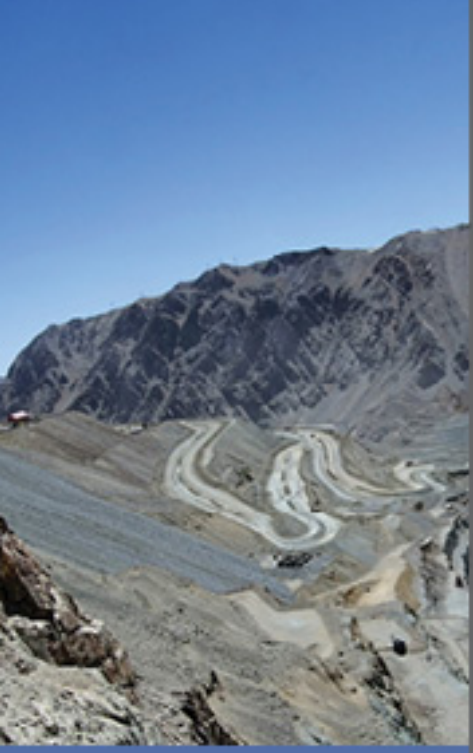

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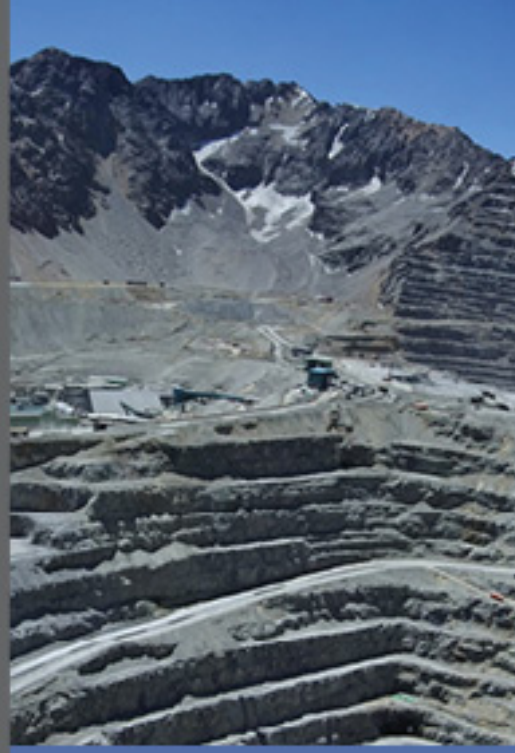

IRMA Standard for Responsible Mining IRMA-STD-001

Draft v2.0

April 2016

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Photo credits

Large photo on cover

Los Bronces mine, Chile. Photo courtesy of Anglo American.

Small photos on cover, clockwise from top

Nye tailings impoundment at the Stillwater Mine, Nye, MT. Photo by IRMA.

Fish killed in the Tizsa River by the Baia Mare cyanide spill, Romania. Photo by Tibor Kocsis.

Zortman-Landusky mining complex, Montana, USA. Photo by Earthworks.

Inside

Section pages: Los Bronces mine; Zortman-Landusky mine (as above).

Chapter headers: Los Bronces mine (as above).

Contents

Notes on this Draft

On 22 July 2014 the multi-stakeholder Initiative for Responsible Mining Assurance (IRMA) released a first draft *Standard for Responsible Mining* (version 1.0) for public review and comment.

We now invite you to review this revised *Standard for Responsible Mining Draft v2.0* and will appreciate your feedback, suggestions for improvement, and also your recommendations of others to whom this should be sent.

The changes in the *Standard for Responsible Mining Draft v2.0* were informed by input received from more than 70 individuals and organizations who submitted comments during the global stakeholder public comment period that ran from 22 July to 22 November, 2014.

This second draft of the IRMA Standard was created by the IRMA Secretariat and the IRMA Steering Committee in consultation with representatives from each of the five sectors leading IRMA:

1) organized labor,
2) nongovernmental organizations (NGO),
3) mining companies,
4) impacted communities, and
5) downstream users (private businesses purchasing mined materials for the products/services they provide).

In addition, representatives from government agencies, financial institutions, academic/university organizations, consultants, related certification programs, and others participated in the review process. Where necessary, multi-stakeholder working groups were created and/or independent experts consulted to help IRMA revise the Standard in a manner that was respectful of the divergent views received on some IRMA requirements, with the objectives of achieving a high-performance bar that IRMA multi-stakeholder leaders could agree reflected "best practice," and meeting the mission of IRMA: *to establish a multi-stakeholder and independently verified responsible mining assurance system that improves social and environmental performance.*

As with the first draft of the *Standard for Responsible Mining*, released July 2014, while IRMA Steering Committee members have not reached agreement on all aspects of the Standard, they believe that now is an appropriate time to once again bring the document for broad consultation and input. The Steering Committee desires a robust and engaged comment period in which diverse stakeholders weigh in on each chapter to provide expert insight and nuanced guidance. We welcome individuals and organizations worldwide to comment and inform another expected revision before the adoption of a Standard version on which certification will begin.

Changes From the 2014 Draft

Notes at the beginning of each chapter draw attention to major changes in that section from the July 2014 draft (v.1.0) and this revised version (v.2.0). In addition, please find in the Introduction to the IRMA Standard, below, several examples of significant system-wide changes between the 2014 draft and this version of the document. Also, as outlined below, some of the content from the first draft of the Standard has been removed:

- **Corporate-Level Requirements:** a decision was made by the IRMA Steering Committee to remove the corporate-level requirements that were in the first draft of the IRMA Standard. The rationale for doing so is that IRMA is certifying mine sites, not mining companies/corporations. And so there is no reason to hold all of a corporation's operations to some of the IRMA requirements, when those operations may never be certified. However, IRMA has developed a draft Policy on Association, which has been designed to enable IRMA to refuse associating or to disassociate from a company or its corporate parent if the entity is involved in behavior that does not align with IRMA's mission and principles. The draft Policy on Association is available at:

www.responsiblemining.net/images/uploads/IRMA_Policy_On_Association_Draft_v1.0.pdf. IRMA stakeholders are welcome to submit comments on the draft Policy to: comment@responsiblemining.net.

- **Means of Verification:** the Means of Verification (MOV) have been updated in this draft. This information provides non-normative guidance to help auditors, companies and stakeholders understand sources of information that an auditor would be expected to have access to, and the kinds of activities that the auditor might be expected to undertake in order to verify conformity with a requirement. For those interested, an alternative, shorter version of the Standard that excludes the MOV has been produced. That version can be accessed at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf.
- **Impact Indicators:** we have removed the IRMA Impact Indicators from this version of the Standard. Impact Indicators will eventually be used to help IRMA gauge whether or not its certification program is making a positive difference in the world. However, we recognized, both from the comments received on the first draft of the Standard, as well as through consultation with experts who are familiar with designing impact indicators, that we have much more work to do in this area. The IRMA Steering Committee agreed that while it is important to work on the IRMA indicators, the priority over this past year was to revise the IRMA Standard requirements. Work on impact indicators will resume in the months ahead.

Flagged Items

Your input is welcome on any portion of this document. In particular, the IRMA Steering Committee seeks assistance in resolving challenging issues in which there is either a difference in opinion between stakeholder perspectives and/or a complex topic on which the broader world community is also struggling with no clear resolution.

We have marked these types of challenges in this document with a [flag] and are most appreciative of solution-based suggestions. You can search for these flags by using the search term flag, or look for flags in Chapters 2.1, 2.9, 2.12, 3.1, 3.2, 3.3, 3.7, 3.9, 3.10 and 4.2. Additionally, there are four other topics on which IRMA is seeking input. These are:

1. Artisanal Mining

IRMA is not planning on certifying artisanal mining operations.[1] However, IRMA received comments from several stakeholders suggesting the need to include requirements for industrial-scale operations that have the potential to affect artisanal mining.

- We are interested in hearing from stakeholders regarding best practice for industrial scale mines that interface with artisanal mines/miners
- We are also interested in hearing from stakeholders with expertise in this subject area who might be willing to participate in a working group that would help IRMA draft best practice requirements for the ISM/ASM interface to be included in the IRMA Standard.
- Note: Any new requirements related to ISM/ASM will be released for public comment.

[1] Defined broadly as "Mining carried out by individuals, groups, families or cooperatives with minimal or no mechanization."

2. Small-to-Medium Sized Operations/Operators

IRMA is seeking to remove barriers that may prevent small-to-medium-sized companies from proposing mine sites for IRMA certification. IRMA recognizes that smaller companies may be less well resourced, and/or may not have the experience or systems in place that larger companies may have to carry out some of the requirements in the IRMA Standard. For example, companies with only a few mines may not have the experience with human rights or biodiversity assessments, either due to the geographical location or the regulatory expectations. Consequently, IRMA is considering potential approaches for creating flexibility for small companies. For example, IRMA could extend timelines for small-to-medium-sized companies to meet particular requirements. Such an approach would not lower the overall performance bar, but would provide greater flexibility for those companies to achieve IRMA certification.

- We are interested in hearing from stakeholders regarding their opinions on whether IRMA should consider creating more flexibility for smaller enterprises, and if so, what sort of approaches might be considered that still ensure that those companies meet IRMA's high performance bar.

3. Disclosure of Information

There are numerous requirements throughout the draft *Standard* for materials to be made public (e.g., assessments, monitoring data, etc.). The IRMA Steering Committee is in the process of reviewing all of the disclosure-related requirements in the Standard and is seeking a way to balance transparency in the reporting of information while not creating a reporting load that is overly burdensome for companies.

Also, presently, many of the requirements specifically state that a company must post certain information on its website. IRMA is considering whether it might make more sense to have a central repository for IRMA disclosures (e.g., the IRMA website), rather than having each company create a place on its own website for IRMA-related information. IRMA recognizes, however, that web-based materials are not appropriate for all stakeholders. So we want to be sensitive to the ability of all stakeholders to access information that is of critical importance to them.

- IRMA welcomes any comments on the types of information that stakeholders and companies think should or should not be required to be reported (including in what format, and to whom), as well as input on whether a central repository for information from IRMA-certified mines would be a helpful tool for companies and interested stakeholders.

4. Timing of Certification

There are some requirements within the IRMA Standard that cannot be met once a mining operation has reached a certain stage – in other words, an operator cannot "turn back the clock" to change actions that have already occurred, nor can it meet time-dependent requirements that did not take place at the appropriate time. IRMA seeks to make its certification system available to any company that can demonstrate that is achieving the social and environmental objectives of the IRMA Standard.

The IRMA Steering Committee is actively considering how best to address non-compliances with the IRMA Standard that occurred during a mine's early stages of development. In some chapters, readers will notice that the Scope of Application section has information on "New versus Existing Mines." Where present, that subsection recognizes that some requirements in the chapter cannot be applied retroactively at existing mines, and clarifies how IRMA expects companies to demonstrate that they still meet the intent of the social and environmental objectives of the chapter.

- We acknowledge that further attention (and guidance to companies and auditors) may be needed, and invite comments on this topic from stakeholders, including operators who may wish to seek IRMA certification for existing mines.

Under Development

It is important to note what is **not** in this document. IRMA leaders recognize that there are key aspects of certification which are equally relevant to the Standard for the success of IRMA's mission and which are being developed in tandem but are not embodied in this draft Standard document.

- **Guidance Document:** this will be a lengthy detailed document offering greater background and context on a chapter-by-chapter basis to provide mining company applicants, stakeholders and auditors greater insight on the basis for requirements in each chapter and how they might be measured. Reviewers of this draft Standard who would like to see one or more chapters of the draft Guidance Document are invited to contact IRMA at info@responsiblemining.net and we will share these with you even as they are in progress.
- **Verification Program:** IRMA's verification program that describes the structure and process for auditing and verifying compliance with the IRMA Standard is being built in tandem and coordination with the draft Standard; the structure of that program is not described in detail in this draft Standard document (although you will find Means of Verification for requirements that inform this program). Auditor training will also be a key component of this system.
- **Certification System processes:** specifics on the application process, length of time for which a certificate is valid, frequency of review of certificates, details on costs of certification, and other mechanics of the system are essential information and will be published for public review but are not included in this document.

Reviewers of this revised *Standard for Responsible Mining Draft v.2.0* may request information on any of the above issues and may also volunteer to participate in multi-stakeholder conversations on the related development of those important programs. IRMA expects to offer each of these pieces for public review and comment as they become available.

Comment on the Draft Standard

The IRMA publicly accessible standards development process is being carried out in a manner that seeks to align with the ISEAL Code of Good Practice for the Development of Social and Environmental Standards. Information on IRMA's standard development process is available at: www.responsiblemining.net/irma-standard/standard-development.

Representatives from each of IRMA's five sectors (labor, NGO, impacted communities, mining industry and downstream business users of mined materials) will carry out proactive outreach to encourage diverse meaningful feedback from stakeholders around the globe throughout that process. We encourage you to share this draft with your colleagues and others you think may be interested and let them know of our desire to hear their feedback to inform further revisions that will support a strong *Standard for Responsible Mining* on which certification can begin.

IRMA will be accepting feedback on the second draft of the IRMA *Standard for Responsible Mining* until 5 June 2016.

Comments may be emailed to us at: comments@responsiblemining.net

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

Preamble

The IRMA Standard for Responsible Mining

Modern societies rely on mined minerals and metals to function. Nearly everything manufactured or constructed – from buildings to roads to computers and trains – contains material mined from the Earth.

Mining is a complex and intensive process that can have major environmental and social impacts. In even the best-managed mines some degree of disturbance is inevitable. In some cases the potential for harm may mean that a decision not to mine may be the best option. In many cases, however, the most negative social and environmental impacts can be avoided if companies operate according to best practice standards.

The Initiative for Responsible Mining Assurance (IRMA) envisions a world where the mining industry is: respectful of the human rights and aspirations of affected communities; provides safe, healthful and respectful workplaces; avoids or minimizes harm to the environment; and leaves positive legacies.

Many organizations and initiatives have developed guidance for different elements of responsible mining. Guidance exists for stakeholder relations, respect for indigenous peoples, the implementation of the UN Guiding Principles on Business and Human Rights, the use of cyanide, management of water, and for many other social and environmental aspects of mining.

Some organizations have specialized in providing guidance for particular mining sectors such as gold, coal, bauxite or tin mining, or for particular groups, such as small-scale or artisanal miners. However, no standard has yet been developed that specifies best practice performance requirements that are applicable to all kinds of industrial mining worldwide, that are designed to be independently auditable at the mine site level, and that are supported by leading companies as well as civil society organizations. The IRMA Standard for Responsible Mining aims to fill this gap.

IRMA was founded in 2006 by a coalition of nongovernment organizations (NGOs); downstream businesses who purchase minerals and metals for the products they make and sell; trade unions; affected communities; and mining companies.

IRMA's mission is to improve social and environmental performance through establishment of a multi-stakeholder independently-verified responsible mining assurance system.

IRMA is building on the experience of sustainability standards in sectors like organic agriculture, forestry, and fisheries – creating a parallel to certification programs like Forest Stewardship Council and Marine Stewardship Council – and is striving to achieve full compliance with the *ISEAL Codes of Good Practice* for standard-setting and assurance.

Once completed, the IRMA *Standard for Responsible Mining* will be a key part of a global mining assurance system consisting of six integrated elements:

1. The international IRMA *Standard for Responsible Mining*, endorsed by leading stakeholders from all key stakeholder groups;
2. A trusted, independent, third-party mechanism to verify implementation of the standard;
3. Communication tools (such as certificates, approved claims and labels) to generate rewards for companies that implement the standard;
4. Mechanisms for resolving disputes relating to the implementation of the IRMA system;
5. A membership program designed to generate and maintain long-term support for the system from all key stakeholder groups;

6. An organizational structure sufficient to ensure the long-term stability and success of the system as a whole (for example through one or more legal entities and associated personnel, governance and financial resources).

IRMA Principles of Engagement

In coming together to establish the IRMA program and the Standard for Responsible Mining on which certification will be based, IRMA's multi-stakeholder Steering Committee members agreed to the following Principles of Engagement as a basis for their participation in IRMA and/or initiatives or projects that flow out of IRMA:

- We are committed to and recognize the value of a multi-sector process and solutions with the participation of all sectors.
- We acknowledge that we must develop strategies and systems that add value for all sectors, recognizing that different sectors define value differently.
- We recognize that while we may not always agree, and that sometimes our disagreements may be aired in public, we see value in finding solutions where we are able to find agreement. We are therefore committed to dialogue despite these disagreements or differences of opinion.
- We are committed to a process that seeks to improve and advance best practices and standards.
- We will seek to learn from and build upon current examples of site-based good practice as well as broader initiatives that are underway.
- We will seek to identify and recognize progress and improvements at existing operations, understanding that there could be, in some cases, inherent limits as to what can be achieved at these sites. We recognize that in certain cases sites with complex and challenging issues could implement improvements that could lead to certification.
- We recognize that in certain cases, whether or not there is governmental approval, due to potential impacts or other values or benefits, no mining could be the best option. We seek to advance methodologies that allow such decisions to be made within a sustainable development context. We also recognize that we must pursue solutions that avoid simply leaving the mining of such sites to less responsible operators.
- We will ground our standard setting and verification process in sound science with regard to all stages of mine development through closure, giving careful consideration to identified risks, while recognizing that scientific uncertainty is not a reason for inaction, and respecting traditional knowledge, custom and values.
- We agree that efficiency is essential. We seek to develop and advance criteria, targets, benchmarks and processes that integrate, whenever possible, existing tools, processes and resources, such as current reporting or auditing. We seek to build on existing knowledge and systems where applicable.
- We agree to develop a list of agreed-upon topics for standards that includes, at a minimum, those topics previously agreed upon in IRMA.
- We recognize that it is essential to develop a system that enables mutually acceptable, credible, independent, third-party verification of compliance with standards, thresholds or performance targets. Accordingly, we seek to create a system that offers public recognition for such compliance and a mechanism to ensure that these commitments are being met in practice on an ongoing basis.

Introduction to the IRMA Standard

Principles and Objectives

The IRMA *Standard for Responsible Mining* (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 principle.

Principle 1—Business Integrity

INTENT: Operating companies conduct their business in a transparent manner that complies with applicable host country and international laws, regulations and best practice.

- **Chapter 1.1—Legal Compliance**: To support the application of the laws and regulations of the country in which mining takes place, or exceed host country laws in a manner consistent with best practice.
- **Chapter 1.2—Revenue and Payments Transparency:** To increase transparency of mining related payments and provide communities and the general public with the information they need to understand and assess the fairness of financial arrangements related to mining operations.

Principle 2—Social Responsibility

INTENT: Operating companies engage with stakeholders to ensure that mining occurs in a manner that respects human rights and cultural heritage, and maintains or enhances the health, safety and quality of life of workers and communities.

- **Chapter 2.1—Fair Labor and Terms of Work:** To maintain or enhance the social and economic wellbeing of mine workers and respect internationally recognized workers' rights.
- **Chapter 2.2—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 2.3—Emergency Preparedness and Response:** To plan for and be prepared to respond effectively to potential emergency situations, prevent or reduce the likelihood of accidents and minimize loss of life, injuries and damage to property, environment, health and social well-being.
- **Chapter 2.4—Human Rights Due Diligence and Compliance:** To identify, prevent, mitigate and remedy infringements of human rights.
- **Chapter 2.5—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 2.6—Security Arrangements:** To manage security in a manner that protects mining operations and products without infringing on human rights.
- **Chapter 2.7—Community Health and Safety:** To protect and improve the health and safety of individuals, families, and communities affected by mining projects.
- **Chapter 2.8—Community and Stakeholder Engagement:** To enable communities and stakeholders to

participate in mining-related decisions that affect their health, wellbeing, safety, livelihoods, futures and the environment.

- **Chapter 2.9—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 2.10—Free, Prior and Informed Consent (FPIC):** To respect the rights, dignity, aspirations, culture, and livelihoods of indigenous peoples.
- **Chapter 2.11—Cultural Heritage:** To protect and respect the cultural heritage of communities and indigenous peoples.
- **Chapter 2.12—Resettlement:** To avoid resettlement, and when that is not possible, equitably compensate affected persons and improve their living standards and livelihoods over pre-resettlement levels.
- **Chapter 2.13—Grievance Mechanism and Access to Other Remedies:** To provide accessible and effective means for affected communities and individuals to raise and resolve mine-related grievances, while not limiting their ability to seek remedy through other mechanisms.

Principle 3—Environmental Responsibility

INTENT: Operating 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 3.1—Water Quality:** To protect water quality and avoid harm to human health, ecosystems and future water uses.
- **Chapter 3.2—Water Quantity:** To maximize efficiency of water-use and minimize off-site impacts to the environment through the adoption of leading water management strategies and practices throughout the full mine life cycle.
- **Chapter 3.3—Mine Waste Management:** To eliminate off-site contamination, minimize short- and long-term risks to communities and the environment, and protect future land uses.
- **Chapter 3.4—Air Quality:** To protect and maintain pre-mine air quality conditions.
- **Chapter 3.5—Noise:** To preserve the amenity or health and well-being of nearby noise receptors, properties, and communities.
- **Chapter 3.6—Greenhouse Gas Emissions:** To minimize climate change impacts through increased energy efficiency, reduced energy consumption, and reduced emissions of greenhouse gases.
- **Chapter 3.7—Protected Areas:** To respect, support and strengthen the effectiveness of legally designated protected areas.
- **Chapter 3.8—Biodiversity Outside Officially Protected Areas:** To avoid contributing to the global loss of biodiversity.
- **Chapter 3.9—Cyanide:** To protect human health and the environment through the responsible management of cyanide.
- **Chapter 3.10—Mercury Management:** To protect human health and the environment through the responsible management of mercury.

Principle 4—Planning and Managing for Positive Legacies

INTENT: Operating companies engage with stakeholders to ensure that mining projects are planned and managed in a manner that leaves positive environmental and social legacies.

- **Chapter 4.1—Environmental and Social Impact Assessment:** To proactively anticipate, avoid, and when that is not possible, minimize and compensate for impacts on affected communities, workers and the environment through the assessment, management and monitoring of environmental and social impacts.
- **Chapter 4.2—Reclamation and Closure:** To protect long-term environmental and social values and ensure that the costs of site reclamation and closure not borne by the community or wider public.

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

Scope of the IRMA Standard

The IRMA Standard is intended to be applicable to all kinds of industrial mining (including surface, sub-surface and solution mining) with the exception of the energy fuels sector. IRMA will not certify oil and gas operations, and more work is needed before thermal coal and uranium can be considered for inclusion.

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

The IRMA Standard and certification scheme covers mining and associated activities, such as construction of infrastructure or preliminary ore processing, that occur on the mine site, and includes requirements that pertain to different phases of the mine life cycle. The Standard does not apply to additional processing of mined material that takes place off site, the manufacturing and assembly of products, or end product use and disposal.

All certified mine sites of whatever type and scale will be required to comply with all relevant requirements of the IRMA Standard. The requirements have therefore been drafted at a level of generality that allows different actions to be taken at mine sites of different types and scales, while still being able to demonstrate compliance.

IRMA is paying specific attention to the issues of scope and applicability of the IRMA *Standard for Responsible Mining* to mine sites of different scales and types within its scope during field testing, and if necessary will develop further guidance. The subsections below provide more information on the applicability of the Standard under different conditions.

Application in Relation to Timing of Certification

IRMA recognizes that there are some requirements within the Standard that cannot be met once a mining operation has reached a certain stage – in other words, an operator cannot "turn back the clock" to change actions that have already occurred, nor can it meet time-dependent requirements that did not take place at the appropriate time. For example, a mine already in operation that seeks to be certified by IRMA but did not obtain the free, prior and informed consent of indigenous peoples before it went into operation can no longer obtain the "prior" consent of indigenous peoples.

IRMA also recognizes that some of the best practices outlined in the IRMA Standard reflect changes in global practice and norms that have come to the fore only in recent years. For example, while there may have been an understanding that companies should respect human rights, the 2011 *UN Guiding Principles on Business and Human Rights* strengthened the expectation that companies do so. Similarly, while there may have been some understanding that companies should act responsibly when operating in conflict-affected or high-risk areas, it was

not until 2011, and the release of the *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*, that there was an internationally recognized and accepted due diligence framework for companies to follow. While newer mines may have implemented systems to meet these relatively new expectations, older mining operations may not have done so.

IRMA seeks to make its certification system available to any company that can demonstrate a high performance level that is consistent with the Standard's principles and objectives. The fact that a mining project did not fully comply with all requirements of the IRMA Standard during an early stage of its development should not necessarily exclude it from subsequent certification, as long as the social and environmental objectives of the IRMA Standard are achieved, and mines address and remedy past practices that do not meet those objectives.

The IRMA Steering Committee is actively considering how best to address non-compliances with the IRMA Standard that occurred during a mine's early stages of development. In some chapters, readers will notice that the Scope of Application section has information on "New versus Existing Mines." Where present, the subsection recognizes that some requirements in the chapter cannot be applied retroactively at existing mines, and clarifies how IRMA expects companies to demonstrate that they still meet the intent of the social and environmental objectives of the chapter. We realize that further attention (and guidance to companies and auditors) may be needed in this area, and are prepared to further revise as warranted so that stakeholders can be assured that IRMA certification delivers a high performance bar in all cases.

Application in Relation to Mine Life Cycle

The IRMA Standard contains requirements that apply during different phases of the mining life cycle (e.g., exploration, construction, operations and closure). The Standard recognizes that different aspects of some requirements will be assessed at different phases of the life cycle (for example, while requirements related to the planning of mine closure may be assessed even during the construction phase, effective implementation of those requirements cannot be assessed until closure is under way or completed).

At present, assessment of compliance is expected to occur once a mine becomes operational. While the current draft Standard focuses on certifying operating mines it is possible that future versions will include additional nodes applying to specific phases (e.g., exploration, construction) so that companies might be assessed during these early stages and be certified as a prospective "IRMA Ready" mine project (having met requirements related to social engagement and environmental protection for that particular stage of development).

Application in Relation to Scale of Mine Site

As mentioned previously, IRMA is planning on certifying industrial-scale mining operations. However, IRMA is paying particular attention to further addressing issues related to:

- **Small-to-Medium Sized Companies that Operate Industrial Scale Mines:** IRMA leaders understand that smaller companies may have less experience with some planning, monitoring, reporting and other formal processes than larger companies with more resources. IRMA wants 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, we are evaluating potential barriers to smaller operators and 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, training opportunities, etc.
- **Artisanal Mining:** IRMA is exploring the potential of creating a new chapter that would have an objective of avoiding or mitigating potential negative impacts of industrial-scale mining on artisanal miners. IRMA expects to work with stakeholders, organizations and standards systems that specialize in the needs of artisanal miners to explore ways that this objective might be achieved. Please see the Flagged Issues on page 1, for more information.

Chapter Structure

The standard is divided into 27 separate chapters, addressing key social or environmental aspects of responsible mining. Each chapter of the standard has the following structure:

BACKGROUND

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.

TERMS USED IN THIS CHAPTER

This is a list of the terms used in the chapter ■ The terms listed are defined at the end of each chapter ■ They are also defined in the Glossary at the end of the Standard document ■

In each chapter you can click here to jump to definitions at the end of the chapter

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 to particular mines. If the company can provide evidence that a chapter is not relevant, that chapter will not need to be included in the scope of the IRMA certification audit. A requirement is only 'not relevant' if the issue to which a requirement relates is not relevant at a particular mine site. For example, requirements related to the use of cyanide would not be relevant at a mine site at which cyanide is never used.

This section also includes information on the applicability of certain chapters, or requirements within chapters, based on the timing of certification. This differentiation was needed, as existing mines may not have implemented certain best practices during particular phases (and those requirements cannot be carried out retroactively).

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
These are the criteria and requirements that must be met for an IRMA certificate to be issued and subsequently maintained by a mining project. Each criterion is divided into a number of requirements. All requirements need to be met in order to comply fully with the criterion. In some cases requirements consist of hierarchical elements at more than one level, for example there may be a high level requirement that "The operating company shall ensure that X is the case", followed by a list of several sub-requirements that can be assessed to determine whether X is the case. Applicants may be required to meet all the elements of such a list, or may be required to achieve one or more of the elements of such a list, as specified.	This information provides non-normative guidance to help auditors, companies and stakeholders understand sources of information that an auditor would be expected to have access to, and the kinds of activities that the auditor might be expected to undertake in order to verify conformity with a requirement.

NOTES

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

Cross References to Other Chapters	
CHAPTER	**ISSUES**
Chapters that have content related to the chapter are listed here	This area describes how the chapters are related.

TERMS USED IN THIS CHAPTER

Terms used in the chapter are defined in this section.

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 there is intended to be flexibility in relation to a requirement, for example if it is intended that time is permitted to implement a requirement, or that a limited number of elements from a longer list must be implemented, then this is specified in the wording of the requirement.

A range of 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, where these terms appear in the text of a chapter, they are listed up front, and are defined at the end of each chapter.

Basis for Certification

The basis for IRMA certification is that, to the best knowledge of the issuing body (on the basis of the evidence reviewed), all of the requirements of the IRMA Standard have been met at the mining project being proposed for certification. 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 whilst 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 auditor.
- Occasional, temporary failures of conformity are inevitable when managing large, complex operations 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 action is taken to correct such failures when they are identified and to analyze and address the issues that resulted in such failures so that they can be avoided in the future.

Consequently, and in line with other comparable certification systems, IRMA expects that certificates may be issued, and may subsequently be maintained, despite the existence of minor non-conformities with the requirements of the IRMA Standard. The IRMA Steering Committee expects to define a maximum level of tolerance that will be permitted, for example in terms of a maximum number of minor non-conformities that are permitted and/or the time that is allowed for a certificate holder to correct any such minor non-conformities in order for a certificate to be issued or maintained.

In all cases, the basis for IRMA certification will be that any failures or apparent failures of conformity with the requirements of the IRMA *Standard for Responsible Mining* 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 will be clearly and explicitly justified by the responsible certification body.

Responsibility for ensuring that the requirements of the IRMA Standard are met rests with the operating company that applies for certification, and which (if successful) subsequently holds the project's certificate of compliance.

Although the scope of the certificate applies to a specific mining project, and ultimate responsibility for compliance rests with the operating company that holds the certificate, compliance for some IRMA Standard requirements may require conformity by others working on the mining project. As required in Chapter 1.1—Legal Compliance, the operating company is responsible for ensuring that when work related to the mining project is implemented by contractors or subcontractors, those entities are in full compliance with the IRMA Standard's requirements. Additionally, there is one chapter that also includes the potential for corporate-owner level reporting (Chapter 1.2—Revenue and Payments Transparency). Rationale for is included in the notes for that chapter.

Coordination with Downstream Certification Schemes

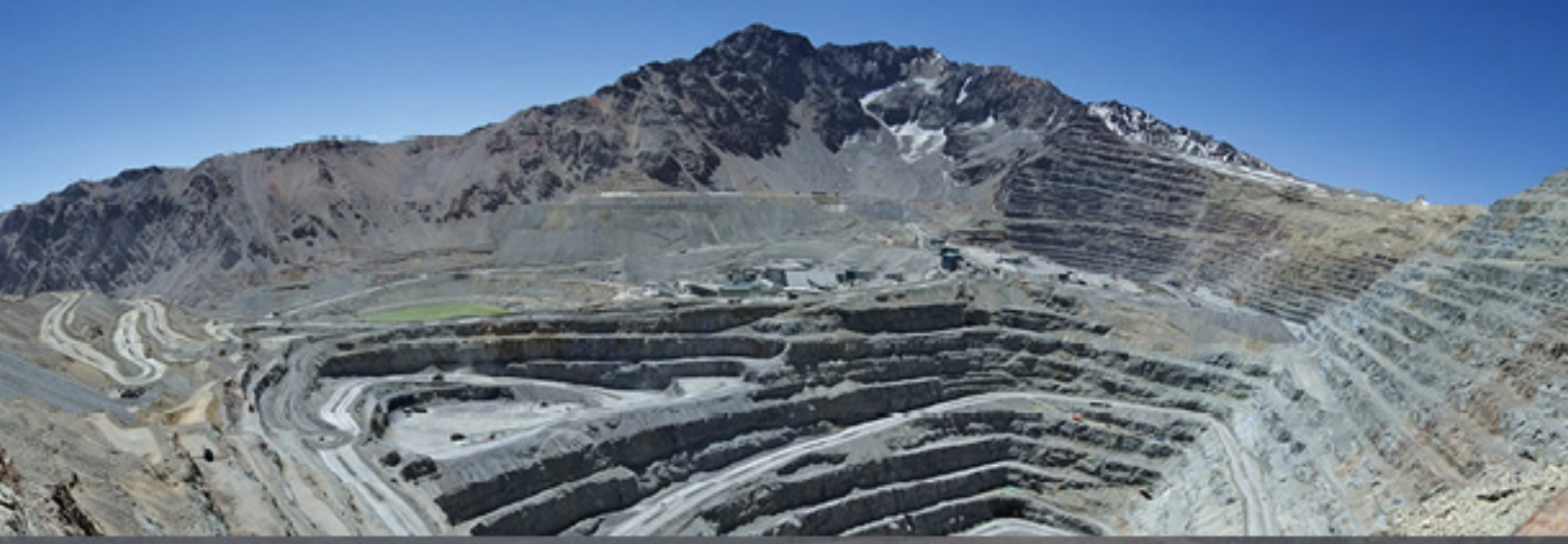
The IRMA Standard and certification scheme covers mining and associated but does not try to address the social and environmental issues associated with processing of mined material that takes place off of the mine site, the manufacturing and assembly of products, or end-product use and disposal. However, a large number of standards and schemes that address these issues already exist or are under development. These include Standards and schemes that focus on particular materials (e.g., steel), on particular processes (e.g., conflict-free smelting of gold or tin/tantalum/tungsten), product sectors (e.g., jewellery, building and construction) or supply chains (e.g., for electronic products). It is IRMA's intent to coordinate wherever possible with existing schemes in order to avoid duplication, maximize social and environmental impact across full product life cycles, and maximize the economic and other benefits for mines that meet the IRMA Standard.

Continuing Improvement

The IRMA Standard aims to recognize and reward best practice in relation to the management of the social and environmental aspects of mining. IRMA recognizes that this is a high standard to achieve. The IRMA Steering Committee is therefore evaluating the potential to support approved uses of the IRMA Standard by mine projects that aim to demonstrate consistent effort to improve environmental and social responsibility over a period of time. Such uses may include the public recognition of 'IRMA Candidate' or 'IRMA Applicant' status for mines that have been assessed against the Standard's requirements but which have not yet achieved the level required for certification, possibly accompanied by the publication of a score or grade which shows how the mine is progressing in a manner which demonstrates continuing improvement (overall and also in particular aspects of performance, e.g., human rights or worker safety). A scoring tool to support this type of use is currently in development.

Pilot Phase

The Steering Committee of IRMA is considering a "pilot phase" that would mark approximately the first one to three years following launch, during which time certifications could be granted but the system would operate in a "bridge" phase. This would be a flexible learning mode, with continuous evaluation and improvement. IRMA is conscious that problems or errors made in planning might be revealed only after the Standard and certification system is put into practice. A Pilot Phase would enable IRMA to stay highly tuned and agile to quickly correct problems, identify gaps, answer conflicting/confusing directions, revise more promptly than a normal Standard review cycle would suggest, and continue to actively engage stakeholders in helping to build a vibrant long-term certification program that promotes more responsible mining. Public input during this current review period may identify particular questions or issues of contention in the draft Standard for focused multi-stakeholder attention.



The IRMA Standard:

Requirements

Business Integrity

Chapter 1.1
Legal Compliance

BACKGROUND

Compliance with applicable host country laws is one of the most basic principles of operating a mine, or any activity, in a given jurisdiction. As an international best practice standard IRMA's requirements may also contain provisions that will be 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 explanation and documentation of any conflict to ensure that the decision process and response are clear and available to interested parties; and
- Maintenance of records - and public access to those records - sufficient to document and demonstrate compliance with host country requirements and the IRMA Standard.

TERMS USED IN THIS CHAPTER

Associated Facility ■ Competent Authority ■ Confidential Business Information ■ Host Country Law ■ Mining Project Operating Company ■ Stakeholder ■

These terms are explained at the end of this chapter

OBJECTIVES/INTENT OF THIS CHAPTER

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

SCOPE OF APPLICATION

Chapter Relevance: This chapter is applicable to all mines applying for IRMA certification.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Removed general requirements related to compliance with international treaties and conventions because these instruments are generally between states and countries, not between government and companies or individuals. Where the intent expressed through an international law, convention or treaty, etc. is to be applied to companies applying for IRMA certification, it is expressly included in the relevant chapters (such as prohibition of child labor, commitments to respect human rights and indigenous peoples' rights, etc.).
- Revised criteria on compliance with most protective requirements (1.1.2) to improve its clarity.
- Removed requirement to make non-compliance information automatically publicly accessible (e.g., on a website). But for transparency purposes, retained ability for stakeholders to request and receive this information, with the exception of confidential information.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Legal Compliance Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
1.1.1. Compliance with Host Country Laws 1.1.1.1. The operating company shall comply with all applicable host country laws in relation to the mining project.	Review of claims and/or prima facie evidence of non-compliance; and government, company, and third-party records and documentation sufficient to demonstrate compliance in relation to any claims/prima facie evidence of non-compliance. Review permits and operational notices, including notices of compliance, payments, and other regulatory documentation.
1.1.2. Compliance with Most Protective Requirements[2] 1.1.2.1. The operating company shall comply with whichever provides the greatest social and/or environmental protections of host country law or IRMA requirements, unless complying with the IRMA requirement would require the operating company to break the host country law.	Review mine operations and practices for clear demonstration that they meet IRMA Standards, unless the host country laws are more stringent.
1.1.3. Response to Non-Compliance 1.1.3.1. If non-compliance with a host country law has taken place, the operating company shall be able to demonstrate that timely and effective action was taken to remedy the non-compliance and to prevent further non-compliances from recurring.	Review operating company responses and remedies to confirm that effective action has been taken to successfully remedy non-compliances and problems. Confirm through interviews or document review that compliance has been achieved, or is being sufficiently pursued, to the satisfaction of the competent authority. Review any procedural changes to prevent similar non-compliance from recurring. If the non-compliance was human rights related, see IRMA Chapter 2.4 for IRMA expectations related to effective remedy.
1.1.4. Disclosure and Reporting of Non-Compliance 1.1.4.1. At minimum, the operating company shall disclose records relating to any legal and permit-related non-compliance to IRMA auditors, and shall disclose this information to stakeholders upon request. Records shall include those reasonably related to the	Review operating company and other sources (e.g., government) documentation of mine-related non-compliance. Documentation might include a link to the company's permit-related non-compliance in company annual or sustainability reports; or, if

[2] For purposes of this section, more protective means the law or requirement that will prevent or mitigate the most negative impact to 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.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
non-compliance, including descriptions of non-compliance events and ongoing and final remedies.[3]	not publicly available, review of company documents. The operating company shall provide access to actual government reports in its possession or to which it has access, such as inspection reports, notices of violations and resolution, etc. Confirm that company information is present and up-to-date. Evidence of making information available to stakeholders will include documented requests from stakeholders and company responses - which may come from the company and/or from interviews with stakeholders.
1.1.5. Contractors and Subcontractors 1.1.5.1. The operating company shall maintain and enforce a policy to demonstrate that it take appropriate steps to ensure compliance with the IRMA Standard by its contractors and subcontractors. This policy shall include, but not be limited to, contractors and subcontractors while working on or traveling en route to the operating company mine site or associated facilities.	Review company policy to ensure that it reasonably accomplishes the stated goals and review company implementation/enforcement of that policy. This shall include, but not be limited to, appropriate policy(s), training, responses to infractions, etc. Review actions and documentation demonstrating the operating company's effective oversight and monitoring of its subcontractors.
1.1.6. Record-keeping 1.1.6.1. The operating company shall maintain records and documentation sufficient to authenticate and demonstrate compliance with host country requirements and the IRMA Standard. 1.1.6.2. Where the operating company claims that information or documentation is confidential business information, it shall provide in its files and to stakeholder requests a description of the information or materials that are being withheld as confidential and an explanation of the reasons for classifying the information as confidential.[4] 1.1.6.3. If a part of a document is confidential, only that confidential part shall be redacted, allowing for the release of non-confidential information.	Review operating company records for their qualitative and quantitative completeness demonstrating compliance with host country and IRMA requirements. Records should be maintained in perpetuity, but for IRMA purposes, at least through mine closure. Examples of relevant records include documentation related to IRMA's individual chapters, host country regulatory reports (both compliance and non compliance, compliance inspections), and monitoring data/reports. Review operating company documentation about information withheld from auditor or stakeholders based on company assertions of confidentiality to ensure that the requirements of this section are compiled-with.

[3] "Ongoing remedies" refers to situations where the operating company is still working on achieving compliance to the satisfaction of the regulatory government entities.

[4] IRMA auditors may be required to execute nondisclosure-confidentiality agreements to view confidential information. These agreements shall not be a bar to IRMA auditors disclosing information necessary to report actual or reasonably possible threats to human health or the environment, and that right to disclose such information shall be included in any nondisclosure-confidentiality agreement.

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 recognising that participation in IRMA is voluntary, this chapter prioritizes IRMA because IRMA seeks to raise the bar of mining practices globally - and not just codify existing practices (whether considered best or not).

The IRMA process is necessarily iterative. Certification bodies, certification applicants and certificate holders are encouraged to contact the IRMA Steering Committee where they find conflict between host country requirements and IRMA standards. The Steering Committee seeks to advance and develop IRMA standards just as it seeks to advance and develop mining best practices and standards of the industry.

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 mining project and may not be used to suggest otherwise or as a defense to claims regarding legal violations.

IRMA is developing a Policy on Association that, when vetted and approved by the IRMA Steering Committee, will identify selected, essential international norms and requirements, the breach of which may be grounds for rejection of an operating company and/or its corporate parent from continued IRMA participation. A draft Policy on Association is at: www.responsiblemining.net/images/uploads/IRMA_Policy_On_Association_Draft_v1.0.pdf. IRMA welcomes comments on this draft policy.

Cross References to Other Chapters

CHAPTER	ISSUES
All IRMA Chapters	As per Chapter 1.1, if there are host country laws that pertain specifically to the topics addressed in any IRMA chapter, the company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law.
2.4—Human Rights Due Diligence and Compliance	If a company's legal non-compliance is human rights related, see IRMA Chapter 2.4 for IRMA expectations related to effective remedy.

TERMS USED IN THIS CHAPTER

Associated Facility

Any facility owned by the operating company that is located on or near to the mine lease/property and is related to the mining project (including ore processing facilities, stationary physical property such as power plants, roads, railroads, borrow areas, fuel production or preparation facilities, parking areas, shops, offices, housing facilities, storage facilities and others).

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.

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. **Note:** IRMA's definition of Confidential Business Information is not settled. Stakeholder input on this definition welcome.

Host Country Law

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. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

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.

Stakeholder

A person or group or people 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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 1.2
Revenue and Payments Transparency

BACKGROUND

Revenues derived from the extraction 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 extractives companies grows. Increased transparency of material payments to and revenues received by the host country government is an essential step toward addressing this matter.

TERMS USED IN THIS CHAPTER

Beneficial Owner ■ Confidential Business Information ■ Corporate Owner(s) ■ International Accounting Standards ■ Material Payments ■ Mining Project ■ Operating Company ■ Stakeholder ■

These terms are explained at the end of this chapter

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 United States, the European Union and in other jurisdictions. The IRMA Standard is intended to support, without duplicating, the work of the EITI and mandatory transparency regimes.

OBJECTIVES/INTENT OF THIS CHAPTER

To increase transparency of mining related payments and provide communities and the general public with the information they need to understand and assess the fairness of financial arrangements related to mining operations.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is applicable to all mines 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 1.2.4.1. 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.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Removed corporate level requirements; revised remaining requirements so that they continue to address both "country-level" disclosures, and "project-level" disclosures.
- No longer require broad "corporate owner" participation in EITI, but do require active participation in the EITI by operating companies if the EITI is active in the country where the mine is located.
- Removed reference to Dodd Frank Act in the requirements (the implementing rules for that law have

not yet been approved). The law, however, is still captured under the category of "equivalent mandatory transparency regime" in 1.2.1.1. Guidance will elaborate on other equivalent regimes.

- Removed the requirement for compliance with the OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations, as transfer pricing is more of a corporate-level issue. It was also recognized that it would be extremely difficult for such a requirement to be audited by IRMA certification bodies in a meaningful way.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Revenue and Payments Transparency Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
1.2.1. Country-Level Disclosure 1.2.1.1. The operating company shall comply with the requirements listed under this Criterion and Criterion 1.2.2, below, and/or demonstrate how it complies with equivalent reporting and disclosure requirements of the European Union Accounting Directive (Directive 2013/34/EU) and the European Union Transparency Directive (Directive 2013/50/EU) respectively, or an equivalent mandatory transparency regime.[5] 1.2.1.2. The operating company shall publish all material payments made by itself and its corporate owner, if relevant, to the government of the country in which the mining project is located. This information shall be updated on an annual basis, and publicly available on the company and/or on appropriate government website(s). 1.2.1.3. The types of payment disclosed shall include as a minimum, as applicable: a. The host government's production entitlement; b. National state-owned enterprise production entitlement; c. Profits taxes; d. Royalties; e. Dividends;	The criterion requires that an operating company demonstrate how it meets the requirements specified in the referenced legislation whether or not that legislation is legally applicable. The onus is on the operating company that is applying for IRMA certification to demonstrate to the certification body compliance with 1.2.1 and/or how it meets the relevant requirements of the implementing legislation for the EU Accounting and Transparency Directives or equivalent national legislation (e.g. forthcoming US or Canadian rules on corporate payments transparency). A simple statement of compliance, or statement that it has not been found guilty of non-compliance would not be sufficient. For 1.2.1.1, 1.2.1.3 and 1.2.1.4, interview operating company and review operating company documentation to confirm compliance with EU or equivalent transparency regime, or the IRMA requirements. Sources of relevant information may include information published on operating company or corporate owner and/or relevant government website(s). For 1.2.1.2, if the operating company is a subsidiary of a larger corporation, and the

[5] The European Union Accounting Directive 2013/34/EU is available at: eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32013L0034 and the European Union Transparency Directive 2013/50/EU is available at: eur-lex.europa.eu/legal-content/EN/TXT/?qid=1415872329209&uri=CELEX:32013L0050. See Guidance for examples and links to equivalent mandatory transparency regimes (e.g., US, Canadian, Norwegian).

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
f. Bonuses, such as signature, discovery and production bonuses; g. Licence fees, rental fees, entry fees and other considerations for licences and/or concessions; h. Payments for infrastructure improvements; and i. Any other significant payments of material benefit to government. 1.2.1.4. At minimum, this information shall be broken down by recipient government body (where applicable), by project (where applicable), and by payment type.	mining project is located in a country that is implementing EITI or its own mandatory transparency regime, it is likely that country-level reporting is already being carried out by the operating company's parent company/corporate owner (not the operating company itself). If this is the case, then the operating company may offer its corporate owner country-level reporting as evidence of compliance with this requirement.
1.2.2. Support for the Extractive Industries Transparency Initiative (EITI) 1.2.2.1. The operating company shall demonstrate support for the EITI by publishing a clear public statement endorsing the EITI Principles and Standard on its external website. 1.2.2.2. If the EITI is active in the country where the mine is located, the operating company shall: a. Commit to engage constructively with and support implementation of the EITI consistent with the multi-stakeholder process adopted in its country of operation; b. Assign strategic responsibility for the EITI to a member of its senior management and appoint a lead contact person responsible for communicating the company's EITI policy, taking action in support of EITI, and responding to queries from EITI stakeholders; and c. Provide links on its external website to completed and up-to-date Company Forms for its operation, if the EITI implementing country has completed at least one validation.	For 1.2.2.1, review copy of public statement. For 1.2.2.2, if relevant: • interview company to determine level of engagement with the EITI in the country of operation • confirm that there are personnel with strategic and communications responsibility related to the EITI • review company forms to ensure that they are up to date
1.2.3. Project-Level Disclosure 1.2.3.1. The operating company shall demonstrate its compliance with the reporting requirements specified in Chapter 10 of the European Union Directive 2013/34/EU or an equivalent mandatory transparency regime, and/or shall comply with the requirements listed	For 1.2.3.1 and 1.2.3.2, review company documentation. Sources of relevant information may include information published on operating company or corporate owner and/or relevant government website(s). Review annual accounts, approved by

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
under 1.2.3.2 below. 1.2.3.2. The operating company shall ensure that the following information at the mining project level is reported on an annual basis and is readily accessible to the public: a. Mine production, disaggregated by product type and volume; b. Revenues from sales, disaggregated by product type; c. Payments and other material benefits to government over US$100,000, as listed in paragraph 1.2.1.3 and disaggregated according to the receiving government entity (e.g. national, regional, local entity; name of government department); d. Social expenditures including in-kind expenditures, and including the names and functions of beneficiaries; e. Payments related to transportation of minerals; f. Any payments to politicians' campaigns, political parties or related organizations; and g. Any fines or other similar penalties that have been issued in relation to the project. 1.2.3.3. The operating company shall publish annual accounts, following international accounting standards.	accredited auditor.
1.2.4. Operating Company Transparency 1.2.4.1. In addition to meeting the requirements of any applicable mandatory transparency regime the material terms for mineral exploration, development and production agreed between the operating company and government entities shall be freely and publicly accessible, with the exception of confidential business information,[6] in the national language(s) of the country in which the mining project is located. a. Where these terms are negotiated, rather than governed by law, the company shall make the relevant agreements, licenses or contracts freely and publicly accessible.	For 1.2.4.1, confirm public availability of relevant agreements and contracts, e.g., concession agreements, licensing agreements, production sharing agreements, service agreements. For 1.2.4.2, review publicly available information on beneficial ownership (e.g., A company register: showing company name, proof of incorporation, legal form and status, address of the registered office, basic regulating powers (e.g., memorandum and articles of association), list of directors; a register of shareholders or members: containing the number of shares held by each shareholder and categories of shares,

[6] Confidential business information that is not material to the terms for mineral exploration, development and production may be excluded or redacted from the publicly accessible documentation as necessary.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
b. Where these terms are governed by law, free, public access to the relevant statutory documentation is deemed sufficient to meet the IRMA requirement. 1.2.4.2. The beneficial ownership of the operating company shall be publicly accessible.	including the nature of the associated voting rights).
1.2.5. Anti-Corruption Measures 1.2.5.1. The operating company shall develop, document and implement policies and procedures that prohibit bribery and other forms of corruption by employees and contractors. 1.2.5.2. Procedures shall include 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. 1.2.5.3. Relevant employees and contractors shall be trained in the application of the operating company's policy and procedures.	For 1.2.5.1 and 1.2.5.2, review documented policies and procedures related to anti-corruption. Absence of significant claims of bribery/ corruption in relation to the mining project shall be supporting evidence to demonstrate that the measures have been effectively implemented. For 1.2.5.3, interview employees and contractors to confirm that the policies and procedures have been implemented in practice. Review any records of trainings.

NOTES

The 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 producing 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 how much their government is receiving from their country's natural resources.

This chapter of the IRMA Standard is based on EITI requirements, but is designed for application to companies. Requirement 1.2.1.2 of the IRMA chapter aims to complement EITI's scheme by requiring operating companies to report corporate-level information about their payments made in the country where the mining project is located, allowing country and corporate reporting to be compared. As an alternative, to avoid duplication, it allows companies to show how their compliance with specific national or regional regulatory regimes provides an equivalent level of transparency.

Since IRMA certifies mine sites, most of the criteria apply specifically to the mining project level, and the chapter includes requirements related to project-level reporting of payments, accounts, mine development agreements, and anti-corruption measures.

As for all aspects of the IRMA Standard, documentation or records that are required to demonstrate conformity with this chapter of the IRMA Standard do not have to be prepared exclusively or specifically for that purpose. Documentation or records that have been prepared to meet a company's legal obligations, or to meet a company's voluntary commitments (e.g. to meet standards other than IRMA's) may also be submitted to demonstrate conformity with the requirements of the IRMA Standard. For example, with particular reference to Criteria 1.2.1 and 1.2.3, documentation prepared in order to comply

with Norwegian, US or Canadian legislation on corporate payments transparency may be used to demonstrate compliance.

Cross References to Other Chapters	
CHAPTER	**ISSUES**
1.1—Legal Compliance	As per Chapter 1.1, if a host country law pertains to mandatory transparency of payments or other information, the company is required to abide by that law. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as such compliance would not require the operating company to break host country law.
2.1—Fair Labor and Terms of Work	Chapter 2.1 has a provision for a grievance mechanism (2.1.5), which enables workers to file complaints anonymously, for example, in relation to financial matters, bribery, corruption, etc. without facing retribution from the company.
2.5—Mining in Conflict-Affected or High-Risk Areas	Information gathered to fulfil requirements in Chapter 2.5 (e.g., 2.5.2.1.b, 2.5.3.2) may feed into the reporting requirements in Chapter 1.2. (e.g., requirements 1.2.1.3. and 1.2.3.2.) regarding payments to governments.
2.6—Security Arrangements	The security risk assessment may reveal information related to payments made to public security forces at the mine site or along transportation routes that will need to be disclosed as country or project-level payments to governments.
2.13—Grievance Mechanism and Access to Other Remedies	Chapter 2.13 has a provision (2.13.2.1) that stakeholders be involved in designing a grievance mechanism. So if it is important to stakeholders, the mechanism could allow for the anonymous filing of complaints, for example, in relation to financial matters, bribery, corruption, etc.

TERMS USED IN THIS CHAPTER

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.

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. **Note:** IRMA’s definition of Confidential Business Information is not settled. Stakeholder input on this definition welcome.

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.

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).

Material Payments

Important or relevant revenue streams. The EITI requires that all material benefit streams be published. According to the EITI Validation guide, a benefit stream is "material if its omission or misstatement could materially affect the final EITI Report." It is typically the responsibility of the national multi-stakeholder group to decide how to define material in quantitative or qualitative terms.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

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.

Stakeholder

A person or group or people 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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

The IRMA Standard:

Requirements

Social Responsibility

Chapter 2.1
Fair Labor and Terms of Work

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 UN *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 labour; the abolition of child labour; 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.

TERMS USED IN THIS CHAPTER

Child Labor ■ Forced Labor ■ Grievance ■ Grievance Mechanism ■ Hazardous Work ■ Host Country Law ■ Indigenous Peoples ■ Living Wage ■ Operating Company ■ Primary Suppliers ■ Retrenchment ■ Trafficking in Persons ■ Worker ■ Workers' Organizations ■ Workers' Representative ■

These terms are explained at the end of this chapter

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 wellbeing of mine workers and respect internationally recognized workers' rights.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is applicable to all mines 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 operating company will not be expected to meet the IRMA requirements that overlap with those in the CBA.

As per IRMA Chapter 1.1, the operating company is responsible for ensuring that its contractors and subcontractors involved in mining-related activities comply with the IRMA Standard.

References in this chapter to primary suppliers/supply chain (2.1.7.4, 2.1.8.2) do not include material or components used in the construction phase of the mining project.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Changed the title of the chapter. It was Fair Labor and Working Conditions, but working conditions are addressed more in Chapter 2.2 than in this chapter.
- Removed specific references in the chapter to IFC Performance Standard 2 and ILO Conventions upon which the Wages and Working Hours criteria are based. In IRMA Guidance we will provide more information on how our requirements align with these two internationally recognized systems.
- Rewrote and re-organized some of the criteria to increase clarity and/or to remove duplication.
- You can download and review a shorter version of the draft Standard that does not have the means of verification: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Fair Labor and Terms of Work Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.1.1. Human Resources Policy 2.1.1.1. The operating 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 law.	Confirm, through interviews with relevant operating company management and through document reviews, that the operating company has human resources policies and procedures in place that are consistent with national law and this chapter's requirements.
2.1.2. Workers' Organizations and Agreements 2.1.2.1. The operating company shall respect the rights of workers to freedom of association and collective bargaining. 2.1.2.2. Where national law substantially restricts workers' organizations, the operating company shall not restrict workers from developing alternative mechanisms to express their grievances and protect their rights regarding working conditions and terms of employment. The operating company shall not seek to influence or control these mechanisms. 2.1.2.3. The operating company shall engage with workers' representatives and workers' organizations, and provide them with information needed for meaningful negotiation in a timely manner. 2.1.2.4. Workers' representatives shall have access to facilities needed to carry out their functions in	Relevant documentation for this criteria may include: • Policies and procedures (e.g. hiring) on human resources related matters • Employee Handbook • Collective Bargaining Agreement • Written records of the employment terms • Written employment contracts, if applicable • Communications (memos, etc.) with workers • Job descriptions • Contracts with recruitment agencies • Internal audit reports • Worker grievance records • Disciplinary records • Government inspection reports • Media or other reports

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
the workplace. This includes access to designated non-work areas during organizing efforts for the purposes of communicating with employees, as well as accommodations for workers' representatives at fly-in/fly-out or other remotely located mine sites, where relevant. 2.1.2.5. The operating company shall remain neutral in any legitimate unionizing or worker-organizing effort; shall not produce or distribute material meant to disparage legitimate trade unions; shall not establish or support a company union for the purpose of undermining legitimate worker representation; and shall not impose sanctions on workers' organizations participating in a legal strike.[7] 2.1.2.6. Upon employment, the operating company shall inform workers: a. Of their rights under national labor and employment law and any applicable collective agreements; and b. That they are free to join a workers' organization of their choosing without any negative consequences or retaliation from the operating company. 2.1.2.7. The operating company shall not discriminate or retaliate against workers who participate, or seek to participate, in legitimate workers' organizations or in a legal strike.[8] 2.1.2.8. Where the operating company is a party to a collective bargaining agreement with a workers' organization, the terms of the agreement shall be respected. Where such an agreement does not exist, or an agreement does not address specific requirements in this chapter, the operating company shall meet the relevant IRMA requirements. 2.1.2.9. The operating company shall not make use of short-term contracts or other measures to undermine a collective bargaining agreement or worker organizing effort, or to avoid obligations to	Relevant interviewees for this criterion include: relevant operating company management (may include human resources, security); workers' representatives; workers. For 2.1.2.1, review regulatory documents and media or other reports related to worker organizations, collective bargaining, strikes and interactions between worker organizations and the operating company. For 2.1.2.2, if relevant, confirm that workers are able to develop mechanisms to express their grievances and protect their rights. For 2.1.2.3, 2.1.2.4: confirm workers' representatives have the information needed for meaningful negotiation, with the company; they have access to facilities and accommodations needed to carry out their functions in the workplace. For 2.1.2.5, confirm that no unions have been established or supported by the company that undermine legitimate worker representation; the company has not disparaged legitimate trade unions, or discriminated against worker representatives including during legal strikes. For 2.1.2.6, confirm that employees have been provided with information on their labor rights (review documentation), and that they are free to join a trade union/workers' organization without any negative consequences from the company. For 2.1.2.7, confirm that the operating company has not discouraged workers from electing worker representatives, joining workers' organizations or bargaining collectively, or retaliated against those who have participated in any of the above. For 2.1.2.8, if a collective bargaining agreement (CBA) is in place, review the

[7] Nothing in this requirement shall remove the right of an operating company to seek enforcement action when workers, workers' representatives or workers' organizations are operating in contravention to laws or regulations.

[8] Nothing in this requirement shall remove the right of an operating company to seek enforcement action when workers, workers' representatives or workers' organizations are operating in contravention to laws or regulations.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
employees under applicable labor and social security laws and regulations. 2.1.2.10. The operating company shall not hire replacement workers in order to prevent or break up a legal strike, support a lockout, or avoid negotiating in good faith. The operating company may, however, hire replacement workers to ensure that critical maintenance, health and safety, and environmental control measures are maintained during a legal strike.	agreement and determine its scope and if it does not cover all of the IRMA requirements, ensure that those requirements are verified. Confirm that terms of CBA are being upheld. For 2.1.2.9, confirm that company does not use short-term contracts to avoid legal obligations to employees or undermine CBA. For 2.1.2.10, if relevant, confirm that replacement workers have not been hired to prevent/break up legal strikes (except for work that if not continued could endanger health, safety, or env't).
2.1.3. Non-Discrimination and Equal Opportunity 2.1.3.1. The operating company shall base employment relationships[9] 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.[10] 2.1.3.2. Exceptions to 2.1.3.1 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. Operating 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. 2.1.3.3. The operating company shall take measures to prevent and address harassment, intimidation, and/or exploitation, especially in regard to female workers.	Relevant documentation for this criteria may include: • Policies and procedures (e.g. recruitment, promotion, remuneration, professional development, termination) • Job advertisements • Job descriptions and wage rates • New employee selection criteria • Hiring records from recruitment process • Employment contracts • Payroll, time and training records • Performance reviews, including disciplinary and promotion records; • Grievance records • Termination records Relevant interviewees for this criterion may include: operating company management (including human resources and security); workers' representatives; and workers. For 2.1.3.1, review relevant documentation to determine how the operating company integrates the principles of equal opportunity and fair treatment and non-discrimination into its hiring and recruitment, compensation, working conditions and terms

[9] 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.

[10] 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), political affiliation, union membership and veteran status.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
	of employment and other employment relationships. Through interviews, confirm that such procedures or practices have been implemented. For 2.1.3.2, confirm company has taken measures to prevent and address harassment, intimidation and/or exploitation, especially women (e.g., through a company policy, memos, records of trainings, etc.). Interview workers of different genders and races/ethnicities, as well as migrant workers and/or children (if any). Review complaint or grievances related to harassment, etc., and records of how the company remedied or resolved them. Confirm that no relevant complaints are unresolved at the time of the IRMA audit (with the exception of recent complaints, e.g., those filed within the previous few months prior to the audit).
2.1.4. Retrenchment 2.1.4.1. Prior to implementing any collective dismissals,[11] the operating company shall carry out an analysis of alternatives to retrenchment.[12] 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,[13] and be implemented to reduce the adverse impacts of retrenchment on workers. 2.1.4.2. The operating 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	For 2.1.4.1, if applicable, review the operating company analysis of alternatives to retrenchment, and retrenchment plan to determine if efforts have been made to reduce adverse impacts of retrenchment on workers. Interview workers' representatives to ensure that workers and workers' organizations were consulted during development of the retrenchment plan. For 2.1.4.2, if applicable, interview workers' representatives to confirm that workers were provided with due notice of dismissal, and review payroll and other termination-related records to verify that workers received severance payments (and back pay/benefits) mandated by law or collective agreement in a timely manner.

[11] 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.

[12] 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 PS2. www.ifc.org/wps/wcm/connect/2408320049a78e5db7f4f7a8c6a8312a/PS2_English_2012.pdf?MOD=AJPERES)

[13] 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. (Source: IFC PS2)

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
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.[14] Where payments are made for the benefit of workers, they shall be provided with evidence of such payments.	
2.1.5. Grievance Mechanism 2.1.5.1. The operating company shall provide a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. The mechanism: a. Shall involve an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned, without any retribution; b. Shall allow for anonymous complaints to be raised and addressed; and c. 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. 2.1.5.2. The operating company shall inform the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them.	Relevant interviewees for this criterion include: relevant operating company management (including human resources or others); workers' representatives; and workers. For 2.1.5.1 and 2.1.5.2, confirm, through interviews and documentation review, that a grievance mechanism exists, workers are aware of it, and that the mechanism is accessible and transparent, provides for timely resolution, enables complaints to be filed anonymously and be addressed without retribution, and that using the mechanism does not bar a worker from seeking remedy for that issue through other mechanisms.
2.1.6. Disciplinary Procedures 2.1.6.1. The operating 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. 2.1.6.2. The operating company shall keep records of all disciplinary actions taken.	For 2.1.6.1, interview management, workers and workers' representatives to confirm the respectful treatment of workers involved in disciplinary actions. For 2.1.6.2, review records retained by operating company for disciplinary actions taken.

[14] In some jurisdictions companies 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 client will provide options to the worker who might chose either a direct cash payment or payment to a defined institution. (Source: IFC PS2)

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.1.7. Child Labor 2.1.7.1. The operating company shall identify the presence of child workers (persons under the age of 18). If a child worker is identified, the company shall ensure that risks to the physical or mental health of the child are assessed and minimized, and that regular monitoring of the child's health, working conditions and hours of work occurs. 2.1.7.2. The minimum age of children employed: a. For hazardous work[15] shall be 18, or the minimum age outlined in national law, whichever is higher; and b. For non-hazardous work shall be 15, or the minimum age outlined in national law, whichever is higher. 2.1.7.3. If the operating company discovers that a child below the minimum age for hazardous or non-hazardous mining-related work is employed: a. The child shall be removed immediately from age-inappropriate tasks; and b. Remediation procedures shall be developed and implemented that take into consideration the welfare of the child and the financial situation of the child's family. 2.1.7.4. Where there is a high risk of child labor in the mine's primary supply chain, the operating company shall develop and implement procedures to monitor its primary suppliers to determine if children below the minimum age for hazardous or non-hazardous work are being employed. If any cases are identified, the operating company shall ensure that appropriate steps are taken to remedy them. Where remedy is not possible, the operating company shall shift the project's primary supply chain over time to suppliers that can demonstrate that they are complying with this chapter.	Relevant interviewees may include: relevant operating company management; workers' representatives; workers (including child workers, if any); and stakeholders, e.g., NGOs that track child labor in the region. For 2.1.7.1 and 2.1.7.2, through interviews and observation, determine if children are employed by the company/contractors. Review company procedures and documentation confirming age verification in hiring. For 2.1.7.3, review company procedures for assessing and minimizing risk to child workers, and monitoring their health, working conditions and hours. Confirm through document review that if children are employed monitoring has been undertaken. If relevant, review documents related to remediation of children under 15 that have been discovered to be employed at the operation, or under 18 if found to be employed in hazardous jobs; confirm that children were removed from age-inappropriate, harmful or dangerous work situations. Review information not protected by privacy laws that relates to complaints/grievances filed in relation to child labor, and records of how the company remedied or responded to them. For 2.1.7.4, confirm through interviews company and documentation, that the operating company has procedures in place to determine if child workers below the minimum age for hazardous /non-hazardous work are being employed by its primary suppliers; and if cases are found, remedy was provided or the company shifted its supplier.

[15] 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 PS 2, footnote 12)

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.1.8. Forced Labor 2.1.8.1. The operating company shall not employ forced labor or participate in the trafficking of persons. 2.1.8.2. Where there is a high risk of forced or trafficked labor in the mine's primary supply chain, the operating company shall develop and implement procedures to monitor its primary suppliers to determine if forced labor or trafficked workers are being employed. If any cases are identified, the operating company shall ensure that appropriate steps are taken to remedy them. Where remedy is not possible, the operating company shall shift the project's primary supply chain over time to suppliers that can demonstrate that they are complying with this chapter.	For 2.1.8.1, interview relevant operating company management, workers and worker representative(s), and other stakeholders if deemed necessary (e.g., NGOs) to confirm that the company does not employ forced labor or trafficked persons. Review hiring documentation and any agreements with labor brokers about employment conditions for supplied labor. For 2.1.8.2, confirm, through interviews with company and stakeholders (e.g., worker representatives, NGOs), and documentation, that the company has procedures in place to determine if forced labor/trafficked workers are employed by its primary suppliers; and that if cases are found, remedy was provided and/or the company shifted its supplier.
2.1.9. Wages [flag] **2.1.9.1. Issue in brief:** Many certification schemes have already included living wage requirements in their Standards (e.g., Forest Stewardship Council, Social Accountability International, Fairtrade International), but these organizations continue to actively test methods and revise their application of the living wage concept. Ideally, IRMA and other systems would simply require that participants demonstrate that they are paying a living wage. One of the greatest challenges with the living wage concept, however, is that there is no universally accepted methodology for calculating living wage. Consequently, there is no reliable database of global living wage values for different locations; and therefore, no simple way for companies or IRMA auditors to verify that mining wages are living wages for the region where the mine is located. A coalition of organizations and initiatives including ISEAL, FSC, SAI and Fairtrade International and others are carrying out living wage studies, using a consistent methodology, which is a big step forward. IRMA could make it a requirement that all operations applying for IRMA certification carry out a living wage study using this methodology to demonstrate that they are paying living wages. However, we are not aware of any other certification system that requires that all applicants carry out living wage studies. IRMA is exploring options for thresholds above which a company might be required to carry out a living wage study, or other triggers, such as complaints, that might compel a company to do so. We welcome stakeholder input on this issue.	
2.1.9.1. The operating company shall pay workers wages that meet or exceed minimum mining industry standards, collective bargaining agreements, or a living wage, where these are higher than the legal minimum wages. When none of these exist, the operating company shall,	If relevant, discuss with operating company management how it determined living wage rates and overtime wage rates, and review any wage studies and calculations conducted or commissioned by the company. Interview workers to determine if wages are enough to

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
through engagement with workers, develop a mechanism for determining, and a timeline for achieving living wages for employees of the mining operation. 2.1.9.2. Overtime hours shall be paid at a rate defined in a collective bargaining agreement or national law, and if neither exists, at a rate above the regular hourly wage. 2.1.9.3. 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. 2.1.9.4. The operating company shall pay wages in a manner that is reasonable for workers (e.g., bank transfer, cash or check). 2.1.9.5. The operating 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.	meet basic needs, and to determine if other requirements regarding wages, such as overtime compensation, information regarding wages, benefits and pay periods, and reasonable methods of payment, and deductions for disciplinary purposes are being met For 2.1.9.1 - 2.1.9.5, review operating company policies regarding wages, including overtime compensation, methods of payment, and whether or not deductions are made for disciplinary purposes. If relevant, interview workers and workers' representatives to determine if the operating company is abiding by wage-related provisions in collective bargaining agreements. Interview operating company, workers and workers' representatives, and review payroll records to confirm that wages are paid in a manner that is reasonable for workers; and that deductions are not made for disciplinary purposes unless permitted by law or collective agreements with due process.
2.1.10. Working Hours and Leave 2.1.10.1. The operating 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; c. Overtime is consensual, and limited to 12 hours a week. d. Exceptions to 2.1.10.1.a, b and c shall be allowed if: e. A freely negotiated collective bargaining	Relevant interviewees for this criterion include: relevant operating company management; workers' representatives; and workers. Confirm through interviews and documentation review that working hours meet the requirements. If working hours exceed requirements, confirm that a collective bargaining agreement allows for the extended working hours, or that a risk management process has been carried out to minimize health and safety impacts associated with extended working hours. For 2.1.10.2, determine if national law or collective bargaining agreements have leave provisions; if Through interviews and

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
agreement is in force that allows variances to the work, rest and/or overtime hours above; or f. 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. 2.1.10.2. Where neither national law nor a collective bargaining agreement includes provisions for worker leave, the operating company shall, at minimum, provide: a. An annual paid holiday of at least three working weeks for each year of service; and b. A maternity leave period of no less than 14 weeks, which includes a compulsory six weeks of leave after childbirth.	documentation review, confirm that the operating company adheres to those provisions or, if relevant, IRMA leave requirements.

NOTES

This chapter uses, as its basis, the International Finance Corporation's (IFC) Performance Standard 2 (PS 2) Labor and Working Conditions. In addition to aligning with IFC performance standard requirements, this chapter contains two other criteria related to Wages (2.1.10) and Working Hours and Leave (2.1.11), which contain requirements that are based, in part, on ILO conventions. Where IFC or ILO concepts have been integrated into IRMA criteria, they are referenced in IRMA Guidance.

Cross References to Other Chapters

CHAPTER	ISSUES
1.1—Legal Compliance	As per Chapter 1.1, if host country laws are more protective of workers' rights or provide more favourable terms of work, those requirements shall supersede IRMA requirements (i.e., companies are required, at minimum to follow host country law). But if IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the company to break host country law. Also, the operating company is responsible for ensuring that its contractors and subcontractors involved in mining-related activities comply with the requirements of this chapter of the IRMA Standard.
2.2—Occupational Health and Safety	Although there are some requirements in this chapter that have a health and safety aspect (such as Child Labor and Working Hours), worker-related issues related to occupational health and safety issues are specifically covered in Chapter 2.2.
2.8—Community and Stakeholder Engagement	Workers are stakeholders, and also often members of the affected communities. As such, the engagement process with workers should align with the requirements in Chapter 2.8.

Cross References to Other Chapters	
2.13—Grievance Mechanism and Access to Other Remedies	There is potential overlap with Chapter 2.13. It is possible that one grievance mechanism may be suitable to address grievances raised in relation to the mining operation from all stakeholders including workers,[16] however, typically labor grievances are dealt with through a separate mechanism established through collective bargaining agreements or human resources policies.[17]

TERMS USED IN THIS CHAPTER

Child Labor

Work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development.

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.

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.

Grievance Mechanism

Any routinized, State-based or non-State-based, judicial or non-judicial process through which complaints or grievances, including business-related human rights abuses, stakeholder complaints and/or labor grievances, can be raised and remedy can be sought.

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.

Indigenous Peoples

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

[16] The OHCHR has elaborated that, "As discussed in the context of Guiding Principle 22, it is fairly usual to have separate grievance mechanisms for direct employees and for external affected stakeholders, though it is not always necessary to separate the two. (UN Office of the High Commissioner for Human Rights. 2012. The Corporate Responsibility to Respect Human Rights: An Interpretive Guide. pp. 69, 70. www.ohchr.org/Documents/Publications/HR.PUB.12.2_En.pdf)

[17] IFC. 2009. Good Practice Note: Addressing Grievances from Project-Affected Communities. p. 21. www.ifc.org/wps/wcm/connect/cbe7b18048855348ae6cfe6a6515bb18/IFC+Grievance+Mechanisms.pdf?MOD=AJPERES&CACHEID=cbe7b18048855348ae6cfe6a6515bb18

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." See Glossary for full definition.

Living Wage

The 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.

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.

Primary Suppliers

Those who are providing goods, and materials essential for the core business processes of the project.

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.

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.

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.

Workers' Representative

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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 2.2
Occupational Health and Safety

BACKGROUND

Occupational health impacts related to the mining industry may include physical injuries; musculoskeletal disorders; noise-induced hearing loss; hand-arm vibration syndrome; skin cancer; dermatitis; heat exhaustion; hypothermia; eye disorders related to radiation exposure; asphyxiation; pneumonia; respiratory disorders; damage to internal organs and other effects related to chemical/metal exposures; decreased mental health and wellbeing; and others.[18]

In 1995, the International Labour Organization (ILO) adopted *Convention 176–Safety and Health in Mines*.[19] This convention set out international standards with respect to mine-related safety and health inspections, accident reporting, investigation, training, 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 remove themselves from dangerous workplace situations.

TERMS USED IN THIS CHAPTER

Biological Exposure Indices (BEI) ■ Competent Authority ■ Competent Professionals ■ Comprehensible Manner ■ Consultation ■ Hazard ■ Health Surveillance ■ Host Country Law ■ Inform ■ Occupational Exposure Limit (OEL) ■ Operating Company ■ Training ■ Worker ■ Workers' Representative ■

These terms are explained at the end of this chapter

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

Chapter Relevance: This chapter is relevant for all mines applying for IRMA certification, however, requirements 2.2.1.5.d and e, and 2.2.3.2.c are only applicable for underground mining operations.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Moved general references to ILO such as "The operating company shall conform with the requirements of Part III of ILO Convention 176 on the Safety and Health in Mines, 1998", and created IRMA-specific requirements that clearly lay out the information that was in the ILO materials. Where we drew on ILO Conventions we will reference it in Guidance for this chapter, so that companies and stakeholders will be able to see which requirements align with ILO.
- Removed some of the prescription related to the OHS risk assessment process, and refer more

[18] ICMM. 2009. Good Practice Guidance on Occupational Health Risk Assessment. www.icmm.com/document/629

[19] International Labour Organization. See "C176 - 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

generally to OHS risk assessment processes. We will add Guidance on the steps that should be included, such as hazard identification, etc.

- Reorganized to try to group material more logically and removed duplicative requirements (i.e., once we laid out all ILO requirements instead of just referring to them, it became clear that there was overlap and duplication with some of the existing requirements).
- Clarified requirements related to worker compensation for injuries (2.2.3.5.a).
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Occupational Health and Safety Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.2.1. Health and Safety Risk Assessment and Management 2.2.1.1. The operating company shall implement an ongoing, systematic health and safety risk assessment process that follows a recognized risk assessment methodology for industrial operations.[20] 2.2.1.2. The health and safety risk assessment process shall consider, at a minimum, risks to health and safety associated with: a. The design, commissioning and operation of the workplace; mining-related processes; the physical stability of working areas; the organization of work; equipment and machinery; and waste and chemical management; b. All personnel, contractors, business partners, suppliers and visitors; c. Routine and non-routine activities, products, procedures, and services; and d. Planned or unplanned changes in duration, personnel, organization, processes, facilities, equipment, procedures, laws, standards, materials, products systems and services. 2.2.1.3. The operating company shall pay particular attention to identifying and assessing hazards to workers who may be especially	Throughout this chapter verification relies heavily on interviews with company management personnel that have occupational health and safety (OHS) responsibilities (referred to simply as "operating company OHS personnel"), as well as workers and worker heath and safety representatives. Auditors shall be able to interview workers and their representatives without management present. Verification will also involve first-hand observations of the workplace by auditors. For 2.2.1.1 and 2.2.1.2, confirm, through interviews and document review, that the operating company has systems in place for the ongoing and systematic assessment of health and safety risks. Relevant documents may include: • Hazard identification analyses and records • Risk assessment documents, including any baseline analyses • Company health and safety policies and procedures For 2.2.1.3, confirm that the evaluation of risks included particular attention to vulnerable or susceptible workers. For 2.2.1.4, review risk management plans to

[20] 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.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
susceptible or vulnerable to particular hazards. 2.2.1.4. The operating company shall develop and implement a risk management plan that includes strategies to manage risks in the following order of priority: (1) Eliminate the hazard; (2) Control hazard at source; (3) Minimize risk by means such as design of safe work systems; and (4) In so far as the risk remains, provide for the use of personal protective equipment. 2.2.1.5. In particular, the operating company shall demonstrate that it has implemented measures to: a. Ensure that the mine has electrical, mechanical and other equipment, including a communication system, to provide conditions for safe operation and a healthy working environment; b. Ensure that the mine is commissioned, operated, maintained and decommissioned in such a way that workers can perform the work assigned to them without endangering their safety and health or that of other persons; c. Maintain the stability of the ground in areas to which persons have access in the context of their work; d. If relevant, whenever practicable provide two exits from every underground workplace, each connected to separate means of egress to the surface; e. If relevant, ensure adequate ventilation for all underground workings to which access is permitted; f. Ensure a safe system of work and the protection of workers in zones susceptible to particular hazards; g. Prevent, detect and combat accumulations of hazardous gases and dusts, and the start and spread of fires and explosions; and h. Ensure that when there is serious danger to the safety and health of workers, operations are stopped and workers are evacuated to a safe location.	confirm that the operating company has developed a risk management process that prioritizes elimination of hazards. For 2.2.1.5, interview operating company OHS personnel, and review any relevant documentation including maps, plans or written procedures, to confirm that they can demonstrate that efforts have been undertaken to eliminate or minimize the risks related to the particular issues outlined in 2.2.1.5. • With respect to 2.2.1.5.g, evidence of compliance may include documentation and training/education materials and records of worker trainings held regarding explosion and fire prevention and/or fire fighting techniques; that workers are aware of the location of fire extinguishers; confirm that equipment for detecting fire and explosive gas is in place, etc. • With respect to 2.2.1.5.h, confirm, through interviews with workers and worker H&S representatives, that workers are informed of evacuation plans and/or procedures, and that they understand where to go in the event of an evacuation; and confirm that communication systems are in place to alert workers of evacuations.
2.2.2. Communication and Engagement with Workers and Others 2.2.2.1. Workers shall be informed of their rights to:	For 2.2.2.1, interview workers and worker H&S representatives to confirm that workers have been informed of their rights as per 2.2.2.1. Review any company documentation

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
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 relevant to their safety or health, held by the employer or the competent authority; e. Remove themselves from any location at the mine when circumstances arise which appear, with reasonable justification, to pose a serious danger to their safety or health; and f. Collectively select safety and health representatives. 2.2.2.2. In all cases a worker attempting to exercise any of the rights referred to in 2.2.2.1 in good faith shall be protected from reprisals of any sort. 2.2.2.3. The operating company shall develop systems to effectively communicate with, and enable input from the workforce on matters relating to occupational health and safety. 2.2.2.4. The operating company shall develop and implement a formal process involving workers' representatives and company management[21] to ensure effective worker consultation and participation in matters relating to occupational health and safety including: a. Health and safety hazard identification and assessment; b. Design and implementation of workplace monitoring and worker health surveillance programs; c. Development of strategies to prevent or mitigate risks to workers through the health and safety risk assessments or workplace and	provided to workers, or training materials, etc. that provides information to workers on their rights. Confirm, through interviews with operating company OHS personnel, workers and worker H&S representatives, that systems are in place to effectively communicate and receive input from the workforce on OHS matters. Review samples of methods of communication (e.g., emails, posters, videos, brochures, others). Confirm with workers and worker H&S representatives that information provided to workers is comprehensible to workers (e.g., in languages and formats that are understandable). For 2.2.2.2, 2.2.2.3 and 2.2.2.4, confirm, through interviews with operating company OHS personnel and worker H&S representatives that a formal process for engaging workers in issues related to OHS exists. Confirm with worker H&S representatives that they have been involved in: hazard identification and health and safety risk assessments; design of workplace monitoring and worker health surveillance programs; development of mitigation strategies to reduce risks to workers; devising health promotion programs, if relevant, strategies to address the mental health and wellbeing of workers; participation in investigations and monitoring with assistance of independent advisors if necessary. Interview worker H&S representatives regarding whether or not consultations and participation in occupational health and safety processes have been effective (e.g., they allow for genuine worker involvement in occupational health and safety issues on

[21] For example, a joint health and safety committee or its equivalent.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
workers' health surveillance; and d. Development of appropriate assistance and programs to support worker health and safety, including worker mental health.[22] 2.2.2.5. The operating company shall provide workers' health and safety representatives with the opportunity to: a. Participate in inspections and investigations conducted by the employer and by the competent authority at the workplace; 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. 2.2.2.6. Visitors and other third parties accessing the mining premises shall receive an occupational health and safety briefing, and be provided with relevant protective equipment for areas of the mine site that they will be entering.	site and timely receipt of information). Review minutes or actions items from meetings held as part of the formal process, and query operating company OHS personnel and worker H&S representatives to determine if worker recommendations are generally implemented and questions responded to, or whether input rarely affects the operating company's actions. For 2.2.2.5, interview worker H&S representatives to confirm that they have the opportunity to participate in inspections/investigations, monitoring, have access to advisers/experts when necessary, and receive timely notice of accidents and dangerous occurrences. Interview operating company to determine if there are procedures are in place to include or communicate with workers' representatives as per 2.2.2.5. For 2.2.2.6, confirm with the operating company that they carry out OHS briefings with visitors and other third parties that visit the mining premises, and that protective equipment is provided in areas where such equipment is necessary. Review communication materials related to visitors and third party OHS requirements.
2.2.3. Measures to Protect Workers 2.2.3.1. Where workers are exposed to physical, chemical or biological hazards the operating company shall: a. Inform the workers, in a comprehensible manner, of the hazards associated with their work, the health risks involved and relevant preventive and protective measures; b. Take appropriate measures to eliminate or minimize the risks resulting from exposure to those hazards, and where adequate protection against risk of accident or injury to health including exposure to adverse conditions	For 2.2.3.1, interview operating company OHS personnel, and review any relevant documentation to confirm that the company has prioritized risk elimination, and when that was not possible, has controlled or mitigated risks in the manner outlined in 2.2.3.1. • Confirm that the company can justify the implementation of different protective measures (e.g., what prevented companies from eliminating certain risks; why was personal protective gear selected over installing equipment to reduce risk, etc.).

[22] E.g., Canadian Standards Association and Bureau de normalisation du Québec. 2013. Psychological health and safety in the workplace – Prevention, promotion, and guidance to staged implementation.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
cannot be ensured by other means, provide and maintain at no cost to the worker suitable protective equipment and clothing; and c. 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. 2.2.3.2. The operating company shall ensure that: a. Training and retraining programmes and comprehensible instructions on safety and health matters as well as on the work assigned are provided for workers, at no cost to them; b. Adequate supervision and control are provided on each shift to secure the safe operation of the mine; and c. If relevant, a system is established so that the names of all persons who are underground can be accurately known at any time, as well as their probable location. 2.2.3.3. If the risk assessment process reveals unique occupational health and safety risks for certain groups of workers (e.g., pregnant women, children, HIV-positive, etc.) the operating company shall ensure that additional protective measures are taken, and trainings and health promotion programs are available to support the health and safety of those workers. 2.2.3.4. The operating 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 operating company shall be clean, safe, and meet the basic needs of the workers. 2.2.3.5. The operating 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 the government schemes[23] or a collective bargaining	• Interview workers to ensure that they have been informed of the hazards associated with their work, health risks, and preventative and protective measures, e.g., information such as signs and labels related to hazards in work areas is provided in a comprehensible manner (in language/formats understandable to workers). Confirm with workers that protective equipment is available to them at no cost. Confirm with workers and worker H&S representatives that personnel trained in first aid, and first aid equipment are available at the work site; and that injured or ill workers have access to medical facilities, including transportation to the facilities. • Determine if there have been OHS-related complaints/grievances related to the failure of the company to eliminate or appropriately control workplace hazards. If grievances have been raised, determine if they were addressed to the satisfaction of workers. For 2.2.3.2: • Confirm that OHS training programs and instructions related to their work are provided at no costs and in a manner that is comprehensible to workers; and that workers are compensated for time spent attending trainings that are held outside of normal working hours, • Confirm that regulations, if any, for supervision and controls for shift work are being met; interview workers and worker H&S representatives to determine if they believe supervision is adequate. If relevant, confirm systems are in place to identify the probable location of underground workers. For 2.2.3.3, interview a sample of vulnerable and/or susceptible workers, including, if

[23] E.g., A 2002 report suggests that 136 countries have worker compensation programs, meaning that approximately 60 do not. (Eleson, R. 2002. International Workers' Compensation. Prepared for the Indiana Compensation Rating Bureau. compclues.icrb.net/public/Lists/CompClues/Attachments/157/WC International information.pdf)

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
agreement, the operating company shall compensate workers for work-related injuries or illnesses at a rate that, at minimum, covers the wages during the recovery and rehabilitation period. If a worker is not able to return to work due to the severity of the work-related injury or illness, the operating 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).[24] b. In countries that do not provide for worker rehabilitation as part of their workers' compensation schemes, the operating company shall ensure that workers have free or affordable access to rehabilitation programs to facilitate an expeditious return to work.	relevant, pregnant women or nursing mothers, migrant workers, workers with accessibility challenges, etc., to determine if adequate protections are in place to protect their health and safety; and also to gauge their level of awareness of trainings, health promotion programs and comprehension of health and safety information. For 2.2.3.4, visit facilities and confirm there are clean toilet/washing facilities available to both genders; that workers have access to potable drinking water and, if relevant, sanitary food storage/prep areas; and, if relevant, accommodations meet the basic needs of workers (they are clean and safe, have working electricity, heat, toilet/washing facilities, etc.). For 2.2.3.5, if there are national laws for worker compensation, confirm with workers and/or worker health representatives that they have been made aware of gov't compensation programs. If no program exists, confirm workers are compensated directly by the company as per a., and have access to rehabilitation opportunities per b.
2.2.4. Inspections, Monitoring and Investigations 2.2.4.1. The operating company and worker representatives of a joint health and safety committee, or its equivalent, shall perform regular inspections of the working environment to identify the various hazards to which the workers may be exposed, and to evaluate the effectiveness of occupational health and safety controls and protective measures. 2.2.4.2. The operating company shall carry out workplace monitoring and worker health surveillance to measure exposures and evaluate the effectiveness of controls as follows: a. Workplace monitoring and worker health	For 2.2.4.1, review procedures and schedules for the regular inspection of the workplace. The frequency of inspections will vary depending on the working environment and potential hazards. For 2.2.4.2: • Interview operating company OHS personnel, and review relevant documentation to confirm that the company has a program that includes workplace monitoring and health surveillance of workers, and that the program was designed by competent professionals, and that laboratories used

[24] If the government does not provide for an "adequate pension," the operating 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 operating 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.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
surveillance shall be designed and conducted by certified industrial hygienists or other competent professionals;[25] b. Health surveillance shall be carried out in a manner that protects the right to confidentiality of medical information, and is not used in a manner prejudicial to workers' interests; c. Samples collected for workplace monitoring and health surveillance purposes shall be analysed in an ISO/IEC 17025 certified or nationally accredited laboratory; d. Sample results shall be compared against national occupational exposure limits (OELs) and/or biological exposure indices (BEIs), if they exist,[26] or OELs/BEIs developed by the American Conference of Governmental Industrial Hygienists (ACGIH);[27] and e. If an OEL/BEI is exceeded, the affected worker(s) shall be informed, and controls shall be reviewed and revised to ensure that future exposure levels remain within safe limits. 2.2.4.3. Controls, protective measures, health risk assessments, risk management plans, and training materials shall be updated as necessary based on inspection and monitoring results. 2.2.4.4. The operating company shall ensure that all workplace injuries, fatalities, accidents and dangerous occurrences, as defined by national laws or regulations, are documented, reported to the competent authority, investigated and that appropriate remedial action is taken.	to process samples had the appropriate accreditation. Interview worker H&S representatives to confirm they were consulted re: the health surveillance program (per 2.2.2.3). • Determine, through interviews with company OHS personnel, how the company protects confidentiality of worker medical information; and confirm that health surveillance findings are not used in any manner prejudicial to their interests (e.g., confirm that any tests done are justified from an OHS point of view; and do not cause unwarranted intrusion on the private life of workers). • Review surveillance and monitoring data, analyses or summary reports to confirm results have been compared to appropriate OEL/BEI standards. For 2.2.4.3, interview operating company, and review relevant documentation, to confirm that findings of monitoring and health surveillance were used to assess the effectiveness of health and safety controls and protections, and that changes were made where warranted. For 2.2.4.4, determine relevant national laws related to occupational injuries, fatalities, accidents and dangerous occurrences. Review incident, investigation and remedial action reports; confirm the company filed legally required information. Confirm, through interviews with company, that a system is in place to investigate incidents and undertake remedial action.

[25] A competent professional may be an occupational physician or clinical toxicologist with experience in assessing and diagnosing occupational diseases associated with hazardous substance exposures. www.dmp.wa.gov.au/documents/ms_biologicalmonitor%281%29.pdf

[26] Some countries have developed occupational hygiene standards for workplaces. The International Labour Organization website provides links to agencies responsible for establishing exposure limits in various countries. www.ilo.org/safework/info/publications/WCMS_151534/lang--en/index.htm

[27] The American Conference of Governmental Industrial Hygienists is a member-based organization composed of independent knowledgeable experts that advances occupational and environmental health. ACGIH develops Threshold Limit Values (TLVs) (akin to OELs) and BEIs through a committee process that involves review of peer-reviewed literature and public input. www.acgih.org/

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.2.5. Health and Safety Data Management and Access to Information 2.2.5.1. The operating company shall maintain accurate records of health and safety risk assessments; workplace monitoring and workers' health surveillance results; and data related to occupational injuries, diseases, accidents, fatalities and dangerous occurrences 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. 2.2.5.2. The operating company shall establish a data management system that enables worker health data to be readily located and retrieved, and data protected by medical confidentiality to be securely stored. Data shall be retained for a minimum of 30 years,[28] and responsible custodians shall be assigned to oversee the heath data management system. 2.2.5.3. The operating company shall allow workers access to their personal information regarding accidents, dangerous occurrences, inspections, investigations and remedial actions, health surveillance and medical examinations.	For 2.2.5.1, interview operating company OHS personnel, and review documentation related to risk assessments and information management systems in place to collect and track data on occupational injuries, diseases, accidents, fatalities, dangerous occurrences, workplace monitoring and health surveillance. Confirm with worker H&S representatives that they have access to this information. Determine if there are national requirements to file occupational health (e.g., illness, disease, and other) information, and review company documentation to confirm that the requirements are being met. Confirm with worker H&S representatives that they have access to information submitted to competent authorities. For 2.2.5.2, confirm with operating company OHS personnel that the health surveillance data management system enables the secure storage of confidential data (e.g., limits access to trained professionals that have the appropriate clearance to view the data). Confirm there are responsible custodians that oversee t data management. For 2.2.5.3, confirm with workers and worker H&S representatives that workers have access to health and safety data relevant to them.

NOTES
Many of the requirements in this chapter are based on International Labour Organization Convention *C176 - Safety and Health in Mines*. Where recommendations of ILO C176 have been integrated into IRMA requirements, the specific ILO C176 Article number will be referenced in the IRMA Guidance for this chapter (under development).

[28] The intention is not that the data should be destroyed after 30 years. Rather, where possible it should be retained indefinitely as the data may be important for future medical research or legal purposes. If a company is sold, provisions should be made for successor custodianship, i.e., transfer of records to the successor company. If a company ceases to operate, it is good practice to notify current employees of their right to access their records before the company goes out of business. (See: U.S. Dept. of Labor. 2001. "Access to Medical and Exposure Records," www.osha.gov/Publications/pub3110text.html)

Cross References to Other Chapters	
CHAPTER	**ISSUES**
1.1—Legal Compliance	As per Chapter 1.1, if host country laws address occupational health and safety, the company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law. Also, the operating company is responsible for ensuring that its contractors and subcontractors involved in mining-related activities comply with the requirements of this chapter of the IRMA Standard, i.e., contracted workers and any other workers who provide project-related work and services should be afforded a safe and healthful work environment.
2.1—Fair Labor and Terms of Work	Note that there are some requirements in Chapter 2.1 that share the objective of protecting the health and safety of workers (such as those relating to child labor, and working hours).
2.3—Emergency Preparedness and Response	Chapter 2.3 shares similar objectives to Chapter 2.2 of protecting the health and safety of workers, but 2.3 also addresses affected communities. Workers and their representatives are to be consulted in the development of the Emergency Response Plan as per 2.3.2.
2.3—Mining in Conflict-Affected or High-Risk Areas	There may be particular risks to workers when projects are located in conflict-affected or high-risk areas. These risks may include potential impacts on health or safety, as well as risks to human rights. The conflict risk assessment should evaluate such risks to workers.
2.7—Community Health and Safety	Chapter 2.7 shares similar objectives to Chapter 2.2 of protecting the health and safety of communities, of which workers are members. The community health and safety risk and impact assessment process includes collaboration with workers as per Criteria 2.9.5. Also, Criteria 2.7.4 has requirements that pertain to workers/employees that are triggered if there are significant risks to workers/communities related to HIV/AIDS, TB or malaria.
2.8—Community and Stakeholder Engagement	Workers are stakeholders, and also often members of the affected communities. As such, the engagement process with workers shall align with the requirements in Chapter 2.8.

TERMS USED IN THIS CHAPTER

Biological Exposure Indices (BEI)

The concentration of chemicals in the body that would correspond to inhalation exposure at a specific concentration in air.

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.

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 established and scientifically robust methodologies that would withstand scrutiny by other professionals.

Comprehensible Manner

In forms and languages that are easily understood by workers and/or other stakeholders.

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.

Hazard

A potential source of harm or adverse health effect on something or someone under certain conditions at work.

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.

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.

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.

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.

Training and Education

In this chapter, training shall be taken to refer to either training or education, as appropriate.

Worker

All non-management personnel.

Workers' Representative

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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 2.3
Emergency Preparedness and Response

BACKGROUND

Modern mines are large industrial facilities and have operational risks. These risks are common to industries that make, handle, transport and use fuels and chemical substances and include the potential for explosions, fires, releases of gas, ventilation failures, rock falls, avalanches, water or slurry inundation, radiation exposures, seismic events and environmental incidents.

Mining companies have direct responsibility for both minimizing risks (through prevention, mitigation, and preparedness) and developing effective and thoughtful emergency response plans for emergencies or major accidents. Mining companies must 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 very important 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.

TERMS USED IN THIS CHAPTER

Affected community ■ Mining Project ■ Operating Company ■ Subsidence ■ Worker ■ Workers' Representative ■

These terms are explained at the end of this chapter

OBJECTIVES/INTENT OF THIS CHAPTER

To plan for and be prepared to respond effectively to potential emergency situations, prevent or reduce the likelihood of accidents and minimize loss of life, injuries and damage to property, environment, health and social well-being.

SCOPE OF APPLICATION

Chapter Relevance: This chapter applies to the operating company and to its on-site contractors and subcontractors involved with dangerous and bulk materials at all mines applying for IRMA certification.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Removed general references to ILO such as "The operating company shall conform with the requirements of Part III of ILO Convention 176 on the Safety and Health in Mines, 1998," and created IRMA-specific requirements that lay out the information that was in the ILO materials. Where we drew on ILO Conventions we will reference it in Guidance for this chapter, so that companies and stakeholders will be able to see which requirements align with ILO. Similarly, removed references to OHSAS.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Emergency Preparedness and Response Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.3.1. Emergency Response Plan 2.3.1.1. All operations related to the mining project shall have an Emergency Response Plan conforming to the guidelines set forth in *United Nations Environment Programme, Awareness and Preparedness for Emergencies at the Local Level (APELL)* for Mining.[29] 2.3.1.2. The operating company shall:[30] a. Conduct an exercise to test the plan, with key participants describing how they would respond to a variety of different emergency scenarios, at least every 12 – 24 months; and b. Update the communications contacts of the Emergency Response Plan at least annually.	For 2.3.1.1, review the IRMA Guidance document for Chapter 2.3 for key components of an Emergency Response Plan as per the APELL. IRMA expects the Emergency Response Plan to meet the intent, not the letter, of the components outlined in the Guidance Document. Review of the operating company's emergency response plan. Confirm that emergency response plans are publicly available and readily accessible in appropriate formats (e.g., on-line, hard copies in various locations) and languages. Interview operating company and review documentation related to testing of emergency scenarios. Confirm that exercises take place annually and that that efforts are made to update communications contacts in the Emergency Response Plan annually. Review lists of participants. Contact a sample of participants and confirm that they have been contacted to update their information.
2.3.2. Community and Worker Consultation 2.3.2.1. The Emergency Response Plan shall be developed in consultation with potentially affected communities and workers and/or workers' representatives,[31] and the operating company shall incorporate their input into the Emergency Response Plan, and include their participation in emergency response planning exercises.	Interviews community stakeholders, workers and workers' representatives to confirm that they were consulted in the development and updating of emergency response plans. Review documentation showing that community members and workers have been involved in the development of emergency response plans (e.g., advertisements, meeting minutes, sign-in sheets).

[29] United Nations Environment Programme. 2001. Awareness and Preparedness for Emergencies at the Local Level (APELL) for Mining, (Technical Report 41). www.unep.fr/shared/publications/pdf/WEBx0055xPA-APELLminingEN.pdf See Appendix 1 for Components of an emergency response plan.

[30] This is in accordance with the APELL for Mining, Section 4, Step 3. See also ICMM. Good practice in emergency preparedness and response. p. 15. www.icmm.com/document/8

[31] This is based on ILO Conventions 174 and 176, OHSAS 18001. See IRMA Guidance for more details.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.3.3. Public Liability Accident Insurance 2.3.3.1. All operations related to the mining project shall be covered by a public liability accident insurance policy that provides financial insurance for unplanned accidental events. 2.3.3.2. The public liability accident insurance shall cover unplanned accidental events such as flood damage, landslides, subsidence, tailings dam failures, major spills of process solutions, leaking tanks, etc. 2.3.3.3. The accident insurance coverage shall remain in force for as long as the operating company, or its successors, has legal responsibility for the property.	Confirm, through interviews with operating company and review of documentation that a public liability accident insurance policy is in force. Review coverage to confirm that it covers a breadth of possible unplanned accidental events that may be related to mining. Assure that insurance (one or more policies) will cover both short and long-term events.

NOTES

The requirements in this chapter largely follow the guidance from the *United Nations Environment Programme, Awareness and Preparedness for Emergencies at the Local Level (APELL)* for Mining Technical Report No. 41 (2001). Additional guidance is also taken from: Part III of International Labour Organization (ILO) *Convention 176 on the Safety and Health in Mines, 1995*; Part III and Part V of ILO *Convention 174 on Prevention of Major Industrial Accidents, 1993*; and, the Occupational Health and Safety Assessment Series (OHSAS) 18001/2.

The chapter does not require a separate emergency response plan from those already prepared for mining projects, contractors, suppliers, and transportation companies, provided it can be demonstrated that the plan is in compliance with the standard.

There may be several different components of an emergency response plan maintained by different functional areas of the operating company, such as safety, environmental and social responsibility, security, and communications/external affairs. Emergency response plans that cover different operations and/or on/parts of a mine site should be combined into or integrated with a site-wide emergency response plan. At minimum, a single reference document shall exist that identifies the location(s), responsible person(s) and contact information for each of the separate emergency response plans or supplements to those plans. A crisis management/communications, rapid response, or other incident command system should be developed in conjunction with the emergency response plans.

Cross References to Other Chapters	
CHAPTER	**ISSUES**
1.1— Legal Compliance	As per Chapter 1.1, mine contractors and subcontractors must be IRMA compliant. So the operating company should be able to demonstrate that either contractors and subcontractors are aware of the company's emergency response plan, and/or have their own plan in place.
2.2— Occupational Health and Safety	Chapter 2.2 provides additional requirements related to worker safety, which may be partially addressed in the Emergency Response Plan. Conversely, emergency-related procedures may also be included in occupational health and safety procedures or plans.
2.7—Community Health and Safety	Information from the community health and safety risk and impact assessment may feed into the Emergency Response Plan.
2.8—Community and Stakeholder Engagement	Engagement with stakeholders during the development and updating of the Emergency Response Plan shall conform with the stakeholder engagement requirements in Chapter 2.8.
4.1—Environmental and Social Impact Assessment	Information from the environment and social impact assessment may feed into the Emergency Response Plan.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a project.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

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.

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.

Worker

All non-management personnel.

Workers' Representative

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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 2.4
Human Rights Due Diligence and Compliance

BACKGROUND

In 1948, the United Nations General Assembly adopted the *Universal Declaration of Human Rights*, which for the first time in human 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.[32] 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.[33]

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 corporations "should avoid infringing on the human rights of others."[34]

TERMS USED IN THIS CHAPTER

Actual Human Rights Impact ■ Adverse Human Rights Impact ■ Confidential Business Information ■ Collaborate ■ Consultation ■ Existing Mine ■ Grievance Mechanism ■ Human Rights Impact Assessment ■ Human Rights Risks ■ Inform ■ Mining Project ■ Mitigation ■ Mining Project ■ Operating Company ■ Potential Human Rights Impact ■ Relevant Business Relationships ■ Remediation/Remedy ■ Rights-Compatible ■ Rights Holder ■ Serious Human Rights Abuses ■ Significant Changes to Mining-Related Activities ■ Vulnerable Group ■

These terms are explained at the end of this chapter

OBJECTIVES/INTENT OF THIS CHAPTER

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

SCOPE OF APPLICATION

Chapter Relevance: This chapter applies to any mine that has the potential to affect the human rights of individuals or communities.

New vs. Existing Mines: Prior to the development of a new mine or certification of an existing mine, companies are expected to demonstrate that they have assessed the human rights risks and impacts

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[32] For more information, see the UN website: www.un.org/en/sections/what-we-do/protect-human-rights/index.html and OHCHR Human Rights website: www.ohchr.org/EN/ProfessionalInterest/Pages/UniversalHumanRightsInstruments.aspx

[33] 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

[34] 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

related to the mining operation. At existing mines, a human rights impact assessment is not required prior to certification, but such a formal assessment is expected for new mines. Additionally, the assessment of human rights impacts shall be updated at new and existing mines: prior to significant changes to mining-related activities and periodically throughout the life of an activity or relationship.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Removed corporate-level requirements.
- Added clarification in 2.4.3 on the expected actions required of companies depending on whether they "caused", "contributed to" or were "linked to" human rights impacts. And whether there were "actual" or "potential" impacts.
- Added more detail into the table at the end of the chapter that outlines "cross-references with other chapters", as there is quite a bit of overlap between this chapter and several others, and to make it clear that we are not expecting a company to duplicate work already done elsewhere.
- Removed specific criteria related to Grievance Mechanism, but included as a requirement (2.4.4.1), and cross-referenced the Grievance Mechanism chapter (i.e., 2.13) to reduce duplication with that chapter.
- Added a criterion related to Reporting (2.4.5). These requirements were previously in the Monitoring criterion.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Human Rights Due Diligence and Compliance Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.4.1. Policy Commitment 2.4.1.1. The operating company shall adopt a policy commitment that includes an acknowledgement of its responsibility to respect human rights.[35] 2.4.1.2. 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 operating company's human rights expectations of personnel, business partners and other parties directly linked to its	For 2.4.1.1, confirm that a policy commitment is in place that includes an acknowledgement to respect human rights. For 2.4.1.2: • Interview senior management or review documentation that shows the commitment is approved at the most senior level. • Interview relevant staff and review documentation to confirm the policy was informed by internal/external expertise.

[35] IRMA recognizes that for larger companies, a policy commitment may be made at the corporate level. In these cases, we do not expect operating companies to have their own 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 site's procedures and dealings with business partners, contractors, etc.).

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
mining operation; d. Be publicly available and communicated internally and externally to all personnel, business partners, other relevant parties and stakeholders; e. Be reflected in operational policies and procedures.	• Review documents to confirm the company has a policy/procedure that stipulates its expectations of personnel, business partners and others parties. • Interview company to confirm that the commitment was communicated internally and externally, and is publicly available, e.g., on a website, and/or in published materials. Interview stakeholders to confirm they were informed of the company's human rights commitments in formats understandable to them. • Review procedures, and interview relevant staff to confirm that the commitment to respect human rights has been integrated into the operation (i.e., recognized at different levels of the company).
2.4.2. Human Rights Impact Assessment 2.4.2.1. The operating company shall establish an ongoing process to identify and assess potential and actual human rights impacts from its activities and relevant business relationships: a. Prior to the development of a new mine the operating company shall conduct a human rights impact assessment (HRIA). b. At existing mines, the operating company shall demonstrate that is has identified and assessed its actual or potential adverse human rights impacts prior to applying for IRMA certification. c. At all mines, assessments of human rights impacts shall be updated periodically, including, at minimum: prior to a new activity or significant changes to mining-related activities; prior to new relationships; and in response to changes in the operating environment. 2.4.2.2. HRIAs shall follow a recognized impact assessment methodology,[36] but may be scaled to the size of the company and severity of potential	For 2.4.2.1 and 2.4.2.2, interview relevant operating company staff and review any related policies or procedures on how the company assesses its potential and actual human rights impacts. Confirm that an HRIA was completed in the appropriate timeframe, using a recognized impact assessment methodology. For 2.4.2.3, interview relevant operating company staff and/or review documentation of the relevant professional human rights expertise of those carrying out the assessment. For 2.4.2.4, review lists of stakeholders and persons with human rights expertise consulted during the HRIA process. Interview a sample of relevant stakeholders and rights holders, to determine if they consider their involvement in human rights impact assessment consultations to have been meaningful. For 2.4.2.5, interview relevant operating company staff and review documentation,

[36] IRMA Guidance will cover this more extensively, but impact assessments typically include: Scoping, to determine the relevant issues to assess; Stakeholder Consultations; Data Collection; Assessment of Significant Impacts; Development of Mitigation measures; and Monitoring (Mitigation and Monitoring are covered in more detail in 2.4.3. and 2.4.4, respectively).

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
human rights impacts. 2.4.2.3. The operating company shall ensure that HRIAs are conducted by teams or individuals with relevant professional human rights expertise or background. 2.4.2.4. As part of the HRIA process, the operating company shall draw on internal and/or external human rights expertise, and consult with potentially affected rights holders and other relevant stakeholders regarding the potential human rights impacts associated with the mining project. 2.4.2.5. A draft HRIA report shall be prepared that includes, at minimum: a. Assessment methodology; b. The current human rights context in the country and project area; c. Identification of relevant human rights laws, standards and issues; d. Identification of those whose human rights may be affected, including disadvantaged and vulnerable rights holders; e. Identification of potential and actual human rights impacts (disaggregated according to potential severity of the impacts, and by rights holder groups) related to the activities of the operating company and relevant business relationships; and f. Recommendations for preventing and mitigating potential impacts and remediating existing impacts. 2.4.2.6. At minimum, stakeholders who participated in the assessment shall have the opportunity to review the key issues and findings identified in the draft HRIA that are relevant to them, and shall be consulted to provide feedback on those findings. 2.4.2.7. Feedback on the draft HRIA shall be integrated into a final report, which shall be made publicly available. 2.4.2.8. The operating company shall integrate the HRIA findings across relevant internal functions and processes.	such as the HRIA methodology and the HRIA itself, to confirm that there has been consideration of the human rights context; that applicable rights have been identified through scoping, and addressed in the assessment; that rights are analysed with appropriate consideration of gender diversity and impacts on vulnerable groups, and where possible, there has been quantification and disaggregation of data; and that consideration has been given to potential means of preventing or mitigating potential impacts and remediating actual impacts. Review document to ensure its contents align with requirement 2.4.2.5. For 2.4.2.6 and 2.4.2.7, interview a sample of relevant stakeholders and rights holders to confirm that they had the opportunity to review the draft findings, and provide feedback. Interview operating company to determine public availability of HRIA (and confirm, e.g., by visiting company website or interviewing stakeholders to affirm that they can view the HRIA at an accessible location). For 2.4.2.8, interview relevant operating company staff to determine how the company integrated the findings across relevant internal functions and processes, e.g., confirm that identification, prevention, mitigation and remediation of adverse human rights impacts is an activity of focus for management, and is recognized at other levels of the company, and that procedures and processes have been revised if necessary based on the HRIA findings.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.4.3. Prevention, Mitigation and Remediation of Human Rights Risks and Impacts 2.4.3.1. Stakeholders shall have access to and be informed about a rights-compatible grievance mechanism to raise and seek recourse for concerns or grievances related to human rights.[37] 2.4.3.2. Responding to potential human rights impacts: a. If the operating company determines that adverse human rights impacts may be caused by its mining-related activities, it shall prioritize preventing impacts from occurring, and if this is not possible, design strategies to mitigate the potential impacts. Mitigation plans shall be developed in consultation with potentially affected rights holder(s). b. If the operating company determines that it may contribute to adverse human rights impacts, it shall take action to prevent or mitigate its contribution, and use its leverage to influence other contributing parties to prevent or mitigate their potential impacts. c. If the operating company determines that it may be linked to potential human rights impacts through its business relationships, it shall use its leverage to influence responsible parties to prevent or mitigate their potential impacts. 2.4.3.3. Responding to actual human rights impacts: a. If the operating company determines that it has caused an actual human rights impact, the company shall: i. Cease the activity responsible for the impact; ii. In a timely manner, develop mitigation strategies and remedies in collaboration with affected rights holders. If mutually acceptable remedies cannot be found through dialogue, the operating company shall attempt to reach agreement through	For 2.4.3.1, interview relevant operating company staff to determine how the company has communicated to stakeholders the existence of the operational-level grievance mechanism (see Chapter 2.13) and/or other means to raise concerns about human rights impacts related to company activities. Interview a sample of rights holders to confirm that they are aware of the existence of the operational-level grievance mechanism and/or other means to raise concerns about potential or actual human rights impacts related to company activities. For 2.4.3.2: • Interview relevant operating company staff to ensure that they understand the appropriate response to potential human rights impacts that have been caused, contributed, or linked to the company. • Interview a sample of affected rights holders to confirm they were informed of potential human rights impacts, and were offered means to ensure that they had the capacity to understand their rights and remedies; that the potential impacts identified in the HRIA or through other means were satisfactorily prevented or reduced as a result of mitigation; and that mitigation plans were developed through a consultative process. Review any company documentation on prevention and mitigation plans. • Interview relevant company staff to confirm they undertook actions to use leverage to mitigate impacts that they contributed to or were linked to (e.g., engaged with responsible parties to get convince them to prevent or mitigate potential human rights impacts, or to remediate actual impacts).

[37] The operational-level grievance mechanism developed as per Chapter 2.13 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 only human rights complaints and grievances. If a separate mechanism is developed, it shall be done in a manner that is consistent with Chapter 2.13.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
an independent, third-party mediator or another means mutually acceptable to affected rights holders; and iii. If relevant, cooperate with other legitimate processes such as judicial or State-based proceedings. b. If the operating company determines that it has contributed to, but another entity has caused, an actual adverse human rights impact, the operating company shall cease its contribution, use its leverage to mitigate any remaining impact, and cooperate in remediation processes. c. If the operating company determines that it is linked to an adverse impact has been linked to the company through its business relationships, the company shall use its leverage to prevent or mitigate the impacts from continuing or recurring.	For 2.4.3.3: • Interview affected rights holders and relevant company staff to determine if any actual adverse human rights impacts were stopped and remediated, and that remedies were developed in a collaborative process. Review any company documentation on remedies. • Interview affected rights holders to confirm that remedies provided for actual human rights impacts were developed in a collaborative manner, timely, culturally appropriate and agreed to in principle and accepted by them in practice. • Interview relevant company staff to confirm that they undertook actions to use their leverage to mitigate impacts that they were linked or contributed to.
2.4.4. Monitoring 2.4.4.1. The operating company shall monitor whether adverse human rights 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. 2.4.4.2. External monitoring of an operating company's human rights due diligence shall occur if the company's due diligence efforts repeatedly fail to prevent, mitigate or remediate adverse 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.[38] a. The company shall fund the external monitoring. The form of such monitoring, and selection of external monitors, shall be determined in collaboration with affected rights holders. b. An external monitoring report that includes findings and recommendations on how to improve the operating company's human rights	For 2.4.4.1, interview relevant operating company staff about the monitoring program. Review indicators, and any data from the monitoring program. Confirm that the company incorporated feedback from internal and external sources, including relevant stakeholders and/or affected rights holders, in the monitoring. For 2.4.4.2, determine, through interviews with relevant operating company staff and stakeholders, review of grievance mechanism findings, review of monitoring results, and other sources of information, if the company has been implicated in the repeated human rights infringements, or serious human rights abuses. If so, confirm that external monitoring of the company's human rights due diligence has occurred; that a collaborative process was undertaken to develop the external monitoring program; and that the affected rights holders had the capacity needed to engage in that process as per Chapter 2.8. Review the monitoring report.

[38] This requirement does not apply if a company has knowingly or intentionally caused, contributed to or been linked to serious human rights abuses. (See Notes section, below, on serious human rights abuses).

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
due diligence shall be produced and made publicly available.	
2.4.5. Reporting	For 2.4.5.1, review operating company website and published material to determine if the operating company has made progress reports publicly available. Review reports to confirm that they include information on the potential and actual human rights impacts that have been identified, and account for how the operating company has prevented, mitigated and/or remediated those impacts.
2.4.5.1. The operating company shall periodically report publicly on the effectiveness of its due diligence activities. Reports shall include information on the potential and actual human rights impacts that have been identified, and account for how the operating company has prevented, mitigated and/or remediated those impacts.	For 2.4.5.2, confirm that final HRIA, if relevant, the external monitoring report, and report on company's subsequent due diligence are publicly available.
2.4.5.2. Publicly available reports referred to in 2.4.2.7, 2.4.4.2.b and 2.4.5.1 may exclude information that is culturally inappropriate, politically sensitive, compromise the safety of any individual, or is legitimate confidential business information. Justification shall be provided for information that is omitted.	For 2.4.5.3, if relevant, confirm with operating company staff and stakeholders that the company has communicated a plan to improve its due diligence based on the external monitoring recommendations.
2.4.5.3. If relevant, the operating company shall report to stakeholders and rights holders on its plans to improve its due diligence activities as a result of external monitoring recommendations.	

NOTES

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

This chapter does not specifically address cases where operating companies knowingly contribute to serious human rights abuses. However, IRMA has created a draft Policy on Association to provide a means for IRMA to exclude companies from IRMA participation if those companies are directly or indirectly involved in activities that violate IRMA's core principles and values. It is likely that knowingly or intentionally causing or contributing to serious human rights abuses would be grounds for IRMA to exclude a company from participating, or terminate a relationship with a company that has an IRMA certified mine. In the current draft policy, the decision of whether or not to deny or withdraw IRMA certification, and any terms and conditions that might allow a company to re-associate with IRMA, will be made by the IRMA Steering Committee. The draft IRMA Policy on Association can be accessed at: www.responsiblemining.net/images/uploads/IRMA_Policy_On_Association_Draft_v1.0.pdf. IRMA welcomes comments on the draft policy.

In requirement 2.4.4.2, the decision to initiate external monitoring may be made by an operating company that has recognized (e.g., through its human rights due diligence processes, complaints filed through its operational-level grievance mechanism, observations made by a third party, or some other means) its repeated failure to prevent, mitigate or remediate human rights impacts, or that its due diligence has failed to prevent it from causing, contributing to, or being linked to serious human rights

abuses. External monitoring may also be suggested as a corrective action, if an IRMA auditor discovers during a certification audit that the operating company's due diligence has failed to prevent any of the situations listed above; or it may be suggested as a remedy through an IRMA Grievance Mechanism process (e.g., if stakeholders claim, on the basis of their own observations or those of third parties, that a company with a mine in the IRMA program has contributed to serious human rights abuses, or repeated human rights infringements). The IRMA Grievance Mechanism (under development) will afford IRMA stakeholders and the operating company involved in such a scenario due hearing as part of the grievance process, and will attempt to resolve grievances through agreed-upon remedies.

Cross References to Other Chapters	
CHAPTER	**ISSUES**
2.5—Mining in Conflict-Affected or High-Risk Areas	There is often a high risk for infringement of human rights at mines operating in conflict-affected or high-risk areas. If risks are identified during the conflict screening or risk assessment, the information may feed into the human rights impact assessment. Strategies developed to mitigate potential or actual human rights impacts identified in the conflict risk assessment must conform with relevant human rights due diligence requirements in Criteria 2.4.3.
2.6—Security Arrangements	Information from security risk assessments may feed into an HRIA. Strategies developed to mitigate potential or actual human rights impacts related to security arrangements must conform with the relevant human rights due diligence requirements in Criteria 2.4.3.
2.8—Community and Stakeholder Engagement	Engagement with stakeholders and rights holders in Chapter 2.4 must conform with the requirements of Chapter 2.8. In particular, criterion 2.8.3 is important to ensure that affected rights holders have the capacity to fully understand their rights and participate effectively in the assessment and development of prevention/mitigation plans, monitoring, and remedies for impacts on their human rights. And 2.8.4 ensures that communications and information are in culturally appropriate formats and languages that are accessible and understandable to affected communities and stakeholders, and are provided in a timely manner.
2.10—Free, Prior and Informed Consent	Indigenous peoples are rights holders, and mining developments pose risks to their individual and collective human rights. The requirements in 2.10 are meant to facilitate a rights-compatible relationship between indigenous peoples and mining companies. See requirement 2.10.1.1 on the company's policy commitment to respect indigenous peoples rights; and requirements 2.10.3.2.a, b and c, related to engagement with indigenous peoples in the assessment of potential impacts on indigenous peoples' right from mining-related activities.
2.13—Grievance Mechanism and Access to Other Remedies	As mentioned in 2.4.3.1, the operating company shall ensure that stakeholders have access to a mechanism for raising human rights concerns. Any operational-level grievance mechanism developed as per Chapter 2.13 is required to be "rights-compatible," and should be appropriate for raising human-rights-related complaints. It may be deemed necessary, however, to create a separate mechanism for determining appropriate remedies for human rights abuses. If a separate mechanism is created, it is expected to adhere to the requirements of Chapter 2.13.
4.1—Environmental and Social Impact Assessment	As long as a Human Rights Impact Assessment meets the requirements in Criterion 2.4.4, it may be conducted as stand-alone assessment or integrated into a larger impact assessment process (e.g., the Environmental and Social Impact Assessment mentioned in Chapter 4.1).

TERMS USED IN THIS CHAPTER

Actual Human Rights Impact

An adverse impact that has already occurred or is occurring.

Adverse Human Rights Impact

When an action removes or reduces the ability of an individual to enjoy his or her human rights.

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. **Note**: IRMA's definition of Confidential Business Information is not settled. Stakeholder input welcome.

Collaborate

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.

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.

Existing Mine

A mine that was operational prior to the date that the IRMA Standard first went into effect.

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.

Human Rights Impact Assessment

A Human Rights Impact Assessment (HRIA) is an instrument for examining policies, legislation, programs and projects and identifying and measuring their effects on human rights. The fundamental purpose of HRIA is to help prevent negative effects on human rights and maximize positive effects. HRIA, as with other impact assessments, are carried out through a series of steps: Preparation; Screening; Scoping; Evidence Gathering; Consultation; Analysis; Conclusions and Recommendations; Monitoring and Evaluation; and Preparation of HRIA report.

Human Rights Risks

Human rights risks are understood to be the business enterprise's potential adverse human rights impacts.

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.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

Mitigation (in relation to human rights impacts)

The mitigation of adverse human rights impact refers to actions taken to reduce its extent, with any residual impact then requiring remediation. The mitigation of human rights risks refers to actions taken to reduce the likelihood of a certain adverse impact occurring.

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Standard first takes effect.

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.

Potential Human Rights Impact

A potential human rights impact is an adverse impact that may occur but has not yet done so.

Relevant Business Relationships

Include relationships with business partners, entities in its value chain, and any other non-State or State entity directly linked to its business operations, products or services.

Remediation/Remedy (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 harm through, for example, injunctions or guarantees of non-repetition.

Rights-Compatible

In reference to grievance mechanism, means ensuring that outcomes and remedies accord with internationally recognized human rights.

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.

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.

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.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, and groups that would be vulnerable due to other circumstances (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, and groups that suffer social or economic discrimination, including indigenous peoples and minorities.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 2.5
Mining and Conflict-Affected or High-Risk Areas

BACKGROUND

Mining 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 operation, and in other cases conflict may be caused or exacerbated by a company's activities or presence in an area.

Developing suitable responses to conflict risks is challenging, but guidance exists to assist companies in identifying, assessing and mitigating risks and impacts associated with operating in an area of existing or latent conflict.[39] 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.[40]

TERMS USED IN THIS CHAPTER

Collaborate ■ Competent Professionals ■ Conflict-Affected or High-Risk Area ■ Conflict Risk ■ Consultation ■ Existing Mine ■ Grievance ■ Mining Project ■ New Mine ■ Operating Company ■ Serious Human Rights Abuses ■ Stakeholder ■

These terms are explained at the end of this chapter

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

Chapter Relevance: All mines applying for IRMA certification are expected to have undertaken conflict screening (Criterion 2.5.1) to determine if they are in a conflict-affected or high-risk area. The due diligence requirements that follow 2.5.1 are relevant for mines that are proposed or located in conflict-affected or high-risk areas, as well as mines that have product that is transported through conflict-affected or high-risk areas (if the material is in the custody or ownership of the operating company).[41]

New vs. Existing Mines: New mines are expected to undertake conflict screening, and any required due diligence, as early as possible during the project investment phase. Existing mines will not be expected to have carried out conflict screening prior to project investment. They will, however, be required to undertake screening, and any other required due diligence, prior to applying for IRMA certification.

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[39] IRMA Guidance will include references for resources related to due diligence for mining in conflict-affected areas, as well as resources on how to carry out a conflict sensitive approach to business practices.

[40] OECD. 2013. Due Diligence Guidance on Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (2nd Ed.) p. 3. www.oecd.org/corporate/mne/GuidanceEdition2.pdf

[41] This is based on a similar requirement found in the World Gold Council's Conflict-Free Gold Standard. A2.4. Available at: www.gold.org/gold-mining/responsible-mining/conflict-free

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Restructured the chapter to more closely align with a typical Risk Assessment Methodology, i.e., assessment, risk management (including development of mitigation strategies), monitoring, and reporting. Also moved "no contribution to conflict" to criteria 2.5.2.
- Removed the reference to the Heidelberg Barometer as the default method to be used to determine whether or not the mining project is located in a conflict-affected/high risk area, and instead, use language taken from the OECD Due Diligence Guidance and UN Guiding Principles on Business and Human Rights.
- Removed specific reference that the report on conflict due diligence be in the dominant languages of potentially affected stakeholders. Communications with stakeholders is covered in Chapter 2.8, and it is mentioned in the table of Cross References to Other Chapters at the end of the chapter.
- Now refer in text (and Cross Reference table) to Chapter 2.4. E.g., if risks related to human rights are uncovered in the conflict risk assessment, companies need to adhere to the requirements related to prevention, mitigation or remediation of human rights risks and impacts laid out in Chapter 2.4.
- Cross Reference table acknowledges that information gathered for the conflict screening and/or risk assessment, may feed into other company assessments such as security risk assessment, ESIA, human rights impact assessments, and vice versa.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Mining and Conflict-Affected or High-Risk Area Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.5.1. Conflict-Affected/High-Risk Area Screening 2.5.1.1. Prior to the development of a new mine,[42] the operating company shall conduct a screening analysis to determine whether or not the proposed mining project is located in a conflict-affected or high-risk area. 2.5.1.2. Screening shall be based on evidence from credible sources, and be informed by consultations with relevant local stakeholders, as well as expert advice.[43]	For 2.5.1.1, confirm that screening occurred during the appropriate timeframe. Note that existing mines are not expected to have carried out conflict screening prior to mine development. They are, however, required to have undertaken screening, and any other required due diligence, prior to applying for IRMA certification. For 2.5.1.2, review the operating company documentation and rationale for its

[42] Ideally, this should take place early in the project investment phase.

[43] IRMA Guidance will provide more information and references regarding what is meant by evidence from credible sources, relevant stakeholders and expert advice. But as an examples: **credible sources** may include reports and other information (e.g., maps, statements) from governments, international organizations, NGOs, industry, media, United Nations or others (e.g., ethical pension funds) relating to mineral extraction, and its impact on conflict, human rights or environmental harm in the country of potential origin, as well as criteria and indicators of conflict-affected or high-risk areas developed through multi-stakeholder initiatives; **relevant stakeholders** may include local government or community leaders; civil society organizations; other companies operating in

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.5.1.3. Screening analyses, including sources of information and rationale used to justify whether or not their mining-related activities occur in a conflicted-affected or high-risk area, shall be documented, and provided to senior management of the operating company.	determination of whether or not the operation is in a conflict-affected or high-risk area. If there is any question about the determination, e.g., from stakeholders, compare company analysis with sources of "credible evidence".
2.5.1.4. If a determination is made that the project is located in a conflicted-affected or high-risk area then the company shall undertake the additional due diligence steps outlined in the remainder of this chapter.	For 2.5.1.3, interview operating company and review documentation to confirm that stakeholders and expert opinion helped to inform the screening. Interview stakeholders and experts to confirm that their input was reflected in the company's screening analysis.
2.5.1.5. If a determination is made that the project is not located in a conflicted-affected or high-risk area, conflict-related risks shall be monitored at a level commensurate with the potential that the area may become a conflict-affected or high-risk area.[44] 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.	For 2.5.1.5, determine who, within the company, has the responsibility to monitor conflict issues, and interview them and/or review any documentation or mechanisms being used to monitor the situation and update screening analyses.
2.5.2. Company Management Systems	
2.5.2.1. When operating in a conflict-affected or high-risk area, the operating company shall not knowingly contribute to armed conflict,[45] 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 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	For 2.5.2.1, review credible sources (e.g., reports and other information from the United Nations, governments, international organizations, NGOs, media, United Nations, to determine if the company has been implicated in knowingly contributing to conflict as per 2.5.2.1. For 2.5.2.2.a, confirm that the operating company or its corporate owner has a policy on conflict-affected areas, and find out how it has been communicated to stakeholders.

the area; or independent experts with local knowledge and expertise; and **expert advice,** as elaborated on in the Guiding Principles on Business and Human Rights, includes drawing on not only expertise and cross-functional consultation within the company, but also to consult externally with credible independent experts, including from Governments, civil society (e.g., human rights defenders), national human rights institutions and relevant multi-stakeholder initiatives.

[44] For example, mines located in many parts of the United States, Canada or Australia may not need to perform monitoring because the areas are stable, have good governance, high standards of living, etc. However, in other countries where peace and security may exist but be somewhat fragile, or even in some regions of so-called stable countries, there may be the need to monitor the situation more closely (e.g., areas where there is potential for localized conflicts, protests, etc. to arise).

[45] Contributing to armed conflict includes, but is not limited to, making payments to or otherwise providing logistical assistance or equipment to any party involved in the armed conflict. It does not include legally required forms of support, including legal taxes, fees, and/or royalties that companies pay to the government of a country in which they operate. Note: Unlike the remainder of requirement 2.5.2.1, "the operating company shall not knowingly contribute to armed conflict" is not limited by whether or not there was illegal activity by the armed parties.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
transportation routes or at points where minerals are traded; or c. Illegally tax or extort intermediaries, export companies or international traders.[46] 2.5.2.2. When operating in a conflict-affected or high-risk area, the operating company shall: a. Adopt and communicate to the public and stakeholders a commitment that when operating in a conflict-affected or high risk area the operating company will not knowingly or intentionally cause, contribute to or be linked to conflict or the infringement of human rights by any party;[47] b. Maintain documentation on the quantity and dates of mineral extraction; locations where minerals are consolidated, traded or processed; all mining-related taxes, fees, royalties or other payments made to governmental officials, including public security forces; all payments made to private security forces or other armed groups; and transportation routes.[48] This information shall be made available to downstream purchasers and auditors 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;[49] c. Assign authority and responsibility to senior staff with the necessary competence, knowledge and experience to oversee the conflict screening and due diligence processes;	Confirm, e.g., through visiting the company or corporate owner website, that the policy is publicly available. For 2.5.2.2.b, interview relevant operating company staff to confirm that the company maintains the required documentation. Confirm that documentation as per 2.5.2.1.b. has been made available to downstream purchasers and others. Review the documentation to ensure that it has been kept up to date. For 2.5.2.2.c, determine who is the operating company senior staff in charge of the conflict screening and due diligence process, and confirm that he or she has the competence, knowledge and experience to be in that position. For 2.5.2.2.d, interview operating company staff and/or to confirm that there is a grievance mechanism in place to address conflict-related issues. Determine if stakeholders had input in the design of the mechanism. Interview stakeholders to determine if they know about and would feel comfortable using the grievance mechanism for conflict-related concerns.

[46] "Direct or indirect support" includes, but is not limited to, procuring minerals from, making payments to or otherwise providing logistical assistance or equipment to non-state armed groups or public or private security forces; it does not include legally required forms of support, including legal taxes, fees, and/or royalties that companies pay to the government of a country in which they operate. (OECD. 2013. *Due Diligence Guidance on Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* (2nd Ed.) p. 22. www.oecd.org/corporate/mne/GuidanceEdition2.pdf). See Notes at the end of the chapter.

[47] The commitment may be integrated into an existing policy, such as a human rights policy, or be a public statement regarding operations in conflict-affected areas. Additionally, the operating company may develop its own policy, or adopt a corporate owner's policy as long as it clearly communicates the operating company's commitment to abide by the corporate-level policy.

[48] This type of documentation is required in Chapter 1.2, other than payments to private security forces/armed groups.

[49] 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.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
and d. Ensure that stakeholders have access to and are informed about a mechanism to raise conflict-related concerns or grievances.[50]	
2.5.3. Conflict Risk Assessment 2.5.3.1. The operating company shall assess the potential risks to the company and impacts to workers and communities associated with operating in the conflict-affected or high-risk area. 2.5.3.2. The assessment shall follow a recognized risk assessment methodology,[51] and be carried out and documented by competent professionals with appropriate training or expertise.[52] 2.5.3.3. The assessment shall include, at minimum: a. An analysis of structural, root and proximate causes of the current conflict, and potential triggers of conflict in the area of operation;[53] b. A review of the factual circumstances of the operating company's mineral extraction, transport, and, if relevant, mineral processing;[54] and c. An analysis of the risk that any of the company's activities may lead to the direct or indirect or infringement of human rights or support of armed groups. 2.5.3.4. The assessment shall be based on credible evidence including on-the-ground research, expert advice, and information from consultations with relevant stakeholders.[55]	For 2.5.3.1, review the risk assessment and confirm it followed a recognized methodology. For 2.5.3.2, review the conflict risk assessment to ensure that it included: • An analysis of the structural/root and proximate causes, and triggers. • A review of factual circumstances of the operating company's mineral extraction, transport and, if relevant, processing. Review the OECD Guidance and IRMA guidance to compare the types of risks that the company should have included in its assessment with the ones that were assessed. If the risk assessment lacks an adequate level of detail, interview members of the assessment team to determine the rationale for why certain risks were not assessed. • An analysis of the potential for company activities to lead to direct or indirect infringements of human rights or support of armed groups. For 2.5.3.3, review documentation to confirm that it was based on credible evidence, on-the-ground research and expert advice. Interview stakeholders

[50] The operational-level grievance mechanism developed as per Chapter 2.13 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 2.13.

[51] Guidance will cover this more extensively, but 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.

[52] The assessment may be carried out internally (by the company) or by external, third-party experts, as long as they are competent to carry out the work.

[53] IRMA Guidance will provide more information on what is meant by structural, root and proximate causes, as well as potential triggers of conflict.

[54] IRMA Guidance will provide more information on what is meant by "factual circumstances" and examples of the types of information that might be relevant to review.

[55] IRMA Guidance will provide more information on what constitutes "credible evidence", "on the ground research", and what is meant by relevant stakeholders and expert advice.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.5.3.5. Conflict risk assessments shall be updated at minimum, on an annual basis, and more often if necessitated by the situation.	regarding their involvement in the risk assessment process. For 2.5.3.4, review documentation (e.g., resumes). For 2.5.3.5, interview company and review documentation to confirm that conflict risk assessments are updated at least annually.
2.5.4. Conflict Risk Management 2.5.4.1. The operating 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. 2.5.4.2. The operating company shall collaborate with relevant stakeholders to develop culturally appropriate strategies to prevent or mitigate risks that are relevant to them; to develop performance objectives, timelines and indicators to measure the effectiveness of the risk management strategies; and to update or revise its prevention and mitigation strategies as needed. 2.5.4.3. If risks to human rights are identified in the assessment, the operating company shall adhere to the requirements in IRMA Chapter 2.4.[56]	For 2.5.4.1, review risk management plan to ensure strategies have been developed to address risks identified in the assessment. For 2.5.4.2, interview company and stakeholders involved in risk management planning to confirm that stakeholders have been involved in developing prevention and mitigation strategies, as well as plans to monitor the effectiveness of the risk management measures (e.g., objectives, indicators and timelines). For 2.5.4.3, confirm that risks to human rights have been addressed as per the requirements of Chapter 2.4. (e.g., prevention and mitigation of human rights infringements caused by the company; and plans for the company to use its leverage related to human rights risks that it may contribute to or be linked to).
2.5.5. Monitoring 2.5.5.1. The operating company shall implement and monitor the effectiveness of its risk management plan as per the performance objectives, timelines and indictors developed with stakeholders. 2.5.5.2. If through monitoring or some other means it is discovered that the operating company has unknowingly or unintentionally been complicit in armed conflict or serious human rights abuses in conflicted-affected or high-risk areas, the operating company shall immediately cease the offending action, mitigate or remediate the impact, and carry	For 2.5.5.1, review documentation and interview relevant company staff to confirm that monitoring has been carried out in accordance with timelines, and effectiveness has been evaluated based on performance objectives and indicators developed in collaboration with stakeholders. Review any updates to strategies (e.g., revisions plans) based on monitoring results. For 2.5.5.2, review documentation (meeting notes, memos) or interview senior management and relevant stakeholders, contractors and employees, to confirm that they were made aware of monitoring

[56] Chapter 2.4—Human Rights Due Diligence and Compliance. (See specifically, requirement 2.4.3.2).

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
out external monitoring of its due diligence activities as per as per IRMA Chapter 2.4.[57]	results. Determine, through interviews with company staff and stakeholders, review of grievance mechanism findings, review of monitoring results, or other sources of information, if the company has been implicated in the repeat human rights infringements, or serious human rights abuses. If so, confirm that external monitoring of the company's human rights due diligence occurred.
2.5.6. Reporting	For 2.5.6.1, review documentation (e.g., meeting notes, memos) interview senior management and relevant stakeholders (e.g., those identified in the risk assessment as being potentially affected, and contractors/employees who have the potential to infringe upon human rights or whose safety may be affected by armed conflict) to confirm that they have been informed of the major findings of the risk assessments, plans and monitoring.
2.5.6.1. The findings of conflict risk assessments, risk management plans and monitoring shall be reported to senior management of the operating company, and stakeholders, contractors and employees shall be informed of findings that are relevant to them.	
2.5.6.2. The conflict risk assessment, risk management plans and monitoring data shall be made available to the IRMA auditor.	For 2.5.6.2, review risk assessment, management plans and monitoring data for completeness.
2.5.6.3. On an annual basis, the operating company shall publicly report on due diligence undertaken to ensure that it is not supporting armed conflict or the infringement of human rights while mining in the conflict-affected or high-risk area.[58]	For 2.5.6.3, confirm that annual reports are publicly available and provide information on the due diligence undertaken by the company to ensure that its mining-related activities are not supporting armed conflict or infringement of human rights.

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). The OECD Guidance formed the basis for many of the requirements in this chapter. IRMA Guidance will provide information on where IRMA requirements align with the OECD.

IRMA reserves the right to delay certification audits for operations located in conflict-affected or high-risk areas if, through consultation with auditors and the operating company, IRMA determines that armed conflict in the vicinity of the mine makes it impossible for auditors to safely visit the operation.

[57] Chapter 2.4—Human Rights Due Diligence and Compliance. (See specifically, requirements 2.4.3.3. and 2.4.4.2.).

[58] This report may be integrated into the reporting on human rights due diligence as per IRMA requirement 2.4.5.1. More information will be provided in IRMA Guidance.

Requirement 2.5.2.1 prohibits a company from knowingly contributing to conflict. This requirement does not speak to impacts on human rights. Chapter 2.4 addresses IRMA's expectations related to the unknowing or unintentional infringement of human rights. If a company knowingly contributes to serious human rights abuses, whether in a conflict-affected area or not, IRMA, through its Policy on Association, may decertify the mining operation and/or end its association with a company. A draft IRMA Policy on Association is at: www.responsiblemining.net/images/uploads/IRMA_Policy_On_Association_Draft_v1.0.pdf. IRMA welcomes comments on the draft policy.

Cross References to Other Chapters	
CHAPTER	**ISSUES**
1.2—Revenue and Payments Transparency	Information gathered to fulfil requirements in Chapter 2.5 (e.g., 2.5.2.1, 2.5.3.1) may feed into the reporting requirements in Chapter 1.2. (e.g., requirements 1.2.1.3 and 1.2.3.2) regarding payments to governments.
2.4—Human Rights Due Diligence and Compliance	Information from human rights impact assessments may feed into the conflict risk assessment, and vice versa, and public reporting on conflict due diligence (i.e., requirement 2.5.6.3) may be integrated into the public reporting on human rights due diligence reporting, as per requirement 2.4.5.1, if human rights due diligence reporting is done on an annual basis. Strategies developed to mitigate potential or actual human rights impacts related to mining in conflict-affected areas must conform with the relevant requirements in Criteria 2.4.3. External monitoring as per requirement 2.4.4.2 shall occur if a company's conflict-related due diligence failed to prevent it from unknowingly causing or contributing to armed conflict or serious human rights abuses.
2.6—Security Arrangements	Information related to security arrangements from conflict risk assessments (e.g., the use of private or public security forces at the mine site or along transportation routes, payments made to these entities, history of infringement of human rights by security forces, etc.) may feed into the security risk assessments, and vice versa.
2.8—Community and Stakeholder Engagement	All stakeholder engagement in Chapter 2.5 must conform with the requirements of Chapter 2.8. In particular, criterion 2.8.3 is important to ensure that affected stakeholders have the capacity to fully understand their rights and participate effectively in the assessment and development of prevention/mitigation plans, monitoring, and remedies for impacts on their safety and human rights in conflict-affected or high risk areas. And 2.8.4 ensures that communications and information are in culturally appropriate formats and languages that are accessible and understandable to affected communities and stakeholders, and provided in a timely manner.
2.13—Grievance Mechanism and Access to Other Remedies	As mentioned in 2.5.2.1.d, the operating company shall ensure that stakeholders are informed of the existence of mechanisms for raising concerns conflict-related concerns. The operational-level grievance mechanism developed as per Chapter 2.13 may serve this purpose. It may be deemed necessary, however, to create a separate mechanism or separate procedures for handling complaints from stakeholders in conflict-affected areas. If a separate mechanism or procedures are created, they must be developed in a manner that aligns with Chapter 2.13.
4.1—Environmental and Social Impact Assessment	Conflict screening may occur as part of the Environmental and Social Impact Assessment process.

TERMS USED IN THIS CHAPTER

Collaborate

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.

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, necessary skills and training to carry out the required work; would be expected to follow established and scientifically robust methodologies that would withstand scrutiny by other professionals.

Conflict-Affected or 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 OECD Guidance (more information in full IRMA Glossary). 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.

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.

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.

Existing Mine

A mine that was operational prior to the date that the IRMA Standard first went into effect.

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.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Standard first takes effect.

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.

Stakeholder

Persons/groups directly or indirectly affected by a project, such as rights holders, as well as those who may have interests in a project or the ability to influence its outcome, positively or negatively.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 2.6
Security Arrangements

BACKGROUND

Security risks to mining operations may result from political, economic, civil or social factors. The role of public or private security forces used in relation to mining operations should be to maintain the rule of law, including safeguarding human rights; provide security to mine workers, equipment and facilities; and protect the mine site or transportation routes from interference with legitimate extraction and trade.

TERMS USED IN THIS CHAPTER

Affected Community ■ Competent Authority ■ Conflict Analysis ■ Mining Project ■ Mitigation ■ Operating Company ■ Potential Human Rights Impact ■ Remediation/Remedy ■ Stakeholder ■ Worker ■

These terms are explained at the end of this chapter

Mine 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 their operations.

OBJECTIVES/INTENT OF THIS CHAPTER

To manage security in a manner that protects mining operations and products without infringing on human rights.

SCOPE OF APPLICATION

Chapter Relevance: The majority of the requirements in this chapter are relevant for any operating company that employs security personnel (e.g., security guards, public or private security forces) at its mine site, or in relation to transportation of its products or ore. Some requirements in this chapter are only relevant for companies that have security arrangements involving private security providers (2.6.1.3 and 2.6.4.1), and others are only relevant if public security forces such as police or military personnel are used (i.e., 2.6.1.4, 2.6.4.2, and 2.6.6.3).

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Removed the requirement to make a public "commitment to implement systems consistent with the Voluntary Principles." It was not the intent that companies become VP participants, as that could present a barrier to some companies that may not have resources for attending meetings and undertaking the promotion required of participants. If companies meet the requirements of the IRMA chapter, they will be implementing systems consistent with the relevant provisions in the VPs.
- Changed the heading on 2.6.3 from "Conduct Human Rights Screenings" to "Due Diligence Prior to Hiring Security Personnel," as the latter is the term used in the VP Implementation Guidance Tool.
- To reduce duplication and overlap between chapters, removed the old Criteria 2.6.5. Management of complaints and grievances, which referred to the IRMA chapter on Grievance Mechanism. Security-related grievances are still addressed in 2.6.6.2. And the overlap is mentioned in the table on Cross References to Other Chapters at the end of this chapter.

- The Cross Reference table that follows the requirements acknowledges that information gathered for the security risk assessment may feed into a conflict risk assessment, ESIA, human rights impact assessment, and vice versa.
- Revised the annual reporting requirement to enable verbal reports to stakeholders or published reports such as those submitted as part of the VP process
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Security Arrangements Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.6.1. Policies and Commitments Related to Security and Human Rights 2.6.1.1. The operating 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 mining 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.[59] 2.6.1.2. The operating company shall have procedures in place regarding the use of force and firearms that align with the best practices expressed in UN *Basic Principles on the Use of Force and Firearms*.[60] 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. 2.6.1.3. If private security is used in relation to the mining operation, the operating company shall have a signed contract with private security	For 2.6.1.1, confirm with the operating company that it has a policy in place related to security and human rights. The company's security policy may be integrated into a broader human rights or other policy. Ensure relevant policies and commitments are publicly available, e.g., published on operating company website or in materials distributed by the operating company, etc. • Review company documentation (e.g., risk assessments, records related to revenue transparency, payments and equipment transfers, human rights screening) to determine if it may be supporting security forces that are infringing on human rights. • Review other sources of credible information, including interviews with relevant stakeholders or experts, to determine if the company may be operating in contravention to its policy commitments. For 2.6.1.2, confirm through interviews with relevant operating company staff and document review that procedures are in place related to the use of force and firearms, and that they are consistent with best practices. For 2.6.1.3, if relevant, review signed

[59] These commitments may be made in a broader Human Rights Policy, or another relevant policy.

[60] UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials (Available at: www.ohchr.org/EN/ProfessionalInterest/Pages/UseOfForceAndFirearms.aspx)

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
providers that at minimum: a. Sets out agreed on principles that are consistent with the Voluntary Principles on Security and Human Rights and other applicable international guidelines[61] and the operating 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 operation; and c. Outlines required training for security personnel. 2.6.1.4. If public security forces are used in relation to the mining operation, the operating company shall make a good faith effort to sign a Memorandum of Understanding (MoU) with public security providers that includes similar provisions to those in 2.6.1.3.	contracts with private security providers to confirm that they include principles and requirements consistent with the VPs. For 2.6.1.4, if relevant, review MoU with public security providers. If no MoU has been signed, determine, through interviews with relevant operating company staff, that good-faith efforts were made to establish an MoU.
2.6.2. Security Risk Assessment and Management 2.6.2.1. Prior to or during the early stages of project development, and as needed,[62] the operating company shall follow a recognized risk assessment methodology[63] to assess security risks and potential human rights impacts that may arise from security arrangements. 2.6.2.2. The scope of the security risk assessment shall include, but not be limited to: the identification of security risks; the potential for violence; the human rights records of private or public security forces; the rule of law; an analysis of the root causes of conflict (e.g., conflict analysis); and equipment transfers.	For 2.6.2.1, confirm that security risk assessment was conducted during the appropriate timeframe, and determine if it has been updated, and if not, the company's rationale for not doing so. Interview stakeholders to determine if they agree with the company's rationale. For 2.6.2.2, review security risk assessment for specific components such as conflict analysis, identification of security risks, root causes of conflict, etc. If there are gaps compared to the list of security-related issues identified in IRMA Guidance, interview company to confirm that they had

[61] E.g., the International Code of Conduct for Private Security Service Providers (Available at: icoca.ch/en/the_icoc); UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials; and the UN Code of Conduct for Law Enforcement Officials (Available at: www.iansa.org/system/files/UNcodeconduct.pdf).

[62] Risk assessments in 2.6.2 are not one-time occurrences. According to the Voluntary Principles on Security and Human Rights 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. www.icmm.com/document/2199)

[63] Guidance will cover this more extensively, but 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.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.6.2.3. The identification and assessment of security-related risks shall be based on credible information obtained from a range of perspectives, including relevant stakeholders and expert advice.[64] 2.6.2.4. The operating 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. 2.6.2.5. If the security risk assessment reveals the potential for conflicts between community members or workers and mine security providers, the operating company shall collaborate with communities and/or workers to develop culturally appropriate strategies to prevent or mitigate those risks. If specific risks to human rights are identified in the assessment, the mitigation strategies shall conform with requirements in IRMA Chapter 2.4.[65]	a justifiable rationale for excluding certain issues from the scope of the risk assessment. For 2.6.2.3, review documentation of the stakeholders and others who were consulted (e.g., gov't representatives, security firms, other companies, human rights institutions, civil society, independent experts, etc.), and the materials reviewed (e.g., reports, other assessments, human rights records, laws) during the assessment. For 2.6.2.4, review the risk management plan to confirm that the company documented the actions to be taken to address identified risks, including monitoring to ensure that its actions were effective. For 2.6.2.5, if risks to communities or workers were identified, review evidence (e.g., minutes of meetings) that the company and relevant community members/workers developed prevention or mitigation strategies through a collaborative process. If necessary, follow up with stakeholder interviews. If human rights risks were identified, confirm that prevention/ mitigation strategies were designed as per Chapter 2.4.
2.6.3. Due Diligence Prior to Hiring Security Personnel 2.6.3.1. The operating company shall develop and implement due diligence procedures[66] 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	For 2.6.3.1, review due diligence procedures and documentation showing that these procedures were used prior to hiring company security and private security firms. If the operating company is relying on the private security provider's own due diligence screening of its employees, the auditor should review any documentation provided

[64] Relevant local stakeholders may include local government or community leaders; civil society organizations; 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. See IRMA Guidance for more information.

[65] IRMA Standard, Chapter 2.4—Human Rights Due Diligence and Compliance. (See specifically, requirement 2.4.3.2).

[66] 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. www.icmm.com/document/2199) This will be explained in more detail in IRMA guidance.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
humanitarian law or the use of excessive force. 2.6.3.2. The operating 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.	by the private security company. For 2.6.3.2, review any operating company procedures and documentation related to efforts to determine if public security personnel have been credibly implicated in human rights abuses, breaches of international humanitarian law or excessive use of force.
2.6.4. Training 2.6.4.1. Prior to deployment of company or private security personnel, the operating company shall provide training that incorporates, at minimum, information related to ethical conduct and respect for the human rights of mine workers and affected communities, and the company's policy on the appropriate use of force and firearms. Initial training and refresher courses shall be mandatory for all operating company personnel involved in security, and for private security contractors that have not received equivalent training from their employers. 2.6.4.2. If public security forces are to be used, the operating 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 operating company shall offer to facilitate training for public security personnel that provide mine-related security. 2.6.4.3. If requested by the community, the operating company shall offer a separate training or workshop for community stakeholders on the company's procedures on the use of force and firearms, and other relevant issues related to security and human rights.	For 2.6.4.1, review records of training sessions, including whether participants were company employees, private contractors, public security, or community members. Review procedures for training new workers and providing refresher courses. Review training materials to confirm that they at least covered topics of human rights of workers and community members, ethical conduct, appropriate use of force and firearms. If private security employees have not been trained by the operating company, review the contract between the operating company and security provider and interview the operating company to confirm that the private security personnel received appropriate training. For 2.6.4.2, if public security providers have not been trained on human rights and the appropriate use of force, determine if the operating company has made efforts to facilitate such training by another party. For 2.6.4.3, review records of trainings, and/ or interview community members to determine if they were offered trainings on issues related to security and human rights.
2.6.5. Management of Security Incidents 2.6.5.1. The operating 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	For 2.6.5.1, review operating company procedures for documenting and recording/ tracking and investigating security incidents; how it determines appropriate disciplinary actions for different types of incidents; procedures for mitigating and remediating impacts related to human rights, injuries or fatalities; procedures for reporting security incidents to appropriate

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
unlawful acts by security personnel and acts that contravene the company's policies on rules of engagement, the use of force, and firearms; c. Take appropriate actions to mitigate and provide remediation for human rights impacts (as per IRMA Chapter 2.4[67]), injuries or fatalities caused by security providers; d. Report security incidents, including any credible allegations of human rights abuses by private or public security providers, to the 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.	authorities; procedures and facilities available for provision of medical aid; procedures to protect those filing security-related allegations. Interview relevant operating company staff to confirm that they understand the procedures. Determine if there are cases of inappropriate use of force through review of complaints and company annual reports; and interviews with the company, workers/workers' representatives and community members). If inappropriate force has been used, confirm that appropriate disciplinary action was taken by the company, and follow-up (e.g., medical aid; report to authorities) occurred.
2.6.5.2. 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, any investigations that are underway, and shall consult with communities and/or workers to develop strategies to prevent the recurrence of similar incidents.	For 2.6.5.2, review documents related to actual security incidents. Review records filed with authorities and compare to the operating company records of incidents. Conduct interviews with community members or workers involved in security incidents to confirm that they have access to information on the incidents and related investigations, and that they have been consulted to develop strategies to prevent the recurrence of similar incidents.
2.6.6. Communication and Disclosure 2.6.6.1. The operating companies shall consult regularly with stakeholders, including host governments and local communities, about the impact of their security arrangements on those communities; and shall report to stakeholders annually on the company's efforts to manage security in a manner that respects human rights.[68] 2.6.6.2. Stakeholders shall have access to and be informed about a mechanism to raise and seek	For 2.6.6.1, interview operating company and stakeholders and review documentation (e.g., records of consultations or meetings with the community members, agendas, written materials, etc.) to confirm that company carries our regular consultations with relevant stakeholders. Confirm, that the company has reported verbally to stakeholders, or has published annual reports on the company's security-related management.

[67] IRMA Standard, Chapter 2.4—Human Rights Due Diligence and Compliance. (See specifically, requirement 2.4.3.3).

[68] E.g., The operating 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.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
recourse for concerns or grievances related to mine security.[69] 2.6.6.3. If public security forces are providing security for mining-related operations, the operating company shall encourage host governments to permit making security arrangements transparent and accessible to the public, subject to any overriding safety and security concerns. 2.6.6.4. The security risk assessment, risk management plan and monitoring results shall be documented and made available to the IRMA auditor.	For 2.6.6.2, confirm that stakeholders have been informed of a mechanism to raise security-related concerns. Interview complainants, if possible, and other stakeholders to determine accessibility and effectiveness of the operating company's management of security related grievances. For 2.6.6.3, determine if public security providers have been used at the site, and if so, interview relevant operating company staff to determine if security arrangements were made public, and if not, why not. For 2.6.6.4, review the risk assessment, risk management plan and monitoring results.

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.[70] 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.[71]

Cross References to Other Chapters

CHAPTER	ISSUES
1.2—Revenue and Payments Transparency	If information on payments to made to governments (e.g., for the provision of public security forces or other related in-kind payments of equipment, etc.) was collected for the security risk assessment, it may feed into reporting requirements in Chapter 1.2 (i.e., 1.2.1.3 and 1.2.3.2).
2.4—Human Rights Due Diligence and Compliance	The security policy may be integrated into a human rights policy as per Chapter 2.4. Information from security risk assessments may feed into the human rights impact assessment, or vice versa. If human rights risks or impacts are identified in the security risk assessment, risk/impact prevention or mitigation strategies shall be designed as per the requirements in Chapter 2.4, Criteria 2.4.3. Reporting on security management (requirement 2.6.6.1) may be done through a company's human rights reporting (requirement 2.4.5.1), if the latter occurs on an annual basis.
2.5—Mining and Conflict Affected Areas	Information from the security risk assessment may feed into conflict screening/conflict risk assessment, or vice versa.

[69] The operational-level grievance mechanism developed as per Chapter 2.13 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.

[70] Voluntary Principles on Security and Human Rights. 2014. www.voluntaryprinciples.org

[71] 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

Cross References to Other Chapters	
2.8—Community and Stakeholder Engagement	All stakeholder engagement in Chapter 2.6 must conform with the requirements of Chapter 2.8. Chapter 2.8, Criterion 2.8.3 is important to ensure that affected stakeholders have the capacity to fully understand their rights and participate effectively in the assessment and development of prevention/mitigation plans, monitoring, and remedies for impacts on their safety and human right. And 2.8.4 ensures that communications and information are in culturally appropriate formats and languages that are accessible and understandable to affected communities and stakeholders, and provided in a timely manner.
2.13—Grievance Mechanism and Access to Other Remedies	The filing of security-related complaints or grievances may be done through the operational-level grievance mechanism, or through a security-specific mechanism developed in accordance with Chapter 2.13. If a separate mechanism or procedures are created specifically for security-related complaints, they should be developed in a manner that aligns with Chapter 2.13.
4.1—Environmental and Social Impact Assessment	Information from the security risk assessment, such as potential social impacts, may feed into the Environmental and Social Impact Assessment, or vice versa.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a project.

Competent Authority

The government department or 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.

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.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

Mitigation (in relation to human rights impacts)

The mitigation of adverse human rights impact refers to actions taken to reduce its extent, with any residual impact then requiring remediation. The mitigation of human rights risks refers to actions taken to reduce the likelihood of a certain adverse impact occurring.

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.

Potential Human Rights Impact

A potential human rights impact is an adverse impact that may occur but has not yet done so.

Remediation/Remedy (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 harm through, for example, injunctions or guarantees of non-repetition.

Stakeholder

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.

Worker

All non-management personnel.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 2.7
Community Health and Safety

BACKGROUND

Responsibly operated mines can play an important part in improving public health, but poor management of impacts can expose local populations to additional 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.[72]

TERMS USED IN THIS CHAPTER

Affected Community ■ Collaborate ■ Contract Workers ■ Ecosystem Services ■ Host Country Law ■ Mining-Related Activities ■ Operating Company ■ Stakeholder ■ Vulnerable Group ■ Workers' Organizations ■

These terms are explained at the end of this chapter

OBJECTIVES/INTENT OF THIS CHAPTER

To protect and improve the health and safety of individuals, families, and communities affected by mining projects.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for any mining operations that may have impacts on community health and/or safety. Operating 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 mining activities, or potential mine expansions. The specific provisions related to HIV/AIDS, tuberculosis and malaria (Criteria 2.7.4) are only relevant at operations where the community health and safety risk and impact assessment has identified that HIV/AIDS, tuberculosis and/or malaria pose a significant risk to worker and/or community health.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- This is a new chapter. It replaces the chapter on HIV/AIDS, TB and Malaria. In the first draft of the IRMA Standard, the provisions related to assessment of risks to community health and safety were located in Chapter 2.9—Obtaining Community Support and Delivering Benefits. Upon review of the requirements, we decided to create a new chapter dedicated to Community Health and Safety, and merge it with the HIV/AIDS, TB and Malaria chapter, as these infectious diseases are community health issues. The expectation is that the community health and safety risk and impact assessment will identify whether or not communities are at risk for these (or other) diseases in relation to mining (e.g., influx of workers may bring these diseases or increase their spread in host or home communities).
- Not all of the provisions related to HIV/AIDS, TB and malaria have been included in this new chapter. However, the provisions that were excluded either: 1) are already covered in other chapters (e.g.,

[72] ICMM. Good Practice Guidance on Health Impact Assessment. p. 32. www.icmm.com/document/792

non-discrimination against works with HIV/AIDS is covered in Chapter 2.1, and 2.2 – see Table of Cross References to Other Chapters, below), or they were more applicable to corporate owners than operating companies.

- The previous community health and safety requirements were based on IFC Performance Standard 4. As with other chapters, we are no longer simply citing IFC requirements. Instead, we have created IRMA-specific requirements that align with IFC. IRMA Guidance will provide more information on how IRMA aligns with IFC, as well as cite some of the guidance created by IFC.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Community Health and Safety Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.7.1. Health and Safety Risk and Impact Scoping 2.7.1.1. The operating company shall carry out a scoping exercise to identify significant potential risks and impacts to community health and safety from mining-related activities. At minimum, the following sources of potential risks and impacts to community health and/or safety shall be considered:[73] a. General mining operations; b. Operation of mine-related equipment or vehicles on public roads; c. Operational accidents; d. Failure of structural elements such as tailings dams, impoundments, waste rock dumps; e. Mining-related impacts on priority ecosystem services;[74] f. Mining-related effects on community demographics; g. Mining-related impacts on availability of services;[75] h. Hazardous materials and substances that may be released as a result of mining-related activities; and i. Water-borne, water-based, water-related, and	Interview operating company and stakeholders, and review scoping documentation for an analysis of the potential impacts associated with the sources of risk listed in 2.7.1.2. Confirm that scoping identified potential risks and impacts for all of the phases of mining, from construction through closure. Review document to confirm that scoping considered potential risks and impacts on vulnerable or susceptible members of affected communities.

[73] More information on these issues will be provided in IRMA Guidance.

[74] For example, land use changes or the loss of natural buffer areas such as wetlands, mangroves, and upland forests that mitigate the effects of natural hazards such as flooding, landslides, and fire, may result in increased vulnerability and community safety-related risks and impacts; or the diminution or degradation of freshwater may result in health-related risks and impacts. (IFC. 2012. Performance Standard 2 – Community Health, Safety and Security, Para. 8).

[75] For example, this may include an influx of migrant workers, which could put pressure on existing water and sewage systems, which may have an affect on community health.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
vector-borne diseases, and communicable diseases that could result from project activities. 2.7.1.2. Scoping shall include an examination of risks and impacts that may occur during the construction, operation and reclamation and closure phases of mine development. 2.7.1.3. Scoping shall take into consideration differential impacts on vulnerable or susceptible members of affected communities.	
2.7.2. Risk and Impact Evaluation 2.7.2.1. The operating company shall carry out an evaluation of risks and impacts to: a. Predict the nature, magnitude, extent and duration of the potential risks and impacts identified during scoping; b. Evaluate the significance of each impact, to determine whether it is acceptable, requires mitigation, or is unacceptable.	Interview operating company and review documentation related to risk and impact evaluation.
2.7.3. Risk and Impact Management and Mitigation 2.7.3.1. The operating company shall document and implement a community health and safety risk management plan that includes: a. Actions to be taken to prevent or mitigate identified risks and impacts; and b. Monitoring that will be conducted to ensure that mitigation measures remain effective. 2.7.3.2. Mitigation measures shall prioritize the avoidance of risks and impacts over minimization. 2.7.3.3. The community health and safety risk management plan shall be updated, as necessary, based on the results of risk and impact monitoring.	For 2.7.3.1 and 2.7.3.2, interview operating company and review documents to confirm that risks to community health and safety are addressed in management plans (e.g., a community health and safety risk management plan and/or other relevant documents such as an emergency response plans, etc). Confirm that prevention/avoidance is prioritized over minimization. For 2.7.3.3, review any updates to the risk management plan/other relevant documents, and monitoring reports that informed the development of strategies to manage risks to community health and safety.
2.7.4. Specific Provisions Related to HIV/AIDS, Tuberculosis and Malaria 2.7.4.1. If the assessment demonstrates a significant risk of community exposure to HIV/AIDS, TB or malaria from mining-related activities, the operating company shall develop, adopt and implement policies, business practices, and	For 2.7.4.1, interview operating company and review relevant policies and procedures, and interview representatives from public health agencies, workers' organization and other relevant stakeholders to confirm that the company has implemented HIV/AIDS, TB and/or malaria initiatives, and the sharing of best practices on treatment and prevention,

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
targeted initiatives: a. In partnership with public health agencies, workers' organizations and other relevant stakeholders, create and fund initiatives to educate the affected and vulnerable communities about these infections and modes of prevention of them, commensurate with the risks posed by mining; b. Operate in an open and transparent manner and be willing to share best practice for the prevention and treatment of these diseases with trade unions, other companies, Civil Society organizations, and policymakers; and c. Make information publicly available on its infectious disease mitigation program for HIV/AIDS, tuberculosis, and malaria. 2.7.4.2. If the assessment demonstrates a significant risk of community exposure to HIV/AIDS, TB or malaria from mining-related activities, the following prevention and mitigation strategies shall be applied, as appropriate: a. In relation to HIV/AIDS, the operating company shall, at minimum: i. Provide free, voluntary and confidential HIV testing and counseling for all employees; ii. Provide HIV/AIDS treatment for 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 the operating company's or facility's contracting companies or others to identify ways for contract workers to access affordable treatment; and iv. Work with public health authorities, communities, workers' organizations and other stakeholders towards ensuring universal access to treatment for dependents of employees and affected community members. b. In relation to tuberculosis, the operating company shall, at minimum, provide free and voluntary testing for employees where this is not reasonably likely to be provided by public or private health programs at an affordable	as appropriate. Review company website for publicly available information on infectious diseases. For 2.7.4.2.a, if relevant, interview operating company and workers to confirm that free testing and counseling are available, and that treatment if provided if not affordably provided elsewhere. Interview contract workers, and review policies and procedures to confirm that programs are available to them. Interview operating company and relevant stakeholders to confirm that company is collaborating in efforts to ensure universal access to treatment for dependents of employees and the community at large. For 2.7.4.2.b, if relevant, confirm that the company provides free and voluntary testing for TB to its employees. For 2.7.4.2.c, if relevant, interview operating company and review documentation related to malaria prevention measures; and inspect facilities and company-provided housing to confirm that malaria protections are in place.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
rate. c. In relation to malaria, the operating company shall, at minimum: i. Ensure that company facilities are not breeding environments for malaria carrying mosquitoes. ii. Provide protection from infection by malaria-carrying mosquitoes in company facilities and any company-provided housing.	
2.7.5. Stakeholder Engagement 2.7.5.1. The operating company shall collaborate with relevant community members and other stakeholders, including workers who live in affected communities, in the scoping of health and safety risks and impacts; the development of prevention or mitigation strategies; the collection of any data needed to inform the health risk and impact assessment process; and the design and implementation of community health and safety monitoring programs.	Review records of stakeholders who participated in the health and safety risk assessment process. Interview stakeholders and confirm that they were involved in scoping, mitigation planning, data collection, impact assessment and monitoring.
2.7.6. Reporting 2.7.6.1. The operating company shall make information on health risks and impacts and monitoring publicly available.	Interview operating company and stakeholders to confirm that information on mining-related health risks and impacts to communities, including monitoring data, are publicly available.

NOTES

There may be infectious diseases other than HIV/AIDS, tuberculosis or malaria that may present risks for some mining projects and communities (E.g., Ebola). If significant risks related to other infectious or communicable diseases are identified during the community health and safety risk and impact assessment process, then companies would be expected to take steps to mitigate and monitor their impacts. This chapter highlights HIV/AIDS, TB and malaria in particular, because the mining industry has significant exposure to those diseases in some parts of the world, and best practices have been established by companies to minimize their impact in relation to those diseases.[76]

[76] International Council on Mining and Metals. "HIV/AIDS, tuberculosis and malaria." www.icmm.com/page/84139/our-work/projects/articles/hiv/aids-tuberculosis-and-malaria

Cross References to Other Chapters	
CHAPTER	**ISSUES**
1.1—Legal Compliance	As per Chapter 1.1, if there are host country laws governing or requiring community health assessments, the company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law.
2.1—Fair Labor and Terms of Work	Requirement 2.1.3.1 mandates fair treatment in employment relationships, and prohibits operating companies from making discriminatory employment decisions on the basis of personal characteristics unrelated to inherent job requirements, such as HIV/AIDs status.
2.2—Occupational Health and Safety	The assessment and mitigation of health and safety risks to workers while engaged in mining-related activities is addressed in Chapter 2.2. However, workers also live in communities that may be affected by mining-related activities, and so they are also included as stakeholders in community health and safety assessment, mitigation and monitoring. HIV/AIDS testing may be included in worker health surveillance mentioned in 2.2.4.2. As per 2.2.4.2.b. "Health surveillance shall be carried out in a manner that protects the right to confidentiality of medical information, and is not used in a manner prejudicial to workers' interests."
2.3—Emergency Preparedness and Response	Mitigation measures related to community health and safety may be incorporated into the Emergency Response Plan (ERP) developed as per Chapter 2.3. For example, if risks related to particular hazards such as chemicals transportation accidents or breaches of tailings impoundments are identified, there may be the need to incorporate into the ERP appropriate methods to alert and possibly evacuate community members as quickly and safely as possible.
2.9—Community and Stakeholder Engagement	Stakeholder engagement in community health and safety assessment, mitigation and monitoring must comply with the general stakeholder engagement requirements in Chapter 2.9. In particular, it may be important for some capacity building to occur, to ensure that community members can engage in the risk assessment process, including development of mitigation and monitoring, in a meaningful way. (See requirement 2.8.3.1)
4.1—Environmental and Social Impact Assessment	The community health and safety risk and impact assessment does not necessary have to be a standalone assessment. It may be carried out as part of the ESIA, as long as the elements listed in this chapter were included in that assessment.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a project.

Collaborate

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.

Contract 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 project for a substantial duration (i.e., employment other than on a casual or intermittent basis), including the construction phase of the project or who are geographically working at the project location.

Host Country Law

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. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Ecosystem Services

The benefits people obtain from ecosystems. These include: provisioning services such as food, forest products and water; regulating services such as regulation of floods, drought, land degradation, air quality, climate and disease; supporting services such as soil formation and nutrient cycling; and cultural services and cultural values such as recreational, spiritual, religious and other nonmaterial benefits.

Mining-Related Activities

Encompasses any activities that may occur during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure), and includes all physical activities (e.g., land disturbance and clearing, sampling, airborne surveys, construction, ore removal, ore processing, waste management, reclamation, etc.).

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.

Stakeholder

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.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, and groups that would be vulnerable due to other circumstances (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, and groups that suffer social and economic discrimination, including indigenous peoples and minorities.

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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 2.8
Community and Stakeholder Engagement

BACKGROUND

Large-scale mining developments have the potential to last for decades over their life cycle. Often mines are built in locations near existing communities; in other cases new communities emerge because of mining activities. Mining 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 mining company investment in community development projects. But mining projects also have the potential to create negative impacts, and even be a source of social conflict, within communities.

TERMS USED IN THIS CHAPTER

Accessible ■ Affected Community ■ Confidential Business Information ■ Consultation ■ Existing Mine ■ Inclusive ■ Mining-Related Activities ■ New Mine ■ Operating Company ■ Rights Holder ■ Stakeholder ■ Vulnerable Group ■

These terms are explained at the end of this chapter

Increasingly, mining companies, host governments, and financial institutions are recognizing that building strong, lasting relationships with those affected by mining activities can improve the identification and management of risks, as well as the long-term viability of operations.[77] Meaningful engagement that is proactive, inclusive, accountable, and transparent is more likely to result in optimal outcomes for both communities and mining companies.[78]

OBJECTIVES/INTENT OF THIS CHAPTER

To enable communities and stakeholders to participate in mining-related decisions that affect their health, wellbeing, safety, livelihoods, futures and the environment.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for all mines applying for IRMA certification.

New vs. Existing Mines: New mines shall meet all requirements in this chapter. Existing mines seeking certification will be required to meet all requirements in Chapter 2.8, with the exception of the requirement in 2.8.2.1 that engagement begin prior to or early in the development phase of the mining project. For some existing mines, this may not have occurred. Those mines will have to demonstrate that they currently engage with stakeholders on an ongoing basis.

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[77] 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

[78] For example, Principle 10 of the Rio Declaration of 1992 states that, "Environmental issues are best handled with the participation of all concerned citizens." See 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 See IRMA Guidance for more information.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Added a new requirement (2.8.2.3) for a permanent stakeholder advisory committee (or its equivalent), which could serve different roles depending on community needs.
- Criterion 2.8.4 (Communications and Access to Information) has been revised, and additional information provided to define terms.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Community and Stakeholder Engagement Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.8.1. Planning and Designing Stakeholder Engagement Processes 2.8.1.1. The operating 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 company's mining-related activities. 2.8.1.2. A stakeholder engagement plan scaled to the project risks and impacts and stage of development shall be developed, implemented and updated as necessary. 2.8.1.3. The operating company shall consult with stakeholders to design engagement processes that are accessible, inclusive and culturally appropriate,[79] and shall demonstrate that continuous efforts are taken to understand and remove barriers to inclusive, meaningful participation by affected stakeholders (especially women, marginalized and vulnerable groups). 2.8.1.4. The operating company shall demonstrate that efforts have been made to understand community dynamics in order to prevent or mitigate community conflicts that might otherwise occur as a result of company engagement processes.	For this criterion relevant documents may include: engagement plan; relevant sections of the environmental and social impact assessment; minutes of meetings with stakeholders consulted in engagement plan development. For 2.8.1.1 and 2.8.1.2, interview operating company representatives (e.g., site management, community relations team, etc.) and stakeholders and review documentation to confirm that that operator has identified a range of affected and interested stakeholders, and has developed and engagement plan. For 2.8.1.3, review documentation and interview stakeholders and community members to confirm their participation in the development of engagement processes that are accessible (efforts have been made to remove barriers to participation), culturally appropriate and inclusive. Determine if relevant stakeholder feedback, whenever received, results in changes to reduce barriers to engagement. For 2.8.1.4, confirm that the company has made efforts to understand community dynamics; and that this information has fed into the development of appropriate

[79] See 2.8.4. below for explanation of understandable and culturally appropriate. Accessible is a defined term.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
	engagement processes. Relevant documentation to support the review of these requirements may include the following: • Outreach materials sent to stakeholders; • Attendance records, meeting minutes and other documentation such as notes from meetings held with local stakeholders; • Copies of presentation or other communication material provide to local stakeholders by the operating company or any other third parties supporting the engagement processes; • Terms of reference for any committees or forums established to engage with local communities and stakeholders. • Other relevant materials.
2.8.2. Engagement Processes 2.8.2.1. Stakeholder engagement shall begin prior to or during mine planning, and be ongoing, throughout the life of the mine. 2.8.2.2. The operating company shall foster two-way dialogue and engagement with stakeholders by: a. Providing relevant information to stakeholders in a timely manner; b. Including participation by site 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; and e. Providing stakeholders with feedback on how the company has taken their input into account. 2.8.2.3. The operating company shall collaborate with stakeholders, including representatives from affected communities, to design and form a permanent stakeholder advisory committee (or its equivalent), to provide oversight of the mining project's environmental and social performance, and/or input to the company on issues of concern	For 2.8.2.1, for new mines, interview the operating company and stakeholders, and review documents to confirm that stakeholder engagement occurred from the point that the company undertook mining-related activities in the area. For 2.8.2.2 and 2.8.2.3 and 2.8.2.4, interview operating company and stakeholders to ensure that: relevant information is made available; issues experts/company management have been engaged; engagement includes dialogue and information exchange (not simply one-way transfer of information from company to stakeholders); engagement respectful, free from manipulation, interference, coercion and intimidation; the company solicits input and provides stakeholders with feedback on how input has been taken into account; processes are accessible, culturally appropriate and inclusive (of gender, age, economic status, stakeholder sectors, etc.). For 2.8.2.5, if relevant: interview operating company and stakeholders to confirm that efforts were made to determine that elected community representatives adequately represent the views/interests of constituents,

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
to stakeholders.[80] 2.8.2.4. Engagement processes shall be accessible and culturally appropriate,[81] and the operating company shall demonstrate that efforts have been made to include participation by women, men, and marginalized and vulnerable groups. 2.8.2.5. When stakeholder engagement processes depend substantially on community representatives, the operating 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 operating company shall undertake additional engagement processes to enable more meaningful participation by and information sharing with the broader community. 2.8.2.6. The operating company shall document engagement processes, including, at minimum, names of participants, and input received from and company feedback provided to stakeholders. 2.8.2.7. The operating company shall report back to affected communities and stakeholders on issues raised during engagement processes.	and are reporting back to the community; and/or whether alternative processes were set up to enable wider community feedback. For 2.8.2.6, review documentation on stakeholder engagement. For 2.8.2.7, review reports or m inutes from meeting with stakeholders.
2.8.3. Strengthening Capacity 2.8.3.1. The operating company shall offer to collaborate with stakeholders from affected communities to assess their capacity to effectively engage in consultations, studies, assessments, and the development of mitigation, monitoring and community development strategies.[82] Where capacity gaps are identified, the operating company shall offer appropriate assistance to facilitate effective stakeholder engagement.[83]	Interview operating company and sample of stakeholders to determine if attempts have been made to assess capacity needs of stakeholders, and strengthen the capacity of affected community members so that they are able to fully participate in project-related engagement activities

[80] Guidance will provide examples of stakeholder advisory committees or their equivalent. The role that such a committee serves will be different in different communities. Some communities may be more concerned with environmental impacts, and want to play more of a role in reviewing monitoring data, while other communities may be more interested in development opportunities or community health impacts. Also, the interests, and therefore role of the committee may shift over time.

[81] See 2.8.4. below for explanation of understandable and culturally appropriate. Accessible is a defined term.

[82] Capacity needs may be legal, technical, process-oriented (e.g., negotiation skills), logistical, or other.

[83] Depending on the circumstances, appropriate assistance may include providing access to training, independent experts, etc.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.8.4. Communications and Access to Information 2.8.4.1. Unless otherwise indicated in IRMA requirements, the operating company shall provide free, timely access to its policies, assessments, mitigation and monitoring plans and reports, and other information reasonably requested by stakeholders.[84] If the company refuses a stakeholder request, it shall provide the stakeholder with a written justification for why it is withholding the information. 2.8.4.2. Communications with and information provided to stakeholders shall be in formats and languages that are culturally appropriate, accessible and understandable to affected communities and stakeholders.[85]	For 2.8.4.1, review the operating company web sites to see if information is publicly available; and interview stakeholders to confirm that information has been made available upon request.. For 2.8.4.2, interview stakeholders to determine if they have timely access to the operating company documents and information in formats and languages that are accessible and understandable.

Cross References to Other Chapters	
CHAPTER	**ISSUES**
2.1—Fair Labor and Terms of Work	Workers and workers' representatives are stakeholders of the mine. Engagement with workers and/or workers' representatives occurs during the negotiation of collective bargaining agreements, retrenchment plans and in the calculation of living wage.
2.2—Occupational Health and Safety	Engagement with workers/workers' representatives occurs during health and safety risk assessment; design of workplace monitoring and worker health surveillance; development of strategies to prevent or mitigate risks to workers; design of programs to support worker health and safety; and in inspections, monitoring and investigation of safety and health matters.
2.3—Emergency Preparedness/Response	Stakeholders are involved in the development of the Emergency Response Plan and participate in emergency response planning exercises.

[84] 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 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 appropriate.

[85] **Culturally appropriate** communication includes interactions and conveyance of information using 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. As per requirement 2.8.1.3., stakeholders can help to define for the company what is considered culturally appropriate. **Understandable:** there may be communities or groups within communities that are not literate, and therefore, need information conveyed in a form other than written (e.g., face-to-face meetings; video; audio). Some communities may prefer to receive information verbally. Some communities or groups within communities may not have reliable access to the internet or computers, and therefore would need written information in hard copy, available at a nearby locations during hours that enable access to individuals who work during the day.

Cross References to Other Chapters	
2.4—Human Rights Due Diligence and Compliance	Stakeholders are consulted in the human rights impact assessment process, including providing input and reviewing drafts; and affected rights-holders collaborate with companies in the development of mitigation plans when their human rights have been infringed upon; and provide input on the company's monitoring of its human rights due diligence.
2.5—Mining and Conflict Affected Areas	Stakeholders are consulted during the conflict-affected areas screening process and conflict risk assessment; and affected stakeholders collaborate in the development of mitigation strategies to address risks that are relevant to them.
2.6—Security Arrangements	Stakeholders are consulted in the security risk assessment; and if there are risks specific to conflicts between communities/workers and mine security providers, community and worker stakeholders collaborate with the company to develop strategies to prevent or mitigate those risks. Stakeholders may also receive training on security and human rights issues.
2.7—Community Health and Safety	Companies collaborate with relevant community members and other stakeholders, including workers who live in affected communities, in the scoping of community health and safety risks and impacts; the development of prevention or mitigation strategies; the collection of any data needed to inform the health risk and impact assessment process; and the design and implementation of community health and safety monitoring programs.
2.9—Obtaining Community Support and Delivering Benefits	Companies collaborate with affected community members and other relevant stakeholders in the development of a participatory community development planning process to guide a company's contributions to community benefits; and to monitor any mechanisms developed to deliver benefits.
2.10—Free, Prior and Informed Consent	Companies collaborate with indigenous peoples to identify indigenous peoples' rights and interests such as lands or resources that may be affected by the mining project; identify studies or assessments needed to determine potential impacts from the mine on these rights and interests; and design and implement plans to address information gaps. Engagement continues throughout the FPIC process, and if consent is given, throughout the life of the mine.
2.11—Cultural Heritage	Stakeholders are consulted during cultural heritage screening, assessment and development of mitigation measures. If indigenous peoples' cultural heritage is affected, they are engaged in and FPIC process before any critical cultural heritage is disturbed or used for commercial purposes.
2.12—Resettlement	Individuals and communities potentially affected by resettlement are consulted during the assessment of risks and impacts; the development of Resettlement Action Plan and resettlement options; and resettlement implementation, including the monitoring of that implementation.
2.13—Grievance Mechanism and Access to Other Remedies	Stakeholder are engaged in the development of a operational-level grievance mechanism, which will provide stakeholders and communities with culturally appropriate means of filing complaints and suggestions, and having their concerns addressed.
3.1—Water Quality	Stakeholders are consulted in the assessment of mixing zones.
3.5—Noise	Stakeholders may be consulted in the development of mitigation plans for noise-impacted wildlife.
3.7—Protected Areas	Stakeholders are consulted in the assessment of potential effects of mining on protected areas.

Cross References to Other Chapters	
3.8—Biodiversity	Stakeholders are consulted in the assessment of potential effects of mining on biodiversity.
4.1—Environmental and Social Impact Assessment	Stakeholders are consulted throughout the environmental and social impact assessment process, including scoping, the collection of data, the development of mitigation plans, and in the monitoring program.
4.2—Reclamation and Closure	Stakeholders can comment on reclamation and closure plan, and the mine's financial surety; and if long-term water treatment may occur, stakeholders are consulted during the risk assessment and subsequent community/company discussions.

TERMS USED IN THIS CHAPTER

Accessible

In reference to grievance mechanism or engagement processes, means being known in an understandable manner to all stakeholder groups for whose use they are intended, and providing adequate assistance for those who may face particular barriers to access.

Affected Community

A community that is subject to risks or impacts from a project.

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. **Note:** IRMA's definition of Confidential Business Information is not settled. Stakeholder input on this definition welcome.

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.

Inclusive

In the context of stakeholder engagement, means that engagement includes men, women, the elderly, youth, displaced persons, vulnerable and disadvantaged persons or groups.

Mining-Related Activities

Encompasses any activities that may occur during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure), and includes all physical activities (e.g., land disturbance and clearing, sampling, airborne surveys, construction, ore removal, ore processing, waste management, reclamation, etc.).

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Standard first takes effect.

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.

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.

Stakeholder

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.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, and groups that would be vulnerable due to other circumstances (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, and groups that suffer social and economic discrimination, including indigenous peoples and minorities.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 2.9
Obtaining Community Support and Delivering Benefits

BACKGROUND

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

Leading companies also recognize the need for delivering 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 mining 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 mining companies provide both immediate and ongoing benefits that last beyond the life of the mining operation.

TERMS USED IN THIS CHAPTER

Affected Community ■ Broad Community Support ■ Collaborate ■ Existing Mines ■ Inclusive ■ Mine Closure ■ New Mine ■ Operating Company ■ Stakeholder ■ Vulnerable Group ■

These terms are explained at the end of this chapter

In addition to providing tangible benefits to affected communities, there is a growing need for mining 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

Chapter Relevance: Operating 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 mining activities, or potential mine expansions.

New vs. Existing Mines: The chapter applies to new mines and existing mines. With respect to obtaining broad community support, new mines are expected to demonstrate that they obtained it prior to the

[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. p. 3), and ICMM materials mention to the need to "gain and maintain the broad community support of the communities on which operations are located." (ICMM. 2008. Sustainable Development Framework: Assurance Procedure. p. 18).

construction of a new mine while existing mines shall demonstrate that they have broad community support when they apply for certification. This approach recognizes that existing mines may not have had broad community support at the time they were constructed, but that through the building and maintenance of strong relationships with affected communities and stakeholders they have been able to earn this support over time.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Added language to 2.9.2.1 to clarify that not only does broad community support need to be obtained, but it must also be maintained. Revised 2.9.2.1 to require that existing mines demonstrate they have earned broad community support by the time they apply for IRMA certification, rather than waiting for a significant change to the operation.
- Removed requirements that addressed community health and safety. Replaced Chapter 2.7 HIV/AIDS, Tuberculosis and Malaria with a broader chapter on Community Health and Safety that integrates the bulk of the HIV/AIDs etc. requirements.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Obtaining Community Support and Delivering Benefits Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.9.1. Commitments to Affected Communities 2.9.1.1. The operating company shall publicly commit to enhancing the health, social and economic wellbeing of affected communities, and developing a project only if it gains and maintains broad community support.	Interview company representatives, and review the operating company website or other materials to ensure public commitment has been made. Interview a representative sample of affected community members to determine if they are aware of the company's commitments.

2.9.2. Obtaining Community Support

[flag] **2.9.2. Issue in brief:** IRMA leaders have agreed that they do not want IRMA to certify mining operations that do not have the support of the communities most affected by their operation. But IRMA also recognizes that at the present time there is no universally accepted means of measuring whether or not a company has obtained broad community support (BCS) for a project. While the International Finance Corporation does require that companies obtain broad community support for certain types of projects in order to qualify for loans, they do not have clear criteria for what constitutes BCS. Given the grey area, IRMA has attempted to come up with some criteria that may be applied, so that any independent, third-party auditor would make the same assessment as to whether or not a company applying for IRMA certification has obtained BCS.

We also realize that the criteria for obtaining BCS may not be the same criteria for demonstrating that BCS is being maintained (e.g., it is not IRMA's intent that communities carry out votes every few years

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
as to whether or not they support the mining operation). But we have not yet developed a separate set of criteria or means of verification expectations related to what it means to maintain support. We welcome stakeholder input on these issues.	
2.9.2.1. Prior to the construction of a new mine, the operating company shall demonstrate that it obtained broad community support from communities affected by the operation, and that this support has been maintained. For existing mines, the operating company shall demonstrate, at the time of application for certification, that the mine has earned and is maintaining broad community support.[87] 2.9.2.2. 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. 2.9.2.3. Evidence of broad community support shall only be considered credible if the process or method used to demonstrate support: a. Occurred after the operating company carried out consultations with relevant stakeholders regarding potential impacts and benefits of the proposed operation; 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 and marginalized members, prior to any decision or resolution.	The operating company shall furnish to IRMA auditors documentation to demonstrate that broad community support has been obtained, and that the process followed conformed to requirements 2.9.2.1 and 2.9.2.2. For new and existing mines, confirm with a range of stakeholders that support from the community is being maintained. Opposition from individuals does not necessarily mean that broad community support is not being maintained. Sustained and widespread disapproval of company practices, however, would be an indication that broad support is not being maintained. For new mines, interview community members, representatives of local government and other relevant individuals to confirm that the process followed to verify that broad community support conformed to requirements 2.9.2.2 and 2.9.2.3. 2.9.2.3.d. applies in the case of a local government decision-making process.
2.9.3. Planning Community Development and Benefits 2.9.3.1. The operating company, in collaboration with affected communities and other relevant stakeholders (including local government), shall contribute to the development of a participatory community development planning process to guide	For 2.9.3.1, determine, through interviews with the operating company, that a participatory planning process is in place. For 2.9.3.2 and 2.9.3.3, interview operating company and community and other relevant stakeholders to determine if the participatory planning process included local

[87] If the affected community is an indigenous peoples' community, the operating company is required to obtain the free, prior and informed consent of that community (as per Chapter 2.10). If the company obtains FPIC, they will have met this requirement also. A company may need to obtain FPIC from indigenous peoples and also demonstrate that it has broad community support for the same project, if there is a community of non-indigenous peoples also affected by the mine.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
a company's contributions to community development and benefits in affected communities. 2.9.3.2. The planning process shall be designed to ensure local participation, social inclusion (including women and men, and vulnerable and traditionally marginalized community members), good governance and transparency. 2.9.3.3. If requested by the community and not provided by the appropriate public authorities, the operating company shall provide funding for mutually agreed upon experts to aid in the participatory process. 2.9.3.4. The planning process and any outcomes or decisions shall be documented and signed by those involved in the process. 2.9.3.5. Efforts shall be made to develop mechanisms that can be self-sustaining after mine closure, and to develop community capacity to oversee and sustain any projects or initiatives agreed upon through negotiations. 2.9.3.6. In collaboration with the community, the operating company shall periodically monitor any mechanisms developed to deliver benefits, based on agreed upon indicators, and evaluate if changes need to be made to community development and benefit initiatives.	participation, was socially inclusive (i.e., included women, vulnerable and traditionally marginalized community members), provided access to experts, if needed (as per 2.9.3.3), and operated according to good governance and transparency. Confirm that community and other relevant stakeholders involved in the process had timely access to the operating company documents and information in appropriate formats necessary to participate in the planning process. For 2.9.3.4 and 2.9.3.5, review documentation related to the planning process. Interview operating company and representative sample of community and other relevant stakeholders to determine if community development initiatives were implemented as planned, and that measures were taken to create sustainable initiatives. For 2.8.3.6, review monitoring and evaluation of results of community development programmes.

Cross References to Other Chapters

CHAPTER	ISSUES
2.9—Community and Stakeholder Engagement	See Chapter 2.8. Community and Stakeholder Engagement, for requirements relating to engagement and communication with stakeholders. In particular, criterion 2.8.3 is important to ensure that stakeholders have the capacity to fully understand their rights and collaborate effectively in community planning processes. Also, 2.8.4 ensures that communications and information are in formats and languages that are accessible and understandable to affected communities and stakeholders, and provided in a timely, culturally appropriate manner.
2.10—Free, Prior and Informed Consent	Chapter 2.10 is relevant for mining projects that may affect communities of indigenous peoples. Rather than obtaining broad community support as per this chapter, when there are indigenous peoples whose land, resources, cultural heritage or rights may be impacted by mining activities, operating companies must adhere to the requirements of Chapter 2.10.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a project.

Broad Community Support

A collective expression by the community in support of the mining project. Support may be demonstrated through credible (i.e., transparent, inclusive, informed) 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.

Collaborate

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.

Existing Mine

A mine that was operational prior to the date that the IRMA Standard first went into effect.

Inclusive

In the context of stakeholder engagement, means that engagement includes men, women, the elderly, youth, displaced persons, vulnerable and disadvantaged persons or groups.

Mine Closure

Includes the following: The reclamation surety holder declares reclamation complete; all of the reclamation surety (as opposed to the water treatment surety) is returned to the operating company; a mine operator no longer maintains an active physical presence on the mine site; and other obvious or reasonable indicators that most or all of the reclamation activities have been completed.

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Standard first takes effect.

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.

Stakeholder

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.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, and groups that would be vulnerable due to other circumstances (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, and groups that suffer social and economic discrimination, including indigenous peoples and minorities.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 2.10
Free, Prior and Informed Consent (FPIC)

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. [88] The following rights of indigenous peoples are especially relevant in relation to industrial-scale mining developments:[89]

- the right to self-determination, by virtue of which indigenous peoples freely determine their political status and pursue their economic, social and cultural development;
- 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
- 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.[90]

TERMS USED IN THIS CHAPTER

Collaborate ■ Consultation ■ Critical Cultural Heritage ■ Free, Prior and Informed Consent (FPIC) ■ FPIC Scoping ■ Host Country Law ■ Indigenous Peoples ■ Mining-Related Activities ■ Operating Company ■ Stakeholder ■ Significant Changes to Mining-Related Activities ■ Vulnerable Group ■

These terms are explained at the end of this chapter

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.[91] Since 1989, FPIC has gained broader application and more widespread support in national laws and various international instruments and bodies.[92]

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

[89] 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

[90] 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

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

[92] 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

OBJECTIVES/INTENT OF THIS CHAPTER

To respect the rights, dignity, aspirations, culture, and livelihoods of indigenous peoples.

SCOPE OF APPLICATION

Chapter Relevance: Operating companies may provide evidence that this Chapter is not relevant if they can prove that there are no indigenous peoples who may be affected by their exploration or mining activities, or potential mine expansions.

New vs. Existing Mines: New mines shall meet the requirements in this chapter. At existing mines, where FPIC was not obtained in the past, operating companies will be expected to demonstrate that they are operating in a manner that seeks to achieve the objective of this chapter. 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 mines, they will need to be addressed as per Chapter 2.4; and other unremediated impacts may be addressed through the operational-level grievance mechanism as per Chapter 2.13. (See the table "Cross Reference to Other Chapters" in the Notes Section of this Chapter for more information.)

Both new and existing mines shall obtain the free, prior and informed consent of indigenous peoples if there are proposed changes to the company's plans or activities that may significantly change the nature or degree of an existing impact, or result in additional impacts on indigenous peoples rights, lands, territories, resources, properties, livelihoods, cultures or religions.

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 shall abide by those laws. Where a host government has established an existing legislative framework that requires or enables agreements between mining 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 the company demonstrate to IRMA auditors that the process whereby the agreement was reached conformed with or exceeded the IRMA FPIC requirements (for example, there was no express or implied 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), and the general intent of this chapter. One of the most important means of verifying this will be for auditors to determine whether or not the indigenous peoples were satisfied with the process that was followed and the outcome of that process.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Added a scope of application section, which includes information on IRMA's expectations for existing mines where operators did not carry out FPIC at the appropriate time (i.e., "prior" to mining activities), and also IRMA's expectations for mines where there is overlap between national laws and the IRMA Standard.
- Added a requirement to address the situation where States have not carried out their own responsibility to carry out FPIC prior to awarding concessions/access to minerals (see 2.10.2.1)
- Provided more specifics on the types of situations when FPIC applies (See 2.10.2.2)
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Free, Prior and Informed Consent (FPIC) Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.10.1. Policy Commitment 2.10.1.1. The operating 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.[93] 2.10.1.2. The operating company shall ensure that indigenous peoples potentially affected by the company's mining-related activities are aware of the policy.	Interview operating company to confirm that a policy is in place, and determine the methods by which the company has made this information publicly available, and, in particular, available to affected indigenous peoples. It is recognized that many larger mining corporations have policies in place that include statements on respecting indigenous peoples' rights, such as human rights policies or specific policies related to indigenous peoples. If an operating company's corporate parent has such a policy in place, it will suffice, as long as it has been communicated to the indigenous peoples potentially affected by the mining project up for IRMA certification.
2.10.2. General Requirements 2.10.2.1. The operating company shall conduct due diligence to determine if the host government has conducted an adequate consultation process aimed at obtaining indigenous peoples' informed consent prior to granting access to mineral resources. The key findings of due diligence assessments shall be made publically available and, if relevant, shall include the company's justification for proceeding with a project (including a free, prior and informed consent process with indigenous peoples) in the absence of full compliance by the State to fulfil its consultation and consent duties.[94] 2.10.2.2. Until it has obtained the free, prior and informed consent of potentially affected indigenous peoples, the operating company shall not undertake any mining-related activities that may affect indigenous peoples' rights or interests,	Interview representatives from the indigenous peoples' representative institutions and/or those chosen by the peoples themselves in accordance with their own procedures to determine if the operating company has complied with the relevant requirements in this criterion.

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

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

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
including those that may: impact on lands, territories and resources;[95] require the physical relocation of people; cause disruption to traditional livelihoods; impact on critical cultural heritage; or involve the use of cultural heritage for commercial purposes. 2.10.2.3. The operating company shall obtain FPIC from indigenous peoples for proposed significant changes to mining-related activities that may result in significant new or increased impacts on indigenous peoples rights or interests. 2.10.2.4. If indigenous peoples' representatives clearly communicate, at any point during engagement with the operating 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. The company may approach indigenous peoples to renew discussions only if agreed to by indigenous peoples' representative.	
2.10.3. Free, Prior and Informed Consent (FPIC) Scoping 2.10.3.1. Where FPIC is required, the operating company shall: a. Identify indigenous peoples that own, occupy or otherwise use land, territories or resources that may be affected by the operating company's mining-related activities; b. Identify the appropriate means of engagement for each community or population of indigenous peoples. Where indigenous peoples' customary approaches do not enable the meaningful participation of women, vulnerable or marginalized groups within indigenous communities, the operating company shall make a reasonable effort to find other ways of facilitating this involvement; and c. Disclose to indigenous peoples, in a culturally appropriate manner, the preliminary project concepts and/or proposed activities, and the indigenous peoples' right to FPIC.	For 2.10.3.1, review company documentation regarding identification of indigenous peoples potentially affected by the proposed activities. Documentation may include the company's methodology or criteria for defining indigenous peoples; a list of studies undertaken or information reviewed to identify indigenous peoples in the project area; and records of consultations with indigenous peoples, civil society, academics, government officials and others with expertise on indigenous peoples' populations in the area of interest. Interview representatives from indigenous peoples' representative institutions and/or those chosen by the peoples themselves in accordance with their own procedures (hereafter "indigenous peoples representatives") to determine if the company followed the indigenous peoples' consultation procedures (i.e., formal

[95] These 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.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.10.3.2. The operating company shall demonstrate that it has take reasonable steps to collaborate with indigenous peoples' representatives and other relevant members of affected communities of indigenous peoples to: a. Identify indigenous peoples' rights and interests that may be affected by the proposed activities; b. Identify additional studies or assessments needed to determine the range and degree of potential impacts on indigenous peoples' rights or interests; and c. Identify if there are capacity issues that may prevent full and informed participation of indigenous peoples. If issues are identified, the operating company shall provide funding or facilitate other means to enable indigenous peoples to address capacity issues in their preferred manner. 2.10.3.3. The operating company shall collaborate with the indigenous peoples representatives to design and implement plans to address the information gaps and needs identified through the scoping process.	protocol, if it exists, or procedures otherwise conveyed to the company). Interview operating company to determine if it conducted due diligence on how the engagement and decision-making processes involve women and vulnerable/marginalized groups; and if they do not, whether attempts were made to develop some mutually acceptable processes with indigenous peoples' representative institutions. Determine if any FPIC-related grievances regarding the company's engagement or consultation practices were filed with the company's project-level grievance mechanism. Interview indigenous peoples' representatives to determine if any FPIC-related grievances have been filed through another grievance mechanism available to community members, including customary law based mechanisms. Interview company representatives and indigenous peoples' representatives to confirm that information about the project was conveyed by the operating company in a culturally appropriate manner (e.g., in languages and using terminology and formats that could be understood by the indigenous peoples). For 2.10.3.2 and 2.10.3.3, interview operating company representatives and indigenous peoples' representatives to confirm that there was collaboration to: • identify the scope of indigenous peoples' rights and interests affected by the project; • identify any additional information (e.g., studies, assessments) necessary to fully understand the potential impacts of the proposed activities; • identify capacity needs, and that if relevant, indigenous peoples were offered access to resources necessary to participate in an informed manner, e.g., funding to hire independent legal, technical experts, or other capacity support.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.10.4. Determine FPIC Process[96] 2.10.4.1. If there is more than one indigenous peoples' population or community that may be affected by the operating company's mining-related activities, they may be included in a single process or separate FPIC processes, as desired by the indigenous peoples. 2.10.4.2. If the potentially affected indigenous peoples have an FPIC protocol in place or under development, the operating company shall abide by it. Otherwise, the operating company shall engage with indigenous peoples' representative institutions in an effort to reach a mutual understanding regarding the FPIC process to be followed. 2.10.4.3. The operating company shall make a reasonable effort to document and make information on the mutually-agreed FPIC process publicly available.	For 2.10.4.1, interview the operating company to determine the steps taken to understand the indigenous peoples' consent process (or processes, if there was more than one population of potentially affected indigenous peoples). For 2.10.4.2, interview indigenous peoples' representatives to confirm that the company followed the indigenous peoples' FPIC process (i.e., a formal protocol, if it exists, or procedures otherwise conveyed to the company). Interview operating company and indigenous peoples' representatives to confirm that agreement was reached on an FPIC process. For 2.10.4.3, review FPIC process document, if it exists. Determine if the FPIC process to be followed has been documented and made publicly available. If documents or documentation do not exist, confirm that the operating company took steps to try to convince the indigenous peoples to make such information publicly available.
2.10.5. Carry Out the FPIC Process 2.10.5.1. The operating company shall document, in a manner agreed to by the indigenous peoples, the FPIC process that was followed. This documentation shall be made publicly available unless the indigenous peoples' representatives have explicitly requested otherwise. 2.10.5.2. The operating company shall make the outcome (i.e., was consent granted or not) of the FPIC process publicly available. 2.10.5.3. If the process results in consent being given by indigenous peoples to certain mining-related activities, an agreement outlining the terms and conditions shall be signed or otherwise validated by the operating company and legitimate representative(s) of the indigenous peoples. The agreement shall be binding unless the parties agree otherwise. The agreement shall be made publicly	For 2.10.5.1, interview operating company representatives and indigenous peoples' representatives to confirm that FPIC process was carried out according to the agreed-to process. Create opportunities for indigenous peoples not directly involved in FPIC negotiations or discussions to provide feedback to IRMA regarding whether or not they have been kept informed of the FPIC process and proposed project, and if their concerns and views were heard and taken into consideration by their representatives involved in as part of the process. Also determine if they believed the process to be free of coercion, intimidation and manipulation. Determine if any grievances regarding the FPIC process were filed with the company's

[96] This may be carried out concurrent with 2.10.3.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
available unless the indigenous peoples' representatives ' explicitly request otherwise.	project-level grievance mechanism or any other grievance mechanism available to community members, including customary law based mechanisms. For 2.10.5.2, and 2.10.5.3, confirm that the outcome of the process was made publicly available. Review signed (or otherwise validated) agreement. If auditor does not have access to all or relevant parts of the agreement, interview operating company representatives, legitimate representatives of indigenous peoples to confirm the outcome of the consent process. Also, confirm with indigenous representatives that any agreements were in languages that the indigenous representatives and peoples could understand.
2.10.6. Failure to Obtain Indigenous Peoples' Consent 2.10.6.1. If a company does not obtain consent from indigenous peoples, mining-related activities shall not proceed.	No verification necessary, because if there is not consent granted through the FPIC process, then the operating company's project will not be eligible for IRMA certification.
2.10.7. Implementation and Ongoing Engagement 2.10.7.1. The operating company shall maintain a system to document the status of the commitments made during the FPIC consent process and make this available to the indigenous peoples' representatives. 2.10.7.2. Engagement with indigenous peoples shall continue throughout all stages of the mining project.	For 2.10.7.1, confirm with the operating company that it has a system for documenting the status of its commitments; and confirm with indigenous peoples' representatives that they have access to this information. Determine, through interviews with operating company representatives and indigenous peoples representatives if there have been any complaints about the implementation of the agreement, and whether or not they have been satisfactorily resolved. For 2.10.7.2, interview operating company and indigenous peoples' representatives to determine if on-going engagement has been satisfactory, and consent has been maintained, or if relevant, resought or renewed as per 2.10.2.3.

NOTES

FPIC, in the context of this standard, requires that engagement with indigenous peoples be free from external manipulation, coercion and intimidation; that potentially affected indigenous peoples be notified that their consent will be sought sufficiently in advance of commencement of any mining-related activities; that there be full disclosure of information regarding all aspects of the proposed project in a manner that is accessible and understandable to the indigenous people; and that indigenous peoples can approve, partially or conditionally approve, or reject a project or activity, and companies abide by the decision.

Because of the requirement that FPIC be free from external manipulation, coercion and intimidation, an FPIC process cannot be undertaken in situations where indigenous or tribal peoples are living in voluntary isolation. Consequently, IRMA will not certify a mine if affected communities include indigenous peoples living in voluntary isolation.

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 national laws. For the purposes of interpreting this standard IRMA proposes the definition presented in the Glossary, adopted from guidance published by the UN Permanent Forum on Indigenous Peoples. Also, IRMA will be developing a guidance document for this chapter that will provide additional information on this and other FPIC-related issues.

Cross References to Other Chapters

CHAPTER	ISSUES
1.1—Legal Compliance	As per Chapter 1.1, if there are host country laws related to Free, Prior and Informed Consent, the company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law.
2.4—Human Rights Compliance and Due Diligence	If indigenous peoples' human rights have been infringed upon at existing mines, a company will be expected to mitigate and remediate the impacts as per Chapter 2.4. This includes human-rights-related impacts on indigenous peoples from past activities at existing mines that have not been adequately mitigation or remediated.
2.8—Community and Stakeholder Engagement	Chapter 2.8 applies to engagement with stakeholders, including rights holders such as indigenous peoples. Therefore, in addition to meeting the requirements above, engagement with indigenous peoples shall conform to the requirements in Chapter 2.8. In particular, criterion 2.8.3 is important to ensure that indigenous peoples have the capacity to fully understand their rights and collaborate effectively in FPIC process, including in the collection of relevant information. Also, 2.8.4 ensures that communications and information are in culturally appropriate languages and formats that are accessible and understandable to affected indigenous peoples, and that information is provided in a timely, manner.
2.11—Cultural Heritage	As per requirement 2.11.5.1, where impacts may occur to indigenous peoples' critical cultural heritage, negotiation shall take place through the FPIC process, unless otherwise specified by the indigenous peoples.
2.12—Resettlement	As per requirement 2.12.6.3, if a project requires the displacement of indigenous peoples, the operating company shall not proceed with resettlement unless it obtains FPIC from affected indigenous peoples.

Cross References to Other Chapters	
2.13—Grievance Mechanism and Access to Other Remedies	Grievances or concerns related to the implementation of FPIC and any related agreements may be addressed through the operational-level grievance mechanism, or other mechanisms for handling grievances agreed to by the indigenous peoples and the company. Complaints or grievances related to unremediated or unsatisfactory mitigation of impacts from past mining-related activities may also be raised through the operational-level grievance mechanism as per Chapter 2.13.
3.7—Protected Areas	As per requirement 3.7.4.1, mining-related activities shall only be undertaken in Indigenous and Community Conserved Areas if agreed to through the FPIC process.
4.1—Environmental and Social Impact Assessment	Some of the aspects of FPIC scoping may be carried out as part of the ESIA (e.g., relevant data collection and studies), however, it is likely that engagement with indigenous peoples will take place before the ESIA process begins, since it would be in the company's best interest to know prior to undertaking the significant step of ESIA whether or not potentially affected indigenous peoples are even interested in pursuing an FPIC process related to mineral development.
4.2—Reclamation and Closure	As per requirement 4.2.8.4, if there is the potential that the mining project will require long-term water treatment, this must be explicitly discussed as part of the Free, Prior and Informed Consent process.

TERMS USED IN THIS CHAPTER

Collaborate

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.

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.

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.

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.

Host Country Law

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. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Indigenous Peoples

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." See Glossary for full definition.

Mining-Related Activities

Encompasses any activities that may occur during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure), and includes all physical activities (e.g., land disturbance and clearing, sampling, airborne surveys, construction, ore removal, ore processing, waste management, reclamation, etc.).

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.

Stakeholder

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.

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.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, and groups that would be vulnerable due to other circumstances (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, and groups that suffer social and economic discrimination, including indigenous peoples and minorities.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 2.11
Cultural Heritage

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.[97]

Mining and other forms of industrial development can over time both create and also result in profound and irreversible damage to cultural heritage. Most obviously, mining 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 as a result of inappropriate visitation of sites or the inappropriate use of traditional knowledge.[98]

TERMS USED IN THIS CHAPTER

Affected Community ■ Chance Find ■ Competent Professionals ■ Collaborate ■ Critical Cultural Heritage ■ Existing Mine ■ Free, Prior and Informed Consent ■ Highly Protected Areas ■ Indigenous Peoples ■ Mining-Related Activities ■ New Mine ■ Nonreplicable Cultural Heritage ■ Operating Company ■ Protected Area ■ Replicable Cultural Heritage ■ Significant Changes to Mining-Related Activities ■ Tangible Cultural Heritage ■ Traditional Knowledge■

These terms are explained at the end of this chapter

Increasingly, mining 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.[99]

OBJECTIVES/INTENT OF THIS CHAPTER

To protect and respect the cultural heritage of communities and indigenous peoples.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is applicable to all mines applying for IRMA certification that have the potential impact indigenous peoples' cultural heritage and/or the cultural heritage of non-indigenous communities.

New vs. Existing Mines: New mines and existing mines shall meet the requirements in this chapter. Existing mines that have not carried out a cultural heritage assessment as per 2.11.1 are not expected to carry out an assessment unless there are proposed changes to the company's plans or activities that may

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[97] 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.

[98] 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 for some indigenous peoples, if knowledge of sacred sites is transferred inappropriately it may be dangerous to both the giver and receiver. (O'Fairchellaigh, C. 2008. Negotiating Cultural Heritage? Aboriginal-Mining Company Agreements in Australia. p. 7)

[99] E.g., see Anglo American. 2009. The Anglo Social Way: Management System Standards. p. 12; and also: Rio Tinto. 2011. Why Cultural Heritage Matters.

potentially affect cultural heritage (or significantly change the nature or degree of an existing impact on cultural heritage); or if previously unknown cultural heritage is encountered by the mining company (also known as "chance finds").

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- This chapter previously cited many of the IFC Performance Standard 8 (IFC PS8) requirements. The chapter has been rewritten to add clarity and reduce duplicative requirements or extraneous information, so that companies know exactly IRMA expects of companies with respect to cultural heritage due diligence. It still aligns strongly with IFC PS8. Where used, the specific IFC paragraph of PS8 will be cited in IRMA Guidance for this chapter.
- The requirements previously listed under 2.11.9. Indigenous Peoples' Cultural Heritage and 2.11.10. Cultural Heritage Awareness, Management and Information Sharing have not been deleted – they were integrated into other criteria (i.e., 2.11.5. Critical Cultural Heritage; 2.11.7. Commercial Use of Cultural Heritage; and 2.11.2. Cultural Heritage Procedures and Training).
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Cultural Heritage Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.11.1. Cultural Heritage Assessment 2.11.1.1. Prior to the development of a new mine, or when there are significant changes to mining related activities, the operating company shall undertake a screening process to identify risks and potential impacts to cultural heritage from the proposed mining-related activities. 2.11.1.2. If the screening indicates potential adverse impacts, the operating company shall assess the nature and scale of the impacts and propose mitigation measures. 2.11.1.3. Screening, assessment and development of mitigation measures shall be carried out by competent professionals, and include consultations with relevant stakeholders.[100]	For 2.11.1.1 and 2.11.1.2, interview appropriate company representatives and review cultural heritage assessment screening documentation. For 2.11.1.3, review documentation (e.g., resumes) to confirm that screening, assessment and mitigation development were carried out by competent professionals; and confirm with company representatives and relevant stakeholders that the company consulted with affected communities and other relevant stakeholders (e.g., regulatory agencies) to identify cultural heritage of importance.
2.11.2. Cultural Heritage Procedures and Training 2.11.2.1. If the assessment demonstrates the potential for cultural heritage to be encountered	For 2.11.2.1, review any procedures and records related to cultural heritage training. For 2.11.2.2, if the assessment revealed the

[100] Relevant stakeholders may include communities within the host country who use, or have used within living memory, the cultural heritage, academics or others with expertise on the local cultural heritage, and national or local regulatory agencies that are entrusted with the protection of cultural heritage

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
during mining-related activities, or if previously unknown cultural heritage is encountered, the operating company shall ensure that relevant employees receive training with respect to cultural awareness, cultural heritage site recognition and care, and company procedures for cultural heritage management. 2.11.2.2. If the proposed location of a project is in an area where cultural heritage is expected to be found, the operating company shall develop procedures for: a. Managing chance finds. b. The procedure shall, at minimum, require 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; c. Managing potential impacts to cultural heritage from contractors and visitors; and d. Allowing continued access to cultural sites, subject to consultations with affected communities and overriding health, safety, and security considerations. 2.11.2.3. If the project affects indigenous peoples' cultural heritage, the operating company shall collaborate with indigenous peoples to determine procedures related to the sharing of information related to cultural heritage.	project to be in an area where cultural heritage is expected to be found, confirm that the company developed a "chance find procedure." Also, confirm with company, and relevant affected stakeholders, that chance finds were not disturbed until after an assessment by competent professionals was made. Interview relevant operating company staff with responsibility for managing cultural heritage-related risks and impacts about their procedures for managing potential impacts to cultural heritage from operational activities, contractors and visitors. Review any related documentation. If the project site contains cultural heritage or prevents access to previously accessible cultural sites, confirm with relevant affected communities that access, as determined through community consultation process, is being provided to them. For 2.11.2.3, if relevant, interview representatives from affected indigenous peoples to ensure that the operating company has collaborated with them to determine what information is acceptable to share with employees and others.
2.11.3. Removal of Replicable Cultural Heritage 2.11.3.1. When tangible cultural heritage that is replicable and not critical is encountered the operating company shall apply 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	For 2.11.3.1, if the project site contains tangible cultural heritage that is replicable and not critical, confirm with appropriate company representatives and relevant stakeholders that the operating company took all reasonable steps to avoid impacts, and where avoidance was not possible, applied the mitigation hierarchy outlined in 2.11.3.1. For 2.11.3.2, confirm that any mitigation work was carried out by competent professionals. Review methodology and, to the extent possible, verify that it aligns with international best practices. Interview stakeholders to determine their views on whether or not mitigation was carried out in

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
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 where affected communities are using the tangible cultural heritage for long-standing cultural purposes compensate for loss of that tangible cultural heritage. 2.11.3.2. All mitigation work involving replicable cultural heritage shall be carried out and documented by competent professionals, using internationally recognized practices for the protection of cultural heritage.	a responsible and respectful manner.
2.11.4. Removal of Non-Replicable Cultural Heritage 2.11.4.1. The operating company shall not remove any 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 project conclusively outweigh the anticipated cultural heritage loss from removal; and c. Any removal of cultural heritage is conducted using the best available technique. 2.11.4.2. All mitigation work involving non-replicable cultural heritage shall be carried out and documented by competent professionals, using internationally recognized practices for the protection of cultural heritage.	For 2.11.4.1, if the project site contains cultural heritage that is non-replicable, confirm with appropriate company representatives and relevant stakeholders that it was not removed unless the conditions in 2.11.4.1 were met. Review documentation evaluating the overall benefits of the project against the anticipated cultural heritage loss, such as lost benefits to particular ties to the heritage, and loss to the affected community of benefits that might arise from commercial or other use of the site. Confirm that any mitigation work was carried out by competent professionals. Review methodology and, to the extent possible, verify that it aligns with international best practices. For 2.11.4.2, interview stakeholders to determine their views on whether or not removal was avoidable, and if unavoidable whether mitigation was carried out in a responsible and respectful manner.
2.11.5. Critical Cultural Heritage 2.11.5.1. Except under exceptional circumstances, the operating company shall not remove, significantly alter, or damage critical cultural heritage. In exceptional circumstances when impacts on critical cultural heritage are unavoidable, the operating company shall	For 2.11.5.1, 2.11.5.2 and 2.11.5.3, if the project site contains critical cultural heritage, confirm through interviews with appropriate company representatives and relevant stakeholders, and document review, that critical cultural heritage was not removed, significantly altered or damaged unless the

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
collaborate with affected communities to negotiate measures to protect critical cultural heritage and provide equitable outcomes for affected communities. Where impacts may occur to indigenous peoples' critical cultural heritage, negotiation shall take place through the Free, Prior and Informed Consent process outlined in Chapter 2.10) unless otherwise specified by the indigenous peoples. 2.11.5.2. The process and outcome shall be documented. 2.11.5.3. The operating company shall 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.[101]	company collaborated with affected communities on protective measures and equitable outcomes, and retained external experts to assist in the assessment and protection of critical cultural heritage. Review credentials of external experts. If indigenous peoples' critical cultural heritage may be impacted, confirm through interviews with the operating company and indigenous peoples' representatives that negotiations occurred during the FPIC process unless otherwise specified by the indigenous peoples. See table of Cross References to Other Chapters (Chapter 3.7) for more information.
2.11.6. Cultural Heritage in Legally Protected Areas 2.11.6.1. Where a proposed project is located within a legally protected cultural heritage area or a legally defined buffer zone, the operating company shall: a. Ensure that the legally protected area is not considered a Highly Protected Area, as per IRMA Chapter 3.7; b. Comply with the requirements 2.11.5.1, 2.11.5.2 and 2.11.5.3; c. Comply with national and/or local cultural heritage protected area management plans; d. Consult with agencies or bodies responsible for protected area governance and management, local communities and other key stakeholders on the proposed project; and e. Implement additional programs, as appropriate, to promote and enhance the conservation aims of the protected area.	For 2.11.6.1, review documentation related to Chapter 3.7 to verify that cultural heritage of concern is not within an HPA. If the project site is in a legally protected area outside of an HPA, confirm with appropriate company representatives and relevant stakeholders that in addition to meeting the requirements related to critical cultural heritage, that the company is in compliance with existing regulations and management plants; carried out consultations, and implemented additional programs to promote or enhance the protect area's conservation aims.

[101] For example, the best available technique proposed by the competent professionals used by the operating company's could undergo a peer review by international external experts, or technical experts selected by stakeholders, to ensure that no better, feasible techniques are available.

2.11.7. Commercial Use of Cultural Heritage

2.11.7.1. Where the operating company proposes to use the 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; the scope and nature of the proposed commercial development; and the potential consequences of such development.

2.11.7.2. The operating 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 their customs and traditions.

2.11.7.3. Where the operating 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 Chapter 2.10 unless otherwise specified by the indigenous peoples.

For 2.11.7.1 and 2.11.7.2, if relevant, confirm with appropriate company representatives and relevant stakeholders that the operating company: has informed communities of their rights under national and international law, and of the scope, nature and potential consequences of the proposed commercial development; has undertaken a collaborative process with good faith negotiations, and has provided fair and equitable sharing of benefits, consistent with the local communities' customs and traditions.

For 2.11.7.3, if indigenous peoples' cultural heritage is proposed for commercial use by the operating company, confirm through interviews with the operating company and indigenous peoples' representatives that negotiations occurred during the FPIC process unless otherwise specified by the indigenous peoples.

NOTES

This chapter uses, as its basis, the IFC Performance Standard 8 (PS 8) Cultural Heritage. Where used, the specific IFC paragraph of PS 8 is cited in the requirements below. Where the IFC PS8 was used to inform an IRMA requirement, the specific IFC paragraph of PS 8 will be cited in IRMA Guidance for this chapter.

While this chapter applies to both indigenous and non-indigenous cultural heritage, it does not specify special requirements applicable to Indigenous and Community Conserved Areas (ICCAs) designated as such by indigenous peoples. Such areas may be considered by indigenous peoples as a part of their cultural heritage and, as such, would be covered by the general requirements of this chapter and/or Chapter 2.10—Free, Prior and Informed Consent.

Cross References to Other Chapters	
CHAPTER	**ISSUES**
1.1—Legal Compliance	Some host countries may have laws relating to the assessment and protection of cultural heritage. As per Chapter 1.1, if host country laws related to cultural heritage exist, a company is required to abide by those laws. However, if IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law.
2.4—Human Rights Compliance and Due Diligence	If the infringement of human rights is predicted during cultural heritage assessment, or if human rights related to cultural heritage have been infringed upon at a new or existing mines, a company will be expected to prevent, mitigate and remediate the impacts as per Chapter 2.4. This includes the mitigation or remediation of human-rights-related impacts from past cultural heritage management activities at existing mines.
2.8—Community and Stakeholder Engagement	Engagement with stakeholders and indigenous peoples regarding cultural heritage shall conform to the requirements in Chapter 2.8 Community and Stakeholder Engagement. In particular, criterion 2.8.3 is important to ensure that stakeholders have the capacity to fully understand their rights and collaborate effectively in the development of prevention/mitigation plans and monitoring processes. Also, 2.8.4 ensures that communications and information are in formats and languages that are accessible and understandable to affected communities and stakeholders, and provided in a timely, culturally appropriate manner.
2.10—Free, Prior and Informed Consent	The identification and assessment of mining activities that impact critical cultural heritage of indigenous peoples may be addressed as part of the FPIC process as per Chapter 2.10.
3.7—Protected Areas	Some legally protected areas are designated as such to preserve "critical cultural heritage." The operating company is required in Chapter 3.7 to identify legally protected areas that may be affected by mining-related activities. That information will be applicable for Criteria 2.11.6 Cultural Heritage in Legally Protected Areas. Indigenous and Community Conserved Areas (ICCAs) designated as such by indigenous peoples, may be considered as cultural heritage by indigenous peoples and therefore addressed in Chapter 2.11. However, consideration of the ecological attributes of protected ICCAs may also be addressed in Chapter 3.7 of the IRMA Standard.
4.1—Environmental and Social Impact Assessment	The cultural heritage assessment required in 2.11.1 may be done in coordination with or as part of the Environmental and Social Impact Assessment in Chapter 4.1, rather than as a stand-alone assessment.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a project.

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.

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 established and scientifically robust methodologies that would withstand scrutiny by other professionals.

Collaborate

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.

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.

Existing Mine

A mine that was operational prior to the date that the IRMA Standard first went into effect.

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.

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.

Highly Protected Areas

Protected areas where mining and related activities are prohibited. This includes the following categories: World Heritage Sites; sites on a State Party's official Tentative List for World Heritage Site inscription; IUCN category I-III protected areas; IUCN category I-V marine protected areas; core areas of UNESCO biosphere reserves; and areas where indigenous peoples live in (voluntary) isolation or where it is assumed that they might live.

Indigenous Peoples

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." See Glossary for full definition.

Mining-Related Activities

Encompasses any activities that may occur during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure), and includes all physical activities (e.g., land disturbance and clearing, sampling, airborne surveys, construction, ore removal, ore processing, waste management, reclamation, etc.).

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Standard first takes effect.

Nonreplicable Cultural Heritage

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.

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.

Protected Area

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. (See IRMA Glossary for an expanded definition based on IUCN management categories)

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." (IFC PS 8, Guidance Note).

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.

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.

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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 2.12 Resettlement

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.

TERMS USED IN THIS CHAPTER

Affected Community ■ Competent Professionals ■ Consultation ■ Displacement ■ Economic Displacement ■ Existing Mine ■ Forced Eviction ■ Free, Prior and Informed Consent (FPIC) ■ Grievance ■ Indigenous Peoples ■ Involuntary Resettlement ■ Livelihood Restoration Plan ■ Mining-Project ■ New Mine ■ Operating Company ■ Replacement Cost ■ Resettlement Action Plan ■ Stakeholder ■ Vulnerable Group ■

These terms are explained at the end of this chapter

Resettlement is considered involuntarily when people do not wish to move but do not have the legal right to refuse land acquisition that results in their displacement.[102] 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.[103] 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.[104]

When deemed unavoidable, involuntary resettlement, like other evictions, must only be carried out under exceptional circumstances and in accordance with international human rights law.[105]

OBJECTIVES/INTENT OF THIS CHAPTER

To avoid resettlement, and when that is not possible, equitably compensate affected persons and improve their living standards and livelihoods over pre-resettlement levels.

SCOPE OF APPLICATION

Chapter Relevance: This chapter applies if mining-related activities could result or have resulted in the physical or economic displacement and involuntary resettlement of people.

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[102] 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)

[103] IFC Performance Standard 5. Para. 3

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

[105] 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

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 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 resettled as a result of project activities.

New vs. Existing Mines: New mines shall meet the requirements in this chapter. At existing mines, where resettlement occurred in the past, operating companies are not required to demonstrate compliance with all of the requirements in this chapter, however, it is possible, even years after a resettlement program occurs, to evaluate the outcomes of resettlement projects and, if necessary, take steps to restore or improve the living conditions and livelihoods of those affected. Therefore, IRMA expects that any mine applying for IRMA certification that carried out a resettlement project after June 1, 1990[106] that posed a risk of significant social impacts will have carried out a completion audit or evaluation (See 2.12.7.3.b) prior to applying for IRMA certification.

If the evaluation demonstrates that the objectives of this chapter have not been met, the company is expected to develop and implement mitigation strategies in collaboration with the affected peoples until the objectives have been met. Mines that are in the mitigation development/implementation phase are eligible for certification.

For mines that involved resettlement prior to 1990, IRMA will not require evidence of such evaluations. It should be noted, however, that if there are human-rights-related impacts related to historic resettlement programs that have not been mitigated or remediated, they will need to be addressed as per Chapter 2.4; and other unremediated impacts may be raised by stakeholders and addressed through the operational-level grievance mechanism as per Chapter 2.13. (See the table "Cross Reference to Other Chapters" in the Notes Section of this Chapter for more information.)

Additionally, all mines shall apply the requirements of this chapter if there are proposed significant changes to mining-related activities, or if direct impacts become significantly adverse, such that communities or individuals have no alternative other than physical and/or economic displacement. In such cases, requirements of this chapter shall apply even where no initial project-related land acquisition or resettlement was involved.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- The 2014 version of this chapter explicitly mentioned various IFC Performance Standard 5 (PS 5) requirements. IFC PS 5 contained many requirements that reiterated information from previous requirements, and so to streamline the IRMA chapter we rewrote the IFC requirements in our own words, with the intention of providing added clarity on IRMA's expectations, and reducing duplicative requirements and extraneous information. The chapter still aligns strongly with IFC PS 5. To more closely align with IFC, we have clarified that this chapter only applies to involuntary resettlement. Companies are encouraged, however, to apply objectives of this chapter to all resettlement, involuntary or voluntary. Where this chapter used or draws from IFC requirements, the specific IFC paragraph of PS 5 will be cited in IRMA Guidance for this chapter.
- The requirements related to community engagement have been grouped together in a single criteria 2.12.2 (now includes requirements previously under the criteria headings Grievance Mechanism, and Access to Independent Experts).

[106] These types of post-resettlement evaluations have been required for World Bank projects since 1990. (See: World Bank Operational Manual. Operational Directive OD 4.30. June 1, 1990. www.ifc.org/wps/wcm/connect/322d9d80488559f584b4d66a6515bb18/OD430_InvoluntaryResettlement.pdf?MOD=AJPERES)

- The requirements previously under Consent of Resettled Communities have been moved to 2.12.6. Resettlement and Livelihood Restoration Planning and Implementation.
- Clarified that existing mines that resettled people after 1990 are not required to demonstrate compliance with this chapter, except for the completion audit/evaluation. Such an evaluation is necessary to demonstrate to IRMA that major resettlement activities have been carried out in a manner that meets the objectives of this chapter.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Resettlement Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.12.1. Risk and Impact Assessment 2.12.1.1. If there is the potential that a new mine or expansion of an existing mine may require land acquisition that could result in the involuntary resettlement of people, during the early stages of project planning the operating 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. 2.12.1.2. The assessment shall include: a. Identification of alternative project designs to avoid or minimize the displacement of people; b. Identification and analysis of social, cultural, human rights, conflict, environmental and economic risks and impacts to displaced persons and host communities for each project design alternative, paying particular attention to potential impacts on women, the poor and vulnerable groups; and c. Identification of risk and impact prevention and mitigation measures, and estimated costs of implementing the measures. 2.12.1.3. The assessment shall be undertaken by, or with the assistance of qualified external experts with experience in resettlement related to large-scale development projects. 2.12.1.4. The operating company shall document decision-making regarding alternative project design and efforts to minimize resettlement. 2.12.1.5. The assessment shall be made public, or, at minimum, be made available to potentially	For 2.12.1.1, confirm, through interviews with relevant operating company employees and review of relevant documentation, that alternative project designs were considered to avoid or minimize physical and/or economic displacement, and that special attention was given to impacts on the poor and vulnerable. For 2.12.1.2, review the assessment. For 2.12.1.3, interview relevant company representatives, and review the qualifications of the company employees or external experts that carried out the resettlement assessment to confirm that they had experience in resettlement. 2.12.1.4, review assessment documentation to confirm that the company provided rationale for decisions related to alternative project designs in relation to how they prevented or minimized the need for resettlement. For 2.12.1.5, confirm that the risks and impacts assessment was made public, or was made available to potentially affected people and their advisors.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
affected people and their advisors, and IRMA auditors.	
2.12.2. Community Engagement 2.12.2.1. The operating company shall disclose relevant information and consult with potentially affected persons and communities, including host communities, during: a. The assessment of displacement and resettlement risks and impacts, including the consideration of alternative project designs to avoid or minimize resettlement; b. The development of a Resettlement Action Plan and/or Livelihood Restoration Plan; c. The development of resettlement options; d. Resettlement implementation; and e. The monitoring and evaluation of compensation payments, livelihood restoration activities, and resettlement. 2.12.2.2. The operating company shall facilitate access, if desired by potentially affected persons 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.[107] 2.12.2.3. Persons from affected communities, including host communities, shall have access to a mechanism to raise and seek recourse for concerns or grievances related to displacement and resettlement.[108]	Confirm, through interviews with relevant company employees and affected persons and communities, including host communities, and review of documentation: • For 2.12.2.1, there has been disclosure of relevant information and participation of affected communities in the identification of project alternatives to minimize the need for resettlement; in the planning and the development of mitigation measures; implementation; and monitoring and evaluation of compensation payments, and livelihood restoration activities and resettlement implementation. Confirm that the views of affected households, included women and men, vulnerable groups, and host communities, were incorporated into the company's decision-making related to resettlement planning, mitigation, compensation, implementation, monitoring and evaluation. • For 2.12.2.2, that the company offered to provide access to independent experts to affected people and host communities throughout the resettlement process. • For 2.12.2.3, the operational-level grievance mechanism developed as per IRMA Chapter 2.13 may be used to handle resettlement-related complaints. If it is not, confirm that any resettlement-specific grievance mechanism is consistent with the requirements of IRMA Chapter 2.13. Confirm that a mechanism was in place early enough to be able to receive and

[107] 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.

[108] The operational-level grievance mechanism developed as per Chapter 2.13 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 2.13.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
	address specific concerns related to compensation and relocation raised by displaced persons and host communities, and that affected persons were aware of the grievance mechanism, that it was culturally appropriate, and enabled stakeholder participation in its design.
2.12.3. Resettlement and Livelihood Restoration Planning and Preparation 2.12.3.1. When project-related displacement is unavoidable, a census shall be carried out to collect appropriate socio-economic baseline data to identify the persons who will be physically or economically displaced by the project and determine who will be eligible for compensation and assistance. 2.12.3.2. In the absence of host government procedures, the operating 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. 2.12.3.3. In the case of physical displacement, the operating 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 persons 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 persons, paying particular attention to the needs of women, the poor and the vulnerable; c. Describe development-related opportunities and benefits for affected persons and communities; d. Describe the methods used for valuing land and other assets;	Interview relevant operating company staff and stakeholders and review documentation to confirm that the operating company: • For 2.12.3.1, carried out a census to collect appropriate socio-economic baseline data to identify potentially displaced persons, and, if relevant, as per 2.12.3.2, developed criteria for eligibility for compensation and assistance; and disseminated cut-off date and eligibility criteria throughout the project area. • Developed a Resettlement Action Plan or Livelihood Restoration Plan in consultation with affected communities that meets the criteria in 2.12.3.3.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
e. Establish the entitlements and rates of compensation for all categories of affected persons (including host communities) in a transparent, consistent, and equitable manner; f. Include a budget and implementation schedule; and g. Be publicly available.	
2.12.4. Mitigation Measures Related to Physical Displacement 2.12.4.1. In all cases, when people living in the mining project area are physically displaced: a. The operating company shall provide relocation assistance that is suited to the needs of each group of displaced persons and is sufficient for them to restore their standard of living at an alternative site; b. New resettlement sites built for displaced persons shall offer improved living conditions; and c. Displaced persons' preferences with respect to relocating in pre-existing communities and groups shall be taken into consideration and existing social and cultural institutions of the displaced persons and any host communities shall be respected. 2.12.4.2. In cases where physically displaced persons 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 law: a. The operating 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. b. If cash compensation is appropriate and preferred by the affected persons, compensation shall be sufficient to replace lost land and other assets at full replacement cost in local markets.[109] 2.12.4.3. In cases where physically displaced	Interview relevant operating company staff and affected persons, and review documentation to confirm that the operating company: • Classified, within the census, each physically displaced person according to the categories laid out in 2.12.4.2 and 2.12.4.3. • Offered relocation assistance to all groups of physically displaced persons sufficient to restore their standards of living; offered improved living conditions if any resettlement sites were built for displaced persons; considered displaced persons' preferences with respect to relocating in pre-existing communities; and respected existing social and cultural institutions of the displaced persons and host communities. For 2.12.4.2, if relevant, confirm that the operating company offered (a) a choice of replacement property of equal or higher value, security of tenure, equivalent or better characteristics, and advantages of location, or (b) cash compensation sufficient to replace the lost land and other assets at full replacement cost in local markets to physically displaced persons having formal legal rights to the land or assets they occupy or use, or a claim to land recognized or recognizable under national law. For 2.12.4.3, if relevant, confirm that the operating company offered a choice of

[109] 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."

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
persons have no recognizable legal right or claim to the land or assets they occupy or use, the operating 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 persons had been occupying the project area prior to the cut-off date for eligibility.	options for adequate housing with security of tenure; provided compensation for the loss of assets other than land at full replacement cost; and offered assistance to physically displaced persons without a recognizable legal right or claim to the land or assets they occupy or use that was sufficient to restore their standard of living at an adequate alternative site.
2.12.5. Mitigation Measures Related to Economic Displacement 2.12.5.1. 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 operating 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 persons 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 persons who are without legally recognizable claims to land shall be compensated for lost assets other than land at full replacement cost. 2.12.5.2. Economically displaced persons 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, and standards of living as follows: a. Transitional support shall be provided based on a reasonable estimate of the time required to restore their income-earning capacity,	For 2.12.5.1, interview relevant operating company staff and affected persons and review documentation to confirm that the operating company: • Compensated business owners full cost of establishing business elsewhere, as well as losses during transition time, including employee compensation; • Provided affected persons with legal rights or claims to land recognizable under national law with replacement property (e.g., agricultural or commercial) of equal or greater value or cash compensation at full replacement cost; • Provided affected persons without legally recognized claims to land with compensation for lost assets other than land (e.g., crops, irrigation infrastructure an d other improvements) at full replacement cost. For 2.12.5.2, confirm that the operating company provided affected persons whose livelihoods or income levels were adversely affected with: • Transitional support, as necessary, based on a reasonable estimate of the time required to restore their income-earning capacity, production levels and standards of living • Provided replacement land of equal or higher productive potential and other beneficial characteristics to persons whose land-based livelihoods were adversely affected • Provided replacement land of equal or higher productive potential and other

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
production levels, and standards of living; b. For persons 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; c. For persons 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 d. If circumstances prevent the operating company from providing land or similar resources as described above, alternative income earning opportunities shall be provided to restore livelihoods.[110]	beneficial characteristics to persons whose land-based livelihoods were adversely affected • Provided continued access to affected resources or access to alternative resources of equal or higher livelihood potential to persons whose natural-resource-based livelihoods were adversely affected • Provided alternative income earning opportunities as needed.
2.12.6. Resettlement and Livelihood Restoration Implementation	
2.12.6.1. The operating company shall make a good faith effort to negotiate agreements with all households that will be physically or economically displaced by the project, even if the company has the legal means to acquire land or restrict land use without their consent.	For 2.12.6.1, interview operating company and review documentation demonstrating that efforts were made (e.g., visits to homes, other forms of contact were made) to negotiate agreements with affected households. A good faith effort means that if an affected household rejects the company's initial offer, that the company continues to try to work with the household to find an acceptable resolution.

[flag] **2.12.6.2. Issue in brief:** The first draft of the IRMA Standard required "consent" from 80% of affected households of non-indigenous peoples. We have reworded this requirement to require signed agreements because it was unclear how consent would be demonstrated otherwise. We recognize that this approach may be viewed as unsatisfactory to some affected communities and NGOs (who pose questions such as what if the remaining 20% are the most vulnerable?) as well as some in the mining industry (who believe this requirement goes beyond current best practice).

It is widely agreed that involuntary resettlement should be avoided whenever possible because of its high potential to impact human rights and create or exacerbate impoverishment. One possible indicator of the likelihood that resettlement will have positive outcomes is if a significant portion of affected households are willing to negotiate and sign compensation and relocation agreements.

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

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
Conversely, a significant display of opposition and refusal to sign agreements may heighten the risk of forced evictions and potential for infringements of human rights. The UN Basic Principles and Guidelines on Development-Based Evictions and Displacement states that, "The right of affected persons, groups and communities to full and prior informed consent regarding relocation must be guaranteed." [111] As of yet, however, there is no international consensus for requiring consent for resettlement from non-indigenous communities. This draft of the IRMA standard retains the 80% "agreement from affected households" threshold. This percentage is based on the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, which India promulgated in 2013. That law required the consent of 80% of landowners affected by private projects such as mines. [112] A year later, however, the government created an ordinance that exempted a range of projects, including mining, from the consent and other provisions of the law. [113] IRMA is also considering a lower threshold of agreement for resettlement programs that affect only a small number of households (e.g., 10 or less). We welcome stakeholder input on these issues.	
2.12.6.2. If the resettlement affects non-indigenous peoples, the operating company shall seek to obtain agreements with all affected households, but at minimum shall obtain signed agreements with at least 80% of affected households that would be physically or economically displaced in order to proceed with the planned resettlement. 2.12.6.3. If a project requires the displacement of indigenous peoples, the operating company shall not proceed with the planned resettlement unless it obtains the free, prior and informed consent (FPIC) of affected indigenous communities as per IRMA Chapter 2.10. 2.12.6.4. Prior to negotiating with affected people, the operating company shall provide them with information 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	For 2.12.6.2, review documentation (e.g., copies of signed agreements, data on number of households identified versus the number who signed agreements). For 2.12.6.3, confirm with indigenous peoples that if resettlement occurred only with their free, prior and informed consent. For 2.12.6.4, confirm with affected people that they were provided with timely information throughout the resettlement process, and made good faith efforts to work with them to come to acceptable compensation and relocation terms. For 2.12.6.5 and 2.12.6.6, review documents related to payment of moving allowances and compensation, and transactions whereby the operating company acquired

[111] Kothari, M.(UN Special Rapporteur on Adequate Housing). 2007. UN Basic Principles and Guidelines on Development-Based Evictions and Displacement A/HRC/4/18. p. 12. Para. 56(e). www.ohchr.org/Documents/Issues/Housing/Guidelines_en.pdf

[112] A copy of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 is available at: indiacode.nic.in/acts-in-pdf/302013.pdf Updates on the progress of the legislation can be found at: www.prsindia.org/billtrack/the-right-to-fair-compensation-and-transparency-in-land-acquisition-rehabilitation-and-resettlement-second-amendment-bill-2015-3783/

[113] Oxfam India. 2015. "Land Acquisition Ordinance 2014: Dismissing Democracy, Displacing Safeguards?" www.oxfamindia.org/sites/default/files/PB-land-acquisition-ordinance-2014-dismissiong-democracy-displacing-safeguards-260215-EN.pdf

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
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). 2.12.6.5. The operating 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 persons. 2.12.6.6. The operating company shall document all transactions to acquire land rights, as well as compensation measures and relocation activities. 2.12.6.7. In cases where affected persons reject compensation offers that meet the requirements of this chapter and, as a result, expropriation or other legal procedures are initiated, the operating company: a. 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 persons; and b. Shall not tolerate the use of forced evictions, and shall take steps to ensure that evictions only occur in accordance with international human rights law[114] and the requirements of this chapter.	land rights, and those associated with compensation measures and relocation activities and those associated with compensation measures and relocation activities; and confirm through interviews with affected persons and other relevant stakeholders that possession of land and assets by the company occurred after compensation and other assistance was provided to them. For 2.12.6.7, if affected persons reject compensation offers and, as a result, expropriation or other legal proceedings were initiated, confirm through interviews with operating company and affected persons and other relevant stakeholders, that the operating company: • Sought to collaborate with relevant responsible government agencies to the extent allowed; • That if evictions occurred they were done so in accordance with procedures consistent with international human rights law as per the procedures outlined in the UNCESCR Right to Adequate Housing, e.g., that government or court-assessed compensation/mitigation for evicted persons was consistent with mitigation measures required in this chapter (as listed in 2.12.4. and 2.12.5), and that monitoring of these affected persons occurred as part of the general monitoring of the resettlement program.
2.12.7. Resettlement and Livelihood Restoration Monitoring and Evaluation 2.12.7.1. The operating 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	For 2.12.7.1 and 2.12.7.2, review procedures related to monitoring and evaluation of the RAP/LRP implementation. Interview affected persons to confirm that they were consulted during the monitoring and evaluation process. Interview operating company and review relevant documentation to confirm that corrective actions were taken, as

[114] 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. Paragraph 15. Available at: www.refworld.org/docid/47a70799d.html

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
of the RAP/LRP and the objectives of this chapter have been met. 2.12.7.2. Periodically, the operating company shall report to affected stakeholders on progress made toward full implementation of the Resettlement Action Plan or Livelihood Restoration Plan. 2.12.7.3. Where resettlement is deemed to pose a risk of significant adverse social impacts the operating company: a. Shall retain competent professionals to verify the operating 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 Resettlement Action Plan/Livelihood Restoration Plan 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 operating company, a comparison of implementation outcomes against the requirements of this chapter, and a determination as to whether the commitments made in the Resettlement Action Plan/Livelihood Plan have been delivered and the monitoring process can therefore be terminated; and iv. Is made available to affected stakeholders and their advisors.	necessary, based on monitoring feedback, and that the company reported to them on progress being made toward implementation of the RAP/LRP. For 2.12.7.3, if significant risks associated with resettlement were identified during the risk assessment, confirm through review of documentation (e.g., report of experts reviewing monitoring program; completion audit) and interviews with the operating company that: • Expert review of monitoring program and provide recommendations, if needed, to determine changes to monitoring program needed to ensure compliance with the requirements of this chapter. • A completion audit was undertaken (after the company perceived that resettlement had been successfully implemented); the audit was carried out by external experts; the review compared resettlement outcomes to objectives, and determined if the company's efforts to restore the living standards and livelihood opportunities of the affected population were properly executed and whether or not monitoring can be terminated.
2.12.8. Private Sector Responsibilities Under Government-Managed Resettlement 2.12.8.1. Where land acquisition and resettlement are the responsibility of the government, the operating company shall collaborate with the responsible government agency, to the extent permitted by the agency, to achieve outcomes that are consistent with this chapter. In addition, where government capacity is limited, the operating company shall identify government resettlement and compensation measures. If these measures do not meet the relevant requirements of this chapter, the operating company shall prepare a	For 2.12.8.1, where resettlement and land acquisition are the responsibility of the government, interview relevant operating company staff and review documentation to confirm that the operating company: • Collaborated with the responsible government agency, to the extent permitted by the agency, to achieve outcomes consistent with this chapter; • Played an active role during resettlement planning, implementation and monitoring where government capacity was limited;

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
supplemental plan that, together with the documents prepared by the responsible government agency, shall address the relevant requirements of this chapter. The operating 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 persons provided under applicable national laws and regulations; c. The supplemental measures to achieve the requirements of this chapter as described in criteria 2.12.4 and 2.12.5 in a manner that is permitted by the responsible agency and implementation time schedule; and d. The financial and implementation responsibilities of the operating company in the execution of its supplemental plan.	• Identified and described government resettlement measures undertaken; and if the measures did not meet the relevant requirements in this chapter, confirm that a supplemental resettlement plan was developed and implemented.

NOTES

This chapter uses, as its basis, the International Finance Corporation's (IFC) Performance Standard 5 (PS 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 the operating 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.

Where the IFC Performance Standard was used to inform an IRMA requirement, the specific IFC paragraph of PS 5 is cited in IRMA Guidance for this chapter.

Cross References to Other Chapters

CHAPTER	ISSUES
1.1—Legal Compliance	As addressed in 2.12.8.1, in some jurisdictions governments may run resettlement projects. As per Chapter 1.1, if there are host country laws that pertain specifically to land acquisition and resettlement, a company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law.
2.4—Human Rights Compliance and Due Diligence	If the timing works, the resettlement risk assessment required in 2.12.2.1 may be done in coordination with or as part of the Human Rights Impact Assessment in Chapter 2.4, rather than as a stand-alone assessment. If the infringement of human rights is predicted, or actually occurs as a result of a resettlement program, a company will be expected to prevent, mitigate and remediate the impacts as per Chapter 2.4. This includes the mitigation or remediation of human-rights-related impacts from past resettlement programs at existing mines.

Cross References to Other Chapters	
2.8—Community and Stakeholder Engagement	Engagement with stakeholders (including rights holders such as indigenous peoples) regarding resettlement shall conform to the requirements in Chapter 2.8. In particular, criterion 2.8.3 is important to ensure that stakeholders have the capacity to fully understand their rights and collaborate effectively in the resettlement assessment and the development of prevention/mitigation plans and monitoring processes. Also, 2.8.4 ensures that communications and information are in culturally appropriate formats and languages that are accessible and understandable to affected stakeholders, and are provided in a timely manner.
2.10—Free, Prior and Informed Consent	Resettlement of indigenous peoples shall only occur if the requirements of Chapter 2.10 Free, Prior and Informed Consent have been followed.
2.13—Grievance Mechanism and Access to Other Remedies	2.12.2.3 requires that a mechanism be available for affected persons to raise grievances related to resettlement. If appropriate and available, grievances or concerns during resettlement may be addressed through the operational-level grievance mechanism as outlined in Chapter 2.13. If a grievance mechanism is developed for the specific purpose of resettlement, it shall conform to the requirements of Chapter 2.13. There may be impacts related to past resettlement programs that have not been remediated. Complaints or grievances related to unremediated or unsatisfactory mitigation of impacts may be addressed through the operational-level grievance mechanism as per Chapter 2.13.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a project.

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 established and scientifically robust methodologies that would withstand scrutiny by other professionals.

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.

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.

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.

Existing Mine

A mine that was operational prior to the date that the IRMA Standard first went into effect.

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 Host Communities: With respect to resettlement, any communities receiving displaced persons.

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.

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.

Indigenous Peoples

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." See Glossary for full definition.

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.

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.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Standard first takes effect.

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.

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.

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.

Stakeholder

Persons/ groups 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, positively or negatively.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, and groups that would be vulnerable due to other circumstances (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, and groups that suffer social and economic discrimination, including indigenous peoples and minorities.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 2.13
Grievance Mechanism and Access to Other Remedies

BACKGROUND

Mining and other large development projects inevitably raise concerns and complaints from community members and stakeholders affected by these projects. It is now expected practice for mining companies to have an operational-level grievance mechanism in place for systematically receiving, tracking, resolving and communicating with local communities and stakeholders, including workers, about their grievances. Grievance mechanisms should not be considered a substitute for meaningful community and stakeholder engagement processes. The two are complementary and should be mutually reinforcing.[115]

TERMS USED IN THIS CHAPTER

Accessible ■ Affected Community ■ Consultation ■ Equitable ■ Grievance ■ Grievance Mechanism ■ Inform ■ Legitimate ■ Mining-Related Activities ■ Operating Company ■ Predictable ■ Remediation/Remedy ■ Rights Holder ■ Rights-Compatible ■ Stakeholder ■ Source of Continuous Learning ■ Transparent ■

These terms are explained at the end of this chapter

Operational-level grievance mechanisms 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 that provide recourse for 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.[116]

OBJECTIVES/INTENT OF THIS CHAPTER

To provide accessible and effective means for affected communities and individuals to raise and resolve mine-related grievances, while not limiting their ability to seek remedy through other mechanisms.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for all mine sites, as all sites have workers and most have external stakeholders who must be provided with an effective means of raising grievances with the company, and if the grievances are not adequately addressed through the operational-level mechanism, who have the right to access other remedies.

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[115] 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

[116] Ruggie, J. 2011. Guiding Principles on Business and Human Rights. A/HRC/17/31. Commentary for Principle 29.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- The chapter has been renumbered. It was previously 5.3.
- Provided more clarity on the development of publicly available procedures that address concerns such as confidentiality, ability to file anonymous complaints, etc. (see 2.13.2.)
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Grievance Mechanism and Access to Other Remedies Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
2.13.1. Access to Operational-Level Grievance Mechanism 2.13.1.1. The operating company shall ensure that stakeholders, including affected community members and rights holders (hereafter referred to collectively as "stakeholders") have access to an operational-level grievance mechanism for raising and seeking remedy for grievances related to the company and its mining-related activities.[117] 2.13.1.2. Operational-level grievance mechanisms shall meet the effectiveness criteria outlined in Principle 31 of the United Nations *Guiding Principles on Business and Human Rights*,[118] which include the need for the mechanism to 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.	For 2.13.1.1, confirm with operating company that an operational-level grievance mechanism is in place. Review any relevant procedures or information about the grievance mechanism. For 2.13.1.2, interview the operating company regarding how the company believes it is meeting the effectiveness criteria. Information related to expectations and examples of how companies may meet the effectiveness criteria will be provided in IRMA Guidance for Chapter 2.13.
2.13.2. Development of Grievance Mechanism and Procedures 2.13.2.1. The operating company shall consult with stakeholders to design culturally appropriate mechanisms and procedures that address, at minimum:	For 2.13.2.1, interview operating company and relevant stakeholders to confirm that stakeholders were consulted in the design the operational-level grievance mechanism and associated procedures. Interview stakeholders to determine if the resultant mechanism and procedures are

[117] More than one mechanism or approach to addressing grievances may be deemed necessary to meet the needs of communities and stakeholders. See IRMA Guidance for more details.

[118] 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)

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
a. How complaints will be filed, acknowledged, investigated, and resolved, including general timeframes for each phase; b. How confidentiality of a complainant's identity will be respected, if requested; c. The ability to file anonymous complaints, if deemed necessary by stakeholders; d. The provision of assistance for those who may face barriers to using the operational-level grievance mechanism; e. 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 f. How complaints and resolutions will be tracked and recorded. 2.13.2.2. The operating company shall ensure that all procedures are documented and made publicly available.	culturally appropriate, accessible (i.e., barriers to its use have been addressed) and acceptable to them. For 2.13.2.2, interview relevant operating company staff to confirm that procedures are documented, and that they are publicly available.
2.13.3. Access to Other Remedy Mechanisms 2.13.3.1. 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.	Interview relevant operating company staff to ensure that acceptance of remedy through the operational-level mechanism did not require the claimants to waive their rights to seek remedy on the same complaint through other non-judicial or judicial mechanisms. If this practice is alleged, review any relevant documentation and/or interview operating company, affected stakeholders and other relevant parties (e.g., legal advisors, human rights defenders).
2.13.4. Monitoring and Evaluation 2.13.4.1. The operating company shall monitor and evaluate the performance of the operational-level grievance mechanism over time. 2.13.4.2. Stakeholders shall be provided with clearly communicated opportunities to submit feedback on the performance of the operational-level grievance mechanism. 2.13.4.3. The operating company shall evaluate the outcomes and remedies provided through the operational-level grievance mechanisms to ensure that they accord with internationally recognized	For 2.13.4.1, interview relevant operating company staff, and review any documentation related to how the operating company monitors and evaluates the performance of the operational-level grievance mechanism. For 2.13.4.2, confirm with relevant operating company staff that stakeholders were provided opportunities to contribute feedback on the performance of the mechanism. For 2.13.4.3, determine how the company reviews grievances to ensure that outcomes

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
human rights. 2.13.4.4. The operating company shall demonstrate that monitoring results and stakeholder feedback have been taken into account to improve the effectiveness and performance of the grievance mechanism and to determine if changes in company activities can be implemented to prevent or mitigate similar grievances in the future.	and remedies accord with internationally recognized human rights. For 2.13.4.4, determine how the company integrates information from its monitoring and stakeholder feedback to improve the performance of the grievance mechanism and its own activities. If there have been concerns or problems with the mechanism identified through stakeholder feedback, determine if the company and stakeholders have been able to resolve these issues (e.g., by making changes to the mechanism or procedures).
2.13.5. Communications 2.13.5.1. The operating company shall take reasonable steps to inform all stakeholders of: a. The existence of the operational-level grievance mechanism, its scope, and its procedures; and b. Their rights to utilize alternative mechanisms for addressing complaints or grievances, such as administrative, judicial or other non-judicial remedies. 2.13.5.2. The operating company shall inform relevant personnel who interact with stakeholders of the proper procedures for handling stakeholder complaints, and ensure that personnel directly involved in the operational-level grievance mechanism receive instruction on the respectful handling of all complaints, including those that may appear frivolous.	For 2.13.5.1, interview relevant operating company staff, and review any materials used to educate or inform communities and stakeholders of the operational-level grievance mechanism and procedures. Interview a sample of stakeholders to confirm that: • They were made aware of the existence of the grievance mechanism and the scope of concerns/grievances that it is meant to handle (e.g., does it include human rights related complaints; those related to resettlement, if relevant; etc.); • They received information on procedures in formats and languages that were accessible and understandable to them, and in a timely and culturally appropriate manner as per the communications requirements in Chapter 2.8.; • They were informed of any procedures to protect confidentiality and remove barriers to their access to using the grievance mechanism; and • They were made aware of the right to use alternative mechanisms for resolving grievances. For 2.13.5.2, interview relevant operating company staff to confirm that procedures are in place for handling any complaints, including those that may be brought to their attention through channels that are outside

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
	of the operational-level mechanism, and that staff and contractors are aware of these procedures; and that they have been adequately trained and/or informed of the respectful handling of complaints or grievances.
2.13.6. Reporting 2.13.6.1. Periodically, the operating company shall report to stakeholders on grievances received and responses provided. This shall be done in a manner that protects the confidentiality and safety of those filing grievances.	Interview relevant operating company staff to determine how they report to stakeholders on the grievances received through the operational-level grievance mechanism, and how they protect confidentiality/safety of those filing grievances. Review any documentation related to the company's reporting. Confirm with stakeholders that they are aware of the grievance reporting.

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.[119]

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 stakeholders to raise concerns about issues pertaining to IRMA certification of a particular mining projects, as well as the IRMA certification process more generally.

Cross References to Other Chapters

CHAPTER	ISSUES
2.8—Community and Stakeholder Engagement	Engagement with stakeholders in the design and monitoring of the grievance mechanism shall conform to the requirements in Chapter 2.8 Community and Stakeholder Engagement. In particular, during the design of the mechanism (requirement 2.13.2.1) attention should be paid to conforming with Chapter 2.8, Criterion 2.8.3. Strengthening Capacity (i.e., ensuring those participating have the capacity to do so in a meaningful way); and during any communications with stakeholders, including reporting, the company shall adhere to the communications requirements of Chapter 2.8.

[119] Ibid. See Principle 31.

Cross References to Other Chapters	
Multiple chapters that mention grievance mechanisms	Grievance mechanisms are explicitly stated as requirements with regard to workers (Chapter 2.1), human rights (Chapter 2.4), mine security (Chapter 2.6), stakeholder engagement (Chapter 2.8) and resettlement (Chapter 2.12). However, even when not explicitly stated in a chapter, it is expected that access to the operational-level grievance mechanism and other remedies will be provided throughout the project's life to grievances related to any issues of stakeholder concern with the mining operation. It is possible that one grievance mechanism may be suitable to address all types of grievances raised in relation to the mining operation, including workers, although typically labor grievances are dealt with through a separate mechanism established through collective bargaining agreements or human resources policies. If, however, a company decides to create multiple grievance mechanisms, all of them shall meet the requirements of this chapter.

TERMS USED IN THIS CHAPTER

Accessible

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.

Affected Community

A community that is subject to risks or impacts from a project.

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.

Equitable

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.

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.

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.

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.

Legitimate

Means enabling trust from the stakeholder groups for whose use they are intended, and being accountable for the fair conduct of grievance processes.

Mining-Related Activities

Encompasses any activities that may occur during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure), and includes all physical activities (e.g., land disturbance and clearing, sampling, airborne surveys, construction, ore removal, ore processing, waste management, reclamation, etc.).

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.

Predictable

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.

Remediation/Remedy (in relation to human rights impacts)

Remediation and remedy refer to the process 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 harm through, for example, injunctions or guarantees of non-repetition.

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.

Rights-Compatible

Means ensuring that outcomes and remedies accord with internationally recognized human rights.

Stakeholder

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.

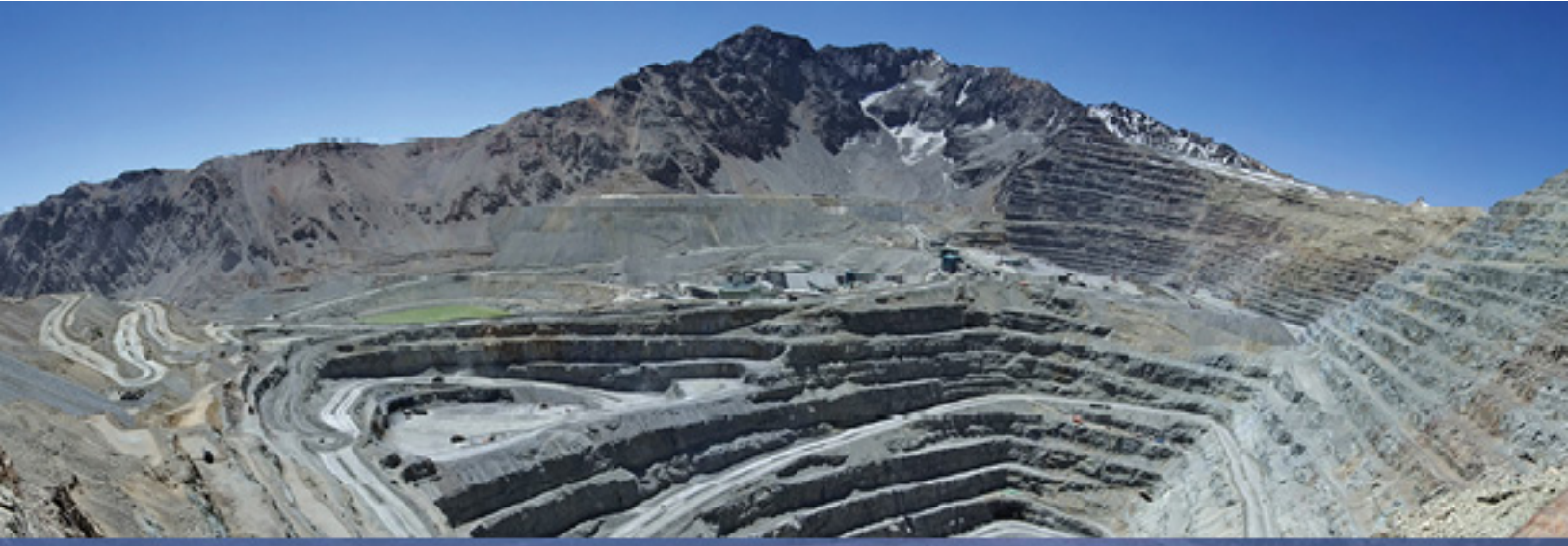
Source of Continuous Learning

Means drawing on relevant measures to identify lessons for improving the mechanism and preventing future grievances and harms.

Transparent

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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.



The IRMA Standard:
Requirements

Environmental Responsibility

Chapter 3.1 Water Quality

BACKGROUND

Mine operations can affect water quality in many ways, including: the discharge of mine water to the environment; seepage through mine wastes to groundwater and surface water; containment breaches; and the release of uncontrolled stormwater. Remediation of mining-caused pollution can be extremely costly, and the design of mine systems to prevent surface and groundwater contamination should be the goal of the mining operation.

Responsible mining operators can minimize water pollution by using a variety of source control approaches including: limiting infiltration of air and water to acid-bearing/metal leaching waste and mined materials; collecting mine-influenced water as close to the source as possible; and carefully controlling the discharge of stormwater and treated water to the environment.

The proactive identification of potential water quality 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.

TERMS USED IN THIS CHAPTER

Adaptive Management ■ Background Water Quality ■ Baseline Water Quality ■ Catchment ■ Consultation ■ Ecosystem ■ Existing Mine ■ High Quality Waters ■ Host Country Law ■ Hyporheic Zone ■ Mining Project ■ Mining-Related Activities ■ Mixing Zone ■ New Mine ■ Non-Industrial Stormwater ■ Operating Company ■ Pit Lake ■ Point of Compliance ■ Polishing ■ Post-Closure ■ Practicable ■ Protected Waters ■ Significant Changes to Mining-Related Activities ■ Spawning ■ Stakeholder ■ Trigger Level ■ Water Quality Goal ■

These terms are explained at the end of this chapter (before the water quality tables)

Mining operations can also contribute positively by treating water and making it available for environmental and community uses, and by creating an enhanced understanding for communities and other stakeholders of water-related environmental and community water quality and quantity needs.

OBJECTIVES/INTENT OF THIS CHAPTER

To protect water quality and avoid harm to human health, ecosystems and future water uses.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is applicable to all mines applying for IRMA certification.

New vs. Existing Mines: if Approaches A or B are followed, the expectation is that surface water discharges at new and existing mines will meet IRMA criteria or water quality will be maintained/improved, respectively. Requirement 3.1.4.2 in Approaches A and B does not apply to existing mines; and 3.1.2.1 does not apply to existing mines unless there is a significant change in mining related activities; and in the case of Approach B, 3.1.1.2 does not apply at existing mines unless practicable, and 3.1.1.3.b does not apply at existing mines unless they are already meeting the requirement.

NOTE TO READERS ON MAJOR CHANGES TO THIS CHAPTER:

- There is divergence among IRMA Steering Committee sectors regarding this chapter, and input is sought on the three approaches to water quality protection proposed below. In all three approaches, companies would be expected to demonstrate that current and future end-uses of water, and human health and ecosystems are sufficiently protected:
    - Approach A requires a mine to maintain or improve water quality, which is essentially a non-degradation approach (so if there are high quality waters, they are not allowed to be degraded; if there are lower quality waters, a company may not pollute them to a significantly greater extent than they are, and may choose to discharge effluent that actually improves the water quality). This approach is consistent with the US Clean Water Act and US state implementation of non-degradation or anti-degradation laws;
    - Approach B requires a mine to meet a set of water quality criteria (Tables 3.1.a, 3.1.b and 3.1.c) that represent international best practice on a parameter-by-parameter basis. The uses protected include freshwater and salt water aquatic organisms, drinking water, agriculture and irrigation, aquaculture, recreation, and industrial. Meeting these "IRMA water quality criteria" will add a high level of protection for all water quality uses.
    - Approach C requires a company to use risk assessment and management to determine, in consultation with the stakeholders, the water quality priorities for that catchment; to define important current and future uses; and develop water quality goals for mine sites that protect those uses, and to define opportunities to improve water quality on a catchment-wide basis.
- The inclusion of different options provides companies with flexibility in how they manage and protect water quality, and recognizes that different companies may prefer different approaches. However, there is debate within the IRMA sectors about whether to offer companies a menu of options to choose from, or to specify a preferred approach from which companies may request an exception. Before proceeding any further, IRMA is seeking feedback to ensure that any approach presented in the final Standard can be carried out in a manner that does not endanger water quality, and can be reliably verified by third-party independent auditors. Please see additional information in the flagged section, below.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Water Quality Requirements

3.1.1. Protection of Water Quality

3.1.1.1. The operating company shall demonstrate that it protects current human and ecosystem health and future end-uses of water using one of the following approaches:[120]

a. Demonstrate that it is maintaining or improving the baseline water quality of surface or groundwater bodies that receive mine discharges as per Approach A;
b. Demonstrate that mine discharges meet the water quality criteria requirements laid out in Approach B;

[120] The operating company shall provide auditors with documented rationale for why a particular approach was taken.

c. Demonstrate that it has undertaken a catchment-wide risk-based approach to water quality management that has resulted in the protection of values agreed to by relevant stakeholders as per Approach C.

[flag] **3.1.1. Issue in brief:** IRMA is evaluating several approaches for protecting water quality around mine sites. Some industry representatives advocate for a rigorous risk-based approach to defining water quality priorities with stakeholders on a water catchment-wide basis (e.g., watershed/drainage basin), and protecting or improving identified uses (while also meeting any minimum legal water quality requirements); while other IRMA stakeholder sectors would prefer to have a set of standardized criteria that all IRMA mines would meet, so that there is a consistent high bar applied across the board. IRMA is also conscious that rigorous risk assessments that include stakeholder participation may be challenging in some areas or for some companies that may not have the expertise or experience with risk-based assessment processes.

This version of the standard puts forth three possible approaches to water quality protection. We are interested in hearing stakeholders' opinions on these approaches based on their experiences with water quality protection at mines sites or other similar industries.

The final version of the Standard could include one, two or all three of these options. This decision will be based on stakeholder input, further research and discussions with technical experts. For example, while we have researched water quality requirements in other voluntary certification programs, we will be reaching out to some of these programs to better understand the challenges and successes of approaches already being implemented by certification systems.

Through stakeholder consultation, research and further field testing, IRMA will evaluate whether all approaches will meet the objective in 3.1.1, which is to protect current human and ecosystem health and future end-uses of water. We are also seeking input from stakeholders on revisions to existing requirements that will improve the auditability of the various approaches.

Approach A: Maintain or Improve Water Quality

Note: This is one option to protect current human and ecosystem health and future end-uses of water. The company shall provide auditors with documented rationale for why this approach was taken.

APPROACH A—MAINTAIN OR IMPROVE WATER QUALITY	MEANS OF VERIFICATION
3.1.1. Protection of Water Quality 3.1.1.1. Mine effluent discharges shall not significantly change surface water or groundwater quality from baseline water quality. Discharges shall be at concentrations that fall within the 95th	Review baseline and subsequent water quality monitoring data to confirm that concentrations of measured water quality parameters fall within the 95 percentile of baseline values. Confirm that carcinogenic chemicals do not

APPROACH A—MAINTAIN OR IMPROVE WATER QUALITY	MEANS OF VERIFICATION
percentile of baseline for each parameter. 3.1.1.2. Mine effluent discharges shall not exceed baseline concentrations for parameters that are carcinogenic.[121]	exceed baseline values.
3.1.2. Water Quality Modeling 3.1.2.1. When a new mining project is in the permitting stage, or when significant changes to mining-related activities initiates a new permitting process, the operating company shall utilize an accepted geochemical / hydrological numerical modeling program that: a. Uses results from geochemical characterization and baseline and operational water quality monitoring to identify which contaminants could be of current and future potential concern; b. Accounts for temporal changes in both water quality and water quantity during and after mining; c. Predicts the quality of effluent for pollution-generating facilities on the mine site, and surface water and groundwater quality at the points of compliance during operation, closure, and post-closure;[122] and incorporates mine water management and movement of contaminants from mine-related sources to receptors. 3.1.2.2. The assumptions and inputs to the model, and the modeling results, shall be made available for stakeholder review.	Review the latest water quality modeling results for mine facilities. Check to see that, at a minimum, the requirements in this subsection are being met. For the purposes of this requirement, a new project means a new mine, and "significant changes to mining-related activities," refers to changes at existing mines. In the latter case, if the changes prompt an environmental review, companies would be expected to update its geochemical characterization/modeling. Confirm, with stakeholders, that they have had the opportunity to review mode assumptions and results.
3.1.3. Water Quality Monitoring Program 3.1.3.1. The operating company shall establish, implement and maintain a documented program to monitor the potential impacts of the mining project on both surface water and groundwater. 3.1.3.2. The monitoring and modeling program	For 3.1.3.1, review documents that detail the water quality monitoring program and assess for comprehensiveness and compliance with requirements of this chapter. For 3.1.3.2, review documentation to

[121] "Carcinogen" means any substance or agent that produces or tends to produce cancer in humans. For the purposes of this chapter, the term carcinogen will apply to substances listed by the International Agency for Research on Cancer (IARC) that are classified as Group 1 (carcinogenic to humans) or Group 2A (probably carcinogenic to humans). In relation to mining, carcinogens of concerns may include, but are not limited to: arsenic, cadmium, beryllium, chromium (VI), lead, nickel, and some radioactive compounds. To view the IARC list of classifications, go to: monographs.iarc.fr/ENG/Classification/latest_classif.php

[122] i.e., predicts whether surface water and/or groundwater quality will be an issue post-closure.

APPROACH A—MAINTAIN OR IMPROVE WATER QUALITY	MEANS OF VERIFICATION
shall be improved by comparing the predicted and actual water quality data and other information that helps define the fate and transport of mine-related contaminants. The model evaluation should occur yearly but, at a minimum, shall be conducted every three years. 3.1.3.3. The effectiveness of water-quality-related mitigation measures shall be evaluated on an annual basis, using monitoring results. Any necessary changes to mitigation approaches shall be reflected in an adaptive management plan or its equivalent.	confirm that comparisons are being made between predicted and actual water quality and the model is evaluated and improved annually using results of the monitoring program. For 3.1.3.3, review documentation to confirm that monitoring data is being used to evaluate the effectiveness of mitigation measures, and that any necessary changes are reflected in an adaptive management plan (or its equivalent). The management plan may be integrated into a comprehensive mine site monitoring plan.
3.1.4. Water Quality Sampling 3.1.4.1. The water quality monitoring program shall include a water quality sampling plan informed by baseline water quality results, biological and benthic aquatic results, location of mine facilities, groundwater and surface water flow directions, and geochemical characterization of mine waste or other materials which have the potential to adversely impact water quality. 3.1.4.2. For new mines, baseline water quality for both surface and ground waters shall be established prior to the start of mine construction. Samples shall be collected: a. In sufficient number to provide statistical reliability to the measurements at each sampling point; and b. Over a period of at least two years; and c. In locations where mining-related activities have the potential to influence surface or groundwater. 3.1.4.3. During operation, closure, and post-closure, sampling shall occur as follows: a. Sampling points shall be selected to ensure reliable evaluation of the nature and extent of any mine-related contamination; b. A sufficient number of samples shall be collected to provide statistical reliability to the measurements at each sampling point; c. Sampling shall take place at a sufficient number of trigger and compliance monitoring points to determine whether baseline water	For 3.1.4.1, review monitoring program. Verify that baseline sampling locations are not influenced by past or present mining activities and that compliance locations are downgradient or downstream of mining sources. Ensure that all potential contaminants of concern are included in the analysis plan, and that frequency of sampling will capture the seasonal and interannual range of concentrations. For 3.1.4.2, confirm that two years of baseline surface water and groundwater quality data has been collected. Two years of baseline water quality and meteorological data is considered the minimum required. For 3.1.4.3: • Review the number and locations of surface water and groundwater quality measurement monitoring points. Review IRMA Guidance for Chapter 3.1, Sampling Points; • Interview operating company to determine how sites were selected; how sampling timing and frequency provides statistically reliable and useful information; and how the sampling sites have been located to detect impacts to surface or groundwater from potential mine-related contamination; • For operating mines most sampling programs for surface waters should require weekly samples, and quarterly

APPROACH A—MAINTAIN OR IMPROVE WATER QUALITY	MEANS OF VERIFICATION
quality for the surface and ground waters affected by the mining project is being maintained or improved; d. Efforts shall be made to identify when maximum contaminant concentrations exist, and to take samples during those time periods; and e. Sediment sampling shall be conducted annually at locations where mine facilities (roads, waste rock facilities, etc.) may be contributing sediment to surface waters; and f. Groundwater monitoring wells for tailings facilities, waste rock dumps, pit lakes, and from underground workings shall be in sufficient quantity and appropriate locations to establish upgradient water quality, and be reasonably able to detect the flow rate and concentration of contaminant plumes, and chemical loading down-gradient from the monitored facility. 3.1.4.4. Analytical (laboratory) detection limits shall be adequate to confirm that the IRMA water quality criteria can be met.	sampling for groundwater. If the sampling frequency is less than this, the longer sampling interval must be justified on a site-specific basis. • Confirm that sediment and sampling is conducted annually at key locations where sediment may enter surface waters from mine facilities. • Ensure that the groundwater monitoring network includes upgradient and downgradient locations, and can reliably evaluate groundwater flow directions and changes in groundwater elevations over time. • Determine if steps have been taken to identify possible relationships between stream flow and groundwater elevations and contaminant concentrations (e.g., rising limb of hydrograph) to ensure that sampling frequency is adequate to capture peak concentrations. Review IRMA Guidance for Chapter 3.1, Data Statistical Analysis. For 3.1.4.4, analytical detection limit is the minimum concentration of a substance that can be measured and reported with 99% confidence that the value is above zero in a given aqueous matrix. Confirm that the company uses a laboratory that can provide detection limits at or below the individual IRMA criteria (or is sufficient to detect concentrations similar to baseline values).
3.1.5. Trigger Levels 3.1.5.1. The operating company shall establish 'trigger levels' to provide an early indication that water quality at specified monitoring points is degrading, although it has not yet reached a level at which the applicable water quality criteria are being exceeded. 3.1.5.2. The operating company shall specify and document in an adaptive management plan or its equivalent the pre-planned responses that will be taken if a trigger level is consistently exceeded, in order to prevent the applicable water quality criteria from being exceeded.	For 3.1.5.1, confirm that trigger levels have been specified for each contaminant for each point of compliance at a trigger monitoring location. Trigger levels are fractions of compliance levels at the specified sampling locations – e.g., 25%, 50%, 75%. Trigger values will be set at concentrations that are higher than baseline values but lower than compliance values. Review IRMA Guidance for Chapter 3.1, Trigger Levels. For choosing trigger level monitoring sites for surface and ground waters, see Chapter 3.1, Trigger Levels/ Sampling Sites for Trigger

APPROACH A—MAINTAIN OR IMPROVE WATER QUALITY	MEANS OF VERIFICATION
	Values in the Guidance document. For 3.1.5.2, confirm that an adaptive management plan or its equivalent (e.g., water management plan) has been developed that specifies actions to be taken if trigger levels are exceeded. The adaptive management actions may include additional monitoring, water treatment, source control, pumping, installation of diversion structures, etc. Continued monitoring may be a necessary part of the response, but by itself would not be sufficient as a response. The plan will address measures to shut down operations if a remedy cannot slow or stop contaminant increases at compliance points.
3.1.6. Mixing Zones 3.1.6.1. Mixing zones are not allowed under Approach A.	Confirm that if this approach is taken mixing zones are not used.
3.1.7. Non-Industrial Stormwater 3.1.7.1. Each significant stormwater discharge point shall be monitored for dissolved metals and important mine-related contaminants, such as nitrate and sulphate, at least once per year, during a storm event. 3.1.7.2. If the level of dissolved metals and other important mine-related contaminants in the non-industrial stormwater discharge exceeds background water quality (or IRMA water quality criteria if background is not measured), action governed by an adaptive management plan or its equivalent shall be employed to ensure that future stormwater discharges meet relevant water quality criteria.[123]	For 3.1.7.1, review water quality data for stormwater discharge points for the period since the last audit. For 3.1.7.2, confirm that an adaptive management plan is in place that outlines measures to be taken in the event that a non-industrial stormwater discharge exceeds background or IRMA water quality criteria (e.g., measures may include increased settling time, the addition of flocculants, or other treatment technologies or BMPs, that are proposed to remedy the problem).
3.1.8. Land Application Disposal (LAD) 3.1.8.1. Land application disposal is not allowed under Approach A.	Confirm that if this approach is taken land application disposal is not used.
3.1.9. Publication of Water Monitoring Results	For 3.1.9.1, confirm that monthly data are

[123] Non-industrial stormwater would not need to meet the IRMA suspended solids criteria. See Notes at the end of the chapter for additional discussion.

APPROACH A—MAINTAIN OR IMPROVE WATER QUALITY	MEANS OF VERIFICATION
3.1.9.1. Water quality data for surface water and groundwater points of compliance, and the trigger-level measuring points, shall be published in electronic format quarterly on the mine or company website. 3.1.9.2. Graphical presentation of water quality data for surface water and groundwater points of compliance, and the trigger-level measuring points, shall be published annually on the mine or company website.	available on the mine or company web site. Note: The goal of publishing water quality monitoring results is to allow the public, and their technical experts, to review compliance data to evaluate both compliance and trends in water quality. Data should be presented in an electronic form/format that facilitates this analysis. For 3.1.9.2, verify that the mine or company website has presented the most recent data on water quality data for surface water and groundwater points of compliance, and the trigger-level measuring points.

Approach B: Meet IRMA Water Quality Criteria

Note: This is one option to protect current human and ecosystem health and future end-uses of water. The company shall provide auditors with documented rationale for why this approach was taken.

APPROACH B—MEET IRMA WATER QUALITY CRITERIA	MEANS OF VERIFICATION
3.1.1. Protection of Water Quality 3.1.1.1. The operating company shall demonstrate that water discharges to surface waters and groundwaters with the exception of non-industrial stormwater and discharges to protected waters or high quality waters, comply at the point of compliance with the IRMA water quality criteria in Tables 3.1.a, 3.1.b or 3.1.c. (See tables at the end of the chapter) a. An exception shall be made if the natural background concentration of a particular parameter is higher than an IRMA water quality criterion, in which case, the applicable baseline water quality concentration of that parameter shall be maintained. 3.1.1.2. Protected waters and/or high-quality waters shall not be degraded above baseline water quality by mine discharges.[124] 3.1.1.3. The water quality criteria for surface and groundwater shall be met: a. At the point of discharge for surface waters, or,	For 3.1.1.1, evaluate whether the applicable water quality criteria have been exceeded since the last audit. If water quality criteria published by an authorized authority more stringent than the IRMA criteria, then the published criteria would apply (by constituent). Water quality criteria will be deemed to be met if at least 95% of the measurements over the past 12 months for each specified parameter are met. It is intended that 3.1.1.1 and 3.1.1.2 apply to treated water discharges, not to non-industrial stormwater, which is discussed in 3.1.7. For 3.1.1.2, note the presence of protected and high-quality waters (as defined in the Glossary). Review baseline water quality data. Confirm that discharges do not exceed baseline water quality values. For 3.1.1.3, interview operating company

[124] This applies at new mines, and at existing mines where practicable.

APPROACH B—MEET IRMA WATER QUALITY CRITERIA	MEANS OF VERIFICATION
where a mixing zone is allowed, at the edge of the mixing zone; b. At the point(s) of compliance for ground waters, which shall be located inside of, but no further than the mine boundary, unless a groundwater mixing zone has been allowed;[125] c. If mine-influenced groundwater is discharging into a surface water via a spring, seep, or in a stream bed (hyporheic zone), then the groundwater discharge shall be treated as a surface water mine discharge for water quality purposes; and d. If the groundwater discharge is into a hyporheic zone where spawning is present, the groundwater discharge shall meet surface water standards in the hyporheic zone.	and stakeholders, and review surface water and groundwater monitoring data, including data sent to regulatory agencies, if required, to confirm that criteria are being met as required. For 3.1.1.3.c and d, determine if groundwater discharges into surface water via a spring, seep or hyporheic zone. Review IRMA Guidance for Chapter 3.1, Groundwater Discharge to Surface Waters.
3.1.2. Water Quality Modeling 3.1.2.1. When a new mining project is in the permitting stage, or when significant changes to mining-related activities initiates a new permitting process, the operating company shall utilize an accepted geochemical / hydrological numerical modeling program that: a. Uses results from geochemical characterization and baseline and operational water quality monitoring to identify which contaminants could be of current and future potential concern; b. Accounts for temporal changes in both water quality and water quantity during and after mining; c. Predicts the quality of effluent for pollution-generating facilities on the mine site, and surface water and groundwater quality at the points of compliance during operation, closure, and post-closure;[126] and incorporates mine water management and movement of contaminants from mine-related sources to receptors. 3.1.2.2. The assumptions and inputs to the model, and the modeling results, shall be made available for stakeholder review.	Review the latest water quality modeling for mine facilities. Check to see that, at a minimum, the requirements in this subsection are being met. For the purposes of this requirement, a new project means a new mine, and "significant changes to mining-related activities," refers to changes at existing mines. In the latter case, if the changes prompt an environmental review, companies would be expected to update its geochemical characterization/modeling. Confirm, with stakeholders, that they have had the opportunity to review mode assumptions and results.

[125] 3.1.1.3.b. Applies at new mines and at mines that are presently meeting this requirement.

[126] i.e., predicts whether surface and/or groundwater quality will be an issue post-closure.

APPROACH B—MEET IRMA WATER QUALITY CRITERIA	MEANS OF VERIFICATION
3.1.3. Water Quality Monitoring Program 3.1.3.1. The operating company shall establish, implement and maintain a documented program to monitor the potential impacts of the mining project on both surface water and groundwater. 3.1.3.2. The monitoring and modeling program shall be improved by comparing the predicted and actual water quality data and other information that helps define the fate and transport of mine-related contaminants. The model evaluation should occur yearly but, at a minimum, shall be conducted every three years. 3.1.3.3. The effectiveness of water-quality-related mitigation measures shall be evaluated on an annual basis, using monitoring results. Any necessary changes to mitigation approaches shall be reflected in an adaptive management plan or its equivalent.	For 3.1.3.1, review documents that detail the water quality monitoring program and assess for comprehensiveness and compliance with requirements of this chapter. For 3.1.3.2, review documentation to confirm that comparisons are being made between predicted and actual water quality and the model is evaluated and improved annually using results of the monitoring program. For 3.1.3.3, review documentation to confirm that monitoring data is being used to evaluate the effectiveness of mitigation measures, and that any necessary changes are reflected in an adaptive management plan (or its equivalent). The management plan may be integrated into a comprehensive mine site monitoring plan.
3.1.4. Water Quality Sampling 3.1.4.1. The water quality monitoring program shall include a water quality sampling plan informed by baseline water quality results, biological and benthic aquatic results, location of mine facilities, groundwater and surface water flow directions, and geochemical characterization of mine waste or other materials which have the potential to adversely impact water quality. 3.1.4.2. For new mines, baseline water quality for both surface waters and groundwaters shall be established prior to the start of mine construction. Samples shall be collected: a. In sufficient number to provide statistical reliability to the measurements at each sampling point; and b. Over a period of at least two years; and c. In locations where mining-related activities have the potential to influence surface water or groundwater. 3.1.4.3. During operation, closure, and post-closure, sampling shall occur as follows: a. Sampling points shall be selected to ensure reliable evaluation of the nature and extent of any mine-related contamination;	For 3.1.4.1, review monitoring program. Verify that baseline sampling locations are not influenced by past or present mining activities and that compliance locations are downgradient or downstream of mining sources. Ensure that all potential contaminants of concern are included in the analysis plan, and that frequency of sampling will capture the seasonal and interannual range of concentrations. For 3.1.4.2, confirm that two years of baseline surface water and groundwater quality data has been collected at new mines. Two years of baseline water quality and meteorological data is considered the minimum required. For 3.1.4.3: • Review the number and locations of surface water and groundwater quality measurement monitoring points. Review IRMA Guidance for Chapter 3.1, Sampling Points; • Interview operating company to determine how sites were selected; how sampling timing and frequency provides

APPROACH B—MEET IRMA WATER QUALITY CRITERIA	MEANS OF VERIFICATION
b. A sufficient number of samples shall be collected to provide statistical reliability to the measurements at each sampling point; c. Sampling shall take place at a sufficient number of trigger and compliance monitoring points to determine whether the IRMA water quality criteria for the surface and ground waters affected by the mining project are being met; (See Tables 3.1.a, 3.1.b and 3.1.c) d. Efforts shall be made to identify when maximum contaminant concentrations exist, and to take samples during those time periods; and e. Sediment and macroinvertebrate sampling shall be conducted annually at surface water locations key to verifying that there are no toxic impacts due to mine discharges outside designated mixing zones; and f. Groundwater monitoring wells for tailings facilities, waste rock dumps, pit lakes, and from underground workings shall be in sufficient quantity and appropriate locations to establish upgradient water quality, and be reasonably able to detect the flow rate and concentration of contaminant plumes, and chemical loading down-gradient from the monitored facility. 3.1.4.4. Analytical (laboratory) detection limits shall be adequate to confirm that the IRMA water quality criteria can be met.	statistically reliable and useful information; and how the sampling sites have been located to detect impacts to surface or groundwater from potential mine-related contamination; • For operating mines most sampling programs for surface waters should require weekly samples, and quarterly sampling for groundwater. If the sampling frequency is less than this, the longer sampling interval must be justified on a site-specific basis. • Confirm that sediment and macroinvertebrate sampling is conducted annually at key surface water locations. Review sediment and macroinvertebrate sampling data to ensure no toxic impacts from mine discharges outside designated mixing zones. • Ensure that the groundwater monitoring network includes upgradient and downgradient locations, and can reliably evaluate groundwater flow directions and changes in groundwater elevations over time. • Determine if steps have been taken to identify possible relationships between stream flow and groundwater elevations and contaminant concentrations (e.g., rising limb of hydrograph) to ensure that sampling frequency is adequate to capture peak concentrations. Review IRMA Guidance for Chapter 3.1, Data Statistical Analysis. For 3.1.4.4, The analytical detection limit is the minimum concentration of a substance that can be measured and reported with 99% confidence that the value is above zero in a given aqueous matrix. Confirm that the operating company uses a laboratory that can provide detection limits at or below the individual IRMA criteria.
3.1.5. Trigger Levels 3.1.5.1. The operating company shall establish 'trigger levels' to provide an early indication that	For 3.1.5.1, confirm that trigger levels have been specified for each contaminant for each point of compliance at a trigger monitoring location. Trigger levels are

APPROACH B—MEET IRMA WATER QUALITY CRITERIA	MEANS OF VERIFICATION
water quality at specified monitoring points is degrading, although it has not yet reached a level at which the applicable water quality criteria are being exceeded. 3.1.5.2. The operating company shall specify and document in an adaptive management plan or its equivalent the pre-planned responses that will be taken if a trigger level is consistently exceeded, in order to prevent the applicable water quality criteria from being exceeded.	fractions of compliance levels at the specified sampling locations – e.g., 25%, 50%, 75%. Trigger values will be set at concentrations that are higher than baseline values but lower than compliance values. Review IRMA Guidance for Chapter 3.1, Trigger Levels. For choosing trigger level monitoring sites for surface and ground waters, see Chapter 3.1, Trigger Levels/ Sampling Sites for Trigger Values in the Guidance document. For 3.1.5.2, confirm that an adaptive management plan or its equivalent (e.g., water management plan) has been developed that specifies actions to be taken if trigger levels are exceeded. The adaptive management actions may include additional monitoring, water treatment, source control, pumping, installation of diversion structures, etc. Continued monitoring may be a necessary part of the response, but by itself would not be sufficient as a response. The plan will address measures to shut down operations if a remedy cannot slow or stop contaminant increases at compliance points.
3.1.6. Mixing Zones 3.1.6.1. A surface water or groundwater mixing zone shall only be allowed if: a. It was subject to a comprehensive, documented risk assessment prior to implementation, including evaluations of the risks to human health, potential economic impacts, effects on aquatic biota, and changes to sediment quality; b. It is as small as practicable; c. It does not contain a zone of acute toxicity to any resident or transient aquatic species; d. It does not interfere with the passage of migratory fish; e. It does not include the water intake or cone of depression associated with a well for any pre-mine public or private drinking water source; f. It does not interfere with a pre-mine use of water for irrigation or livestock, unless that use can be adequately provided by a similar or	For 3.1.6.1, review the calculations for the extent of the mixing zone to determine if an effort was made to make the mixing zone as small-as-practicable. • Confirm that no zones of acute toxicity exist in the mixing zone, and that the mixing zone does not interfere with the passage of migratory fish or pre-mine use of water for irrigation/livestock. The presence of acute toxicity will be evaluated based on the results of the whole effluent toxicity testing. • Review documentation related to drinking water sources to ensure that the mixing zone is outside of the water intake or cone of depression for wells. • Confirm that a risk assessment was conducted and that the mixing zone has been reviewed through in consultation with stakeholders as per IRMA Chapter 2.8.

APPROACH B—MEET IRMA WATER QUALITY CRITERIA	MEANS OF VERIFICATION
better quality and volume by the mining operation through another source, and that this substitution is agreed to by all relevant water users; and g. It was subject to a credible, transparent process of stakeholder review and consultation (as per section 2.8.2. of the IRMA Standard) prior to implementation. 3.1.6.2. The discharge of effluent into a surface water mixing zone shall take place only after the application of best practice water treatment technologies. 3.1.6.3. If fish are present, whole effluent toxicity testing and benthic community testing shall be conducted at least annually on the effluent entering the mixing zone to evaluate the toxicity of the treated effluent. 3.1.6.4. Discharges of effluent into the mixing zone shall match the local hydrograph in relation to surface water flows to the extent practicable.	For 3.1.6.2, review the water treatment scheme at the mine to determine if the water treatment technologies being applied reflect best practices, and that technical feasibility and ecosystem benefits get equal consideration with economic cost in the choice of treatment technologies. Confirm that untreated mine effluent is not being discharged directly into groundwater or surface water. For 3.1.6.3, identify adaptive management actions that will take place if the effluent does not pass whole effluent toxicity testing. Actions could include improving treatment methods, mixing with cleaner water, or decreasing or ceasing effluent discharge. For 3.1.6.4, review records of effluent discharge, in comparison to local hydrograph and contaminant levels.
3.1.7. Non-Industrial Stormwater 3.1.7.1. Each significant stormwater discharge point shall be monitored for dissolved metals and important mine-related contaminants, such as nitrate and sulphate, at least once per year, during a storm event. 3.1.7.2. If the level of dissolved metals and other important mine-related contaminants in the non-industrial stormwater discharge exceeds IRMA water quality criteria, action governed by an adaptive management plan or its equivalent shall be employed to ensure that future stormwater discharges meet IRMA water quality criteria (measured as dissolved metals). Non-industrial stormwater is not required to meet the suspended solids criteria.[127]	For 3.1.7.1, review water quality data for stormwater discharge points for the period since the last audit. For 3.1.7.2, confirm that an adaptive management plan is in place that outlines measures to be taken in the event that a non-industrial stormwater discharge exceeds IRMA water quality criteria (e.g., measures may include increased settling time, the addition of flocculants, or other treatment technologies or BMPs, that are proposed to remedy the problem).
3.1.8. Land Application Disposal (LAD) 3.1.8.1. Land application disposal areas shall be designed so that breakthrough of contamination	For 3.1.8.1, verify that predictive modeling has been completed that predicts that breakthrough of contamination will not occur, and predicts which contaminant will

[127] See Notes at the end of the chapter for additional discussion.

APPROACH B—MEET IRMA WATER QUALITY CRITERIA	MEANS OF VERIFICATION
will not occur. 3.1.8.2. LAD shall not be a primary treatment method for metals.[128] 3.1.8.3. Prior to land application there shall be a rigorous analysis that shall show: a. The absorption capacity of the soils in the LAD; b. Which contaminant will saturate the soils first; c. That monitoring, including trigger levels, for both surface water and groundwater contamination in the LAD area has been implemented; and d. That the level of contaminants taken up in plants will pose no danger of contaminant accumulation that poses a risk to human health, wildlife, or domestic animals. 3.1.8.4. If any contaminant value exceeds the surface water or groundwater values predicted by the analysis of 3.1.8.3, use of the LAD area shall be discontinued until contaminant values no longer exceed predicted levels.	first exceed the absorptive capacity of the LAD area. For 3.1.8.2, confirm that some level of treatment to remove contaminants has been applied before the effluent is land applied. The use of LAD for polishing is acceptable, where the metal contaminant concentration acceptable for polishing is the level at or below the trigger level for that contaminant. If the concentration of the metal contaminant exceeds the trigger level, then a means of primary treatment should be employed before LAD is applied. For 3.1.8.3, review documentation related to LAD analyses: • Check technical reports for soil absorption capacity information. • Verify that predictive modeling has been completed that predicts which contaminant will first exceed the absorptive capacity of the LAD area. • Review monitoring results to verify compliance with criteria • Review any company documentation related to plant uptake of contaminants (e.g., studies conducted by the company or reviews of other studies that demonstrate low risk). For 3.1.8.4, review LAD contaminant data, and confirm that appropriate actions have been taken based on the data. The use of the predicted contaminant level to control use of LAD is to help prevent an exceedance at a point of compliance, which would be difficult to mitigate for an LAD area.
3.1.9. Publication of Water Monitoring Results 3.1.9.1. Water quality data for surface water and groundwater points of compliance, and the trigger-level measuring points, shall be published in electronic format quarterly on the mine or company website.	For 3.1.9.1, confirm that monthly data are available on the mine or company web site. Note: The goal of publishing water quality monitoring results is to allow the public, and their technical experts, to review compliance data to evaluate both compliance and trends in water quality. Data should be presented

[128] Use of LAD for polishing is acceptable.

APPROACH B—MEET IRMA WATER QUALITY CRITERIA	MEANS OF VERIFICATION
3.1.9.2. Graphical presentation of water quality data for surface water and groundwater points of compliance, and the trigger-level measuring points, shall be published annually on the mine or company website.	in an electronic form/format that facilitates this analysis. For 3.1.9.2, verify that the mine or company website has presented the most recent data on water quality data for surface water and groundwater points of compliance, and the trigger-level measuring points.

Approach C: Implement Catchment-Wide, Risk-Based Water Quality Management

Note: This is one option to protect current human and ecosystem health and future end-uses of water. The company shall provide auditors with documented rationale for why this approach was taken.

APPROACH C—RISK-BASED WATER MANAGEMENT	MEANS OF VERIFICATION
3.1.1. Protection of Water Quality 3.1.1.1. The operating company shall apply a risk framework to evaluate and manage water quality consistent with the international standard Risk Management – Principles and Guidelines (ISO31000:2009). 3.1.1.2. The operating company shall demonstrate a commitment to a catchment-wide risk-based approach to understanding and addressing water needs and managing water quality in a manner that protects current human and ecosystem health and future end-uses of water.	Confirm that a risk framework has been implemented, with input from stakeholders and with specifics on assessing and managing water-related risks. Review documents and engage with senior site management to obtain evidence of commitment by the operating company to a catchment-wide approach to understanding water needs and interests and implementing responsible management at the senior site management level.
3.1.2. Understand the Catchment Context 3.1.2.1. The operating company shall consult with communities, regulators, and other relevant stakeholders to understand the catchment context, including past, current, and potential future human, environmental, cultural, agricultural, and industrial uses and to understand stakeholder needs and concerns regarding water quality. 3.1.2.2. As part of this process, the operating company shall: a. Obtain, distribute, review and summarize relevant environmental data on the hydrology, land use, water use and water quality in catchments within the vicinity of the mining operation;	For 3.1.2.1, review documents for evidence that relevant water catchment-related data on the hydrology, land use, water use, water quality monitoring, and community monitoring have been collated, and interview operating company to confirm that the information is understood and that stakeholders were consulted. For 3.1.2.2.a, b and c, determine whether catchment-related data and information, including information about existing water quality objectives, have been obtained, reviewed, and distributed to the relevant stakeholders. For 3.1.2.2.d, confirm that the company

APPROACH C—RISK-BASED WATER MANAGEMENT	MEANS OF VERIFICATION
b. Obtain, distribute, review and summarize relevant environmental data to understand baseline and background conditions, including waters affected by natural mineralization and pollution from sources not related to operations at the mine site; c. Obtain and distribute to stakeholders relevant information about existing water quality objectives established by regulators for the catchment; and d. Ensure that stakeholders have the capacity to be meaningfully informed and engaged about water issues at the catchment level.	evaluated whether the stakeholders required additional capacity to be informed about and engaged in discussing the catchment context, and if additional capacity building was needed, that the requirements in IRMA Chapter 2.8 (Criteria 2.8.3) were implemented.
3.1.3. Develop Mine Site Context 3.1.3.1. For new projects, a sufficient number of statistically reliable samples covering a period of at least two years shall be collected prior to the start of mine construction to establish baseline water quality for both surface and ground waters. 3.1.3.2. The operating company shall establish, implement and maintain a documented program to understand and monitor potential impacts of the mining operation on both surface and groundwater, appropriate to the scope and scale of the operation. (See also criteria 3.1.9) 3.1.3.3. A new project shall undertake geochemical/hydrogeological evaluations and a modeling effort appropriate to the nature and scale of the planned operation and the surrounding land and water uses, for incorporation into the environmental impact assessment, the risk assessment(s) described in Section 3.1.5.1, and permitting or licencing process to: a. Use results from geochemical characterization and baseline and operational water quality monitoring to identify which contaminants could be of current and future potential concern; b. Account for temporal changes in both water quality and water quantity during and after mining; c. Predict potential surface water and groundwater quality for pollution-generating facilities on the mine site, and at the points of compliance during operation, closure, and post-closure;	For 3.1.3.1, confirm that a robust baseline water quality evaluation has been conducted that could be used to reliably establish baseline concentrations of potential mine contaminants in groundwater and surface water. For 3.1.3.2, evaluate whether a hydrologic and water quality monitoring program is in place that can distinguish mine influences on water and sediment quality and aquatic communities. For 3.1.3.3, confirm that a hydrogeochemical evaluation of potential mining effects has been conducted and used in the risk assessment and risk management plans in 3.1.5.2. The evaluation shall use results from baseline and operational monitoring and geochemical characterization to identify potential contaminants of concern and predict potential water quality downstream or downgradient of mine facilities. Confirm that an environmental model has been created, using the hydrogeochemical evaluation above, to predict concentrations of mine-related contaminants at compliance locations during and after mining, including during the post-closure period. For 3.1.3.4, confirm that the site environmental model is evaluated and updated (usually annually) using results of the monitoring program. If the model evaluation takes place less often, the

APPROACH C—RISK-BASED WATER MANAGEMENT	MEANS OF VERIFICATION
d. Incorporate mine water management and movement of mine-related contaminants from mine facilities from sources to receptors; and e. Predict whether surface and/or groundwater quality will be an issue post-closure. 3.1.3.4. Operational monitoring results shall be used to calibrate or improve the model. Evaluation of the model shall occur at a defined period appropriate to the monitoring program.	frequency should be justified based on site-specific conditions.
3.1.4. Develop Water Quality Goals 3.1.4.1. The operating company shall utilize information and data gathered in 3.1.2 to confirm water uses downstream of the mining operation (e.g., aquatic biodiversity, agriculture, human uses, industry). 3.1.4.2. The operating company shall refer to regulatory requirements and establish water quality objectives and numeric water quality goals that protect identified current and future uses within the catchment. Tables 3.1.d to 3.1.j shall provide a guide in establishing numeric water quality goals. (See tables at the end of the chapter) 3.1.4.3. Water quality goals and trigger levels shall be established to ensure that protected waters and high quality waters are given the highest priority for protection to ensure they are not degraded.	For 3.1.4.1, confirm that the operating company consulted with communities, regulators, and other relevant stakeholders and reviewed relevant environmental data in developing water quality goals, defining current and future uses, and identifying high quality waters. For 3.1.4.2, review numeric water quality goals, and interview operating company to determine its rationale for developing the numeric goals. Confirm that the company has documented its engagement with stakeholders, including how priorities have been developed and the concerns of stakeholders have been taken into account and responded to in determining current and future water quality priorities, goals, and uses. For 3.1.4.3, confirm that a program is in place to protect high quality waters from degradation.
3.1.5. Application of a Risk Framework: Risk Assessment and Management 3.1.5.1. The operating company shall carry out a water quality risk assessment that incorporates the following: a. The risk context shall be established using information gathered in 3.1.2 to 3.1.4, including mine site-specific contextual data. b. Risks shall be identified and analysed by systematic review of data and information gathered through stakeholder engagement, and shall consider risks, threats, consequences, barriers to prevent threats from occurring, and controls to mitigate the consequence of risks.	Confirm that the community and stakeholder engagement requirements of Chapter 2.8 have been incorporated into the Risk Assessment and Risk Management programs. Review documents for evidence of an effective stakeholder communication and consultation plan that is integrated into the organization's consideration of objectives and risks. For 3.1.5.1, review risk assessment documents and risk management plans to confirm that relevant geographical and catchment information, international and local water quality standards,

APPROACH C—RISK-BASED WATER MANAGEMENT	MEANS OF VERIFICATION
c. The probability and consequence of all potential water quality impacts shall be assessed for each mine facility (e.g., waste rock, tailings impoundment, open pit, underground, and stormwater run-off from industrial and non-industrial areas), and shall identify leading practices to prevent or minimize water quality impacts. d. Stakeholders shall be given the opportunity to provide input into the risk assessment process, and improvements will be reviewed for incorporation in response to stakeholder input. e. The risk assessment shall be revised at least annually or when there have been significant incidents or significant changes to mining-related activities. 3.1.5.2. The operating company shall manage water quality risks as follows: a. A risk management approach shall be utilized that is based on a waste minimization and water conservation hierarchy that prioritizes in the order of avoidance of impact, reduction of use, reuse, recycling, treatment, containment, and lastly, disposal. b. Risk management strategies shall be designed to protect the water quality goals established in 3.1.4. c. A risk management plan or its equivalent (e.g., water management plan or adaptive management plan) shall be created based on the results of the risk assessment. The plan shall identify actions to be taken and responsibilities for the actions and communications with stakeholders in the event of an identified water quality issue; and shall be used to evaluate the effectiveness of the mine management, mitigation, monitoring, and modeling programs. d. The risk management plan shall be updated annually, or as needed, to incorporate input from ongoing consultations and monitoring results, and to include new information as it becomes available.	environmental and human water uses, regulatory requirements, expected long-term water needs, sensitivity to water quality, and pressures on water use have been incorporated. In reviewing risk assessments, confirm that the following have been considered: company values; policies and systems; objectives; decision-making and strategies; mine layout and design; site water flows; rehabilitation design; available resources and technologies for successful management of the operation and its water; accountabilities and responsibilities for water management; and operational water needs. Confirm that these issues have been considered with strategic and technical objectives, including long-term production goals over the expected life of the operation, and environmental and social goals, such as water quality objectives that are based on protecting identified water uses and environmental and societal values. Confirm that the risk assessments are updated with significant incidents or changes to mining-related activities. For 3.1.5.2, review the risk management plan: • For a, confirm that the waste minimization and water conservation hierarchy was followed where treatment was deemed the best option • Review the water treatment scheme to ensure that technical feasibility and ecosystem benefits are considered in parallel with economic cost in the choice of treatment technologies. • For b, determine that actions and mitigation measures are included that will be put in place if water quality goals are not being met. • For c, confirm that a risk management plan has been created that reflects the outcomes of the risk assessment; evaluates the effectiveness of the mine management, mitigation, monitoring,

APPROACH C—RISK-BASED WATER MANAGEMENT	MEANS OF VERIFICATION
	and modeling programs; and requires actions based on the monitoring results. • For d, confirm that risk management plans are reviewed annually; confirm that the plans are updated as needed, based on issues identified in the stakeholder engagement meetings (e.g., review stakeholder comments and/or interview stakeholders to determine if their input has been reflected in updated plans) as well as monitoring results.
3.1.6. Waste Management and Mitigation 3.1.6.1. Where the risk management plan or its equivalent requires the prevention and mitigation of water quality impacts, the operating company shall review and implement best available techniques to mitigate identified risks.[129]	Confirm that leading practices to prevent or minimize water quality impacts from mine wastes have been identified and implemented, based on evaluation of potential water quality impacts and baseline or background water quality data.
3.1.7. Mixing Zones 3.1.7.1. Where surface or/and groundwater mixing zones are to be utilized as a risk management option, the evaluation shall be subject to a comprehensive, documented risk assessment prior to implementation, including evaluations of the risks to human health, potential economic impacts, effects on aquatic biota, and changes to sediment quality. 3.1.7.2. The mixing zone shall: a. Be as small as practicable; b. Not contain a zone of acute toxicity that would significantly affect fish and other aquatic animals; c. Not interfere with the passage of migratory fish; and d. Not include impacts that affect water uses of the water intake or cone of depression associated with a well for any pre-mine public or private drinking water source; nor interfere	For 3.1.7.1, if relevant, confirm that a mixing zone was used only after a risk assessment occurred. For 3.1.7.2: • Review the calculations for the extent of the mixing zone to confirm that the mixing zone is as small-as-practicable and complies with legal requirements of the permitting agencies (as per IRMA Chapter 1.1). • Review results of field investigations of aquatic communities and laboratory toxicity tests (e.g., whole effluent toxicity tests) using effluent and receiving water to confirm the mixing zone does not contain zones of acute toxicity, and is suitable to allow for the passage of migratory fish and the viability of identified aquatic species. • Review documentation related to

[129] Techniques may include: limiting water and oxygen ingress to acid bearing materials such as through surface and groundwater diversion of water to avoid infiltration of mine-related constituents, soil compaction of mining wastes to minimize ingress of oxygen and water, selective placement of acid bearing materials in-pit or underground, careful management of water use in mining and beneficiation, design of wet or dry covers for waste rock, clay seals, and responsible placement and management of tailings. Where risk mitigation is to be considered, options would be considered such as addition of chemicals to generate alkalinity or to neutralize acidity, and water treatment such as reverse osmosis, ion exchange, or passive treatment to reduce acidity.

APPROACH C—RISK-BASED WATER MANAGEMENT	MEANS OF VERIFICATION
with a pre-mine use of water for irrigation or livestock, unless that use can be adequately provided by a similar or better quality and volume by the mining operation through another source, and that this substitution is agreed to by relevant water users. 3.1.7.3. Where the mixing zone may extend beyond the boundary of the mine site, the mixing zone evaluation shall be subject to a credible, transparent process of community review and consultation (per section 2.8.2. of the IRMA Standard) prior to implementation. 3.1.7.4. The discharge of effluent into a surface water mixing zone shall take place only after both the application of leading practice water treatment technologies and a plan to manage the mixing zone to achieve the goals of 3.1.7.2 are in place.	drinking and irrigation/livestock water sources to confirm that surface water intakes or cones of depression for pre-mining wells are not adversely affected by the mixing zone. If substitute irrigation or livestock watering sources are offered, confirm that the relevant water users have been adequately informed through an IRMA stakeholder engagement process and agree to the substitution in writing or other appropriate means of verification. The agreement will include terms and conditions and the length of substitution. For 3.1.7.3, confirm, through review of minutes from stakeholder meetings, interviews with stakeholders, etc., that interested stakeholders were consulted as part of the risk assessment process; that the processes were accessible; and that stakeholders had the capacity to adequately participate as per requirements in IRMA Chapter 2.8. For 3.1.7.4, if discharge into a mixing zone occurs, confirm that leading practices are being used to treat mine effluent prior to discharge and review the plan.
3.1.8. Land Application Disposal (LAD) 3.1.8.1. Where LAD areas are to be utilized as a risk treatment option, the following shall apply: a. They shall be designed so that breakthrough of contamination will not occur. b. LAD shall not be a primary treatment method for metals. 3.1.8.2. Prior to land application there shall be a rigorous analysis to show: a. The absorption capacity of the soils in the LAD; b. Which contaminant will saturate the soils first; c. That monitoring, including trigger levels, for both surface water and groundwater contamination in the LAD area has been implemented; and d. That the level of contaminants taken up in plants will pose no danger of contaminant	For 3.1.8.1.a, confirm, based on the results from the analysis in 3.1.9.2, that trigger levels are established that ensure that contaminant breakthrough at the LAD will not occur. For 3.1.8.1.b, review monitoring results to confirm that the LAD is being used only for polishing and that the metal contaminant concentrations in the waters being applied to the LAD are at or below the defined trigger level for that contaminant. If the concentration of the contaminants in the water being applied to the LAD exceeds the trigger level, confirm that a means of primary treatment will be employed before the LAD is used. For 3.1.8.2.a, review technical reports for

APPROACH C—RISK-BASED WATER MANAGEMENT	MEANS OF VERIFICATION
accumulation to human health, wildlife, or domestic animals. 3.1.8.3. If a contaminant trigger level is exceeded at a LAD surface water or groundwater trigger monitoring point use of the LAD area shall be discontinued until all contaminant levels drop below the trigger levels, and the risk assessment shall be reviewed.	soil absorption capacity information. Ideally, site-specific soil adsorption studies will be conducted. For 3.1.8.2.b and c, verify that modeling has been completed that predicts whether and when (if relevant) contaminants will exceed the absorption capacity of the LAD area. For 3.1.8.2.d, review monitoring results to verify compliance with criteria. For 3.1.8.3, confirm that a monitoring program is in place to sample LAD trigger monitoring points for the identified contaminants of concern. Confirm that the adaptive management plan or its equivalent includes actions to discontinue the use of the LAD if the trigger levels are exceeded at LAD trigger monitoring points.
3.1.9. Monitoring Program 3.1.9.1. The risk management plan shall include a water quality monitoring program with the results used in the review of water quality goals and risk assessments and plans at an appropriate frequency (in accordance with 3.1.5.2.d). 3.1.9.2. The monitoring program shall include a water quality sampling plan informed by baseline water quality (for new mines) or background water quality (for existing mines), water quality results, biological and benthic aquatic results, location of existing and proposed mine facilities, groundwater and surface water flow directions, and geochemical characterization of mine waste or other materials which have the potential to adversely impact water quality. a. The program shall include a sufficient number of sampling points to determine which water quality goals established in 3.1.4 should be applied for the surface and groundwaters affected by the mining project, and whether these criteria as established are being met; b. Sampling points shall be selected to ensure reliable evaluation of the nature and extent of any mine-related contamination; c. Water quality, sediment and macroinvertebrate sampling shall be conducted annually or as relevant to assess impacts at surface water	For 3.1.9.1, confirm that the operating company has in place a monitoring program which uses the water quality monitoring results to review water quality goals and risk assessments and plans at least annually. For 3.1.9.2, confirm that a water quality, sediment, and macroinvertebrate sampling program has been created in collaboration with stakeholders that is defined according to weather and hydrologic conditions and the parameters being measured. For 3.1.9.2.a, b, and c, confirm that the selected sampling points are sufficient to evaluate the nature and extent of any mine-related contamination. For 3.1.9.2.d and e, confirm that trigger monitoring locations and that analytical detection limits are adequate to evaluate whether relevant water quality criteria are being met at all compliance points and whether trigger levels are being exceeded. For 3.1.9.2.f, confirm that the number of samples collected provide statistical reliability to the results and their comparison to trigger levels and water quality goals.

APPROACH C—RISK-BASED WATER MANAGEMENT	MEANS OF VERIFICATION
locations against water quality goals and verify that there are not toxic impacts to aquatic ecosystems due to mine discharges; d. Trigger levels and trigger monitoring locations shall be established to provide an early warning system for water quality effects; e. Analytical detection limits shall be adequate to confirm whether the relevant trigger levels and water quality criteria are being met at respective trigger and compliance points; and f. During operation, closure, and post-closure, a sufficient number of samples shall be collected to provide statistical reliability to the measurements at each sampling point. 3.1.9.3. Efforts shall be made to identify when maximum contaminant concentrations exist, and to take samples during those time periods.	For 3.1.9.3, confirm that the operating company has identified relationships between stream flow and groundwater elevations and contaminant concentrations (e.g., rising limb of hydrograph) and ensure that sampling frequency is adequate to capture peak concentrations.
3.1.10. Publication of Water Monitoring Results 3.1.10.1. Water quality data for surface water and groundwater monitoring locations shall be published in a format that is accessible and useful for stakeholders and at a frequency that meets the needs of stakeholders (at least annually, and quarterly if monitoring data are available). 3.1.10.2. Feedback about the accessibility, usefulness, and frequency of data availability shall be sought from stakeholders and considered in planning future communications.	For 3.1.10.1, confirm that data are available (at least annually, and quarterly if monitoring data are available). Confirm with stakeholders that data are available in formats that are appropriate and accessible to them, e.g., a summary report on the monitoring and/or graphs of the data and interpretation of the results, as appropriate. For 3.1.10.2, confirm that input on the form and frequency of data has been received and responded to in a timely manner.
3.1.11. Compliance with Water Quality Goals 3.1.11.1. The operating company shall demonstrate that water discharges to surface and ground waters comply at the discharge point of compliance with the water quality goals established in 3.1.4. 3.1.11.2. The water quality goals for surface and groundwater shall be met: a. At defined points of compliance for surface waters, which, for a mixing zone, will be at the downstream end of the mixing zone; and b. At groundwater compliance sites located outside the groundwater capture zone. If groundwater is discharging via a spring, seep, or through a stream bed (hyporheic zone) into a surface water reach where spawning is	For 3.1.11.1 – 3.1.11.3, evaluate whether the applicable water quality goals and trigger levels established in 3.1.4 have been exceeded at respective compliance and trigger monitoring locations (since the last audit). If they have been exceeded, identify the nature and extent of exceedances and confirm that adaptive management actions and mitigation measures are being taken to address the exceedances. Typically the water quality criteria and trigger levels are deemed to be met if at least 95% of the measurements over the past 12 months for each specified parameter are met. For 3.1.11.3, confirm that where trigger

APPROACH C—RISK-BASED WATER MANAGEMENT	MEANS OF VERIFICATION
present, the groundwater discharge will be required to meet surface water quality goals. 3.1.11.3. Where trigger levels are exceeded at trigger monitoring locations, corrective actions shall be taken.	levels are used, they are a basis for corrective actions.
3.1.12. Environmental and Community Water Uses 3.1.12.1. Where appropriate as part of an overall risk management strategy, mining operations may consider ways to contribute positively to environmental and community uses such as by treating water and making it available for other uses. Such opportunities would be considered in consultation with relevant local community and government stakeholders.	Review and report on stakeholder engagement feedback related to environmental and community water uses and the identification of and progress against appropriate opportunities.

NOTES

The water quality tables mentioned in Approaches B and C can be found after the "Terms Used in This Chapter."

IRMA Water Quality Criteria

For Approach B, the IRMA surface water and groundwater quality criteria were chosen to protect all potential beneficial uses – aquatic organisms (surface waters), drinking water, human health, and irrigation, agriculture and livestock. While this may be a rigorous requirement, it is best practice. IRMA is cognizant that these criteria, taken as a whole, will be more stringent than the criteria in most existing regulatory permits for existing and future mines. Provisions are made for baseline water quality conditions that exceed the IRMA criteria.

The IRMA water quality criteria were chosen from a mix of international water quality criteria, which are listed in the Notes of Table 3.1.b. Sometimes the criteria from different sources matched, in which case that number was used. If they differed slightly then the most prominently cited number was chosen. In most cases where only one entity had a criterion for a particular parameter, that contaminant was not listed. There were exceptions to these guidelines. A detailed list comparing the criteria from each international source is available, along with an explanation of how a particular IRMA criterion was chosen among the various international criteria. This detailed comparison exists on an Excel spreadsheet that is available on request.

Stormwater

In Approaches A and B, the intent of criteria 3.1.7 is to identify whether there are significant problems with non-industrial stormwater runoff from the mine facility, and to rectify these problems using existing Best Management Practices (BMPs). Criteria 3.1.7 contains a requirement to measure non-industrial stormwater discharges once a year during a storm event (this is a best practice). It is assumed that all sample collecting will be conducted in a manner that does not jeopardize the safety of the sample collector.

Most non-industrial stormwater is routed through a settling pond, although that is not a requirement. Whether it is or not, non-industrial stormwater should meet either IRMA numerical water quality criteria or baseline water quality, since it is technically un-impacted water. If it does not, then something on the

mine site is impacting that stormwater, so some form of additional treatment is required. Additional treatment could be as simple as increasing the residence time or adding flocculent in a settling pond, or employing better BMPs, including increased settling time, the addition of flocculants, or other treatment technologies.

Since most impacts of metals to organisms are related to dissolved quantities of metals, and since the suspended solids in non-industrial stormwater are often high and can yield correspondingly high "total" metals levels, IRMA is recommending using "dissolved" metals to judge compliance with the IRMA criteria. It is the intent that stormwater meet the IRMA criteria for suspended solids through settling or other means, but it is not an absolute requirement for storm related discharges because of high storm flow volumes.

Cross References to Other Chapters	
CHAPTER	**ISSUES**
1.1—Legal Compliance	As per Chapter 1.1, if there are host country laws that pertain specifically to the topics addressed in any IRMA chapter (e.g., the use of mixing zones in Approach B, 3.1.6 and Approach C, 3.1.8), the company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirement, as long as complying with it would not require the operating company to break the host country law. E.g., if host country water quality criteria are more protective of human health or the environment than IRMA requirements, the host country requirements supersede IRMA requirements.
2.8—Community and Stakeholder Engagement	The requirement to consult with stakeholders regarding mixing zones (in Approach B, 3.1.6) shall conform with IRMA stakeholder engagement requirements in Chapter 2.8. This includes determining if the stakeholders have the capacity to effectively participate in discussions, and provision for access to independent experts if necessary to ensure meaningful engagement. Similarly, in the risk-based approach option to water quality protection (Approach C), the various requirements related to stakeholder engagement will need to meet the requirements in Chapter 2.8, including, the provision of capacity building or access to independent experts if that is what is needed for effective participation in the risk-based approach processes.
3.2—Water Quantity	Chapter 3.1 addresses issues relating to water quality. Chapter 3.2 considers issues relating to the quantity of water used.
3.3—Mine Waste Management	Requirements in Chapter 3.3 address pit and underground backfill, liners, and lake-riverine-ocean waste disposal.
4.2—Reclamation and Closure	Requirements in Chapter 4.2 address financial sureties and long-term/perpetual water treatment.

TERMS USED IN THIS CHAPTER

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. In this way, decision-making simultaneously meets one or more resource management objectives and, either passively or actively, accrues information needed to improve future management. Adaptive management is a tool that should be used not only to change a system, but also to learn about the system. See Glossary for full definition.

Background Water Quality

Water quality in a catchment that has not been impacted by the mine (e.g., water quality upstream of the mine site; or upgradient for groundwater).

Baseline Water Quality

The water quality before the effects of any anthropogenic activity has been detected.

Catchment

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 any point along a stream channel. The word catchment is sometimes used interchangeably with drainage basin or watershed.

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.

Ecosystem

A dynamic complex of plant, animal and micro-organism communities, and their non-living environment, interacting as a functional unit.

Existing Mine

A mine that was operational prior to the date that the IRMA Standard first went into effect.

High-Quality Waters

High-quality waters are those waters in which baseline water quality has not been degraded by anthropogenic activity, and for which most contaminants do not exceed IRMA water quality criteria.

Host Country Law

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. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Hyporheic Zone

A region beneath and alongside a streambed, where there is mixing of shallow groundwater and surface water.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

Mining-Related Activities

Encompasses any activities that may occur during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure), and includes all physical activities (e.g., land disturbance and clearing, sampling, airborne surveys, construction, ore removal, ore processing, waste management, reclamation, etc.).

Mixing Zone

A portion of a surface or groundwater in which the effluent discharge mixes with the receiving water, and in which water quality is allowed to exceed otherwise specified standards. Compliance with water quality criteria occurs at the edge of the mixing zone.

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Standard first takes effect.

Non-Industrial Stormwater

Discharge of rainfall, snow or snowmelt runoff from land and impervious surface, e.g., access roads.

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.

Pit Lake

Lake formed in the site of a mine pit when mine dewatering pumpage ceases.

Point of Compliance

The physical location where water quality must meet the surface/groundwater criteria of the IRMA Standard or other relevant water quality objectives. The point of compliance for a surface water discharge is the point of discharge; the points of compliance for groundwater are all groundwater monitoring sites located outside the groundwater capture zone (see the definition for capture zone); in no case shall mine-related contaminants extend beyond the mine boundary; and if a mixing zone is authorized, then the point of compliance is at the edge of the mixing zone.

Polishing

A secondary or a higher level of treatment that may be required to reach water quality objectives or criteria.

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 converted to a post-closure trust fund (or equivalent).

Practicable

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.

Protected Waters

Protected waters are those waters designated by a national, regional, or local governmental body as waters for which no degradation above baseline water quality values will be allowed.

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.

Spawning

The release or deposit eggs of a fish, amphibian, mollusc, or crustacean.

Stakeholder

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.

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.

Water Quality Goal

In this chapter, means a numeric value established for contaminant parameters that is protective of current and identified future uses of the surface and groundwater.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Water Quality Tables

IRMA Water Quality Criteria (protective of most sensitive uses)

3.1.a—IRMA Surface Fresh Water Quality Criteria

3.1.b— IRMA Fresh Groundwater Quality Criteria

3.1.c— IRMA Salt Water Quality Criteria

Criteria by Designated Use

3.1.d—Aquatic Organisms - Fresh Water Quality Criteria

3.1.e—Aquatic Organisms - Salt Water Quality Criteria

3.1.f—Human Health Drinking Water Quality Criteria

3.1.g—Agriculture - Irrigation Water Quality Criteria

3.1.h—Aquaculture Water Quality Criteria

3.1.i—Recreational Water Quality Criteria

3.1.j—Industrial Water Quality Criteria

Note: Data and rationale for IRMA water quality criteria and designated use water quality 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

TABLE 3.1.a. – IRMA Surface Fresh Water Quality Criteria

Metals / Metaloids	Units		Criteria[1]	Most Sensitive Use	Source[2]
Aluminum	µg/L		30	Aquaculture	AUS, WHO
Antimony	µg/L		6	Human Health - Drinking Water	USEPA, Health CA
Arsenic	µg/L		10	Human Health - Drinking Water	USEPA, Health CA, AUS, WHO
Barium	µg/L		1000	Human Health - Drinking Water	Health CA
Beryllium	µg/L		60	Human Health - Drinking Water	AUS
Cadmium	µg/L		X [3]	Aquatic Organisms Fresh Water	USEPA
Calcium	mg/L		measure		
Chromium (Total)	µg/L		50	Human Health - Drinking Water	Health CA, AUS, EU, WHO
Chromium (VI)	µg/L		20	Aquaculture	WHO
Cobalt	µg/L		50	Agriculture - Irrigation	AUS, CCME, FAO, USEPA, SA
Copper	µg/L		X [3]	Aquatic Organisms Fresh Water	USEPA
Iron	µg/L		10	Aquaculture	AUS, WHO
Lead	µg/L		X [3]	Aquatic Organisms Fresh Water	USEPA
Magnesium	mg/L		measure		
Manganese	µg/L		10	Aquaculture	AUS
Mercury	µg/L		0.07	Aquatic Organisms Fresh Water	EU
Molybdenum	µg/L		10	Aquaculture	AUS
Nickel	µg/L		X [3]	Aquatic Organisms Fresh Water	USEPA
Phosphorus (Total)	mg/L		measure		
Potassium	mg/L		measure		
Radium 226/228	Bq/L		0.2	Human Health - Drinking Water	USEPA
Selenium	µg/L		5	Aquatic Organisms Fresh Water	USEPA, SA, AUS-NZ
Silver	µg/L		0.25	Aquatic Organisms Fresh Water	CCME
Sodium	mg/L		measure		
Thallium	µg/L		0.8	Aquatic Organisms Fresh Water	CCME
Uranium	µg/L		15	Aquatic Organisms Fresh Water	CCME
Uranium 238	Bq/L		1	Human Health - Drinking Water	WHO
Vanadium	µg/L		100	Aquaculture	AUS
Zinc	µg/L		X [3]	Aquatic Organisms Fresh Water	USEPA
Non-Metals / Ions	**Units**		**Criteria**	**Most Sensitive Use**	**Source[2]**
Alkalinity (as CaCO3)	mg/L		measure		
Ammonia (Total)	µg/L		X [3]	Aquatic Organisms Fresh Water	USEPA
Chlorine	µg/L		2	Aquaculture	WHO
Chloride	mg/L		100	Agriculture - Irrigation	S.A. (irrigation)
Cyanide (Chronic - Free or *WAD*)	µg/L		5	Aquatic Organisms Fresh Water	CCME, USEPA
Dissolved Organic Carbon	mg/L		measure if Biotic Ligand Model is used to calculate aquatic life criteria		
Fluoride	mg/L		0.75	Aquatic Organisms Fresh Water	SA
Hardness	mg/L		measure if USEPA hardness-based method is used to calculate aquatic life criteria		
Hydrogen Sulfide	µg/L		1	Aquaculture	AUS, WHO
Nitrates + Nitrites	mg/L		10	Human Health - Drinking Water	USEPA
Nitrates	mg/L		10	Human Health - Drinking Water	Health CA, USEPA
Nitrites	mg/L		0.1	Aquaculture	AUS
Nitrogen, total	mg/L		measure		
pH (standard units)	s.u.		6.5 - 8.4	Agriculture - Irrigation	USEPA, SA, FAO
Sulfate	mg/L		400	Recreational	AUS
Suspended Solids	mg/L		15	Aquatic Organisms Fresh Water	MMER
Temperature	degC		<2 diff	Aquaculture	AUS
Total Dissolved Solids	mg/L		500	Human Health - Drinking Water	USEPA, Health CA

Notes:
[1] Metals may be measured as "Dissolved" or "Total Recoverable" ; [2] See Table 3.1.b. "Notes" for a list of abbreviations; [3] Use USEPA Hardness-based or Biotic Ligand Model "chronic" calculations for metals, and temp. and pH based calculations for Ammonia

TABLE 3.1.b. – IRMA Fresh Groundwater Quality Criteria

Metals / Metaloids	Units		Criteria[1]	Most Sensitive Use	Source
Aluminum	µg/L		100	Human Health - Drinking Water	Health CA
Antimony	µg/L		6	Human Health - Drinking Water	USEPA, Health CA
Arsenic	µg/L		10	Human Health - Drinking Water	USEPA, Health CA, AUS, WHO
Barium	µg/L		1000	Human Health - Drinking Water	Health CA
Beryllium	µg/L		60	Human Health - Drinking Water	AUS
Cadmium	µg/L		5	Human Health - Drinking Water	USEPA, Health CA, EU
Chromium (Total)	µg/L		50	Human Health - Drinking Water	Health CA, AUS, EU, WHO
Copper	µg/L		200	Agriculture - Irrigation	AUS, CCME, FAO, USEPA, SA
Iron	µg/L		300	Human Health - Drinking Water	USEPA, Health CA, AUS
Lead	µg/L		10	Human Health - Drinking Water	Health CA, AUS, EU, WHO
Manganese	µg/L		50	Human Health - Drinking Water	USEPA, Health CA, EU
Mercury	µg/L		1	Human Health - Drinking Water	Health CA, AUS, EU
Molybdenum	µg/L		10	Agriculture - Irrigation	AUS, FAO, USEPA, SA
Nickel	µg/L		20	Human Health - Drinking Water	AUS
Radium 226/228	Bq/L		0.2	Human Health - Drinking Water	USEPA
Selenium	µg/L		20	Agriculture - Irrigation	AUS, USEPA, SA
Silver	µg/L		100	Human Health - Drinking Water	USEPA, AUS
Thallium	µg/L		2	Human Health - Drinking Water	USEPA
Uranium	µg/L		20	Human Health - Drinking Water	Health CA
Uranium 238	Bq/L		1	Human Health - Drinking Water	WHO
Vanadium	µg/L		100	Agriculture - Irrigation	CCME, AUS, USEPA, FAO
Zinc	µg/L		2000	Agriculture - Irrigation	USEPA, FAO
Non-Metals / Ions	**Units**		**Criteria**	**Most Sensitive Use**	**Source**
Alkalinity (as $CaCO_3$)	mg/L		measure		
Chlorine	mg/L		1	Agriculture - Irrigation	USEPA
Chloride	mg/L		100	Agriculture - Irrigation	S.A. (irrigation)
Cyanide (Free or WAD)	mg/L		0.2	Human Health - Drinking Water	USEPA, Health CA
Fluoride	mg/L		1	Agriculture - Irrigation	CCME, FAO
Nitrate & Nitrite	mg/L		10	Human Health - Drinking Water	USEPA
Nitrate	mg/L		10	Human Health - Drinking Water	Health CA, USEPA
Nitrite	mg/L		1	Human Health - Drinking Water	Health CA, USEPA
pH (standard units)	s.u.		6.5 - 8.4	Agriculture - Irrigation	USEPA, SA, FAO
Sulfate	mg/L		500	Human Health - Drinking Water	USEPA, Health CA, AUS
Total Dissolved Solids	mg/L		500	Human Health - Drinking Water	USEPA, Health CA

Note:

[1] It is recommended that metals be measured as "Dissolved" but "Total Recoverable" may be used if desired.

Abbreviations for Sources / Standards: AUS = Australian National Health and Medical Research Council; AUS-NZ = Australian and New Zealand Environment and Conservation Council; BLM = Biotic Ligand Model; CCME = Canadian Council of Ministers of the Environment; EU = European Union; FAO = Food and Agriculture Organization of the United Nations; Health CA = Health Canada; IFC = International Finance Corporation of the World Bank Group; USEPA = US Environmental Protection Agency; USFWS = US Fish and Wildlife Service; WHO = World Health Organization of the United Nations; MMER = Canadian Metal Mining Effluent Regulations; DW = Drinking Water Standard; I = Irrigation/Agricultural/Livestock Standard.

TABLE 3.1.c. – IRMA Salt Water Quality Criteria

Metals / Metaloids	Units		Criteria[1]	Most Sensitive Use	Source[2]
Aluminum	µg/L		10	Aquaculture	AUS, WHO
Antimony	µg/L		-		
Arsenic	µg/L		12.5	Aquatic Organisms Salt Water	CCME
Barium	µg/L		0.12	Aquatic Organisms Salt Water	CCME
Cadmium	µg/L		-		
Calcium	mg/L		-		
Chromium (Total)	µg/L		-		
Chromium (III)	µg/L		27.4	Aquatic Organisms Salt Water	AUS-NZ
Chromium (VI)	µg/L		4.4	Aquatic Organisms Salt Water	AUS-NZ
Cobalt	µg/L		1	Aquatic Organisms Salt Water	AUS-NZ
Copper	µg/L		1.3	Aquatic Organisms Salt Water	AUS-NZ
Iron	µg/L		10	Aquaculture	AUS
Lead	µg/L		X [3]	Aquaculture	AUS
Magnesium	mg/L		-		
Manganese	µg/L		10	Aquaculture	AUS
Mercury	µg/L		0.4	Aquatic Organisms Salt Water	AUS-NZ
Molybdenum	µg/L		-		
Nickel	µg/L		70	Aquatic Organisms Salt Water	AUS-NZ
Selenium	µg/L		10	Aquaculture	AUS
Silver	µg/L		1.4	Aquatic Organisms Salt Water	AUS-NZ
Thallium	µg/L		-		
Uranium	µg/L		-		
Vanadium	µg/L		100	Aquatic Organisms Salt Water	AUS-NZ
Zinc	µg/L		5	Aquaculture	AUS
Non-Metals / Ions	**Units**		**Criteria**	**Most Sensitive Use**	**Source[2]**
Alkalinity (as CaCO3)	mg/L		20 - 100	Aquaculture	WHO
Ammonia (Total)	mg/L		X [4]	Aquatic Organisms Salt Water	USEPA
Chlorine	mg/L		0.5	Aquatic Organisms Salt Water	CCME
Chloride	mg/L		120	Aquatic Organisms Salt Water	CCME
Cyanide (Chronic - Free or *WAD*)	µg/L		4	Aquatic Organisms Salt Water	AUS-NZ
Fluoride	mg/L		-		
Hardness	mg/L		measure		
Hydrogen Sulfide	µg/L		1	Aquaculture	AUS, WHO
Nitrates	mg/L		13	Aquatic Organisms Salt Water	AUS-NZ
Nitrites	mg/L		0.1	Aquaculture	AUS
pH (standard units)	s.u.		6.5 - 8.7	Aquatic Organisms Salt Water	USEPA & CCME
Sulfate	mg/L		-		
Suspended Solids	mg/L		10	Aquaculture	AUS
Temperature	degC		<2 diff	Aquaculture	AUS
Total Dissolved Solids	mg/L		-		

Notes:
[1] Metals may be measured as "Dissolved" or "Total Recoverable"
[2] See Table 3.1.b. "Notes" for a list of abbreviations
[2] hardness-dependent, see Meade IW, 1989, Aquaculture Management
[4] USEPA (1989) calculations/tables provide variation as Temp & pH increase

TABLE 3.1.d. – Aquatic Organisms - Fresh Water Quality Criteria

Metals / Metaloids[1]	Units		Criteria	Source		Non-Metals / Ions[1]	Units		Criteria	Source
Aluminum	µg/L		55	AUS-NZ		Alkalinity (as CaCO3)	mg/L		measure	
Antimony	µg/L		-			Ammonia (Tot)	mg/L		X*	USEPA
Arsenic	µg/L		24	AUS-NZ		Chlorine	µg/L		3	AUS-NZ
Barium	µg/L		-			Chloride	mg/L		120	CCME
Beryllium	µg/L		-			Cyanide (Chronic - Free/*WAD*)	µg/L		5	CCME, USEPA
Cadmium	µg/L		X*	USEPA		Cyanide (Acute - Free / WAD)	µg/L		20	USEPA, AUS-NZ, USFWS
Calcium	mg/L		measure			Dissolved Organic Carbon	mg/L		measure	
Chromium (Tot)	µg/L		-			Fluoride	mg/L		0.75	S.A.
Chromium (III)	µg/L		X*	USEPA		Hardness	mg/L		measure	
Chromium (VI)	µg/L		1	AUS-NZ		Hydrogen Sulfide	µg/L		2	USEPA
Cobalt	µg/L		-			Nitrate & Nitrite				
Copper	µg/L		X*	USEPA		Nitrates	mg/L		13	CCME
Iron	µg/L		300	CCME		Nitrites	mg/L		0.06	CCME
Lead	µg/L		X*	USEPA		Nitrogen, tot. as N	mg/L		measure	
Magnesium	mg/L		measure			pH	s.u.		6.5 - 9.0	USEPA, CCME
Manganese	µg/L		1700	AUS-NZ		Sulfate	mg/L		-	
Mercury	µg/L		0.07	EU		Suspended Solids	mg/L		15	MMER (2015)
Molybdenum	µg/L		34	AUS-NZ		Temperature	degC		>3 diff	IFC
Nickel	µg/L		X*	USEPA		Total Dissolved Solids	mg/L		-	
Phosphorus (Tot)	mg/L		measure							
Potassium	mg/L		measure							
Radium 226/228	Bq/L		-							
Selenium	µg/L		5	USEPA, SA, AUS-NZ						
Silver	µg/L		0.25	CCME						
Sodium	mg/L		measure							
Thallium	µg/L		0.8	CCME						
Uranium	µg/L		15	CCME						
Vanadium			-							
Zinc	µg/L		X*	USEPA						

Notes: * Use USEPA Hardness-based or Biotic Ligand Model (BLM) calculations for metals, and Temperature and pH-based calculations for Ammonia. 1) Table values are most limiting criteria based on aquatic, human heath, drinking water, agricultural use, etc. 2) Hardness-based calculation assuming 100 mg/L CaCO3unless otherwise noted. BLM calculations may also apply. 3) Calculated value based on temperature and pH.

Abbreviations for Sources/ Standards: AUS = Australian National Health and Medical Research Council; AUS-NZ = Australian and New Zealand Environment and Conservation Council; BLM = Biotic Ligand Model; CCME = Canadian Council of Ministers of the Environment; EU = European Union; FAO = Food and Agriculture Organization of the United Nations; Health CA = Health Canada; IFC = International Finance Corporation of the World Bank Group; USEPA = US Environmental Protection Agency; USFWS = US Fish and Wildlife Service; WHO = World Health Organization; MMER = Canadian Metal Mining Effluent Regulations; DW = Drinking Water; I = Irrigation /Agricultural /Livestock.

TABLE 3.1.e. – Aquatic Organisms - Salt Water Quality Criteria

Metals / Metaloids[1]	Units	Criteria	Source		Non-Metals / Ions	Units	Criteria	Source
Aluminum	µg/L	-			Alkalinity (as CaCO3)	mg/L	-	
Antimony	µg/L	-			Ammonia (Total)	mg/L	X *	USEPA
Arsenic	µg/L	12.5	CCME		Chlorine	µg/L	0.5	CCME
Barium	µg/L	-			Chloride	mg/L	120	CCME
Beryllium	µg/L	-			Cyanide (Chronic - Free / *WAD*)	µg/L	4	AUS-NZ
Cadmium	µg/L	0.12	CCME		Fluoride	mg/L	-	
Calcium	mg/L	-			Hardness	mg/L		
Chromium (Total)	µg/L	-			Hydrogen Sulfide	µg/L	2	USEPA
Chromium (III)	µg/L	27.4	AUS-NZ		Nitrate & Nitrite	mg/L	-	
Chromium (VI)	µg/L	4.4	AUS-NZ		Nitrates	mg/L	13	AUS-NZ
Cobalt	µg/L	1	AUS-NZ		Nitrities	mg/L	-	
Copper	µg/L	1.3	AUS-NZ		Nitrogen, total (as N)	mg/L	-	
Iron	µg/L	-			pH (standard units)	s.u.	6.5- 8.7	USEPA, CCME
Lead	µg/L	4.4	AUS-NZ		Sulfate	mg/L	-	
Magnesium	mg/L	-			Suspended Solids	mg/L	-	
Manganese	µg/L	-			Temperature	degC	-	
Mercury	µg/L	0.4	AUS-NZ		Total Dissolved Solids	mg/L	-	
Molybdenum	µg/L	-						
Nickel	µg/L	70	AUS-NZ					
Phosphorus (Tot)	mg/L	-						
Potassium	mg/L	-						
Radium 226/228	Bq/L	-						
Selenium	µg/L	71	USEPA					
Silver	µg/L	1.4	AUS-NZ					
Sodium	mg/L	-						
Thallium	µg/L	-						
Uranium	µg/L	-						
Vanadium	µg/L	100	AUS-NZ					
Zinc	µg/L	15	AUS-NZ					

Notes: *Use USEPA Hardness-based or Biotic Ligand Model (BLM) calculations for metals, and Temperature and pH-based calculations for Ammonia. 1)Table values are most limiting criteria based on aquatic, human heath, drinking water, agricultural use, etc. 2) Hardness-based calculation assuming 100 mg/L CaCO3unless otherwise noted. Biotic Ligand Model (BLM) calculations may also apply. 3)Calculated value based on Temperature and pH.

Abbreviations for Sources/ Standards: AUS = Australian National Health and Medical Research Council; AUS-NZ = Australian and New Zealand Environment and Conservation Council; BLM = Biotic Ligand Model; CCME = Canadian Council of Ministers of the Environment; EU = European Union; FAO = Food and Agriculture Organization of the United Nations; Health CA = Health Canada; IFC = International Finance Corporation of the World Bank Group; USEPA = US Environmental Protection Agency; USFWS = US Fish and Wildlife Service; WHO = World Health Organization of the United Nations; MMER = Canadian Metal Mining Effluent Regulations; DW = Drinking Water Standard; I = Irrigation/Agricultural/Livestock Standard.

TABLE 3.1.f. – Human Health and Drinking Water Quality Criteria			
Metals / Metaloids	**Units**	**Criteria**	**Source**
Aluminum	µg/L	100	Health CA
Antimony	µg/L	6	USEPA, Health CA
Arsenic	µg/L	10	USEPA, Health CA, AUS, WHO
Barium	µg/L	1000	Health CA
Beryllium	µg/L	60	AUS
Cadmium	µg/L	5	USEPA, Health CA, EU
Chromium (Total)	µg/L	50	Health CA, AUS, EU, WHO
Copper	µg/L	1000	Health CA, AUS
Iron	µg/L	300	USEPA, Health CA, AUS
Lead	µg/L	10	Health CA, AUS, EU, WHO
Manganese	µg/L	50	USEPA, Health CA, EU
Mercury	µg/L	1	Health CA, AUS, EU
Molybdenum	µg/L	50	AUS
Nickel	µg/L	20	AUS, EU
Radium 226/228	Bq/L	0.2	USEPA
Selenium	µg/L	40	WHO
Silver	µg/L	100	USEPA, AUS
Thallium	µg/L	2	USEPA
Uranium	µg/L	20	Health CA
Uranium 238	Bq/L	1	WHO
Vanadium	µg/L	-	
Zinc	µg/L	5000	USEPA, Health CA
Non-Metals / Ions	**Units**	**Criteria**	**Source**
Alkalinity (as CaCO3)	mg/L	-	
Chlorine	mg/L	5	AUS, WHO
Chloride	mg/L	250	AUS, USEPA, Health CA
Cyanide (Free or WAD)	µg/L	200	USEPA, Health CA
Fluoride	mg/L	1.5	Health CA, AUS, WHO
Nitrate & Nitrite	mg/L	10	USEPA
Nitrates	mg/L	10	Health CA, USEPA
Nitrites	mg/L	1	Health CA, USEPA
pH (standard units)	s.u.	6.5 - 8.5	USEPA, Health CA, AUS
Sulfate	mg/L	500	USEPA, Health CA, AUS
Total Dissolved Solids	mg/L	500	USEPA, Health CA

Abbreviations for Sources/ Standards: AUS = Australian National Health and Medical Research Council; AUS-NZ = Australian and New Zealand Environment and Conservation Council; BLM = Biotic Ligand Model; CCME = Canadian Council of Ministers of the Environment; EU = European Union; FAO = Food and Agriculture Organization of the United Nations; Health CA = Health Canada; IFC = International Finance Corporation of the World Bank Group; USEPA = US Environmental Protection Agency; USFWS = US Fish and Wildlife Service; WHO = World Health Organization of the United Nations; MMER = Canadian Metal Mining Effluent Regulations; DW = Drinking Water Standard; I = Irrigation/Agricultural/Livestock Standard.

TABLE 3.1.g. – Agriculture - Irrigation Water Quality Criteria			
Metals / Metaloids	**Units**	**Criteria**	**Source**
Aluminum	µg/L	5000	CCME, USEPA, AUS, SA, FAO
Antimony	µg/L	-	
Arsenic	µg/L	100	AUS, USEPA, SA, FAO
Barium	µg/L	-	
Beryllium	µg/L	100	CCME, AUS, USEPA, SA, FAO
Cadmium	µg/L	10	AUS, USEPA, SA, FAO
Chromium (Total)	µg/L	100	AUS, FAO, USEPA, SA
Cobalt	µg/L	50	AUS, CCME, FAO, USEPA, SA
Copper	µg/L	200	AUS, CCME, FAO, USEPA, SA
Iron	µg/L	5000	CCME, FAO, USEPA, SA
Lead	µg/L	100	AUS, SA
Manganese	µg/L	200	CCME, AUS, FAO
Mercury	µg/L	2	AUS
Molybdenum	µg/L	10	AUS, FAO, USEPA, SA
Nickel	µg/L	200	CCME, AUS, USEPA, FAO, SA
Radium 228	Bq/L	2	AUS
Selenium	µg/L	20	AUS, USEPA, SA
Silver	µg/L	-	
Thallium	µg/L	-	
Uranium	µg/L	100	AUS
Uranium 238	Bq/L	0.2	AUS
Vanadium	µg/L	100	CCME, AUS, USEPA, FAO
Zinc	µg/L	2000	USEPA, FAO
Non-Metals / Ions	**Units**	**Critera**	**Source**
Alkalinity (as CaCO3)	mg/L	-	
Chlorine	mg/L	1	USEPA
Chloride	mg/L	100	S.A. (irrigation)
Cyanide (Free or WAD)	µg/L	-	
Fluoride	mg/L	1	CCME, FAO
Nitrate & Nitrite	mg/L	100	CCME, USEPA
Nitrates	mg/L	-	
Nitrites	mg/L	10	CCME, USEPA
pH (standard units)	s.u.	6.5 - 8.4	USEPA, SA, FAO
Sulfate	mg/L	1000	AUS, CCME, USEPA, SA
Suspended Solids	mg/L	30	USEPA
Total Dissolved Solids	mg/L	1000	SA

Abbreviations for Sources/ Standards: AUS = Australian National Health and Medical Research Council; AUS-NZ = Australian and New Zealand Environment and Conservation Council; BLM = Biotic Ligand Model; CCME = Canadian Council of Ministers of the Environment; EU = European Union; FAO = Food and Agriculture Organization of the United Nations; Health CA = Health Canada; IFC = International Finance Corporation of the World Bank Group; USEPA = US Environmental Protection Agency; USFWS = US Fish and Wildlife Service; WHO = World Health Organization of the United Nations; MMER = Canadian Metal Mining Effluent Regulations; DW = Drinking Water Standard; I = Irrigation/Agricultural/Livestock Standard.

TABLE 3.1.h. – Aquaculture Water Quality Criteria

Metals / Metaloids	Units	Fresh Criteria	Marine Criteria	Source
Aluminum	µg/L	30	10	AUS, WHO
Antimony	µg/L	-	-	
Arsenic	µg/L	50	30	AUS, WHO
Barium	µg/L	-	-	
Beryllium	µg/L	-	-	
Cadmium	µg/L	X [1]	X [2]	AUS, WHO
Chromium (VI)	µg/L	20	-	WHO
Cobalt	µg/L	-	-	
Copper	µg/L	X [1]	X [2]	AUS
Iron	µg/L	10	10	AUS, WHO
Lead	µg/L	X [1]	X [2]	AUS
Manganese	µg/L	10	10	AUS
Mercury	µg/L	1	-	AUS, WHO
Molybdenum	µg/L	-	-	
Nickel	µg/L	100	100	AUS
Radium 226/228	Bq/L	-	-	
Selenium	µg/L	10	10	AUS
Silver	µg/L	3	3	AUS
Thallium	µg/L	-	-	
Uranium	µg/L	-	-	
Vanadium	µg/L	100	100	AUS
Zinc	µg/L	5	5	AUS
Non-Metals / Ions	**Units**	**Fresh Criteria**	**Marine Criteria**	**Source**
Alkalinity (as CaCO3)	mg/L	20 - 100	-	WHO
Ammonia (Total)	µg/L	20	100	AUS
Chlorine	µg/L	2	-	WHO
Chloride	mg/L	-	-	
Cyanide (Free or WAD)	µg/L	5	5	AUS
Fluoride	mg/L	20	-	AUS
Hydrogen Sulfide	µg/L	1	1	AUS, WHO
Nitrate & Nitrite	mg/L	-	-	
Nitrates	mg/L	50	100	AUS
Nitrites	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	-	-	
Suspended Solids	mg/L	40	10	AUS
Temperature	degC	<2 diff	<2 diff	AUS
Total Dissolved Solids	mg/L	-	-	

Abbreviations for Sources/ Standards: AUS = Australian National Health and Medical Research Council; AUS-NZ = Australian and New Zealand Environment and Conservation Council; BLM = Biotic Ligand Model; CCME = Canadian Council of Ministers of the Environment; EU = European Union; FAO = Food and Agriculture Organization of the United Nations; Health CA = Health Canada; IFC = International Finance Corporation of the World Bank Group; USEPA = US Environmental Protection Agency; USFWS = US Fish and Wildlife Service; WHO = World Health Organization of the United Nations; MMER = Canadian Metal Mining Effluent Regulations; DW = Drinking Water Standard; I = Irrigation/Agricultural/Livestock Standard.

TABLE 3.1.i. – Recreational Water Quality Criteria			
Metals / Metaloids	**Units**	**Criteria**	**Source**
Aluminum	µg/L	-	
Antimony	µg/L	-	
Arsenic	µg/L	50	AUS
Barium	µg/L	1000	AUS
Beryllium	µg/L	-	
Cadmium	µg/L	5	AUS
Chromium (Total)	µg/L	50	AUS
Cobalt	µg/L	-	
Copper	µg/L	-	
Iron	µg/L	300	AUS
Lead	µg/L	50	AUS
Manganese	µg/L	100	AUS
Mercury	µg/L	1	AUS
Molybdenum	µg/L	-	
Nickel	µg/L	100	AUS
Radium 226/228	Bq/L	-	
Selenium	µg/L	10	AUS
Silver	µg/L	50	AUS
Thallium	µg/L	-	
Uranium	µg/L	-	
Vanadium	µg/L	-	
Zinc	µg/L	-	
Non-Metals / Ions	**Units**	**Critera**	**Source**
Alkalinity (as CaCO3)	mg/L	-	
Ammonia (Total)	mg/L	10	AUS
Chlorine	mg/L	1	USEPA
Chloride	mg/L	400	AUS
Cyanide (Free or WAD)	µg/L	100	AUS
Fluoride	mg/L	-	
Hardness	mg/L	500	AUS
Hydrogen Sulfide	µg/L	50	AUS
Nitrate & Nitrite	mg/L	-	
Nitrates	mg/L	10	AUS
Nitrites	mg/L	1	AUS
pH (standard units)	s.u.	6.5 - 8.5	AUS, SA
Sulfate	mg/L	400	AUS
Suspended Solids	mg/L	30	USEPA
Total Dissolved Solids	mg/L	1000	AUS

Abbreviations for Sources/ Standards: AUS = Australian National Health and Medical Research Council; AUS-NZ = Australian and New Zealand Environment and Conservation Council; BLM = Biotic Ligand Model; CCME = Canadian Council of Ministers of the Environment; EU = European Union; FAO = Food and Agriculture Organization of the United Nations; Health CA = Health Canada; IFC = International Finance Corporation of the World Bank Group; USEPA = US Environmental Protection Agency; USFWS = US Fish and Wildlife Service; WHO = World Health Organization of the United Nations; MMER = Canadian Metal Mining Effluent Regulations; DW = Drinking Water Standard; I = Irrigation/Agricultural/Livestock Standard.

TABLE 3.1.j. – Industrial Water Quality Criteria			
Metals / Metaloids	**Units**	**Critera**	**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 / Ions	**Units**	**Critera**	**Source**
Alkalinity (as CaCO3)	mg/L	-	
Chlorine	mg/L	1	USEPA
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	USEPA
Sulfate	mg/L	-	
Suspended Solids	mg/L	30	USEPA
Total Dissolved Solids	mg/L	-	

Abbreviations for Sources/ Standards: AUS = Australian National Health and Medical Research Council; AUS-NZ = Australian and New Zealand Environment and Conservation Council; BLM = Biotic Ligand Model; CCME = Canadian Council of Ministers of the Environment; EU = European Union; FAO = Food and Agriculture Organization of the United Nations; Health CA = Health Canada; IFC = International Finance Corporation of the World Bank Group; USEPA = US Environmental Protection Agency; USFWS = US Fish and Wildlife Service; WHO = World Health Organization of the United Nations; MMER = Canadian Metal Mining Effluent Regulations; DW = Drinking Water Standard; I = Irrigation/Agricultural/Livestock Standard.


Chapter 3.2
Water Quantity

[flag] IRMA is seeking feedback during this comment period on the potential application of a risk-based approach to the protection of water quantity, including examples of where such an approach has been used effectively. Please see Chapter 3.1, Approach C, for a risk-based approach to water quality protection.

BACKGROUND

Mines are often a large water user for their locale, even if not over a large region. The impacts of the quantity of water used by a mining project are highly location-specific, depending critically on the local climate as well as on competition for water for uses other than mining. In arid regions water scarcity may be a critical concern, whereas in high rainfall regions challenges arise from the need to divert water in order to develop a mine. The depletion of groundwater by dewatering operations and the presence of large mine facilities can take decades to replenish after mining ceases, and in some instances, groundwater levels and flow directions can be altered indefinitely.

TERMS USED IN THIS CHAPTER

Conceptual Flow Model (CFM) ■ Endangered Species ■ Exceedance Flow ■ Grievance ■ Habitat ■ Metals Leaching ■ Mine Dewatering ■ Mining Project ■ Operating Company ■ Operational-level Grievance Mechanism ■ Passby Flow ■ Pit Lake ■ Practicable ■ Protected Area ■ Protected Waters ■ Rare Species ■ Significant Changes to Mining-Related Activities ■

These terms are explained at the end of this chapter

Key aspects of responsible mining in relation to water use include the efficient use of production water, the withdrawal and disposal of mine dewatering water, stormwater, and floodwater in ways that minimize harm to surrounding water users and environmental resources, and ensuring that total withdrawals maintain environmental flows in nearby streams, springs, lakes, wetlands and any other surface water resource. Responsible mining operations can also clean up previously impacted water to make them usable, and in some cases might provide a water supply from an alternative source. Responsible mining protects water resources by reducing the amount used for processing and by minimizing the need for dewatering or efficiently using the dewatering water. Responsible groundwater use will protect other groundwater users by not causing unreasonable groundwater drawdown.

OBJECTIVES

To maximize efficiency of water-use and minimize off-site impacts to the environment through the adoption of leading water management strategies and practices throughout the full mine life cycle.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is applicable to all mines applying for IRMA certification.

Existing legal water rights regimes may supersede the implementation of certain aspects of the IRMA requirements.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Major reorganization with the addition of supplemental explanatory text to add clarity.
- Previous criterion related to Underground Mines, which addressed backfilling, was removed because it is adequately covered in Chapter 4.2 Reclamation and Closure, criterion 4.2.5.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Water Quantity Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
3.2.1. General Requirements 3.2.1.1. To the extent practicable the operating company shall maximize the use of water efficient processes. 3.2.1.2. Mine surface or groundwater water use shall not: a. Decrease the flow from a spring by more than 50%; b. Change stream base flows to rates less than required for passby flows; or c. Cause significant negative impacts to: i. Community or individual water supplies; ii. Aquatic life or wildlife; iii. Rare / endangered species; or iv. The ecological or amenity value of water bodies within protected areas. 3.2.1.3. The operating company shall identify all relevant water users potentially affected by the mine, regardless of whether their water rights are recognized by a government.	For 3.2.1.1, verify procedures and processes in place that demonstrate that the operating company is utilizing water efficient and water saving practices, and is continually seeking additional areas of increasing water use efficiency. For 3.2.1.2, interview operating company and relevant stakeholders to verify that the listed impacts have not occurred as a result of mining activities. If relevant, confirm that water bodies within protected areas have been identified and that water management plans and monitoring exists to identify, mitigate or prevent significant impacts. In this context "significant" means "having or likely to have a major effect; important." Review IRMA Guidance for Chapter 3.2 Water Quantity, "Objectives-Intent / Surface Water Use" for an explanation of passby flows. For 3.2.1.3, confirm that the operating company has taken reasonable steps to identify local water users, and has attempted to establish a relationship with those users who might be impacted by mine activities.
3.2.2. Mitigation 3.2.2.1. If not resolved by other means, issues arising around ground or surface water impacts shall be discussed and resolved through the operational-level grievance mechanism (see IRMA Chapter 2.13). 3.2.2.2. For significant impacts on ground or surface waters in protected areas or on protected waters, mitigation other than prevention or avoidance shall not be an alternative.	A formal mitigation plan is not required, but if no mitigation plan exists then the company should be able to demonstrate that it is meeting any needs for mitigation. For 3.2.2.1, interview operating company and affected stakeholders to verify that water disputes/issues have been resolved, either through the operational-level grievance mechanism (as per Chapter 5.3) or through some other means.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
	For 3.2.2.2, see IRMA Glossary and Chapter 3.7 Protected Areas for definitions / explanations of protected areas; see IRMA Glossary for a definition of protected waters. If mining occurs in protected areas, confirm that impacts on surface or ground waters were prevented or avoided.
3.2.3. Planning, Monitoring, and Modeling 3.2.3.1. The operating company shall complete a suitable groundwater analysis for existing mines, and in advance of an Environmental (and Social) Impact Assessment for a new mine, to estimate the potential for the mine to affect groundwater resources, including both groundwater quantity and quality. 3.2.3.2. A suitable analysis includes: a. A Conceptual Flow Model (CFM), or its functional equivalent, including: i. A quantitative analysis of baseline conditions for recharge to the aquifers; ii. Discharges from the aquifer; and iii. Flow pathways and aquifer properties controlling the flow between recharge and discharge. b. The mine plan will be imposed on the CFM, or its equivalent, to estimate significant impacts including, but not limited to, the following: i. Whether dewatering will be required; ii. Whether production water is available and the impacts of using it; and iii. The effect of the mine voids (underground and/or open pit) during the various project phases, including whether a pit lake will form, its volume, or the estimated inflow and void volume for underground workings. 3.2.3.3. If the Conceptual Flow Model indicates that there could be impacts, a numerical streamflow and/or groundwater model shall be developed by the operating company to quantify the impacts and help to plan mitigation and mine water management (see section 3.2.3.4): a. The numerical model will be developed to industry standards,[130] including use of the appropriate code, model structure including discretization and boundaries, proper model calibration and	For 3.2.3.1 and 3.2.3.2, confirm that the Conceptual Flow Model for the mine: • Is being utilized as a predictive tool to inform risk-based decisions; • Has been peer reviewed; • Has been updated on a regular basis; and, • Has been used to inform monitoring well locations. Review IRMA Guidance for Chapter 3.2, "Objectives-Intent / Groundwater Use" for further explanation. For 3.2.3.3, if relevant, confirm that the mine has developed a numerical streamflow and/or groundwater model, and that the model results have helped to inform mitigation and mine water management. For 3.2.3.4, verify that the company has a plan that: • Monitors drawdown caused by mine dewatering; • Monitors all potential groundwater sources; • Monitors surface water resources that may be affected by the dewatering; and, • Mitigates damages that occur and may be discovered through monitoring. See IRMA Chapter 3.1 Water Quality for requirements for avoiding water quality degradation. The mine water management plan may be integrated into a comprehensive mine site monitoring plan. For 3.2.3.5, confirm that the mine has a plan to collect data that is lacking and to redo its analyses and plans as it collects new data.

[130] (E.g., See Anderson, Woessner and Hunt. 2015. Applied Groundwater Modeling: Simulation of Flow and Advective Transport. Second Edition. Academic Press.)

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
verification, and appropriate assumptions for the mine; b. The numerical model will be used to predict the impacts of pumping, dewatering, seepage, and any other significant mine-related groundwater impacts including, but not limited to: i. The amount of water removed, and the extent of groundwater drawdown caused by mine dewatering and by the development of mine production water, both from open pits and underground mine voids; and ii. The impacts on streams and springs including, the amount of water drawn from springs and streams and the time until impacts are felt at the stream. c. The numerical model shall be verified at least every five years during mine operations and closure, to assess whether it accurately predicted impacts of the mine and to improve calibration for continued predictions. 3.2.3.4. A mine water management plan shall be developed, and include: a. A water management strategy designed to estimate the needed water for each aspect and phase of mining and where that water will be obtained. The operating company shall demonstrate through its water management strategy that it will use water efficiently and minimize the mining impacts on surface and groundwater resources. This includes: i. Minimizing the impacts of mine dewatering; ii. Placing production wells so that the effects do not reach surface in less than 30 days; and iii. Using production water most efficiently. b. A surface water and groundwater monitoring strategy (which may also incorporate/include other monitoring requirements); c. A surface water and groundwater impact mitigation strategy (which may also incorporate/include other mitigation requirements); d. A strategy to mitigate aspects of mine water use and dewatering that could affect water quality. This includes the development of acid generating and/or metals leaching conditions as a result of oxygen reaching the dewatered aquifer or due to leaching caused by disposal of the dewatering water; and e. A review at least every five years, or when there is	For 3.2.3.6, verify the use of a water balance or water accounting framework with a demonstrated program of work in place to understand and refine areas of uncertainty and improve completeness. An example of a recognized mine-site water balance is presented as Appendix I to the IRMA Guidance for Chapter 3.2 Water Quantity. Discharge locations may be mapped in the water quantity monitoring plan, and/or incorporated as a part of a site-wide monitoring plan that incorporates, for example, the requirements of Sections 3.1.3 (Approaches A and B, Water Quality) or 3.1.5.2 (Approach C, Water Quality), 3.2.3.4 (Water Quantity), 3.3.11.1. (Mine Waste Management), 3.4.1 (Air Quality), 3.9.4 (Cyanide), and 3.10.3 (Mercury). For 3.2.3.7, verify hydrology reports and data are publically available.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
a significant change to mining-related activities or the mining operation. 3.2.3.5. If monitoring data do not support the estimates: a. The model shall be revised until monitoring data support the estimates; and b. The water management plan shall be amended in response to the revised model. 3.2.3.6. The operating company shall provide an accurate mine-site water balance accounting for its operations: a. The accounting shall identify the sources of water to be stored onsite, consumptively used, and discharged; and b. Any discharge location shall be listed and mapped in a monitoring plan. 3.2.3.7. All groundwater and surface water hydrology data and reports shall be publicly available.	
3.2.4. Surface Water Passby Flows 3.2.4.1. The operating company shall establish passby flows for sites affected by surface water withdrawals from the mining project.[131] Passby flows shall be based on the flow maintenance goals of the natural flow regime method.[132] Unless the operating company can justify different requirements that account for habitat, in-stream flow, and channel-building flow, the following specified passby flows shall be met: a. If the watershed area exceeds 130 square kilometres (50 square miles) the passby flow shall be Q75 for winter/spring months and Q60 for the summer months. b. If the watershed area is less than 130 square kilometres (50 square miles) the Q60 value shall apply all year. c. If withdrawals are higher or passby flows lower than those specified above, the operating company shall demonstrate, using an appropriate in-stream habitat methodology, that habitat will be protected for the aquatic and terrestrial life present at the site.	For 3.2.4.1, confirm that passby flows have been established, using an appropriate methodology. Confirm that the appropriate watershed area and exceedance flows are used to determine passby flows. Confirm that an appropriate methodology was used to assess the in-stream habitat and to assess the mine's effect on surface water flow. Confirm that established passby flows have been implemented and maintained. Review IRMA Guidance for Chapter 3.2 Water Quantity, 3.2.4.1. Surface Water Use for further explanation. For 3.2.4.2, review operating company documentation estimating exceedance flows, and confirm that the best available data and methodology were used to determine exceedance flows. Confirm that estimates are reviewed and updated at least every five years. For 3.2.4.3, if water withdrawal is occurring, confirm that the mine has established gauging

[131] Passby flows are not necessary if there are no surface or groundwater withdrawals; or if the existing water rights regime prevents the use of specified passby flows.

[132] Poff et al. 1997. The Natural Flow Regime. BioScience. Vol. 47, No. 11. Available at: www.fs.fed.us/stream/Poffetal_1997.pdf

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
3.2.4.2. The operating company shall: a. Estimate the exceedance flows (Q60, Q75) using the best available data and/or methodology b. Document its justification for its data analysis and/or choice of methodology; and c. Review and update exceedance flow estimates at least every five years on the basis of river flow gauging data and analysis. 3.2.4.3. The operating company shall establish a river flow gauging station[133] at the withdrawal site(s), and monitor such site(s) to verify that withdrawals stay within the prescribed values. 3.2.4.4. In regions where legal water rights regimes control passby flow, the legal permit/entitlement/allocation shall be considered the minimum obligation for passby flows.	stations for reach withdrawal site. For 3.2.4.4, if there is a legal water rights regime, confirm that the mine has a water permit of right that encompasses all surface and groundwater take.
3.2.5. Groundwater Use 3.2.5.1. If there is potential to affect off-site groundwater uses or users, the operating company shall not use groundwater in excess of the rate of replenishment (groundwater mining). Exceptions can be made for: a. Mine dewatering, or b. Providing initial production water, if that usage will not cause deleterious effects to surrounding groundwater-dependent resources. 3.2.5.2. In arid regions where groundwater is isolated from the surface water and there is effectively no local recharge to the aquifer, groundwater may be used for production or other mine-related activities for the life of the mine. The operator shall: a. Implement water conservation activities to minimize the use of this isolated groundwater; and b. Provide evidence that the groundwater is isolated, which includes evidence that indicates that using this isolated water will not affect surface water sources for a minimum of 100 years.	For 3.2.5.1, confirm that the mine's plans for groundwater use do not exceed the available water. Verify through groundwater level monitoring that groundwater mining is not occurring or that the groundwater use will not become groundwater mining in the future. Review IRMA Guidance for Chapter 3.2 Water Quantity, 3.2.5.1. Groundwater Water Use for further explanation. For 3.2.5.2, if groundwater is being utilized for production water or other mine uses, verify that it has been demonstrated that the aquifer being utilized is isolated, and that no surface waters are being impacted at present and for a projected 100 years.
3.2.6. Mine Dewatering 3.2.6.1. The operating company shall reduce the impact of mine dewatering on water quality or	Verify that the dewatering water will be used efficiently and disposed properly, with priority given to the listed strategies.

[133] Gauging station: A site at which surface flows can be measured. For IRMA, it is primarily used for the maintenance of passby flows or monitoring the effects of groundwater withdrawals on surface water. At a minimum, it is a staff gauge with well-defined stage discharge relationship. If it is part of a monitoring plan, it should include a continuous recording water level measurement device.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
quantities by: a. Using the dewatering water as production water; b. Providing the dewatering water to other local water users to replace their pumpage; c. Returning the water to the same aquifer it was removed from; or, d. Returning the water to same local basin. e. In areas where precipitation exceeds evaporation, mine dewatering water may be discharged to streams so long as it will not exacerbate flooding, cause erosion, and meets the protection of water quality requirements as specified in Chapter 3.1.[134]	Also see the Guidance document for Chapter 3.2, 3.2.6.1. Mine Dewatering for further explanation.
3.2.7. Pit Lakes and Mine Workings 3.2.7.1. In areas in which evaporation exceeds precipitation, and where the pit lake shape will be altered by partial backfilling or other means, the final shape of the pit lake shall be designed to minimize evaporative loss. 3.2.7.2. The operating company shall plan, whenever safe and possible, to provide for long-term usage of the pit lake water, providing for beneficial uses that are consistent with long-term water quality and safety. 3.2.7.3. In areas where the final mine void water balance indicates a risk of pit lake overflow, the operating company shall design to avoid or control any overflow discharge to surface waters.	For 3.2.7.1, review relevant designs and documentation .If the shape of a pit/pit lake will be altered during closure (for example by partial backfilling), verify that an attempt to minimize evaporative loss from the pit lake has been done in a thorough and professional manner. Also see related pit lake requirements in Chapters 3.1 and 4.2). For 3.2.7.2, review closure plan or other relevant documents to confirm that the operating company is planning to close the pit and lake to accommodate long-term beneficial uses. Verify that the operating company is providing for access when possible. For 3.2.7.3, verify that if there is a risk of final void overflow that controls are planned and financial mechanisms in place to convey any discharge.
3.2.8. Water Quantity Monitoring 3.2.8.1. Groundwater and surface water monitoring locations shall be informed by the Conceptual Flow Model. 3.2.8.2. Monitoring of groundwater levels and surface water flows shall commence prior to mining operations and continue as the final void (open cut or underground) fills. 3.2.8.3. Monitoring shall inform the mitigation and management strategies during operations and closure.	For 3.2.8.1 and 3.2.8.2, interview operating company and review documentation to confirm that the locations of water quantity monitoring sites were informed by the Conceptual Flow Model. Confirm, also, that monitoring began prior to mining operations and is ongoing throughout the life of the mine into closure. See "Monitoring from Construction to Closure and Reclamation" p. 11 and "3.2.7 Monitoring and Treatment Areas" p. 15, in Golder, 2011, Appendix I of IRMA Guidance for Chapter 3.2. For 3.2.8.3, verify that the operations closure management plan contains water-related

[134] See Chapter 3.1, requirement 3.1.1 in Approaches A and B, and 3.1.11 in Approach C.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
	monitoring, mitigation and management strategies. This monitoring may be incorporated as a part of a site-wide monitoring plan that incorporates, for example, the requirements of Sections 3.1.3 (Approaches A and B, Water Quality) or 3.1.5.2 (Approach C, Water Quality), 3.3.11.1. (Mine Waste Management), 3.4.1 (Air Quality), 3.9.4 (Cyanide) and 3.10.3 (Mercury).

NOTES

The requirements of the Water Quantity chapter attempt to protect surface and groundwater beneficial uses – aquatic organisms (surface waters), drinking water, human health, irrigation, agriculture and livestock.

Groundwater Use

The effect of using groundwater for mine production depends on the source of groundwater, whether it is a large or small aquifer, and whether it is connected to a nearby surface water source. The requirement that companies show that pumping will not affect streamflow for 30 days, with the alternative to show the water is not being drawn from the alluvium underneath the stream within a broader subterranean channel, attempts to create a balance between surface and groundwater rights while also acknowledging that most groundwater pumping will eventually be drawn from surface water sources.

Surface Water Use

A passby flow is a prescribed flow rate that must be allowed to pass an intake when a withdrawal is occurring, which is the same as a low flow condition during which no water can be withdrawn. If too low, specified passby flows can allow significant damage to occur to streams, especially small streams.

Cross References to Other Chapters

CHAPTER	ISSUES
1.1—Legal Compliance	As per Chapter 1.1, if there are host country laws that pertain specifically to the topics addressed in any IRMA chapter, the company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirement, as long as complying with it would not require the operating company to break the host country law. Existing legal water rights regimes in host countries may conflict with IRMA requirements, and therefore supersede the implementation of certain aspects of the IRMA requirements.
2.13—Grievance Mechanism and Access to Other Remedy	Requirement 3.2.2.1 refers to potential disputes over ground or surface water withdrawal. These disputes may be addressed through the operational-level grievance mechanism or some other means.
3.1—Water Quality	Chapter 3.1 has requirements related to pit lakes (e.g., 3.1.4.3.f in Approaches A and B) that may be relevant to 3.2.7.
3.7—Protected Areas	Requirements 3.2.1.2 and 3.2.2.2 refer to conditions that apply to Protected Areas. See Chapter 3.7 for identification of, and requirements related to mines operating in and adjacent to protected areas.

Cross References to Other Chapters	
4.1—Environmental and Social Impact Assessment	3.2.3.2 requires that a Conceptual Flow Model (CFM), or its functional equivalent, be utilized as part of the groundwater analysis in an Environmental and Social Impact Assessment, and provides details on how the CFM is to be utilized in this analysis.
4.2—Reclamation and Closure	Chapter 4.2 has requirements related to pit lakes (e.g., 4.2.3) that may be relevant to 3.2.7.

TERMS USED IN THIS CHAPTER

Conceptual Flow Model (CFM)

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.

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.

Exceedance Flow

An exceedance flow is the flow that the river will exceed a given percentage of the time. A Q60 flow will be exceeded 60% of the time. The values are usually determined on a monthly basis.

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.

Habitat

The place or type of site where an organism or population occurs.

Metals Leaching

The extraction of soluble metals by percolating solvents. Leaching may be natural or induced. Primary mineral weathering commonly accelerates metal dissolution and removal in mine site drainage. Metals leaching can also be referred to as "neutral" leaching, or "contaminant" leaching.

Mine Dewatering

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.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

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

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.

Passby Flow

A passby flow is a prescribed flow rate that must be allowed to pass a given point (e.g. a water intake) when a withdrawal is occurring; a passby flow also specifies a low flow condition during which no water can be withdrawn. Diversions must not lower the flow to beneath this flow rate.

Pit Lake

Lake formed in the site of a mine pit when mine dewatering pumpage ceases.

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.

Protected Area

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. (See IRMA Glossary for an expanded definition based on IUCN management categories)

Protected Waters

Protected waters are those waters designated by a national, regional, or local governmental body as waters for which no degradation above baseline water quality values will be allowed.

Rare Species

Species that are uncommon or scarce, but not classified as threatened. These species are located in geographically restricted areas or specific habitats, or are scantily scattered on a large scale. They are approximately equivalent to the IUCN (2001) category of Near Threatened (NT), including species that are close to qualifying for, or are likely to qualify for, a threatened category in the near future. They are also approximately equivalent to imperiled species

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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 3.3
Mine Waste Management

[flag] IRMA Steering Committee members are aware of recent and emerging efforts by others to define critical safeguards related to mine waste/tailings management. Such efforts have been initiated in the wake of two recent failures of major tailings dams that led to significant worker and community loss of life and environmental degradation. This draft of Chapter 3.3 has incorporated some of the findings from a 2015 expert review panel that examined the failure of the Mount Polley tailings storage facility in Canada.

IRMA expects to also learn from the recent findings of the Mining Association of Canada's Tailings Review Taskforce, as well as the impending findings of the ICMM global tailings management expert review, a United Nations Environment Program review on tailings management, and other investigations and efforts launched in the wake of the 2015 Samarco tailings dam tragedy. IRMA respects the efforts of these expert review panels, and recognizes that the Standard will benefit from the knowledge gained through these important reviews.

N.B. Industry participants in IRMA have not yet provided comments on this revised chapter, but will do so based on the lessons arising from the aforementioned reviews.

BACKGROUND

Most of the material removed from the ground at a mine will remain on the site as waste. The waste takes two general forms: waste from processing the ore into a concentrate or final product (tailings, spent heap leach materials, etc.), and waste rock from the mine that is not processed for minerals (called overburden, waste rock, sub-economic ore, etc.). All of this material can contain sub-economic concentrations of the mined mineral and other minerals including sulfidic minerals. In addition, tailings will contain process chemicals, and in the case of hard rock mining waste rock may contain nitrogen based explosives compounds, both of which may contaminate water resources.

TERMS USED IN THIS CHAPTER

200-year/24-hour Maximum Precipitation Event ■ Existing Mine ■ Failure Modes and Effects Analysis (FMEA) ■ Independent Tailings Review Board ■ Maximum Credible Earthquake (MCE) ■ Metals Leaching ■ Mine Closure ■ Mining Project ■ Mixing Zone ■ New Mine ■ Operating Company ■ Pit Lake ■ Practicable ■ Probable Maximum Precipitation (PMP) ■ Process Water ■ Stormwater (Non-Industrial) ■ Threatened Species ■

These terms are explained at the end of this chapter

It is through waste characterization and management that the operating company has the most control over both the short- and long-term environmental contamination. Geochemical testing can be utilized to determine whether wastes have the potential to generate acid drainage and/or metals leaching contaminants, but the control and management associated with these waste materials is a major challenge. Water contamination is the most prevalent problem, but air quality/dust can also be an issue. Impacts can continue over very long timeframes. Similarly, there are legacy problems from old mines that were operated and closed/abandoned under different environmental standards than are applicable today.

Information and concern about contamination problems may not become apparent until a mine has closed, when there is no longer an operator or responsible party in place to address the problems.

OBJECTIVES/INTENT OF THIS CHAPTER

To eliminate off-site contamination, minimize short- and long-term risks to communities and the environment, and protect future land uses.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for all mines applying for IRMA certification.

New vs. Existing Mines: The requirements in this chapter are applicable to all new mines, new facilities at existing mines, and existing mine facilities where practicable. However, at existing mines where compliance with the requirements are judged not to be practicable, non-compliance, even though not practicable, may result in the mine being non-certifiable under the IRMA Standard. Examples on non-certifiable practices are: Riverine, Lake, and Submarine Mine Waste Disposal (3.3.1.3); and Tailings Dam expansions where it is practicable to meet the requirements of (3.3.4).

Existing mines may qualify for IRMA certification without strict compliance to the following requirements: Liners and Effluent Control Systems (3.3.3); Tailings Dam (3.3.4); Tailings Impoundments (3.3.5); Heap Leach Facilities (3.3.7); Process Water Facilities (3.3.8); Stormwater Facilities (3.3.9); and Underground Mines (3.3.10).

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Supplementary text was added, or revisions were made to existing language in the sections on engineering plans, liners, Independent Tailings Review Boards, stormwater facilities, and wildlife monitoring, to add clarity
- Removed requirement for reporting toxics following the rules of the USEPA Toxic Release Inventory; companies may now use other approaches
- Allowed for alternatives to liners to manage seepage from wastes (see 3.3.3)
- Non-critical stormwater design requirements are now required to use the 200-year/24-hour storm event, instead of the 100-year/24-hour event. This is primarily due to the uncertainty associated with climate change (and is being utilized in many new mine proposals)
- Added a requirement for and Independent Tailings Review Panel (3.3.5.2.)
- Monitoring of surface water seeps from waste rock dumps is now required. (This is simply a presence-absence determination, not a pass-fail determination – i.e. Are there seeps, and if so, are they being monitored?)
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Mine Waste Management Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
3.3.1. General Requirements 3.3.1.1. The operating plan, or its equivalent shall provide a detailed physical description of the mine facility, the geology and hydrology, and other physical elements that could reasonably affect design specifications. 3.3.1.2. A report disclosing the annual and cumulative mass balance of toxic constituents generated, stored	For 3.3.1.1, review materials provided by the company that demonstrate an understanding of the landscape, geological and hydrological context of the mine, and how those factors affected design considerations. Also see the Chapter 3.3 Mine Waste Management Additional Background and Guidance ("IRMA Guidance for Chapter 3.3"), 3.3.1. General Requirements. For 3.3.1.2, the USEPA Toxics Release Inventory

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
or released from mining and processing operations shall be published at least annually on the mine or company website. 3.3.1.3. Riverine, Lake, and Submarine Mine Waste Disposal: At this time, IRMA will only certify operations that utilize land-based mine waste disposal. Rivers, streams, lakes and oceans shall not be used for the disposal of mine waste. 3.3.1.4. Mine Waste a. All waste material at a mine facility shall be evaluated for its potential to generate acid generating and/or metals leaching and to release water contaminants at levels in excess of the standards. b. All mine rock used for construction outside of a waste facility shall be free of acid/metals leaching contaminants, and shall be tested before use as construction material. c. Testing shall follow the guidelines published in the Global Acid Rock Drainage (GARD) Guide issued by the International Network for Acid Prevention.	(TRI) Program for mining can be an example of reporting. Or, the company can use an alternative method, such as complete mass balance of waste produced that includes accounting of toxic constituents in the waste rock and tailings material generated onsite, and amounts of constituents released off-site to air and water. Also see IRMA Guidance for Chapter 3.3, 3.3.1.2 Mass Balance Calculations–Further Information. For 3.3.1.3, ensure that the project is only using land-based mine waste disposal. For 3.3.1.4, review mine waste geochemistry. Confirm that construction materials coming from mine waste have been sampled for acid generating/metals leaching in accordance with GARD guidelines. See IRMA Guidance for Chapter 3.3, 3.3.1.4. Mine Waste–Further Information for GARD Guidelines.
3.3.2. General Engineering Requirements 3.3.2.1. Engineering plans for critical mine structures, including tailings and water supply dams, and waste rock facilities bear the seal and signature of a qualified licensed professional engineer. 3.3.2.2. Surveys that require the employment of professional surveyors shall bear the seal and signature of a licensed professional surveyor.	See IRMA Guidance for Chapter 3.3, 3.3 General Engineering Requirements for additional information. For 3.3.2.1, the engineering plans should contain the guidance elements, or their equivalents, as described IRMA Guidance for Chapter 3.3, 3.3.1. General Requirements. For 3.3.2.2,examples of surveys that should require professional surveyors are described in the IRMA Guidance, 3.3.1. General Requirements, subsections (b) and (e).
3.3.3. Liners and Effluent Control Systems 3.3.3.1. Newly constructed waste rock and tailings disposal facilities shall be lined if: a. Acid generation/metals leaching/cyanide or other contaminated leachate is predicted; and b. Contaminants are predicted to leach to the environment off the mine site at levels above the IRMA or other relevant water quality criteria or goals.[135]	For all of 3.3.3, refer to IRMA Guidance for Chapter 3.3, 3.3.3. Liners. For 3.3.3.1, IRMA anticipates that both tailings and waste rock facilities with the potential to discharge contaminants to the environment off a mine site shall be lined. Confirm that designed seepage collection systems will prevent the off-site migration of toxic levels of contaminants, or that new waste facilities that

[135] IRMA criteria are found in Chapter 3.1, Tables 3.1a, 3.1b and 3.1c. If Approaches A or C are taken to protect water quality as per Chapter 3.1, then the numerical water quality criteria may differ from IRMA water quality criteria.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
3.3.3.2. Newly constructed liner systems shall: a. Achieve an equivalent liner fluid-transit time of one year or longer; and b. Have a drainage collection layer on top of the liner, and/or a leakage collection system under the liner. 3.3.3.3. A natural in-situ layer, for example clay or bedrock, may be utilized as a liner if it meets the requirements in 3.3.3.2. 3.3.3.4. A constructed or natural effluent control system to prevent off-site contaminant migration may be substituted for a liner if it can be demonstrated that relevant water quality standards will be met off-site.[136] 3.3.3.5. Effluent control systems, including source control, covers, underdrains, liners, and slurry cutoff walls shall be employed before a mixing zone is utilized to dilute contaminants.	drain off site will have liner systems. For 3.3.3.2, confirm that company calculations of liner fluid transit meet the requirement. An example of the minimum equivalent liner fluid-transit time of one year would be a natural-material liner with a thickness of 33 cm and coefficient of permeability of $1x10^{-6}$. The use of a synthetic or geosynthetic membrane, with appropriate subgrade preparation, is also recommended. For 3.3.3.3, for liners, including natural materials, confirm that engineering reports demonstrate that bedrock and/or clay meets 3.3.3.2. For natural in-situ layers confirm that adequate monitoring measures are included. For 3.3.3.4, verify that an appropriate groundwater model has been used to predict that IRMA water quality standards will be met off-site. For 3.3.3.5, confirm that effluent control systems have been employed prior to using a mixing zone. This applies to new waste rock facilities. Existing facilities shall comply to the extent practicable.
3.3.4. Tailings Dams 3.3.4.1. Tailings dams shall be designed to withstand potentially long-term catastrophic events. Designs shall incorporate the following: a. Apply the guidelines of the Canadian Dam Association *Dam Safety Guidelines* (or equivalent) for design;[137] b. The maximum credible earthquake shall be used for long-term seismic stability design for the tailing embankment; and c. The probable maximum precipitation event shall be used for the design of operational holding capacity. 3.3.4.2. An Independent Tailings Review Board (ITRB), composed of at least three independent experts, shall be formed to review all tailings impoundments	This applies to new tailings dams, and to tailings dam expansions if practicable. Review tailings dam design documents to ensure that the requirements above have been incorporated into the design. Also, see IRMA Guidance for Chapter 3.3, 3.3.4. Tailings Dams. 3.3.4.2 is based on the findings of the Mt. Polley Expert Review Panel. Requirements for these panels will be provided in the IRMA Guidance document for Chapter 3.3. 3.3.4.2 applies to new and existing tailings impoundments, to all tailings dams 25 meters or greater in height. Interview ITRB members and/or review documentation from reviews.

[136] IRMA criteria are found in Chapter 3.1, Tables 3.1a, 3.1b and 3.1c. If Approaches A or C are taken to protect water quality as per Chapter 3.1, then the numerical water quality criteria may differ from IRMA water quality criteria.

[137] Canadian Dam Association. Dam Safety Guidelines. 2007. See also, Application of Dam Safety Guidelines to Mining Dams. 2014. Both publications are available at: www.imis100ca1.ca/cda/Main/Publications/Dam_Safety/CDA/Publications_Pages/Dam_Safety.aspx?hkey=52124537-9256-4c4b-93b2-bd971ed7f425

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
constructed to retain wet tailings during mine operation in order to provide third-party recommendations on the design, construction, operation and closure of tailings impoundments.[138] The ITRB shall meet at a frequency that it deems necessary to ensure safety, but no less frequently than every five years.	Confirm that a panel has been formed and that reviews have been undertaken during the relevant stages, and at a frequency determined by the ITRB.
3.3.5. Tailings Impoundments 3.3.5.1. The following requirements shall be implemented at new facilities:[139] a. Tailings impoundment design and operation shall place safety as the primary consideration; and b. Tailings impoundments designs shall incorporate liners and/or drainage collection underdrains or systems that can be used to dewater impoundment tailings after closure. 3.3.5.2. Tailings impoundments shall be designed for dry closure. Wet closure of tailings may be considered if it can be demonstrated, through a risk assessment and a failure modes and effects analysis or its equivalent, that wet closure poses less long-term risk to environmental and social considerations than a dry closure.	Review tailings impoundment design. 3.3.5.1 applies to the design of all new tailings impoundments and all major changes to impoundments. Also see IRMA Guidance for Chapter 3.3, 3.3.5. Tailings Impoundments. For 3.3.5.2, review tailings impoundment design documents and and closure plans. If wet closure is to be used, confirm that it a risk assessment has been completed that includes a failure modes and effects-type analysis.
3.3.6. Heap Leach Facilities 3.3.6.1. Heap leach facilities shall incorporate the following:[140] a. Heap leach facilities and associated solution channels within the heap shall have a synthetic liner with a low permeability subgrade of a minimum of 12 inches of soil that has a minimum re-compacted in-place coefficient of permeability of $1x10^{-6}$ cm/sec; b. Heap leach facilities shall be equipped with a leak collection recovery system and/or underdrain	Low permeability is defined in Subsection 3.3.3.2. Review heap leach liner design and installation records. Confirm that adequate groundwater monitoring is in place to detect and confirm that seepage is being collected. 3.3.6.1.a and b apply to newly constructed heap leach facilities. Also see the IRMA Guidance for Chapter 3.3,

[138] This applies to new and existing tailings impoundments, and to all tailings dams 25 meters or greater in height. The World Bank and other lenders groups require the formation of a similar "independent panel of experts" to review the investigation, design, construction and filling of new large dams, and includes reviews for high hazard cases involving significant and complex remedial work on existing dams. (World Bank Operational Manual. OP 4.37. Available at: web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,contentMDK:20064653~menuPK:64701637~pagePK:64709096~piPK:64709108~theSitePK:502184~isCURL:Y,00.html)

[139] These requirements were added as a result of the Mt. Polley Expert Review Panel findings. (Source: Report on Mount Polley Tailings Storage Facility Breach, Independent Expert Engineering Investigation and Review Panel, Province of British Columbia, January 30, 2015. Available at: www.mountpolleyreviewpanel.ca/final-report).

[140] 3.3.6.1.a and b apply to newly constructed heap leach facilities.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
system; and c. Heap leach liner integrity shall not be intentionally breached on closure.	3.3.6. Leach Facilities.
3.3.7. Waste Rock Facilities 3.3.7.1. Waste rock facilities shall be designed to minimize seepage of contaminated water to groundwater. 3.3.7.2. Waste rock facilities that contain potentially acid generating or metals leaching (PAG/ML) rock shall be designed and constructed to insulate the PAG/ML waste rock from the environment with non-acid-generating waste or a liner before a reclamation soil cover is applied. 3.3.7.3. Surface seeps from waste rock dumps that exceed IRMA or other relevant surface water quality criteria or goals[141] shall be monitored at least quarterly during operation, and at least annually during closure, for contaminants and flow, with sufficient data to determine chemical loading.	For 3.3.7.1 and 3.3.7.2, review documentation related to waste facility design, and confirm that the company has taken all practicable efforts to minimize seepage of contaminated water. For 3.3.7.2, confirm that company has tkane all practicable steps to minimize infiltration or water flow through waste rock and/or provide sufficient buffering material to neutralize acid rock generation, and preferably to minimize the seepage from PAG/ML waste rock dumps. Also see IRMA Guidance for Chapter 3.3, 3.3.7. Waste Rock Facilities. For 3.3.7.3, review monitoring data to confirm that surface seeps are being monitored, and if there any contamination problems associated with the seeps. This is a presence-absence determination, not a pass-fail determination (i.e. if there are seeps, are they being monitored?).
3.3.8. Process Water Facilities 3.3.8.1. New facilities designed to store process waters shall: a. Be constructed and operated with no planned discharges of contaminated process water to the environment; b. Be constructed and operated to minimize seepage to groundwater; and c. For contaminated process water storage facilities, incorporate a seepage collection and/or leak detection systems into the facility design. 3.3.8.2. Process water holding ponds for new and expanded facilities, and other mine facilities open to precipitation that involve the storage of contaminated water, shall be designed for the 200-year/24-hour maximum precipitation event.	For 3.3.8.1, review design schemes. It is the best practice objective of IRMA that the discharge of all contaminants be stopped at the facility boundary. While this will inevitably involve the deployment of more than one mitigation strategy, each individual component of the mine facility should be designed, constructed, and operated to provide as much containment as is reasonably possible. Also see IRMA Guidance for Chapter 3.3, 3.3.8. Process Water System Plans and Specifications. For 3.3.8.2, review facility design plans. The requirement for a 200-year design event is tied to the uncertainty in predicting climate change impacts.

[141] IRMA criteria are found in Chapter 3.1, Tables 3.1a, 3.1b and 3.1c. If Approaches A or C are taken to protect water quality as per Chapter 3.1, then the numerical water quality criteria may differ from IRMA water quality criteria.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
3.3.9. Stormwater Facilities 3.3.9.1. New stormwater conveyance and storage facilities shall be designed:[142] a. For critical facilities the probable maximum precipitation event; and b. For non-critical facilities at least the 200-year/24-hour maximum precipitation event 3.3.9.2. New stormwater conveyance and storage facilities built for closure/permanent containment or treatment shall be designed: a. For critical facilities the probable maximum precipitation event; and b. For non-critical facilities at least the 200-year/24-hour maximum precipitation event.	Review design of stormwater diversions and settling ponds. For 3.3.9.1, review stormwater monitoring records. Review 200-year/24-hour maximum precipitation event specification. The requirement for a 200-year design event is tied to the uncertainty in predicting climate change impacts. For 3.3.9.2, review stormwater monitoring records. Review 200-year/24-hour maximum precipitation event specification. The requirement for a 200-year design event is tied to the uncertainty in predicting climate change impacts.
3.3.10. Underground Mines 3.3.10.1. New and expanded mine workings shall be designed so that there will be no drainage after mine closure, if practicable.	Review facility design. Also see IRMA Guidance for Chapter 3.3, 3.3.10. Underground Mines. This applies to new construction at both new and expanded underground mines.
3.3.11. Monitoring 3.3.11.1. The operating company shall monitor pit lakes, tailings impoundments, process solution ponds and any other non-enclosed facilities storing potentially toxic wastes for mortalities of migratory birds, threatened species, and local wildlife or livestock species: a. All mortalities shall be recorded, including location, species,[143] number, and date of incident. b. If there is any mortality involving migratory birds or threatened species, and it is followed by two separate incidents within the following one-year period,[144] measures shall be taken to prevent future mortalities, including water treatment and/or cyanide destruction if required to reduce toxic contaminants. c. Mortalities of any species shall be calculated on at least a quarterly basis, and the results publicly	Review monitoring plan, and monitoring data as necessary, and any documentation on animal mortalities including follow-up actions taken related to incidents. Also see IRMA Guidance for Chapter 3.3, 3.3.11.3. Mortalities of Migratory Birds, Threatened Species, and Local Wildlife Species. Review operating company/mine website or annual reports/sustainability reports for mortality data. Confirm that mortality reporting occurs annually, but includes quarterly data, if relevant (e.g., if there were no mortalities, data for a year would not need to be shown by quarter.) This applies to new construction at both new and expanded facilities. This monitoring may be incorporated as a part of a site-wide monitoring plan that incorporates, for

[142] Critical facilities include dam spillways, stream channels re-established on closed tailings facilities, tailings and waste rock diversion structures, etc.

[143] E.g. migratory or non-migratory birds, threatened species, local wildlife, cattle, pigs, etc.

[144] Separate mortality incidents means that the incidents resulting in mortalities were separated in time (there may be one or more deaths per "incident").

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
reported by the company at least annually.	example, the requirements of Sections 3.1.3 (Approaches A and B, Water Quality) or 3.1.5.2 (Approach C, Water Quality), 3.2.8. (Water Quality), 3.4.1 (Air Quality), 3.9.4 (Cyanide) and 3.10.3 (Mercury).
3.3.12. Climate Change 3.3.12.1. The design of all mine facilities that store or control the flow of water shall make quantitative estimates of the potential impacts of climate change over the facility design life.	Review documentation to confirm that climate change has been quantitatively considered in the design of these facilities (e.g., that the risk of increased precipitation and run-off due to climate change and/or variability has been addressed).

NOTES

This chapter was developed with guidance from the best practices for waste management provided in the Global Acid Rock Drainage (GARD) Guide, and regulations from Arizona, Nevada and New Mexico guidance and regulations. In drafting the proposed standard IRMA did consider the fact that the conditions of the Standard would need to be technically practicable all over the world. IRMA realizes that in most instances one-size does not fit-all. However, as much as is possible, IRMA would not only like to standardize the requirements, but also provide a level playing field for all potential mines.

The IRMA guidance document for Chapter 3.3 "Mine Waste Management Additional Background and Guidance" is referred to throughout the Means of Verification as a source of additional information for companies and auditors. The guidance document was developed to conform with recommendations from:

- The best practices for waste management provided in the Global Acid Rock Drainage (GARD) Guide;
- Standards derived primarily from Arizona, Nevada and New Mexico guidance and regulations.

Marine and Lake Disposal

IRMA participants have divergent views on the issue of waste disposal into lakes and oceans. Further work is required to determine the specific requirements under which such disposal methods could be considered, and comments are invited on this point.

IRMA recognizes that there are some specific instances where marine or lake disposal of mine waste might be the environmentally preferable method of waste disposal. Riverine mine waste disposal has never been demonstrated to be environmentally sound.

There are two fundamental problems with the disposal of mine waste in oceans and lakes that have led IRMA to take its present position. First, there is no defined program in place to collect scientific information on impacts to existing resources and areas that would be affected by deep sea disposal. Lake disposal has been justified by regulatory bodies as appropriate on the basis that many of these natural water bodies can be restored to some or all of their former function after the cessation of mining, however, this presumption has not been confirmed by appropriate research. Second, the economic advantage of utilizing a natural body of water for waste disposal, over construction of an engineered impoundment for this waste, is so large that it presently distorts the evaluation of the social and environmental factors involved in a waste disposal location decision. Until appropriate regulatory guidelines and proper technical analysis are developed/employed for making decisions about the use of a natural water body can be demonstrated, IRMA will only certify land-based tailings disposal.

Cross References to Other Chapters	
CHAPTER	**ISSUES**
1.1—Legal Compliance	As per Chapter 1.1, if there are host country laws governing waste management at mine sites, the company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law.
3.1—Water Quality	IRMA water quality criteria, which are mentioned in 3.3.3.1, 3.3.3.4 and 3.3.7.3 can be found in Chapter 3.1, Tables 3.1.a, 3.1.b and 3.1c. If Approaches A and C are taken to protect water quality as per Chapter 3.1, the numerical water quality limits may differ from IRMA water quality criteria. Chapter 3.1 contains monitoring requirements in 3.1.3. Post-Closure Monitoring, and 3.1.5. Mixing Zones that are relevant to waste management facilities.
3.2—Water Quantity	Chapter 3.2 contains monitoring requirements in 3.2.8 that are relevant to waste management facilities.
3.9—Cyanide	The Mine Waste Management chapter refers to cyanide as a potential contaminant in mine waste facilities. Refer to Chapter 3.8 for requirements related to monitoring and management of cyanide.
4.2—Reclamation and Closure	See this chapter for discussions of financial sureties, long-term/perpetual water treatment, and monitoring of waste facilities and groundwater.

TERMS USED IN THIS CHAPTER

200-year/24-hour Maximum Precipitation Event

The maximum amount of rainfall that could be expected to fall in 24 hours, on average, every 200 years at a given location.

Existing Mine

A mine that was operational prior to the date that the IRMA Standard first went into effect.

Failure Modes and Effects Analysis (FMEA)

A methodology that can be used to assess the potential for, or likelihood of, failure of structures, equipment or processes; and the effects of such failures on the larger systems of which they form a part, and on the surrounding ecosystem, including human health and safety. FMEA provides evaluators with the ability to perform a systematic and comprehensive evaluation of potential failure modes of the design/plan in order to identify the potential hazards.

Independent Tailings Review Board

The appointment of independent tailings review board is to provide third-party advice on the design, construction, operation and closure of all tailings impoundments engineered to retain wet tailings during mine operation. Independent Tailings review boards are to be asked to provide opinions on the following: whether the design, construction and operation of the Tailings Storage Facilities (TSF) are consistent with satisfactory long-term performance; whether design and construction have been performed in accordance with the Board's expectation of good practice; whether safety and operation of the TSF conform to the Board's expectation of good practice; and whether there are weaknesses that would reasonably be expected to have a material adverse effect on the integrity of the TSF, human health, safety, and successful operation of the facility for its intended purpose.

Maximum Credible Earthquake (MCE)

The greatest earthquake that reasonably could be generated by a specific seismic source, based on seismological and geologic evidence and interpretations. The MCE is often associated with a recurrence interval of 10,000 years.

Metals Leaching

The extraction of soluble metals by percolating solvents. Leaching may be natural or induced. Primary mineral weathering commonly accelerates metal dissolution and removal in mine site drainage. Metals leaching can also be referred to as “neutral” leaching, or “contaminant” leaching.

Mine Closure

Includes the following: The reclamation surety holder declares reclamation complete; All of the reclamation surety (as opposed to the water treatment surety) is returned to the operating company; A mine operator no longer maintains an active physical presence on the minesite; and other obvious or reasonable indicators that most or all of the reclamation activities have been completed.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

Mixing Zone

A portion of a surface or groundwater in which the effluent discharge mixes with the receiving water, and in which water quality is allowed to exceed otherwise specified standards. Compliance with water quality criteria occurs at the edge of the mixing zone.

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Standard first takes effect.

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.

Pit Lake

Lake formed in the site of a mine pit when mine dewatering pumpage ceases.

Practicable

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.

Probable Maximum Precipitation (PMP)

Theoretically, the greatest depth of precipitation for a given duration that is physically possible over a given size storm area at a particular geographical location at a certain time of year.

Process Water

Process water means any water which comes into direct contact with mine workings and ore or waste rock (including roads used to transport ore or waste rock), mine processing facilities, or results from the processing of mineral products (e.g. tailings ponds, heap leach ponds, seepage collection ponds, wastewater treatment facility holding ponds, etc.).

Stormwater

Industrial Stormwater – Discharge of the interaction of rainfall, snow or snowmelt runoff with unreclaimed mine facilities like waste rock, tailings, mine openings and mine processing facilities and associated roads, or activities included in a wastewater discharge permit program.

Non-industrial Stormwater – Discharge of rainfall, snow or snowmelt runoff from land and impervious surface areas such as access roads.

Threatened 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).

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 3.4
Air Quality

BACKGROUND

Mining sites can release significant quantities of air pollutants in two main categories: particulate matter, and toxics. By volume, the great majority of contaminants are particulate, such as dust from blasting, large truck and equipment traffic, conveyors, ore crushing, etc. Toxics may represent only a small proportion of a mine's air emissions, but are important because they can significantly degrade human health and the environment.

TERMS USED IN THIS CHAPTER

Affected Community ■ Air Dispersion Modeling ■ Associated Facility ■ Host Country Law ■ Mining Project ■ Mining-Related Activities ■ Operating Company ■ Rare, Threatened or Endangered Species ■

These terms are explained at the end of this chapter (before the air quality table)

Mines may emit contaminants from localized sources such as processing plants or from more diffused activities, such as fugitive dust emitted by blasting or truck traffic, or wind-blown from exposed surfaces such as roads, pits, and waste piles, or from dried surfaces of tailings impoundments.

These releases can generally be controlled with reasonably inexpensive measures. However, a mine's typically large geographic footprint make control especially important and sometimes difficult. The most common method of dust control is spraying water - such as by truck on roads and near blasting activities. 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 and maintain pre-mine air quality conditions.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant to all mining operations that release to air any of the contaminants in Table 3.4.a, below, or others that may present a risk to human or ecosystem health. Air emissions may be from stationary or mobile equipment, mine waste disposal areas, and other mining-related activities undertaken on the mine site or along transportation routes.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Removed requirement to comply with all requirements of EU regulations and implementation protocols, as these provide more guidance to States than companies
- Changed the requirement related to air dispesion modeling (3.4.2.2) so that it is required unless a company can demonstrate that there is no significant risk to communities or ecosystems from air pollutants.
- Added a requirement to measure the mass deposition of dust (3.2.3.4).
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Air Quality Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
3.4.1. Air Quality Management Plan 3.4.1.1. The operating company shall develop, maintain and implement a documented air quality management plan that adjusts to the specific issues and concerns at the mine site and evolves as data becomes available.	Review company or mine annual and/or sustainability reports for appropriate content Review air quality management plan and any updates to the plan.
3.4.2. Monitoring and Modeling 3.4.2.1. The operating company shall monitor and record air quality at the operations associated with the mining project by using personnel trained in air quality monitoring. 3.4.2.2. The operating company shall employ air dispersion modeling consistent with leading methodologies (e.g., US EPA's Air Quality Guidelines, technical guidance related to the European Union Air Quality Directive, etc.[145]) to estimate the concentrations, transport and dispersion of mining-related air contaminants, unless the company can demonstrate that emissions of air pollutants from the mining project pose no significant risk of impacts to humans, wildlife or rare, threatened or endangered plant species.[146] 3.4.2.3. The operating company shall position air collection canisters around the mine site, related operations and transportation routes and the surrounding environment such that they provide a representative sampling of air quality sufficient to demonstrate compliance or non-compliance with the air quality criteria in 3.4.3.1. Air monitoring locations shall be informed by the air dispersion modelling results. 3.4.2.4. The operating company shall measure mass deposition of dust. Dust deposit gauges should be located between the mine site and nearby communities or properties likely to be affected by dust deposition.	For 3.4.2.1, review documents related to qualifications and/or training records of all staff who are responsible for and undertake air quality monitoring to demonstrate that those staff have been trained to the appropriate standards and skills by a suitable training agency. For 3.4.2.2, if modeling is done, review EPA or EU modelling guidelines. Interview operating company to confirm that these guidelines or a similar modelling methodology was followed. Confirm that the air quality model is 'fit-for-purpose' as per the EU guidelines. For example, that the model: • Has the appropriate spatial and temporal resolution for the intended application; • Is adequately validated for the particular application, and is well documented; • Contains the relevant physical and chemical processes suitable for the type of application, the scale and the pollutant(s) for which it is applied; • The relevant emission sources for the application are adequately represented; • Includes suitable meteorological data If a company has not carried out modeling, review documentation to confirm that a scientific analysis supports the claim that the risk to humans, wildlife or important plant species from air emissions is insignificant. At minimum, the analysis should consider the pollutants in Table 3.4.a, as well as any other relevant air emissions (e.g., dust, mercury air

[145] See 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

[146] Such a demonstration may be made through air quality analyses conducted as part of an ESIA, risk assessment, and/or based on monitoring data. If, at any later date, monitoring suggests a heightened risk of impacts, modeling shall be conducted.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
	emissions at gold mines). For 3.4.2.3, each mine site is unique and it is therefore up to the IRMA auditor to assess the adequacy/efficacy of air quality monitoring activities and locations. Review documentation and interview operating company to determine how sites were selected, and confirm monitoring locations were informed by modelling results. For 3.4.2.4, dust contamination monitoring should focus on the boundary of the mine, thereby reflecting what the mine is emitting onto neighboring properties and communities
3.4.3. Air Quality Compliance 3.4.3.1. The operating company shall comply with the European Union's Air Quality Standards as amended to its latest form (See Table 3.4.a, below) at all mine operations, and associated facilities and transportation routes associated with those operations. 3.4.3.2. Dust deposition shall not exceed 350 mg/m^2/day, measured as an annual average.[147]	For 3.4.3.1, review documentation and records such as air quality monitoring data or air quality reports submitted to competent authorities to confirm that air quality contaminant concentrations meet EU Air Quality Standards. For 3.4.3.2, review records from dust sampling to confirm that deposition does not exceed 350 mg/m^2/day, measured as an annual average.
3.4.4. Reporting 3.4.4.1. The operating company shall ensure that its air quality management plan and compliance information is up-to-date and publicly available.[148]	For 3.4.4.1, review documentation, which may include air quality information published by the operating company (e.g., in annual reports, sustainability reports and/or on a website accessible to the public). Other evidence of making information publicly available to stakeholders may include documented requests from stakeholders and company responses - which may come from the company and/or interviews with stakeholders.

[147] 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 criteria 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.

[148] Compliance information may include air quality monitoring data, air quality reports (to agencies), records related to non-compliance (as per Chapter 1.1) etc.

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 included contaminants, including contaminants released during mining, and its inclusion of specific metalloid contaminants.[149] 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 standards also evolve.

Cross References to Other Chapters

CHAPTER	ISSUES
1.1—Legal Compliance	As per Chapter 1.1, if there are host country laws governing air quality related to mine sites, the company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law.
2.13—Grievance Mechanism and Access to Other Remedies	Air quality impacts not anticipated in the ESIA or not adequately mitigated may result in complaints by stakeholders. As per Chapter 2.13, the operating company is required to have an operational-level grievance mechanism available to stakeholders, including procedures for filing complaints, and having complaints recorded, investigated and resolved in a timely manner.
4.1—Environmental and Social Impact Assessment	Potential air quality impacts may be identified in the ESIA. The assessment may help to inform the location of air monitoring sites, as well as potential means of mitigating air quality impacts.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a project.

Air Dispersion Modeling

Dispersion modeling uses mathematical formulations to characterize the atmospheric processes that disperse a pollutant emitted by a source. Based on emissions and meteorological inputs, a dispersion model can be used to predict concentrations at selected downwind receptor locations.

Associated Facility

Any facility controlled by the operating company that is near to the mine lease/property, and essential to the mining operation (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 and others).

Host Country Law

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. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

[149] 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.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

Mining-Related Activities

Encompasses any activities that may occur during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure), and includes all physical activities (e.g., land disturbance and clearing, sampling, airborne surveys, construction, ore removal, ore processing, waste management, reclamation, etc.).

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.

Rare, Threatened or Endangered Species

Rare species are uncommon or scarce, but not classified as threatened. These species are located in geographically restricted areas or specific habitats, or are scantily scattered on a large scale. They are approximately equivalent to the IUCN (2001) category of Near Threatened (NT), including species that are close to qualifying for, or are likely to qualify for, a threatened category in the near future. They are also approximately equivalent to imperiled species

Threatened species 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).

Endangered species are not Critically Endangered but are facing a very high risk of extinction in the wild in the near future, as defined by IUCN (2001).

(IUCN categories: www.iucnredlist.org/static/categories_criteria_2_3 - categories)

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

TABLE 3.4.a. – European Union (EU) Numeric Air Quality Standards.[1]			
Pollutant	**Concentration**	**Averaging period**	**Permitted exceedances / year**
Fine particles (PM2.5)	25 µg/m^3	1 year	n/a
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	n/a
PM10	50 µg/m^3	24 hours	35
	40 µg/m^3	1 year	n/a
Lead (Pb)	0.5 µg/m^3	1 year	n/a
Carbon monoxide (CO)	10 mg/m^3	Maximum daily 8 hour mean	n/a
Benzene	5 µg/m^3	1 year	n/a
Ozone	120 µg/m^3	Maximum daily 8 hour mean	25 days averaged over 3 years
Arsenic (As)	6 ng/m^3	1 year	n/a
Cadmium (Cd)	5 ng/m^3	1 year	n/a
Nickel (Ni)	20 ng/ m^3	1 year	n/a
Polycyclic Aromatic Hydrocarbons	1 ng/m^3 (as concentration of Benzo(a)pyrene)	1 year	n/a
Notes: [1] EU. Air Quality Standards (as of July 3, 2013). http://ec.europa.eu/environment/air/quality/standards.htm			

Chapter 3.5 Noise

BACKGROUND

All phases of mining can create significant noise. These include: blasting in both open pit and underground mines; large ore and waste rock truck traffic on the mine site; noise from ore stockpiling, screening, and crushing; and, truck or rail traffic bring consumables to the mine site, and shipping product from the mine for final processing.

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.[150]

TERMS USED IN THIS CHAPTER

Affected Community ■ Competent Professionals ■ Grievance ■ Host Country Law ■ Mining Project ■ Mining-Related Activities ■ Noise Receptor ■ Operating Company ■ Stakeholder ■

These terms are explained at the end of this chapter

Many noises can be moderated or partially managed by employing mitigation measures, including berms, mufflers, sequenced blasting, planning, timing, and communications. However, effective control may be challenging due to a mine's typically large geographic footprint, especially when a mine is located near communities.

OBJECTIVES/INTENT OF THIS CHAPTER

To preserve the amenity or health and well-being of nearby noise receptors, properties, and communities.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for all mines applying for IRMA certification.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Changed the allowable noise levels to refer to IFC requirements.
- Revised requirement to measure noise types (tonal, low frequency, fluctuating and impulsive), to only requiring those types of measurements if there is a complaint that is not resolved by undertaking other mitigation measures (3.5.2.1).
- Added a requirement regarding noise impacts on noise-sensitive wildlife populations (3.5.1.2).
- Added a requirement related to blast noise and vibration (3.5.3.).
- Reporting requirements were modified to require that the company provide the relevant data to stakeholders who have filed formal noise complaints, and otherwise to other stakeholders upon request.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

[150] 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 Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
3.5.1. Allowable Noise Levels 3.5.1.1. Where there are human noise receptors that could be affected, noise from mining-related activities shall not exceed a maximum one-hour LAeq (dBA) at residential, institutional or educational receptors of 55 dBA during the hours of 07:00 to 22:00 and 45 dBA at other times, or result in a increase of more than 3 dB above background as measured at the nearest receptor off-site. For industrial or commercial receptors this maximum is 70 dBA at all times.[151] 3.5.1.2. If an environmental analysis for the mining activities identifies a noise-sensitive wildlife population, the operating company shall develop a written mitigation plan that includes: a. Specific actions to measure and identify whether or not wildlife populations are being impacted and, where appropriate, to monitor and mitigate noise impacts to relevant wildlife populations; b. Participation by competent professionals in the assessment and development of mitigation and monitoring plans; and c. Consultations with relevant regulatory agencies and stakeholders, including sharing of assessment, monitoring and mitigation information, prior to adoption of the mitigation plan.	Review company monitoring data to confirm numerically that IRMA requirements and host country laws pertaining to noise, if they exist, are being met. The dBA decibel levels are measured out of doors. Review documentation showing all environmental analyses, such as ESIA or other (including regulatory agency, contractor, mining project, public, etc.) that identified noise impacts to wildlife populations. Review written mitigation plans for noise and wildlife and documentation that it was developed with participation by competent professionals such as wildlife biologists and acoustic control/noise specialists if necessary, and that agency and stakeholders had the chance to review mitigation plans and other relevant information prior to their adoption. Mitigation measures for wildlife populations may include, but are not limited to, the same mitigation measures available to limit impacts to humans, except that relocation or extermination shall not be an acceptable mitigation measure.
3.5.2. Mitigation of Noise-Related Complaints 3.5.2.1. When the operating company receives a noise-related grievance/complaint from affected community members or other stakeholders the operating company shall consider the four types of noise identified below when assessing the complaint and possible mitigation measures.[152] If mitigation or other actions do not resolve the complaint/problem	Interview operating company and review information related to the operational level grievance mechanism (see Chapter 5.3) to determine if any noise-related complaints have been made. If relevant, review any documentation on the resolution of noise-related complaints. If mitigation measures did not successfully resolve

[151] ibid. pp. 52, 53 and Table 1.7.1.

[152] While most discussions about noise focus on volume, impacts from noise are largely controlled by four factors that can increase the health impacts or annoyance factors associated with noise. The Industrial Noise Policy developed by the NSW Environment Protection Authority provides more information on the four noise types that can contribute to intrusive noise impacts. and decibel adjustments to protect noise amenity. See:. www.epa.nsw.gov.au/noise/industrial.htm. IRMA Guidance will provide more background and resources related to this requirement..

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
then the decibel (dB) adjustments specified below shall apply:[153] a. Where tonal noise is created, a correction of 5 dB shall apply to the measured dB level; b. Where low frequency noise is emitted such that the difference between dBA and dBC measured at the boundary of the mine site is greater than 15 decibels, then: [154] i. A correction of 5 dB shall apply; ii. the mine shall provide independent reporting to certify numerically that low frequency noise does or does not exist; c. Where noise is fluctuating, a correction of 5 dB shall apply; and d. Where impulsive noise exists, a correction of 5 dB shall be assessed. This correction shall be applied based on any individual impulsive noise or any string of impulsive noise. A time constant of 35 milliseconds shall be applied to monitor impulsive noise. 3.5.2.2. When stakeholders raise a concern or complaint about the potential effects of mining-related noise on wildlife populations, the complaint shall trigger the mitigation plan required in 3.5.1.2. The complainant shall be included in mitigation plan consultations.	the complaint, confirm through review of company documentation (including calculations) that the company applied the required decibel adjustments to their measured noise, and that the resultant noise levels met the allowable noise levels in 3.5.1.1; or for wildlife-related noise complaints mentioned in 3.5.2.2, that mitigation plan was developed as per 3.5.1.2.
3.5.3. Blast Noise and Vibration 3.5.3.1. Mining operations shall undertake blasting operations as follows:[155] a. A maximum level for air blast overpressure of 115 dB(Lin Peak) shall be exceeded on no more than 5 % of blasts over a 12-month period at a sensitive place; b. Blasting shall only occur during the hours of 09:00 am to 17:00. Monday to Saturday unless prior approval has been obtained from the appropriate	Review operating company documents (e.g., blasting logs, data on pressure and vibration measurements) to confirm that IRMA requirements and host country blasting regulations, if they exist, are being met. If operating company has blasted outside the timeframes identified in 3.5.3.1, review operating company documentation supporting the exception. Verify accuracy and completeness of the company's explanation with appropriate stakeholders and in the case of wildlife, with

[153] The decibel "correction" shall apply to account for the special impacts that occur from special types of noise. The correction shall be added to the measured dB level before that dB level is compared to the acceptable dB noise level of the IRMA or host country noise standard. Where a correction is applied, the uncorrected dB level shall be reported parenthetically. The total correction applied for 3.5.2.1. a, b, c and d shall not exceed 10 db(A).

[154] If the mine site includes more than one source of low frequency noise that triggers this requirement then the subpart shall apply individually for each of the sources on the mine site.

[155] These requirements are based on the Australia and New Zealand Environment Council's "Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration." ANZEC, 1990. Available at: www.environment.nsw.gov.au/resources/noise/anzecblasting.pdf

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
government permitting agency, and prior to that permitting the public was consulted about impacts to human and non-human receptors, particularly as regarding times of day and seasonality. In no circumstance shall blasting be allowed before 07:00 or after 19:00; and c. A ground vibration peak particle velocity shall not exceed 5 mm/second peak particle velocity for 9 out of 10 consecutive blasts and not greater than 10 mm/second peak particle velocity at any time. 3.5.3.2. Mining operations may undertake blasting outside of the time restraints in 3.5.3.1.b when the operating company can document that such blasting will not elicit complaints either because: a. There are no nearby noise receptors, including wildlife potentially impacted by blasting noises; or b. Potentially affected human receptors have given voluntary approval for the expanded blasting hours and, if there are potentially affected wildlife receptors, a competent wildlife biologist has provided his/her written opinion that such expanded hours will not adversely impact wildlife.	wildlife biologists or other appropriate experts.
3.5.4. Reporting 3.5.4.1. When stakeholders make a noise-related complaint, the operating company shall provide relevant noise data and information to them. Otherwise, noise data and information shall be made available to stakeholders upon request.	Interview company and stakeholders who have complained about noise, if any, to confirm that information is provided to complainants. Evidence of making information available to stakeholders could include documented requests from stakeholders and company responses.

Cross References to Other Chapters	
CHAPTER	**ISSUES**
1.1—Legal Compliance	As per IRMA Chapter 1.1, if there are host country laws governing noise from mining operations, the company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law.
2.2—Occupational Health and Safety	Chapter 3.5 pertains to the impacts of mine-related noise on local communities and wildlife. The impacts of harmful noise on workers are covered in Chapter 2.2.
2.8—Community and Stakeholder Engagement	Consultations with stakeholders related to the development of noise mitigation plans shall conform to the stakeholder engagement requirements in Chapter 2.8. Reporting shall conform with the Communications and Access to Information requirements in Chapter 2.8.
2.13—Grievance Mechanism and Access to Other Remedies	Noise impacts not anticipated in the ESIA or not adequately mitigated may result in complaints by stakeholders. As per Chapter 2.13, the operating company is required to have an operational-level grievance mechanism available to stakeholders, including procedures for filing mining-related complaints, and having those complaints recorded, investigated and resolved in a timely manner.

Cross References to Other Chapters	
4.1—Environmental and Social Impact Assessment	Potential noise impacts, such as impacts on sensitive wildlife species, may be identified in the ESIA. The assessment may result in the development of mitigating strategies for noise.

TERMS USED IN THIS CHAPTER

Affected Community

Local communities that are subject to risks or impacts from a project.

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 established and scientifically robust methodologies that would withstand scrutiny by other professionals.

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.

Host Country Law

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. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

Mining-Related Activities

Encompasses any activities that may occur during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure), and includes all physical activities (e.g., land disturbance and clearing, sampling, airborne surveys, construction, ore removal, ore processing, waste management, reclamation, etc.).

Noise 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.

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.

Stakeholder

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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 3.6
Greenhouse Gas Emissions

BACKGROUND

Mining is a major energy consumer and emitter of carbon. The mining industry therefore has an opportunity and responsibility to manage its energy use and carbon emissions, but it also shows the potential for mines to consume less energy, emit less carbon, and improve the company's bottom line.

According to the International Council on Mining and Metals, the mining industry's greenhouse gas emissions come from two major categories. The first half is direct emissions as a result from fossil fuel use in mining and processing operations; transportation of ore and electricity generation at remote sites; and fugitive emissions. The second half is indirect emissions from electricity use, primarily in refining and smelting operations. Mining companies can reduce consumption in both of these groupings and thereby cut costs and improve competitiveness by adopting best practices regarding energy efficiency and emissions reduction.

TERMS USED IN THIS CHAPTER

Affected Community ■ Host Country Law ■ Mining Project ■ Mining-Related Activities ■ Operating Company ■ Significant Changes to Mining-Related Activities ■

These terms are explained at the end of this chapter

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

Chapter Relevance: This chapter is relevant for all mines applying for IRMA certification.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Removed the previous numeric corporate target of 10% greenhouse gas reduction per year, and replaced with a mine-specific target set by the company.
- Emissions quantification and reporting is now based on the publicly available Greenhouse Gas Protocol Corporate Standard, rather than ISO requirements, which are not publicly available.
- 3.6.2 now requires companies to demonstrate that they have investigated emissions reductions opportunities, but does not prescribe specific types of reductions, as the ones previously listed may not be the most cost-effective methods in all cases.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Greenhouse Gas Emissions Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
3.6.1. Greenhouse Gas Policy 3.6.1.1. The operating company shall develop and maintain a greenhouse gas or equivalent policy that commits the company to: a. Identifying, measuring and reporting greenhouse gas emissions from the mining project and mining-related activities; b. Identifying energy efficiency and carbon savings opportunities across the operation; c. Setting meaningful and achievable greenhouse gas reduction targets; and d. Reviewing and revising the policy at least every five years and as needed, such as if there are significant changes to mining-related activities.	Review greenhouse gas policy to ensure commitment to measuring/reporting; identifying reduction/efficiency opportunities; established and reduction targets; and reviewing/revising the policy. The policy does not have to be stand-alone and does not have to be special/exclusive to IRMA purposes. Nor does it have to be named "greenhouse gas policy."
3.6.2. Emissions Quantification and Reporting 3.6.2.1. The operating company shall comply with the methods described in the *Greenhouse Gas Protocol Corporate Standard*.[156]	Review documentation on details and explanations of calculations made, including assumptions, data sources, and discussion of errors, inconsistencies, and other information that could reasonably be necessary to ensure that the methods conform to the GHG Protocol Corporate Standard. If other methods are used, interview operating company to determine their justification for using an alternative set of methods, and information to confirm that the methods used are internationally recognized and comparable to the GHG Protocol Corporate Standard.
3.6.3. Emissions Reduction Strategies 3.6.3.1. The greenhouse gas policy shall be underpinned by a plan that details the actions that will be taken to achieve the targets set out in the policy. 3.6.3.2. The operating company shall demonstrate that it has investigated greenhouse gas reduction strategies, and shall document the results of its investigations.	Review the plan to ensure that there are actions laid out to achieve the reduction targets outlined in the policy. Review documentation to confirm that they company has investigated various greenhouse gas reduction strategies.

[156] Greenhouse Gas Protocol Initiative. Corporate Accounting and Reporting Standard. www.ghgprotocol.org/files/ghgp/public/ghg-protocol-revised.pdf

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
3.6.4. Reporting 3.6.4.1. The greenhouse gas policy shall be publicly available. 3.6.4.2. On an annual basis, the operating company shall make publicly available an accounting of its greenhouse gas emissions; the results of any investigations into means of reducing emissions; and actual efforts taken to reduce emissions from the mining project and mining-related activities.	Confirm that the policy is available (e.g. on company website, or in hard copies in publicly accessible locations and formats appropriate for stakeholders and affected communities). Review publicly available documentation regarding the emissions reduction strategies investigated and used by the company.

NOTES

In the future, the IRMA Steering Committee may consider the development of numeric criteria to further guide mining GHG emissions as appropriate.

Cross References to Other Chapters	
CHAPTER	**ISSUES**
1.1—Legal Compliance	As per Chapter 1.1, if there are host country laws governing the reporting or reduction of greenhouse gas emissions, the company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law.
2.8—Community and Stakeholder Engagement	Reporting to stakeholders shall conform with the Communications and Access to Information requirements in Chapter 2.8.
4.1—Environmental and Social Impact Assessment	Potential impacts from greenhouse gas emissions (e.g., environmental and social impacts related to climate change) may be identified in the ESIA. The assessment may result in the development of mitigation and/or greenhouse gas reduction strategies.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a project.

Host Country Law

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. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

Mining-Related Activities

Encompasses any activities that may occur during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure), and includes all physical activities (e.g., land disturbance and clearing, sampling, airborne surveys, construction, ore removal, ore processing, waste management, reclamation, etc.).

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.

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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 3.7 Protected Areas

BACKGROUND

Remote locations targeted for mineral exploration often have relatively low existing human populations, but may be areas of high biodiversity value, or of other natural or cultural significance, and often overlap with existing or proposed protected area designations. Competing values in these areas may lead to tension as to how best to manage the land and resources. A comprehensive system of properly designated, respected, secure and effectively managed protected areas can contribute to the resolution of these tensions.

IRMA recognizes UNESCO World Heritage sites, and supports the spectrum protected areas levels identified by the International Union for Conservation of Nature (IUCN), which offers levels of protection that range from areas that are off limits to industrial activities to those in which certain activities may be permitted where they are consistent with the conservation and/or cultural objectives in the designated area.[157]

Mining companies should work to support effective protected area management in collaboration with other actors.

TERMS USED IN THIS CHAPTER

Consultation ■ Existing Mine ■ Free, Prior and Informed Consent (FPIC) ■ Highly Protected Areas ■ Host Country Law ■ Indigenous Peoples ■ Mining-Related Activities ■ New Mine ■ Operating Company ■ Protected Area ■ Stakeholder ■ Tentative List for World Heritage Site Incsription ■ World Heritage Site ■

These terms are explained at the end of this chapter

OBJECTIVES/INTENT OF THIS CHAPTER

To respect, support and strengthen the effectiveness of legally designated protected areas.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for all mines applying to IRMA certification. Companies must demonstrate that they undertook a process to identify protected areas that might be affected by its mining-related activities. If no protected areas were identified, then the remainder of the chapter is non-applicable.

New vs. Existing Mines: Highly Protected Areas are 'no go zones'. In all but a few exceptional cases (e.g., see requirement 3.7.1.2), neither new mines nor existing mines will be eligible for IRMA certification if mining-related activities are taking place in Highly Protected Areas.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Removed the corporate-level requirements
- Added a requirement (3.7.2.2) that recognizes that there may be situations where a mine existed in a place that was later designated as a highly protected area. In these situations, IRMA is proposing that the mines be eligible for certification, as long as the operating company can demonstrate that it implementing measures to ensure that the mining project is not placing at risk the special values of those areas.
- Added a third category of "protected area." There are now Highly Protected Areas that are no-go zones for

[157] IUCN categories of protected areas available at: www.iucn.org/about/work/programmes/gpap_home/gpap_quality/gpap_pacategories/

mining (3.7.2.1); protected areas where mining is allowed if company can demonstrate mining is compatible with maintenance of area's special values (3.7.4.1); and a new category, where mining is allowed if company can demonstrate a net positive impact on biodiversity (3.7.4.2). (See table in Notes section at end of chapter, which outlines the three categories)

- You can download and review a shorter version of the draft Standard that does not have the means of verification: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Protected Areas Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
3.7.1. Identification of Potentially Affected Protected Areas 3.7.1.1. The operating company shall identify and document the locations and boundaries of all protected areas that may be affected by mining-related activities.	Review any operating company documentation related to identification of protected areas in the vicinity of proposed or existing mining-related activities. This may include review of lists or maps of identified protected areas. Check list against World Database on Protected Areas (WDPA) www.protectedplanet.net/ and other resources listed in IRMA Guidance. Interview relevant stakeholders to confirm completeness of list.
[f] **3.7.2. Activities in Highly Protected Areas** 3.7.2.1. Mining-related activities shall not take place in the following Highly Protected Areas (HPA):[158] • World Heritage Sites • Sites on a State Party's official Tentative List for World Heritage Site inscription • IUCN category I-III protected areas • IUCN category I-V marine protected areas • Core areas of UNESCO biosphere reserves; and • Areas where indigenous peoples live or are assumed to live in (voluntary) isolation	For 3.7.2.1 and 3.7.2.2, review mining operation maps against country lists and maps of "Highly Protected Areas". If relevant, interview relevant stakeholders and with parties responsible for the management of any potentially affected Highly Protected Area to confirm that the company's activities are not putting the special values of the HPA at risk. Review company's public report on measures being taken to protect the special values of the Highly Protected Area.

[flag] **3.7.2.2. Issue in brief:** There may be situations where a highly protected area (HPA) is created around an existing mine site, i.e., the mine was in place prior to designation of the HPA. In this situation, IRMA may still certify these mine sites, as long as the company can demonstrate that is implementing measures to ensure that the mining project is not placing at risk the special values of those areas. IRMA is seeking input on this approach and welcomes feedback from interested stakeholders.

[158] The official list of World Heritage Sites is available at: whc.unesco.org/en/list/; The World Database on Protected Areas (WDPA), an increasingly comprehensive listing of protected areas classified in accordance with the IUCN classifications: www.protectedplanet.net/; See IRMA Guidance for other links to various Highly Protected Areas.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
3.7.2.2. As an exception to 3.7.2.1, mining shall be allowed in Highly Protected Areas if the mine was in operation prior to the area's designation as an HPA. a. In these cases, the operating company shall design and undertake measures to ensure that such mining projects do not put the integrity of the special values for which those areas are designated Highly Protected Areas at risk. b. The operating company shall report publicly on the measures that are being taken to ensure that the mining operation is protecting the special values of the Highly Protected Areas.	
3.7.3. Assessment of Potentially Affected Protected Areas 3.7.3.1. The operating company shall carry out an assessment of each identified protected area,[159] including consultation with interested stakeholders. 3.7.3.2. The assessment shall include: a. Identifying and listing the special values which the area is intended to protect; b. Assessing the current status of the area in relation to the protection of those values; c. Assessing the potential effects of mining-related activities on those special values, including positive and negative direct, indirect and cumulative effects; d. Identifying and evaluating alternatives to the proposed mining activities, to determine least damaging options; and e. Identifying and evaluating opportunities for partnerships that will enhance long-term sustainable management of the protected area. 3.7.3.3. The findings of the assessment process, including data on which the findings are based, shall be publicly available.	Review publicly available assessment reports on identified protected areas for completeness. Interview interested stakeholders to confirm their participation in the assessment.
3.7.4. Activities In Or Adjacent To Protected Areas 3.7.4.1. Mining-related activities shall only be undertaken in the following categories of protected areas if the assessment clearly demonstrates that the proposed activities are compatible with the maintenance of the special values for which the area is	Review mining operation maps against country lists and maps of "Protected Areas" Review the assessment to confirm that it demonstrates that the mining activities are compatible with special values of the protected areas.

[159] Since mining is not permitted in HPAs, no assessment is needed of those areas unless the mine already existed prior to designation of the area as an HPA. In that case, an assessment would be required.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
designated for protection: • IUCN category V-VI protected areas; • Natura 2000 sites • Indigenous and Community Conserved Areas (ICCAs) in which free, prior and informed consent (FPIC) has been demonstrated, in compliance with the requirements of IRMA Chapter 2.10; • Important Bird Areas (IBAs); • Official buffer zones of sites designated as Highly Protected Areas, and other areas outside the boundaries of Highly Protected Areas in which mining activities may affect the values for which the Highly Protected Area was designated for protection; and • Other officially designated protected areas.	If the activities are in areas listed in 3.7.4.2, confirm that the assessment demonstrated that even with the mining development there would be a net positive impact on biodiversity in those areas. Confirm that the assessment was carried out or peer reviewed by reputable professionals. Interview stakeholders consulted as part of the assessment process, including parties responsible for the management of the potentially affected protected areas. to determine if they are in agreement that special values are adequately protected. See IRMA Guidance for links to lists of various protected areas listed in this criterion.
3.7.4.2. Mining-related activities shall only be undertaken in the following categories of protected areas if the assessment was carried out or peer-reviewed by a reputable conservation organization and/or academic institution;[160] it clearly demonstrates that the proposed activities are compatible with the maintenance of the special values for which the area is designated for protection; and, in cases where the area is designated to protect biodiversity, that there will be a net positive impact on biodiversity during and after mine operations: • IUCN category IV protected areas; • Ramsar sites that are not IUCN category I- III protected areas; and • UNESCO Biosphere Reserves beyond the core areas.	
3.7.5. Monitoring of Impacts on Protected Areas 3.7.5.1. The operating company shall ensure that a monitoring program is in place that is capable of identifying any significant adverse impacts that the operating company's mining-related activities may have on the special values for which the protected areas in 3.7.4.1 and 3.7.4.2 were designated for	Review documentation on the monitoring program. Review public reports of monitoring results.

[160] E.g., An academic institution or environmental NGO with experience in biodiversity assessments. Also, the personnel responsible for carrying out the peer-review or assessment would be 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 would be expected to follow established and scientifically robust methodologies to carry out their work).

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
protection. 3.7.5.2. The results of such monitoring shall be publicly available.	
3.7.6. Management Response 3.7.6.1. In the event that monitoring has identified any significant adverse impacts as described in 3.7.5, above, the operating company shall ensure that there has been a timely and effective management response.	Review documentation related to monitoring and follow-up/response to significant adverse impacts.

NOTES

This chapter defines restrictions on mining- related activities in or adjacent to different categories of formally protected areas. The chapter distinguishes between three kinds of protected area: Highly Protected Areas, and two categories of other protected areas. IRMA will not certify mines in Highly Protected Areas. Other protected areas are treated as special cases, where conservation values are prioritized, but where mining-related activities may take place so long as such activities can be shown to be compatible with the maintenance of the values that the areas are designed to protect, or that the company can demonstrate a net positive impact on biodiversity. A separate chapter of the IRMA Standard (Chapter 3.8) addresses the management of biodiversity more generally, including its management outside of formally protected areas.

This chapter includes three responses to different categories of protected areas, as follows:

HIGHLY PROTECTED AREAS (HPA)	**PROTECTED AREAS (I)**	**PROTECTED AREAS (II)**
No-Go Areas (unless areas were designated as HPA after mining-related activities already occurring)	Mining allowed if company can demonstrate mining is compatible with maintenance of area's special values	Mining allowed if company can demonstrate net positive impact on biodiversity
• World Heritage Sites; • Sites on a State Party's official Tentative List for World Heritage Site inscription; • IUCN category I-III protected areas; • IUCN category I-V marine protected areas; • Core areas of UNESCO biosphere reserves; and • Areas where indigenous peoples live or where it is assumed that they might live in (voluntary) isolation.	• IUCN category V-VI protected areas; • Natura 2000 sites; • Indigenous and Community Conserved Areas (ICCAs) in which free, prior and informed consent (FPIC) has been demonstrated; • Important Bird Areas (IBAs); • Official buffer zones of sites designated as Highly Protected Areas, and other areas outside the boundaries of Highly Protected Areas in which mining activities may affect the values for which the Highly Protected Area was designated for protection; and • Other officially designated protected areas.	• IUCN category IV protected areas; • Ramsar sites that are not IUCN category I- III protected areas; and • UNESCO Biosphere Reserves beyond the core areas.

Cross References to Other Chapters	
CHAPTER	**ISSUES**
1.1—Legal Compliance	As per Chapter 1.1, if there are host country laws governing protected areas, the company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law.
2.8—Community and Stakeholder Engagement	Engagement with stakeholders in the protected areas assessment shall conform to the requirements in Chapter 2.8. In particular, criterion 2.8.3 is important to ensure that stakeholders have the capacity to participate in the assessment or protected areas. Also, 2.8.4. ensures that communications and information are in formats and languages that are accessible and understandable to affected communities and stakeholders, and provided in a timely, culturally appropriate manner.
2.10—Free, Prior and Informed Consent	As per 3.7.4.1, mining-related activities shall only be undertaken in Indigenous and Community Conserved Areas if the operating company first obtains the free, prior and informed consent of indigenous peoples s per Chapter 2.10.
2.11—Cultural Heritage	Protection of cultural heritage in legally protected areas is addressed in 2.11.6.
2.13—Grievance Mechanism and Access to Other Remedies	Stakeholders who have complaints related to the operating company's assessment, mitigation, monitoring or other issues related to protected areas will have access to raise these issues. As per Chapter 2.13, the operating company is required to have an operational-level grievance mechanism available to stakeholders, including procedures for filing complaints, and having complaints recorded, investigated and resolved in a timely manner.
3.2—Water Quantity	Protected areas are addressed in relation to water quantity in 3.2.1.2 and 3.2.2.2. In particular, mine water use is prohibited from impacting water bodies in protected areas.
3.8—Biodiversity Outside of Officially Protected Areas	The effects of the operating company's activities on any protected areas in categories not listed in this chapter will be addressed through the operating company's policies and procedures for protecting biological diversity outside officially protected areas as per IRMA Chapter 3.8.
4.1—Environmental and Social Impact Assessment	The assessment of potentially affected protected areas in 3.7.3 may be carried out as a stand-alone assessment or as part of the ESIA; or data collected for one may feed into the other.

TERMS USED IN THIS CHAPTER

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.

Existing Mine

A mine that was operational prior to the date that the IRMA Standard first went into effect.

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.

Highly Protected Areas

Protected areas where mining and related activities are prohibited. This includes the following categories: World Heritage Sites; sites on a State Party's official Tentative List for World Heritage Site inscription; IUCN category I-III protected areas; IUCN category I-V marine protected areas; core areas of UNESCO biosphere reserves; and areas where indigenous peoples live or are assumed to live in (voluntary) isolation.

Host Country Law

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. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Indigenous Peoples

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." See Glossary for full definition.

Mining-Related Activities

Encompasses any activities that may occur during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure), and includes all physical activities (e.g., land disturbance and clearing, sampling, airborne surveys, construction, ore removal, ore processing, waste management, reclamation, etc.).

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Standard first takes effect.

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.

Protected Area

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. (See IRMA Glossary for an expanded definition based on IUCN management categories)

Stakeholder

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.

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.

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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 3.8
Biodiversity Outside Officially Protected Areas

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. Biological diversity underpins ecosystem functioning and the provision of ecosystem services essential for human well-being. It provides for food security, human health, clean air and water; it contributes to local livelihoods, and economic development, and is essential for the achievement of the Millennium Development Goals, including poverty reduction. In addition it is a central component of many belief systems, worldviews and identities. Despite its fundamental importance, biodiversity continues to be lost.[161]

TERMS USED IN THIS CHAPTER

Biodiversity/Biological Diversity ■ Competent Professionals ■ Consultation ■ Cumulative Effects ■ Endangered Species ■ Existing Mine ■ Free, Prior and Informed Consent (FPIC) ■ High Conservation Values (HCV) ■ Host Country Law ■ Mining-Related Activities ■ New Mine ■ Operating Company ■ Protected Area ■ Stakeholder ■ Threatened Species ■

These terms are explained at the end of this chapter

In some situations biodiversity is formally protected and this protection takes precedence over mining as described in Chapter 3.7 on Protected Areas. However, in many areas of the world an adequate system of protected areas has yet to be established. Biodiversity is also of value outside of formally protected areas.

If society is to benefit from mining, while the loss of biodiversity is to be halted, biodiversity losses where mining takes place need to be offset by gains elsewhere. This chapter puts forward a framework designed to ensure that biodiversity losses are avoided or minimized wherever possible, but that, where they occur, they are mitigated through restoration practices and compensated for by verified gains in other locations through the implementation of offset initiatives.

OBJECTIVES/INTENT OF THIS CHAPTER

To avoid contributing to the global loss of biodiversity.

SCOPE OF APPLICATION

Chapter Relevance: This chapter will not be applicable if no known risks to biodiversity and ecosystem services, including risks related to potential knowledge gaps, are identified through the Biodiversity Impact Assessment screening process.

New vs. Existing Mines: The requirements apply to both existing mines and new mines. The requirements are drafted with the intent that the overall impact of the mine on biodiversity will be considered across the whole period of the mine's life. If an existing mine applies for certification, the assessment of its impact on biodiversity would include consideration of past impacts to the extent possible. These impacts would then need to be taken into account in its plan to demonstrate that it is 'biodiversity neutral or positive' over its whole life. This approach does not prevent existing mines applying for IRMA certification late in their project life, but ensures that doing so does not allow them to avoid responsibilities that would have been applicable had they applied for IRMA certification at an earlier stage.

[161] Adopted from the Convention on Biological Diversity (CBD) Strategic Plan for Biodiversity 2011-2020. Available at: www.cbd.int/sp/

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Removed corporate level requirements
- Requirements related to Wetlands have been moved from the Reclamation and Closure chapter (now 4.2) to this chapter. The main points are that wetlands are to be avoided if possible; and if not possible that they be mitigated on a "no net loss" basis. This is covered in 3.8.2.1.a and 3.8.2.1.c. The previous Chapter 4.1 (now 4.2) also required a wetlands functional assessment, but the intent of that was to act as a means to demonstrate that the no net loss had been achieved. It is not a specific requirement here, but we will add to Guidance that a wetlands functional assessment is a means to demonstrate that no net loss can be achieved.
- Minor changes include that biodiversity management planning be carried out by competent professionals (as per IFC); and some requirements have been revised for clarity purposes.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Biodiversity Outside Officially Protected Areas Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
3.8.1. Biodiversity Impact Assessment 3.8.1.1. The operating company shall carry out and make publicly available an assessment of the past and potential future impacts of its mining-related activities on biodiversity.[162] 3.8.1.2. The assessment shall include consultation with stakeholders shall include explicit identification and consideration of: a. Direct, indirect and cumulative effects of the proposed mining-related activities on biodiversity, including consideration of positive and negative impacts, and actual and potential impacts associated with the project from the exploration phase onwards. b. Past and potential future impacts on any protected areas, that have not been assessed under the requirements specified in 3.7.3. c. Past and potential future impacts on High Conservation Values 1 - 3 (HCV 1 - 3), including fish and wildlife, wetlands, and species listed as threatened or endangered; d. Options to restore or offset past impacts from mining-related activities; and	Review of publicly accessible assessment reports. Confirm that the assessment of biodiversity impacts related to the mine site considered the issues listed in 3.8.1.2. Interview stakeholders to confirm that they were consulted in the biodiversity impact assessment. Information on HCV 1 – 3 available at: www.hcvnetwork.org/about-hcvf/the-six-high-conservation-values

[162] i.e., the impact of mining-related activities on biodiversity in relation to the mine site/project being considered for certification; not at all of the company's sites.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
e. Options to avoid, minimize, restore or offset the potential future impacts.	
3.8.2. Biodiversity Management Plan 3.8.2.1. The operating company shall develop, in consultation with stakeholders, a biodiversity management plan or equivalent which: a. Follows the mitigation hierarchy of avoiding, minimizing, restoring and/or offsetting potential future impacts on biodiversity, prioritising the avoidance of existing protected areas, wetlands and areas containing or impacting on HCVs 1 – 3; b. Describes the specific objectives, timelines, locations and activities that it shall implement to minimize, restore and/or offset any past or potential future negative impacts on biodiversity; c. Demonstrates that impacted wetlands will be replaced on a "no net loss" basis; and d. Demonstrates that the net impact of the operating company's mining-related activities on biodiversity will be neutral or positive over the lifetime of the project.[163] 3.8.2.2. Biodiversity management planning shall be carried out and documented by competent professionals using best practice procedures to: a. Identify key biodiversity indicators sufficient to monitor the impact of the operating company's activities over time, and to demonstrate that the overall net impact is neutral or positive; b. Conduct surveys or baseline studies to establish the status of the key biodiversity indicators prior to the commencement of site-disturbing operations; c. Develop mitigation measures to be implemented to minimize negative impacts on biodiversity associated with specific operations or processes,[164] and to enhance, protect or restore biodiversity;[165] and d. Develop a process for updating the plan if new information relating to biodiversity becomes	For 3.8.2.1, interview stakeholders to confirm that they were consulted in the development of the biodiversity management plan. Review of biodiversity management plan (or equivalent) and verify that the management plan prioritizes avoidance of protected areas, wetlands and HCVs 1-3. Where avoidance was not deemed possible, confirm that the decision was based on an analysis of potential options, and that there were plausible technical or financial reasons why avoidance was not a viable option. Review any plans or analyses that demonstrate that any impacts on wetlands will be mitigated on a no net loss basis; and that the overall mining-related impacts on biodiversity will be neutral or positive. For 3.8.2.2, interview stakeholders and review documentation to confirm that planning procedures align with widely recognized best practice guidance, e.g., for identifying key biodiversity indicators that will enable a company to demonstrate net neutral or positive impact on biodiversity; conducting baseline studies; developing mitigation measures. Confirm relevant expertise of planning team. Confirm that baseline surveys or studies informed the development of key indicators.

[163] 'life time of the project' includes past phases of the project (e.g., exploration, construction, etc.).

[164] Impacts may be associated with specific operations or processes such as the planning, siting and construction of roads and other infrastructure; hunting, fishing, trapping and collecting of wild fauna or flora within and adjacent to the operating company's areas of operation; the use of introduced species, etc.

[165] Mitigation measure may include the identification of key areas for protection, measures to offset unavoidable negative impacts, or commitments for site restoration or reclamation at the end of the project's operational life.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
available during the implementation of the mining project.[166]	
3.8.3. Monitoring and Corrective Actions 3.8.3.1. The operating company shall develop and implement a program to monitor the implementation of its biodiversity management plan and the specified key biodiversity indicators over time, and at sufficient detail and regularity to evaluate the operating company's success in achieving its neutral or net positive objectives. 3.8.3.2. The findings of the monitoring program shall be subject to professional review and shall be made publicly available. 3.8.3.3. If monitoring shows that the operating company's biodiversity objectives are not being achieved as expected, the operating company shall define and implement timely and effective corrective action in consultation with interested stakeholders.	For 3.8.3.1, review documentation related to monitoring program. For 3.8.3.2, review publicly available monitoring findings, as well as any professional review of the monitoring program's findings. For 3.8.3.3, review of corrective actions undertaken, if required, and interview stakeholders to confirm that they were involved in the process to develop corrective actions.
3.8.4. Allocation of Resources 3.8.4.1. The operating company shall allocate sufficient personnel and other resources for full and effective implementation and monitoring of the biodiversity management plan.	Interview operating company and stakeholders to confirm that adequate personnel and resources are in place to implement and monitor the biodiversity management plan.

NOTES

This chapter adopts the terminology of 'High Conservation Values' (HCVs) as developed originally by the Forest Stewardship Council (FSC) and subsequently incorporated into other leading international voluntary sustainability standards systems. HCVs 1 to 3 are specified in this chapter as this chapter deals specifically with biodiversity, rather than with broader environmental or social values touched on by HCVs 4 – 6. The issues raised in HCVs 4 – 6 are addressed in different chapters of this standard.

A range of guidance documents on the HCV concept will be referenced in IRMA Guidance, as will examples of best practice guidance relevant to the assessment and management of biodiversity.

[166] As with the initial development of the biodiversity management plan, any updates shall include consultation with stakeholders to determine how the plan should take account of the new information, and updates shall align with the general mitigation hierarchy specified in 3.8.2.1.

Cross References to Other Chapters	
CHAPTER	**ISSUES**
1.1—Legal Compliance	As per Chapter 1.1, if there are host country laws governing protection of biodiversity, the company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law.
2.8—Community and Stakeholder Engagement	Engagement with stakeholders in the biodiversity assessment and management shall conform to the requirements in Chapter 2.8. In particular, criterion 2.8.3 is important to ensure that stakeholders have the capacity to participate in assessments and the development of management plans. Also, 2.8.4 ensures that communications and information are in culturally appropriate formats and languages that are accessible and understandable to affected stakeholders, and provided in a timely manner.
2.13—Grievance Mechanism and Access to Other Remedies	Stakeholders who have complaints related to the operating company's assessment, mitigation, monitoring or other issues related to biodiversity outside of protected areas will have access to raise these issues. As per Chapter 2.13, the operating company is required to have an operational-level grievance mechanism available to stakeholders, including procedures for filing complaints, and having complaints recorded, investigated and resolved in a timely manner.
3.7—Protected Areas	The effects of the operating company's activities on officially protected areas, including biodiversity in those areas, are addressed in Chapter 3.7.
4.1—Environmental and Social Impact Assessment	The assessment of the mining project's impacts on biodiversity as per 3.8.1 may be carried out as a stand-alone assessment or as part of an ESIA; or data collected for one may feed into the other.

TERMS USED IN THIS CHAPTER

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

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 established and scientifically robust methodologies that would withstand scrutiny by other professionals.

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.

Cumulative Effects

Additive, synergistic, interactive or nonlinear outcomes of multiple development or disturbance events that aggregate over time and space. (See IRMA Glossary for examples)

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.

Existing Mine

A mine that was operational prior to the date that the IRMA Standard first went into effect.

High Conservation Values (HCV)

Biological, ecological, social or cultural values that are considered outstandingly significant or critically important, at the national, regional or global level. (See IRMA Glossary for definitions of the 6 HCV areas).

Host Country Law

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. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Mining-Related Activities

Encompasses any activities that may occur during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure), and includes all physical activities (e.g., land disturbance and clearing, sampling, airborne surveys, construction, ore removal, ore processing, waste management, reclamation, etc.).

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Standard first takes effect.

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.

Protected Area

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. (See IRMA Glossary for an expanded definition based on IUCN management categories)

Stakeholder

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.

Threatened 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).

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 3.9 Cyanide f

f [flag] The IRMA Steering Committee is especially interested in hearing from stakeholders on this chapter, as we did not receive many comments on it during our previous comment period.

BACKGROUND

Cyanide is an industrial 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 mining industry to improve the life-cycle management of cyanide used in gold mining, to enhance the protection of human health, and to reduce the potential for environmental impacts. Although the *International Cyanide Management Code* only provides for the certification of gold mines, the same principles can be applied to other types of mining operations that use cyanide for the extraction of commercial quantities of minerals. This chapter builds on the ICMI Principles and Standards of Practice.

TERMS USED IN THIS CHAPTER

Existing Mine ■ Host Country Law ■ Mining Project ■ Mixing Zone ■ New Mine ■ Operating Company ■ Whole Effluent Testing ■ Secondary Containment ■

These terms are explained at the end of this chapter

OBJECTIVES/INTENT OF THIS CHAPTER

To protect human health and the environment through the responsible management of cyanide.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is applicable to operating companies that own, control or operate mining projects associated with the production, storage, use or transportation of cyanide; and to any mining project that requires the storage onsite of cyanide in bags or bulk containers, or that use cyanide in a mill process. This does not apply to cyanide for laboratory use or other de minimus testing purposes. It applies during operations and decommissioning of the associated facilities.

Mining projects must also maintain and provide documentation that cyanide producers and transporters supplying the mining projects are International Cyanide Management Code (Code) certified.

New vs. Existing Mines: New mines shall meet all of the requirements of this chapter. Existing mines are not required to meet the design/construction requirements in 3.9.2, unless new cyanide storage facilities, mixing, and process tanks are constructed after the IRMA Standard takes effect.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Clarified that companies demonstrate that they have taken steps to ensure that cyanide producers and transporters supplying the mining project are certified by the Cyanide Code.
- Clarified that companies conditionally-certified by ICMI are considered to be in compliance with the IRMA Standard.

- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Cyanide Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
3.9.1. Compliance with the International Cyanide Management Code (The Cyanide Code) 3.9.1.1. If the operating company is eligible to be a signatory to the Cyanide Code,[167] it shall obtain a certification of compliance in accordance with the requirements of the International Cyanide Management Institute (ICMI).[168] 3.9.1.2. If the operating company is not eligible to become a signatory of the Cyanide Code, but the mining operation requires the storage onsite of cyanide in bags or bulk containers, or uses cyanide in a mill process, the company shall have its compliance with the code independently audited and verified by an auditor listed on the ICMI website.[169] 3.9.1.3. The operating company shall demonstrate that it has take steps to ensure that cyanide producers and transporters supplying the mining project are certified by the Cyanide Code.	For 3.9.1.1, ICMI Signatories: confirm certification and review most recent Summary Audit Report (available on the ICMI website: www.cyanidecode.org). For 3.9.1.2, if the mine is not a gold mine (the only type of mine currently eligible for ICMI certification), determine whether the mine requires the storage onsite of cyanide in bags or bulk containers, or uses cyanide in a mill process (e.g., through review of mine supply records). If it does, confirm that an independent audit demonstrates that the operating company is in compliance with the Cyanide Code. Verify that the independent auditor is listed on the ICMI website. For 3.9.1.3, if the mine's cyanide suppliers or transporters are not ICMI certified, then the company shall take appropriate steps to bring them into compliance.
3.9.2. Construction 3.9.2.1. In addition to the requirements of the Cyanide Code, the following design criteria shall be met:[170] 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. b. Pipelines containing process solution[171] shall utilize secondary containment in combination with	Review operating company documentation to confirm that all relevant storage facilities, mixing, and process tanks meet the requirements.

[167] International Cyanide Management Code. "Directory of Signatory Companies." www.cyanidecode.org/signatory-companies/directory-of-signatory-companies

[168] An operating company whose ICMI certification is current, or conditionally current, at the time of an IRMA audit shall be considered in compliance with IRMA requirement 3.9.1.1.

[169] This section does not apply to cyanide for laboratory use, or for other de minimis purposes.

[170] This requirement applies to all storage facilities and mixing or processing tanks constructed at new mines, and new facilities and tanks constructed at existing mines.

[171] Solution at a gold mine with a concentration of 0.5 mg/l WAD cyanide or greater. (ICMI. Cyanide Code)

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
audible alarms, interlock systems, and/or sumps, as spill control measures.	
3.9.3. Discharges 3.9.3.1. Discharges to a mixing zone shall not contain cyanide, either alone or in combination with other toxins, that will cause acute toxicity to resident or migratory species.	Interview operating company and review relevant information (e.g., water quality management plans, monitoring data). If a mixing zone is utilized for the discharge of contaminated water, confirm that testing has occurred that demonstrates that the level of cyanide in the discharge before mixing does not exceed the IRMA water quality criteria for acute toxicity in Chapter 3.1 (Table 3.1.a IRMA Surface Fresh Water Quality Criteria).
3.9.4. Monitoring 3.9.4.1. The operating company shall monitor discharges to surface or ground waters for weak acid dissociable (WAD) cyanide. 3.9.4.2. If WAD cyanide is detected in discharges to surface waters, then the operating company shall also monitor total cyanide, free cyanide, and thiocyanate levels. 3.9.4.3. If a mixing zone is utilized for the discharge to surface waters the operating company shall conduct whole effluent toxicity testing annually on the effluent to verify the absence of acute toxicity.[172]	For 3.9.4.1, if there is a discharge of treated water to surface water or ground waters, confirm the discharge is being monitored for WAD cyanide. For 3.9.4.2, if WAD is detected in a discharge, confirm that total cyanide, free cyanide and thiocyanate are also being monitored. For 3.9.4.3, if a mixing zone is used for surface water discharges, confirm, through review of monitoring documentation, that Whole Effluent Toxicity testing is being conducted annually. This monitoring may be incorporated as a part of a site-wide monitoring plan that incorporates, for example, the requirements of Sections 3.1.3 (Approaches A and B, Water Quality) or 3.1.5.2 (Approach C, Water Quality), 3.2.3.4 (Water Quantity), 3.3.11.1. (Mine Waste Management), 3.4.1 (Air Quality), and 3.10.3 (Mercury).
3.9.5. Reporting 3.9.5.1. Cyanide water quality monitoring data shall be published on at least a quarterly basis on the mine or the operating company website in tabular format, and graphical format if available. 3.9.5.2. If the operating company is a Cyanide Code signatory it shall include in its annual report or sustainability report a link to the company's audit information and corrective actions published on the ICMI website.	For 3.9.5.1, review company website to confirm availability of quarterly monitoring data. For 3.9.5.2, if the operating company is a signatory to the Cyanide Code, confirm that it links to its audit/compliance information is available in its annual or sustainability reports.

[172] Or, if the risk-based approach to water quality protection is used, the operating company many use other documented means deemed appropriate for verifying whether or not zones of acute toxicity exist. (See Chapter 3.1, Approach C, 3.1.7.2.b.)

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 mining operations. Cyanide production, transportation, and gold mining operations are certified as being in compliance with the Code following an independent third-party audit (paid for by the operating 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. The IRMA Cyanide Standard requires the same auditing procedures, and certified auditors, as for the Cyanide Code.

Cross References to Other Chapters

CHAPTER	ISSUES
1.1—Legal Compliance	As per Chapter 1.1, if there are host country laws governing cyanide transport, storage, use, etc., the company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law.
2.2—Occupational Health and Safety	Cyanide use is an occupational health and safety consideration, and its use, storage and transport may be included in the OHS risk assessment process.
2.3—Emergency Preparedness and Response	The transportation of cyanide is a potential hazard to communities and the environment along transportation routes. Chapter 2.3 mandates emergency response planning for a spill, and requires coordination between the mine and emergency responders in adjacent communities.
2.7—Community Health and Safety	The use of cyanide at mining operations may present a health risk to local communities, and may be analyzed during the community health and safety risk and impact assessment process.
2.13—Grievance Mechanism and Access to Other Remedies	Stakeholders with complaints related to a operating company's use of cyanide, can raise complaints through the company's operational-level grievance mechanism. As per Chapter 2.13, the company is required to have a grievance mechanism available to stakeholders for filing complaints, and having them investigated and resolved in a timely manner.
3.1—Water Quality	IRMA's water quality criteria for cyanide discharge limits appear in Chapter 3.1, Tables 3.1a, 3.1b and 3.1c. If other approaches to water quality protection are taken as per Chapter 3.1, the cyanide discharge limits may differ from IRMA water quality criteria.
3.3—Mine Waste Management	Chapter 3.3 contains references to effluent control for mine wastes containing cyanide (3.3.3.1), and monitoring and preventing impacts to wildlife from cyanide (3.3.11.1).
4.1—Environmental and Social Impact Assessment	The potential impacts to nearby communities and the environment from cyanide may be examined as part of the ESIA, and mitigation strategies developed as a result.

TERMS USED IN THIS CHAPTER

Existing Mine

A mine that was operational prior to the date that the IRMA Standard first went into effect.

Host Country Law

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. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

Mixing Zone

A portion of a surface or groundwater in which the effluent discharge mixes with the receiving water, and in which water quality is allowed to exceed otherwise specified standards. Compliance with water quality criteria occurs at the edge of the mixing zone.

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Standard first takes effect.

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.

Whole Effluent Toxicity

Refers to the aggregate toxic effect to aquatic organisms from all pollutants contained in a mine's effluent.

Secondary Containment

Requires that areas be designed with appropriate containment and/or diversionary structures to prevent a discharge in quantities that may be harmful.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 3.10
Mercury Management

[flag] The IRMA Steering Committee is especially interested in hearing from stakeholders on this chapter, as we did not receive many comments on it during our previous comment period.

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.

Mercury is a persistent, bio-accumulative pollutant. When released into the environment and deposited or carried into air and water, mercury can be converted to methyl-mercury. Methyl-mercury can be transmitted up the food chain and accumulates 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 surface and ground waters and to the atmosphere by adopting appropriate mercury reduction goals and by applying suitable mercury reduction technologies.

TERMS USED IN THIS CHAPTER

Affected Community ■ Artisanal Mining ■ Existing Mine ■ Host Country Law ■ Mercury Waste ■ Mining Project ■ New Mine ■ Stakeholder ■

These terms are explained at the end of this chapter

OBJECTIVES/INTENT OF THIS CHAPTER

To protect human health and the environment through the responsible management of mercury.

SCOPE OF APPLICATION

Chapter Relevance: This chapter applies to any mining project, new or existing, that utilizes an autoclave, roaster, carbon kiln, refining furnace, retort or other process that could lead to significant emissions of mercury.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- Removed a requirement that companies meet the applicable provision of the Minamata Convention, primarily because the convention applies to countries, not companies. Much of the material in Minamata Convention is already addressed within the IRMA requirements. However, the Convention goes into more detail on State and other parties' interactions with artisanal miners. IRMA recognizes that it is good practice for industrial mines to engage with local artisanal miners with the goal of reducing mercury use and health/contamination issues. We are considering potential approaches for integrating artisanal mining-related requirements into the IRMA Standard. Please see the flagged item "Artisanal Mining" on page 5 of this document for more details.
- Clarified the requirement to provide a mercury mass balance for the mine if the mine uses thermal processes in processing or refining (3.10.1.1).
- Removed Requirement 3.10.3. Construction, which required that companies to implement the US EPA Mercury Rule. Upon review of the Mercury Rule, we realized that some requirements are too US-specific to be applied globally (e.g., reporting to EPA); and many of the important elements in the rule are already addressed

in the other IRMA requirements such as Planning, Monitoring and Reporting.

- Removed the requirement that corporate owners of an IRMA certified mine offer up a relevant mine site for mercury-related research. The IRMA Steering Committee supports the need for such research, but is looking into other ways to provide incentives for mines to participate in a research program without making a certification decision dependent on such participation.
- Revised the reporting requirement to remove duplication with Chapter 2.8, and instead referenced relevant sections of 2.8 in the table of Cross References to Other Chapters at the end of the chapter.
- You can download and review a shorter version of the draft Standard that does not have the means of verification: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Mercury Management Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
3.10.1. Planning 3.10.1.1. Each mine with a mercury recovery system shall perform a mercury mass balance that assesses the amount of organic and inorganic mercury in the waste rock and ore, and document (or estimate, if measurements are not available) the amount of organic and inorganic mercury during or after processing: a. Released to air and water; b. Produced as by-product; and c. Resident in tailings ponds, waste rock dumps, etc.	Review the report disclosing the annual and cumulative mass balance of toxic constituents generated, stored, or released from mining and processing operations required in Chapter 3.3, Section 3.3.1.2, to confirm the required analyses/predictions for mercury were made and disclosed.
3.10.2. Mercury Capture and Disposal 3.10.2.1. Mercury from primary emission controls: a. Shall not be stored on-site or disposed with tailings after removal; b. Shall not be sold or given away either directly or indirectly to an entity engaged in artisanal mining of gold; c. Shall be sold only for an end use listed in Annex A (Products) or Annex B (Processes) of the Minamata Convention on Mercury;[173] or d. Shall be sent to a regulated repository. 3.10.2.2. Mercury waste from secondary waste streams, which result from primary emission controls, containing low levels of mercury may be disposed of on-site:	For 3.10.2.1, review mercury disposal procedures. Primary mercury includes elemental Hg, calomel, sulfidized carbon residue, etc. Review disposal records. Regulated refers to the certification and regulation of a storage facility by a governmental authority. For 3.10.2.2, if mercury from secondary waste streams is disposed on-site: confirm that a risk-based evaluation of the disposal has been carried out, and that the disposal occurs in a lined tailings facility with permeability less than 10^{-9} cm/sec. The on-site disposal of secondary mercury waste is anticipated to be only for relatively small amounts of mercury compounds for which it would otherwise be difficult to locate a regulated

[173] 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

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
a. Only after a risk-based evaluation of the on-site disposal; and b. Only in fully lined tailings storage facilities where the liner is a synthetic material of permeability less than 10^{-9} cm/sec.	repository.
3.10.3. Monitoring 3.10.3.1. For each mining project with a source of mercury air emissions a mercury monitoring plan shall be developed in consultation with affected communities. 3.10.3.2. The mercury monitoring plan shall address: a. Potential public health impacts (e.g., food source and blood level mercury); b. Environmental impacts monitoring (e.g., fish tissue and stream sediment mercury levels), including locations that are most likely to promote methylation, such as still waters, wetlands, and anaerobic sediment; and c. Mercury air emission monitoring.[174] 3.10.3.3. The mercury monitoring plan shall include the monitoring of: a. The quantity of organic and inorganic mercury released to air including fugitive emissions (to the extent technologically and economically feasible with air monitoring equipment); b. The quantity of organic and inorganic mercury released to water, including the forms of mercury; c. The amount of organic and inorganic mercury captured in pollution control systems; and d. The amount of by-product mercury produced (including the mercury captured in pollution control systems).	Review mercury monitoring plan. For 3.10.3.1, interview the operating company and relevant stakeholders including from affected communities to confirm that stakeholders were consulted in the development of the mercury monitoring plan. For 3.10.3.2 and 3.10.3.3, confirm that the monitoring plan it addresses the elements listed in those requirements. Interview operating company and review monitoring data to confirm that monitoring is occurring as outlined in the plan. Mercury monitoring may be incorporated as a part of a site-wide monitoring plan that incorporates, for example, the requirements of Sections 3.1.3 (Approaches A and B, Water Quality) or 3.1.5.2 (Approach C, Water Quality), 3.2.3.4 (Water Quantity), 3.3.11.1. (Mine Waste Management), 3.4.1 (Air Quality), and 3.9.4 (Cyanide).
3.10.4. Reporting 3.10.4.1. The operating company shall report publicly, at least annually a summary report of the findings from the implementation of the mercury monitoring plan, including the monitoring data. 3.10.4.2. Reporting shall be satisfied by publishing the results annually on the mine or company website.	Review company website to confirm that information is publicly available. The objective is for those interested to be able to easily calculate the efficiency of the mercury capture systems, and to track the amount and location of mercury disposed.

[174] This includes air monitoring required as part of a regulatory permit requirement.

NOTES

The US EPA "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 (EU Directive 96/61/EC on Integrated Pollution Prevention and Control). These standards do not include direct mining provisions but are intended to reduce mercury use and targeted the "metallic mercury gained from non-ferrous mining and smelting operations" by prohibiting metallic mercury export and by-product sales and requiring safe metallic mercury storage.

IRMA recognizes both the paucity of existing regulations and the 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 all mercury emissions from mines certified by IRMA.

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's in the environment, by encouraging source control – preventing mercury from getting into the environment in the first place. However, mercury air emission testing is very expensive (hundreds of thousands of dollars annually).

Researchers have documented fugitive mercury air emissions from non-thermal sources at mines, most notably heap leach facilities.[175] Further research is needed to assess the pervasiveness of these non-thermal sources,[176] as well as to verify the reliability of the thermal-source measurements. The IRMA Steering Committee is considering ways to incentivize companies to engage in research to help elucidate the scale and scope of these emissions.

Cross References to Other Chapters

CHAPTER	ISSUES
1.1—Legal Compliance	As per Chapter 1.1, if there are host country laws governing mercury transport, storage, use, etc., the company is required to abide by those laws. If IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law.
2.2—Occupational Health and Safety	Mercury may present an occupational health and safety (OHS) hazard, and if so, may be included in the OHS risk assessment process.
2.3—Emergency Preparedness and Response	The protection of communities and workers during emergencies related to the transport and storage of hazardous substances, such as mercury, may be addressed in Emergency Response Planning. Chapter 2.3 mandates emergency response planning for a spill, and requires coordination between the mine and emergency responders in adjacent communities.
2.7—Community Health and Safety	Mercury emissions may present health risks to local communities, and if there are thermal mercury sources at the mine risks from mercury exposure should be analyzed during the community health and safety risk and impact assessment process.

[175] See: Joyce, P and Miller, G. 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, January 2007; and most recently: Miller, M and Gustin, M. 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, 2013 Jun;63(6):681-93.

[176] Eckley CS, Gustin M, Miller MB, 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.

Cross References to Other Chapters	
2.8—Community and Stakeholder Engagement	Requirement 3.10.3.1 shall conform with the stakeholder engagement requirements in Chapter 2.8. In particular, criterion 2.8.3 is important to ensure that stakeholders have the capacity to participate in mercury monitoring. Also, regarding reporting of data in 3.10.4, requirement 2.8.4.2 requires that communications be in formats and languages that are culturally appropriate, accessible and understandable to affected communities and stakeholders.
2.13—Grievance Mechanism and Access to Other Remedies	Stakeholders who have complaints related to a operating company's use of cyanide, can raise complaints through the company's operational-level grievance mechanism. As per Chapter 2.13, the operating company is required to have an operational-level grievance mechanism available to stakeholders, including procedures for filing complaints, and having complaints recorded, investigated and resolved in a timely manner.
4.1—Environmental and Social Impact Assessment	Potential risks to the environment and human health may be identified during the ESIA process, and information from that process may feed into the Mercury Monitoring Plan (e.g., selection of sampling locations, etc.). If mercury is identified during ESIA as a key risk to human health or the environment, stakeholders shall be provided with the opportunity to propose independent experts to collaborate with the company on the company on the design and implementation of its monitoring program; and the company is required to facilitate the independent monitoring of key impact indicators where this would not interfere with the safe operation of the project.

TERMS USED IN THIS CHAPTER

Affected Community

Local communities that are subject to risks or impacts from a project.

Artisanal Mining

Mining carried out by individuals, groups, families or cooperatives with minimal or no mechanization.

Existing Mine

A mine that was operational prior to the date that the IRMA Standard first went into effect.

Host Country Law

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. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Mercury Waste

Substances or objects consisting of mercury or mercury compounds, containing mercury or mercury compounds, or contaminated with mercury or mercury compounds, that are disposed of, are intended to be disposed of, or are required to be disposed of by provisions of national law or applicable conventions. Mercury waste does not include metals, ores, or minerals, including coal, or wastes derived therefrom that contain naturally occurring mercury or mercury compounds.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

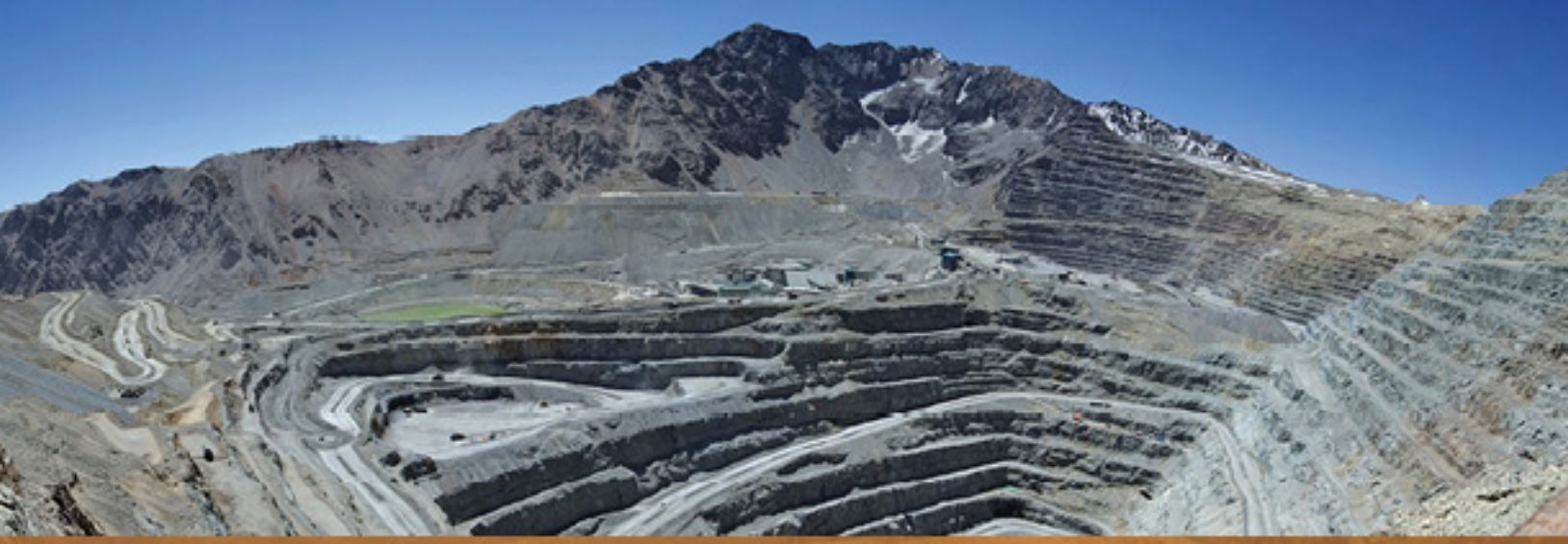
New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Standard first takes effect.

Stakeholder

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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.



The IRMA Standard:

Requirements

Planning and Managing for Positive Legacies

Chapter 4.1 Environmental and Social Impact Assessment

BACKGROUND

In almost all jurisdictions, mining companies are required to conduct environmental impact assessments (EIA) or environmental and social impact assessments (ESIA) prior to mine development, and some also require them prior to exploration. ESIA enable regulators and other stakeholders to review predicted impacts and mitigation measures for a mining proposal before it is finalized or approved.

The importance of stakeholder involvement in ESIA is increasingly recognized, improving the quality of the assessments and helping to build community support for a project by involving local stakeholders in the process and associated decision-making.

OBJECTIVES/INTENT OF THIS CHAPTER

To proactively anticipate, avoid, and when that is not possible, minimize and compensate for impacts on affected communities, workers and the environment through the assessment, management and monitoring of environmental and social impacts.

TERMS USED IN THIS CHAPTER

Affected Community ■ Collaborate ■ Cumulative Effects ■ Competent Professionals ■ Consultation ■ Existing Mine ■ Host Country Law ■ Inform ■ Mining Project ■ Mining-Related Activities ■ New Mine ■ Operating Company ■ Post-Closure ■ Rights Holder ■ Stakeholder ■

These terms are explained at the end of this chapter

SCOPE OF APPLICATION

New versus Existing Mines: ESIAs are typically undertaken to predict potential impacts from a proposed mining project, and often are mandated by host country regulatory agencies. For IRMA's purposes, mines that did not carry out an ESIA prior to the mine development will not be expected to subsequently carry out such an assessment. But they will be expected to demonstrate that an environmental and social management plan (or its equivalent) and monitoring programs are in place to detect impacts. Additionally, criterion 4.1.5 requires the collection of baseline data. For projects where baseline data was not collected at the appropriate time, the applicant shall collate and present data to provide the best possible picture of baseline conditions.

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- This was previously Chapter 5.1.
- Revised previous 5.1.2 Scoping (now 4.1.2) to include some of the requirements previously in 5.1.3 Provision of Preliminary Information; revised 5.1.6 Impact Analysis (now 4.1.6), to provide clarity on expectations; and revised stakeholder participation/disclosure criteria to remove duplication with Chapter 2.8 (relevant sections of the IRMA Standard are referenced in footnotes and the table of Cross References to Other Chapters below).
- Added a new section 4.1.7. ESIA Report.
- Deleted Chapter 5.2—Environmental and Social Impact Monitoring. This was done because many chapters specifically address monitoring, and so it created overlap/duplication within the Standard. We created a specific monitoring criterion (4.1.8) in this chapter; and integrated monitoring-related issues directly into some other criteria (e.g., 4.1.4 on stakeholder participation, and 4.1.9 on disclosure).

- Removed the requirement for a permanent monitoring advisory group, as the role of this group overlapped with the independent experts in 4.1.8.3. Instead, added a permanent "stakeholder advisory group" into Chapter 2.8—Community and Stakeholder Engagement, which could play such a monitoring oversight role.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Environmental and Social Impact Assessment Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
4.1.1. General Requirements 4.1.1.1. An Environmental and Social Impact Assessment (ESIA), appropriate to the nature and scale of the proposed mining project and commensurate with the level of its environmental and social risks and impacts, shall be completed prior to the commencement of any site-disturbing operations associated the project. 4.1.1.2. The ESIA shall be carried out in accordance with publicly available, documented procedures that include all the elements specified in this chapter.	Review ESIA report and associated records. Review documented procedures. Confirm public availability of ESIA.
4.1.2. Scoping 4.1.2.1. The operating company shall carry out a scoping process to identify all potentially significant social and environmental impacts of the project to be assessed in the ESIA.[177] 4.1.2.2. During scoping, the operating company shall identify stakeholders and rights holders (hereafter, collectively referred to as "stakeholders") who may be interested in and/or affected by the proposed project. 4.1.2.3. Scoping shall include the consideration of: a. Social and environmental impacts during all stages of the project lifecycle, from pre-construction through post-closure; b. Direct, indirect impacts and and cumulative effects; and c. Potential impacts of extreme events. 4.1.2.4. Scoping shall result in the identification of: a. Potentially significant environmental and social	For 4.1.2.1 and 4.2.2.2, interview interested and affected stakeholders and rights holders to confirm that they were consulted during ESIA scoping, and interview company and review documentation to confirm that stakeholder identification conformed to the requirements in Chapter 2.8 –Community and Stakeholder Engagement. Review records of preliminary identification of interested and affected stakeholders and rights holders. Review scoping documentation and confirm that it included the breadth of issues in 4.1.2.3 and resulted in the identification of the issues in 4.1.2.4.

[177] 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. IRMA Guidance will provide more information on ESIA scoping.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
impacts of the proposed project; b. Preliminary actions to mitigate any identified negative impacts, including alternative project designs; and c. Additional information and data needed to understand and assess the potential impacts.	
4.1.3. Provision of Preliminary Information 4.1.3.1. Prior to the implementation of the ESIA the operating company shall ensure that: a. A report has been prepared and published on the operating company's external website, in the official national language(s) of the country in which the project is proposed to take place, that provides: b. Background information about the project, including information as to the proposed nature and duration of the project and related activities; c. The preliminary identification of potential significant environmental and social impacts, and proposed actions to mitigate any negative impacts; d. 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 e. Contact details for the person or team responsible for management of the ESIA. f. There has been a wide, public announcement of the project proposal and the associated ESIA process, and reasonable efforts to contact and inform all affected and interested stakeholders identified during ESIA scoping.	Review publicly available information (e.g., preliminary ESIA project report on external website) and interview operating company and review documentation related to communications to inform affected and interested stakeholders and about the project proposal information.
4.1.4. Stakeholder Participation 4.1.4.1. The operating company shall ensure that there has been provision for timely and effective stakeholder consultation, review and comment on: a. The proposed scope of the ESIA (the issues and impacts to be considered); b. Methodologies for the collection of environmental and social data; c. The findings of environmental and social studies carried out in relation to the ESIA, or whose findings are relevant to the conclusions and recommendations of the ESIA; d. Options and proposals to mitigate the potential impacts of the project;	For 4.1.4.1, interview the operating company team responsible for ESIA, and review documentation related to stakeholder and outreach during all of the relevant stages. For 4.1.4.2, interview interested and affected stakeholders to confirm that they were provided with opportunities to engage at different stages and provide input, and participate in the collection of data and in the development of mitigation proposals and the monitoring program. For 4.1.4.3, review of records of comments, and actions taken in response to stakeholder input.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
e. Provisional conclusions and recommendations of the ESIA, prior to finalization; and f. The final conclusions and recommendations of the ESIA; and g. The scope and design of the ESIA monitoring program. 4.1.4.2. The operating company shall encourage and facilitate stakeholder participation, where possible, in the collection of data for the ESIA, in the development of options and proposals to mitigate the potential impacts of the project, and in the ESIA monitoring program.[178] 4.1.4.3. The operating company shall record all stakeholder comments received in relation to ESIA scoping; implementation; ESIA findings, conclusions and recommendations; and the monitoring program. The company shall record how it responded to any such comments.	
4.1.5. Data Collection 4.1.5.1. Baseline data describing the prevailing environmental, 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. 4.1.5.2. Additional studies shall be carried out as necessary to fulfil the information needs of the ESIA.	Review ESIA and baseline data.
4.1.6. Impact Analysis 4.1.6.1. The operating company shall: a. Predict in greater detail the characteristics[179] of the potentially significant environmental and social impacts identified during scoping; b. Determine the significance of the predicted impacts; c. Identify and develop measures to avoid or minimize the predicted adverse impacts, including consideration of alternative approaches to achieve the desired project	Review ESIA and any other documentation related to impact analysis.

[178] Facilitation may include the 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.

[179] 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 significance (local, regional, global).

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
objectives; and d. Determine the relative importance of residual impacts (i.e., impacts that cannot be mitigated) and whether such impacts can be compensated for or otherwise offset.	
4.1.7. ESIA Report and Management Plan 4.1.7.1. The operating company shall prepare an ESIA report that includes, at minimum:[180] a. A description of the proposed project; b. Description of the main impacts likely to result from the project, their predicted characteristics, and recommended measures to avoid or mitigate impacts; c. A review of the public consultation process, the views and concerns expressed by stakeholders and how the concerns were taken into account; and d. Names and affiliations of ESIA authors and others involved in technical studies. 4.1.7.2. If a decision is made to proceed with the mining project, an environmental and social management plan (or its equivalent) shall be developed that outlines the specific mitigation actions that will be carried out. This plan shall be implemented, and revised or updated as necessary based on new information.[181]	In many countries, the information contained in government-mandated reports will be specified in legislation. Companies will be expected to publish supplementary report if information required by regulatory agencies does not cover all of the information requirements in this chapter. Review environmental and social management plan (or its equivalent). Determine if this plan is updated occasionally based on the information gained from monitoring, or if there are changes in the operation, etc.
4.1.8. Environmental and Social Impact Monitoring 4.1.8.1. The operating company shall establish a program to monitor: a. The key environmental and social impacts identified through the environmental and social assessment; and b. The implementation of mitigation measures established as a result of the ESIA. 4.1.8.2. The monitoring program shall be designed and carried out by competent professionals. 4.1.8.3. The operating company shall provide affected stakeholders with the opportunity to propose independent experts to collaborate with the company on the design and implementation of its monitoring program; and shall facilitate the independent	For 4.1.8.1, review documentation related to the monitoring program. For 4.1.8.2, review credentials of the professionals responsible for planning and carrying out monitoring. For 4.1.8.3, interview stakeholders to confirm that they had the opportunity to propose independent experts to collaborate in monitoring. For 4.1.8.4, review documentation related to the monitoring program and data collected, as well as follow-up plans or actions based on monitoring results. There may be a site-wide monitoring plan that incorporates, for example, the requirements of Sections 3.1.3 (Approaches A and B, Water

[180] The UN University has developed guidance on international theory and practice of environmental (and social) impact assessment and has outlined other elements typically contained in an ESIA report. See: eia.unu.edu/course/index.html%3Fpage_id=114.html

[181] E.g., if monitoring indicates that effects are greater than predicted; or if there is a change in mining activities that warrants an update.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
monitoring of key impact indicators where this would not interfere with the safe operation of the project.[182] 4.1.8.4. The operating company shall have an effective, documented system in place to review the results of monitoring on a regular basis and to respond with timely and effective action as appropriate.	Quality) or 3.1.5.2 (Approach C, Water Quality), 3.2.3.4 (Water Quantity), 3.3.1.1. (Mine Waste Management), 3.4.1 (Air Quality), 3.9.4 (Cyanide), and 3.10.3 (Mercury) and other relevant monitoring requirements.
4.1.9. Disclosure[183] 4.1.9.1. The ESIA report and any supporting data and analyses shall be made publicly available. Detailed assessments of some issues and impacts may be reported as stand-alone documents, but the ESIA report shall review and present the results of the full analysis in an integrated manner. 4.1.9.2. The operating company shall make an anonymized version of the record of stakeholder and rights holder comments and its own findings, conclusions and recommendations publicly available. 4.1.9.3. Summary reports of the findings of the monitoring program shall be made publicly available at least annually, and all data and methodologies related to the monitoring program shall be publicly available. 4.1.9.4. The existence of publicly available information, and the means of accessing it, shall be publicized by appropriate means.[184]	For 4.1.9.1, confirm public availability of ESIA reports and associated documentation and records. For 4.1.9.2, confirm accessibility of public record of anonymized stakeholder comments and operating company responses. For 4.1.9.3, if relevant, confirm public availability of summary reports and other information and data from the permanent monitoring advisory group. Interview stakeholders to confirm that they are aware of how to access ESIA-related information. As per Chapter 2.8, confirm that information is in culturally appropriate formats and languages.

NOTES

In many jurisdictions there are 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 4.1 align with the good practice requirements described by IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts.

Where documents and records produced in satisfaction of legal or other organization's requirements also meet the requirements of the IRMA standard the operating 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.

The standard does not list 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 operating company, in consultation with interested and affected stakeholders, to ensure that all the relevant

[182] For example by 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.

[183] See Chapter 2.8 for requirements related to Communications and Access to Information (2.8.4).

[184] E.g., local radio, leaflets, local meetings.

issues and impacts are identified and considered. Issues/ impacts to be considered may include (but are not limited to) the following:

- Environmental impacts (e.g. surface disturbance, waste generation, air quality, biodiversity, species at risk, noise, water use and quality, spills);
- Social impacts (e.g. housing, infrastructure, social services, poverty, community physical and mental health and safety, local economies, resettlement, ecosystem services, employment, population movements, differential and/or specific impacts on women);
- Labor and working conditions;
- Human rights;
- Trans-boundary effects (e.g. air pollution, use of international waterways);
- Greenhouse gas emissions;
- Potential impacts on World Heritage Sites;
- Potential impacts on Indigenous peoples and/or other vulnerable individuals or groups (e.g., women, ethnic minorities, youth and elderly, etc.), including impacts on culture and cultural heritage;
- Socio-political risks, including e potential infringement of human rights, conflict and political instability.

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 project and its potential impacts, prior to decision-making. The fact that an effective ESIA has been designed and implemented does not imply that a 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.

Cross References to Other Chapters

CHAPTER	ISSUES
1.1—Legal Compliance	As mentioned in Chapter 1.1, companies are required to abide by host country law. Consequently, if there is an ESIA process mandated by a regulatory agency within the host country, the company will be required to participate in that process. However, if that process does not include some of the elements of the IRMA ESIA chapter, the operating company will be expected to demonstrate that measures were taken to meet the IRMA requirements, as well.
2.4—Human Rights Compliance and Due Diligence	If the infringement of human rights is predicted during cultural heritage assessment, or if human rights related to cultural heritage have been infringed upon at a new or existing mines, a company will be expected to prevent, mitigate and remediate the impacts as per Chapter 2.4. This includes the mitigation or remediation of human-rights-related impacts from past cultural heritage management activities at existing mines.
2.3—Emergency Preparedness and Response	Potential impacts related to community safety, and mitigation strategies identified in the ESIA should feed into the Emergency Response Plan and planning processes described in Chapter 2.3.
2.8—Community and Stakeholder Engagement	Capacity building or training may be needed to ensure effective, effective participation by stakeholders in the ESIA process (see 4.1.4). The primary reference for that requirement is 2.8.3 Strengthening Capacity, in Chapter 2.8. Disclosure of information shall meet the requirements of Chapter 2.8. In particular, information mentioned in 4.1.9.1 to 4.1.9.3 shall be in formats and languages that are culturally appropriate, accessible and understandable to affected stakeholders. See criterion 2.8.4 for more details.

Cross References to Other Chapters	
2.10—Free, Prior and Informed Consent	Implementation of ESIA requirements can be integrated with the free, prior and informed consent process described in Chapter 2.10. However, it should be emphasized that indigenous peoples' participation in the ESIA process, including in the consideration of proposals to mitigate expected impacts does not, of itself, imply consent, even if the recommended actions to minimize impacts are fully implemented.
3.2—Water Quantity	Section 3.2.3.2 requires that a Conceptual Flow Model (CFM), or its functional equivalent, be utilized as part of the groundwater analysis in an Environmental and Social Impact Assessment, and provides details on how the CFM is to be utilized in this analysis.
Multiple chapters that require risk or impact assessment	There are numerous chapters in the IRMA Standard that require risk or impact assessments. These assessments may be integrated into the ESIA, if the timing works, and the relevant information and analyses are included in the ESIA. Information produced for other assessments may also feed into the ESIA process (i.e., collection of some data may have already occurred, as well as an analysis of potential significance of some issues). Conversely, if other assessments occur later than the ESIA, the data and analysis carried out for the ESIA may feed into those assessments. The following chapters include reference to risk or impact assessment: 2.4—Human rights Due Diligence; 2.5—Mining and Conflict Affected Areas; 2.6—Security Arrangements; 2.7—Community Health and Safety; 2.9—Obtaining Community Support and Delivering Benefits; 2.11—Cultural Heritage; 2.12—Resettlement; 3.1—Water Quality; Chapter 3.7—Protected Areas; Chapter 3.8—Biodiversity Outside of Protected Areas; and Chapter 4.2—Reclamation and Closure.
Multiple chapters that require monitoring	Several IRMA chapters have their own monitoring specifications, some of which may not entirely align with all of the ESIA monitoring requirements in Chapter 4.1. Where they differ, the chapter requirements take precedence. If there are no particular requirements, then the expectation is that any significant impacts related to those chapters will be captured in the ESIA monitoring program. The following chapters include references to monitoring: 2.1—Fair Labor and Terms of Work; 2.2—Occupational Health and Safety; 2.4—Human rights Due Diligence; 2.5—Mining and Conflict Affected Areas; 2.6—Security Arrangements; 2.7—Community Health and Safety; 2.9—Obtaining Community Support and Delivering Benefits; 2.12—Resettlement; 3.1—Water Quality; 3.2—Water Quantity; 3.4—Air Quality; 3.5—Noise; 3.7—Protected Areas; Chapter 3.8—Biodiversity Outside of Protected Areas; 3.9—Cyanide; 3.10—Mercury; and Chapter 4.2—Reclamation and Closure.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a project.

Collaborate

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.

Cumulative Effects

Additive, synergistic, interactive or nonlinear outcomes of multiple development or disturbance events that aggregate over time and space. Examples of cumulative 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.

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 established and scientifically robust methodologies that would withstand scrutiny by other professionals.

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.

Existing Mine

A mine that was operational prior to the date that the IRMA Standard first went into effect.

Host Country Law

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. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country

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.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

Mining-Related Activities

Encompasses any activities that may occur during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure), and includes all physical activities (e.g., land disturbance and clearing, sampling, airborne surveys, construction, ore removal, ore processing, waste management, reclamation, etc.).

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Standard first takes effect.

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.

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 converted to a post-closure trust fund (or equivalent).

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.

Stakeholder

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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Chapter 4.2
Reclamation and Closure

BACKGROUND

Reclamation refers to the process of reconverting disturbed land to its former or other productive uses.[185] 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 reclamation and closure include: (1) the final use that is appropriate for reclaimed mine lands; (2) whether re-contoured mine lands should be re-vegetated or whether reinvasion of natural vegetation is sufficient; (3) the timing of the reclamation process; (4) whether open pits should be backfilled with waste in a way that does not degrade the environment; and, (5) how much money should be set aside to guarantee that reclamation is accomplished, how should that money be invested or valued in terms of discount rate, and what form of financial surety is required for this guarantee to be effective in practice.

TERMS USED IN THIS CHAPTER

Affected Community ■ Confidential Business Information ■ Consultation ■ Facility ■ Financial Surety (Reclamation / Post-Closure) ■ Free, Prior and Informed Consent ■ Holding Costs ■ Host Country Law ■ Indigenous Peoples ■ Landscape ■ Metals Leaching ■ Mine Closure ■ Operating Company ■ Pit Lake ■ Post-Closure ■ Practicable ■ Revegetation ■ Stakeholder ■ Stormwater ■ Subsidence ■

These terms are explained at the end of this chapter

It is now widely recognized that the objectives and impacts of reclamation and closure must be considered from project inception. 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. This forms an overall framework to guide all actions and decisions taken during the mine's life.

OBJECTIVES/INTENT OF THIS CHAPTER

To protect long-term environmental and social values, and ensure that the costs of site reclamation and closure not borne by the community or wider public.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for all mines applying for IRMA certification.

New vs. Existing Mines: This chapter applies to all mines, as it affects existing and future requirements. For existing mines the chapter requirements are not applicable if the mine has progressed to a stage where meeting the requirement is no longer possible. For example, existing mines may qualify for IRMA certification without strict compliance to the following requirements: Open Pits (4.2.3); Underground Mines (4.2.4); and Post-Closure Water Treatment (4.2.7).

[185] Powter, Chris. 2002. Glossary of Reclamation and Remediation Terms used in Alberta. Government of Alberta. Available at: http://environment.gov.ab.ca/info/library/6843.pdf

NOTES TO READERS ON MAJOR CHANGES TO THIS CHAPTER

- This chapter has been renumbered. It was previously Chapter 4.1.
- In 4.2.1, clarified that the costs of exploration-related reclamation will be covered by the company, and carried out in a timely manner; the appeal process for incomplete reclamation was also clarified.
- The sections on reclamation and closure planning and calculating the reclamation and closure surety were extensively edited.
- Requirements related to wetland impacts, which had been in this chapter, were integrated into Chapter 3.8. Biodiversity Outside of Protected Areas, as wetland analysis and mitigation should occur prior to closure.
- In 4.2.4 Open Pits the requirement to backfill, cover, or submerge pit walls that contain acid-generating/ metals-leaching rock was changed to require risk assessment to analyze alternatives to minimize long-term environmental impacts.
- The requirement independently audit the mine-closure financial surety was changed from every 3 years to every 5 years in order to conform with most regulatory requirements.
- The requirement for post-closure water quality monitoring was changed from "… until IRMA surface and groundwater quality standards criteria have been met for at least 5 years" to "until IRMA surface and groundwater quality standards criteria have been met for at least 5 years with a minimum of 25-years of post-closure data." This is to recognize the possibility of unpredicted acid drainage commencing after closure.
- 4.2.8.2 Post-Closure Water Treatment. An additional sub-requirement was added for clarification that the water treatment costs within the surety be conservatively calculated.
- You can download and review a shorter version of the draft Standard that does not have the means of verification at: www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v2.0.pdf

Reclamation and Closure Requirements

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
4.2.1. Exploration Reclamation 4.2.1.1. The operating company shall guarantee that the cost of implementing exploration reclamation will be met by the company in a timely manner. 4.2.1.2. Appeals of incomplete or inadequate exploration reclamation, if not resolved by other means, shall be discussed and resolved through the operational-level grievance mechanism (see Chapter 2.13).	Interview operating company and review documentation to establish whether there have been any complaints related to exploration reclamation associated with the mine, and if so, confirm that actions were taken to resolve the issues.
4.2.2. Reclamation and Closure Planning 4.2.2.1. Prior to the commencement of any site-disturbing activities the operating company shall prepare and publish on the company website a reclamation and closure plan compatible with the protection of human health and the environment, and with other beneficial uses, which demonstrates how	Review the reclamation and closure plan. For 4.2.2.2, confirm that the elements of the reclamation and closure plan conform with the guidance elements, or encompass their equivalents, as described in IRMA Guidance for Chapter 4.2, 4.2.2. Reclamation and Closure Plan

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
the affected areas will be returned to a stable landscape with an agreed post-mining end use. 4.2.2.2. The reclamation and closure plan shall contain enough information to demonstrate how all the requirements of this chapter will be met, including appropriate references to reclamation commitments presented in the ESIA. At a minimum the reclamation and closure plan shall contain and incorporate clear descriptions of: a. A general statement of purpose; b. Site location and background Information; c. Facility description, including individual site features; d. The role of the community in reviewing the reclamation and closure plan; e. Agreed-upon (after-ESIA) post-mining land use and facility use; f. Source and pathway characterization including geochemistry and hydrology to identify the potential discharge of pollutants; g. Source mitigation program to prevent the degradation of water resources; h. Hazardous materials disposal; i. Facility demolition and disposal, if not used for other purposes; j. Earthwork: i. Stabilization and final topography of the reclaimed mine lands; ii. Stormwater runoff/run-on management; iii. Topsoil salvage to the maximum extent practicable; iv. Topsoil storage in a manner that preserves its capability to support plant regeneration; and, v. Concurrent reclamation, which should be employed wherever practicable; k. Revegetation: i. Plant material appropriate for the agreed post-mine land use; ii. A defined period, no longer than 10 years, when planned revegetation tasks shall be completed; iii. Quantitative revegetation standards; iv. Plant material selection prioritizing native species; v. Measures for control of noxious weeds; and, vi. Clear mitigation measures to be implemented if these standards are not met. l. Off-sets (mitigation); m. Interim operations and maintenance, including	Elements. For 4.2.2.3, review financial surety calculations in the reclamation and closure plan to insure the specified categories are included, and that reasonable assumptions have been utilized in calculating the financial surety. Review IRMA Guidance for Chapter 4.2, 4.2.2.3. Reclamation and Closure Financial Assurance Cost Estimate. Re: Subpart (g) Holding costs: A minimum of one-year funding for holding costs, and at least two years is recommended. For 4.2.2.4, review the most recent version of reclamation and closure plan and confirm that the previous version was written fewer than five years before. For 4.2.2.5, interview operating company and relevant stakeholders, and review documentation to confirm that stakeholders were consulted in the revision of the reclamation and closure plan, and that any relevant capacity building, training or access to independent experts occurred. For 4.2.2.6, confirm that the reclamation and closure plan for the mine is available on the company website.

process fluid management, water treatment and mine geotechnical stabilization;

n. Long-term maintenance;
o. Post-closure monitoring plan;
p. The role of the community in long-term monitoring and maintenance (if any); and
q. A schedule for all activities indicated in the plan.

4.2.2.3. The reclamation and closure plan shall include a detailed determination of the estimated costs of reclamation and closure, and post-closure, based on the assumption that reclamation and closure will be completed by a third party, using costs associated with the reclamation and closure plan as implemented by a regulatory agency. These costs shall include, at minimum:

a. Mobilization/demobilization;
b. Engineering redesign, procurement, and construction management;
c. Facility demolition and disposal;
d. Earthwork;
e. Revegetation;
f. Disposal of hazardous materials;
g. Holding costs that would be incurred by the regulatory agency following a bankruptcy before actual reclamation begins, including:
    i. Interim process fluid and site management
    ii. Short-term water treatment
    iii. Process fluid management;
h. Post-closure costs for:
    i. Long-term water treatment
    ii. Long-term monitoring and maintenance
i. Indirect Costs:
    i. Mobilization/demobilization;
    ii. Engineering redesign, procurement and construction management;
    iii. Contractor overhead and profit;
    iv. Agency administration;
    v. Contingency; and
j. Either:
    i. A multi-year inflation increase in the financial surety; or
    ii. An annual review and update of the financial surety.

4.2.2.4. The operating company shall provide a yearly reclamation progress report and review and update the reclamation and closure plan and/or financial

assurance when there is a significant change to the mine plan, but at least every 5 years.[186]

4.2.2.5. If not otherwise provided for through a regulatory process, prior to the commencement of the construction of the mine and prior to completing the final reclamation plan the operating company shall provide the public with at least 30 days to comment on the reclamation plan. Additionally:

a. If necessary, the operating company shall provide resources for capacity building and training to enable meaningful stakeholder participation; and
b. Prior to completing the final reclamation plan, the operating company shall provide affected communities and interested stakeholders with the opportunity to propose independent experts to provide input to the operating company on the design and implementation of the plan and on the adequacy of the completion of reclamation activities prior to release of part or all of the financial surety.

4.2.2.6. The results of all reclamation and closure plan updates, as well as the most recent version of the reclamation and closure plan, shall be publicly available on the mine or company website.

4.2.3. Open Pits

4.2.3.1. Open pits shall be partially or completely backfilled if:

a. A pit lake is predicted to exceed the water quality standards of this chapter;
b. The company and key stakeholders have agreed that backfilling would have socioeconomic and environmental benefits; and
c. It is an economically viable.

4.2.3.2. Where acid-generating/metals leaching materials are exposed in the pit wall of the mine the operating company shall perform a risk assessment to analyse alternatives to minimize long-term environmental impacts.

Review the plans for new or expanded open pits. To verify whether a thorough evaluation of the potential for the backfill of open pits has been conducted in a socially, environmentally, and economically practicable manner, at a minimum the following factors should be examined:

- Are there environmental advantages and/or environmental liabilities associated with backfilling?
- Is there an opportunity for sequential backfill of multiple open pits to return the area to usable post-mind land use;
- Would backfilling enhance the stability of pit walls required to ensure protection of human health and the environment?
- What are the impacts on wildlife?
- What are the impacts on surface or groundwater quality?
- What are the greenhouse gas emissions associated with backfilling?

[186] ICMM, 2008. Planning for Integrated Closure: Toolkit. p. 37. Available at: www.icmm.com/document/310

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
	• Is backfilling economically viable? • In locations where evapotranspiration exceeds precipitation, either backfilling to the water table level or agreed-upon compensation to affected users for the water being lost to evaporation should be ensured. For more discussion on this evaluation see IRMA Guidance for Chapter 4.2, 4.2.3. Open Pits. For 4.2.3.2, if relevant, confirm that a risk assessment was undertaken that analysed the alternatives for minimizing long-term impacts from exposed acid-generating/metals leaching in pit walls.
4.2.4. Underground Mines 4.2.4.1. Underground mines shall be backfilled if: a. Subsidence is predicted on lands not owned by the mining company; and b. If the mining method allows.	This applies to new or expanded underground mines. Review documentation, e.g., closure and reclamation plan or other analyses that predict if subsidence is expected on lands not owned by the company; interview operating company to determine if backfilling is feasible based on mining method, and if so, confirm that it is occurring or is planned to occur.
4.2.5. Financial Surety for Mine Closure 4.2.5.1. Financial surety instruments shall be: a. Independently guaranteed, reliable, and readily liquid; b. Evaluated by third-party analysts, using accepted accounting methods, at least every five years or when there is a significant change to the mine plan; c. In place before ground disturbance begins; and d. Sufficient to cover the reclamation and closure expenses for the period until the next financial surety review is completed. 4.2.5.2. Self-bonding or corporate guarantees shall not be permitted. 4.2.5.3. The results of all approved financial surety reviews shall be publicly available on the mine or company website. 4.2.5.4. Prior to the commencement of the construction of the mine, prior to any renewal of the financial surety, and prior to final release of the financial surety the operating company shall provide the public with at least 30 days to comment on the	For 4.2.5.1, review third-party analysis findings. Use of a qualified consultant is anticipated for the analysis. Government agency review is also acceptable if the agency has a registered professional that has placed their credential on the review document. For 4.2.5.2, confirm that the financial surety is not in the form of a self-bond or corporate guarantee. For 4.2.5.3, confirm that approved surety reviews are available on the company website. For 4.2.5.4, interview operating company and relevant stakeholders, and review documentation to confirm that stakeholders were consulted in the revision of the financial surety, and that any relevant capacity building, training or access to independent experts occurred. For 4.2.5.5, review financial surety terms and conditions. Partial bond releases are anticipated, but with public comment.

adequacy of the financial surety. Additionally:

a. Where the company deems certain financial surety information to be legitimate confidential business information it shall make the data available to the IRMA auditor and satisfy the auditor that the grounds for commercial confidentiality are reasonable. If certain information is not included for confidential reasons, the fact that the information has been withheld shall be disclosed along with the financial surety.[187]
b. If necessary, the operating company shall provide resources for capacity building and training to enable meaningful stakeholder participation; and
c. Prior to the beginning of closure reclamation activities the operating company shall provide affected communities and interested stakeholders with the opportunity to propose independent experts to review the financial surety.

4.2.5.5. The terms of the financial surety shall guarantee that the surety shall not be released until reclamation and closure are complete, all impacts have been mitigated, and reclamation has been shown to be effective for a sufficient period of time after mine closure to demonstrate that the reclaimed mine site and resources are stable.

4.2.6. Post-Closure Planning and Monitoring

4.2.6.1. Monitoring of closed mine facilities for geotechnical stability and routine maintenance, including surface and underground mine workings, is required in post-closure. The reclamation and closure plan shall include specifications for the post-closure monitoring and maintenance of all mine facilities, including, but not limited to:

a. Inspection of surface (open pits) and underground mine workings;
b. Inspection and maintenance of tailings and waste rock disposal facilities including effectiveness of cover and any seepage capture systems; and
c. Mechanisms for contingency and response planning and implementation.

4.2.6.2. Monitoring locations for surface and

For 4.2.6.1, review reclamation and closure plan for post closure mine facility monitoring requirements and funding provisions.

Review IRMA Guidance for Chapter 4.2, Long-Term Maintenance.

For 4.2.6.2, 4.2.6.3, and 4.2.6.4, review Reclamation and Closure Plan for post closure surface, groundwater and biologic monitoring requirements, if relevant, and funding provisions.

Review water monitoring records.

For 4.2.6.5, review Reclamation and Closure Plan for pit lake water quality monitoring requirements, and the presence of appropriate measures to protect wildlife if pit lake water will be potentially harmful.

[187] As per IRMA Chapter 2.13, companies are required to have an operational-level grievance mechanism, which would provide a means for stakeholders to initiate dialogue and seek a resolution with a company if the withholding of confidential information makes it difficult or impossible for stakeholders to adequately review the company's calculations.

groundwater shall be sufficient to detect off-site contamination from all closed mine facilities, as well as at the points of compliance.

4.2.6.3. Water quality monitoring locations shall be sampled until IRMA or other relevant surface water and groundwater quality criteria or goals have been met for at least 5 years, with a minimum of 25 years of post-closure data.[188] 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.

4.2.6.4. Biologic monitoring shall be included in post-closure monitoring if required to ensure there is no ongoing post-closure damage to aquatic resources.

4.2.6.5. Pit lake water quality shall be monitored, and if potentially harmful to people, wildlife, livestock, birds, or agricultural uses, adequate measures shall be taken to protect these organisms.

4.2.7. Post-Closure Water Treatment

[flag] **4.2.7.1. Issue in brief:** Perpetual water treatment is the most controversial issue in this chapter. Many in the NGO community oppose the certification of mines that require water treatment in perpetuity. Some mining industry participants have stated that all of their mines will require water treatment in perpetuity. This raises an almost intractable predicament.

The proposed standard recognizes that there are an increasing number of mines being permitted by regulatory authorities throughout the world that will require water treatment in perpetuity. It aims to influence the design and management of mines that undergo certification to reduce the number of new mines that will require water treatment in perpetuity, minimize the amount of water to be treated, and provide stakeholders with better information and more say in the process.

IRMA's intent is to reduce and minimize the impacts to water from mining. The requirements for perpetual treatment proposed do not unilaterally ban long-term water treatment, but if long-term treatment is proposed for a mine, or mine expansion, then the mine planning process must meet the safeguards in 4.2.7.1. Those requirements, combined with the financial incentive the mining industry has to eliminate long-term water treatment, are aimed at minimizing the number of new mines that will require water treatment, as well as minimizing the amount water to be treated.

IRMA welcomes input from interested stakeholders on approaches to minimizing impacts related to long-term water treatment.

[188] IRMA criteria are found in Chapter 3.1, Tables 3.1a, 3.1b and 3.1c. If Approaches A or C are taken to protect water quality as per Chapter 3.1, then the numerical water quality criteria may differ from IRMA water quality criteria.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
4.2.7.1. Long-term water treatment shall not take place unless:[189] a. All practicable efforts to implement best practice water and waste management methods to avoid long-term treatment have been made; b. Long-term water treatment is explicitly discussed/authorized with affected community stakeholders;[190] c. The operating company funds an engineering and risk assessment to be carried out by an independent third-party that is supervised by technical representatives selected by affected local communities: i. The risk assessment shall include consultations with stakeholders, and the findings shall be discussed with affected communities prior to mine construction or expansion;[191] ii. As a part of the risk assessment the environmental and financial advantages/disadvantages and risks of long-term water treatment versus other mitigation methods shall be evaluated;[192] and iii. The analysis shall incorporate data on the failure rates of the proposed mitigation measures and water treatment mechanisms to protect long-term risks to downstream beneficial uses.	Review the closure plan to ensure that all technically feasibility feasible options (covers, etc.) have been investigated before the option of long-term water treatment is employed. Confirm that FPIC / Community Engagement requirements have been met to assure that the affected community is aware of the risks associated with long-term water treatment. Significant risks include, but are not limited to: • Acute and/or chronic impacts to aquatic life that would result in a reduction in viability or population density. • Impacts to human health. • Degradation of water quality that impairs ecological, recreation, cultural or economic uses. • Potential economic impacts of long-term monitoring, maintenance, and water treatment if these costs are underestimated. Confirm that the independent third-party assessment was paid for by the operating company but the assessment was supervised/overseen by technical representatives selected by affected stakeholders from the local communities. Review independent third-party engineering & risk assessment.
4.2.8. Post-Closure Financial Surety 4.2.8.1. The operating company shall provide sufficient financial surety in the form of a trust fund or other similar suitable interest-accruing cash or equivalent long-term security for all long-term activities, including: post closure site monitoring and maintenance, and water treatment operations. 4.2.8.2. If post-closure water treatment is required: a. The water treatment cost component of the post-closure financial surety shall be calculated	See IRMA Guidance for Chapter 4.2, 4.2.8. Post Closure Financial Assurance Cost Estimate. For 4.2.8.1, review financial surety calculations. For 4.2.8.2, a proven treatment technology, e.g. mechanical water treatment, should be proposed for cost analysis. Less-proven technologies, e.g. most passive biologic treatment systems, should not be considered for financial surety purposes until their effectiveness on-site has been demonstrated.

[189] This requirement applies to new or expanded mines.

[190] Stakeholder engagement shall be carried out in conformance with Chapter 2.8-Community Stakeholder Engagement; or, if indigenous peoples' communities are affected by the project, post-closure water treatment shall be addressed during the FPIC process.

[191] ibid.

[192] Other mitigation measures may include liners, seepage pumpback systems, etc.

CRITERIA AND REQUIREMENTS	MEANS OF VERIFICATION
conservatively. A treatment technology proven to be effective under similar climatic conditions and at a similar scale as the proposed operation shall be utilized for cost calculations; and b. When construction commences, or whenever the commitment for long-term water treatment is initiated: i. The trust fund (or equivalent) for long-term water treatment shall be established in full; and, ii. Sufficient funding shall be established to conduct adequate post-closure monitoring and maintenance for as long as baseline water quality values are exceeded. 4.2.8.3. The post-closure financial surety shall be recalculated and reviewed by an independent analyst at the same time as the reclamation financial surety. 4.2.8.4. Long-term Net Present Value (NPV) calculations utilized to estimate the value of the financial surety shall use conservative assumptions, including: a. A real interest rate of 3% or less;[193] unless the entity holding the financial surety 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 $10 or less.	Water treatment costs should be based on maximum possible mine-related contaminant concentrations. The third-party engineering & risk assessment should be structured to inform the estimates and should be based on the highest observed concentrations in relevant mine waters during mine operation. When the obligation for long-term water treatment is incurred, the public must be financially protected in full. For 4.2.8.3, confirm that both the reclamation and post-closure financial sureties are recalculated at least every 5 years, as required by this chapter. Use of a qualified consultant is anticipated for the independent analysis. Government agency review is also acceptable if the agency has a registered professional that has placed their credential on the review document. For 4.2.8.4, review financial surety calculations.

NOTES

Reclamation planning and reclamation sureties are controversial topics. There is a great deal of literature available on reclamation planning, and these sources provide the necessary detail to guide reclamation planning.[194] Detail on how to calculate financial sureties, what form of financial surety should and should not be accepted, and what legal precautions should be taken to insure that the financial surety is available for mine closure are also available.[195]

IRMA auditors will be expected to be familiar with the requirements of these sources, assisted by a Guidance document, and their audits of the reclamation plans and financial sureties will reflect this knowledge. This is why there isn't more prescriptive detail on reclamation plans and financial sureties in the IRMA Standard. It will be up to IRMA to monitor whether the intent of the IRMA Standard is being met in the field, and if it is not, then changes to the standard will be made.

[193] Real Interest Rate – the difference between the rate of return and inflation (An interest rate that has been adjusted to remove the effects of inflation to reflect the real cost of funds to the borrower, and the real yield to the lender). A 3% real interest rate is a realistic but conservative assumption for NPV calculations.

[194] E.g., ICMM 2005, 2006, 2008; Kuipers 2000; USDA 2004. See IRMA Guidance for Chapter 4.2 for detailed references.

[195] E.g., ICMM 2005; Kuipers 2000; USDA 2004. See IRMA Guidance for Chapter 4.2 for detailed references.

Cross References to Other Chapters	
CHAPTER	**ISSUES**
1.1—Legal Compliance	Some host countries may have laws relating to the reclamation and closure of mines. As per Chapter 1.1, if host country laws related to reclamation and closure exist, a company is required to abide by those laws. However, if IRMA requirements are more stringent than host country law, the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to break the host country law.
2.8—Community and Stakeholder Engagement	Engagement with stakeholders during reclamation and closure, including prior to and during the risk assessment of long-term water treatment options (4.2.7.1), shall conform to the requirements in Chapter 2.8 Community and Stakeholder Engagement. In particular, criterion 2.8.3 is important to ensure that stakeholders have the capacity to fully engage in the review of financial surety information and reclamation and closure plans. Also, 2.8.4 ensures that communications and information are in formats and languages that are accessible and understandable to affected communities and stakeholders, and provided in a timely, culturally appropriate manner.
2.10—Free, Prior and Informed Consent	If there are indigenous peoples potentially impacted by long-term water treatment (4.2.7.1), that treatment shall not take place without the consent of indigenous peoples.
2.13—Grievance Mechanism and Access to Other Remedies	Stakeholders who have complaints related to an operating company's reclamation and closure planning or implementation can raise complaints through the company's operational-level grievance mechanism. As per Chapter 2.13, the company is required to have an operational-level grievance mechanism available to stakeholders, including procedures for filing complaints, and having complaints recorded, investigated and resolved in a timely manner. In particular, if there are complaints related to inadequate exploration reclamation, the operational-level grievance mechanism may be place to address and resolve the concerns of stakeholders.
3.1—Water Quality	IRMA water quality criteria mentioned in 4.2.6.3 can be found in Tables 3.1.a, 3.1.b and 3.1.c of Chapter 3.1. If Approaches A and C are taken to protect water quality as per Chapter 3.1, the numerical water quality limits may differ from IRMA water quality criteria.
3.2—Water Quantity	If long-term water treatment is required, stream flows could be affected. See 3.2.3.4, Mine Water Management Plan, for particular requirements.
3.3—Mine Waste Management	See this chapter for discussions of pit and underground backfill, liners, and lake-riverine-ocean waste disposal, which all have relevance to reclamation and closure.
4.1—Environmental and Social Impact Assessment	A reclamation plan and an estimated financial assurance for closure and post-closure are required as an integral part of an ESIA. If potential impacts related to long-term water quality are significant, the operating company shall provide affected stakeholders with the opportunity to propose independent experts to collaborate with the company on the company on the design and implementation of its monitoring program; and shall facilitate the independent monitoring of key impact indicators where this would not interfere with the safe operation of the project as per 4.1.8.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a project.

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. **Note:** IRMA's definition of Confidential Business Information is not settled. Stakeholder input on this definition welcome.

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.

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. Mine facilities – this means any facilities owned by the operating company that are located on the mine or mine-lease property.

Financial Surety (Reclamation)

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.

Financial Surety (Post-Closure)

A trust fund or other similar suitable interest accruing cash or equivalent long-term security, held by a governmental or other entity with the ability to accept financial responsibility for the site over the long-term, for all long-term activities, including: post closure site monitoring and maintenance; and, water treatment operations.

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 Country Law

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. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

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.

Metals Leaching

The extraction of soluble metals by percolating solvents. Leaching may be natural or induced. Primary mineral weathering commonly accelerates metal dissolution and removal in mine site drainage. Metals leaching can also be referred to as “neutral” leaching, or “contaminant” leaching.

Mine Closure

Includes the following: The reclamation surety holder declares reclamation complete; All of the reclamation surety (as opposed to the water treatment surety) is returned to the operating company; A mine operator no longer maintains an active physical presence on the minesite; and other obvious or reasonable indicators that most or all of the reclamation activities have been completed.

Pit Lake

Lake formed in the site of a mine pit when mine dewatering pumpage ceases.

Operational-Level Grievance Mechanism

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.

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 converted to a post-closure trust fund (or equivalent).

Practicable

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.

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.

Stakeholder

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.

Stormwater

Industrial Stormwater – Discharge of the interaction of rainfall, snow or snowmelt runoff with unreclaimed mine facilities like waste rock, tailings, mine openings and mine processing facilities and associated roads, or activities included in a wastewater discharge permit program.

Non-industrial Stormwater – Discharge of rainfall, snow or snowmelt runoff from land and impervious surface areas such as access roads.

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.

For a full list of terms used in the Standard, see the Glossary of Terms at the end of the document.

Glossary of Terms

The IRMA Glossary of Terms is not intended to be a complete set of terms associated with mining best practices. However, the preparers of the IRMA Standard often found it necessary to depend on rigorous terminology in crafting the wording of the Standard. These terms were added to this Glossary of Terms, and the terms relevant to each chapter are defined in that chapter.

200-year/24-hour Maximum Precipitation Event

The maximum amount of rainfall that could be expected to fall in 24 hours, on average, every 200 years at a given location.

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. In this way, decision-making simultaneously meets one or more resource management objectives and, either passively or actively, accrues information needed to improve future management. Adaptive management is a tool that should be used not only to change a system, but also to learn about the system. Because adaptive management is based on a learning process, it improves long-run management outcomes. The challenge in using the adaptive management approach lies in finding the correct balance between gaining knowledge to improve management in the future and achieving the best short-term outcome based on current knowledge.

There are a number of scientific and social processes which are vital components of adaptive management, including: Management is linked to appropriate temporal and spatial scales; Management retains a focus on statistical power and controls; Use of computer models to build synthesis and an embodied ecological consensus; Use of embodied ecological consensus to evaluate strategic alternatives; and Communication of alternatives to political arena for negotiation of a selection. The achievement of these objectives requires an open management process which seeks to include past, present and future stakeholders. Adaptive management needs to at least maintain political openness, but usually aims to create it. Adaptive management must therefore be a scientific and social process. It must focus on the development of new institutions and institutional strategies in balance with scientific hypothesis and experimental frameworks.

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: UN Office of the High Commissioner for Human Rights. 2011. *Guiding Principles on Business and Human Rights*. www.business-humanrights.org/Documents/UNGuidingPrinciples)

Adverse Human Rights Impact

When an action removes or reduces the ability of an individual to enjoy his or her human rights.

Actual Human Rights Impact

An adverse impact that has already occurred or is occurring.

Affected Community

A community that is subject to risks or impacts from a project.

(Source: IFC. Glossary of Terms. *IFC Policy & Performance Standards and Guidance Notes*)

Artisanal Mining

Mining carried out by individuals, groups, families or cooperatives with minimal or no mechanization.

Associated Facility

Any facility controlled by the operating company that is near to the mine lease/property, and essential to the mining operation (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 and others)

(Adapted from: www.revisor.leg.state.mn.us/rules/?id=6131.0010&format=pdf)

Baseline Water Quality

The water quality before the effects of any anthropogenic activity has been detected.

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 Chapter III, *FATF Guidance: Transparency and Beneficial Ownership*. 2014)

Best Management Practices

Best Management Practice (BMP) is a term used in the United States and Canada to describe a type of water pollution control. BMPs typically include schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters. BMPs can also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Best Practice(s)

Practices that are widely recognized by interested stakeholders as being the most effective way to achieve agreed goals, given the current state of knowledge.

In the context of the drafting of the IRMA Standard, this has been interpreted to mean that the Standard should consist of a set of auditable requirements that reflects agreement of the multi-stakeholder IRMA process on the most effective way to achieve the agreed social and environmental objectives of each chapter of the IRMA standard, given the current state of knowledge.

The IRMA Standard is intended to specify levels of performance such that a mine that is operating according to best practice could reasonably be expected to conform with all the specified requirements of every chapter.

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

(Sources: IFC; *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: ILO. www.ilo.org/safework/info/publications/WCMS_151534/lang--en/index.htm)

Biological Monitoring

Testing for the presence of a hazardous substance, its metabolites (by-products) or a biochemical change in a person's biological materials (e.g. body tissue, blood, urine, breath) to determine how much chemical has entered the body following exposure.

(Source: Gov. of Western Australia. 2008. *Risk-Based Health Surveillance and Biological Monitoring*. www.dmp.wa.gov.au/documents/ms_biologicalmonitor%281%29.pdf)

Broad Community Support

A collective expression by the community in support of the mining project. Support may be demonstrated through credible (i.e., transparent, inclusive, informed) 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)

Capture Zone

The area inside which all mine facilities are located, including all underground mine workings, tailings facilities, mill facilities, and all surface stockpiles of ore and development rock, and where the mine is required to contain all mine-related contaminants. A Capture Zone shall be as small as practicable, and represents the farthest extent from the mine that mine-related contaminants in groundwater and surface water are allowed. A Capture Zone extends from the land surface to the depth at which groundwater is not affected by mining activities.

Catchment

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 any point along a stream channel. The word catchment is sometimes used interchangeably with drainage basin or watershed.

(Adapted from: US Geological Survey. water.usgs.gov/edu/watershed.html)

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 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). International Programme on the Elimination of Child Labour. "What is child labour." www.ilo.org/ipec/facts/lang--en/index.htm)

Certificate Holder

The operating company that applies for IRMA certification and, if the application is successful, is issued with a certificate of compliance and is responsible for ensuring that all the requirements of certification are met on an ongoing basis, and for demonstrating this to the satisfaction of its certification body.

Collaborate

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.

(Adapted from: South Africa Dept. of Env. Affairs and Tourism. *Stakeholder Engagement*. www.environment.gov.za/sites/default/files/docs/series3_stakeholder_engagement.pdf)

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: ILO. www.ilo.org/dyn/normlex/en/f?p=1000:91:0::NO:::)

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 established and scientifically robust methodologies that would withstand scrutiny by other professionals.

Comprehensible Manner

In forms and languages that are easily understood by workers and/or other stakeholders.

(Source: 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 MP, and W 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*).

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. **Note:** IRMA's agreed upon definition of Confidential Business Information is not settled. Stakeholder input on this definition welcome.

(Sources: www.epa.gov/opptintr/pfoa/pubs/glossary.html and World Intellectual Property Organization: "What is the international legal framework of trade secret protection?" www.wipo.int/patents/en/topics/trade_secrets.html)

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: International Alert. 2005. *Conflict-sensitive business practice: Guidance for extractive industries. See Macro-level Conflict Risk and Impact Assessment tool*. pp. 4, 5. www.international-alert.org/resources/publications/csbp-extractive-industries-en)

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. 2013. *Due Diligence Guidance on Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*. p. 65. www.oecd.org/corporate/mne/GuidanceEdition2.pdf)

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.

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.

(Adapted from South Africa Dept. of Env. Affairs and Tourism. *Stakeholder Engagement.* www.environment.gov.za/sites/default/files/docs/series3_stakeholder_engagement.pdf)

Contract 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 project for a substantial duration (i.e., employment other than on a casual or intermittent basis), including the construction phase of the project or who are geographically working at the project location.

(Source: *IFC Performance Standard 2*. Guidance.)

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.

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.

(Adapted from: *IFC Performance Standard 7.* Para. 16; and *Performance Standard 8*, Para. 13)

Cumulative Effects

Additive, synergistic, interactive or nonlinear outcomes of multiple development or disturbance events that aggregate over time and space." Examples of cumulative 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.

(Adapted from: International Association for Impact Assessment. 2005. *Biodiversity Impact Assessment.* Special Publication Series No. 3. Examples from IFC Performance Standard 1, page 4, footnote 16).

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 Resttlement?" web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALDEVELOPMENT/EXTINVRES/0,,contentMDK:20480221~menuPK:1242368~pagePK:148956~piPK:216618~theSitePK:410235,00.html)

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: from *IFC 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

Ecosystem Services: The benefits people obtain from ecosystems. These include: provisioning services such as food, forest products and water; regulating services such as regulation of floods, drought, land degradation, air quality, climate and disease; supporting services such as soil formation and nutrient cycling; and cultural services and cultural values such as recreational, spiritual, religious and other nonmaterial benefits.

(Source: Based on R. Hassan, R. Scholes and N. Ash. 2005. *Ecosystems and Human Well-being: Synthesis.* The Millennium Ecosystem Assessment Series. Island Press, Washington DC).

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 www.iucnredlist.org/static/categories_criteria_2_3)

Environmental Flow

The quantity, quality and timing of water flows required to sustain freshwater and estuarine ecosystems and the human livelihoods and well-being that depend on these ecosystems.

(Source: Brisbane Declaration. 2007. www.eflownet.org/downloads/documents/WorldBank_EF2009.pdf)

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: UN Office of the High Commissioner for Human Rights. 2011. *Guiding Principles on Business and Human Rights.* www.business-humanrights.org/Documents/UNGuidingPrinciples)

Exceedance Flow

An exceedance flow is the flow that the river will exceed a given percentage of the time. A Q60 flow will be exceeded 60% of the time. The values are usually determined on a monthly basis.

Existing Mine

A mine that was operational prior to the date that the IRMA Standard first went into effect.

Exploration Activity

Any landscape disturbance by a mining company to ascertain whether a deposit is economically viable, including drilling, trenching and road construction.

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. In the case of:

Mine facilities – this means any facilities owned by the operating company that are located on the mine or mine-lease property; and,

Associated facilities – facilities near to or essential to the mine lease/property that are related to the mining operation. See "Associated Facility"

Facility Boundary

The boundary of the mine facility itself, as described during the Environmental & Social Impact Assessment process for the mine. In general this will be the area of active surface disturbance for mining and milling. It is recognized that mine expansions may require the extension of a facility boundary (and it is anticipated this would be accompanied by an Environmental & Social Impact Assessment).

Failure Modes and Effects Analysis (FMEA)

A methodology for the assessment of 'risk', which is a combination of likelihood and consequences of failure. The goal is to provide a useful analysis technique that can be used to assess the potential for, or likelihood of, failure of structures, equipment or processes, and the effects of such failures on the larger systems of which they form a part, and on the surrounding ecosystem, including human health and safety. FMEA provides evaluators with the ability to perform a systematic and comprehensive evaluation of potential failure modes of the design/plan in order to identify the potential hazards.

(Adapted from: Roberston GeoConsultants Inc. www.rgc.ca/?page=page&id=99)

Financial Surety

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.

Post-Closure Financial Surety – a trust fund or other similar suitable interest accruing cash or equivalent long-term security, held by a governmental or other entity with the ability to accept financial responsibility for the site over the long-term, for all long-term activities, including: post closure site monitoring and maintenance; and, water treatment operations.

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)

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. *IFC 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: UN Office of the High Commissioner for Human Rights. 2011. *Guiding Principles on Business and Human Rights.* www.business-humanrights.org/Documents/UNGuidingPrinciples)

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.

(Adapted from: UN Office of the High Commissioner for Human Rights. 2011. *Guiding Principles on Business and Human Rights.* www.business-humanrights.org/Documents/UNGuidingPrinciples)

Habitat

The place or type of site where an organism or population occurs.

(Source: Based on the *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. www.ccohs.ca/oshanswers/hsprograms/hazard_risk.html)

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: Article 3 (d) of ILO *Convention concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour.* 1999. No. 182)

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)

High Conservation Values

Biological, ecological, social or cultural values which are considered outstandingly significant or critically important, at the national, regional or global level.

HCV 1 - Species diversity. Concentrations of biological diversity including endemic species, and rare, threatened or endangered species, that are significant at global, regional or national levels.

HCV 2 - Landscape-level ecosystems and mosaics. Large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.

HCV 3 - Ecosystems and habitats. Rare, threatened, or endangered ecosystems, habitats or refugia.

HCV 4 - Critical ecosystem services. Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.

HCV 5 - Community needs. Sites and resources fundamental for satisfying the basic necessities of local communities or indigenous peoples (for livelihoods, health, nutrition, water, etc.), identified through engagement with these communities or indigenous peoples.

HCV 6 - Cultural values. Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/ sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples.

Highly Protected Areas

Protected areas in the following categories: World Heritage Sites; sites on a State Party's official Tentative List for World Heritage Site inscription; IUCN category I-III protected areas; IUCN category I-V marine protected areas; core areas of UNESCO biosphere reserves; and areas where indigenous peoples live or where it is assumed that they might live in (voluntary) isolation.

High-Quality Waters

High-quality waters are those waters in which baseline water quality has not been degraded by anthropogenic activity, and for which most contaminants do not exceed IRMA water quality criteria.

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: from IFC, 2012. *IFC Performance Standard 5*)

Host Country Law

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. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Human Rights Impact Assessment

A Human Rights Impact Assessment (HRIA) is an instrument for examining policies, legislation, programs and projects and identifying and measuring their effects on human rights. The fundamental purpose of HRIA is to help prevent negative effects on human rights and maximize positive effects. HRIA, as with other impact assessments, are carried out through a series of steps: Preparation; Screening; Scoping; Evidence Gathering; Consultation; Analysis; Conclusions and Recommendations; Monitoring and Evaluation; and Preparation of HRIA report.

(Source: based on Nordic Trust Fund/World Bank. 2013. *Human Rights Impact Assessments: A review of the literature, differences with other forms of assessments and relevance for development*. siteresources.worldbank.org/PROJECTS/Resources/40940-1331068268558/HRIA_Web.pdf)

Human Rights Risks

Human rights risks are understood to be the business enterprise's potential adverse human rights impacts.

(Source: UN. *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.

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: Definition is based on text in *IFC Performance Standard 1*).

Independent Tailings Review Board:

The appointment of independent tailings review board is to provide third-party advice on the design, construction, operation and closure of all tailings impoundments engineered to retain wet tailings during mine operation. Independent Tailings review boards are to be asked to provide opinions on the following: whether the design, construction and operation of the Tailings Storage Facilities (TSF) are consistent with satisfactory long-term performance; whether design and construction have been performed in accordance with the Board's expectation of good practice; whether safety and operation of the TSF conform to the Board's expectation of good practice; and whether there are weaknesses that would reasonably be expected to have a material adverse effect on the integrity of the TSF, human health, safety, and successful operation of the facility for its intended purpose.

(Source: Definition based on Independent Expert Engineering Investigation and Review Panel. *Report on Mount Polley Tailings Storage Facility Breach.* Province of British Columbia, January 30, 2015. Available at: www.mountpolleyreviewpanel.ca/final-report)

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")

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.

(Adapted from South Africa Dept. of Env. Affairs and Tourism. *Stakeholder Engagement*. www.environment.gov.za/sites/default/files/docs/series3_stakeholder_engagement.pdf)

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 Standard*, 2013).

IRMA System Impact Indicators

Indicators that allow progress towards IRMA's global objectives to be measured over time. These indicators are not intended to measure or monitor compliance with the IRMA Standard's requirements.

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: based on World Conservation Union (IUCN). Glossary definitions as provided on IUCN website).

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: UN Office of the High Commissioner for Human Rights. 2011. *Guiding Principles on Business and Human Rights.* www.business-humanrights.org/Documents/UNGuidingPrinciples)

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

The 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. *SA8000 Standard*. 2014)

Local Communities

Communities of any size that are in or adjacent to the mining project area, and also those that are close enough to have their economies, rights or environments significantly affected by the management activities or the biophysical aspects of the mining project.

(Source: modified from FSC 2011).

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

Important or relevant revenue streams. The EITI requires that all material benefit streams be published. According to the EITI Validation guide, a benefit stream is "material if its omission or misstatement could materially affect the final EITI Report." It is typically the responsibility of the national multi-stakeholder group to decide how to define material in quantitative or qualitative terms.

(Source Extractives Industries Transparency Initiative, Glossary, consulted November 2013).

Maximum Credible Earthquake (MCE)

The greatest earthquake that reasonably could be generated by a specific seismic source, based on seismological and geologic evidence and interpretations. The MCE is often associated with a recurrence interval of 10,000 years.

(Source: *Large Dams the First Structures Designed Systematically Against Earthquakes*, Martin Wieland, ICOLD, 14th World Conference on Earthquake Engineering, Beijing, October 12-17, 2008)

Mercury Waste

Substances or objects consisting of mercury or mercury compounds, containing mercury or mercury compounds, or contaminated with mercury or mercury compounds, that are disposed of, are intended to be disposed of, or are required to be disposed of by provisions of national law or applicable conventions. Mercury waste does not include metals, ores, or minerals, including coal, or wastes derived therefrom that contain naturally occurring mercury or mercury compounds.

Metals Leaching

The extraction of soluble metals by percolating solvents. Leaching may be natural or induced. Primary mineral weathering commonly accelerates metal dissolution and removal in mine-site drainage. Metals leaching can also be referred to as "neutral" leaching, or "contaminant" leaching.

(Source: Price, 2009)

Mine Closure

Includes the following: The reclamation surety holder declares reclamation complete; all of the reclamation surety (as opposed to the water treatment surety) is returned to the operating company; A mine operator no longer maintains an active physical presence on the minesite; and other obvious or reasonable indicators that most or all of the reclamation activities have been completed.

Mine Dewatering

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.

Mining Project

Any set of activities undertaken for the purposes of extracting mineral resources. Mining projects may include exploration, mine construction, mining, mine closure and related activities either as separately or in combination.

Mining-Related Activities

Encompasses any activities that may occur during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure), and includes all physical activities (e.g., land disturbance and clearing, sampling, airborne surveys, construction, ore removal, ore processing, waste management, reclamation, etc.).

Mitigation

The mitigation of adverse human rights impact refers to actions taken to reduce its extent, with any residual impact then requiring remediation. The mitigation of human rights risks refers to actions taken to reduce the likelihood of a certain adverse impact occurring.

(Source: UN OHCHR. 2012. *The Corporate Responsibility to Respect Human Rights: An Interpretive Guide.* www.ohchr.org/EN/Issues/Business/Pages/Tools.aspx)

Mixing Zone

A portion of a surface or groundwater in which the effluent discharge mixes with the receiving water, and in which water quality is allowed to exceed otherwise specified standards. Compliance with water quality criteria occurs at the edge of the mixing zone.

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Standard first takes effect.

Noise 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.

(Adapted from IFC. 2007. *Environmental, Health, and Safety Guidelines*. Section 1.7. Noise Management.)

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: Wikipedia and ILO. www.ilo.org/safework/info/publications/WCMS_151534/lang--en/index.htm)

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: UN Office of the High Commissioner for Human Rights. 2011. *Guiding Principles on Business and Human Rights*. www.business-humanrights.org/Documents/UNGuidingPrinciples)

Passby Flow

A passby flow is a prescribed flow rate that must be allowed to pass a given point (e.g. a water intake) when a withdrawal is occurring; a passby flow also specifies a low flow condition during which no water can be withdrawn. Diversions must not lower the flow to beneath this flow rate.

Pit Lake

Lake formed in the site of a mine pit when mine dewatering pumpage ceases.

(Source: Schulze 2013, Castendyk and Eary 2009)

Point of Compliance

The physical location where water quality must meet the surface/groundwater criteria of the IRMA Standard or other relevant water quality objectives: The point of compliance for a surface water discharge is the point of discharge; The points of compliance for groundwater are all groundwater monitoring sites located outside the groundwater capture zone (see the definition for capture zone);

in no case shall mine-related contaminants extend beyond the mine boundary; If a mixing zone is authorized, then the point of compliance is at the edge of the mixing zone.

Polishing

A secondary or a higher level of treatment that may be required to reach water quality objectives or criteria.

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 converted to a post-closure trust fund (or equivalent).

Potential Human Rights Impact

A "potential human rights impact" is an adverse impact that may occur but has not yet done so.

(Source: UN OHCHR. 2012. *The Corporate Responsibility to Respect Human Rights: An Interpretive Guide.* www.ohchr.org/EN/Issues/Business/Pages/Tools.aspx)

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: UN Office of the High Commissioner for Human Rights. 2011. *Guiding Principles on Business and Human Rights.* www.business-humanrights.org/Documents/UNGuidingPrinciples)

Prevention

The prevention of adverse human rights impact refers to actions taken to ensure such impact does not occur.

(Source: UN OHCHR. 2012. *The Corporate Responsibility to Respect Human Rights: An Interpretive Guide.* www.ohchr.org/EN/Issues/Business/Pages/Tools.aspx)

Primary Suppliers

Those suppliers who, on an ongoing basis, provide the majority of living natural resources, goods, and materials essential for the core business processes of the project.

(Source: *IFC Performance Standard 2*, Guidance Note 2, footnote 4)

Probable Maximum Precipitation (PMP)

Theoretically the greatest depth of precipitation for a given duration that is physically possible over a given size storm area at a particular geographical location at a certain time of year.

(Source: *Manual for Estimation of Probable Maximum Precipitation*, Operational Hydrology Report 1, 2nd Ed, Publication 332, World Meteorological Organization, Geneva, 1986, p. 1)

Process Water

Process water means any water which comes into direct contact with mine workings and ore or waste rock (including roads used to transport ore or waste rock), mine processing facilities, or results from the processing of mineral products (e.g. tailings ponds, heap leach ponds, seepage collection ponds, wastewater treatment facility holding ponds, etc.).

Protected Area

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 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

VI 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 N (2008) *Guidelines for applying protected area management categories*. IUCN)

Protected Waters

Protected waters are those waters designated by a national, regional, or local governmental body as waters for which no degradation above baseline water quality values will be allowed.

Rare Species

Species that are uncommon or scarce, but not classified as threatened. These species are located in geographically restricted areas or specific habitats, or are scantily scattered on a large scale. They are approximately equivalent to the IUCN (2001) category of Near Threatened (NT), including species that are close to qualifying for, or are likely to qualify for, a threatened category in the near future. They are also approximately equivalent to imperiled species

(Source: Based on IUCN. (2001). *IUCN Red List Categories and Criteria: Version 3.1*. IUCN Species Survival Commission. IUCN. Gland, Switzerland and Cambridge, UK).

Related Activities (See Mining-Related Activities)

Physical activities related to a mining project both inside and outside of the property or concession zone of the project, including exploration activities, the development of any new infrastructure required to implement a project or to transport or process its production, and the transportation of mine supplies or products, and including activities carried out in joint ventures with other companies, or commissioned by the company on its behalf.

Relevant Business Relationships

Include relationships with business partners, entities in its value chain, and any other non-State or State entity directly linked to its business operations, products or services.

(Source: based on UN Guiding Principles definition)

Remediation/Remedy (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 harm through, for example, injunctions or guarantees of non-repetition.

(Source: UN OHCHR. 2012. *The Corporate Responsibility to Respect Human Rights: An Interpretive Guide.* www.ohchr.org/EN/Issues/Business/Pages/Tools.aspx)

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: See IFC 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 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).

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: from IFC. 2012. *IFC 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: based on IFC. 2012. *IFC Performance Standard 5*, paragraph 19.)

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.

(From IFC. 2012. *IFC 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.

(Source: Kuipers, 2000)

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.

(Adapted from UNICEF. *Gender Equality, UN Coherence & You*. Glossary. www.unicef.org/gender/training/content/resources/Glossary.pdf)

Rights-Compatible

In reference to grievance mechanism, means ensuring that outcomes and remedies accord with internationally recognized human rights.

(Source: UN Office of the High Commissioner for Human Rights. 2011. *Guiding Principles on Business and Human Rights.* www.business-humanrights.org/Documents/UNGuidingPrinciples)

Secondary Containment

Requires that areas be designed with appropriate containment and/or diversionary structures to prevent a discharge in quantities that may be harmful.

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. 2013. *Due Diligence Guidance on Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.* 2nd Ed. p. 21. www.oecd.org/daf/inv/mne/mining.htm)

Shall

Indicates a requirement of the standard.

Shall Not

Indicates a prohibition.

Should/ Should Not

Indicates a recommendation.

(Source: based on ISO Guide 2, General Vocabulary section 7.1; and ISO/IEC Directives Part 2, Fifth edition. 2004. Annex H, Verbal forms for the expression of provisions).

Significant

For the purposes of Principal 9, HCVs 1, 2 and 6 there are three main forms of recognizing significance.

A designation, classification or recognized conservation status, assigned by an international agency such as IUCN or Birdlife International.

A designation by national or regional authorities, or by a responsible national conservation organization, on the basis of its concentration of biodiversity.

A voluntary recognition by the manager, owner or Organization, on the basis of available information, or of the known or suspected presence of a significant biodiversity concentration, even when not officially designated by other agencies.

Any one of these forms will justify designation as HCVs 1, 2 and 6. Many regions of the world have received recognition for their biodiversity importance, measured in many different ways. Existing maps and classifications of priority areas for biodiversity conservation play an essential role in identifying the potential presence of HCVs 1, 2 and 6.

(Source: Forest Stewardship Council. 2011).

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: UN Office of the High Commissioner for Human Rights. 2011. *Guiding Principles on Business and Human Rights.* www.business-humanrights.org/Documents/UNGuidingPrinciples)

Spawning

The release or deposit eggs of a fish, amphibian, mollusc, or crustacean.

Stakeholder

Stakeholders are 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.

(Adapted from IFC. International Finance Corporation. 2007. *Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets*. p. 10)

Stormwater

Industrial Stormwater – Discharge of the interaction of rainfall, snow or snowmelt runoff with unreclaimed mine facilities like waste rock, tailings, mine openings and mine processing facilities and associated roads, or activities included in a wastewater discharge permit program.

Non-industrial Stormwater – Discharge of rainfall, snow or snowmelt runoff from land and impervious surface areas such as access roads.

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.

Support

Provision of direct or indirect support includes: procuring minerals from, making payments to or otherwise providing logistical assistance or equipment.

(Source: OECD. 2013. *Due Diligence Guidance on Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* (2nd Ed.). www.oecd.org/daf/inv/mne/mining.htm)

Surveillance of the Working Environment:

A generic term that includes the identification and evaluation of environmental factors that may affect workers' health. It covers assessments of sanitary and occupational hygiene conditions, factors in the organization of work which may pose risks to the health of workers, collective and personal protective equipment, exposure of workers to hazardous agents and control systems designed to eliminate and reduce them.

(Source: ILO. 1997, *Technical and Ethical Guidelines for Workers Health Surveillance*. OSH No. 72)

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 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: based on IUCN. (2001). *IUCN Red List Categories and Criteria: Version 3.1.* IUCN Species Survival Commission. IUCN. Gland, Switzerland and Cambridge, UK).

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). www.unodc.org/documents/treaties/UNTOC/Publications/TOC Convention/TOCebook-e.pdf)

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: UN Office of the High Commissioner for Human Rights. 2011. *Guiding Principles on Business and Human Rights.* www.business-humanrights.org/Documents/UNGuidingPrinciples)

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.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, and groups that would be vulnerable due to other circumstances (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, and groups that suffer social and economic discrimination, including indigenous peoples and minorities.

(Sources: IFC. 2002. *Handbook for Preparing a Resettlement Action Plan.* p. 15. documents.worldbank.org/curated/en/2002/04/1990723/handbook-preparing-resettlement-action-plan and FAO. Glossary. www.fao.org/ag/wfe2005/glossary_en.htm)

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 World Heritage Commission, "Presentation of the Results of the International Expert Meeting on World Heritage and Buffer Zones," Paper prepared for the 32nd Session of the World Heritage Committee, Quebec, City, July 2-10, 2008).

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: Based on definition in SA8000 Guidance. IFC PS2)

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: Based on definition in SA8000 Guidance)