Version: Stage 6 (Construction)

IRMA Standard for Responsible Mineral Exploration and Development

("IRMA-Ready" Standard)

Draft v.1.0

December 2021

Contents

NOTE TO REVIEWERS

This draft *IRMA-Ready Standard for Responsible Mineral Exploration and Development* ("IRMA-Ready Standard") has been produced in response to requests from IRMA stakeholders for a comprehensive standard that defines best practices during mineral exploration and development, prior to the operational phase of a mine. It is called IRMA-Ready because it is assumed that any project that meets the requirements in this Standard will be prepared to also meet the requirements in the IRMA *Standard for Responsible Mining* once it becomes operational.

The starting point for development of this draft was the IRMA *Standard for Responsible* Mining (referred to as the "Mining Standard"). However, certain terminology has changed, and numerous requirements have been adapted. Differences in wording between the Mining Standard and this standard, and differences between the various stages are colored in blue.

Reviewers are welcome to comment on any aspect of this draft Standard. Throughout the draft Standard, however, you will see NOTES and CONSULTATION QUESTIONS. These appear with a yellow background.

NOTES are informative, to provide readers with a background on the section, or drafters' notes, for example on why particular requirements were removed or combined in this Standard as compared to the Mining Standard.

CONSULTATION QUESTIONS are directed at reviewers. These are areas where the drafters are seeking input to help guide and/or improve the wording, help determine the scope or relevancy of proposed requirements, etc.

Comments may be submitted to IRMA: comments@responsiblemining.net

When providing comments back to IRMA, it would be appreciated if reviewers could reference specific Chapters, requirement numbers and/or consultation question numbers.

Deadline for Comments: 15 April 2022

Disclaimer

The draft IRMA-Ready Standard is being released for public review. IRMA seeks feedback, comments, questions and suggestions for improvement from diverse stakeholders globally.

This draft has been prepared by the IRMA Secretariat staff to catalyze global conversation and input, and does not represent content approved or endorsed by IRMA's multi-stakeholder Board of Directors for final application.

There are six stages of exploration and development included in the draft standard. These include:

Exploration Stage 1: Office compilation, photo-geologic study, pre-exploration investigations (e.g., review of previous studies, research, non-invasive site visit), pre-exploration consultations, application for exploration-related permits/approvals.

Exploration Stage 2: Aerial examinations, geologic examinations, mapping and investigations, geochemical sampling, geophysics-airborne/ground, surface trenching.

Exploration Stage 3: Road construction, rotary drilling, core drilling, underground work, other surface work (e.g., surface facilities to support underground work), bulk sampling, pilot processing plant.

- If additional exploration or in-fill drilling is performed during mine pre-permitting and permitting stages, then the requirements of Stage #3 are applicable to those activities.
- If additional in-fill drilling or exploration directly adjacent to the mine is performed during mine construction and operations, the requirements of the IRMA Standard are applicable.

Development – Pre-permitting Stage: Baseline environmental data collection, stakeholder engagement related to mining project proposals, project level FPIC determination, project designs, feasibility study.

Development – Mine Permitting Stage: Permit applications and environmental social impact assessment, permit finalization.

Development – Construction Stage: For new projects, applies to the period between permit finalization and initiation of operations. Includes site clearing, topsoil salvage, development of utility corridors, construction of roads and facilities (may only be first stage or site – other stages may occur after operations have commenced).

NOTE TO REVIEWERS ON THE STAGES OF EXPLORATION AND DEVELOPMENT, AND HOW THEY HAVE BEEN MANAGED IN THIS DRAFT STANDARD

We realize that there may be differences of opinion on what can/should be included in each stage.

CONSULTATION QUESTION 1: Do you feel strongly that some of the activities in these categories should be shifted to a different stage? Or should any stages be described differently? If so, please explain your rationale.

We also realize that there can be overlap between the stages. We are proposing, therefore, that when applying for an assessment a company would be assessed against the latest stage of exploration or development that includes any of the IRMA-defined activities being carried out by the company. For example, an exploration company may be trenching and starting to drill. They should be assessed using the Exploration Stage 3 criteria, even though trenching is also listed in Stage 2.

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Some aspects of Stage 3 exploration, such as in-fill drilling, bulk sampling and reclamation of exploration sites, may happen concurrent with Pre-Permitting/Permitting/Construction. In such cases, the company will be expected to be meeting both the exploration-related requirements for Stage 3 activities and the Pre-Permitting/Permitting/Construction requirements.

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Reviewers should be aware that during Pre-permitting and Permitting there are two aspects that are relevant in some chapters:

1) Requirements usually need to apply to the proposed mining project (e.g., stakeholder engagement, assessments of mine proposals, preparation of management plans, monitoring plans, etc.).

2) Requirements sometimes need to apply to project development activities[1] (e.g., sampling or data collection, preparing permit applications, meeting with stakeholders, fulfilling regulatory obligations, etc.).

This creates some complexity in some requirements, because where both aspects are relevant the requirements can be dual-faceted. For example:

[1] We are proposing the following definition for **project development activities**:

> Field- and office-based activities carried out during the pre-permitting and permitting stages to develop a mine proposal, support the environmental and social impact assessment of a proposal, generate information necessary to fulfill regulatory and permitting requirements, engage with stakeholders and rights holders, and maintain company operations.

"3.2.2.1. The company shall . . . identify and assess the significance/consequence of the full range of potential hazards associated with project development activities. **It shall also** carry out a separate process for the proposed mining project, that includes, at minimum, assessing hazards related to. . ."

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Construction often includes many of the requirements found in Permitting. The rationale is that if a company decides to commission an IRMA audit at the Construction stage, and certain activities that were supposed to have happened during Permitting did not occur (e.g., assessments, development of policies, procedures, etc.), then in most cases we set the expectation that these elements be fulfilled before the mine is operational, i.e., during the Construction stage.

HOW THE STAGES ARE REPRESENTED

Beneath each requirement, there will be a list of all of the stages of exploration and development to which the requirement applies. If a stage is missing, it means that the requirement does not apply at that stage.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

Introduction to the IRMA-Ready Standard

Modern societies rely on mined minerals and metals to function. Nearly everything manufactured or constructed – from buildings to roads to computers to automobiles – contains material mined from the Earth. Mining provides important employment and financial opportunities for host communities and host countries. But it is a complex and intensive process that can impact the physical environment, such as through the loss of habitat or contamination of water, and affect local communities' social and economic lives, such as through displacement of livelihoods or cultural impacts.

The Initiative for Responsible Mining Assurance (IRMA) believes that many of the negative social and environmental impacts can be avoided if exploration projects and mines operate according to leading practices, and if mines are designed and planned well from their inception.

The *Standard for Responsible Mining* v.1.0 specifies a set of objectives and leading performance requirements for environmentally and socially responsible practice at mine sites. That Standard serves as the basis of a voluntary system offering independent third-party assessment and certification of environmental and social performance measures at industrial-scale mine sites around the world.

The *IRMA Standard for Responsible Mineral Exploration and Development* (IRMA-Ready Standard) defines best practices during mineral exploration and development, prior to the operational phase of a mine. It is referred to, in short, as the IRMA-Ready Standard because it is assumed that any project that meets the requirements in this Standard will be well prepared to also meet the requirements in the IRMA *Standard for Responsible Mining* once the project becomes an operational mine.

Principles and Objectives

The IRMA *Standard for Responsible Mineral Exploration and Development* (the IRMA Standard) is designed to support the achievement of four overarching principles. Additionally, each chapter of the IRMA Standard has an objective that meets one or more of these principles. For organizational purposes, chapters are listed under one core principle. It should be noted, however, that most chapters and their objectives are relevant to more than one principle.

IRMA and its supporters are committed to promoting the uptake of the IRMA Standard by recognizing and rewarding mineral exploration and development projects that are certified as meeting the requirements in each relevant chapter of the Standard and thereby fulfilling IRMA's overall principles and objectives.

Principle 1—Business Integrity

> **INTENT: Companies conduct business in a transparent manner that complies with applicable host country and international laws, respects human rights and builds trust and credibility with workers, communities and stakeholders.**

Chapter 1.1—Legal Compliance: To support the application of the laws and regulations of the country in which mineral exploration and development takes place, or exceed host country laws in a manner consistent with best practice.

Chapter 1.2—Community and Stakeholder Engagement: To support mineral exploration and development company decision-making and enable communities and stakeholders to participate in mineral exploration-and-development-related decisions that affect their health, well-being, safety, livelihoods, futures and the environment.

Chapter 1.3—Human Rights Due Diligence: To respect human rights, and identify, prevent, mitigate and remedy infringements of human rights.

Chapter 1.4— Complaints and Grievance Mechanism and Access to Remedy: To provide accessible and effective means for affected communities and individuals to raise and resolve mineral exploration-and-development-related complaints and grievances at the project level, while not limiting their ability to seek remedy through other mechanisms.

Chapter 1.5—Revenue and Payments Transparency: To increase transparency of mineral exploration-and-development-related payments. prevent and address corruption and bribery, and provide communities and the general public with the information they need to understand and assess the fairness of financial arrangements related to mineral exploration and development projects.

Principle 2— Planning and Managing for Positive Legacies

> **INTENT: Companies engage with stakeholders from the early planning stages and throughout the mine life cycle to ensure that mining projects are planned and managed to deliver positive economic, social and environmental legacies for companies, workers and communities.**

Chapter 2.1—Environmental and Social Impact Assessment and Management: To proactively anticipate and assess environmental and social impacts; manage them in accordance with the mitigation hierarchy; and monitor and adapt environmental and social management systems in a manner that protects affected communities, workers and the environment throughout the entire mine life cycle.

Chapter 2.2—Free, Prior and Informed Consent (FPIC): To demonstrate respect for the rights, dignity, aspirations, culture, and livelihoods of indigenous peoples, participate in ongoing dialogue and engagement, and collaborate on strategies to minimize impacts and create benefits for indigenous peoples, thereby creating conditions that allow for indigenous peoples' free, prior and informed consent and decision-making regarding mineral exploration and development.

Chapter 2.3—Obtaining Community Support and Delivering Benefits: To obtain and maintain credible broad support from affected communities, and produce tangible and equitable benefits to communities that are in alignment with their needs and aspirations and sustainable over the long term.

Chapter 2.4—Resettlement: To avoid involuntary resettlement, and when that is not possible, equitably compensate affected persons and improve the livelihoods and standards of living of displaced persons.

Chapter 2.5—Emergency Preparedness and Response: To plan for and be prepared to respond effectively to industrial emergency situations that may affect offsite resources or communities, and minimize the likelihood of accidents, loss of life, injuries, and damage to property, environment, health and social well-being.

Chapter 2.6—Planning and Financing Reclamation and Closure: To protect long-term environmental and social values, and ensure that the costs of site reclamation and closure are not borne by affected communities or the wider public.

Principle 3— Social Responsibility

> **INTENT: Companies engage with workers, stakeholders and rights holders to maintain or enhance the health, safety, cultural values, quality of life and livelihoods of workers and communities.**

Chapter 3.1—Fair Labor and Terms of Work: To maintain or enhance the social and economic well-being of mineral exploration and development project workers and respect internationally recognized workers' rights.

Chapter 3.2—Occupational Health and Safety: To identify and avoid or mitigate occupational health and safety hazards, maintain working environments that protect workers' health and working capacity, and promote workplace safety and health.

Chapter 3.3—Community Health and Safety: To protect and improve the health and safety of individuals, families, and communities affected by mineral exploration and development projects.

Chapter 3.4—Mining and Conflict-Affected or High-Risk Areas: To prevent contribution to conflict or the perpetration of serious human rights abuses in conflict-affected or high-risk areas.

Chapter 3.5—Security Arrangements: To manage security in a manner that protects mineral exploration and development projects without infringing on human rights.

Chapter 3.6—Artisanal and Small-Scale Mining: To avoid conflict and, where possible within the scope of national law, foster positive relationships between mineral exploration and development companies and artisanal and small-scale mining (ASM) entities, and support the development of ASM that provides positive livelihood opportunities and is protective of human rights, health, safety and the environment.

Chapter 3.7—Cultural Heritage: To protect and respect the cultural heritage of communities and indigenous peoples.

Principle 4—Environmental Responsibility

> **INTENT: Companies engage with stakeholders to ensure that mining is planned and carried out in a manner that maintains or enhances environmental values, and avoids or minimizes impacts to the environment and communities.**

Chapter 4.1—Waste and Materials Management: To manage wastes and materials in a manner that minimizes their short- and long-term physical and chemical risks, and protects the health and safety of communities and future land and water uses.

Chapter 4.2—Water Management: To manage water resources in a manner that strives to protect current and future uses of water.

Chapter 4.3—Air Quality: To protect human health and the environment from airborne contaminants.

Chapter 4.4—Noise and Vibration: To preserve the health and well-being of nearby noise receptors and the amenity of properties and community values, and to protect offsite structures from vibration impacts.

Chapter 4.5—Greenhouse Gas Emissions: To minimize climate change impacts through increased energy efficiency, reduced energy consumption and reduced emissions of greenhouse gases.

Chapter 4.6—Biodiversity, Ecosystem Services and Protected Areas: To protect biodiversity, maintain the benefits of ecosystem services and respect the values being safeguarded in protected areas.

Chapter 4.7—Cyanide: To protect human health and the environment through the responsible management of cyanide.

Chapter 4.8—Mercury Management: To protect human health and the environment through the responsible management of mercury.

Scope of the IRMA-Ready Standard

The IRMA-Ready Standard is intended to be applicable to exploration projects and proposals to develop any type of industrial- or large-scale mining operation (including surface, sub-surface and solution or brine “mining”), and all mined materials (e.g., minerals, metals) with the exception of energy fuels. IRMA will not certify oil and gas exploration or development projects, and more work is needed before thermal coal or uranium can be considered for inclusion.

For the mineral development phases, the scope also includes any associated mineral processing activities that are included in the proposed projects, as these are included in IRMA mining audits (if facilities are co-located with a mine).

To make this clear, we are proposing to revise the definition of Mining Project by adding the text in blue:

> Mining Project - Any set of activities undertaken for the purpose of extracting mineral resources, and the infrastructure required to support these activities. Mining projects may include exploration, mine construction, mining, associated mineral processing, mine closure, post-closure and related activities either as separately or in combination.

IRMA also has a draft Mineral Processing Standard that, when finalized and approved, will be applicable at mineral processing facilities that are not co-located with mines.

CONSULTATION QUESTION 2: Currently, we have not included the two new chapters added to the draft Mineral Processing Standard, since that standard has not yet been finalized or approved. (English or Spanish versions of the draft Mineral Processing Standard can be downloaded from the IRMA website.[2])

We are considering that those two chapters, and certain requirements that are different for mining operations and mineral processing facilities, could be added to the IRMA-Ready Standard so that a company can be prepared for future IRMA audits of mines and mineral processing facilities (either co-located or stand-alone). Would that be of value to mineral development companies?

There is no defined minimum cut-off point for the scale of exploration or mineral development projects to which the IRMA Standard may apply, but it is not designed to be applicable to artisanal or small-scale mining.

The subsections below provide more information on the applicability of the Standard under different conditions.

IRMA-Ready Assessment Stages

There are six stages of exploration and development included in the draft IRMA-Ready standard. These include:

Exploration Stage 1: Office compilation, photo-geologic study, pre-exploration investigations (e.g., review of previous studies, research, non-invasive site visit), pre-exploration consultations, application for exploration-related permits/approvals.

Exploration Stage 2: Aerial examinations, geologic examinations, mapping and investigations, geochemical sampling, geophysics-airborne/ground, surface trenching.

Exploration Stage 3: Road construction, rotary drilling, core drilling, underground work, other surface work (e.g., surface facilities to support underground work), bulk sampling, pilot processing plant.

- If additional exploration or in-fill drilling is performed during mine pre-permitting and permitting stages, then the requirements of Stage #3 are applicable to those activities.
- If additional in-fill drilling or exploration directly adjacent to the mine is performed during mine construction and operations, the requirements of the IRMA Standard are applicable.

Development – Pre-permitting Stage: Baseline environmental data collection, stakeholder engagement related to mining project proposals, project level FPIC determination, project designs, feasibility study.

Development – Mine Permitting Stage: Permit application and environmental social impact assessment, permit finalization

Development – Construction Stage: For new projects, applies to the period between permit finalization and initiation of operations. Includes site clearing, topsoil salvage, development of utility corridors, construction of roads and facilities (may only be first stage or site – other stages may occur after operations have commenced).

When applying for an assessment a company would apply the IRMA-Ready Standard criteria for the latest stage of exploration or development that includes any of the activities from the list above that are being carried out. For

[2] Download the draft IRMA Standard for Responsible Mineral Processing (Draft v.1.0) **in English**: https://responsiblemining.net/irma-mineral-processing-standard-draft-14june2021-2/ **or Spanish**: https://responsiblemining.net/irma-estandar-para-el-procesamiento-responsable-de-minerales-borrador1-0-27sept2021/

example, an exploration company may be trenching and starting to drill. They should be assessed using the Exploration Stage 3 criteria, even though trenching is listed in Stage 2.

Some aspects of Stage 3 exploration, such as in-fill drilling, bulk sampling and reclamation of exploration sites, may happen concurrent with Pre-Permitting/Permitting/Construction. In such cases, the company will be expected to be meeting both the exploration-related requirements for Stage 3 activities and the Pre-Permitting, Permitting or Construction requirements.

Readers will note, as well, that construction includes many of the requirements found in Permitting. If a company decides to commission an IRMA audit at the construction stage, all of the activities/actions that were supposed to have happened during permitting will still apply because if not done during permitting these elements should be carried out during Construction (e.g., assessments, policies, etc.).

Application in Relation to Scale of Company/Project

IRMA is interested in exploring if there may be issues related to small-to-medium-sized companies or related to the scale of an exploration or development project that pose barriers to meeting some of the IRMA requirements. IRMA leaders understand that smaller companies may have less experience with some planning, monitoring, reporting and other formal processes than larger companies, or during early stages of development, they may not have access to sufficient capital to simultaneously carry out all of the expectations in the IRMA-Ready Standard.

IRMA desires to create a Standard that is accessible to all companies wanting to demonstrate their commitment to greater social and environmental performance, and as a result, IRMA is evaluating potential barriers to smaller operators and is considering ways to reduce barriers while still maintaining a Standard that is protective of social and environmental values. Possible strategies being considered include longer timelines allowed to accomplish some tasks, adjusted fees for participation in IRMA, and technical and financial resources to support capacity building and training opportunities for smaller companies, especially those producing low-value commodities.

Language

The IRMA Standard follows ISO guidance in the use of the word 'shall' to indicate a requirement that must be met. For example, "There shall be an environmental impact assessment for the mine site."

The requirements of the IRMA Standard have been drafted taking account of the intent that conformity will be strictly assessed in accordance with the wording.

If flexibility is intended, for example, if mines can choose to implement one or more elements from a longer list, then this is specified in the wording of the requirement.

Technical terms are defined in the Glossary located at the end of the document. The definitions are considered to be normative for the purpose of interpreting the IRMA Standard. As mentioned above, defined terms are listed in a box at the beginning of the chapter, and terms are lightly underlined in the chapter text.

Chapter Structure

BACKGROUND

Each chapter has a short introduction to the issue covered in the chapter, which may include an explanation of why the issue is important, a description of key issues of concern, and the identification of key aspects of recognized or emerging best practice that the standard aims to reflect.

OBJECTIVES/INTENT STATEMENT

A description of the key objectives that the chapter is intended to contribute to or meet.

SCOPE OF APPLICATION

A description of the conditions under which the chapter may or may not be relevant for particular projects. If the company can provide evidence that a chapter is not relevant, it will not be included in the scope of the assessment.

CRITICAL REQUIREMENTS IN THIS CHAPTER

The critical requirements are listed here.

Chapter Requirements

X.X.X. These are criteria headings

X.X.X.X. This is the requirement number. (If it is a critical requirement, it will be noted here)
And these are the requirements that must be met for an IRMA certificate to be issued and subsequently maintained by a mining project. Most criteria have more than one requirement. All requirements must be met in order to comply fully with the criterion.

a. Some requirements contain sub-elements:

   i. At more than one level. Mines may be required to meet all elements in a list, or one or more of the elements of such a list, as specified

NOTES

Any additional notes related to the chapter and its requirements are explained here.

Critical Requirements in the IRMA-Ready Standard

NOTE: In the IRMA Mining Standard, a set of requirements were identified by the IRMA Board of Directors as being critical requirements that any mine site claiming to be following good practices in mining should be meeting. In total there are 40 IRMA requirements deemed critical in the Mining Standard.

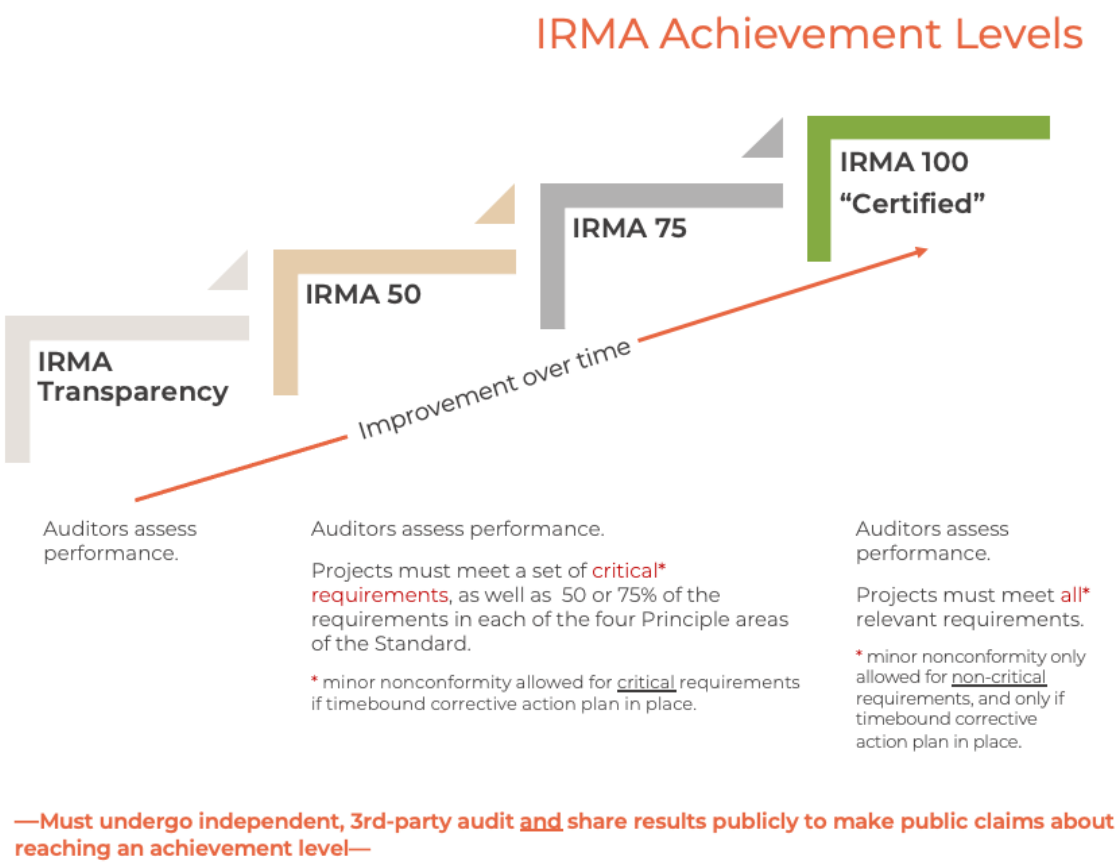
Mines certified as IRMA 100 must fully meet all critical requirements, and mines achieving IRMA 50 or IRMA 75 must substantially meet all critical requirements, and develop corrective actions plans that outline how they will fully meet the requirements within specified time frames.

In the draft IRMA-Ready Standard, we have assumed that the requirements from the Mining Standard deemed critical would similarly be considered critical in this standard. There is on additional critical requirement being proposed in Chapter 2.2 (see requirement 2.2.3.2).

CONSULTATION QUESTION 3: Are there any additional or alternative requirements that should be considered critical requirements in the IRMA-Ready Standard?

IRMA Achievement Levels

The IRMA-Ready Standard aims to recognize and reward best practice in relation to the management of the social and environmental aspects of mineral exploration and development projects. IRMA recognizes that this is a high standard to achieve. Consequently, IRMA has developed a series of achievement levels that can be reached if projects undergo independent, third-party assessment by an approved certification body.



Basis for Awarding Achievement Levels

The basis for IRMA certification is that, to the best knowledge of the certification body, on the basis of the evidence reviewed during the independent, third-party assessment, the necessary scores have been achieved to meet to reach a particular achievement level. However, it should be noted that:

- Auditing conformity with some requirements of the IRMA *Standard for Responsible Mining* will be based on sampling, and some level of failure within a sample may be accepted while the overall level of performance required to conform with the requirement may still be met. Where possible IRMA will aim to provide quantitative guidance but in the absence of specific guidance decisions will be based on the professional judgment of the certification body.
- Occasional, temporary failures of conformity are inevitable when managing large, complex projects over time, and such temporary failures do not imply the automatic, immediate withdrawal or suspension of an IRMA certificate so long as the failure is not the result of negligence, recklessness or intentional wrongdoing, and so long as appropriate and timely actions are taken to correct identified failures and analyze and address the issues that caused failures so that they can be avoided in the future.

Consequently, and in line with other comparable certification systems, IRMA expects that certificates and verified achievement levels may be awarded, and may subsequently be maintained, despite the existence of minor non-conformities with the requirements of the standard.

In all cases, the basis for IRMA certification will be that any failures or apparent failures of conformity with the requirements of the IRMA-Ready Standard that are identified by an auditor will be explicitly documented in the audit report at the time, and the resulting decision to issue, confirm, suspend or withdraw a certificate or

downgrade (or upgrade) an achievement level will be clearly and explicitly justified by the responsible certification body.

Comment on the IRMA-Ready Standard

> Comments on all of IRMA's standards and system are always welcome.
>
> **Deadline for Comments on the IRMA-Ready Standard: 15 April 2022**
>
> Comments may be emailed to IRMA at: comments@responsiblemining.net

Additional information about IRMA is available on our website: www.responsiblemining.net.

Principle 1: Business Integrity

Chapter 1.1—Legal Compliance

NOTE TO REVIEWERS ON CHAPTER 1.1:

Host country laws related to mineral exploration and development vary significantly from one jurisdiction to the next. As in the IRMA Standard for Responsible Mining, this draft IRMA-Ready Standard for mineral exploration and development projects seeks to define best practices, and therefore the expectation is that many IRMA requirements will go beyond host country law. By requiring all participating projects to apply IRMA's standards, regardless of host country, we are seeking to level the playing field for all projects no matter where they are located, and deliver the same level of positive outcomes for communities and stakeholders the world over.

While based on the Mining Standard, some of the requirements below have been revised to increase clarity of expectations.

BACKGROUND

Compliance with applicable host country laws is one of the most basic principles of exploring for or developing a mine, or carrying out any activity, in a given jurisdiction. As an international best practice standard IRMA's requirements may also contain provisions that are more stringent or demanding than the minimum legal requirements specified at the national level in a particular country.

This chapter seeks to ensure that the IRMA Standard supports and complements compliance with international and national laws and regulations. It is based on five precepts:

- Compliance with host country laws and permits;
- Compliance with the IRMA Standard and requirements;
- Compliance with the most protective of host country or IRMA requirements;
- Compliance with the host country law when there is a direct conflict with an IRMA requirement; and
- Maintenance of records to document and demonstrate compliance with host country requirements and the IRMA Standard.

OBJECTIVES/INTENT OF THIS CHAPTER

To support the application of the laws and regulations of the country in which mineral exploration and development takes place, or exceed host country laws in a manner consistent with best practice.

SCOPE OF APPLICATION

RELEVANCE: This chapter is applicable to all exploration and development projects applying for IRMA certification.

CRITICAL REQUIREMENTS IN THIS CHAPTER

The company has a system in place to identify all applicable host country laws and track the operation's compliance with those obligations (1.1.1.1).

Legal Compliance Requirements

1.1.1. Compliance with Host Country Laws

NOTE FOR 1.1.1: We have added a new requirement 1.1.1.1 to make it clear that companies are responsible for demonstrating that they have a system in place to know their legal obligations and track if they are maintaining compliance with those obligations. A requirement previously in the Disclosure section (now 1.1.4) "The company shall maintain records and documentation sufficient to authenticate and demonstrate compliance and/or non-compliance with host country laws and the IRMA Standard" has been removed. This record-keeping is part of maintaining a system that would enable the company to know and track compliance with legal obligations.

1.1.1.2 makes it clear that compliance with laws is expected.

1.1.1.3 was a separate criterion in the Mining Standard, called "Response to Non-Compliance." We combined the two because both pertain to Compliance with Host Country Laws.

1.1.1.1. (Critical Requirement)
The company shall have a system in place to identify all host country laws that are applicable to the project,[3] and shall track the status of the project's compliance with those obligations.

1.1.1.2. The company shall carry out all activities in a manner that complies with host country law.

1.1.1.3. If non-compliance with a host country law has taken place, the company shall be able to demonstrate that timely and effective action was taken to remedy the non-compliance and that measures were taken to prevent recurrence of similar non-compliance issues.

1.1.1.4. Neither new exploration activities nor mine construction shall commence until all required permits and approvals have been received.

NOTE FOR 1.1.1.4: This is new. The impetus for this requirement is that some projects have broken ground on construction even before receiving all required permits, sometimes creating the potential for exacerbating conflicts with communities and other stakeholders, or putting the environment or cultural heritage at risk.

1.1.2. Compliance with Most Protective Requirements

1.1.2.1. The company shall comply with whichever provides the greatest social and/or environmental protections of host country law or IRMA requirements.[4] If complying fully with an IRMA requirement would require the company to break host country law then the company shall endeavor to meet the intent of the IRMA requirement to the extent feasible without violating the law.

1.1.3. Contractor Compliance

[3] Host country law includes all applicable requirements, including but not limited to laws, rules, regulations, and permit requirements, from any governmental or regulatory entity, including but not limited to applicable requirements at the federal/national, state, provincial, county or town/municipal levels, or their equivalents in the country where the mine is located.

[4] For purposes of this section, most protective means the law or requirement that will prevent or mitigate the most negative impact(s) to the host state's human health and environment and cause the least risk to the host state's economic resources, such as by posing risks of injury to human health and the environment.

1.1.3.1. The company shall demonstrate that it takes appropriate steps to ensure compliance with the IRMA-Ready Standard by contractors engaged in activities relevant to the exploration or development project, including construction.[5] At minimum, this shall include:

a. Language in contracts that require compliance with the applicable requirements of the IRMA-Ready Standard; and
b. Monitoring of contractor performance on applicable requirements of the IRMA-Ready Standard.

NOTE FOR 1.1.3.1: This was 1.1.4.1 in the Mining Standard. We have added new sub-requirements 1.1.3.1.a and b to clarify that explicit steps must be taken with regard to contractors. The language for construction has been added to include that stage of development.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.1.4. Disclosure

1.1.4.1. Records related to compliance and/or non-compliance with host country laws shall be made available to IRMA auditors, and shall include descriptions of non-compliance events and ongoing and final remedies.[6] Where the company claims that records or documentation contains confidential business information, it shall:

a. Provide to auditors a general description of the confidential material and an explanation of the reasons for classifying the information as confidential; and
b. If a part of a document is confidential, only that confidential part shall be redacted, allowing for the release of non-confidential information to auditors and stakeholders.

NOTE FOR 1.1.4.1: This requirement is the combination of 1.1.5.2 and 1.1.5.4. from the Mining Standard. We combined them because they are directly related.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.1.4.2. Upon request, companies shall provide stakeholders with a summary of the project's regulatory non-compliance issues that are publicly available.[7]

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

NOTES

This chapter balances the importance of compliance with host country laws with the recognition that laws can greatly vary between countries and regions. Therefore, this chapter establishes minimum legal standards and applicability requirements for other IRMA chapters when comparing host country law with the requirements in the IRMA Standard. As a general rule, and particularly recognizing that participation in IRMA is voluntary, this chapter prioritizes IRMA requirements because IRMA seeks to raise the bar of mineral exploration and development practices globally - and not just codify existing practices (whether considered best or not).

IRMA certification is based on the evidence available to and reviewed by a certification body. Certification does not guarantee that a certificate holder complies with all the legal obligations associated with a certified exploration or development project and may not be used to suggest otherwise or as a defense to claims regarding legal violations.

[5] The definition of contractors includes relevant subcontractors (i.e., those involved in providing services to the company or the company's contractors that are relevant to the mining project).

[6] As used in this section, "records" includes, but is not limited to, any permit, regulatory, or relevant governmental actions whether pending or resolved. "Ongoing remedies" refers to situations where the company is still working on achieving compliance to the satisfaction of the regulatory government entities/competent authorities.

[7] "Publicly available" means that information is either already accessible by the public (e.g., compliance/non-compliance reports, statistics, inspection or other reports published on a regulatory website, or compliance/non-compliance-related information published by the company), or that information could be accessed through legal public means (e.g., through information requests to regulators).

Where documents and records produced in satisfaction of legal or other company requirements also meet the requirements of the IRMA Standard the company is not required to duplicate these. A company may choose to develop summaries and explanations of such documents and records in order to facilitate the IRMA audit process and thereby reduce its cost.

Chapter 1.2—Community and Stakeholder Engagement

NOTE TO REVIEWERS ON CHAPTER 1.2:

Criteria 1.2.4 differs slightly from the IRMA Mining Standard language (some information that was related was consolidated).

One of the issues IRMA is seeking to address is how to deal with the issue of timing of activities. In many cases, the best practice is to initiate a certain activity at a particular point in time, often, the earlier the better. But not all projects will have undertaken activities at the appropriate time in accordance with best practice. If IRMA is rigid with its requirements, then projects that did not meet a timing element would not be awarded full points and could never reach IRMA 100.

CONSULTATION QUESTION 4: Is it critical that engagement begin as outlined in the following requirements, or should IRMA allow full points as long as the company can demonstrate that during a particular stage the expectation is currently being met? Or should companies be recognized and rewarded for implementing practices at the time when they can be most effective?

BACKGROUND

Mineral exploration and development may last for decades before mine operations are initiated. Often mineral exploration and development projects are conducted in locations near existing communities; in other cases, they may be located in remote and/or uninhabited areas and if successful would require new communities to emerge to support mining activities. Mineral exploration and development projects have the potential to significantly impact the lives of people in those communities. Some changes may be beneficial, for example, through the provision of jobs, or through mineral exploration and development company investment in community development projects. But exploration and development projects also have the potential to create negative impacts and even be a source of social conflict within communities.

Increasingly, the mining industry including exploration and development companies, host governments, and financial institutions are recognizing that building strong, lasting relationships with those affected by mineral exploration and development activities can improve the identification and management of risks, as well as the long-term viability of future mining operations.[8] Meaningful stakeholder engagement that is proactive, inclusive, accountable and transparent increases the potential for optimal outcomes for both communities and exploration and development companies.[9]

OBJECTIVES/INTENT OF THIS CHAPTER

To support mineral exploration and development company decision-making and enable communities and stakeholders to participate in mineral exploration-and-development-related decisions that affect their health, well-being, safety, livelihoods, futures and the environment.

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant for all mineral exploration and development projects applying for IRMA certification.

[8] Herbertson, K., Ballestaeros, A., Goodland, R. and Munilla, I. 2009. Breaking Ground: Engaging Communities In Extractive And Infrastructure Projects. (World Resources Institute). pdf.wri.org/breaking_ground_engaging_communities.pdf

[9] For example, Principle 10 of the Rio Declaration of 1992 states that, "Environmental issues are best handled with the participation of all concerned citizens." (Source: United Nations. 1992. Report of the United Nations Conference on Environment and Development. Annex I. "Rio Declaration on Environment and Development." http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm)

CRITICAL REQUIREMENTS IN THIS CHAPTER

The mineral exploration or development company fosters two-way dialogue and meaningful engagement with stakeholders (1.2.2.2).

Community and Stakeholder Engagement Requirements

1.2.1. Planning and Designing Stakeholder Engagement Processes

NOTE FOR 1.2.1.1 (below): There are slight differences in wording for the various stages of exploration and development.

In Stage 1 of Exploration, some stakeholder engagement is expected before permits are sought, but this is not as critical during earlier information gathering phases. Identification occurs again prior to Stage 2, as there may be a broader set of affected and interested stakeholders.

There are different expectations beginning In Stage 3 of exploration. Stage 3 is when a deeper level of understanding and therefore analysis of potentially affected and interested stakeholders needs to occur, as there will be more ground-based activity, the company will be much more visible, and stakeholders will have more questions and concerns about the project's impacts and potential benefits. This deeper level of analysis of stakeholders carries through the pre-permitting and permitting stages. Construction is included because if identification and analysis for the construction phase was not done during mine permitting, it will need to take place during the construction phase.

We have integrated the previous requirement 1.2.1.4 on understanding community dynamics into this requirement, as it should be part of the stakeholder analysis process starting in Stage 3.

1.2.1.1. Prior to construction, the company shall undertake identification and analysis of the range of groups and individuals, including community members, rights holders and others (hereafter referred to collectively as stakeholders) who may be affected by or interested in the construction of the mining project. The analysis shall include efforts to understand community dynamics in order to prevent or mitigate community conflicts related to construction of the mining project and the company's engagement with its various stakeholders.

Construction

NOTE FOR 1.2.1.2 (below): There are slight differences in wording for the exploration and development stages. There is no need to update the engagement plan during Stage 1. But as activities are undertaken and evolve plans should be updated. By the mine permitting stage, companies should also have at least a preliminary engagement plan in place for actual mine construction and operations.

1.2.1.2. A stakeholder engagement plan, scaled to the risks and impacts of mine construction, shall be developed, implemented and updated as necessary.

Construction

NOTE FOR 1.2.1.3 (below): We have not required the inclusion of stakeholders in the design of engagement processes during the early stages of exploration. (Note that the company is responsible to consult with stakeholders to identify potential barriers to engagement in 1.2.3.1, even in the earliest stages of exploration). But as exploration activities intensify in Stage 3, it will be increasingly important to make sure that engagement processes are effective. The best way to achieve this is by including stakeholders in the design of the processes.

We can add that if stakeholders were engaged in designing engagement processes in the Permitting stage, that they do not need to redesign processes for the Construction stage, unless the processes are not working.

CONSULTATION QUESTION 5: Should the requirement to engage with stakeholders about the design of engagement processes apply during the early exploration stages?

1.2.1.3. The company shall consult with stakeholders to design engagement processes that are accessible, inclusive and culturally appropriate,[10] and shall demonstrate efforts are taken to remove barriers to engagement for affected stakeholders (especially women, marginalized and vulnerable groups).

1.2.2. Engagement Processes

1.2.2.1. Stakeholder engagement shall begin prior to obtaining exploration permits, and shall be ongoing, throughout all stages of exploration, mine pre-permitting, permitting and construction.

NOTE FOR 1.2.2.1: Wording has changed slightly compared to the Mining Standard, to reflect the different stages of exploration and development.

NOTE FOR 1.2.2.2 (below): We added sub-requirement 1.2.2.2.a, related to providing advanced notice of exploration activities to stakeholders. Sharing timelines gives stakeholders an opportunity to potentially influence activities that may conflict with cultural or environmental values or livelihood activities.[11] This sub-requirement is carried through the pre-permitting or permitting stages, as there may be intrusive activities during all of these stages (even pre-permitting and permitting involve on-the-ground studies, baseline sampling, etc., which may affect stakeholders), and also through construction.

In 1.2.2.2.b, providing relevant information on proposed activities would include the scope and potential outcomes of exploration, which will be important for managing local expectations. Doing so in a "consistent manner" comes from IFC guidance: "The information you share with stakeholders should be available to all. . . don't create or exacerbate uneven power dynamics by doling out key information to some and not others in the community."[12]

In 1.2.2.2.d. Engaging in a respectful manner would include adhering to any engagement protocols that may be in place, e.g., with indigenous peoples (see Chapter 2.2).

In 1.2.2.2.e. Issues relevant to stakeholders may include gaining permission for entering private lands, developing mitigation and compensation agreements with relevant stakeholders for any damage caused by exploration-related activities.[13]

[10] See definitions of inclusive and accessible. "Culturally appropriate" engagement processes (e.g., communications, interactions and conveyance of information) would be those that are aligned with the cultural norms and communication styles of the affected communities and stakeholders. Companies would be expected to use methods, languages, terminology and formats that are respectful of cultural differences (e.g., in some cultures, it is disrespectful to look directly into a person's eyes), and can be easily understood by the affected communities and stakeholders. Stakeholders can help to define for the company what is considered culturally appropriate.

[11] For example, there may be important gatherings planned at a particular time of year, or local knowledge about locations of sensitive species that might be disturbed by noise from aircraft during certain time periods. (Source: Government of the Yukon Territory.2008. Flying in Caribou Country – how to minimize disturbance from aircraft. https://www.miningnorth.com/_rsc/site-content/library/Flying_in_Caribou_Country.pdf)

[12] IFC. A Strategic Approach to Early Stakeholder Engagement: a good practice handbook for junior companies in the extractive industries. p. 47. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/784051524469298172/a-strategic-approach-to-early-stakeholder-engagement-a-good-practice-handbook-for-junior-companies-in-the-extractive-industries.

[13] Ibid. page 50.

1.2.2.2. (Critical Requirement)
The company shall foster two-way dialogue and meaningful engagement with stakeholders by:[14]

a. Providing advanced notice on timing of planned construction activities;
a. Providing relevant information about construction activities to stakeholders in a timely and consistent manner;
b. Including participation by construction project management and subject-matter experts when addressing concerns of significance to stakeholders;
c. Engaging in a manner that is respectful, and free from manipulation, interference, coercion or intimidation;
d. Soliciting feedback from stakeholders on issues relevant to them (including potential impacts and mitigation options for construction activities); and
e. Providing stakeholders with feedback on how the company has taken their input into account.

Construction

1.2.2.3. The company shall collaborate with stakeholders, including representatives from affected communities, to design and implement formal stakeholder engagement mechanism(s)[15] to provide ongoing stakeholder input on the proposed mining project and issues of concern to stakeholders.

NOTE FOR 1.2.2.3: Wording has changed slightly compared to the Mining Standard, to reflect the purpose of a stakeholder engagement mechanism.

This requirement has not been applied to the exploration phases because of the uncertainty of the longevity of exploration projects, and the time lapses that may occur between activities. As per 1.2.2.2, above, exploration companies are still expected to engage with stakeholders on issues of significance to stakeholders.

The requirement becomes relevant during pre-permitting because once a mining project is proposed it seems important to start to develop mechanisms that enable stakeholder oversight as the project moves forward through permitting into construction and operation. We included the construction phase (even though the engagement mechanism should already be developed by then) to be clear that if a company has not yet developed such a mechanism by the time construction commences, is would be expected to develop one at that time.

CONSULTATION QUESTION 6: While ongoing stakeholder oversight and input is necessary during mining operations, is it as important to have a formalized engagement mechanism during exploration and development? If yes, should we require it during exploration?

Pre-permitting | Mine Permitting | Construction

1.2.2.4. Engagement processes shall be accessible and culturally appropriate,[16] and shall include participation by women, men, and marginalized and vulnerable groups or their representatives.

Stage 1 | Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

1.2.2.5. When stakeholder engagement mechanisms and/or processes depend substantially on community representatives, the company shall demonstrate that efforts have been made to confirm whether or not such persons represent the views and interests of affected community members and can be relied upon to faithfully communicate relevant information to them. If this is not the case, the company shall undertake additional engagement processes to enable more meaningful participation by and information sharing with the broader community.

[14] Ibid.

[15] A mechanism could be a permanent advisory committee, or other types of committees dedicated to specific issues.

[16] See footnote 12 for more information on culturally appropriate engagement processes.

CONSULTATION QUESTION 7: As per the Note for 1.2.1.3, in Stage 3 it will be increasingly important to make sure that engagement processes are effective, and this requires that information reaches the affected communities. This also applies to formal stakeholder engagement mechanisms mentioned in 1.2.2.3.

Should we include this in the earliest stages of exploration?

Stage 3 | Pre-permitting | Mine Permitting | Construction

1.2.2.6. The company shall document engagement processes, including, at minimum, names of participants, and input received from and company feedback provided to stakeholders.

Stage 1 | Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

1.2.2.7. The company shall report back to affected communities and stakeholders on issues raised during engagement processes.

NOTE FOR 1.2.2.7: We have not required that companies undertake formal reporting during the earliest stages of exploration. This does not mean that during Stages 1 and 2 companies do not provide feedback to communities - informal feedback is required for all exploration stages in 1.2.2.2.f, and Chapter 1.4 requires that there be reporting to stakeholders on how grievances have been addressed/resolved.

As per the Note for 1.2.1.3, as exploration activities intensify in Stage 3 and beyond, it will be increasingly important to make sure that companies formally report back to communities on issues raised by them.

CONSULTATION QUESTION 8: Should we include formal reporting for the earliest stages of exploration?

Stage 3 | Pre-permitting | Mine Permitting | Construction

1.2.3. Strengthening Capacity

1.2.3.1. The company shall consult with stakeholders from affected communities about potential barriers to engagement, and if any are identified, the company shall offer appropriate assistance to facilitate more effective engagement.[17]

NOTE FOR 1.2.3.1: This requirement has been simplified from the Mining Standard language.

Stage 1 | Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

1.2.4. Communications and Access to Information

NOTE ON 1.2.4: The Mining Standard included multiple places where a company was required to either make information publicly available or make the information available to stakeholders upon request. We provided that option in recognition that it could be overly onerous to for a company to have to upload to the internet, or store in a public location, copious amounts of information, and keep that information up to date.

In auditing the Mining Standard, however, we found that often information was not publicly available, but no requests had been made either, so it was uncertain if the company would actually make the information available if requested. Requiring a policy or procedure related to making information available to stakeholders is the best way to ensure that if a company chooses to not automatically make information publicly available, that it has something in writing, at least, to demonstrate a commitment that it will make certain information available upon request.

We are proposing this change throughout the draft IRMA-Ready Standard wherever there is the option to make information publicly available or available to stakeholders upon request. This criterion related to Communication

[17] Depending on the circumstances, appropriate assistance may include providing access to training, funding to hire independent experts, capacity building, etc.

and Access to Information, however, is the location that will underpin all other references to making information available to stakeholders upon request.

1.2.4.1. Communications shall be carried out and information shall be provided to stakeholders in a timely manner, and shall be in formats and languages that are culturally appropriate and accessible to affected communities and stakeholders.[18]

NOTE FOR 1.2.4.1: This requirement was 1.2.4.3 in the Mining Standard.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.2.4.2. Any information that relates to the project's environmental or social performance as required in the IRMA-Ready Standard shall be made available to relevant stakeholders upon request, with the following caveats:

a. The company shall have a policy in place that addresses how it will make information available to stakeholders upon request;
b. If requests for information are unreasonable because of the content[19] or the volume of information requested, efforts shall be made by the company to provide stakeholders with summaries of requested information;
c. If requests for information are not met in full, or in a timely manner, the company shall provide stakeholders with a written justification or explanation; and
d. If part of a document contains confidential business information, then confidential information may be redacted, allowing for the release of non-confidential information.

NOTE FOR 1.2.4.2: This requirement combines 1.2.4.1 and 1.2.4.2 and 1.2.4.4 from the Mining Standard, and adds more clarity on the type of information that must be provided. In particular, 1.2.4.2 is new. See the Note for Criterion 1.2.4, above, for more of an explanation on why this has been added.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

[18] ""in a timely manner" will likely vary based on the company's resources and procedures (e.g., some companies may have due diligence procedures in place for releasing data publicly) and also the size/nature of the request. As a general rule of thumb, however, requests should be fulfilled within 1 to 3 months, although for particularly large requests or requests made to companies with limited capacity to fulfill information requests, some flexibility may be needed. Also, some companies have stringent quality assurance procedures that must be followed in order to share data publicly, and so may require more time to prepare materials for release. (See also 1.2.4.2 for requests that are not responded to in what seems like a "timely manner.") See footnote 9 for more on culturally appropriate communications.

[19] Companies are not expected to release information that is culturally inappropriate, compromises the safety of any individual, is confidential employee information, or legitimate confidential business information. Culturally inappropriate information may include that which is sensitive to particular groups or communities, and therefore should not be freely released to all requesting parties (e.g., locations of indigenous peoples' sacred sites). Stakeholders can help to define what is considered culturally inappropriate.

Chapter 1.3—Human Rights Due Diligence

NOTE TO REVIEWERS ON CHAPTER 1.3:

Very few changes were made compared to the Mining Standard, just some minor clarifications and streamlining.

We have included Stage 1 in this Chapter because the United Nations' Guiding Principles on Business and Human Rights outline expectations for human rights due diligence that apply to all business enterprises, "regardless of their size, sector, location, ownership and structure."[20]

However, we have attempted to streamline the expectations for companies at that stage of development, given that in the majority of cases a company's work at that stage is unlikely to lead to the development of a mine.

CONSULTATION QUESTION 9: We'd be interested in knowing if we have underestimated the human rights due diligence responsibilities of companies at Exploration Stage 1. How extensive does human rights due diligence need to be at that stage?

BACKGROUND

In 1948, the United Nations General Assembly adopted the *Universal Declaration of Human Rights*, which, for the first time in history, enumerated the fundamental civil, political, economic, social and cultural rights that all human beings should enjoy. Since that time, a series of core international human rights conventions and treaties, along with other instruments, have established the international legal framework for individual and collective human rights.[21] For example, United Nations instruments have elaborated on the rights of indigenous peoples, women, national or ethnic, religious and linguistic minorities, children, persons with disabilities, and migrant workers and their families.[22]

In 2011, the UN *Guiding Principles on Business and Human Rights* (the 'Guiding Principles'), which were unanimously endorsed by the United Nations Human Rights Council, clarified the corporate responsibility to respect human rights, stating that all corporation "should avoid infringing on the human rights of others."[23]

The UN Guiding Principles outline expectations for human rights due diligence that apply to all business enterprises, "regardless of their size, sector, location, ownership and structure."[24]

OBJECTIVES/INTENT OF THIS CHAPTER

To respect human rights, and identify, prevent, mitigate and remedy infringements of human rights.

SCOPE OF APPLICATION

RELEVANCE: This chapter applies to any mine that is seeking IRMA certification. The requirements outlined below are applicable to activities and business relationships that relate to the project seeking certification, not all of a company's activities and business relationships.

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[20] Office of the High Commissioner for Human Rights. Guiding Principles on Business and Human Rights. Implementing the United Nations "Protect, Respect and Remedy" Framework. p. 1. https://www.ohchr.org/documents/publications/guidingprinciplesbusinesshr_en.pdf

[21] For more information, see the United Nations website: www.un.org/en/sections/what-we-do/protect-human-rights/index.html and Office of the High Commissioner for Human Rights website: www.ohchr.org/EN/ProfessionalInterest/Pages/UniversalHumanRightsInstruments.aspx

[22] The Office of the High Commissioner for Human Rights (OHCHR) lists a number of United Nations human rights instruments that enumerate the rights of persons belonging to particular groups or populations. See: OHCHR. 2012. The Corporate Responsibility to Respect – An Interpretive Guide. p. 38. www.ohchr.org/Documents/Issues/Business/RtRInterpretativeGuide.pdf

[23] See: Ruggie, J. 2011. Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework. March 21, 2011. A/HRC/17/31. www.ohchr.org/Documents/Issues/Business/A-HRC-17-31_AEV.pdf

[24] Office of the High Commissioner for Human Rights. Guiding Principles on Business and Human Rights. Implementing the United Nations "Protect, Respect and Remedy" Framework. p. 1. https://www.ohchr.org/documents/publications/guidingprinciplesbusinesshr_en.pdf

CRITICAL REQUIREMENTS IN THIS CHAPTER

The company has a policy in place that acknowledges its responsibility to respect all internationally recognized human rights (1.3.1.1) and an ongoing process to identify and assess potential and actual human rights impacts from mineral processing site activities and business relationships (1.3.2.1), and the company is taking steps to remediate any known impacts on human rights caused by the mineral processing site (1.3.3.3).

Human Rights Due Diligence Requirements

1.3.1. Policy Commitment

1.3.1.1. (Critical Requirement)
The company shall adopt a policy commitment that includes an acknowledgement of its responsibility to respect all internationally recognized human rights.[25]

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.3.1.2. The policy shall:

a. Be approved at the most senior level of the company;
b. Be informed by relevant internal and/or external expertise;
c. Stipulate the company's human rights expectations of personnel, contractors and other parties directly linked to its project;
d. Be publicly available and communicated internally and externally to all personnel, contractors and other relevant parties and stakeholders;
e. Be reflected in the project's operational procedures and employee/contractor training programs.

NOTE FOR 1.3.1.2: This requirement is intended to be consistent with the expectations in the UN Guiding Principles on Business and Human Rights (see Background section).

There are slight differences between the sub-requirements here and in the Mining Standard, e.g., we replaced the word "business partners" with "contractors" to be more clear. Also, we added a training element in 1.3.1.2.e. to ensure that company personnel understand their responsibility to respect human rights.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.3.2. Assessment of Human Rights Risks and Impacts

NOTE FOR 1.3.2.1 (below): For Exploration Stage 1, when no on-the-ground activities have yet commenced, explorations companies should at least be starting to understand the potential impacts that their activities may have if the decide to move ahead with an exploration project.

For Exploration Stages 2 and beyond, we removed the word "ongoing", as the use of the word "updated" makes it clear that impacts need to be continually assessed as the project progresses and changes. The initial assessment would evaluate risks with proposed activities, and updates to the assessment should evaluate human rights risks and impacts associated with any new proposed activities as well as activities already underway.

1.3.2.1. (Critical Requirement)
Prior to seeking exploration permits the company shall identify human rights that may be affected by proposed exploration activities.

Stage 1

[25] IRMA recognizes that policy commitments are often made at the corporate level. In such cases, companies do not need to develop project-specific policies, but they will be expected to demonstrate that they are operating in compliance with the corporate policy (e.g., site-level management understand the policy, and have integrated it into the project's procedures and dealings with business partners, contractors, etc.).

1.3.2.1. (Critical Requirement)
The company shall identify and assess potential human rights impacts (hereafter referred to as human rights "risks") and actual human rights impacts from mine construction and business relationships. Assessment of human rights risks and impacts shall be updated periodically, including, at minimum, when there are significant changes in mine construction activities, business relationships, or in the operating environment.

Construction

NOTE FOR 1.3.2.2 – 1.3.2.5: Not required for Stage 1, because no assessment required for that stage (See 1.3.2.1). Expectations are and consistent with the Mining Standard except for a slight change to 1.3.2.5 to clarify that assessment findings need to be integrated in multiple ways during exploration/development (previously said at the mine site operational level).

CONSULTATION QUESTION 10: Are some of the expectations in 1.3.2.2 – 1.3.2.5 too much to expect for companies carrying out Stages 2 and 3 of Exploration? If yes, what elements should be removed and why?

1.3.2.2. Assessments, which may be scaled to the size of the company and severity of human rights risks and impacts, shall:

a. Follow a credible process/methodology;[26]
b. Be carried out by competent professionals; and
c. Draw on internal and/or external human rights expertise, and consultations with potentially affected rights holders, including men, women, children (or their representatives) and other vulnerable groups, and other relevant stakeholders.

1.3.2.3. As part of its assessment, the company shall document, at minimum:

a. The assessment methodology;
b. The current human rights context in the country and project area;
c. Relevant human rights laws and norms;
d. A comprehensive list of the human rights risks related to project activities and business relationships, and an evaluation of the potential severity of impacts for each identified human rights risk;
e. The identification of rights holders, an analysis of the potential differential risks to and impacts on rights holder groups (e.g., women, men, children, the elderly, persons with disabilities, indigenous peoples, ethnic or religious minority groups, and other disadvantaged or vulnerable groups), and a disaggregation of results by rights holder group;
f. Recommendations for preventing, mitigating and remediating identified risks and impacts, giving priority to the most salient human rights issues.

1.3.2.4. At minimum, stakeholders and rights holders who participated in the assessment process shall have the opportunity to review draft key issues and findings that are relevant to them, and shall be consulted to provide feedback on those findings.

1.3.2.5. The company shall demonstrate that steps have been taken to effectively integrate assessment findings in proposed and actual operations, activities and relationships.

Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

1.3.3. Prevention, Mitigation and Remediation of Human Rights Impacts

NOTE FOR 1.3.3: The requirements apply to all stages because whenever a risk to human rights is identified a company is expected to take steps to prevent it from occurring. This needs to be done if a company's actions pose

[26] A "credible" assessment process/methodology would typically include: scoping or identification of the salient human rights, stakeholder consultations; data collection; assessment of the severity of human rights risks and impacts; development of prevention/mitigation measures; and monitoring and evaluation of the effectiveness of implemented measures. This process should be ongoing/updated, as mentioned in 1.3.2.1. For more information see: https://www.humanrights.dk/projects/human-rights-impact-assessment

risks to human rights, or if the company may contribute to or be linked to potential human rights impacts through its business relationships. Similarly, if an actual impact on human rights is discovered a company must take steps to prevent further impacts, and provide mitigation and/or remediation for the impact that has occurred.

Some slight wording changes compared to the Mining Standard in 1.3.3.2 and 1.3.3.3, such as adding reference to business relationships.

1.3.3.1. Project stakeholders shall have access to and be informed about a rights-compatible grievance mechanism and other mechanisms through which they can raise concerns and seek recourse for grievances related to human rights.[27]

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.3.3.2. Responding to human rights risks:

a. If the company determines there is a risk of causing adverse human rights impacts through its activities it shall prioritize preventing impacts from occurring, and if this is not possible, design strategies to mitigate the human rights risks. Mitigation plans shall be developed in consultation with potentially affected rights holder(s).
b. If the company determines there is a risk of contributing to adverse human rights impacts through its activities or business relationships, it shall take action to prevent or mitigate its contribution, and use its leverage to influence other contributing parties to prevent or mitigate their contributions to the human rights risks.
c. If the company determines there is a risk of being linked to adverse human rights impacts through its business relationships, it shall use its leverage to influence responsible parties to prevent or mitigate their risks to human rights from their activities.

1.3.3.3. (Critical Requirement)
Responding to actual human rights impacts:

a. If the company determines that it has caused an actual human rights impact, it shall:
    i. Cease or change the activity responsible for the impact; and
    ii. In a timely manner, develop mitigation strategies and remediation in collaboration with affected rights holders. If mutually acceptable remedies cannot be found through dialogue, the company shall attempt to reach agreement through an independent, third-party mediator or another means mutually acceptable to affected rights holders;
b. If the company determines that it has contributed to an actual human rights impact, the company shall cease or change any activities or business relationships that are contributing to the impact, mitigate and remediate impacts to the extent of its contribution, use its leverage to influence other contributing parties to cease or change their activities, and mitigate and remediate the remaining impact;
c. If the company determines that it is linked to an actual human rights impact through a business relationship the company shall use its leverage to prevent or mitigate the impact from continuing or recurring; and
d. The company shall cooperate with other legitimate processes such as judicial or State-based investigations or proceedings related to human rights impacts that the company caused, contributed to, or was directly linked to through its business relationships.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.3.4. Monitoring

[27] The operational-level grievance mechanism developed as per IRMA Chapter 1.4 may be used as the mechanism to receive all types of complaints, including those related to human rights, or a separate mechanism may be created to handle human rights complaints and grievances. If a separate mechanism is developed, it shall be done in a manner that is consistent with Chapter 1.4. Also, there may be other mechanisms not operated by the company through which rights holders can seek recourse (e.g., administrative, judicial and non-judicial remedies).

NOTE FOR 1.3.4: Some slight wording changes compared to the Mining Standard. Monitoring is a step outlined in the UN Guiding Principles for all companies, and so it has been included for all stages in this requirement, but it is recognized that there may be little to monitor in some stages, in particular Stage 1 of exploration.

1.3.4.1. The company shall monitor whether salient human rights risks and impacts are being effectively addressed. Monitoring shall include qualitative and quantitative indicators, and draw on feedback from internal and external sources, including affected rights holders.

1.3.4.2. External monitoring of a company's human rights due diligence shall occur if the company's due diligence efforts repeatedly fail to prevent, mitigate or remediate actual human rights impacts; or if its due diligence activities failed to prevent the company from unknowingly or unintentionally causing, contributing to or being linked to any serious human rights abuse. Additionally:

a. The company shall fund the external monitoring; and
b. The form of such monitoring, and selection of external monitors, shall be determined in collaboration with affected rights holders.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.3.5. Reporting

NOTE FOR 1.3.5: Some slight wording changes compared to the Mining Standard. In particular, the previous 1.3.5.3 has been incorporated into 1.3.5.1 and 1.3.5.2, as it is not an independent requirement but rather a clarification of what is reported.

Communicating externally about how human rights impacts are being addressed is a step outlined in the UN Guiding Principles (Principle 21). The Mining Standard (and this standard) goes beyond reporting only why there have been human rights impacts, as expressed in the UNGPs,[28] and includes reporting more generally on human rights due diligence activities, because this is increasingly a global expectation. For example, according to Shift/Mazars, "In addition to doing business with respect for human rights, companies are expected to be transparent and accountable about their efforts. . .Regulations from the UK's Modern Slavery Act to the French 'plan de vigilance' law to the California Transparency in Supply Chains Act and the EU non-financial reporting Directive are all calling for the same kind of disclosure on human rights: disclosure that aligns with the UN Guiding Principles and its expectations for human rights due diligence."[29]

CONSULTATION QUESTION 11: Is it reasonable to expect that exploration and development companies report on their human rights due diligence efforts, or do you believe that goes beyond what is considered best practice related to human rights reporting?

1.3.5.1. The company or its corporate owner shall periodically report publicly on the effectiveness of its human rights due diligence activities. At minimum, reporting shall include the methods used to determine the salient human rights issues, a list of salient risks and impacts that were identified, and actions taken by the company to prevent, mitigate and/or remediate the human rights risks and impacts. Public reporting may exclude information that is politically sensitive, is confidential business information, or that may compromise safety or place any individual at risk.

1.3.5.2. If relevant, the company shall publish a report on external monitoring findings and recommendations to improve its human rights due diligence, and the company shall report to relevant stakeholders and rights holders on its plans to improve its due diligence activities as a result of external monitoring recommendations. Reports

[28] According to Principle 21, "In order to account for how they address their human rights impacts, business enterprises should be prepared to communicate this externally, particularly when concerns are raised by or on behalf of affected stakeholders. Business enterprises whose operations or operating contexts pose risks of severe human rights impacts should report formally on how they address them." (Office of the High Commissioner for Human Rights. Guiding Principles on Business and Human Rights. Implementing the United Nations "Protect, Respect and Remedy" Framework. p. 23. https://www.ohchr.org/documents/publications/guidingprinciplesbusinesshr_en.pdf)

[29] Shift/Mazars. UN Guiding Principles Reporting Framework website: "Why Reporting Matters." https://www.ungpreporting.org/about-us/why-reporting-matters/

may exclude information that is politically sensitive, is confidential business information, or that may compromise safety or place any individual at risk.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

NOTES

This chapter is based on the framework for corporate responsibility established in the UN *Guiding Principles on Business and Human Rights*,[30] and includes best practice requirements to increase transparency regarding human rights impacts, and to increase the ability of rights holders to participate, in a meaningful way, in decisions that affect their lives.

[30] See: Ruggie, J. 2011. Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework. March 21, 2011. A/HRC/17/31. www.ohchr.org/Documents/Issues/Business/A-HRC-17-31_AEV.pdf

Chapter 1.4—Complaints and Grievance Mechanism and Access to Remedy

NOTE TO REVIEWERS ON CHAPTER 1.4:

Minor revisions, including combination of some requirements found in the Mining Standard, were made to this chapter to try to reduce overlap, streamline expectations and add clarity.

There are differing levels of expectations for Exploration versus Pre-Permitting/Permitting and Construction, given the greater scale of the proposed operations, and the need for a long-term mechanism that remains effective for the life of the mine.

BACKGROUND

Mineral exploration and development projects inevitably raise concerns and complaints from community members and stakeholders affected by these projects. It is now expected practice for mineral exploration and development companies to have in place site-level processes (often referred to as "operational-level grievance mechanisms") for systematically receiving, tracking, resolving and communicating with local communities and stakeholders, including workers, about their complaints or grievances. Grievance mechanisms, however, should not be considered a substitute for community and stakeholder engagement processes that allow for airing of concerns. The two are complementary and should be mutually reinforcing.[31]

Having accessible and trusted procedures in place to receive complaints can lead to the quick resolution of many stakeholder concerns before they escalate into serious grievances or conflicts. Stakeholders are more likely to trust complaints and grievance procedures if they have some say in their design.

Operational-level complaint and grievance processes are just one option for individuals to seek justice or remediation for damages that they believe have occurred as a result of company activities. For example, traditional authorities may have conflict or dispute resolution systems in place; countries may have legal frameworks, such as court systems, to provide recourse to aggrieved parties; workers may have access to corporate-level whistle-blower procedures; and remedies may be sought through national or international human rights bodies, labor tribunals or other non-judicial mechanisms. Operational-level grievance mechanisms should neither be used to undermine the role of legitimate trade unions in addressing labor-related disputes, nor preclude any stakeholder from accessing judicial or other non-judicial grievance mechanisms.[32]

OBJECTIVES/INTENT OF THIS CHAPTER

To provide accessible and effective means for affected communities and individuals to raise and resolve mineral exploration-and-development-related complaints and grievances at the project level, while not limiting their ability to seek remedy through other mechanisms.

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant for all mineral exploration and development projects, as all have workers and most have external stakeholders who must be provided with an effective means of raising complaints and

[31] IFC. 2009. Good Practice Note: Addressing Grievances from Project-Affected Communities. p. 6. www.ifc.org/wps/wcm/connect/cbe7b18048855348ae6cfe6a6515bb18/IFC+Grievance+Mechanisms.pdf?MOD=AJPERES&CACHEID=cbe7b18048855348ae6cfe6a6515bb18

[32] Ruggie, J. 2011. Guiding Principles on Business and Human Rights. A/HRC/17/31. Commentary for Principle 29. Available at: www.ohchr.org/Documents/Issues/Business/A-HRC-17-31_AEV.pdf

grievances with the company, and if the grievances are not adequately addressed through the project-level grievance mechanism, who have the right to access remedy through other channels.

CRITICAL REQUIREMENTS IN THIS CHAPTER

Stakeholders have access to operational-level mechanisms that allows them to raise and seek resolution or remedy for complaints and grievances that may occur in relation to the mineral exploration or development project (1.4.1.1).

Complaints, Grievances and Access to Remedy Requirements

1.4.1. Access to Operational-Level Complaints and Grievance Mechanism

NOTE FOR 1.4.1.1 (below): Simplified the language compared to the Mining Standard to make it more clear. Removed the explanation that stakeholders include community members and rights holders – we can include that in Guidance).

We will also add to guidance that a grievance mechanism must be in place, i.e., there must be an identified way for stakeholders to contact the company and express their concerns/complaints and have those complaints documented and addressed, but that the system can be scaled to the level of activity.

CONSULTATION QUESTION 12: During Stage 1, which is primarily office-based and there is no actual on-the-ground exploration activity, is there a need for a grievance mechanism?

1.4.1.1. (Critical Requirement)
An operational-level grievance mechanism shall be in place to enable stakeholders to raise and seek resolution and/or remedy for the range of complaints and grievances that may occur in relation to the company and its mine construction activities.[33]

Construction

1.4.2. Development of Complaints and Grievance Procedures

1.4.2.1. Complaints and grievance procedures shall be developed and made publicly available in languages and formats that are understandable to stakeholders who may be affected by the project.

NOTE FOR 1.4.2.1: This was 1.4.2.2 in the Mining Standard. It has been moved here, and revised slightly to clarify that procedures must be developed instead of documented, so that it is clear for Stage 1 and 2 that procedures must be in place. And these procedures must be in languages and formats that are understandable to those who will use the mechanism.

Stage 1 | Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

1.4.2.2. The company shall consult with stakeholders on the design of culturally appropriate complaints and grievance procedures that address, at minimum:

a. The effectiveness criteria outlined in Principle 31 of the United Nations Guiding Principles on Business and Human Rights,[34] which include the need for the mechanism to be: (a) Legitimate, (b) Accessible, (c)

[33] Ibid.

[34] Effectiveness criteria are from: United Nations Guiding Principles on Business and Human Rights. (See Principle 31, page 33. https://www.ohchr.org/documents/publications/guidingprinciplesbusinesshr_en.pdf)

Predictable, (d) Equitable, (e) Transparent, (f) Rights-compatible, (g) A source of continuous learning, and (h) Based on engagement and dialogue;

b. How complaints and grievances will be filed, acknowledged, investigated, and resolved, including general timeframes for each phase;
c. How confidentiality of a complainant's identity will be respected, if requested;
d. The ability to file anonymous complaints, if deemed necessary by stakeholders;
e. The provision of assistance for those who may face barriers to using the operational-level grievance mechanism, including women, children, and marginalized or vulnerable groups;
f. Options for recourse if an initial process does not result in satisfactory resolution or if the mechanism is inadequate or inappropriate for handling serious human rights grievances; and
g. How complaints and grievances and their resolutions will be tracked and recorded.

NOTE FOR 1.4.2.2: This requirement was 1.4.2.1 in the Mining Standard. Currently, we are not proposing to apply it to Stages 1 and 2 of exploration, because it is not clear that the effort needed to engage stakeholders in a process to co-design a grievance mechanism is warranted at these early stages when the level of impacts should be relatively low compared to Stage 3 and those associated with a proposed mining project. Reviewers should bear in mind that a grievance mechanism is still required as per 1.4.1.1, and in 1.4.2.1, all companies are expected to develop procedures and make them publicly available to stakeholders, so stakeholders for Stage 1 and 2 Exploration projects still have the opportunity to express concerns and complaints. They would just not help the company design the actual grievance procedures, and for Stages 1 and 2 we are currently not as prescriptive about what is in the procedures.

We will add Guidance that new mechanisms need not be designed in subsequent stages if they were already designed in a collaborative manner in an earlier stage, and mechanisms are working effectively for stakeholders.

CONSULTATION QUESTION 13: Is it reasonable to expect companies at Stage 1 and 2 of exploration to have developed extensive complaints and grievance procedures as per 1.4.2.1, i.e., should this expectation be expanded to those stages?

Stage 3	Pre-permitting	Mine Permitting	Construction

1.4.3. Access to Other Remedy Mechanisms

1.4.3.1. No remedy provided by an operational-level grievance mechanism shall require aggrieved parties to waive their right to seek recourse from the company for the same complaint through other available mechanisms, including administrative, non-judicial or judicial remedies, and the company, in its communications with stakeholders, shall not state or imply that filing a complaint with the company might preclude a stakeholder from seeking redress through administrative, judicial or other non-judicial remedies.[35]

NOTE FOR 1.4.3.1: Combined 1.4.3.1 with 1.4.5.2 from the Mining Standard, as both relate to the ability of stakeholders to seek remedy through avenues other than the operational-level grievance mechanism

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.4.4. Monitoring and Evaluation

1.4.4.1. Complaints and grievances and their outcomes and remedies shall be documented.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

[35] The *Guiding Principles on Business and Human Rights* have identified that access to remedy for grievances is fundamental to ensuring respect and protection of human rights. (Ruggie, J. 2011. Guiding Principles on Business and Human Rights. A/HRC/17/31. Available at: www.ohchr.org/Documents/Issues/Business/A-HRC-17-31_AEV.pdf)

1.4.4.2. The company shall consult with stakeholders and review complaints and grievance data and outcomes to determine:

a. If changes to procedures can make the complaints mechanism more trusted by and accessible to stakeholders;
b. If changes in company activities can be implemented to prevent or mitigate similar grievances in the future; and
c. If outcomes and remedies provided through the grievance mechanism accord with internationally recognized human rights.

NOTE FOR 1.4.4.2: Revised language to add clarity. Also, combined 1.4.4.2 with requirement 1.4.4.3 from the Mining Standard (re: consultation with stakeholders), and clarified that monitoring and evaluation happens through such consultation and the review of complaints and grievance data and outcomes.

Currently, requirement 1.4.4.2 does not apply to Stages 1 and 2 of exploration, because of the resources needed to carry out monitoring and evaluation. Our sense is that small exploration companies are unlikely to have the capacity to do so. However, we will add guidance that if companies do have the capacity, they should carry out this type of evaluation at the earliest stage possible.

CONSULTATION QUESTION 14: Is it reasonable to expect companies at Stage 1 and 2 of exploration to be carrying out monitoring and evaluation as per 1.4.4.2, i.e., should this expectation be expanded to those stages?

Stage 3 | Pre-permitting | Mine Permitting | Construction

1.4.5. Communications

1.4.5.1. The company shall inform potentially affected stakeholders about the operational-level grievance mechanism and explain how to file a complaint or grievance related to the project.

NOTE FOR 1.4.5.1: The Mining Standard requires that efforts be made to inform ALL stakeholders, but this was removed because it is too broad and difficult to audit. Have limited it to "potentially affected stakeholders," as these are the stakeholders that are the most likely to have concerns with the project, and depending on the circumstances may have limited capacity to spend time to understand the company's procedures. This makes it important for targeted outreach to occur. We have also made it clear that part of informing includes explaining how to file a complaint.

1.4.5.2. The company shall ensure that personnel and contractors that may interact with stakeholders are aware of the company's procedures, and receive instruction on the respectful handling of all complaints and grievances.

NOTE FOR 1.4.5.2: This was 1.4.5.3 in the Mining Standard. Now 1.4.5.2 because 1.4.5.3 was combined with 1.4.3.2, above. Also, added that this also applies to contractors, and simplified and clarified language (e.g., rather than "inform" we say that personnel and contractors must "receive instruction" on the respectful handling of complaints).

Stage 1 | Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

1.4.6. Reporting

1.4.6.1. Periodically, the company shall report, at minimum, to affected communities on grievances received and responses provided. This shall be done in a manner that protects the confidentiality and safety of those filing grievances.

NOTE FOR 1.4.6.1: We have revised the wording compared to the Mining Standard, now requiring that reporting is to "affected communities" and not stakeholders generally. The reason for the change is that the primary intent of this requirement is that the company demonstrate responsiveness to community concerns, and that this type of reporting should be on the aggregate of grievances filed, not reporting back on individual stakeholder complaints.

". . . at minimum" is meant to indicate that reporting to affected communities must occur, but that companies could also report to other stakeholder groups, such as regulators or even investors who may be interested in grievance information. (We can add those details in Guidance).

CONSULTATION QUESTION 15: Would it be reasonable to expect that exploration companies at Stage 1 of exploration will have systems developed to periodically report back to stakeholders on issues raised by them?

Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

NOTES

This chapter uses as its basis the effectiveness criteria UN Guiding Principles on Business and Human Rights, i.e., that a grievance mechanism be: (a) Legitimate, (b) Accessible, (c) Predictable, (d) Equitable, (e) Transparent, (f) Rights-compatible, (g) A source of continuous learning, and (h) Based on engagement and dialogue.[36]

This chapter does not pertain to grievances related to IRMA certification. IRMA is in the process of developing its own grievance mechanism, which will enable IRMA stakeholders to raise concerns about issues pertaining to IRMA certification of a particular mineral exploration and development project, as well as the IRMA certification system more generally.

[36] Ruggie, J. 2011. Guiding Principles on Business and Human Rights. A/HRC/17/31. See Principle 31. Available at: www.ohchr.org/Documents/Issues/Business/A-HRC-17-31_AEV.pdf)

Chapter 1.5—Financial Transparency and Anti-Corruption

NOTE TO REVIEWERS ON CHAPTER 1.5:

The name of this chapter has changed (it was Revenue and Payments Transparency), to better reflect the scope and intent of the requirements.

The financial transparency requirements have been significantly streamlined compared to the Mining Standard, primarily to increase clarity regarding the expectations.

We added a criterion, 1.5.6. Reporting of Exploration Results, which is not addressed in the Mining Standard.

BACKGROUND

Revenues derived from the exploration and development of a country's mineral resources can make a major contribution to funding public services and other valuable government activities. However, where citizens have limited knowledge of revenues paid by natural resource companies the chances of theft or inappropriate usage of revenues from exploration and development companies grows. Increased transparency of material payments to and revenues received by the host country government, as well as increased measures to prevent bribery and corruption in order to attain exploration and development permits and approvals, are essential steps toward addressing these issues.

Additionally, the chapter addresses the need for standardized and transparent reporting of mineral reserves, resources and exploration results. According to the Committee for Mineral Reserves International Reporting Standards (CRIRSCO), an international initiative that has developed mineral reporting codes, guidelines and standardized definitions related to mineral resources and mineral reserves, "Unlike many other industries, [the mining industry] is based on depleting mineral assets, the knowledge of which is imperfect prior to the commencement of extraction. It is therefore essential that the industry communicates the risks associated with investment effectively and transparently in order to earn the level of trust necessary to underpin its activities."[37]

OBJECTIVES/INTENT OF THIS CHAPTER

To increase transparency of mineral exploration-and-development-related payments. prevent and address corruption and bribery, and provide communities and the general public with the information they need to understand and assess the fairness of financial arrangements related to mineral exploration and development projects.

SCOPE OF APPLICATION

RELEVANCE: This chapter is applicable to all mineral exploration and development projects applying for IRMA certification.

The requirements apply to compliance at the time of assessment, and on an ongoing basis thereafter. The information provided does not have to be backdated to cover activity prior to the application, with the exception of requirement 1.5.3.1. In relation to this requirement the terms for mineral exploration, development and production for the project must be made freely and publicly accessible for the whole period of project development up to the time of application and thereafter.

CRITICAL REQUIREMENTS IN THIS CHAPTER

[37] CRIRSCO website: http://www.crirsco.com/welcome.asp

The company has developed and implemented policies and procedures that prohibit bribery and corruption by employees and contractors (1.5.5.1).

Financial Transparency and Anti-Corruption Requirements

1.5.1. Disclosure of Country-Level Payments

1.5.1.1. On a yearly basis, the company shall publish a report that discloses all material payments made by itself and its corporate owner to the government of the country in which the mineral exploration or development project is located. The report shall either comply with reporting and disclosure requirements of a recognized mandatory transparency regime,[38] or comply with the following set of requirements:[39]

a. The report shall be made public within 12 months after the end of each financial year;[40]
b. At minimum, information shall be broken down by recipient government body (where applicable), by project (where applicable), and by payment type; and
c. The types of payment disclosed shall include as a minimum, as applicable:
    i. The host government's mineral exploration or development fees (e.g., licence fees, rental fees, entry fees and other considerations for licences and/or concessions);
    ii. Bonuses, such as signature bonus (e.g., upon contract signing) or discovery bonus (e.g., upon first discovery of minerals);
    iii. Payments for infrastructure improvements; and
    iv. Any other significant payments and material benefits to government, including in kind payments.[41]

NOTE FOR 1.5.1.1: We combined requirements 1.5.1.1, 1.5.1.2, 1.5.1.3. and 1.5.1.4 from the Mining Standard into a single requirement to make it clear what is being required. We will list recognized mandatory transparency regimes, such as that of the European Union, Canada and the United Kingdom, in guidance.

Some of the disclosure categories have been removed that were in the Mining Standard, since there will not yet be mineral production. These include: host government's production entitlement, national state-owned enterprise production entitlement, profits taxes, royalties, dividends.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.5.2. Disclosure of Project-Level Payments

[38] If mandatory reporting laws are more stringent, then companies need to adhere to those laws.

Recognized mandatory transparency regimes include:

The European Union Accounting Directive 2013/34/EU is available at: http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32013L0034&qid=1524171176636 and the European Union Transparency Directive 2013/50/EU is available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1415872329209&uri=CELEX:32013L0050.

Government of Canada. 2015. Extractive Sector Transparency Measures Act. http://laws-lois.justice.gc.ca/eng/acts/E-22.7/page-1.html; Ministry of Finance. 2013. Regulations on country-by-country reporting. Available at: http://www.publishwhatyoupay.no/en/node/16414; and

UK Government .2014. The Reports on Payments to Governments Regulations 2014. http://www.legislation.gov.uk/uksi/2014/3209/pdfs/uksi_20143209_en.pdf

[39] If mandatory reporting laws are more stringent, then companies need to adhere to those laws.

[40] The information may be made publicly available on the company and/or appropriate government website(s).

[41] An example of "other significant payments" is transportation revenue. According to EITI Standard, Section 4.4, transportation revenue may include revenue from taxes, tariffs or other relevant payments related to transport of 'minerals', which is taken to include mined materials and outputs from smelting or refining). Social expenditures made by companies may be an example of material payments and/or benefits to governments (see EITI requirement 6.1).

1.5.2.1. On a yearly basis, the company shall publish a report that discloses the following information at the project level:

a. Material payments and other material benefits to government as listed in paragraph 1.5.1.1, disaggregated according to the receiving government entity (e.g., national, regional, local entity; name of government department);
b. Social expenditures, including the names and functions of beneficiaries;
c. Payments to politicians' campaigns, political parties or related organizations; and
d. Facilitation payments made to government officials (when operating in countries where such payments are legal);
e. Fines or other similar penalties that have been issued in relation to the project.

NOTE FOR 1.5.2.1: We replaced requirements 1.5.2.1 from the Mining Standard with this requirement, which was largely drawn from 1.5.2.2 in the Mining Standard. The new 1.5.2.1, here, more clearly lays out the expectations for project-level disclosure of payments. We will add Guidance that the requirements laid out in 1.5.2.1 are meant to align with EU, EITI and other mandatory transparency regulations and schemes.

Some of the disclosure categories have been removed that were in the Mining Standard, since there will not yet be mineral production. These include: mine production, disaggregated by product type and volume; revenues from sales, disaggregated by product type; and taxes, tariffs or other relevant payments related to transportation of minerals.

Also, we added 1.5.2.1.d, which addresses facilitation payments, to align with a requirement in the International Council on Mining and Metals performance expectations (PE), which require mining companies "publicly disclose facilitation payments" (see PE 1.2).[42] We have clarified, however, that these types of payments be disclosed for countries where such payments are legal. Where such payments are illegal, it is unlikely that any company is going to willing disclose such payments publicly as it will incriminate them. If an auditor determines that illegal facilitation payments are occurring, then that will be reflected in the ratings in Chapter 1.1 Legal Compliance.

We are proposing that the definition of facilitation payment used by the Responsible Jewellery Council be added to our Glossary:[43]

Facilitation Payment: facilitation payments are sums of money paid to get preferential treatment for something the receiver is otherwise still required to do—for example, paying an official to speed up, or 'facilitate', an authorization process.

1.5.2.2. The company shall publish annual accounts, following international accounting standards.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.5.3. Support for the Extractive Industries Transparency Initiative (EITI)

1.5.3.1. If a project is located in a country without a mandated transparency regime, the company shall demonstrate support for the EITI by publishing a clear public statement endorsing the EITI Principles on its external website.

NOTE FOR 1.5.3.1: This is not an onerous requirement, so has been included for all stages. A second requirement that required engagement with EITI was removed – the rationale being that when mining projects become actual operating mines they will have income from production and more ability to hire staff to engage in EITI.

[42] ICMM. 2020. Mining Principles: Performance Expectations. https://www.icmm.com/en-gb/about-us/member-requirements/mining-principles/mining-principles

[43] Responsible Jewellery Council. 2019. Code of Practices Guidance. p. 105. https://www.responsiblejewellery.com/wp-content/uploads/RJC-COP-Guidance-April-2019.pdf

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.5.4. Company and Project Transparency

NOTE FOR 1.5.4: The criterion name has changed from Company Transparency in the Mining Standard to Company and Project Transparency here.

The requirement has been streamlined compared to the Mining Standard, with some material added to a footnote because it is more relevant to how the requirement will be audited.

CONSULTATION QUESTION 16: Stage 1 is not currently included in requirement 1.5.4.1. Would agreements related to access to government-hosted mining cadastres and related data be relevant at Stage 1, and therefore, should we include it?

1.5.4.1. The material terms for mineral exploration, development and production agreed between the company and government entities shall be freely and publicly accessible,[44] with the exception of confidential business information,[45] in the national language(s) of the country in which the project is located.

	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.5.4.2. The beneficial ownership of the company shall be publicly accessible.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.5.5. Anti-Bribery and Anti-Corruption

NOTE FOR 1.5.5: This criterion has been strengthened compared to the Mining Standard. However, the requirements here are not as stringent as those proposed in IRMA's draft Mineral Processing Standard. Partly, we are trying to balance the fact that companies at these early stages do not typically have the larger operating budgets of producing mines or mineral processing facilities to fund more robust implementation and anti-corruption procedures including training and reporting. We also acknowledge, however, that the potential for bribery, facilitation payments and corruption exist during the exploration and development phases, when companies are seeking permissions from regulatory bodies or rights holders, to pursue mineral development.

CONSULTATION QUESTION 17: Should we enhance requirements in a manner similar to the draft Mineral Processing Standard (and if so, should the enhancements apply to all stages of development or just particular ones?).[46] The Mineral Process Standard includes:

1.5.5.1. The company shall develop, document and implement policies and procedures that prohibit bribery or corruption (including extortion, embezzlement and money laundering) and address conflicts of interest, procurement of undue influence through political and charitable contributions and facilitation payments by employees and contractors, individually and jointly.

1.5.5.2. At minimum, procedures shall include:
a. Criteria and approval processes for the offer and acceptance of third party financial and in-kind gifts, including hospitality and entertainment;
b. Internal reporting and recording of approved given and accepted gifts, as well as any undue pecuniary or other advantage given to, or received from, public officials or the employees of business partners, directly or through third parties acting on their behalf;
c. A whistleblower or other mechanism for workers, employees, contractors or stakeholders to raise concerns about suspected bribery, corruption or other unethical practices associated with the mineral processing operation; [This is covered in the IRMA-Ready Standard in 3.1.5.2]
d. Protections for whistleblowers and employees who refuse to pay bribes or legal facilitation payments even if such refusal

[44] Where these terms are negotiated, rather than governed by law, the company shall make the relevant agreements, licences or contracts freely and publicly accessible. Where these terms are governed by law, free, public access to the relevant statutory documentation is deemed sufficient to meet the IRMA requirement.

[45] Confidential business information may be excluded or redacted from the publicly accessible documentation as necessary.

[46] The draft IRMA Standard for Responsible Mineral Processing can be found at:

results in the loss of business;
e. Investigation of alleged cases of bribery or corruption; and
f. Disciplinary actions to be taken if cases of bribery or corruption are discovered.

1.5.5.4. The company's policies and procedures shall be publicly available, and communicated to workers, business partners and suppliers.

1.5.5.5. The company shall publicly report the:
a. Total number and nature of confirmed incidents of bribery and corruption;
b. Total number of confirmed incidents in which employees were dismissed or disciplined for bribery or corruption;
c. Total number of confirmed incidents when contracts with business partners were terminated or not renewed due to violations related to bribery or corruption; and
d. Public legal cases regarding bribery or corruption brought against the company or its employees during the reporting period and the outcomes of such cases.

1.5.5.1. (Critical Requirement)
The company shall develop, implement and make publicly available a policy and procedures that prohibit bribery and address other forms of corruption by employees and contractors.

NOTE FOR 1.5.5.1: This requirement has been strengthened compared to the Mining Standard. Added that companies not only have to prohibit bribery, but also need to include procedures for how any form of corruption, if found, will be addressed. Also added that procedures be publicly available.

1.5.5.2. Procedures shall include:

a. A requirement to internally report and record any undue pecuniary or other advantage given to, or received from, public officials or the employees of business partners, directly or through third parties including contractors;[47]
b. Disciplinary actions to be taken if cases of bribery or corruption are discovered; and
c. Where facilitation payments are allowed by applicable law, actions to be taken to eliminate facilitation payments or to reduce the size and frequency of these payments over time.

NOTE FOR 1.5.5.2: Added a sub-requirement (1.5.5.2.c) that is not in the Mining Standard. This was done to better align with the Responsible Jewellery Council's (RJC) Code of Practices (CoP, 11.3), which requires that "Where facilitation payments are allowed by applicable law, members shall: a. Act to eliminate all facilitation payments or to reduce the size and frequency of facilitation payments over time."[48]

NOTE - also added that any facilitation payments must be publicly disclosed in 1.5.2.1.

1.5.5.3. Relevant employees and contractors shall be trained in the application of the company's policy and procedures.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

1.5.6. Reporting of Exploration Results

NOTE FOR 1.5.6.: This is a new criterion, not in the Mining Standard. The need for standardized and transparent reporting of exploration results has been described by the Committee for Mineral Reserves International Reporting Standards (CRIRSCO) as follows: "Unlike many other industries, [the mining industry] is based on depleting mineral assets, the knowledge of which is imperfect prior to the commencement of extraction. It is therefore essential that the industry communicates the risks associated with investment effectively and transparently in order to earn the level of trust necessary to underpin its activities." [49]

[47] NOTE TO REVIEWERS: Will add guidance that third parties can include family members of the company's workers and contractors.

[48] Responsible Jewellery Council. 2019. Code of Practices. p. 18. https://www.responsiblejewellery.com/wp-content/uploads/RJC-COP-2019-V1-1-Standards-2.pdf

[49] CRIRSCO website: http://www.crirsco.com/welcome.asp

See also the Note for 1.5.6.1.

A pre-feasibility or feasibility study is an evaluation of a proposed mining project to determine whether the mineral resources and reserves can be mined economically. A pre-feasibility study evaluates a range of options for an exploration project and identifies preferred mining and mineral processing options. Pre-feasibility studies, because they typically rely on mineral resources more so than mineral reserves, have a lower confidence level than feasibility studies.

A feasibility study is a comprehensive technical and economic study that relies on mineral reserves rather than mineral resources, and that includes a detailed financial analysis, including sensitivity analysis, to justify whether development of a project is reasonably justified.

The results of a pre-feasibility study or feasibility study may serve as the basis for a decision to proceed with a mine development project, however typically a feasibility study is required for a decision by a financial institution to finance the development of a project. Additionally, the feasibility study identifies the major project technical and economic risks; and forms the basis for the mine plan presented for development in stakeholder consultation, development of project detailed designs and evaluations, and project permitting.

While some publicly traded exploration and mining companies publish pre-feasibility and feasibility studies as part of their security and exchange filings, private companies and companies based in unregulated jurisdictions are not required to do so. In most of those cases the information is considered proprietary and confidential.

In some cases, companies may choose to proceed with a project decision based on pre-feasibility level information, which may decrease the time required to develop a project, but also significantly increases project risks. In particular, pre-feasibility studies are often based on speculative mineral resources rather than proven reserves, which can result in significant changes to mine plans, processing and other aspects not originally contemplated in the project plan, or during public consultation and permitting. Not only can this lead to unanticipated costs during mine development, but it can also put the environment and communities at risk (for example, if the pre-feasibility studies do not adequately estimate ore and waste tonnages, the designed facilities may not be adequate to effectively manage wastes).

CONSULTATION QUESTION 18: Should IRMA require that exploration and development companies publish or at least share with auditors their pre-feasibility and/or feasibility studies, so that auditors can determine if appropriate information has been collected to support project-related decisions? Or is there another way to give investors and other stakeholders confidence that the decisions related to proceeding with mine proposals are based on truthful geologic, economic, and socio-political information?

1.5.6.1. Any publication of exploration results, mineral resources and mineral reserves shall be done in a manner that is consistent with the Committee for Mineral Reserves International Reporting Standards (CRIRSCO) International Reporting Template.[50]

NOTE FOR 1.5.6.1: CRIRSCO is an international initiative that has developed mineral reporting codes, guidelines and standardized definitions related to mineral resources and mineral reserves. Its aim is "to contribute to earning and maintaining … trust by promoting high standards of reporting of mineral deposit estimates (Mineral Resources and Mineral Reserves) and of exploration progress (Exploration Results)."[51]

Requirement 1.5.6.1 references the International Reporting Template (IRT), which is "a document that draws on the best of the CRIRSCO-style reporting standards, such as the JORC Code (Australasia), SAMREC Code (South Africa), PERC Reporting Standard (Europe), CIMM Guidelines (Canada), SME Guide (USA) and Certification Code (Chile). These reporting standards are recognised and adopted world-wide for market-related reporting and

[50] For definitions of exploration results, mineral resources and reserves, see: http://www.crirsco.com/news_items/CRIRSCO_standard_definitions_oct2012.pdf

[51] Ibid.

financial investment."[52] CRIRSCO's website lists all of the national reporting standards that it considers to be in accordance with the principles of the CRIRSCO Template.[53]

If companies are reporting in a manner that complies with national standards that are considered to be equivalent to CRIRSCO template, then reporting according to those standards would be seen as sufficient for meeting 1.5.6.1. The requirement is not applicable to Stage 1, because there will not be any results to report at this stage.

CONSULTATION QUESTION 19: IRMA does not wish to duplicate the efforts of CRIRSCO or equivalent national reporting standards by creating its own set of exploration reporting requirements. However, if exploration is occurring in a country without an CRIRSCO-equivalent reporting standard, then IRMA will need to develop its own set of auditable requirements or require that a company be audited to the requirements in the CRIRSCO template. If we were to go with the former approach, are there particular requirements in the CRIRSCO International Reporting Template or national standards that should be viewed as key indicators that the reporting has been done in a responsible manner? Or should IRMA simply require that its companies demonstrate that an independent, third-party has verified that all relevant requirements in the CRIRSCO template have been met?

Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

NOTES

The Extractive Industries Transparency Initiative (EITI) is a global coalition of governments, companies and civil society working together to improve openness and accountable management of revenues from natural resources, allowing citizens to see for themselves how much their government is receiving from their country's natural resources. The EITI is complemented and extended by mandatory transparency regimes enacted into law in the European Union and other jurisdictions. The IRMA Standard is intended to support, without duplicating, the work of the EITI and mandatory transparency regimes.

The Extractive Industries Transparency Initiative (EITI) maintains the EITI Standard. The EITI scheme applies specifically to countries. Countries implement the EITI Standard to ensure full disclosure of taxes and other payments made by oil, gas and mining companies. These payments are disclosed in an annual EITI Report (to see all EITI Reports, go to: eiti.org/countries/reports). This report allows citizens to see for themselves the revenues that their government is receiving from their country's natural resources.

Since IRMA assessments are of mineral exploration and development projects (not companies), most of the criteria in the chapter apply specifically at the project level, and the chapter includes requirements related to project-level reporting of payments, accounts, mineral exploration and development agreements, mineral resources, reserves and exploration results, and measures to prevent bribery and corruption.

[52] http://www.crirsco.com/template.asp

[53] https://www.crirsco.com/national/

Principle 2: Planning for Positive Legacies

Chapter 2.1—Env. and Social Impact Assessment and Management

NOTE TO REVIEWERS ON CHAPTER 2.1:

There are notable changes in this standard compared to the Mining Standard.

We have added a screening process for the Exploration Stage (see Criterion 2.1.1), as the impacts, particularly during Stage 2 of Exploration, may not be significant enough to warrant a more in-depth environmental and social impact assessment process. But some analysis of potential impacts should still be done. We have not applied this during Stage 1, although it could begin late in that Stage before a decision is made to progress to Stage 2.

Also, the requirements related to stakeholder engagement have been separated out for the ESIA process and the environmental and social management system.

We have included the requirements for the Construction phase, in the (unlikely) case where a project has proceeded to Construction without undergoing and ESIA. We can add Guidance that if the ESIA was conducted during the Permitting stage, that it would not be expected to be done during Construction.

CONSULTATION QUESTION 20: Only in a few cases have we included requirements for the Pre-Permitting stage. Our thinking is that a company should have a general understanding of the range of potential issues associated with a project, as proposed, at that stage of development, and that baseline data should start to be collected at some point during Pre-Permitting to inform the eventual final project proposal. However, because the project is not fully designed yet, many of the steps in the ESIA process do not apply. We welcome input on differing opinions on which requirements may or may not be applicable during the Pre-Permitting stage.

BACKGROUND

In almost all jurisdictions, mineral development companies are required to conduct environmental impact assessments (EIA) or environmental and social impact assessments (ESIA) prior to developing a mine, and some also require assessments prior to mineral exploration. Robust ESIA processes enable regulators and other stakeholders to participate in the identification and review of predicted impacts and mitigation measures for an exploration project or mine development proposal before it is finalized or approved.

When developing mitigtion strategies the use of a mitigation hierarchy to avoid, or where avoidance is not possible, minimize or compensate for impacts to workers, communities and the environment is widely considered a best practice approach to managing environmental and social risks and impacts.[54]

Impact prevention and mitigation strategies developed during the ESIA process are typically integrated into a comprehensive, documented environmental and social management plan, and an environmental and social management system (ESMS) is developed and implemented to ensure that exploration and development project

[54] International Finance Corporation (IFC). 2012. *IFC Performance Standards on Environmental and Social Sustainability*. Guidance Note 1: Assessment and Management of Environmental and Social Risks and Impacts. GN62, pp. 20, 21. http://www.ifc.org/wps/wcm/connect/e280ef804a0256609709ffd1a5d13d27/GN_English_2012_Full-Document.pdf?MOD=AJPERES

personnel remain responsive to issues as they arise, and that they continue to effectively monitor and mitigate risks and reduce impacts on the environment, workers and neighboring communities throughout the exploration and development phase of the mine life cycle.

The importance of stakeholder involvement in the identification and management of environmental and social issues is increasingly recognized, as it improves the quality of the impact assessments, and helps to build community support for a project by involving local stakeholders in decisions related to mitigation and management of risk and impacts.

OBJECTIVES/INTENT OF THIS CHAPTER

To proactively anticipate and assess environmental and social impacts; manage them in accordance with the mitigation hierarchy; and monitor and adapt environmental and social management systems in a manner that protects affected communities, workers and the environment throughout the entire mine life cycle.

SCOPE OF APPLICATION

This chapter applies to all mineral exploration and development projects that are in Stage 2 or beyond.

CRITICAL REQUIREMENTS IN THIS CHAPTER

The company has carried out a process to identify potential significant impacts (social and environmental) of the exploration project or proposed mining project (2.1.3.1).

Environmental and Social Impact Assessment and Management Requirements

2.1.2. Preliminary ESIA Planning and Information Sharing

NOTE FOR 2.1.2: The requirements below have been modified slightly from the Mining Standard (and draft Mineral Processing Standard), though the content is essentially the same. Two criteria were combined and title created that better reflects the overall intent. Moved a requirement related to informing stakeholders to 2.1.7.

This criterion is only relevant for Exploration Stages 1 and 2 if the screening process in 2.1.1.3 finds that further assessment is warranted.

We have not applied this to the Pre-Permitting stage, as the project may not yet be fully defined at that point. (Some ESIA requirements, however, are being proposed for inclusion, for example 2.1.3 related to scoping, and 2.1.4 related to collection of baseline data.)

If the ESIA was conducted during the Permitting stage, it would not be expected to be done again during Construction.

NOTE FOR 2.1.2.1 (below): This combines two requirements in the Mining Standard.

The requirement that the ESIA "commence after a project plan has been sufficiently developed" is a change in wording from the Mining Standard. The equivalent requirement in the Mining Standard (2.1.1.1) says that ESIA shall not take place until the nature and scale of the project and its risks are known and can be assessed. The intent for both versions is to enable a reasonable estimation of potential impacts related to the project. We've added similar requirements in the Screen and Scoping sections (see 2.1.1.1 and 2.1.3.1).

2.1.2.1. An Environmental and Social Impact Assessment (ESIA), appropriate to the nature and scale of the proposed mining project and commensurate with the level of environmental and social risks and impacts, shall commence after a project plan has been sufficiently developed, and be completed prior to the commencement of

any site-disturbing activities. Should a proposal be significantly revised a new assessment process shall be undertaken.

2.1.2.2. The Environmental and Social Impact Assessment (ESIA) shall be carried out in accordance with publicly available, documented procedures.

2.1.2.3. Prior to the implementation of the ESIA process the company shall prepare a report and publish it on the company's external website, in the official national language(s) of the country in which the project is proposed to take place. The report shall provide:

a. A detailed description of the proposed project, including the proposed location, and nature and duration of the project and related activities;
b. A description of the main steps of the ESIA process that will be carried out, the estimated timeline and the range of opportunities for stakeholder participation in the process; and
c. Contact details for the person or team responsible for management of the ESIA.

Mine Permitting | Construction

2.1.3. ESIA Scoping

NOTE FOR 2.1.3: This criterion is only relevant for Exploration Stages 1 and 2 if the screening process in 2.1.1.3 finds that further assessment is warranted.

We have applied the scoping requirements to the Pre-Permitting stage, because even if the project is not fully defined it is important for the company to understand the range of potential impacts early in the project design phase, so that it can consider revisions to its projects plans and begin collecting data necessary to inform potential project designs.

CONSULTATION QUESTION 23: Do you agree with the approach to require scoping of potential impacts during Pre-Permitting even though a full ESIA is not yet required? And if so, are all of the expectations laid out in 2.1.3 relevant for the Pre-Permitting Stage, or should there be a lower bar for projects in this early design phase?

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The requirements are only relevant during Construction if scoping was not carried out during Permitting.

Potential impacts on human rights may be scoped as part of this process if the scoping process is consistent with the requirements in Chapter 1.3. Similarly, potential impacts on indigenous peoples' rights or interests, community health and safety, cultural heritage, biodiversity, noise, ecosystems services and protected areas may be covered here if the process is consistent with requirements in Chapters 2.2, 3.3, 3.7 and 4.6, respectively. Potential impacts related to noise and vibration, or operating in a conflict-affected and high-risk area may be scoped here or in a standalone process as per Chapters 4.4 and 3.4, respectively.

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CONSULTATION QUESTION 24: Should IRMA include a more detailed list of issues that, at minimum, should always be considered during scoping? For example, impacts on:

i. Physical Environment
   a) Geologic Resources
   b) Soil Resources
   c) Surface Water and Groundwater Resources
   d) Air Resources
   e) Noise and Vibration
ii. Biological Environment
   a) Vegetation/Flora
   b) Fish and Wildlife/Fauna
   c) Ecosystems: Terrestrial, Wetlands, Aquatic, Marine

d) Endangered or Threatened Species and Habitat
e) Protected Areas

iii. Social-Economic-Cultural Environment
a) Socio-Economic Conditions
b) Infrastructure (i.e., for Public Health, Transportation Systems, Communications and Energy)
c) Land Use (actual and potential), including, if relevant, artisanal and small-scale mining operations
d) Cultural Heritage, including archeological, ceremonial, spiritual, and historic

iv. Human Rights
a) All internationally recognized human rights
b) Rights of indigenous peoples

NOTE FOR 2.1.3.1 (below): The requirement combines two requirements from the Mining Standard (e.g., 2.1.3.1 and 2.1.3.3), and we added specific references to climate change in 2.1.3.1.e and f to replace the previous requirement to identify "potential impacts of extreme events." 2.1.3.1 e and f make it clear that climate change needs to be factored into the assessment in two ways – both how the project might exacerbate climate change, and how climate change might lead to impacts on the project (and lead to impacts on human health and the environment).

In 2.1.3.1.d, we added that identification includes potential positive impacts as well as negative.

2.1.3.1.g is new. It was mentioned in the Notes section of this chapter in the Mining Standard, and is a requirement in other chapters (e.g., Chapter 1.3, 3.3), so it makes sense to include it here, as well.

NOTE FOR 2.1.3.2 (below): 2.1.3.2.b was requirement 2.1.3.4 in the Mining Standard. Here we added that project designs need to not only avoid significant impacts but also align with stakeholder expectations related to the post-mining/post-reclamation end-uses for mining-affected lands. This is to ensure that companies begin discussions on acceptable post-mining end-uses early in the planning process – and is a requirement for development of the reclamation and closure plan (see Chapter 2.6, requirement 2.6.2.1).

2.1.3.1. The company shall carry out a scoping process to identify potential impacts of the proposed project to be assessed in the ESIA.[55] Scoping shall include the consideration of:

a. Potential social impacts (including potential impacts on communities and workers);
a. Potential environmental impacts (including potential impacts on wildlife, air, water and soils)
b. Potential impacts likely to occur in each stage of the proposed project life cycle, from pre-construction through post-reclamation (and post-closure);
c. Potential negative and positive, direct and indirect and cumulative impacts of the project; and
d. The project's potential contribution to climate change;
e. The potential impacts of a changing climate change and extreme events on the project,[56] and any implications those impacts may have on health, safety or the environment; and
f. The differential impacts of activities on vulnerable groups or susceptible members of affected communities.

2.1.3.2. Scoping shall result in the identification of:

a. Potentially significant environmental and social impacts of proposed project activities that require further assessment;

[55] Scoping refers to the early, open and interactive process of determining the major issues and impacts that will be important in decision-making on the proposal, and need to be addressed in an ESIA. Sufficient scoping is essential to help inform and establish the foundation for any impact or risk assessment.

[56] Including potential for extreme weather events, such as floods and droughts, extended periods of warm temperatures, variability in precipitation, windstorms, cold spells and freeze-thaw cycles, coastal erosion, and coastal flooding due to sea-level rise.

b. Alternative project designs to avoid significant adverse impacts and align with stakeholder expectations for post-reclamation end-uses of affected areas;[57]
c. Other actions to mitigate identified adverse impacts; and
d. Additional information and data needed to further understand and assess the potential impacts.

Mine Permitting | Construction

2.1.4. ESIA Data Collection

NOTE FOR 2.1.4: This criterion is only relevant during Construction if not done during Permitting.

NOTE FOR 2.1.4.1 (below): This requirement is only relevant for Exploration Stages 1 and 2 if the screening process in 2.1.1.3 finds that further assessment is warranted, as data collected during these stages will help inform the assessment of potential impacts.

CONSULTATION QUESTION 25: Should baseline data always be collected by exploration companies even if a detailed ESIA is not warranted? If so, should a full suite of environmental, social, economic and political baseline data be collected, or are particular data more important to collect, e.g., water quality and quantity data, biodiversity, etc.?

CONSULTATION QUESTION 26: We have applied the baseline data collection requirements to the Pre-Permitting stage, because even if the project is not fully defined it is important for the company to begin collecting data necessary to inform potential project designs. Data collection prior to mine permitting may need to be collected for months or years prior to finalizing the ESIA.

Do you agree with this approach? And if so, should a full suite of environmental, social, economic and political baseline data be collected, or are particular data more important to collect, e.g., water quality and quantity data, biodiversity, etc.?

CONSULTATION QUESTION 27: Should we add more detail on the baseline data that are expected to be collected?

For example, surface water and groundwater flows, quality, uses; sediment quality; geology; topography, climate; meteorology; flood risk; air quality; landscape and visual amenity; noise and vibration; soils and land use; biodiversity (terrestrial, aquatic, subterranean and marine species, habitats, ecosystems and ecosystem services); cultural heritage; socio-economics (local and regional demographics, employment, safety and security, health, livelihoods, dependence on natural resources, human rights), traffic, transport, infrastructure, etc.?[58]

2.1.4.1. Baseline data describing the prevailing environmental (physical and biological), social, economic and political environment shall be collected at an appropriate level of detail to allow the assessment of the potential impacts of the proposed project.

Pre-permitting | Mine Permitting | Construction

2.1.4.2. Additional studies (for example, comprehensive field or laboratory testing programs) shall be carried out as necessary to fulfill the information needs of the ESIA.

Stage 2 (if relevant) | Stage 3 (if relevant) | Mine Permitting | Construction

[57] See Chapter 2.6 on Planning and Financing Reclamation and Closure, and in particular, requirement 2.6.1.1 where companies need to consult with stakeholders on preferred end-uses of reclaimed lands, and 2.6.1.3.e, where the post-exploration or post-mining end uses are expected to be incorporated into the reclamation and closure plan.

[58] This list is from Guidelines for Environmental and Social Impact Assessment (2016), prepared by the World Business Council for Sustainable Development for its Cement Sustainability Initiative. See pages 33 to 55. https://www.wbcsd.org/Sector-Projects/Cement-Sustainability-Initiative/Resources/Guidelines-for-Environmental-and-Social-Impact-Assessment-ESIA

2.1.5. ESIA Impact Analysis

NOTE FOR 2.1.5: This requirement is only relevant for Exploration Stages 1 and 2 if the screening process in 2.1.1.3 finds that further assessment is warranted.

We are assuming that for proposed mining projects, that the actual assessment will not occur during Pre-Permitting, as all of the data and the final project design will likely not be known at that stage.

CONSULTATION QUESTION 28: Should a preliminary, less comprehensive assessment still occur at the Pre-Permitting stage to inform project development options and choices?

NOTE FOR 2.1.5.1 (below): Added 2.1.5.1.c, to clarify that ESIA look at positive impacts of proposed developments, as well as negative (adverse) impacts. Also added in d that companies need to evaluate the alternative project designs as part of their assessment of mitigation options.

2.1.5.1. An assessment appropriate to the nature and scale of the proposed mining project and commensurate with the level of its environmental and social risks and impacts, shall be carried out that:[59]

a. Predicts in greater detail the characteristics of the potentially significant environmental and social impacts identified during scoping;[60]
b. Determines the significance of the predicted impacts;
c. Evaluates options, including alternative project designs, to optimize potential positive impacts;
d. Evaluates options, including alternative project designs, to mitigate predicted significant adverse impacts in line with the mitigation hierarchy, prioritizing the avoidance of impacts through consideration of alternative project designs; and
e. Determines the relative importance of residual impacts (i.e., impacts that cannot be mitigated) and whether significant residual adverse impacts can be addressed to the satisfaction of affected or relevant stakeholders.

Mine Permitting | Construction

2.1.6. Stakeholder Consultation and Participation in ESIA

NOTE FOR 2.1.6: In the Mining Standard, the stakeholder-related requirements related to ESIA were combined with ESMS. They have been separated in this Standard to add clarity. For Criterion 2.1.6, requirements were drawn from 2.1.2 and 2.1.9 in the Mining Standard.

This requirement is only relevant for Exploration Stages 1 and 2 if the screening process in 2.1.1.3 finds that further assessment is warranted.

Requirements in 2.1.6. are only relevant during Construction if the ESIA not carried out prior to this stage.

NOTE FOR 2.1.6.1 (below): The Mining Standard said that there needed to be "wide, public announcement" of the project, but it is not clear how wide the announcement needs to be (e.g., national announcements, international?). We've revised this to make it more clear that, at minimum, the company should be informing stakeholders in affected communities, or other who may be potentially affected by the project.

NOTE FOR 2.1.6.2 (below): 2.1.6.2.a was expanded to align better with Chapter 2.6 (requirement 2.6.1.1)., which mentions that post-mining end uses shall be agreed with affected communities. The time to have these discussions

[59] As stated in 2.1.2.1, the assessment is expected to be appropriate to the nature and scale of the proposed exploration activities and commensurate with the level of environmental and social risks and impacts.

[60] Characteristics of impacts will vary, but may include: nature (positive, negative, direct, indirect, cumulative); magnitude (severe, moderate, low); extent/location (area/volume covered, distribution); timing (during construction, operation, closure and reclamation; immediate, delayed, rate of change); duration (short or long term; intermittent or continuous); reversibility/irreversibility; likelihood (probability, uncertainty or confidence in the prediction); and extent (local, regional, global).

is when there is still an opportunity to influence mine designs and mitigation strategies, so we have made it explicit that those discussions happen during the ESIA process. Also added positive impacts to d.

NOTE FOR 2.1.6.3: This was 2.1.9.2 in the Mining Standard.

NOTE FOR 2.1.6.4: This was 2.1.9.5 in the Mining Standard.

2.1.6.1. Prior to the implementation of the ESIA process the company shall undertake reasonable and culturally appropriate efforts to inform potentially affected and interested stakeholders in potentially affected communities about the proposed project.

2.1.6.2. As part of the ESIA process, the company shall provide for timely and effective stakeholder and rights holder (hereafter collectively referred to as stakeholder) consultation, review and comment on:

a. The issues and impacts to be considered in the proposed scope of the ESIA (see 2.1.3), including stakeholders' preferred post-reclamation land use(s) (See 2.6.1.1);
b. Methodologies for the collection of environmental and social baseline data (see 2.1.4);
c. The findings of environmental and social studies relevant to the conclusions and recommendations of the ESIA (see 2.1.5.1.a and b);
d. Options and proposals to mitigate the potential adverse impacts of the project (see 2.1.5.1.c) including reclaiming the site to the preferred post-mining land use(s), and optimize positive impacts;
e. Provisional conclusions and recommendations of the ESIA, prior to finalization (see 2.1.6.1); and
f. The final conclusions and recommendations of the ESIA (see 2.1.6.1).

2.1.6.3. The company shall encourage and facilitate stakeholder participation, where possible, in the collection of data for the ESIA,[61] and in the development of options to mitigate the potential impacts of the project.

2.1.6.4. The company shall record all stakeholder comments received in relation to the ESIA process (scoping, assessment, findings, conclusions and recommendations), and record how it responded to stakeholder comments.

Mine Permitting | Construction

2.1.7. ESIA Reporting and Disclosure

NOTE FOR 2.1.7: Combined some Mining Standard requirements and re-organized to consolidate all reporting-type requirements in this version. 2.1.7.1 incorporates material from 2.1.6.1 and 2.1.10.1 in the Mining Standard, and 2.1.7.2 combines material from 2.1.10.1 and 2.1.10.5 in the Mining Standard. Requirement 2.1.7.3 was 2.1.10.2 in the Mining Standard.

The ESIA process will not be completed during Pre-Permitting, so not report is needed at that stage.

NOTE FOR 2.1.7.1 (below): We added positive impacts to c and d

2.1.7.1. The company shall prepare an ESIA report that includes, at minimum: [62]

a. A description of the proposed mining project;
b. Data on baseline conditions and results of additional investigative studies;
c. Detailed description of the direct, indirect and cumulative impacts likely to result from the project, and identification of significant adverse impacts;
d. Description of the alternatives considered to optimize positive impacts and avoid and mitigate significant adverse impacts in line with the mitigation hierarchy;
e. Recommended measures to optimize positive impacts, and avoid or mitigate adverse impacts;

[61] Facilitation of participation may include, e.g., provision of information and explanations in local languages, using materials and approaches designed to be accessible to local communities, and providing capacity building or training on methods. See also Chapter 2.8, Criteria 2.8.3.

[62] Detailed assessments of some issues and impacts may be reported as stand-alone documents, but the ESIA report shall present the results of the full analysis in an integrated manner.

f. A review of the public consultation process, the views and concerns expressed by stakeholders and how the concerns were taken into account; and
g. Names and affiliations of ESIA authors and others involved in technical studies.

2.1.7.2. The ESIA report shall be made publicly available, and the means of accessing it shall be communicated to stakeholders.

2.1.7.3. The company shall make publicly available an anonymized version of the ESIA record of stakeholder comments and its own responses, including how each comment was taken into account.

Mine Permitting | Construction

2.1.8. Environmental and Social Management System (ESMS)

NOTE FOR 2.1.8: This Criterion was 2.1.7 in the Mining Standard. Requirement 2.1.8.2.b differs from the Mining Standard because it includes actions to optimize positive impacts.

As seen below, the management of environmental and social impacts will vary by stage of development. Exploration projects, no matter what stage, should develop and implement a plan to manage known potential impacts. However, if significant impacts have been identified, the plan will need to be more robust. As a result, there are two options for Exploration companies – one if significant potential impacts were not identified, and one where significant potential impacts were identified and an ESIA carried out. The latter approach is continued in Permitting and Construction.

2.1.8.1. The company shall develop and maintain a system to manage environmental and social risks and impacts throughout the life of the project.

2.1.8.2. An environmental and social management plan (or its equivalent) shall be developed that, at minimum:

a. Outlines the specific mitigation actions that will be carried out to address significant environmental and social impacts identified during and subsequent to the ESIA process;
b. Outlines the specific actions that will be taken to optimize positive environmental or social impacts and benefits identified during and subsequent to the ESIA process;
c. Assigns personnel responsible for implementation of various elements of the plan; and
d. Includes estimates for the resources needed to implement the plan.

NOTE FOR 2.1.8.2: During construction, the plan should already have been developed, and will begin being implemented. It is possible that additional potential impacts will be identified during construction, and so 2.1.8.2.b includes actions that may have been identified post-ESIA.

Note that for Construction there is a requirement (2.1.8.3) to implement the plan, and update it as necessary.

2.1.8.3. The environmental and social management plan shall be implemented, and revised or updated as necessary based on monitoring results or other information.

Construction

2.1.9. Environmental and Social Impact Monitoring

NOTE FOR 2.1.9: This was Criterion 2.1.8 in the Mining Standard.

Exploration projects, no matter what stage, should monitor issues where there are known potential impacts, to determine the effectiveness of any mitigation measures implemented. However, if significant impacts have been identified, the plan will need to be more robust. As a result, there are two options for Exploration companies – one if significant potential impacts were not identified, and one where significant potential impacts were identified and an ESIA carried out.

For the Permitting stage, no implementation will yet be occurring, so the wording is slightly different than other stages.

2.1.9.1. If screening in 2.1.1.3 indicates that proceeding to an ESIA is warranted, then as part of the ESMS, the company shall establish and implement a program to monitor:

a. The significant environmental and social impacts identified during or after the ESIA process; and
b. The effectiveness of mitigation measures implemented to address environmental and social impacts.

2.1.9.2. The monitoring program shall be designed and carried out by competent professionals.

2.1.9.3. If requested by relevant stakeholders, the company shall facilitate the independent monitoring of key impact indicators where this would not interfere with the safe operation of the project.[63]

2.1.10. Stakeholder Consultation and Participation in Environmental and Social Management

NOTE FOR 2.1.10: In the Mining Standard, the stakeholder-related requirements related to ESIA were combined with ESMS (in Criterion 2.1.9). They have been separated in this Standard to add clarity.

During the Permitting stage, the environmental and social monitoring plan will only be a proposed plan, not yet implemented, so requirement 2.1.10.3 from Exploration and Construction is not included.

2.1.10.1. The company shall encourage and facilitate stakeholder participation, where possible, in the development of options to mitigate potential and actual impacts.[64]

2.1.10.2. The company shall provide for timely and effective stakeholder consultation, review and comment on the scope and design of the environmental and social monitoring program.

2.1.10.3. The company shall encourage and facilitate stakeholder participation, where possible, in the implementation of the environmental and social monitoring program.[65]

2.1.11. Environmental and Social Disclosures and Reporting

NOTE FOR 2.1.11: These requirements are from criterion 2.10.1 in the Mining Standard.

In both 2.1.11.1 and 2.1.11.2, we have added the wording "or the company shall have a policy in place to make the information available to stakeholders upon request." See explanation in Chapter 1.2, Note for Criterion 1.2.4.

We did not include requirement 2.1.10.5 from the Mining Standard, which required that: "The existence of publicly available ESMS information, and the means of accessing it, shall be publicized by appropriate means." Other

[63] Examples of facilitation of participation in monitoring include: provision of capacity building or training on monitoring methods, community access to the mine site to participate in company monitoring activities or community-based independent monitoring activities; funding to enable community participation, etc. Or, if requested by relevant stakeholders (e.g., in particular those who may be directly affected), companies may also facilitate independent monitoring by providing funding to stakeholders to hire experts, allowing independent experts to have access to sites for monitoring social or environmental indicators, and by allowing access to relevant company records, reports or documentation.

[64] Facilitation of participation must include, e.g., provision of information and explanations in local languages, using materials and approaches designed to be accessible to local communities (see also Chapter 1.2, 1.2.4.1), and may also include access to experts to help stakeholders better understand the pros and cons of different mitigation options.

[65] Examples of facilitation of participation in monitoring include: provision of: capacity building or training on monitoring methods, community access to the mine site to participate in company monitoring activities or community-based independent monitoring activities; funding to enable community participation, etc.

Also, it should be noted that stakeholders may not be interested in participating in monitoring activities. In such cases, the company should be able to produce evidence that good faith efforts that were made to provide stakeholders with opportunities to fully participate.

requirements in Criteria 2.1.10 and 2.1.11 and Chapter 1.2 on Community and Stakeholder Engagement exist to ensure that stakeholders are engaged and aware of information related to the facility.

During the Permitting stage, the environmental and social monitoring plan will only be a proposed plan, so there will not be any findings yet. Thus, 2.1.11.2 is not relevant.

2.1.11.1. The environmental and social management plan shall be publicly available, or the company shall have a policy in place to make the information available to stakeholders upon request.

Stage 2 | Stage 3 | Construction

2.1.11.2. Annual summary reports of the findings of the environmental and social monitoring program, and all data and methodologies related to the monitoring program shall be publicly available, or the company shall have a policy in place to make the information available to stakeholders upon request.

Stage 2 | Stage 3 | Construction

NOTES

Many jurisdictions have legal requirements for undertaking ESIA. Similarly, ESIA are often mandated by organizations that provide funding for projects (e.g., International Finance Corporation (IFC)/World Bank). The requirements of Chapter 2.1 are meant to align with the good practice requirements described by IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts.

The chapter does not list all of the issues and impacts that are likely to be significant, as these will vary greatly depending on the scale, nature, duration and location of the particular project. It is the responsibility of the mineral exploration or development company, in consultation with interested and affected stakeholders, to ensure that all the relevant issues and impacts are identified and considered. Issues/impacts to be considered may include (but are not limited to) the following:

- Social and socio-economic impacts (e.g., effects of exploration and proposed mining activities such as construction, road building, traffic, noise, air and water pollution, waste and chemical management, land disturbance and use, security arrangements, and resettlement, if relevant, on housing, infrastructure, social services, poverty, community physical and mental health and safety, local economies, livelihoods, ecosystem services, employment, population movements, etc.);
- Differential and/or specific impacts on women, children, minority groups and vulnerable groups;
- Socio-political risks, including potential infringement of human rights, conflict and political instability;
- Potential impacts on indigenous peoples and/or other vulnerable individuals or groups (e.g., women, ethnic minorities, children, youth and elderly, etc.), including impacts on culture and cultural heritage;
- Impacts on artisanal and small-scale miners (ASM) and their communities;
- Labor and working conditions;
- Environmental impacts (e.g., effects of surface disturbance, traffic, noise, waste generation, air quality, water use and quality, spills) on wildlife and vegetation, including threatened species, and biodiversity, ecosystem services and protected areas such as World Heritage Sites); trans-boundary effects (e.g., air pollution, use of international waterways); and greenhouse gas emissions and contributions to climate change.

An ESIA that meets the requirements of this chapter is a critical step in informing interested and affected stakeholders and rights holders including, where applicable, indigenous peoples about a proposed exploration or mining project and its potential impacts, prior to decision-making. The fact that an effective ESIA has been designed and implemented does not imply that an exploration or mining project should necessarily proceed. With effective engagement of stakeholders, however, it should provide a sound basis for consideration as to whether a project should or should not proceed.

Chapter 2.2—Free, Prior and Informed Consent (FPIC)

NOTE TO REVIEWERS ON CHAPTER 2.2:

Revisions were made to this chapter to try to reduce overlap, and the flow was reorganized.

Reviewers should note that FPIC of indigenous peoples is required generally for the proposed exploration and mining projects, but there are also instances in other chapter where FPIC is also added as a requirement. For example, it is mentioned in relation to resettlement (2.4.6.1), critical cultural heritage (3.7.5.1.b), tailings facilities (4.1.1.5), long-term water treatment (4.2.3.5.e).

What this means is that companies need to make an effort to ensure that if the FPIC requirements in other chapters are relevant, that they are included either as standalone discussions, or, more likely, as part of the FPIC process for an exploration or mining project more generally.

One proposed change compared to the Mining Standard is that all exploration and development projects demonstrate that they have obtained the consent of indigenous peoples for activities that they are conducting. This differs from the mining standard – in that standard it is a critical requirement that new mines obtain FPIC, but we provided an exception for existing mines, recognizing that if FPIC was not achieved prior to the development of the mine, those sites cannot turn back the clock and obtain the "prior" consent. Instead, existing mines are expected to demonstrate "that they are operating in a manner that seeks to achieve the objectives of the chapter" (see Scope of Application section of Chapter 2.2 in the Mining Standard) though we acknowledge that the vagueness of that statement makes it difficult to audit consistently.

One of the reasons we are proposing a different approach is because the Business and Human Rights Resource Center has specifically identified IRMA's approach to FPIC in the Mining Standard as a potential concern. In its June 2021 report "The UN Guiding Principles on Business & Human Rights and Indigenous Peoples: Progress achieved, the implementation gap and challenges for the next Decade" the authors write that:

> "It will be crucial to see whether the IRMA standard and certification scheme are robust enough to prevent bad actors from gaming the system by exploiting loopholes, such as the fact that no FPIC is required to certify existing mines. In the latter case, companies are only required to demonstrate "that they are operating in a manner that seeks to achieve the objectives of this chapter"".[66]

As mentioned above, the "loophole" exists because we recognized that many existing mine sites would not have "prior" consent (in some cases because it was not an internationally-recognized expectation when the mines were developed) but might have developed very strong and positive relationships with indigenous peoples affected by their operations. It did not seem fair to prevent those mines from attaining a high achievement level in the IRMA system for failing to do something they may not have known was expected when mines were developed 10 or 20 years ago.

In this draft exploration and development standard, we are striving to recognize and reward good-faith actors, while still holding them to a high bar and being transparent about aspects where the projects have not performed up to international best practice expectations.

PROPOSAL:

We are proposing that obtaining **consent** be a critical requirement (2.2.5.2), but that we de-link consent from the free, prior and informed elements. The elements related to ensuring that consent be freely given, and that

[66] https://www.iprights.org/images/resources/downloadables/UNGP10_-_BOOK_FINAL_ENG.pdf

indigenous peoples be informed and make the decision prior to the commencement of activities are covered in numerous requirements elsewhere in the chapter:

> **Free** refers to a consent given voluntarily and without coercion, intimidation or manipulation. It also refers to a process that is self-directed by the community from whom consent is being sought, unencumbered by coercion, expectations or timelines that are externally imposed.[67] (See requirements 2.2.3.2, 2.2.3.3, 2.2.3.4, 2.2.4.1, 2.2.4.2)
>
> **Prior** means that consent is sought sufficiently in advance of any authorization or commencement of activities, at the early stages of a development or investment plan, and not only when the need arises to obtain approval from the community. (See requirement 2.2.3.3)
>
> **Informed** refers mainly to the nature of the engagement and type of information that should be provided prior to seeking consent and also as part of the ongoing consent process. (See requirements 2.2.3.3 and 2.2.3.4, 2.2.3.5)

The Mining Standard has 40 critical requirements, and in the IRMA system if these are not "substantially met" in the initial audit, and "fully met" in subsequent audits, mines cannot achieve and maintain IRMA 50, IRMA 75 or IRMA 100 achievement levels. It can only achieve "IRMA Transparency." The same scoring and achievement system is being proposed for the IRMA-Ready Standard.

By making obtaining consent a critical element, we continue to elevate the importance of indigenous peoples' sovereignty and self-determination related to extractive activities that affect their rights and interests, but also enable sites that did not do everything perfectly in the past to reach one of the higher achievement levels in IRMA if they subsequently carry out the steps necessary to achieve free, informed consent (assuming they meet all other critical requirements). It should be noted that if the other FPIC elements/requirements in the FPIC chapter are not been fully met, then the mine will not be able to achieve the very highest achievement level (IRMA 100). And it is also important to note that a project/site's performance on every single critical and non-critical requirement will be transparently reported in the public audit report.

CONSULTATION QUESTION 30: Do you agree with our proposed approach to include consent of indigenous peoples for all (i.e., existing and new) activities as a critical requirement, but in the requirement (2.2.5.2) de-linking consent from the other elements of FPIC?

Alternatively, we could require "free, informed consent" and just delink the "prior" element.

Or should we retain FPIC in its entirety, and accept that any project that has not achieved FPIC for existing activities cannot reach one of the higher achievement levels in IRMA?

If the latter scenario is preferable, what should happen if a company subsequently goes through a comprehensive and rigorous FPIC process and receives FPIC for new/major changes to activities? Should those sites be allowed to reach a higher achievement level, or would the fact that "prior" consent was not achieved for a past activity forever hold them back from reaching an IRMA achievement level beyond IRMA Transparency?

BACKGROUND

For more than a quarter century the international community has recognized that special attention needs to be paid to the individual and collective rights of indigenous peoples.[68] The following rights of indigenous peoples are especially relevant in relation to industrial-scale mineral exploration and development:[69]

- The right to self-determination, by virtue of which indigenous peoples freely determine their political status and pursue their economic, social and cultural development;

[67] FAO. http://www.fao.org/3/i6190e/i6190e.pdf

[68] United Nations. 2008. Guidelines on Indigenous Peoples' Issues. www.un.org/esa/socdev/unpfii/documents/UNDG_guidelines_EN.pdf

[69] Anaya, J. 2013. Extractive Industries and Indigenous Peoples. Report of the Special Rapporteur on the Rights of Indigenous Peoples. UN Doc. A/HRC/24/41. Para. 28. Available at: unsr.jamesanaya.org/study/report-a-hrc-24-41-extractive-industries-and-indigenous-peoples-report-of-the-special-rapporteur-on-the-rights-of-indigenous-peoples

- Rights to property, culture, religion, and non-discrimination in relation to lands, territories and natural resources, including sacred places and objects;
- Rights to health and physical well-being in relation to a clean and healthy environment;
- Rights to set and pursue their own priorities for development; and
- The right to make authoritative decisions about external projects or investments.

Both States and corporations should respect these rights. Corporations may demonstrate such respect by obtaining the Free, Prior and Informed Consent (FPIC) of indigenous peoples and providing culturally appropriate alternatives and adequate compensation and benefits for projects that affect indigenous peoples' rights.[70]

Key elements of the requirement for consent of indigenous peoples have been recognized by international law since 1989, when the General Conference of the International Labour Organization adopted Convention 169 on Indigenous and Tribal Peoples.[71] Since 1989, FPIC has gained broader application and more widespread support in national laws and various international instruments and bodies.[72]

OBJECTIVES/INTENT OF THIS CHAPTER

To demonstrate respect for the rights, dignity, aspirations, culture, and livelihoods of indigenous peoples, participate in ongoing dialogue and engagement, and collaborate on strategies to minimize impacts and create benefits for indigenous peoples, thereby creating conditions that allow for indigenous peoples' free, prior and informed consent and decision-making regarding mineral exploration and development.

SCOPE OF APPLICATION

RELEVANCE: A mineral exploration and development company may provide evidence that this chapter is not relevant if it can prove that there are no indigenous peoples whose legal or customary rights or interests may be affected by the company's exploration or development activities, or potential project expansions. Examples of rights or interests may include lands, territories and resources that indigenous peoples possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired; livelihood, cultural or spiritual activities or places; or critical cultural heritage.

Additionally, it should be noted that if there are human-rights-related impacts on indigenous peoples that have not been mitigated or remediated at existing exploration and development projects, they will need to be addressed as per Chapter 1.3; and other unremediated impacts may be addressed through the operational-level grievance mechanism as per Chapter 1.4.

OVERLAP WITH NATIONAL LAWS: The State always holds the primary duty to protect indigenous peoples' rights. Nothing in this chapter is intended to reduce the primary responsibility of the State to consult with indigenous peoples in order to obtain their FPIC and protect their rights. However, IRMA recognizes that in the absence of national laws, or in the exercise of their right to self-determination, some indigenous peoples may wish to engage with companies without State involvement.

As per Chapter 1.1, if national FPIC laws exist, companies must abide by those laws. Where a host government has established an existing legislative framework that requires or enables agreements between mineral exploration and development companies and indigenous communities (as in Australia), it may not be necessary for companies to run a parallel FPIC process based on the requirements of this chapter. It would, however, be necessary for companies to demonstrate to IRMA auditors that the process whereby the agreement was reached conformed with or exceeded IRMA FPIC requirements and met the general intent of this chapter (for example, there was no express or implied

[70] IFC. 2012. Performance Standard 7 Indigenous Peoples. Objectives and Paras. 9 and 14. Available at: www.ifc.org/wps/wcm/connect/1ee7038049a79139b845faa8c6a8312a/PS7_English_2012.pdf?MOD=AJPERES

[71] ILO. Convention 169. Available at: www.ilo.org/indigenous/Conventions/no169/lang--en/index.htm

[72] For a detailed discussion of recent international jurisprudence related to FPIC see: Gilbert, J. and Doyle, C. 2011. "A New Dawn over the Land: Shedding Light on Collective Ownership and Consent." pp. 24-42. Available at: roar.uel.ac.uk/2648/1/A_New_Dawn_Over_the_Land_-_Shedding_Light_on_Collective_Ownership_and_Consent.pdf

threat to invoke compulsory powers if agreement could not be reached, and the community was advised at the outset that the company would not undertake an activity in the absence of community consent).

CRITICAL REQUIREMENTS IN THIS CHAPTER

The company does not initiate contact with indigenous peoples living in isolation (2.2.3.2), and obtains consent for any exploration or development activities that may affect indigenous peoples' rights or interests without the consent of those indigenous peoples (2.2.5.2).

Free, Prior and Informed Consent (FPIC) Requirements

2.2.1. Policy Commitment

2.2.1.1. The company shall have a publicly available policy that includes a statement of the company's respect for indigenous peoples' rights, as set out in the United Nations Declaration on the Rights of Indigenous peoples.[73]

2.2.1.2. The company shall ensure that indigenous peoples potentially affected by the company's proposed activities are aware of the policy.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

2.2.2. Due Diligence Related to State Obligations

NOTE FOR 2.2.2. This was previously titled "General Requirements." It has been renamed because several requirements were removed from this section, and the remaining requirement is specific to due diligence related to State obligations, so the new name provides greater clarity.

The requirements removed include 2.2.2.2, which pertained to the need for new mines/site to obtain FPIC (this has been revised and is now 2.2.5.2), a requirement for new and existing mines to obtain FPIC for proposed changes to operations that will lead to new or increased impacts on indigenous peoples' rights or interests (this has changed to a requirement to carry out additional FPIC scoping and implementation in 2.2.6.3), and 2.2.2.4, which required that even prior to engaging in a process of seeking FPIC, the company needs to seek permission from indigenous peoples (that requirement is now 2.2.3.3).

2.2.2.1. The company shall conduct due diligence to determine if the host government conducted an adequate consultation process aimed at obtaining indigenous peoples' free, prior and informed consent prior to granting access to mineral resources. The key findings of due diligence assessments shall be made publicly available and shall include the company's justification for proceeding with a project if the State failed to fulfill its consultation and/or consent duties.[74]

NOTE FOR 2.2.2.1: If the due diligence was completed at an earlier stage, a company will not be expected to carry out due diligence again.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

2.2.3. Free, Prior and Informed Consent (FPIC) Scoping

NOTE FOR 2.2.3: If a company provides evidence that scoping was thoroughly done at earlier stage, a company will not be expected to carry out identification at subsequent stages.

[73] Available at: www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf

[74] The company shall make all documents relating to the due diligence process available to the IRMA auditor for review.

2.2.3.1. The company shall identify indigenous peoples who may be affected by the company's activities, including indigenous peoples living in voluntary isolation.[75]

NOTE FOR 2.2.3.1: We added identification of indigenous peoples living in voluntary isolation, because it is critical that from the earliest stages of exploration efforts be made to identify if there may be indigenous peoples living in isolation, so that contact with or impacts on them can be avoided (see Note for 2.2.3.2, below).

We've revised this slightly from the Mining Standard. In that standard, which says: "The company shall Identify, through consultations with indigenous peoples and other sources of credible information, indigenous peoples who may be affected by the company's activities. . . "

We removed the clause "through consultations with indigenous peoples and other sources of credible information" because the company should not be contacting indigenous peoples if they are living in voluntary isolation. Have added footnote associated to more fully explain the context.

We are proposing to define indigenous peoples living in voluntary isolation as:

> Indigenous peoples or segments of indigenous peoples who do not maintain sustained contacts with the majority non-indigenous population, and who generally reject any type of contact with persons not part of their own people. They may also be peoples or segments of peoples previously contacted and who, after intermittent contact with the non-indigenous societies, have returned to a situation of isolation and break the relations of contact that they may have had with those societies.[76]

2.2.3.2. (Critical Requirement)
To respect indigenous peoples' right to self-determination and safeguard irreplaceable cultural heritage, the company shall not initiate contact with potentially affected indigenous peoples living in voluntary isolation.

NOTE FOR 2.2.3.2: This requirement has been moved from the Chapter on Cultural Heritage (3.7).

Article 26 of the American Declaration on the Rights of Indigenous Peoples (2016) enshrines the collective right of Indigenous Peoples in situation of voluntary isolation or initial contact to "remain in that condition and to live freely and in accordance with their cultures."[77]

As expressed by the Inter-American Commission on Human Rights, "it is fundamental that every effort be made to reinforce respect for the principle of no contact, and that contact should happen only at the initiative of the peoples in isolation."[78]

This requirement has been given "Critical Requirement" status because the Notes section of the Mining Standard indicated that "IRMA will not certify a mine if affected communities include indigenous peoples living in voluntary isolation." Making the requirement critical has the same effect, and is more clear to all involved.

We added the term "potentially affected indigenous peoples" to 2.2.3.2 (and following requirements) to clarify that we're not referring to all indigenous peoples, generally, but rather, those indigenous peoples who may be affected by the proposed activities.

We are proposing to define "potentially affected indigenous peoples" as:

[75] The most credible source of information will be indigenous peoples in the area, however, contact must not be made with those living in voluntary isolation. Other sources should also be consulted in case there are different communities of indigenous peoples that may be affected (i.e., consulting a single community may not result in identification of all potential indigenous peoples who might be affected). Other sources could include State studies, academics, other regional indigenous peoples' communities or organizations, etc.

[76] Inter-American Commission on Human Rights (IACHR). 2013. Indigenous peoples in Voluntary Isolation and Initial Contact in the Americas: Recommendations for the Full Respect of their Human Rights. p. 4. http://www.oas.org/en/iachr/indigenous/docs/pdf/report-indigenous-peoples-voluntary-isolation.pdf

[77] American Declaration on the Rights of Indigenous Peoples (2016). https://www.oas.org/en/sare/documents/DecAmIND.pdf

[78] IACHR. 2013. Indigenous peoples in Voluntary Isolation and Initial Contact in the Americas: Recommendations for the Full Respect of their Human Rights. p. 10. http://www.oas.org/en/iachr/indigenous/docs/pdf/report-indigenous-peoples-voluntary-isolation.pdf

Indigenous peoples who own, occupy or otherwise use land, territories or resources or have rights that may be affected by a mineral exploration or development project.

2.2.3.3. The company shall disclose to potentially affected indigenous peoples, in a culturally appropriate manner, the preliminary project concepts and proposed activities, and the indigenous peoples' right to FPIC., and seek permission to proceed with FPIC discussions. If representatives of potentially affected indigenous peoples clearly communicate, at any point during engagement with the company, that they do not wish to proceed with FPIC-related discussions, the company shall recognize that it does not have consent, and shall cease to pursue any proposed activities that would affect the rights or interests of the indigenous peoples. The company may renew FPIC discussions only if agreed to by the indigenous peoples' representatives.

NOTE FOR 2.2.3.3: This was moved (used to be 2.2.2.4), and it was amended to make it clear that permission to initiate FPIC discussions is a necessary precursor to moving forward with the FPIC discussions that, in turn, may enable moving forward with exploration.

2.2.3.4. The company shall collaborate with representatives of potentially affected indigenous peoples and other relevant members of affected communities of indigenous peoples to:

a. Identify the appropriate means of engagement for each group of indigenous peoples (e.g., tribe, nation, population);
b. Identify indigenous peoples' rights and interests that may be affected by the proposed activities;[79]
c. Identify additional studies or assessments needed to determine the range and degree of potential impacts on indigenous peoples' rights or interests; and
d. Identify if there are capacity issues that may prevent full and informed participation of indigenous peoples. If issues are identified, the company shall provide funding or facilitate other means to enable indigenous peoples to address capacity issues in their preferred manner; and
e. Ensure that the community as a whole/collective has meaningful opportunities to be involved in these processes.

2.2.3.5. The company shall collaborate with representatives of potentially affected indigenous peoples to design and implement plans to address the information gaps and needs identified through the FPIC scoping process.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

2.2.4. Determine FPIC Processes[80]

NOTE FOR 2.2.4: If a company provides evidence that the following requirements were fulfilled at an earlier stage, a company will not be expected to carry them out again at subsequent stages. Some minor wording changes compared to the Mining Standard.

2.2.4.1. If there is more than one distinct indigenous peoples' group (e.g., tribe, nation, population) that may be affected by the proposed exploration activities or mineral development proposals, they may be included in a coordinated process or separate FPIC processes, as desired by the various groups of indigenous peoples.

[79] The circumstances for obtaining FPIC include situations where proposed activities may affect indigenous peoples' rights or interests, including those that may: impact their lands, territories and resources; require the physical relocation of people; cause disruption to traditional livelihoods; impact critical cultural heritage; or involve the use of cultural heritage for commercial purposes. Indigenous peoples' rights include traditional rights, which are defined as "Rights which result from a long series of habitual or customary actions, constantly repeated, which have, by such repetition and by uninterrupted acquiescence, acquired the force of a law within a geographical or sociological unit. It also encompasses the rights of Indigenous and Tribal Peoples established by the ILO Convention 169." (Source: Forest Stewardship Council)

Lands, territories and resources include those that indigenous peoples possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired. Rights and interests to lands, territories and resources may apply even if indigenous peoples no longer live on the lands affected by the project, if they still retain ties to those land through customary usage, including seasonal or cyclical use. (See IFC PS 7, Guidance Note 9).

[80] This may be carried out concurrent with 2.2.3.

2.2.4.2. If potentially affected indigenous peoples have an FPIC protocol in place or under development, the company shall abide by it unless changes are agreed to by the indigenous peoples' group(s). Otherwise, the company shall jointly develop and document, in a manner agreed to by indigenous peoples' representatives, the FPIC process or processes to be followed.[81]

2.2.4.3. The company shall make information on the mutually-agreed FPIC processes publicly available, unless the indigenous peoples' representatives have explicitly requested otherwise.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

2.2.5. Implement FPIC Process

NOTE FOR 2.2.5: If a company provides evidence that the following requirements were fulfilled at an earlier stage the company will not be expected to repeat new or increased impacts on indigenous peoples' rights or interests, at which point an FPIC process will need to be carried out again (see 2.2.6.3).

Some departures from the Mining Standard have occurred, in particular, 2.2.5.2 has been revised, and a new requirement has been added (2.2.5.4).

2.2.5.1. The company shall document and shall publicly report on, in a manner agreed to by the indigenous peoples, the FPIC process that was followed and its outcome.

NOTE FOR 2.2.5.1: Requirements 2.2.5.1 and 2.2.5.2 from the Mining Standard have been combined.

2.2.5.2. (Critical Requirement)
The company shall not carry out mineral exploration or development activities that may affect indigenous peoples' rights or interests without the consent of those indigenous peoples.

NOTE FOR 2.2.5.2: This requirement combines elements from 2.2.2.2 and 2.2.6.1 from the Mining Standard. As explained in the background for CONSULTATION QUESTION 30 (in chapter preface), requirement 2.2.5.2 takes a different approach than the Mining Standard. It requires that at the time of an audit, all sites/projects seeking IRMA certification or a higher level of achievement will need to be demonstrate that they have obtained consent of indigenous peoples to be carrying out their activities.

Also, in the Mining Standard there is an additional requirement that states that "For new and existing mines, the company shall obtain FPIC from indigenous peoples for proposed changes to mining-related activities that may result in new or increased impacts on indigenous peoples' rights or interests." 2.2.5.2 in this proposed standard covers such situations because it speaks generally to needing consent for all exploration and development activities, which would include any new activities proposed (see also 2.2.6.3).

2.2.5.3. If consent for exploration activities or a mineral development proposal has been obtained, an agreement outlining the terms and conditions of the consent agreement shall be signed or otherwise validated by the company and the representative(s) of the indigenous peoples. The agreement shall be binding, and it shall be made publicly available unless the indigenous peoples' representatives explicitly request otherwise.

2.2.5.4. The company shall develop an "Indigenous Peoples Development Plan", or equivalent, that:

a. Includes actions agreed with the indigenous peoples to minimize, mitigate or compensate for potential and actual adverse impacts on their right and interests, and actions to optimize benefits. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound.
b. Describes implementation actions clearly assigned to a responsible party/ies.

[81] Also, there may be a desire to establish different FPIC processes for different stages of development (e.g., exploration, mining, closure) or based on various triggers (e.g., major expansion of the mine). For example, a process to obtain FPIC during the exploration stage may be less onerous than a process established to obtain FPIC for a mine development proposal, as the mining stage will likely have greater potential impacts on indigenous peoples' rights and interests, require more assessment, more dialogue around impact mitigation, remediation compensation, project benefits, etc.

c. Provides key indicators, linked to adequate baseline data, to enable measurement of the effectiveness of actions over time.
d. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

NOTE FOR 2.2.5.5: This is a new requirement. It has been added to align with IFC Performance Standard, which requires a similar plan so that there is a clear plan for how impacts and benefits will be managed.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

2.2.6. Implementation and Ongoing Engagement

NOTE FOR 2.2.6: This was criterion 2.2.7 in the Mining Standard. But we combined the sole requirement from that criterion with another (2.2.5.2) so the criterion was deleted.

2.2.6.1. The company shall collaborate with indigenous peoples to monitor implementation of the FPIC agreement and the "Indigenous Peoples Development Plan," and to document the status of the commitments made in the agreement and plan.

NOTE FOR 2.2.6.1: Revised to also refer to the Indigenous Peoples Development Plan.

2.2.6.2. Engagement with indigenous peoples shall continue throughout all stages of exploration and mineral development, including mine construction.

2.2.6.3. FPIC scoping and implementation of the FPIC process shall be repeated if there are proposed changes to exploration, mineral development or construction activities that may result in new or increased impacts on indigenous peoples' rights or interests.

NOTE FOR 2.2.6.3: This replaces 2.2.2.3 from the Mining Standard, which had the same intent. It makes it clear that FPIC is not a one-time thing, but that the process needs take place when there are proposed changes that may lead to new or increased impacts on indigenous peoples' rights or interests.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

NOTES

Free, Prior and Informed Consent, in the context of this standard, requires that:

- Engagement with indigenous peoples be free from external manipulation, coercion and intimidation;
- Potentially affected indigenous peoples be notified that their consent will be sought, and that notification occur sufficiently in advance of commencement of any mineral exploration-and-development-related activities;
- There be full disclosure of information regarding all aspects of the proposed mining project in a manner that is accessible and understandable to the indigenous peoples; and
- Indigenous peoples can fully approve, partially or conditionally approve, or reject a project or activity, and companies will abide by the decision.

The chapter uses the term indigenous peoples, recognizing that there may be peoples for whom this chapter applies who prefer to use other terms such as tribal, aboriginal, First Nations, *Adivasi*, etc., but who have the right to FPIC according to international and/or host country laws. For the purposes of interpreting this standard IRMA uses a definition presented in the IRMA Glossary of Terms, which is from guidance published by the United Nations Permanent Forum on Indigenous Peoples.

Chapter 2.3—Obtaining Community Support and Delivering Benefits

NOTE TO REVIEWERS ON CHAPTER 2.3:

According to Davis and Franks, "Large lenders appear to be increasingly considering the risk to their own reputation of company-community conflict in the projects that they finance."[82] The concept of Broad Community Support is one metric that has been adopted by the International Finance Corporation to help manage this risk. The IFC "must be satisfied that [broad community support] is in place before it supports large projects with significant impacts." [83]

Also, the International Council on Mining and Metals has acknowledged that "Successful mining and metals projects require the support of a range of interested and affected parties. This includes both the formal legal and regulatory approvals granted by governments and the broad support of a company's host communities." [84]

However, there has been the suggestion that this attitude may not yet be as widespread in companies engaged in mineral exploration:

> *"What a lot of juniors don't seem to realize is that if at the time they're doing that drilling, reducing the technical risk, they increase the social license risk by doing things that promote conflict, they can severely reduce the value that they could ever hope to sell a project for, or maybe not be able to sell it at all. In the case of [Project X], the junior mining company that was doing that had hopes of selling out to a big company like [Company Y]. But nobody was interested because of the conflict situation."*[85]

By including the "broad community support" metric for mineral exploration and development companies, the intent is to promote greater awareness of the costs of conflict, and the benefits of carrying out activities and building relationships in a manner that will foster support from affected communities.

BACKGROUND

There is widespread acknowledgement from extractive industries that efforts spent on building respectful relationships, responding to community and indigenous peoples' concerns, and minimizing project-related impacts can be beneficial to both companies and affected communities.

Mineral exploration and development companies typically contribute to local or national economies by procuring goods and services from the host country. Leading companies also recognize the need for delivering additional benefits to affected communities, and that benefits are best defined by the communities themselves. When communities' needs and aspirations are not at the forefront of mineral exploration and development company investments, experience shows that efforts often fail to deliver long-lasting benefits. Increasingly, efforts are being made to ensure that community investments made by companies provide both immediate and ongoing benefits that last beyond the life of the project.

[82] Davis, R. and Franks, D. 2014. Costs of Company-Community Conflict in the Extractive Sector. p. 35. CSR Initiative at the Harvard Kennedy School. https://www.csrm.uq.edu.au/media/docs/603/Costs_of_Conflict_Davis-Franks.pdf

[83] International Finance Corporation. IFC Fact Sheet: IFC Policy and Performance Standards on Social & Environmental Sustainability and Policy on Disclosure of Information. https://www.ifc.org/wps/wcm/connect/8eb52895-8f38-410b-b5a9-5b48f9fa41b1/FactSheet.pdf?MOD=AJPERES&CVID=jqeFfxV

[84] ICMM. 2013. Indigenous Peoples and Mining. Position Statement. https://www.icmm.com/en-gb/members/member-commitments/position-statements/indigenous-peoples-and-mining-position-statement

[85] Davis, R. and Franks, D. 2014. Costs of Company-Community Conflict in the Extractive Sector. p. 36. CSR Initiative at the Harvard Kennedy School. https://www.csrm.uq.edu.au/media/docs/603/Costs_of_Conflict_Davis-Franks.pdf

In addition to providing tangible benefits to affected communities, there is a growing need for mineral exploration and development companies to obtain and maintain broad community support for their projects and operations.[86] A high level of community support can provide reassurance to a company's shareholders and investors, and steps taken by a company to earn community support can foster the development and maintenance of strong relationships with affected communities.

OBJECTIVES/INTENT OF THIS CHAPTER

To obtain and maintain credible broad support from affected communities; and produce tangible and equitable benefits to communities that are in alignment with their needs and aspirations and sustainable over the long term.

SCOPE OF APPLICATION

RELEVANCE: Mineral exploration and development companies may provide evidence that this chapter is not relevant if they can demonstrate that there are no communities that may be affected by their current or future activities, or by proposed mining projects.

CRITICAL REQUIREMENTS IN THIS CHAPTER

None.

CONSULTATION QUESTION 31: Is there any requirement in this chapter that you believe should be deemed critical, i.e., that a project should not reach an achievement level in IRMA unless they can demonstrate that they are at least substantially meeting the requirement?

Obtaining Community Support and Delivering Benefits Requirements

2.3.1. Commitments to Affected Communities

2.3.1.1. The company shall publicly commit to:

a. Maintaining or improving the health, social and economic wellbeing of affected communities; and
b. Carrying out exploration activities and/or developing a mining project only if it gains and maintains broad community support.[87]

NOTE FOR 2.3.1.1: We added here that the commitment should include support for carrying out exploration activities, as this aligns with requirement 2.3.2.1.

We added and/or, because the commitment need only apply to whichever stages(s) are relevant.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

2.3.2. Obtaining Community Support[88]

[86] For example, ICMM members recognize that: "Successful mining and metals projects require the support of a range of interested and affected parties. This includes both the formal legal and regulatory approvals granted by governments and the broad support of a company's host communities." (ICMM. 2013. Indigenous Peoples and Mining. Position Statement. https://www.icmm.com/en-gb/members/member-commitments/position-statements/indigenous-peoples-and-mining-position-statement)

[87] This also may be referred to as social licence to operate, or community support, etc.

[88] The requirements in 2.3.2 apply to non-indigenous communities. If an affected community is an indigenous peoples' community, the company is required to obtain the free, prior and informed consent of that community (as per Chapter 2.2). A company may need to obtain FPIC from indigenous peoples and also demonstrate that it has broad community support for the same project, if one or more communities of non-indigenous peoples may also be affected by the project.

NOTE FOR 2.3.2.1 (below): This requirement that has differing expectations based on the stage of development. The thinking is that:

—Because Stage 1 does not yet involve on-the-ground activities, it is an investigative exercise, which should help determine whether or not it makes sense to proceed with an exploration project that is under consideration.

—In Stages 2 and 3, community support for exploration activities should be demonstrated. The rationale here is that if exploration activities are not supported by the community, then the likelihood of a mine achieving broad community support is low.

—In Pre-permitting, Permitting stages, when companies are determining the feasibility of developing a mine, companies should be able to demonstrate that the project proposal has broad community support as a criterion for proceeding with further development of the project. Again, if BCS is not present at this stage, then the likelihood of a mine achieving broad community support is low.

It is possible, of course, that a project may not have support in an early phase, but over time is able to gain support, for example, if the company puts in additional effort to work with affected communities and address their concerns, redesign elements of the project to avoid impacts, optimize community benefits, etc. So the potential exists for companies to demonstrate, over time, that they have improved their performance on this requirement. Such changes in performance would be disclosed in the public audit report, enabling stakeholders to understand the level of support a project has, and make decisions (such as whether or not to invest in a project) based on that information.

2.3.2.1. The company shall demonstrate that there is broad community support in communities affected by construction of the mine and communities that will be affected once the mine is in operation.

Construction

2.3.2.2. Broad community support shall be determined through local democratic processes or governance mechanisms, or by another process or method agreed to by the company and an affected community (e.g., a referendum). Evidence of broad community support shall be considered credible if the process or method used to demonstrate support:

a. Occurred after the company carried out consultations with relevant stakeholders regarding potential impacts and benefits of exploration activities or a proposed mining project;
b. Was transparent;
c. Was free from coercion or manipulation; and
d. Included the opportunity for meaningful input by all potentially affected community members, including women, vulnerable groups and marginalized members, prior to any decision or resolution.

CONSULTATION QUESTION 32: Is it realistic to think that affected communities will have gone through a process (e.g., a community referendum, a vote at a town or district level) related to mineral exploration projects? It seems likely that this may not always happen, especially if exploration projects are distant from the communities, or the activities are fairly low impact? If it is not realistic, then what would be sufficient evidence for companies engaged in Stage 2 or 3 exploration to demonstrate that they have broad community support for their activities?

Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

2.3.3. Planning and Delivering Community Benefits

NOTE FOR 2.3.3: The Mining Standard does not currently have any requirement to set targets for contributions made by companies to provide benefits to affected communities. However, research by the International Finance

Corporation has shown that some mining companies use a formula for determining their contributions.[89] For example:

—Mining Company 1 (Latin America): 1% of pre-tax annual profits based on 3-year rolling average.

—Mining Company 2 (Sub-Saharan Africa): 1% of operational profits plus USD $1 for each ounce of gold produced.

—Mining Company 3 (Global): 2% of expected capital expenditures.

By adding some sort of minimum requirement, IRMA could help define a minimum level of investment that all communities should receive if exploration projects or mines are to be developed that affect their communities.

CONSULTATION QUESTION 33: Should IRMA consider requiring a minimum benchmark for a company's community investments?

If so, should the same rate apply to all stages of exploration and development, or only once a mining project has been fully developed?

Or if not a specific target, should IRMA consider requiring public disclosure of a company's investments?

CONSULTATION QUESTION 34: We have minimized the expectations for Stage 2 Exploration, given the much smaller scale of impacts and recognizing the reduced resources for these early-phase projects. But we have applied all requirements in this criterion to Stage 3 Exploration as Pre-Permitting/Permitting/Construction, primarily due to the increased potential for impacts at that stage. Do you agree with this approach?

2.3.3.1. The company, in collaboration with affected communities and other relevant stakeholders (including workers and local government), shall develop a participatory planning process to guide a company's contributions to community development initiatives and benefits in affected communities.[90]

Stage 3	Pre-permitting	Mine Permitting	Construction

2.3.3.2. If requested by the community and not provided by the appropriate public authorities, the company shall provide funding for mutually agreed upon experts to aid in the participatory process (e.g., as facilitators and/or community advisors).

NOTE FOR 2.3.3.2: This was 2.3.3.3 in the Mining Standard. Added (e.g., as facilitators and/or community advisors) to provide clarity on what roles the experts might serve.

Stage 3	Pre-permitting	Mine Permitting	Construction

NOTE FOR 2.3.3.3 (below): This was 2.3.3.2 in the Mining Standard. We've combined it with 2.3.3.4 from the Mining Standard, so that all of the expectations of the process are included in one requirement. Procurement is now addressed in 2.3.3.6.

There are slightly differing expectations of the process for exploration (Stages 3) and mine development (pre-permitting, permitting, construction).

CONSULTATION QUESTION 35: Should we add that the planning process specifically include development of local employment targets/commitments and/or mentorship programs to improve the skills base in communities? If so, would these apply to all stages, or should these commitments be made for the mining project stage in recognition

[89] IFC Advisory Services. 2010. Strategic Community Investment: A Good Practice Handbook for Companies Doing Business in Emerging Markets. p. 78. https://www.ifc.org/wps/wcm/connect/95c6b4b5-2097-4f47-9518-7a21b8516c1a/12014complete-web.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-95c6b4b5-2097-4f47-9518-7a21b8516c1a-jkD15-5

[90] "Relevant stakeholders" may include, for example, local economic planning entities, community service groups, social services agencies, land-use focused groups, chambers of commerce, artisanal and small-scale mining representatives, faith-based groups, school boards, conservation organizations, etc.

"Community initiatives" may include any projects or undertakings that support the community, such as infrastructure, training programs, social programs, scholarships, mentorships, grants, etc.

that large-scale mines, once developed, will create jobs and generate funds to offer to these types of training and mentorship programs?

2.3.3.3. The planning process shall:

a. Have broad local participation (including women and men, vulnerable groups and traditionally marginalized community members, e.g., children, youth, the elderly, or their representatives);
b. Adhere to principles of good governance and transparency;
c. Develop initiatives that benefit a broad spectrum of the community (e.g., women, men, children, youth, vulnerable and traditionally marginalized groups); and
d. Develop mechanisms that can be self-sustaining after mine closure (including the building of community capacity to oversee and sustain any projects or initiatives agreed upon through negotiations).

Pre-permitting | Mine Permitting | Construction

2.3.3.4. The planning process and any outcomes or decisions shall be documented and made publicly available.

NOTE FOR 2.3.3.4: This was 2.3.3.5 in the Mining Standard.

Stage 3 | Pre-permitting | Mine Permitting | Construction

2.3.3.5. In collaboration with the community, the company shall periodically monitor the effectiveness of any mechanisms or agreements developed to deliver community benefits, based on agreed upon indicators, and evaluate if changes need to be made to those mechanisms or agreements.

NOTE FOR 2.3.3.5: This was 2.3.3.6 in the Mining Standard.

It is assumed that monitoring of agreements made during pre-permitting and/or permitting would begin during actual mining operations. But if there were benefits that were to be realized during construction (e.g., job targets or other initiatives) then those would need to be monitored during the construction phase.

Stage 3 | Construction

2.3.3.6. The company shall develop a local procurement policy, and demonstrate that efforts have been made to support local suppliers and businesses.

NOTE FOR 2.3.3.6: This is a new approach. A reference was made to procurement in requirement 2.3.3.4 in the Mining Standard. IRMA has received comments on its Mining Standard that relate to local procurement. There has been a suggestion to separate local procurement from the participatory planning process for community development initiatives, and instead, have a standalone requirement. This makes sense, as local procurement is another means to provide benefits at the local level, but is not based on philanthropy but rather a business relationship that can benefit the supplier and purchaser.

During the exploration and development stages, companies aren't likely buying massive volumes of goods, and local companies or businesses may not have many of the goods or services that these companies need (nor the impetus to develop services or stock supplies since the company may or may not be present long term).

However, efforts that are made to "buy local" provide a demonstrate that companies are interested in supporting local economies. Being transparent about local procurement intentions, by releasing a public policy, is another way to both manage expectations and demonstrate that local procedure is considered important by the company.

CONSULTATION QUESTION 36: Are we setting the right level of expectation when it comes to local procurement? If not, what is the appropriate level of expectation related to local procurement during each of the stages of exploration and development?

Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

Chapter 2.4—Resettlement

NOTE TO REVIEWERS ON CHAPTER 2.4:

Some minor revisions were made to this chapter to try to reduce overlap.

We have included the Construction stage throughout this chapter, even though it is likely that resettlement planning and implementation are most likely to have been completed before mine construction begins. The main reason we retained these requirements for the construction phase is that a company might decide to have its mine construction project evaluated against this standard and they may not have carried out resettlement according to best practices. In such cases, they should still be scored against these requirements. However, if the requirements were sufficiently fulfilled at an earlier stage, and there were no new resettlement activities proposed during the Construction stage, then they would not need to be repeated during Construction.

BACKGROUND

There are well-documented economic, social and environmental risks related to resettlement. People may be economically displaced from their livelihoods as well as physically displaced from their lands, homes, communities, and social and cultural ties. If planned or executed poorly resettlement may lead to increased impoverishment of affected households.

Resettlement is considered involuntary when people do not wish to move but do not have the legal right to refuse land acquisition that results in their displacement.[91] The International Finance Corporation's (IFC) Performance Standard 5 on Land Acquisition and Involuntary Resettlement states that involuntary resettlement should be avoided where possible.

The IFC encourages its clients to use negotiated settlements, even if they have the legal means to acquire land without the seller's consent.[92] Negotiated settlements typically give affected persons a greater role in planning the resettlement, help avoid expropriation and eliminate the need to use governmental authority to remove people forcibly.[93]

When deemed unavoidable, involuntary resettlement, like other evictions, must only be carried out under exceptional circumstances and in accordance with international human rights law.[94]

OBJECTIVES/INTENT OF THIS CHAPTER

To avoid involuntary resettlement, and when that is not possible, equitably compensate affected persons and improve the livelihoods and standards of living of displaced persons.

SCOPE OF APPLICATION

RELEVANCE: This chapter applies if exploration and development-related activities could result (or have resulted) in the physical or economic displacement and involuntary resettlement of people.

This chapter does not apply to voluntary resettlement (i.e., market transactions in which the seller is not obliged to sell and the buyer cannot resort to expropriation or other compulsory procedures sanctioned by the legal system of

[91] According to the International Finance Corporation, "This occurs in cases of (i) lawful expropriation or temporary or permanent restrictions on land use and (ii) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller fail." (IFC. 2012. IFC Performance Standards on Environmental and Social Sustainability. Performance Standard 5: Land Acquisition and Involuntary Resettlement. Para. 1)

[92] IFC Performance Standard 5. Para. 3

[93] European Bank for Reconstruction and Development. 2014. Performance Requirement 5. Land Acquisition, Involuntary Resettlement and Economic Displacement. p. 30. www.ebrd.com/news/publications/policies/environmental-and-social-policy-esp.html

[94] See Kothari, M. 2007. "Basic Principles and Guidelines on Development-based Evictions and Displacement". A/HRC/4/18. www.ohchr.org/Documents/Issues/Housing/Guidelines_en.pdf

the host country if negotiations fail). As with involuntary resettlement, however, there are risks such as impoverishment that accompany voluntary resettlement. IRMA therefore encourages companies to implement measures to maximize benefits for any household voluntarily resettled as a result of project activities.

CRITICAL REQUIREMENTS IN THIS CHAPTER

Companies must obtain the free, prior and informed consent of indigenous peoples prior to resettling them (2.4.6.1), and if resettlement has occurred of any population, the company monitors and evaluates its implementation and takes corrective actions until the provisions of resettlement action plans and/or livelihood restoration plans have been met (2.4.7.1).

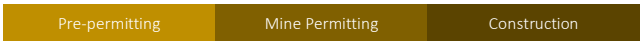
Resettlement Requirements

2.4.1. Risk and Impact Assessment

NOTE FOR 2.4.1: Requirements 2.4.1.1, 2.4.1.2, 2.4.1.3 and 2.4.1.4 from the Mining Standard have been combined.

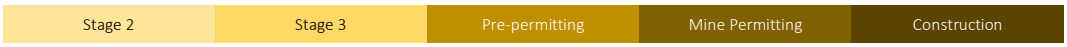
2.4.1.1. If there is the potential that a proposed mining project may require land acquisition that could result in the involuntary resettlement (hereafter referred to as resettlement) of people, the company shall undertake an assessment process to evaluate the potential direct and indirect risks and impacts related to the physical and/or economic displacement of people. The assessment, which may be scaled to the scope of the potential resettlement, shall:

a. Be completed prior to any resettlement of people;
a. Be carried out by competent professionals with experience in resettlement related to large-scale development projects;
b. Include identification of alternative project designs to avoid, and if that is not possible, minimize the displacement of people;
c. Include identification and analysis of the social, cultural, human rights, conflict, environmental and economic risks and impacts to displaced persons and host communities[95] for each project design alternative, paying particular attention to potential impacts on women, children, the poor and vulnerable groups; and
d. Include identification of measures to prevent and mitigate risks and impacts, and estimate the costs of implementing the measures.



2.4.1.2. The assessment shall be documented and made public, or, at minimum, be made available to potentially affected people and their advisors.

NOTE FOR 2.4.1.2: This was 2.4.1.5 in the Mining Standard. We added documented to ensure that the risk assessment, and in particular the rationale related to alternative project designs to avoid resettlement, are fully captured.



2.4.2. Community Engagement

2.4.2.1. The company shall disclose relevant information and consult with potentially affected people and communities, including host communities, during:

a. The assessment of displacement and resettlement risks and impacts, including the consideration of alternative mining project designs to avoid or minimize resettlement;

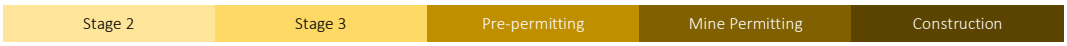
[95] Host communities may also be called "receiving communities."

b. The development of resettlement and livelihood options; and
c. The development, and if relevant, the implementation, monitoring and evaluation of a Resettlement Action Plan (RAP) and/or Livelihood Restoration Plan (LRP).

NOTE FOR 2.4.2.1.c: Added "if relevant" because implementation, monitoring and evaluation will only begin to occur when resettlement happens. It is unlikely that the act of resettlement for proposed mining projects will occur during pre-permitting, but the development of a resettlement action plan might begin at that stage.

2.4.2.2. The company shall facilitate access, if desired by potentially affected people and communities, including host communities, to independent legal or other expert advice from the earliest stages of project design and assessment, through monitoring and evaluation of the resettlement process.[96]

2.4.2.3. People from affected communities, including host communities, shall have access to an effective mechanism to raise and seek recourse for concerns or grievances related to displacement and resettlement.[97]



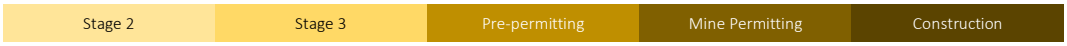
2.4.3. Resettlement and Livelihood Restoration Planning and Preparation

2.4.3.1. When project-related displacement is deemed unavoidable, a census shall be carried out to collect appropriate socio-economic baseline data to identify the people who will be physically or economically displaced by the project and determine who will be eligible for compensation and assistance.

2.4.3.2. In the absence of host government procedures, the company shall establish compensation eligibility criteria and a cut-off date for eligibility. Information regarding the cut-off date shall be well documented, and disseminated along with eligibility information throughout the mining project area.

2.4.3.3. In the case of physical displacement, the company shall develop a Resettlement Action Plan. If the project involves economic displacement only, a Livelihood Restoration Plan shall be developed. In either case, these plans shall, at a minimum:

a. Describe how affected people will be involved in an ongoing process of consultation throughout the resettlement/livelihood restoration planning, implementation and monitoring phases;
b. Describe the strategies to be undertaken to mitigate the negative impacts of displacement and improve or restore livelihoods and standards of living of displaced people, paying particular attention to the needs of women, the poor and vulnerable groups;
c. Describe development-related opportunities and benefits for affected people and communities;
d. Describe the methods used for valuing land and other assets;
e. Establish the compensation framework (i.e., entitlements and rates of compensation for all categories of affected people, including host communities) in a transparent, consistent, and equitable manner;
f. Include a budget and implementation schedule; and
g. Be publicly available.



2.4.4. Mitigation Measures Related to Physical Displacement

2.4.4.1. When people are physically displaced as a result of the development of a mine or its associated facilities:

[96] This may involve providing funding to enable affected people to select and consult with experts; work with government agencies and/or non-governmental organizations to provide free legal and other services to affected people; or other means.

[97] The operational-level grievance mechanism developed as per Chapter 1.4 may be used as a mechanism to receive and address resettlement related grievances, or a mechanism may be created to handle only resettlement-related concerns. If a separate mechanism is developed, it shall be done in a manner that is consistent with IRMA Chapter 1.4 (in particular, it shall be developed in a manner that meets the UNGP effectiveness criteria for grievance mechanisms).

a. The company shall provide relocation assistance that is suited to the needs of each group of displaced peoples and is sufficient for them to improve or at least restore their standard of living at an alternative site;
b. New resettlement sites built for displaced people shall offer improved living conditions; and
c. Displaced people's preferences with respect to relocating in pre-existing communities and groups shall be taken into consideration and existing social and cultural institutions of displaced peoples and any host communities shall be respected.

NOTE FOR 2.4.4.1: Guidance for mines and auditors will state that if physical displacement is planned but has not yet occurred, companies will be expected to demonstrate that the resettlement action plan contains provisions that the elements in 2.4.4.1 will occur

Pre-permitting | Mine Permitting | Construction

2.4.4.2. In cases where physically displaced people have formal legal rights to the land or assets they occupy or use, or do not have formal legal rights but have a claim to land that is recognized or recognizable under national (host country) law:

a. The company shall offer the choice of replacement property (land and assets) of at least equal value and characteristics, security of tenure, and advantages of location; and
b. If cash compensation is appropriate and preferred by the affected people, compensation shall be sufficient to replace lost land and other assets at full replacement cost in local markets.[98]

2.4.4.3. In cases where physically displaced people have no recognizable legal right or claim to the land or assets they occupy or use, the company shall:

a. Offer options for adequate housing with security of tenure; and
b. Compensate for the loss of assets other than land at full replacement cost, provided that the people had been occupying the project area prior to the cut-off date for eligibility.

NOTE FOR 2.4.4.2 and 2.4.4.3: Guidance for mines and auditors will state that if physical displacement is planned but has not yet occurred, companies will be expected to demonstrate that the resettlement action plan contains provisions that the elements in 2.4.4.2 and 2.4.4.3 will occur.

Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

2.4.5. Mitigation Measures Related to Economic Displacement

2.4.5.1. If project-related land acquisition or restrictions on land use result in economic displacement, regardless of whether or not the affected people are physically displaced, the company shall apply the following measures:

a. When commercial structures are affected, the business owners shall be compensated for the cost of re-establishing commercial activities elsewhere, for lost net income during the period of transition, and for the costs of the transfer and reinstallation of the plant, machinery or other equipment, and the employees shall be compensated for lost income;
b. When affected people have legal rights or claims to land that are recognized or recognizable under national law, replacement property of equal or greater value shall be provided, or, where appropriate, cash compensation at full replacement cost; and
c. Economically displaced people who are without legally recognizable claims to land shall be compensated for lost assets other than land at full replacement cost.

2.4.5.2. All economically displaced people whose livelihoods or income levels are adversely affected shall be provided opportunities to improve, or at least restore, their means of income-earning capacity, production levels,

[98] According to IFC PS 5, footnote 21, "Payment of cash compensation for lost assets may be appropriate where (i) livelihoods are not land-based; (ii) livelihoods are land-based but the land taken for the project is a small fraction of the affected asset and the residual land is economically viable; or (iii) active markets for land, housing, and labor exist, displaced persons use such markets, and there is sufficient supply of land and housing."

and standards of living, and transitional support shall be provided based on a reasonable estimate of the time required to restore their income-earning capacity, production levels, and standards of living. Additionally:

a. For people whose livelihoods are land-based, replacement land that has a combination of productive potential, locational advantages, and other factors at least equivalent to that being lost shall be offered as a matter of priority;
b. For people whose livelihoods are natural resource-based and where project-related restrictions on access apply, continued access to affected resources or access to alternative resources with at least equivalent livelihood-earning potential and accessibility shall be provided; and
c. If circumstances prevent the company from providing land or similar resources as described above, alternative income earning opportunities shall be provided to restore livelihoods.[99]

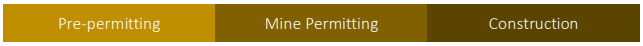
NOTE FOR 2.4.5.1 and 2.4.5.2: Guidance for mines and auditors will state that if economic displacement is planned but has not yet occurred, companies will be expected to demonstrate that the livelihood restoration plan contains provisions that the elements in 2.4.5.1 and 2.4.5.2 will occur.

2.4.6. Resettlement and Livelihood Restoration Agreements and Implementation

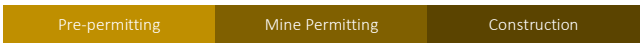
NOTE FOR 2.4.6.1 (below): In the Mining Standard, this requirement was prefaced with "In order to be certified by IRMA, if a new project will require the displacement of indigenous peoples the company shall obtain the free, prior and informed consent (FPIC). . ."

Instead of using that language, we have made 2.4.6.1 a critical requirement, which will have the same effect.

2.4.6.1. (Critical Requirement)
If a proposed mining project or associated facilities will require the displacement of indigenous peoples the company shall obtain the free, prior and informed consent (FPIC) of affected indigenous communities before proceeding with the resettlement and mine development (as per IRMA Chapter 2.2).



2.4.6.2. If a proposed mining project or associated facilities will require the displacement of non-indigenous peoples, the company shall make a good faith effort to negotiate agreements with all households that will be physically or economically displaced by the mining project before proceeding with the resettlement, even if the company has the legal means to acquire land or restrict land use without their consent.



NOTE ON 2.4.6.3 – 2.4.6.7 (below): We have not included Stage 1 because there is no on-the-ground activity at this point that would require resettlement. Also, requirements 2.4.6.4 – 2.4.6.7 will only become relevant for other Stages once resettlement has begun.

2.4.6.3. Prior to negotiating with affected people, the company shall provide or facilitate access to resources necessary to participate in an informed manner. This shall include, at minimum:

a. Copies of RAP and/or LRP;
b. Details on what to expect at various stages of the resettlement or livelihood restoration process (e.g., when an offer will be made to them, how long they will have to respond, how to access the grievance mechanism if they wish to appeal property or asset valuations, legal procedures to be followed if negotiations fail); and
c. Independent legal experts or others to ensure that affected people understand the content of any proposed agreement and associated information.

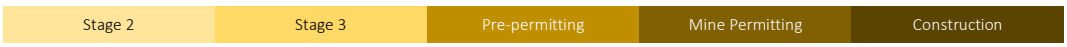
[99] E.g., Such as credit facilities, training, cash, or employment opportunities.

2.4.6.4. In cases where affected people reject compensation offers that meet the requirements of this chapter and, as a result, expropriation or other legal procedures are initiated, the company shall explore opportunities to collaborate with the responsible government agency, and, if permitted by the agency, play an active role in resettlement planning, implementation, and monitoring to mitigate the risk of impoverishment of those affected people.

2.4.6.5. Forced evictions shall not be carried except in accordance with law and international best practice,[100] and the requirements of this chapter.

2.4.6.6. The company shall take possession of acquired land and related assets only after compensation has been made available, and, where applicable, resettlement sites and moving allowances have been provided to the displaced people.

2.4.6.7. The company shall document all transactions to acquire land rights, and all compensation measures and relocation activities.



2.4.7. Resettlement and Livelihood Restoration Monitoring and Evaluation

NOTE FOR 2.4.7: Implementation of the RAP and/or LRP, and monitoring and evaluation of that implementation will only begin to occur when resettlement happens. We have applied these requirements to Pre-Permitting, although it seems unlikely that the act of resettlement for proposed mining projects will occur during pre-permitting.

CONSULTATION QUESTION 37: Do you know of any situations when resettlement might occur during pre-permitting? Or should we remove the requirements in this criterion from the pre-permitting stage?

2.4.7.1. (Critical Requirement)
The company shall establish and implement procedures to monitor and evaluate the implementation of a Resettlement Action Plan (RAP) or Livelihood Restoration Plan (LRP), and take corrective action as necessary until the provisions of the RAP/LRP and the objectives of this chapter have been met.

NOTE FOR 2.4.7.1: Guidance for mines and auditors will state that if resettlement is planned but has not yet occurred, companies will be expected to demonstrate that RAP and/or LRP contains provisions related to monitoring and evaluation.

2.4.7.2. Periodically, the company shall report to affected people and other relevant stakeholders on progress made toward full implementation of the RAP or LRP.

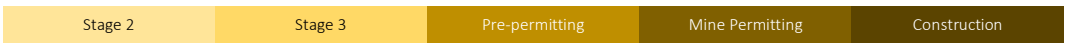
NOTE FOR 2.4.7.2: This will only be relevant when monitoring and evaluation has begun.

2.4.7.3. Where resettlement is deemed to pose a risk of significant adverse social impacts the company:

a. Shall retain competent professionals to verify the company's monitoring information and provide advice on additional steps needed to achieve compliance with the requirements of this chapter; and
b. Shall commission a completion audit that:
    i. Occurs after the company deems that its RAP/LRP has been fully and successfully implemented;
    ii. Is carried out by external resettlement experts;
    iii. Includes, at a minimum, a review of the mitigation measures implemented by the company, a comparison of implementation outcomes against the requirements of this chapter, and a determination as to whether the commitments made in the RAP/LRP have been delivered and the monitoring process can therefore be terminated; and
    iv. Is made available to affected people and their advisors.

[100] See: UN Committee on Economic, Social and Cultural Rights (CESCR). 1997. General Comment No. 7: The right to adequate housing (Art. 11.1): forced evictions. In particular, see Paragraph 15. Available at: www.refworld.org/docid/47a70799d.html

NOTE FOR 2.4.7.3: This will only be relevant when monitoring and evaluation has begun.



2.4.8. Private Sector Responsibilities Under Government-Managed Resettlement

2.4.8.1. Where land acquisition and resettlement are the responsibility of the government, the company shall collaborate with the responsible government agency, to the extent permitted by the agency, to achieve outcomes that are consistent with this chapter.

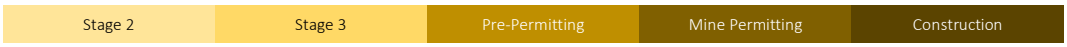
NOTE FOR 2.4.8.1: We have included the Pre-Permitting Stage here, because we are assuming that collaboration with government may need to begin during pre-permitting.

2.4.8.2. The company shall identify government resettlement and compensation measures. If these measures do not meet the relevant requirements of this chapter, the company shall prepare and implement a supplemental plan that, together with the documents prepared by the responsible government agency, shall address the relevant requirements of this chapter. The company shall include in its supplemental plan, at a minimum:

a. Identification of affected people and impacts;
b. A description of regulated activities, including the entitlements of physically and economically displaced people provided under applicable national laws and regulations;
c. The supplemental measures to achieve the requirements of this chapter in a manner that is permitted by the responsible agency and an implementation schedule; and
d. The financial and implementation responsibilities of the company in the execution of its supplemental plan.

NOTE FOR 2.4.8.2: Added that the company should not only prepare but also implement the plan. This nuance was left out of the Mining Standard, and should be considered for addition in the next revision of that Standard.

Also, we have not included the Pre-Permitting Stage here, because we are assuming that the government's own plan will not be prepared and implemented until the mine has been permitted (or is close to being permitted).



NOTES

This chapter uses, as its basis, the International Finance Corporation's (IFC) Performance Standard 5 – Land Acquisition and Involuntary Resettlement, which applies to physical displacement and/or economic displacement resulting when land rights or land use rights are acquired by a mineral exploration or development company: through expropriation or other compulsory procedures in accordance with the legal system of the host country; or through negotiated settlements with property owners or those with legal rights to the land if failure to reach settlement would have resulted in expropriation or other compulsory procedures.

Chapter 2.5—Emergency Preparedness and Response

NOTE TO REVIEWERS ON CHAPTER 2.5:

The requirements in this draft chapter take a different approach compared to the IRMA Mining Standard. This chapter is longer than the one in the Mining Standard because it more clearly outlines expectations, whereas the Mining Standard relies on companies demonstrating conformance with the United Nations' (UN) APELL for Mining guidance.[101] It has become clear that there is a need for more specific steps to ensure that companies understand what is best practice in emergency preparedness and response. The chapter aligns with the requirements in IRMA's draft Standard for Responsible Mineral Processing (which is currently going through public consultation).[102]

The requirements below draw from the UN's generic work on Awareness and Preparedness for Emergencies at Local Level (APELL),[103], as well as the UN's specific guidance for the mining industry, information from the International Labor Organization,[104] the Prospectors and Developers Association of Canada,[105] and other sources.

We have also added in emergency preparedness and response elements related to tailings facilities in some requirements, so that companies can ensure they are aligned with the Global Industry Standard for Tailings Management[106] (see more in the Note to Reviewers on Chapter 4.1).

Generally speaking, the type of an emergency arising from mineral exploration and development is limited, and is unlikely to result in catastrophic failures, so the approach taken here is intended to enable companies to tailor the emergency preparation and response activities to the level of risk and potential impacts appropriate to the scale and nature of their activities.

We have not applied any of the requirements to Stage 1 of Exploration, the rationale being that there is no on-the-ground work that would create emergency situations.

Mineral development companies that are proposing to develop mining projects will not only be expected to have plans in place for their project development activities,[107] but they will also be expected to have developed emergency and preparedness response plans for the proposed projects, including for potential catastrophic failures. Plans for proposed projects will need to be far more extensive than what is needed for exploration (and project development activities), particularly with respect to community impacts, to address the higher level of risk and potential for catastrophic accidents inherent in mining projects as compared to explorations activities.

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[101] United Nations Environment Programme. 2001. APELL for mining: guidance for the mining industry in raising awareness and preparedness for emergencies at local level. https://wedocs.unep.org/handle/20.500.11822/8093

[102] The first 60-day period of consultation has closed, but IRMA is always open to receiving stakeholder feedback. The draft is available on the IRMA website under the IRMA Draft Mineral Processing Standard tab: https://responsiblemining.net/resources/#resources-irma

[103] United Nations Environment Programme. 2015. Awareness and Preparedness for Emergencies at Local Level (APELL), 2nd Edition. https://www.preventionweb.net/files/45469_unepawarenesspreparednessemergencie.pdf

[104] International Labour Organization. C174-Prevention of Major Industrial Accidents Convention, 1993. https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:312319

[105] Prospectors and Developers Association of Canada. e3-Plus Toolkit "Emergency Response." https://www.pdac.ca/priorities/responsible-exploration/e3-plus/toolkits/health-and-safety/emergency-response

[106] ICMM, UNEP and PRI. 2020. Global Industry Standard for Tailings Management. https://globaltailingsreview.org/global-industry-standard/

[107] We are proposing the following definition for **project development activities**:

> Field- and office-based activities carried out during the pre-permitting and permitting stages to develop a mine proposal, support the environmental and social impact assessment of a proposal, generate information necessary to fulfill regulatory and permitting requirements, engage with stakeholders and rights holders, and maintain company operations.

BACKGROUND

Modern mineral exploration and development projects are significant industrial undertakings and have operational risks such as the potential for vehicular and other accidents, fires, chemical spills, and environmental incidents.

Mineral exploration and development companies have direct responsibility for minimizing risks (through prevention, mitigation, and preparedness) and developing effective plans for responding to emergencies or major accidents.

Mineral exploration and development companies should also work with joint venture partners, contractors and suppliers providing bulk and dangerous materials to put adequate emergency response plans in place to deal with both on-site and off-site accidents. It is also important for companies to coordinate and communicate with communities that could be affected by these accidents, both to protect health and safety in these communities, and so that the emergency resources in the communities are available if needed.

OBJECTIVES/INTENT OF THIS CHAPTER

To plan for and be prepared to respond effectively to industrial emergency situations that may affect offsite resources or communities, and minimize the likelihood of accidents, loss of life, injuries, and damage to property, environment, health and social well-being.

SCOPE OF APPLICATION

RELEVANCE: This chapter applies to the mineral exploration and development company and to its contractors (and subcontractors).

CRITICAL REQUIREMENTS IN THIS CHAPTER

There is an emergency response plan in place (2.5.3.1) and there is worker and community participation in emergency response exercises to test the plan (2.5.4.4).

Emergency Preparedness and Response Requirements

2.5.1. Identify Key Emergency Response Stakeholders and Capacity Needs

2.5.1.1. The company shall identify public sector agencies, first responders, local authorities and institutions, and key individuals and organizations in potentially affected communities (hereafter referred to as key stakeholders) that should be involved in emergency preparedness and response planning for project development activities, and the proposed mining project. Particular efforts shall be made to identify those who will be integral to response and recovery efforts related to major accidents such as tailings facility failures.

NOTE FOR 2.5.1.1: We have added the blue text to be consistent with the expectations in the Global Industry Standard on Tailings Management[108] (GISTM), requirement 13.2.

We are proposing that this identification must begin during Permitting (though it could start earlier), since tailings facilities and others that could lead to major accidents will be more fully conceptualized during permitting, and it will be more important to know the players who should be engaged in emergency preparedness and response planning in relation to those facilities.

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2.5.1.2. The company shall consult with key stakeholders to determine their roles and responsibilities with respect to emergency preparedness and response, and the current resources available for key stakeholders to respond to emergencies related to mine construction and the proposed mining project, including tailings facilities. If deficiencies in resources or weaknesses in community response capabilities are identified, the

[108] ICMM, UNEP and PRI. 2020. Global Industry Standard for Tailings Management (GISTM). https://globaltailingsreview.org/global-industry-standard/

company shall collaborate with key stakeholders to develop and implement a plan to build the capacity and resources necessary to facilitate effective emergency preparedness and response.

NOTE FOR 2.5.1.2: During Construction, in addition to planning for the proposed mining project there may also be construction activities that will require engagement with emergency preparedness and response personnel and stakeholders in affected communities. So both are included in 2.5.1.1 and 2.5.1.2.

Construction

2.5.2. Evaluate Hazards and Assess Risks

NOTE FOR 2.5.1: Note that we are proposing to revise our definition of workers to include contractors. See CONSULTATION QUESTION 53 (in Note for Chapter 3.1). So the requirements below would be inclusive of contractors.

2.5.2.1. The company shall collaborate with workers, workers' representatives and key stakeholders to:

a. Compile a comprehensive list of foreseeable industrial accidents related to the proposed mining project and mine construction, including potential failure of tailings impoundments and accidents that may be caused by natural events or disasters, that pose risks to workers, offsite communities or natural resources;[109]
b. Assess the potential severity of the impact for each possible accident;
c. Assess the probability of occurrence of each possible accident;
d. Identify key emergency scenarios including, but not limited to, all potential accidents that have a moderate or high severity or probability of occurrence; and
e. Identify measures to prevent, and if that is not possible, minimize the negative consequences that could occur from all potential key emergency scenarios.

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2.5.2.2. Evaluations shall include assessment of the potential consequences for all credible flow failure scenarios related to proposed tailings facilities,[110] and clearly identify potentially affected areas and the approximate degree of expected consequences.

NOTE FOR 2.5.2.2: This is new. It has been added to align with GISTM (13.1). We have included the Construction stage because if not done earlier these issues need to be factored into the assessment at that stage. Also, there may be issues that arise during construction that change tailings facilities designs (so 2.5.2.3, below is also relevant during Construction).

2.5.2.3. Evaluations shall be updated if there is a material change to the proposed mining project or to the social, environmental and local economic context that could lead to changes in the consequences related potential accidents and facility failures.

NOTE FOR 2.5.2.3: This is new. It has been added to align with GISTM (13.1). GISTM says updates to Emergency Preparedness and Response Plans (EPRP) must occur if there are material changes in tailings facilities or social, environmental, economic context, however, given that the EPRP is based on the understanding of consequences it seems reasonable to expect that the assessment of potential consequences also be updated. This is also good practice for potential accidents that may be unrelated to tailings facilities.

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2.5.3. Emergency Preparedness and Response Plans

[109] Ibid.

[110] For more on credible flow failure scenarios, which are produced during a breach analysis for a tailings facility, see Chapter 4.1, requirement 4.1.3.3.c.

NOTE ON 2.5.3: 2.5.3.1 and 2.5.3.2 are based on requirement 2.5.1.1 in the Mining Standard. We are requiring that plans be in place to address emergencies that may arise from accidents or incidents that take place during exploration, or in relation to project development activities, and construction activities.

CONSULTATION QUESTION 40: Emergency and response plans for employee/worker accidents during mine construction and operation are often addressed by regulatory requirements separate from emergency and response plans intended for the public. As a result, we have separated these two elements (workers in 2.5.3.1 and public/environment in 2.5.3.2). Do you agree with this approach?

CONSULTATION QUESTION 41: Emergency response plans are not typically required for exploration and development activities, but are required for mining operations. Based on the potential for accidents associated with exploration activities, emergency response plans it seems reasonable that they should be required for the protection of workers. However, if there is not significant potential for impacts to the public and environment during exploration, we are not requiring that an emergency response plan be required for protection of the public and environment (IRMA Guidance will explain that the requirement is relevant unless companies can provide auditors with a sound rationale for why the plans are not relevant). Do you agree with this approach?

CONSULTATION QUESTION 42: It is typical to produce one emergency and response plan for accidents such as chemical spills, fires, and other similar events, and another plan dedicated solely to tailings storage failures. Should IRMA separately define these different requirements (for the permitting and construction stages) to be more consistent with industry norms?

2.5.3.1. (Critical Requirement)
The company shall prepare and implement an emergency preparedness and response plan and associated procedures for the protection of workers.[111] The plan shall:

a. Be developed through consultations with workers' representatives;
b. To the extent possible, prioritize the elimination of hazards that may lead to major industrial accidents, and when hazard elimination is not possible, outline proactive measures to minimize the consequences of all potential industrial accidents that pose a significant risk to workers;[112]
c. Contain responses, including but not limited to, evacuation and emergency medical procedures, for all potential industrial accidents that pose a significant risk to worker health or safety;
d. Be accessible to all workers in languages and formats that are understandable, with procedures clearly displayed throughout all relevant facilities.

2.5.3.2. (Critical Requirement)
If relevant, the company shall prepare and implement an emergency preparedness and response plan and associated procedures for the protection of the public and the environment. The plan shall:

a. Be developed through consultations with key stakeholders from potentially affected communities;
b. To the extent possible, prioritize the elimination of hazards, and if elimination is not possible, outline proactive measures to minimize the consequences of all potential industrial accidents that pose a significant risk to public health, safety, the environment or property, and that pose the greatest concern to communities;[113]
c. Include measures to protect vulnerable groups (e.g., children, the elderly, or people with disabilities);
d. Include contact information for all key stakeholders;
e. Be consistent with any local or regional emergency or disaster response plans; and

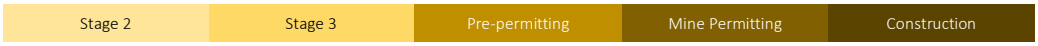
[111] This is based on ILO Conventions 174. The plan may be integrated with 2.5.3.2, below.

[112] If relevant, measures shall include, but not be limited to: installation of alarms, early warning devices, smoke and gas detection equipment, provision of fire safety and fire-fighting equipment, medical emergency supplies, emergency lighting, emergency communications equipment, suitable numbers of appropriately located, clearly marked (in local language(s)) and unblocked emergency exits and escape routes, and designated safe assembly locations.

[113] If relevant, measures shall include, but not be limited to: installation of alarms, early warning devices, medical emergency supplies, emergency lighting, emergency communications equipment, suitable numbers of appropriately located, clearly marked (in local language(s)) and unblocked escape routes, and designated safe assembly locations. For tailings facilities, additional mitigation measures will need to be considered.

f. Be publicly accessible.

NOTE FOR 2.5.3.2: This requirement would be considered relevant unless companies could demonstrate to auditors that the exploration or proposed mining project does not pose a significant risk to public health, safety or the environment.



NOTE FOR 2.5.3.3 and 2.5.3.4: We have included two more requirements that pertain to emergency responses plans for proposed mining projects (2.5.3.3 and 2.5.3.4). These requirements include elements that are contained in the Global Industry Standard for Tailings Management. Because the plans are only preliminary, there are some elements from the GISTM that are not included, such as testing plans, which should be done prior to the tailings facility becoming operational, and maintaining a shared state of readiness with the community, which will be relevant when the tailings facility becomes operational. These will likely be proposed for inclusion in the IRMA Mining Standard, when it undergoes revision.

CONSULTATION QUESTION 43: It is typical to produce one emergency and response plan for accidents such as chemical spills, fires, and other similar events, and another plan dedicated solely to tailings storage failures. Should IRMA separately define these different requirements (e.g., add another requirement specifically for emergency response related to tailings facilities), or is the approach below sufficient?

2.5.3.3. The company shall prepare a preliminary emergency preparedness and response plan for the proposed mining project that outlines measures to protect workers.[114] The plan, developed through consultations with workers' representatives, shall:

a. Be developed through consultations with workers' representatives;
b. Address risks related to tailings facilities, which shall be informed by credible flow failure scenarios and the assessment of potential consequence;
c. To the extent possible, prioritize the elimination of hazards that may lead to major industrial accidents, and when hazard elimination is not possible, outline proactive measures to minimize the consequences of all potential industrial accidents that pose a significant risk to workers;[115]
d. Contain responses, including but not limited to, evacuation and emergency medical procedures, for all potential industrial accidents that pose a significant risk to worker health or safety.

2.5.3.4. The company shall prepare a preliminary emergency preparedness and response plan for the proposed mining project that outlines measures for the protection of the public and the environment. The plan shall:

a. Be developed through consultations with key stakeholders from potentially affected communities;
b. Address risks related to tailings facilities, which shall be informed by credible flow failure scenarios and the assessment of potential consequence;
c. To the extent possible, prioritize the elimination of hazards, and if elimination is not possible, outline proactive measures to minimize the consequences of all potential industrial accidents that pose a significant risk to public health, safety, the environment or property, and that pose the greatest concern to communities;[116]
d. Include measures to protect vulnerable groups (e.g., children, the elderly, or people with disabilities);

[114] This plan may be integrated with 2.5.3.4, below.

[115] If relevant, measures to minimize consequence shall include, but not be limited to: installation of alarms, early warning devices, smoke and gas detection equipment, provision of fire safety and fire-fighting equipment, medical emergency supplies, emergency lighting, emergency communications equipment, suitable numbers of appropriately located, clearly marked (in local language(s)) and unblocked emergency exits and escape routes, and designated safe assembly locations.

For tailings facilities, additional mitigation measures will need to be considered.

[116] If relevant, measures shall include, but not be limited to: installation of alarms, early warning devices, medical emergency supplies, emergency lighting, emergency communications equipment, suitable numbers of appropriately located, clearly marked (in local language(s)) and unblocked escape routes, and designated safe assembly locations.

For tailings facilities, additional mitigation measures will need to be considered.

e. If relevant, include provisions for providing immediate response to save lives, supply humanitarian aid and minimize environmental harm in the event of a catastrophic failure of a tailings facility;
f. Be consistent with any local or regional emergency or disaster response plans;
g. Be publicly accessible.

NOTE FOR 2.5.3.4: This requirement has some additions compared to the Mining Standard. In particular, references to response related to tailings facilities in 2.5.3.4.b and c are meant to align with the GISTM (13.1), and 2.5.3.4.e is meant to align with GISTM 13.4.

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2.5.4. Education, Training, Testing, Review and Updating

NOTE FOR 2.5.4: Requirements 2.5.4.2, and 2.5.4.3, 2.5.4.4, 2.5.4.5 and 2.5.4.6 contain the words "if relevant". We will add guidance that these requirements would not be relevant, for example, if there are no external stakeholders who may be put at risk by emergencies during exploration or construction activities. IRMA Guidance will also explain that the requirement will be considered applicable unless companies can provide auditors with a sound rationale for why the requirements are not relevant).

These requirements are included for Pre-permitting and Permitting because there may be company staff on site carrying out studies or sampling, and therefore, the potential for accidents exists. But requirements 2.5.4.1 – 2.5.4.6 are not meant to apply to emergency preparedness and response for proposed mining projects. 2.5.4.7 addresses that situation.

2.5.4.1. The company shall cover emergency preparedness and response measures during induction and refresher training for workers, appropriate to the area(s) in which the workers will be working.

2.5.4.2. If relevant, periodically the company shall undertake public awareness raising efforts to share information about the hazards and risks related to the project and emergency preparedness and response measures. Information shall be communicated to potentially affected stakeholders in languages and formats that are understandable to them.

2.5.4.3. If relevant, the company shall commission or deliver communications and media training related to emergency preparedness and response for relevant spokespersons within the company. It shall also be provided to spokesperson within the community, if relevant.

2.5.4.4. (Critical Requirement)
If relevant, the company shall carry out the following exercises to test emergency preparedness and response plans, and document lessons learned:[117]

a. Table top emergency response simulations, on an annual basis or more frequently;
b. Drills and exercises with workers and, if relevant, key stakeholders, every 24 months or more frequently;
c. If relevant, testing of on-site and off-site early warning systems on an annual basis or more frequently.

2.5.4.5. If relevant, on an annual basis, the company shall review and, if necessary, update contact information for key stakeholders listed in the emergency response plan.

2.5.4.6. If relevant, on an annual basis, the effectiveness of emergency preparedness response plans shall be evaluated and updated as necessary, taking into consideration:

a. Challenges encountered or deficiencies identified during testing;
b. Lessons learned from actual accidents or near-miss incidents at the project site other similar projects; and
c. Grievances or input received from stakeholders or workers.

[117] For example, see Mining Association of Canada Crisis Management and Communications Planning Reference Guide, Section 8. https://mining.ca/wp-content/uploads/2019/09/MAC-Crisis-Reference-Guide_June-2016-CLEAN-FINAL.pdf

See, also, UN APELL, pp. 55 – 57 and 90 – 96. https://mining.ca/wp-content/uploads/2019/09/MAC-Crisis-Reference-Guide_June-2016-CLEAN-FINAL.pdf

Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

2.5.4.7. The preliminary emergency preparedness response plan for the proposed mining project shall be updated if there is a material change to the proposed project or to the social, environmental and local economic context[118] that affects the evaluation of hazards and risks (see also 2.5.2.3).

NOTE FOR 2.5.4.7: This has been added to align with GISTM (13.1). It is an additional requirement only relevant during Permitting and Construction.

Mine Permitting | Construction

2.5.5. Public Liability Accident Insurance

NOTE FOR 2.5.5: Public liability insurance covers holders (e.g., an exploration or development company) for the cost of a claim made by a member of the public that has suffered injury or property damage as a result a company's business activities. In the case of exploration and construction, this might include damages from chemical spills, leaking tanks or pits, explosions, fires, aviation or auto accidents, or other project-related activities.

We have included these requirements for the Pre-Permitting and Permitting stages, assuming that there is still the potential for company activities to cause damage to property or persons (e.g., if staff or contractors are carrying out the surveys or baseline studies necessary to obtain permits).

2.5.5.1. Projects shall be covered by a public liability accident insurance policy for unplanned accidental events in the amount of at least USD 1 million per accident/occurrence to cover personal injury and property damage.[119]

NOTE FOR 2.5.5.1: The Mining Standard did not include a minimum amount of coverage. We have proposed coverage in the amount of USD 1 million per accident related to exploration and development activities. We have seen examples that are higher and lower than this.

CONSULTATION QUESTION 44: Is coverage of $1 million per accident/occurrence a reasonable minimum bar for exploration and development activities? If not, what is an appropriate way to determine what is a reasonable level of coverage? Should the amount be different during Pre-Permitting/Permitting and Construction?

2.5.5.2. If available, a company shall obtain liability insurance through a provider based in the host country of the project.

NOTE FOR 2.5.5.2: The Mining Standard did not include this requirement. It has been added to address the challenges, such as language barriers or difficulty accessing or contacting the providers, if claimants have to deal with foreign insurance companies in order to be reimbursed for claims. It is also a way to support the host country economy.

CONSULTATION QUESTION 45: Is this requirement reasonable or are there other ways to manage this type of situation?

2.5.5.3. The accident insurance coverage shall remain in force for as long as the company has legal responsibility for the project.

Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

[118] See Chapter 4.1, requirement 4.1.9.2.

[119] The public liability accident insurance shall cover unplanned accidental events such as road damage, flood damage, landslides, chemical spills, leaking tanks or pits, fires, explosions, aviation or vehicular accidents and others that may cause harm to people, property or natural resources on or off of the project site.

NOTES

The requirements in this chapter draw on the United Nations' (UN) APELL for Mining[120] the UN's generic work on Awareness and Preparedness for Emergencies at Local Level (APELL),[121] information from the International Labor Organization,[122] the Prospectors and Developers Association of Canada,[123] and other sources.

[120] United Nations Environment Programme. 2001. APELL for Mining: Guidance for the mining industry in raising awareness and preparedness for emergencies at local level. https://wedocs.unep.org/handle/20.500.11822/8093

[121] United Nations Environment Programme. 2015. Awareness and Preparedness for Emergencies at Local Level (APELL), 2nd Edition. https://www.preventionweb.net/files/45469_unepawarenesspreparednessemergencie.pdf

[122] International Labour Organization. C174-Prevention of Major Industrial Accidents Convention, 1993. https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:312319

[123] Prospectors and Developers Association of Canada. e3-Plus Toolkit "Emergency Response." https://www.pdac.ca/priorities/responsible-exploration/e3-plus/toolkits/health-and-safety/emergency-response

Chapter 2.6—Planning and Financing Reclamation and Closure

NOTE TO REVIEWERS ON CHAPTER 2.6:

This chapter has some major differences compared to the Mining Standard, and also some significant differences between Exploration (Stages 1, 2 and 3) and Mineral Development (i.e., Pre-permitting, Permitting and Construction). The main reason for the differences is that during Exploration, there will be both planning and implementation of reclamation activities that needs to occur, whereas during Pre-Permitting and Permitting, the company will be developing plans to estimate what the required reclamation and closure actions and costs will be for its proposed mining activities.

We have not applied the requirements to Exploration Stage 1, given that there is not ground disturbance at that stage.

During Construction, we are proposing that all plans, permits and financial assurance be finalized prior to the initiation of project construction.

As acknowledged at the beginning of this document, some aspects of exploration may occur concurrent with Pre-permitting, Permitting and/or Construction. Reclamation of exploration sites is one of these aspects. For example, there will be situations where a company decides to move on to pre-permitting based on some exploration results, but decides that certain areas that have been explored do not show promising mineralization. As a result, exploration in some parts of the project area (those areas not being proposed for potential mining) will cease, and reclamation can begin at the same time as the company develops a mine proposal.

We have not applied the exploration reclamation requirements directly to the pre-permitting and permitting stages because, as mentioned in the Note to Reviewers on page 5:

> "We recognize that some aspects of Stage 3 exploration, such as in-fill drilling, bulk sampling and reclamation of exploration sites, may happen concurrent with Pre-Permitting / Permitting / Construction. In such cases, the company will be expected to be meeting both the exploration-related requirements for Stage 3 activities and the Pre-Permitting/Permitting/Construction requirements for a mine proposal. . .
>
> We plan to include targeted questions for companies carrying out self-assessments or moving on to independent, third-party assessment to determine the appropriate scope and set of requirements that will be applicable to their situation."

BACKGROUND

Reclamation refers to the process of rehabilitation and stabilization such that disturbed land is returned to its former or other beneficial uses.[124] Closure refers to the activities that are required to maintain compliance with environmental regulations during and following completion of reclamation.

Discussions over the adequacy of exploration project and proposed mine reclamation and closure include: (1) the final use that is appropriate for reclaimed exploration or proposed mine lands; (2) how re-contoured exploration or proposed mine lands should be stabilized, re-vegetated and ecosystem functionality restored; (3) the timing of reclamation processes; (4) whether exploration features or proposed open pits should be backfilled in a way that does not degrade the environment; and (5) how much money should be set aside to guarantee that reclamation will be accomplished, how should that money be invested or valued in terms of discount rate, and what form of financial surety should be required for this guarantee to be effective in practice.

[124] Powter, C. 2002. Glossary of Reclamation and Remediation Terms used in Alberta. Government of Alberta. Available at: http://environment.gov.ab.ca/info/library/6843.pdf

It is now widely recognized that the objectives and impacts of reclamation and closure must be considered from project inception. Reclamation and closure plans form an overall framework to guide all actions and decisions taken during the exploration and development project's life.

A reclamation and closure plan should define a vision of the end result of the process and set concrete objectives to implement that vision. Future changes to the reclamation plan can be anticipated, but the use of new technologies, while countenanced, cannot be relied upon until they have been proven. The reclamation and closure plan must include only techniques that rely on proven technologies.

OBJECTIVES/INTENT OF THIS CHAPTER

To protect long-term environmental and social values, and ensure that the costs of site reclamation and closure are not borne by affected communities or the wider public.

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant for all exploration and development projects applying for IRMA certification. However, some of the requirements are not relevant for particular stages.

CRITICAL REQUIREMENTS IN THIS CHAPTER

Reclamation and closure plans are compatible with protection of human health and the environment (2.6.1.2), reclamation and closure plans and information are available to stakeholders (2.6.5.1), and financial assurance is in place for reclamation, closure and post-closure, including long-term monitoring and maintenance (2.6.3.1).

Planning and Financing Reclamation and Closure Requirements

2.6.1. Reclamation and Closure Planning

NOTE FOR 2.6.1. This was criterion 2.6.2 in the Mining Standard.

NOTE FOR 2.6.1.1 (below): This is a **new** requirement not in the Mining Standard. It was added to reflect the need to develop agreed post-exploration and/or mining end-uses (that concept was in the Mining Standard, but we are making it more clear in this Standard because it is during these early phases that such consultations should begin, so that reclamation can be planned accordingly. We mention this issue in 2.6.1.3, and in Chapter 2.1. (2.1.6.2.a).

2.6.1.1 has the caveat that consultations on end-uses must occur "if . . .end-use is not otherwise determined by applicable regulations." The reason is that post-exploration or post-mining uses of land are sometimes determined by the government, for example if the affected areas are public, not privately owned. If there is the ability to affect end-uses, then this should be done through consultations with affected communities.

Consultations during the Construction stage are included in the event that mines enter the IRMA program at that stage of development and did not carry out these consultations at an earlier stage. We will add guidance that if a company has evidence showing that consultations took place at an earlier phase, that will be deemed sufficient to meet the requirement (i.e., they would not need to conduct consultations again during construction).

2.6.1.1. If the end-use is not otherwise determined by applicable regulations, the company shall consult with affected communities to develop agreed post-mining end use(s) for areas that will be affected by the proposed mining project.

Pre-permitting | Mine Permitting | Construction

NOTE FOR 2.6.1.2 (below): The requirements are similar for Exploration and Permitting, but there is an added expectation that after Permitting the plan must incorporate/conform with terms and conditions that may have

been applied by regulatory bodies during the permitting process. Also, in exploration we are referring to it as a reclamation plan, as closure is a word more often associated with an operating mine.

For Pre-Permitting we have added that a "preliminary" reclamation and closure plan shall be prepared.

CONSULTATION QUESTION 46: The rationale for adding requirements in Pre-Permitting is because having even a rough estimate of possible reclamation and closure costs will be important to decide whether a project will/should proceed. Do you agree with this approach?

2.6.1.2. (Critical Requirement)
The company shall prepare a reclamation and closure plan that includes the terms and conditions of all final permits, is compatible with protection of human health and the environment, and demonstrates how areas affected by the proposed mining project will be returned to a stable landscape with an agreed post-mining end use.

Mine Permitting | Construction

NOTE FOR 2.6.1.3 (below): The differences between exploration and mine development are minor (terminology), and the time allowed to complete revegetation/ecological restoration (see g).

We have added a proposed new term "post-reclamation" for the exploration stage, to replace the term "post-closure" for the mining stage. We are proposing that the definition of post-reclamation is:

> The period following the reconversion of land and/or water resources to productive use or the potential for productive use.

There are also differences with the Mining Standard - we have added "(i) Use of stockpiled (salvaged topsoil)", as this should be included in the plan. Also, we revised (v) to include invasive alien species in addition to noxious weeds, as this is something referenced in other standards.

And in Exploration, we specifically mention that roads must be considered. In many places these will be new roads, which could be seen as positive and/or negative by members of local communities, and should be discussed during reclamation planning.

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CONSULTATION QUESTION 47: In some chapters of this draft Standard (e.g., 4.2, 4.3, 4.6, 4.8) we are proposing that monitoring plans, which are used to determine if mitigation/management measures are being effective, are not yet required during Pre-Permitting. The assumption is that outlining a monitoring plan or program would not typically occur until the final details of the project design are known, e.g., based on the outcomes of ESIA.

Is there enough information in the Pre-Permitting stage to develop the post-closure monitoring plan (4.6.1.3.n)?

Are there other elements included in 2.6.1.3 that would be difficult to include in a plan developed at that stage?

2.6.1.3. At a minimum, the reclamation and closure plan shall contain:

a. A general statement of purpose;
b. Site location and background Information;
c. A description of the entire proposed facility, including individual site features;[125]
d. The role of affected communities in reviewing the reclamation and closure plan;
e. Agreed-upon post-mining land use and facility use;[126]

[125] This should be informed by IRMA Chapter 4.1, requirements 4.1.3.1 and 4.1.3.2.

[126] See 2.6.1.1.

f. Source and pathway characterization including geochemistry and hydrology to identify the potential discharge of pollutants during closure;[127]
g. Source mitigation program to prevent the degradation of water resources;[128]
h. Interim operations and maintenance, including process water management, water treatment, and mine site and waste site geotechnical stabilization;
i. Plans for concurrent or progressive reclamation and revegetation, which should be employed wherever practicable;
j. Earthwork:
    i. Stabilization and final topography of the reclaimed lands;
    ii. Stormwater runoff/run-on management;
    iii. Topsoil salvage to the maximum extent practicable; and
    iv. Topsoil storage in a manner that preserves its capability to support plant regeneration;
k. Revegetation/Ecological Restoration:
    i. Use of stockpiled (salvaged) topsoil;
    ii. Plant material selection, prioritizing native species as appropriate for the agreed post-mine land use;
    iii. Quantitative revegetation objectives with clear measures to be implemented if objectives are not met within a specified time;
    iv. A defined period, no longer than 10 years, when planned revegetation tasks shall be completed;
    v. Measures for control of noxious weeds and invasive alien species; and
    vi. Planned activities to restore natural habitats (as well as biodiversity, ecosystem services and other conservation values as per Chapter 4.6);
l. Hazardous materials disposal;[129]
m. Facility demolition and disposal, if not used for other purposes;
n. Post-closure monitoring plan (for more details, see 2.6.4.2);
o. Long-term maintenance;
p. The role of the community in long-term maintenance and monitoring (if any); and
q. A schedule that demonstrates that reclamation activities will take place in a timely manner.

Pre-permitting | Mine Permitting | Construction

NOTE FOR 2.6.1.4 (below): The intent of 2.6.1.4 is that companies need to develop a realistic estimate of the costs of reclamation to ensure that funds are available to carry out the work (in the case of exploration), and for mine planning purposes (in the case of pre-permitting and permitting). Understanding the likely costs of reclamation and closure is necessary to evaluating project technical and economic viability and may incentivize a company to re-design a project to avoid certain costs, such as long-term water treatment or long-term monitoring and maintenance costs if proposed tailings storage facilities are situated in geologically unstable areas, etc.

The requirements for Pre-permitting are less detailed than for Mine Permitting (below) because during pre-permitting the estimate is being used in reserve evaluations, pre-feasibility and feasibility studies, but less detail is necessary that when full-blown evaluations are needed during permitting when mine proposals will be fully developed.

In the Pre-permitting stage, however, it is important to consider the long-term reclamation and closure costs of alternatives such as tailings storage facility locations or means to reduce long-term risks to water resources, so that those costs can be factored into project-related decision-making.

There are differences in cost calculations for Exploration versus those calculated for Pre-Permitting, and differences between Pre-Permitting and Permitting (i.e., for proposed mining projects):

[127] This should be informed by IRMA Chapter 4.1, requirement 4.1.3.2. and Chapter 4.2, requirement 4.2.2.3.

[128] This should be informed by IRMA Chapter 4.1, requirement 4.1.5.2 and Chapter 4.2, requirement 4.2.2.4.

[129] This should be informed by IRMA Chapter 4.1, requirement 4.1.2.1.

- First and foremost, we assume that during Pre-Permitting companies need to calculate potential reclamation and closure costs for the reasons stated above, but that including potential costs of having a third-party carry out the reclamation and closure activities for financial assurance purposes is not necessary, since this is a preliminary planning stage. As a result, items like holding costs, and some indirect costs like mobilization/demobilization and agency administration have been excluded.
- Second, we assume that a third-party might need to take on reclamation costs during exploration, and that during the Permitting stage it is important also for companies to factor in these costs so that there is a realistic estimate of potential reclamation and closure liability. The difference, however, is that holding costs period is shorter for exploration versus what should be estimated for mining projects, as reclamation should be less intensive for exploration and therefore should be able to commence sooner.
- Third, there is less detail in (f) Post-reclamation monitoring and maintenance for Exploration, as there should not be the need for long-term water treatment or long-term monitoring and maintenance for exploration reclamation.
- Fourth, in exploration we did not include engineering redesign, procurement, and construction management in Indirect Costs (g), because exploration reclamation is considered comparatively straight-forward and no redesign, materials procurement, or significant construction management costs are typically encountered.
- In Permitting and Construction, we have added a requirement related to pit lakes (2.6.1.4.f.ii).

There are also differences with the Mining Standard - we removed mobilization/demobilization, engineering redesign, procurement, and construction management from the general list of costs as these are already listed in Indirect Costs (g).

2.6.1.4. The reclamation and closure plan for the proposed mining project shall include a detailed determination of the estimated costs of mining reclamation and closure, and post-closure, based on the assumption that reclamation will be completed by a third party, using costs associated with the reclamation plan as implemented by a regulatory agency. These costs shall include, at minimum:

a. Earthwork;
b. Revegetation/Ecological Restoration;
c. Disposal of hazardous materials;
d. Facility demolition and disposal;
e. Holding costs that would be incurred by a regulatory agency if the company were to declare bankruptcy. These costs shall be calculated based on the assumption that there would be a two-year period before final reclamation activities would begin, and shall include costs related to:
    i. Interim process water and site management; and
    ii. Short-term water treatment;
f. Post-closure costs for:
    i. Long-term water treatment (see Chapter 4.2, requirement 4.2.3.5); and
    ii. Long-term monitoring and maintenance, including any long-term measures related to pit lake water quality;[130]
g. Indirect Costs:
    i. Mobilization/demobilization;
    ii. Engineering redesign, procurement and construction management;
    iii. Contractor overhead and profit;
    iv. Agency administration; and
    v. Contingency; and

[130] Measures related to pit lake water quality might include measures to prevent birds, wildlife, livestock or people from coming in contact with pit lake water if that water exceeds certain water quality criteria; or measures to prevent pit lake waters from contaminating the environment. See also requirement 2.6.4.2 below, and, in the water chapter, requirement 4.2.2.3.

h. Either:
    i. A multi-year inflation increase in the financial surety; or
    ii. An annual review and update of the financial surety.

NOTE FOR 2.6.1.4 (above): In 2.6.1.4.f.ii, we have added a reference to pit lake water quality. This is to integrate requirement 2.6.5.5 from the Mining Standard, which refers to providing adequate measures to protect organisms and the environment if pit lakes have poor water quality.

Mine Permitting | Construction

2.6.1.5. The scope, activities, and resultant reclamation and closure cost estimates for any tailings facility and associated structures shall be extractable from any asset wide reclamation and closure plan and cost estimate.

NOTE FOR 2.6.1.5 (above): We have added this because the GISTM (requirement 10.7) requires that estimated reclamation, closure and post-closure costs for tailings facilities be reviewed periodically throughout the tailings facility life-cycle to confirm adequate financial capacity is available to carry out the required activities, and requires that the reviews be made public. In order to meet that requirement, companies will need to provide tailings-specific cost calculations.

Mine Permitting | Construction

NOTE FOR 2.6.1.6 (below): There are minor differences between stages – 5-year-updates to the plan are not required during pre-permitting/permitting, as reclamation has not yet begun. Instead, the trigger for updating the plan is if there are significant changes to the mining project proposal.

For all stages, we removed reference to providing stakeholders with interim reclamation progress report, which was in the Mining Standard, and have moved it to 2.6.5.1, below.

2.6.1.6. The company shall review and update the reclamation and closure plan, including cost estimates, when there is a significant change to the mine plan or every 5 years,[131] whichever is soonest.

Construction

NOTE FOR 2.6.1.7 (below): The level of stakeholder engagement and comment on reclamation (and closure) plans increases after Exploration Stages 2 and 3 and Pre-permitting, because this is typically when increased stakeholder involvement in the reclamation and closure discussions is required by regulators.

For the Permitting and Construction stages, the references from the Mining Standard to stakeholder engagement in the final reclamation plan has been removed, since that will not be relevant until the mine's operational phase.

2.6.1.7. If not otherwise provided for through a regulatory process, prior to the commencement of the construction of the mine the company shall provide stakeholders with at least 60 days to comment on the reclamation and closure plan, including cost estimates. Additionally, if requested by affected communities or other stakeholders, the company shall:

a. Provide resources for capacity building and training to enable meaningful stakeholder engagement;[132] and
b. Provide affected communities and interested stakeholders with the opportunity to propose independent experts to provide input to the company on the design and implementation of the plan.

Mine Permitting | Construction

2.6.2. Backfilling as a Part of Reclamation

[131] Ibid.

[132] For more on meaningful stakeholder engagement see Chapter 1.2, requirement 1.2.2.2.

NOTE FOR 2.6.2.1 (below): There are clear differences between expectations for Exploration Stage 2 and Stage 3, as there will be increasing levels of disturbance as exploration progresses.

Pre-Permitting/Permitting/Construction are the same expectations that are in the Mining Standard.

2.6.2.1. The reclamation and closure plan shall include provisions for open pits to be partially or completely backfilled if:

a. A pit lake is predicted to exceed the water quality criteria in IRMA Chapter 4.2;[133]
b. The company and key stakeholders have agreed that backfilling would have socioeconomic and environmental benefits; and
c. It is economically viable.

Pre-permitting | Mine Permitting | Construction

NOTE FOR 2.6.2.2 (below): There should not be any underground features during Stage 2, so it was not included. Pre-Permitting/Permitting/Construction are the same expectations that are in the Mining Standard.

2.6.2.2. The reclamation and closure plan shall include provisions for underground mines to be backfilled if:

a. Subsidence is predicted on lands not owned by the mining company; and
b. If the mining method allows.

Pre-permitting | Mine Permitting | Construction

2.6.3. Financial Assurance

NOTE FOR 2.6.3: The name of this criterion has changed from Financial Surety to Financial Assurance, as both terms were used in the Mining Standard. We selected Financial Assurance as being a more generic and applicable term. The definition of Financial Assurance is proposed as:

> A financial mechanism or instrument to provide funds for a regulatory authority (or government agency) to hire a third-party to carry out reclamation, decommissioning, monitoring, cleanup or other activities at a specific facility or site if the responsible entity is unable or unwilling to perform required actions.

We are proposing that financial assurance does not need to be in place during Pre-Permitting or Permitting stages. However, during Pre-Permitting and Permitting companies do need to estimate the potential liability that will need to be covered by financial assurance if and when a mine is developed (see 2.6.1.4.)

The requirements for Exploration and Construction are similar, but two requirements have been omitted from Exploration (2.6.3.3 and 2.6.3.4 in Construction stage) because of the shorter-term nature of exploration (so financial assurance won't be in place as long), and the expectation that long-term water treatment will not take place post-exploration.

Some major changes have been made compared to the Mining Standard, with the intent of reducing duplication and adding clarity to the expectations. Below are how Mining Standard requirements have been addressed:

1) Requirement 2.6.4.2 in the Mining Standard requires that financial assurance be:

a. Independently guaranteed, reliable, and readily liquid; (this is addressed in 2.6.3.2, below, where we say that self-bonding and corporate guarantees are not acceptable unless there are no other options. See CONSULTATION QUESTION 48 regarding this issue. Also, the Mining Standard mentioned separately that self-bonding or corporate guarantees not be used. We have combined both in 2.6.3.2, as they reflect the same intent).

[133] See Chapter 4.2, requirement 4.2.2.2 and 4.2.2.3 for prediction of water quality, and requirement 4.2.3.3 for requirements related to maintaining water quality at baseline/background or at levels protective of current and future end uses of water.

b. Reviewed by third-party analysts, using accepted accounting methods, at least every five years or when there is a significant change to the mine plan; (This will not be relevant until the financial assurance is in place after the mine is in operation)

c. In place before ground disturbance begins (we removed the timing element. Instead, companies will be judged on whether the financial assurance is in place at the time of the audit, since we are measuring performance in real time. Guidance can explain that ideally, financial assurance is place before disturbance begins.).

d. Sufficient to cover the reclamation and closure expenses for the period until the next financial surety review is completed. (This will not be relevant until the financial assurance is in place after the mine is in operation)

2) Requirement 2.6.4.5 in the Mining Standard requires companies to provide stakeholders an opportunity to comment on the adequacy of financial assurance. In this standard, 2.6.1.6 now specifies that stakeholders have the opportunity to review the reclamation (and closure) plan, including cost estimates. Companies are also required in 2.6.5.2 to disclose actual financial assurance terms and form of that financial assurance. Together, this information will enable stakeholders to gain perspective on whether or not financial assurance amounts are sufficient, and they can feed back to the company as per 2.6.1.6.

3) Requirement 2.6.4.6 in the Mining Standard, which related to terms of release, has been re-written to add more clarity (and is now 2.6.4.3 in Exploration and 2.6.5.1. in Permitting/Construction)

4). Requirement 2.6.3.3, below, is found in the Mining Standard in a separate criterion called Post-Closure Financial Assurance (2.6.7). The Mining criterion has been deleted in this draft standard, and requirement 2.6.7.4 from that section is now 2.6.3.2, and the post-closure element from 2.6.7 incorporated into the Construction stage (2.6.3.1).

2.6.3.1. (Critical Requirement)
Financial assurance shall be in place to cover the estimated reclamation and mine closure and post-closure costs, including post-closure site monitoring and maintenance. If long-term water treatment is expected post-closure:[134]

a. The company shall be able to demonstrate for the purposes of alignment with the Global Industry Tailings Standard that adequate financial capacity is available to cover the costs associated with planned closure, early closure, reclamation, and post-closure of the tailings facility and its appurtenant structures; and
b. The financial assurance must include funds to cover long-term water treatment for as long as IRMA Water Quality Criteria are predicted to be exceeded;[135]
c. The company must demonstrate that funds for this purpose will be available in full, irrespective of the company's finances at the time of mine closure or bankruptcy; and
d. Cost calculations must be based on treatment technology proven to be effective under similar climatic conditions and at a similar scale as the proposed operation.

NOTE FOR 2.6.3.1: We have combined two requirements that were in the Mining Standard, because long-term water treatment costs would be part of the total financial assurance amount. By separating the two requirements it made them seem as if they two are not connected. We removed the sub-requirement from the Mining Standard to calculate the cost "conservatively" as we are requiring conservative estimates for the financial assurance generally (see 2.6.3.4, below).

Also, 2.6.3.1.a was added to ensure that the IRMA Standard enables companies to also fulfil the requirements of the Global Industry Standard for Tailings Management (in this case, requirement 10.7).

2.6.3.2. Financial assurance shall be independently guaranteed, reliable, and readily liquid (e.g., self-bonding or corporate guarantees shall not be used).

[134] See Chapter 4.2, requirement 4.2.3.5.

[135] IRMA criteria are found in Chapter 4.2, Tables 3.1a to h. Alternatively, the mine may meet baseline or background water quality values as per Chapter 4.2, requirement 4.2.2.3.

NOTE FOR 2.6.3.2: The rationale behind financial assurance is that a company carrying out site-disturbing activities provides a financial guarantee that disturbed areas and resources will be reclaimed to an acceptable condition. If the company successfully completes reclamation according to the requirements of the reclamation plan, the funds are released back to them. If the company fails to reclaim the site as planned, and all means are exhausted to compel the company to reclaim the site, then the funds are forfeited and used to reclaim the land, typically under the supervision of the regulatory authority.[136]

For mining projects, we are aware that financial assurance regulations do not exist in some countries, and even when they are in place, the regulatory agencies may not always have the expertise or will to provide adequate oversight of reclamation activities should an exploration/development/mining company go bankrupt.

CONSULTATION QUESTION 49: We will be exploring this issue in more depth as we begin revisions on the Mining Standard in 2021/2022. However, we'd like to get some initial feedback from interested stakeholders now. In countries where there are weak reclamation laws, and/or no laws requiring financial assurance for mine reclamation and closure, or where government institutions do not have the capability of overseeing reclamation and closure activities, are there alternative approaches that can ensure that reclamation and closure are carried out in an effective manner that protects the health and safety of communities long-term?

For example, we'd be interested in hearing if there are good examples of non-governmental third-parties overseeing or carrying out reclamation and closure, or, if no concrete examples are known, suggestions of how alternatives might be structured?

2.6.3.3. The terms of the financial assurance shall specify that:

a. The financial assurance will not be released until revegetation/ecological restoration and reclamation of mined areas and mine waste facilities (e.g., tailings facilities) have been shown to be effective and stable; and
b. Public comment will be sought before partial and final release the financial assurance.

2.6.3.4. Long-term Net Present Value (NPV) calculations used to estimate the value of the financial assurance shall use conservative assumptions, including:

a. A real interest rate of 3% or less; unless the entity holding the financial assurance can document that a higher long-term real interest rate can be achieved; and
b. NPV calculation will be carried out until the difference in the NPV between the last two years in the calculations is US $10.00 or less (or its equivalent in other currencies).

Construction

2.6.4. (Planning) Monitoring and Maintenance

NOTE FOR 2.6.4: The title of this criterion has changed. In the Mining Standard it was "Post-Closure Planning and Monitoring." We've added parenthesis around Planning because during exploration the monitoring and maintenance related to reclamation, will need to be developed and implemented.

CONSULTATION QUESTION 50: We have only applied 2.6.4.2, the monitoring and maintenance requirements, to Stage 3 of Exploration, as it seems unlikely that the amount of disturbance during Stage 2 would warrant this level of effort and attention. We would be interested in hearing if you think some or all of the sub-requirements in 2.6.4.2 should be applicable for Stage 2.

CONSULTATION QUESTION 51: In this draft of the IRMA-Ready Standard we are proposing to include the requirement to develop monitoring and maintenance elements in the preliminary reclamation and closure plan (2.6.4.2) during Pre-Permitting, as it seems important to have an understanding of these potential long-term costs

[136] Examples of various options are found in: Cheng, L and Skousen, J.G. 2017. "Comparison of international mine reclamation bonding systems with recommendations for China." International Journal of Coal Science & Technology, Volume 4, pp. 67-79. Open Access: https://link.springer.com/article/10.1007/s40789-017-0164-3

in order to make project-related decisions (e.g., whether to proceed, what design options should be included/excluded, etc.).

In some chapters of this draft Standard (e.g., 4.2, 4.3, 4.6, 4.8) we are proposing that monitoring plans, which are used to determine if mitigation/management measures are being effective, are not yet required during Pre-Permitting. The assumption is that outlining a monitoring plan or program would not typically occur until the final details of the project design are known, e.g., based on the outcomes of ESIA.

Is there enough information in the Pre-Permitting stage to develop at least rough post-closure monitoring and maintenance costs? And if so, do you agree that this is important information to be included in decision-making at the Pre-Permitting stage?

2.6.4.2. The post-closure monitoring and maintenance components of the reclamation and closure plan for the proposed mining project (See 2.6.1.3.n and o) shall include the following provisions:

NOTE FOR 2.6.4.2: This requirement combines several requirements from the Mining Standard into a single requirement (2.6.5.1 and 2.6.5.2). This requirement in Pre-Permitting/Permitting and Construction has two more sub-requirements than Exploration, to address potential for long-term water treatment and monitoring related to pit lakes. These are not relevant to exploration.

a. Routine maintenance and monitoring of reclaimed mining areas shall continue until such areas can be demonstrated to be meeting revegetation and restoration objectives, and the sites are stable;

NOTE FOR 2.6.4.2.a: The Mining Standard does not have any indication of how long monitoring and maintenance is required. We have added some clarity that monitoring must continue until sites are stable and meeting revegetation objectives as per 2.6.1.3.k. Also, removed reference to erosion and weed control, as stability and revegetation/restoration objectives are broader than those two items.

CONSULTATION QUESTION 52: Regulations developed by the Bureau of Land Management (BLM) in the United States allow for release of all reclamation related financial assurance based on revegetation success after as little as 3 years. The state of New Mexico in the U.S., however, requires up to 5 years of monitoring to demonstrate revegetation success before final financial assurance release.[137]

Should IRMA add more specificity and include a timeframe for how long revegetation and stability need to be monitored and consistently demonstrated before financial assurance is released? If so, do you have suggestions on the length of time that is appropriate to demonstrate revegetation success and stability?

b. Surface and groundwater monitoring sites shall be located such that they can detect any changes to baseline water quality conditions, and sites shall be sampled until IRMA Water Quality Criteria or baseline conditions have been met for at least five years, with a minimum of 25 years of post-closure data.[138]

c. Biologic monitoring shall occur if there is the potential of post-closure damage to aquatic and terrestrial resources, and shall continue until it can be demonstrated that aquatic and terrestrial resources are no longer at risk;

NOTE FOR 2.6.4.1.c: Added clarity that biologic monitoring must continue until resources are no longer at risk. 2.6.4.1.

d. If long-term water treatment is required post-closure,[139] monitoring shall occur for as long as IRMA Water Quality Criteria are predicted to be exceeded post-closure;[140] and

[137] For example, see: New Mexico Energy, Minerals and Natural Resources Department Mining and Minerals Division. 1999. Coal Mine Reclamation Program Vegetation Standards.http://www.emnrd.state.nm.us/MMD/documents/VEG_STANDARD.DOC

[138] In the Mining Standard, the 25-year minimum may be waived if ongoing water quality monitoring demonstrates and modeling predicts that no contamination of surface or ground waters is occurring or will occur, respectively.

[139] See Chapter 4.2, requirement 4.2.2.3.d and 4.2.3.5

[140] IRMA criteria are found in Chapter 4.2, Tables 3.1a to h. Alternatively, the mine may meet baseline or background water quality values as per Chapter 4.2, requirement 4.2.2.3.

NOTE FOR 2.6.4.1.d: In the Mining Standard, there was a separate criterion that addressed post-closure water treatment. We moved that requirement to Chapter 4.2 – Water Management, but have retained in 2.6.4.1.c, the need for the post-closure monitoring plan to include any monitoring that might be required if long-term water treatment will occur.

e. If a pit lake is predicted post-closure, and water quality is predicted to pose a risk to people, wildlife, livestock, birds, or post-closure end uses, monitoring shall continue for as long as IRMA Water Quality Criteria are predicted to be exceeded post-closure.

NOTE FOR 2.6.4.1.e: This sub-requirement stems from 2.6.5.5 in the Mining Standard. See also 2.6.1.4.f.ii, and Chapter 4.2, requirement 4.2.2.3.

Pre-permitting | Mine Permitting | Construction

2.6.5. Reporting and Disclosure

NOTE FOR 2.6.5: This is a new Criterion. It has been added to make this chapter more consistent with the format of other chapters. The Mining Standard only mentioned taking practicable steps to minimize the volume of contaminated water to be treated. water to be treated. We added here that companies need to demonstrate that they have and action plan and funding in place to fulfill that commitment.

Requirement 2.6.5.1, below, is not new. It is based on requirements 2.6.2 4 and 2.6.2.6 in the Mining Standard. We have changed the wording in 2.6.5.1 and 2.6.5.2 related to making information available upon request to "or the company shall have a policy in place to make the information available to stakeholders upon request." See explanation in Chapter 1.2, Note for Criterion 1.2.4.

Requirement 2.6.4.5 in the Mining Standard requires companies to provide stakeholders an opportunity to comment on the adequacy of financial assurance. Requirement 2.6.5.2, here, provides stakeholders with information on which to base such comments.

2.6.5.1. (Critical Requirement)
The most recent version of the reclamation and closure plan, including the results of all reclamation and closure plan updates, shall be publicly available or the company shall have a policy in place to make the information available to stakeholders upon request

2.6.5.2. The form and terms of financial assurance that is proposed shall be publicly available or the company shall have a policy in place to make the information available to stakeholders upon request.[141]

Pre-permitting | Mine Permitting | Construction

NOTES

Reclamation planning and financial sureties for mineral exploration and development project reclamation are controversial topics. But there is a great deal of literature available on best practices in reclamation planning, and these sources provide the necessary detail to guide such planning.[142] Guidance is also available on calculating financial sureties and on the risks and benefits of different forms of financial sureties.[143]Principle 3: Social Responsibility

[141] Ibid.

[142] E.g., ICMM. 2008. Planning for Integrated Mine Closure: Toolkit. https://www.icmm.com/website/publications/pdfs/mine-closure/310.pdf

[143] E.g., ICMM. 2005. Financial Assurance for Mine Closure and Reclamation. https://www.icmm.com/website/publications/pdfs/mine-closure/282.pdf; ICMM. 2006. Financial Assurance for Mine Closure and Reclamation: Guidance Paper. https://www.icmm.com/website/publications/pdfs/mine-closure/23.pdf; Sassoon, M. 2009. Financial Surety: Guidelines for the Implementation

Chapter 3.1—Fair Labor and Terms of Work

NOTE TO REVIEWERS ON CHAPTER 3.1:

Several suggested revisions have been made to this chapter based on changes to the Mining Standard that were proposed in the draft Mineral Processing Standard.[144]

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As noted in the Scope of Application, Chapter 1.1 states that "1.1.3.1. The company shall demonstrate that it takes appropriate steps to ensure compliance with the IRMA-Ready Standard by contractors engaged in activities relevant to the exploration or development project, including construction. . ."

This means that contractors have the same responsibilities as the company, and also that contracted workers need to be afforded the same rights and terms of work as those hired directly by the company (and also need to be subject to the same Occupational Health and Safety protections as per Chapter 3.2).

We have also added language in the Legal Compliance Chapter (1.1, requirements 1.1.3.1.a and b), requiring that companies provide:

a. Language in contracts that require compliance with the applicable requirements of the IRMA-Ready Standard; and
b. Monitoring of contractor performance on applicable requirements of the IRMA-Ready Standard.

This means the company needs to demonstrate to IRMA auditors that they perform some oversight or due diligence to ensure that contracting companies are meeting their obligations.

We are also proposing to provide more clarity on the expectation of and obligations to contractors by revising the definition worker as follows:

Previous definition of Worker: All non-management personnel

Proposed definition of Workers: All non-management personnel directly employed by the company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the project site.

CONSULTATION QUESTION 53: Are these actions enough, or would a better approach be to separate out contractor-specific requirements or highlight them in a different manner (e.g., add "and contractors" after each reference to workers when the company also needs to ensure that contractors are similarly protected)?

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We have made the requirements below applicable to all stages of exploration and development because there are company employees/workers/contractors employed during all stages.

CONSULTATION QUESTION 54: Are there any requirements that you believe are not relevant for particular stages of development?

of Financial Surety for Mine Closure. (World Bank Group's Oil, Gas, and Mining Policy Division). pp. 7, 9, 10 and 41. http://siteresources.worldbank.org/INTOGMC/Resources/7_eifd_financial_surety.pdf; Kuipers, J. 2000. Hardrock Reclamation Bonding Practices in the Western United States. https://www.csp2.org/files/reports/Hardrock%20Bonding%20Report.pdf; USDA. 2004. Training Guide for Reclamation Bond Estimation and Administration. https://www.fs.fed.us/geology/bond_guide_042004.pdf

[144] The first 60-day period of consultation has closed, but IRMA is always open to receiving stakeholder feedback. The draft is available on the IRMA website under the IRMA Draft Mineral Processing Standard tab: https://responsiblemining.net/resources/#resources-irma

CONSULTATION QUESTION 55: During Pre-Permitting and Permitting we assume that the requirements in Chapter 3.1 apply to protections for workers engaged in work related to project development activities.[145]

However, should companies be required to have policies and/or procedures in place for the proposed mining project to demonstrate how, if the mine is developed, these protections for workers will be included? Are such plans typically in place at that time? Or is it more reasonable to wait until after a mine is in operation and is being assessed against similar requirements in the IRMA Mining Standard (i.e., assess actual labor practices)?

BACKGROUND

Responsible employers provide fair wages and respectful workplaces. However, historically, a portion of the labor force has been the subject of mistreatment such as child and forced labor, discrimination, inadequate wages, and lack of respect for workers' rights.

In 1919, the International Labour Organization (ILO) was formed to protect workers' rights. Since that time, a number of internationally recognized human rights of workers have been enumerated and incorporated into laws world-wide. These include the United Nations *International Bill of Human Rights*, and the ILO *Declaration on Fundamental Principles and Rights at Work* and eight core ILO conventions that cover: freedom of association and the right to collective bargaining; the elimination of all forms of forced or compulsory labor; the abolition of child labor; and the elimination of discrimination in respect of employment and occupation. In addition to acknowledging the need to safeguard those human rights of workers, companies are increasingly recognizing the need to provide working hours and wages that promote a high quality of life for workers and their families.

The fundamental principles and rights of workers have been incorporated into various voluntary standards to protect labor rights and ensure fair working conditions (e.g., International Finance Corporation Performance Standard 2; Social Accountability International SA8000; Global Reporting Initiative). Within any responsible labor standard and verification system, there is an inextricable link between the role of workers and the practice of freedom of association. Workers with first-hand knowledge of environmental, human rights and labor practices must have the right to participate in the verification process without fear of employer retribution. This can be best guaranteed by workers having the right to freely establish or join trade unions of their choosing without employer interference and through protections provided in collective bargaining agreements.

OBJECTIVES/INTENT OF THIS CHAPTER

To maintain or enhance the social and economic well-being of mineral exploration and development project workers and respect internationally recognized workers' rights.

SCOPE OF APPLICATION

RELEVANCE: This chapter is applicable to all mineral exploration and development projects applying for IRMA certification. IRMA recognizes that some of the requirements of this chapter may be included in a collective bargaining agreement (CBA). If such an agreement is in place, the company will not be expected to meet the IRMA requirements that overlap with those in the CBA.

As per IRMA Chapter 1.1, the company engaged in exploration or mining project development is responsible for ensuring that contractors involved in project-related activities comply with the requirements in this chapter.

CRITICAL REQUIREMENTS IN THIS CHAPTER

Workers' right to freedom of association and collective bargaining are respected (3.1.2.1, 3.1.2.2), measures are in place to prevent and address harassment, intimidation, and/or exploitation, especially in regard to female workers

[145] We are proposing the following definition for **project development activities**:

> Field- and office-based activities carried out during the pre-permitting and permitting stages to develop a mine proposal, support the environmental and social impact assessment of a proposal, generate information necessary to fulfill regulatory and permitting requirements, engage with stakeholders and rights holders, and maintain company operations.

(3.1.3.2); workers have access to operational-level mechanisms that allows them to raise and seek resolution or remedy for complaints and grievances that may occur in relation to workplace-related issues (3.1.5.1); no children (i.e., persons under the age of 18) are employed to do hazardous work and no children under the age of 15 are employed to do non-hazardous work (3.1.7.2); and forced labor and the trafficking of persons is does not occur in relation to the project (3.1.8.1).

Fair Labor and Terms of Work Requirements

3.1.1. Human Resources Policy

3.1.1.1. The company shall adopt and implement human resources policies and procedures that set out its approach to managing workers in a manner that is consistent with the requirements of this chapter and national (i.e., host country) law.[146]

NOTE FOR 3.1.1.1: Deleted reference to mining project, otherwise same content as Mining Standard.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.1.2. Respect for Freedom of Association and Collective Bargaining

NOTE FOR 3.1.2: In the Mining Standard, this is called Workers Organization and Agreements. The Mining Standard separates out the various elements in 3.1.2.1 and 3.1.2.2, below, into individual requirements. Because these elements are all associated with freedom of association or collective bargaining in good faith, we have combined them to act as indicators that companies are, indeed, respecting these rights. In the Mining Standard, the requirement to respect freedom of association and collective bargaining was a critical requirement, so we have made both 3.1.2.1 and 3.1.2.2 critical requirements in this Standard. Any input on this approach is welcome.

3.1.2.1. (Critical Requirement)
The company shall respect the rights of workers to freedom of association by:

a. Informing workers of their right to freedom of association under national labor and employment law (if relevant);
b. Informing workers that they are free to join a workers' organization of their choosing without any negative consequences or retaliation from the company;
c. Providing workers' representatives with access to facilities needed to carry out their functions in the workplace, including provision of access to designated non-work areas during organizing efforts for the purposes of communicating with workers, and provision of accommodations for workers' representatives at project sites, where relevant;[147]
d. Remaining neutral in any legitimate unionizing or worker-organizing effort;
e. Refraining from producing or distributing material that disparages legitimate trade unions;
f. Refraining from establishing or supporting a company union for the purpose of undermining legitimate worker representation;
g. Refraining from imposing sanctions on workers, workers' representatives or workers' organizations participating in a legal strike; [148] and

[146] IRMA recognizes that for larger companies, human resources policies may be developed at the corporate level. In these cases, IRMA does not expect the company to have developed its own policies, but the company will be expected to demonstrate that the mine site is operating in compliance with the corporate policies (e.g., site-level management understand the corporate policies, and have integrated them into the mine site's procedures).

[147] For example, at remotely located sites.

[148] Nothing in this requirement shall remove the right of an company to seek enforcement action when workers, workers' representatives or workers' organizations are operating in contravention to laws or regulations.

h. Where national law substantially restricts workers' organizations, allowing workers to develop alternative mechanisms to express their grievances and protect their rights regarding working conditions and terms of employment, and refraining from seeking to influence or control these mechanisms.

3.1.2.2. (Critical Requirement)

The company shall respect the rights of workers to collective bargaining by:

a. If relevant, informing workers of their right to collective bargaining under national labor and employment law;
b. If relevant, informing workers of their rights under any applicable collective agreement; and
c. If relevant, providing workers with a copy of the collective agreement and the contact information for the appropriate trade union (or workers' organization) representative;
d. Negotiating in good faith with workers' representatives and workers' organizations and providing them with information needed for meaningful negotiation in a timely manner;
e. Respecting the terms and agreements of collective bargaining agreements;
f. Refraining from the use of short-term contracts or other measures to undermine a collective bargaining agreement or reduce obligations to workers under applicable labor and social security laws and regulations; and
g. Refraining from hiring replacement workers in order to prevent, undermine or break up a legal strike, support a lockout, or avoid negotiating in good faith. The company may, however, hire replacement workers to ensure that critical maintenance, health and safety, and environmental control measures are maintained during a legal strike.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.1.3. Non-Discrimination and Equal Opportunity

3.1.3.1. The company shall base employment relationships on the principles of equal opportunity and fair treatment, and shall not discriminate or make employment decisions on the basis of personal characteristics unrelated to inherent job requirements.[149] Exceptions may be made with respect to hiring and recruitment in the case of:

a. Targets or quotas mandated by law;
b. Targets developed through local agreements for the employment of local residents, indigenous peoples, or individuals who have been historically disadvantaged; or
c. Company targets for the employment of local residents, indigenous peoples, or individuals who have been historically disadvantaged that are expressed in publicly accessible policies with explicit goals and justification for such targets.

NOTE IN 3.1.3.1: Combined 3.1.3.1 with 3.1.3.2 (which provided the exceptions to 3.1.3.1). These should be audited and scored as one requirement.

3.1.3.2. (Critical Requirement)

The company shall develop and implement measures to prevent and address harassment, intimidation, and/or exploitation, especially in regard to female workers.

NOTE FOR 3.1.3.2: The Mining Standard is worded that the company shall "take" measures. This has been modified to be make the language more clear.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

[149] "Employment relationships" include: recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices.

"Personal characteristics unrelated to inherent job requirements" may include: gender, race, nationality, ethnicity, social and indigenous origin, religion or belief, disability, HIV status, age, sexual orientation, marital status, parental status, worker status (e.g., local vs. migrant workers, temporary versus permanent workers), political affiliation, union membership and veteran status.

3.1.4. Retrenchment

NOTE FOR 3.1.4: The rationale behind applying this to all stages is that although the retrenchment is commonly associated with large-scale workforces, the concept can apply at any phase - for example, a company may have a country-specific office and exploration or permitting staff that it could collectively dismiss (e.g., if a project in that country is not going to proceed). The alternative to retrenchment in such as case would be to try to absorb the staff / offer them positions in other offices.

3.1.4.1. Prior to implementing any collective dismissals,[150] the company shall carry out an analysis of alternatives to retrenchment.[151] If the analysis does not identify viable alternatives to retrenchment, a retrenchment plan shall be developed in consultation with workers, their organizations, and, where appropriate, the government. The plan shall be based on the principle of non-discrimination,[152] and be implemented to reduce the adverse impacts of retrenchment on workers.

3.1.4.2. The company shall ensure that all workers receive notice of dismissal and severance payments mandated by law and collective agreements in a timely manner. All outstanding back pay, social security benefits, and pension contributions and benefits shall be paid on or before termination of the working relationship, or in accordance with a timeline agreed through a collective agreement. Payments shall be made directly to workers, or to appropriate institutions for the benefit of workers.[153] Where payments are made for the benefit of workers, they shall be provided with evidence of such payments.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.1.5. Grievance Mechanism

3.1.5.1. (Critical Requirement)
The company shall provide a grievance mechanism or mechanisms for workers (and their organizations, where they exist) to raise workplace concerns.[154] The mechanism(s), at minimum:

a. Shall involve an appropriate level of management and address concerns promptly, without any retribution, using an understandable and transparent process that provides timely feedback to workers on actions taken and their outcomes;
b. Shall allow for anonymous complaints to be raised and addressed;
c. Shall recognize, reward and protect from retaliation, workers and contractors who identify opportunities for improving occupational health and safety, tailings facility management or other suggestions for improving environmental, social or governance performance;

[150] Collective dismissals cover all multiple dismissals that are a result of an economic, technical, or organizational reason; or other reasons that are not related to performance or other personal reasons.

[151] Examples of alternatives may include negotiated working-time reduction programs, employee capacity-building programs; long-term maintenance works during low production periods, etc. (Source: IFC. 2004. Managing Retrenchment. Good Practice Note No. 4. https://www.ifc.org/wps/wcm/connect/8b14b6004885555db65cf66a6515bb18/Retrenchment.pdf?MOD=AJPERES)

[152] Re: the principles of non-discrimination, selection criteria for those to be laid off should be objective, fair, and transparent. The retrenchment should not be based on personal characteristics unrelated to inherent job requirements.

[153] In some jurisdictions companies may be obligated by law to transfer certain payments to specific institutions such as pension fund administration, health funds, etc. In such cases companies would not provide payments directly to the worker but, for the benefit of the worker, to the appropriate institution. In cases where payments to certain institutions are optional the company should allow the worker to choose either a direct cash payment or payment to a defined institution.

[154] If worker complaints/grievances involve the infringement of human rights, they should either be handled through the general operational grievance mechanism (see IRMA Chapter 1.4), which is required to conform with the effectiveness criteria laid out in the UN Guiding Principles on Business and Human Rights (UNGP) (See pp. 33 -35 of http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf) or be addressed through a different procedure that is compatible with the UNGP effectiveness criteria. If the grievance mechanism in 3.1.5.1 meets the UNGP effectiveness criteria, then that shall suffice.

NOTE FOR 3.1.5.1: We have added to 3.1.5.1.a and added the new 3.1.5.1.c to better align with the Global Industry Standard for Tailings Management (GISTM, requirement 11.5).[155] In 3.1.5.1.c, we have added that workers should also be recognized and rewarded and not retaliated against for suggesting opportunities for improving occupational health and safety and other ESG aspects to align with GISTM (12.1).

d. Shall allow workers' representatives to be present, if requested by the aggrieved worker; and
e. Shall not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.

3.1.5.2. As part of the grievance mechanism, or as a separate mechanism, the company shall establish a formal, confidential and written whistleblower process to receive, investigate and promptly address concerns from management personnel, workers and contractors about possible permit violations or other matters relating to regulatory compliance, bribery or corruption, occupational health and safety, public health and safety, tailings facility integrity or the environment. The company shall not discharge, discriminate against, or otherwise retaliate in any way against a whistleblower who, in good faith, has reported such issues.

NOTE FOR 3.1.5.2: This is a new requirement. We have added to 3.1.5.2 to align with the Global Industry Standard for Tailings Management (Requirement 12.1 and 12.2), although that Standard does not refer to the mechanism as a whistleblowing mechanism. We have added other elements that should also be encouraged and not retaliated against, such as internal reporting on bribery or corruption, issues related to occupational health and safety, etc.

We included a whistleblower provision in the draft IRMA Mineral Processing Standard, but it was not as extensive as this one. We will consider expanding it when we revise the draft, and will consider adding this to the Mining Standard when it is revised.

The proposed definition of **Whistleblower** in the draft Mineral Processing Standard is:

> A person who raises concerns regarding the unlawful or unethical activity or behavior of a person or organization.

3.1.5.3. The company shall inform the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them.

3.1.5.4. The company shall maintain a record of grievances and the company's actions taken to respond to and/or resolve the issues.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.1.6. Disciplinary Procedures

3.1.6.1. The company shall have documented disciplinary procedures (or their equivalent) that are made available to all workers.

3.1.6.2. The company shall not use corporal punishment, harsh or degrading treatment, sexual or physical harassment, mental, physical or verbal abuse, coercion or intimidation of workers during disciplinary actions.

3.1.6.3. The company shall keep records of all disciplinary actions taken.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.1.7. Child Labor

3.1.7.1. The company shall document the ages of all workers.

[155] ICMM, UNEP and PRI. 2020. Global Industry Standard for Tailings Management. https://globaltailingsreview.org/global-industry-standard/

3.1.7.2. (Critical Requirement)
Children (i.e., persons under the age of 18[156]) shall not be hired to do hazardous work (e.g., in excavations or where there is exposure to hazardous substances[157]) or any other work defined as a worst form of child labor by ILO Convention 182 (Worst Forms of Child Labor) and ILO Recommendation 190 (Worst Forms of Child Labor),[158] and the minimum age for non-hazardous work shall be 15, or the minimum age outlined in national law, whichever is higher.

NOTE FOR 3.1.7.2: Combined previous 3.1.7.2 and 3.1.7.3 from the Mining Standard - to include children under 18 and those under 15 in the same requirement. Also, have added reference to ILO Conventions 182 and 190, as there may be other forms of labor that are not fitting for persons under the age of 18 other than the examples provided. We will add Guidance on this.

3.1.7.3. When a child is legally performing non-hazardous work, the company shall assess and minimize the risks to their physical and mental health, and ensure that regular monitoring of the child's health, working conditions and hours of work occurs by the national labor authority, or if that is not possible, by the company itself.

3.1.7.4. If the company discovers that a child under the minimum ages outlined in 3.1.7.2 or 3.1.7.3 is performing hazardous or non-hazardous work:

a. The child shall be removed immediately from his or her job; and
b. Remediation procedures shall be developed and implemented that provide the child with support in his or her transition to legal work or schooling, and that take into consideration the welfare of the child and the financial situation of the child's family.

3.1.7.5. Where there is a high risk of child labor amongst contractors or in the project's supply chain,[159] the company shall develop and implement procedures to monitor its contractors and suppliers to determine if children are employed for hazardous work or children below the minimum age for non-hazardous work are being employed. If any cases are identified, the company shall ensure that appropriate steps are taken to remedy them.

NOTE FOR 3.1.7.5: We have revised this requirement to add contractors. We also removed a clause that if cases are identified that "Where remedy is not possible, the company shall shift the project's supply chain over time to suppliers that can demonstrate that they are complying with this chapter." Some companies may have a no tolerance policy and may end the relationship immediately, while others will choose to work with suppliers or contractors to improve their practices.

We can add guidance that, at minimum, children cease doing inappropriate work, as per 3.1.7.5.a, and that ideally suppliers and contractors also take some steps to provide remedy as per 3.1.7.5.b.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

[156] Age 18 is the dividing line between childhood and adulthood according to the major ILO child labour conventions (Nos. 138 and 182), and the United Nations Convention on the Rights of the Child (CRC). Although many cultural traditions and personal characteristics could argue for a higher or lower age, in first crafting and then in ratifying these Conventions the international community has determined that persons under 18 are children and have the right to special protection. (International Labour Organization. 2011. Children in Hazardous Work: what we know, what we need to know. http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_155428.pdf)

[157] Examples of hazardous work activities include work (i) with exposure to physical, psychological, or sexual abuse; (ii) underground, underwater, working at heights, or in confined spaces; (iii) with dangerous machinery, equipment, or tools, or involving handling of heavy loads; (iv) in unhealthy environments exposing the worker to hazardous substances, agents, processes, temperatures, noise, or vibration damaging to health; or (v) under difficult conditions such as long hours, late night, or confinement by employer. (Source: IFC. 2012. Performance Standard 2: Labor and Working Conditions. Footnote 12. https://www.ifc.org/wps/wcm/connect/88f1f09e-5fe4-4fad-9286-33ecb221ab23/PS2_English_2012.pdf?MOD=AJPERES&CVID=jiVQlns

[158] ILO. 1999. Convention 182 - Worst Forms of Child Labor. https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C182 and ILO. 1999. Recommendation 190 - Worst Forms of Child Labor. https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:312528

[159] The determination of whether or not there is a high risk of child labor in the supply chain should occur as part of the company's human rights due diligence in Chapter 1.3. If child labor in the supply chain is identified as being a salient risk during the human rights impact assessment, the company will be required to carry out the remaining due diligence as per Chapter 1.3, and also the requirements in 3.1.7.6. Additionally, if the mine is operating in or sourcing minerals from a conflict-affected and high-risk area, child labor should be one of the issues assessed in the conflict risk assessment. If child labor is identified as a risk, the due diligence outlined in Chapter 3.4 apply.

3.1.8. Forced Labor

3.1.8.1. (Critical Requirement)
The company shall not employ forced labor or participate in the trafficking of persons either directly or through third parties.

NOTE FOR 3.1.8.1: Have added "either directly or through third parties" to make it clear that neither the company nor recruitment agencies, if used by the company, are allowed to use these practices.

3.1.8.2. The company shall:

a. Have a documented policy on hiring practices and the avoidance of forced labor and trafficking;
b. Not require workers to pay fees or deposits associated with their recruitment or employment;
c. Issue written contracts to workers in appropriate local language(s) for review prior to employment;
d. Not retain or restrict access to official identity papers and personal documentation originals provided by workers as part of the employment process; and
e. Not unreasonably restrict the movement of workers or their access to basic liberties.

NOTE FOR 3.1.8.2: This requirement is not in the Mining Standard. It was developed to add more clarity on expectations related to forced labor and human trafficking. This is also in the draft Mineral Processing Standard, and we will consider adding it to the Mining Standard.

3.1.8.3. Where there is a high risk of forced labor or the trafficking of persons amongst contractors or in the project's supply chain, the company shall develop and implement procedures to monitor its contractors and suppliers to determine if forced labor or the trafficking of persons is occurring. If any cases are identified, the company shall ensure that appropriate steps are taken to remedy them.

NOTE FOR 3.1.8.3: This was 3.1.8.2 in the Mining Standard.

We have revised this requirement to add contractors. We also removed a clause that if cases are identified that "Where remedy is not possible, the company shall shift the project's supply chain over time to suppliers that can demonstrate that they are complying with this chapter." Some companies may have a no tolerance policy and may end the relationship immediately, while others will choose to work with suppliers or contractors to improve their practices. We can develop guidance on what might constitute appropriate remediation steps.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.1.9. Wages and Benefits

3.1.9.1. The company shall pay wages to workers that meet or exceed the higher of applicable legal minimum wages, prevailing industry wages, wages agreed through collective wage agreements, or a living wage.

NOTE: Added 3.1.9.1 that companies should pay the prevailing industry wage if that is higher than minimum or a living wage. This is a requirement in other systems. For example, the Responsible Jewellery Council requires that: Members shall pay all employees a wage rate for normal hours worked, not including overtime, based on the higher of either the applicable legal minimum wage, plus associated statutory benefits, or the prevailing industry standards. Wages paid on a performance-related basis shall not be less than the legal minimum wage for a normal working week. Members shall ensure that comparable wages are given to all employees for carrying out work of equal value with processes to assess and remediate any potential wage disparity that discriminates against any category of workers.[160]

The benefit of including it is that if the prevailing wage is high then the company will be expected to match it, thus equalizing the same pay for the same work across the industry. The challenge is that companies (and auditors) may not know the prevailing industry rates.

[160] Responsible Jewellery Council. 2019. Code of Practices. 17.1. https://www.responsiblejewellery.com/wp-content/uploads/RJC-COP-2019-V1-1-Standards-2.pdf

CONSULTATION QUESTION 56: Are there good sources for prevailing industry wages? Should the matching of prevailing industry wage be done on a regional basis, rather than global?

3.1.9.2. Overtime hours shall be paid at a rate that is 125% of the regular wage, or, if higher, a rate defined in a collective bargaining agreement or national law.

NOTE FOR 3.1.9.2: The Mining Standard did not specify a minimum for overtime pay (thus, could have been lower than ILO's minimum recommended threshold of 125% regular pay) https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_170708.pdf). We have added the ILO threshold here.

3.1.9.3. All workers shall be provided with written and understandable information about wages (overtime rates, benefits, deductions and bonuses) before they enter employment, and for the pay period each time they are paid.

CONSULTATION QUESTION 57: In addition to or instead of providing information on wages and benefits, should IRMA require that employment contracts be signed, as a means of providing added security to workers?

3.1.9.4. The company shall pay wages in a manner that is reasonable for workers (e.g., bank transfer, cash or check).

CONSULTATION QUESTION 58: Is payment of workers in cash still considered good practice?

Background/Rationale for question: Cash payments are potentially associated with a number of issues, including risk of theft, fraud and tax evasion and the disempowerment of women workers who have less control over their wages in some socio-cultural settings. Electronic transfers (or suitable alternatives) may be a more appropriate approach than the transfer of cash

3.1.9.5. The company shall ensure that deductions from wages are not made for disciplinary purposes unless one of the following conditions exist:

a. Deductions from wages for disciplinary purposes are permitted by national law, and the law guarantees the procedural fairness of the disciplinary action; or
b. Deductions from wages for disciplinary purposes are permitted in a freely negotiated collective bargaining agreement or arbitration award.

3.1.9.6. The company shall ensure that employee wages, benefits and deductions are recorded and documented.

NOTE FOR 3.1.9.6: This is a new requirement. We will add to Guidance that auditors need to check that benefits such as social security, pension and other contributions required by national law are being paid, and that the company is paying legally mandated deductions from workers' wages to the government as required by national laws. (As per Chapter 1.1, companies are required to comply with host country laws)

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.1.10. Working Hours and Leave

3.1.10.1. The company shall ensure that:

a. Regular working hours do not exceed eight hours per day, or 48 per week. Where workers are employed in shifts the 8-hour day and 48-hour week may be exceeded, provided that the average number of regular hours worked over a 3-week period does not exceed 8 hours per day and 48 hours per week;
b. Workers are provided with at least 24 consecutive hours off in every 7-day period; and
c. Overtime is limited to 12 hours a week.
d. Overtime is consensual.
e. Exceptions to 3.1.10.1.b and c shall be allowed at projects in remote locations if:
    i. A freely negotiated collective bargaining agreement is in force that allows variances to the rest and/or overtime hours above;

i. Through consultations with workers' representatives, a risk management process that includes a risk assessment for extended working hours is established to minimize the impact of longer working hours on the health, safety and welfare of workers;

f. Workers shall be provided with appropriate time off for meals and breaks.

g. Employee work hours, overtime and annual and sick leave are recorded and documented.

NOTE FOR 3.1.10.1: Re-organized this section compared to Mining Standard. Also added a requirement related to breaks (f), and requirement to record and document hours and leave.

CONSULTATION QUESTION 59: Any comments on breaks would be appreciated. For example, should we specify break durations or number of breaks based on shift duration (e.g., one meal break (of at least 30 minutes) and one coffee/tea break (of at least 15 minutes) per six-hour shift, and more breaks if shifts are longer)? Should these breaks be considered paid working time? For more information, see: https://www.worldpolicycenter.org/sites/default/files/WORLD%20Report%20-%20Personal%20Medical%20Leave%20OECD%20Country%20Approaches_0.pdf

3.1.10.2. Where neither national law nor a collective bargaining agreement includes provisions for worker leave, the company shall, at minimum, provide:

a. Paid medical leave with a sufficient wage replacement rate to prevent poverty and ensure essential needs can be met during leave-taking;

NOTE FOR 3.1.10.2.a: This requirement is new.

CONSULTATION QUESTION 60: The proposed language outlines a minimum standard meant to ensure that workers who are ill are able to afford to take time off. However, we could also strive to set a higher standard here, or be more specific about minimum number of weeks/months of paid medical leave and a lower limit to the wage replacement rate. Given the wide variation in paid medical leave (see, for example, https://www.worldpolicycenter.org/sites/default/files/WORLD%20Report%20-%20Personal%20Medical%20Leave%20OECD%20Country%20Approaches_0.pdf) any thoughts on acceptable minimum standards would be welcome.

b. An annual paid holiday of at least three working weeks per year, after achieving one year of service;[161] and

c. A paid maternity leave period of no less than 8 weeks prenatal leave and 6 weeks after childbirth, with a sufficient wage replacement rate to prevent poverty and ensure essential needs can be met during leave-taking.

NOTE FOR 3.1.10.2.c: This requirement is different than what is in the Mining Standard. It has been revised to align more closely with expectations in IILO Convention 183 – Maternity Protection Convention, including that "Cash benefits shall be at a level which ensures that the woman can maintain herself and her child in proper conditions of health and with a suitable standard of living." https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C183.

CONSULTATION QUESTION 61: Paternity leave is not (yet) covered by an international convention, but there is an argument for including a related requirement. The Responsible Jewellery Council's Code of Practices notes in Requirement 16.4 "Members shall provide employees with all legally mandated public holidays and leave, including maternity and paternity." IRMA already requires mineral processing operations to meet their legal obligations (see Chapter 1.1), but should some amount of paternity leave be an IRMA requirement even when not legally mandated?

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

NOTES

[161] A worker whose length of service in any year is less than that required for the full entitlement shall be entitled in respect of that year to a holiday with pay proportionate to his or her length of service during that year. (Based on ILO C132 – Holidays with Pay Convention (Revised), 1970 (No. 132). http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:::NO:12100:P12100_ILO_CODE:C132:NO)

This chapter uses, as its basis, the International Finance Corporation's (IFC) Performance Standard 2 – Labor and Working Conditions. In addition to aligning with IFC performance standard requirements, this chapter contains two additional criteria related to Wages (3.1.9) and Working Hours and Leave (3.1.10), with requirements that are based, in part, on ILO conventions.

Chapter 3.2—Occupational Health and Safety

NOTE TO REVIEWERS ON CHAPTER 3.2:

Some minor revisions were made to this chapter to try to reduce overlap.

For some requirements, level of effort lower for Stage 1. The occupational health and safety risks should be much lower for those doing office work compared to field-based work, so we have attempted to reflect this by reducing the expectations at Stage 1. However, we may not have struck the right balance, and are open to suggestions on where requirements should be added or removed from Stage 1.

ILO Convention 176 forms the basis of this Chapter. As outlined in the background section, below, that Convention applies at mines sites and at exploration sites that involve the mechanical disturbance of ground. As a result, the majority of requirements have been limited to Exploration Stages 2 and 3 and beyond, given that Exploration Stage 1 does not involve actual ground-disturbing activities. However, you will see some places where we include Stage 1, and are requesting input, via Consultation Questions, regarding whether or not those additions are reasonable.

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One issue that arose while drafting this chapter was how to handle the requirements for Occupational Health and Safety in relation to project development activities (i.e., during Pre-permitting and Permitting). There are two aspects at play during these stages:

1). Managing occupational health and safety of company employees who are engaged in the activities to support project development (e.g., consultants carrying out studies, baseline sampling, research on legal compliance, preparing permit applications, those talking with investors, regulators and stakeholders, etc.). Companies have a duty of care to ensure that the health and safety of these employees and/or contactors are protected.

2). Demonstrating, through assessments and preparation of management plans, how occupational health and safety of workers at the proposed mining project will be protected.

This creates some complexity to the requirements, for example, in some requirements we have tried to include expectations for both aspects in the same requirement:

"3.2.2.1. The company shall implement an ongoing health and safety risk assessment process that follows a recognized risk assessment methodology for industrial operations, and identifies and assesses the significance/consequence of the full range of potential hazards associated **with project development activities. It shall also carry out a separate process for the proposed mining project, that includes, at minimum, assessing hazards related to. . ."**

We are proposing the following definition for project development activities:

> Field- and office-based activities carried out during the pre-permitting and permitting stages to develop mine proposals, support the environmental and social impact assessment of the proposal, generate information necessary to fulfill regulatory and permitting requirements, engage with stakeholders and rights holders, and maintain company operations.

Reviewers are also directed to questions related to requirement 3.2.3.1 and criteria 3.2.4, 3.2.5 and 3.2.6, where we ask whether certain plans, policies or procedures are necessary for proposed mining projects, or whether it is more appropriate to wait until a mine is operational to assess actual implementation of those elements.

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One final issue to present to reviewers: in IRMA's draft Mineral Processing Standard[162], we proposed a new requirement after a review of other standards suggested that this is a common expectation for the mining industry.

3.2.1. Commitment to Health and Safety and Objective of Zero Harm

3.2.1.1. The operating company shall develop a policy or commitment to prioritize the health and safety of its workers over profits, manage operations in a manner that prevents injuries and fatalities, and demonstrate continuing improvement in health and safety performance with an objective of achieving zero harm, and shall communicate the commitment to all employees and publicly.

CONSULTATION QUESTION 62: Should we include a similar commitment for exploration companies? And require that companies proposing mining projects make a similar commitment? Or this more relevant once mining has commenced, because that is when the commitment will actually be put into practice and results can be measured?

BACKGROUND

Occupational health impacts related to the mineral exploration and development industry may include physical injuries, musculoskeletal disorders, noise-induced hearing loss, hand-arm vibration syndrome, skin cancer, dermatitis, heat exhaustion, hypothermia, eye disorders from radiation exposure, asphyxiation, pneumonia, respiratory disorders and lung diseases such as silicosis, damage to internal organs and other effects related to chemical/metal exposures, decreased mental health and well-being, and others.[163]

Key hazards related to mineral exploration and development include, but are not limited to: slips, falls and abrasions and other workplace injuries, fires, chemical spills and vehicle collisions with other vehicles, equipment, humans or wildlife.[164]

Due to the many hazards and potential impacts associated with mineral exploration and development projects, a strong focus on occupational health and safety must be present at responsible projects.

In 1995, *Convention 176–Safety and Health in Mines* was adopted by the International Labour Organization (ILO).[165] The convention set out international standards with respect to occupational health and safety at mine sites and exploration projects that include the mechanical disturbance of ground.[166] The convention outlines the need for: safety and health inspections, accident reporting and investigations, hazard assessment and management, and workers' rights to participate in workplace health and safety decisions, be adequately trained in their tasks, be informed of occupational hazards, and to remove themselves from dangerous workplace situations. These same international standards are applicable as appropriate to mineral exploration and development projects.

OBJECTIVES/INTENT OF THIS CHAPTER

To identify and avoid or mitigate occupational health and safety hazards, maintain working environments that protect workers' health and working capacity, and promote workplace safety and health.

SCOPE OF APPLICATION

[162] The first 60-day period of consultation has closed, but IRMA is always open to receiving stakeholder feedback. The draft is available on the IRMA website under the IRMA Draft Mineral Processing Standard tab: https://responsiblemining.net/resources/#resources-irma

[163] ICMM. 2009. Good Practice Guidance on Occupational Health Risk Assessment. https://www.icmm.com/website/publications/pdfs/health-and-safety/161212_health-and-safety_health-risk-assessment_2nd-edition.pdf

[164] ICMM website: "Preventing Fatalities." https://www.icmm.com/en-gb/health-and-safety/safety/preventing-fatalities

[165] International Labour Organization. 1995. Safety and Health in Mines Convention, 1995 (No. 176). www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_ILO_CODE:C176

[166] Ibid. Article 1. Requirement 1.

RELEVANCE: This chapter is relevant for all mineral exploration and development projects applying for IRMA certification.

CRITICAL REQUIREMENTS IN THIS CHAPTER

Work is stopped if unsafe conditions exist (3.2.4.1) and workers are informed of the hazards associated with their work, the health risks involved and provided with relevant preventive and protective measures (3.2.4.2).

Occupational Health and Safety Requirements

3.2.1. Health and Safety Management System

3.2.1.1. The company shall implement a health and safety management system for measuring and improving the project's health and safety performance.[167]

Construction

3.2.2. Health and Safety Risk Assessment and Management

NOTE ON 3.2.2.1 (below): The Mining Standard divided 3.2.2.1 into two requirements. We have consolidated them into a single requirement related to risk assessment process.

3.2.2.1. The company shall implement an ongoing health and safety risk assessment process that follows a recognized risk assessment methodology for industrial operations,[168] and identifies and assesses the significance/consequence of the full range of potential hazards associated with mine construction activities including, at minimum:

a. The design and construction of the workplace;
b. The organization of work;[169]
c. The physical stability of working areas;
d. Use of equipment and machinery;
e. Waste and chemical management;[170]
f. Potential outbreaks of infectious diseases (including potential transmission to or from nearby communities);
g. Personnel, contractors, business partners, suppliers and visitors;
h. Unwanted events;[171]
i. Routine and non-routine activities, procedures, and services;
j. Changes in duration, personnel, organization, processes, facilities, equipment, procedures, laws, standards, materials, systems and services.

[167] See the Government of Western Australia Department of Mines, Industry Regulation and Safety for information on suggested components of a health and safety management system: http://www.dmp.wa.gov.au/Safety/What-is-a-safety-management-4598.aspx

[168] For example, the risk assessment methodologies found in: Risk Assessment - Recommended Practices for Municipalities and Industry prepared by the Risk Assessment Expert Committee of the former Major Industrial Accidents Council of Canada; the process outlined in ICMM's Good Practice Guidance on Occupational Health Risk Assessment. p. 16; or other similar methodologies.

[169] The organization of work includes many aspects, such as pace of work, work load, number of people performing a job (staffing levels), hours and days on the job, length and number of rest breaks and days away from work, layout of the work, skill mix of those workers on the job, assignment of tasks and responsibilities, and training for the tasks being performed. (Source: AFL-CIO Department of Safety and Health, January 2006. https://www.upte.org/hs/workreorg.pdf)

[170] See also IRMA Chapter 4.1, requirement 4.1.2.1, which requires the identification of all materials, substances, such as chemicals, and wastes associated with the mineral processing operation that have the potential to cause impacts on human health, safety, the environment or communities.

[171] An unwanted event is a situation where a hazard has or could possibly be released in an unplanned way. (ICMM. 2015. Health and Safety Critical Control Management Good Practice Guide).

Construction

3.2.2.2. The company shall pay particular attention to identifying and assessing hazards to workers who may be especially susceptible or vulnerable to particular hazards.

3.2.2.3. The company shall develop, implement and systematically update a risk management plan that prioritizes measures to eliminate significant hazards, and outlines additional controls to effectively minimize negative consequences and protect workers and others from remaining hazards.[172]

Stage 1 | Stage 2 | Stage 3 | Construction

3.2.2.4. At minimum, the company shall demonstrate that it has developed and implemented procedures to:

a. Ensure that electrical, mechanical and other equipment used during construction provide conditions for safe operation and a healthy working environment;
b. Ensure that workers have access to a communication system to maintain contact with each other and office staff;
c. Ensure a safe system of work and the protection of workers in zones susceptible to particular hazards;
d. Ensure that when there is potential high risk of harm to workers, operations are stopped and workers are evacuated to a safe location.

CONSULTATION QUESTION 67: Are there other particular hazards during mine construction that warrant mention in 3.2.2.4?

Construction

3.2.2.5. If the risk assessment process identifies risks to workers from potential outbreaks of infectious diseases (see 3.2.2.1), the company shall develop an action plan[173] to mitigate risks. If the risk assessment demonstrates a significant risk of worker exposure to HIV/AIDS, tuberculosis, malaria or SARS-CoV-2 (COVID-19), the management plan shall integrate the following:

a. In relation to HIV/AIDS (if relevant), the company shall, at minimum:
   i. Provide free, voluntary and confidential HIV testing and counseling for all workers and employees;
   ii. Provide HIV/AIDS treatment for workers and employees where it cannot reasonably be assumed that this will be provided in an effective manner by public or private insurance schemes at an affordable rate;
   iii. Provide access for contractors to education and other preventative programs, and to work with contracting companies or others to identify ways for contracted workers to access affordable treatment;
b. In relation to tuberculosis (if relevant), the company shall, at minimum, provide free and voluntary testing for workers/employees where it is not reasonably likely to be provided by public or private health programs at an affordable rate;
c. In relation to malaria (if relevant), the company shall, at minimum:
   i. Develop a vector control plan;
   ii. Ensure that company facilities are not breeding environments for malaria-carrying mosquitoes; and
   iii. Provide protection from infection by malaria-carrying mosquitoes in company facilities and any company-provided housing;
d. In relation to SARS-CoV-2 (COVID-19) (if relevant), the company shall, at minimum:

[172] Re: "systematically update," plans should be updated as necessary based on the outcomes and information from the company's ongoing risk assessment process, monitoring, and other information.

For information on the hierarchy of controls see ILO C176 – Safety and Health in Mines (1995). http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C176

[173] This may be a standalone plan, or may be incorporated in the risk management plan in 3.2.2.4. For Pre-Permitting and Permitting, separate action plans will be required: one for activities carried out to support pre-permitting or permitting activities, and a second proposed plan for the proposed mining project.

i. Provide no-cost training for workers and contractors on preventative measures to reduce the risk of infection and spread of the disease;
ii. Provide health screening of workers, contractors and visitors;
iii. Provide testing and a voluntary vaccination programme at no cost to workers;
iv. Provide options for working from home (where this is possible);
v. Implement virtual (online) alternatives to internal and external meetings;
vi. Modify transport, accommodation, catering and changing facilities to minimize close contact between workers, contractors and/or visitors;
vii. Clean and disinfect the working environment based on best international guidance;
viii. Provide at no cost suitable personal protective equipment to workers, contractors and visitors;
ix. Modify shift patterns and changeover times to minimize close contact between workers and/or contractors;
x. Provide for isolation and/or medical treatment of workers where infection is suspected or confirmed;
xi. Suspend non-essential activities, if necessary; and
xii. Suspend all activities, if necessary.

NOTE FOR 3.2.2.5.d: 3.2.2.5.d is a new requirement (not yet incorporated into the Mining Standard) borne out of experiences with COVID-19. However, these plans would also be appropriate if there is the potential for outbreaks of Ebola, or other infectious diseases. Our proposal is that all sites should have a plan in place that covers general elements of how to respond to outbreaks of known potential diseases. For new (unknown) diseases, having a general plan in place will enable operations to more quickly adapt and develop disease-specific responses.

The action plan is geared toward management of infectious diseases at the project sites, but also seeks to minimize risks to nearby communities by reducing the potential for significant outbreaks at exploration or construction sites. If sites respond quickly when cases are found, and implement controls to limit the spread, then there will be less potential for movement of viruses/diseases between sites and communities). See also Chapter 3.3 Community Health and Safety, where this action plan is required to be implemented if infectious diseases are found.

CONSULTATION QUESTION 68: Have we captured all essential elements that should be included in an action plan? How have exploration and development companies addressed the issue of vaccinations? What if workers refuse to get vaccinated?

CONSULTATION QUESTION 69: We included this requirement for Stage 1 Exploration, as there is still a chance that office work could come with risks related to infectious diseases. Do you agree with this approach?

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.2.3. Communication and Engagement with Workers and Others

NOTE FOR 3.2.3: Requirement 3.2.3.4 from the Mining Standard was not included. It required that the company develop and implement a formal process involving workers' representatives and company management to address matters relating to occupational health and safety. This level of engagement seems critical for large-scale mining operations, but for these earlier stages may not be as necessary. 3.2.3.3, below, still requires that systems be in place for workers to communicate with management on occupational health and safety issues.

3.2.3.1. Workers shall be informed of their rights to:

a. Report accidents, dangerous occurrences and hazards to the employer and to the competent authority;
b. Request and obtain, where there is cause for concern on safety and health grounds, inspections and investigations to be conducted by the employer and the competent authority;
c. Know and be informed of workplace hazards that may affect their safety or health;

d. Obtain information held by the employer or the competent authority that is relevant to their safety or health;
e. Remove themselves from any work location or site when circumstances arise that appear, with reasonable justification, to pose a serious danger to their safety or health; and
f. Collectively select safety and health representatives.

CONSULTATION QUESTION 70: We included this requirement for Stage 1 Exploration, as even workers who are not carrying out field-based work should still be informed of their rights related to protection of health and safety. Do you agree with this approach? Are there other requirements in this Criterion that should also apply to Stage 1?

3.2.3.2. In all cases a worker attempting to exercise in good faith any of the rights referred to in 3.2.3.1 shall be protected from reprisals of any sort.

3.2.3.3. The company shall develop systems to effectively communicate with and enable input from the workforce on matters relating to occupational health and safety.[174]

3.2.3.4. The company shall provide workers' health and safety representatives with the opportunity to:

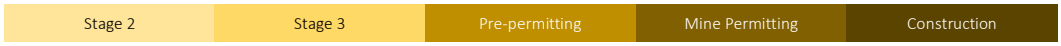
a. Participate in inspections and investigations conducted at the workplace by the employer and by the competent authority;
b. Monitor and investigate safety and health matters;
c. Have recourse to advisers and independent experts; and
d. Receive timely notice of accidents and dangerous occurrences.

CONSULTATION QUESTION 72: Is this requirement too much to expect of projects in Exploration Stage 1? Or do exploration companies sometimes have someone on staff who is selected to discuss worker health and safety issues with management?

3.2.3.5. Visitors and other third parties accessing the project site shall receive an occupational health and safety briefing, and shall be require to wear relevant protective equipment for areas of the site that they will be entering.

NOTE FOR 3.2.3.5: This requirement said that visitors needed to be "provided with" protective equipment. We have changed this to say they must be required to wear the protective equipment.

The requirement is not relevant for Stage 1, because there is not yet a project site.



3.2.4. Measures to Protect Workers

CONSULTATION QUESTION 73: During Pre-Permitting and Permitting we assume that the following requirements in 3.2.4 will apply to workers engaged in work related to project development activities. However, should companies be required to have policies and/or procedures in place for the proposed mining project to demonstrate how, if the mine is developed, they will put these requirements into practice? Or should we just evaluate these after a mine is in operation and is being assessed against similar requirements in the IRMA Mining Standard?

3.2.4.1. (Critical Requirement)
The company shall discontinue operations if unsafe working conditions are discovered, and ensure that:

a. In cases where an area is affected:

[174] See also Chapter 1.2 for requirements relating to communications with stakeholders, which should also apply to workers.

i. All workers leave the affected area immediately;
ii. Workers re-entering the affected area to reinstate safe working conditions are protected from harm; and
iii. Working conditions in the affected area are verified as safe before general workers are allowed to enter.

b. In cases where machinery or equipment is the cause of unsafe working conditions:
i. Use of the machinery or equipment ceases immediately;
ii. The equipment is fixed or replaced by an appropriate trained specialist; and
iii. The equipment is verified as safe before being used again.

NOTE FOR 3.2.4.1: 3.2.4.1 is new, not in the Mining Standard. The notion that work must be stopped if dangerous conditions exist was not explicitly stated in the Mining Standard, and was an oversight that we are seeking to correct here (and will propose for the next Mining Standard revision). By making it a critical requirement we are emphasizing that if unsafe working conditions are observed during the audit, an exploration site will not be able to achieve IRMA 50 or higher during that audit cycle. In 3.2.5.2 below, auditors would also expect to see changes to the health and safety management plan to improve controls and prevent similar conditions from recurring.

CONSULTATION QUESTION 74: Do you agree that this should be included in the IRMA-Ready Standard, and that it should be a critical requirement?

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.2.4.2. (Critical Requirement)
The company shall implement the following critical measures to protect the safety and health of workers including:

a. Informing workers, in a comprehensible manner, of the hazards associated with their work, the health risks involved and relevant preventive and protective measures;
b. Providing and maintaining, at no cost to workers, suitable protective equipment and clothing where exposure to adverse conditions or adequate protection against risk of accident or injury to health cannot be ensured by other means.

NOTE ON 3.2.4.2: In the Mining Standard, the equivalent to 3.2.4.2, below, contained two sub-requirements that were deemed, "critical requirements," while the others were not. That made it difficult to audit and score all of the requirements in a fair and equal manner. To remedy that situation, we have separated out the "critical" sub-requirements as 3.2.4.2, and have created a new requirement 3.2.4.3 to capture the other sub-requirements.

One added consideration: one issue identified during the first mining audits is that health and safety measures perhaps did not get as much attention and weight as other chapters, and that the protection of workers' lives and health should be given greater emphasis. As a result, in the draft Mineral Processing Standard we separated out the two sub-requirements and made them individual requirements to give them greater weight in the overall score in this chapter.

CONSULTATION QUESTION 75: Should we take the same approach for the IRMA-Ready Exploration and Development Standard that we did for the Mineral Processing Standard, i.e., should we create two separate critical requirements where currently in IRMA-Ready there exists just one (3.2.4.2)? Or are there perhaps other occupational health and safety requirements that for exploration and development might be more appropriate to make critical requirements?

CONSULTATION QUESTION 76: We included requirements 3.2.4.2, 3.2.4.3, 3.2.4.4, 3.2.4.5 and 3.2.4.6 for Stage 1 Exploration, as even workers who are not carrying out field-based work should still be afforded some basic protections in the case of a work-related injury. Do you agree with this approach?

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.2.4.3. The company shall also:

a. Provide workers who have suffered from an injury or illness at the workplace with first aid, and, if necessary, prompt transportation from the workplace and access to appropriate medical facilities;
b. Provide, at no cost to workers, education and training/retraining programs and comprehensible instructions on the work assigned and on safety and health matters; and
c. Provide adequate supervision and control on each shift.

Stage 2 | Stage 3 | Construction

3.2.4.4. If the risk assessment process or other sources reveal unique occupational health and safety risks for certain groups of workers (e.g., pregnant women, children, HIV-positive, etc.) the company shall ensure that additional protective measures are implemented, and trainings and health promotion programs are available to support the health and safety of those workers.

Stage 1 | Stage 2 | Stage 3 | Construction

3.2.4.5. The company shall provide workers with clean toilet, washing and locker facilities (commensurate with the number and gender of staff employed), potable drinking water, and where applicable, sanitary facilities for food storage and preparation. Any accommodations provided by the company shall be clean, safe, and meet the basic needs of the workers.

3.2.4.6. The company shall ensure that workers are provided with compensation for work-related injuries and illnesses as follows:

a. In countries where workers' compensation is not provided through government schemes or a collective bargaining agreement:[175]
    i. The company shall compensate workers for work-related injuries or illnesses at a rate that, at minimum, covers medical expenses and wages during the recovery and rehabilitation period;[176]
    ii. If a worker is not able to return to work due to the severity of a work-related injury or illness, the company shall compensate for lost earnings until the worker qualifies for an adequate pension (i.e., 2/3 or more of the salary they would otherwise normally receive if healthy and working);[177] or
    iii. If an occupational illness manifests after a worker has retired, the company or its corporate owner shall, at minimum, compensate the worker for medical expenses, unless the company or its corporate owner can establish that the occupational illness was not connected to the worker's employment at the mining project.[178]
b. In countries that do not provide for worker rehabilitation as part of their workers' compensation schemes, the company shall ensure that workers have free or affordable access to rehabilitation programs to facilitate an expeditious return to work; and
c. Where a worker dies as a result of a work-related injury or disease, the company shall, at minimum, provide to spouses and dependent children benefits to cover funeral expenses and transportation of the worker's body, if appropriate, as well as compensation that is equal to or greater than three months' salary of the deceased worker.

Stage 1 | Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

[175] Many, but not all countries have workers' compensation schemes. For example, a 2002 report found that 136 countries had worker compensation programs, meaning that approximately 60 did not. (Eleson, R. 2002. International Workers' Compensation. Prepared for the Indiana Compensation Rating Bureau. http://compclues.icrb.net/file/29dbcff9-2752-4fed-bfdc-422c8c403483)

[176] If medical expenses are fully covered by health insurance, then companies are not required to provide additional compensation.

[177] If the government does not provide for an "adequate pension," the company would be expected to supplement the government pension so that a worker was receiving equivalent to 2/3 or more of the salary he or she would otherwise receive; if no government pension program exists, the company would be expected to pay compensation equivalent to 2/3 or more of the salary the worker would otherwise normally receive if healthy and working. Normally, this requirement can be met by providing the appropriate public or private disability insurance coverage.

[178] If medical expenses are fully covered by health insurance or relevant compensation schemes covering occupational health matters, then companies are not required to provide additional compensation.

3.2.5. Monitoring and Evaluation

NOTE FOR 3.2.5: The title of this criterion has changed. In the Mining Standard it was "Inspections, Monitoring and Investigations." Also, a requirement (3.2.5.2 in the Mining Standard) related to health surveillance has been removed, as the exposures (chemicals, dust, heat, etc.) during exploration are likely to be much lower than those during the mining phase.

CONSULTATION QUESTION 77: Are there cases where workers engaged in exploration or construction undergo health surveillance? Should we include it as a requirement in this standard?

CONSULTATION QUESTION 78: During Pre-Permitting and Permitting we assume that the following monitoring and evaluation measures will apply to work related to project development activities. However, should companies be required to have a monitoring and evaluation plan in place for the proposed mining project to demonstrate how, if the mine is developed, monitoring and evaluation will take place? Or should we just evaluate the mine's actual monitoring and evaluation program after the mine is built, and it is being assessed against similar requirements in the IRMA Mining Standard?

3.2.5.1. The company shall perform regular inspections of the working environment to identify the various hazards to which workers are being or may be exposed, and monitor the implementation of the controls developed in the health and safety management plan.

NOTE FOR 3.2.5.1: A reference to representatives from a joint health and safety committee participating in inspections has been removed. We have included above, however, that workers' representatives be allowed to participate in inspections (See 3.2.3.4).

3.2.5.2. Annually, or more frequently, the company shall evaluate the effectiveness of occupational health and safety controls and protective measures, and the health and safety management plan shall be reviewed and updated as follows:

a. If monitoring suggests that risks remain despite implementation of controls or protective measures the plan shall be updated with more stringent controls or protective measures;
b. If there are workplace injuries, fatalities, accidents or dangerous occurrences, the plan shall be reviewed and revised with the objective of preventing similar incidents from occurring.

NOTE FOR 3.2.5.2: This requirement combines elements of 3.2.5.1 and 3.2.5.3 in the Mining Standard, but adds an annual effectiveness review of the management plan.

3.2.5.3. The company shall ensure that all workplace injuries, fatalities, accidents and incidents, as defined by national laws or regulations, are documented, reported to the competent authority, investigated and that appropriate remedial action is taken.

NOTE FOR 3.2.5.3: This has been reworded compared to the Mining Standard. Instead of the term "dangerous occurrences, we are now proposing here and in the draft Mineral Processing Standard to use the term "incident" which is defined as follows:

Incident: An unexpected event that disrupts regular work activity. A "near miss" (or close call, injury-free event, near accident) is a sub-set of incidents where no harm occurred but there was the potential for injury, ill health, fatality or damage to property or the environment.

CONSULTATION QUESTION 79: Do companies routinely collect incident data beyond near misses? If not, should we only require that data on "incidents" be limited to near misses?

Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.2.6. Health and Safety Data Management and Access to Information

NOTE FOR 3.2.6: Exploration Stage 1 is included here, as companies should be keeping records of any health-or-safety-related incidents that occur in the workplace.

CONSULTATION QUESTION 80: During Pre-Permitting and Permitting we assume that the following measures will apply to data and information kept on employees and contractors engaged in work related to project development activities. However, should companies be required to have a plan in place for the proposed mining project to demonstrate how, if the mine is developed, health and safety data management and access to information will occur? Or should we just evaluate the mine's actual monitoring and evaluation program after the mine is built, and it is being assessed against similar requirements in the IRMA Mining Standard?

3.2.6.1. The company shall maintain accurate records of health and safety risk assessments, workplace monitoring results, and data on occupational injuries, diseases, fatalities, accidents and incidents that is collected by the company and submitted to competent authorities. This information, except for data protected for medical confidentiality reasons, shall be available to workers' health and safety representatives.

NOTE FOR 3.2.6.1: Replaced "dangerous occurrences" with incidents (see Note for 3.2.5.3, above), and removed reference to health surveillance data (see Note for 3.2.5).

3.2.6.2. If medical examinations are conducted on workers, those records shall be collected and securely stored for as long as the worker is employed by the company, or longer, if required by host country law.

NOTE FOR 3.2.6.1: Although we removed a requirement from the Mining Standard that pertained to health surveillance (see Note for 3.2.5), we are assuming that it is possible that some companies may perform medical examinations on workers during exploration, development and construction. If such examinations do occur, the data need to be securely stored for medical confidentiality reasons. So we have retained part of that element of 3.2.6.2 from the Mining Standard. We have not required that data base stored for 30 years, as in the Mining Standard, as that requirement was there to ensure that data are kept for mine workers, as occupational illnesses have been known to develop years after a miner is no longer employed at a particular site. It's unclear what might be the appropriate timeframe for those working in mineral exploration. But companies must adhere to host country legal requirements for storage of medical information.

3.2.6.3. The company shall allow workers access to their personal information regarding accidents, incidents, inspections, investigations, remedial actions, and, if relevant, medical examinations.

NOTE FOR 3.2.6.3: Replaced "dangerous occurrences" with incidents (see Note for 3.2.5.3, above), and removed reference to health surveillance data (see Note for 3.2.5).

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

NOTES

Many of the requirements in this chapter are based on International Labour Organization Convention *C176 - Safety and Health in Mines*.[179]

[179] International Labour Organization. 1995. Safety and Health in Mines Convention, 1995 (No. 176). www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_ILO_CODE:C176

Chapter 3.3—Community Health and Safety

NOTE TO REVIEWERS ON CHAPTER 3.3:

Community health and safety issues may have been screened (for exploration) or scoped (proposed mining projects) as part of an environmental and social impact assessment process (Chapter 2.1). Regardless of whether the evaluation was carried out as per Chapter 2.1 or as a standalone exercise as per Chapter 3.3, the additional requirements in this chapter must be followed. For example, 3.3.2 provides more detailed requirements specifically related to scoping of community health and safety issues than articulated in Chapter 2.1 (which provides more general and generic requirements to cover the range of potential social and environmental risks/impacts related to exploration and development). If all of these risks and impacts outlined in 3.3.2 were scoped as part of the ESIA (Chapter 2.1), there would be no need, however, to re-scope the issues in a standalone Community Health and Safety Scoping exercise.

Stage 1 has not been included in this chapter, because during that stage there is no on-site activity, so the company will not impact the health or safety of nearby communities. Beginning in Stage 2, however, there will be field staff and equipment that could potentially pose risks to the health or safety of communities.

As mentioned in the NOTE TO REVIEWERS on page 5, (on the "STAGES OF EXPLORATION AND DEVELOPMENT, AND HOW THEY HAVE BEEN MANAGED IN THIS DRAFT STANDARD") during Pre-permitting and Permitting there are two aspects that are relevant in some chapters:

1) Requirements usually need to apply to the proposed mining project (e.g., stakeholder engagement, assessments of mine proposals, preparation of management plans, monitoring plans, etc.).

2) Requirements sometimes need to apply to project development activities (e.g., field- and office-based activities carried out to develop a mine proposal, support the environmental and social impact assessment of a proposal, generate information necessary to fulfill regulatory and permitting requirements, engage with stakeholders and rights holders, and maintain company operations).

CONSULTATION QUESTION 81: Currently, the community-health-related requirements for the Pre-permitting and Permitting stages in Chapter 3.3 apply only to what the company plans to do in relation to the proposed mining project.

Are there material risks to community health and safety during project development activities that warrant including requirements specific to project development activities? For example, perhaps the infectious disease requirement (3.3.5.1) should be included if project development activities include visits with stakeholders.

BACKGROUND

Mineral exploration and development companies can contribute to efforts that lead to improvements in public health, but poor management of exploration and development impacts can expose local populations to health and safety risks.

Both the identification of potential mining-related health and safety impacts, as well as the mitigation of those impacts will be most successfully achieved when undertaken in partnership with local stakeholders such as local community representatives, government officials, health service providers, public health officials, and community development workers, as well as mine workers who live in communities.[180]

OBJECTIVES/INTENT OF THIS CHAPTER

To protect and improve the health and safety of individuals, families, and communities affected by mineral exploration and development projects.

[180] ICMM. Good Practice Guidance on Health Impact Assessment. p. 32. www.icmm.com/document/792

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant for any mineral exploration and development project that may have impacts on community health and/or safety. This chapter may be deemed Not Relevant if companies can provide evidence that that there are no communities that are or may be affected by their current exploration and development activities or proposed activities.

CRITICAL REQUIREMENTS IN THIS CHAPTER

The risks to community health and safety posed by the project are evaluated (3.3.1.1 and 3.3.2.1).

Community Health and Safety Requirements

3.3.2. Community Health and Safety Risk and Impact Scoping

NOTE FOR 3.3.2: Slight wording changes to title compared to the Mining Standard (was Health and Safety Risk and Impact Scoping). Also, in 3.3.2.1.i, we have added COVID-19 to the list of potential diseases, and clarified that companies should not only consider the potential that exploration workers might be exposed by visiting communities, but also that they might bring certain diseases into communities).

Note that in the Scope of Application section, above, this chapter may be deemed Not Relevant if companies can provide evidence that there are no communities that may be affected by exploration or proposed mining activities. When communities are present, however, scoping is the starting point for companies proposing a mine, whereas scoping is only required during Exploration if screening indicates that there will be impacts on communities.

3.3.2.1. Either as part of Chapter 2.1 (see Criterion 2.1.3) or as a separate exercise, the company shall carry out a scoping exercise to identify significant potential risks and impacts to community health and safety from mine construction activities. At minimum, the following sources of potential risks and impacts to community health and/or safety shall be considered:

a. General construction operations;
a. Operation of construction-related equipment or vehicles on public roads or other areas accessible to stakeholders;
b. Construction accidents;
c. Impacts of construction activities on priority ecosystem services (see also IRMA Chapter 4.6);
d. Construction-related effects on community demographics, including in-migration of construction workers and others;
e. Construction-related impacts on availability of services;
f. Hazardous materials and substances that may be released as a result of construction-related activities (see also IRMA Chapter 4.1); and
g. Increased prevalence of water-borne, water-based, water-related, and vector-borne diseases, and communicable and sexually transmitted diseases (e.g., HIV/AIDs, tuberculosis, malaria, Ebola virus disease) that could occur as a result of the construction of the mine.

3.3.2.3. Scoping shall include consideration of the differential impacts of project activities on vulnerable groups or susceptible members of affected communities.

3.3.2.3. Scoping shall include an examination of risks and impacts that may occur during the various stages of the mine life cycle (e.g., construction, operation, reclamation, mine closure and post-closure).

NOTE FOR 3.3.2.3: We can add Guidance that this will not be necessary in Construction if done in Permitting.

Construction

3.3.3. Risk and Impact Assessment

NOTE FOR 3.3.3.1 (below): For Exploration Stages 1 and 2, this will be relevant if screening indicated that scoping and further assessment was warranted. We can add Guidance that for the Construction stage, this will not be necessary if it occurred during Permitting.

3.3.3.1. Either as part of Chapter 2.1 (see Criterion 2.1.5) or as a separate exercise, the company shall carry out an assessment of risks and impacts to:[181]

a. Predict the nature, magnitude, extent and duration of the potential risks and impacts related to community health and safety identified during scoping; and
b. Evaluate the significance of each impact, to determine whether it is acceptable, requires mitigation, or is unacceptable.[182]

Pre-permitting | Mine Permitting | Construction

3.3.4. Risk and Impact Management and Mitigation

NOTE FOR 3.3.4.1 (below): 3.3.4.1 has been modified compared to the Mining Standard. We have tried to make management plans all include similar elements, no matter the particular topic/purpose of the plan.

For Exploration Stages 1 and 2, this will be relevant if screening indicated that scoping and further assessment was warranted, because a management plan would then be needed to address significant impacts. We can add Guidance that for the Construction stage, this will not be necessary if it occurred during Permitting.

If Community Health and Safety management elements are included in the Environmental and Social Management plan requirement in Chapter 2.1, then that may be sufficient to meet the expectations of this requirement (depending on whether or not the expectations in this section are met).

3.3.4.1. If significant potential risks or impacts to community health and safety from project activities are identified, the company shall document and implement a community health and safety risk management plan that:

a. Outlines the measures to avoid, and where that is not possible, minimize adverse impacts on community health and safety. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound.
b. Describes implementation actions clearly assigned to a responsible party/ies.
c. Provides key indicators, linked to adequate baseline data, to enable measurement of the effectiveness of avoidance, minimization and/or offsetting activities over time.
d. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

3.3.4.2. Mitigation measures shall prioritize the avoidance of risks and impacts over minimization and compensation.

Stage 2 (if relevant) | Stage 3 (if relevant) | Pre-permitting | Mine Permitting | Construction

3.3.4.3. The community health and safety risk management plan shall be updated as necessary based on the results of risk and impact monitoring.

Stage 2 (if relevant) | Stage 3 (if relevant) | Construction

3.3.5. Specific Provisions Related to HIV/AIDS, Tuberculosis, Malaria and Emerging Infectious Diseases

[181] Some or all of these risks and impacts may have been assessed as part of the ESIA (IRMA Chapter 2.1), risks in 3.3.2.1.d may have been assessed as part of a mine waste risk assessment (IRMA Chapter 4.1), and risks to human health and safety related to impacts on priority ecosystem services in 3.3.2.1.e may have been assessed as part of a scoping exercise as per Chapter 4.6. If the full range of risks to community health and safety were assessed elsewhere, there is no need to duplicate efforts.

[182] As per requirement 3.3.6.1.b, stakeholders must be involved in the assessment of the significance of the risks.

NOTE: This criterion has changed fairly significantly from the Mining Standard. References to company actions related to workers have been moved to Chapter 3.2 on occupational (worker) health and safety, and this chapter focuses on the public health aspects of infectious disease management.

As seen in 3.3.5.1.c, we refer to Chapter 3.2, in particular, requirement 3.2.2.5, which involves creation of an action plan to mitigate risks to workers related to infectious diseases like COVID-19, Ebola and others (which should also reduce potential spread from Exploration Projects, or, eventually, from mines themselves, to communities).

3.3.5.1. If the company's risk and impact assessment (in 3.3.3.1) or other information indicates that there is a significant risk of community exposure to an infectious disease such as SARS-CoV-2 (COVID-19), HIV/AIDS, tuberculosis, malaria, or others due to transmission between project workers or contractors and the community, the company shall develop and adopt policies, business practices, and targeted initiatives as follows:

a. In partnership with public health agencies, workers' organizations and other relevant stakeholders, create and fund initiatives to educate affected communities and vulnerable groups about these infections and modes of prevention of them, and support efforts to achieve universal access to testing, vaccinations and treatment for affected community members;
b. Operate in an open and transparent manner and be willing to share best practice for the prevention and treatment of these diseases with workers' organizations (e.g., trade unions), other companies, civil society organizations and policymakers; and
c. Make information publicly available on its infectious disease mitigation program and its infectious disease action plan (see Chapter 3.2, requirement 3.2.2.5).

Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

3.3.6. Stakeholder Engagement

NOTE ON 3.3.6.1: For Exploration Stages 1 and 2, some of these elements will only be relevant if screening indicates that there were potential risks to community health and safety that needed to be further assessed.

There are minor differences between Pre-Permitting/Permitting and Construction - during Construction monitoring programs will be implemented, whereas in the earlier stages they will only be designed.

3.3.6.1. The company shall collaborate with relevant community members[183] and stakeholders, including workers who live in affected communities and individuals or representatives of vulnerable groups, in:

a. Scoping of community health and safety risks and impacts related to the project;
b. Assessment of significant community health and safety risks and impacts related to the project;
c. Development of prevention or mitigation strategies;
d. Collection of any data needed to inform the health risk and impact assessment process; and
e. Design and implementation of community health and safety monitoring programs.

Construction

3.3.7. Reporting

3.3.7.1. The company shall make information on community health and safety risks and impacts and monitoring results publicly available.

Construction

[183] Relevant community members include women, men, children or their representatives, other vulnerable groups (e.g., ethnic minorities, the elderly, health-compromised individuals, children) or their representatives, public health providers, government health agencies, and workers who live in affected communities. A review of government statistics on various diseases may help to reveal other relevant populations.

Chapter 3.4—Mineral Exploration and Development and Conflict-Affected or High-Risk Areas

NOTE TO REVIEWERS ON CHAPTER 3.4:

We have revised the title of this chapter compared to the Mining Standard, to make it more applicable to the exploration and development phases.

We have also added specificity in some of the requirements here that is not contained in the Mining Standard (e.g., that standard does not consistently refer to assessing the transport of minerals through conflict-affected and high-risk areas).

We have written this chapter to apply to all stages of exploration, mining project development and construction.

During Stage 1 and Pre-Permitting and Mine Permitting projects are still in the "consideration" or "proposal" phase, and during Construction there shouldn't be transport or import of minerals yet. But it is possible that the mere presence of company (either consultants undertaking studies, surveys, or construction workers, etc.) might create risks to human rights or the potential that armed groups might try to extort "fees", etc. Even in Stage 1, it is plausible that employees of a company, even if not physically present in the conflict-affected or high-risk area, could be carrying out activities that could exacerbate conflict or lead to infringements of human rights in such areas. So all stages of exploration and development have been included below.

CONSULTATION QUESTION 82: Is it reasonable to expect that Exploration companies engaged at Stage 1 carry out due diligence activities if they are even looking at seeking exploration permits for exploration concessions in conflict-affected or high-risk areas?

BACKGROUND

Mineral exploration and development projects may take place in areas where there are existing or potential conflicts or socio-political instability that can adversely affect the project and local stakeholders. In some cases, conflict may be external to the company's project, and in other cases conflict may be caused, exacerbated or supported by a company's activities or presence in an area.

"Companies and their investors are paying increased attention to the challenges and opportunities of doing business in conflict-affected and high-risk areas. These areas differ significantly from more stable operating environments and require companies and investors to take into consideration additional factors."[184]

Developing suitable responses when exploring for or developing minerals from conflict-affected or high-risk areas is challenging, but guidance exists to assist companies in identifying, assessing and mitigating risks and impacts associated with operating in those areas. The most widely accepted framework is the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas.[185]

[184] UN Global Compact and PRI (2010). They elaborate that "The following conditions often prevail in conflict-affected and high-risk areas: human rights violations; presence of an illegitimate or unrepresentative government; lack of equal economic and social opportunity; systematic discrimination against parts of the population; lack of political participation; poor management of revenues, including from natural resources; endemic corruption; and chronic poverty with associated heightened risks and responsibilities." (UN Global Compact and PRI. 2010. *Guidance on Responsible Business in Conflict-Affected and High Risk Areas: A Resource for Companies and Investors.* https://www.unglobalcompact.org/docs/issues_doc/Peace_and_Business/Guidance_RB.pdf)

[185] Organisation for Economic Cooperation and Development (OECD). 2016. OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas. (3rd Ed.) https://mneguidelines.oecd.org/mining.htm

Such guidance is increasingly being used as a means of cultivating transparent mineral supply chains and corporate engagement in the mineral sector, with a view to enabling countries to benefit from their mineral resources and preventing the extraction and trade of minerals from becoming a source of conflict, human rights abuses, and insecurity.

OBJECTIVES/INTENT OF THIS CHAPTER

To prevent contribution to conflict or the perpetration of serious human rights abuses in conflict-affected or high-risk areas.

SCOPE OF APPLICATION

RELEVANCE: All mineral exploration and development projects applying for IRMA certification are expected to have undertaken conflict screening (criterion 3.4.1) to determine if they are in a conflict-affected or high-risk area. The due diligence requirements that follow 3.4.1 are relevant for projects that are proposed or located in conflict-affected or high-risk areas, as well as projects that have product that is transported through conflict-affected or high-risk areas (if the material is in the custody or ownership of the company).[186]

CRITICAL REQUIREMENTS IN THIS CHAPTER

When carrying out project-related activities, or when transporting minerals through or sourcing minerals from a conflict-affected or high-risk area, the company has committed to not support any parties that contribute to conflict or the infringement of human rights in those areas (3.4.2.1).

Mining and Conflict-Affected or High-Risk Area Requirements

3.4.1. Conflict-Affected and High-Risk Area Screening

3.4.1.1. The company shall conduct a screening analysis, based on evidence from credible sources,[187] to determine whether or not the mining project is located in, will require transport of minerals through, or will involve sourcing minerals from a conflict-affected or high-risk area.

3.4.1.2. If a determination is made that the mining project is located in, will require transport of minerals through, or will involve sourcing minerals from a conflict-affected or high-risk area, then the company shall undertake the additional due diligence steps outlined in the remainder of this chapter.

3.4.1.3. If a determination is made that the mining project is not located in, will not require transport of minerals through, and will not involve sourcing minerals from a conflict-affected or high-risk area, then the situation shall be monitored at a level commensurate with the potential that the project area, proposed transport routes or source areas may become a conflict-affected or high-risk area and/or that minerals from such areas may enter the mine's supply chain. If new risks emerge or previously identified risks intensify, screening shall take place to determine if risks are significant enough to warrant undertaking the additional due diligence steps in the remainder of this chapter.

Construction

3.4.2. Company Management Systems

[186] This is based on a similar requirement found in the World Gold Council's Conflict-Free Gold Standard. A2.2. Available at: www.gold.org/gold-mining/responsible-mining/conflict-free

[187] Ibid.

3.4.2.1. (Critical Requirement)
When carrying out project-related activities, or when transporting minerals through or sourcing minerals from a conflict-affected or high-risk area, the company shall not knowingly or intentionally cause, contribute to or be linked to conflict or the infringement of human rights by any party, or knowingly provide direct or indirect support to non-state armed groups or their affiliates, public security forces, or private security forces who:

a. Illegally control mineral exploration or mine sites, transportation routes and upstream actors in the supply chain;
b. Illegally tax or extort money or minerals at point of access to mine sites, along transportation routes for minerals or metal-bearing materials or at points where minerals or metal-bearing materials are traded; or Illegally tax or extort intermediaries, export companies or international traders.

NOTE ON 3.4.2.1: This may be relevant to companies in the Pre-Permitting and Permitting stages because the offices of the companies may be located in a conflict-affected or high-risk areas, so they would be carrying out project-related activities in such areas.

Pre-permitting | Mine Permitting | Construction

NOTE ON 3.4.2.2 (below): Instead of writing out what the policy should contain, we are proposing to refer instead to an "OECD-compliant policy", which we will define as being a policy that aligns with the model policy found in Annex II of the OECD Due Diligence Guidance for Mineral Supply Chains.[188]

In 3.4.2.2.b there are differences between Exploration and subsequent stages, because during exploration many of the details that related to mineral extraction are not yet relevant.

3.4.2.2. If the company operates in, proposes a mining project in, will transport minerals through or will source minerals from a conflict-affected or high-risk area, the company shall:

a. Adopt and communicate to the public and stakeholders a commitment that when carrying out project-related activities, or when transporting minerals through or sourcing minerals from a conflict-affected or high-risk area the company will not knowingly or intentionally cause, contribute to or be linked to conflict or the infringement of human rights by any party;
b. Develop and implement, as relevant, a system to document the quantity and dates of mineral extraction; quantity and dates of minerals obtained from other sources (e.g., from ASM); locations where minerals are consolidated, traded or processed; all taxes, fees, royalties or other payments made to governmental officials for the purposes of mineral development, extraction, trade, transport and export of minerals; all taxes and other payments made to public or private security forces or other armed groups; identification of all actors in the upstream supply chain; and transportation routes;[189]

NOTE FOR 3.4.2.2.b: During Pre-Permitting and Permitting and Construction there may not be much documentation, other than payments to governments or other armed groups, since mineral extraction has not yet begun. But taxes and other payments to governments, at minimum, should be occurring. For the rest, a system can be developed to ensure that once a mine is operational, those elements can be tracked.

[188] OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas. 3rd Ed. https://mneguidelines.oecd.org/mining.htm

[189] Documentation for some of these items is required in IRMA Chapter 1.5 (e.g., quantities of minerals produced; mining-related taxes, fees, royalties and other payments made to governments). See requirements 1.5.1.2 and 1.5.2.2. Documentation on those particular items does not need to be provided to auditors for the purposes of this chapter if the site has already been verified as meeting the relevant requirements of Chapter 1.5.

c. Make the information in 3.4.2.2.b available to auditors, to downstream purchasers, if relevant, and to any institutionalized mechanism, regional or global, with the mandate to collect and process information on minerals from conflict-affected and high-risk areas;[190]

NOTE FOR 3.4.2.2.c: The phrase "if relevant" was added after downstream purchasers because there may not be any purchasers during these early stages.

d. Assign authority and responsibility to senior staff with the necessary competence, knowledge and experience to oversee the conflict due diligence processes; and
e. Ensure that stakeholders have access to and are informed about a mechanism to raise conflict-related concerns or grievances.[191]

Pre-permitting | Mine Permitting | Construction

3.4.3. Risk Assessment

NOTE FOR 3.4.3: We have revised the title of the criterion. In the Mining Standard it was named "Conflict Risk Assessment," but the assessment goes beyond assessing conflict-related impacts. It also assesses the potential for human rights impacts and other issues that may be present in high-risk areas where conflict may not be the dominating or defining characteristic.

We also made some minor changes to wording compared to the Mining Standard.

3.4.3.1. The company shall assess the risks to the company, workers and communities associated with operating in, transporting minerals through, or sourcing minerals from the conflict-affected or high-risk area. Assessments shall include, at minimum:

a. Analysis of structural, root and proximate factors in the current conflict, and potential triggers of conflict in the area of operation;[192]
b. Review of the factual circumstances of the company's proposed or actual exploration activities, mineral development activities, extraction, transport, and, if relevant, mineral sourcing and/or processing;[193] and
c. Analysis of the risk that any of the company's activities may lead to the direct or indirect infringement of human rights, the support of armed groups or contribute to conflict.

3.4.3.2. Assessments shall:

a. Follow a recognized risk assessment methodology,[194]
b. Be carried out and documented by competent professionals; and

[190] The company may exclude information that compromises the safety of any individual or is legitimate confidential business information. Justification shall be provided for information that is omitted.

[191] The operational-level grievance mechanism developed as per Chapter 1.4 may be used as the mechanism to receive all types of concerns or complaints, including conflict-related grievances, or a separate mechanism may be created to handle only conflict-related complaints and grievances. If a separate mechanism is developed, it shall be done in a manner consistent with Chapter 1.4.

[192] Structural/root factors are long-term, deep-rooted factors underlying conflict; proximate/intermediate factors are visible, recent manifestations of the conflict, and factors; and triggers are actions that contribute to further escalation of the conflict. For more information on structural, root and proximate causes, as well as potential triggers of conflict, see: UN Development Group. 2016. Conducting a Conflict and Development Analysis. pp. 59-64. https://undg.org/wp-content/uploads/2016/10/UNDP_CDA-Report_v1.3-final-opt-low.pdf

[193] This requirement comes from OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas. For more details on factual circumstances see, for example, p. 82 of OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas. 3rd Ed. https://mneguidelines.oecd.org/mining.htm

Mineral sourcing refers to situations where the company purchases ore or mined materials from other mines, and processes it at the mine site. These materials may come from other large-scale mines or artisanal and small-scale mining (ASM) operations (See also Chapter 3.6).

[194] Risk assessments typically include: establishment of scope; identification of risks; assessment of risks; development of risk treatment and mitigation measures; monitoring and revision; as well as stakeholder engagement and communication requirements.

c. Be based on credible evidence including on-the-ground research, expert advice, and information from consultations with relevant stakeholders, including men, women, children (or their representatives) and other vulnerable groups.[195]

NOTE ON 3.4.3.2: Combined 3.4.3.2 and 3.4.3.3 from the Mining Standard.

3.4.3.3. Risk assessments shall be updated at minimum, on an annual basis, and more often if necessitated by the situation.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.4.4. Risk Management

NOTE FOR 3.4.4: We have revised the title of the criterion. In the Mining Standard it was named "Conflict Risk Management." See Note for 3.4.3.

Requirement 3.4.4.3 from the Mining Standard, which addresses risks to human rights, has been combined with 3.4.4.1 here.

3.4.4.1. The company shall develop and implement a risk management plan that includes actions to be taken to prevent or mitigate risks identified through the risk assessment process. If risks to human rights are identified in the assessment, the actions shall align with the requirements in IRMA Chapter 1.3.[196]

3.4.4.2. The company shall collaborate with relevant stakeholders to develop culturally appropriate strategies to prevent or mitigate risks that are relevant to them; and to develop performance objectives, timelines and indicators to measure the effectiveness of the risk management strategies.[197]

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.4.5. Monitoring

3.4.5.1. The company shall implement and monitor the effectiveness of its risk management plan as per the performance objectives, timelines and indictors developed with stakeholders.

3.4.5.2. If through monitoring or some other means it is discovered that the company has unknowingly or unintentionally been complicit in armed conflict or serious human rights abuses related to operating in, pursuing mineral exploration or development in, transporting minerals through or sourcing minerals from conflict-affected

[195] "credible evidence" may include reports and other information (e.g., maps, statements) relating to mineral extraction, and its impact on conflict, human rights or environmental harm. Sources of evidence would be considered credible if they are trusted and/or referred to by a range of stakeholders, including competent professional and experts who work on human rights and/or conflict-affected areas. Such sources may come from governments, international organizations, NGOs, industry, media, United Nations, academics or others.

"expert advice" may involve drawing on expertise and cross-functional consultation within the company, but also consulting externally with credible independent experts, including from governments, civil society (e.g., human rights defenders), national human rights institutions and relevant multi-stakeholder initiatives. (See, e.g., UN Guiding Principles on Business and Human Rights, Commentary for Principle 23. http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf)

"Relevant stakeholders" may include local government or community leaders; civil society organizations; other companies operating in the area; or independent experts with local knowledge and expertise. Special effort should be made to include women, children or their representatives, and other groups who may be particularly vulnerable to impacts from security arrangements (e.g., this might include ASM operators, human rights defenders, and youth).

[196] The risk of committing, contributing to or being linked to human rights violations is increased in conflict-affected and high-risk areas. When projects are located in conflict-affected or high-risk areas, companies must ensure that risks to human rights are addressed as per IRMA Chapter 1.3. The chapter requires steps to prevent, mitigate and remediate potential and actual human rights impacts.

[197] For this requirement, "relevant stakeholders," at minimum, should include those who have the potential to be directly affected (either actual individuals or their representatives) by the risks identified by the company. And "culturally appropriate" strategies would be those that are aligned with the cultural norms of the affected communities. Stakeholders can help to define for the company what is considered culturally appropriate. (For more on culturally appropriate engagement, see IRMA Chapter 1.2).

or high-risk areas, the company shall immediately cease or change the offending action, mitigate or remediate the impact, and carry out external monitoring of its due diligence activities as per as per IRMA Chapter 1.3.[198]

NOTE FOR 3.4.5.2: Slight wording changes from the Mining Standard.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.4.6. Reporting

3.4.6.1. The findings of risk assessments, risk management plans and monitoring shall be reported to senior management of the company; and stakeholders, contractors, workers and other employees shall be informed of findings that are relevant to them.

3.4.6.2. On an annual basis, where the company is operating in, pursuing mineral exploration or development in, transporting minerals through or sourcing minerals from a conflict-affected or high-risk area, the company or its corporate owner shall publicly report on due diligence undertaken to ensure that its actions are not supporting armed conflict or the infringement of human rights.[199]

NOTE FOR 3.4.6.2: Slight wording changes from the Mining Standard.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

NOTES

The most widely recognized due diligence framework for minerals sourced from conflict zones is the *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* (OECD Guidance).[200] The OECD Guidance formed the basis for many of the requirements in this chapter.

The risk of committing, contributing to or being linked to human rights violations is increased in conflict-affected and high-risk areas. Requirement 3.4.2.1 mentions that companies shall not infringe upon human rights, however, Chapter 1.3 is the primary chapter that addresses IRMA's expectations related to the infringement of human rights. When projects are located in conflict-affected or high-risk areas, companies must ensure that risks to human rights are addressed as per Chapter 1.3 Human Rights Due Diligence.

IRMA reserves the right to delay independent, 3rd-party assessments for projects located in conflict-affected or high-risk areas if IRMA and/or certification bodies determine that conflict in the vicinity of a project creates unacceptable risks to auditors.

[198] IRMA Chapter 1.3—Human Rights Due Diligence. (See specifically, requirements 1.3.3.3. and 1.3.4.2.).

[199] This report may be integrated into the reporting on human rights due diligence as per IRMA requirement 1.3.5.1.

[200] OECD. 2016. OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas. (3rd Ed.) https://mneguidelines.oecd.org/mining.htm

Chapter 3.5—Security Arrangements

NOTE TO REVIEWERS ON CHAPTER 3.5:

This chapter is essentially the same as the Mining Standard, other than a few minor word changes. We've used the generic term "project" for all stages, to simplify the presentation of this chapter.

The chapter was written to address the potential for conflicts between security forces and communities in the context of large-scale mining operations. The chapter is based on the principles and framework established by the Voluntary Principles on Security and Human Rights (VPSHR) (https://www.voluntaryprinciples.org). As explained by the VPSHR, the Voluntary Principles on Security and Human Rights ("VPs") is "an important tool that can assist both governments and companies in their efforts to implement the U.N. Guiding Principles [on Business and Human Rights] in the area of security".

We are proposing that these requirements are applicable if there is a project site where mineral exploration or project-development activities like sampling, studies or surveys, or construction activities are occurring, as conflicts could arise in those situations that may result in interactions between site security and nearby communities or others. It is often during exploration or project proposal phase when communities or groups within communities become active in their opposition to mineral extraction, which can create the potential for conflict and infringement of human rights.

CONSULTATION QUESTION 83: At the present time, the only Criterion we are applying to proposed mining projects is 3.5.2, related to risk assessment and management. Companies at the Pre-Permitting and Permitting Stages will be expected to both assess and manage risks related to the project site (if relevant), and also carry out an assessment to determine if there may be risks related to security arrangements for the proposed mining project. If there are either type of risks, they will be expected to be managed accordingly.

It is assumed that other requirements will be applied during the project development stage, and that if the mine becomes operational, the policies and procedures developed for the project will carry over to the mining operation. So we did not state that the other requirements need to be developed for the proposed mining project. Do you agree with this approach? Or are there other requirements or Criterion that should be developed specifically in relation to the proposed mining project?

CONSULTATION QUESTION 84: Currently we've only applied one requirement to Stage 1, the policy commitment in 3.5.1.1, given that Stage 1 is likely taking place in an office environment, and not at a project site where security might be necessary. Is there any reason that some of the additional requirements other than a policy commitment might be relevant at that early stage?

BACKGROUND

Security risks to mineral exploration and development projects may result from political, economic, civil or social factors. The role of public or private security forces used in relation to exploration and development should be to maintain the rule of law, including safeguarding human rights; provide security to workers, equipment and facilities; and protect the project site or transportation routes from interference with legitimate extraction and trade.

Project security arrangements that are founded on a substantial understanding of the context, stakeholders and international best practice can help a company reduce the potential for violent conflicts with communities or workers, contribute to peace and stability in the regions where it operates, and demonstrate respect for the human rights of stakeholders affected by a company's activities.

OBJECTIVES/INTENT OF THIS CHAPTER

To manage security in a manner that protects mineral exploration and development projects without infringing on human rights.

SCOPE OF APPLICATION

RELEVANCE: The majority of the requirements in this chapter are relevant for any project that employs security personnel (e.g., security guards, public or private security forces) at its project site.

Some requirements in this chapter are only relevant for companies that have security arrangements involving private security providers (i.e., 3.5.1.3, 3.5.3.1, 3.5.4.1), and others are only relevant if public security forces such as police or military personnel are used (i.e., 3.5.1.4, 3.5.3.2, 3.5.4.2).

CRITICAL REQUIREMENTS IN THIS CHAPTER

The company has policy and procedures in place that align with best practices to limit the use of force and firearms by security personnel (3.5.1.2).

Security Arrangements Requirements

3.5.1. Policies and Commitments Related to Security and Human Rights

3.5.1.1. The company shall adopt and make public a policy acknowledging a commitment to respect human rights in its efforts to maintain the safety and security of its project; and a commitment that it will not provide support to public or private security forces that have been credibly implicated in the infringement of human rights, breaches of international humanitarian law or the excessive use of force.[201]

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.5.1.2. The company shall have a policy and procedures in place regarding the use of force and firearms that align with the best practices expressed in United Nations *Basic Principles on the Use of Force and Firearms*.[202] At minimum, the company's procedures shall require that:

a. Security personnel take all reasonable steps to exercise restraint and utilize non-violent means before resorting to the use of force;
b. If force is used it shall not exceed what is strictly necessary, and shall be proportionate to the threat and appropriate to the situation; and
c. Firearms shall only be used for the purpose of self-defense or the defense of others if there is an imminent threat of death or serious injury.

3.5.1.3. If private security is used in relation to the project, the company shall have a signed contract with private security providers that at minimum:

a. Sets out agreed on principles that are consistent with the Voluntary Principles on Security and Human Rights[203] and the company's procedures on the use of force and firearms;
b. Delineates respective duties and obligations with respect to the provision of security in and around the project and, if relevant, along transport routes; and
c. Outlines required training for security personnel.

3.5.1.4. If public security forces provide security to the project and/or transport routes, the company shall make a good faith effort to sign a Memorandum of Understanding or similar agreement with public security providers that includes similar provisions to those in 3.5.1.3.

Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

[201] These commitments may be made in a broader Human Rights Policy, or another relevant policy.

[202] UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials (Available at: www.ohchr.org/EN/ProfessionalInterest/Pages/UseOfForceAndFirearms.aspx)

[203] Voluntary Principles on Security and Human Rights. 2014. www.voluntaryprinciples.org

3.5.2. Security Risk Assessment and Management

NOTE FOR 3.5.2: During Pre-Permitting and Permitting, there may be risks related to current company activities at the project site, as well as risks should the proposed mining project be developed. Thus, for those stages the company will be expected to not only evaluate risks at the current project site, but also carry out an assessment of potential risks associated with the proposed mining project.

See CONSULTATION QUESTION 83 in Note to Reviewers on Chapter 3.5.

3.5.2.1. The company shall assess security risks and potential human rights impacts that may arise from security arrangements. Assessments of security-related risks and impacts shall be updated periodically, including, at minimum, when there are significant changes in project activities, security arrangements or in the operating environment.[204]

3.5.2.2. Assessments, which may be scaled to the size of the company and severity of security risks and potential human rights impacts, shall:

a. Follow a credible process/methodology;[205]
b. Be carried out and documented by competent professionals; and
c. Draw on credible information obtained from a range of perspectives, including men, women, children (or their representatives) and other vulnerable groups, relevant stakeholders and expert advice.[206]

3.5.2.3. The scope of the security risk assessment shall include, but need not be limited to:

a. Identification of security risks to the company, workers and communities, paying particular attention to risks to women, children and other vulnerable groups;
b. Analysis of the political and security context in the host country context (e.g., the human rights records of the government and public and private security forces; adherence to the rule of law; corruption);
c. Analysis of current and potential conflicts or violence in the host country and affected communities; and
d. Risks associated with equipment transfers.

3.5.2.4. The company shall develop and implement a risk management plan that includes actions to be taken to prevent or mitigate identified risks, and monitoring that will be conducted to ensure that mitigation measures are effective.

3.5.2.5. If the security risk assessment reveals the potential for conflicts between security providers and affected community members or workers, then the company shall collaborate with communities and/or workers to develop mitigation strategies that are culturally appropriate and that take into consideration the needs of women, children

[204] A risk assessment in 3.5.2 is not a one-time occurrence. According to the Voluntary Principles on Security and Human Rights (VP) Implementation Guidance Tools, "Any major decision relating to a project or company might represent an appropriate time to conduct or renew a risk assessment, e.g., a project expansion, an acquisition or merger or any other major business decision. Major changes in external circumstances may bring about the need to conduct a VPs risk assessment. This may include a change in government, the outbreak of conflict, an economic crisis, or a major political or policy decision." (ICMM, IFC and IPIECA. 2012. Voluntary Principles on Security and Human Rights Implementation Guidance Tools. p. 24. http://www.voluntaryprinciples.org/files/VPs_IGT_Final_13-09-11.pdf)

[205] Risk assessments typically include: Establishment of scope; Identification of sources of risk; Identification of risks; Assessment of risks; Development of risk treatment and mitigation measures; and Communications, Monitoring and Assessment and Revision (Source: Voluntary Principles Implementation Guidance Tool. p. 23). The assessment of security risks may be integrated in existing risk assessment processes.

[206] Special effort should be made to include women, children or their representatives, and other groups who may be particularly vulnerable to impacts from security arrangements (e.g., this might include ASM operators, human rights defenders, and youth) Other relevant local stakeholders may include local government or community leaders, civil society organizations or other companies operating in the area. Expert advice may come from governments, multi-stakeholder initiatives, human rights institutions and civil society or academics with local knowledge and expertise.

and other vulnerable groups. If specific risks to human rights are identified in the assessment, the mitigation strategies shall conform with requirements in IRMA Chapter 1.3.[207]

Stage 2 | Stage 3 | Construction

3.5.3. Due Diligence Prior to Hiring Security Personnel

3.5.3.1. Prior to hiring private security, the company shall develop and implement due diligence procedures to prevent the hiring of company security personnel and private security providers who have been convicted of or credibly implicated in the infringement of human rights, breaches of international humanitarian law or the use of excessive force.[208]

3.5.3.2. If public security forces will be present at the site, the company shall make a good faith effort to determine if public security personnel providing security to the mine have been convicted of or credibly implicated in the infringement of human rights, breaches of international humanitarian law or the use of excessive force.

Construction

3.5.4. Training

3.5.4.1. Prior to deployment of company or private security personnel, the company shall provide training that incorporates, at minimum, information related to ethical conduct and respect for the human rights of workers and affected communities, with particular reference to vulnerable groups, and the company's policy on the appropriate use of force and firearms. Initial training and refresher courses shall be mandatory for all company personnel involved in security, and for private security contractors that have not received equivalent training from their employers.

3.5.4.2. If public security forces are to be used, the company shall determine if public security personnel are provided with training on human rights and the appropriate use of force and firearms. If this training is not occurring, the company shall offer to facilitate training for public security personnel that provide security to the project.

Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

3.5.5. Management of Security Incidents

3.5.5.1. The company shall:

a. Develop and implement systems for documenting and investigating security incidents, including those involving impacts on human rights or the use of force;
b. Take appropriate actions, including disciplinary measures, to prevent and deter abusive or unlawful acts by security personnel and acts that contravene the company's policies on rules of engagement, the use of force and firearms, human rights, and other relevant policies;
c. Take appropriate actions to mitigate and provide remediation for human rights impacts (as per IRMA Chapter 1.3),[209] injuries or fatalities caused by security providers;

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[207] IRMA Standard, Chapter 1.3—Human Rights Due Diligence. (See specifically, requirement 1.3.3.2).

"culturally appropriate" strategies would be those that are aligned with the cultural norms of the affected communities. Stakeholders can help to define for the company what is considered culturally appropriate. (For more on culturally appropriate engagement, see IRMA Chapter 1.2)

[208] Due diligence includes research or investigations to vet prospective private security providers and security personnel such as: history of respect for/violations of human rights law and international humanitarian law; personal/business reputation; management style and ethics of key executives; litigation and criminal offence history; procedures on use of force and firearms; compliance with health, safety and environmental regulations; etc. (VP Implementation Guidance Tool. pp. 52, 53. http://www.voluntaryprinciples.org/files/VPs_IGT_Final_13-09-11.pdf).

[209] IRMA Standard, Chapter 1.3—Human Rights Due Diligence. (See specifically, requirement 1.3.3.3).

d. Report security incidents, including any credible allegations of human rights abuses by private or public security providers, to competent authorities and national human rights institutions, and cooperate in any investigations or proceedings;
e. Provide medical assistance to all injured persons, including offenders; and
f. Ensure the safety of victims and those filing security-related allegations.

3.5.5.2. In the event of security-related incidents that result in injuries, fatalities or alleged human rights impacts on community members or workers, the company shall provide communities and/or workers with information on the incidents and any investigations that are underway, and shall consult with communities and/or workers to develop strategies to prevent the recurrence of similar incidents.

Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.5.6. Communication and Disclosure

3.5.6.1. The company shall consult regularly with stakeholders, including host governments and affected communities, about the impact of their security arrangements on those communities; and shall report to stakeholders annually[210] on the company's security arrangements[211] and its efforts to manage security in a manner that respects human rights.

NOTE FOR 3.5.6.1: Combined 3.5.6.1 and 3.5.6.2 from the Mining Standard.

3.5.6.2. Stakeholders and workers shall have access to and be informed about a mechanism to raise and seek recourse for concerns or grievances related to project security.[212]

NOTE FOR 3.5.6.3: Added that workers should also have access to a mechanism to raise issues related to project security.

3.5.6.3. If public security forces are providing security for any aspect of the project, the company shall encourage host governments to permit making security arrangements, such as the purpose and nature of public security, transparent and accessible to the public, subject to any overriding safety and security concerns.[213]

Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

NOTES

This chapter draws on the Voluntary Principles on Security and Human Rights ("Voluntary Principles"), which provides a widely recognized framework for risk assessment and management of security providers that is respectful of human rights.[214] Companies are encouraged to become corporate participants in the Voluntary Principles initiative, to learn from and share knowledge with other companies and participants regarding best practices related to security and human rights.[215]

[210] E.g., The company may either report verbally, for example at a public meeting, or publish a report (such as an annual progress report produced by companies participating in the Voluntary Principles on Human Rights) that is available to stakeholders. See Guidance for more information.

[211] Security arrangements could include information on the company's policies and procedures, such as how it approaches use of force.

[212] The operational-level grievance mechanism developed as per Chapter 1.4 may be used as the mechanism to receive and address security-related grievances, or a separate mechanism may be created to handle only security-related concerns. The grievance mechanism for workers required in Chapter 3.1 may also be used.

[213] As explained in the Voluntary Principles Implementation Guidance Tool, information that could create security and safety concerns or human rights risks would include specific troop movements, supply schedules, company personnel movements, locations of valuable or hazardous equipment, etc.). ICMM, IFC and IPIECA. 2012. Voluntary Principles on Security and Human Rights Implementation Guidance Tools. p. 47. http://www.voluntaryprinciples.org/files/VPs_IGT_Final_13-09-11.pdf

[214] Voluntary Principles on Security and Human Rights. 2014. www.voluntaryprinciples.org

[215] ibid. "Voluntary Principles Initiative – Guidance on Certain Roles and Responsibilities of Companies." www.voluntaryprinciples.org/wp-content/uploads/2014/10/VPs_-_Roles_and_Responsibilities_-_Corporate_Pillar1.pdf

Chapter 3.6—Artisanal and Small-Scale Mining

NOTE TO REVIEWERS ON CHAPTER 3.6:

The requirements in this chapter were developed specifically in relation to the interaction between large-scale mine sites and artisanal and small-scale mining operations (ASM). Mining occurs in particular areas because those areas are mineralized. In some cases, ASM and LSM miners are targeting the same minerals/metals, but this is not always the case. Regardless of the target minerals, the high potential for ASM activity in the vicinity of large-scale mines creates potential for conflict between the different miners, as well as potential for positive transfer of information and technologies. IRMA's Mining Standard promotes such positive interactions, and the mitigation of potential negative interactions.

The requirements in the Mining Standard are also applicable to Exploration and Development, as there may be interactions between company personnel and ASM entities during these phases. And any company considering the possibility of developing a mine where ASM is already occurring needs to understand the context and should be determining how mining can proceed in a manner that will lead to positive outcomes for the ASM entities who might already be operating in or be attracted to the project area.

Currently we are only requiring that exploration companies in Stage 1 understand the ASM context, as it will help inform them whether or not to proceed to Stage 2.

CONSULTATION QUESTION 85: Is there any reason that some of the additional requirements other than a policy commitment might be relevant at Stage 1 of Exploration?

BACKGROUND

It has been estimated that there are between 20 and 30 million men, women and children involved in artisanal and small-scale mining (ASM) worldwide, and that the ASM sector is responsible for 15 to 20 percent of the production of global minerals and metals.[216]

While there is no single definition of artisanal and small-scale mining (ASM), it is generally understood to encompass a range of activities, including prospecting, exploration, extraction, processing and transportation, and use more simplified and labor-intensive technologies and practices than large-scale industrial mining.

The ASM sector is complex and diverse. It includes individuals or families mining to earn or supplement their livings, as well as small-scale commercial operations that employ numerous workers. Much of ASM is informal, with entities operating in in contravention to laws, or in the absence of an appropriate legal framework, although some ASM operators do have permits, pay taxes and abide by social and environmental regulations.[217] In some contexts, there may be a criminal element to ASM activities, such as smuggling, tax evasion, money laundering, trafficking in illegal chemicals, or financing of conflict.[218]

ASM sometimes occurs in areas close to mineral exploration concessions. ASM miners may have traditionally operated in those areas, full-time or seasonally, or in other cases miners may have arrived during exploration or after the development of the large-scale mine (LSM).

[216] Buxton, A. 2013. Responding to the Challenge of Artisanal and Small-Scale Mining: How can knowledge networks help? Institute for Environment and Development (IIED), London. p. 3. http://pubs.iied.org/16532IIED/

[217] ibid. p. 4; Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF). 2017. IGF Guidance for Governments: Managing Artisanal and Small-Scale Mining. International Institute for Sustainable Development (IISD).p. 5. http://igfmining.org/wp-content/uploads/2017/01/igf-guidance-for-governments-asm.pdf

[218] IGF, 2017, p. 12; and Echavarria, C. 2014. 'What is legal?' Formalising Artisanal and Small-Scale Mining in Colombia. Institute for Environment and Development (IIED), London and Alliance for Responsible Mining (ARM), Columbia. P. 23. http://pubs.iied.org/pdfs/16565IIED.pdf

Given the diversity within the ASM sector, it is understandable that interactions between mineral exploration and development company and ASM entities can also take on a variety of forms, from violent confrontation to harmonious co-existence.[219]

ASM is playing a growing role in many national economies,[220] and holds the potential to provide decent livelihoods if conducted in an organized and responsible manner and afforded more secure access to capital and markets. Mineral exploration and development companies that operate in the same regions as ASM, or that purchase minerals produced by ASM, have the opportunity to contribute to positive transformations in the ASM sector.

OBJECTIVES/INTENT OF THIS CHAPTER

To avoid conflict and, where possible within the scope of national law, foster positive relationships between mineral exploration and development companies and artisanal and small-scale mining (ASM) entities, and support the development of ASM that provides positive livelihood opportunities and is protective of human rights, health, safety and the environment.

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant to any mineral exploration and development project that has the potential to interact with ASM entities due to proximity or through commercial relationships such as sourcing ore or minerals from ASM entities.

CRITICAL REQUIREMENTS IN THIS CHAPTER

None.

Artisanal and Small-Scale Mining Requirements

3.6.1. Understand the ASM Context

3.6.1.1. The company shall determine if artisanal and small-scale mining (ASM) entities are present in a proposed project area, and if ASM entities are present the company shall carry out a scoping process to understand the legal, social and environmental context in which ASM activities are occurring.

NOTE FOR 3.6.1.1: We are proposing that companies need to do this no matter what stage they are at, including Stage 1. It is critical information that should inform whether or not, or how, a company might proceed with on-the-ground exploration activities.

If an evaluation was conducted at an earlier stage it may suffice, depending on how recent, given that conditions can change fairly rapidly in some locations.

Stage 1	Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.6.2. Engage with ASM Entities and Communities

NOTE FOR 3.6.2: The requirements in Criterion 3.6.2 have been scaled back from the Mining Standard, primarily because exploration companies will not have a constant presence on site, nor will they be generating profits that would enable them to be developing programs to benefit ASM. These points do not absolve exploration companies

[219] Communities and Small-Scale Mining, World Bank/IFC Oil, Gas and Mining Sustainable Community Development Fund and ICMM. 2010. Working Together - How Large-Scale Mining Can Engage with Artisanal and Small-Scale Miners. p. 5. https://www.commdev.org/wp-content/uploads/2015/06/Working-together-How-large-scale-mining-can-engage-with-artisanal-and-small-scale-miners.pdf

[220] Freundenberger, M., Ali, S., Fella, T. and Pennes, S. 2013. Property Rights and Artisanal Mining: Clarifying and Strengthening Rights: Options for Policymakers. USAID Issue Brief. p. 1. https://www.land-links.org/wp-content/uploads/2016/09/Property-Rights-and-Artisanal-Mining.pdf

of all responsibility, however, and so there are still requirements for engagement, sharing of information, and a responsibility to not harm and provide some benefits if possible.

When the company moves on to pre-permitting and permitting, more outreach has been added to the communities who may be affected by potential conflicts between ASM and a large-scale mine, if developed, in order to better understand their concerns.

3.6.2.1. When a company has identified the presence of ASM on or in close proximity to the proposed mining project area, and where there is no material risk to company personnel, it shall:

a. Make a good faith effort to inform ASM entities of the proposed mining project;
b. Make a good faith effort to engage with ASM entities including, where relevant, informal ASM operators and formal ASM associations, as part of ongoing stakeholder engagement efforts (See IRMA Chapter 1.2);
c. Make a good faith effort to consult with informal and formal ASM entities during relevant risk and impact assessments and closure planning, to inform company strategies on how best to mitigate negative impacts and contribute positive opportunities for those engaged in ASM;
d. Engage with communities that are or may be affected by ASM operations and/or interactions between LSM and ASM entities; and
e. Inform ASM entities and communities that there is an operational-level grievance mechanism available to raise concerns and resolve conflicts related to the proposed mining project.[221]

Pre-permitting | Mine Permitting | Construction

3.6.3. Foster Positive Relationships and Opportunities for ASM and Communities

3.6.3.1. The company shall ensure that project security personnel, if used, are trained in respecting the human rights of individuals engaged in ASM activities and members of affected communities.

3.6.3.2. The company shall demonstrate that it has considered opportunities to enhance positive safety, environmental and social impacts of ASM activities for the benefit of ASM entities and host communities.

Stage 2 | Stage 3 | Pre-permitting | Mine Permitting | Construction

[221] Ibid.

Chapter 3.7—Cultural Heritage

NOTE TO REVIEWERS ON CHAPTER 3.7:

The requirements in this chapter have been revised and streamlined compared to the Mining Standard, to reduce duplication and overlap. Of particular note, there is a criterion in the Mining Standard that is almost verbatim a requirement in Chapter 4.6. The intention of both is that mining is not to occur in, or affect, particular protected areas such as World Heritage Sites (WHS) and a few others. Instead of duplicating this requirement here, we are proposing that the requirement stay in Chapter 4.6, and apply regardless of whether the WHS or other areas were designated to protect ecological, cultural heritage or any other values.

Cultural heritage issues may have been screened (for exploration) or scoped (proposed mining projects) as part of an environmental and social impact assessment process (Chapter 2.1). Regardless of whether the evaluation was carried out as per Chapter 2.1 or as a standalone exercise as per Chapter 3.7, the additional requirements in this chapter must be followed (the chapter lays out the expected proposed mitigation steps to follow if risks to or impacts on cultural heritage have been identified).

The requirements in this chapter have not been included for Exploration Stage 1, but wording for Stage 2 makes it clear that screening for potential impacts on cultural heritage must be done "prior to commencing ground-disturbing exploration activities." (See requirement 3.7.2.1, Stage 2).

CONSULTATION QUESTION 88: Currently, there is no critical requirement in this chapter. Should we add a critical requirement, for example, 3.7.5.1, which seeks to preserve and protect "critical cultural heritage"? (See also CONSULTATION QUESTION 89)

BACKGROUND

Cultural heritage is the legacy of physical structures, landscapes and artifacts, as well as intangible attributes of a group or society, such as language, activities or knowledge that has cultural, scientific, spiritual or religious value.[222]

Over time, mineral exploration, development and mining can both create and also result in profound and irreversible damage to cultural heritage. Most obviously, activities can destroy or damage tangible cultural heritage, such as historical buildings or sites of spiritual significance. But damage to intangible cultural heritage may also occur, for example, as a result of inappropriate visitation of sites or the inappropriate use of traditional knowledge.[223]

Increasingly, mineral exploration and development companies are recognizing the importance of protecting and where possible promoting cultural heritage to respect the rights of, and strengthen relationships with communities wherever they operate.[224]

OBJECTIVES/INTENT OF THIS CHAPTER

To protect and respect the cultural heritage of communities and indigenous peoples.

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[222] Adapted from: Daes, E. 1995. Protection of the heritage of Indigenous People. Final report of the Special Rapporteur, Mrs. Erica-Irene Daes, in conformity with Subcommission resolution 1993/44 and decision 1994/105 of the Commission on Human Rights. E/CN.4/Sub.2/1995/26. June 21, 1995; and IFC. 2012. IFC's Guidance Notes: Performance Standards on Environmental and Social Sustainability. Guidance Note 7, p. 17.

[223] E.g., some indigenous heritage sites may be gendered—safe for one sex but dangerous to the other; indigenous peoples' knowledge regarding the existence, location and significance of sites is often not public; and in some cases, if knowledge of sacred sites is transferred inappropriately it may be dangerous to both the giver and receiver. (O'Faircheallaigh, C. 2008. Negotiating Cultural Heritage? Aboriginal-Mining Company Agreements in Australia. p. 7)

[224] E.g., see Anglo American. 2009. The Anglo Social Way: Management System Standards. p. 12. http://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/supplier/aa_social_way.pdf; and also: Rio Tinto. 2011. Why Cultural Heritage Matters. http://www.riotinto.com/documents/ReportsPublications/Rio_Tinto_Cultural_Heritage_Guide.pdf

SCOPE OF APPLICATION

RELEVANCE: This chapter is applicable to all mineral exploration and development projects applying for IRMA certification that occur in traditional or customary use areas of indigenous peoples and/or in areas where there may be artifacts of historical significance related to non-indigenous peoples.

CRITICAL REQUIREMENTS IN THIS CHAPTER

None.

Cultural Heritage Requirements

3.7.1. General Stipulations

NOTE FOR 3.7.1: The term scoping has been added, which was not in the Mining Standard. See Note for 3.7.2, below.

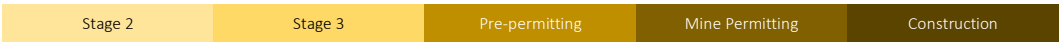
3.7.1.1. Screening, scoping, assessment and the development and implementation of mitigation measures and procedures related to the management of cultural heritage shall be carried out by competent professionals using internationally recognized practices for the protection of cultural heritage.

NOTE FOR 3.7.1.1: Added "using internationally recognized practices. . ." above. This enabled us to remove Mining Standard requirements later in the chapter (criteria 3.7.3 and 3.7.4) that duplicated this requirement.

3.7.1.2. Screening, scoping, assessment and the development of mitigation measures and procedures related to the management of cultural heritage shall include consultations with relevant stakeholders.

3.7.1.3. Cultural heritage assessments, management plans and procedures shall be provided to, or the company shall have a policy in place to make the information available upon request to, at minimum, stakeholders in affected communities and stakeholders who have been engaged on cultural heritage issues.

NOTE FOR 3.7.1.3. We have changed the wording in 3.7.1.3 related to making information available upon request to requiring that the company have a policy in place to make the information available to stakeholders upon request. See explanation in Chapter 1.2, Note for Criterion 1.2.4.



3.7.2. Cultural Heritage Screening, Scoping and Assessment

NOTE FOR 3.7.2: The title of this criterion includes the term screening (for exploration) and scoping (for Pre-Permitting/Permitting and Construction) to correspond with the language used in Chapter 2.1.

We have not required that screening and assessment occur in Stage 1 Exploration. In Guidance we will add that decisions related to moving on to ground-disturbing activities will need to be informed by cultural heritage screening. This screening could happen as part of Stage 1 exploration, but it must happen in Stage 2 before ground-disturbance takes place to avoid unanticipated impacts on critical cultural heritage.

3.7.2.2 has been slightly streamlined compared to the Mining Standard.

3.7.2.1. Either as part of Chapter 2.1 (see Criterion 2.1.3) or as a separate exercise, company shall undertake a scoping process to identify risks and potential impacts to replicable, non-replicable and critical cultural heritage from the proposed mining project (including project development activities and construction activities).

3.7.2.2. If the scoping indicates the potential for replicable, non-replicable or critical cultural heritage to be encountered during activities related to project development, construction or the proposed mining project, the company shall assess the nature and scale of the potential impacts and propose mitigation measures at least as

protective as the requirements below (see criteria 3.7.3, 3.7.4, 3.7.5 and 3.7.6), based on the type of cultural heritage likely to be affected.

NOTE FOR 3.7.2.1 and 3.7.2.2.: We have included scoping of cultural heritage issues during Construction, even though it should have been completed during Pre-Permitting and Permitting. If it was done during those phases then a company would not be expected to re-do the scoping. However, if it was not done earlier, it is expected that a scoping will take place during the Construction stage.

Pre-permitting | Mine Permitting | Construction

3.7.3. Replicable Cultural Heritage

NOTE FOR 3.7.3: In the Mining Standard there was a second requirement in this criterion. It duplicated what is required in 3.7.1.1, so it is not included.

3.7.3.1. When tangible replicable cultural heritage that is not critical is encountered during construction the company shall implement mitigation measures that favor avoidance. Where avoidance is not feasible, the following mitigation hierarchy shall apply:

a. Minimize adverse impacts and implement restoration measures, in situ, that ensure maintenance of the value and functionality of the cultural heritage, including maintaining or restoring any ecosystem processes needed to support it;
b. Where restoration in situ is not possible, restore the functionality of the cultural heritage in a different location, including the ecosystem processes needed to support it;
c. Where restoring the functionality of the cultural heritage in a different location is not feasible, permanently remove historical and archeological artifacts and structures; and
d. Where affected communities are using the tangible cultural heritage for long-standing cultural purposes compensate for loss of that tangible cultural heritage.

Construction

3.7.4. Non-Replicable Cultural Heritage

NOTE FOR 3.7.4: In the Mining Standard there was a second requirement in this criterion. It duplicated what is required in 3.7.1.1, so it is not included.

3.7.4.1. The company shall not remove any tangible nonreplicable cultural heritage, unless all of the following conditions are met:

a. There are no technically or financially feasible alternatives to removal;
b. The overall benefits of the proposed mining project conclusively outweigh the anticipated cultural heritage loss from removal; and
c. Any removal of cultural heritage is conducted using the best available technique.

Construction

3.7.5. Critical Cultural Heritage

NOTE FOR 3.7.5: The Mining Standard addresses cultural heritage-based "protected areas" in its chapter on Cultural Heritage protections. The Mining Standard, and this proposed Standard, also have chapters on Biodiversity, Ecosystem Services and Protected Areas. We are proposing here to address ALL protected areas in Chapter 4.6. Otherwise, there is the potential to confuse companies/auditors, or double count a company's performance in relation to protected areas (either doubly reward or doubly penalize, depending on the circumstances). The requirements removed from this chapter essentially duplicated those found in Chapter 4.6 (requirements 4.6.5.1 – 4.6.5.4). We have revised those requirements in Chapter 4.6 so that they now apply to all

protected areas, including ones developed to protect cultural heritage. If this seems like a reasonable approach, we will consider proposing the same change to the Mining Standard.

Note, also, that we removed a requirement that referred to avoiding contact with indigenous peoples living in voluntary isolation as a means of protecting their critical cultural heritage. That requirement was moved to the chapter on Free, Prior and Informed Consent (Chapter 2.2, requirement 2.2.3.2).

3.7.5.1. Except under exceptional circumstances, the company shall not remove, significantly alter or damage critical cultural heritage. In exceptional circumstances when impacts on critical cultural heritage are unavoidable, the company shall:[225]

a. Retain external experts to assist in the assessment and protection of critical cultural heritage, and use internationally recognized practices for the protection of cultural heritage;[226] and
b. Collaborate with affected communities to negotiate measures to protect critical cultural heritage and provide equitable outcomes for affected communities, and document the mutually accepted negotiation process and outcomes. Where impacts may occur to the critical cultural heritage of indigenous peoples, negotiation shall take place through the free, prior and informed consent (FPIC) process outlined in IRMA Chapter 2.2, unless otherwise specified by the indigenous peoples.

CONSULTATION QUESTION 89: Should the removal, alteration or damage to critical cultural heritage be prohibited during exploration, given the high likelihood that an exploration project will not result in the development of a mine?

Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

3.7.6. Commercial Use of Cultural Heritage[227]

3.7.6.1. Where the company proposes to use the intangible cultural heritage, including knowledge, innovations or practices of local communities for commercial purposes, the company shall inform these communities of their rights under national and international law, of the scope and nature of the proposed commercial development, and of the potential consequences of such development.

3.7.6.2. The company shall not proceed with such commercialization unless it:

a. Collaborates with affected communities using a good faith negotiation process that results in a documented outcome; and
b. Provides for fair and equitable sharing of benefits from commercialization of such knowledge, innovation, or practice, consistent with local customs and traditions.

3.7.6.3. Where the company proposes to use indigenous peoples' cultural heritage for commercial uses, negotiation shall take place through the free, prior and informed consent

process outlined in IRMA Chapter 2.2, unless otherwise specified by the indigenous peoples.

Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

[225] In addition to 3.7.5.1 a and b, as per 3.7.1.1 any mitigation shall be carried out by competent professionals using internationally recognized practices for the protection of cultural heritage.

[226] For example, the best available technique proposed by competent professionals hired by the company could undergo a peer review by international external experts, or technical experts selected by stakeholders, to ensure that no better, feasible techniques are available.

[227] At the present time, there are not clear examples of mining companies proposing to use intangible cultural heritage for commercial purposes. This requirement is from IFC, and the examples provided in IFC guidance include commercialization of traditional medicinal knowledge or other sacred or traditional technique for processing plants, fibers, or metals, or locally-sourced industrial design. (IFC. 2012. Performance Standard 8: Cultural Heritage. Guidance Note, GN29. https://www.ifc.org/wps/wcm/connect/39e39000498007fda1fff3336b93d75f/Updated_GN8-2012.pdf?MOD=AJPERES)

It is expected that community stakeholders will help to identify if there are cases where the exploration or mining project or company has proposed and/or used a community's intangible cultural heritage for commercial purposes.

3.7.7. Cultural Heritage Management

NOTE FOR 3.7.7: This requirement is similar for all stages, with minor changes to wording. 3.7.7.1 has been expanded compared to the Mining Standard. We recognized that we did not have consistent expectations for management plans in the Mining Standard, and are proposing to add that level of consistency for all management plans in this Standard. Also, we added contractors to the training requirement in 3.7.7.3. For the Pre-Permitting and Permitting stages, we made all requirements applicable because we assume that some of the activities during pre-permitting and permitting, such as collection of baseline data and other surveys could result in disturbance of cultural heritage, and so management plans and procedures related to chance finds should be developed and may need to be implemented.

CONSULTATION QUESTION 90: Should employees and contractors who do field work always be trained on cultural awareness, cultural heritage site recognition and care, and company procedures for cultural heritage management? If not, what would be the trigger? Would it be if the proposed project is in an area of known historic or current use by indigenous peoples? What might be alternative or additional criteria?

3.7.7.1. If replicable, non-replicable or critical cultural heritage is identified in the permitted mining area, a cultural heritage management plan or its equivalent shall be developed and implemented. The plan shall:

a. Outline the measures to avoid, and where that is not possible, minimize adverse impacts on cultural heritage. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound;
b. Describe implementation actions clearly assigned to a responsible party/ies;
c. Provide key indicators, linked to adequate baseline data, to enable measurement of the effectiveness of avoidance, minimization and/or offsetting activities over time; and
d. Include estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

3.7.7.2. If construction is occurring in an area where cultural heritage is expected to be found, the company shall develop and implement procedures for:

a. Managing chance finds, including, at minimum, a requirement that employees or contractors shall not further disturb any chance find until an evaluation by competent professionals is made and actions consistent with the requirements of this chapter are developed;
b. Managing potential impacts to cultural heritage from contractors and visitors;
c. Allowing continued access to cultural sites, subject to consultations with affected communities and overriding health, safety, and security considerations; and
d. If the mining project affects indigenous peoples' cultural heritage, the company shall collaborate with indigenous peoples to determine procedures related to the sharing of information related to cultural heritage.

3.7.7.3. The company shall ensure that relevant employees and contractors receive training with respect to cultural awareness, cultural heritage site recognition and care, and company procedures for cultural heritage management.

Construction

NOTES

This chapter uses, as its basis, the IFC Performance Standard 8—Cultural Heritage.[228]

[228] International Finance Corporation. 2012. Performance Standard 8 – Cultural Heritage. https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/performance-standards/ps8

Principle 4: Environmental Responsibility

Chapter 4.1—Waste and Materials Management

NOTE TO REVIEWERS ON CHAPTER 4.1:

This chapter is not relevant for Stage 1 Exploration because there is no project site where waste and materials need to be managed.

There are fairly significant differences between the different stages in this Chapter. Volumes of wastes are dramatically different in exploration versus what would be expected if a mining project is developed. Also, during Exploration Stages 1 and 2, companies are dealing with actual wastes, whereas during Pre-Permitting/Permitting the companies are proposing how they plan to manage wastes if the project is approved and is developed. Those proposals should be consistent with what is being required in the IRMA Mining Standard.

Alignment with the Global Industry Standard for Tailings Management: Two years after releasing the IRMA Standard for Responsible Mining (v.1.0) the Global Industry Standard for Tailings Management (GISTM) was released.[229] IRMA has reviewed that Standard, and its accompanying Conformance Protocols.[230] This IRMA-Ready Standard aims to incorporate and update elements to ensure that we align with the requirements in the GISTM that apply to the development and construction of new tailings facilities. These requirements do not apply during the Exploration stages.

construction of new tailings facilities. These requirements do not apply during the Exploration stages.

There are two new criteria that relate to the design and construction of tailings facilities that were not included in the Mining Standard, and a new Public Disclosure and Access to Information criterion.

In our efforts to align, we are proposing to adopt numerous definitions used in the GITSM. (See proposed glossary additions at the end of this chapter)

While the GISTM focuses on tailings facilities, the IRMA Standard is more broadly focused. Other mine waste facilities can also have failures or incidents and create risks to safety and the environment, for example, waste rock dumps, heap leach facilities or process water impoundments that are situated close to roadways, communities or sensitive ecosystems. As a result, in this chapter you will see references to both tailings and other mine waste facilities.

BACKGROUND

Mineral exploration and development activities uses materials that, if mismanaged, create risks to human health, safety and the environment. Fuels used by vehicles and equipment, chemicals, such as solvents used to clean or maintain equipment, and wastes from onsite sewage treatment facilities can be harmful to living organisms if spilled or otherwise released to the environment. Mineral exploration and development also generate waste materials that may be associated with risks to health, safety and the environment, depending on the chemical characteristics of the material and how it is managed.

[229] ICMM, UNEP and PRI. 2020. Global Industry Standard for Tailings Management. https://globaltailingsreview.org/global-industry-standard/

[230] ICMM. 2021. Conformance Protocols - Global Industry Standard for Tailings Management. https://www.icmm.com/en-gb/guidance/environmental-stewardship/tailings-conformance-protocols

Most material resulting from mineral exploration and development will remain on the site as waste in two general forms: waste from trenching and drilling that is backfilled or disposed in a "mud pit," and soil and rock removed during bulk sampling and/or other advanced exploration and development activities that will not be shipped off the project site (e.g., overburden, waste rock from underground adit). These waste materials may contain target minerals and other constituents including sulfide and other metal-bearing minerals, as well as radionuclides.

Mineral exploration and development-related wastes have the potential to contaminate water bodies, air and soil. Water contamination is the most prevalent concern associated with wastes and hazardous materials used or generated as a result of mineral exploration and development activities. IRMA requires implementing best practices in the handling, storage and transport and disposal of potentially hazardous materials. Also, geochemical testing can be used to determine whether mineral exploration and development wastes like drilling mud and waste rock contain radionuclides or other contaminants in significant concentrations or quantities. If the potential exists, then mitigation measures can be put in place to require special handling of those materials.

During the project planning stages of mine development, companies will be focused on evaluating risks, and selecting facilities designs and strategies to eliminate, and if that is not possible, minimize the risk of contamination from mining related wastes and risks to physical integrity of mine waste facilities. During the construction stage, quality control becomes a key focus, to ensure that facilities are constructed in a manner that meets the design intent and design criteria established to minimize the risk of facility failure that could affect human rights, health, safety or the environment.

OBJECTIVES/INTENT OF THIS CHAPTER

To manage wastes and materials in a manner that minimizes their short- and long-term physical and chemical risks, and protects the health and safety of communities and future land and water uses.

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant for all mineral exploration and development projects.

CRITICAL REQUIREMENTS IN THIS CHAPTER

A risk assessment has been done to identify risks to human rights, health, safety, environment and communities posed by tailings facilities, and, if relevant, other mine facilities (4.1.4.1), mitigation strategies be developed in a manner that aligns with the mitigation hierarchy, which prioritizes prevention of conditions that present risk (4.1.7.1), and projects do not dispose of wastes in riverine, submarine or lakes (4.1.8.1).

NOTE ON CRITICAL REQUIREMENTS: We deleted one of the critical requirements from the Mining Standard that related to use of best practices in mitigation, as the new structure of the mitigation section was changed to better align with the Global Industry Standard for Tailings Management. Instead, we are proposing that the mitigation strategies be developed in a manner that aligns with the mitigation hierarchy, which prioritizes prevention of conditions that present risks (See requirement 4.1.7.1). Also, one of the critical requirements in this chapter of the Mining Standard is not relevant during these early phases (it related to monitoring the performance of mine waste facilities against performance criteria to provide an early warning of potential problems inform continual improvement of management of those facilities).

CONSULTATION QUESTION 91: Are there other critical requirements that you'd recommend for this chapter?

Waste and Materials Management Requirements

4.1.1. Policy and Governance

NOTE FOR 4.1.1: At the present time we have not included the requirement for waste management policy during exploration, as the commitment to manage wastes becomes so much more relevant once a mine is going to be

developed, because the massive volumes of waste produced during mining can cause drastic changes to the environment and failure of waste disposal facilities can lead to grave environmental harm and loss of human life.

In this chapter, exploration projects are still expected to develop and implement measures to manage wastes in a responsible manner, it is just the policy that has been excluded. The rationale is that rather than requiring a company to spend time and resources developing another policy, they can be putting their efforts into improving their practices (on this issue or, if they are already managing wastes well, on other issues).

CONSULTATION QUESTION 92: Is a policy commitment to waste management as important for the exploration stages as it is for the mine development stages? If it should be required, are the expectations in the requirements below appropriate for exploration, or should they be revised (and if they should be revised, what would you suggest are appropriate policy-level expectations for exploration companies)?

4.1.1.1. The company shall develop a publicly available Waste Management Policy (or equivalent) that includes:

a. A commitment to manage all waste materials and mine waste facilities, including tailings facilities, in a safe manner that eliminates, if practicable, and otherwise minimizes risks to human rights, health, safety, the environment and communities;
b. A commitment to emergency preparedness and response that includes, in the case of a catastrophic failure of a tailings facility, the provision of immediate response to save lives, supply humanitarian aid and minimize environmental harm, and provision of support for long-term reconstruction, restoration and recovery efforts.
c. A commitment to cooperate in credible global transparency initiatives to create standardized, independent, industry-wide and publicly accessible databases, inventories or other information repositories about the safety and integrity of tailings facilities.

NOTE FOR 4.1.1.1: This has been revised (4.1.1.1.b added) to better align with the GISTM (8.1). 4.1.1.1.b also supports GISTM requirements 13.4 and 14.3. Many of the requirements in GISTM related to preparing for long-term recovery happen after a failure has occurred (so have not been added to this early-phase standard), but a public commitment to providing immediate humanitarian aid, etc., and support long-term recovery efforts will help demonstrate that the company is aware of its responsibilities in this regard.

Not all projects will have the potential for catastrophic tailings facility failure, and so we can add Guidance that if there is no potential for this to occur, then parts of 4.1.1.1.b will not be relevant.

We have added 4.1.1.1.c to align with GISTM 15.3.

4.1.1.2. The company shall demonstrate its commitment to the effective implementation of the policy by, at minimum:

a. Having the policy approved by senior management and endorsed at the Director/Governance level of the company;
b. Having a process in place to ensure that relevant employees understand the policy to a degree appropriate to their level of responsibility and function, and that they have the competencies necessary to fulfill their responsibilities.
c. Having procedures and/or protocols in place to implement the policy; and
d. Allocating a sufficient budget to enable the effective implementation of the policy.

NOTE FOR 4.1.1.2. This requirement was in the original Mining Standard. It applies to any waste management facility or practice at a mine site.

4.1.1.3. For proposed mining projects with a tailings facility, the company shall establish a tailings governance framework and a performance-based tailings management system (TMS) and ensure that the environmental and social management system (see Chapter 2.1) and other critical systems encompass relevant aspects of the tailings facility management, including:

a. Educating personnel who have a role in any phase of the tailings facility lifecycle about how their job procedures and responsibilities relate to the prevention of a facility failure;

b. Establishing mechanisms that incorporate workers' experience-based knowledge into planning, design and operations for all phases of the tailings facility lifecycle;[231]
c. Establish mechanisms that promote cross-functional collaboration[232] to ensure effective data and knowledge sharing, communication and implementation of management measures to support public safety and the integrity of the tailings facility; and
d. For roles with responsibility for tailings facilities, develop mechanisms such that incentive payments or performance reviews are based, at least in part, on public safety and the integrity of the tailings facility. These incentive payments shall reflect the degree to which public safety and the integrity of the tailings facility are part of the role. Long-term incentives for relevant executive managers should take tailings management into account.

NOTE FOR 4.1.1.3: This requirement is new. It integrates various requirements from GISTM that relate to a governance framework for tailings management specifically (GISTM 8.2). Sub-requirement 4.1.1.3.a aligns with 11.1, 4.1.1.3.b aligns with 11.2, 4.1.1.3.c aligns with 11.3. 4.1.1.3.d align with GISTM 8.3.

The terms tailings governance framework, tailings management system were not in the IRMA Mining Standard. We are proposing to use the GISTM definitions for these terms. (See proposed glossary additions at the end of this chapter)

4.1.1.4. Additionally, if proposed mining projects include a tailings facility, the company shall:

a. Identify appropriate qualifications and experience requirements for all personnel who will play safety-critical roles in the operation of a tailings facility, including, but not limited to the Responsible Tailings Facility Engineer (RTFE), the Engineer of Record (EOR) and the Accountable Executive(s), ensure that incumbents of these roles have the identified qualifications and experience, and develop succession plans for these personnel;
b. Appoint one or more Accountable Executives to oversee matters related to the safety of tailings facilities and avoiding or minimizing the social and environmental consequences of a tailings facility failure. The Accountable Executive(s) shall:
   i. Be accountable for a program of tailings management training, and for emergency preparedness and response;
   ii. Be directly answerable to the Chief Executive Officer;
   iii. Select the EOR for the tailings facility;
   iv. Have scheduled communication with the EOR and regular communication with the Board of Directors.[233]
c. Require the Board of Directors to document how it plans to hold the Accountable Executive(s) accountable;
d. Appoint a site-specific Responsible Tailings Facility Engineer (RTFE) who shall be accountable for the integrity of the tailings facility, liaise with the EOR and internal teams such as operations, planning, regulatory affairs, social performance and environment, have regular two-way communication with the Accountable Executive, and be familiar with the Design Basis Report, the design report and the construction and performance of the tailings facility;

[231] According to the Conformance Protocols for GISTM, "Examples could include documentation of having workers with experience in tailings management, or with the specific tailings facility: – involved in the development or review of tailings management systems, tailings design, OMS, and closure planning. – providing training to new workers. – communicating deviations from normal operating conditions. – Incorporating the information and experience they have in managing the tailings facility into action plans and related documents. (p. 78)

[232] According to the Conformance Protocols for GISTM, "Cross-functional collaboration could be established through tailings management working groups which involve different departments within an organisation that regularly meet to discuss the various aspects of the tailings facility. Information sharing may include operations and maintenance crews in tailings area, relevant process and mine personnel, safety and emergency preparedness personnel, etc. Sharing could include relevant activities of each group and/or sharing of incident investigations, tailings performance results and other key tailings performance indicators as appropriate." (p. 79)

[233] Communication can be initiated either by the Accountable Executive(s), or the Board.

e. Ensure that those designing and constructing the tailings facility are competent and have experience appropriate to the Consequence Classification and complexity of the proposed tailings facility. This may be through:
   i. Engaging an engineering firm with expertise and experience in the design and construction of tailings facilities of comparable complexity to provide EOR services for operating the tailings facility and for closed facilities with 'High', 'Very High' and 'Extreme' Consequence Classification, where the firm nominates a senior engineer to represent the firm as the EOR, and the company has approved the selection after verifying that the individual has the necessary experience, skills and time to fulfill this role; or
   ii. Appointment of an in-house engineer with expertise and experience in comparable facilities as the EOR. In this instance, the EOR may delegate the design to a firm ('Designer of Record') but shall remain thoroughly familiar with the design in discharging their responsibilities as EOR.
f. Have a written agreement with the EOR that clearly describes the EOR's authority, role and responsibilities throughout the tailings facility lifecycle, and during change of ownership of mining properties. The written agreement must clearly describe the obligations of the company to the EOR, to support the effective performance of the EOR;
g. Where it becomes necessary to change the EOR (whether a firm or an in-house employee), develop a detailed plan for the comprehensive transfer of data, information, knowledge and experience with the construction procedures and materials; and
h. For tailings facilities with Consequence Classification of 'Very High' or 'Extreme', the company shall appoint an Independent Tailings Review Board (ITRB). For all other tailings facilities, the company may appoint a senior independent technical reviewer. Additionally:
   i. ITRBs and senior technical reviewers shall be appointed by the company early in the project development process, shall certify in writing that they follow best practices for engineers in avoiding conflicts of interest, and shall report to the Accountable Executive;
   ii. ITRBs shall consist of a panel of three or more subject matter experts who are third-party, competent professionals who have not been directly involved with the design or operation of the particular tailings or mine waste facility; and
   iii. Senior technical reviewers shall be competent professionals with in-depth knowledge and at least 15 years' experience in the specific area of the review requirements, e.g., tailings design, operations and closure, environmental and social aspects or any other specific topic of concern, and may be an in-house employee or an external party.

NOTE FOR 4.1.1.4: This is new. The requirements here relate to the hiring of competent people, and establishing a system of accountability. It has been added to align with GISTM (8.6, 8.4, 8.5, 9.1, 9.2, 9.4, 9.5, and 8.7). 4.1.1.4.h.ii and h.iii and incorporated some details from the IRMA Mining Standard into ITRB definitions.

We will add definitions of Accountable Executive, Engineer of Record, Responsible Tailings Facility Engineer, and others used in 4.1.1.4 based on definitions from the GISTM. (See proposed glossary additions at the end of this chapter)

4.1.1.5. Where a proposed tailings or other mine waste facility may impact the rights or interests of indigenous peoples, including their land and resource rights and their right to self-determination, the company shall obtain the Free Prior and Informed Consent (FPIC) for the siting, design and construction of the facility.[234]

NOTE FOR 4.1.1.5: This has been added to align with GISTM 1.2. We've expanded it to include other mine waste facilities. The IRMA-Ready Standard has an entire chapter on FPIC (2.2), however, we have also identified other elements that specifically must be included in FPIC discussions (see Note to Reviewers for Chapter 2.2), and so we are proposing to add this requirement as well.

Pre-permitting | Mine Permitting | Construction

[234] And as per Chapter 2.2, the company shall maintain FPIC throughout the entire mine life cycle.

4.1.2. Safe Management of Materials Other Than Mineralized Wastes

NOTE FOR 4.1.2: This section is meant to address those wastes that are not considered mineralized wastes. We are proposing that **Mineralized Wastes** are defined as follows:

> Any wastes that contain residual minerals or metals that are generated or created from mining or mineral processing operations, including, but not limited to, tailings, waste rock, smelter slag, baghouse dust, wet scrubber slurry and ash.

The materials and wastes addressed in 4.1.2, therefore, include materials used during exploration and (proposed) mining, such as chemicals and fuels, that pose risks during their transport and storage and use, and then, once used, must be disposed of in a safe manner. It would also include **non-mineralized waste** materials, such as garbage, sewage, construction wastes, that must be managed responsibly.

CONSULTATION QUESTION 93: Do you agree with the proposed requirements related to materials and non-mineralized wastes? Have we adequately addressed the relevant issues related to these materials/wastes?

4.1.2.1. The company shall identify all potential materials and substances that are not considered waste materials (e.g., unused chemicals, fuels) associated with the proposed mining project (including any associated mineral processing operations) that have the potential to cause impacts on human health, safety, the environment or communities,[235] and:

a. Determine if there are opportunities to prevent the use of those materials, including substitution with materials that pose less of a risk to health, safety or the environment;
b. If prevention is not possible, document and implement procedures for the legal and safe transport, handling, labeling,[236] use, recycling, (re)use, storage and/or disposal of those materials, including those managed on behalf of the company by an external contractor / third-party;
c. Develop and implement procedures for flammable, combustible and explosive materials, including segregation from sources of heat and fire;
d. Develop and implement procedures and controls to prevent spills and other incidents, and an emergency response plan[237] and procedures for spills response and containment; and
e. Develop and implement procedures for the inspection of all storage and conveyance structures, such as tanks, pipes, values flanges and alarms.

NOTE FOR 4.1.2.1: This requirement has more detail on expectations than the Mining Standard related to development of procedures, and preparation of emergency response plans and inspections. Because these are the early stages of mine development, when processes can be more easily adapted, there is also an emphasis on selecting materials that are less likely to pose risks (4.1.2.1.a).

Some of the material comes from the Responsible Minerals Initiative's ESG Standard.[238]

We propose to add more examples of what are considered best practice procedures for safe transport, handling, labeling, use, recycling, storage and disposal in IRMA Guidance.

[235] Some of the information from this process can feed into Chapter 4.2, 4.2.2, which relates to prediction of potential impacts on water from chemicals and other sources.

[236] E.g., Labels on all containers and tanks that show contents, hazards and operational status (if out of service, empty or unused).

[237] This may be done as part of the Emergency Preparedness and Responsible Plan in Chapter 2.5.

[238] E.g., see sections 19 and 20. RMI. Environmental, Social & Governance (ESG) Standard for Mineral Supply Chains. 2021. p. 10. http://www.responsiblemineralsinitiative.org/media/docs/standards/RMI_RMAP%20ESG%20Standard%20for%20Mineral%20Supply%20Chains_%20June32021_FINAL.pdf

4.1.2.2. The company shall identify all wastes (other than mineralized wastes) associated with the proposed mining project,[239] and determine if the wastes will be considered non-hazardous or hazardous.[240]

a. For both types of wastes, the company shall demonstrate that waste management options have been considered in accordance with the waste mitigation hierarchy, which prioritizes preventing the generation of waste, and if that is not possible, considers in the following order of preference, reuse, recycling, recovery including energy recovery, and as a last option, safe disposal.

NOTE FOR 4.1.2.2: This requirement was not in the Mining Standard. It was added to provide more details on how non-mineralized wastes should be managed.

NOTE FOR 4.1.2.2.a: IRMA will provide Guidance and examples of the different levels in the waste hierarchy. The requirement for managing wastes in accordance with the waste management hierarchy aligns with the Responsible Minerals Initiative's ESG Standard.[241]

b. Additionally, if the waste is hazardous, the company shall ensure that:

i. Wastes are not diluted in order to reduce the hazardous characteristics and classify them as non-hazardous;

ii. Hazardous waste managed by treatment, storage and disposal facilities[242] meet design standards, operating requirements, inspections, release prevention and response, and special waste requirements as well as other requirements for containers, containment buildings, drip pads, land treatment units, landfills, surface impoundments, tanks, waste piles and miscellaneous units as described in the U.S. Resource Conservation and Recovery Act (RCRA) Subtitle C, or an equivalent standard.[243]

NOTE FOR 4.1.2.2.b: We will add Guidance on the critical elements from the RCRA Subtitle C that would need to be in place to meet this requirement.

CONSULTATION QUESTION 94: Are there any other sources of best global standards or practices for the management of hazardous wastes that you can recommend?

4.1.2.3. The company shall develop a system for documenting information on the generation, transport, treatment and disposal (on-site and offsite) of wastes, including, at minimum:

a. Waste volumes generated, including solids/liquids contents;
b. Physical, chemical and biological characteristics of the waste;
c. Waste transport, treatment and disposal dates / periods;
d. Waste treatment and disposal locations (on-site and off-site);
e. Treatment and disposal facility design characteristics including presence/absence of impermeable layer below waste and leachate/run-off collection system; and
f. Regulatory authorization for any waste management vendors engaged by the company for transport, treatment and disposal.

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[239] For Pre-Permitting, Permitting and Construction non-mine wastes might include wastes associated with offices, cafeterias, accommodations and shops such as garbage, human waste, wastes from used containers or spilled materials, and construction wastes.

[240] Non-hazardous waste includes sludges, industrial wastes, garbage and refuse and any other mineral processing waste which is not determined to be hazardous waste.

Hazardous waste is a waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment and are a listed or characteristic hazardous waste. (Source: https://www.epa.gov/hw/defining-hazardous-waste-listed-characteristic-and-mixed-radiological-wastes#FandK)

[241] E.g., see section 17. RMI. Environmental, Social & Governance (ESG) Standard for Mineral Supply Chains. 2021. p. 9. http://www.responsiblemineralsinitiative.org/media/docs/standards/RMI_RMAP%20ESG%20Standard%20for%20Mineral%20Supply%20Chains_%20June32021_FINAL.pdf

[242] Treatment using a method, technique, or process designed to physically, chemically, or biologically change the nature of a hazardous waste.

Storage where hazardous waste is held for a temporary period, after which the hazardous waste is treated, disposed of, or stored elsewhere.

Disposal of any hazardous waste on or in the land, where hazardous waste is intentionally placed and where the waste will remain after the mining or mineral processing facility stops operation.

[243] Resource Conservation and Recovery Act (RCRA) Orientation Manual 2014, III-53-85. https://www.epa.gov/sites/default/files/2015-07/documents/rom.pdf

NOTE FOR 4.1.2.3: This was not in the Mining Standard. The elements above, except for e, generally align with Responsible Minerals Initiative's ESG Standard.[244]

Pre-permitting | Mine Permitting | Construction

4.1.3. Mine Waste Source Characterization and Impact Prediction

NOTE FOR 4.1.3: The requirements in this criterion do not apply during Exploration. The rationale being that the volumes of mineralized wastes do not warrant the level of evaluation outlined below (i.e., they do not present the chemical or physical risks that the high-volume mine wastes present).

We will add Guidance that if a company can demonstrate that this was done during the Permitting process, there would not be a need to do a new characterization unless new information becomes available during Construction.

4.1.3.1. The company shall identify all proposed mine waste facilities that have the potential to be associated with waste discharges or incidents, including catastrophic failures, that could lead to impacts on human rights, health, safety, the environment or communities.[245]

NOTE FOR 4.1.3.1: This is similar to the Mining Standard, but we added a reference to human rights, as that is something that is included in the Global Industry Standard for Tailings Management, and a very reasonable addition here. The IRMA Mining Standard did not define catastrophic failure, and so we are proposing to adopt the definition in the GISTM:

Catastrophic Failure: A tailings facility failure that results in material disruption to social, environmental and local economic systems. Such failures are a function of the interaction between hazard exposure, vulnerability, and the capacity of people and systems to respond. Catastrophic events typically involve numerous adverse impacts, at different scales and over different timeframes, including loss of life, damage to physical infrastructure or natural assets, and disruption to lives, livelihoods, and social order. Operators may be affected by damage to assets, disruption to operations, financial loss, or negative impact to reputation. Catastrophic failures exceed the capacity of affected people to cope using their own resources, triggering the need for outside assistance in emergency response, restoration and recovery efforts. [GISTM]

We have also added a footnote to 4.1.3.1 to clarify that impacts on communities encompasses a host of potential impacts.

4.1.3.2. The company shall perform a detailed characterization for each proposed tailings and other mine waste facility that has associated chemical risks. Characterization shall include:[246]

a. A detailed description of the facility that includes geology, hydrogeology and hydrology, climate, and all potential sources of mining impacted water (MIW);[247]

NOTE FOR 4.1.3.2: This requirement is from the Mining Standard.

[244] E.g., see section 17. RMI. Environmental, Social & Governance (ESG) Standard for Mineral Supply Chains. 2021. p. 9. http://www.responsiblemineralsinitiative.org/media/docs/standards/RMI_RMAP%20ESG%20Standard%20for%20Mineral%20Supply%20Chains_%20June32021_FINAL.pdf

[245] Impacts on communities may include impacts on cultural heritage, property, infrastructure, livelihoods, the local economy, local services, social order. Impacts on human rights may include impacts affecting access to drinking water, or standard of living, or others. And Impacts on environment may include those that affect biodiversity, ecosystem services, or natural resources such as air, water, soil, forests, wildlife, etc.

[246] Some of this information can feed into the prediction of potential impacts of mine facilities, including mine wastes, on water (see Chapter 4.2, criteria 4.2.2

[247] Mining impacted water, also referred to as mining influenced water or MIW, includes acid rock drainage (ARD), neutral mine drainage, saline drainage, and metallurgical process waters of potential concern. A key characteristic of most of these waters is that they contain elevated metals that have leached from surrounding solids (e.g., waste rock, tailings, mine surfaces, or mineral surfaces in their pathways). This fact is commonly acknowledged by the phrase "metal leaching" (ML), frequently resulting in acronyms such as ARD/ML. Note that in Australia, the term acid and metalliferous drainage (AMD) is used as a synonym for ARD.

NOTE FOR 4.1.3.2.a: We removed the phrase "climate change projections" with climate. At this point it is a detailed characterization of the proposed facility. Where climate change projections come into play are in the risk assessments 4.1.4.1.b, water balance modelling (4.1.5.9), understanding the changing local context (4.1.9.2) and adaptive management (4.2.4.4).

b. Source material characterization using industry best practice to determine potential for acid rock drainage (ARD) or metals leaching (ML). This shall include:
   i. Analysis of petrology, mineralogy, and mineralization;
   ii. Identification of geochemical test units;
   iii. Estimation of an appropriate number of samples for each geochemical test unit; and
   iv. Performance of comprehensive geochemical testing on all samples from each geochemical test unit.
c. Source material characterization to determine if radioactive elements are present;

NOTE FOR 4.1.3.2.c: We have added radioactive elements, as this is increasingly important with the increased interest in rare earth mining operations. However, it may also be applicable to other types of mining and associated mineral processing. According to the U.S. Environmental Protection Agency (EPA), radioactive elements are present in many soils and rock formations, and consequently in the water that comes into contact with them. Extraction and processing of these resources may expose or concentrate naturally occurring radioactive materials (NORM), causing them to be classified Technologically Enhanced NORM or TENORM. Technically enhanced means that the radiological, physical, and chemical properties of the radioactive material have been concentrated or further altered by having been processed, or beneficiated, or disturbed in a way that increases the potential for human and/or environmental exposures. The EPA Agency lists mining as one of the major industrial sectors that generate TENORM (e.g., hard rock metal mining, rare earth mining wastes, copper mining and production wastes, and bauxite and alumina production wastes).[248]

d. A conceptual model that describes what is known about release, transport and fate of contaminants and includes all sources, pathways and receptors for each facility;[249]
e. Water balance and chemistry mass balance models for each facility;[250]
f. Identification of contaminants of concern for the facility/source materials, and the potential resources and communities at risk from those contaminants.[251]

Pre-permitting | Mine Permitting | Construction

4.1.3.3. The company shall identify the potential physical risks related to proposed tailings storage facilities and other proposed mine waste facilities[252] that may be subject to catastrophic failures or other events that may cause impacts on human rights, health, safety, the environment or communities.[253] Evaluations shall be informed by the following:

a. A detailed site characterization of the proposed tailings facility site(s) that includes data on climate, geomorphology, geology, geochemistry, hydrology and hydrogeology (surface and groundwater flow and quality), geotechnical, and seismicity;

[248] See EPA website: "Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM)." https://www.epa.gov/radiation/technologically-enhanced-naturally-occurring-radioactive-materials-tenorm

[249] This information will feed into the Conceptual Site Model required in IRMA Chapter 4.2, requirement 4.2.2.3.a.

[250] This information should feed into the site-wide water balance model in IRMA Chapter 4.2, requirement 4.2.2.3.b.

[251] Resources and communities may be at risk from contaminants that enter drinking water sources, or contaminants spread via air (e.g., tailings dust).

This should be done using the results from 4.1.3.2.a-d and also hydrogeochemical/hydrogeological modeling as per IRMA Chapter 4.2, if relevant. (See Chapter 4.2, requirement 4.2.2.3.c).

[252] For example, waste rock dumps, heap leach facilities, process water impoundments.

[253] Impacts on communities may include impacts on cultural heritage, property, infrastructure, livelihoods, the local economy, local services, social order. Impacts on human rights may include impacts affecting access to drinking water, or standard of living, or others. And Impacts on environment may include those that affect biodiversity, ecosystem services, or natural resources such as air, water, soil, forests, wildlife, etc.

b. A failure modes analysis, or equivalent, to determine credible failure modes associated with tailings and other mine waste facilities;
c. A consequence of failure classification for the tailings facility, which shall be determined by assessing the downstream conditions documented in the knowledge base (see 4.1.7.2) and selecting the classification corresponding to the highest Consequence Classification for each category in Table 4.1. The assessment and selection of the classification shall be based on credible failure modes, and shall be defensible and documented.
d. A breach analysis for the proposed tailings facility that:
   i. Uses a methodology that considers credible failure modes, site conditions, and the properties of the slurry;
   ii. Estimates the physical area impacted by a potential failure. When flowable materials (water and liquefiable solids) are expected to be present at proposed tailings facilities with Consequence Classification of 'High', 'Very High' or 'Extreme', the results should include estimates of the physical area impacted by a potential credible flow failure, flow arrival times, depth and velocities, and depth of material deposition; and
   iii. Is updated whenever there is a material change to the proposed tailings facility.
e. For mine waste facilities other than tailings facilities, if credible failure modes are identified in 4.1.3.3.b that could impact human safety or the environment, a consequence classification and further analysis similar those conducted for a tailings facilities in 4.1.3.3.c and d;
f. Detailed engineering plans and reports, including site investigations, seepage and stability analyses;
g. Independent technical review (see 4.1.6);
h. Descriptions of facility design criteria;
i. Proposed short-term and long-term placement plans and schedules for tailings and waste rock or other facilities that are subject to stability concerns;
j. Proposed master tailings placement plan (based on life of mine); and
k. Facility water balances (see 4.1.5.9).

NOTE FOR 4.1.3.3: This requirement is revised fairly significantly compared to the Mining Standard. It is missing a couple of elements from the Mining Standard that are not yet relevant (see Construction phase below, where they are included), and has several additions.

4.1.3.3.a was added to align with GISTM 2.2 (except we did not include the GISTM reference to updating physical and chemical properties to account for variabilities in ore processing or ore properties. That part of the requirement is more appropriate for the Mining Standard).

4.1.3.3.b was added to make it clear that both tailings and other mine waste facilities need to carry out a failure modes analysis (because this informs whether additional steps need to be taken or not).

4.1.3.3.c is new, and aligns with GISTM 4.1. We are proposing to adopt GISTM definition of Consequence Classification (including the Consequence Classification Table from Annex 2 of GISTM, incorporated as Table 4.1 in the IRMA-Ready standard, at the end of this chapter). Other newly defined terms include Breach Analysis and Credible Failure Modes. (See proposed glossary additions at the end of this chapter)

4.1.3.3.d replaces a previous requirement that mentioned dam breach assessment to align with GISTM 2.3.

4.1.3.3.e. This has been added to make it clear that if there are other mine waste facilities that could have credible failure modes, that additional studies must be carried out to determine if there is a significant risk to humans or the environment that needs to be appropriately managed. For example, although the risk is lower than for tailings facilities, it is possible that the integrity or stability of waste rock dumps, heap leach facilities or process water impoundments could be compromised and result in impacts on people or the environment.

CONSULTATION QUESTION 95: Are there other mine facilities that are not related to mine wastes that might be subject to catastrophic failures and therefore should also be addressed in this standard?

4.1.3.4. Facility characterizations, in 4.1.3.2 and 4.1.3.3, and the studies and reports that they are based on, shall be updated if there are any material changes to the proposed tailings or mine waste facilities (e.g., siting, design, ore characteristics).

NOTE FOR 4.1.3.4: This requirement is revised slightly compared to the Mining Standard, as these characterizations only need to be updated during Permitting or Construction if there are changes to what is being proposed for mine waste facilities. If the same site location and design remains throughout the permitting and construction stages then an update might not be necessary.

4.1.3.5. Use of predictive tools and models for tailings and other mine waste facility characterizations shall be consistent with current industry best practice, and shall be continually revised and updated over the life of the mine as site characterization data and operational monitoring data are collected.

Pre-permitting | Mine Permitting | Construction

4.1.4. Waste Facility Assessments

NOTE FOR 4.1.4: In this criterion, we do require some assessment for waste facilities used during Exploration Stage 3, as this is the exploration stage when wastes and exposed exploration features may begin to have more significant risks associated with them. Although risks of impacts are lower than during mining, chemical risks during Stage 3 Exploration might include the potential for acid drainage and/or metals leaching, or seepage of drilling related contaminants to the environment. Physical risks might include movement of wastes due to seismic events or precipitation events, or catastrophic failure of engineered waste disposal areas.

Additionally, no alternatives analysis is required for Exploration.

4.1.4.1. For proposed mining projects, the company shall assess the risks posed by tailings facilities, and other mine waste facilities, including their potential failure, on human rights, health, safety, environment and communities. The risk assessment shall:

a. Be conducted by a qualified multi-disciplinary team using best practice methodologies;
b. Take into account potential chemical risks associated with tailings or other facilities identified in 4.1.3.2, and potential physical risks identified in 4.1.3.3, and the social, environmental and local economic context identified in 4.1.7.2, including uncertainties due to climate change;
c. Identify the groups most at risk, as well as the potential human exposure and vulnerability to tailings facility credible failure scenarios;[254]
d. Shall be subject to independent review (See 4.1.8.1.a), after which the company shall prepare an action plan. Any actions related to unacceptable tailings facility risks shall be implemented without delay; and
e. Be updated at a minimum every three years and more frequently whenever there is a material change either to the proposed tailings or other mine waste facility or to the social, environmental and local economic context.

NOTE FOR 4.1.4.1: Some of the requirements during Pre-Permitting, Permitting and Construction are similar to those found in the Mining Standard, but this requirement has been overhauled to integrate elements from the GISTM. For example, 4.1.4.1.a and 4.1.4.1.d integrate elements from GISTM 10.1, and 4.1.4.1.c has been added to address GISTM 2.4.

Also, the language in this requirement has been amended to better align with the requirements in GISTM (3.3 and 3.4) to ". . .assess the social, environmental and local economic impacts of the tailings facility and its potential failure," and to "Update the assessment of the social, environmental and local economic impacts to reflect a material change either to the tailings facility or to the social, environmental and local economic context."

[254] In order to identify the groups most at risk, refer to the most up-to-date tailings breach analysis (or analysis for other mine facilities). See 4.1.3.3.

We will add guidance that if the assessments are carried out in the Permitting stage, that it does not need to be done again during the Construction stage (unless there are changes that are made to waste facility designs during Construction that cause an update to the assessment).

4.1.4.2. The company shall carry out and document a multi-criteria alternatives analysis[255] to inform the selection of sites, designs and strategies for the management of tailings facilities (and other mine waste facilities that may be subject to catastrophic failures[256]), in order to minimize risks to people and the environment throughout the facility life cycle, and minimize the volume of tailings and water placed in external tailings facilities. The assessment shall:

a. Identify minimum design specifications and performance objectives for facility performance throughout the mine life cycle, including mine closure objectives and post-closure land and water uses;
b. Identify possible alternatives for siting, design and management of mine wastes, avoiding a priori judgements about the alternatives;
c. Carry out a screening or "fatal flaw" analysis to eliminate alternatives that fail to meet minimum specifications;
d. Assess remaining alternatives using a rigorous, transparent decision-making tool, such as Multiple Accounts Analysis (MAA) or its equivalent, that takes into account environmental, technical, socio-economic and project economics considerations, inclusive of risk levels and hazard evaluations, associated with each alternative;
e. Include a sensitivity analysis to reduce potential that biases will influence the selection of final site locations, design specifications and waste management practices; and
f. Be repeated if there are major changes to proposed tailings facilities.

NOTE FOR 4.1.4.2: Updated this compared to the Mining Standard, to include facility design.

We reworded the opening sentence to align better with GISTM 3.2. We are also changing the terminology – in the Mining Standard we used "alternatives assessment." The GISTM uses "alternatives analysis." We will adopt that phrase, and revise our definition to meet the one in the GISTM. (See proposed glossary additions at the end of this chapter)

It applies during Construction because it is possible there may be changes to proposed tailings or mine waste facilities during that stage.

Pre-permitting | Mine Permitting | Construction

4.1.5. Design of Tailings Facilities

NOTE FOR 4.1.5: This is a new criterion. The Mining Standard did not include requirements related to the design of tailings facilities. Clearly, the design of tailings facilities is critical to preventing catastrophic failures that may lead to loss of lives and environmental damage, which is why GISTM included design criteria, and why we are including those requirements in our draft IRMA-Ready Standard.

In drafting this section, however, we realized that we do not have any design-related requirements for other mine waste facilities (or other major associated facilities such as water dams, large processing ponds or impoundments, etc.). We also do not have any construction-related requirements in the Mining Standard, but we were able to

[255] An alternatives analysis that should objectively and rigorously consider all available options and sites for mine waste disposal. It should assess all aspects of each mine waste disposal alternative throughout the project life cycle (i.e., from construction through operation, closure and ultimately long-term monitoring and maintenance). The alternatives analysis should also include all aspects of the project that may contribute to the impacts associated with each potential alternative. The assessment should address environmental, technical and socio-economic aspects for each alternative throughout the project life cycle. [GISTM]

For more on alternatives analysis or alternatives assessment see: Environment Canada. 2016. Guidelines for the Assessment of Alternatives for Mine Waste Disposal. https://www.canada.ca/en/environment-climate-change/services/managing-pollution/publications/guidelines-alternatives-mine-waste-disposal/chapter-2.html; and Mining Association of Canada. 2021. A Guide to the Management of Tailings Facilities (Version 3.2). Appendix 3. https://mining.ca/wp-content/uploads/2021/03/MAC-Tailings-Guide-Version-3-2-March-2021.pdf

[256] See 4.1.3.3.e. Other mine waste facilities might include, for example, waste rock dumps, heap leach facilities, process water impoundments.

adapt the GISTM construction requirements for wider application. It is not as easy to adapt the GISTM design requirements to other facilities because they are so integrated with other GISTM requirements.

CONSULTATION QUESTION 96: Should IRMA develop design-related requirements for any other types of facilities? Or even simply provide some minimum safeguards such as use of qualified personnel, and internal accountability and sign-off on designs? Or are the potential risks related to other mining-related facilities low enough that design issues are unlikely to cause public harm or create risks to worker health and safety?

NOTE FOR 4.1.5.1 (below): This requirement is from GISTM 4.2. We have adapted it for the Pre-Permitting Stage, when only preliminary designs will be required; and also for the Permitting and Construction stages, we revised wording to reflect that some elements cannot yet be implemented, so in 4.1.5.1.b.ii we are proposing that the company make a commitment to carry through on these elements. We are also proposing to adopt the GISTM definition of preliminary designs. (See proposed glossary additions at the end of this chapter)

At the end of this chapter, we have added three tables (Table 4.1.a, 4.1.b and 4.1.c) from the GISTM that relate to Consequence Classifications, Flood Design Criteria and Seismic Design Criteria. We will GISTM and other source materials to determine appropriate guidance for use of these tables in guiding the design of tailings facilities.

CONSULTATION QUESTION 97: Rather than asking for a commitment, should we simply delete the part of paragraph 4.1.5.1.b.ii related to reviewing the consequence of failure classification? It will almost certainly be added to the IRMA Mining Standard, so operating mines engaged in IRMA will be expected to carry out such a review.

4.1.5.1. With the objective of maintaining flexibility in the development of a new tailings facility and optimizing costs while prioritizing safety throughout the tailings facility lifecycle, the company shall:

a. Develop preliminary designs for the tailings facility with external loading design criteria consistent with both the consequence of failure classification selected based on current conditions and higher Consequence Classifications (including 'Extreme'). (See Table 4.1.a)
b. Informed by the range of requirements defined by the preliminary designs, either:
   i. Implement the design for the 'Extreme' Consequence Classification external loading criteria; or
   ii. Implement the design for the current Consequence Classification criteria, or a higher one, and demonstrate that the feasibility, at a proof of concept level, to upgrade to the design for the 'Extreme' classification criteria can be maintained throughout the tailings facility lifecycle; and commit to reviewing the consequence of failure classification at the time of the Dam Safety Review (DSR) and at least every five years, or sooner if there is a material change in the social, environmental and local economic context, and complete the upgrade of the tailings facility to the new Consequence Classification as determined by the DSR within three years. This review shall proceed until the tailings facility has been safely closed according to this Standard.

4.1.5.2. The Accountable Executive shall take the decision to adopt a design for the current consequence classification criteria and to maintain flexibility to upgrade the design for the highest classification criteria later in the tailings facility lifecycle. This decision shall be documented.

NOTE FOR 4.1.5.2: This is a new requirement. It aligns with GISTM 4.3. it is not relevant during Pre-Permitting.

Mine Permitting | Construction

4.1.5.3. The company shall select, explicitly identify and document all design criteria that are appropriate to minimize risk for all credible failure modes for all phases of the tailings facility lifecycle.

NOTE FOR 4.1.5.3: This is a new requirement. It aligns with GISTM 4.4.

4.1.5.4. The company shall apply design criteria for seepage management, and apply factors of safety for slope stability, that consider estimated operational properties of materials and expected performance of design

elements, and quality of the implementation of risk management systems. These issues shall also be appropriately accounted for in designs based on deformation analyses.

NOTE FOR 4.1.5.4: This is a new requirement. It aligns with GISTM 4.5. In the second sentence we changed a should to a shall. It's not clear if that was a mistake in the GISTM, but the Conformance Protocols for GISTM[257] do not give any examples of when this would not be required. We have also added in that factors of safety related to slope stability seismicity and flood management be applied.

CONSULTATION QUESTION 98: GISTM requires that companies apply design criteria for slope stability and seepage management, but the Conformance Protocols for GISTM[258] do not elaborate on how companies should determine the appropriate factor of safety for slope stability given a particular consequence classification, or what would be considered responsible seepage management. GISTM does provide tables to help companies establish minimum external loading design criteria (i.e., tables on flood design criteria and seismic design criteria).[259]

Should IRMA include in its requirements specific design criteria for slope stability related to consequence classifications, and also specific criteria related to seepage management (e.g., appropriate liner specifications, etc.)? Or should we simply include guidance for companies and auditors to better understand if appropriate factors of safety and seepage management have been applied? Are there particular regulatory or industry standards that you would recommend we consult to ensure that our requirements and/or guidance align with best practices?

4.1.5.5. The company shall identify and address brittle failure modes with conservative design criteria, independent of trigger mechanisms, to minimize their impact on the performance of the tailings facility.

NOTE FOR 4.1.5.5: This is a new requirement. It aligns with GISTM 4.6

4.1.5.6. The EOR shall prepare a Design Basis Report (DBR) that details the design assumptions and criteria, including operating constraints, and that provides the basis for the design of all phases of the tailings facility lifecycle. The EOR shall update the DBR every time there is a material change in the design assumptions, design criteria, design or the knowledge base and confirm internal consistency among these elements.

NOTE FOR 4.1.5.6: T This is a new requirement. It aligns with GISTM 4.7. We have added a definition of DBR based in GISTM. (See proposed glossary additions at the end of this chapter)

4.1.5.7. The company shall incorporate the outcome of the multi-criteria alternatives analysis including the use of tailings technologies in the design of the tailings facility.

NOTE FOR 4.1.5.7: This is a new requirement. It aligns with GISTM 5.1

4.1.5.8. The company shall develop a robust design that considers the technical, social, environmental and local economic context, the tailings facility consequence classification, site conditions, water management, mine plant operations, tailings operational and construction issues, and that demonstrates the feasibility of safe closure of the tailings facility. The design shall be reviewed and updated as performance and site data become available and in response to material changes to the tailings facility or its performance.

NOTE FOR 4.1.5.8: This is a new requirement. It aligns with GISTM 5.2. We have changed a should to a shall. It's not clear if that was a typo in the GISTM, but the Conformance Protocols do not give any examples of why the review and updating of the design would not be required.

[257] Conformance Protocols for 4.5. (See footnote 230)

[258] Ibid.

[259] GISTM. See Annex 2, Tables 2 and 3 and associated text on page 36. (See footnote 229)

4.1.5.9. The company shall develop a plan to manage water in relation to the tailings facility that is designed to protect against unintentional releases.[260] The plan shall take into account the facility water balance model (see 4.1.3.2.d), the knowledge base including climate change (see 4.1.7.2), upstream and downstream hydrological and hydrogeological basins, the mine site, mine planning and overall operations and the integrity of the tailings facility throughout its lifecycle.

NOTE FOR 4.1.5.9: This is a new requirement. It aligns with GISTM 5.3. We added a footnote that these elements may be integrated into the Water Management Plan in Chapter 4.2), or may be a stand-alone plan for the tailings facility.

4.1.5.10. The company shall address all potential failure modes of the structure, its foundation, abutments, reservoir (tailings deposit and pond), reservoir rim and appurtenant structures to minimize risk to as low as reasonably practicable (ALARP). Risk assessments must be used to inform the design.

NOTE FOR 4.1.5.10: This is a new requirement. It aligns with GISTM 5.4. The term "as low as reasonably practicable" was not previously used in the IRMA Mining Standard. So we propose to adopt the GISTM definition. (See proposed glossary additions at the end of this chapter)

4.1.5.11. The company shall develop a design for each stage of construction of the tailings facility, including but not limited to start-up, partial raises and interim configurations, final raise, and all closure stages.

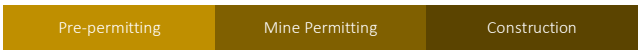
NOTE FOR 4.1.5.11: This is a new requirement. It aligns with GISTM 5.5.

4.1.5.12. The company shall design the closure phase of the tailings facility with sufficient detail to demonstrate the feasibility of the closure scenario and to allow implementation of elements of the design, and progressive reclamation, during construction and operation as appropriate.

NOTE FOR 4.1.5.12: This is a new requirement. It aligns with GISTM 5.6.

4.1.5.13. The company shall include new and emerging technologies and approaches and use the evolving knowledge in the refinement of the design and construction.

NOTE FOR 4.1.5.13: This is a new requirement. It aligns with the part of GISTM 6.6 that applies to design.



4.1.6. Construction of Tailings and Other Facilities

NOTE FOR 4.1.6: This is a new criterion. The Mining Standard did not include requirements related to the construction of tailings facilities, so the requirements from the GISTM that apply to the construction phase have been adopted here.

We realized, as we were drafting this section, that at least some of the GISTM requirements should apply to the construction of all mine waste facilities, not just tailings facilities, because they are good practices related to construction of any facility. And so we have applied 4.1.6.1 – 4.1.6.4 to all mine facilities. We did not apply all of the requirements across the board, because we realize that the consequences of failure of some facilities may not warrant the level of detail outlined for tailings facilities.

CONSULTATION QUESTION 99: Should either of the other construction requirements in 4.1.6 that are currently applied solely to tailings facilities also be applied to all mine waste facilities?

4.1.6.1. All mine waste facilities, including tailings facilities, shall be constructed according to their design intent, using qualified personnel and appropriate methodology, equipment and procedures.

[260] This may be a stand-alone plan for tailings water management, or it may be incorporated in the Adaptive Management Plan for water in chapter 4.2.

NOTE FOR 4.1.6.1: This is a new requirement. It aligns with GISTM 6.1.

4.1.6.2. For all mine waste facilities, including tailings facilities, the company shall develop and implement a formal change management system that triggers the evaluation, review, approval and documentation of changes to design, construction, operation or monitoring during the life cycle of the facility.

NOTE FOR 4.1.6.2: This is a new requirement. It aligns with the part of GISTM 6.5 that is relevant for the Construction phase.

4.1.6.3. For all mine waste facilities, including tailings facilities, the company shall establish and implement a program to manage the quality of all engineering work, and to confirm that both the implementation of the design and the design intent are met. For tailings facilities, the program shall also be designed to manage the interactions between the EOR, the RTFE and the Accountable Executive throughout tailings facility life cycle.

NOTE FOR 4.1.6.3: This is a new requirement. It aligns with GISTM 9.3.

4.1.6.4. For tailings facilities, and other mine waste facilities if necessary,[261] the EOR or senior independent technical reviewer shall conduct performance reviews of the construction of the facility, annually or more frequently, if required.

NOTE FOR 4.1.6.4: This is a new requirement. It aligns with GISTM 10.4.

4.1.6.5. For tailings facilities, the company shall manage the quality and adequacy of the construction process by implementing Quality Control, Quality Assurance and Construction versus Design Intent Verification (CDIV). The company shall use the CDIV to ensure that the design intent is implemented and is still being met if the site conditions vary from the design assumptions.

NOTE FOR 4.1.6.5: This is a new requirement. It aligns with GISTM 6.2. Only the construction element has been pulled out here.

4.1.6.6. For tailings facilities, the company shall maintain records and documentation necessary to produce a detailed Construction Records Report that will describe all aspects of the "as built" product. The EOR and Responsible Tailings Facility Engineer shall ensure that sufficient information is being collected throughout the Construction stage, and at the end of construction shall sign off on a final Construction Records Report. Records and documentation shall include, but not be limited to:

a. Construction activities and schedule;
b. Geometrical information;
c. Materials used;
d. Laboratory and field test results;
e. Equipment;
f. Instruments and their installation details, calibration records and readings;
g. Procedures;
h. Quality Control and Quality Assurance data;
i. CDIV results;
j. Changes to design or any aspect of construction;
k. Non-conformances and their resolution;
l. Construction photographs;
m. Construction shift reports;
n. Roles, responsibilities and personnel, including independent review; and
o. Detailed construction record drawings.

NOTE FOR 4.1.6.6: This is a new requirement. It basically aligns with GISTM 6.3, which asks companies to "Prepare a detailed Construction Records Report ('as-built' report) whenever there is a material change to the

[261] Other mine waste facilities that might need review include, for example, waste rock dumps, heap leach facilities, process water impoundments, if they may have the potential for catastrophic failures (See 4.1.3.3.e).

tailings facility, its infrastructure or its monitoring system. The EOR and the Responsible Tailings Facility Engineer (RTFE) shall sign this report."

However, during the Construction stage we are proposing, the alternative language, above, which will set up a company to be well placed, at the end of the construction period, to have the correct information and result in a report to which that the EOR and RTFE will feel comfortable signing their names.

The list of records and documentation is drawn from the GISTM definition for Construction Records Report. (See proposed glossary additions at the end of this chapter)

Construction

4.1.7. Mitigation of Risks and Management of Mine Waste Management Facilities

NOTE FOR 4.1.7: In this criterion, we do require development and implementation of a plan to mitigate risks related to waste facilities used during Exploration Stage 3, as this is the exploration stage when wastes and exposed exploration features may begin to have more significant risks associated with them. But the overall expectations are much scaled back compared to planned mitigation for proposed mining projects.

All of the requirements during the Permitting/Pre-Permitting stage apply during Construction. We will add Guidance that if these requirements were met during Permitting, and there were no significant changes to the design of mine waste facilities, then they would not need to be re-evaluated during Construction.

4.1.7.1. (Critical Requirement)
Proposed mine waste mitigation and management strategies shall align with the mitigation hierarchy. Where physical and chemical risks associated tailings and other mine facilities cannot be avoided, risk controls and critical controls shall be developed in an interdisciplinary and interdepartmental manner, and be informed by site-specific characteristics, modeling and other relevant information.

NOTE FOR 4.1.7.1: This requirement combines a couple of requirements from the Mining Standard, and replaces the previous critical requirement which related to the use of best practices. This aligns, in part, with GISTM 3.3.

4.1.7.2. Where risk assessments predict material acute or chronic impacts on human rights, health, safety, environment or communities, the company shall develop measures that align with the mitigation hierarchy, and include those measures in a a risk management plan or equivalent (See also 4.1.7.4.b).

NOTE FOR 4.1.7.2: This is a new requirement. It aligns with GISTM 3.3.

4.1.7.3. Where chemical risks related to proposed tailings and other mine waste facilities have been identified:

a. Priority shall be given to source control measures to prevent generation of contaminants;
b. Where source control measures are not practicable or effective, migration control measures shall be developed to prevent or minimize the movement of contaminants to where they can cause harm; and
c. If necessary, MIW shall be captured and treated to remove contaminants before water is returned to the environment or used for other purposes.

NOTE FOR 4.1.7.3: This is essentially the same as the Mining Standard.

4.1.7.4. The company shall develop an Operations, Maintenance and Surveillance (OMS) manual (or its equivalent) for tailings facilities and other mine waste facilities with 'Very High' or 'Extreme' Consequence Classifications, that includes:

a. An operations plan that documents practices that will be used to transport, contain, re-use, and dispose of wastes, and, if applicable, effluents, residues and process waters, including the recycling of process waters;[262]

[262] Some of the water-related issues may be covered in the Adaptive Management Plan for water (or its equivalent) as per IRMA Chapter 4.2 (see requirement 4.2.4.4).

b. A risk management plan (or its equivalent) that, includes, at minimum:
   i. Documentation of all risk controls, critical controls and other mitigation measures necessary for safe operation of facilities (see 4.1.7.1, 4.1.7.2 and 4.1.7.3);
   ii. Documentation of specific and measurable performance objectives, indicators, criteria, and performance parameters for risk controls, critical controls and other measures; and
   iii. A trigger action response plan (or its equivalent) that describes pre-defined trigger levels for performance criteria and actions to be taken if trigger levels are exceeded, i.e., performance is outside of expected range; and
   iv. Periodic review of risk management strategies based on monitoring data (see 4.1.7.4.d.iii), and considerations such as climate change, or changes to the social, environmental and economic context that may influence mitigation and management measures and controls.
c. A documented maintenance program that includes routine, predictive and event-driven maintenance to ensure that all relevant parameters (e.g., all civil, mechanical, electrical and instrumentation components of a mine waste facility) are maintained in accordance with performance criteria, the reclamation and closure plan, host country law and sound operating practices;
d. A comprehensive and integrated performance monitoring program that:
   i. Integrates monitoring of tailings and/or other mine facilities and any appurtenant structures associated with those facilities with aspects of the environmental and social monitoring plan (see Chapter 2.1) that are related to those facilities;
   ii. Includes a procedures for a comprehensive and integrated engineering monitoring system that is appropriate for verifying design assumptions and for monitoring potential failure modes, including full implementation of the Observational Method for non-brittle failure modes.[263]
   iii. Includes a procedure for regular inspections of facilities that includes monitoring of performance objectives, indicators, criteria, and performance parameters (4.1.7.4.b) designed to measure performance throughout the tailings facility lifecycle, and recording and evaluating the data at appropriate frequencies. The data shall be reviewed to confirm that existing controls and strategies remain effective to manage risk throughout the tailings facility lifecycle, and if performance measures are not being met, the company shall review and update risk management controls and strategies, and update the monitoring program accordingly.
   iv. Includes a procedure for analysis of technical monitoring data at the frequency recommended by the EOR, and assessment of the performance of the tailings facility, clearly identifying evidence on any deviations from the expected performance and any deterioration of the performance over time. The procedure shall also include promptly submitting evidence on deviations to the EOR for review, promptly addressing performance outside the expected ranges through Trigger Action Response Plans (TARPs) or critical controls, and updating the risk assessment and design, if required.
   v. Includes a procedure for reporting the results of each of the monitoring program at the frequency required to meet company and regulatory requirements and, at a minimum, on an annual basis. The procedure shall state that the RTFE and the EOR shall review and approve the technical monitoring reports.

NOTE FOR 4.1.7.4: This aligns, in part, with 4.1.5 5 from the Mining Standard. For the Permitting and Construction phase, there is no active surveillance or monitoring of the facilities, since they are not yet operational, however, OMS plans should be in place prior to the operation of the facility. We are proposing to add the GISTM definition for OMS to our Glossary. (See proposed glossary additions at the end of this chapter)

4.1.7.4.b has been revised slightly to align with elements of GISTM 6.4, 7.4. A risk management plan is not specifically mentioned in GISTM requirements, but it is referred to in the definition of Trigger action response plan (TARP), and elements of such a plan are included elsewhere in the GISTM. We propose to add the GISTM definition of TARP to our glossary. (See proposed glossary additions at the end of this chapter)

[263] As per 4.1.5.5., brittle failure modes are addressed by conservative design criteria.

4.1.7.4.d.i is meant to align with GISTM 7.1, 4.1.7.4.d.ii with GISTM 7.2, 4.1.7.4.d.iii with GISTM 7.3, 4.1.7.4.d.iv with GISTM 7.4 and 4.1.7.4.d.v with GISTM 7.5. There are differences in wording, because at these early stages of development monitoring will be limited, but there should be a plan in place that outlines what will be done when facilities are fully operational. Also, the wording in the IRMA requirements integrates some language from the GISTM Conformance Protocols that go beyond the requirements, to help to increase clarity in expectations. Finally, the original GISTM requirement says "Based on the data obtained, update the monitoring programmes throughout the tailings facility lifecycle to confirm that they remain effective to manage risk."

However, with think that if the performance metrics are not being met, simply changing the monitoring program is not going to lead to more effective risk management. Changing the actual controls seems like the obvious first step, followed by monitoring whether or not the revised controls are being effective. So we have made that clarification.

4.1.7.4.d.i leaves out the reference to adaptive management because that is reflected in various requirements such as 4.1.7.4.b.iv (which aligns with the GISTM definition of Adaptive Management, now added to our Glossary under Adaptive Management for Tailings Facilities), and 4.1.7.4.d.iii.

4.1.7.5. Personnel involved in the operations of each mine waste facility shall have access to and receive training on the OMS. For tailings facilities, the Responsible Tailings Facility Engineer shall provide OMS access and training with support from the Engineer of Record.

NOTE FOR 4.1.7.5: This has been added to complete alignment with GISTM 6.4.

4.1.7.6. Annually, the OMS manual shall be reviewed for effectiveness and updated if there are changes to proposed or actual material changes to tailings or other mine facility siting, design or construction.

NOTE FOR 4.1.7.6: This has been added to complete alignment with GISTM 6.4. In the IRMA Mining Standard it will be expanded to include changes during operations and closure.

Pre-permitting | Mine Permitting | Construction

4.1.8. Independent Review of Mine Waste Management Facilities

NOTE FOR 4.1.8: The requirements in the Mining Standard related to independent review have been integrated into 4.1.8.1 and sub-requirements related to independent reviewers in 4.1.1.4.h. 4.1.8.2 is from the Mining Standard).

We propose adopting the definitions of Independent Review, Independent Tailings Review Board, and Senior Technical Reviewer to align with GISTM. (See proposed glossary additions at the end of this chapter)

The requirements in this criterion do not apply during Exploration. The rationale being that the volumes of mineralized wastes do not warrant an independent review of the waste management practices.

4.1.8.1. Independent reviews shall take place during the planning, siting, design, construction, operation, water and mass balance, maintenance, monitoring, and risk management of tailings facilities (and other mine waste facilities that may be subject to catastrophic failures[264]). Additionally, depending on the consequence classification of the facility (see 4.1.1.4.h),[265] either an Independent Tailings Review Board or a senior independent technical reviewer shall:

a. Review the risk assessment (see 4.1.4.1) and identify any unacceptable tailings facility risks;
b. Review the multi-criteria alternatives analysis (see 4.1.4.2), and review the tailings design to ensure that the design incorporates the outcome of the multi-criteria alternatives analysis (see 4.1.5.7);

[264] See 4.1.3.3.e. Other mine waste facilities might include, for example, waste rock dumps, heap leach facilities, process water impoundments.

[265] As per 4.1.1.4.h, for tailings facilities with Consequence Classification of 'Very High' or 'Extreme', the company shall appoint an Independent Tailings Review Board (ITRB). For all other tailings facilities, the company may appoint a senior independent technical reviewer.

c. Review preliminary tailings facility designs, and the decision-making process for final design of tailings facilities (See 4.1.5.1; and
d. Review the Design Basis Report (See 4.1.5.6).

NOTE FOR 4.1.8.1: While the need for an ITRB was included in the Mining Standard we have revised our requirement to align better with the GISTM. The general requirement for independent reviews is found in GISTM 10.6. We have also included specific reviews mentioned in GISTM: review of risk assessment aligns with GISTM 10.1; review of multi-criteria alternatives analysis aligns with GISTM 3.2 and 5.1; review of designs aligns with GISTM 4.2; review of DBR aligns with GISTM 4.8.

4.1.8.2. The company shall develop and implement an action plan in response to commentary, advice or recommendations from every independent review, document a rationale for any advice or recommendations that will not be implemented, and track progress of the plan's implementation.[266]

Pre-permitting | Mine Permitting | Construction

4.1.9. Stakeholder Engagement in Mine Waste Management

NOTE FOR 4.1.9: Several of the requirements in this criterion do not apply during Exploration. However, exploration companies should be sharing information on waste management with stakeholders if stakeholders have concerns or are interested in that information.

We have removed a couple of requirements related to emergency preparedness and response related to catastrophic failure of tailings or other waste facilities. Those requirements duplicate what is in Chapter 2.5 (see, for example, 2.5.3.4 and 2.5.4.4). That chapter now integrates requirements found in the Global Industry Standard for Tailings Management.

4.1.9.1. The company shall identify rights holders and other stakeholders that may be affected by proposed tailings and other mine waste facilities that may be subject to catastrophic failures. Identification shall be reviewed and, if necessary, updated if there is a change to a proposed mine waste facility or an update to a tailings facility breach analysis or risk assessment in 4.1.4.1.

NOTE FOR 4.1.9.1: This is new. The Global Tailings Standard requires that efforts be made to identify groups most at risk from tailings failures, and that has been addressed in 4.1.4.1.c, but rather than limit the identification to those most at risk IRMA is proposing that we require companies to demonstrate that they understand all who may be affected, not just those most at risk. The example in the GISTM Conformance Protocols suggests that "People within the inundation area from the tailings facility with credible flow failure scenario . . . will be most at risk; however, all groups downstream and nearby the tailings facility with a credible flow failure scenario should be considered. . ."[267]

4.1.9.2. The company shall consult with rights holders and other stakeholders that may be affected by proposed tailings and other mine waste facilities that may be subject to catastrophic failures to develop a shared understanding of the social, environmental and local economic context,[268] and the potential human rights risks associated with incidents or failures related to those facilities. This shared knowledge base shall reflect uncertainties due to climate change, and shall be updated at least every five years, and whenever there is a material change either to the tailings or other mine waste facility or to the social, environmental and local economic context.

[266] All of this information shall be made available to IRMA auditors. Non-disclosure agreements will be signed by IRMA auditors, but even so, confidential business information may be withheld as long as the company provides to auditors a description of the confidential information or materials that are being withheld and an explanation of the reasons for classifying the information as confidential; and if a part of a document is confidential, only that confidential part shall be redacted, allowing for the release of non-confidential information. (See IRMA Chapter 1.1, requirement 1.1.4.1)

[267] GISTM Conformance Protocols. p. 22. (See footnote 230)

[268] This information contributes to what is called the "knowledge base" in the GISTM. . (See footnote 229)

NOTE FOR 4.1.9.2: This is new. It has been added to align with GISTM 1.3. We have added that the shared knowledge base also include an understanding of the human rights that are at risk, because GISTM 1.1 requires companies to respect human rights in accordance with UN Guiding Principles on Business and Human Rights (UNGP), and the UNGPs, in turn, expect that the assessment of human rights risks be done in consultation with potentially affected people (UNGP Principle 18).

4.1.9.3. The company shall share relevant information and consult with stakeholders during the screening and assessment of mine waste facilities (see 4.1.4.2), to inform decisions on the siting, design and management of the facilities.

NOTE FOR 4.1.9.3: This was 4.1.7.1 in the Mining Standard. It has been slightly adapted (e.g., the addition of sharing relevant information) in an effort to align with GISTM (1.3). We will need to adapt this for the IRMA Mining Standard to include ongoing engagement throughout the tailings/mine waste facility life cycle as per GISTM.

Although screening and assessment together with final design should have occurred prior to the construction stage, it is still possible that the design of waste management facilities may change during construction as actual site conditions are encountered, so there may be the need to consult stakeholders during the construction stage prior to a final design of mine waste facilities such as tailings storage impoundments.

4.1.9.4. The company shall inform stakeholders of their ability to file tailings or other waste-related complaints or grievances through the operational-level grievance mechanism established as per Chapter 1.4.

NOTE FOR 4.1.9.4: This is new. While the Mining Standard requires a rights-compatible operational-level grievance mechanism, it did not specifically mention it in relation to tailings issues. We added it to align with GISTM 1.4.

Pre-permitting | Mine Permitting | Construction

4.1.10. Public Disclosure and Access to Information

NOTE FOR 4.1.10: This is a new criterion. There was a reporting requirement included in the Mining Standard but it was included in stakeholder engagement section of the chapter.

4.1.10.1 aligns with GISTM 15.2.

4.1.10.1. If requested by stakeholders, the company shall share information related to permitted tailings and other mine waste facilities, including information material to the public safety and integrity of planned tailings facilities, in a timely manner. [269]

Construction

4.1.10.2. For proposed tailings facilities for which the regulatory authorization process has commenced, or the facilities are otherwise approved by the company, the company shall publish and update the following information, and any exclusion of information[270] must be documented in site records and be approved by the Accountable Executive:

a. A plain language summary of the rationale for the basis of the design and site selected as per the multi-criteria alternative analysis, impact assessments, and mitigation plans (information may be obtained from

[269] As per IRMA requirement 1.2.4.2, if requests are not provided in full, or in a timely manner, the company must provide stakeholders with a written justification or explanation.

[270] Information may be excluded from public disclosure if required to be kept confidential by legislation or other third party requirements, if considered proprietary information related to competitive advantage, or if disclosure could result in harm to a third party that is not offset by the value of disclosure promoted by this requirement.

the output of multiple requirements including but not limited to, IRMA requirements 4.1.4.2, 4.1.5.7, 4.1.5.9, 4.1.6.5, 4.1.7.2, 4.1.7.4, 4.1.7.5, 4.1.7.6, 4.1.8.1); and

b. The Consequence Classification (Requirement 4.1.3.3.b)

NOTE FOR 4.1.10.1: This is new. It aligns with GISTM 15.1.

Mine Permitting | Construction

4.1.11. Additional Considerations

NOTE FOR 4.1.11: The wording of this is different than the Mining Standard requirement, which said that IRMA would not certify mines that dispose of mine wastes in water bodies. The intent of the requirement is the same, however. And there are minor differences in wording between the stages below.

4.1.11.1. (Critical Requirement)
Companies shall not dispose of mine construction wastes in rivers, lakes or marine environments.

Construction

NOTES

IRMA recognizes that the quantity of non-mineral hazardous waste and mineral hazardous waste involved in exploration and development activities is minimal as compared to large-scale mining operations, however the goal of IRMA-Ready is for responsible mineral exploration and development projects to set an example of their future large-scale project intent by engaging in industry-leading practices during the exploration and development phase.

Table 4.1.a. Consequence Classification Matrix[271]

Dam Failure Consequence Classification	Incremental Losses				
	Potential Population at Risk	Potential Loss of Life	Environment	Health, Social and Cultural	Infrastructure and Economics
Low	None	None expected	Minimal short-term loss or deterioration of habitat or rare and endangered species.	Minimal effects and disruption of business and livelihoods. No measurable effect on human health. No disruption of heritage, recreation, community or cultural assets.	Low economic losses: area contains limited infrastructure or services. <US$1M.
Significant	1 – 10	Unspecified	No significant loss or deterioration of habitat. Potential contamination of livestock/fauna water supply with no health effects. Process water low potential toxicity. Tailings not potentially acid generating and have low neutral leaching potential. Restoration possible within 1 to 5 years.	Significant disruption of business, service or social dislocation. Low likelihood of loss of regional heritage, recreation, community, or cultural assets. Low likelihood of health effects.	Losses to recreational facilities, seasonal workplaces, and infrequently used transportation routes. <US$10M
High	10 – 100	Possible (1 – 10)	Significant loss or deterioration of critical habitat or rare and endangered species. Potential contamination of livestock/	500-1,000 people affected by disruption of business, services or social dislocation.	High economic losses affecting infrastructure, public transportation, and commercial facilities, or

[271] From the Global Industry Standard for Tailings Management, Annex 2. https://globaltailingsreview.org/global-industry-standard/

			fauna water supply with no health effects. Process water moderately toxic. Low potential for acid rock drainage or metal leaching effects of released tailings. Potential area of impact 10 km2 – 20 km2. Restoration possible but difficult and could take > 5 years	Disruption of regional heritage, recreation, community or cultural assets. Potential for short term human health effects.	employment. Moderate relocation/ compensation to communities. <US$100M.
Very High	100 – 1000	Likely (10 – 100)	Major loss or deterioration of critical habitat or rare and endangered species. Process water highly toxic. High potential for acid rock drainage or metal leaching effects from released tailings. Potential area of impact > 20 km2. Restoration or compensation possible but very difficult and requires a long time (5 years to 20 years).	1,000 people affected by disruption of business, services or social dislocation for more than one year. Significant loss of national heritage, community or cultural assets. Potential for significant long-term human health effects.	Very high economic losses affecting important infrastructure or services (e.g., highway, industrial facility, storage facilities, for dangerous substances), or employment. High relocation/ compensation to communities. < US$1B
Extreme	> 1000	Many (>100)	Catastrophic loss of critical habitat or rare and endangered species. Process water highly toxic. Very high potential for acid rock drainage or metal leaching effects from released tailings. Potential area of impact > 20 km2. Restoration or compensation in kind impossible or requires a very long time (> 20 years).	5,000 people affected by disruption of business, services or social dislocation for years. Significant National heritage or community facilities or cultural assets destroyed. Potential for severe and/or long-term human health effects.	Extreme economic losses affecting critical infrastructure or services, (e.g., hospital, major industrial complex, major storage facilities for dangerous substances) or employment. Very high relocation/ compensation to communities and very high social readjustment costs. >US$1B

Table 4.1.b: Flood Design Criteria[272]

Consequence Classification	Flood Criteria[273] – Annual Exceedance Probability	
	Operations and Closure (Active care)	Passive-Closure (Passive Care)
Low	1/200	1/10,000
Significant	1/1,000	1/10,000
High	1/2,475	1/10,000
Very High	1/5,000	1/10,000
Extreme	1/10,000	1/10,000

[272] From the Global Industry Standard for Tailings Management, Annex 2. https://globaltailingsreview.org/global-industry-standard/

[273] The term "Maximum Probable Precipitation" (PMP) or "Probable Maximum Flood" (PMF) are terms sometimes used to denote extreme hydrological events. The concepts of PMP and PMF are acceptable for assigning flood loading if they meet, or exceed, the requirements above for Extreme Consequence Classification facilities and/or facilities at the Post-Closure (or Passive Care Closure) phase.

Table 4.1.c: Seismic Design Criteria[274]

Consequence Classification	Seismic Criteria[275],[276] – Annual Exceedance Probability	
	Operations and Closure (Active care)	Passive-Closure (Passive Care)
Low	1/200	1/10,000
Significant	1/1,000	1/10,000
High	1/2,475	1/10,000
Very High	1/5,000	1/10,000
Extreme	1/10,000	1/10,000

PROPOSED ADDITIONS TO IRMA GLOSSARY FROM THE GLOBAL INDUSTRY STANDARD ON TAILINGS MANAGEMENT (Conformance Protocols):[277]

Adaptive Management for Tailings Facilities: A structured, iterative process of robust decision-making with the aim of reducing uncertainty over time via system monitoring. It includes the implementation of mitigation and management measures that are responsive to changing conditions, including those related to climate change, and the results of monitoring throughout the tailings facility lifecycle. The approach supports alignment on decisions about the tailings facility with the changing social, environmental and economic context and enhances opportunities to develop resilience to climate change in the short and long term. [GISTM]

Alternatives Analysis: An analysis that should objectively and rigorously consider all available options and sites for mine waste disposal. It should assess all aspects of each mine waste disposal alternative throughout the project life cycle (i.e., from construction through operation, closure and ultimately long-term monitoring and maintenance). The alternatives analysis should also include all aspects of the project that may contribute to the impacts associated with each potential alternative. The assessment should address environmental, technical and socio-economic aspects for each alternative throughout the project life cycle. [GISTM]

Accountable Executive: One or more executive (s) who is/ are directly answerable to the CEO on matters related to this Standard, communicates with the Board of Directors, and who is accountable for the safety of tailings facilities and for minimizing the social and environmental consequences of a potential tailings facility failure. The Accountable Executive(s) may delegate responsibilities but not accountability. [GISTM and ICMMGPG]

Breach Analysis: A study that assumes a failure of the tailings facility and estimates its impact. Breach Analyses must be based on credible failure modes. The results should determine the physical area impacted by a potential failure, flow arrival times, depth and velocities, duration of flooding, and depth of material deposition. The Breach Analysis is based on scenarios which are not connected to probability of occurrence. It is primarily used to inform emergency preparedness and response planning and the consequence of failure classification. The classification is then used to inform the external loading component of the design criteria. [GISTM]

Catastrophic Failure: A tailings facility failure that results in material disruption to social, environmental and local economic systems. Such failures are a function of the interaction between hazard exposure, vulnerability, and the capacity of people and systems to respond. Catastrophic events typically involve numerous adverse impacts, at

[274] From the Global Industry Standard for Tailings Management, Annex 2. https://globaltailingsreview.org/global-industry-standard/

[275] The selection of the design ground motion should consider the seismic setting and the reliability and applicability of the probabilistic and deterministic methods for seismic hazard assessment. The Maximum Credible Earthquake (MCE) is part of a deterministic approach that can govern in some areas. The method that produces the most appropriate ground motion for the facility safety should be used for the design.

[276] For existing tailings facilities the EOR, with review by the ITRB or a senior independent technical reviewer, may determine that the upgrade to this design criteria is not feasible or cannot be retroactively applied. In this case, the Accountable Executive shall approve and document the implementation of measures to reduce both the probability and the consequences of a tailings facility failure in order to reduce the risk to a level as low as reasonably practicable (ALARP). The basis and timing for addressing the upgrade of existing tailings facilities shall be risk-informed and carried out as soon as reasonably practicable (see Requirement 4.7).

[277] From the Global Industry Standard for Tailings Management, Annex 2. https://globaltailingsreview.org/global-industry-standard/

different scales and over different timeframes, including loss of life, damage to physical infrastructure or natural assets, and disruption to lives, livelihoods, and social order. Operators may be affected by damage to assets, disruption to operations, financial loss, or negative impact to reputation. Catastrophic failures exceed the capacity of affected people to cope using their own resources, triggering the need for outside assistance in emergency response, restoration and recovery efforts. [GISTM]

Credible Failure Modes / Scenarios: Refers to technically feasible failure mechanisms given the materials present in the structure and its foundation, the properties of these materials, the configuration of the structure, drainage conditions and surface water control at the facility, throughout its lifecycle. Credible failure modes can and do typically vary during the lifecycle of the facility as the conditions vary. A facility that is appropriately designed and operated considers all of these credible failure modes and includes sufficient resilience against each. Different failure modes will result in different failure scenarios. Credible catastrophic failure modes do not exist for all tailings facilities. The term 'credible failure mode' is not associated with a probability of this event occurring and having credible failure modes is not a reflection of facility safety. [GISTM]

Consequence Classification is typically used in the water dam industry to assess potential downstream impacts if a hypothetical failure scenario were to occur. The results of consequence classification may be used to establish design criteria and review frequency in prescriptive water dam regulatory regimes. Typical regimes define five classes (e.g., extreme, very high, high, moderate significant and low) based on an evaluation of the potential downstream consequences of a facility breach and subsequent flow failure in terms of three criteria: (i) incremental loss of life and/or population at risk; (ii) environment and cultural values; and (iii) infrastructure and economics. The GISTM included a draft consequence classification based on ICOLD included in Table 1 of Annex 2 (Table 4.1 in the IRMA-Ready standard). The GISTM differs from conventional water dam classification as it notes that classification is to be based upon credible failure modes versus purely hypothetical ones. Operators may elect to adopt a more conservative approach by adopting 'Extreme' external loading criteria. Consequence of failure should not be confused with risk of failure, which is determined by considering both consequence and likelihood of a credible failure scenario.

Construction Records Report: Describes all aspects of the 'as-built' product, including all geometrical information, materials, laboratory and field test results, construction activities, schedule, equipment and procedures, Quality Control and Quality Assurance data, CDIV results, changes to design or any aspect of construction, non-conformances and their resolution, construction photographs, construction shift reports, and any other relevant information. Instruments and their installation details, calibration records and readings must be included in the CRR. Roles, responsibilities and personnel, including independent review should be documented. Detailed construction record drawings are fundamental. [GISTM]

Credible Failure Modes / Scenarios: Refers to technically feasible failure mechanisms given the materials present in the structure and its foundation, the properties of these materials, the configuration of the structure, drainage conditions and surface water control at the facility, throughout its lifecycle. Credible failure modes can and do typically vary during the lifecycle of the facility as the conditions vary. A facility that is appropriately designed and operated considers all of these credible failure modes and includes sufficient resilience against each. Different failure modes will result in different failure scenarios. Credible catastrophic failure modes do not exist for all tailings facilities. The term 'credible failure mode' is not associated with a probability of this event occurring and having credible failure modes is not a reflection of facility safety. [GISTM]

Design Basis Report: Provides the basis for the design, operation, construction, monitoring and risk management of a tailings facility

Engineer of Record: The qualified engineering firm responsible for confirming that the tailings facility is designed, constructed, and decommissioned with appropriate concern for integrity of the facility, and that it aligns with and meets applicable regulations, statutes, guidelines, codes, and standards. The Engineer of Record may delegate responsibility but not accountability. In some highly-regulated jurisdictions, notably Japan, the role of EOR is undertaken by the responsible regulatory authorities. [GISTM]

Independent Review: Independent, objective, expert commentary, advice, and, potentially, recommendations to assist in identifying, understanding, and managing risks associated with tailings facilities. This information is provided to the Operator to:

- Facilitate informed management decisions regarding tailings management so that tailings-related risks are managed responsibly and in accordance with an acceptable standard of care.
- Ensure that the Accountable Executive has a third-party opinion regarding the risks and the state of the tailings facility and the implementation of the tailings management system, independent of the teams (employees, consultants, and contractors) responsible for planning, designing, constructing, operating, and maintaining the facility. [ICMMGPG]

Independent Tailings Review Board: A board that provides independent technical review of the design, construction, operation, closure and management of tailings facilities. The independent reviewers are third-parties who are not, and have not been directly involved with the design or operation of the particular tailings facility. The expertise of the ITRB members shall reflect the range of issues relevant to the facility and its context and the complexity of these issues. In some highly regulated jurisdictions, notably Japan, the role of ITRB is undertaken by the responsible regulatory authorities. [GISTM]

Operations, Maintenance and Surveillance Manual: Describes the performance indicators and criteria for risk controls and critical controls, and the ranges of performance linked to specific pre-defined management actions. An OMS manual also describes the procedures for collecting, analysing and reporting surveillance results in a manner consistent with the risk controls and critical controls and that supports effective, timely decision-making. The link between OMS activities and critical controls management underscores the fact that it is essential that OMS Manuals be developed to reflect site-specific conditions and circumstances. An OMS Manual cannot be purchased 'off-the-shelf'. To be effective, it must be tailored to the site. [GISTM]

Preliminary Design: For the purpose of Requirement 4.1.5.1 in the IRMA-Ready Standard, preliminary design is a design performed to a level of detail sufficient to determine the differences between viable designs that adopt different external loading design criteria in terms of required footprints, volumes and drainage requirements. [GISTM]

Responsible Tailings Facility Engineer (RTFE): An engineer appointed by the Operator to be responsible for the tailings facility. The RTFE must be available at all times during construction, operations and closure. The RTFE has clearly defined, delegated responsibility for management of the tailings facility and has appropriate qualifications and experience compatible with the level of complexity of the tailings facility. The RTFE is responsible for the scope of work and budget requirements for the tailings facility, including risk management. The RTFE may delegate specific tasks and responsibilities for aspects of tailings management to qualified personnel but not accountability. [GISTM]

Senior Technical Reviewer: A professional who is either an in-house employee or an external party with in-depth knowledge and at least 15 years' experience in the specific area of the review requirements, e.g. tailings design, operations and closure, environmental and social aspects or any other specific topic of concern. [GISTM]

Trigger action response plan (TARP) is a tool to manage risk controls, including critical controls. TARPs provide pre-defined trigger levels for performance criteria that are based on the risk controls and critical controls of the tailings facility. The trigger levels are developed based on the performance objectives and risk management plan for the tailings facility. TARPs describe actions to be taken if trigger levels are exceeded (performance is outside the normal range), to prevent a loss of control. A range of actions is predefined, based on the magnitude of the exceedance of the trigger level. [GISTM]

Chapter 4.2—Water Management

NOTE TO REVIEWERS ON CHAPTER 4.2:

This chapter is not relevant for Stage 1 Exploration because there is no project site where waste and materials need to be managed.

Also, no requirements have been included for Exploration Stage 2, and many have not been included for Exploration Stage 3—the rationale being that potential impacts on water resources from exploration are expected to be screened during these stages in Chapter 2.1-Environmental and Social Impact Assessment and Management, and if there are potentially significant risks to water from exploration that chapter requires that a plan be in place to prevent or mitigate the impacts. We have, however, included requirements related to engagement with stakeholders on water issues in Exploration Stage 3, as drilling can have impacts on water availability and quality. We have also included the collection of baseline water data and water monitoring that occurs throughout Exploration Stage 3.

As mentioned in the Note to Reviewers on Chapter 4.1, this draft IRMA-Ready Standard attempts to integrate requirements from the Global Industry Standard for Tailings Management (GISTM) that are relevant to these early stages. You'll see reference to the GISTM in 4.2.2.4 and 4.2.2.5.

BACKGROUND

Mineral exploration and development projects can affect water quality in many ways, including through the discharge of water to the environment, chemical spills and the release of uncontrolled stormwater.

The design of measures to prevent surface and groundwater contamination should be a primary goal of mineral exploration and development projects. Companies can minimize water pollution from projects by using a variety of source control approaches including: isolating and reclaiming waste materials, and carefully controlling the discharge of stormwater to the environment.

The impacts of water used by a mineral exploration and development projects are highly location-specific, depending on the local climate as well as on competition for water required by other users. In arid regions, water scarcity may be a critical concern, whereas in high rainfall regions stormwater control may be an issue.

Responsible mineral exploration and development projects can protect water resources by using water efficiently, minimizing groundwater drawdown, ensuring that total withdrawals still enable sufficient environmental flows in streams, springs and other surface waters, and by treating any polluted water and discharging it in ways that prevent harm to surrounding water users and environmental resources. Responsible mineral exploration and development projects can also clean up previously impacted water to make it usable, and in some cases provide a water supply from an alternative source.

Increasingly, responsible mineral exploration and development companies are aware of their project's context, and pay attention not only to their impacts but to their dependencies and opportunities as well. They are participating in collective actions to address shared water challenges and opportunities among diverse stakeholders, and are adopting approaches that lead to positive water governance outcomes at the local and regional levels. Such proactive and collaborative identification of potential water quality and quantity issues and the development of suitable management strategies adapted throughout the life cycle of a mine can help prevent or minimize surface water and groundwater contamination and impacts on water quantity.

OBJECTIVES/INTENT OF THIS CHAPTER

To manage water resources in a manner that strives to protect current and future uses of water.

SCOPE OF APPLICATION

RELEVANCE: This chapter is applicable to all mineral exploration and development projects.

CRITICAL REQUIREMENTS IN THIS CHAPTER

Water quality and quality are being or will be monitored (4.2.4.1) and adverse impacts resulting from the operation are being or will be mitigated according to an adaptive management plan (4.2.4.4).

CONSULTATION QUESTION 100: In the Mining Standard, the critical requirement related to water quality monitoring and mitigation. While that might be appropriate during Exploration and Construction, during Pre-Permitting and Permitting a monitoring program and adaptive management plan are only being proposed, not yet implemented.

Should we consider different critical requirements for the Pre-Permitting and Permitting stages? For example, collection of baseline water data? Or are these existing critical requirements still appropriate?

Water Management Requirements

4.2.1. Water Management Context and Collaboration at the Local and Regional Level

4.2.1.1. The company shall identify water users, water rights holders and other stakeholders that may potentially affect or be affected by the company's water management practices.

4.2.1.2. The company shall conduct its own research and collaborate with relevant stakeholders to identify current and potential future uses of water at the local and regional level that may be affected by its water management practices.[278]

4.2.1.3. The company shall conduct its own research and collaborate with relevant stakeholders to identify and address shared water challenges and opportunities at the local and regional levels, and shall take steps to contribute positively to local and regional water stewardship outcomes.

NOTE: We can add Guidance, when appropriate, that if requirements 4.2.1.1 – 4.2.1.3 have been carried out already, the company would not be expected to have to do additional identification, research and outreach during the Construction stage.

Construction

4.2.2. Site Characterization and Prediction of Potential Impacts

NOTE FOR 4.2.2: As mentioned in the Note at the beginning of this chapter, we have not required prediction of potential impacts on water resources related to exploration in this chapter, because they are expected to be screened for Exploration Stages 2 and 3 in Chapter 2.1-Environmental and Social Impact Assessment and Management, and if there are potentially significant risks to water from exploration that chapter requires that a plan be in place to prevent or mitigate the impacts.

For the Construction stage, we can add Guidance that if baseline data were already collected, these requirements would not be relevant.

[278] "relevant stakeholders" should include water users, water rights holders, downstream communities (or communities that may be affected by groundwater withdrawals or contamination), government regulators, others engaged in work related to water management at the local or regional level, and others who may affect, be affected by or have an interest in the project's management of water.

"local and regional level" is meant to encompass the areas that may be affected by a project' site's water use or water management practices. For IRMA purposes, the "local" area should be considered to be the particular basin/catchment/watershed where the site is located, whereas "regional" encompasses areas beyond the immediate basin/catchment/watershed.

Water-related ecosystem services are important uses to consider. (See, e.g., Grizzetti et al., 2016. "Assessing water ecosystem services for water resource management," Environmental Science and Policy. 61:194-203. https://www.sciencedirect.com/science/article/pii/S1462901116300892) They may be discussed in 4.2.1.2, but are otherwise required to be scoped, assessed and mitigated as per Chapter 4.6.

4.2.2.2 aligns with requirement 4.2.4.2 in the Mining Standard, which applies to samples collected during operational monitoring. We've applied it to baseline samples because all potential mining-related contaminants should be sampled during baseline sampling to determine if they are present or not. In later stages (Construction, Operations, companies are allowed to reduce the list of parameters sampled if they can demonstrate "no reasonable potential for a parameter to exceed the baseline/background values or numeric criteria in the IRMA Water Quality Criteria by End-Use Tables.")

CONSULTATION QUESTION 102: We are requiring the collection of baseline data for Exploration Stage 3 here, as some of the activities occurring in stage can impact water availability and quantity, and it will help to inform the screening process required in Chapter 2.1. (Note that we could also add such a requirement to Chapter 2.1 - see CONSULTATION QUESTION 21 related to requirement 2.1.1.2). Do you agree that baseline water data should be collected at this stage? And if so, should it be as detailed as the baseline data necessary for proposed mining projects (e.g., detailed enough to understand seasonal and temporally variability, sampling of all potential contaminants as per 4.2.2.2)?

Similarly, 4.2.2.3 aligns with requirement 4.2.4.3 in the Mining Standard, which requires companies to invite stakeholders to participate in water monitoring. We are proposing to apply it to baseline sampling because for some affected communities, water is the most contentious issue related to proposed exploration and mining projects, and openness to include stakeholders in the water sampling process will help to build trust at this early stage.

CONSULTATION QUESTION 103: Should stakeholders be invited to be part of the baseline sampling process, or is that beyond what is reasonable to expect during exploration and/or project development?

As mentioned in the Note at the beginning of the chapter, requirement 4.2.2.4 is not included for Exploration because it duplicates efforts in Chapter 2.1-Environmental and Social Impact Assessment and Management.

CONSULTATION QUESTION 104: Should we outline a list of potential exploration-related impacts on water that should be scoped either as part of Chapter 2.1 or as a standalone exercise (similar to what we have done in Chapters on Community Health and Safety (3.3), Cultural Heritage (3.7)? For example, these might include potential sedimentation from erosion of roads or other exploration-impacted areas; potential for spills of fuels or drilling muds. Alternatively, these could be included in requirements or Guidance for Chapter 2.1 (see also CONSULTATION QUESTION 21 related to requirement 2.1.1.2)

4.2.2.1. The company shall gather baseline data to reliably determine:

a. The seasonal and temporal variability in:
    i. The physical, chemical and biological conditions of surface waters, natural seeps/springs and groundwaters that may be affected by the proposed mining project;
    ii. Water quantity (i.e., flows and levels of surface waters, natural seeps/springs and groundwaters) that may be affected by the proposed mining project;[279] and
b. Sources of contamination and changes in water quantity or quality that are unrelated to the proposed mining project.

NOTE FOR 4.2.2.1 – 4.2.2.3: We can add Guidance, when appropriate, that if baseline data were already collected, the company would not be expected to gather additional baseline data during the Construction stage.

[279] For IRMA purposes, water quantity refers generally to the amount of water present or passing a certain location in water bodies that exist on the earth's surface, such as lakes, ponds, rivers, streams, etc., (i.e., referred to as surface waters) and water present in water bodies that exist underground (i.e., groundwaters). It also includes the amount of water that originates underground but expresses itself at the surface (e.g., natural springs or seeps). Water quantity measurements may be expressed as volumes, however, for IRMA's purposes measurements for rivers, streams and natural springs/seeps maybe expressed as a flow (in ft3/sec or m3/sec), while measurements for lakes and groundwater may be expressed as a level or elevation (e.g., feet or meters above a reference point such as sea level).

4.2.2.2. Baseline water quality samples shall be analyzed for all parameters in the IRMA Water Quality Criteria by End-Use Tables (corresponding to the end-uses identified with stakeholders in 4.2.1.2), using accredited laboratories capable of detecting contaminants at levels below the values in the IRMA Water Quality Criteria by End-Use Tables.

4.2.2.3. The company shall solicit stakeholders from affected communities to participate in baseline water sampling:

a. Participation may involve the use of independent experts selected by the community; and
b. If requested by community stakeholders, costs related to participation in baseline sampling shall be covered in full or in part by the company, and a mutually acceptable agreement for covering costs shall be developed.

Pre-permitting | Mine Permitting | Construction

4.2.2.4. The company shall carry out a scoping process that includes collaboration with relevant stakeholders to identify potentially significant impacts that the proposed mining project may have on water quantity and quality, and current and potential future water uses. The scoping process shall include evaluation of:

a. The proposed mining-related chemicals, wastes, facilities such as tailings impoundments or other mine waste or processing facilities, and any activities throughout the mine life cycle (construction through post-closure) that may pose a risk to water quality;[280] and
b. The proposed use of water by the mine, and any activities throughout the mine life cycle that may affect water quantity.

NOTE FOR 4.2.2.4: This requirement has been revised. We added a reference to tailings facilities so that companies can demonstrate they are doing what they need to do to meet the Global Industry Standard for Tailings Management (GISTM), requirement 5.3.

We can add Guidance that if scoping was already done during Permitting (as it should have been), the company would not be expected carry out scoping during the Construction stage.

This requirement has not been included for the exploration phase. However, in Chapter 2.1 potential impacts on water resources are still expected to be screened during Exploration Stages 2 and 3, and if any potentially significant impacts to water are identified they need to be addressed.

CONSULTATION QUESTION 104: Should we outline a list of potential exploration-related impacts on water that should be scoped either as part of Chapter 2.1 or as a standalone exercise (similar to what we have done in Chapters on Community Health and Safety (3.3), Cultural Heritage (3.7)? For example, these might include potential sedimentation from erosion of roads or other exploration-impacted areas; potential for spills of fuels or drilling muds. Alternatively, these could be included in requirements or Guidance for Chapter 2.1 (see also CONSULTATION QUESTION 21 related to requirement 2.1.1.2)

4.2.2.5. Where potential significant impacts on water quantity or quality, or current and future water uses have been identified, the company shall carry out the following additional analyses to further predict and quantify the potential impacts, taking into consideration climate change:

a. Development of a conceptual site model (CSM) to estimate the potential for mine-related contamination from the proposed mining project to affect water resources;
b. Development of a numeric mine site water balance model to predict impacts that might occur at different surface water flow/groundwater level conditions (e.g., low, average and high flows/levels), including impacts related to tailings impoundments or other mine facilities that hold or control fluids;

[280] Some of this information will have been gathered as per Chapter 4.1- Mine Waste and Materials Management, criterion 4.1.2 Source Characterization and Prediction.

c. If relevant, development of other numerical models (e.g., hydrogeochemical/hydrogeological) to further predict or quantify potential mining-related impacts on water resources (e.g., quality of waters receiving mining-related effluent, drawdown of groundwater, etc.);
d. Prediction of whether long-term water treatment will be required to mitigate impacts on water quality during operations and mine closure/post-closure; and
e. If open pit mining method will be used, prediction of whether or not a pit lake will form, and if so, whether pit lake water quality will pose a risk to wildlife, livestock, birds or post-closure end uses.

NOTE FOR 4.2.2.5: The reference to climate change, as well a reference to tailings impoundments in 4.2.2.5 align with the GISTM (5.3).

4.2.2.5.e is a new sub-requirement. It has been added because we refer to pit lakes in Chapter 2.6, but nowhere did we explicitly require a company to model whether or not pit lake water quality might pose a risk to the environment or organisms that come in contact with it.

4.2.2.6. Use of predictive tools and models shall be consistent with current industry best practices.

NOTE FOR 4.2.2.6: This requirement in the Mining Standard included that the models must be updated with operational data, but since mines are not yet operational during these stages we removed that aspect.

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4.2.3. Prevention and Mitigation of Impacts to Water

NOTE FOR 4.2.3: We can add Guidance, when appropriate, that if requirements 4.2.3.1 – 4.2.3.2 and 4.2.3.5 and 4.2.3.6 have been carried out already, the company would not be expected to have to do additional consultations related to mitigation options, or more analysis of mixing zones during the Construction stage.

4.2.3.1. The company, in collaboration with relevant stakeholders, shall evaluate options to mitigate predicted significant adverse impacts on water quantity, water quality and current and potential future water uses that may be affected by the proposed mining project's management practices. Options shall be evaluated in a manner that aligns with the mitigation hierarchy.

4.2.3.2. If a surface water or groundwater mixing zone is proposed as a mitigation strategy:

a. A risk assessment shall be carried out to identify, evaluate and document risks to human health, local economies and aquatic life from use of the proposed mixing zone, including, for surface water mixing zones, an evaluation of whether there are specific contaminants in point source discharges, such as certain metals, that could accumulate in sediment and affect aquatic life; and
b. If any significant risks are identified, the company shall develop mitigation measures to protect human health, aquatic life and local economies including, at minimum:
    i. Surface water or groundwater mixing zones are as small as practicable;
    ii. Water in a surface water mixing zone is not lethal to aquatic life;
    iii. A surface water mixing zone does not interfere with the passage of migratory fish;
    iv. Surface water or groundwater mixing zones do not interfere with a pre-mine use of water for irrigation, livestock or drinking water, unless that use can be adequately provided for by the company through another source of similar or better quality and volume, and the substitution is agreed to by all potentially affected water users; and
    v. Point source discharges into a surface water mixing zone match the local hydrograph for surface water flows to the extent practicable.[281]

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[281] A hydrograph is a graph or plot that shows the rate of water flow in relation to time, given a specific point or cross section.

NOTE FOR 4.2.3.3 and 4.2.3.4: Requirements 4.2.3.3 and 4.2.3.4 differ for Pre-Permitting/Permitting and Construction. During Pre-permitting and Permitting the company is still in the stage of predicting and developing plans to mitigate impacts, whereas during the Construction stage impacts on water quality and quantity are measurable. Also, during Pre-Permitting/Permitting, we have drafted the requirements to enable the mine, should it be developed, to meet the IRMA Mining Standard.

4.2.3.3. Waters affected by mine construction shall be maintained at a quality that enables safe use for current purposes and for the potential future uses identified in collaboration with relevant stakeholders (see 4.2.1.2). In particular, the company shall demonstrate that contaminants measured at points of compliance are:

a. Being maintained at baseline or background levels; or
b. Being maintained at levels that are protective of the identified uses of those waters (see IRMA Water Quality Criteria by End Use Tables 4.2.a to 4.2.h, which correspond to particular end uses).

4.2.3.4. Unless otherwise agreed by potentially affected stakeholders, water resources affected by mine construction activities shall be maintained at quantities that enable continued use of those resources for current purposes and for the potential future uses.[282]

Construction

4.2.3.5. If long-term water treatment is predicted post-closure, the proposed mining project shall not be developed unless an engineering and risk assessment has been carried out by an independent third party that:

a. Evaluates the environmental and financial advantages/disadvantages and risks of long-term water treatment versus other mitigation methods;
b. Incorporates data on the failure rates of the proposed mitigation measures and water treatment mechanisms;
c. Determines that the contaminated water to be treated perpetually poses no significant risk to human health or to the livelihoods of communities if the discharge were to go untreated due to a temporary failure in water treatment; and
d. Includes consultations with stakeholders and their technical representatives during the design of the assessment, and discussion of findings with affected communities;[283] and
e. If indigenous peoples' rights or interests may be affected by long-term water treatment (including potential risks of accidents or incidents related to long-term water treatment facilities) then the company must obtain FPIC from indigenous peoples (as per IRMA Chapter 2.2).

NOTE FOR 4.2.3.5: In the Mining Standard this requirement was in the Reclamation and Closure chapter (Criterion 2.6.6, Post-Closure Water Treatment), as it related to issues that would need to be addressed post-mine-closure issues. It has been moved here to keep all of the water-related requirements together.

The overall intent of this requirement (now 4.2.3.5) has always been that projects that will require long-term water treatment only be developed if the risks have been thoroughly understood, disclosed, and discussed with those who will bear the potential consequences should a failure occur, and that steps be taken to minimize the negative impacts if a decision is made to proceed (see 4.2.3.6).

Readers should note, as well, that there are additional requirements in place in Chapter 2.6 that if long-term water treatment is required, there will be sufficient funds in place to ensure that treatment operations would be able to continue in perpetuity, regardless of the long-term financial status of the company.

The Mining Standard includes a requirement that long-term water treatment should not take place unless the company "iii. Determines that the contaminated water to be treated perpetually poses no significant risks to human health or to the livelihoods of communities if the discharge were to go untreated."

[282] As per 4.2.1.2, those current and future uses must be identified in collaboration with relevant stakeholders.

[283] If indigenous peoples' rights or interests may be affected by long-term water treatment (including potential risks of accidents or incidents related to long-term water treatment facilities) then the company must obtain FPIC from indigenous peoples as per IRMA Chapter 2.2.

Some questions have been raised about that sub-requirement, including why long-term water treatment would be necessary at all unless there was a significant risk to human health or livelihoods if water were to go untreated. In other words, there is concern that as written in the Mining Standard the requirement is a de facto prohibition on long-term water treatment, which was not the intent (otherwise we would have simply prohibited long-term water treatment).

What we are now proposing in 4.2.3.5.c is that companies at least be able to demonstrate that if there were to be a "short-term" event (e.g., power outage, road washout, equipment breakdown) that affected the ability of the water treatment plant to operate as planned, that the short-term release of untreated waters would not pose a threat to the community. This assumes, of course, that any short-term disruption would be fixable. We also have not (yet) put a timeframe on the short-term event.

We have also pulled text from an existing footnote related to needing FPIC from indigenous peoples into the requirement (now 4.2.3.5.e).

Also, we can add Guidance that if the assessment is carried out during the Permitting stage, the company would not need to carry out a new one during Construction.

CONSULTATION QUESTION 105: Any suggestions on alternative language or approach, or alternative means for safeguarding water resources and those who rely on them if long-term water treatment is necessary, would be welcome.

4.2.3.6. If a decision is made to proceed with long-term water treatment, the company shall develop an action plan that outlines all of the practicable steps that it will take to minimize the volume of water to be treated, and shall demonstrate that funding is in place to carry out these actions.

NOTE FOR 4.2.3.6: The Mining Standard only mentioned taking practicable steps to minimize the volume of contaminated water to be treated. We added here that companies need to demonstrate that they have and action plan and funding in place to fulfill that commitment.

We can mention in Guidance that elements of the action plan can be incorporated in the water management plan and/or reclamation and closure plan, depending on the actions.

Also, we can add Guidance that if the action plan is developed during the Permitting stage, the company would not need to create a new one during Construction.

Pre-permitting | Mine Permitting | Construction

4.2.4. Monitoring and Adaptive Management

NOTE FOR 4.2.4: The requirements in 4.2.4 differ between Permitting and Exploration/Construction. During Permitting the company is still in the stage of predicting impacts and would only be starting to develop a plan to monitor impacts during the operational phase, whereas during the Exploration and Construction stages monitoring is actually being implemented.

In this draft of the IRMA-Ready Standard we are not proposing to include the requirement to develop a water monitoring program during Pre-Permitting. The assumption is that a monitoring program would not be developed until the final details of the project design are known, e.g., based on the outcomes of ESIA.

CONSULTATION QUESTION 106: Should companies be expected to develop a preliminary water monitoring program even during Pre-Permitting?

4.2.4.1. (Critical Requirement)
The company shall develop and implement a program to monitor changes in water quantity and quality.[284] As part of the program the company shall:

a. Establish a sufficient number of monitoring locations at appropriate sites to provide reliable data on changes to water quantity and the physical, chemical and biological conditions of surface waters, natural springs/seeps and groundwater (hereafter referred to as water characteristics);
b. Sample on a frequent enough basis to account for seasonal fluctuations, storm events and extreme events that may cause changes in water characteristics;
c. Establish trigger levels and/or other indicators to provide early warning of negative changes in water characteristics;
d. Sample the quality and record the quantity of mine-affected waters destined for re-use by non-mining entities; and
e. Use credible methods and appropriate equipment to reliably detect changes in water characteristics.

Stage 3 Construction

NOTE FOR 4.2.4.2 and 4.2.4.3 (below): The requirements below only pertain to the Exploration and Construction stages because during Pre-permitting and Permitting the company is still in the stage of predicting impacts and would only be starting to develop a plan to monitor impacts during the operational phase, whereas during the Exploration and Construction stages monitoring is actually being implemented.

4.2.4.2. Samples shall be analyzed for all parameters that have a reasonable potential to adversely affect identified current and future water uses, using accredited laboratories capable of detecting contaminants at levels below the values in the IRMA Water Quality Criteria by End-Use Tables. Where baseline monitoring, source characterization,[285] modeling, and other site-specific information indicate no reasonable potential for a parameter to exceed the baseline values or numeric criteria in the IRMA Water Quality Criteria by End-Use Tables, those parameters need not be measured on a regular basis.[286]

NOTE FOR 4.2.4.2: The Mining Standard included the use of accredited laboratories in the list in 4.2.4.1, but that sub-requirement was not a critical requirement. We moved it to 4.2.4.2, which is not a critical requirement, to make things more clear in this Standard.

4.2.4.3. The company shall actively solicit stakeholders from affected communities to participate in water monitoring and to review and provide feedback on the water monitoring program:

a. Participation may involve the use of independent experts selected by the community; and
b. If requested by community stakeholders, costs related to participation in monitoring and review of the monitoring program shall be covered in full or in part by the company, and a mutually acceptable agreement for covering costs shall be developed.

NOTE FOR 4.2.4.3: This is unchanged from the Mining Standard.

Stage 3 Construction

NOTE FOR 4.2.4.4 (below): This requirement has been modified compared to the Mining Standard. We have tried to make management plans in this Standard include similar elements, no matter the particular topic.

[284] See also IRMA Chapter 4.1, criteria 4.1.4, as water monitoring that occurs here is likely to have relevance to waste management (e.g., one indicator of the effectiveness of waste management practices may be whether or not water quality is being maintained at required levels).

[285] See also IRMA Chapter 4.1, criterion 4.1.2 on Source Characterization and Prediction.

[286] The comprehensive suite of parameters in IRMA Water Quality Tables should be analyzed periodically during operations, such as every five years, to ensure that no unanticipated contaminants have appeared, e.g., due to changes in ore or waste characteristics as mining progresses.

During Pre-permitting and Permitting the company will still be required to have a proposed or preliminary plan in place for how it proposes to mitigate impacts on water. However, during Exploration and Construction these plans will actually be implemented.

4.2.4.4. (Critical Requirement)
The company shall develop and implement construction-related requirements from an adaptive management plan for water that:

a. Outlines planned actions to mitigate predicted impacts on current and future uses of water and natural resources from changes in surface water and groundwater quality and quantity throughout the life cycle of the proposed mining project, including unintentional releases from tailings or other mine waste facilities,[287] and taking into account climate change;
b. Specifies actions that will occur if trigger levels and/or other indicators are reached;
c. Includes timelines for completion of actions, and assigns actions to responsible party/ies.
d. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

Construction

NOTE FOR 4.2.4.5 and 4.2.4.6 (below): During Pre-permitting/ Permitting engagement with stakeholders will be related to proposed plans, whereas during Exploration and Construction they are plans being implemented.

4.2.4.5. Annually or more frequently if necessary (e.g., due to changes in operational or environmental factors) the company shall review and evaluate the effectiveness of adaptive management actions, and, as necessary, revise the plan to improve water management outcomes.

4.2.4.6. Community stakeholders shall be provided with the opportunity to review and comment on adaptive management plans and participate in revising the plans.

Stage 3 Construction

4.2.5. Data Sharing, Communications and Reporting on Water Management Performance

NOTE FOR 4.2.5: There are differences between the stages below given the amount of data available to be shared publicly and with stakeholders.

4.2.5.1. The company shall publish baseline data on water quantity and quality, and the following water data shall be published annually, or at a frequency agreed by stakeholders from affected communities:[288]

a. Monitoring data for surface water and groundwater points of compliance; and
b. Monitoring data for water quantity (i.e., flows and levels of surface waters, springs/seeps and groundwater), and the volume of water discharged and extracted/pumped for mining operations.

NOTE FOR 4.2.5.1: This is essentially the same as the Mining Standard.

Construction

[287] As per Chapter 4.1, requirement 4.1.5.9, water management related to tailings may have been included in a stand-alone water management plan for that facility. If so, then that would be sufficient to meet this aspect of requirement 4.2.4.4.

[288] Additionally, as per Chapter 1.2—Community and Stakeholder Engagement, requirement 1.2.4.3: "Communications shall be carried out and information shall be provided to stakeholders in a timely manner, and shall be in formats and languages that are culturally appropriate and accessible to affected communities and stakeholders."

NOTE FOR 4.2.5.2 (below): This is the same as the Mining Standard. We have not applied it to the Pre-Permitting/Permitting stages because there should not be a need for such procedures until there is some activity that has the potential to create an imminent threat. During construction it is possible that such a threat could exist.

4.2.5.2. The company shall develop and implement effective procedures for rapidly communicating with relevant stakeholders in the event that there are changes in water quantity or quality that pose an imminent threat to human health or safety, or commercial or natural resources.

Stage 3 Construction

NOTE FOR 4.2.5.3: This requirement for Construction is the same as the Mining Standard.

4.2.5.3. The company shall discuss water management strategies, performance and adaptive management issues with relevant stakeholders on an annual basis or more frequently if requested by stakeholders.

Construction

IRMA Water Quality Criteria by End-Use Tables

4.2.a—Aquatic Organisms - Fresh Water Quality Criteria

4.2.b—Aquatic Organisms - Salt Water Quality Criteria

4.2.c—Drinking Water and Human Health Quality Criteria

4.2.d—Agriculture - Irrigation Water Quality Criteria

4.2.e—Agriculture - Irrigation Water Quality Criteria

4.2.f—Aquaculture Water Quality Criteria

4.2.g—Recreational Water Quality Criteria

4.2.h—Industrial Water Quality Criteria

Note: Data and rationale for IRMA and end-use criteria values are available upon request.

Abbreviations

Bq/L = Becquerel per Liter
$CaCO_3$ = calcium carbonate
degC = degrees centigrade
mg/L = milligrams per Liter
s.u. = standard units
Tot. = Total
µg/L = micrograms per Liter
WAD = weak acid dissociable

NOTE: IRMA is seeking input on the proposed criteria for cyanide in IRMA Water Quality Criteria by End-Use Table 4.2.a. Aquatic Organisms - Fresh Water Quality Criteria.

The International Cyanide Management Code ("the Cyanide Code") was developed through a multi-stakeholder process as an effort to improve the management of cyanide at gold, and in 2017 also silver mines. The Cyanide Code's Implementation Guidance states that: "Discharges to surface waters should not exceed 0.5 mg/l WAD cyanide nor result in a concentration of free cyanide in excess of 0.022 mg/l within the receiving surface water body, and downstream of any mixing zone approved by the applicable jurisdiction. The 0.022 mg/l guideline is from the United States Environmental Protection Agency's National Water Quality Criteria for Cyanide, and represents a concentration to which a freshwater aquatic community can be briefly exposed without resulting in an unacceptable effect." (Guidance for Standard of Practice 4.5. https://www.cyanidecode.org/become-signatory/implementation-guidance)

There is concern among some stakeholder groups, however, that a lower value may be necessary, as some aquatic species are more sensitive to cyanide's effects, and several regulatory jurisdictions have a set a cyanide limit between 0.004 and 0.007 mg/L for the protection of aquatic life. As per IRMA Chapter 1.1, if there are lower limits set by a host country, mines in those jurisdictions are expected to meet those limits.

Although it is not as stringent a standard as found in some countries, it is hoped that the 0.022 mg/l limit in the IRMA Standard will begin to spur improvements in cyanide management at mining operations located in countries that do not have strong regulatory programs.

Over time, IRMA will be gathering data to better understand what levels of cyanide are achievable in surface waters at existing mines, and whether aquatic impacts related to cyanide are being experienced at sites that are meeting the 0.022 mg/l guidelines set by the Cyanide Code. Depending on the outcomes, IRMA may revise its cyanide criteria to provide greater protections for aquatic organisms.

CONSULTATION QUESTION 107: Is the 0.022 mg/L guideline value appropriate or should IRMA lower its Water Quality criterion for cyanide in Table 4.2.a?

TABLE 4.2.a. – Aquatic Organisms - Fresh Water Quality Criteria

Metals / Metalloids[1]	Units		Criteria	Source		Non-Metals / Anions[1]	Units		Criteria	Source
Aluminum	µg/L		55	AUS-NZ		Alkalinity (as CaCO3)	mg/L		measure	
Antimony	µg/L		-			Ammonia (Tot)	mg/L		X**	USA
Arsenic	µg/L		24	AUS-NZ		Chlorine	µg/L		3	AUS-NZ
Barium	µg/L		-	PER, CHI		Chloride	mg/L		230	USA
Boron	µg/L		750	PHI						
Beryllium	µg/L		-			Cyanide (Free/*WAD*)	µg/L		22	Cyanide Code
Cadmium	µg/L		X*	USA						
Calcium	mg/L		measure			Dissolved Organic Carbon	mg/L		measure	
Chromium (Tot)	µg/L		-			Dissolved Oxygen	mg/L		measure	
Chromium (III)	µg/L		X*	USA		Fluoride	mg/L		1	PHI
Chromium (VI)	µg/L		11	USA, PE		Hardness	mg/L		measure	
Cobalt	µg/L		-			Hydrogen Sulfide	mg/L		****	
Copper	µg/L		X*	USA, CAN		Nitrate & Nitrite	mg/L		-	
Iron	µg/L		1000	USA		Nitrate (as NO_3^-)	mg/L		13	CAN, PER
Lead	µg/L		X*	USA, CAN		Nitrite (as NO_2^-)	mg/L		-	
Magnesium	mg/L		measure			Nitrogen, tot. as N	mg/L		measure	
Manganese	µg/L		370	SAF		pH	s.u.		6.5 - 9.0	US, CAN
Mercury	µg/L		0.1	PER, EU, SAF		Sulfate	mg/L		-	
Molybdenum	µg/L		73	CAN		Temperature	degC		<3 diff	IFC
Nickel	µg/L		X*	USA		Total Dissolved Solids	mg/L		-	
Potassium	mg/L		measure			Total Suspended Solids	mg/L		40	Between CAN and IFC ***
Radium 226/228	Bq/L		-							
Selenium	µg/L		5	USA, SAF, AUS-NZ						
Silver	µg/L		0.25	CAN						
Sodium	mg/L		measure							
Thallium	µg/L		0.8	CAN, PER						
Uranium	µg/L		-							
Vanadium			-							
Zinc	µg/L		X*	USA						

Notes: * Use USEPA Hardness-based or Biotic Ligand Model (BLM) calculations for metals; ** and Temperature and pH-based calculations for Ammonia. *** Baseline /background likely to be higher at many sites. See 4.2.3.3.a. **** A limit for Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured.

Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; CAN = Canada; CHI = China; EU = European Union; IFC = International Finance Corporation; PER =Peru, PHI =Philippines; SAF = South Africa; USA = United States. (References listed at end of tables).

TABLE 4.2.b. – Aquatic Organisms - Salt Water Quality Criteria								
Metals / Metalloids[1]	**Units**	**Criteria**	**Source**		**Non-Metals / Anions**	**Units**	**Criteria**	**Source**
Aluminum	µg/L	-			Alkalinity (as CaCO3)	mg/L	-	
Antimony	µg/L	-			Ammonia (Total)	mg/L	X *	AUS-NZ
Arsenic	µg/L	12.5	CAN		Chlorine	µg/L	0.5	CAN
Barium	µg/L	-			Chloride	mg/L	-	
Beryllium	µg/L	-			Cyanide (Chronic - Free / *WAD*)	µg/L	4	AUS-NZ, PER
Cadmium	µg/L	4	SAF		Fluoride	mg/L	-	
Calcium	mg/L	-			Hardness	mg/L	-	
Chromium (Total)	µg/L	-			Hydrogen Sulfide	mg/L	***	US, PER
Chromium (III)	µg/L	27.4	AUS-NZ		Nitrate & Nitrite	mg/L	-	
Chromium (VI)	µg/L	4.4	AUS-NZ		Nitrate (NO_3^-)	mg/L	13 **	AUS
Cobalt	µg/L	-			Nitrite (NO_2^-)	mg/L	-	
Copper	µg/L	3.1	US		Nitrogen, total (as N)	mg/L	-	
Iron	µg/L	-			pH (standard units)	s.u.	6.5- 8.7	US, CAN
Lead	µg/L	8.1	US, PER		Sulfate	mg/L	-	
Magnesium	mg/L	-			Temperature	degC	-	
Manganese	µg/L	-			Total Dissolved Solids	mg/L	-	
Mercury	µg/L	0.4	AUS-NZ		Total Suspended Solids	mg/L	-	
Molybdenum	µg/L	-						
Nickel	µg/L	70	PHI					
Potassium	mg/L	-						
Radium 226/228	Bq/L	-						
Selenium	µg/L	71	US, PER					
Silver	µg/L	1.4	US, AUS-NZ					
Sodium	mg/L	-						
Thallium	µg/L	-						
Uranium	µg/L	-						
Vanadium	µg/L	100	AUS-NZ					
Zinc	µg/L	15	AUS-NZ					

Notes: * Calculated value based on temperature and pH. ** From Vol. 2, Chapter 8 of AUS-NZ (2000). Guidelines for Fresh and Marine Water Quality, p. 8-3-169. (See references at end of tables). *** A limit for Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured.

Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; CAN = Canada; PER =Peru, PHI =Philippines; SAF = South Africa; USA = United States. (References listed at end of tables).

TABLE 4.2.c. –Drinking Water and Human Health Quality Criteria			
Metals / Metalloids	**Units**	**Criteria**	**Source**
Aluminum	µg/L	100	CAN, WHO
Antimony	µg/L	6	USA, CAN
Arsenic	µg/L	10	USA, CAN, AUS, EU, SAF, WHO
Barium	µg/L	1000	CAN, PER
Beryllium	µg/L	60	AUS
Cadmium	µg/L	5	USA, CAN, EU, SAF, CHI, PER
Chromium (Total)	µg/L	50	CAN, AUS, EU, WHO, SAF, CHI, PER
Copper	µg/L	1000	USA, CAN, AUS
Iron	µg/L	300	USA, CAN, AUS, SAF, CHI
Lead	µg/L	10	CAN, AUS, EU, SA, WHO, CHI, PER
Manganese	µg/L	50	USA, CAN, EU, SAF
Mercury	µg/L	1	CAN, AUS, EU, SAF, PER, PHI
Molybdenum	µg/L	50	AUS
Nickel	µg/L	20	AUS, EU, CHI, PHI
Radium 226/228	Bq/L	13.5	CAN, AUS
Selenium	µg/L	40	WHO, PER
Silver	µg/L	100	USA, AUS
Thallium	µg/L	2	USA
Uranium	µg/L	30	USA, WHO
Zinc	µg/L	3000	AUS, SAF, PER
Non-Metals / Ions	**Units**	**Criteria**	**Source**
Alkalinity (as CaCO3)	mg/L	-	
Ammonia	mg/L	0.5	AUS, EU, PER
Chlorine	mg/L	5	AUS, WHO
Chloride	mg/L	250	AUS, USA, CAN
Cyanide (Free or WAD)	µg/L	80	AUS
Fluoride	mg/L	1.5	CAN, AUS, EU, WHO, PER
Hydrogen Sulfide (as S^{2-})	mg/L	*	
Nitrate (as NO_3^-)	mg/L	45	CAN, USA, CHI
Nitrite (as NO_2^-)	mg/L	3.3	CAN, USA, CHI
pH (standard units)	s.u.	6.5 - 8.5	USA, CAN, AUS, CHI, PHI
Sulfate	mg/L	400	Value between CAN, PER and USA, WHO, CHI
Total Dissolved Solids	mg/L	500	USA, CAN

Notes: * A limit for Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured.

Abbreviations for Sources/ Standards: AUS = Australia; CAN = Canada; CHI = China; EU = European Union; IFC = International Finance Corporation; PER =Peru, PHI =Philippines; SAF = South Africa; USA = United States; WHO = World Health Organization of the United Nations;. (References listed at end of tables).

TABLE 4.2.d. – Agriculture - Irrigation Water Quality Criteria			
Metals / Metalloids	**Units**	**Criteria**	**Source**
Aluminum	µg/L	5000	CAN, USA, AUS-NZ, SAF, FAO, PER
Antimony	µg/L	-	
Arsenic	µg/L	100	USA, AUS-NZ, SAF, FAO, PER
Barium	µg/L	-	
Beryllium	µg/L	100	USA, CAN, AUS-NZ, SAF, FAO, PER
Boron	µg/L	750	PHI
Cadmium	µg/L	10	USA, AUS-NZ, SAF, FAO, PER
Chromium (Total)	µg/L	100	USA, AUS-NZ, FAO, SAF, PER
Cobalt	µg/L	50	USA, AUS-NZ, CCME, FAO, SAF, PER
Copper	µg/L	200	USA, AUS-NZ, CCME, FAO, SAF
Iron	µg/L	5000	USA, CAN, FAO, SAF, PER
Lead	µg/L	200	CAN, SAF
Manganese	µg/L	200	CAN, AUS-NZ, FAO, PER, PHI
Mercury	µg/L	2	AUS-NZ , PHI
Molybdenum	µg/L	10	USA, CAN, AUS-NZ, SAF, FAO
Nickel	µg/L	200	USA, CAN, AUS-NZ, SAF, FAO, PER, PHI
Radium 228	Bq/L	-	
Selenium	µg/L	20	USA, CAN, AUS-NZ, SAF, PER, PHI
Silver	µg/L	-	
Thallium	µg/L	-	
Uranium	µg/L	100	AUS-NZ
Vanadium	µg/L	100	USA, CAN, AUS-NZ, FAO
Zinc	µg/L	2000	USA, FAO, PER, PHI
Non-Metals / Anions	**Units**	**Criteria**	**Source**
Alkalinity (as CaCO3)	mg/L	-	
Chlorine	mg/L	175	CAN
Chloride	mg/L	100	CAN, SAF
Cyanide (Free or WAD)	µg/L	-	
Fluoride	mg/L	1	USA, CAN, FAO, PER
Nitrate & Nitrite	mg/L	-	
Nitrate	mg/L	-	
Nitrite	mg/L	-	
pH (standard units)	s.u.	6.5 - 8.4	USA, SAF, FAO
Sulfate	mg/L	1000	AUS-NZ, PER
Total Dissolved Solids	mg/L	500 – 3500*	CAN
Total Suspended Solids	mg/L	-	

Notes: * 500 mg/L for berries, stone fruit, and some vegetables; 3500 mg/L for asparagus, some grains and other vegetables (see Canadian Council of Ministers of the Environment for more information. http://st-ts.ccme.ca/en/index.html?lang=en&factsheet=215)

Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; CAN = Canada; FAO = Food and Agriculture Organization of the United Nations; PER =Peru, PHI =Philippines; SAF = South Africa; USA = United States. (References listed at end of tables).

TABLE 4.2.e. – Agriculture - Livestock Water Quality Criteria			
Metals / Metalloids	**Units**	**Criteria**	**Source**
Aluminum	µg/L	5000	USA, CAN, AUS-NZ, SAF, FAO, PER
Antimony	µg/L	-	
Arsenic	µg/L	200	USA, PER
Barium	µg/L	-	
Beryllium	µg/L	100	CAN, PER
Boron	µg/L	5000	CAN, AUS-NZ, PER
Cadmium	µg/L	50	USA, PER
Chromium (Total)	µg/L	1000	USA, AUS-NZ, SAF, PER
Cobalt	µg/L	1000	USA, CAN, AUS-NZ, SAF, PER
Copper	µg/L	500	USA, CAN, AUS-NZ, SAF, PER
Iron	µg/L	10000	SAF
Lead	µg/L	100	USA, CAN, AUS-NZ, SAF
Manganese	µg/L	200	AUS-NZ, PER, PHI
Mercury	µg/L	3	CAN
Molybdenum	µg/L	300	USA
Nickel	µg/L	1000	CAN, AUS-NZ, SAF, PER, PHI
Radium 228	Bq/L	-	
Selenium	µg/L	50	USA, CAN, SAF, PER
Silver	µg/L	-	
Thallium	µg/L	-	
Uranium	µg/L	200	CAN, AUS-NZ
Vanadium	µg/L	100	USA, CAN
Zinc	µg/L	24000	USA, PER
Non-Metals / Anions	**Units**	**Criteria**	**Source**
Alkalinity (as CaCO3)	mg/L	-	
Chlorine	mg/L	-	
Chloride	mg/L	-	CAN, SAF
Cyanide (Free or WAD)	µg/L	-	
Fluoride	mg/L	2	USA, CAN, AUS-NZ, PER
Nitrate & Nitrite (NO_3-N + NO_2-N)	mg/L	100	CAN, AUS-NZ
Nitrate (as NO_3-N)	mg/L	-	
Nitrite (as NO_2-N)	mg/L	10	USA, CAN, PER
pH (standard units)	s.u.	6.5 - 8.4	PER
Sulfate	mg/L	1000	AUS-NZ, PER
Total Dissolved Solids	mg/L	3000	CAN
Total Suspended Solids	mg/L	-	

Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; CAN = Canada; FAO = Food and Agriculture Organization of the United Nations; PER =Peru, PHI =Philippines; SAF = South Africa; USA = United States. (References listed at end of tables).

TABLE 4.2.f. – Aquaculture Water Quality Criteria				
Metals / Metalloids	**Units**	**Fresh Criteria**	**Marine Criteria**	**Source**
Aluminum	µg/L	30	10	AUS, SAF
Antimony	µg/L	-	-	
Arsenic	µg/L	50	30	AUS, PER, SAF
Barium	µg/L	-	-	
Beryllium	µg/L	-	-	
Cadmium	µg/L	X *	X *	AUS, SAF
Chromium (VI)	µg/L	100	50	PER, PHI
Cobalt	µg/L	-	-	
Copper	µg/L	X *	X *	AUS
Iron	µg/L	10	10	AUS, SAF
Lead	µg/L	X *	X *	AUS
Manganese	µg/L	10	10	AUS
Mercury	µg/L	1	1	AUS, SAF
Molybdenum	µg/L	-	-	
Nickel	µg/L	100	100	AUS
Radium 226/228	Bq/L	-	-	
Selenium	µg/L	10	10	AUS, PHI
Thallium	µg/L	-	-	
Uranium	µg/L	-	-	
Zinc	µg/L	5	5	AUS
Non-Metals / Anions	**Units**	**Fresh Criteria**	**Marine Criteria**	**Source**
Alkalinity (as CaCO3)	mg/L	-	-	
Ammonia (Total)	µg/L	20	100	AUS
Chlorine	µg/L	-	-	
Chloride	mg/L	-	-	
Cyanide (Free or WAD)	µg/L	5	5	AUS, PER
Fluoride	mg/L	20	5	AUS, SAF
Hydrogen Sulfide	mg/L	**	**	
Nitrate & Nitrite	mg/L	-	-	
Nitrate (as NO_3^-)	mg/L	50	100	AUS
Nitrite (as NO_2^-)	mg/L	0.1	0.1	AUS
pH (standard units)	s.u.	6.5 - 9.0	6.0 - 9.0	AUS, WHO
Sulfate	mg/L	-	-	
Temperature	degC	<2 diff	<2 diff	AUS
Total Dissolved Solids	mg/L	-	-	
Total Suspended Solids	mg/L	40	40	AUS, PER

Notes: * Hardness dependent. ** A limit for Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured.

Abbreviations for Sources/ Standards: AUS = Australia; PER = Peru; PHI =Philippines; SAF = South Africa; WHO = World Health Organization. (References listed at end of tables).

TABLE 4.2.g. – Recreational Water Quality Criteria			
Metals / Metalloids	**Units**	**Criteria**	**Source**
Aluminum	µg/L	200	AUS-NZ, PER
Antimony	µg/L	-	
Arsenic	µg/L	10	PER, PHI
Barium	µg/L	700	PER, PHI
Beryllium	µg/L	-	
Boron	µg/L	500	PER, PHI
Cadmium	µg/L	5	AUS-NZ
Chromium (Total)	µg/L	50	AUS-NZ, PER
Cobalt	µg/L	-	
Copper	µg/L	1000	AUS-NZ
Iron	µg/L	300	AUS-NZ, PER
Lead	µg/L	10	AUS-NZ
Manganese	µg/L	100	AUS-NZ, PER
Mercury	µg/L	1	AUS-NZ, PER
Molybdenum	µg/L	-	
Nickel	µg/L	40	PHI
Radium 226/228	Bq/L	-	
Selenium	µg/L	10	AUS-NZ, PER
Silver	µg/L	50	AUS-NZ
Thallium	µg/L	-	
Uranium	µg/L	-	
Vanadium	µg/L	-	
Zinc	µg/L	3000	PER
Non-Metals / Anions	**Units**	**Criteria**	**Source**
Alkalinity (as CaCO3)	mg/L	-	
Ammonia (Total)	mg/L	-	
Chlorine	mg/L	-	
Chloride	mg/L	400	AUS-NZ
Cyanide (Free or WAD)	µg/L	100	AUS-NZ
Fluoride	mg/L	-	
Hardness	mg/L	-	
Hydrogen Sulfide	mg/L	*	
Nitrate & Nitrite	mg/L	-	
Nitrate (as NO_3-N)	mg/L	10	AUS-NZ, PER
Nitrite (as NO_2-N)	mg/L	1	AUS-NZ, PER
pH (standard units)	s.u.	6.5 - 8.5	AUS-NZ, SAF, PHI
Sulfate	mg/L	400	AUS-NZ
Total Dissolved Solids	mg/L	-	
Total Suspended Solids	mg/L	30	USA, PHI

Notes: * Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured.

Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; PER = Peru; PHI =Philippines; SAF = South Africa; USA = United States. (References listed at end of tables).

TABLE 4.2.h. – Industrial Water Quality Criteria			
Metals / Metalloids	**Units**	**Criteria**	**Source**
Aluminum	µg/L	-	
Antimony	µg/L	-	
Arsenic	µg/L	-	
Barium	µg/L	-	
Beryllium	µg/L	-	
Cadmium	µg/L	-	
Chromium (Total)	µg/L	-	
Cobalt	µg/L	-	
Copper	µg/L	-	
Iron	µg/L	-	
Lead	µg/L	-	
Manganese	µg/L	-	
Mercury	µg/L	-	
Molybdenum	µg/L	-	
Nickel	µg/L	-	
Radium 226/228	Bq/L	-	
Selenium	µg/L	-	
Silver	µg/L	-	
Thallium	µg/L	-	
Uranium	µg/L	-	
Vanadium	µg/L	-	
Zinc	µg/L	-	
Non-Metals / Anions	**Units**	**Criteria**	**Source**
Alkalinity (as CaCO3)	mg/L	-	
Chlorine	mg/L	1	USA
Chloride	mg/L	-	
Cyanide (Free or WAD)	µg/L	-	
Fluoride	mg/L	-	
Nitrate & Nitrite	mg/L	-	
Nitrates	mg/L	-	
Nitrites	mg/L	-	
pH (standard units)	s.u.	6.0 -9.0	USA
Sulfate	mg/L	-	
Total Suspended Solids	mg/L	30	USA
Total Dissolved Solids	mg/L	-	
Abbreviations for Sources/ Standards: USA = United States. (References listed at end of tables).			

REFERENCES FOR SOURCE MATERIALS USED IN TABLES

REFERENCES FOR TABLE 4.2.A.

AUS-NZ Australian and New Zealand Environment and Conservation Council. 2000. Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Volume 1. http://www.agriculture.gov.au/SiteCollectionDocuments/water/nwqms-guidelines-4-vol1.pdf

CAN Canadian Council of Ministers of the Environment. Canadian Water Quality Guidelines for the Protection of Aquatic Life. Available at: http://ceqg-rcqe.ccme.ca/en/index.html

CHI People's Republic of China. 2002. Environmental quality standard for surface water (GB 3838-2002). English version not found. Available in: Zhao et al. 2016. "Amendment of water quality standards in China: viewpoint on strategic considerations," Environmental Quality Benchmarks for Aquatic Ecosystem Protection: Derivation and Application. https://www.usask.ca/toxicology/jgiesy/pdf/publications/JA-931-temp.pdf

EU European Union. 2013. Directive 2013/39/EU of the European Parliament and of the Council of 12 August 2013 amending Directives 2000/60/EC and 2008/105/EC as regards priority substances in the field of water policy. https://publications.europa.eu/en/publication-detail/-/publication/296e91b8-4610-11e3-ae03-01aa75ed71a1/language-en

IFC International Finance Corporation. 2007. Environmental, Health and Safety Guidelines for Mining. https://www.ifc.org/wps/wcm/connect/1f4dc28048855af4879cd76a6515bb18/Final+-+Mining.pdf?MOD=AJPERES

PER Peru Ministry of Environment (MINAM). 2015. National Environmental Quality Standards for Water (2015). http://www.ana.gob.pe/sites/default/files/normatividad/files/ds-ndeg-015-2015-minam.pdf

PHI Republic of the Philippines. 2016. Water Quality Guidelines and General Effluent Standards of 2016. http://wepa-db.net/3rd/en/topic/waterstandard/Philippines_Water%20Quality%20Guideline_2016.pdf

SAF South Africa. 1996. South African Water Quality Guidelines. Volume 7: Aquatic Ecosystems, 2nd Ed. http://www.dwa.gov.za/iwqs/wq_guide/Pol_saWQguideFRESHAquaticecosystemsvol7.pdf

USA US Environmental Protection Agency. National Recommended Water Quality Criteria - Aquatic Life Criteria Table. https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table

REFERENCES FOR TABLE 4.2.B. (LISTED ONLY IF DIFFERENT SOURCES THAN 4.2.A)

SAF South Africa. 1995. Water Quality Guidelines for Coastal Marine Waters, Volume 1. Available at: http://www.iwa-network.org/filemanager-uploads/WQ_Compendium/Database/Future_analysis/085.pdf

REFERENCES FOR TABLE 4.2.C.

AUS Australia National Health and Medical Research Council. 2017. Australian Drinking Water Quality Guidelines 6 (2011). https://www.nhmrc.gov.au/_files_nhmrc/file/publications/nhmrc_adwg_6_version_3.4_final.pdf

CAN Health Canada. 2017. Guidelines for Canadian Drinking Water Quality: Summary Table. Available at: https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html

CHI People's Republic of China. 2006. Standards for Drinking Water Quality. GB 5749-2006. English version available at: http://www.iwa-network.org/filemanager-uploads/WQ_Compendium/Database/Selected_guidelines/016.pdf

EU European Union. 1998. EU Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption. http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:01998L0083-20151027

PER Peru Ministry of Environment (MINAM). 2015. National Environmental Quality Standards for Water (2015). http://www.ana.gob.pe/sites/default/files/normatividad/files/ds-ndeg-015-2015-minam.pdf

PHI Republic of the Philippines. 2016. Water Quality Guidelines and General Effluent Standards of 2016. http://wepa-db.net/3rd/en/topic/waterstandard/Philippines_Water%20Quality%20Guideline_2016.pdf

SAF South Africa. 1996. South African Water Quality Guidelines. Volume 1: Domestic Use. 2nd Ed. http://www.dwa.gov.za/iwqs/wq_guide/Pol_saWQguideFRESH_vol1_Domesticuse.PDF

USA US Environmental Protection Agency. 2018. Drinking Water Standards and Health Advisory Tables. https://www.epa.gov/sites/production/files/2018-03/documents/dwtable2018.pdf

WHO World Health Organization. 2011. Guidelines for Drinking Water Quality. http://www.who.int/water_sanitation_health/water-quality/guidelines/en/

REFERENCES FOR TABLE 4.2.D.

AUS-NZ Australian and New Zealand Environment and Conservation Council. 2000. Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Volume 1. http://www.agriculture.gov.au/SiteCollectionDocuments/water/nwqms-guidelines-4-vol1.pdf

CAN Canadian Council of Ministers of the Environment. Various years. Canadian Water Quality Guidelines for the Protection of Agriculture. Searched by individual factsheet. http://ceqg-rcqe.ccme.ca/en/index.html

FAO Ayers, R and Westcot, D. 1985. Water Quality for Agriculture. FAO Irrigation and Drainage Paper 29 (last updated 1994). http://www.fao.org/docrep/003/t0234e/t0234e00.HTM

PER Peru Ministry of Environment (MINAM). 2015. National Environmental Quality Standards for Water (2015). http://www.ana.gob.pe/sites/default/files/normatividad/files/ds-ndeg-015-2015-minam.pdf

PHI Republic of the Philippines. 2016. Water Quality Guidelines and General Effluent Standards of 2016. http://wepa-db.net/3rd/en/topic/waterstandard/Philippines_Water%20Quality%20Guideline_2016.pdf

SAF South Africa. 1996. South African Water Quality Guidelines. Volume 4: Agricultural Use: Irrigation. 2nd Ed. http://www.dwaf.gov.za/iwqs/wq_guide/Pol_saWQguideFRESH_vol4_Irrigation.pdf

USA US Environmental Protection Agency. 2012. Guidelines for Water Reuse. EPA/600/R-12/618. https://www3.epa.gov/region1/npdes/merrimackstation/pdfs/ar/AR-1530.pdf

REFERENCES FOR TABLE 4.2.E. (IF DIFFERENT FROM TABLE 4.2.D)

SAF South Africa. 1996. South African Water Quality Guidelines. Volume 5: Agricultural Use: Livestock Watering. 2nd Ed. http://www.dwaf.gov.za/iwqs/wq_guide/Pol_saWQguideFRESH_vol5_Livestockwatering.pdf

REFERENCES FOR TABLE 4.2.F. (IF DIFFERENT FROM TABLE 4.2.D)

SAF South Africa. 1996. South African Water Quality Guidelines. Vol. 6: Agricultural Use: Aquaculture. 2nd Ed. http://www.iwa-network.org/filemanager-uploads/WQ_Compendium/Database/Future_analysis/077.pdf

SAF South Africa. 1995. Water Quality Guidelines for Coastal Marine Waters, Vol. 4: Mariculture. Available at: http://www.iwa-network.org/filemanager-uploads/WQ_Compendium/Database/Future_analysis/084.pdf

REFERENCES FOR TABLE 4.2.G. (IF DIFFERENT FROM TABLE 4.2.D)

SAF South Africa. 1996. Water Quality Guidelines. Vol. 2: Recreational Use. Available at: http://www.iwa-network.org/filemanager-uploads/WQ_Compendium/Database/Future_analysis/084.pdf

REFERENCES FOR TABLE 4.2.H. (IF DIFFERENT FROM TABLE 4.2.D)

None.

Chapter 4.3—Air Quality

NOTE TO REVIEWERS ON CHAPTER 4.3:

This chapter is not relevant for Stage 1 Exploration because there is no project site where air quality may be affected by exploration activities.

Also, the requirements in this chapter have not been included for Exploration Stages 2 or 3—the rationale being that potential impacts on air quality during exploration are required to be screened in Chapter 2.1-Environmental and Social Impact Assessment and Management, and if there are potentially significant risks to air quality from exploration that chapter requires that a plan be in place to prevent or mitigate the impacts.

For Pre-Permitting and Permitting, however, there are additional steps that should be undertaken given the potential for large-scale mining developments to significantly impact air quality.

These requirements carry into the Construction stage because if not done at an earlier stage a mine being audited during the Construction stage would be expected to demonstrate that these requirements are being met at the time of the audit. We can add Guidance, when appropriate, that if the requirements have been carried out already, the company would not be expected to repeat the effort during Construction.

BACKGROUND

Mineral exploration and development sites can release air contaminants. By volume, the great majority of air contaminants are particulate matter, such as dust from vehicle and equipment traffic as well as drilling. Other air contaminants may represent only a small proportion of a project's air emissions, but are important because like particulate matter they can significantly affect human health and the environment.

Mineral exploration and development projects may emit contaminants from diffused activities, such as fugitive dust emitted by drilling or truck traffic, or wind-blown from exposed surfaces such as roads, pits, and drill pads. These releases can generally be controlled with reasonably inexpensive measures. The most common method of dust control is spraying water - such as by truck on roads and pads. Chemical additives, such as magnesium chloride may be added to increase the effectiveness and durability of sprayed water.

OBJECTIVES/INTENT OF THIS CHAPTER

To protect human health and the environment from airborne contaminants.

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant to all mineral exploration and development projects that release to air any of the contaminants in Table 4.3, below, or other contaminants that may present a risk to human or ecosystem health. Air emissions may be from stationary or mobile equipment, waste facilities, and other related activities undertaken on the project site or along transportation routes.

This chapter does not address air contaminants in the workplace. Those issues are addressed in IRMA Chapter 3.2—Occupational Health and Safety. Also, the management of emissions of greenhouse gases and mercury are addressed in Chapters 4.5 and 4.8, respectively.

CRITICAL REQUIREMENTS IN THIS CHAPTER

When significant potential impacts on air quality are identified, company develops measures to avoid and minimize adverse impacts on air quality, and documents them in a management plan (4.3.2.3).

Air Quality Requirements

4.3.1. Air Quality Scoping and Impact Assessment

NOTE FOR 4.3.1: In the Mining Standard this was referred to as screening (in the Criterion title and in the requirements). We have revised the term here to maintain consistency with Chapter 2.1. We will add Guidance that if scoping has been carried out already, the company would not be expected to repeat the effort during Construction.

4.3.1.1. Either as part of Chapter 2.1 (see Criterion 2.1.3) or as a separate exercise, the company shall carry out a scoping (or equivalent) process to determine if there may be significant air quality impacts associated with the proposed mining project.

4.3.1.2. The company shall establish the baseline air quality in the proposed mining project area.

4.3.1.3. If scoping or other credible information indicates that air emissions from proposed mining-related activities may adversely impact human health, quality of life or the environment, and If not carried out as part of the Environmental and Social Impact Assessment process (see Chapter 2.1), the company shall undertake an assessment to predict and evaluate the significance of the potential impacts.

4.3.1.4. Any assessment of potential impacts on air quality shall include the use of air quality modeling and monitoring consistent with widely accepted and documented methodologies to estimate the concentrations, transport and dispersion of mining-related air contaminants.[289]

Pre-permitting | Mine Permitting | Construction

4.3.2. Air Quality Management Plan

NOTE FOR 4.3.2: The requirements in 4.3.2 differ between Pre-Permitting/Permitting and Construction. During Pre-permitting and Permitting the company is still in the stage of developing plans to mitigate impacts, whereas during the Construction the plan is actually be implemented.

For Pre-Permitting and Permitting, we've incorporated requirements from criterion 4.3.4 of the Mining Standard, which lays out options for demonstration that a mine is protecting air quality. Our approach here is to turn those performance-based requirements for mines into objectives for proposed mines, and require that proposed air quality management plans include strategies and mitigation measures to achieve those objectives.

For Construction, we have not included those same requirements in the plans. But we do require that a plan be in place to address construction related air impact (4.3.2.3).

NOTE FOR 4.3.2.3 (below): This requirement has been modified compared to the Mining Standard. We have added more detail about what the plan shall include, so that management plans in this Standard include similar elements no matter the particular topic/purpose of the plan. During Construction the plan will not only be developed but also implemented.

4.3.2.3. (Critical Requirement)
If significant potential impacts on air quality from mine construction have been identified, the company shall develop and implement an air quality management plan that:

a. Outlines the measures to avoid, and where that is not possible, minimize adverse impacts on air quality. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound;
b. Describes implementation actions clearly assigned to a responsible party/ies;

[289] See, e.g., US EPA's Air Quality Guidelines. Appendix W To Part 51—Guideline On Air Quality Models. Pt. 51, App. W, 40 CFR Ch. I (7–1–03 Edition). Available at: www3.epa.gov/scram001/guidance/guide/appw_03.pdf and European Environment Agency. 2011 The Application of Models under the EU Air Quality Directive. www.eionet.europa.eu/events/EIONET/Technical report_3

c. Provides key indicators, linked to adequate baseline data, to enable measurement of the effectiveness of avoidance, minimization and/or offsetting activities over time; and
d. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

4.3.2.4. Air quality management strategies and plans shall be implemented and updated as necessary during mine construction.

Construction

4.3.3. Air Quality Monitoring

NOTE FOR 4.3.3: The requirements in 4.3.2 differ between Permitting and Construction. During Permitting the company is still in the stage of predicting and developing plans to monitor impacts, whereas during the Construction stage monitoring is actually be implemented.

In this draft of the IRMA-Ready Standard we are not proposing to include the requirement to develop an air quality monitoring program during Pre-Permitting. The assumption is that a monitoring plan would not be developed until the final details of the project design are known, e.g., based on the outcomes of ESIA.

CONSULTATION QUESTION 108: Should companies be expected to develop a preliminary air monitoring program even during Pre-Permitting?

4.3.3.1. The company shall develop and implement a program monitor and document ambient air quality and dust associated with mine construction.

4.3.3.2. Ambient air quality and dust monitoring locations shall be situated around the mine construction site, related operations and transportation routes and the surrounding environment such that they will provide a representative sampling of air quality sufficient to demonstrate compliance or non-compliance with the air quality and dust criteria in 4.3.4.1, and sufficient to detect air quality and dust impacts on affected communities and the environment. Where modeling is required (see 4.3.1.4) air monitoring locations shall be informed by the air quality modeling results.

Construction

4.3.4. Protection of Air Quality

NOTE FOR 4.3.4: See Note for criterion 4.3.2. This criterion only applies during Construction because this is the stage when air quality management plans and mitigation measures will begin to be put into effect.

4.3.4.1. During mine construction:

a. Air emissions from the project shall comply with the European Union's Air Quality Standards[290] (EU Standards) as amended to their latest form (see Table 4.3, below) at the boundaries of the proposed mine site and transportation routes; or
b. If the site is located in an airshed where baseline air quality is already degraded below EU Standards, the company shall make incremental improvements to the air quality in the airshed that are at least equivalent to the construction project's emissions; or
c. Implement a risk-based approach to protecting air quality as follows:
   i. Comply with host country air quality standards;

[290] The most recent version of the EU Air Quality Standards can be found at: http://ec.europa.eu/environment/air/quality/standards.htm

Note that mercury is not included in the list of air pollutants in Table 4.3. Mercury air emissions are addressed in IRMA Chapter 4.8. Similarly, there are no emissions limits for the following greenhouse gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, or nitrogen trifluoride. Greenhouse gas air emissions are addressed in IRMA Chapter 4.5.

ii. Assess whether in meeting these standards there are residual risks to human health from the project's air emissions; and
iii. Where residual risks related to the construction project's air emissions remain, develop and implement a plan to make incremental reductions in construction emissions to eliminate the potential for health impacts, through a multi-year phased plan with defined timelines, and/or develop and implement a plan to make incremental improvements to the air quality in the airshed that are at least equivalent to the project's emissions.

4.3.4.2. During mine construction, dust deposition shall not exceed 350 mg/m^2/day, measured as an annual average.[291] An exception to 4.3.4.2 may be made if demonstrating compliance is not reasonably possible through ordinary monitoring methods. In such cases the company shall utilize best available practices to minimize dust contamination.

Construction

4.3.5. Reporting

NOTE FOR 4.3.5.1 (below): Requirement 4.3.5.1 in the Mining Standard mentions the need for air quality management plan to be up-to-date. That is now covered in 4.3.2.4 (Pre-Permitting/Permitting) and 4.3.2.2 (Construction) in this Standard.

We have changed the wording in 4.3.5.1, which previously required the option of making information available upon request, to requiring that the company have a policy in place to make the information available to stakeholders upon request. See explanation in Chapter 1.2, Note for Criterion 1.2.4.

4.3.5.1. The company shall ensure that its air quality management plan and air quality compliance information[292] is publicly available, or that a policy is in place to make the information available to stakeholders upon request.

Construction

NOTES

Air quality standards and requirements were reviewed for various countries, focusing on the most expansive, developed standards. The greatest focus was on the standards of the European Union, Canada, Australia, and United States. With the goal in mind of adopting a standard that would evolve over time the decision was made to adopt the European Union's (EU) numeric air quality standards. There are many developed standards but the EU's stands out for its breadth of contaminants, including some known to be released during mining, and its inclusion of specific metalloid contaminants.[293] Further, like many developed national standards, the EU's air quality standards were developed to be comprehensive, transparent (development, review and modification, application, and interpretation in the courts), and enduring. Finally, the EU's air quality standards are evolving and therefore predicating IRMA's air quality standard on them will ensure that IRMA's air quality standards also evolve.

[291] IRMA has added a specific dust criteria because dust is not listed on EU list of contaminants as it is not strictly harmful to health rather it is a "nuisance", and can be problematic communities and ecosystems located near mine sites. This requirement is based on the German TA Luft (Technical Instructions on Air Quality Control) Regulation, available at: www.bmub.bund.de/fileadmin/bmu-import/files/pdfs/allgemein/application/pdf/taluft_engl.pdf. The German dust guidelines have been incorporated here as the minimum requirement, but may require further citation and consideration, notably the potential inclusion of both an annual and a monthly mean. More information will be provided in IRMA Guidance.

[292] Compliance information may include air quality monitoring data, air quality reports (to agencies), records related to non-compliance (as per Chapter 1.1) etc.

[293] The US EPA's Air Quality Standards are similar in many ways, however the EU includes contaminants not found in the US standards that may be released by mining and mining-related activities, such as arsenic, cadmium, and nickel.

TABLE 4.3. – European Union (EU) Numeric Air Quality Standards.[1]			
Pollutant	**Concentration**	**Averaging period**	**Permitted exceedances / year**
Sulphur dioxide (SO2)	350 µg/m^3	1 hour	24
	125 µg/m^3	24 hours	3
Nitrogen dioxide (NO2)	200 µg/m^3	1 hour	18
	40 µg/m^3	1 year	not applicable
Fine particles (PM-2.5)	25 µg/m^3	1 year	not applicable
PM-10	50 µg/m^3	24 hours	35
	40 µg/m^3	1 year	not applicable
Lead (Pb)	0.5 µg/m^3	1 year	not applicable
Carbon monoxide (CO)	10 mg/m^3	Maximum daily 8-hour mean	not applicable
Benzene	5 µg/m^3	1 year	not applicable
Ozone	120 µg/m^3	Maximum daily 8-hour mean	25 days averaged over 3 years
Arsenic (As)	6 ng/m^3	1 year	not applicable
Cadmium (Cd)	5 ng/m^3	1 year	not applicable
Nickel (Ni)	20 ng/ m^3	1 year	not applicable
Polycyclic Aromatic Hydrocarbons	1 ng/m^3 (as concentration of Benzo(a)pyrene)	1 year	not applicable
Notes: EU. Air Quality Standards (as of July 3, 2013). http://ec.europa.eu/environment/air/quality/standards.htm			

Chapter 4.4—Noise and Vibration

NOTE TO REVIEWERS ON CHAPTER 4.4:

In the Mining Standard, this chapter focused on the impacts of noise and vibrations on human noise receptors. We have added the noise element on wildlife, in particular, because exploration often occurs in more remote areas where wildlife may not have had much previous exposure to human industrial activity and/or may be more sensitive to noise and vibration.[294]

The Mining Standard expected that noise-related impacts on wildlife receptors would have been considered as part of the Environmental and Social Impact Assessment process in Chapter 2.1, and if significant impacts were identified then mitigation options would have been developed as per the ESIA process (including consultations with relevant stakeholders, such as government biologists, wildlife conservation organizations, academic experts and community members whose livelihoods or sustenance may be affected by impacts on wildlife).

However, the approach taken in this Standard for Exploration and Development is that noise and vibration issues may be screened (for exploration) or scoped (for proposed mining projects) as part of an environmental and social impact assessment process (Chapter 2.1). And like our approach with Community Health and Safety (Chapter 3.3), and Cultural Heritage (Chapter 3.7) in this draft Standard, in this Noise and Vibration chapter we have laid out particular considerations that must be considered as part of a screening or scoping of issues related to those topics. In other words, regardless of whether the evaluation is carried out as part of a larger evaluation in Chapter 2.1 or as a standalone exercise as per Chapter 4.4, the specific requirements in Chapter 4.4 must be followed.

This chapter is not relevant for Stage 1 Exploration because there is no project site where noise from exploration activities will be generated.

BACKGROUND

Mineral exploration and development can create significant noise and/or vibration through airborne and ground-based geophysics, drilling and other activities.

Studies have shown that there are direct links between noise and health. Problems related to noise include stress-related illnesses, high blood pressure, speech interference, hearing loss, sleep disruption, and lost productivity.[295]

Many noises can be moderated or partially managed by employing mitigation measures, including, planning, timing, and communications. However, effective noise control may be challenging if a project is located near communities.

OBJECTIVES/INTENT OF THIS CHAPTER

To preserve the health and well-being of nearby noise receptors and the amenity of properties and community values, and to protect offsite structures from vibration impacts.

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant for all projects applying for IRMA certification. Worker-related noise impacts are addressed in Chapter 3.2, Occupational Health and Safety.

CRITICAL REQUIREMENTS IN THIS CHAPTER

None.

[294] SLR Consulting. 2017. Expert Environmental Guidance on Exploration Methodologies: Part Four: Drilling. p. 121. https://assets.gov.ie/76753/9a4ac3d4-6f71-412d-a013-1ac32a2128e3.pdf

[295] For example, see various documents on US EPA Noise Pollution Clearinghouse website: www.nonoise.org/epa.htm; Also, see various publications on World Health Organization website: www.euro.who.int/en/health-topics/environment-and-health/noise/publications

Noise and Vibration Requirements

4.4.1. Noise and Vibration Screening/Scoping

NOTE FOR 4.4.1: We use the terms screening for Exploration and scoping for Mine Development to align with the approach and language used in Chapter 2.1. (See Note for criterion 2.1.1)

Unlike the Mining Standard, which focused on the impacts of mining-related noise and vibration on human receptors, we have added screening/scoping of potential impacts of noise and vibration on wildlife, as it is during exploration and prior to mining that these types of impacts are more appropriately identified, and mitigation measures developed (see 4.4.2, below).

For screening/scoping of potential impacts related to noise we started with Exploration Stage 2 because aerial overflights during that stage may create noise that affects communities and/or wildlife.

4.4.1.1. Either as part of Chapter 2.1 (see Criterion 2.1.3) or as a separate exercise, the company shall carry out scoping to determine if there may be significant impacts on offsite human noise receptors from noise and/or vibration associated with the proposed mining project, including mine construction. Screening shall be updated if there is a proposed change to the mine plan that is likely to result in a new source of noise or vibration or an increase in predicted noise or vibration levels.

NOTE FOR 4.4.1.1: This would not be required during Construction if adequate scoping of mine construction noise and vibration issues was carried out during Permitting.

4.4.1.2. Scoping shall include consultations with representatives from potentially affected communities, as well as other relevant stakeholders.

NOTE FOR 4.4.1.2: See Note for this requirement in Exploration Stages 2 and 3 above. This would not be required during Construction if adequate scoping was carried out during Permitting.

4.4.1.3. If scoping identifies that wildlife may be significantly affected by noise from proposed mining or mine construction activities, then the company shall document baseline ambient noise levels in the proposed mining project area. If screening identifies human receptors who may be impacted by noise from proposed mining or mine construction activities, then the company shall document baseline ambient noise levels at the location(s) of receptors closest to the proposed activities, and at locations of other relevant human receptors.[296]

NOTE FOR 4.4.1.3: This requirement has been revised. In the Mining Standard it did not refer to wildlife. This would not be required during Construction if adequate scoping was carried out during Permitting.

Pre-permitting | Mine Permitting | Construction

4.4.2. Management and Mitigation of Impacts

NOTE FOR 4.4.2: The title of this criterion is different than the Mining Standard, which referred specifically to impacts on human receptors. As mentioned in the Note for 4.4.1, we have added screening/scoping of potential impacts of noise and vibration on wildlife, and therefore, it follows to add mitigation if potential impacts are identified.

In this criterion there are different expectations for Exploration versus Pre-Permitting/Permitting/Construction. The noise from exploration will be different than that produced from mining operations, which tend to operate all day, every day. Because exploration noise will be intermittent and periodic (although there could be some sustained

[296] Relevant human noise receptors should include the closest receptors to where exploration activities will take place, but also any others that have the potential to be affected by noise or vibrations. Topography and meteorology (e.g., prevailing wind directions, temperature inversions) should be considered, when evaluating which receptors might be relevant. (Australian Department of Industry, Innovation and Science. Leading Practice Sustainable Development Program: 3.0 Noise. https://industry.gov.au/resource/Programs/LPSD/Airborne-contaminants-noise-and-vibration/Noise/Pages/Meteorological-effects-on-the-propagation-of-noise.aspx)

periods of noise) we have not added the detail that is included for proposed mining projects during Pre-Permitting/Permitting. We can add Guidance that those in the exploration stage can use the noise levels established for mines (in the following requirements) to inform their mitigation objectives.

4.4.2.1. If there are human or wildlife noise receptors that will be significantly affected by noise from mine construction activities, the company shall develop and implement a noise management plan (or equivalent) that:

a. Outlines the measures to avoid, and where that is not possible, minimize adverse impacts related to noise and vibration. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound.
b. Describes implementation actions clearly assigned to a responsible party/ies.
c. Provides key indicators, linked to adequate baseline data, to enable measurement of the effectiveness of avoidance, minimization and/or offsetting activities over time.
d. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

4.4.2.2. If scoping indicates that there are there are residential, institutional or educational noise receptors that will be affected by noise from mine construction activities, then the management plan shall include measures to prevent noise from exceeding a maximum one-hour LAeq (dBA) of 55 dBA during the hours of 07:00 to 22:00 (i.e., day) and 45 dBA at other times (i.e., night) at the nearest offsite receptor with the following exceptions:

a. The hours during which elevated noise levels are allowed may be adjusted if the company can justify that alternative hours are necessary and/or appropriate because of local, cultural or social norms.
b. If baseline ambient noise levels exceed 55 dBA (day) and/or 45 dBA (night), then noise levels shall not exceed 3 dB above baseline as measured at relevant offsite noise receptors.

NOTE FOR 4.4.2.2: For the Construction stage we removed the blasting-related requirements 4.4.2.4 and 4.4.2.5, as those were based on requirements developed for mining-related blasting. Also, the blasting requirements in 4.4.2.4 have not been included during the Construction stage. See CONSULTATION QUESTION 109, above.

4.4.2.3. If screening or other credible information indicates that there are only industrial or commercial receptors that may be affected by noise from mine construction, then noise measured at the nearest industrial or commercial receptor shall not exceed 70 dBA.

Construction

4.4.3. Response to Complaints

NOTE FOR 4.4.3: This is a new criterion heading. The requirements below were previously under Management and Mitigation of Impacts in 4.4.2.

We've made the criterion applicable during Pre-Permitting and Permitting because there is a potential, albeit low, that project development activities (such as field work) could lead to noise-related complaints. Pre-Permitting and Permitting because there are no operations that would cause noise-related complaints.

4.4.3.1. If a credible, supported complaint is made to the company that noise or vibration is adversely impacting human noise receptors, then the company shall consult with affected stakeholders to develop mitigation strategies or other proposed actions to resolve the complaint. Where complaints are not resolved then other options, including noise monitoring and the implementation of additional mitigation measures, shall be considered.

4.4.3.2. All noise- and vibration-related complaints and their outcomes shall be documented.

Stage 2 | Stage 3 | Pre-Permitting | Permitting | Construction

4.4.4. Reporting

NOTE FOR 4.4.4: We have changed the wording in 4.4.4.1, which previously required the option of making information available upon request, to requiring that the company have a policy in place to make the information available to stakeholders upon request. See explanation in Chapter 1.2, Note for Criterion 1.2.4.

4.4.4.1. When stakeholders make a noise-related complaint, the company shall provide relevant noise data and information to them. Otherwise, the company shall have in place a policy to make noise data and information available to stakeholders upon request.

Chapter 4.5—Greenhouse Gas and Energy Management

NOTE TO REVIEWERS ON CHAPTER 4.5:

This chapter is not relevant for Stage 1 Exploration because there is no project site where exploration activities are generating greenhouse gas emissions (and emissions related to desk-based work should be minimal).

We have revised the title of this chapter to reflect that companies are not only expected to reduce emissions that contribute to climate change, but that managing energy use and sources of energy also plays a role. Also, throughout the document we have added requirements related to energy use and efficiency that are not in the Mining Standard. Reviewers should be aware that we will be revising this chapter in the Mining Standard, as we know that the global expectations related to reducing impacts related to climate change have increased in the three years since we developed that standard. So some of the proposed changes made here may be carried over to when the Mining Standard is revised. Feedback on this standard will feed into that revision process.

One major proposed change is that proposed mining projects commit to achieving net zero Scope 1 and 2 greenhouse gas emissions at the site by 2050 or sooner. See context and consultation questions related to that issue in requirement 4.5.2.1.

Currently, there is not a lot of evidence that mineral exploration companies measure and report energy use and greenhouse gas emissions. But as more downstream entities are striving to understand the carbon footprint of their raw materials this may gain in importance. Also, according to the Prospectors and Developers Association of Canada, greenhouse gas emissions may become a material issue if carbon taxes are levied.[297]

The IRMA Standard for Responsible Mining requires mines to not only identify and report on GHG emissions, but also look for opportunities to reduce emissions. We are proposing below to require Exploration companies to at least collect and report energy use and greenhouse gas emissions data, as this will begin to provide a better industry-wide picture of whether there are realistic opportunities for reducing emissions during these stages of development. We have not included for the Exploration stages a requirement to demonstrate that they are investigating opportunities for reducing energy use and emissions, but we are open to suggestions and feedback from stakeholders who may have good examples of exploration projects taking steps to reduce energy use and greenhouse gas emissions.

CONSULTATION QUESTION 110: Given the state of knowledge, have we struck an appropriate balance at this point in time by requiring that exploration companies (in Stages 2 and 3) be required to simply collect and report energy use and greenhouse gas emissions data?

BACKGROUND

Humans are increasingly influencing the climate and the earth's temperature by burning fossil fuels, cutting down rainforests and raising livestock. These activities release gases such as carbon dioxide, methane, nitrous oxide, ozone and a few others that have the ability to trap heat in the Earth's atmosphere. Many of these gases also occur naturally, but human activity is increasing the concentrations of some of them in the atmosphere.[298] Global concern over greenhouse gas emissions and climate change has led to the development of the United Nations Framework

[297] Prospectors and Developers Association of Canada (PDAC) website. PDAC Guidance and Tools. "Climate Change.". https://www.pdac.ca/priorities/responsible-exploration/climate-change/pdac-guidance-and-tools

[298] European Commission website: "Causes of Climate Change." https://ec.europa.eu/clima/change/causes_en

Convention on Climate Change, and has spurred the establishment of targets for the reduction of greenhouse gas emissions that are applicable in over 190 countries.[299]

Mineral exploration and development projects consume energy typically in the form of fossil fuels, to power vehicles and equipment, and as a result, produce greenhouse gas emissions.

Companies can reduce fuel and energy consumption and thereby cut costs and reduce greenhouse gas emissions by selecting mining methods and technologies that require less energy, by adopting best practices in energy efficiency and by switching to lower emissions fuels and energy sources.

OBJECTIVES/INTENT OF THIS CHAPTER

To minimize climate change impacts through increased energy efficiency, reduced energy consumption and reduced emissions of greenhouse gases.

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant for all mineral exploration and development projects.

CRITICAL REQUIREMENTS IN THIS CHAPTER

There is a policy being implemented that includes targets for reducing greenhouse gas emissions and energy consumption (4.5.2.1).

Greenhouse Gas And Energy Use Emissions Requirements

4.5.1. Technology Selection

NOTE FOR 4.5.1: This is a new criterion, not in the Mining Standard. It has been added because the mine design phase presents the best timing for integrating "clean energy" technologies and approaches into a mining operation. "The structure of mining investments makes it harder to phase out old technology and incorporate new technologies such as renewable energy or electrified equipment before end-of-mine-life. Clean energy sources need to be an integral part of mine planning and design during the planning phase, as well as during operation expansions."[300]

Opportunities for eliminating some sources and minimizing GHG emissions and energy consumption through the selection of technologies and mining/processing techniques, design of buildings, facilities and processes should be assessed during the pre-feasibility and feasibility phases.[301]

It may be difficult to assess whether minimization of energy consumption and greenhouse gas emissions have been given due weight in the final selection of technologies and practices. Perhaps if companies can demonstrate that they have investigated and calculated the energy use and greenhouse gas emissions of potential options, and have selected more efficient, less polluting technologies and processes, even though some of these approaches might have had higher upfront costs, then that could be sufficient evidence that they have integrated "clean energy" concerns into their mine planning.

CONSULTATION QUESTION 111: Are there other ways a company might demonstrate it has given the minimization of energy use and greenhouse gas emissions due weight in its mine planning process?

[299] For example, see: "Nationally appropriate mitigation commitments or actions by developed country Parties," United Nations Climate Change website. http://unfccc.int/focus/mitigation/items/7223.php

[300] Igogo, T., Loweder, T., Engel-Cox, J., Newman, A and Awuah-Offei, K. 2020. Integrating Clean Energy in Mining Operations: Opportunities, Challenges and Enabling Approaches. (Joint Institute for Strategic Energy Analysis). p. vii. https://www.nrel.gov/docs/fy20osti/76156.pdf

[301] Ibid. p. 22.

4.5.1.1. The company shall demonstrate that energy efficiency, minimization of energy consumption and minimization of greenhouse gas emissions were material considerations in the selection of energy sources, mining and processing methods, technologies and equipment, the design of buildings and facilities, and proposed operational procedures.

Pre-permitting | Mine Permitting | Construction

4.5.2. Greenhouse Gas and Energy Policy

NOTE FOR 4.5.2: The title of this criterion has changed slightly compared to the Mining Standard.

We have not included this criterion for Exploration stages. Currently, there is not a lot of evidence that mineral exploration companies have policies, nor do they measure and report energy use and greenhouse gas emissions. But this is becoming increasingly important in supply chains, and also, according to the Prospectors and Developers Association of Canada, GHG emissions may become a material issue if carbon taxes are levied.[302]

Instead of requiring companies in the Exploration stages to expend resources developing policies, our thinking is that a better use of resources would be to require them to gather actual data to estimate their energy use and greenhouse gas emissions.

CONSULTATION QUESTION 112: The IRMA Mining Standard not only requires mines to have policies and identify and report on GHG emissions, but also requires that they look for opportunities to reduce emissions and set targets for reductions. We have not included those steps in the IRMA-Ready Standard for the Exploration phases, but are open to suggestions and feedback if stakeholders believe this should be a requirement.

4.5.2.1. (Critical Requirement)
The company or its corporate owner shall develop and maintain a greenhouse gas and energy (or equivalent) policy that commits the company to:

a. Quantifying, at minimum, Scope 1 and Scope 2 greenhouse gas emissions,[303] as well as energy use from project development activities, and estimating those emissions and energy use for the proposed mining project;

   NOTE FOR 4.5.2.1.a: As mentioned again in the note for 4.2.3.1, there are two elements to the Pre-Permitting/Permitting stages: identification of potential sources of emissions and energy consumption from project development activities (e.g., field work, maintaining offices, other project-related travel, etc.) can be identified and quantified. However, for the proposed mining project, emissions and energy use can only be estimated/predicted.

b. Identifying greenhouse gas reduction and energy efficiency opportunities for the proposed mining project;
c. Achieving net zero Scope 1 and 2 greenhouse gas emissions at the site by 2050 or sooner; and

   NOTE FOR 4.5.2.1.c: We have revised the policy expectations compared to the Mining Standard, which requires that targets be set for reducing greenhouse gas emissions. While existing mining operations should be continually searching for ways to reduce emissions over time, asking proposed mining projects that are not yet developed to set targets for emissions reductions does not make sense. Especially if, as per 4.5.1 above, these projects are being developed in a manner that will maximize energy efficiency, and

[302] Prospectors and Developers Association of Canada website: "Climate Change – 1. GHG Emissions Calculator."https://www.pdac.ca/priorities/responsible-exploration/climate-change/pdac-guidance-and-tools

[303] Scope 1 emissions are the direct emissions from the mining project; Scope 2 are the indirect emissions from consumption of purchased electricity, heat, and steam. Scope 3 are other indirect emissions. See GHG Protocol Standard for more details. https://ghgprotocol.org/corporate-standard

minimize energy use and greenhouse gas emissions from the outset. If that is done, there may not be opportunities in the short term to further reduce emissions and energy use.

We have revised the wording of 4.5.2.1.c to reflect that instead of reduction targets, that new projects make a net-zero commitment. This dovetails well with a recent commitment that the International Council on Mining and Metals has set for its member companies, to "build clear pathways to achieving net zero Scope 1 and 2 GHG emissions by 2050 or sooner, through meaningful short and/or medium-term targets."[304]

We could also add a requirement for the company to set targets for Scope 3 emissions. ICMM members have committed to setting Scope 3 reduction targets by 2023, but no specific target level appears to be required.

CONSULTATION QUESTION 113: For proposed mining projects where efficiencies can be designed from the beginning, is it realistic to set a net-zero target at the site level? Or are such targets more appropriately set at the company level where net-zero can be achieved across a set of operations/facilities?

Perhaps instead of 4.5.2.1.c, above, we could consider requiring a commitment to "demonstrating that the project will achieve net zero scope 1 and 2 greenhouse gas emissions, or will contribute to the achievement of net zero scope 1 and 2 greenhouse gas emissions by the company as a whole by 2050."

Is 2050 the appropriate timeframe, or should more ambitious goals be set by IRMA? What if a proposed life of a mine does not extend to 2050?

CONSULTATION QUESTION 114: Should proposed mining projects be expected to demonstrate that they have plans in place to reduce Scope 3 emissions, or demonstrate how they are factoring Scope 3 emissions into their selection of suppliers or downstream partners? Or are expectations related to Scope 3 emissions more appropriately applied once mines become operational?

d. Reviewing the policy at least every five years and revising as needed, such as if there are significant changes to the proposed mining project, new technologies become available, or there are newly identified opportunities for reductions.

Pre-permitting	Mine Permitting	Construction

4.5.3. Emissions and Energy Use Identification and Quantification

NOTE FOR 4.5.3: The title of this criterion has changed slightly, as we have added in quantification of energy use (the Mining Standard only addressed GHG emissions).

Also, we have revised this requirement slightly compared to the Mining Standard. Instead of saying that companies must "complying with quantification methods", we have more explicitly stated that companies need to identify and quantify emissions and energy use.

There are various tools that have been created to aid in the calculation of GHG emissions and energy use, such as:

- PDAC GHG calculator: https://www.pdac.ca/priorities/responsible-exploration/climate-change/pdac-guidance-and-tools
- Greenhouse Gas Protocol calculator tools. https://ghgprotocol.org/calculation-tools
- US Environmental Protection Agency greenhouse gas equivalency calculator: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

[304] International Council on Mining and Metals. 2021. "Our commitment to a goal of net zero by 2050 or sooner." https://www.icmm.com/netzero

CONSULTATION QUESTION 115: Any addition resources on calculator tools that may be appropriate for exploration and development companies would be appreciated.

4.5.3.1. The company shall identify and quantify energy use and, at minimum, Scope 1 and Scope 2 greenhouse gas emissions from mine construction activities using methods aligned with a widely accepted reporting standard, such as the *Greenhouse Gas Protocol Corporate Standard* or the Global Reporting Initiative's *GRI 305* emissions reporting standard.[305]

Construction

NOTE FOR 4.5.3.2 (below): This is a new requirement, not in the Mining Standard. But it is increasingly an expectation in the mining sector.[306] We have applied it during the Pre-Permitting, Permitting and Construction stages.

CONSULTATION QUESTION 116: Are any exploration companies having their data third-party verified? Would this expectation be too onerous for companies at the exploration stage?

4.5.3.2. Calculations of energy use and greenhouse gas emissions shall be verified by credible third party.

Construction

4.5.4. Greenhouse Gas and Energy Management Plan

NOTE FOR 4.5.4: In the Mining Standard, this criterion is called "Emissions Reduction Strategies." As discussed in the Note for 4.5.2, proposed mining projects should be more focused on designs to prevent energy use and greenhouse gas emissions. We removed a requirement related to demonstrating progress on emissions and energy reduction. Reducing energy consumption and emissions further will not be required until mines are operational.

Proposed mining projects, however, should have a proposed plan in place to demonstrate how the commitment to net zero emissions by 2050 will be achieved if the project is developed, and be able to demonstrate that they have looked into strategies for reducing emissions and energy use.

We can add Guidance that if requirements 4.5.4.1 and 4.5.4.2 have been carried out already, the company would not be expected to have to develop a management plan or carry out additional investigations during the Construction stage.

4.5.4.1. The greenhouse gas (or equivalent) policy shall be underpinned by a management plan that details the actions that will be taken to achieve the targets and commitments set out in the policy.

4.5.4.2. The company shall demonstrate that it has investigated strategies for minimizing greenhouse gas emissions and energy consumption, and shall document the results of its investigations.

Pre-permitting | Mine Permitting | Construction

4.5.5. Reporting

4.5.5.1. The greenhouse gas and energy (or equivalent) policy shall be publicly available.

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[305] Gas Protocol Corporate Accounting and Reporting Standard. https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf; and *GRI 305* emissions reporting standard. https://www.globalreporting.org/standards/gri-standards-download-center/gri-305-emissions/ .

Scope 1 emissions are the direct emissions from a project; Scope 2 are the indirect emissions from consumption of purchased electricity, heat, and steam. Scope 3 are other indirect emissions. See GHG Protocol Standard for more details. https://ghgprotocol.org/corporate-standard

[306] For example, to reach AA level in the Mining Association of Canada's Climate Change Protocol, companies must have their energy use and GHG emissions "independently assured." (See p. 10 of the protocol, https://mining.ca/wp-content/uploads/2021/04/FINAL-Climate-Change-Protocol-ENGLISH.pdf)

CONSULTATION QUESTION 117: In the Mining Standard there is only this requirement to make the policy publicly available. Should the management plan mentioned in 4.5.4.1 also be publicly available (or made available to stakeholders upon request), or is the policy and the disclosure of data below sufficient for stakeholders?

Pre-permitting | Mine Permitting | Construction

4.5.5.2. Annual data on energy use and greenhouse gas emissions for mine construction, calculations for estimated energy use and greenhouse gas emissions for the proposed mining project, and the methods used to estimate energy use and emissions, shall be publicly available.

Construction

Chapter 4.6—Biodiversity, Ecosystem Services and Protected Areas

NOTE TO REVIEWERS ON CHAPTER 4.6:

The general framework of requirements in this chapter has not changed from the Mining Standard, however, there are some minor language modifications.

One notable change, however, is that Criterion 4.6.5 related to Protected Areas now includes all protected areas including those designated to protect cultural heritage. See Note for 4.6.5 in that section, below.

Also, reviewers are directed to Criterion 4.6.4, where there are several CONSULTATION QUESTIONS for which we'd appreciate comments.

For the most part, requirements in this chapter have not been applied to Stage 1 Exploration, given that there are no activities during that stage that will impact biodiversity, ecosystems or protected areas. There are a few requirements that do apply in this earliest stage, however, because companies should be aware of areas that are particularly important for biodiversity, as well as protected areas. These factors will have implications, such as costs to implement appropriate mitigation, that will influence whether or not a project should be pursued.

BACKGROUND

Biological diversity, or biodiversity, describes the variety of life on Earth. It refers to the wide variety of ecosystems and living organisms: animals, plants, their habitats and their genes. Biodiversity underpins ecosystem functioning and the provision of ecosystem services essential for human well-being, it is a central component of many belief systems, world views and identities, it provides for food security, human health, clean air and water, and contributes to local livelihoods and economic development. Despite its fundamental importance, however, biodiversity continues to be lost.[307]

Mineral exploration and development may take place in landscapes that are already heavily modified or degraded, and therefore, pose little or no threat to global biodiversity loss. When located in areas of high biodiversity value, however, there is the potential that mineral exploration and development may lead to a temporary or permanent loss in biodiversity and ecosystem services.

Globally, a network of protected areas has been put in place, offering various levels of protection for biodiversity, land and seascapes. Developments such as exploration and mining are expected to respect those protections and operate in manner that safeguards biodiversity and other values that led to a protected area designation (e.g., cultural values – see IRMA Chapter 3.7). In many areas of the world, however, an adequate system of protected areas has yet to be established, and even where protections exist there are opportunities to further conserve biodiversity and other important values.

Through adherence to the mitigation hierarchy during the most appropriate stages in project development, mineral exploration and development can proceed in a manner that supports global biodiversity, maintains the ecosystem services that communities need to survive and thrive, and leaves behind structurally safe and functioning ecosystems upon closure. This chapter puts forward a framework for projects to proactively assess and manage impacts on biodiversity and ecosystem services according to the mitigation hierarchy of avoiding and minimizing impacts early in the project life cycle, and if impacts cannot be avoided, restoring and, if necessary, offsetting or compensating for residual impacts throughout the remainder of the project's life.

OBJECTIVES/INTENT OF THIS CHAPTER

[307] Adopted from the Convention on Biological Diversity (CBD) Strategic Plan for Biodiversity 2011-2020. Available at: www.cbd.int/sp/

To protect biodiversity, maintain the benefits of ecosystem services and respect the values being safeguarded in protected areas.

SCOPE OF APPLICATION

RELEVANCE: This chapter will not be applicable if no risks to biodiversity, ecosystem services or protected areas, including risks related to potential knowledge gaps, are identified through the screening process.

CRITICAL REQUIREMENTS IN THIS CHAPTER

The company has evaluated potential impacts of proposed projects on biodiversity, ecosystem services and protected areas (4.6.2.1), and these impacts are being mitigated and minimized (4.6.4.1), and projects shall not be developed in or adversely affect World Heritage Sites (WHS), areas on a State Party's official Tentative List for WHS Inscription, IUCN protected area management categories I-III, or core areas of UNESCO biosphere reserves.

Biodiversity, Ecosystem Services and Protected Areas Requirements

4.6.1. General Stipulations

NOTE FOR 4.6.1: Compared to the Mining Standard, we have made a small addition in 4.6.1.1 that the design of mitigation measures should also be carried out by competent professionals using appropriate methodologies.

We will guidance that not all of the elements (e.g., screening, scoping, assessment, management planning, design and implementation of mitigation measures, and monitoring) will be applicable for each stage of development.

4.6.1.1. Biodiversity, ecosystem services and protected areas screening, scoping, assessment, management planning, design and implementation of mitigation measures, and monitoring shall be carried out and documented by competent professionals using appropriate methodologies.

4.6.1.2. Biodiversity, ecosystem services and protected areas screening, scoping, assessment, management planning, and the development of mitigation and monitoring plans shall include consultations with stakeholders, including, where relevant, affected communities and external experts.

CONSULTATION QUESTION 118: While stakeholder engagement during Exploration stages would be ideal, it would be good to hear feedback on whether it is something that is currently being undertaken by exploration companies, and if it is not, why not?

4.6.1.3. Biodiversity, ecosystem services and protected areas impact assessments, management plans and monitoring data shall be publicly available, or the company shall have in place a policy to make the information available to stakeholders upon request.

NOTE FOR 4.6.1.3: We have changed the wording in 4.6.1.3, which previously required the option of making information available upon request, to requiring that the company have a policy in place to make the information available to stakeholders upon request. See explanation in Chapter 1.2, Note for Criterion 1.2.4.

Stage 2	Stage 3	Pre-permitting	Mine Permitting	Construction

4.6.2. Biodiversity, Ecosystem Services and Protected Areas Screening and Scoping

NOTE FOR 4.6.2: The title of this criterion includes the term screening (for exploration) and scoping (for Pre-Permitting/Permitting and Construction) to correspond with the language used in Chapter 2.1.

Two requirements from the Mining Standard have been combined to create 4.6.2.1 for Stage 2, 3, Pre-Permitting, Permitting and Construction. Both related to screening/scoping.

We will add Guidance to the Construction stage that if scoping was carried out during Pre-Permitting/Permitting there is not the need to repeat the exercise during Construction. But if not done earlier, it would be necessary to carry it out at that time.

4.6.2.1. (Critical Requirement)
Either as part of Chapter 2.1 (see Criterion 2.1.3) or as a separate exercise, the company shall carry out a scoping or equivalent process to establish a preliminary understanding of the impacts on or risks to biodiversity, ecosystem services and protected areas from past and proposed activities related to the proposed mining project. Screening shall include identification and documentation of:

a. Boundaries of legally protected areas in the proposed mine's area of influence, and the conservation values being protected in those areas;
b. Boundaries of Key Biodiversity Areas (KBA)[308] in the proposed mine's area of influence, the important biodiversity values within those areas and the ecological processes and habitats supporting those values;
c. Areas of modified habitat, natural habitat and critical habitat[309] within the proposed mine's area of influence, and the important biodiversity values (e.g., threatened and endangered species) present in the critical habitat areas; and
d. Ecosystems or processes within the proposed mine's area of influence that may or do provide provisioning, regulating, cultural and supporting ecosystem services.

NOTE FOR 4.6.2.1: Past activities related to the proposed mining project would include impacts caused during exploration, baseline sampling, surveys, or other company activities leading up to the Pre-Permitting, Permitting or Construction stages.

Pre-permitting | Mine Permitting | Construction

4.6.3. Impact Assessment

NOTE FOR 4.6.3: This step may be carried out as part of a larger ESIA process in Chapter 2.1.

We will add Guidance to the Construction stage that if impact assessment was carried out during Pre-Permitting/Permitting there is not the need to repeat the exercise during Construction. But if not done earlier, it would be necessary to carry it out at that time.

4.6.3.1. When screening identifies protected areas or areas of potentially important global, national or local biodiversity or ecosystems services (e.g., KBAs, critical habitat, threatened or endangered species) that have been or may be affected by past and proposed activities related to the proposed mining project, the company shall carry out an impact assessment that includes:

a. Establishment of baseline conditions of biodiversity, ecosystem services and, if relevant, conservation values (i.e., in protected areas) within the mine's proposed or actual area of influence;
b. Identification of potentially significant direct, indirect and cumulative impacts of past and proposed mining-related activities on biodiversity, ecosystem services and, if relevant, on the conservation values of protected areas that may occur throughout the mine's life cycle;
c. Evaluation of options, including the scope of the proposed mining project and/or its footprint, to avoid potentially significant adverse impacts on biodiversity, ecosystem services and conservation values of protected areas, prioritizing avoidance of impacts on important biodiversity values and priority ecosystem services; evaluation of options to minimize potential impacts; evaluation of options to provide restoration for potential and actual impacts; and evaluation of options to offset significant residual impacts (see 4.6.4.1 and 4.6.4.2); and

[308] KBAs include Alliance for Zero Extinction sites (AZE), Important Bird and Biodiversity Areas (IBA), Important Plant Areas (IPA).

[309] Modified, natural and critical habitat refers to the biodiversity value of the area as determined by species, ecosystems and ecological processes. Critical habitats are a subset of modified or natural habitats. (See: International Finance Corporation. 2012. Performance Standard 6, Guidance Notes. (GN26 and Para.9) https://www.ifc.org/wps/wcm/connect/a359a380498007e9a1b7f3336b93d75f/Updated_GN6-2012.pdf?MOD=AJPERES

d. Identification and evaluation of opportunities for partnerships and additional conservation actions that could enhance the long-term sustainable management of protected areas and/or biodiversity and ecosystem services.

Pre-permitting | Mine Permitting | Construction

4.6.4. Biodiversity and Ecosystem Services Impact Mitigation and Management

NOTE FOR 4.6.4: We combined a couple of requirements from the Mining Standard (moved a requirement related to offsets from previous 4.6.4.3 to 4.6.4.1), and deleted a requirement that applied to existing mines.

Also, we revised 4.6.4.2 to make it more consistent with management plans through the Standard.

We will add Guidance to the Construction stage that if development of mitigation and management plans were carried out during Pre-Permitting/Permitting there is not the need to repeat the exercise during Construction. But if not done earlier, it would be necessary to carry it out at that time.

NOTE FOR 4.6.4.1 (below): Although IRMA's Mining Standard intended to be consistent with best practices related to mitigation of impacts on biodiversity and ecosystem services, it has been brought to our attention that the Mining Standard contains elements that do not reflect best practice.

For example, IFC outlines additional safeguards that must be in place in areas of critical habitat, stipulating that "the client will not implement any project activities unless all of the following are demonstrated:

- No other viable alternatives within the region exist for development of the project on modified or natural habitats that are not critical;
- The project does not lead to measurable adverse impacts on those biodiversity values for which the critical habitat was designated, and on the ecological processes supporting those biodiversity values;
- The project does not lead to a net reduction in the global and/or national/regional population of any Critically Endangered or Endangered species over a reasonable period of time; and
- A robust, appropriately designed, and long-term biodiversity monitoring and evaluation program is integrated into the client's management program."

CONSULTATION QUESTION 119: Should IRMA include the "no-go-unless" stipulation for critical habitats, and if so, should they be included for both of the Exploration and project development (Pre-Permitting/Permitting) stages?

Also, in comparison to requirement 4.6.4.1.c of the IRMA Mining Standard, where we say that new mines must demonstrate they can achieve "no net loss and preferably net gain in important biodiversity values", the International Finance Corporation requires net gain in critical habitat areas,[310] and similarly, KBA Partners recommend that companies achieve net gain on the trigger elements if a project is in a Key Biodiversity Area.[311]

CONSULTATION QUESTION 120: Should IRMA align more specifically with IFC,[312] mentioning the differing levels of expectations for modified, natural and critical habitats. For example, something like:

Mitigation measures shall:

[310] IFC's Performance Standard 6. Paragraph 10. https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/performance-standards/ps6

[311] KBA Partners Guidelines on Business and KBAs (KBA Partners. 2018. Guidelines on Business and KBAs: Managing Risk to Biodiversity. p. 8. https://portals.iucn.org/library/sites/library/files/documents/2018-005-En.pdf)

[312] See, in particular, paragraphs 12, 15, 18. (IFC's Performance Standard 6. https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/performance-standards/ps6)

b. Be designed and implemented to minimize impacts on important biodiversity values in areas of modified habitat, achieve no net loss for impacts on important biodiversity values in areas of natural habitat, and achieve net gain in important biodiversity values in critical habitat areas.

CONSULTATION QUESTION 121: Should IRMA outline some key best practice elements related to the development of offsets that must always be demonstrated by a company in order to 4.6.4.1.c? For example, requirements related to calculating offsets, or the timescale or spatial scale of achieving offsets, or requiring a company to obtain the Free, Prior and Informed Consent of indigenous peoples for a proposed offset project that affects the peoples' rights or interests (even if those indigenous peoples are not affected by the mining activities).

If so, what key practices would you suggest are key to include?

4.6.4.1. (Critical Requirement)
Mitigation measures for proposed mining projects shall:

a. Follow the mitigation hierarchy of:
    i. Prioritizing the avoidance of impacts on important biodiversity values and priority ecosystem services and the ecological processes and habitats necessary to support them;
    ii. Where impacts are not avoidable, minimizing impacts to the extent possible;
    iii. Restoring biodiversity, ecosystem services and the ecological processes and habitats that support them; and
    iv. As a last resort, offsetting the residual impacts.
b. Be designed and implemented to deliver at least no net loss, and preferably a net gain in important biodiversity values, and the ecological processes that support those values, on an appropriate geographic scale and in a manner that will be self-sustaining after mine closure; and
c. Utilize international best practices for offsets, should those be required.

Pre-permitting | Mine Permitting | Construction

NOTE FOR 4.6.4.2 (below): For Pre-permitting/Permitting/Construction we have included the phrase "and, if necessary, implement" to make this applicable to the Construction phase. But also because there may be project development activities (e.g., field work, surveys needed to inform the ESIA and permit application) that could require biodiversity management and mitigation.

During Pre-Permitting/Permitting, if no mitigation needs to be put in place, the plan would be developed solely for the mining project.

4.6.4.2. The company shall develop, and, if necessary, implement a biodiversity management plan or equivalent that:

a. Outlines specific objectives (e.g., no net loss/net gain, no additional loss) with measurable conservation outcomes, timelines, locations and activities that will be implemented to avoid, minimize, restore, enhance and, if necessary, offset adverse impacts on biodiversity and ecosystem services;
b. Describes implementation actions clearly assigned to a responsible party/ies.
c. Provides key indicators, linked to adequate baseline data, to enable measurement of the effectiveness of avoidance, minimization and/or offsetting activities over time.
d. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

Pre-permitting | Mine Permitting | Construction

NOTE FOR 4.6.4.3 (below): We adapted the requirement from the Mining Standard to be more applicable to the various stages of exploration and development.

4.6.4.3. Biodiversity management shall include a process for updating or adapting the management plan if mine construction activities change the scope, nature or magnitude of predicted impacts on biodiversity or ecosystem services.[313]

Construction

4.6.5. Protected Areas Mitigation and Management[314]

NOTE FOR 4.6.5: The Mining Standard addressed cultural heritage-based "protected areas" in its chapter 3.7 on Cultural Heritage Protection.

We are proposing in this standard to address ALL protected areas in Chapter 4.6. Otherwise, there is the potential to double count a company's performance in relation to protected areas (either doubly reward or doubly penalize, depending on the circumstances). The requirements removed from Chapter 3.6 essentially duplicated 4.6.5.1 – 4.6.5.3. We have revised those requirements below so that they now apply to all protected areas.

And we added a footnote to criterion 4.6.5 to make this clear that the criterion applies to all legal protected areas, including those designated to protect ecological values, cultural values or any other values deemed important by those who created the legal designation.

Also, we revised the requirements in criterion 4.6.5 to be more applicable to the various stages of exploration and development and deleted a requirement that related to existing mines.

Note that we have applied this criterion to Stage 1 Exploration. There are prohibitions and extra requirements related to protected areas that any company at that stage should consider before seeking exploration permits.

4.6.5.1. A mining project shall not be proposed or constructed in any legally protected area unless the applicable criteria in the remainder of this chapter are met, and additionally the company:

a. Demonstrates that the proposed development in such areas is legally permitted;
b. Consults with protected area sponsors, managers and relevant stakeholders on the proposed project;
c. Develops a plan that demonstrates how proposed mining activities will be conducted in a manner consistent with protected area management plans for such areas; and
d. Identifies additional conservation actions or programs that will be implemented to promote and enhance the conservation aims and/or effective management of the area.

4.6.5.2. A mining project shall not be proposed or constructed in the following protected areas unless the project meets 4.6.5.1.a through d, and an assessment, carried out or peer-reviewed by a reputable conservation organization and/or academic institution,[315] demonstrates that mining-related activities will not damage the integrity of the special values for which the area was designated or recognized:

- International Union for Conservation of Nature (IUCN) protected areas designated as protected area management category IV;
- Ramsar sites that are not IUCN protected area management categories I-III; and
- Buffer zones of UNESCO biosphere reserves.

4.6.5.3. (Critical Requirement)
A mining project shall not be proposed or constructed in, or adversely affect the following protected areas:

[313] For example, new information may be obtained through the implementation and monitoring of mitigation measures.

[314] This criterion applies to any legal protected area, regardless of the reason for the protected area status, i.e., areas designated to protect ecological values, cultural values or any other values deemed important by those who created the legal designation.

[315] E.g., Peer review should be undertaken by an academic institution or environmental NGO with experience in biodiversity assessments. Also, the personnel responsible for carrying out the peer-review or assessment are expected to be competent professionals (i.e., in-house staff or external consultants with relevant education, knowledge, proven experience and necessary skill-sets and training to carry out the required work. Competent professionals are expected to follow scientifically robust methodologies to carry out their work).

- World Heritage Sites, and areas on a State Party's official Tentative List for World Heritage Site Inscription;
- IUCN protected area management categories I-III;
- Core areas of UNESCO biosphere reserves.

Pre-permitting | Mine Permitting | Construction

4.6.6. Monitoring

NOTE FOR 4.6.6: We revised the requirements in criterion 4.6.5 to be more applicable to the various stages of exploration and development. In the Permitting stages, monitoring activities in the management plan will not yet be occurring, so the expectations are different than during Exploration and Construction. For example, 4.6.6.4 is not applicable because there will not yet be any findings from monitoring programs until they are implemented. In this draft of the IRMA-Ready Standard we are not proposing to include the requirement to develop a monitoring program during Pre-Permitting. The assumption is that a monitoring plan would not be developed until the final details of the project design are known, e.g., based on the outcomes of ESIA.

CONSULTATION QUESTION 122: Should companies be expected to develop a preliminary biodiversity monitoring program even during Pre-Permitting?

4.6.6.1. The company shall develop and implement a program to monitor the implementation of its protected areas and/or biodiversity and ecosystem services management plan(s) throughout the mine life cycle (including construction).

4.6.6.2. Monitoring of key biodiversity or other indicators shall occur with sufficient detail and frequency to enable evaluation of the effectiveness of mitigation strategies and progress toward the objectives of at least no net loss or net gain in biodiversity and ecosystem services over time.

4.6.6.3. If monitoring reveals that the company's protected areas and/or biodiversity and ecosystem services objectives are not being achieved as expected, the company shall define and implement timely and effective corrective action in consultation with relevant stakeholders.

4.6.6.4. The findings of monitoring programs shall be subject to independent review.

Construction

NOTES

Although presented in a different format, many of the requirements in this chapter are meant to generally align with the International Finance Corporation's (IFC) Performance Standard 6—Biodiversity Conservation and Sustainable Management of Living Natural Resources, and also the KBA Partners' Guidelines on Business and Key Biodiversity Areas (KBAs).[316]

This chapter focuses on the conservation of the most important or critical areas of biodiversity (in some cases these have been designated as protected areas or Key Biodiversity Areas, in other cases they will not have been officially designated but still contain important biodiversity values). Despite this emphasis, it is expected that mines will minimize impacts on biodiversity and ecosystem services generally, according to the mitigation hierarchy (see 3.7.4.1). Similarly, while the objectives of no net loss and preferably net gain are explicitly required to be planned for in the case of impacts on important biodiversity values and priority ecosystem services, it is strongly encouraged that such objectives be considered for any impacts on biodiversity or ecosystem services (e.g., IFC PS6 states that in areas of natural habitat, mitigation measures will be designed to achieve no net loss of biodiversity where feasible).

[316] IFC. 2012. Performance Standard 6— Biodiversity Conservation and Sustainable Management of Living Natural Resources with Guidance Notes. https://www.ifc.org/wps/wcm/connect/a359a380498007e9a1b7f3336b93d75f/Updated_GN6-2012.pdf?MOD=AJPERESKBA Partners. 2018. Guidelines on Business and KBAs: Managing Risk to Biodiversity. https://portals.iucn.org/library/sites/library/files/documents/2018-005-En.pdf)

Chapter 4.7—Cyanide Management

NOTE TO REVIEWERS ON CHAPTER 4.7:

Cyanide should not be used at exploration projects other than for approved laboratory use such as for metallurgical testing. This section does not apply to cyanide for laboratory use or other de minimis testing purposes, and so the chapter is not applicable for Exploration Projects. If proposed mining projects will use cyanide, then proposals will need to be checked to make sure they meet the requirements in this Chapter.

The requirements outlined below differ from the Mining Standard requirements, because at the Pre-Permitting, Permitting and Construction stages cyanide is not yet being used. As a result, several requirements have been removed.

BACKGROUND

Cyanide is a chemical used in the processing of gold and silver at many mine sites and as a minor processing reagent at some base metal mines. If released to the environment, or if improperly used in mineral processing, cyanide can pose a risk to workers, surrounding communities, aquatic resources and wildlife.

The International Cyanide Management Institute (ICMI) has developed a program for the gold and silver mining industry to improve the life cycle management of cyanide used in gold and silver mining, to enhance the protection of human health, and to reduce the potential for environmental impacts.[317] Although the *International Cyanide Management Code* only provides for the certification of gold and silver mines, the same principles can be applied to other types of mining operations that use cyanide for the extraction of commercial quantities of minerals.

OBJECTIVES/INTENT OF THIS CHAPTER

To protect human health and the environment through the responsible management of cyanide.

SCOPE OF APPLICATION

RELEVANCE: This chapter is applicable to companies that are proposing to develop mining projects that will require the transport, storage or use of cyanide. The chapter does not apply to cyanide for laboratory use or other de minimis testing purposes.

CRITICAL REQUIREMENTS IN THIS CHAPTER

Proposed mining projects that use cyanide develop plans to design, construct and operate the project in a manner that complies with the Cyanide Code (4.7.1.1).

Cyanide Management Requirements

4.7.1. Compliance with the International Cyanide Management Code (The Cyanide Code)

CONSULTATION QUESTION 123: The Cyanide Code was developed for gold and silver mines, but in this standard we are proposing, in 4.7.1.1, to require that any mining project that proposes to use cyanide adhere to the best practices in the Cyanide Code that relate to design, construction and proposed operations. Do you agree with this approach?

[317] International Cyanide Code website: https://www.cyanidecode.org/

4.7.1.1. (Critical Requirement)
If a proposed mining project requires the use of cyanide, the company shall demonstrate that the project is designed and constructed, and proposed to be operated in a manner that complies with the International Cyanide Management Institute's Cyanide Code.[318]

Construction

4.7.1.2. The company shall public commit to sourcing from cyanide producers and using transporters that are certified as meeting the "Cyanide Production and Transport Practices" of the Cyanide Code.[319]

NOTE FOR 4.7.1.2: At this stage, we are suggesting a commitment, since companies will not yet be sourcing or transporting cyanide. By requiring a commitment, it demonstrates that they understand that they will need to do this to meet the IRMA Mining Standard.

Pre-permitting | Mine Permitting | Construction

4.7.2. Construction

NOTE FOR 4.7.2: There are slight differences between the Pre-Permitting/Permitting and Construction stages, as construction-related requirements will be implemented during Construction. In 4.7.2.1.b, added information from the footnote in the Mining Standard into the requirement to add clarity.

4.7.2.1. In addition to meeting the requirements of the Cyanide Code that relate to the design and construction of unloading, storage and mixing facilities,[320] the following design criteria shall be met:

a. Impermeable secondary containment for cyanide unloading, storage, mixing and process tanks shall be sized to hold a volume at least 110% of the largest tank within the containment and any piping draining back to the tank, and with additional capacity for the design storm event; and
b. Pipelines that will contain process water or process solution that has a concentration of 0.5 mg/l WAD cyanide or greater shall utilize secondary containment in combination with audible alarms, interlock systems, and/or sumps as spill control measures if process water/solution.

Construction

4.7.3. Baseline Sampling

NOTE FOR 4.7.3: This is a new criterion title that takes the place of a criterion called Monitoring. During the stages below, there will not be active monitoring for cyanide, because it won't yet be in use. However, baseline sampling for cyanide is necessary during these stages. We will add Guidance to the Construction stage that if the company already collected baseline data during Pre-Permitting/Permitting there would not be the need to repeat the exercise during Construction. But if not done earlier, it would be necessary to carry it out at that time.

4.7.3.1. The company shall carry out baseline water quality sampling of surface waters and groundwaters for weak acid dissociable (WAD) cyanide.

4.7.3.2. If WAD cyanide is detected in baseline samples of surface waters, then the company shall also monitor total cyanide, free cyanide, and thiocyanate levels.

Pre-permitting | Mine Permitting | Construction

[318] Ibid.

[319] See Cyanide Production and Transportation verification protocols here: http://www.cyanidecode.org/auditors-auditing/auditing-cyanide-code

[320] See Cyanide Code, Mining Principle 3, Handling and Storage. https://cyanidecode.org/the-cyanide-code/#1615235956210-19209ee3-516c and Verification Protocols for Principle 3: https://cyanidecode.org/wp-content/uploads/2021/06/14-Mining-Verification-Protocol-JUNE-2021.pdf

NOTES

The International Cyanide Management Institute (ICMI) Principles broadly state commitments that signatories make to manage cyanide in a responsible manner. Standards of Practice identify the performance goals and objectives that must be met in order to comply with the Principles. Separate verification protocols have been developed for cyanide production, transportation, and gold and silver mine operations. Cyanide production, transportation, and operations are certified as being in compliance with the Code following an independent third-party audit (paid for by the company) verifying conformance with the Code's Standards of Practice. Audit results are made public on the ICMI website to inform stakeholders of the status of cyanide management practices at certified operations.

Chapter 4.8—Mercury Management

NOTE TO REVIEWERS ON CHAPTER 4.8:

Emissions of mercury should not be an issue at exploration projects because mercury-bearing ores are unlikely to be treated in quantities large enough to create significant mercury emissions. And during these early stages companies will not be constructing on-site power generation facilities that use coal. So our proposal is that this chapter is not applicable for Exploration Projects.

We will add Guidance to the Construction stage that if the company already carried out the steps below during permitting, then they would not be expected to repeat them during Construction unless new data have been collected and/or there has been some major change to the mining/mineral processing plans.

BACKGROUND

Mercury can occur in both inorganic and organic forms. An inorganic form, elemental mercury is a byproduct of some mining operations, due to the presence of mercury compounds in ore bodies such as gold, silver, copper and zinc deposits, and in fuel sources such as coal that may be burned to provide power to the mining operation.

Mercury is a persistent, bio-accumulative pollutant. When released into the environment and deposited or carried by air and water to wetlands, streams or some other types of environments, mercury can be converted to methyl-mercury. Methyl-mercury can be transmitted up the food chain and accumulate in the tissues of animals.

Because of mercury's potentially significant health and environmental impacts, mining operations should work to restrict the release of point source mercury emissions to the atmosphere and surface and ground waters by adopting appropriate mercury reduction goals and by applying suitable mercury reduction technologies.

OBJECTIVES/INTENT OF THIS CHAPTER

To protect human health and the environment through the responsible management of mercury.

SCOPE OF APPLICATION

RELEVANCE: This chapter applies to any mining project, new or existing, that utilizes an autoclave, roaster, carbon kiln, refining furnace, retort or other thermal process that could lead to significant emissions of mercury.

CRITICAL REQUIREMENTS IN THIS CHAPTER

Mercury-bearing wastes are not permanently stored on site without adequate safeguards, are not sold or given to artisanal or small-scale miners, and are otherwise sold only for end uses covered in the Minamata Convention or disposed of in regulated repositories (4.8.3.2).

Mercury Management Requirements

4.8.1. Mercury Analysis

NOTE FOR 4.8.1: The title of this criterion is different than the Mining Standard. Mercury Analysis is a better description than Planning.

This chapter of the IRMA Standard seeks to reduce the costs to public health associated with mercury exposure, and the technical challenges of removing mercury once it is in the environment, by preventing mercury from getting into the environment in the first place.

We will add Guidance to the Construction stage that if the company already carried out the appropriate analyses during Pre-Permitting/Permitting there would not be the need to repeat the exercise during Construction. But if not done earlier, it would be necessary to carry it out at that time.

4.8.1.1. If ore from the proposed mining project will undergo thermal treatment or other materials that are potentially mercury-bearing will be burned in proposed associated facilities,[321] the company shall determine if the ore or materials contain mercury.

NOTE FOR 4.8.1.1: Requirement 4.8.1.1 is new. It requires a proactive analysis of ores, as well as other materials that will be burned in association with a mining project, to determine if they contain mercury. If this is not done, the potential risks related to mercury emissions cannot be known, and releases to the environment cannot be proactively prevented.

By including the word "burn" we are clarifying that this requirement applies not only to thermal processes that treat mercury-containing materials, but also those facilities that may burn mercury-containing materials, such as coal burned in associated infrastructure like power plants or in smelters co-located with mining operations. It was a potential mercury emission source not clearly specified in the IRMA Standard for Responsible Mining. Mercury from the burning of coal can be a significant source of mercury released to the environment, and so we have specifically included it to be considered during mine permitting. (We will discuss with stakeholders if and how to include it when we revise the IRMA Standard for Responsible Mining).

4.8.1.2. If the proposed mining project will use a thermal process to treat or burn material containing mercury the company shall:[322]

a. Collect baseline data for mercury in air, soils, wetlands, water bodies and biota; and
b. Perform a mercury mass balance to predict the amount of mercury that will be:
   i. Released to air;
   ii. Discharged to water;
   iii. Produced as by-product; and
   iv. Disposed of on-site or at off-site facilities.

NOTE FOR 4.8.1.2: This requirement has been revised slightly compared to its equivalent in the Mining Standard. We have included the collection of baseline mercury data so that there is an understanding of the pre-mining levels of mercury in the environment.

Pre-permitting | Mine Permitting | Construction

4.8.2. Impact Assessment

NOTE FOR 4.8.2: This approach is a divergence from the Mining Standard. It requires that proposed mining projects that will emit mercury carry out an assessment to determine whether or not the mercury emissions pose a risk to human health or the environment.

We will add Guidance to the Construction stage that if the company already carried out the assessment during Pre-Permitting/Permitting there would not be the need to repeat the exercise during Construction. But if not done earlier, it would be necessary to carry it out at that time.

[321] This requirement includes associated facilities that may treat or burn materials containing mercury. For example, if there is a power plant being proposed to supply the mining project, and that plant will burn coal, then it would be within scope.

[322] Values may be estimated if measurements are not available.

4.8.2.1. Any proposed mining project that will use a thermal process to treat or burn material containing mercury (e.g., ore, concentrate, coal) shall assess whether the predicted emissions pose a significant risk to human health or the environment.[323]

NOTE FOR 4.8.2.1: Mercury is a potent neurotoxin that negatively impacts human health and the environment around the world. Mercury is transported globally in the atmosphere and in water, so mercury emitted in one location may affect ecosystems and populations far removed from the source. While global efforts such as the Minamata Convention aim to reduce emissions of mercury, there are very few national or global standards on what are acceptable mercury emission limits for the mining industry.

CONSULTATION QUESTION 124: What is the most appropriate way for a company to demonstrate there is not likely to be a significant risk from its project-level mercury emissions?

One possible approach for **gold mines** in the US or elsewhere, would be that they demonstrate that they will be able to meet the mercury emissions limits set out in the U.S. National Emission Standards for Hazardous Air Pollutants (NESHAP) for Gold Mine Ore Processing and Production.[324]

What might be appropriate metrics for **other types of mines** such as iron, lead, copper, zinc, silver, tin, nickel, silico- and ferro-manganese, that use thermal processes on ores or concentrates that contain mercury, or that burn coal that contains mercury?

Pre-permitting | Mine Permitting | Construction

4.8.3. Mercury Management Plan

NOTE FOR 4.8.3: The requirement for a management plan was not included in the Mining Standard, so requirement 4.8.3.1 is new. Requirement 4.8.3.2, which relates to managing mercury wastes, was in the Mining Standard, but it has been adapted here.

We will add Guidance to the Construction stage that if the company already developed a plan during Pre-Permitting/Permitting there would not be the need to repeat the exercise during Construction. But if not done earlier, it would be necessary to carry it out at that time.

4.8.3.1. If the assessment determines that mercury emissions from the proposed mining project will cause public health or environmental impacts, the company shall develop a mercury management plan, that, at minimum:

a. Outlines best available techniques (BAT) and best environmental practices (BEP) that will be implemented to control and minimize the amount of mercury released to the atmosphere. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound.
b. Describes implementation actions clearly assigned to a responsible party/ies.
c. Provides key indicators, linked to existing emission data and public health or environmental impacts, to enable measurement of the effectiveness of mitigation measures over time.
d. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

[323] "thermal processes" related to ore may include: roasting operations and autoclaves that are used to pre-treat gold mine ore; carbon kilns; preg tanks; electrowinning cells; mercury retorts; and melt furnaces. Definitions for these processes can be found at: https://www.law.cornell.edu/cfr/text/40/63.11651

[324] U.S. National Emission Standards for Hazardous Air Pollutants (NESHAP): Gold Mine Ore Processing and Production Area Source Category (40 CFR Part 63, Subpart EEEEEEE, § 63.11645 (available at: https://www.law.cornell.edu/cfr/text/40/63.11645).

Affected Source	Existing Sources	New Sources	Units
Ore pretreatment processes	127	84	lb of mercury emitted/ million tons of ore
Carbon processes with mercury retorts	2.2	0.8	lb Hg/ton of concentrate
Carbon processes without mercury retorts	0.17	0.14	lb Hg/ton of concentrate
Non-carbon concentrate processes	0.2	0.1	lb Hg/ton of concentrate

4.8.3.2. (Critical Requirement)
The proposed mercury management plan shall include provisions for the safe management of mercury and mercury-bearing wastes (e.g., from an emissions control system). At minimum, the plan shall stipulate that mercury and mercury wastes:

a. Will not be stored on-site or disposed on-site either alone or mixed with other mining-related wastes unless:
   i. A risk-based evaluation of the on-site storage or disposal of mercury waste demonstrates that the risk of long-term contamination is low; and
   ii. Disposal occurs in fully lined waste storage facilities using synthetic liners that have a permeability of 10-9 cm/sec or less.
b. Will not be sold or given away either directly or indirectly to an entity engaged in artisanal or small-scale mining; and
c. Will be sold only for an end use listed in Annex A (Products) or Annex B (Processes) of the Minamata Convention on Mercury[325] or sent to a regulated repository that accepts mercury wastes.

NOTE FOR 4.8.3.2: This combines two requirements from the Mining Standard, and incorporates some new language for clarity.

We will add Guidance to the Construction stage that if the company already developed a plan during Pre-Permitting/Permitting that contains this information there would not be the need to repeat the exercise during Construction. But if not done earlier, it would be necessary to carry it out at that time.

Pre-permitting | Mine Permitting | Construction

4.8.4. Monitoring

NOTE FOR 4.8.4: This criterion has been slightly revised compared to the Mining Standard.

We will add Guidance to the Construction stage that if the company already developed a plan during Permitting there would not be the need to repeat the exercise during Construction. But if not done earlier, it would be necessary to carry it out at that time.

In this draft IRMA-Ready Standard we are not proposing to include the requirement to develop a monitoring plan during Pre-Permitting. The assumption is that a monitoring plan would not be developed until the final details of the project design are known, e.g., based on the outcomes of ESIA.

CONSULTATION QUESTION 125: Should companies be expected to develop preliminary monitoring plans even during Pre-Permitting?

4.8.4.1. If the proposed mining project has a source of mercury air emissions a mercury monitoring plan shall be developed in consultation with relevant stakeholders.

4.8.4.2. The proposed mercury monitoring plan shall include provisions to monitor and document:

a. Potential public health impacts (e.g., mercury levels in food source and blood level mercury);
b. Environmental impacts (e.g., mercury levels in fish tissue, soils, surface waters and stream sediments), including locations that are most likely to promote methylation, such as still waters, wetlands, and anaerobic sediment; and
c. Mercury in air emissions, including fugitive emissions (to the extent technologically and economically feasible with air monitoring equipment);
d. Mercury discharged to water (noting the forms of mercury);

[325] Annex A and B also list phase out dates after which the manufacture, import or export of the product shall not be allowed. Companies are expected to comply with those phase-out dates. The text and Annexes of the Minamata Convention are available at: www.mercuryconvention.org/Convention/tabid/3426/Default.aspx

e. Mercury captured or produced as by-product from emissions control systems; and
f. The amount of mercury waste disposed on-site and/or sent to regulated waste disposal sites.

NOTE FOR 4.8.4.2: This requirement combines two requirements from the Mining Standard.

Mine Permitting | Construction

4.8.5. Reporting

NOTE FOR 4.8.5: This requirement is new. Other reporting requirements from the Mining Standard have been deleted, since actual data will not have been collected at these stages.

4.8.5.1. The company shall publish or have in place a policy to provide to stakeholders upon request the findings from any mercury risk assessment processes.

Pre-permitting | Mine Permitting | Construction

NOTES

This chapter of the IRMA Standard seeks to reduce the costs to public health associated with mercury exposure, and the technical challenges of removing mercury once it is in the environment, by encouraging source control and preventing mercury from getting into the environment in the first place.

The United States Environmental Protection Agency's "National Emission Standards for Hazardous Air Pollutants: Gold Mine Ore Processing and Production Area Source Category" regulations, effective December 16, 2010, are the only existing national mercury emissions standards for mining.

The EU regulates mercury emissions from major industrial sources, including from non-ferrous ore processing and smelting operations, through EU Directive 96/61/EC on Integrated Pollution Prevention and Control and EU Directive 2010/75/EU on Industrial Emissions. These standards aim to reduce mercury pollution by prohibiting metallic mercury export and by-product sales, requiring safe metallic mercury storage, and reducing mercury emissions from non-ferrous metals using Best Available Techniques (BAT) and Best Environmental Practices (BEP).

IRMA recognizes both the paucity of existing regulations and the high cost of monitoring and collecting mercury from mine emission sources, and seeks to begin to develop better air monitoring though targeted approaches that use broad, less expensive testing protocols to determine if more testing is necessary.

Given the significant health risks associated with mercury, and the challenges and costs associated with reducing mercury once it enters environmental pathways, it is important that accurate information is available on potential mercury emissions from proposed mining projects.

Researchers have documented fugitive mercury air emissions from non-thermal sources at mines, most notably heap leach facilities.[326] However, mercury air emission testing for fugitive mercury from non-thermal sources can be expensive. Further research is needed to assess the pervasiveness of these non-thermal sources, as well as to verify the reliability of the thermal-source measurements.[327] The IRMA Board will consider ways to incentivize companies to engage in research to help elucidate the scale and scope of these emissions.

[326] See: Joyce, P. and Miller, G. January 2007. Mercury Air Concentrations in Northern Nevada: Monitoring Active Metals Mines as Sources of Mercury Pollution. University of Nevada, Reno, Department of Natural Resource & Environmental Science; and most recently: Miller, M. and Gustin, M. June 2013. "Testing and Modeling the Influence of Reclamation and Control Methods for Reducing Non-Point Mercury Emissions Associated with Industrial Open Pit Gold Mines," *Journal of the Air & Waste Management Association*. 63(6):681-93.

[327] Eckley, C.S., Gustin, M., Miller M.B., Marsik, F. 2011. "Nonpoint Source Hg Emissions from Active Industrial Gold Mines - Influential Variables and Annual Emission Estimates," *Environmental Science and Technology*. 45 (2) 392-399.

Glossary of Terms

NOTE RE: GLOSSARY. Some terms below are proposed additions from the Global Industry Standard on Tailings Management (GISTM).[328]

The IRMA Glossary of Terms is not intended to be a complete set of terms associated with mining best practices. However, in drafting the IRMA Standard it was sometimes necessary to develop or adopt rigorous terminology to ensure consistent interpretation and application of the Standard. These terms were added to this Glossary of Terms.

Accessible

In reference to grievance mechanism or engagement processes, means being known to all stakeholder groups for whose use they are intended, and providing adequate assistance for those who may face particular barriers to access.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Accident (proposed in draft Mineral Processing Standard, and applied here)

An event that results in injury, ill health, fatality or damage to property or the environment.

Acid Rock Drainage (ARD)

The drainage produced when rocks with sulfide or other acid-producing minerals are under oxidizing conditions (exposed to water and oxygen) and generate an acidic water stream. Acid rock drainage generally contains elevated concentrations of metals, sulfate, and other constituents and has a pH < 6. The terms acid mine drainage and acid and metalliferous drainage (both AMD) are sometimes used as synonyms for ARD.

Actual Human Rights Impact

An adverse impact that has already occurred or is occurring.

Accountable Executive PROPOSED

One or more executive (s) who is/ are directly answerable to the CEO on matters related to this Standard, communicates with the Board of Directors, and who is accountable for the safety of tailings facilities and for minimizing the social and environmental consequences of a potential tailings facility failure. The Accountable Executive(s) may delegate responsibilities but not accountability.

Source: GISTM (see Note Re: Glossary).

Adaptive Management

Adaptive Management is a structured, iterative process of robust decision-making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring. It includes the development of management practices based on clearly identified outcomes, and monitoring to determine if management actions are meeting desired outcomes. If outcomes are not being met, the process requires development and implementation of management changes to ensure that outcomes are met or re-evaluated.

Source: Adapted from US Forest Service. 2008. *National Forest System Land Management Planning. Final Rule*. Federal Register. Vol. 73, No. 77, §219.16.

Adaptive Management for Tailings Facilities PROPOSED

A structured, iterative process of robust decision-making with the aim of reducing uncertainty over time via system monitoring. It includes the implementation of mitigation and management measures that are responsive to changing conditions, including those related to climate change, and the results of monitoring throughout the tailings facility lifecycle. The approach supports alignment on decisions about the tailings facility

[328] International Council on Mining and Metals (ICMM). 2021. Conformance Protocols: Global Industry Standard for Tailings Management. https://www.icmm.com/en-gb/guidance/environmental-stewardship/tailings-conformance-protocols

with the changing social, environmental and economic context and enhances opportunities to develop resilience to climate change in the short and long term.

Source: GISTM (see Note Re: Glossary).

Additional Conservation Actions

A broad range of activities that are intended to benefit biodiversity, where the effects or outcomes can be difficult to quantify.

Source: Biodiversity A to Z website. http://www.biodiversitya-z.org/themes/terms

Adverse Human Rights Impact

When an action removes or reduces the ability of an individual to enjoy his or her human rights.

Affected Community

A community that is subject to potential risks or impacts from a project.

Source: Adapted from IFC. IFC Policy & Performance Standards and Guidance Notes. Glossary of Terms.

Air Quality Modeling

Mathematical and numerical techniques used to simulate the physical and chemical processes that affect air pollutants as they disperse and react in the atmosphere. These include, for example: Air dispersion models, which are used to predict concentrations of pollutants at selected downwind receptor locations; and Receptor models, which use observational techniques and chemical and physical characteristics of gases and particles measured at source and receptor and to identify the presence of and to quantify source contributions to receptor concentrations.

Source: USEPA website: "Air Quality Models." https://www3.epa.gov/scram001/aqmindex.htm

Alternatives Analysis PROPOSED

An analysis that should objectively and rigorously consider all available options and sites for mine waste disposal. It should assess all aspects of each mine waste disposal alternative throughout the project life cycle (i.e., from construction through operation, closure and ultimately long-term monitoring and maintenance). The alternatives analysis should also include all aspects of the project that may contribute to the impacts associated with each potential alternative. The assessment should address environmental, technical and socio-economic aspects for each alternative throughout the project life cycle.

Source: GISTM (see Note Re: Glossary).

Ambient Air Quality

The concentrations of pollutants (e.g., chemicals, particulate matter) in air (for IRMA's purposes, outdoor air).

Area of Influence

The area within which a project may potentially directly and indirectly cause impacts. The area of direct impacts caused by mining-related activities includes the physical mine site footprint, areas adjacent to the project site that are affected by emissions and effluents, power transmission corridors, pipelines, borrow and disposal areas, etc., and the area affected by associated facilities that, although not part of the project that is being assessed, would not have been constructed in the absence of the project. Areas indirectly affected by mining-related activities include the physical footprint of non-project activities in the surrounding area that are caused or stimulated by the project plus the area affected by their emissions and effluents.

Source: Adapted from Gullison et al. 2015. *Good Practices for the Collection of Biodiversity Baseline Data*.

Artisanal and Small-Scale Mining (ASM)

Formal or informal operations with predominantly simplified forms of exploration, extraction, processing and transportation. ASM is normally low capital intensive and uses high labour intensive technology. ASM can include men and women working on an individual basis as well as those working in family groups, in partnership or as

members of cooperatives or other types of legal associations and enterprises involving hundreds or thousands of miners. For example, it is common for work groups of 4-10 individuals, sometimes in family units, to share tasks at one single point of mineral extraction (e.g. excavating one tunnel). At the organisational level, groups of 30-300 miners are common, extracting jointly one mineral deposit (e.g. working in different tunnels), and sometimes sharing processing facilities.

Source: OECD. 2016. *OECD Due Diligence Guidance on Responsible Mineral Supply Chains from Conflict Affected and High Risk Areas.*

Associated Facility

Any facility owned or managed by the company that would not have been constructed, expanded or acquired but for the exploration or development of the mine (including ore processing facilities, stationary physical property such as power plants, port sites, roads, railroads, borrow areas, fuel production or preparation facilities, parking areas, shops, offices, housing facilities, storage facilities, etc.).

Source: Adapted from IFC. 2012. *Performance Standard 1* and other sources.

Avoidance

See Mitigation Hierarchy

Background Water Quality

Established after mining has commenced, it is the water quality in a similarly mineralized area outside of the mine's influence (e.g., surface water quality upstream of the mine site or upgradient for groundwater).

Baseline

A description of existing conditions to provide a starting point (e.g. pre-project condition) against which comparisons can be made (e.g. post-impact condition), allowing the change to be quantified.

Source: Adapted from the Business and Biodiversity Offsets Programme. 2012. Glossary.

Baseline Air Quality

Ambient air concentrations prior to mining project commencement due to emissions from both natural and human-caused sources.

Source: Adapted from BC Ministry of Environment. 2008. Guidelines for Air Quality Dispersion Modelling in British Columbia.

Baseline Water Quality

The water quality at the site or in the area surrounding a proposed mining project, before mining-related activity has occurred.

Basin/Catchment/Watershed

An area of land that drains all the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or the mouth of a stream or river. The word basin, or "drainage basin" is sometimes used interchangeably with catchment or watershed.

Beneficial Owner

The natural person(s) who ultimately owns or controls a company and/or on whose behalf a company is owned. It includes those persons who exercise ultimate effective control over a legal person or arrangement. Reference to "ultimately owns or controls" and "ultimate effective control" refer to situations in which ownership/control is exercised through a chain of ownership or by means of control other than direct control.

Source: Adapted from FATF Guidance: Transparency and Beneficial Ownership. 2014. Chapter III.

Best Available Techniques (BAT)

Techniques that can most effectively achieve a high level of environmental protection and allow implementation in relevant sectors under economically and technically viable conditions. "Techniques" includes both the technology used and the way in which the installation is designed, built, maintained, operated and

decommissioned; "Available" techniques means those techniques that are accessible to the operator and that are developed on a scale that allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages; and "Best" means most effective in achieving a high general level of protection of the environment as a whole.

Source: Adapted from the *Stockholm Convention.* 2009.

Best Available Technology (BAT)

Site-specific combination of technologies and techniques that are economically achievable and that most effectively reduce risks (e.g., physical, geochemical, ecological, social, financial and reputational) to an acceptable level during all stages of operation and closure, and support an environmentally and economically viable mining operation.

Source: Adapted from Mining Association of Canada. 2017. *A Guide to the Management of Tailings Facilities* (3rd Ed).

Best Available/Applicable Practice (BAP)

Encompasses management systems, operational procedures, techniques and methodologies that, through experience and demonstrated application, have proven to reliably manage risk and achieve performance objectives in a technically sound and economically efficient manner. BAP is an operating philosophy that embraces continual improvement and operational excellence, and which is applied consistently throughout the life of a facility, including the post-closure period.

Source: Adapted from Mining Association of Canada. 2017. *A Guide to the Management of Tailings Facilities* (3rd Ed).

Best Environmental Practices

The application of the most appropriate combination of environmental control measures and strategies.

Source: *The Stockholm Convention*. 2009.

Biodiversity/Biological Diversity

The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems

Source: *Convention on Biological Diversity*. 1992, Article 2.

Biological Exposure Indices (BEI)

The concentration of chemicals in the body that would correspond to inhalation exposure at a specific concentration in air.

Source: International Labour Organization (ILO) website. "Chemical exposure limits."

Biosphere Reserves

Biosphere reserves are areas comprising terrestrial, marine and coastal ecosystems. Each reserve promotes solutions reconciling the conservation of biodiversity with its sustainable use. Biosphere reserves are 'Science for Sustainability support sites' – special places for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity. Biosphere reserves are nominated by national governments and remain under the sovereign jurisdiction of the states where they are located. Their status is internationally recognized.

Source: UNESCO.

Breach Analysis PROPOSED

A study that assumes a failure of the tailings facility and estimates its impact. Breach Analyses must be based on credible failure modes. The results should determine the physical area impacted by a potential failure, flow arrival times, depth and velocities, duration of flooding, and depth of material deposition. The Breach Analysis is based on scenarios which are not connected to probability of occurrence. It is primarily used to inform emergency preparedness and response planning and the consequence of failure classification. The classification is then used to inform the external loading component of the design criteria.

Source: GISTM (see Note Re: Glossary).

Broad Community Support (BCS)

A collective expression by the community in support of the mining project. Support may be demonstrated through credible (i.e., transparent, inclusive, informed, democratic) local government processes or other processes/methods agreed to by the community and company. There may be BCS even if some individuals or groups object to the business activity.

Source: Adapted from IFC. 2012. *IFC Sustainability Framework*. p. 7.

Business Relationships

Relationships a business enterprise has with business partners, entities in a value chain, and any other non-State or State entity directly linked to its business operations, products or services. They include indirect business relationships in its value chain, beyond the first tier, and minority as well as majority shareholding positions in joint ventures.

Source: UN Office of the High Commissioner for Human Rights. 2012. *The Corporate Responsibility to Respect Human Rights: An Interpretive Guide*. p. 5.

Catastrophic Failure PROPOSED

A tailings facility failure that results in material disruption to social, environmental and local economic systems. Such failures are a function of the interaction between hazard exposure, vulnerability, and the capacity of people and systems to respond. Catastrophic events typically involve numerous adverse impacts, at different scales and over different timeframes, including loss of life, damage to physical infrastructure or natural assets, and disruption to lives, livelihoods, and social order. Operators may be affected by damage to assets, disruption to operations, financial loss, or negative impact to reputation. Catastrophic failures exceed the capacity of affected people to cope using their own resources, triggering the need for outside assistance in emergency response, restoration and recovery efforts.

Source: GISTM (see Note Re: Glossary).

Certificate Holder

The company that applies for IRMA certification and, if the application is successful, is issued with a certificate of compliance for a particular mine site. The certificate holder is responsible for ensuring that all the requirements of certification for the certified mine site are met on an ongoing basis, and for demonstrating this to the satisfaction of its certification body.

Certification Body

Also known as a conformity assessment body, is an entity that performs auditing and conformity assessment services to determine if specified requirements are fulfilled (in this case conformity with the IRMA *Standard for Responsible Mining*).

Source: Adapted from ISO/IEC 17000:2005.

Chance Find

A chance find procedure is a project-specific procedure that outlines the actions to be taken if previously unknown cultural heritage is encountered.

Source: IFC. 2012. *Performance Standard 8*. Footnote 2.

Child Labor

Work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development.

Source: International Labour Organization (ILO) website: "What is child labour."

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Source: Adapted from South Africa Dept. of Env. Affairs and Tourism. *Stakeholder Engagement*.

Company Union

A workers' organization that is dominated or controlled by an employer.

Competent Authority

The government department or other authority having power to issue and enforce regulations, orders or other instructions having the force of law in respect of the subject matter of the provision concerned.

Source: International Labour Organization (ILO). *Maritime Labour Convention, 2006*.

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, necessary skills and training to carry out the required work. Competent professionals would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals. Other equivalent terms used may include: competent person, qualified person, qualified professional. For independent reviews (in IRMA Chapter 4.1) competent professionals must not be in-house staff.

Comprehensible Manner

In forms and languages that are easily understood by workers and/or other stakeholders.

Source: International Labour Organization (ILO). Code of Practice. *Ambient Factors in the Workplace*.

Conceptual Flow Model (CFM)

A Conceptual Flow Model (CFM) is a description of sources and flow paths for groundwater flow through an aquifer from points of recharge to points of discharge. It may be a qualitative description with as much quantification as possible based on the descriptions.

Sources: Anderson and Woessner (1992). *Applied Groundwater Modeling: Simulation of Flow and Advective Transport*; Fetter CW (2001). *Applied Hydrogeology*, 4th Ed; and Myers T (2013). "Remediation scenarios for selenium contamination," *Hydrogeology Journal*.

Conceptual Site Model (CSM)

A qualitative description, based on site measurements and observations, of what is known about the release, transport and fate of contaminants at a site. A CSM includes a schematic or diagram and an accompanying narrative description.

Confidential Business Information

Material that contains trade secrets or commercial or financial information that has been claimed as confidential by its source. The information must be secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question; it must have commercial value because it is secret; and it must have been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.

Sources: US EPA Terms and Acronyms Search, and World Intellectual Property Organization: "What is the international legal framework of trade secret protection?"

Conflict Analysis

The systematic study of the profile, issues and stakeholders that shape an existing or potential conflict, as well as factors in the interaction between the three. It helps companies gain a better understanding of the environment in which they operate and their role in that context.

Source: Adapted from International Alert. 2005. *Conflict-sensitive Business Practice: Guidance for extractive industries*.

Conflict Risk

Any conflicts that may emerge or be exacerbated because of a company's presence, activities or relationships; and the likelihood that such conflicts will occur. Conflicts may arise within or between communities and/or stakeholder groups, or between the company and communities/stakeholders.

Conflict-Affected and High-Risk Areas

Areas identified by the presence of armed conflict, widespread violence, including violence generated by criminal networks, or other risks of serious and widespread harm to people. Armed conflict may take a variety of forms, such as a conflict of international or non-international character, which may involve two or more states, or may consist of wars of liberation, or insurgencies, civil wars. High-risk areas are those where there is a high risk of conflict or of widespread or serious abuses as defined in paragraph 1 of Annex II of the Guidance (link below). Such areas are often characterized by political instability or repression, institutional weakness, insecurity, collapse of civil infrastructure, widespread violence and violations of national or international law.

Source: OECD. 2016. *Due Diligence Guidance on Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.*

Consequence Classification PROPOSED

Typically used in the water dam industry to assess potential downstream impacts if a hypothetical failure scenario were to occur. The results of consequence classification may be used to establish design criteria and review frequency in prescriptive water dam regulatory regimes. Typical regimes define five classes (e.g., extreme, very high, high, moderate significant and low) based on an evaluation of the potential downstream consequences of a facility breach and subsequent flow failure in terms of three criteria: (i) incremental loss of life and/or population at risk; (ii) environment and cultural values; and (iii) infrastructure and economics.

The GISTM included a draft consequence classification based on ICOLD included in Table 1 of Annex 2 (Table 4.1 in the IRMA-Ready standard). The GISTM differs from conventional water dam classification as it notes that classification is to be based upon credible failure modes versus purely hypothetical ones. Operators may elect to adopt a more conservative approach by adopting 'Extreme' external loading criteria. Consequence of failure should not be confused with risk of failure, which is determined by considering both consequence and likelihood of a credible failure scenario.

Source: GISTM (see Note Re: Glossary).

Conservation Outcome

A conservation outcome is the result of a conservation intervention aimed at addressing direct threats to biodiversity or their underlying socio-political, cultural, and/or economic causes. Conservation outcomes are typically in the form of: (a) extinctions avoided (i.e. outcomes that lead to improvements in a species' national or global threat status); (b) sites protected (i.e. outcomes that lead to designation of a site as a formal or informal protection area, or to improvement in the management effectiveness of an existing protected area); and (c) corridors created (i.e. outcomes that lead to the creation of interconnected networks of sites at the landscape scale, capable of maintaining intact biotic assemblages and natural processes, and, thereby, enhancing the long-term viability of natural ecosystems). Conservation outcomes would also include any other intervention that leads to conservation gains.

Source: Business and Biodiversity Offsets Programme. 2012. Glossary.

Conservation Values

The ecological, biological, geomorphological, geological, cultural, spiritual, scenic or amenity values, features, processes or attributes that are being conserved.

Construction Records Report PROPOSED

Describes all aspects of the 'as-built' product, including all geometrical information, materials, laboratory and field test results, construction activities, schedule, equipment and procedures, Quality Control and Quality Assurance data, CDIV results, changes to design or any aspect of construction, non-conformances and their resolution, construction photographs, construction shift reports, and any other relevant information. Instruments and their installation details, calibration records and readings must be included in the CRR. Roles, responsibilities and personnel, including independent review should be documented. Detailed construction record drawings are fundamental.

Source: GISTM (see Note Re: Glossary).

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle the company should take into account the concerns and views expressed by stakeholders in the final decision.

Source: Adapted from South Africa Department of Environmental Affairs and Tourism. *Stakeholder Engagement.*

Contracted Workers

Workers engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work or providing services directly related to core business processes of the mining project for a substantial duration (i.e., employment other than on a casual or intermittent basis) who are geographically working at the project location. These workers may be engaged at any point during the mine life cycle (including prior to or during construction phase).

Source: IFC. 2012. *Performance Standard 2*. Guidance Notes.

Contractor

An individual, company, or other legal entity that carries out duties related to a mining project that are subject to a contractual agreement that defines, for example, work, duties or services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. This includes sub-contractors.

Control

An act, object (engineered) or system (combination of act and object) intended to prevent or mitigate an unwanted event.

Source: ICMM. 2015. *Health and Safety Critical Control Management: Good Practice Guide.*

Corporate Owner(s)

The corporation(s) or other business institution(s) including any private or state-run enterprises that have complete or partial financial interest in or ownership of a mining project.

Credible Failure Modes / Scenarios PROPOSED

Refers to technically feasible failure mechanisms given the materials present in the structure and its foundation, the properties of these materials, the configuration of the structure, drainage conditions and surface water control at the facility, throughout its lifecycle. Credible failure modes can and do typically vary during the lifecycle of the facility as the conditions vary. A facility that is appropriately designed and operated considers all of these credible failure modes and includes sufficient resilience against each. Different failure modes will result in different failure scenarios. Credible catastrophic failure modes do not exist for all tailings facilities. The term 'credible failure mode' is not associated with a probability of this event occurring and having credible failure modes is not a reflection of facility safety.

Source: Global Industry Standard for Tailings Management (GISTM).

Critical Cultural Heritage

Consists of: (i) the internationally recognized heritage of communities who use, or have used within living memory the cultural heritage for long-standing cultural purposes, (ii) legally protected cultural heritage areas, including those proposed by host governments for such designation; or (iii) natural areas with cultural and/or spiritual value such as sacred groves, sacred bodies of water and waterways, sacred trees, and sacred rocks.

Source: Adapted from IFC. 2012. *Performance Standard 7.* Para. 16; and *Performance Standard 8*, Para. 13.

Critical Habitat

Areas with high biodiversity value, including but not necessarily limited to: (i) habitat of significant importance to critically endangered, endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes. Other recognized high biodiversity values might also support a critical habitat designation, based on case-by-case evaluation.

Source: Adapted from IFC. 2012. *Performance Standard 6*, Para. 13 and GN55, GN56, 57.

Critical Control

An action, object (engineered) or system (combination of action and object) put in place to prevent or reduce the likelihood of an unwanted event, or to minimize or mitigate the negative consequences if an unwanted event occurs, in particular for high-consequence risks.

Sources: Adapted from ICMM. 2015. *Health and Safety Critical Control Management: Good Practice Guide, and Mining Association of Canada.* 2017. *A Guide to the Management of Tailings Facilities (3rd Ed)*.

Cumulative Impacts

Additive, synergistic, interactive or nonlinear outcomes of multiple development or disturbance events that aggregate over time and space." Examples of cumulative impacts (or effects) may include: reduction of water flows in a watershed due to multiple withdrawals; increases in sediment loads to a watershed over time; interference with migratory routes or wildlife movement; or more traffic congestion and accidents due to increases in vehicular traffic on community roadways.

Source: Adapted from International Association for Impact Assessment. 2005. *Biodiversity Impact Assessment.* Special Publication Series No. 3, with examples from IFC. 2012. *Performance Standard 1*, page 4, footnote 16.

Cumulative Impacts (on biodiversity)

Cumulative impacts refer to the incremental impacts of the mining project on biodiversity values, when also considering other current and reasonably foreseeable future stressors affecting a biodiversity value in the landscape. Cumulative impacts can be similar in type (e.g., emissions to air from multiple projects) or distinct (e.g., the cumulative effect of habitat loss, habitat fragmentation, and vehicular mortality on wildlife).

Source: Adapted from Gullison et al. 2015. *Good Practices for the Collection of Biodiversity Baseline Data.*

Design Basis Report PROPOSED

Provides the basis for the design, operation, construction, monitoring and risk management of a tailings facility.

Dewatering (of mines)

The extraction of water to lower the water table to a level lower than the deepest point of the mine, thereby keeping the mine dry.

Direct/Indirect Impacts

Direct impacts are those caused by activities that are undertaken, and facilities that are owned and managed by the mining company. Indirect impacts are those that are caused or stimulated by the mining project's presence (e.g., impacts related to the influx of workers or others seeking economic opportunities due to the mine development).

Source: Adapted from Gullison et al. 2015. *Good Practices for the Collection of Biodiversity Baseline Data*.

Displacement

A process by which projects cause people to lose land or other assets, or access to resources. This may result in physical dislocation, loss of income, or other adverse impacts.

Source: World Bank website: "What is Involuntary Resettlement?"

Ecological Processes

Biophysical processes (e.g., hydrologic regimes, local climatic regimes, soil chemistry/nutrient cycling, fires, floods and other natural disturbance regimes, herbivory, predation, ecological corridors, migration routes) necessary for the habitat to persist in a landscape or seascape for the long term.

Source: Adapted from IFC. 2012. *Performance Standard* 6. Guidance Note.

Economic Displacement

The loss of assets or access to assets that leads to a loss of income sources or other means of livelihood (i.e., the full range of means that individuals, families, and communities utilize to make a living, such as wage-based income, agriculture, fishing, foraging, other natural resource-based livelihoods, petty trade, and bartering). Economic displacement results from an action that interrupts or eliminates people's access to jobs or productive assets, whether or not the affected persons must move to another location.

Source: Adapted from IFC. 2012. *Performance Standard 5.*

Ecosystem

A dynamic complex of plant, animal and micro-organism communities, and their non-living environment, interacting as a functional unit.

Source: Convention on Biological Diversity 1992, Art. 2.

Ecosystem Services

The benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fibre; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling.

Source: Business and Biodiversity Offsets Programme. 2012. Glossary.

Endangered Species

A species that is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future, as defined by IUCN.

Source: Adapted from IUCN Red List.

Engineer of Record PROPOSED

The qualified engineering firm responsible for confirming that the tailings facility is designed, constructed, and decommissioned with appropriate concern for integrity of the facility, and that it aligns with and meets applicable regulations, statutes, guidelines, codes, and standards. The Engineer of Record may delegate responsibility but not accountability. In some highly-regulated jurisdictions, notably Japan, the role of EOR is undertaken by the responsible regulatory authorities.

Source: GISTM (see Note Re: Glossary).

Enhancement (of biodiversity values)

The improvement of the ability of a degraded ecosystem to support biodiversity, through conservation measures such as alteration to the soils, vegetation and / or hydrology. The term is sometimes used for a type of restoration that enhances the biodiversity present but is not couched in terms of restoring the ecosystem to some prior state.

Source: Business and Biodiversity Offsets Programme. 2012. Glossary.

Equitable

In reference to grievance mechanism, means seeking to ensure that aggrieved parties have reasonable access to sources of information, advice and expertise necessary to engage in a grievance process on fair, informed and respectful terms.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Existing Mine

A mine that was operational prior to the date that the IRMA Certification System becomes operational (estimated late 2019).

Exploration Activity

Any landscape disturbance by a mining company to ascertain whether a deposit is economically viable, including drilling, trenching and road construction.

Facilitation Payment PROPOSED

Sums of money paid to get preferential treatment for something the receiver is otherwise still required to do — for example, paying an official to speed up, or 'facilitate', an authorization process.

Source: Responsible Jewellery Council. 2019. Code of Practices Guidance.

Facility

The term facility is widely utilized in this Standard, and for the most part is associated with a specific type of facility that is that is self-described (e.g., stormwater facilities, waste rock facilities, tailings facility, etc.). However, in a number of instances the term facility is used more generically. For example, "mine facilities" include any facilities owned by the company that are located on the mine-lease property.

Financial Assurance PROPOSED to replace Financial Surety (below)

A financial mechanism or instrument to provide funds for a regulatory authority (or government agency) to hire a third-party to carry out reclamation, decommissioning, monitoring, cleanup or other activities at a specific facility or site if the responsible entity is unable or unwilling to perform required actions.

Financial Surety PROPOSED to be replaced by Financial Assurance (above)

Reclamation Financial Surety – a financial surety instrument that covers all costs associated with mine closure, at a minimum for the cost of existing and anticipated/predicted mine facilities for the subsequent 12 months, and which shall be independently guaranteed, reliable, and readily liquid. See also Post-Closure Financial Surety for the period following reclamation.

Forced Eviction

The permanent or temporary removal against their will of individuals, families and/or communities from the homes and/or land which they occupy, without the provision of, and access to, appropriate forms of legal or other protection

Source: United Nations Committee on Economic, Social and Cultural Rights. 1997. *Basic Principles and Guidelines on Development-Based Evictions and Displacement.*

Forced Labor

Any work or service not voluntarily performed that is exacted or coerced from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements required to pay off a debt; or slavery or slavery-like practices. It also includes requirements of excessive monetary deposits, excessive limitations on freedom of movement, excessive notice periods, substantial or inappropriate fines, and loss or delay of wages that prevent workers from voluntarily ending employment within their legal rights.

Source: Adapted from IFC. 2012. *Performance Standard 2*. Guidance Note 2, GN67.

Free, Prior and Informed Consent (FPIC)

Consent based on: engagement that is free from external manipulation, coercion and intimidation; notification, sufficiently in advance of commencement of any activities, that consent will be sought; full disclosure of information regarding all aspects of a proposed project or activity in a manner that is accessible and understandable to the people whose consent is being sought; acknowledgment that the people whose consent is being sought can approve or reject a project or activity, and that the entities seeking consent will abide by the decision.

Free, Prior and Informed Consent (FPIC) Scoping

Identification of the indigenous peoples that need to be involved in an FPIC process, and an evaluation of the information and capacity needs that must be addressed in order for indigenous peoples to make a free, prior and informed consent decision.

Grievance

A perceived injustice evoking an individual's or a group's sense of entitlement, which may be based on law, contract, explicit or implicit promises, customary practice, or general notions of fairness of aggrieved communities.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Grievance Mechanism

Any routinized, State-based or non-State-based, judicial or non-judicial process through which mining-project-related complaints or grievances, including business-related human rights abuses stakeholder complaints, and/or labor grievances, can be raised and remedy can be sought.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Ground Vibration

The level of vibration (peak particle velocity) measured in mm/second in the ground. The measurement point should be at least the longest dimension of the foundations of a building or structure away from the building or structure, if possible. If this is not possible, the measurement point should be as far from the building or structure as is practical.

Source: Adapted from Victoria (Australia) State Government. *Ground Vibration and Airblast Limits for Blasting in Mines and Quarries.*

Habitat

A terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the non-living environment. The place or type of site where an organism or population naturally occurs.

Sources: IFC. 2012. *Performance Standard 6; Convention on Biological Diversity,* Article 2.

Hazard (in relation to the workplace):

A potential source of harm or adverse health effect on something or someone under certain conditions at work.

Source: Canadian Centre for OHS website: "Hazard and Risk."

Hazardous Work (in relation to child labor)

Work that, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children.

Source: ILO. 1999. *Convention Concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour*. No. 182. Article 3 (d).

Health Surveillance

Procedures and investigations to assess workers' health in order to detect and identify an abnormality. The results of surveillance should be used to protect and promote health of the individual, collective health at the

workplace, and the health of exposed working population. Health assessment procedures may include, but are not limited to, medical examinations, biological monitoring, radiological examinations, questionnaires or a review of health records.

Source: ILO. 1997. *Technical and Ethical Guidelines for Workers Health Surveillance*. OSH No. 72.

Heap Leach/Heap Leaching

An industrial mining process to extract precious metals, copper and other compounds from ore. Typically, mined ore is crushed and heaped on an impermeable leach pad, and chemicals (reagents) are applied that percolate through the ore and absorb specific minerals and metals. The solution is collected and target metals are recovered from the solution.

Holding Costs

The costs that would be incurred by a regulatory agency immediately after bankruptcy of a company responsible for maintaining a mine site, and before reclamation begins. Examples of such costs include continuing water treatment, routine maintenance, and the other operating costs involved with holding a piece of severely disturbed land.

Host Communities

With respect to resettlement, any communities receiving displaced persons.

Source: IFC. 2012. *Performance Standard 5*.

Host Country Law

May also be referred to as national law, if such a phrase is used in reference to the laws of the country in which the mining project is located. Host country law includes all applicable requirements, including but not limited to laws, rules regulations, and permit requirements, from any governmental or regulatory entity, including but not limited to applicable requirements at the federal/national, state, provincial, county or town/municipal levels, or their equivalents in the country where the mine is located. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Human Rights Defenders

Any person or group of persons working to promote human rights and contributing to the effective elimination of all violations of human rights and fundamental freedoms of peoples and individuals. Defenders can be of any gender, of varying ages, from any part of the world and from all sorts of professional or other backgrounds, i.e., not only found within NGOs and intergovernmental organizations but might also, in some instances, be government officials, civil servants or members of the private sector and individuals working within their local communities.

Source: Adapted from UN Office of the High Commissioner for Human Rights website: "Who is a defender."

Human Rights Risks

Human rights risks are understood to be the business enterprise's potential adverse human rights impacts. (May also be referred to as potential human rights impacts).

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights.* Commentary on Principle 17.

Hyporheic Zone

A region beneath and alongside a streambed, where there is mixing of shallow groundwater and surface water.

Important Biodiversity Values

The particular biodiversity elements or features, such as individual species, assemblages of species, particular ecological processes, etc., that trigger an area's designation as having significant biodiversity value (e.g., designation as critical habitat, a Key Biodiversity Area, a Protected Area), as well as the ecological context needed to support the maintenance of the trigger elements.

Source: Adapted from IUCN.

In Kind Payments

Payments made to a government (e.g. royalty) in the form of the actual commodity (oil, gas, or minerals) instead of cash.

Source: Extractives Industries Transparency Initiative (EITI) Glossary.

Incident (proposed in draft Mineral Processing Standard, and applied here)

An unexpected event that disrupts regular work activity. A "near miss" (or close call, injury-free event, near accident, etc.) is a sub-set of incidents where no harm.

Inclusive

In the context of stakeholder engagement, means that engagement includes men, women, the elderly, youth, displaced persons, vulnerable and disadvantaged persons or groups.

Source: Adapted from IFC. 2012. *Performance Standard 1.*

Independent Review PROPOSED

Independent, objective, expert commentary, advice, and, potentially, recommendations to assist in identifying, understanding, and managing risks associated with tailings facilities. This information is provided to the Operator to:

- Facilitate informed management decisions regarding tailings management so that tailings-related risks are managed responsibly and in accordance with an acceptable standard of care.

- Ensure that the Accountable Executive has a third-party opinion regarding the risks and the state of the tailings facility and the implementation of the tailings management system, independent of the teams (employees, consultants, and contractors) responsible for planning, designing, constructing, operating, and maintaining the facility.

Source: GISTM (see Note Re: Glossary).

Independent Tailings Review Board PROPOSED

A board that provides independent technical review of the design, construction, operation, closure and management of tailings facilities. The independent reviewers are third-parties who are not, and have not been directly involved with the design or operation of the particular tailings facility. The expertise of the ITRB members shall reflect the range of issues relevant to the facility and its context and the complexity of these issues. In some highly regulated jurisdictions, notably Japan, the role of ITRB is undertaken by the responsible regulatory authorities.

Source: GISTM (see Note Re: Glossary).

Indigenous Peoples

An official definition of "indigenous" has not been adopted by the UN system due to the diversity of the world's indigenous peoples. Instead, a modern and inclusive understanding of "indigenous" includes peoples who: identify themselves and are recognized and accepted by their community as indigenous; demonstrate historical continuity with pre-colonial and/or pre-settler societies; have strong links to territories and surrounding natural resources; have distinct social, economic or political systems; maintain distinct languages, cultures and beliefs; form non-dominant groups of society; and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities. In some regions, there may be a preference to use other terms such as: tribes, first peoples/nations, aboriginals, ethnic groups, Adivasi and Janajati. All such terms fall within this modern understanding of "indigenous."

Source: United Nations Permanent Forum on Indigenous Issues, Fifth Session, "Fact Sheet 1: indigenous peoples and Identity."

Indigenous Peoples Living in Voluntary Isolation

Indigenous peoples or segments of indigenous peoples who do not maintain sustained contacts with the majority non-indigenous population, and who generally reject any type of contact with persons not part of their own people.10 They may also be peoples or segments of peoples previously contacted and who, after intermittent contact with the non-indigenous societies, have returned to a situation of isolation and break the relations of contact that they may have had with those societies.

Source: Inter-American Commission on Human Rights. *Indigenous peoples in Voluntary Isolation and Initial Contact in the Americas: Recommendations for the Full Respect of their Human Rights*.

Inform

The provision of information to inform stakeholders of a proposal, activity or decision. The information provided may be designed to help stakeholders in understanding an issue, alternatives, solutions or the decision-making process. Information flows are one-way. Information can flow either from the company to stakeholders or vice versa.

Source: Adapted from South Africa Dept. of Env. Affairs and Tourism. *Stakeholder Engagement*.

Intangible Cultural Heritage

Knowledge, innovations and/or practices, including oral expressions of folklore, performing arts, rituals, festivals, that are inherited from past generations, maintained in the present and bestowed for the benefit of future generations.

International Accounting Standards

Several accounting standards are commonly recognized as an international accounting standard; for example, the International Financial Reporting Standards (IFRS), which are set by the International Accounting Standards Board (IASB).

Source: *Extractives Industries Transparency Initiative (EITI) Standard*. 2013.

Involuntary Resettlement

Physical displacement (relocation or loss of shelter) and to economic displacement (loss of assets or access to assets that leads to loss of income sources or other means of livelihood) as a result of project-related land acquisition and/or restrictions on land use. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in physical or economic displacement. This occurs in cases of (i) lawful expropriation or temporary or permanent restrictions on land use and (ii) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller fail.

Source: IFC. 2012. *Performance Standard 5*.

Key Biodiversity Areas (KBA)

Sites that contribute to the global persistence of biodiversity, including vital habitat for threatened or geographically restricted plant and animal species in terrestrial, freshwater and marine ecosystems.

Source: IUCN.

Landscape

A geographical mosaic composed of interacting ecosystems resulting from the influence of geological, topographical, soil, climatic, biotic and human interactions in a given area.

Source: IUCN.

Legitimate

In reference to grievance mechanism, means enabling trust from the stakeholder groups for whose use they are intended, and being accountable for the fair conduct of grievance processes.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights.*

Leverage

Leverage is an advantage that gives power to influence. In the context of Chapter 1.3, it refers to the ability to effect change in the wrongful practices of the party that is causing or contributing to an adverse human rights impact.

Source: UN Office of the High Commissioner for Human Rights. 2012. *The Corporate Responsibility to Respect Human Rights: An Interpretive Guide.*

Lin Peak/Linear Peak

The maximum level of air pressure fluctuation measured in decibels without frequency weighting.

Livelihood

The full range of means that individuals, families, and communities utilize to make a living, such as wage-based income, agriculture, fishing, foraging, other natural resource-based livelihoods, petty trade, and bartering.

Source: IFC. 2012. *Performance Standard 5*.

Livelihood Restoration Plan

A plan that establishes the entitlements (e.g., compensation, other assistance) of affected persons and/or communities who are economically displaced, in order to provide them with adequate opportunity to reestablish their livelihoods.

Living Wage

Remuneration received for a standard work week by a worker in a particular place sufficient to afford a decent Standard of living for the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, health care, transport, clothing, and other essential needs including provision for unexpected events.

Source: Social Accountability International. 2014. *SA8000 Standard*.

Long-Term Water Treatment

Long-term water treatment is defined as any water treatment that requires active water treatment after mine closure. After mine closure long-term water treatment is assumed to be required until it can be empirically demonstrated that water treatment is no longer needed.

Material Payments

If not defined in a mandatory transparency regime or through an EITI country-specific multi-stakeholder process, material payments are those that exceed US$100,000 (or its equivalent in other currencies). Payments may occur as a single installment or be the aggregate of a series of related payments that are made in the same fiscal/financial year. Material payments may be monetary or in kind.

Mercury Emission Control System

Any system that will limit mercury emissions (either designed specifically for mercury, or mercury capture is a co-benefit), including sorbent technologies that can remove mercury from the gas stream during processing, or oxidation technologies that will increase the percentage of particulate-bound mercury removed by particulate scrubbers.

Mercury Waste

Wastes consisting of, containing , or contaminated with mercury (i.e., elemental mercury (Hg(0)) or mercury compounds.

Source: *Basel Convention*. Technical Guidelines.

Metals Leaching

The release of metals by contact with solvents. Leaching may be natural or induced (e.g., related to mining operations). Mining commonly accelerates metal leaching. Metals leaching can also be referred to as "contaminant" leaching.

Mine Closure

A period of time when ore-extracting and processing activities of a mine have ceased, and final decommissioning and mine reclamation are occurring. It typically includes pre-closure (detailed closure design and planning), closure (actual activities of closure of mine workings and construction/decommissioning) and post-closure (mainly long-term reclamation, monitoring, and treatment) periods, each with its own specific activities.

Mine Waste Facility

Facilities that contain, store, are constructed of, or come in contact with wastes that are generated or created during mining (e.g., waste rock, pit walls, pit floors or underground workings, runoff or discharge from exposed mined areas) and mineral processing (e.g., tailings, spent ore, effluent). These facilities include, but are not limited to open pits, underground mine workings and subsidence areas, waste rock facilities, tailings storage facilities, heap leach facilities, process water facilities, stormwater facilities, borrow areas for construction and/or reclamation, water treatment facilities, and water supply dams/impoundments.

Mineralized Wastes PROPOSED

Any wastes that contain residual minerals or metals that are generated or created from mining or mineral processing operations, including, but not limited to, tailings, waste rock, smelter slag, baghouse dust, wet scrubber slurry and ash.

Mining Impacted Waters (MIW)

Any water whose chemical composition has been affected by mining or mineral processing. Also referred to as mining influenced waters or mine impacted waters. Includes acid rock drainage (ARD), acid mine drainage or acid and metalliferous drainage (AMD), neutral mine drainage, saline drainage, and metallurgical process waters of potential concern. A key characteristic of most mining impacted waters (also known as mining influenced waters) is that they contain elevated metals that have leached from surrounding solids (e.g., waste rock, tailings, mine surfaces, or mineral surfaces in their pathways). This fact is commonly acknowledged by the phrase "metals leaching" (ML), frequently resulting in acronyms such as ARD/ML.

Mining Project. PROPOSED REVISION

Any set of activities undertaken for the purpose of extracting mineral resources, and the infrastructure required to support these activities. Mining projects may include exploration, associated mineral processing, mine construction, mining, mine closure, post-closure and related activities either as separately or in combination.

Mining-Related Activities

Physical activities (e.g., land disturbance and clearing, road building, sampling, airborne surveys, facility construction, ore removal, ore processing, waste management, reclamation, etc.) carried out during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure, post-closure).

Mitigation (including in relation to Human Rights Impacts)

Actions taken to reduce the likelihood of a certain adverse impact occurring. The mitigation of adverse human rights impacts refers to actions taken to reduce its extent, with any residual impact then requiring remediation.

Source: Adapted from UN Office of the High Commissioner for Human Rights. 2012. *The Corporate Responsibility to Respect Human Rights: An Interpretive Guide.*

Mitigation Hierarchy

The mitigation hierarchy is a set of prioritized steps to alleviate environmental (or social) harm as far as possible through avoidance, minimization and restoration of adverse impacts. Compensation/offsetting are only considered to address residual impacts after appropriate avoidance, minimization and restoration measures have been applied. The biodiversity mitigation hierarchy is as follows (but the steps can be applied for any environmental or social impacts):

i. Avoidance: measures taken to avoid creating impacts from the outset, such as careful spatial or temporal placement of elements of infrastructure, in order to completely avoid impacts on certain components of biodiversity. This results in a change to a 'business as usual' approach.

ii. Minimization: Measures taken to reduce the duration, intensity and/or extent of impacts that cannot be completely avoided, as far as is practically feasible.

iii. Restoration: measures taken to assist the recovery of ecosystems that have been degraded, damaged or destroyed. Involves altering an area in such a way as to re-establish an ecosystem's composition, structure and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original.

iv. Offset: Measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse impacts on biodiversity arising from project development after appropriate prevention and mitigation actions have been taken. The goal of biodiversity offsets is no net loss or a net gain of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function and people's use and cultural values associated with biodiversity.

Mixing Zone

A volume of surface water or groundwater containing the point or area of discharge and within which an opportunity for the mixture of wastes with receiving surface waters or groundwaters has been afforded, and where water quality is allowed to exceed otherwise specified standards.

Source: Adapted from US Environmental Protection Agency.

Modified Habitat

Areas that may contain a large proportion of plant and/or animal species of non-native origin, and/or where human activity has substantially modified an area's primary ecological functions and species composition. (This excludes habitat that has been converted in anticipation of the project.) Modified habitats may include areas managed for agriculture, forest plantations, reclaimed coastal zones, and reclaimed wetlands.

Source: IFC. 2012. *Performance Standard 6.*

Natural Habitat

Areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition.

Source: IFC. 2012. *Performance Standard 6.*

Natural Seep/Spring

A natural seep is a moist or wet place where water reaches the earth's surface from an underground aquifer. Seeps are usually not of sufficient volume to be flowing much beyond their above-ground location.

A natural spring is a discharge of water formed when the side of a hill, a valley bottom or other excavation intersects a flowing body of groundwater at or below the local water table, below which the subsurface material is saturated with water. A natural spring is differentiated from a seep in that water flows at a greater rate from an aquifer to the earth's surface.

Source: Adapted from USGS and others.

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Certification System becomes operational (estimated late 2019).

No Net Loss and Net Gain (of biodiversity)

Targets for development projects in which the impacts on biodiversity caused by the project are balanced or outweighed by measures taken to first avoid and minimize the impacts, then to undertake on-site rehabilitation and/or restoration, and finally to offset the residual impacts (if appropriate). No net loss, in essence, refers to the point where biodiversity gains from targeted conservation activities match the losses of biodiversity due to the impacts of a specific development project, so that there is no net reduction overall in the type, amount and

condition (or quality) of biodiversity over space and time. A net gain (sometimes referred to as Net Positive Impact) means that biodiversity gains exceed a specific set of losses.

Non-replicable Cultural Heritage PROPOSED

May relate to the social, economic, cultural, environmental, and climatic conditions of past peoples, their evolving ecologies, adaptive strategies, and early forms of environmental management, where the (i) cultural heritage is unique or relatively unique for the period it represents, or (ii) cultural heritage is unique or relatively unique in linking several periods in the same site.

Source: IFC Performance Standard 8.

Occupational Exposure Limit (OEL)

An upper limit on the acceptable concentration of a hazardous substance in workplace air for a particular material (e.g., gases, vapors and particles). It is typically set by competent national authorities and enforced by legislation to protect occupational safety and health.

Sources: ILO and others.

Offset

Measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse impacts on biodiversity arising from project development after appropriate prevention and mitigation actions have been taken. The goal of biodiversity offsets is no net loss or a net gain of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function and people's use and cultural values associated with biodiversity. (See also Mitigation Hierarchy)

Operating Company

An operating entity, effectively in control of managing a mine site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Operational-Level Grievance Mechanism

An operational- or project-level grievance mechanism is a formalized means through which individuals or groups can raise concerns about the impact an enterprise has on them—including, but not exclusively, on their human rights—and can seek remedy.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights.*

Operations, Maintenance and Surveillance Manual PROPOSED

Describes the performance indicators and criteria for risk controls and critical controls, and the ranges of performance linked to specific pre-defined management actions. An OMS manual also describes the procedures for collecting, analysing and reporting surveillance results in a manner consistent with the risk controls and critical controls and that supports effective, timely decision-making. The link between OMS activities and critical controls management underscores the fact that it is essential that OMS Manuals be developed to reflect site-specific conditions and circumstances. An OMS Manual cannot be purchased 'off-the- shelf'. To be effective, it must be tailored to the site.

Source: GISTM (see Note Re: Glossary).

Peak Particle Velocity

The instantaneous sum of the velocity vectors (measured in millimetres per second) of the ground movement caused by the passage of vibration from blasting.

Pit Lake

Lake formed in a mine pit when mine dewatering pumpage ceases.

Point of Compliance

For IRMA purposes, is the physical location where water quality must meet IRMA used-based standards (See IRMA Water Quality By End-Use Tables 4.2.a – 4.2.h). The location will vary based on the following scenarios:

Surface water compliance points: are located where point source discharges enter surface waters. Points of compliance for non-point-source discharges are located downstream of but as close as practicable to known mine-related nonpoint sources.

Groundwater compliance points: are located outside the groundwater capture zone (which extends from the land surface to the depth at which groundwater is not affected by mining activities) or area of hydrologic control for mine facilities or sources but as close as practicable to those sources.

Stormwater compliance locations: are in industrial stormwater collection impoundments when water is present.

If a mixing zone is used: the point of compliance is at the downstream or downgradient edge of the mixing zone. The edge of the mixing zone is where the diluted plume meets background water quality. In no case shall mine-related contaminants extend beyond the mine boundary, unless a mixing zone authorized by a regulatory agency extends beyond the boundary.

If a mine is providing water to another entity for a designated use: the water must meet IRMA use-based standards, or legal documentation must be received from the entity verifying that they will be responsible for treating water to meet use-based standards.

Post-Closure

The period after the reclamation surety holder declares the activities required by the reclamation and closure plan are complete; any significant objections raised during the public comment period on the final release of the financial surety have been resolved; and the reclamation surety has been returned to the operator, or it has been converted to a post-closure trust fund or equivalent (i.e., if there is a need to fund long-term management and monitoring of the site). This phase continues until final sign-off and relinquishment can be obtained from the regulator and stakeholders.

Post-Reclamation PROPOSED

The period following the reconversion of land and/or water resources to productive use or the potential for productive use.

Potential Human Rights Impact

An adverse impact on human rights that may occur but has not yet done so. (May also be referred to as human rights risk).

Source: Adapted from UN Office of the High Commissioner for Human Rights. 2012. *The Corporate Responsibility to Respect Human Rights: An Interpretive Guide.*

Potentially Affected Indigenous Peoples PROPOSED

Indigenous peoples who own, occupy or otherwise use land, territories or resources or have rights that may be affected by a mineral exploration or development project.

Practicable

Practicable means giving equal weight to environmental, social, and economic benefits and costs. This is not a technical definition. It is the discussion between the affected parties on the balance between these interrelated costs and benefits that is important.

Predictable

In reference to grievance mechanism, means providing a clear and known procedure with an indicative time frame for each stage, and clarity on the types of process and outcome available and means of monitoring implementation.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights.*

Preliminary Design PROPOSED

For the purpose of Requirement 4.1.5.1 in the IRMA-Ready Standard, preliminary design is a design performed to a level of detail sufficient to determine the differences between viable designs that adopt different external loading design criteria in terms of required footprints, volumes and drainage requirements.
Source: GISTM (see Note Re: Glossary).

Priority Ecosystem Services

Ecosystem services are considered priority under the following circumstances: (i) Project operations are likely to result in a significant impact on the ecosystem service; the impact will result in a direct adverse impact on affected communities' livelihood, health, safety and/or cultural heritage; and the project has direct management control or significant influence over the service; or (ii) The project directly depends on the service for its primary operations; and the project has direct management control or significant influence over the service.
Source: IFC. 2012. *Performance Standard 6.*

Process Water

Water that is used to process ore using hydrometallurgical extraction techniques. It commonly contains process chemicals.
Source: Lottermoser, B. 2010. *Mine Wastes: Characterization, Treatment and Environmental Impacts*.

Project Development Activities PROPOSED

Field- and office-based activities carried out during the pre-permitting and permitting stages to develop a mine proposal, support the environmental and social impact assessment of a proposal, generate information necessary to fulfill regulatory and permitting requirements, engage with stakeholders and rights holders, and maintain company operations.

Protected Area / Protected Area Management Categories (IUCN)

A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. The definition is expanded by six "protected area management categories" (one with a sub-division), summarized below.

Ia *Strict nature reserve:* Strictly protected for biodiversity and also possibly geological/ geomorphological features, where human visitation, use and impacts are controlled and limited to ensure protection of the conservation values

Ib *Wilderness area:* Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition

II *National park:* Large natural or near-natural areas protecting large-scale ecological processes with characteristic species and ecosystems, which also have environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities

III Natural monument or feature: Areas set aside to protect a specific natural monument, which can be a landform, sea mount, marine cavern, geological feature such as a cave, or a living feature such as an ancient grove

IV Habitat/species management area: Areas to protect particular species or habitats, where management reflects this priority. Many will need regular, active interventions to meet the needs of particular species or habitats, but this is not a requirement of the category

V Protected landscape or seascape: Where the interaction of people and nature over time has produced a distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values

Protected areas with sustainable use of natural resources: Areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a

natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims

Source: Dudley. 2008. *Guidelines for Applying Protected Area Management Categories.* IUCN.

Receptor (of Noise/Vibration) NOTE: changed term from Noise Receptor to Receptor

A point of reception or (human) receptor may be defined as any point on the premises occupied by persons where extraneous noise and/or vibration are received. Examples of receptor locations may include: permanent or seasonal residences; hotels/motels; schools and daycares; hospitals and nursing homes; places of worship; and parks and campgrounds, and similar public spaces and commons. For wildlife, receptor locations may include wildlife habitat for sensitive animal species.

Source: Adapted from IFC. 2007. *Environmental, Health, and Safety Guidelines*. Section 1.7. Noise Management.

Remediation/Remedy (including in relation to Human Rights Impacts)

Remediation and remedy refer to both the processes of providing remedy for an adverse (human rights) impact and the substantive outcomes that can counteract, or make good, the adverse impact. These outcomes may take a range of forms, such as apologies, restitution, rehabilitation, financial or non-financial compensation, and punitive sanctions (whether criminal or administrative, such as fines), as well as the prevention of further harm through, for example, injunctions or guarantees of non-repetition.

Source: UN Office of the High Commissioner for Human Rights. 2012. *The Corporate Responsibility to Respect Human Rights: An Interpretive Guide.*

Replacement Cost

The market value of the assets plus transaction costs. In applying this method of valuation, depreciation of structures and assets should not be taken into account. Market value is defined as the value required to allow affected communities and persons to replace lost assets with assets of similar value.

Source: IFC. 2012. *Performance Standard 2.*

Replicable Cultural Heritage

Tangible forms of cultural heritage that can themselves be moved to another location or that can be replaced by a similar structure or natural features to which the cultural values can be transferred by appropriate measures. Archeological or historical sites may be considered replicable where the particular eras and cultural values they represent are well represented by other sites and/or structures.

Source: IFC. 2012. *Performance Standard 8.* Guidance Note.

Resettlement

Voluntary Resettlement: voluntary land transactions (i.e., market transactions in which the seller is not obliged to sell and the buyer cannot resort to expropriation or other compulsory procedures sanctioned by the legal system of the host country if negotiations fail) that lead to the relocation of willing sellers.

Involuntary Resettlement: physical displacement (relocation or loss of shelter) and to economic displacement (loss of assets or access to assets that leads to loss of income sources or other means of livelihood) as a result of project-related land acquisition and/or restrictions on land use. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in physical or economic displacement. This occurs in cases of (i) lawful expropriation or temporary or permanent restrictions on land use and (ii) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller fail.

Source: IFC. 2012. *Performance Standard 5.*

Resettlement Action Plan

A plan designed to mitigate the negative impacts of displacement; identify development opportunities; develop a resettlement budget and schedule; and establish the entitlements of all categories of affected persons

(including host communities). Such a plan is required when resettlement involves physical displacement of persons.

Source: Adapted from IFC. 2012. *Performance Standard 5*, paragraph 19.

Residual Impacts

Project-related impacts that remain after on-site mitigation measures (avoidance, minimization, restoration) have been applied.

Responsible Tailings Facility Engineer (RTFE) PROPOSED

An engineer appointed by the Operator to be responsible for the tailings facility. The RTFE must be available at all times during construction, operations and closure. The RTFE has clearly defined, delegated responsibility for management of the tailings facility and has appropriate qualifications and experience compatible with the level of complexity of the tailings facility. The RTFE is responsible for the scope of work and budget requirements for the tailings facility, including risk management. The RTFE may delegate specific tasks and responsibilities for aspects of tailings management to qualified personnel but not accountability.

Source: GISTM (see Note Re: Glossary).

Restoration

Measures taken to assist the recovery of ecosystems that have been degraded, damaged or destroyed. Involves altering an area in such a way as to re-establish an ecosystem's composition, structure and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original.

Retrenchment

The elimination of a number of work positions or the dismissal or layoff of a number of workers by an employer, generally by reason of plant closing or for cost savings. Retrenchment does not cover isolated cases of termination of employment for cause or voluntary departure. Retrenchment is often a consequence of adverse economic circumstances or as a result of a reorganization or restructuring.

Source: IFC. 2012. *Performance Standard 2*, Guidance Note GN 48.

Revegetation

Revegetation is the task of reseeding or replanting forbs, grasses, legumes and other plants (sometimes including shrubs and trees) so as to provide cover to decrease erosion, provide for soil stability and provide forage for wildlife or livestock or to otherwise return the site to a useable state.

Rights Holder

Rights holders are individuals or social groups that have particular entitlements in relation to specific duty bearers (e.g., State or non-state actors that have a particular obligation or responsibility to respect, promote and realize human rights and abstain from human rights violations). In general terms, all human beings are rights-holders under the Universal Declaration of Human Rights. In particular contexts, there are often specific social groups whose human rights are not fully realized, respected or protected.

Source: Adapted from UNICEF. *Gender Equality, UN Coherence & You*. Glossary.

Rights-Compatible

In reference to grievance mechanism, means ensuring that outcomes and remedies accord with internationally recognized human rights.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Risk Control

An action, object (engineered) or system (combination of action and object) put in place to prevent or reduce the likelihood of an unwanted event, or to minimize or mitigate the negative consequences if an unwanted event occurs.

Source: See Critical Control definition.

Salient Human Rights

Those human rights that are at risk of the most severe negative impacts through a company's activities or business relationships. They therefore vary from company to company.

Source: UN Guiding Principles Reporting Framework website. Glossary.

Secondary Containment

Requires that areas be designed with appropriate containment and/or diversionary structures to prevent a discharge in quantities that may be harmful.

Senior Technical Reviewer PROPOSED

A professional who is either an in-house employee or an external party with in-depth knowledge and at least 15 years' experience in the specific area of the review requirements, e.g., tailings design, operations and closure, environmental and social aspects or any other specific topic of concern.

Source: GISTM (see Note Re: Glossary).

Serious Human Rights Abuses

i) any forms of torture, cruel, inhuman and degrading treatment; ii) any forms of forced or compulsory labour, which means work or service which is exacted from any person under the menace of penalty and for which said person has not offered himself voluntarily; iii) the worst forms of child labour (as per ILO Convention 182); iv) other gross human rights violations and abuses such as widespread sexual violence; v) war crimes or other serious violations of international humanitarian law, crimes against humanity or genocide.

Source: OECD. 2016. *Due Diligence Guidance on Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.*

Shall

Indicates a requirement of the standard.

Shall Not

Indicates a prohibition.

Should/Should Not

Indicates a recommendation.

Source: ISO Guide 2, General Vocabulary section 7.1; and *ISO/IEC Directives Part 2*, Fifth edition. 2004.

Significant Changes to Mining-Related Activities

Changes in scale or scope (e.g., production increases, new or expanded activities or facilities, alterations in waste management activities, closure, etc.) that may create significant environmental, social and/or human rights impacts, or significantly change the nature or degree of an existing impact.

Source of Continuous Learning

In reference to grievance mechanism, means drawing on relevant measures to identify lessons for improving the mechanism and preventing future grievances and harms.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights.*

Stakeholders

Persons or groups who are directly or indirectly affected by a project, such as rights holders, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively.

Source: Adapted from IFC. 2007. *Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets.*

Stormwater

Industrial stormwater (also known as contact water) is runoff of rainfall, snow or snowmelt that has contacted mined materials (e.g., waste rock, tailings, mine openings, mine processing facilities and associated mining roads). Non-industrial stormwater (also known as non-contact water) is runoff of rainfall, snow or snowmelt from land and impervious surface areas such as non-mining related roads that do not contain mined materials.

Subsidence

Subsidence is a sinking of the ground surface that results in a fracture of the surface which could change surface water hydrology, or pose a threat to human health or property.

Suppliers

Those who are provide goods, services or materials to the project.

Tailings

The waste stream resulting from milling and mineral concentration processes that are applied to ground ore (i.e., washing, concentration, and/or treatment). Tailings are typically sand to clay-sized materials that are considered too low in mineral values to be treated further. They are usually discharged in slurry form to a final storage area commonly referred to as a tailings storage facility (TSF) or tailings management facility (TMF).

Source: Global Acid Rock Drainage Guide and others.

Tangible Cultural Heritage

A unique and often non-renewable resource that possesses cultural, scientific, spiritual, or religious value, and are considered worthy of preservation for the future. Includes moveable or immovable objects, sites, structures, groups of structures, natural features, or landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural value.

Tentative List for World Heritage Site Inscription

The list of sites that relevant State Parties are formally considering for nomination as a World Heritage Site in the next five to ten years.

Threatened (and Endangered) Species

Species that meet the IUCN (2001) criteria for Vulnerable (VU), Endangered (EN) or Critically Endangered (CR), and are facing a high, very high or extremely high risk of extinction in the wild. These categories may be re-interpreted for IRMA purposes according to official national classifications (which have legal significance) and to local conditions and population densities (which should affect decisions about appropriate conservation measures).

Source: Adapted from IUCN. 2001. *IUCN Red List Categories and Criteria: Version 3.1*.

Traditional Knowledge

A cumulative body of knowledge, innovations practices and representations maintained and developed by peoples with extended histories of interaction with the natural environment.

Trafficking in Persons

The recruitment, transportation, transfer, harboring or receipt of a person by means of the threat or use of force or other means of coercion, or by abduction, fraud, deception, abuse of power or of a position of vulnerability, or by the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation includes, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs. Women and children are particularly vulnerable to trafficking practices.

Source: *UN Convention against Transnational Organized Crime and the Protocols.* Article 3(a).

Transparent

In reference to grievance mechanism, means keeping parties to a grievance informed about its progress, and providing sufficient information about the mechanism's performance to build confidence in its effectiveness and meet any public interest at stake.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Trigger Action Response Plan (TARP) PROPOSED

A tool to manage risk controls, including critical controls. TARPs provide pre-defined trigger levels for performance criteria that are based on the risk controls and critical controls of the tailings facility. The trigger levels are developed based on the performance objectives and risk management plan for the tailings facility. TARPs describe actions to be taken if trigger levels are exceeded (performance is outside the normal range), to prevent a loss of control. A range of actions is predefined, based on the magnitude of the exceedance of the trigger level.

Source: GISTM (see Note Re: Glossary).

Trigger Level

A concentration between baseline or background values and IRMA water quality criteria or other applicable compliance limits that can warn of mine-related effects to water quality and trigger adaptive management or corrective actions to improve water quality.

Voluntary Resettlement

Voluntary land transactions (i.e., market transactions in which the seller is not obliged to sell and the buyer cannot resort to expropriation or other compulsory procedures sanctioned by the legal system of the host country if negotiations fail) that lead to the relocation of willing sellers.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, or that has some specific characteristics that make it more susceptible to health impacts or lack of economic opportunities due to social biases or cultural norms (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, at-risk children and youth, ex-combatants, internally displaced people and returning refugees, HIV/AIDS-affected individuals and households, religious and ethnic minorities, migrant workers, and groups that suffer social and economic discrimination, including indigenous peoples, minorities and in some societies, women).

Sources: IFC. 2002. *Handbook for Preparing a Resettlement Action Plan,* FAO, and World Bank: "Vulnerable Groups."

Waste Rock

Barren or mineralized rock that has been mined but is of insufficient value to warrant treatment and, therefore, is removed ahead of the metallurgical processes and disposed of on site. The term is usually used for wastes that are larger than sand-sized material and can be up to large boulders in size; also referred to as waste rock dump or rock pile.

Water Balance

An accounting of the inflow to, outflow from, transfers and storage changes of water over a fixed period.

Source: Adapted from *Global Acid Rock Drainage Guide* Glossary.

Water Quality Criteria

Numerical concentrations or a narrative statement recommended to support and maintain a designated water use. Criteria are based on scientific information about the effects of water pollutants on a specific water use

(Source: Adapted from UNEP. 2015. *Compendium of Water Quality Regulatory Frameworks: Which Water for Which Use?*

Water Quantity

For IRMA purposes, water quantity refers generally to the amount of water present or passing a certain location in water bodies that exist on the earth's surface, such as lakes, ponds, rivers, streams, etc., (i.e., referred to as

surface waters) and water present in water bodies that exist underground (i.e., groundwaters). It also includes the amount of water that originates underground but expresses itself at the surface (e.g., natural springs or seeps). Water quantity measurements may be expressed as volumes, however, for IRMA's purposes measurements for rivers, streams and natural springs/seeps maybe expressed as a flow (in ft^3/sec or m^3/sec), while measurements for lakes and groundwater may be expressed as a level or elevation (e.g., feet or meters above a reference point such as sea level).

Whole Effluent Toxicity

Whole Effluent Toxicity (WET) refers to the aggregate toxic effect to aquatic organisms from all pollutants contained in a mine's effluent.

World Heritage Site

A site/property inscribed on the World Heritage List, which has outstanding universal value and meets the conditions of authenticity and integrity. The World Heritage property includes within its borders all of the attributes that are recognized as being of outstanding universal value.

Source: UNESCO.

Worker

All non-management personnel.

Workers' Organizations

Typically called trade unions or labor unions, these organizations are voluntary associations of workers organized on a continuing basis for the purpose of maintaining and improving their terms of employment and workplace conditions.

Source: Adapted from *SA8000 Guidance* and IFC. 2012. *Performance Standard 2.*

Workers' Representatives

A worker chosen to facilitate communication with senior management on matters related to working conditions, occupational health and safety or other workers' concerns. This is undertaken by the recognized trade union(s) in unionized facilities and, elsewhere, by a worker elected by non-management personnel for that purpose.

Source: Adapted from *SA8000 Guidance*.