



IRMA

Initiative for Responsible
Mining Assurance



IRMA Standard for Responsible Mining v1.0 EN

June 2018



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Photo credits

Large photo on cover

Los Broncos 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.

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

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

Section/Chapter photos

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

Chapter headers: Los Broncos mine (as above).

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Preamble

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

The Initiative for Responsible Mining Assurance (IRMA) believes that many of the negative social and environmental impacts can be avoided if mines operate according to leading practices.

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

IRMA is an answer to global demand for more socially and environmentally responsible mining. Through IRMA:

- Industrial-scale mines can document their leadership and receive value for proven responsible performance;
- Purchasers of metals and minerals can source from mines that meet a full array of leading practices in social and environmental responsibility;
- Communities, workers and civil society organizations can convey social licence with assurance that a mine operates to leading levels of socially and environmentally responsible performance.

IRMA was founded in 2006 by a coalition of non-governmental organizations (NGOs), businesses that purchase minerals and metals for the products they make and sell, organized labor (e.g., trade unions), affected communities and mining companies. The IRMA Steering Committee set the mission to establish a multi-stakeholder and independently verified responsible mining assurance system that improves social and environmental performance and creates value for leading mine sites.

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.

The *Standard for Responsible Mining* v.1.0 was created by the IRMA Steering Committee and IRMA Secretariat through a robust, intensive multi-year collaborative process. Representatives of IRMA's five core sectors as well as representatives from government agencies, financial institutions, academic organizations, related certification programs, and others participated in the process to define the content of the Standard.

IRMA conducted two rounds of public consultation (in 2014 and 2016) and two field tests (one in Zimbabwe and one in the United States) to collect input on the requirements of the Standard, convened multi-stakeholder working groups and consulted independent experts to further articulate requirements that reflect responsible mining. During the two public consultation periods, more than 120 individuals and organizations including government agencies, financial institutions, academic institutions, NGOs and others provided more than 2,100 comments and recommendations that informed the content presented in *Standard for Responsible Mining* v.1.0.

To view stakeholder comments and IRMA's responses, visit: <http://www.responsiblemining.net/irma-standard/>

IRMA'S LAUNCH PHASE

The IRMA Steering Committee is fully committed to the objectives articulated in each chapter of the *Standard for Responsible Mining* v.1.0. The IRMA Steering Committee also recognizes that errors or oversights made in crafting the specific requirements to meet those objectives are likely only to be revealed when the Standard is tested globally, at a diversity of mine sites. The IRMA Steering Committee also believes that there is value in continuing to solicit feedback on the Standard's requirements from stakeholders with an interest in the social and environmental performance of mine sites. Therefore, the IRMA Steering Committee is releasing the *Standard for Responsible Mining* v.1.0 with a “Launch Phase” designed as a deliberate process of testing requirements and engaging stakeholders.

IRMA does not intend to certify mines in 2018 based on the *Standard for Responsible Mining* v.1.0. Instead, IRMA will provide unique recognition for participating mine sites' early investment and engagement in advancing responsible mining during this Launch Phase.

The Launch Phase is a flexible learning mode to enable IRMA to identify gaps, clarify conflicting or confusing directions, refine requirements and the means of their verification, and continue to actively engage stakeholders in the *Standard for Responsible Mining*. The data, feedback and other input collected during the Launch Phase will be used to refine the content of the *Standard for Responsible Mining*.

The Launch Phase is a time-bound process with specific offerings to mine sites and other stakeholders:

- **Self-Assessment:** Mine sites can self-assess their performance against the *Standard for Responsible Mining* v.1.0. In the third quarter of 2018 an on-line self-assessment tool will be available at www.responsiblemining.net. Mines using the self-assessment tool are invited to provide input on the content of the Standard, and on the self-assessment tool itself.
- **Independently-Verified Scoring of Site Performance:** Later in 2018, IRMA-trained auditors will be available to independently review and provide a verified scoring of mine site performance. IRMA will actively collect feedback from participating mines as well as auditors and stakeholders involved in the independent assessment process.
- **Stakeholder Engagement:** Other stakeholders are invited to share their comments on the content of the Standard through comment@responsiblemining.net. IRMA will also host engagements with specific stakeholders such as affected communities and technical experts to collect feedback on the Standard.
- **Public Recognition and Supply Chain Connections:** IRMA is offering multiple opportunities for diverse stakeholders – mines, purchasers, civil society, investors, government agencies and others – to express their interest in responsible mining, make connections and share achievement on IRMA's online Responsible Mining Map: map.responsiblemining.net. Mine sites may share their self-assessment and verified scores of site performance on the IRMA Map. Purchasers and investors with an interest in mineral supply chain responsibility can use the Responsible Mining Map to identify mines with a commitment to and experience with responsible mining, and also list their own interest in responsible mining. Civil society groups and others may also describe their interests and put themselves on the map.

The Launch Phase will come to a close on 30 June 2019. An IRMA-sponsored multi-sector committee of technical experts will rely on the feedback, data, and learning generated through the Launch Phase to create *the Standard for Responsible Mining* v.2.0. Certification of achievement based on the *Standard for Responsible Mining* v.2.0 will be available in late 2019.

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 one principle.

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

Principle 1—Business Integrity

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

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

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

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

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

Chapter 1.5—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— Planning and Managing for Positive Legacies

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

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

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

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

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

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

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

Principle 3— Social Responsibility

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

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

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

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

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

Chapter 3.5—Security Arrangements: To manage security in a manner that protects mining operations and products without infringing on human rights.

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

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

Principle 4—Environmental Responsibility

INTENT: 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 4.1—Waste and Materials Management: To eliminate off-site contamination, minimize short- and long-term risks to the health and safety of communities and the environment, and protect future land and water uses.

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

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

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

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

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

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

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

Scope of the IRMA Standard

The IRMA Standard is intended to be applicable to all types of industrial- or large-scale mining (including surface, sub-surface and solution mining), and all mined materials (e.g., minerals, metals) with the exception of energy fuels. 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 or small-scale mining.

The IRMA Standard and certification scheme covers mining and related 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. In limited cases the Standard refers to infrastructure, such as transportation routes, or associated facilities located off of the mine site (e.g., resettlement requirements apply even if displacement occurs only in relation to a facility not located on the mining lease, if that facility would not have been built except for the development of the mine). The Standard does not apply to 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 its Launch Phase (see page 7), 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 mine that can demonstrate a high performance level that is consistent with the Standard's principles and objectives. The fact that an existing mine 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 impacts from 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, 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. IRMA realizes that further attention (and guidance to companies and auditors) may be needed in this area, and is 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 after a mine becomes operational. While the current 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 those particular stages 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 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, IRMA is evaluating potential barriers to smaller operators and is considering ways to reduce barriers while still maintaining a Standard that is protective of social and environmental values. Possible strategies being considered include longer timelines allowed to accomplish some tasks, adjusted fees for participation in IRMA, and technical and financial resources to support capacity building and training opportunities for smaller companies, especially those producing low-value commodities.

Chapter Structure

BACKGROUND

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

OBJECTIVES/INTENT STATEMENT

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

SCOPE OF APPLICATION

A description of the conditions under which the chapter may or may not be relevant for particular 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 'not relevant' if the issue to which a requirement relates is not applicable at the 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. The 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).

TERMS USED IN THIS CHAPTER

This is a list of the terms used in the chapter ■ Each term is separated with ■

Terms listed here are identified in the chapter with a dashed underline. And they are defined in the [Glossary of Terms](#) at the end of the document.

Chapter Requirements

X.X.X. These are criteria headings

X.X.X.X. And these are the requirements that must be met for an IRMA certificate to be issued and subsequently maintained by a mining project. Most criteria have more than one requirement. All requirements must be met in order to comply fully with the criterion.

- a. Some requirements consist of hierarchical elements:
 - i. At more than one level.
 - ii. Mines may be required to meet all elements in a list, or one or more of the elements of such a list, as specified.

NOTES

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

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.

Language

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

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

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

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

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 relevant 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 while the overall level of performance required to conform with the requirement may still be met. Where possible IRMA will aim to provide quantitative guidance but in the absence of specific guidance decisions will be based on the professional judgment of the certification body.
- Occasional, temporary failures of conformity are inevitable when managing large, complex mining 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 actions are taken to correct identified failures and analyze and address the issues that caused failures so that they can be avoided in the future.

Consequently, and in line with other comparable certification systems, IRMA expects that certificates 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, if successful, that 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. For example, 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 are two chapters that include the potential for corporate-owner level actions and reporting (Chapter 1.5—Revenue and Payments Transparency and 4.5—Greenhouse Gas Emissions). The rationale for including corporate-level requirements for these issues is included in the notes for each of the chapters.

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 efforts to improve environmental and social responsibility over a period of time. Such uses may include the public recognition of ‘IRMA Candidate’ status for mines that have been assessed against the Standard’s requirements but have not yet achieved the level required for certification. Also, mines that have not reached full certification status will be allowed to publish an independently-verified score, and update that score over time to demonstrate continuing improvement (overall and/or for particular aspects of performance, e.g., human rights or worker safety).

Flagged Items



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, 2.4, 3.2, 4.2, 4.3, 4.5 and 4.8.

Stakeholder input is welcome on any portion of this document. In particular, the IRMA Steering Committee seeks assistance in resolving issues that involve a difference in opinion between stakeholder perspectives and/or are topics that continue to pose challenges for the broader global community.

Associated Documents and Materials

It is important to note what is **not** in this document. IRMA leaders recognize that there are key aspects of certification that 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 document.

Guidance Materials: these materials will offer additional 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. As they are developed, these will be made available in the Standards section of the IRMA website: <http://www.responsiblemining.net/irma-standard>

Verification Program: IRMA’s verification documents describe the procedures for auditing and verifying compliance with the IRMA Standard. While verification procedures are not described in detail in this Standard document, prior to beginning Launch Phase auditor-verified scoring IRMA will produce a version of the Standard that includes Means of Verification (i.e., non-normative guidance for auditors, companies and stakeholders on the sources of information and the activities that an auditor might review and undertake, respectively, in order to verify conformity with a requirement). That version will be made available at: <http://www.responsiblemining.net/irma-standard>

Certification System Procedures: IRMA will not be certifying mines until 2019. Specifics on the certification application process, length of time for which a certificate will be valid, frequency of review of certificates, details on costs of certification, and other mechanics of the system will be published for public review but are not included in this document.

Collaboration with Related Standards and Certification Systems

The IRMA Standard and certification scheme cover mining and some associated activities but do not try to address the social and environmental issues associated with the refining and smelting of mined material that takes place off of the mine site, nor does IRMA address the manufacturing and assembly, end-use, disposal or recycling of products made from mined materials.

A 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, aluminum), 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.

Also, 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. Purchasers of mined materials from jewelers to steel manufacturers have defined specific requirements for portions of their supply chains.

IRMA is committed to the alignment of these multiple initiatives and has relied on the content and objectives of many of these efforts in the development of the *Standard for Responsible Mining*. IRMA's contribution is a multi-sector-defined set of requirements that can be applied globally at industrial-scale mine sites.

IRMA is committed to close collaboration with other systems that are forwarding responsible mining, to seek mutual recognition and added value for participants. IRMA will proactively collaborate with colleagues forwarding more responsible artisanal-scale mining (ASM) and with others working on materials retrieval and recycling. IRMA will provide purchasers and investors with consistent integrated tools for identifying leading mines and also those making improvements. IRMA is also committed to working in partnership to develop supply-chain connections to ensure the sustainability and responsibility of products and services in such industries as jewelry, building, automotive, technology/electronics, household products, and others.

Comment on the IRMA Standard

Comments on the IRMA Standard and system are always welcome.

They may be emailed to IRMA at: comments@responsiblemining.net

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



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 are more stringent or demanding than the minimum legal requirements specified at the national level in a particular country.

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

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

TERMS USED IN THIS CHAPTER

Competent Authority ■ Confidential Business Information ■ Contractor ■ Corporate Owner ■ Host Country Law ■ Mine Closure ■ Mining Project ■ Operating Company ■ Remedy ■ Stakeholder ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

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

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

Legal Compliance Requirements

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.¹

¹ Host country law includes all applicable requirements, including but not limited to laws, rules, regulations, and permit requirements, from any governmental or regulatory entity, including but not limited to applicable requirements at the federal/national, state, provincial, county or town/municipal levels, or their equivalents in the country where the mine is located.

1.1.2. Compliance with Most Protective Requirements

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.² If complying fully with an IRMA requirement would require the operating company to break host country law then the company shall endeavor to meet the intent of the IRMA requirement to the extent feasible without violating the law.

1.1.3. 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.

1.1.4. Contractor Compliance

1.1.4.1. The operating company shall demonstrate that it takes appropriate steps to ensure compliance with the IRMA Standard by contractors engaged in activities relevant to the mining project.³

1.1.5. Record-Keeping and Disclosure

1.1.5.1. The operating company shall maintain records and documentation sufficient to authenticate and demonstrate compliance and/or non-compliance with host country laws and the IRMA Standard.

1.1.5.2. Records related to compliance and/or non-compliance with host country laws shall be made available to IRMA auditors, and shall include descriptions of non-compliance events and ongoing and final remedies.⁴

1.1.5.3. Upon request, operating companies shall provide stakeholders with a summary of the mining project's regulatory non-compliance issues that are publicly available.⁵

1.1.5.4. Where the operating company claims that records or documents contain confidential business information, it shall:

- a. Provide to auditors a general description of the confidential material and an explanation of the reasons for classifying the information as confidential;⁶ and
- b. If a part of a document is confidential, only that confidential part shall be redacted, allowing for the release of non-confidential information.

² For purposes of this section, most protective means the law or requirement that will prevent or mitigate the most negative impact(s) to the host state's human health and environment and cause the least risk to the host state's economic resources, such as by posing risks of injury to human health and the environment.

³ The definition of contractors includes relevant subcontractors (i.e., those involved in providing services to the operating company or the company's contractors that are relevant to the mining project).

⁴ As used in this section, "records" includes, but is not limited to, any permit, regulatory, or relevant governmental actions whether pending or resolved. "Ongoing remedies" refers to situations where the operating company is still working on achieving compliance to the satisfaction of the regulatory government entities/competent authorities.

⁵ "Publicly available" means that information is either already accessible by the public (e.g., compliance/non-compliance reports, statistics, inspection or other reports published on a regulatory website, or compliance/non-compliance-related information published by the company), or that information could be accessed through legal public means (e.g., through information requests to regulators).

⁶ IRMA auditors or certification bodies may be required to execute nondisclosure-confidentiality agreements to view confidential information. These agreements shall not be a bar to IRMA auditors disclosing confidential information required by law.

NOTES

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

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

Where documents and records produced in satisfaction of legal or other company 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.

IRMA is developing a Policy on Association that, when finalized, 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 owner from continued IRMA participation. The IRMA Policy on Association will not be put into effect until after the IRMA Launch Phase. IRMA welcomes comments on its draft Policy on Association, which is available on the IRMA website: www.responsiblemining.net.

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
All IRMA Chapters	As per Chapter 1.1, if there are <u>host country laws</u> that pertain specifically to the topics addressed in any IRMA chapter, the <u>operating company</u> is required to abide by those laws. If IRMA requirements are more stringent than <u>host country law</u> , the company is required to also meet the IRMA requirements, as long as complying with them would not require the company to break the <u>host country law</u> .
1.2—Community and Stakeholder Engagement	<u>Stakeholders</u> have access to information on regulatory non-compliances upon request (1.1.5.3). Access to information needs to conform with criteria 1.2.4 in Chapter 1.2. Both Chapters 1.1 and 1.2 include provisions that allow <u>confidential business information</u> to be withheld from auditors (Chapter 1.1) and <u>stakeholders</u> (Chapter 1.2). In both cases, however, companies are expected to redact only the confidential information and release the remaining non-confidential information to auditors and <u>stakeholders</u> .
1.3—Human Rights Due Diligence	If an <u>operating company's</u> legal non-compliance is human rights related, see Chapter 1.3 for IRMA expectations related to effective <u>remedy</u> .
1.5—Revenue and Payments Transparency	In Chapter 1.5, criteria 1.5.2 on disclosure of project-level payments to governments requires <u>operating companies</u> to disclose publicly any fines or other similar penalties that have been issued in relation to the <u>mining project</u> . This information must be made available to <u>stakeholders</u> if requested, as per requirement 1.1.5.3 in this chapter.



Chapter 1.2 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.

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.⁷ Meaningful stakeholder engagement that is proactive, inclusive, accountable and transparent increases the potential for optimal outcomes for both communities and mining companies.⁸

TERMS USED IN THIS CHAPTER

Accessible ■ Affected Community ■ Artisanal and Small-Scale Mining (ASM) ■ Child Labor ■ Collaborate ■ Confidential Business Information ■ Consultation ■ Existing Mine ■ Forced Labor ■ Inclusive ■ Indigenous Peoples ■ Mining Project ■ Mining-Related Activities ■ New Mine ■ Operating Company ■ Rights Holder ■ Stakeholder ■ Vulnerable Group ■ Worker ■ Workers' Organizations ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

OBJECTIVES/INTENT OF THIS CHAPTER

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

SCOPE OF APPLICATION

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 1.2, with the exception of the requirement in 1.2.2.1 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.

⁷ 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

⁸ For example, Principle 10 of the Rio Declaration of 1992 states that, "Environmental issues are best handled with the participation of all concerned citizens." (Source: United Nations. 1992. Report of the United Nations Conference on Environment and Development. Annex I. "Rio Declaration on Environment and Development." <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>)

Community and Stakeholder Engagement Requirements

1.2.1. Planning and Designing Stakeholder Engagement Processes

1.2.1.1. The operating company shall undertake identification and analysis of the range of groups and individuals, including community members, rights holders and others (hereafter collectively referred to as “stakeholders”) who may be affected by or interested in the company’s mining-related activities.

1.2.1.2. A stakeholder engagement plan scaled to the mining project’s risks and impacts and stage of development shall be developed, implemented and updated as necessary.

1.2.1.3. The operating company shall consult with stakeholders to design engagement processes that are accessible, inclusive and culturally appropriate,⁹ and shall demonstrate that continuous efforts are taken to understand and remove barriers to engagement for affected stakeholders (especially women, marginalized and vulnerable groups).

1.2.1.4. 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.

1.2.2. Engagement Processes

1.2.2.1. Stakeholder engagement shall begin prior to or during mine planning, and be ongoing, throughout the life of the mine.

1.2.2.2. The operating company shall foster two-way dialogue and meaningful engagement with stakeholders by:¹⁰

- 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.

1.2.2.3. The operating company shall collaborate with stakeholders, including representatives from affected communities, to design and form stakeholder engagement mechanism(s) (e.g., a permanent advisory committee, or committees dedicated to specific issues), to provide stakeholder oversight of the mining project’s environmental and social performance, and/or input to the company on issues of concern to stakeholders.

⁹ See definitions of inclusive and accessible. “Culturally appropriate” engagement processes (e.g., communications, interactions and conveyance of information) would be those that are aligned with the cultural norms and communication styles of the affected communities and stakeholders. Companies would be expected to use methods, languages, terminology and formats that are respectful of cultural differences (e.g., in some cultures, it is disrespectful to look directly into a person’s eyes), and can be easily understood by the affected communities and stakeholders. Stakeholders can help to define for the company what is considered culturally appropriate.

¹⁰ “Meaningful engagement” includes a two-way exchange of information between the company and stakeholders, with stakeholders’ views being taken into account in decision-making; engagement is conducted in good faith (i.e., the company genuinely intends to understand how stakeholder interests are affected by their actions and address adverse impacts, and stakeholders honestly represent their interests, intentions and concerns); and companies are responsive to stakeholder input and follow through on commitments.” (Source: OECD. 2017. *OECD Due Diligence Guidance for Meaningful Stakeholder Engagement in the Extractive Sector*. p. 18. Available at: <http://www.oecd.org/publications/oecd-due-diligence-guidance-for-meaningful-stakeholder-engagement-in-the-extractive-sector-9789264252462-en.htm>)

1.2.2.4. Engagement processes shall be accessible and culturally appropriate,¹¹ and the operating company shall demonstrate that efforts have been made to include participation by women, men, and marginalized and vulnerable groups or their representatives.

1.2.2.5. 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.

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

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

1.2.3. Strengthening Capacity

1.2.3.1. 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.¹² Where capacity gaps are identified, the operating company shall offer appropriate assistance to facilitate effective stakeholder engagement.¹³

1.2.4. Communications and Access to Information

1.2.4.1. Any information that relates to the mine's performance against the IRMA Standard shall be made available to relevant stakeholders upon request, unless the operating company deems the request to be unreasonable¹⁴ or the information requested is legitimate confidential business information. If part of a document is confidential only that confidential part shall be redacted, allowing for the release of non-confidential information.

1.2.4.2. If original requests for information are deemed unreasonable, efforts shall be made by the operating company to provide stakeholders with overviews or summaries of the information requested.

1.2.4.3. Communications shall be carried out and information shall be provided to stakeholders in a timely manner, and shall be in formats and languages that are culturally appropriate and accessible to affected communities and stakeholders.¹⁵

¹¹ See footnote 9 for more information on culturally appropriate engagement processes.

¹² Capacity needs may be legal, technical, process-oriented (e.g., negotiation skills), logistical, or other.

¹³ Depending on the circumstances, appropriate assistance may include providing access to training, independent experts, capacity building, etc.

¹⁴ Companies are not expected to release information that is culturally inappropriate, compromises the safety of any individual, is confidential employee information, or legitimate confidential business information. Culturally inappropriate information may include that which is sensitive to particular groups or communities, and therefore should not be freely released to all requesting parties (e.g., locations of indigenous peoples' sacred sites). Stakeholders can help to define what is considered culturally inappropriate.

¹⁵ "in a timely manner" will likely vary based on the operating company's resources and procedures (e.g., some companies may have due diligence procedures in place for releasing data publicly) and also the size/nature of the request. As a general rule of thumb, however, requests should be fulfilled within 1 to 3 months, although for particularly large requests or requests made to companies with limited capacity to fulfill information requests, some flexibility may be needed. Also, some companies have stringent quality assurance procedures that must be followed

1.2.4.4. If requests for information are not met in full, or in a timely manner, the operating company shall provide stakeholders with a written justification for why it has withheld information.

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.3—Legal Compliance	Stakeholders have access to information on regulatory non-compliances upon request (1.1.5.3). Access to information needs to conform with criteria 1.2.4 in Chapter 1.2.
1.3—Human Rights Due Diligence	Stakeholders are consulted in the human rights risks and impact assessment process, including providing input and reviewing drafts. Affected rights holders are engaged in a collaborative process with companies in the development of mitigation plans when their human rights have been infringed upon; and can provide input on the company's monitoring of its human rights due diligence. Engagement needs to conform with the requirements in Chapter 1.2.
1.4—Complaints and Grievance Mechanism and Access to Remedy	Stakeholders are engaged in the development of an operational-level grievance mechanism, which will provide stakeholders and rights holders with a culturally appropriate means of filing complaints and suggestions, and having their concerns addressed. This engagement needs to conform with the requirements in Chapter 1.2.
2.1—Environmental and Social Impact Assessment and Management	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. Engagement needs to conform with requirements in Chapter 1.2.
2.2—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 Free, Prior and Informed Consent (FPIC) process, and if consent is given, throughout the life of the mine. This engagement and access to relevant information needs to conform with the requirements in Chapter 1.2.
2.3—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. This engagement needs to conform with the requirements in Chapter 1.2.
2.4—Resettlement	Individuals and communities potentially affected by resettlement are consulted during the assessment of risks and impacts; the development of Resettlement Action Plan and/or Livelihood Restoration Plan and resettlement options; and resettlement implementation, including the monitoring of that implementation. This engagement and access to relevant information needs to conform with the requirements in Chapter 1.2.
2.5—Emergency Preparedness/Response	Stakeholders are involved in the development of the Emergency Response Plan and participate in emergency response planning exercises. This engagement needs to conform with the requirements in Chapter 1.2.
2.6—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. This engagement and access to relevant information needs to conform with the requirements in Chapter 1.2.

in order to share data publicly, and so may require more time to prepare materials for release. (See also 1.2.4.4 for requests that are not responded to in what seems like a "timely manner.") See footnote 9 for more on culturally appropriate communications.

CROSS REFERENCES TO OTHER CHAPTERS	
3.1—Fair Labor and Terms of Work	<u>Workers</u> and <u>workers’ representatives</u> are <u>stakeholders</u> of the mine. Engagement with <u>workers</u> and/or <u>workers’ representatives</u> occurs during the negotiation of collective bargaining agreements, <u>retrenchment</u> plans and in the calculation of <u>living wage</u> . This engagement and access to relevant information needs to conform with the requirements in Chapter 1.2.
3.2—Occupational Health and Safety	Engagement with <u>workers/workers’ representatives</u> occurs during health and safety risk assessment; design of workplace monitoring and worker <u>health surveillance</u> ; development of strategies to prevent or <u>mitigate</u> risks to <u>workers</u> ; design of programs to support <u>worker</u> health and safety; and in inspections, monitoring and investigation of safety and health matters. This engagement and access to information needs to conform with Chapter 1.2 requirements.
3.3—Community Health and Safety	Companies <u>collaborate</u> with relevant community members and other <u>stakeholders</u> , including <u>workers</u> who live in <u>affected communities</u> , in the scoping of community health and safety risks and impacts; the development of prevention or <u>mitigation</u> 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. This engagement and access to relevant information needs to conform with the requirements in Chapter 1.2.
3.4—Mining and Conflict Affected Areas	<u>Stakeholders</u> are <u>consulted</u> during the conflict-affected areas screening process and conflict risk assessment; and affected <u>stakeholders</u> <u>collaborate</u> in the development of <u>mitigation</u> strategies to address risks that are relevant to them. This engagement and access to relevant information needs to conform with the requirements in Chapter 1.2.
3.5—Security Arrangements	<u>Stakeholders</u> are <u>consulted</u> during the security risk assessment; and if there are risks specific to conflicts between communities/ <u>workers</u> and mine security providers, community and <u>worker</u> <u>stakeholders</u> <u>collaborate</u> with the company to develop strategies to prevent or mitigate those risks. <u>Stakeholders</u> may also receive training on security and human rights issues. This engagement and access to relevant information needs to conform with the requirements in Chapter 1.2.
3.6—Artisanal and Small-Scale Mining	If <u>artisanal and small-scale mining (ASM)</u> is occurring in the vicinity of the industrial scale mine that is participating in IRMA, the <u>ASM</u> operating entities and miners would be considered <u>stakeholders</u> , and engagement with them would need to conform with Chapter 1.2.
3.7—Cultural Heritage	<u>Stakeholders</u> are <u>consulted</u> during cultural heritage screening, assessment and development of mitigation measures. If <u>indigenous peoples’</u> cultural heritage is affected, they are engaged in and <u>FPIC</u> process before any critical cultural heritage is disturbed or used for commercial purposes. This engagement and access to relevant information needs to conform with the requirements in Chapter 1.2.
4.1—Waste and Materials Management	<u>Stakeholders</u> are required to be <u>consulted</u> during the screening and assessment of <u>mine waste</u> <u>facility</u> siting and management alternatives; and in preparation of emergency preparedness plans on issues related to catastrophic failure of waste facilities. <u>Stakeholders</u> are also to be provided with certain information related to waste management upon request. Engagement and communications with stakeholders must conform with the requirements in Chapter 1.2.
4.2—Water Management	<u>Stakeholders</u> are engaged in the identification of potential and future uses of water (4.2.1), scoping of impacts of the mining project water (4.2.2.2), evaluation of <u>mitigation</u> measures (4.2.3.1), if relevant, risk assessment related to <u>mixing zones</u> (4.2.3.2), decisions on replacement water sources (4.2.3.4), participation in water monitoring (4.2.4.3), review and revision of <u>adaptive management</u> plans (4.2.4.6), and sharing of information (4.2.5). This engagement and access to information needs to conform with requirements in Chapter 1.2.
4.4—Noise and Vibration	Affected <u>stakeholders</u> are <u>consulted</u> in the development of noise <u>mitigation</u> plans. This engagement and access to information needs to conform with requirements in Chapter 1.2.
4.6—Biodiversity, Ecosystem Services and Protected Areas	<u>Stakeholders</u> are <u>consulted</u> in the assessment of potential effects of mining on <u>biodiversity</u> , <u>ecosystem services</u> and <u>protected areas</u> . This engagement and access to relevant information needs to conform with the requirements in Chapter 1.2.



Chapter 1.3

Human Rights Due Diligence

BACKGROUND

In 1948, the United Nations General Assembly adopted the *Universal Declaration of Human Rights*, which, for the first time in history, enumerated the fundamental civil, political, economic, social and cultural rights that all human beings should enjoy. Since that time, a series of core international human rights conventions and treaties, along with other instruments, have established the international legal framework for individual and collective human rights.¹⁶ 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.¹⁷

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."¹⁸ Other frameworks have similarly emerged that outline specific due diligence under particular circumstances. For example, the *OECD Due Diligence Guidance for Mineral Supply Chains in Conflict-Affected and High-Risk Areas*¹⁹ provides specific guidance for mining companies on what due diligence is required in such areas to address risks to human rights and other risks when operating in those areas (see IRMA Chapter 3.4).

TERMS USED IN THIS CHAPTER

Actual Human Rights Impact ■ Adverse Human Rights Impact ■ Business Relationships ■ Competent Professionals ■ Confidential Business Information ■ Consultation ■ Grievance ■ Grievance Mechanism ■ Human Rights Defenders ■ Human Rights Risks ■ Indigenous Peoples ■ Inform ■ Leverage ■ Mining Project ■ Mining-Related Activities ■ Mitigation ■ Operating Company ■ Potential Human Rights Impact ■ Remediation/Remedy ■ Rights-Compatible ■ Rights Holder ■ Salient Human Rights ■ Serious Human Rights Abuses ■ Stakeholders ■ Vulnerable Group ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

OBJECTIVES/INTENT OF THIS CHAPTER

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

SCOPE OF APPLICATION

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

¹⁶ For more information, see the United Nations website: www.un.org/en/sections/what-we-do/protect-human-rights/index.html and Office of the High Commissioner for Human Rights website: www.ohchr.org/EN/ProfessionalInterest/Pages/UniversalHumanRightsInstruments.aspx

¹⁷ 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

¹⁸ 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

¹⁹ OECD. 2016. OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas. (3rd Ed.) <https://mneguidelines.oecd.org/mining.htm>

Human Rights Due Diligence Requirements

1.3.1. Policy Commitment

1.3.1.1. The operating company shall adopt a policy commitment that includes an acknowledgement of its responsibility to respect all internationally recognized human rights.²⁰

1.3.1.2. The policy shall:

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

1.3.2. Assessment of Human Rights Risks and Impacts

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

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

- a. Follow a credible process/methodology;²¹
- b. Be carried out by competent professionals; and
- c. Draw on internal and/or external human rights expertise, and consultations with potentially affected rights holders, including men, women, children (or their representatives) and other vulnerable groups, and other relevant stakeholders.

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

- a. The assessment methodology;
- b. The current human rights context in the country and mining project area;
- c. Relevant human rights laws and norms;
- d. A comprehensive list of the human rights risks related to mining project activities and business relationships, and an evaluation of the potential severity of impacts for each identified human rights risk;

²⁰ IRMA recognizes that for some operating companies, a policy commitment may be made at the corporate level. In these cases, operating companies do not need to have developed their own policies, but they will be expected to demonstrate that they are operating in compliance with their corporate owner's policy (e.g., site-level management understand the policy, and have integrated it into the mine's procedures and dealings with business partners, contractors, etc.).

²¹ A "credible" assessment process/methodology would typically include: scoping or identification of the salient human rights, stakeholder consultations; data collection; assessment of the severity of human rights risks and impacts; development of prevention/mitigation measures; and monitoring and evaluation of the effectiveness of implemented measures. This process should be ongoing/updated, as mentioned in 1.3.2.1. For more information see: <https://www.humanrights.dk/projects/human-rights-impact-assessment>

- e. The identification of rights holders, an analysis of the potential differential risks to and impacts on rights holder groups (e.g., women, men, children, the elderly, persons with disabilities, indigenous peoples, ethnic or religious minority groups, and other disadvantaged or vulnerable groups), and a disaggregation of results by rights holder group;
- f. Recommendations for preventing, mitigating and remediating identified risks and impacts, giving priority to the most salient human rights issues.

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

1.3.2.5. The operating company shall demonstrate that steps have been taken to effectively integrate assessment findings at the mine site operational level.

1.3.3. Prevention, Mitigation and Remediation of Human Rights Impacts

1.3.3.1. Mining project stakeholders shall have access to and be informed about a rights-compatible grievance mechanism and other mechanisms through which they can raise concerns and seek recourse for grievances related to human rights.²²

1.3.3.2. Responding to human rights risks related to the mining project:

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

1.3.3.3. Responding to actual human rights impacts related to the mining project:

- a. If the operating company determines that it has caused an actual human rights impact, the company shall:
 - i. Cease or change the activity responsible for the impact; and
 - ii. In a timely manner, develop mitigation strategies and remediation in collaboration with affected rights holders. If mutually acceptable remedies cannot be found through dialogue, the operating company shall attempt to reach agreement through an independent, third-party mediator or another means mutually acceptable to affected rights holders;
- b. If the operating company determines that it has contributed to an actual human rights impact, the company shall cease or change any activities that are contributing to the impact, mitigate and remediate

²² The operational-level grievance mechanism developed as per IRMA Chapter 1.4 may be used as the mechanism to receive all types of complaints, including those related to human rights, or a separate mechanism may be created to handle only human rights complaints and grievances. If a separate mechanism is developed, it shall be done in a manner that is consistent with Chapter 1.4. Also, there may be other mechanisms that are not operated by the company through which stakeholders or rights holders can seek recourse (e.g., administrative, judicial and non-judicial remedies), and these options should be mentioned to stakeholders who lodge human rights related grievances with the company.

impacts to the extent of its contribution, use its leverage to influence other contributing parties to cease or change their activities, and mitigate and remediate the remaining impact;

- c. If the operating company determines that it is linked to an actual human rights impact through a business relationship the company shall use its leverage to prevent or mitigate the impact from continuing or recurring; and
- d. The operating company shall cooperate with other legitimate processes such as judicial or State-based investigations or proceedings related to human rights impacts that the operating company caused, contributed to, or was directly linked to through its business relationships.

1.3.4. Monitoring

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

1.3.4.2. External monitoring of an operating company's human rights due diligence shall occur if the company's due diligence efforts repeatedly fail to prevent, mitigate or remediate actual human rights impacts; or if its due diligence activities failed to prevent the company from unknowingly or unintentionally causing, contributing to or being linked to any serious human rights abuse.²³ Additionally:

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

1.3.5. Reporting

1.3.5.1. The operating company or its corporate owner shall periodically report publicly on the effectiveness of its human rights due diligence activities. At minimum, reporting shall include the methods used to determine the salient human rights issues, a list of salient risks and impacts that were identified, and actions taken by the operating company to prevent, mitigate and/or remediate the human rights risks and impacts.

1.3.5.2. If relevant, the operating company shall publish a report on external monitoring findings and recommendations to improve the operating company's human rights due diligence, and the operating company shall report to relevant stakeholders and rights holders on its plans to improve its due diligence activities as a result of external monitoring recommendations.²⁴

1.3.5.3. Public reporting referred to in 1.3.5.1 and 1.3.5.2 may exclude information that is politically sensitive, is confidential business information, or that may compromise safety or place any individual at risk of further victimization.

²³ 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 at the end of Chapter 1.3 for more on serious human rights abuses).

²⁴ This requirement is only relevant if external monitoring was required as per 1.3.4.2.

NOTES

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

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 an operating company or its corporate owner 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 IRMA Policy on Association will not be put into effect until after the IRMA Launch Phase. IRMA welcomes comments on its draft Policy on Association, which is available on the IRMA website: www.responsiblemining.net.

In Chapter 1.3, criteria 1.3.4, the decision to initiate external monitoring may be made by an operating company that recognizes (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) that it has repeatedly failed to prevent, mitigate or remediate human rights impacts, or that discovers 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.

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.2—Community and Stakeholder Engagement	Engagement with <u>stakeholders</u> and <u>rights holders</u> in Chapter 1.3 must conform with the requirements of Chapter 1.2. In particular, criterion 1.2.3 is important to ensure that affected <u>rights holders</u> have the capacity to fully understand their rights and participate effectively in the assessment and development of prevention/ <u>mitigation</u> plans, monitoring, and <u>remedies</u> for impacts on their human rights. And 1.2.3 ensures that communications and information are in culturally appropriate formats and languages that are <u>accessible to affected communities and stakeholders</u> , and are provided in a timely manner.
1.4— Complaints and Grievance Mechanism and Access to Remedy	As mentioned in 1.3.3.1, the <u>operating company</u> shall ensure that <u>stakeholders</u> have access to a mechanism for raising human rights concerns. Any operational-level <u>grievance mechanism</u> developed as per Chapter 1.4 is required to be <u>rights-compatible</u> , and should be appropriate for raising human-rights-related complaints. It may be deemed necessary, however, to create a separate mechanism for determining appropriate <u>remedies</u> for infringements of human rights. If a separate mechanism is created, it is expected to adhere to the requirements of Chapter 1.4.
2.1—Environmental and Social Impact Assessment and Management	As long as the assessment of <u>human rights risks</u> and impacts meets the requirements in Criterion 1.3.4, it may be conducted as stand-alone assessment or integrated into a larger impact assessment process (e.g., the Environmental and Social Impact Assessment required in Chapter 2.1).

CROSS REFERENCES TO OTHER CHAPTERS	
2.2—Free, Prior and Informed Consent	Indigenous peoples are rights holders, and mining developments may pose risks to their individual and collective human rights. The requirements in Chapter 2.2 are meant to facilitate a rights-compatible relationship between indigenous peoples and mining companies. See requirement 2.2.1.1 on the company's policy commitment to respect indigenous peoples' rights; and requirements 2.2.3.2.a, b and c, related to engagement with indigenous peoples in the assessment of potential impacts on indigenous peoples' rights from mining-related activities.
2.4—Resettlement	Even where mining project proponents have obtained legal rights over land, displaced households and affected communities have human rights under international law that must be fully respected and fulfilled by project proponents and contractors. Human rights risks related to resettlement may be assessed as per requirement 1.3.2.1 in Chapter 1.3, or assessed as part of the Resettlement Risk and Impact Assessment Process in Chapter 2.4.
3.1—Fair Labor and Terms of Work	Even though there is a worker grievance mechanism required as per Chapter 3.1, the grievance mechanism in Chapter 1.3 may also be used by workers seeking remedy specifically in relation to perceived infringements of their human rights (e.g., core labor rights are considered human rights). Incidents of child labor or forced labor associated with a mining project are addressed in Chapter 3.1, but should also be assessed as per requirement 1.3.2.1 in Chapter 1.3. Similarly, the determination of whether or not there is a high risk of child labor in the supply chain should occur as part of the operating company's human rights due diligence in Chapter 1.3. If child labor in the supply chain is identified as being a salient risk during the human rights impact assessment, the company will be required to carry out the remaining due diligence as per Chapter 1.3, and also the requirements in 3.1.7.6. Similarly, if forced labor in the supply chain is identified as a risk, the company should carry out due diligence as per Chapter 1.3, and also the requirements in 3.1.8.2.
3.2—Occupational Health and Safety	Workers have the right to health, and so during the human rights assessment companies should include an assessment of the potential that workers and management-level employees may be exposed to unacceptable health impacts. The occupational health and safety risk assessment in Chapter 3.2 will likely feed into this assessment.
3.4—Mining in Conflict-Affected or High-Risk Areas	There is often a high risk for infringement of human rights at mines operating in or sourcing minerals from 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 risk and impact assessment. Strategies developed to mitigate human rights risks and impacts identified in the conflict risk assessment must conform with relevant human rights due diligence requirements in Criteria 1.3.3.
3.5—Security Arrangements	Human rights risks related to mine security may be assessed as per requirement 3.5.2.1 in Chapter 3.5, and/or assessed during the human rights risk and impact assessment in Chapter 1.3. If assessed as per Chapter 3.5, the information from the security risk assessment should feed into the human rights risk and impact assessment. Strategies developed to mitigate human rights risks and impacts related to security arrangements must conform with the relevant human rights due diligence requirements in Criteria 1.3.3.



Chapter 1.4

Complaints and Grievance Mechanism and Access to Remedy

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 in place site-level processes (often referred to as “operational-level grievance mechanisms”) for systematically receiving, tracking, resolving and communicating with local communities and stakeholders, including workers, about their complaints or grievances. Grievance mechanisms should not be considered a substitute for community and stakeholder engagement processes that allow for airing of concerns. The two are complementary and should be mutually reinforcing.²⁵

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

Operational-level complaint and grievance processes are just one option for individuals to seek justice or remediation for damages that they believe have occurred as a result of company activities. For example, traditional authorities may have conflict or dispute resolution systems in place; countries may have legal frameworks, such as court systems, to provide recourse to aggrieved parties; workers may have access to corporate-level whistle-blower procedures; and remedies may be sought through national or international human rights bodies, labor tribunals or other non-judicial mechanisms. Operational-level grievance mechanisms should neither be used to undermine the role of legitimate trade unions in addressing labor-related disputes, nor preclude any stakeholder from accessing judicial or other non-judicial grievance mechanisms.²⁶

TERMS USED IN THIS CHAPTER

Accessible ■ Affected Community ■ Competent Authority ■ Contractor ■ Consultation ■ Equitable ■ Grievance ■ Grievance Mechanism ■ Inform ■ Indigenous Peoples ■ Human Rights Defenders ■ Legitimate ■ Mining Project ■ Mining-Related Activities ■ Operating Company ■ Predictable ■ Remediation/Remedy ■ Rights Holder ■ Rights-Compatible ■ Stakeholder ■ Source of Continuous Learning ■ Transparent ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

OBJECTIVES/INTENT OF THIS CHAPTER

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

²⁵ 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

²⁶ Ruggie, J. 2011. Guiding Principles on Business and Human Rights. A/HRC/17/31. Commentary for Principle 29. Available at: www.ohchr.org/Documents/Issues/Business/A-HRC-17-31_AEV.pdf

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant for all mines, as all have workers and most have external stakeholders who must be provided with an effective means of raising complaints and grievances with the company, and if the grievances are not adequately addressed through the operational-level grievance mechanism, who have the right to access remedy through other channels.

Complaints, Grievances and Access to Remedy Requirements

1.4.1. Access to Operational-Level Complaints and Grievance Mechanism

1.4.1.1. 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 mechanism that allows them to raise and seek resolution or remedy for the range of complaints and grievances that may occur in relation to the company and its mining-related activities.²⁷

1.4.2. Development of Complaints and Grievance Procedures

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

- a. The effectiveness criteria outlined in Principle 31 of the United Nations *Guiding Principles on Business and Human Rights*,²⁸ 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;
- b. How complaints and grievances will be filed, acknowledged, investigated, and resolved, including general timeframes for each phase;
- c. How confidentiality of a complainant’s identity will be respected, if requested;
- d. The ability to file anonymous complaints, if deemed necessary by stakeholders;
- e. The provision of assistance for those who may face barriers to using the operational-level grievance mechanism, including women, children, and marginalized or vulnerable groups;
- f. Options for recourse if an initial process does not result in satisfactory resolution or if the mechanism is inadequate or inappropriate for handling serious human rights grievances; and
- g. How complaints and grievances and their resolutions will be tracked and recorded.

²⁷ Grievance mechanisms are explicitly stated as requirements with regard to workers (Chapter 3.1), human rights (Chapter 1.3), mine security (Chapter 3.5), stakeholder engagement (Chapter 1.2) and resettlement (Chapter 2.4). 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 project.

It is possible that one grievance mechanism may be suitable to address all types of grievances raised in relation to the mining project, including workers, although typically labor grievances are dealt with through a separate mechanism established through collective bargaining agreements or human resources policies. The development of workers’ grievance mechanism is addressed in Chapter 3.1.

It is also possible that more than one mechanism or approach to addressing complaints and grievances may be deemed necessary to meet the needs of affected communities and stakeholders. If a company decides to create multiple grievance mechanisms, all of them shall meet the requirements of this chapter.

²⁸ The *Guiding Principles on Business and Human Rights* have identified that access to remedy for grievances is fundamental to ensuring respect and protection of human rights. (Ruggie, J. 2011. Guiding Principles on Business and Human Rights. A/HRC/17/31. Available at: www.ohchr.org/Documents/Issues/Business/A-HRC-17-31_AEV.pdf)

1.4.2.2. The operating company shall ensure that all complaints and grievance procedures are documented and made publicly available.

1.4.3. Access to Other Remedy Mechanisms

1.4.3.1. No remedy provided by an operational-level grievance mechanism shall require aggrieved parties to waive their right to seek recourse from the company for the same complaint through other available mechanisms, including administrative, non-judicial or judicial remedies.

1.4.4. Monitoring and Evaluation

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

1.4.4.2. The operating company shall monitor and evaluate the performance of the operational-level complaints and grievance mechanism over time to determine:

- a. If changes need to be made to improve its effectiveness as per 1.4.2.1.a;
- b. If changes in company activities can be implemented to prevent or mitigate similar grievances in the future; and
- c. If outcomes and remedies provided through the mechanism accord with internationally recognized human rights.

1.4.4.3. Stakeholders shall be provided with clearly communicated opportunities to submit feedback on the performance of the complaints and grievance mechanism.

1.4.5. Communications

1.4.5.1. The operating company shall take reasonable steps to inform all stakeholders of the existence of the operational-level complaints and grievance mechanism, its scope, and its procedures.

1.4.5.2. The operating company shall neither state nor imply that participation in an operational level grievance mechanism precludes the stakeholder from seeking redress through administrative, judicial or other non-judicial remedies.

1.4.5.3. The operating company shall inform relevant personnel who interact with stakeholders of the proper procedures for handling stakeholder complaints and grievances, and ensure that personnel directly involved in the operational-level mechanism receive instruction on the respectful handling of all complaints and grievances, including those that may appear frivolous.

1.4.6. Reporting

1.4.6.1. 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.

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.²⁹

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

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.2—Community and Stakeholder Engagement	Engagement with <u>stakeholders</u> in the design and monitoring of the <u>grievance mechanism</u>, and in communications related to the grievance mechanism, shall conform to the requirements in Chapter 1.2 Community and Stakeholder Engagement. In particular, during the design of the mechanism (requirement 1.4.2.1) attention should be paid to conforming with Chapter 1.2, Criterion 1.2.3. Strengthening Capacity (i.e., ensuring those participating have the capacity to do so in a meaningful way); and during any communications with <u>stakeholders</u>, including reporting, the company shall adhere to the communications requirements in 1.2.4.
Multiple chapters that mention grievance mechanisms	<u>Grievance mechanisms</u> are explicitly stated as requirements with regard to <u>workers</u> (Chapter 3.1), human rights (Chapter 1.3), mine security (Chapter 3.5), <u>stakeholder</u> engagement (Chapter 1.2) and <u>resettlement</u> (Chapter 2.4). However, even when not explicitly stated in a chapter, it is expected that access to the operational-level <u>grievance mechanism</u> and other <u>remedies</u> will be provided throughout the project's life to <u>grievances</u> related to any issues of <u>stakeholder</u> concern with the <u>mining project</u>. It is possible that one <u>grievance mechanism</u> may be suitable to address all types of <u>grievances</u> raised in relation to the <u>mining project</u>, including <u>workers</u>, although typically labor <u>grievances</u> are dealt with through a separate mechanism established through collective bargaining agreements or human resources policies. Or more than one mechanism or approach to addressing complaints and <u>grievances</u> may be deemed necessary to meet the needs of <u>affected communities</u> and <u>stakeholders</u>. If a company decides to create multiple <u>grievance mechanisms</u>, all of them shall meet the requirements in Chapter 1.4.

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



Chapter 1.5

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.

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

TERMS USED IN THIS CHAPTER

Beneficial Owner ■ Confidential Business Information ■ Contractors ■ Corporate Owner(s) ■ Grievance ■ Grievance Mechanism ■ Host Country Law ■ Indigenous Peoples ■ In Kind Payments ■ International Accounting Standards ■ Material Payments ■ Mining Project ■ Operating Company ■ Stakeholder ■ Worker ■ Workers' Representatives ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

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

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 1.5.3.1. In relation to this requirement the terms for mineral exploration, development and production for the project must be made freely and publicly accessible for the whole period of project development up to the time of application and thereafter.

Revenue and Payments Transparency Requirements

1.5.1. Disclosure of Country-Level Payments

1.5.1.1. The operating company shall comply with 1.5.1.2 and 1.5.1.3, and/or demonstrate how it complies with equivalent reporting and disclosure requirements of the European Union Accounting Directive (2013/34/EU) and the European Union Transparency Directive (2013/50/EU), or an equivalent mandatory transparency regime.³⁰

1.5.1.2. On a yearly basis, the operating company shall publish a report that discloses all material payments made by itself and its corporate owner to the government of the country in which the mining project is located. The report shall be made public within 12 months after the end of each financial year.³¹

1.5.1.3. 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;
- 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 and material benefits to government, including in kind payments.³²

1.5.1.4. At minimum, this information shall be broken down by recipient government body (where applicable), by project (where applicable), and by payment type.

1.5.2. Disclosure of Project-Level Payments

1.5.2.1. 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,³³ and/or shall comply with the requirements listed under 1.5.3.2 below.

1.5.2.2. 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;

³⁰ The European Union Accounting Directive 2013/34/EU is available at: <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32013L0034&qid=1524171176636> and the European Union Transparency Directive 2013/50/EU is available at: <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1415872329209&uri=CELEX:32013L0050>.

Equivalent transparency regimes include, for example: Government of Canada. 2015. Extractive Sector Transparency Measures Act. <http://laws-lois.justice.gc.ca/eng/acts/E-22.7/page-1.html>; Ministry of Finance. 2013. Regulations on country-by-country reporting. Available at: <http://www.publishwhatyoupay.no/en/node/16414>; and UK Government. 2014. The Reports on Payments to Governments Regulations 2014. http://www.legislation.gov.uk/uksi/2014/3209/pdfs/uksi_20143209_en.pdf

³¹ The information may be made publicly available on the company and/or appropriate government website(s).

³² An example of "other significant payments" is transportation revenue. According to EITI Standard, Section 4.4, transportation revenue may include revenue from taxes, tariffs or other relevant payments related to transport of mined commodities). Social expenditures made by companies may be an example of material payments and/or benefits to governments (see EITI requirement 6.1).

³³ See footnote 30.

- c. Material payments and other material benefits to government as listed in paragraph 1.5.1.3, disaggregated according to the receiving government entity (e.g. national, regional, local entity; name of government department);
- d. Social expenditures, including the names and functions of beneficiaries;³⁴
- e. Taxes, tariffs or other relevant payments related to transportation of minerals;
- f. Payments to politicians' campaigns, political parties or related organizations; and
- g. Fines or other similar penalties that have been issued in relation to the project.

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

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

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

1.5.3.2. If the mining project is located in a country without a mandated transparency regime and the EITI is active in that country, 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; and
- b. 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.

1.5.4. Operating Company Transparency

1.5.4.1. 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,³⁵ 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, licences or contracts freely and publicly accessible.
- b. Where these terms are governed by law, free, public access to the relevant statutory documentation is deemed sufficient to meet the IRMA requirement.

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

³⁴ Social expenditures include in-kind expenditures. Reporting of social expenditures does not include expenditures agreed upon with affected indigenous peoples' governing bodies, e.g., "impact and benefit" or similar agreements reached through the process of Free, Prior and Informed Consent (see Chapter 2.2). Those expenditures may be reported if agreed by the indigenous peoples.

³⁵ 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.

1.5.5. Anti-Corruption Measures

1.5.5.1. The operating company shall develop, document and implement policies and procedures that prohibit bribery and other forms of corruption by employees and contractors.

1.5.5.2. Procedures shall include:

- a. A requirement to internally report and record any undue pecuniary or other advantage given to, or received from, public officials or the employees of business partners, directly or through third parties; and
- b. Disciplinary actions to be taken if cases of bribery or corruption are discovered.

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

NOTES

The Extractive Industries Transparency Initiative (EITI) maintains the EITI Standard. The EITI scheme applies specifically to countries. Countries implement the EITI Standard to ensure full disclosure of taxes and other payments made by 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 the revenues that 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 operating companies reporting on the mine site that is up for certification. Requirement 1.5.1.2 of the IRMA chapter aims to complement EITI's scheme by requiring operating companies to report corporate-level information about payments made by the operating company or its corporate owner 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 operating 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 at the mining project level, and the chapter includes requirements related to project-level reporting of payments, accounts, mine development agreements, and anti-corruption measures.

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.1—Legal Compliance	As per Chapter 1.1, if a <u>host country law</u> pertains to mandatory transparency of payments or other information, the company is required to abide by that law. If the mandatory transparency scheme is essentially equivalent to IRMA's requirements (e.g., EU, Norway, Canada) then the company will only need to meet <u>host country law</u>. If IRMA requirements are more stringent than a host country's mandatory transparency regime (e.g., the host country does not require reporting on a project level), the company is required to also meet the IRMA requirements, as long as such compliance would not require the <u>operating company</u> to violate <u>host country law</u>. If <u>host country law</u> prohibits certain actions, such as publishing contracts (1.5.3.1), companies are not expected to break the law.
1.4—Complaints and Grievance Mechanism and Access to Remedy	Chapter 1.4 has a provision (1.4.2.1) that <u>stakeholders</u> be involved in designing a <u>grievance mechanism</u>. If it is important to <u>stakeholders</u>, the mechanism could allow for the anonymous filing of complaints, for example, in relation to financial matters, bribery, corruption, etc. Even if it does not, the company may receive complaints related to financial matter, corruption or bribery through this mechanism.
2.2—Free, Prior and Informed Consent	Reporting of social expenditures in 1.5.2.2.d does not include expenditures agreed upon with affected <u>indigenous peoples'</u> governing bodies (e.g., "impact and benefit" or similar agreements reached through the process of <u>Free, Prior and Informed Consent</u> - See Chapter 2.2). Those expenditures may be reported if agreed by the indigenous peoples.
3.1—Fair Labor and Terms of Work	Chapter 3.1 has a provision for a <u>grievance mechanism</u> (3.1.5), which enables <u>workers</u> to file complaints anonymously, for example, in relation to financial matters, bribery, corruption, etc. without facing retribution from the company.
3.4—Mining in Conflict-Affected or High-Risk Areas	Information gathered to fulfill requirements in Chapter 3.4 (e.g., 3.4.2.2.b, 3.4.3.1) may feed into the reporting requirements in Chapter 1.5. (e.g., requirements 1.5.1.3. and 1.5.3.2.) regarding payments to governments.
3.5—Security Arrangements	The security risk assessment in Chapter 3.5 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.



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Chapter 2.1 Environmental and Social Impact Assessment and Management



[flag] Issue in brief: While there is agreement among IRMA sectors that environmental and social impact assessment (ESIA) and management systems are essential for the responsible management of large-scale mining projects, there is not agreement on the particular methodology that must be followed. Most countries have their own ESIA processes, and there are also globally recognized environmental and social management standards such as the International Finance Corporation's Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts, and the ISO 14001 Standard for Environmental Management Systems, which some companies, especially larger corporations, follow.

The current version of the IRMA chapter has drawn upon national approaches and international standards to come up with criteria that reflect commonly applied best practices.

A suggestion has been made that IRMA consider adopting the IFC Performance Standard that covers this topic area, with the argument that this is a well-known and stringent standard. However, not all companies are familiar with IFC requirements, and it is unclear if all of the requirements in the IFC Performance Standard need to be included in the IRMA chapter, or if there may be certain practices that are not required by IFC that IRMA stakeholders would like to see included by IRMA.

During the Launch Phase, IRMA will encourage companies to self-assess and be scored against the current IRMA chapter requirements. We will also explore whether there are companies that would prefer to score against the IFC Performance Standard, and if so, we will carry out an alignment exercise in 2018 to determine if there are significant differences between the IRMA chapter and the requirements in the IFC Performance Standard, and based on our learnings revise this chapter if necessary prior to offering certification in late 2019.

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 assessments prior to exploration. ESIA enable regulators and other stakeholders to participate in the identification and review of predicted impacts and mitigation measures for a mining proposal before it is finalized or approved.

When developing mitigation strategies the use of a mitigation hierarchy to avoid, or where avoidance is not possible, minimize or compensate for impacts to workers, communities and the environment is widely considered a best practice approach to managing environmental and social risks and impacts.³⁶

³⁶ International Finance Corporation (IFC). 2012. *IFC Performance Standards on Environmental and Social Sustainability*. Guidance Note 1: Assessment and Management of Environmental and Social Risks and Impacts. GN62, pp. 20, 21.
http://www.ifc.org/wps/wcm/connect/e280ef804a0256609709ffd1a5d13d27/GN_English_2012_Full-Documen.pdf?MOD=AJPERES

Impact prevention and mitigation strategies developed during the ESIA process are typically integrated into a comprehensive, documented environmental and social management plan, and an environmental and social management system (ESMS) is developed and implemented to ensure that mine site personnel remain responsive to issues as they arise, and that they continue to effectively monitor and mitigate risks and reduce impacts on the environment, workers and neighboring communities throughout the mine life cycle.

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

OBJECTIVES/INTENT OF THIS CHAPTER

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

TERMS USED IN THIS CHAPTER

Accessible ■ Affected Community ■ Artisanal and Small-Scale Mining (ASM) ■ Background Water Quality ■ Baseline ■ Biodiversity ■ Competent Professionals ■ Consultation ■ Corporate Owner ■ Cumulative Impacts ■ Direct/Indirect Impacts ■ Ecosystem Services ■ Existing Mine ■ Human Rights Risks ■ Indigenous Peoples ■ Inform ■ Mining Project ■ Mitigation ■ Mitigation Hierarchy ■ New Mine ■ Operating Company ■ Post-Closure ■ Protected Areas ■ Resettlement ■ Rights Holder ■ Stakeholder ■ Threatened Species ■ Worker ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

SCOPE OF APPLICATION

NEW VERSUS EXISTING MINES: ESIA's 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, existing 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 2.1.5 requires the collection of baseline data. At existing mines, if baseline data were not collected at the appropriate time, the applicant should still attempt to collate data to provide the best possible picture of baseline conditions in order to better understand the magnitude of impacts caused by the mining project. In some IRMA chapters, existing mines are required to estimate or approximate baseline conditions. For example, in Chapter 4.2 companies are expected to establish background water quality conditions even when project baseline water quality data were not collected (See Chapter 4.2, requirement 4.2.1.1).

Environmental and Social Impact Assessment and Management Requirements

2.1.1. General Requirements

2.1.1.1. 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 with the project.

2.1.1.2. To enable a reasonable estimation of potential impacts related to the mining project, the ESIA process shall commence only after the project design has been sufficiently developed. Should the proposal be significantly revised a new assessment process shall be undertaken.

2.1.1.3. The ESIA shall be carried out in accordance with publicly available, documented procedures.

2.1.2. Provision of Preliminary Information

2.1.2.1. Prior to the implementation of the ESIA process the operating company shall ensure that there has been wide, public announcement of the project proposal and the associated ESIA process, and that reasonable and culturally appropriate efforts have been made to inform potentially affected and interested stakeholders in potentially affected communities about the proposed project.

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

- a. A general description of the proposed project, including details on the proposed location, and nature and duration of the project and related activities;
- b. The preliminary identification of potential significant environmental and social impacts, and proposed actions to mitigate any negative impacts;
- c. 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
- d. Contact details for the person or team responsible for management of the ESIA.

2.1.3. Scoping

2.1.3.1. The operating company shall carry out a scoping process to identify all potentially significant social and environmental impacts of the mining project to be assessed in the ESIA.³⁷

2.1.3.2. 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.

2.1.3.3. Scoping shall include the consideration of:

- a. Social impacts (including potential impacts on communities and workers) and environmental impacts (including potential impacts on wildlife, air, water, vegetation and soils) during all stages of the project life cycle, from pre-construction through post-closure;³⁸
- b. Direct, indirect and cumulative impacts; and
- c. Potential impacts of extreme events.

2.1.3.4. Scoping shall result in the identification of:

- a. Potentially significant environmental and social impacts of the proposed project;
- b. Alternative project designs to avoid significant adverse impacts;
- c. Other actions to mitigate identified adverse impacts; and
- d. Additional information and data needed to understand and assess the potential impacts.

2.1.4. ESIA Data Collection

2.1.4.1. 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 mining project.

³⁷ 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.

³⁸ See the Notes section at the end of the chapter for a more detailed list of the types of issues that should be included in the scoping process.

2.1.4.2. Additional studies shall be carried out as necessary to fulfill the information needs of the ESIA.

2.1.5. ESIA Impact Analysis

2.1.5.1. The operating company shall:

- a. Predict in greater detail the characteristics of the potentially significant environmental and social impacts identified during scoping;³⁹
- b. Determine the significance of the predicted impacts;
- c. Evaluate options to mitigate predicted significant adverse impacts in line with the mitigation hierarchy, prioritizing the avoidance of impacts through consideration of alternative project designs; and
- d. Determine the relative importance of residual impacts (i.e., impacts that cannot be mitigated) and whether significant residual adverse impacts can be addressed to the satisfaction of affected or relevant stakeholders.

2.1.6. ESIA Report

2.1.6.1. The operating company shall prepare an ESIA report that includes, at minimum:

- a. A description of the proposed mining project;
- b. Detailed description of the direct, indirect and cumulative impacts likely to result from the project, and identification of significant adverse impacts;
- c. Description of the alternatives considered to avoid and mitigate significant adverse impacts in line with the mitigation hierarchy, and the recommended measures to avoid or mitigate those impacts;
- d. A review of the public consultation process, the views and concerns expressed by stakeholders and how the concerns were taken into account; and
- e. Names and affiliations of ESIA authors and others involved in technical studies.

2.1.7. Environmental and Social Management System (ESMS)

2.1.7.1. The operating company shall develop and maintain a system to manage environmental and social risks and impacts throughout the life of the mine.

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

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

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

³⁹ Characteristics of impacts will vary, but may include: nature (positive, negative, direct, indirect, cumulative); magnitude (severe, moderate, low); extent/location (area/volume covered, distribution); timing (during construction, operation, closure and reclamation; immediate, delayed, rate of change); duration (short or long term; intermittent or continuous); reversibility/irreversibility; likelihood (probability, uncertainty or confidence in the prediction); and extent (local, regional, global).

2.1.8. Environmental and Social Impact Monitoring

2.1.8.1. As part of the ESMS, the operating company shall establish a program to monitor:

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

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

2.1.8.3. If requested by relevant stakeholders, the operating company shall facilitate the independent monitoring of key impact indicators where this would not interfere with the safe operation of the project.⁴⁰

2.1.9. Stakeholder Consultation and Participation in ESIA and Environmental and Social Monitoring

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

- a. The issues and impacts to be considered in the proposed scope of the ESIA (see 2.1.3);
- b. Methodologies for the collection of environmental and social baseline data (see 2.1.4);
- c. The findings of environmental and social studies relevant to the conclusions and recommendations of the ESIA (see 2.1.5.1.a and b);
- d. Options and proposals to mitigate the potential impacts of the project (see 2.1.5.1.c);
- e. Provisional conclusions and recommendations of the ESIA, prior to finalization (see 2.1.6.1); and
- f. The final conclusions and recommendations of the ESIA (see 2.1.6.1).

2.1.9.2. The operating company shall encourage and facilitate stakeholder participation, where possible, in the collection of data for the ESIA, and in the development of options to mitigate the potential impacts of the project during and subsequent to the ESIA process.⁴¹

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

2.1.9.4. The operating company shall encourage and facilitate stakeholder participation, where possible, in the implementation of the environmental and social monitoring program.⁴²

2.1.9.5. The operating company shall record all stakeholder comments received in relation to ESIA scoping; implementation; ESIA findings, conclusions and recommendations; and the environmental and social monitoring program. The company shall record how it responded to stakeholder comments.

⁴⁰ 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. If requested by relevant stakeholders (e.g., in particular those who may be directly affected), companies may also facilitate independent monitoring by providing funding to stakeholders to hire experts.

⁴¹ Facilitation of participation may include, e.g., provision of information and explanations in local languages, using materials and approaches designed to be accessible to local communities, and providing capacity building or training on methods. See also Chapter 2.8, Criteria 2.8.3.

⁴² Facilitation of participation may include, e.g., provision of: capacity building or training on monitoring methods, community access to the mine site to participate in company monitoring activities or community-based independent monitoring activities; funding to enable community participation, etc. Also, it should be noted that stakeholders may not be interested in participating in monitoring activities. In such cases, the operating company should be able to produce evidence that good faith efforts that were made to provide stakeholders with opportunities to fully participate.

2.1.10. Environmental and Social Disclosures and Reporting⁴³

2.1.10.1. 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.

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

2.1.10.3. The environmental and social management plan shall be made available to stakeholders upon request.

2.1.10.4. Summary reports of the findings of the environmental and social monitoring program shall be made publicly available at least annually, and all data and methodologies related to the monitoring program shall be publicly available.

2.1.10.5. The existence of publicly available ESIA and ESMS information, and the means of accessing it, shall be publicized by appropriate means.⁴⁴

NOTES

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

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

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

⁴³ See Chapter 2.8 for requirements related to Communications and Access to Information (2.8.4).

⁴⁴ “Appropriate means” refers to the need to publish information in formats and languages that are culturally appropriate, accessible and understandable to affected stakeholders as per Chapter 1.2. For example, appropriate means could include local radio announcements, leaflets, announcements at local meetings, etc.

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 mining project and its potential impacts, prior to decision-making. The fact that an effective ESIA has been designed and implemented does not imply that a mining project should necessarily proceed. With effective engagement of stakeholders, however, it should provide a sound basis for consideration as to whether a project should or should not proceed.

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.1—Legal Compliance	As mentioned in Chapter 1.1, companies are required to abide by <u>host country law</u> . 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 Chapter 2.1, the <u>operating company</u> will be expected to demonstrate that measures were taken to meet the IRMA requirements, as well.
1.2—Community and Stakeholder Engagement	Requirement 1.2.2.3 specifically relates to <u>stakeholder oversight</u> of the company's environmental and social performance, and consequently, is relevant to this chapter. Capacity building or training may be needed to ensure effective participation by <u>stakeholders</u> in the ESIA process (see 2.1.9). The primary reference for that requirement is 1.2.3 Strengthening Capacity, in Chapter 1.2. Disclosure of information shall meet the requirements of Chapter 1.2. In particular, information mentioned in 2.1.9 shall be in formats and languages that are culturally appropriate, accessible and understandable to affected <u>stakeholders</u> . See criterion 1.2.4 for more details.
1.3—Human Rights Due Diligence	If the infringement of human rights is predicted during ESIA, or if human rights were infringed during exploration, a company will be expected to prevent, <u>mitigate</u> predicted impacts and <u>remediate</u> the human rights impacts as per Chapter 1.3.
2.2—Free, Prior and Informed Consent	Implementation of ESIA requirements can be integrated with the <u>free, prior and informed consent</u> process described in Chapter 2.2. However, it should be emphasized that <u>indigenous peoples'</u> participation in the ESIA process, including in the consideration of proposals to <u>mitigate</u> expected impacts does not, of itself, imply consent, even if the recommended actions to minimize impacts are fully implemented.
2.3—Obtaining Community Support and Delivering Benefits	It is possible that some initial planning of the company's contributions to community development initiatives and benefits may have been done during the ESIA process. If so, it is important that monitoring of the effectiveness of the community investment decisions occurs, and if necessary, additional planning occurs as per chapter 2.3.
2.5—Emergency Preparedness and Response	Potential impacts related to community safety, and <u>mitigation</u> strategies identified in the ESIA should feed into the Emergency Response Plan and planning processes described in Chapter 2.5.
4.1—Waste and Materials Management	Potential risks and impacts posed by mine wastes and other materials should be scoped, at least in a general manner, during the ESIA process. Additionally, Chapter 4.1 requires a more in-depth assessment of potential chemical and physical risks related to mine wastes and other materials (see 4.1.2 and 4.1.3).
4.2—Water Management	Potential impacts of the <u>mining project</u> on water quality or quantity should be scoped during the ESIA process, or in a separate scoping process as per Chapter 4.2, requirement 4.2.2.2. Chapter 4.2 also requires a more in-depth assessment of potentially significant impacts on water quality and quantity if potential impacts are identified during a screening/scoping process.
4.3—Air Quality Management	Potential impacts of the <u>mining project</u> on air quality may be scoped during the ESIA process, or in a separate screening process as per Chapter 4.3, requirement 4.3.1.1. Chapter 4.3 also requires a more in-depth assessment of potentially significant impacts on air quality if potential impacts are identified during a screening/scoping process.

CROSS REFERENCES TO OTHER CHAPTERS	
4.4—Noise and Vibration	Chapter 4.4 includes screening of impacts of noise and vibrations on human receptors, and this may be screened as part of the Environmental and Social Impact Assessment process. Noise-related impacts on wildlife, however, are not addressed in Chapter 4.4, and should be screened in the ESIA process, and if significant impacts are identified then those impacts should be mitigated as per the ESIA process (including consultations with relevant stakeholders, such as government biologists, wildlife conservation organizations, academic experts and community members whose livelihoods or sustenance may be affected by impacts on wildlife). Any related monitoring should occur as per the Environmental and Social Monitoring program.
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. 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 references to risk or impact assessments: 1.3—Human Rights Due Diligence; 2.3—Obtaining Community Support and Delivering Benefits; 2.4—Resettlement; 2.6—Planning for and Financing Reclamation and Closure; 3.3—Community Health and Safety; 3.4—Mining and Conflict-Affected or High-Risk Areas; 3.5—Security Arrangements; 3.7—Cultural Heritage; 4.1—Waste and Materials Management; 4.2—Water Management; 4.3—Air Quality; 4.4—Noise and Vibration; and 4.6—Biodiversity, Ecosystem Services and Protected Areas.
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 2.1. 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 (or a monitoring program that meets the requirements laid out in Chapter 2.1). The following chapters include references to monitoring: 1.3—Human Rights Due Diligence; 2.3—Obtaining Community Support and Delivering Benefits; 2.4—Resettlement; 2.6—Planning for and Financing Reclamation and Closure; 3.1—Fair Labor and Terms of Work; 3.2—Occupational Health and Safety; 3.3—Community Health and Safety; 3.4—Mining and Conflict Affected Areas; 3.5—Security Arrangements; 4.1—Waste and Materials Management; 4.2—Water Management; 4.3—Air Quality; 4.4—Noise and Vibration; 4.6—Biodiversity, Ecosystem Services and Protected Areas; 4.7—Cyanide Management; and 4.8—Mercury Management.



Planning and Managing for Positive Legacies



Chapter 2.2 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.⁴⁵ The following rights of indigenous peoples are especially relevant in relation to industrial-scale mining developments:⁴⁶

- 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; and
- The right to make authoritative decisions about external projects or investments.

TERMS USED IN THIS CHAPTER

Collaboration ■ Consultation ■ Corporate Owner ■ Critical Cultural Heritage ■ Existing Mine ■ Free, Prior and Informed Consent (FPIC) ■ FPIC Scoping ■ Grievance ■ Grievance Mechanism ■ Host Country Law ■ Indigenous Peoples ■ Mining Project ■ Mining-Related Activities ■ New Mine ■ Operating Company ■ Rights Holder ■ Stakeholder ■ Vulnerable Group ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

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.⁴⁷

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.⁴⁸ Since 1989, FPIC has gained broader application and more widespread support in national laws and various international instruments and bodies.⁴⁹

OBJECTIVES/INTENT OF THIS CHAPTER

To demonstrate respect for the rights, dignity, aspirations, culture, and livelihoods of indigenous peoples, participate in ongoing dialogue and engagement, and collaborate on strategies to minimize impacts and create

⁴⁵ United Nations. 2008. Guidelines on Indigenous Peoples' Issues. www.un.org/esa/socdev/unpfii/documents/UNDG_guidelines_EN.pdf

⁴⁶ 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

⁴⁷ 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

⁴⁸ ILO. Convention 169. Available at: www.ilo.org/indigenous/Conventions/no169/lang--en/index.htm

⁴⁹ 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

benefits for indigenous peoples, thereby creating conditions that allow for indigenous peoples' free, prior and informed consent and decision-making regarding mining development.

SCOPE OF APPLICATION

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

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 objectives of this chapter. For example, companies may demonstrate that they have the free, informed consent of indigenous peoples for current operations by providing evidence of signed or otherwise verified agreements, or, in the absence of agreements, demonstrate that they have a process in place to respond to past and present community concerns and to remedy and/or compensate for past impacts on indigenous peoples' rights and interests. In alignment with this chapter, such processes should have been agreed to by indigenous peoples and evidence should be provided that agreements are being fully implemented by the companies.

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 1.3; and other unremediated impacts may be addressed through the operational-level grievance mechanism as per Chapter 1.4. (See also the "Cross References to Other Chapters" table below).

Both new and existing mines shall obtain the free, prior and informed consent of indigenous peoples if there are proposed changes to a 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 companies to demonstrate to IRMA auditors that the process whereby the agreement was reached conformed with or exceeded IRMA FPIC requirements and met the general intent of this chapter (for example, there was no express or implied 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).

Free, Prior and Informed Consent (FPIC) Requirements

2.2.1. Policy Commitment

2.2.1.1. 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.⁵⁰

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

2.2.2. General Requirements

2.2.2.1. The operating company shall conduct due diligence to determine if the host government 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 publicly available and shall include the company's justification for proceeding with a project if the State failed to fulfill its consultation and/or consent duties.⁵¹

2.2.2.2. New mines shall not be certified by IRMA unless they have obtained the free, prior and informed consent (FPIC) of potentially affected indigenous peoples.⁵² The circumstances for obtaining FPIC include situations where mining-related activities may affect indigenous peoples' rights⁵³ or interests, including those that may: impact on lands, territories and resources;⁵⁴ 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.

2.2.2.3. For new and existing mines, the operating company shall obtain FPIC from indigenous peoples for proposed changes to mining-related activities that may result in new or increased impacts on indigenous peoples' rights or interests.

2.2.2.4. 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 affecting the rights or interests of the indigenous peoples. The company may approach indigenous peoples to renew discussions only if agreed to by the indigenous peoples' representatives.

⁵⁰ Available at: www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf

⁵¹ The company shall make all documents relating to the due diligence process available to the IRMA auditor for review.

⁵² This requirement only applies at new mines that have the potential to affect the interests or rights of indigenous peoples. If there are no indigenous peoples who may be affected, then there is no need to obtain FPIC. Instead, requirements in Chapter 2.3 apply.

⁵³ Indigenous peoples' rights include traditional rights, which are defined as "Rights which result from a long series of habitual or customary actions, constantly repeated, which have, by such repetition and by uninterrupted acquiescence, acquired the force of a law within a geographical or sociological unit. It also encompasses the rights of Indigenous and Tribal Peoples established by the ILO Convention 169." (Source: Forest Stewardship Council)

⁵⁴ 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.

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

2.2.3.1. The operating company shall:

- a. Consult with indigenous peoples and others, and review other relevant data to identify indigenous peoples that own, occupy or otherwise use land, territories or resources that may be affected by the mining project;
- b. Disclose to indigenous peoples, in a culturally appropriate manner, the preliminary project concepts and/or proposed activities, and the indigenous peoples' right to FPIC.

2.2.3.2. The operating company shall collaborate with indigenous peoples' representatives and other relevant members of affected communities of indigenous peoples to:

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

2.2.3.3. 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.

2.2.4. Determine FPIC Processes⁵⁵

2.2.4.1. If there is more than one distinct indigenous peoples' group (e.g., tribe, nation, population) that may be affected by the operating company's mining-related activities, they may be included in a coordinated process or separate FPIC processes, as desired by the indigenous peoples.

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

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

2.2.5. Implement FPIC Process

2.2.5.1. The operating company shall document, in a manner agreed to by the indigenous peoples, the FPIC process that was followed.

⁵⁵ This may be carried out concurrent with 2.2.3. Also, there may be a desire to establish different FPIC processes for different stages of development (e.g., exploration, mining, closure) or based on various triggers (e.g., major expansion of the mine). For example, a process to obtain FPIC during the exploration stage may be less onerous than a process established to obtain FPIC for a mine development proposal, as the mining stage will likely have greater potential impacts on indigenous peoples' rights and interests, require more assessment, more dialogue around impact mitigation, remediation compensation, project benefits, etc.

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

2.2.5.3. 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 the representative(s) of the indigenous peoples. The agreement shall be binding and shall be made publicly available unless the indigenous peoples' representatives explicitly request otherwise.

2.2.6. Failure to Obtain Indigenous Peoples' Consent

2.2.6.1. For new mines, IRMA certification is not possible if a mining project does not obtain free, prior and informed consent from indigenous peoples.

2.2.7. Implementation and Ongoing Engagement

2.2.7.1. The operating company shall collaborate with indigenous peoples to monitor implementation of the FPIC agreement, and document the status of the commitments made in the agreement.

2.2.7.2. Engagement with indigenous peoples shall continue throughout all stages of the mining project.

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, and that notification occur sufficiently in advance of commencement of any mining-related activities; that there be full disclosure of information regarding all aspects of the proposed mining project in a manner that is accessible and understandable to the indigenous peoples; and that indigenous peoples can fully approve, partially or conditionally approve, or reject a project or activity, and companies will 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 (see also Chapter 3.7, requirement 3.7.5.5). 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 host country laws. For the purposes of interpreting this standard IRMA uses a definition presented in the IRMA Glossary of Terms, which is from guidance published by the United Nations Permanent Forum on Indigenous Peoples.

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.1—Legal Compliance	As per Chapter 1.1, if there are <u>host country laws</u> related to <u>free, prior and informed consent</u> , the company is required to abide by those laws. If IRMA requirements are more stringent than <u>host country law</u> , the company is required to also meet the IRMA requirements, as long as complying with them would not require the <u>operating company</u> to violate <u>host country law</u> .
1.2—Community and Stakeholder Engagement	Chapter 1.2 applies to engagement with <u>stakeholders</u>, including <u>rights holders</u> such as <u>indigenous peoples</u>. Therefore, in addition to meeting the requirements above, engagement with <u>indigenous peoples</u> shall conform to the requirements in Chapter 1.2. In particular, criterion 1.2.3 is important to ensure that <u>indigenous peoples</u> have the capacity to fully understand their rights and <u>collaborate effectively</u> in <u>FPIC</u> process, including in the collection of relevant information. Also, 1.2.4 ensures that communications and information are in culturally appropriate languages and formats that are <u>accessible</u> and <u>understandable</u> to affected <u>indigenous peoples</u>, and that information is provided in a timely, manner.
1.3—Human Rights Due Diligence	If <u>indigenous peoples'</u> human rights have been infringed upon at <u>existing mines</u> , a company will be expected to <u>mitigate</u> and <u>remediate</u> the impacts as per Chapter 1.3. This includes human-rights-related impacts on <u>indigenous peoples</u> from past activities at <u>existing mines</u> that have not been adequately <u>mitigated</u> or <u>remediated</u> .
1.4—Complaints and Grievance Mechanism and Access to Remedy	<u>Grievances</u> or concerns related to the implementation of <u>FPIC</u> and any related agreements may be addressed through the operational-level <u>grievance mechanism</u> , or other mechanisms for handling <u>grievances</u> as long as those mechanisms have been agreed to by the <u>indigenous peoples</u> and the company. Complaints or <u>grievances</u> related to unremediated or unsatisfactory <u>mitigation</u> of impacts from past <u>mining-related activities</u> may also be raised through the operational-level <u>grievance mechanism</u> as per Chapter 1.4.
2.1—Environmental and Social Impact Assessment and Management	Some of the aspects of <u>FPIC</u> <u>scoping</u> may be carried out as part of the ESIA (e.g., relevant data collection and studies), however, it is likely that engagement with <u>indigenous peoples</u> 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 <u>indigenous peoples</u> are even interested in pursuing an <u>FPIC</u> process related to mineral development.
2.4—Resettlement	As per requirement 2.4.6.3, if a <u>mining project</u> requires the displacement of <u>indigenous peoples</u> , the <u>operating company</u> shall not proceed with resettlement unless it obtains <u>FPIC</u> from affected <u>indigenous peoples</u> .
2.6—Reclamation and Closure	As per requirement 2.6.6.1, if there is the potential that the <u>mining project</u> will require <u>long-term water treatment</u> , this must be explicitly addressed as part of the <u>free, prior and informed consent process</u> .
3.7—Cultural Heritage	As per requirement 3.7.5.1, where impacts may occur to <u>indigenous peoples'</u> <u>critical cultural heritage</u>, negotiation shall take place through the <u>FPIC</u> process, unless otherwise specified by the <u>indigenous peoples</u>. Chapter 3.7 (requirement 3.7.5.5) also prohibits new exploration or mining in areas where <u>indigenous peoples</u> are known to live in voluntary isolation, both to respect those peoples' right to self-determination and recognizing that <u>FPIC</u> is not possible when <u>indigenous peoples</u> reject contact and the presence of persons who do not belong to their people in their lands and ancestral territories.



Chapter 2.3

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, and minimizing project-related impacts can be beneficial to both companies and affected communities.

Mining companies typically contribute national and local economic benefits through payments in taxes and royalties, and can contribute even more by procuring goods and services from the host country. Leading companies also recognize the need for delivering additional benefits to affected communities, and that benefits are best defined by the communities themselves. When communities' needs and aspirations are not at the forefront of 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.

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.⁵⁶ 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.

TERMS USED IN THIS CHAPTER

Affected Community ■ Broad Community Support ■ Collaboration ■ Consultation ■ Existing Mine ■ Grievance ■ Inclusive ■ Mine Closure ■ Mining Project ■ New Mine ■ Operating Company ■ Post-Closure ■ Stakeholder ■ Vulnerable Group ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

OBJECTIVES/INTENT OF THIS CHAPTER

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

SCOPE OF APPLICATION

RELEVANCE: 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 construction of the 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

⁵⁶ For example, ICMM members recognize that: "Successful mining and metals projects require the support of a range of interested and affected parties. This includes both the formal legal and regulatory approvals granted by governments and the broad support of a company's host communities." (ICMM. 2013. Indigenous Peoples and Mining. Position Statement. <https://www.icmm.com/en-gb/members/member-commitments/position-statements/indigenous-peoples-and-mining-position-statement>)

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.

Obtaining Community Support and Delivering Benefits Requirements

2.3.1. Commitments to Affected Communities

2.3.1.1. The operating company shall publicly commit to:

- a. Maintaining or improving the health, social and economic wellbeing of affected communities; and
- b. Developing a mining project only if it gains and maintains broad community support.⁵⁷

2.3.2. Obtaining Community Support⁵⁸

2.3.2.1. For new mines, the operating company shall demonstrate that it obtained broad community support from communities affected by the mining project, and that this support is being maintained.

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

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

2.3.2.3. For existing mines, the operating company shall demonstrate that the mine has earned and is maintaining broad community support.

2.3.3. Planning and Delivering Community Benefits

2.3.3.1. The operating company, in collaboration with affected communities and other relevant stakeholders (including workers and local government), shall develop a participatory planning process to guide a company's contributions to community development initiatives and benefits in affected communities.⁵⁹

⁵⁷ This also may be referred to as social licence to operate, or community support, etc.

⁵⁸ The requirements in 2.3.2 apply to non-indigenous communities. If an 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 2.2). A company may need to obtain FPIC from indigenous peoples and also demonstrate that it has broad community support for the same project, if there is a community of non-indigenous peoples also affected by the mine.

⁵⁹ "Relevant stakeholders" may include, for example, local economic planning entities, community service groups, social services agencies, land-use focused groups, chambers of commerce, artisanal and small-scale mining representatives, faith-based groups, school boards, conservation organizations, etc.

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

2.3.3.2. The planning process shall be designed to ensure local participation, social inclusion (including both women and men, vulnerable groups and traditionally marginalized community members, e.g., children, youth, the elderly, or their representatives), good governance and transparency.

2.3.3.3. 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.

2.3.3.4. Efforts shall be made to develop:

- a. Local procurement opportunities;
- b. Initiatives that benefit a broad spectrum of the community (e.g., women, men, children, youth, vulnerable and traditionally marginalized groups); and
- c. Mechanisms that can be self-sustaining after mine closure (including the building of community capacity to oversee and sustain any projects or initiatives agreed upon through negotiations).

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

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

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.2—Community and Stakeholder Engagement	See Chapter 1.2 for requirements relating to engagement and communication with <u>stakeholders</u> . In particular, criterion 1.2.3 is important to ensure that <u>stakeholders</u> have the capacity to fully understand their rights and <u>collaborate</u> effectively in community planning processes. Also, 1.2.4 ensures that communications and information are in formats and languages that are <u>accessible</u> and understandable to <u>affected communities and stakeholders</u> , and provided in a timely, culturally appropriate manner.
2.2—Free, Prior and Informed Consent	Chapter 2.2 is relevant for <u>mining projects</u> that may affect communities of <u>indigenous peoples</u> . Rather than obtaining <u>broad community support</u> as per this chapter, when there are <u>indigenous peoples</u> whose land, resources, cultural heritage or rights may be impacted by mining activities, <u>operating companies</u> must adhere to the requirements of Chapter 2.2.
3.6—Artisanal and Small-Scale Mining	If <u>ASM</u> entities are present and are affected by the <u>mining project</u> , they should be included in the process to plan and determine benefits in 2.3.3.



Planning and Managing for Positive Legacies



Chapter 2.4 Resettlement



[flag] Issue in brief: In some cases, by virtue of the location of a mineable ore body, proposed mining projects are located in close proximity to where people live. The situation where those affected do not have the legal right to refuse land acquisition and displacement is referred to as involuntary resettlement.

The current approach of the IRMA resettlement chapter does not prohibit involuntary resettlement, although it encourages mines to avoid it if possible. When avoidance is not possible, IRMA, like other internationally recognized standards on resettlement (e.g., IFC Performance Standard 5) requires that companies strive to minimize impacts on affected people, implement mitigation measures such as fair compensation and improvements to livelihoods and living conditions that are discussed ahead of time with affected peoples. Active engagement of affected peoples and their advisors is required throughout the process, from the earliest stages of resettlement risk and impact assessment through the monitoring of resettlement outcomes.

During its Launch Phase, IRMA will be encouraging mines that have been through resettlement processes to help test this chapter, and determine if the metrics used are robust and comprehensive enough to ensure that if the displacement of individuals and communities occurs, it can be carried out in a fair and respectful way that leads to improvements in quality of life and economic opportunities for affected peoples.

BACKGROUND

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

Resettlement is considered involuntary when people do not wish to move but do not have the legal right to refuse land acquisition that results in their displacement.⁶⁰ The International Finance Corporation's (IFC) Performance Standard 5 on Land Acquisition and Involuntary Resettlement states that involuntary resettlement should be avoided where possible.

TERMS USED IN THIS CHAPTER

Affected Community ■ Associated Facilities ■ Baseline ■ Collaboration ■ Competent Professionals ■ Consultation ■ Displacement ■ Economic Displacement ■ Existing Mine ■ Forced Eviction ■ Free, Prior and Informed Consent (FPIC) ■ Grievance ■ Grievance Mechanism ■ Host Community ■ Indigenous Peoples ■ Involuntary Resettlement ■ Livelihood Restoration Plan (LRP) ■ Mining Project ■ Mining-Related Activities ■ Mitigation ■ New Mine ■ Operating Company ■ Remediation ■ Replacement Cost ■ Resettlement Action Plan (RAP) ■ Stakeholder ■ Vulnerable Group ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

⁶⁰ 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)

The IFC encourages its clients to use negotiated settlements, even if they have the legal means to acquire land without the seller's consent.⁶¹ 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.⁶²

When deemed unavoidable, involuntary resettlement, like other evictions, must only be carried out under exceptional circumstances and in accordance with international human rights law.⁶³

OBJECTIVES/INTENT OF THIS CHAPTER

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

SCOPE OF APPLICATION

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

This chapter does not apply to voluntary resettlement (i.e., market transactions in which the seller is not obliged to sell and the buyer cannot resort to expropriation or other compulsory procedures sanctioned by the legal system of the host country if negotiations fail). As with involuntary resettlement, however, there are risks such as impoverishment that accompany voluntary resettlement. IRMA therefore encourages companies to implement measures to maximize benefits for any household voluntarily resettled as a result of project activities.

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. It is possible, however, to evaluate the outcomes of resettlement projects even years after resettlement occurs, 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 30 April 2006⁶⁴ will have carried out a completion audit or evaluation (See 2.4.7.3.b) prior to applying for IRMA certification, if the resettlement posed a risk of significant social impacts.

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 and continue mitigation 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 30 April 2006, IRMA will not require evidence of such evaluations. It should be noted, however, that if there are human-rights-related impacts from historic resettlement programs that have not been mitigated or remediated, they will need to be addressed as per Chapter 1.3; and other unremediated impacts may be raised by stakeholders and addressed through the operational-level grievance mechanism as per Chapter 1.4. (See "Cross References to Other Chapters" table at the end of this chapter for more information).

Additionally, all mines shall apply the requirements of this chapter if there are proposed 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.

⁶¹ IFC Performance Standard 5. Para. 3

⁶² European Bank for Reconstruction and Development. 2014. Performance Requirement 5. Land Acquisition, Involuntary Resettlement and Economic Displacement. p. 30. www.ebrd.com/news/publications/policies/environmental-and-social-policy-esp.html

⁶³ 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

⁶⁴ This chapter is largely based on IFC's Sustainability Framework, and in particular, Performance Standard 5 on Land Acquisition and Involuntary Resettlement. In 2006, IFC adopted the Sustainability Framework, which articulated IFC's strategic commitment to sustainable development. http://www.ifc.org/wps/wcm/connect/9fb7150048855c138af4da6a6515bb18/2007%2BUpdated%2BGuidance%2BNotes_full.pdf?MOD=AJPERES&attachment=true&id=1322804281925

Resettlement Requirements

2.4.1. Risk and Impact Assessment

2.4.1.1. If there is the potential that a new mine (including associated facilities) or the expansion of an existing mine or associated facilities may require land acquisition that could result in the involuntary resettlement (for the remainder of this chapter, referred to as resettlement) of people, 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.

2.4.1.2. The assessment shall:

- a. Be undertaken during the early stages of mining project planning;
- b. Include identification of alternative mining project designs to avoid, and if that is not possible, minimize the displacement of people;
- c. Identify and analyze the social, cultural, human rights, conflict, environmental and economic risks and impacts to displaced persons and host communities⁶⁵ for each project design alternative, paying particular attention to potential impacts on women, children, the poor and vulnerable groups; and
- d. Identify measures to prevent and mitigate risks and impacts, and estimate the costs of implementing the measures.

2.4.1.3. The assessment shall be undertaken by competent professionals with experience in resettlement related to large-scale development projects.

2.4.1.4. The operating company shall document decision-making regarding alternative mining project designs and efforts to minimize resettlement.

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

2.4.2. Community Engagement

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

- a. The assessment of displacement and resettlement risks and impacts, including the consideration of alternative mining project designs to avoid or minimize resettlement;
- b. The development of resettlement and livelihood options; and
- c. The development, implementation, monitoring and evaluation of a Resettlement Action Plan (RAP) and/or Livelihood Restoration Plan (LRP).

2.4.2.2. The operating company shall facilitate access, if desired by potentially affected people and communities, including host communities, to independent legal or other expert advice from the earliest stages of project design and assessment, through monitoring and evaluation of the resettlement process.⁶⁶

⁶⁵ Host communities may also be called “receiving communities.”

⁶⁶ 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.

2.4.2.3. People from affected communities, including host communities, shall have access to an effective mechanism to raise and seek recourse for concerns or grievances related to displacement and resettlement.⁶⁷

2.4.3. Resettlement and Livelihood Restoration Planning and Preparation

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

2.4.3.2. In the absence of host government procedures, the 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.

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

2.4.4. Mitigation Measures Related to Physical Displacement

2.4.4.1. In all cases, when people are physically displaced as a result of the development or expansion of a mine or its associated facilities:

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

⁶⁷ The operational-level grievance mechanism developed as per Chapter 1.4 may be used as a mechanism to receive and address resettlement related grievances, or a mechanism may be created to handle only resettlement-related concerns. If a separate mechanism is developed, it shall be done in a manner that is consistent with IRMA Chapter 1.4 (in particular, it shall be developed in a manner that meets the UNGP effectiveness criteria for grievance mechanisms).

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

- a. The 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; and
- b. If cash compensation is appropriate and preferred by the affected people, compensation shall be sufficient to replace lost land and other assets at full replacement cost in local markets.⁶⁸

2.4.4.3. In cases where physically displaced people have no recognizable legal right or claim to the land or assets they occupy or use, the 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 people had been occupying the project area prior to the cut-off date for eligibility.

2.4.5. Mitigation Measures Related to Economic Displacement

2.4.5.1. If project-related land acquisition or restrictions on land use result in economic displacement, regardless of whether or not the affected people are physically displaced, the 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 people have legal rights or claims to land that are recognized or recognizable under national law, replacement property of equal or greater value shall be provided, or, where appropriate, cash compensation at full replacement cost; and
- c. Economically displaced people who are without legally recognizable claims to land shall be compensated for lost assets other than land at full replacement cost.

2.4.5.2. All economically displaced people whose livelihoods or income levels are adversely affected shall be provided opportunities to improve, or at least restore, their means of income-earning capacity, production levels, and standards of living, and transitional support shall be provided based on a reasonable estimate of the time required to restore their income-earning capacity, production levels, and standards of living.

Additionally:

- a. For people whose livelihoods are land-based, replacement land that has a combination of productive potential, locational advantages, and other factors at least equivalent to that being lost shall be offered as a matter of priority;
- b. For people whose livelihoods are natural resource-based and where project-related restrictions on access apply, continued access to affected resources or access to alternative resources with at least equivalent livelihood-earning potential and accessibility shall be provided; and
- c. If circumstances prevent the operating company from providing land or similar resources as described above, alternative income earning opportunities shall be provided to restore livelihoods.⁶⁹

⁶⁸ 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."

⁶⁹ E.g., Such as credit facilities, training, cash, or employment opportunities.

2.4.6. Resettlement and Livelihood Restoration Agreements and Implementation

2.4.6.1. In order to be certified by IRMA, if a new project will require the displacement of indigenous peoples the operating company shall obtain the free, prior and informed consent (FPIC) of affected indigenous communities before proceeding with the resettlement and mine development (as per IRMA Chapter 2.2).

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

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

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

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

2.4.6.5. Forced evictions shall not be carried except in accordance with law and international best practice,⁷⁰ and the requirements of this chapter.

2.4.6.6. 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 people.

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

2.4.7. Resettlement and Livelihood Restoration Monitoring and Evaluation

2.4.7.1. 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 of the RAP/LRP and the objectives of this chapter have been met.

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

⁷⁰ See: UN Committee on Economic, Social and Cultural Rights (CESCR). 1997. General Comment No. 7: The right to adequate housing (Art. 11.1): forced evictions. In particular, see Paragraph 15. Available at: www.refworld.org/docid/47a70799d.html

2.4.7.3. 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 RAP/LRP has been fully and successfully implemented;
 - iii. Is carried out by external resettlement experts;
 - iv. 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 RAP/LRP have been delivered and the monitoring process can therefore be terminated; and
 - v. Is made available to affected people and their advisors.

2.4.8. Private Sector Responsibilities Under Government-Managed Resettlement

2.4.8.1. Where land acquisition and resettlement are the responsibility of the government, the 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.

2.4.8.2. 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 supplemental plan that, together with the documents prepared by the responsible government agency, shall address the relevant requirements of this chapter. The company shall include in its supplemental plan, at a minimum:

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

NOTES

This chapter uses, as its basis, the International Finance Corporation's (IFC) Performance Standard 5 – Land Acquisition and Involuntary Resettlement, which applies to physical displacement and/or economic displacement resulting when land rights or land use rights are acquired by 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.

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.1—Legal Compliance	As addressed in criterion 2.4.8, in some jurisdictions governments may oversee resettlement projects. As per Chapter 1.1, if there are <u>host country laws</u> that pertain specifically to land acquisition and resettlement, a company is required to abide by those laws. If IRMA requirements are more stringent than <u>host country law</u> , the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to violate <u>host country law</u> .
1.2—Community and Stakeholder Engagement	Engagement with <u>stakeholders</u> (including <u>rights holders</u>) regarding resettlement shall conform to the requirements in Chapter 1.2. In particular, criterion 1.2.3 is important to ensure that <u>stakeholders</u> have the capacity to fully understand their rights and engage effectively in the resettlement assessment and the development of prevention/mitigation plans and monitoring processes. Also, 1.2.4 ensures that communications and information are in culturally appropriate formats and languages that are <u>accessible</u> and understandable to affected <u>stakeholders</u> , and are provided in a timely manner. (See Chapter 1.2 for explanations of these terms)
1.3—Human Rights Due Diligence	If the timing works, the resettlement risk assessment required in 2.4.1 may be done in coordination with or as part of the assessment of <u>human rights risks</u> and impacts in Chapter 1.3, 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, <u>mitigate</u> and <u>remediate</u> the impacts as per Chapter 1.3. This includes the <u>mitigation</u> or <u>remediation</u> of human-rights-related impacts from past resettlement programs at <u>existing mines</u> .
1.4—Complaints and Grievance Mechanism and Access to Remedy	Requirement 2.4.2.3 requires that a mechanism be available for affected people to raise <u>grievances</u> related to resettlement. If appropriate, <u>grievances</u> or concerns during resettlement may be addressed through the operational-level <u>grievance mechanism</u> as outlined in Chapter 1.4. If a <u>grievance mechanism</u> is developed for the specific purpose of resettlement, it shall conform to the requirements of Chapter 1.4. There may be impacts related to past resettlement programs that have not been <u>remediated</u> . Complaints or <u>grievances</u> related to unremediated or unsatisfactory <u>mitigation</u> of impacts may be addressed through the operational-level <u>grievance mechanism</u> as per Chapter 1.4.
2.2—Free, Prior and Informed Consent	Resettlement of <u>indigenous peoples</u> shall only occur if the <u>free, prior and informed consent</u> requirements in Chapter 2.2 have been followed.
3.6—Artisanal and Small-Scale Mining	When <u>artisanal and small-scale mining (ASM)</u> activities are occurring in the same area as proposed large-scale mining projects, <u>ASM</u> entities should be engaged by the company, included as part of the resettlement risk assessment and baseline studies, and should be afforded <u>mitigation</u> , compensation and alternative livelihood opportunities in the <u>Resettlement Action Plan</u> and/or <u>Livelihood Restoration Plan</u> .
4.6—Biodiversity, Ecosystem Services and Protected Areas	Resettlement may lead to impacts on <u>biodiversity</u> , <u>ecosystem services</u> , or <u>protected areas</u> depending on the location of resettled communities. The potential impacts of resettlement impacts on <u>biodiversity</u> , <u>ecosystem services</u> , or <u>protected areas</u> should be identified during the Resettlement Risk and Assessment Process (See 2.4.1.2.c), and any necessary <u>mitigation</u> developed accordingly to Chapter 4.6, criteria 4.6.4.



Planning and Managing for Positive Legacies



Chapter 2.5 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 minimizing risks (through prevention, mitigation, and preparedness) and developing effective plans for responding to emergencies or major accidents.

Mining companies should also work with joint venture partners, contractors and suppliers providing bulk and dangerous materials to put adequate emergency response plans in place to deal with both on-site and off-site accidents.

It is also important for companies to coordinate and communicate with communities that could be affected by these accidents, both to protect health and safety in these communities, and so that the emergency resources in the communities are available if needed.

TERMS USED IN THIS CHAPTER

Affected Community ■ Consultation ■ Mine Waste Facility ■ Mining Project ■ Operating Company ■ Stakeholder ■ Subsidence ■ Worker ■ Workers' Representative ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

OBJECTIVES/INTENT OF THIS CHAPTER

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

SCOPE OF APPLICATION

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

Emergency Preparedness and Response Requirements

2.5.1. Emergency Response Plan

2.5.1.1. 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*.⁷¹

⁷¹ 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. See also, http://apell.eecentre.org/Modules/GroupDetails/UploadFile/APELL_Handbook_2016_-_Publication.pdf

2.5.1.2. The operating company shall:⁷²

- 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 to 24 months; and
- b. Update the communications contacts of the emergency response plan at least annually.

2.5.2. Community and Worker Consultation

2.5.2.1. The emergency response plan shall be developed in consultation with potentially affected communities and workers and/or workers' representatives,⁷³ and the operating company shall incorporate their input into the emergency response plan, and include their participation in emergency response planning exercises.

2.5.3. Public Liability Accident Insurance

2.5.3.1. 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.

2.5.3.2. The public liability accident insurance shall cover unplanned accidental events such as flood damage, landslides, subsidence, mine waste facility failures, major spills of process solutions, leaking tanks, and other potential accidents.

2.5.3.3. The accident insurance coverage shall remain in force for as long as the operating company, or any successor, has legal responsibility for the property.

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 those plans are in compliance with the chapter requirements.

There may be several different components of an emergency response plan maintained by different functional areas of the operating company, such as health and safety, environmental and social responsibility, security, and communications or external affairs. Emergency response plans that cover different operations and/or parts of a mine site should be combined into or integrated with a site-wide emergency response plan. A single reference document should 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. And a crisis management/communications, rapid response, or other incident command system should be developed in conjunction with the emergency response plans.

⁷² This is in accordance with the APELL for Mining, Section 4, Step 3. See also ICMM. 2005. Good Practice in Emergency Preparedness and Response. p. 15. <https://www.icmm.com/website/publications/pdfs/health-and-safety/good-practice-emergency-preparedness-and-response>

⁷³ This is based on ILO Conventions 174 and 176, and OHSAS 18001.

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.1— Legal Compliance	As per Chapter 1.1, mine <u>contractors</u> must be IRMA compliant. So the <u>operating company</u> should be able to demonstrate that <u>contractors</u> are included in the company's emergency preparedness activities and emergency response plans and/or that <u>contractors</u> have emergency preparedness and response procedures and plans that conform with IRMA requirements.
1.2—Community and Stakeholder Engagement	Engagement with <u>stakeholders</u> during the development and updating of the emergency response plan shall conform with the stakeholder engagement requirements in Chapter 1.2. In particular, communications shall be in formats and languages that are culturally appropriate, accessible and understandable to potentially <u>affected communities</u> and <u>stakeholders</u> .
2.1—Environmental and Social Impact Assessment and Management	Information from the environment and social impact assessment may feed into the emergency response plan.
3.2— Occupational Health and Safety	Chapter 3.2 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.
3.3—Community Health and Safety	Information from the community health and safety risk and impact assessment may feed into the emergency response plan.
4.1—Waste and Materials Management	Chapter 4.1 requires that the emergency response plan include provisions related to catastrophic failure of <u>mine waste facilities</u> , that the emergency action provisions be developed with potentially <u>affected communities</u> and local agencies, and that evacuation drills related to catastrophic failures are held on a regular basis. (See 4.1.7.2 and 4.1.7.3)



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Chapter 2.6 Planning and Financing Reclamation and Closure

BACKGROUND

Reclamation refers to the process of rehabilitation and stabilization such that disturbed land is returned to its former or other beneficial uses.⁷⁴ 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 mine reclamation and closure include: (1) the final use that is appropriate for reclaimed mine lands; (2) how re-contoured mine lands should be stabilized, re-vegetated and ecosystem functionality restored; (3) the timing of reclamation processes; (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 will be accomplished, how should that money be invested or valued in terms of discount rate, and what form of financial surety should be required for this guarantee to be effective in practice.

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.

TERMS USED IN THIS CHAPTER

Acid Rock Drainage ■ Affected Community ■ Biodiversity ■ Confidential Business Information ■ Conservation Values ■ Consultation ■ Contractor ■ Corporate Owners ■ Ecosystem Services ■ Existing Mine ■ Exploration Activity ■ Facility ■ Financial Surety ■ Free, Prior and Informed Consent ■ Holding Costs ■ Host Country Law ■ Landscape ■ Long-term Water Treatment ■ Metals Leaching ■ Mine Closure ■ Mining Project ■ Mitigation ■ New Mine ■ Operating Company ■ Pit Lake ■ Post-Closure ■ Practicable ■ Process Water ■ Restoration ■ Revegetation ■ Stakeholder ■ Stormwater ■ Subsidence ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

OBJECTIVES/INTENT OF THIS CHAPTER

To protect long-term environmental and social values, and ensure that the costs of site reclamation and closure are not borne by affected communities or the wider public.

SCOPE OF APPLICATION

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

NEW VS. EXISTING MINES: This chapter applies to new mines and existing mines, as it affects both existing and future requirements. For existing mines the chapter requirements are not applicable if the mining project 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: Backfilling of Open Pits and Underground Mines (2.6.3); and Post-Closure Water Treatment (2.6.6).

⁷⁴ Powter, C. 2002. Glossary of Reclamation and Remediation Terms used in Alberta. Government of Alberta. Available at: <http://environment.gov.ab.ca/info/library/6843.pdf>

Planning and Financing Reclamation and Closure Requirements

2.6.1. Exploration Reclamation

2.6.1.1. The operating company shall guarantee that the cost of implementing reclamation for exploration activities related to the mining development will be met by the company.

2.6.1.2. The operating company shall implement exploration-related reclamation in a timely manner.

2.6.1.3. Any stakeholder complaints of incomplete or inadequate exploration reclamation, if not resolved by other means, shall be discussed and resolved through the operational-level grievance mechanism (see IRMA Chapter 1.4).

2.6.2. Reclamation and Closure Planning

2.6.2.1. Prior to the commencement of mine construction activities the operating company shall prepare a reclamation and closure plan that is compatible with protection of human health and the environment, and demonstrates how affected areas will be returned to a stable landscape with an agreed post-mining end use.

2.6.2.2. At a minimum, the reclamation and closure plan shall contain:

- a. A general statement of purpose;
- b. Site location and background Information;
- c. A description of the entire facility, including individual site features;⁷⁵
- d. The role of affected communities in reviewing the reclamation and closure plan;
- e. Agreed-upon post-mining land use and facility use;⁷⁶
- f. Source and pathway characterization including geochemistry and hydrology to identify the potential discharge of pollutants during closure;⁷⁷
- g. Source mitigation program to prevent the degradation of water resources;⁷⁸
- h. Interim operations and maintenance, including process water management, water treatment, and mine site and waste site geotechnical stabilization;
- i. Plans for concurrent or progressive reclamation and revegetation, which should be employed wherever practicable;
- j. Earthwork:
 - i. Stabilization and final topography of the reclaimed mine lands;
 - ii. Stormwater runoff/run-on management;
 - iii. Topsoil salvage to the maximum extent practicable; and
 - iv. Topsoil storage in a manner that preserves its capability to support plant regeneration;
- k. Revegetation/Ecological Restoration:
 - i. Plant material selection, prioritizing native species as appropriate for the agreed post-mine land use;

⁷⁵ This should be informed by IRMA Chapter 4.1, requirements 4.1.3.1 and 4.1.3.2.

⁷⁶ The post-mining land use and facility use should be agreed with affected communities. Ideally, this should be done at some point after the completion of the Environmental and Social Impact Assessment process in Chapter 2.1.

⁷⁷ This should be informed by IRMA Chapter 4.1, requirement 4.1.3.2. and Chapter 4.2, requirement 4.2.2.3.

⁷⁸ This should be informed by IRMA Chapter 4.1, requirement 4.1.5.2 and Chapter 4.2, requirement 4.2.2.4.

- ii. Quantitative revegetation standards with clear measures to be implemented if these standards are not met within a specified time;
- iii. A defined period, no longer than 10 years, when planned revegetation tasks shall be completed;
- iv. Measures for control of noxious weeds; and
- v. Planned activities to restore natural habitats (as well as biodiversity, ecosystem services and other conservation values as per Chapter 4.6);
- l. Hazardous materials disposal;⁷⁹
- m. Facility demolition and disposal, if not used for other purposes;
- 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.

2.6.2.3. 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. Earthwork;
- d. Revegetation/Ecological Restoration;
- e. Disposal of hazardous materials;
- f. Facility demolition and disposal;
- g. Holding costs that would be incurred by a regulatory agency if the operating company were to declare bankruptcy. These costs shall be calculated based on the assumption that there would be a two-year period before final reclamation activities would begin, and shall include costs related to:
 - i. Interim process water and site management; and
 - ii. Short-term water treatment;
- h. Post-closure costs for:
 - i. Long-term water treatment; and
 - 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; and
 - 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.

⁷⁹ This should be informed by IRMA Chapter 4.1, requirement 4.1.2.1.

2.6.2.4. The operating company shall 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,⁸⁰ and at the request of stakeholders provide them with an interim reclamation progress report.

2.6.2.5. 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 stakeholders with at least 60 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 engagement;⁸¹ 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.

2.6.2.6. The most recent version of the reclamation and closure plan, including the results of all reclamation and closure plan updates, shall be publicly available or available to stakeholders upon request.

2.6.3. Backfilling as a Part of Reclamation

2.6.3.1. Open pits shall be partially or completely backfilled if:

- a. A pit lake is predicted to exceed the water quality criteria in IRMA Chapter 4.2;⁸²
- b. The company and key stakeholders have agreed that backfilling would have socioeconomic and environmental benefits; and
- c. It is economically viable.

2.6.3.2. 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.

2.6.4. Financial Surety for Mine Closure

2.6.4.1. Financial surety instruments shall be in place for mine closure and post-closure (see also 2.6.7).

2.6.4.2. Financial surety instruments for shall be:

- a. Independently guaranteed, reliable, and readily liquid;
- b. Reviewed by third-party analysts, using accepted accounting methods, at least every five years or when there is a significant change to the mine plan;
- 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.

2.6.4.3. Self-bonding or corporate guarantees shall not be used.

⁸⁰ ICMM. 2008. Planning for Integrated Closure: Toolkit. p. 37. Available at: <https://www.icmm.com/website/publications/pdfs/mine-closure/310.pdf>

⁸¹ For more on meaningful stakeholder engagement see Chapter 1.2, requirement 1.2.2.2.

⁸² See Chapter 4.2, requirement 4.2.2.2 and 4.2.2.3 for prediction of water quality, and requirement 4.2.3.3 for requirements related to maintaining water quality at baseline/background or at levels protective of current and future end uses of water.

2.6.4.4. The results of all approved financial surety reviews, with the exception of confidential business information, shall be made available to stakeholders upon request.

2.6.4.5. 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 60 days to comment on the adequacy of the financial surety. Additionally:

- a. Where the company deems certain financial surety information to be confidential business information it shall make the data available to the IRMA auditor and satisfy the auditor that the grounds for 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.⁸³
- b. If necessary, the operating company shall provide resources for capacity building and training to enable meaningful stakeholder engagement;⁸⁴ 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.

2.6.4.6. The terms of the financial surety shall guarantee that the surety is not released until:

- a. Revegetation/ecological restoration and reclamation of mining and waste sites and have been shown to be effective and stable; and
- b. Public comment has been taken before partial or final surety release.

2.6.5. Post-Closure Planning and Monitoring

2.6.5.1. Monitoring of closed mine facilities for geotechnical stability and routine maintenance are 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/or underground mine workings;
- b. Inspection and maintenance of mine waste facilities including effectiveness of any cover and/or seepage capture systems; and
- c. Mechanisms for contingency and response planning and implementation.

2.6.5.2. Monitoring locations for surface and groundwater shall be sufficient to detect off-site contamination from all closed mine facilities, as well as at the points of compliance.

2.6.5.3. Water quality monitoring locations shall be sampled until IRMA Water Quality Criteria have been met for at least five years, with a minimum of 25 years of post-closure data.⁸⁵ 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.

2.6.5.4. Biologic monitoring shall be included in post-closure monitoring if required to ensure there is no ongoing post-closure damage to aquatic and terrestrial resources.

⁸³ As per IRMA Chapter 1.4, 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.

⁸⁴ For more on meaningful stakeholder engagement see Chapter 1.2, requirement 1.2.2.2.

⁸⁵ IRMA water quality criteria are found in Chapter 4.2, Tables 3.1a to h. Alternatively, the mine may meet baseline or background water quality values as per Chapter 4.2, requirement 4.2.2.3.

2.6.5.5. If a pit lake is present, 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.

2.6.6. Post-Closure Water Treatment

2.6.6.1. Long-term water treatment shall not take place unless:⁸⁶

- a. All practicable efforts to implement best practice water and waste management methods to avoid long-term treatment have been made; and
- b. The operating company funds an engineering and risk assessment that:
 - i. Is carried out by an independent third-party;
 - ii. Evaluates the environmental and financial advantages/disadvantages and risks of long-term water treatment versus other mitigation methods;
 - iii. Incorporates data on the failure rates of the proposed mitigation measures and water treatment mechanisms;
 - iv. Determines that the contaminated water to be treated perpetually poses no significant risk to human health or to the livelihoods of communities if the discharge were to go untreated; and
 - v. Includes consultations with stakeholders and their technical representatives during the design of the study, and discussion of findings with affected communities prior to mine construction or expansion.⁸⁷

2.6.6.2. If a decision is made to proceed with long-term water treatment, the operating company shall take all practicable efforts to minimize the volume of water to be treated.

2.6.7. Post-Closure Financial Surety

2.6.7.1. The operating company shall provide sufficient financial surety for all long-term activities, including post-closure site monitoring, maintenance, and water treatment operations. Financial assurance shall guarantee that funds will be available, irrespective of the operating company's finances at the time of mine closure or bankruptcy.

2.6.7.2. If long-term water treatment is required post-closure:

- a. The water treatment cost component of the post-closure financial surety shall be calculated conservatively, and cost calculations based on treatment technology proven to be effective under similar climatic conditions and at a similar scale as the proposed operation; and
- b. When mine construction commences, or whenever the commitment for long-term water treatment is initiated, sufficient funding shall be established in full for long-term water treatment and for conducting post-closure monitoring and maintenance for as long as IRMA Water Quality Criteria are predicted to be exceeded.⁸⁸

2.6.7.3. The post-closure financial surety shall be recalculated and reviewed by an independent analyst at the same time as the reclamation financial surety.

⁸⁶ This requirement applies to new or expanded mines.

⁸⁷ If indigenous peoples' rights or interests may be affected by long-term water treatment (including potential risks of accidents or incidents related to long-term water treatment facilities) then the operating company must obtain FPIC from indigenous peoples as per IRMA Chapter 2.2.

⁸⁸ IRMA criteria are found in Chapter 4.2, Tables 3.1a to h. Alternatively, the mine may meet baseline or background water quality values as per Chapter 4.2, requirement 4.2.2.3.

2.6.7.4. Long-term Net Present Value (NPV) calculations utilized to estimate the value of any financial surety shall use conservative assumptions, including:

- a. A real interest rate of 3% or less;⁸⁹ 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 US \$10.00 or less (or its equivalent in other currencies).

NOTES

Reclamation planning and financial sureties for mine closure are controversial topics. But there is a great deal of literature available on best practices in reclamation planning, and these sources provide the necessary detail to guide such planning.⁹⁰ Guidance is also available on calculating financial sureties and on the risks and benefits of different forms of financial sureties.⁹¹

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 <u>host country laws</u> related to reclamation and closure exist, a company is required to abide by those laws. However, if IRMA requirements are more stringent than <u>host country law</u> , the company is required to also meet the IRMA requirements, as long as complying with them would not require the <u>operating company</u> to violate <u>host country law</u> .
1.2—Community and Stakeholder Engagement	Engagement with <u>stakeholders</u> during reclamation and closure, including prior to and during the risk assessment of <u>long-term water treatment options</u> (2.6.7.1), shall conform to the requirements in Chapter 1.2. The need for meaningful <u>stakeholder</u> engagement is found in requirement 1.2.2.2. Criterion 1.2.3 is important to ensure that <u>stakeholders</u> have the capacity to fully engage in the review of <u>financial surety</u> information and reclamation and closure plans. Also, 1.2.4.2 ensures that communications and information are in formats and languages that are accessible and understandable to <u>affected communities</u> and <u>stakeholders</u> , and provided in a timely, culturally appropriate manner. The disclosure requirements in 2.6.2 and 2.6.4 should conform with 1.2.4.2.
1.4—Complaints and Grievance Mechanism and Access to Remedy	As per Chapter 1.4, the company is required to have an operational-level <u>grievance mechanism</u> available to <u>stakeholders</u> , including procedures for filing complaints, and having complaints recorded, investigated and resolved in a timely manner. <u>Stakeholders</u> who have complaints related to an <u>operating company's</u> reclamation and closure planning or implementation, including complaints related to reclamation activities from the exploration phase, can raise them through the company's operational-level <u>grievance mechanism</u> .

⁸⁹ 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.

⁹⁰ E.g., ICMM. 2008. Planning for Integrated Mine Closure: Toolkit. <https://www.icmm.com/website/publications/pdfs/mine-closure/310.pdf>

⁹¹ E.g., ICMM. 2005. Financial Assurance for Mine Closure and Reclamation. <https://www.icmm.com/website/publications/pdfs/mine-closure/282.pdf>; ICMM. 2006. Financial Assurance for Mine Closure and Reclamation: Guidance Paper. <https://www.icmm.com/website/publications/pdfs/mine-closure/23.pdf>; Sassoon, M. 2009. Financial Surety: Guidelines for the Implementation of Financial Surety for Mine Closure. (World Bank Group's Oil, Gas, and Mining Policy Division). pp. 7, 9, 10 and 41. http://siteresources.worldbank.org/INTOGMC/Resources/7_eifd_financial_surety.pdf; Kuipers, J. 2000. Hardrock Reclamation Bonding Practices in the Western United States. <https://www.csp2.org/files/reports/Hardrock%20Bonding%20Report.pdf>; USDA. 2004. Training Guide for Reclamation Bond Estimation and Administration. https://www.fs.fed.us/geology/bond_guide_042004.pdf

CROSS REFERENCES TO OTHER CHAPTERS	
2.1—Environmental and Social Impact Assessment and Management	A reclamation plan and an estimated financial assurance for <u>mine closure</u> and <u>post-closure</u> are required as an integral part of an ESIA. If potential impacts related to long-term water quality are significant, the <u>operating company</u> shall provide affected <u>stakeholders</u> with the opportunity to propose independent experts to <u>collaborate</u> with the company on the design and implementation of its monitoring program; and, as per 2.1.8, shall facilitate the independent monitoring of key impact indicators where this would not interfere with the safe operation of the project.
2.2—Free, Prior and Informed Consent	If there are <u>indigenous peoples</u> potentially impacted by <u>long-term water treatment</u> (2.6.7.1), that treatment shall not take place without the <u>free, prior and informed consent</u> of <u>indigenous peoples</u> .
2.3—Obtaining Community Support and Delivering Benefits	Chapter 2.3 includes the requirement (2.3.3.4) for a company to undertake efforts to ensure that its contributions to community development initiatives can be sustained after <u>mine closure</u> .
3.6—Artisanal and Small-Scale Mining	Chapter 2.6 requires that <u>affected communities</u> be involved in closure planning. If present in the area, Chapter 3.6 requires that <u>ASM entities</u> be involved in <u>mine closure</u> planning (see 3.6.2.1.b), as they should be considered members of <u>affected communities</u> .
4.1—Waste and Materials Management	See Chapter 4.1 for requirements related to open pit and underground backfilling, liners, and lake-riverine-ocean waste disposal, all of which have relevance to reclamation and closure. Also, some of the information in the reclamation and closure plan (2.6.2) will be informed by or will include information gathered for Chapter 4.1 (E.g., site facility information, source and pathway characterization for contaminants; source <u>mitigation</u> measures; and hazardous materials disposal).
4.2—Water Management	Some of the information in the reclamation and closure plan (2.6.2) will be informed by or will include information gathered for Chapter 4.2 (E.g., source and pathway characterization for contaminants; source <u>mitigation</u> measures). <u>Water Quality Criteria</u> in Chapter 4.2 will apply during <u>mine closure</u> and <u>post-closure</u> . Also, in the determination of whether or not to backfill pits, the predicted quality of <u>pit lake</u> water should be compared to IRMA Water Quality Criteria.



The IRMA Standard:
Requirements
Social Responsibility



Chapter 3.1

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 United Nations *International Bill of Human Rights*, and the ILO *Declaration on Fundamental Principles and Rights at Work* and eight core ILO conventions that cover: freedom of association and the right to collective bargaining; the elimination of all forms of forced or compulsory labor; the abolition of child labor; and the elimination of discrimination in respect of employment and occupation. In addition to acknowledging the need to safeguard those human rights of workers, companies are increasingly recognizing the need to provide working hours and wages that promote a high quality of life for workers and their families.

The fundamental principles and rights of workers have been incorporated into various voluntary standards to protect labor rights and ensure fair working conditions (e.g., International Finance Corporation Performance Standard 2; Social Accountability International SA8000; Global Reporting Initiative). Within any responsible labor standard and verification system, there is an inextricable link between the role of workers and the practice of freedom of association. Workers with first-hand knowledge of environmental, human rights and labor practices must have the right to participate in the verification process without fear of employer retribution. This can be best guaranteed by workers having the right to freely establish or join trade unions of their choosing without employer interference and through protections provided in collective bargaining agreements.

TERMS USED IN THIS CHAPTER

Child Labor ■ Company Union ■ Consultation ■ Contractors ■ Corporate Owner ■ Forced Labor ■ Grievance ■ Grievance Mechanism ■ Hazardous Work ■ Host Country Law ■ Indigenous Peoples ■ Living Wage ■ Mining Project ■ Mining-Related Activities ■ Operating Company ■ Practicable ■ Remediation/Remedy ■ Retrenchment ■ Stakeholders ■ Suppliers ■ Trafficking in Persons ■ Worker ■ Workers' Organizations ■ Workers' Representative ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

OBJECTIVES/INTENT OF THIS CHAPTER

To maintain or enhance the social and economic well-being of mine workers and respect internationally recognized workers' rights.

SCOPE OF APPLICATION

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 contractors involved in mining-related activities comply with the IRMA Standard.

Fair Labor and Terms of Work Requirements

3.1.1. Human Resources Policy

3.1.1.1. The operating company shall adopt and implement human resources policies and procedures applicable to the mining project that set out its approach to managing workers in a manner that is consistent with the requirements of this chapter and national (i.e., host country) law.⁹²

3.1.2. Workers' Organizations and Agreements

3.1.2.1. The operating company shall respect the rights of workers to freedom of association and collective bargaining.

3.1.2.2. 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.

3.1.2.3. The operating company shall engage with workers' representatives and workers' organizations and provide them with information needed for meaningful negotiation in a timely manner.

3.1.2.4. Workers' representatives shall have access to facilities needed to carry out their functions in the workplace. This includes access to designated non-work areas during organizing efforts for the purposes of communicating with workers, as well as accommodations for workers' representatives at fly-in/fly-out or other remotely located mine sites, where relevant.

3.1.2.5. 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.⁹³

3.1.2.6. Upon employment, the operating company shall:

- a. Inform workers of their rights under national labor and employment law;
- b. Inform workers that they are free to join a workers' organization of their choosing without any negative consequences or retaliation from the operating company;
- c. If relevant, inform workers of their rights under any applicable collective agreement; and
- d. If relevant, provide workers with a copy of the collective agreement and the contact information for the appropriate trade union (or workers' organization) representative.

3.1.2.7. 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.⁹⁴

⁹² IRMA recognizes that for larger companies, human resources policies may be developed at the corporate level. In these cases, IRMA does not expect the operating company to have developed its own policies, but the operating company will be expected to demonstrate that the mine site is operating in compliance with the corporate policies (e.g., site-level management understand the corporate policies, and have integrated them into the mine site's procedures).

⁹³ 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.

⁹⁴ 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.

3.1.2.8. 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.

3.1.2.9. 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 or reduce obligations to workers under applicable labor and social security laws and regulations.

3.1.2.10. The operating company shall not hire replacement workers in order to prevent, undermine or break up a legal strike, support a lockout, or avoid negotiating in good faith. The company may, however, hire replacement workers to ensure that critical maintenance, health and safety, and environmental control measures are maintained during a legal strike.

3.1.3. Non-Discrimination and Equal Opportunity

3.1.3.1. The operating company shall base employment relationships⁹⁵ 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.⁹⁶

3.1.3.2. Exceptions to 3.1.3.1 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.

3.1.3.3. The operating company shall take measures to prevent and address harassment, intimidation, and/or exploitation, especially in regard to female workers.

3.1.4. Retrenchment

3.1.4.1. Prior to implementing any collective dismissals,⁹⁷ the operating company shall carry out an analysis of alternatives to retrenchment.⁹⁸ 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,⁹⁹ and be implemented to reduce the adverse impacts of retrenchment on workers.

⁹⁵ 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.

⁹⁶ Personal characteristics unrelated to inherent job requirements may include: gender, race, nationality, ethnicity, social and indigenous origin, religion or belief, disability, HIV status, age, sexual orientation, marital status, parental status, worker status (e.g., local vs. migrant workers, temporary versus permanent workers), political affiliation, union membership and veteran status.

⁹⁷ 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.

⁹⁸ Examples of alternatives may include negotiated working-time reduction programs, employee capacity-building programs; long-term maintenance works during low production periods, etc. (Source: IFC. 2004. Managing Retrenchment. Good Practice Note No. 4. <https://www.ifc.org/wps/wcm/connect/8b14b6004885555db65cf66a6515bb18/Retrenchment.pdf?MOD=AJPERES>)

⁹⁹ Ibid. 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.

3.1.4.2. 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 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.¹⁰⁰ Where payments are made for the benefit of workers, they shall be provided with evidence of such payments.

3.1.5. Grievance Mechanism

3.1.5.1. The operating company shall provide a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns.¹⁰¹ The mechanism, at minimum:

- a. Shall involve an appropriate level of management and address concerns promptly, without any retribution, using an understandable and transparent process that provides timely feedback to those concerned;
- b. Shall allow for anonymous complaints to be raised and addressed;
- c. Shall allow workers' representatives to be present, if requested by the aggrieved worker; and
- d. Shall not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.

3.1.5.2. The operating company shall inform the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them.

3.1.5.3. The operating company shall maintain a record of grievances and the company's actions taken to respond to and/or resolve the issues.

3.1.6. Disciplinary Procedures

3.1.6.1. The operating company shall have documented disciplinary procedures (or their equivalent) that are made available to all workers.

3.1.6.2. 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.

3.1.6.3. The operating company shall keep records of all disciplinary actions taken.

3.1.7. Child Labor

3.1.7.1. The operating company shall document the ages of all workers.

¹⁰⁰ In some jurisdictions companies may be obligated by law to transfer certain payments to specific institutions such as pension fund administration, health funds, etc. In such cases companies would not provide payments directly to the worker but, for the benefit of the worker, to the appropriate institution. In cases where payments to certain institutions are optional the company should allow the worker to choose either a direct cash payment or payment to a defined institution.

¹⁰¹ If worker complaints/grievances involve the infringement of human rights, they should either be handled through the general operational grievance mechanism (see IRMA Chapter 1.4), which is required to conform with the effectiveness criteria laid out in the UN Guiding Principles on Business and Human Rights (UNGP) (See pp. 33 -35 of http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf) or be addressed through a different procedure that is compatible with the UNGP effectiveness criteria. If the grievance mechanism in 3.1.5.1 meets the UNGP effectiveness criteria, then that shall suffice.

3.1.7.2. Children (i.e., persons under the age of 18)¹⁰² shall not be hired to do hazardous work (e.g., working underground or where there may be exposure to hazardous substances).¹⁰³

3.1.7.3. The minimum age for non-hazardous work shall be 15, or the minimum age outlined in national law, whichever is higher.

3.1.7.4. When a child is legally performing non-hazardous work, the company shall assess and minimize the risks to their physical and mental health, and ensure that regular monitoring of the child's health, working conditions and hours of work occurs by the national labor authority, or if that is not possible, by the company itself.

3.1.7.5. If the operating company discovers that a child under the minimum ages outlined in 3.1.7.2 or 3.1.7.3 is performing hazardous or non-hazardous work:

- a. The child shall be removed immediately from his or her job; and
- b. Remediation procedures shall be developed and implemented that provide the child with support in his or her transition to legal work or schooling, and that take into consideration the welfare of the child and the financial situation of the child's family.

3.1.7.6. Where there is a high risk of child labor in the mine's supply chain,¹⁰⁴ the operating company shall develop and implement procedures to monitor its 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 supply chain over time to suppliers that can demonstrate that they are complying with this chapter.

3.1.8. Forced Labor

3.1.8.1. The operating company shall not employ forced labor or participate in the trafficking of persons.

3.1.8.2. Where there is a high risk of forced or trafficked labor in the mine's supply chain,¹⁰⁵ the operating company shall develop and implement procedures to monitor its 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,

¹⁰² Age 18 is the dividing line between childhood and adulthood according to the major ILO child labour conventions (Nos. 138 and 182), and the United Nations Convention on the Rights of the Child (CRC).

¹⁰³ Examples of hazardous work activities include work (i) with exposure to physical, psychological, or sexual abuse; (ii) underground, underwater, working at heights, or in confined spaces; (iii) with dangerous machinery, equipment, or tools, or involving handling of heavy loads; (iv) in unhealthy environments exposing the worker to hazardous substances, agents, processes, temperatures, noise, or vibration damaging to health; or (v) under difficult conditions such as long hours, late night, or confinement by employer. (Source: IFC. 2012. Performance Standard 2. Footnote 12. https://www.ifc.org/wps/wcm/connect/2408320049a78e5db7f4f7a8c6a8312a/PS2_English_2012.pdf?MOD=AJPERES)

¹⁰⁴ The determination of whether or not there is a high risk of child labor in the supply chain should occur as part of the operating company's human rights due diligence in Chapter 1.3. If child labor in the supply chain is identified as being a salient risk during the human rights impact assessment, the company will be required to carry out the remaining due diligence as per Chapter 1.3, and also the requirements in 3.1.7.6. Additionally, if the mine is operating in or sourcing minerals from a conflict-affected and high-risk area, child labor should be one of the issues assessed in the conflict risk assessment. If child labor is identified as a risk, the due diligence outlined in Chapter 3.4 apply.

¹⁰⁵ The determination of whether or not there is a high risk of forced labor in the supply chain should occur as part of the operating company's human rights due diligence in Chapter 1.3. If forced labor in the supply chain is identified as being a salient risk during the human rights impact assessment, the company will be required to carry out the remaining due diligence as per Chapter 1.3, and also the requirements in 3.1.8.2. Additionally, if the mine is operating in or sourcing minerals from a conflict-affected and high-risk area, forced labor should be one of the issues assessed in the conflict risk assessment. If forced labor is identified as a risk, the due diligence outlined in Chapter 3.4 apply.

the operating company shall shift the project's supply chain over time to suppliers that can demonstrate that they are complying with this chapter.

3.1.9. Wages

3.1.9.1. The operating company shall pay wages to workers that meet or exceed the higher of applicable legal minimum wages, wages agreed through collective wage agreements, or a living wage.¹⁰⁶

3.1.9.2. 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.

3.1.9.3. All workers shall be provided with written and understandable information about wages (overtime rates, benefits, deductions and bonuses) before they enter employment, and for the pay period each time they are paid.

3.1.9.4. The operating company shall pay wages in a manner that is reasonable for workers (e.g., bank transfer, cash or check).

3.1.9.5. 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.

3.1.10. Working Hours and Leave

3.1.10.1. The operating company shall ensure that:

- a. Regular working hours do not exceed eight hours per day, or 48 hours 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 eight hours per day and 48 hours per week;
- b. Workers are provided with at least 24 consecutive hours off in every 7-day period; and
- c. Overtime is consensual and limited to 12 hours a week.
- d. Exceptions to 3.1.10.1.b and c shall be allowed at mines in remote locations if:
 - i. A freely negotiated collective bargaining agreement is in force that allows variances to the rest and/or overtime hours above; and
 - ii. 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.

3.1.10.2. Where neither national law nor a collective bargaining agreement includes provisions for worker leave, the operating company shall, at minimum, provide:

¹⁰⁶ Living wage has been defined as: "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. (Ankar, R. and Ankar, M. 2013. *A Shared Approach to Estimating Living Wages*. Prepared for the Global Living Wage Coalition. http://www.isealliance.org/sites/default/files/Global_Living_Wage_Coalition_Anker_Methodology.pdf)

- a. An annual paid holiday of at least three working weeks per year, after the worker reaches one year of service;¹⁰⁷ and
- b. A maternity leave period of no less than 14 weeks.

NOTES

This chapter uses, as its basis, the International Finance Corporation's (IFC) Performance Standard 2 – Labor and Working Conditions. In addition to aligning with IFC performance standard requirements, this chapter contains two additional criteria related to Wages (3.1.9) and Working Hours and Leave (3.1.10), with requirements that are based, in part, on ILO conventions.

CROSS REFERENCES TO OTHER CHAPTERS

CHAPTER	ISSUES
1.1—Legal Compliance	As per Chapter 1.1, if <u>host country laws</u> are more protective of <u>workers'</u> rights or provide more favorable terms of work, those requirements shall supersede IRMA requirements. But if IRMA requirements are more stringent than <u>host country law</u>, the company is required to also meet the IRMA requirements, as long as complying with them would not require the company to violate <u>host country law</u>. Also, as per 1.1.5.1 the <u>operating company</u> is responsible for ensuring that <u>contractors</u> involved in <u>mining-related activities</u> comply with the requirements of this chapter of the IRMA Standard, i.e., <u>contract workers</u> and any other workers who provide project-related work and services should be apprised of labor rights and provided fair terms of work. Additionally, Chapter 3.1 requires companies to take steps to identify instances of <u>child labor</u> and <u>forced labor</u> within their primary supply chain. This should also apply to <u>contractors</u> as per 1.1.5.1. Similarly, if <u>contractors</u> place <u>worker</u> health and safety at risk, procedures and mitigation measures will need be taken to <u>remedy</u> this.
1.2—Community and Stakeholder Engagement	<u>Workers</u> are <u>stakeholders</u>, and also often members of the <u>affected communities</u>. As such, the engagement process with <u>workers</u> on issues related to <u>affected communities</u> should align with the requirements in Chapter 1.2.
1.3—Human Rights Due Diligence	The <u>grievance mechanism</u> in Chapter 1.3 may also be used by <u>workers</u> seeking <u>remedy</u> for perceived infringements of their human rights (e.g., core labor rights are considered human rights). Also, if there are instances of <u>child labor</u> or <u>forced labor</u> at the mine, both of which are considered infringements of human rights, companies shall ensure that the remedy section of Chapter 1.3 is followed (see requirement 1.3.3). The risks that <u>child labor</u> or <u>forced labor</u> might occur at the mine or in its supply chain should be assessed as part of the human rights assessment in Chapter 1.3.

¹⁰⁷ A worker whose length of service in any year is less than that required for the full entitlement shall be entitled to a holiday with pay proportionate to his or her length of service during that year. (Based on ILO C132 – Holidays with Pay Convention (Revised), 1970 (No. 132). http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100::NO:12100:P12100_ILO_CODE:C132:NO)

CROSS REFERENCES TO OTHER CHAPTERS	
1.4—Complaints and Grievance Mechanism and Access to Remedy	It is possible that one <u>grievance mechanism</u> may be suitable to address <u>grievances</u> raised in relation to the <u>mining project</u> from all <u>stakeholders</u> including <u>workers</u> , ¹⁰⁸ however, typically <u>labor grievances</u> are dealt with through a separate mechanism established through collective bargaining agreements or human resources policies. ¹⁰⁹ If <u>worker-specific grievance mechanisms</u> are developed, they need to be consistent with the effectiveness criteria in Chapter 1.4.
3.2—Occupational Health and Safety	Although there are some requirements in this chapter that have a health and safety aspect (such as <u>child labor</u> and working hours), <u>worker-related</u> issues related to occupational health and safety issues are specifically covered in Chapter 3.2. Compensation for work-related injuries are also addressed in Chapter 3.2 (requirement 3.2.3.5). The <u>grievance mechanism</u> in 3.1.5 may be used to hear worker’s OH&S-related grievances.
3.3—Community Health and Safety	Requirement 3.1.3.1 mandates fair treatment in employment relationships, and prohibits <u>operating companies</u> from making discriminatory employment decisions on the basis of personal characteristics unrelated to inherent job requirements, such as HIV/AIDs status, which is also addressed in Chapter 3.3 (see requirement 3.3.4.2).
3.4—Mining and Conflict Affected Areas	Incidents of <u>child labor</u> or <u>forced labor</u> are addressed in Chapter 3.1. However, if the mine is in a conflict-affected or high-risk area the potential for <u>child labor</u> and <u>forced labor</u> should also be considered during the <u>conflict risk</u> assessment in Chapter 3.4.

¹⁰⁸ The UN Office of the High Commissioner of Human Rights 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)

¹⁰⁹ 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



Chapter 3.2

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 from radiation exposure, asphyxiation, pneumonia, respiratory disorders and lung diseases such as silicosis, damage to internal organs and other effects related to chemical/metal exposures, decreased mental health and well-being, and others.¹¹⁰

Key hazards related to mining include, but are not limited to: rocks falls, ground subsidence, vehicle collisions with other vehicles, equipment, humans or wildlife, explosions, release of noxious gases, catastrophic failure of mine infrastructure.¹¹¹

Due to the many hazards and potential impacts associated with mining, a strong focus on occupational health and safety must be present at responsible mines.

In 1995, *Convention 176–Safety and Health in Mines* was adopted by the International Labour Organization (ILO).¹¹² The convention set out international standards with respect to occupational health and safety at mine sites, including the need for: safety and health inspections, accident reporting and investigations, hazard assessment and management, and workers' rights to participate in workplace health and safety decisions, be adequately trained in their tasks, be informed of occupational hazards, and to remove themselves from dangerous workplace situations.

TERMS USED IN THIS CHAPTER

Affected Community ■ Biological Exposure Indices (BEI) ■ Competent Authority ■ Competent Professionals ■ Comprehensible Manner ■ Consultation ■ Contractor ■ Corporate Owner Grievance ■ Hazard ■ Health Surveillance ■ Inform ■ Mining Project ■ Mining-Related Activities ■ Occupational Exposure Limit (OEL) ■ Operating Company ■ Stakeholder ■ Supplier ■ Training ■ Worker ■ Workers' Representative ■ *These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.*

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

RELEVANCE: This chapter is relevant for all mines applying for IRMA certification, however, requirements 3.2.1.5.d and e, and 3.2.3.2.c are only applicable for underground mining operations.

Occupational Health and Safety Requirements

¹¹⁰ ICMM. 2009. Good Practice Guidance on Occupational Health Risk Assessment. https://www.icmm.com/website/publications/pdfs/health-and-safety/161212_health-and-safety_health-risk-assessment_2nd-edition.pdf

¹¹¹ ICMM website: "Preventing Fatalities." <https://www.icmm.com/en-gb/health-and-safety/safety/preventing-fatalities>

¹¹² International Labour Organization. 1995. Safety and Health in Mines Convention, 1995 (No. 176). www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_ILO_CODE:C176

3.2.1. Health and Safety Management System

3.2.1.1. The operating company shall implement a health and safety management system for measuring and improving the mining project's health and safety performance.¹¹³

3.2.2. Health and Safety Risk Assessment and Management

3.2.2.1. The operating company shall implement an ongoing, systematic health and safety risk assessment process that follows a recognized risk assessment methodology for industrial operations.

3.2.2.2. The assessment process shall identify and assess the significance/consequence of the full range of potential hazards associated with the mining project, including those related to:

- a. The design, construction and operation of the workplace, mining-related activities and processes, the physical stability of working areas, the organization of work, use of equipment and machinery, and waste and chemical management;¹¹⁴
- b. All personnel, contractors, business partners, suppliers and visitors;
- c. Unwanted events;¹¹⁵
- d. Routine and non-routine activities, products, procedures, and services; and
- e. Changes in duration, personnel, organization, processes, facilities, equipment, procedures, laws, standards, materials, products systems and services.

3.2.2.3. The operating company shall pay particular attention to identifying and assessing hazards to workers who may be especially susceptible or vulnerable to particular hazards.

3.2.2.4. The operating company shall develop, implement and systematically update a risk management plan that prioritizes measures to eliminate significant hazards, and outlines additional controls to effectively minimize negative consequences and protect workers and others from remaining hazards.¹¹⁶

3.2.2.5. The operating company shall demonstrate that it has developed procedures and 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 own safety and health or that of other persons;
- c. Maintain the stability of the ground in areas where persons may have access in the context of their work;

¹¹³ See the Government of Western Australia Department of Mines, Industry Regulation and Safety for information on suggested components of a health and safety management system: <http://www.dmp.wa.gov.au/Safety/What-is-a-safety-management-4598.aspx>

¹¹⁴ See also IRMA Chapter 4.1—Waste and Materials Management, requirements 4.1.2.1 and 4.1.3.1.

¹¹⁵ An unwanted event is a situation where a hazard has or could possibly be released in an unplanned way. (Source: ICMM. 2015. Health and Safety Critical Control Management Good Practice Guide. <https://www.icmm.com/website/publications/pdfs/health-and-safety/8570.pdf>)

¹¹⁶ Re: "systematically update," plans should be updated as necessary based on the outcomes and information from the company's ongoing risk assessment process, monitoring, and other information.

For information on the hierarchy of controls see ILO C176 – Safety and Health in Mines (1995). http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C176

- d. If relevant, whenever practicable provide two exits from every underground workplace, each connected to separate means of egress to the surface;¹¹⁷
- e. If relevant, ensure adequate ventilation for all underground workings to which access is permitted;¹¹⁸
- 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 potential high risk of harm to workers, operations are stopped and workers are evacuated to a safe location.

3.2.3. Communication and Engagement with Workers and Others

3.2.3.1. Workers shall be informed of their rights to:

- a. Report accidents, dangerous occurrences and hazards to the employer and to the competent authority;
- b. Request and obtain, where there is cause for concern on safety and health grounds, inspections and investigations to be conducted by the employer and the competent authority;
- c. Know and be informed of workplace hazards that may affect their safety or health;
- d. Obtain information held by the employer or the competent authority that is relevant to their safety or health;
- e. Remove themselves from any location at the mine when circumstances arise that appear, with reasonable justification, to pose a serious danger to their safety or health; and
- f. Collectively select safety and health representatives.

3.2.3.2. In all cases a worker attempting to exercise in good faith any of the rights referred to in 3.2.3.1 shall be protected from reprisals of any sort.

3.2.3.3. The operating company shall develop systems to effectively communicate with and enable input from the workforce on matters relating to occupational health and safety.¹¹⁹

3.2.3.4. The operating company shall develop and implement a formal process involving workers' representatives and company management to ensure effective worker consultation and participation in matters relating to occupational health and safety including:¹²⁰

- 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 workers' health surveillance; and
- d. Development of appropriate assistance and programs to support worker health and safety, including worker mental health.

3.2.3.5. The operating company shall provide workers' health and safety representatives with the opportunity to:

- a. Participate in inspections and investigations conducted at the workplace by the employer and by the competent authority;
- b. Monitor and investigate safety and health matters;

¹¹⁷ This is only relevant at underground mines.

¹¹⁸ This is only relevant at underground mines.

¹¹⁹ See also Chapter 1.2 for requirements relating to communications with stakeholders, which should also apply to workers.

¹²⁰ For example, a joint health and safety committee or its equivalent.

- c. Have recourse to advisers and independent experts; and
- d. Receive timely notice of accidents and dangerous occurrences.

3.2.3.6. 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.

3.2.4. Measures to Protect Workers

3.2.4.1. The operating company shall implement measures to protect the safety and health of workers including:

- a. Informing workers, in a comprehensible manner, of the hazards associated with their work, the health risks involved and relevant preventive and protective measures;
- b. Providing and maintaining, at no cost to workers, suitable protective equipment and clothing where exposure to adverse conditions or adequate protection against risk of accident or injury to health cannot be ensured by other means;
- c. Providing 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;
- d. Providing, at no cost to workers, education and training/retraining programs and comprehensible instructions on the work assigned and on safety and health matters;
- e. Providing adequate supervision and control on each shift; and
- f. If relevant, establishing a system to identify and track at any time the probable locations of all persons who are underground.¹²¹

3.2.4.2. 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.

3.2.4.3. 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.

3.2.4.4. 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 government schemes or a collective bargaining agreement:¹²²
 - i. The operating company shall compensate workers for work-related injuries or illnesses at a rate that, at minimum, covers medical expenses and wages during the recovery and rehabilitation period;¹²³
 - ii. If a worker is not able to return to work due to the severity of a work-related injury or illness, the operating company shall compensate for lost earnings until the worker qualifies for an adequate

¹²¹ This is only relevant at underground mines.

¹²² Many, but not all countries have workers' compensation schemes. For example, a 2002 report found that 136 countries had worker compensation programs, meaning that approximately 60 did not. (Eleson, R. 2002. International Workers' Compensation. Prepared for the Indiana Compensation Rating Bureau. <http://compclues.icrb.net/file/29dbcff9-2752-4fed-bfdc-422c8c403483>)

¹²³ If medical expenses are fully covered by health insurance, then companies are not required to provide additional compensation.

pension (i.e., 2/3 or more of the salary they would otherwise normally receive if healthy and working),¹²⁴ or

- iii.  If an occupational illness manifests after a worker has retired, the operating company or its corporate owner shall, at minimum, compensate the worker for medical expenses, unless the operating company or its corporate owner can establish that the occupational illness was not connected to the worker's employment at the mining project.¹²⁵
- 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; and
- c. Where a worker dies as a result of a work-related injury or disease, the operating company shall, at minimum, provide to spouses and dependent children benefits to cover funeral expenses and transportation of the worker's body, if appropriate, as well as compensation that is equal to or greater than three months' salary of the deceased worker.



[flag] 3.2.4.4.a.iii Issue in brief: The IRMA Steering Committee is interested in exploring with mining companies and workers whether or not requirement 3.2.4.4.a.iii, as written, is reasonable, and verifiable.

In particular, IRMA recognizes that illnesses related to occupational exposures or incidents may not manifest until after the worker has stopped being employed by the mine, and at that point it can be extremely difficult for workers to prove that working at the mine caused their illnesses.

Mine sites, on the other hand, should be retaining records related to occupational exposures, accidents, workers' medical surveillance, etc., that can establish whether or not there is a probable link between occupational issues and the ex-worker's subsequent illnesses

3.2.5. Inspections, Monitoring and Investigations

3.2.5.1. The operating company and workers' representatives on a joint health and safety committee, or its equivalent, shall perform regular inspections of the working environment to identify the various hazards to which workers may be exposed, and to evaluate the effectiveness of occupational health and safety controls and protective measures.

3.2.5.2. 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 surveillance shall be designed and conducted by certified industrial hygienists or other competent professionals;
- 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 analyzed in an ISO/IEC-17025-certified or nationally accredited laboratory;

¹²⁴ 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.

¹²⁵ If medical expenses are fully covered by health insurance or relevant compensation schemes covering occupational health matters, then companies are not required to provide additional compensation.

- d. Sample results shall be compared against national occupational exposure limits (OELs) and/or biological exposure indices (BEIs), if they exist,¹²⁶ or OELs/BEIs developed by the American Conference of Governmental Industrial Hygienists (ACGIH);¹²⁷ and
- e. If an OEL/BEI is exceeded, the affected worker(s) shall be informed immediately, and controls shall be reviewed and revised in a timely manner to ensure that future exposure levels remain within safe limits.

3.2.5.3. Controls, protective measures, health risk assessments, risk management plans, and training and educational materials shall be updated as necessary based on inspection and monitoring results.

3.2.5.4. 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 and investigated, and that appropriate remedial action is taken.

3.2.6. Health and Safety Data Management and Access to Information

3.2.6.1. 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 shall be 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.

3.2.6.2. 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,¹²⁸ and responsible custodians shall be assigned to oversee the health data management system.

3.2.6.3. The operating company shall allow workers access to their personal information regarding accidents, dangerous occurrences, inspections, investigations, remedial actions, health surveillance and medical examinations.

NOTES

Many of the requirements in this chapter are based on International Labour Organization Convention *C176 - Safety and Health in Mines*.

¹²⁶ 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

¹²⁷ 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/

¹²⁸ 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 <u>host country laws</u> (i.e., national laws) address occupational health and safety, the company is required to abide by those laws. If IRMA requirements are more stringent than <u>host country law</u>, the company is required to also meet the IRMA requirements, as long as complying with them would not require the <u>operating company</u> to violate <u>host country law</u>. Also, the <u>operating company</u> is responsible for ensuring that <u>contractors</u> involved in <u>mining-related activities</u> comply with the requirements of this chapter of the IRMA Standard, i.e., <u>contract workers</u> and any other workers who provide project-related work and services should be afforded a safe and healthful work environment.
1.2—Community and Stakeholder Engagement	<u>Workers</u> are <u>stakeholders</u> , and also often members of the <u>affected communities</u> . As such, the engagement process with <u>workers</u> should align with the requirements in Chapter 1.2.
1.3—Human Rights Due Diligence	<u>Workers</u> have the right to health. Consequently, during the human rights assessment companies should include an assessment the potential that employees may be exposed to unacceptable health impacts that impinge on this right.
2.5—Emergency Preparedness and Response	Chapters 2.5 and 2.2 share the similar objective of protecting the health and safety of workers, but 2.5 also addresses <u>affected communities</u> . <u>Workers</u> and their representatives are to be consulted in the development of the Emergency Response Plan as per 2.5.2.
3.1—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 <u>workers</u> (such as those relating to <u>child labor</u> in 3.1.7, and working hours in 3.1.9). The <u>grievance mechanism</u> in Chapter 3.1, criterion 3.1.5, may be used to hear health- and safety-related worker <u>grievances</u>.
3.3—Community Health and Safety	Chapter 3.3 shares similar objectives to Chapter 3.2 of protecting the health and safety of communities, of which <u>workers</u> are often members. The community health and safety risk and impact assessment process includes collaboration with <u>workers</u> as per criteria 3.3.5. Also, criteria 3.3.4 has requirements that pertain to <u>workers/employees</u> that are triggered if there are significant risks to <u>workers/communities</u> related to HIV/AIDS, tuberculosis or malaria.
3.4—Mining in Conflict-Affected or High-Risk Areas	There may be particular risks to <u>workers</u> when projects are located in <u>conflict-affected or high-risk areas</u> . 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 <u>workers</u> , and the information should be integrated in the occupational health and safety risk assessment (or vice versa).



Chapter 3.3 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.¹²⁹

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

RELEVANCE: This chapter is relevant for any mining project 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 current mining activities or potential mine expansions.

The specific provisions related to HIV/AIDS, tuberculosis and malaria (criteria 3.3.4) 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.

TERMS USED IN THIS CHAPTER

Affected Community ■ Collaborate ■ Contract Workers ■ Contractors ■ Ecosystem Services ■ Host Country Law ■ Mine Closure ■ Mining Project ■ Mining-Related Activities ■ Mitigation ■ Mitigation Hierarchy ■ Operating Company ■ Priority Ecosystem Services ■ Post-Closure ■ Stakeholder ■ Tailings ■ Vulnerable Group ■ Worker ■ Workers' Organizations ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

Community Health and Safety Requirements

3.3.1. Health and Safety Risk and Impact Scoping

3.3.1.1. 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:¹³⁰

- a. General mining operations;
- b. Operation of mine-related equipment or vehicles on public roads;
- c. Operational accidents;

¹²⁹ ICMM. Good Practice Guidance on Health Impact Assessment. p. 32. www.icmm.com/document/792

¹³⁰ Some or all of these risks and impacts may have been scoped as part of the ESIA (IRMA Chapter 2.1), or other IRMA chapters. If so, there is no need to re-scope the issues in a standalone Community Health and Safety Scoping exercise.

- d. Failure of structural elements such as tailings dams, impoundments, waste rock dumps (see also IRMA Chapter 4.1);¹³¹
- e. Mining-related impacts on priority ecosystem services;¹³²
- f. Mining-related effects on community demographics, including in-migration of mine workers and others;
- g. Mining-related impacts on availability of services;
- h. Hazardous materials and substances that may be released as a result of mining-related activities;¹³³ and
- i. Increased prevalence of water-borne, water-based, water-related, and vector-borne diseases, and communicable and sexually transmitted diseases (e.g., HIV/AIDs, tuberculosis, malaria, Ebola virus disease or others) that could occur as a result of the mining project.

3.3.1.2. Scoping shall include an examination of risks and impacts that may occur throughout the mine life cycle (e.g., construction, operation, reclamation, mine closure and post-closure).

3.3.1.3. Scoping shall include consideration of the differential impacts of mining activities on vulnerable groups or susceptible members of affected communities.

3.3.2. Risk and Impact Assessment

3.3.2.1. The operating company shall carry out an assessment of risks and impacts to:¹³⁴

- a. Predict the nature, magnitude, extent and duration of the potential risks and impacts identified during scoping; and
- b. Evaluate the significance of each impact, to determine whether it is acceptable, requires mitigation, or is unacceptable.¹³⁵

3.3.3. Risk and Impact Management and Mitigation

3.3.3.1. The operating company shall document and implement a community health and safety risk management plan that includes:

- a. Actions to be taken to mitigate the significant risks and impacts identified during its risk and impact assessment; and
- b. Monitoring that will be conducted to ensure that measures to prevent or mitigate impacts remain effective.

¹³¹ It is possible that as part of a mine's waste management approach a scoping assessment may have been undertaken to identify risks to community safety from tailings dams, impoundments, waste rock dumps and other waste facilities. If such a scoping exercise was done, and risks to community health or safety were identified, then these risks should have been (or should be) further assessed to determine the significance of the risks to community health and safety. This may have been (or may be) done as part of the Community Health and Safety Risk and Impact Assessment in section 3.3.2 or another assessment such as an ESIA (see IRMA Chapter 2.1).

¹³² See also IRMA Chapter 4.6. Potential impacts on priority ecosystem services should have been identified as part of the scoping exercise for IRMA Chapter 4.6. If any of the identified potential impacts create risks to community health or safety, they should be further assessed to determine the significance of those risks.

Mining-related impacts on priority ecosystems services that could pose a risk to communities include, for example, land use changes or the loss of natural buffer areas such as wetlands, mangroves, and upland forests. These systems often mitigate the effects of natural hazards such as flooding, landslides, and fire, and if lost or damaged may result in increased vulnerability and community safety-related risks and impacts. Also, the diminution or degradation of freshwater may result in health-related risks and impacts. (IFC. 2012. Performance Standard 2. Para. 8).

¹³³ See IRMA Chapter 4.1 for more requirements related to hazardous materials.

¹³⁴ Some or all of these risks and impacts may have been assessed as part of the ESIA (IRMA Chapter 2.1), risks in 3.3.1.1.d may have been assessed as part of a mine waste risk assessment (IRMA Chapter 4.1), and risks to human health and safety related to impacts on priority ecosystem services in 3.3.1.1.e may have been assessed as part of a scoping exercise as per Chapter 4.6. If the full range of risks to community health and safety were assessed elsewhere, there is no need to duplicate efforts.

¹³⁵ As per requirement 3.3.5.1.b, stakeholders must be involved in the assessment of the significance of the risks.

3.3.3.2. Mitigation measures shall prioritize the avoidance of risks and impacts over minimization and compensation.

3.3.3.3. The community health and safety risk management plan shall be updated as necessary based on the results of risk and impact monitoring.¹³⁶

3.3.4. Specific Provisions Related to HIV/AIDS, Tuberculosis, Malaria and Emerging Infectious Diseases

3.3.4.1. If the operating company's risk and impact assessment or other information indicates that there is a significant risk of community exposure to HIV/AIDS, tuberculosis, malaria or another emerging infectious disease related to mining activities, the operating company shall develop, adopt and implement policies, business practices, and targeted initiatives to address identified risks, and shall:¹³⁷

- a. In partnership with public health agencies, workers' organizations and other relevant stakeholders, create and fund initiatives to educate 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 practices for the prevention and treatment of these diseases with workers' organizations, other companies, civil society organizations and policymakers; and
- c. Make information publicly available on its infectious disease mitigation program.

3.3.4.2. If the assessment demonstrates a significant risk of community exposure to HIV/AIDS, tuberculosis or malaria from mining-related activities, the following prevention and mitigation strategies shall be applied, as appropriate:¹³⁸

- a. In relation to HIV/AIDS, the operating company shall, at minimum:
 - i. Provide free, voluntary and confidential HIV testing and counseling for all mine workers and employees;
 - ii. Provide HIV/AIDS treatment for workers and employees where it cannot reasonably be assumed that this will be provided in an effective manner by public or private insurance schemes at an affordable rate;
 - iii. Provide access for contractors to education and other preventative programs, and 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 mine workers/employees and affected community members.
- b. In relation to tuberculosis, the operating company shall, at minimum, provide free and voluntary testing for mine workers/employees where it is not reasonably likely to be provided by public or private health programs at an affordable rate; and
- c. In relation to malaria, the operating company shall, at minimum:
 - i. Develop a vector control plan;

¹³⁶ Updated "as necessary" should be interpreted as meaning that plans should be updated whenever monitoring or other information indicates that impacts on community health and safety have occurred, or that changes to the mining project (e.g., expansions, changes in operations and practices, etc.) may create new risks that need to be mitigated.

¹³⁷ This requirement is only relevant if there is a significant risk of community exposure to HIV/AIDS, tuberculosis, malaria or another emerging infection disease that is in some way related to the presence of the mining project.

¹³⁸ This requirement and/or sub-requirements are only relevant if there is a significant risk of community exposure to HIV/AIDS, tuberculosis, malaria or another emerging infection disease that is in some way related to the presence of the mining project.

- ii. Ensure that company facilities are not breeding environments for malaria-carrying mosquitoes; and
- iii. Provide protection from infection by malaria-carrying mosquitoes in company facilities and any company-provided housing.

3.3.5. Stakeholder Engagement

3.3.5.1. The operating company shall collaborate with relevant community members¹³⁹ and stakeholders, including workers who live in affected communities and individuals or representatives of vulnerable groups, in:

- a. Scoping of community health and safety risks and impacts related to mining;
- b. Assessment of significant community health and safety risks and impacts related to mining;
- c. Development of prevention or mitigation strategies;
- d. Collection of any data needed to inform the health risk and impact assessment process; and
- e. Design and implementation of community health and safety monitoring programs.

3.3.6. Reporting

3.3.6.1. The operating company shall make information on community health and safety risks and impacts and monitoring results publicly available.

NOTES

Infectious diseases such as HIV/AIDS, tuberculosis, malaria or other emerging infectious diseases (e.g., Ebola virus disease, sexually transmitted diseases, etc.) may present risks for some mining projects and communities. If significant risks related to infectious or communicable diseases are identified during the community health and safety risk and impact assessment process, then companies are 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 mining companies to minimize their impact in relation to those diseases.¹⁴⁰ Recent experience with Ebola virus in Liberia has demonstrated that mining operations can also play a key role in combatting other infectious diseases that threaten their workers and communities.¹⁴¹

¹³⁹ Relevant community members include women, men, children or their representatives, other vulnerable groups (e.g., ethnic minorities, the elderly, health-compromised individuals, children) or their representatives, public health providers, government health agencies, and workers who live in affected communities. A review of government statistics on various diseases may help to reveal other relevant populations.

¹⁴⁰ International Council on Mining and Metals. 2008. Good Practice Guidance on HIV/AIDS, Tuberculosis and Malaria. <https://www.icmm.com/website/publications/pdfs/health-and-safety/314.pdf>

¹⁴¹ US Geological Survey. 2015. Fact Sheet: The Ebola Virus Disease Outbreak and the Mineral Sectors of Guinea, Liberia, and Sierra Leone. <https://pubs.usgs.gov/fs/2015/3033/pdf/fs2015-3033.pdf>

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.1—Legal Compliance	As per Chapter 1.1, if there are <u>host country laws</u> governing or requiring community health assessments, the <u>operating company</u> is required to abide by those laws. If IRMA requirements are more stringent than <u>host country law</u> , the company is required to also meet the IRMA requirements, as long as complying with them would not require the company to violate <u>host country law</u> .
1.2—Community and Stakeholder Engagement	<u>Stakeholder engagement</u> in community health and safety assessment, mitigation and monitoring must comply with the general <u>stakeholder engagement</u> requirements in Chapter 1.2. 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 <u>mitigation and monitoring</u> , in a meaningful way. (See requirement 1.2.3.1) And 1.2.4 ensures that communications and information are in culturally appropriate formats and languages that are accessible and understandable to <u>affected communities and stakeholders</u> , and that they are provided in a timely manner.
1.3—Human Rights Due Diligence	There are a number of community-health-related human rights (e.g., Right to Health, Right to Security of Person, Right to Adequate Housing, Right to Food, Right to Water, Right to Clean Environment, Right to Adequate Standard of Living, etc.) that may be affected by mining. ¹⁴² These issues should be assessed during the human rights impact assessment process in Chapter 1.3.
1.4—Complaints and Grievances Mechanism and Access to Remedy	<u>Affected community members and stakeholders</u> have the right to access the operational-level <u>grievance mechanism</u> if they have concerns about community health and safety issues related to <u>mining project</u> .
2.1—Environmental and Social Impact Assessment and Management	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 are included in that assessment.
2.5—Emergency Preparedness and Response	<u>Mitigation measures</u> related to community health and safety may be incorporated into or developed as part of the emergency response plan (ERP) as per Chapter 2.5. For example, if risks related to particular <u>hazards</u> such as chemicals transportation accidents or breaches of <u>tailings impoundments</u> 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.
3.1—Fair Labor and Terms of Work	Requirement 3.1.3.1 mandates fair treatment in employment relationships, and prohibits <u>operating companies</u> from making discriminatory employment decisions on the basis of personal characteristics unrelated to inherent job requirements, such as HIV/AIDs status (see requirement 3.3.4.2).
3.2—Occupational Health and Safety	The assessment and <u>mitigation</u> of health and safety risks to <u>workers</u> while engaged in <u>mining-related activities</u> are addressed in Chapter 3.2. However, workers may also live in communities that may be affected by <u>mining-related activities</u> , and if so, they should also be included as <u>stakeholders</u> in community health and safety assessment, <u>mitigation and monitoring</u> . HIV/AIDs testing may be included in <u>worker health surveillance</u> mentioned in 3.2.4.2. As per 3.2.4.2.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 <u>workers’ interests</u> .”

¹⁴² Salcito, K., Utzinger, J., Krieger, G. R., Wielga, M., Singer, B. H., Winkler, M. S., & Weiss, M. G. 2015. “Experience and lessons from health impact assessment for human rights impact assessment,” BMC International Health and Human Rights, 15, 24. <http://doi.org/10.1186/s12914-015-0062-y>

CROSS REFERENCES TO OTHER CHAPTERS	
3.6—Artisanal and Small-Scale Mining	If <u>artisanal and small-scale mining (ASM)</u> is occurring in the vicinity of the industrial scale mine that is participating in IRMA, the <u>ASM operating entities and miners</u> would be considered <u>stakeholders</u> and/or members of <u>affected communities</u> , and should be included in the scoping and assessment of risks to community health and safety, as well as in any programs related to HIV/AIDS, tuberculosis, malaria or emerging Infectious diseases.
4.1—Waste and Materials Management	Chapter 4.1, requirement 4.1.2.1, requires the identification of all materials, substances, such as chemicals, and wastes (other than mine wastes) associated with the <u>mining project</u> that have the potential to cause impacts on human health, safety, the environment or communities. And requirement 4.1.3., requires the identification of chemical and physical risks associated with mine waste materials (e.g., <u>tailings</u> , <u>waste rock</u> , spent ore from <u>heap leaches</u> , and residues and fluid wastes from mineral processing), which could include risks to community health and safety.
4.2—Water Management	Requirement 4.2.5.2 requires a company to develop and implement procedures for rapidly communicating with <u>stakeholders</u> in the event that there are changes in water quantity or quality that pose an imminent threat to human health or safety.
4.6—Biodiversity, Ecosystem Services and Protected Areas	4.6.1.1.e requires scoping of <u>mining-related impacts</u> on <u>priority ecosystem services</u> . This may have been done during the ESIA, as part of a <u>biodiversity</u> and ecosystem impact assessment as per Chapter 4.6, or scoped as part of the community health and safety scoping (3.3.1). Regardless of when the scoping occurred, if there were risks community health and safety related to potential impacts on <u>priority ecosystem services</u> , those risks should be further evaluated in the community health and safety risk and impact assessment process (3.3.2).



Chapter 3.4

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, exacerbated or supported by a company's activities or presence in an area.

"Companies and their investors are paying increased attention to the challenges and opportunities of doing business in conflict-affected and high-risk areas. These areas differ significantly from more stable operating environments and require companies and investors to take into consideration additional factors."¹⁴³

Developing suitable responses when operating in or sourcing minerals from conflict-affected or high-risk areas is challenging, but guidance exists to assist companies in identifying, assessing and mitigating risks and impacts associated with operating in those areas. The most widely accepted framework is the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas.¹⁴⁴

Such guidance is increasingly being used as a means of cultivating transparent mineral supply chains and corporate engagement in the mineral sector, with a view to enabling countries to benefit from their mineral resources and preventing the extraction and trade of minerals from becoming a source of conflict, human rights abuses, and insecurity.

OBJECTIVES/INTENT OF THIS CHAPTER

To prevent contribution to conflict or the perpetration of serious human rights abuses in conflict-affected or high-risk areas.

TERMS USED IN THIS CHAPTER

Affected Community ■ Business Relationships ■ Certification Body ■ Collaboration ■ Competent Professionals ■ Confidential Business Information ■ Conflict-Affected or High-Risk Area ■ Conflict Risk ■ Consultation ■ Contractor ■ Corporate Owner ■ Existing Mine ■ Grievance ■ Grievance Mechanism ■ Human Rights Defender ■ Human Rights Risks ■ Mining Project ■ Mining-Related Activities ■ Mitigation ■ New Mine ■ Operating Company ■ Remediation/Remedy ■ Serious Human Rights Abuses ■ Stakeholder ■ Worker ■ Vulnerable Group ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

¹⁴³ UN Global Compact and PRI (2010). They elaborate that "The following conditions often prevail in conflict-affected and high-risk areas: human rights violations; presence of an illegitimate or unrepresentative government; lack of equal economic and social opportunity; systematic discrimination against parts of the population; lack of political participation; poor management of revenues, including from natural resources; endemic corruption; and chronic poverty with associated heightened risks and responsibilities." (UN Global Compact and PRI. 2010. *Guidance on Responsible Business in Conflict-Affected and High Risk Areas: A Resource for Companies and Investors*. https://www.unglobalcompact.org/docs/issues_doc/Peace_and_Business/Guidance_RB.pdf)

¹⁴⁴ Organisation for Economic Cooperation and Development (OECD). 2016. OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas. (3rd Ed.) <https://mneguidelines.oecd.org/mining.htm>

SCOPE OF APPLICATION

RELEVANCE: All mines applying for IRMA certification are expected to have undertaken conflict screening (criterion 3.4.1) to determine if they are in a conflict-affected or high-risk area. The due diligence requirements that follow 3.4.1 are relevant for 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).¹⁴⁵

NEW VS. EXISTING MINES: New mines are expected to undertake conflict screening, and any required due diligence, as early as possible during the mining 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.

Mining and Conflict-Affected or High-Risk Area Requirements

3.4.1. Conflict-Affected and High-Risk Area Screening

3.4.1.1. The operating company shall conduct a screening analysis, based on evidence from credible sources,¹⁴⁶ to determine whether or not the mining project is located in and/or sources minerals from a conflict-affected or high-risk area.¹⁴⁷

3.4.1.2. If a determination is made that the mining project is located in a conflicted-affected or high-risk area or it sources minerals from such areas, then the operating company shall undertake the additional due diligence steps outlined in the remainder of this chapter.

3.4.1.3. If a determination is made that the project is not located in a conflicted-affected or high-risk area, and no minerals are sourced from those areas, then conflict-related risks shall be monitored at a level commensurate with the potential that the project area may become a conflict-affected or high-risk area and/or that minerals from such areas may enter the mine's supply chain. If new risks emerge or previously identified risks intensify, screening shall take place to determine if risks are significant enough to warrant undertaking the additional due diligence steps in the remainder of this chapter.

3.4.2. Company Management Systems

3.4.2.1. When operating in or sourcing minerals from a conflict-affected or high-risk area, the operating company shall not knowingly or intentionally cause, contribute to or be linked to conflict or the infringement

¹⁴⁵ This is based on a similar requirement found in the World Gold Council's Conflict-Free Gold Standard. A2.2. Available at: www.gold.org/gold-mining/responsible-mining/conflict-free

¹⁴⁶ "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. Links to credible sources will be provided in Guidance.

¹⁴⁷ Ideally, this should take place early in the project investment phase. However, for new and existing mines entering the IRMA system, the most important thing is that screening does take place, and if it demonstrates that a mining project is located in a conflict-affected or high-risk area, that subsequent due diligence takes place.

of human rights by any party, or knowingly provide direct or indirect support¹⁴⁸ 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 transportation routes or at points where minerals are traded; or
- c. Illegally tax or extort intermediaries, export companies or international traders.

3.4.2.2. 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;¹⁴⁹
- b. Maintain documentation on: the quantity and dates of mineral extraction; quantity and dates of minerals obtained from other sources (e.g., from ASM); locations where minerals are consolidated, traded or processed; all mining-related taxes, fees, royalties or other payments made to governmental officials for the purposes of extraction, trade, transport and export of minerals; all taxes and other payments made to public or private security forces or other armed groups; identification of all actors in the upstream supply chain; and transportation routes.¹⁵⁰ 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;¹⁵¹
- c. Assign authority and responsibility to senior staff with the necessary competence, knowledge and experience to oversee the conflict due diligence processes; and
- d. Ensure that stakeholders have access to and are informed about a mechanism to raise conflict-related concerns or grievances.¹⁵²

3.4.3. Conflict Risk Assessment

3.4.3.1. The operating company shall assess the risks to the company, workers and communities associated with operating in or sourcing minerals from the conflict-affected or high-risk area. Assessments shall include, at minimum:

¹⁴⁸ “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. 2016. OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas. (3rd Ed.) <https://mneguidelines.oecd.org/mining.htm>)

¹⁴⁹ 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 the operating company clearly communicates its commitment to abide by the corporate-level policy.

¹⁵⁰ Documentation for some of these items is required in IRMA Chapter 1.5 (e.g., quantities of minerals produced; mining-related taxes, fees, royalties and other payments made to governments). See requirements 1.5.1.2 and 1.5.2.2. Documentation on those particular items does not need to be provided to auditors for the purposes of this chapter if the mine site has already been verified as meeting the relevant requirements of Chapter 1.5.

¹⁵¹ 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.

¹⁵² The operational-level grievance mechanism developed as per Chapter 1.4 may be used as the mechanism to receive all types of concerns or complaints, including conflict-related grievances, or a separate mechanism may be created to handle only conflict-related complaints and grievances. If a separate mechanism is developed, it shall be done in a manner consistent with Chapter 1.4.

- a. Analysis of structural, root and proximate factors in the current conflict, and potential triggers of conflict in the area of operation;¹⁵³
- b. Review of the factual circumstances of the operating company's mineral extraction, transport, and, if relevant, mineral sourcing and/or processing;¹⁵⁴ and
- c. Analysis of the risk that any of the company's activities may lead to the direct or indirect infringement of human rights, support of armed groups or otherwise contribute to conflict.

3.4.3.2. Assessments shall follow a recognized risk assessment methodology,¹⁵⁵ and be carried out and documented by competent professionals.

3.4.3.3. Assessments shall be based on credible evidence including on-the-ground research, expert advice, and information from consultations with relevant stakeholders, including men, women, children (or their representatives) and other vulnerable groups.¹⁵⁶

3.4.3.4. Conflict risk assessments shall be updated at minimum, on an annual basis, and more often if necessitated by the situation.

3.4.4. Conflict Risk Management

3.4.4.1. 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.

3.4.4.2. 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.¹⁵⁷

¹⁵³ Structural/root factors are long-term, deep-rooted factors underlying conflict; proximate/intermediate factors are visible, recent manifestations of the conflict, and factors; and triggers are actions that contribute to further escalation of the conflict. For more information on structural, root and proximate causes, as well as potential triggers of conflict, see: UN Development Group. 2016. Conducting a Conflict and Development Analysis. pp. 59-64. https://undg.org/wp-content/uploads/2016/10/UNDP_CDA-Report_v1.3-final-opt-low.pdf

¹⁵⁴ This requirement comes from OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas. For more details on factual circumstances see, for example, p. 82 of OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas. 3rd Ed. <https://mneguidelines.oecd.org/mining.htm>

Mineral sourcing refers to situations where the operating company purchases ore or mined materials from other mines, and processes it at the mine site. These materials may come from other large-scale mines or artisanal and small-scale mining (ASM) operations (See also Chapter 3.6).

¹⁵⁵ 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.

¹⁵⁶ "credible evidence" may include reports and other information (e.g., maps, statements) relating to mineral extraction, and its impact on conflict, human rights or environmental harm. Sources of evidence would be considered credible if they are trusted and/or referred to by a range of stakeholders, including competent professional and experts who work on human rights and/or conflict-affected areas. Such sources may come from governments, international organizations, NGOs, industry, media, United Nations, academics or others.

"expert advice" may involve drawing on expertise and cross-functional consultation within the company, but also consulting externally with credible independent experts, including from governments, civil society (e.g., human rights defenders), national human rights institutions and relevant multi-stakeholder initiatives. (See, e.g., UN Guiding Principles on Business and Human Rights, Commentary for Principle 23. http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf)

"Relevant stakeholders" may include local government or community leaders; civil society organizations; other companies operating in the area; or independent experts with local knowledge and expertise. Special effort should be made to include women, children or their representatives, and other groups who may be particularly vulnerable to impacts from security arrangements (e.g., this might include ASM operators, human rights defenders, and youth).

¹⁵⁷ For this requirement, "relevant stakeholders," at minimum, should include those who have the potential to be directly affected (either actual individuals or their representatives) by the risks identified by the company. And "culturally appropriate" strategies would be those that are aligned with the cultural norms of the affected communities. Stakeholders can help to define for the company what is considered culturally appropriate. (For more on culturally appropriate engagement, see IRMA Chapter 1.2).

3.4.4.3. If risks to human rights are identified in the assessment, the operating company shall adhere to the requirements in IRMA Chapter 1.3.¹⁵⁸

3.4.5. Monitoring

3.4.5.1. The operating company shall implement and monitor the effectiveness of its risk management plan as per the performance objectives, timelines and indicators developed with stakeholders.

3.4.5.2. 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 conflict-affected or high-risk areas, the operating company shall immediately cease or change the offending action, mitigate or remediate the impact, and carry out external monitoring of its due diligence activities as per as per IRMA Chapter 1.3.¹⁵⁹

3.4.6. Reporting

3.4.6.1. The findings of conflict risk assessments, risk management plans and monitoring shall be reported to senior management of the operating company; and stakeholders, contractors, mine workers and other employees shall be informed of findings that are relevant to them.

3.4.6.2. On an annual basis, where the operating company is operating in or sourcing minerals from a conflict-affected or high-risk area, the company or its corporate owner shall publicly report on due diligence undertaken to ensure that its actions are not supporting armed conflict or the infringement of human rights in those areas.¹⁶⁰

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).¹⁶¹ The OECD Guidance formed the basis for many of the requirements in this chapter.

The risk of committing, contributing to or being linked to human rights violations is increased in conflict-affected and high-risk areas. Requirement 3.4.2.1 mentions that companies shall not infringe upon human rights, however, Chapter 1.3 is the primary chapter that addresses IRMA's expectations related to the unknowing or unintentional infringement of human rights. When mining projects are located in conflict-affected or high-risk areas, operating companies must ensure that risks to human rights are addressed as per Chapter 1.3 Human Rights Due Diligence.

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 refuse certification, decertify a mine or end its association with a company. The IRMA Policy on Association will not be put into effect until after the IRMA Launch Phase. IRMA welcomes comments on its draft Policy on Association, which is available on the IRMA website: www.responsiblemining.net.

¹⁵⁸ The risk of committing, contributing to or being linked to human rights violations is increased in conflict-affected and high-risk areas. When mining projects are located in conflict-affected or high-risk areas, operating companies must ensure that risks to human rights are addressed as per IRMA Chapter 1.3. The chapter requires steps to prevent, mitigate and remediate potential and actual human rights impacts.

¹⁵⁹ IRMA Chapter 1.3—Human Rights Due Diligence. (See specifically, requirements 1.3.3.3. and 1.3.4.2.).

¹⁶⁰ This report may be integrated into the reporting on human rights due diligence as per IRMA requirement 1.3.5.1.

¹⁶¹ OECD. 2016. *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas*. (3rd Ed.) <https://mneguidelines.oecd.org/mining.htm>

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

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.2—Community and Stakeholder Engagement	All <u>stakeholder</u> engagement in Chapter 3.4 must conform with the requirements of Chapter 1.2. In particular, criterion 1.2.3 is important to ensure that affected <u>stakeholders</u> have the capacity to fully understand their rights and participate effectively in the assessment and development of <u>prevention/mitigation</u> plans, monitoring, and <u>remedies</u> for impacts on their safety and human rights in <u>conflict-affected or high-risk areas</u> . And 1.2.4 ensures that communications and information are in culturally appropriate formats and languages that are accessible and understandable to <u>affected communities</u> and <u>stakeholders</u> , and provided in a timely manner.
1.3—Human Rights Due Diligence	Information from human rights impact assessments may feed into the <u>conflict risk</u> assessment, and vice versa, and public reporting on conflict due diligence (i.e., requirement 3.4.6.3) may be integrated into the public reporting on human rights due diligence reporting, as per requirement 1.3.5.1, if human rights due diligence reporting is done on an annual basis. Strategies developed to prevent, <u>mitigate</u> and <u>remediate</u> potential or <u>actual human rights impacts</u> related to mining in conflict-affected areas must conform with the relevant requirements in Criteria 1.3.3. External monitoring as per requirement 1.3.4.2 shall occur if a company's conflict-related due diligence fails to prevent it from unknowingly causing or contributing to armed conflict or <u>serious human rights abuses</u> .
1.4—Complaints and Grievance Mechanism and Access to Remedy	As mentioned in 3.4.2.1.d, the <u>operating company</u> shall ensure that <u>stakeholders</u> are informed of the existence of mechanisms for raising conflict-related concerns. The operational-level <u>grievance mechanism</u> developed as per Chapter 1.4 may serve this purpose. It may be deemed necessary, however, to create a separate mechanism or separate procedures for handling complaints from <u>stakeholders</u> in conflict-affected areas. If a separate mechanism or procedures are created, they must be developed in a manner that aligns with Chapter 1.4.
1.5—Revenue and Payments Transparency	Information gathered to fulfill requirements in Chapter 3.4 (e.g., 3.4.2.1, 3.4.3.1) may feed into the reporting requirements in Chapter 1.5 (e.g., requirements 1.5.1.3 and 1.5.3.2) regarding payments to governments. Also, in <u>conflict-affected or high-risk areas</u> , ensuring strict adherence to anti-corruption requirements (1.5.5) is critical.
2.1—Environmental and Social Impact Assessment	Conflict screening may occur as part of the Environmental and Social Impact Assessment process.
3.1—Fair Labor and Terms of Work	Incidents of <u>child labor</u> and <u>forced labor</u> are addressed in Chapter 3.1. However, the potential for <u>child labor</u> and <u>forced labor</u> in conflict-affected areas should also be considered during the <u>conflict risk</u> assessment in Chapter 3.4.
3.5—Security Arrangements	Information related to security arrangements from <u>conflict risk</u> 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.
3.6—Artisanal and Small-Scale Mining	If the mine is sourcing minerals from <u>ASM</u> entities located in conflict-affected areas, requirements in this chapter are also relevant in Chapter 3.6 (see requirement 3.6.4.2).



Chapter 3.5 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.

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

RELEVANCE: The majority of the requirements in this chapter are relevant for any mining project 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 (3.5.1.3 and 3.5.4.1), and others are only relevant if public security forces such as police or military personnel are used (i.e., 3.5.1.4, 3.5.4.2, and 3.5.6.3).

TERMS USED IN THIS CHAPTER

Affected Community ■ Artisanal or Small-Scale Mining (ASM) ■ Collaboration ■ Competent Authority ■ Competent Professional ■ Conflict Analysis ■ Conflict Risk ■ Consultation ■ Contractors ■ Grievance ■ Human Rights Risk ■ Mining Project ■ Mining-Related Activities ■ Mitigation ■ Operating Company ■ Potential Human Rights Impact ■ Remediation/Remedy ■ Stakeholder ■ Vulnerable Group ■ Worker ■ Workers' Representative ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

Security Arrangements Requirements

3.5.1. Policies and Commitments Related to Security and Human Rights

3.5.1.1. 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, breaches of international humanitarian law or the excessive use of force.¹⁶²

¹⁶² These commitments may be made in a broader Human Rights Policy, or another relevant policy.

3.5.1.2. The operating company shall have a policy and procedures in place regarding the use of force and firearms that align with the best practices expressed in United Nations *Basic Principles on the Use of Force and Firearms*.¹⁶³ At minimum, the company's procedures shall require that:

- a. Security personnel take all reasonable steps to exercise restraint and utilize non-violent means before resorting to the use of force;
- b. If force is used it shall not exceed what is strictly necessary, and shall be proportionate to the threat and appropriate to the situation; and
- c. Firearms shall only be used for the purpose of self-defense or the defense of others if there is an imminent threat of death or serious injury.

3.5.1.3. If private security is used in relation to the mining project, the operating company shall have a signed contract with private security providers that at minimum:

- a. Sets out agreed on principles that are consistent with the Voluntary Principles on Security and Human Rights¹⁶⁴ 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 mining project and, if relevant, along transport routes; and
- c. Outlines required training for security personnel.

3.5.1.4. If public security forces are used to provide security to the mining project and/or transport routes, the operating company shall make a good faith effort to sign a Memorandum of Understanding or similar agreement with public security providers that includes similar provisions to those in 3.5.1.3.

3.5.2. Security Risk Assessment and Management

3.5.2.1. The operating company shall assess security risks and potential human rights impacts that may arise from security arrangements. Assessments of security-related risks and impacts shall be updated periodically, including, at minimum, when there are significant changes in mining-related activities, security arrangements or in the operating environment.¹⁶⁵

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

- a. Follow a credible process/methodology;¹⁶⁶
- b. Be carried out and documented by competent professionals; and
- c. Draw on credible information obtained from a range of perspectives, including men, women, children (or their representatives) and other vulnerable groups, relevant stakeholders and expert advice.¹⁶⁷

¹⁶³ UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials (Available at: www.ohchr.org/EN/ProfessionalInterest/Pages/UseOfForceAndFirearms.aspx)

¹⁶⁴ Voluntary Principles on Security and Human Rights. 2014. www.voluntaryprinciples.org

¹⁶⁵ A risk assessment in 3.5.2 is not a one-time occurrence. According to the Voluntary Principles on Security and Human Rights (VP) Implementation Guidance Tools, "Any major decision relating to a project or company might represent an appropriate time to conduct or renew a risk assessment, e.g., a project expansion, an acquisition or merger or any other major business decision. Major changes in external circumstances may bring about the need to conduct a VPs risk assessment. This may include a change in government, the outbreak of conflict, an economic crisis, or a major political or policy decision." (ICMM, IFC and IPIECA. 2012. Voluntary Principles on Security and Human Rights Implementation Guidance Tools. p. 24. http://www.voluntaryprinciples.org/files/VPs_IGT_Final_13-09-11.pdf)

¹⁶⁶ 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.

¹⁶⁷ Special effort should be made to include women, children or their representatives, and other groups who may be particularly vulnerable to impacts from security arrangements (e.g., this might include ASM operators, human rights defenders, and youth) Other relevant local

3.5.2.3. The scope of the security risk assessment shall include, but need not be limited to:

- a. Identification of security risks to the company, workers and communities, paying particular attention to risks to women, children and other vulnerable groups;
- b. Analysis of the political and security context in the host country context (e.g., the human rights records of the government and public and private security forces; adherence to the rule of law; corruption);
- c. Analysis of current and potential conflicts or violence in the host country and affected communities; and
- d. Risks associated with equipment transfers.

3.5.2.4. The 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.

3.5.2.5. If the security risk assessment reveals the potential for conflicts between mine security providers and affected community members or workers, then the operating company shall collaborate with communities and/or workers to develop mitigation strategies that are culturally appropriate and that take into consideration the needs of women, children and other vulnerable groups. If specific risks to human rights are identified in the assessment, the mitigation strategies shall conform with requirements in IRMA Chapter 1.3.¹⁶⁸

3.5.3. Due Diligence Prior to Hiring Security Personnel

3.5.3.1. The operating company shall develop and implement due diligence procedures to prevent the hiring of company security personnel and private security providers who have been convicted of or credibly implicated in the infringement of human rights, breaches of international humanitarian law or the use of excessive force.¹⁶⁹

3.5.3.2. 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.

3.5.4. Training

3.5.4.1. 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, with particular reference to vulnerable groups, and the company's policy on the appropriate use of force and firearms. Initial training and refresher courses shall be mandatory for all operating company personnel involved in security, and for private security contractors that have not received equivalent training from their employers.

3.5.4.2. If public security forces are to be used, the 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

stakeholders may include local government or community leaders, civil society organizations or other companies operating in the area. Expert advice may come from governments, multi-stakeholder initiatives, human rights institutions and civil society or academics with local knowledge and expertise.

¹⁶⁸ IRMA Standard, Chapter 1.3—Human Rights Due Diligence. (See specifically, requirement 1.3.3.2).

"culturally appropriate" strategies would be those that are aligned with the cultural norms of the affected communities. Stakeholders can help to define for the company what is considered culturally appropriate. (For more on culturally appropriate engagement, see IRMA Chapter 1.2)

¹⁶⁹ Due diligence includes research or investigations to vet prospective private security providers and security personnel such as: history of respect for/violations of human rights law and international humanitarian law; personal/business reputation; management style and ethics of key executives; litigation and criminal offence history; procedures on use of force and firearms; compliance with health, safety and environmental regulations; etc. (VP Implementation Guidance Tool. pp. 52, 53. http://www.voluntaryprinciples.org/files/VPs_IGT_Final_13-09-11.pdf).

training is not occurring, the company shall offer to facilitate training for public security personnel that provide mine-related security.

3.5.5. Management of Security Incidents

3.5.5.1. 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 unlawful acts by security personnel and acts that contravene the company's policies on rules of engagement, the use of force and firearms, human rights, and other relevant policies;
- c. Take appropriate actions to mitigate and provide remediation for human rights impacts (as per IRMA Chapter 1.3),¹⁷⁰ 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 competent authorities and national human rights institutions, and cooperate in any investigations or proceedings;
- e. Provide medical assistance to all injured persons, including offenders; and
- f. Ensure the safety of victims and those filing security-related allegations.

3.5.5.2. In the event of security-related incidents that result in injuries, fatalities or alleged human rights impacts on community members or workers, the company shall provide communities and/or workers with information on the incidents and any investigations that are underway, and shall consult with communities and/or workers to develop strategies to prevent the recurrence of similar incidents.

3.5.6. Communication and Disclosure

3.5.6.1. If requested by a representative community structure, the operating company shall offer a briefing for community stakeholders on the company's procedures on the use of force and firearms.¹⁷¹

3.5.6.2. The operating company shall consult regularly with stakeholders, including host governments and affected communities, about the impact of their security arrangements on those communities; and shall report to stakeholders annually on the company's security arrangements and its efforts to manage security in a manner that respects human rights.¹⁷²

3.5.6.3. Stakeholders shall have access to and be informed about a mechanism to raise and seek recourse for concerns or grievances related to mine security.¹⁷³

3.5.6.4. If public security forces are providing security for any aspect of the mining project, the operating company shall encourage host governments to permit making security arrangements, such as the purpose and

¹⁷⁰ IRMA Standard, Chapter 1.3—Human Rights Due Diligence. (See specifically, requirement 1.3.3.3).

¹⁷¹ "a representative community structure" could be a local government, a community-based organization, etc.

¹⁷² 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.

¹⁷³ The operational-level grievance mechanism developed as per Chapter 1.4 may be used as the mechanism to receive and address security-related grievances, or a separate mechanism may be created to handle only security-related concerns.

nature of public security, transparent and accessible to the public, subject to any overriding safety and security concerns.¹⁷⁴

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.¹⁷⁵ 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.¹⁷⁶

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.2—Community and Stakeholder Engagement	All <u>stakeholder</u> engagement in Chapter 3.5 must conform with the requirements of Chapter 1.2. In particular, criterion 1.2.3 is important to ensure that affected <u>stakeholders</u> have the capacity to fully understand their rights and participate effectively in the assessment and development of <u>prevention/mitigation</u> plans, monitoring, and remedies for impacts on their safety and human rights. And 1.2.4 ensures that communications and information are in culturally appropriate formats and languages that are <u>accessible</u> and understandable to <u>affected communities and stakeholders</u> , and provided in a timely manner.
1.3—Human Rights Due Diligence	There is considerable potential for integration between Chapters 3.5 and 1.3. For example: the security policy may be integrated into a human rights policy in Chapter 1.3; Information from security risk assessment may feed into the assessment of risks to or impacts on human rights; and if human rights risks or impacts are identified in the security risk assessment, <u>prevention, mitigation or remediation</u> strategies shall be designed as per the requirements in Chapter 1.3, criteria 1.3.3. Reporting on security management (requirement 3.5.6.1) may be done through a company’s human rights reporting (requirement 1.3.5.1), if the latter occurs on an annual basis.
1.4—Complaints and Grievance Mechanism and Access to Remedy	The filing of security-related complaints or <u>grievances</u> may be done through the operational-level <u>grievance mechanism</u> required in Chapter 1.4, or through a security-specific mechanism. If a separate mechanism or procedures are created specifically for security-related complaints, they should be developed in a manner that aligns with Chapter 1.4.
1.5—Revenue and Payments Transparency	If information on payments 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 1.5 (i.e., 1.5.1.3 and 1.5.3.2).
2.1—Environmental and Social Impact Assessment and Management	Information from the security risk assessment, such as potential social impacts, may feed into the Environmental and Social Impact Assessment or vice versa.

¹⁷⁴ As explained in the Voluntary Principles Implementation Guidance Tool, information that could create security and safety concerns or human rights risks would include specific troop movements, supply schedules, company personnel movements, locations of valuable or hazardous equipment, etc.). ICM, IFC and IPIECA. 2012. Voluntary Principles on Security and Human Rights Implementation Guidance Tools. p. 47. http://www.voluntaryprinciples.org/files/VPs_IGT_Final_13-09-11.pdf

¹⁷⁵ Voluntary Principles on Security and Human Rights. 2014. www.voluntaryprinciples.org

¹⁷⁶ *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	
3.4—Mining and Conflict Affected Areas	Information from the security risk assessment may feed into conflict screening/<u>conflict risk assessment</u>, or vice versa. As per requirement 3.4.2.1. When operating in a <u>conflict-affected or high-risk area</u>, the <u>operating company</u> shall not knowingly provide direct or indirect support to public security 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 transportation routes or at points where minerals are traded; or c. Illegally tax or extort intermediaries, export companies or international traders. Requirement 3.5.2.3 in the Chapter 3.4 mentions current and potential sources of conflict. If in a <u>conflict-affected or high-risk area</u>, this analysis will have been done as part of the <u>conflict risk assessment</u> (3.4.3.3.a).
3.6—Artisanal and Small-Scale Mining.	If <u>ASM</u> is occurring on or near the mine site, requirement 3.6.3.1 is relevant (relates to requirement 3.5.4.1 in Chapter 3.5).



Chapter 3.6

Artisanal and Small-Scale Mining

BACKGROUND

It has been estimated that there are between 20 and 30 million men, women and children involved in artisanal and small-scale mining (ASM) worldwide, and that the ASM sector is responsible for 15 to 20 percent of the production of global minerals and metals.¹⁷⁷

While there is no single definition of artisanal and small-scale mining (ASM), it is generally understood to encompass a range of activities, including prospecting, exploration, extraction, processing and transportation, and use more simplified and labor-intensive technologies and practices than large-scale industrial mining.

The ASM sector is complex and diverse. It includes individuals or families mining to earn or supplement their livings, as well as small-scale commercial operations that employ numerous workers. Much of ASM is informal, with entities operating in in contravention to laws, or in the absence of an appropriate legal framework, although some ASM operators do have permits, pay taxes and abide by social and environmental regulations.¹⁷⁸ In some contexts, there may be a criminal element to ASM activities, such as smuggling, tax evasion, money laundering, trafficking in illegal chemicals, or financing of conflict.¹⁷⁹

ASM sometimes occurs in areas close to or on large-scale mining (LSM) concessions. ASM miners may have traditionally operated in those areas, full-time or seasonally, or in other cases miners may have arrived during LSM exploration or after the development of the large-scale mine.

Given the diversity within the ASM sector, it is understandable that interactions between LSM and ASM entities can also take on a variety of forms, from violent confrontation to harmonious co-existence.¹⁸⁰

ASM is playing a growing role in many national economies,¹⁸¹ and holds the potential to provide decent livelihoods if conducted in an organized and responsible manner and afforded more secure access to capital and markets. Large-scale mines that operate in the same regions as ASM, or that purchase minerals produced by ASM, have the opportunity to contribute to positive transformations in the ASM sector.

TERMS USED IN THIS CHAPTER

Accessible ■ Affected Communities ■ Artisanal and Small-Scale Mining (ASM) ■ Child Labor ■ Collaboration ■ Consultation ■ Conflict-Affected or High-Risk Area ■ Forced Labor ■ Grievance Mechanism ■ Indigenous Peoples ■ Inform ■ Mining Project ■ Mitigation ■ Operating Company ■ Stakeholder ■ Vulnerable Group ■ Worker ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

¹⁷⁷ Buxton, A. 2013. Responding to the Challenge of Artisanal and Small-Scale Mining: How can knowledge networks help? Institute for Environment and Development (IIED), London. p. 3. <http://pubs.iied.org/16532IIED/>

¹⁷⁸ *ibid.* p. 4; Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF). 2017. IGF Guidance for Governments: Managing Artisanal and Small-Scale Mining. International Institute for Sustainable Development (IISD). p. 5. <http://igfmining.org/wp-content/uploads/2017/01/igf-guidance-for-governments-asm.pdf>

¹⁷⁹ IGF, 2017, p. 12; and Echavarría, C. 2014. 'What is legal?' Formalising Artisanal and Small-Scale Mining in Colombia. Institute for Environment and Development (IIED), London and Alliance for Responsible Mining (ARM), Columbia. P. 23. <http://pubs.iied.org/pdfs/16565IIED.pdf>

¹⁸⁰ Communities and Small-Scale Mining, World Bank/IFC Oil, Gas and Mining Sustainable Community Development Fund and ICMM. 2010. Working Together - How Large-Scale Mining Can Engage with Artisanal and Small-Scale Miners. p. 5. <https://www.commdev.org/wp-content/uploads/2015/06/Working-together-How-large-scale-mining-can-engage-with-artisanal-and-small-scale-miners.pdf>

¹⁸¹ Freudenberger, M., Ali, S., Fella, T. and Pennes, S. 2013. Property Rights and Artisanal Mining: Clarifying and Strengthening Rights: Options for Policymakers. USAID Issue Brief. p. 1. <https://www.land-links.org/wp-content/uploads/2016/09/Property-Rights-and-Artisanal-Mining.pdf>

OBJECTIVES/INTENT OF THIS CHAPTER

To avoid conflict and, where possible within the scope of national law, foster positive relationships between large-scale mines and artisanal and small-scale mining (ASM) entities, and support the development of ASM that provides positive livelihood opportunities and is protective of human rights, health, safety and the environment.

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant to any large-scale mining operation that has the potential to interact with ASM entities due to proximity or through commercial relationships such as sourcing ore or minerals from ASM entities.

Artisanal and Small-Scale Mining Requirements

3.6.1. Understand the ASM Context

3.6.1.1. When a large-scale mining (LSM) operating company has identified the presence of artisanal and small-scale mining (ASM) entities on the LSM concession or in close proximity to LSM operations, the operating company shall carry out a scoping process to understand the legal, social and environmental context in which ASM activities are occurring.

3.6.2. Engage with ASM Entities and Communities

3.6.2.1. When an operating company has identified the presence of ASM on or in close proximity to its mining project, and where there is no material risk to company personnel, it shall:

- a. Make a good faith effort to engage with ASM entities including, where relevant, informal ASM operators and formal ASM associations, as part of ongoing stakeholder engagement efforts (See IRMA Chapter 1.2);
- b. Make a good faith effort to consult with informal and formal ASM entities during relevant risk and impact assessments and closure planning;
- c. Engage with communities that are or may be affected by ASM operations and/or interactions between LSM and ASM entities; and
- d. Inform ASM entities and communities that there is an operational-level grievance mechanism available to raise concerns and resolve conflicts related to the LSM operation.¹⁸²

3.6.3. Foster Positive Relationships and Opportunities for ASM and Communities

3.6.3.1. The operating company shall ensure that mine security personnel are trained in respecting the human rights of individuals engaged in ASM activities and members of affected communities.

3.6.3.2. The operating company shall demonstrate that it has considered opportunities to enhance positive safety, environmental and social impacts of ASM activities for the benefit of ASM entities and host communities.

¹⁸² See IRMA Chapter 1.4—Complaints and Grievance Mechanism and Access to Remedy.

3.6.4. Perform Due Diligence in Commercial Relationships with ASM¹⁸³

3.6.4.1. When a large-scale mine sources minerals from or has other commercial relationships with ASM entities, the operating company shall:

- Regularly assess the social and environmental risks and impacts related to the ASM entities with whom it has a commercial relationship;¹⁸⁴
- Collaborate with those ASM entities with whom it can legally and legitimately engage to develop and implement a plan to eliminate or mitigate the most significant risks,¹⁸⁵ and over time, address other social and environmental risks related to those ASM operations; and
- Periodically monitor the effectiveness of mitigation strategies, and adapt plans as necessary to facilitate continued minimization of risks.

3.6.4.2. When a large-scale mine has commercial relationships with ASM entities that are located in conflict-affected or high-risk areas, the operating company shall carry out due diligence related to those ASM entities as required in IRMA Chapter 3.4.

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.1—Legal Compliance	As per Chapter 1.1, if a <u>host country law</u> is more protective of human rights, health or the environment than an IRMA requirement, the <u>host country law</u> shall supersede the IRMA requirement. But if an IRMA requirement is more protective than <u>host country law</u>, the company is required to also meet the IRMA requirement, as long as doing so would not require the company to violate <u>host country law</u>. Chapter 1.1 also requires that <u>contractors</u> adhere to the IRMA Standard. So if there are <u>contractors</u> of the <u>mining project</u> that may be engaging with <u>ASM</u>, they should be made aware of the <u>operating company's</u> policies and approaches regarding engagement with and respect for the human rights of <u>ASM</u> entities, and operate in a manner consistent with those policies and approaches.
1.2—Community and Stakeholder Engagement	<u>ASM</u> entities are <u>stakeholders</u> of the <u>mining project</u>, and also often members of <u>affected communities</u>. As such, engagement processes with <u>ASM</u> must conform with requirements in Chapter 1.2.
1.3—Human Rights Due Diligence	3.6.2.1.b requires that an <u>operating company</u> <u>consult</u> with <u>ASM</u> entities during relevant risk and impact assessments. This includes the <u>operating company's</u> human rights related impact assessment (which is covered in Chapter 1.3, requirement 1.3.2.1). If it is discovered (e.g., through the human rights, security or conflict risk assessments) that the <u>operating company</u> may contribute to or be linked to potential or <u>actual human rights impacts</u> as a result of sourcing from <u>ASM</u> operations the <u>operating company's</u> <u>mitigation</u> measures will be expected to adhere to the requirements in IRMA Chapter 1.3. (See specifically, requirements 1.3.3.2.b and c, and 1.3.3.3.b and c).

¹⁸³ This criteria is only relevant if the LSM has a commercial/business relationship with an ASM entity. LSM with commercial relationships must carry out 3.6.4 in addition to 3.6.1, 3.6.2 ad 3.6.3.

¹⁸⁴ An array of social and environmental issues at ASM operations may pose social and environmental risks. These include, but are not limited to lack of legal compliance, bribery and corruption, child labor, forced labor, low wages, lack of labor rights, poor occupational health and safety (e.g., exposure of workers and communities to toxic chemicals such as mercury and cyanide), lack of gender equality, security risks, human rights abuses, especially in conflict-affected areas, environmental pollution and degradation from poor waste management practices, and operating in protected areas or areas of key biodiversity.

¹⁸⁵ The most significant risks will vary, depending on the ASM operations. However, if present, the following should always be considered “significant risks”: serious human rights abuses, including the worst forms of child labor, forced labor, torture, cruel, inhuman or degrading treatment, widespread sexual violence, war crimes or serious violations of international humanitarian law, crimes against humanity or genocide.

CROSS REFERENCES TO OTHER CHAPTERS	
1.4—Complaints, Grievances and Access to Remedy	3.6.2.1.d requires that <u>ASM</u> entities and communities be informed that there is an operational-level <u>grievance mechanism</u> available to raise concerns and resolve conflicts related to the large-scale mine. Such a <u>grievance mechanism</u> is required in Chapter 1.4.
2.1—Environmental and Social Impact Assessment and Management	3.6.2.1.b requires that operating companies <u>consult</u> with ASM associations and miners during relevant risk and impact assessments. This should include the Environmental and Social Impact Assessment in Chapter 2.1 (see especially criteria 2.1.4).
2.4—Resettlement	3.6.2.1.b requires that an <u>operating company</u> <u>consult</u> with <u>ASM</u> entities during relevant risk and impact assessments. If there are <u>ASM</u> miners, processors or other ASM entities that may be affected by <u>resettlement</u>, <u>consultations</u> with <u>ASM</u> entities will be required as part of the <u>resettlement</u> risk and impact assessment (see criteria 2.4.1). Additionally, ASM activities should be included in socio-economic baseline studies carried out prior to resettlement, and ASM entities should be afforded mitigation, compensation and livelihood opportunities in the <u>Resettlement Action Plan</u> and/or <u>Livelihood Restoration Plan</u>.
2.6—Planning and Financing Reclamation and Closure	Chapter 2.6 requires that <u>affected communities</u> be involved in assessments/closure planning. If present in the area, <u>ASM</u> entities will need to be involved in <u>mine closure</u> planning.
3.1—Fair Labor and Terms of Work	Chapter 3.1, criteria 3.1.7 and 3.1.8, relate to <u>child labor</u> and <u>forced labor</u> , respectively. If an LSM project sources from or has other commercial relationships with ASM (i.e., there is a supply chain relationship), the LSM operator is required in Chapter 3.1 to carry out due diligence to determine if <u>child labor</u> and/or <u>forced labor</u> are occurring at those <u>ASM</u> operations (see requirements 3.1.7.4 and 3.1.8.2, respectively). If <u>child labor</u> or <u>forced labor</u> are discovered, the LSM <u>operating company</u> is required to carry out <u>remediation</u> .
3.2—Occupational Health and Safety	3.6.2.1.b requires that an <u>operating company</u> <u>consult</u> with <u>ASM</u> entities during relevant risk and impact assessments. If <u>ASM</u> entities are operating on LSM concessions, they may pose occupational health and safety risks for LSM <u>workers</u> and employees. These risks should be assessed as part of the OHS health and safety risk assessment process in 3.2.1.
3.3—Community Health and Safety	3.6.2.1.b requires that an <u>operating company</u> <u>consult</u> with <u>ASM</u> entities during relevant risk and impact assessments. This includes the <u>operating company's</u> community health and safety scoping and, if relevant, risk and impact evaluation (3.3.1).
3.4—Mining in Conflict-Affected and High-Risk Areas	3.6.2.1.b requires that an <u>operating company</u> <u>consult</u> with <u>ASM</u> entities during relevant risk and impact assessments. If a large-scale mine (LSM) seeking IRMA certification is located in a conflict-affected area, consultations with ASM will be required as part of the conflict risk assessment (See chapter 3.4, requirement 3.4.3.4). As per 3.6.4.2, if the LSM sources from or has other commercial relationships with ASM operations located in a conflict-affected or high-risk area, the LSM is required to carry out the due diligence steps outlined in Chapter 3.4.
3.5—Security Arrangements	3.6.2.1.b requires that an <u>operating company</u> <u>consult</u> with <u>ASM</u> associations and miners during relevant risk and impact assessments. This includes the <u>operating company's</u> security risk assessment (requirement 3.5.2.1). Criterion 3.5.4 in Chapter 3.5 requires that private security personnel be given training that incorporates, at minimum, information related to ethical conduct and respect for the human rights of mine <u>workers</u> and <u>affected communities</u>, and the company's policy on the appropriate use of force and firearms. Requirement 3.6.3.1 simply clarifies that in addition to human rights of mine workers and affected communities, that the human rights of ASM miners be specifically included when <u>ASM</u> is located on or in close proximity to the <u>operating company's</u> mining operation.
4.8—Mercury Management	Chapter 4.8 prohibits LSM operating companies from selling or giving away mercury to <u>ASM</u> entities (See 4.8.2.2.b).



Chapter 3.7 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.¹⁸⁶

Over time, mining and other forms of industrial development can 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, for example, as a result of inappropriate visitation of sites or the inappropriate use of traditional knowledge.¹⁸⁷

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.¹⁸⁸

OBJECTIVES/INTENT OF THIS CHAPTER

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

SCOPE OF APPLICATION

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 3.7.1 are not expected to carry out an assessment unless there are proposed changes to the company's plans or activities that may 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). Existing mines will, however, be expected to meet the requirements in the remainder of the chapter.

TERMS USED IN THIS CHAPTER

Affected Community ■ Biodiversity ■ Biosphere Reserve ■ Chance Find ■ Collaboration ■ Competent Professionals ■ Conservation Values ■ Contractor ■ Critical Cultural Heritage ■ Ecosystem Services ■ Existing Mine ■ Free, Prior and Informed Consent ■ Highly Protected Areas ■ Indigenous Peoples ■ Intangible Cultural Heritage ■ Mining-Related Activities ■ New Mine ■ Nonreplicable Cultural Heritage ■ Operating Company ■ Protected Area ■ Protected Area Management Category ■ Replicable Cultural Heritage ■ Significant Changes to Mining-Related Activities ■ Tangible Cultural Heritage ■ Tentative List for World Heritage Site Inscription ■ World Heritage Site ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

¹⁸⁶ 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.

¹⁸⁷ E.g., some indigenous heritage sites may be gendered—safe for one sex but dangerous to the other; indigenous peoples' knowledge regarding the existence, location and significance of sites is often not public; and in some cases, if knowledge of sacred sites is transferred inappropriately it may be dangerous to both the giver and receiver. (O'Faircheallaigh, C. 2008. Negotiating Cultural Heritage? Aboriginal-Mining Company Agreements in Australia. p. 7)

¹⁸⁸ E.g., see Anglo American. 2009. The Anglo Social Way: Management System Standards. p. 12. http://www.angloamerican.com/~media/Files/A/Anglo-American-PLC-V2/documents/supplier/aa_social_way.pdf; and also: Rio Tinto. 2011. Why Cultural Heritage Matters. http://www.riotinto.com/documents/ReportsPublications/Rio_Tinto_Cultural_Heritage_Guide.pdf

Cultural Heritage Requirements

3.7.1. General Stipulations

3.7.1.1. Screening, assessment and the development and implementation of mitigation measures and procedures related to the management of cultural heritage shall be carried out by competent professionals.

3.7.1.2. Screening, assessment and the development of mitigation measures and procedures related to the management of cultural heritage shall include consultations with relevant stakeholders.¹⁸⁹

3.7.1.3. Cultural heritage assessments, management plans and procedures shall be made available upon request to community stakeholders and other stakeholders who have been engaged with the mine site on cultural heritage issues.¹⁹⁰

3.7.2. Cultural Heritage Screening and Assessment

3.7.2.1. 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 replicable, non-replicable and critical cultural heritage from the proposed mining-related activities.¹⁹¹

3.7.2.2. If the screening indicates the potential for replicable, non-replicable or critical cultural heritage to be encountered during mining-related activities, the operating company shall assess the nature and scale of the potential impacts and propose mitigation measures to avoid, minimize, restore or compensate for adverse impacts. Mitigation measures shall be consistent with the requirements below (see criteria 3.7.3, 3.7.4, 3.7.5 and 3.7.6), based on the type of cultural heritage likely to be affected.

3.7.3. Replicable Cultural Heritage

3.7.3.1. When tangible replicable cultural heritage that is not critical is encountered during mining-related activities 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 ecosystem processes needed to support it;

¹⁸⁹ Relevant stakeholders may include, e.g., 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.

¹⁹⁰ In this case, community stakeholders would include individuals from affected communities (and the host country if there are those who use, or have used within living memory, the cultural heritage that may be affected by the mining activities). If the operating company engaged with other stakeholders (e.g., during the cultural heritage assessment process), such as academics or organizations with expertise on the local cultural heritage, or local or national regulatory agencies entrusted with the protection of cultural heritage that may be affected by the mine site, the company would be expected to share information if requested with those stakeholders, too.

¹⁹¹ If screening has not identified any risks or potential impacts to cultural heritage, then further assessment is not needed.

Note that screening may have taken place as part of the ESIA in IRMA Chapter 1.2, or as part of the biodiversity, ecosystem services and protected areas screening in IRMA Chapter 4.6.

Screening should include a determination of whether or not the mining project is in an area currently or traditionally occupied or used by indigenous peoples, where cultural heritage of other communities may be affected, where there may be indigenous peoples living in voluntary isolation, or where nearby areas have been legally protected to preserve cultural heritage.

- c. Where restoring the functionality of the cultural heritage in a different location is not feasible, permanently remove historical and archeological artifacts and structures; and
- d. Where affected communities are using the tangible cultural heritage for long-standing cultural purposes compensate for loss of that tangible cultural heritage.

3.7.3.2. All mitigation work involving tangible replicable cultural heritage shall be carried out and documented by competent professionals, using internationally recognized practices for the protection of cultural heritage.

3.7.4. Non-Replicable Cultural Heritage

3.7.4.1. The operating company shall not remove any tangible nonreplicable cultural heritage, unless all of the following conditions are met:

- a. There are no technically or financially feasible alternatives to removal;
- b. The overall benefits of the mining project conclusively outweigh the anticipated cultural heritage loss from removal; and
- c. Any removal of cultural heritage is conducted using the best available technique.

3.7.4.2. All mitigation work involving tangible non-replicable cultural heritage shall be carried out and documented by competent professionals, using internationally recognized practices for the protection of cultural heritage.

3.7.5. Critical Cultural Heritage

3.7.5.1. 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:

- a. Retain external experts to assist in the assessment and protection of critical cultural heritage, and use internationally recognized practices for the protection of cultural heritage;¹⁹² and
- b. Collaborate with affected communities to negotiate measures to protect critical cultural heritage and provide equitable outcomes for affected communities, and document the mutually accepted negotiation process and outcomes. Where impacts may occur to the critical cultural heritage of indigenous peoples negotiation shall take place through the free, prior and informed consent process outlined in IRMA Chapter 2.2, unless otherwise specified by the indigenous peoples.

3.7.5.2. When a new mine is proposed within a legally protected cultural heritage area, including areas proposed by host governments for such designation, or a legally defined protected area buffer zone, the operating company shall:

- a. Comply with requirement 3.7.5.1;
- b. Comply with the protected area's management plan;
- c. Consult with agencies or bodies responsible for protected area governance and management, affected communities and other key stakeholders on the proposed mining project; and
- d. Implement additional programs, as appropriate, to promote and enhance the conservation aims of the protected area.

¹⁹² For example, the best available technique proposed by competent professionals hired by the operating company could undergo a peer review by international external experts, or technical experts selected by stakeholders, to ensure that no better, feasible techniques are available.

3.7.5.3. IRMA will not certify new mines that are developed in or that adversely affect the following protected areas if those areas were designated to protect cultural values (see also Chapter 4.6):¹⁹³

- World Heritage Sites, and areas on a State Party's official Tentative List for World Heritage Site Inscription;
- International Union for Conservation of Nature (IUCN) protected area management categories I-III; and
- Core areas of UNESCO biosphere reserves.

3.7.5.4. An existing mine located entirely or partially in a protected area listed in 3.7.5.3 shall demonstrate that:

- a. The mine was developed prior to the area's official designation;
- b. Management plans have been developed and are being implemented to ensure that activities during the remaining mine life cycle will not permanently and materially damage the integrity of the cultural values for which the area was designated or recognized; and
- c. The operating company collaborates with relevant management authorities to integrate the mine's management strategies into the protected area's management plan.

3.7.5.5. To safeguard irreplaceable cultural heritage and respect indigenous peoples' right to self-determination, the operating company shall not carry out new exploration or develop new mines in areas where indigenous peoples are known to live in voluntary isolation.

3.7.6. Commercial Use of Cultural Heritage¹⁹⁴

3.7.6.1. Where the operating company proposes to use the intangible cultural heritage, including knowledge, innovations or practices of local communities for commercial purposes, the company shall inform these communities of their rights under national and international law, of the scope and nature of the proposed commercial development, and of the potential consequences of such development.

3.7.6.2. The 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 local customs and traditions.

3.7.6.3. 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 IRMA Chapter 2.2, unless otherwise specified by the indigenous peoples.

¹⁹³ Chapter 3.7 is focused on the protection of cultural heritage, and so requirement 3.7.5.3 is specific to cultural values. There is a similar requirement in Chapter 4.6—Biodiversity, Ecosystem Services and Protected Areas (4.6.5.3) that prohibits IRMA certification of mines that are developed in or that affect World Heritage Sites, IUCN protected areas management categories I-III and core areas of UNESCO biosphere reserves if they were designated to protect values other than cultural values (e.g., protect biodiversity, unique geological formations, etc.).

¹⁹⁴ At the present time, there are not clear examples of mining companies proposing to use intangible cultural heritage for commercial purposes. This requirement is from IFC, and the examples provided in IFC guidance include commercialization of traditional medicinal knowledge or other sacred or traditional technique for processing plants, fibers, or metals, or locally-sourced industrial design. (IFC. 2012. Performance Standard 8: Cultural Heritage. Guidance Note, GN29. https://www.ifc.org/wps/wcm/connect/39e39000498007fda1fff3336b93d75f/Updated_GN8-2012.pdf?MOD=AJPERES)

It is expected that community stakeholders will help to identify if there are cases where the mining project or operating company has proposed and/or used a community's intangible cultural heritage for commercial purposes.

3.7.7. Cultural Heritage Management

3.7.7.1. A cultural heritage management plan or its equivalent shall be developed that outlines the actions and mitigation measures to be implemented to protect cultural heritage.

3.7.7.2. If a new or existing mines is in an area where cultural heritage is expected to be found, the operating company shall develop procedures for:

- a. Managing chance finds, including, at minimum, a requirement that employees or contractors shall not further disturb any chance find until an evaluation by competent professionals is made and actions consistent with the requirements of this chapter are developed;
- b. Managing potential impacts to cultural heritage from contractors and visitors;
- c. Allowing continued access to cultural sites, subject to consultations with affected communities and overriding health, safety, and security considerations; and
- d. If the mining project affects indigenous peoples' cultural heritage, the operating company shall collaborate with indigenous peoples to determine procedures related to the sharing of information related to cultural heritage.

3.7.7.3. 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.

NOTES

This chapter uses, as its basis, the IFC Performance Standard 8—Cultural Heritage.

While this chapter applies to both indigenous and non-indigenous cultural heritage, it does not specify requirements applicable to Indigenous and Community Conserved Areas (ICCAs) designated as such by indigenous peoples or local communities. These are areas governed and/or managed by the people or community in a manner that conserves nature and/or cultural values.¹⁹⁵ Such areas may be considered by indigenous peoples as a part of their cultural heritage and, as such, could be raised during the cultural heritage screening process and addressed in Chapter 2.8, and/or addressed during the free, prior and informed consent process in Chapter 2.2—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 <u>host country laws</u> related to cultural heritage exist, a company is required to abide by those laws. However, if IRMA requirements are more stringent than <u>host country law</u> , the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to violate <u>host country law</u> .
1.2—Community and Stakeholder Engagement	Engagement with <u>stakeholders</u> and <u>indigenous peoples</u> regarding cultural heritage shall conform to the requirements in Chapter 1.2. In particular, criterion 1.2.3 is important to ensure that <u>stakeholders</u> have the capacity to fully understand their rights and collaborate effectively in the development of <u>prevention/mitigation</u> plans and monitoring processes. Also, 1.2.4 ensures that communications and information are in formats and languages that are accessible and understandable to <u>affected communities</u> and <u>stakeholders</u> , and provided in a timely, culturally appropriate manner.

¹⁹⁵ ICCA Consortium website: “Three defining characteristics for ICCAs.” <https://www.iccaconsortium.org/index.php/discover/>

CROSS REFERENCES TO OTHER CHAPTERS	
1.3—Human Rights 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 either a <u>new mine</u> or <u>existing mine</u>, a company will be expected to prevent, <u>mitigate</u> and <u>remediate</u> the impacts as per Chapter 1.3. This includes the <u>mitigation</u> or <u>remediation</u> of human-rights-related impacts from past cultural heritage management activities at <u>existing mines</u>. Requirement 3.7.5.5 regarding <u>indigenous peoples</u> in voluntary isolation was written not only to protect the cultural heritage of those <u>indigenous peoples</u>, but also to respect their right to self-determination, which means that their decision to remain isolated must be respected.
2.1—Environmental and Social Impact Assessment and Management	The cultural heritage assessment required in 3.7.1 may be done in coordination with or as part of the Environmental and Social Impact Assessment in Chapter 2.1, rather than as a stand-alone assessment.
2.2—Free, Prior and Informed Consent	The identification and assessment of mining activities that impact cultural heritage of <u>indigenous peoples</u> may be addressed as part of the <u>FPIC</u> process as per Chapter 2.2.
4.6— Biodiversity, Ecosystem Services and Protected Areas	Some legally <u>protected areas</u> are designated as such to preserve <u>critical cultural heritage</u>. The <u>operating company</u> is required in Chapter 4.6 to identify legally <u>protected areas</u> that may be affected by <u>mining-related activities</u>. That information will be applicable for requirements in 3.7.5 pertaining to areas that are designated to protect cultural heritage. Also, the requirements in Chapter 3.7 align with those in Chapter 4.6 regarding actions to be taken by the <u>operating company</u> if mines are to be developed in <u>protected areas</u>. Indigenous and Community Conserved Areas (ICCAs) designated as such by indigenous peoples, may be created to protect cultural heritage and therefore may be addressed in Chapter 3.7. However, consideration of the ecological attributes of protected ICCAs may also be addressed in Chapter 4.6 of the IRMA Standard.



The IRMA Standard:
Requirements

Environmental Responsibility



Chapter 4.1

Waste and Materials Management

BACKGROUND

The mining process uses materials that, if mismanaged, create risks to human health, safety and the environment. Fuels used by heavy machinery, chemicals, such as solvents used to clean or maintain equipment, and wastes from onsite sewage treatment facilities can be harmful to living organisms if spilled or otherwise released to the environment. Mining also generates large volumes of waste materials that may be associated with risks to health, safety and the environment, depending on the chemical characteristics of the material and how it is managed.

Most mined material will remain on the site as wastes in two general forms: waste from processing ore into a concentrate or final product (e.g., tailings, spent heap leach materials, etc.), and soil and rock removed during mining that will not be processed for minerals (e.g., overburden, waste rock, sub-economic ore, etc.). These waste materials may contain target minerals and other constituents including sulfide and other metal-bearing minerals. In addition, some tailings may contain process chemicals, and waste rock may contain nitrogen-based explosives compounds.

If water treatment is necessary to remove metals or other constituents from mine-impacted waters before discharging water to the environment, the process may generate waste sludges that contain high concentrations of metals or other contaminants.

Mining-related wastes have the potential to contaminate water bodies, air and soil. Water contamination is the most prevalent problem associated with mine wastes and hazardous materials used or generated as a result of mining activities. Mining wastes may also pose a risk to nearby communities, as the storage of any large volumes of any material behind dams and/or in constructed impoundments holds the potential for catastrophic failure.

There are, however, existing and emerging materials, technologies, and waste management practices that aim to prevent or greatly reduce the potential for contamination from hazardous materials and mine wastes and catastrophic failures of mine waste facilities. These include implementing best practices in the handling, storage and transport and disposal of potentially hazardous materials. Also, geochemical testing can be used to determine whether mining wastes like tailings and waste rock have the potential to generate acid and/or leach metals and other contaminants, and if the potential exists, then mitigation measures can be put in place to prevent acid generation and metals leaching.

Increasingly, mining companies are also implementing stronger accountability mechanisms such as ensuring waste facility decisions are approved at the highest levels of the company; more rigorous assessments of sources of potential contamination and physical risks posed by mine waste facilities; and independent review of waste facility siting, design, construction, operation and closure plans.

TERMS USED IN THIS CHAPTER

Acid Rock Drainage (ARD) ■ Affected Communities ■ Alternatives Assessment ■ Best Available/Applicable Practice (BAP) ■ Best Available Technology (BAT) ■ Collaboration ■ Competent Professional ■ Conceptual Site Model (CSM) ■ Consultation ■ Critical Control ■ Existing Mine ■ Facility ■ Heap Leach ■ Host Country Law ■ Independent Review ■ Metals Leaching (ML) ■ Mine Closure ■ Mine Waste Facility ■ Mining Impacted Waters (MIW) ■ Mining Project ■ Mitigation ■ Mitigation Hierarchy ■ Operating Company ■ Post-Closure ■ Practicable ■ Process Water ■ Risk Control ■ Stakeholder ■ Tailings ■ Waste Rock ■ Water Balance ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

OBJECTIVES/INTENT OF THIS CHAPTER

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

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant for all mines.

IRMA recognizes that some of the requirements in the IRMA Standard are emerging best practices (see Notes at the end of the chapter for more information). Consequently, during IRMA's Launch Phase (2018 into 2019) we will not expect that all requirements in this chapter will have been completely fulfilled. Companies will be expected, however, to have started to develop the processes and procedures necessary to fully meet the chapter requirements within a reasonable timeframe (e.g., 1 to 2 years). When IRMA launches its full certification program in late 2019, it is expected that the requirements in this chapter will be required to be met in order to achieve certification.

Waste and Materials Management Requirements

4.1.1. Policy and Governance

4.1.1.1. The operating company shall develop a policy for managing waste materials and mine waste facilities in a manner that eliminates, if practicable, and otherwise minimizes risks to human health, safety, the environment and communities.

4.1.1.2. The operating company shall demonstrate its commitment to the effective implementation of the policy by, at minimum:

- a. Having the policy approved by senior management and endorsed at the Director/Governance level of the company;
- b. Having a process in place to ensure that relevant employees understand the policy to a degree appropriate to their level of responsibility and function, and that they have the competencies necessary to fulfill their responsibilities;
- c. Having procedures and/or protocols in place to implement the policy; and
- d. Allocating a sufficient budget to enable the effective implementation of the policy.

4.1.2. Safe Management of Materials Other Than Mine Wastes

4.1.2.1. The operating company shall:

- a. Identify all materials, substances and wastes (other than mine wastes)¹⁹⁶ associated with the mining project that have the potential to cause impacts on human health, safety, the environment or communities; and
- b. Document and implement procedures for the safe transport, handling, storage and disposal of those materials, substances and wastes.

¹⁹⁶ Mine wastes are not included in requirement 4.1.2.1, as they are the primary focus of the rest of this chapter (see criteria 4.1.1 and 4.1.3 – 4.1.6). For the purposes of this chapter, “mine waste” include tailings, waste rock, spent ore from heap leaches, wastes generated during mineral processing (e.g., residues and used processing fluids, wastes from thermal processing – including mercury wastes in Chapter 4.8). It does not include chemicals that go into mineral processing that have not been used.

4.1.3. Mine Waste Source Characterization and Impact Prediction

4.1.3.1. The operating company shall identify all existing and/or proposed mine waste facilities that have the potential to be associated with waste discharges or incidents, including catastrophic failures, that could lead to impacts on human health, safety, the environment or communities.

4.1.3.2. The operating company shall perform a detailed characterization for each mine waste facility that has associated chemical risks. Characterization shall include:¹⁹⁷

- a. A detailed description of the facility that includes geology, hydrogeology and hydrology, climate change projections, and all potential sources of mining impacted water (MIW);¹⁹⁸
- b. Source material characterization using industry best practice to determine potential for acid rock drainage (ARD) or metals leaching (ML). This shall include:
 - i. Analysis of petrology, mineralogy, and mineralization;
 - ii. Identification of geochemical test units;
 - iii. Estimation of an appropriate number of samples for each geochemical test unit; and
 - iv. Performance of comprehensive geochemical testing on all samples from each geochemical test unit.
- c. A conceptual model that describes what is known about release, transport and fate of contaminants and includes all sources, pathways and receptors for each facility;¹⁹⁹
- d. Water balance and chemistry mass balance models for each facility;²⁰⁰
- e. Identification of contaminants of concern for the facility/source materials, and the potential resources at risk from those contaminants.²⁰¹

4.1.3.3. The operating company shall identify the potential physical risks related to tailings storage facilities and all other mine waste facilities where the potential exists for catastrophic failure resulting in impacts on human health, safety, the environment or communities. Evaluations shall be informed by the following:

- a. Detailed engineering reports, including site investigations, seepage and stability analyses;
- b. Independent technical review (see 4.1.6);
- c. Facility classification based on risk level or consequence of a failure, and size of the structure/impoundment;
- d. Descriptions of facility design criteria;
- e. Design report(s);
- f. Short-term and long-term placement plans and schedules for tailings and waste rock or other facilities that are subject to stability concerns;
- g. Master tailings placement plan (based on life of mine);
- h. Internal and external inspection reports and audits, including, if applicable, an annual dam safety inspection report;

¹⁹⁷ See also IRMA Chapter 4.2, criteria 4.2.2

¹⁹⁸ Mining impacted water, also referred to as mining influenced water or MIW, includes acid rock drainage (ARD), neutral mine drainage, saline drainage, and metallurgical process waters of potential concern. A key characteristic of most of these waters is that they contain elevated metals that have leached from surrounding solids (e.g., waste rock, tailings, mine surfaces, or mineral surfaces in their pathways). This fact is commonly acknowledged by the phrase "metal leaching" (ML), frequently resulting in acronyms such as ARD/ML. Note that in Australia, the term acid and metalliferous drainage (AMD) is used as a synonym for ARD.

¹⁹⁹ This information will feed into the Conceptual Site Model required in IRMA Chapter 4.2, requirement 4.2.2.3.a.

²⁰⁰ This information should feed into the site-wide water balance model in IRMA Chapter 4.2, requirement 4.2.2.3.b.

²⁰¹ This should be done using the results from 4.1.3.2.a-d and also hydrogeochemical/hydrogeological modeling as per IRMA Chapter 4.2, if relevant. (See Chapter 4.2, requirement 4.2.2.3.c).

- i. Facility water balances (see 4.1.3.2.d); and
- j. Dam breach inundation (if applicable) and waste rock dump runout analyses.

4.1.3.4. Facility characterizations shall be updated periodically to inform waste management and reclamation decisions throughout the mine life cycle.²⁰²

4.1.3.5. Use of predictive tools and models for mine waste facility characterization shall be consistent with current industry best practice, and shall be continually revised and updated over the life of the mine as site characterization data and operational monitoring data are collected.

4.1.4. Waste Facility Assessment

4.1.4.1. A risk-based approach to mine waste assessment and management shall be implemented that includes:

- a. Identification of potential chemical risks (see 4.1.3.2) and physical risks (see 4.1.3.3) during the project conception and planning phase of the mine life cycle;
- b. A rigorous risk assessment to evaluate the potential impacts of mine waste facilities on health, safety, environment and communities early in the life cycle;
- c. Updating of risk assessments at a frequency commensurate with each facility's risk profile, over the course of the facility's life cycle; and
- d. Documented risk assessment reports, updated when risks assessments are revised (as per 4.1.4.1.c).

4.1.4.2. The operating company shall carry out and document an alternatives assessment to inform mine waste facility siting and selection of waste management practices.²⁰³ The assessment shall:

- a. Identify minimum specifications and performance objectives for facility performance throughout the mine life cycle, including mine closure objectives and post-closure land and water uses;
- b. Identify possible alternatives for siting and managing mine wastes, avoiding a priori judgements about the alternatives;
- c. Carry out a screening or "fatal flaw" analysis to eliminate alternatives that fail to meet minimum specifications;
- d. Assess remaining alternatives using a rigorous, transparent decision-making tool, such as Multiple Accounts Analysis (MAA) or its equivalent, that takes into account environmental, technical, socio-economic and project economics considerations, inclusive of risk levels and hazard evaluations, associated with each alternative;
- e. Include a sensitivity analysis to reduce potential that biases will influence the selection of final site locations and waste management practices; and
- f. Be repeated, as necessary, throughout the mine life cycle (e.g., if there is a mine expansion or a lease extension that will affect mine waste management).

4.1.5. Mitigation of Risks and Management of Mine Waste Management Facilities

²⁰² See also IRMA Chapter 2.6—Planning and Financing Reclamation and Closure, 2.6.2.2.c, g, and l.

²⁰³ Alternatives assessment is a process to identify and objectively and rigorously assess the potential impacts and benefits (including environmental, technical and socio-economic aspects) of different options so that an informed decision can be made.

For more on alternatives assessment see: Environment Canada. 2016. Guidelines for the Assessment of Alternatives for Mine Waste Disposal. <https://www.canada.ca/en/environment-climate-change/services/managing-pollution/publications/guidelines-alternatives-mine-waste-disposal/chapter-2.html>; and Mining Association of Canada. 2017. Guide to the Management of Tailings Facilities, p. 46. <http://mining.ca/sites/default/files/documents/MAC-Guide-to-the-Management-of-Tailings-Facilities-2017.pdf>.

4.1.5.1. Mine waste facility design and mitigation of identified risks shall be consistent with best available technologies (BAT) and best available/applicable practices (BAP).²⁰⁴

4.1.5.2. Mitigation of chemical risks related to mine waste facilities shall align with the mitigation hierarchy as follows:

- a. Priority shall be given to source control measures to prevent generation of contaminants;
- b. Where source control measures are not practicable or effective, migration control measures shall be implemented to prevent or minimize the movement of contaminants to where they can cause harm; and
- c. If necessary, MIW shall be captured and treated to remove contaminants before water is returned to the environment or used for other purposes.

4.1.5.3. For high-consequence-rated mine waste facilities, a critical controls framework shall be developed that aligns with a generally accepted industry framework, such as, for example, the process outlined in Mining Association of Canada's Tailings Management Guide.²⁰⁵

4.1.5.4. Mine waste management strategies shall be developed in an interdisciplinary and interdepartmental manner and be informed by site-specific characteristics, modeling and other relevant information.

4.1.5.5. The operating company shall develop an Operation, Maintenance and Surveillance (OMS) manual (or its equivalent) aligned with the performance objectives, risk management strategies, critical controls and closure plan for the facility, that includes:

- a. An operations plan that documents practices that will be used to transport and contain wastes, and, if applicable, effluents, residues and process waters, including the recycling of process waters;²⁰⁶
- b. A documented maintenance program that includes routine, predictive and event-driven maintenance to ensure that all relevant parameters (e.g., all civil, mechanical, electrical and instrumentation components of a mine waste facility) are maintained in accordance with performance criteria, company standards, host country law and sound operating practices;
- c. A surveillance program that addresses surveillance needs associated with the risk management plan and critical controls management, and includes inspection and monitoring of the operation, physical and chemical integrity and stability, and safety of mine waste facilities, and a qualitative and quantitative comparison of actual to expected behavior of each facility;
- d. Documentation of facility-specific performance measures as indicators of effectiveness of mine waste management actions; and
- e. Documentation of risk controls and critical controls (see also 4.1.5.3), associated performance criteria and indicators, and descriptions of pre-defined actions to be taken if performance criteria are not met or control is lost.

²⁰⁴ There are several reference documents that contain useful information on best available technologies (BAT) including, for example: European Commission. 2009. Reference Document on Best Available Techniques for the Management of Tailings and Waste-Rock in Mining activities. http://eippcb.jrc.ec.europa.eu/reference/BREF/mmr_adopted_0109.pdf; and MEND Secretariat. 2017. Study of Tailings Management Technologies. Mine Environment Neutral Drainage (MEND) Project Report 2.50.1. Prepared by Kohn Crippen Berger. http://mend-nedem.org/wp-content/uploads/2.50.1Tailings_Management_TechnologiesL.pdf

Best industry design criteria have been used for tailings dams and other structures that may be subject to catastrophic failures, and the criteria have been designed to prevent catastrophic events during operations and post-closure. Examples of industry accepted quality guidelines include: Australian National Committee on Large Dams (ANCOLD), which has information at: www.ancold.org.au; and the Canadian Dam Association's Dam Safety Guidelines (2007) and Application of Dam Safety Guidelines to Mining Dams (2014). Both publications are available at: www.imis100.ca/cda/Main/Publications/Dam_Safety/CDA/Publications_Pages/Dam_Safety.aspx?hkey=52124537-9256-4c4b-93b2-bd971ed7f425

²⁰⁵ Mining Association of Canada. 2017. A Guide to the Management of Tailings Facilities (Third Ed). Section 4.4.3. <http://mining.ca/documents/guide-management-tailings-facilities-third-edition>

²⁰⁶ Some of the water-related issues may be covered in the Adaptive Management Plan for water (or its equivalent) as per IRMA Chapter 4.2 (see requirement 4.2.4.4).

4.1.5.6. On a regular basis, the operating company shall evaluate the performance of mine waste facilities to:

- a. Assess whether performance objectives are being met (see 4.1.4.2.a and 4.1.5.5);
- b. Assess the effectiveness of risk management measures, including critical controls (see 4.1.5.3);
- c. Inform updates to the risk management process (see 4.1.4.1.c) and the OMS manual (see 4.1.5.7); and
- d. Inform the management review to facilitate continual improvement (see 4.1.5.8).

4.1.5.7. The OMS manual shall be updated and new or revised risk and critical control strategies implemented if information reveals that mine waste facilities are not being effectively operated or maintained in a manner that protects human health and safety and prevents or otherwise minimizes harm to the environment and communities.

4.1.5.8. The operating company shall implement an annual management review to facilitate continual improvement of tailings storage facilities and all other mine waste facilities where the potential exists for contamination or catastrophic failure that could impact human health, safety, the environment or communities. The review shall:

- a. Align with the steps outlined in the Mining Association of Canada's Tailings Management Protocol²⁰⁷ or a similar framework; and
- b. Be documented, and the results reported to an accountable executive officer.

4.1.6. Independent Review of Mine Waste Management Facilities

4.1.6.1. The siting and design or re-design of tailings storage facilities and other relevant mine waste facilities,²⁰⁸ and the selection and modification of strategies to manage chemical and physical risks associated with those facilities shall be informed by independent reviews throughout the mine life cycle.²⁰⁹

4.1.6.2. Reviews shall be carried out by independent review bodies, which may be composed of a single reviewer or several individuals. At high-risk mine waste facilities a panel of three or more subject matter experts shall comprise the independent review body.

4.1.6.3. Independent reviewers shall be objective, third-party, competent professionals.

4.1.6.4. Independent review bodies shall report to the operation's general manager and an accountable executive officer of the operating company or its corporate owner.

4.1.6.5. The operating company shall develop and implement an action plan in response to commentary, advice or recommendations from an independent review, document a rationale for any advice or recommendations that will not be implemented, and track progress of the plan's implementation. All of this information shall be made available to IRMA auditors.²¹⁰

4.1.7. Stakeholder Engagement in Mine Waste Management

²⁰⁷ Mining Association of Canada (MAC). 2017. Tailings Management Protocol. Towards Sustainable Mining. <http://mining.ca/sites/default/files/documents/TSM-Tailings-Management-Protocol-2017.pdf>

²⁰⁸ Relevant facilities would be other mine waste facilities where the potential exists for catastrophic failure that could result in impacts on human health, safety, the environment, or the livelihoods of communities

²⁰⁹ Independent reviewers should not be directly involved with the design or operations of the facility, but rather, should review all key documents and information, analyses, design values and conclusions related to the decisions made by others.

²¹⁰ Non-disclosure agreements will be signed by IRMA auditors, but even so, confidential business information may be withheld as long as the company provides to auditors a description of the confidential information or materials that are being withheld and an explanation of the reasons for classifying the information as confidential; and if a part of a document is confidential, only that confidential part shall be redacted, allowing for the release of non-confidential information. (See IRMA Chapter 1.1, requirement 1.1.6.4)

4.1.7.1. Stakeholders shall be consulted during the screening and assessment of mine waste facility siting and management alternatives (see 4.1.4.2), and prior to the finalization of the design of the facilities.

4.1.7.2. Emergency preparedness and response plans or emergency action plans related to catastrophic failure of mine waste facilities shall be discussed and prepared in consultation with potentially affected communities and workers and/or workers' representatives, and in collaboration with first responders and relevant government agencies.²¹¹

4.1.7.3. Emergency and evacuation drills (desktop and live) related to catastrophic failure of mine waste facilities shall be held on a regular basis.²¹²

4.1.7.4. If requested by stakeholders, the operating company shall report to stakeholders on mine waste facility management actions, monitoring and surveillance results, independent reviews and the effectiveness of management strategies.

4.1.8. Additional Considerations

4.1.8.1. At the present time, mine sites using riverine, submarine and lake disposal of mine waste materials will not be certified by IRMA.

NOTES

This chapter aims to align with requirements in the Mining Association of Canada's (MAC) 2017 Tailings Management Protocol and Guide to the Management of Tailings Facilities (Tailings Guide).²¹³ The IRMA Standard, however, applies the MAC protocol and guidance to mine waste facilities other than tailings storage facilities, as other large mine waste facilities such as waste rock or heap leach facilities (which are used to process/extract metals from ores, but also end up as long-term waste sites) need to be similarly managed to protect human health, safety, the environment and communities in the short- and long-term.

The MAC Tailings Management Protocol is one of the most recent standards being applied for tailings management at the global level. It was updated based on recommendations from external independent experts and an internal working group following a 2014 tailings dam failure at a Canadian mine. The changes in the new 2017 MAC Tailings Management Protocol and Tailing Guide have been viewed by leading experts and MAC companies as an important step in preventing future tailings disasters and adverse effects on the environment, human health and safety.²¹⁴

The 2017 version of the MAC Tailings Management Protocol does not take effect for MAC members until 2019. IRMA recognizes that the MAC Tailings Protocol, and therefore some of the requirements in the IRMA Standard, are new. Consequently, during IRMA's Launch Phase (2018 into 2019) we will not expect that all requirements will have been completely fulfilled. Companies will be expected, however, to have started to develop the processes and procedures necessary to fully meet the chapter requirements within a reasonable timeframe. When IRMA Launches its full certification program later in 2019, all requirements in the chapter will need to be met in order to achieve certification (though at that point some requirements may have been revised based on Launch Phase learning).

²¹¹ See also IRMA Chapter 2.5—Emergency Preparedness and Response for related requirements.

²¹² Ibid.

²¹³ Mining Association of Canada. 2017. Toward Sustainable Mining (TSM) Tailings Management Protocol. <http://mining.ca/towards-sustainable-mining/protocols-frameworks/tailings-management-protocol>; and Mining Association of Canada. 2017. A Guide to the Management of Tailings Facilities (Third Ed). <http://mining.ca/documents/guide-management-tailings-facilities-third-edition>

²¹⁴ Mining Association of Canada. 2017. A Guide to the Management of Tailings Facilities (Third Ed). pp. iii - v. <http://mining.ca/documents/guide-management-tailings-facilities-third-edition>

IRMA's leadership believes that riverine tailings disposal is not consistent with IRMA's guiding principles. 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 we welcome contributions from interested parties to help advance this debate.

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.1—Legal Compliance	Some host countries may have laws relating to the management of mine wastes and other materials or substances transported and used at mine site. As per Chapter 1.1, if such <u>host country laws</u> exist, a company is required to abide by those laws. However, if IRMA requirements are more stringent than <u>host country law</u> , the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to violate <u>host country law</u> .
1.2—Community and Stakeholder Engagement	4.1.7 addresses <u>stakeholder</u> engagement related to mine waste management. Any engagement with stakeholders must conform with requirements in Chapter 1.2. For example, 1.2.4 ensures that communications and information are in culturally appropriate formats and languages that are accessible and understandable to <u>affected communities</u> and <u>stakeholders</u> , and provided in a timely manner, and 1.2.2.2 requires dialogue and meaningful engagement that includes providing <u>stakeholders</u> with feedback on how <u>stakeholder</u> input has been taken into account.
1.4—Complaints and Grievance Mechanism and Access to Remedy	As per Chapter 1.4, the <u>operating company</u> is required to have an operational-level <u>grievance mechanism</u> available to <u>stakeholders</u> , including procedures for filing complaints, and having complaints recorded, investigated and resolved in a timely manner. <u>Stakeholders</u> who have complaints related to an <u>operating company's</u> waste and materials management can raise complaints through the company's operational-level <u>grievance mechanism</u> .
2.1—ESIA and Management	Potential impacts on the environment or communities from mine wastes and materials such as chemicals should be scoped, at least in a general manner, during the ESIA process (see 2.1.3). In 2.1.3.3, screening of potential impacts on wildlife should include those related to mine waste management and the storage, transport and disposal of potentially hazardous materials.
2.5—Emergency Preparedness and Response	The protection of communities and <u>workers</u> from catastrophic failures of <u>mine waste facilities</u> and during emergencies related to the transport and storage of hazardous materials (e.g., spills) should be addressed in Emergency Response Planning. Chapter 2.5 mandates coordination between the mine and emergency responders in potentially <u>affected communities</u> .
2.6—Planning and Financing Reclamation and Closure	As per Chapter 2.6, the planning of reclamation and closure of <u>mine waste facilities</u> shall begin early in the mine development process, include progressive remediation of waste facilities, and take into consideration <u>post-closure</u> land-use, long-term stability, <u>long-term water treatment</u> , backfilling of pits and underground workings. There must also be financial surety provided to cover the costs of reclamation and closure of <u>mine waste facilities</u> .
3.2—Occupational Health and Safety	Risks to <u>workers</u> related to mine waste management and handling of other materials (e.g., chemicals, other wastes) should be evaluated as part of the occupational health and safety risk assessment process in Chapter 3.2.
3.3—Community Health and Safety	Risks to communities from incidents/failures/accidents related to mine waste or other materials (e.g., chemicals, other wastes) should be evaluated as part of the Community Health and Safety Assessment in Chapter 3.3.
4.2—Water Management	Mine waste management has potential implications for water management. As a result, Chapter 4.2, similar to 4.1, addresses characterization of wastes, water balance, chemical modeling and <u>Conceptual Site Models</u> (see 4.2.2), prevention of water contamination through management of mine wastes (see 4.2.3), and <u>mitigation</u> and monitoring of waters that may be contaminated by mine wastes (see 4.2.3 and 4.2.4, respectively).

CROSS REFERENCES TO OTHER CHAPTERS	
4.4—Air Quality Management	Mine waste facilities may contribute to air quality emissions (e.g., particulate matter/dust). Chapter 4.2 addresses the assessment of potential emissions, and the mitigation and monitoring of actual emissions.
4.6—Biodiversity, Ecosystem Services and Protected Areas	Mine wastes and other materials (e.g., chemicals, other wastes) may pose risks to threatened or endangered species, biodiversity, ecosystem services or protected areas. These risks may be identified and evaluated during the screening, and if necessary, assessment processes in Chapter 4.6. The risks may also be identified during the Waste Facility Assessment process in Chapter 4.1 (criteria 4.1.4). Mitigation strategies may be developed as per 4.1.5, or developed as part of or integrated into the Biodiversity Management Plan (see 4.6.4). Any assessment and mitigation development processes should include input from experts and stakeholders that have expertise in biodiversity, ecosystem services or protected areas issues.
4.7—Cyanide Management	Chapter 4.7 requires that discharges to surface waters (e.g., from cyanide-bearing wastes) shall not contaminate water. If cyanide is used at the mining project, risk controls to manage cyanide must be included in the OMS plan (4.1.5.5.a), and monitoring for potential impacts on wildlife from cyanide-containing wastes take place as per 4.1.5.5.c.
4.8—Mercury Management	Chapter 4.8 contains requirements related to mercury wastes, which, if they are derived from thermal processing of ore or concentrate, are considered mine wastes. If such wastes are being considered for on-site storage (e.g., co-disposal in tailings impoundments), requirement 4.8.2.3.a requires a risk-based evaluation (this may be done as part of the risk assessment in 4.1.4.1), and allows on-site storage if the risk of long-term contamination is low. If disposal is to occur, however, the tailings storage facility must be lined as per 4.8.2.3.b. If mercury wastes are stored or disposed of on-site, relevant information should be included in the (include in OMS plan) as per 4.1.5.5.a. As per requirement 4.8.2.2, if wastes are not disposed of on site, they shall only be sold for an end use listed in Annex A (Products) or Annex B (Processes) of the Minamata Convention on Mercury or sent to a regulated repository.



Chapter 4.2

Water Management

BACKGROUND

Mines 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, breaches or failures of tailings and water storage facilities, chemical spills and the release of uncontrolled stormwater.

Remediation of mining-caused pollution can be extremely costly. Consequently, the design of systems to prevent surface and groundwater contamination should be a primary 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-generating/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.

Mines are often a large water user for their locale, even if not over a large region. The impacts of water used by a mining project are highly location-specific, depending 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 or areas where the water table is above the level of the mine challenges arise from the need to divert water in order to develop a mine. The depletion of groundwater, surface water and springs from mine dewatering operations and general water usage by mine facilities can take decades to replenish after mining ceases, and in some instances, groundwater levels and flow directions can be altered indefinitely.

Responsible mining operators can protect water resources by using water efficiently, ensuring that total withdrawals maintain environmental flows in streams, springs and other surface waters, minimizing groundwater drawdown, and treating mine-influenced water and discharging it in ways that minimize harm to surrounding water users and environmental resources. Responsible mining operations can also clean up previously impacted water to make it usable, and in some cases provide a water supply from an alternative source.

Increasingly, responsible mining operators are aware of their operating context, and pay attention not only to their impacts but to their dependencies and opportunities as well. They are participating in collective actions to address shared water challenges and opportunities among diverse stakeholders, and are adopting approaches that lead to positive water governance outcomes at the local and regional levels. Such proactive and collaborative identification of potential water quality and quantity issues and the development of suitable management strategies adapted throughout the life cycle of a mine can help prevent or minimize surface water and groundwater contamination and impacts on water quantity.

TERMS USED IN THIS CHAPTER

Acid Rock Drainage (ARD) ■ Adaptive Management ■ Affected Community ■ Background ■ Baseline ■ Basin/Catchment/Watershed ■ Collaboration ■ Competent Professionals ■ Conceptual Flow Model (CFM) ■ Conceptual Site Model (CSM) ■ Consultation ■ Dewatering ■ Ecosystem Services ■ Host Country Law ■ Metals Leaching (ML) ■ Mine Closure ■ Mining Project ■ Mitigation ■ Mitigation Hierarchy ■ Mixing Zone ■ Natural Seep/Spring ■ Offsetting ■ Operating Company ■ Pit Lake ■ Point of Compliance ■ Post-Closure ■ Practicable ■ Stakeholder ■ Stormwater ■ Tailings ■ Waste Rock ■ Water Balance ■ Water Quality Criteria ■ Whole Effluent Toxicity ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

OBJECTIVES/INTENT OF THIS CHAPTER

To manage water resources in a manner that strives to protect current and future uses of water.

SCOPE OF APPLICATION

RELEVANCE: This chapter is applicable to all mines.

NEW VS. EXISTING MINES: In 4.2.2.1, it is expected that new mines will collect baseline water quality data. Existing mines that did not collect baseline data prior to commencement of mining operations will need to demonstrate that background water quality data have been collected.

Water Management Requirements

4.2.1. Water Management Context and Collaboration at the Local and Regional Level

4.2.1.1. The operating company shall identify water users, water rights holders and other stakeholders that may potentially affect or be affected by its mine water management practices.

4.2.1.2. The operating company shall conduct its own research and collaborate with relevant stakeholders to identify current and potential future uses of water at the local and regional level that may be affected by the mine's water management practices.²¹⁵

4.2.1.3. The operating company shall conduct its own research and collaborate with relevant stakeholders to identify and address shared water challenges and opportunities at the local and regional levels, and shall take steps to contribute positively to local and regional water stewardship outcomes.

4.2.2. Site Characterization and Prediction of Potential Impacts

4.2.2.1. The operating company shall gather baseline or background data to reliably determine:²¹⁶

a. The seasonal and temporal variability in:

- i. The physical, chemical and biological conditions of surface waters, natural seeps/springs and groundwaters that may be affected by the mining project;
- ii. Water quantity (i.e., flows and levels of surface waters, natural seeps/springs and groundwaters) that may be affected by the mining project;²¹⁷ and

²¹⁵ "relevant stakeholders" should include water users, water rights holders, downstream communities (or communities that may be affected by groundwater withdrawals or contamination), government regulators, others engaged in work related to water management at the local or regional level, and others who may affect, be affected by or have an interest in the mine's management of water.

"local and regional level" is meant to encompass the areas that may be affected by a mine site's water use or water management practices. For IRMA purposes, the "local" area should be considered to be the particular basin/catchment/watershed where the site is located, whereas "regional" encompasses areas beyond the immediate basin/catchment/watershed.

Water-related ecosystem services are important uses to consider. (See, e.g., Grizzetti et al., 2016. "Assessing water ecosystem services for water resource management," Environmental Science and Policy. 61:194-203. <https://www.sciencedirect.com/science/article/pii/S1462901116300892>) They may be discussed in 4.2.1.2, but are otherwise required to be scoped, assessed and mitigated as per Chapter 4.6.

²¹⁶ New mines are expected to collect baseline data. Existing mines that did not collect baseline data prior to commencement of mining operations will need to demonstrate that background water quality data have been collected.

²¹⁷ For IRMA purposes, water quantity refers generally to the amount of water present or passing a certain location in water bodies that exist on the earth's surface, such as lakes, ponds, rivers, streams, etc., (i.e., referred to as surface waters) and water present in water bodies that exist underground (i.e., groundwaters). It also includes the amount of water that originates underground but expresses itself at the surface (e.g., natural springs or seeps). Water quantity measurements may be expressed as volumes, however, for IRMA's purposes measurements for rivers, streams and natural springs/seeps may be expressed as a flow (in ft³/sec or m³/sec), while measurements for lakes and groundwater may be expressed as a level or elevation (e.g., feet or meters above a reference point such as sea level).

- b. Sources of contamination and changes in water quantity or quality that are unrelated to the mining project.

4.2.2.2. The operating company shall carry out a scoping process that includes collaboration with relevant stakeholders to identify potentially significant impacts that the mining project may have on water quantity and quality, and current and potential future water uses. The scoping process shall include evaluation of:

- a. The mining-related chemicals, wastes, facilities and activities that may pose a risk to water quality;²¹⁸ and
- b. The mine's use of water, and any mining activities that may affect water quantity.

4.2.2.3. Where potential significant impacts on water quantity or quality, or current and future water uses have been identified, the operating company shall carry out the following additional analyses to further predict and quantify the potential impacts:

- a. Development of a conceptual site model (CSM) to estimate the potential for mine-related contamination to affect water resources;
- b. Development of a numeric mine site water balance model to predict impacts that might occur at different surface water flow/groundwater level conditions (e.g., low, average and high flows/levels);
- c. If relevant, development of other numerical models (e.g., hydrogeochemical/hydrogeological) to further predict or quantify potential mining-related impacts on water resources; and
- d. Prediction of whether water treatment will be required to mitigate impacts on water quality during operations and mine closure/post-closure.

4.2.2.4. Use of predictive tools and models shall be consistent with current industry best practices, and shall be continually revised and updated over the life of the mine as operational monitoring and other relevant data are collected.

4.2.3. Prevention and Mitigation of Impacts to Water

4.2.3.1. The operating company, in collaboration with relevant stakeholders, shall evaluate options to mitigate predicted significant adverse impacts on water quantity, water quality and current and potential future water uses that may be affected by the mine's water management practices. Options shall be evaluated in a manner that aligns with the mitigation hierarchy.

4.2.3.2. If a surface water or groundwater mixing zone is proposed as a mitigation strategy:

- a. A risk assessment shall be carried out to identify, evaluate and document risks to human health, local economies and aquatic life from use of the proposed mixing zone, including, for surface water mixing zones, an evaluation of whether there are specific contaminants in point source discharges, such as certain metals, that could accumulate in sediment and affect aquatic life; and
- b. If any significant risks are identified, the operating company shall develop mitigation measures to protect human health, aquatic life and local economies including, at minimum:
 - i. Surface water or groundwater mixing zones are as small as practicable;
 - ii. Water in a surface water mixing zone is not lethal to aquatic life;
 - iii. A surface water mixing zone does not interfere with the passage of migratory fish;
 - iv. Surface water or groundwater mixing zones do not interfere with a pre-mine use of water for irrigation, livestock or drinking water, unless that use can be adequately provided for by the

²¹⁸ Some of this information will have been gathered as per Chapter 4.1- Mine Waste and Materials Management, criterion 4.1.2 Source Characterization and Prediction.

operating company through another source of similar or better quality and volume, and the substitution is agreed to by all potentially affected water users; and

- v. Point source discharges into a surface water mixing zone match the local hydrograph for surface water flows to the extent practicable.²¹⁹



4.2.3.3. Waters affected by the mining project shall be maintained at a quality that enables safe use for current purposes and for the potential future uses identified in collaboration with relevant stakeholders (see 4.2.1.2). In particular, the operating company shall demonstrate that contaminants measured at points of compliance are:

- a. Being maintained at baseline or background levels; or
- b. Being maintained at levels that are protective of the identified uses of those waters (see IRMA Water Quality Criteria by End Use Tables 4.2.a to 4.2.h, which correspond to particular end uses).



[flag] 4.2.3.3 Issue in brief: During IRMA's Launch Phase a mine site may request an exception to 4.2.3.3 if it believes there are site-specific factors that prevent it from meeting the requirement. Sites will still be expected to demonstrate that water quality is protective of identified current and future uses of water. IRMA's Technical Water Committee will review requests for exceptions (see Notes at the end of the chapter).

Additionally, IRMA is seeking input, in particular, on the proposed criteria for cyanide in IRMA Water Quality Criteria Table 4.2.a. – Aquatic Organisms - Fresh Water Quality Criteria. (For further information, see Table 4.2.a)

4.2.3.4. Unless agreed by potentially affected stakeholders, water resources affected by mining activities shall be maintained at quantities that enable continued use of those resources for current purposes and for the potential future uses identified in collaboration with relevant stakeholders (see 4.2.1.2).

4.2.4. Monitoring and Adaptive Management

4.2.4.1. The operating company shall develop and document a program to monitor changes in water quantity and quality.²²⁰ As part of the program the operating company shall:

- a. Establish a sufficient number of monitoring locations at appropriate sites to provide reliable data on changes to water quantity and the physical, chemical and biological conditions of surface waters, natural springs/seeps and groundwater (hereafter referred to as water characteristics);
- b. Sample on a frequent enough basis to account for seasonal fluctuations, storm events and extreme events that may cause changes in water characteristics;
- c. Establish trigger levels and/or other indicators to provide early warning of negative changes in water characteristics;
- d. Sample the quality and record the quantity of mine-affected waters destined for re-use by non-mining entities;
- e. Use credible methods and appropriate equipment to reliably detect changes in water characteristics; and

²¹⁹ A hydrograph is a graph or plot that shows the rate of water flow in relation to time, given a specific point or cross section.

²²⁰ See also IRMA Chapter 4.1, criteria 4.1.4, as water monitoring that occurs here is likely to have relevance to waste management (e.g., one indicator of the effectiveness of waste management practices may be whether or not water quality is being maintained at required levels).

- f. Use accredited laboratories capable of detecting contaminants at levels below the values in the IRMA Water Quality Criteria by End-Use Tables.

4.2.4.2. Samples shall be analyzed for all parameters that have a reasonable potential to adversely affect identified current and future water uses. Where baseline or background monitoring, source characterization,²²¹ modeling, and other site-specific information indicate no reasonable potential for a parameter to exceed the baseline/background values or numeric criteria in the IRMA Water Quality Criteria by End-Use Tables (depending on the approach used in 4.2.3.3), those parameters need not be measured on a regular basis.²²²

4.2.4.3. The operating company shall actively solicit stakeholders from affected communities to participate in water monitoring and to review and provide feedback on the water monitoring program:

- a. Participation may involve the use of independent experts selected by the community; and
- b. If requested by community stakeholders, costs related to participation in monitoring and review of the monitoring program shall be covered in full or in part by the company, and a mutually acceptable agreement for covering costs shall be developed.

4.2.4.4. The operating company shall develop and implement an adaptive management plan for water that:

- a. Outlines planned actions to mitigate predicted impacts on current and future uses of water and natural resources from changes in surface water and groundwater quality and quantity related to the mining project; and
- b. Specifies adaptive management actions that will occur if certain outcomes (e.g., specific impacts), indicators, thresholds or trigger levels are reached, and timelines for their completion.

4.2.4.5. Annually or more frequently if necessary (e.g., due to changes in operational or environmental factors) the operating company shall review and evaluate the effectiveness of adaptive management actions, and, as necessary, revise the plan to improve water management outcomes.

4.2.4.6. Community stakeholders shall be provided with the opportunity to review adaptive management plans and participate in revising the plans.

4.2.5. Data Sharing, Communications and Reporting on Water Management Performance

4.2.5.1. The operating company shall publish baseline or background data on water quantity and quality, and the following water data shall be published annually, or at a frequency agreed by stakeholders from affected communities:²²³

- a. Monitoring data for surface water and groundwater points of compliance; and
- b. Monitoring data for water quantity (i.e., flows and levels of surface waters, springs/seeps and groundwater), and the volume of water discharged and extracted/pumped for mining operations.

4.2.5.2. The operating company shall develop and implement effective procedures for rapidly communicating with relevant stakeholders in the event that there are changes in water quantity or quality that pose an imminent threat to human health or safety, or commercial or natural resources.

²²¹ See also IRMA Chapter 4.1, criterion 4.1.2 on Source Characterization and Prediction.

²²² The comprehensive suite of parameters in IRMA Water Quality Tables should be analyzed periodically during operations, such as every five years, to ensure that no unanticipated contaminants have appeared, e.g., due to changes in ore or waste characteristics as mining progresses.

²²³ Additionally, as per Chapter 1.2—Community and Stakeholder Engagement, requirement 1.2.4.3: “Communications shall be carried out and information shall be provided to stakeholders in a timely manner, and shall be in formats and languages that are culturally appropriate and accessible to affected communities and stakeholders.”

4.2.5.3. The operating company shall discuss water management strategies, performance and adaptive management issues with relevant stakeholders on an annual basis or more frequently if requested by stakeholders.

NOTES

IRMA is establishing a multi-stakeholder technical water committee that will operate, at minimum, during IRMA's Launch Phase. The committee will serve two primary purposes:

- The committee will evaluate the exceptions to the numeric water quality criteria requested by mines being independently audited during the Launch Phase and determine whether or not mine site's rationale can be viewed as credibly protecting water uses/aquatic ecosystems (see 4.2.3.3); and
- Based on learning gained through evaluations of launch-phase information and stakeholder feedback, the technical water committee will help develop language for a revised water management chapter that will be included in the post-Launch phase IRMA Standard (estimated to be released in mid-to-late 2019).

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.1—Legal Compliance	As per Chapter 1.1, if there are <u>host country laws</u> that pertain specifically to the topics addressed in any IRMA chapter the <u>operating company</u> is required to abide by those laws. If IRMA requirements are more stringent than <u>host country law</u> , the company is required to also meet the IRMA requirement, as long as complying with it would not require the <u>operating company</u> to break the <u>host country law</u> . 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.
1.2—Community and Stakeholder Engagement	The requirements to <u>consult or collaborate with stakeholders</u> regarding mine water management (in 4.2.1.2, 4.2.1.3, 4.2.4.1) shall conform with IRMA <u>stakeholder engagement</u> requirements in Chapter 1.2. This includes determining if the <u>stakeholders</u> have the capacity to effectively participate in discussions, and provision for access to independent experts if necessary to ensure meaningful engagement in water monitoring (requirement 4.2.5.3). Similarly, communications with <u>stakeholders</u> (e.g., in 4.2.1.2, 4.2.1.3, 4.2.4.1 and 4.2.6) shall conform with requirements in 1.2.4, which require that communications and information are in culturally appropriate formats and languages that are <u>accessible</u> and understandable to affected <u>stakeholders</u> , and are provided in a timely manner, and requirement 1.2.2.2 requires dialogue and meaningful engagement that includes providing <u>stakeholders</u> with feedback on how their input has been taken into account.
1.3—Human Rights Due Diligence	In 2010, the United Nations recognized the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights. The potential for the <u>mining project</u> to infringe on this right should be evaluated as part of human rights due diligence in Chapter 1.3.
1.4—Complaints and Grievance Mechanism and Access to Remedy	If not resolved by other means, issues related to mining-related water impacts may be discussed and resolved through the mine's operational-level <u>grievance mechanism</u> (see IRMA Chapter 1.4).
2.1—Environmental and Social Impact Assessment and Management	Scoping of impacts related to water may have been done as part of the Environmental, and Social Impact Assessment process (See 2.1.3). If potential impacts were identified during scoping, they should have been further assessed as per 4.2.2.

CROSS REFERENCES TO OTHER CHAPTERS	
2.6—Planning and Financing Reclamation and Closure	The need for <u>long-term water treatment</u> (i.e., post-closure) should have been evaluated in Chapter 4.2, requirement 4.2.2.3.d. If it is predicted to be necessary, Chapter 2.6 includes additional requirements for a risk assessment prior to <u>long-term water treatment</u> (see 2.6.6.1), and provision of financial assurance to cover the cost of <u>long-term water treatment</u> (see 2.6.7.2). Also, the <u>conceptual site model</u> , site water balance and numerical hydrogeochemical or hydrogeological models mentioned in 4.2.2.3, if used, can and should inform reclamation and closure planning (e.g., areas requiring soil remediation, whether wet or dry closure will be possible, the potential future impacts of climate change on the site, the water quality and quantity at closure, and potential to avoid <u>long-term water treatment</u>).
4.1—Waste and Materials Management	Mine waste management has potential implications for water management. As a result, Chapter 4.2, similar to 4.1, addresses characterization of wastes, <u>water balance</u> , chemical modeling and <u>Conceptual Site Models</u> (see 4.2.2), prevention of water contamination through management of mine wastes (see 4.2.3), and <u>mitigation</u> and monitoring of waters that may be contaminated by mine wastes (see 4.2.3 and 4.2.4, respectively).
4.3—Air Quality	The <u>conceptual site model</u> may provide information that will be useful to air quality assessment, as air is one pathway for contaminants to travel.
4.6—Biodiversity, Ecosystem Services and Protected Areas	Mining-related impacts on water and mine water management practices may affect <u>biodiversity</u> (e.g., affect habitat or water supply for <u>threatened and endangered species</u>), <u>ecosystem services</u> (e.g., reduce flood regulation, availability of drinking water), or mining may affect waters located in <u>protected areas</u> . Potential impacts related to <u>biodiversity</u> , <u>ecosystem services</u> or <u>protected areas</u> should have been scoped either during the Biodiversity, Ecosystem Services and Protected Areas screening process (see criteria 4.6.2) or as per Site Characterization and Prediction of Potential Impacts in Chapter 4.2 (see 4.2.2). If potential impacts are identified in either case, the significance of the potential impacts should be further assessed (as per 4.6.3), and <u>mitigation</u> developed accordingly to 4.6.4.
4.7—Cyanide Management	If cyanide is transported to, stored or used on site, monitoring of cyanide in surface water and groundwaters is required in Chapter 4.7 (see 4.7.4). Monitoring of cyanide in water may be incorporated into the water management program in Chapter 4.2 (see criteria 4.2.4).
4.8—Mercury Management	Monitoring of mercury released to water may be required as part of the mercury monitoring plan (See 4.8.3). Mercury monitoring in water may be incorporated into the water management program in Chapter 4.2 (see criteria 4.2.4).



[flag] Issue in brief: IRMA is seeking input on the proposed criteria for cyanide in IRMA Water Quality Criteria by End-Use Table 4.2.a. Aquatic Organisms - Fresh Water Quality Criteria.

The International Cyanide Management Code ("the Cyanide Code") was developed through a multi-stakeholder process as an effort to improve the management of cyanide at gold, and in 2017 also silver mines. The Cyanide Code's Implementation Guidance states that: "Discharges to surface waters should not exceed 0.5 mg/l WAD cyanide nor result in a concentration of free cyanide in excess of 0.022 mg/l within the receiving surface water body, and downstream of any mixing zone approved by the applicable jurisdiction. The 0.022 mg/l guideline is from the United States Environmental Protection Agency's National Water Quality Criteria for Cyanide, and represents a concentration to which a freshwater aquatic community can be briefly exposed without resulting in an unacceptable effect." (Guidance for Standard of Practice 4.5. <https://www.cyanidecode.org/become-signatory/implementation-guidance>)

There is concern among some stakeholder groups, however, that a lower value may be necessary, as some aquatic species are more sensitive to cyanide's effects, and several regulatory jurisdictions have a set a cyanide limit between 0.004 and 0.007 mg/L for the protection of aquatic life. As per IRMA Chapter 1.1, if there are lower limits set by a host country, mines in those jurisdictions are expected to meet those limits.

Although it is not as stringent a standard as found in some countries, it is hoped that the 0.022 mg/l limit in the Launch Phase version of the IRMA Standard will begin to spur improvements in cyanide management at mining operations located in countries that do not have strong regulatory programs.

During IRMA's Launch Phase, we will be gathering data to better understand what levels of cyanide are achievable in surface waters at existing mines, and whether aquatic impacts related to cyanide are being experienced at sites that are meeting the 0.022 mg/l guidelines set by the Cyanide Code. Depending on the outcomes, IRMA may revise its cyanide criteria to provide greater protections for aquatic organisms.

IRMA Water Quality Criteria by End-Use Tables

4.2.a—Aquatic Organisms - Fresh Water Quality Criteria

4.2.b—Aquatic Organisms - Salt Water Quality Criteria

4.2.c—Drinking Water and Human Health Quality Criteria

4.2.d—Agriculture - Irrigation Water Quality Criteria

4.2.e—Agriculture - Irrigation Water Quality Criteria

4.2.f—Aquaculture Water Quality Criteria

4.2.g—Recreational Water Quality Criteria

4.2.h—Industrial Water Quality Criteria

Abbreviations

Bq/L = Becquerel per Liter

CaCO₃ = calcium carbonate

degC = degrees centigrade

mg/L = milligrams per Liter

s.u. = standard units

Tot. = Total

µg/L = micrograms per Liter

WAD = weak acid dissociable

Note: Data and rationale for IRMA and end-use criteria values are available upon request.

TABLE 4.2.a. – Aquatic Organisms - Fresh Water Quality Criteria

Metals / Metalloids ¹	Units	Criteria	Source	Non-Metals / Anions ¹	Units	Criteria	Source
Aluminum	µg/L	55	AUS-NZ	Alkalinity (as CaCO ₃)	mg/L	measure	
Antimony	µg/L	-		Ammonia (Tot)	mg/L	X**	USA
Arsenic	µg/L	24	AUS-NZ	Chlorine	µg/L	3	AUS-NZ
Barium	µg/L	-	PER, CHI	Chloride	mg/L	230	USA
Boron	µg/L	750	PHI				
Beryllium	µg/L	-		 Cyanide (Free/WAD)	µg/L	22	Cyanide Code
Cadmium	µg/L	X*	USA				
Calcium	mg/L	measure		Dissolved Organic Carbon	mg/L	measure	
Chromium (Tot)	µg/L	-		Dissolved Oxygen	mg/L	measure	
Chromium (III)	µg/L	X*	USA	Fluoride	mg/L	1	PHI
Chromium (VI)	µg/L	11	USA, PE	Hardness	mg/L	measure	
Cobalt	µg/L	-		Hydrogen Sulfide	mg/L	****	
Copper	µg/L	X*	USA, CAN	Nitrate & Nitrite	mg/L	-	
Iron	µg/L	1000	USA	Nitrate (as NO ₃ ⁻)	mg/L	13	CAN, PER
Lead	µg/L	X*	USA, CAN	Nitrite (as NO ₂ ⁻)	mg/L	-	
Magnesium	mg/L	measure		Nitrogen, tot. as N	mg/L	measure	
Manganese	µg/L	370	SAF	pH	s.u.	6.5 - 9.0	US, CAN
Mercury	µg/L	0.1	PER, EU, SAF	Sulfate	mg/L	-	
Molybdenum	µg/L	73	CAN	Temperature	degC	<3 diff	IFC
Nickel	µg/L	X*	USA	Total Dissolved Solids	mg/L	-	
Potassium	mg/L	measure		Total Suspended Solids	mg/L	40	Between CAN and IFC ***
Radium 226/228	Bq/L	-					
Selenium	µg/L	5	USA, SAF, AUS-NZ				
Silver	µg/L	0.25	CAN				
Sodium	mg/L	measure					
Thallium	µg/L	0.8	CAN, PER				
Uranium	µg/L	-					
Vanadium		-					
Zinc	µg/L	X*	USA				

Notes: * Use USEPA Hardness-based or Biotic Ligand Model (BLM) calculations for metals; ** and Temperature and pH-based calculations for Ammonia. *** Baseline /background likely to be higher at many sites. See 4.2.3.3.a. **** A limit for Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured.

Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; CAN = Canada; CHI = China; EU = European Union; IFC = International Finance Corporation; PER =Peru, PHI =Philippines; SAF = South Africa; USA = United States. (References listed at end of tables).

TABLE 4.2.b. – Aquatic Organisms - Salt Water Quality Criteria

Metals / Metalloids ¹	Units	Criteria	Source		Non-Metals / Anions	Units	Criteria	Source
Aluminum	µg/L	-			Alkalinity (as CaCO ₃)	mg/L	-	
Antimony	µg/L	-			Ammonia (Total)	mg/L	X *	AUS-NZ
Arsenic	µg/L	12.5	CAN		Chlorine	µg/L	0.5	CAN
Barium	µg/L	-			Chloride	mg/L	-	
Beryllium	µg/L	-			Cyanide (Chronic - Free / WAD)	µg/L	4	AUS-NZ, PER
Cadmium	µg/L	4	SAF		Fluoride	mg/L	-	
Calcium	mg/L	-			Hardness	mg/L	-	
Chromium (Total)	µg/L	-			Hydrogen Sulfide	mg/L	***	US, PER
Chromium (III)	µg/L	27.4	AUS-NZ		Nitrate & Nitrite	mg/L	-	
Chromium (VI)	µg/L	4.4	AUS-NZ		Nitrate (NO ₃ ⁻)	mg/L	13 **	AUS
Cobalt	µg/L	-			Nitrite (NO ₂ ⁻)	mg/L	-	
Copper	µg/L	3.1	US		Nitrogen, total (as N)	mg/L	-	
Iron	µg/L	-			pH (standard units)	s.u.	6.5- 8.7	US, CAN
Lead	µg/L	8.1	US, PER		Sulfate	mg/L	-	
Magnesium	mg/L	-			Temperature	degC	-	
Manganese	µg/L	-			Total Dissolved Solids	mg/L	-	
Mercury	µg/L	0.4	AUS-NZ		Total Suspended Solids	mg/L	-	
Molybdenum	µg/L	-						
Nickel	µg/L	70	PHI					
Potassium	mg/L	-						
Radium 226/228	Bq/L	-						
Selenium	µg/L	71	US, PER					
Silver	µg/L	1.4	US, AUS-NZ					
Sodium	mg/L	-						
Thallium	µg/L	-						
Uranium	µg/L	-						
Vanadium	µg/L	100	AUS-NZ					
Zinc	µg/L	15	AUS-NZ					

Notes: * Calculated value based on temperature and pH. ** From Vol. 2, Chapter 8 of AUS-NZ (2000). Guidelines for Fresh and Marine Water Quality, p. 8-3-169. (See references at end of tables). *** A limit for Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured.

Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; CAN = Canada; PER =Peru, PHI =Philippines; SAF = South Africa; USA = United States. (References listed at end of tables).

TABLE 4.2.c. –Drinking Water and Human Health Quality Criteria

Metals / Metalloids	Units	Criteria	Source
Aluminum	µg/L	100	CAN, WHO
Antimony	µg/L	6	USA, CAN
Arsenic	µg/L	10	USA, CAN, AUS, EU, SAF, WHO
Barium	µg/L	1000	CAN, PER
Beryllium	µg/L	60	AUS
Cadmium	µg/L	5	USA, CAN, EU, SAF, CHI, PER
Chromium (Total)	µg/L	50	CAN, AUS, EU, WHO, SAF, CHI, PER
Copper	µg/L	1000	USA, CAN, AUS
Iron	µg/L	300	USA, CAN, AUS, SAF, CHI
Lead	µg/L	10	CAN, AUS, EU, SA, WHO, CHI, PER
Manganese	µg/L	50	USA, CAN, EU, SAF
Mercury	µg/L	1	CAN, AUS, EU, SAF, PER, PHI
Molybdenum	µg/L	50	AUS
Nickel	µg/L	20	AUS, EU, CHI, PHI
Radium 226/228	Bq/L	13.5	CAN, AUS
Selenium	µg/L	40	WHO, PER
Silver	µg/L	100	USA, AUS
Thallium	µg/L	2	USA
Uranium	µg/L	30	USA, WHO
Zinc	µg/L	3000	AUS, SAF, PER
Non-Metals / Ions	Units	Criteria	Source
Alkalinity (as CaCO ₃)	mg/L	-	
Ammonia	mg/L	0.5	AUS, EU, PER
Chlorine	mg/L	5	AUS, WHO
Chloride	mg/L	250	AUS, USA, CAN
Cyanide (Free or WAD)	µg/L	80	AUS
Fluoride	mg/L	1.5	CAN, AUS, EU, WHO, PER
Hydrogen Sulfide (as S ²⁻)	mg/L	*	
Nitrate (as NO ₃ ⁻)	mg/L	45	CAN, USA, CHI
Nitrite (as NO ₂ ⁻)	mg/L	3.3	CAN, USA, CHI
pH (standard units)	s.u.	6.5 - 8.5	USA, CAN, AUS, CHI, PHI
Sulfate	mg/L	400	Value between CAN, PER and USA, WHO, CHI
Total Dissolved Solids	mg/L	500	USA, CAN

Notes: * A limit for Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured.

Abbreviations for Sources/ Standards: AUS = Australia; CAN = Canada; CHI = China; EU = European Union; IFC = International Finance Corporation; PER =Peru, PHI =Philippines; SAF = South Africa; USA = United States; WHO = World Health Organization of the United Nations; (References listed at end of tables).

TABLE 4.2.d. – Agriculture - Irrigation Water Quality Criteria

Metals / Metalloids	Units	Criteria	Source
Aluminum	µg/L	5000	CAN, USA, AUS-NZ, SAF, FAO, PER
Antimony	µg/L	-	
Arsenic	µg/L	100	USA, AUS-NZ, SAF, FAO, PER
Barium	µg/L	-	
Beryllium	µg/L	100	USA, CAN, AUS-NZ, SAF, FAO, PER
Boron	µg/L	750	PHI
Cadmium	µg/L	10	USA, AUS-NZ, SAF, FAO, PER
Chromium (Total)	µg/L	100	USA, AUS-NZ, FAO, SAF, PER
Cobalt	µg/L	50	USA, AUS-NZ, CCME, FAO, SAF, PER
Copper	µg/L	200	USA, AUS-NZ, CCME, FAO, SAF
Iron	µg/L	5000	USA, CAN, FAO, SAF, PER
Lead	µg/L	200	CAN, SAF
Manganese	µg/L	200	CAN, AUS-NZ, FAO, PER, PHI
Mercury	µg/L	2	AUS-NZ, PHI
Molybdenum	µg/L	10	USA, CAN, AUS-NZ, SAF, FAO
Nickel	µg/L	200	USA, CAN, AUS-NZ, SAF, FAO, PER, PHI
Radium 228	Bq/L	-	
Selenium	µg/L	20	USA, CAN, AUS-NZ, SAF, PER, PHI
Silver	µg/L	-	
Thallium	µg/L	-	
Uranium	µg/L	100	AUS-NZ
Vanadium	µg/L	100	USA, CAN, AUS-NZ, FAO
Zinc	µg/L	2000	USA, FAO, PER, PHI
Non-Metals / Anions	Units	Criteria	Source
Alkalinity (as CaCO ₃)	mg/L	-	
Chlorine	mg/L	175	CAN
Chloride	mg/L	100	CAN, SAF
Cyanide (Free or WAD)	µg/L	-	
Fluoride	mg/L	1	USA, CAN, FAO, PER
Nitrate & Nitrite	mg/L	-	
Nitrate	mg/L	-	
Nitrite	mg/L	-	
pH (standard units)	s.u.	6.5 - 8.4	USA, SAF, FAO
Sulfate	mg/L	1000	AUS-NZ, PER
Total Dissolved Solids	mg/L	500 – 3500*	CAN
Total Suspended Solids	mg/L	-	

Notes: * 500 mg/L for berries, stone fruit, and some vegetables; 3500 mg/L for asparagus, some grains and other vegetables (see Canadian Council of Ministers of the Environment for more information. <http://st-ts.ccme.ca/en/index.html?lang=en&factsheet=215>)

Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; CAN = Canada; FAO = Food and Agriculture Organization of the United Nations; PER =Peru, PHI =Philippines; SAF = South Africa; USA = United States. (References listed at end of tables).

TABLE 4.2.e. – Agriculture - Livestock Water Quality Criteria

Metals / Metalloids	Units	Criteria	Source
Aluminum	µg/L	5000	USA, CAN, AUS-NZ, SAF, FAO, PER
Antimony	µg/L	-	
Arsenic	µg/L	200	USA, PER
Barium	µg/L	-	
Beryllium	µg/L	100	CAN, PER
Boron	µg/L	5000	CAN, AUS-NZ, PER
Cadmium	µg/L	50	USA, PER
Chromium (Total)	µg/L	1000	USA, AUS-NZ, SAF, PER
Cobalt	µg/L	1000	USA, CAN, AUS-NZ, SAF, PER
Copper	µg/L	500	USA, CAN, AUS-NZ, SAF, PER
Iron	µg/L	10000	SAF
Lead	µg/L	100	USA, CAN, AUS-NZ, SAF
Manganese	µg/L	200	AUS-NZ, PER, PHI
Mercury	µg/L	3	CAN
Molybdenum	µg/L	300	USA
Nickel	µg/L	1000	CAN, AUS-NZ, SAF, PER, PHI
Radium 228	Bq/L	-	
Selenium	µg/L	50	USA, CAN, SAF, PER
Silver	µg/L	-	
Thallium	µg/L	-	
Uranium	µg/L	200	CAN, AUS-NZ
Vanadium	µg/L	100	USA, CAN
Zinc	µg/L	24000	USA, PER
Non-Metals / Anions	Units	Criteria	Source
Alkalinity (as CaCO ₃)	mg/L	-	
Chlorine	mg/L	-	
Chloride	mg/L	-	CAN, SAF
Cyanide (Free or WAD)	µg/L	-	
Fluoride	mg/L	2	USA, CAN, AUS-NZ, PER
Nitrate & Nitrite (NO ₃ -N + NO ₂ -N)	mg/L	100	CAN, AUS-NZ
Nitrate (as NO ₃ -N)	mg/L	-	
Nitrite (as NO ₂ -N)	mg/L	10	USA, CAN, PER
pH (standard units)	s.u.	6.5 - 8.4	PER
Sulfate	mg/L	1000	AUS-NZ, PER
Total Dissolved Solids	mg/L	3000	CAN
Total Suspended Solids	mg/L	-	
Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; CAN = Canada; FAO = Food and Agriculture Organization of the United Nations; PER =Peru, PHI =Philippines; SAF = South Africa; USA = United States. (References listed at end of tables).			

TABLE 4.2.f. – Aquaculture Water Quality Criteria

Metals / Metalloids	Units	Fresh Criteria	Marine Criteria	Source
Aluminum	µg/L	30	10	AUS, SAF
Antimony	µg/L	-	-	
Arsenic	µg/L	50	30	AUS, PER, SAF
Barium	µg/L	-	-	
Beryllium	µg/L	-	-	
Cadmium	µg/L	X *	X *	AUS, SAF
Chromium (VI)	µg/L	100	50	PER, PHI
Cobalt	µg/L	-	-	
Copper	µg/L	X *	X *	AUS
Iron	µg/L	10	10	AUS, SAF
Lead	µg/L	X *	X *	AUS
Manganese	µg/L	10	10	AUS
Mercury	µg/L	1	1	AUS, SAF
Molybdenum	µg/L	-	-	
Nickel	µg/L	100	100	AUS
Radium 226/228	Bq/L	-	-	
Selenium	µg/L	10	10	AUS, PHI
Thallium	µg/L	-	-	
Uranium	µg/L	-	-	
Zinc	µg/L	5	5	AUS
Non-Metals / Anions	Units	Fresh Criteria	Marine Criteria	Source
Alkalinity (as CaCO ₃)	mg/L	-	-	
Ammonia (Total)	µg/L	20	100	AUS
Chlorine	µg/L	-	-	
Chloride	mg/L	-	-	
Cyanide (Free or WAD)	µg/L	5	5	AUS, PER
Fluoride	mg/L	20	5	AUS, SAF
Hydrogen Sulfide	mg/L	**	**	
Nitrate & Nitrite	mg/L	-	-	
Nitrate (as NO ₃ ⁻)	mg/L	50	100	AUS
Nitrite (as NO ₂ ⁻)	mg/L	0.1	0.1	AUS
pH (standard units)	s.u.	6.5 - 9.0	6.0 - 9.0	AUS, WHO
Sulfate	mg/L	-	-	
Temperature	degC	<2 diff	<2 diff	AUS
Total Dissolved Solids	mg/L	-	-	
Total Suspended Solids	mg/L	40	40	AUS, PER
Notes: * Hardness dependent. ** A limit for Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured. Abbreviations for Sources/ Standards: AUS = Australia; PER = Peru; PHI =Philippines; SAF = South Africa; WHO = World Health Organization. (References listed at end of tables).				

TABLE 4.2.g. – Recreational Water Quality Criteria

Metals / Metalloids	Units	Criteria	Source
Aluminum	µg/L	200	AUS-NZ, PER
Antimony	µg/L	-	
Arsenic	µg/L	10	PER, PHI
Barium	µg/L	700	PER, PHI
Beryllium	µg/L	-	
Boron	µg/L	500	PER, PHI
Cadmium	µg/L	5	AUS-NZ
Chromium (Total)	µg/L	50	AUS-NZ, PER
Cobalt	µg/L	-	
Copper	µg/L	1000	AUS-NZ
Iron	µg/L	300	AUS-NZ, PER
Lead	µg/L	10	AUS-NZ
Manganese	µg/L	100	AUS-NZ, PER
Mercury	µg/L	1	AUS-NZ, PER
Molybdenum	µg/L	-	
Nickel	µg/L	40	PHI
Radium 226/228	Bq/L	-	
Selenium	µg/L	10	AUS-NZ, PER
Silver	µg/L	50	AUS-NZ
Thallium	µg/L	-	
Uranium	µg/L	-	
Vanadium	µg/L	-	
Zinc	µg/L	3000	PER
Non-Metals / Anions	Units	Criteria	Source
Alkalinity (as CaCO ₃)	mg/L	-	
Ammonia (Total)	mg/L	-	
Chlorine	mg/L	-	
Chloride	mg/L	400	AUS-NZ
Cyanide (Free or WAD)	µg/L	100	AUS-NZ
Fluoride	mg/L	-	
Hardness	mg/L	-	
Hydrogen Sulfide	mg/L	*	
Nitrate & Nitrite	mg/L	-	
Nitrate (as NO ₃ -N)	mg/L	10	AUS-NZ, PER
Nitrite (as NO ₂ -N)	mg/L	1	AUS-NZ, PER
pH (standard units)	s.u.	6.5 - 8.5	AUS-NZ, SAF, PHI
Sulfate	mg/L	400	AUS-NZ
Total Dissolved Solids	mg/L	-	
Total Suspended Solids	mg/L	30	USA, PHI

Notes: * Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured.

Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; PER = Peru; PHI =Philippines; SAF = South Africa; USA = United States. (References listed at end of tables).

TABLE 4.2.h. – Industrial Water Quality Criteria

Metals / Metalloids	Units	Criteria	Source
Aluminum	µg/L	-	
Antimony	µg/L	-	
Arsenic	µg/L	-	
Barium	µg/L	-	
Beryllium	µg/L	-	
Cadmium	µg/L	-	
Chromium (Total)	µg/L	-	
Cobalt	µg/L	-	
Copper	µg/L	-	
Iron	µg/L	-	
Lead	µg/L	-	
Manganese	µg/L	-	
Mercury	µg/L	-	
Molybdenum	µg/L	-	
Nickel	µg/L	-	
Radium 226/228	Bq/L	-	
Selenium	µg/L	-	
Silver	µg/L	-	
Thallium	µg/L	-	
Uranium	µg/L	-	
Vanadium	µg/L	-	
Zinc	µg/L	-	
Non-Metals / Anions	Units	Criteria	Source
Alkalinity (as CaCO ₃)	mg/L	-	
Chlorine	mg/L	1	USA
Chloride	mg/L	-	
Cyanide (Free or WAD)	µg/L	-	
Fluoride	mg/L	-	
Nitrate & Nitrite	mg/L	-	
Nitrates	mg/L	-	
Nitrites	mg/L	-	
pH (standard units)	s.u.	6.0 -9.0	USA
Sulfate	mg/L	-	
Total Suspended Solids	mg/L	30	USA
Total Dissolved Solids	mg/L	-	
Abbreviations for Sources/ Standards: USA = United States. (References listed at end of tables).			

REFERENCES FOR SOURCE MATERIALS USED IN TABLES

REFERENCES FOR TABLE 4.2.A.

- AUS-NZ Australian and New Zealand Environment and Conservation Council. 2000. Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Volume 1.
<http://www.agriculture.gov.au/SiteCollectionDocuments/water/nwqms-guidelines-4-vol1.pdf>
- CAN Canadian Council of Ministers of the Environment. Canadian Water Quality Guidelines for the Protection of Aquatic Life. Available at: <http://ceqg-rcqe.ccme.ca/en/index.html>
- CHI People's Republic of China. 2002. Environmental quality standard for surface water (GB 3838-2002). English version not found. Available in: Zhao et al. 2016. "Amendment of water quality standards in China: viewpoint on strategic considerations," Environmental Quality Benchmarks for Aquatic Ecosystem Protection: Derivation and Application.
<https://www.usask.ca/toxicology/jgiesy/pdf/publications/JA-931-temp.pdf>
- EU European Union. 2013. Directive 2013/39/EU of the European Parliament and of the Council of 12 August 2013 amending Directives 2000/60/EC and 2008/105/EC as regards priority substances in the field of water policy. <https://publications.europa.eu/en/publication-detail/-/publication/296e91b8-4610-11e3-ae03-01aa75ed71a1/language-en>
- IFC International Finance Corporation. 2007. Environmental, Health and Safety Guidelines for Mining.
<https://www.ifc.org/wps/wcm/connect/1f4dc28048855af4879cd76a6515bb18/Final+-+Mining.pdf?MOD=AJPERES>
- PER Peru Ministry of Environment (MINAM). 2015. National Environmental Quality Standards for Water (2015). <http://www.ana.gob.pe/sites/default/files/normatividad/files/ds-ndeg-015-2015-minam.pdf>
- PHI Republic of the Philippines. 2016. Water Quality Guidelines and General Effluent Standards of 2016.
[http://wepa-db.net/3rd/en/topic/waterstandard/Philippines Water%20Quality%20Guideline 2016.pdf](http://wepa-db.net/3rd/en/topic/waterstandard/Philippines%20Water%20Quality%20Guideline%202016.pdf)
- SAF South Africa. 1996. South African Water Quality Guidelines. Volume 7: Aquatic Ecosystems, 2nd Ed.
[http://www.dwa.gov.za/iwqs/wq_guide/Pol saWQguideFRESHAquaticecosystemsvol7.pdf](http://www.dwa.gov.za/iwqs/wq_guide/Pol_saWQguideFRESHAquaticecosystemsvol7.pdf)
- USA US Environmental Protection Agency. National Recommended Water Quality Criteria - Aquatic Life Criteria Table. <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table>

REFERENCES FOR TABLE 4.2.B. (LISTED ONLY IF DIFFERENT SOURCES THAN 4.2.A)

- SAF South Africa. 1995. Water Quality Guidelines for Coastal Marine Waters, Volume 1. Available at: http://www.iwa-network.org/filemanager-uploads/WQ_Compendium/Database/Future_analysis/085.pdf

REFERENCES FOR TABLE 4.2.C.

- AUS Australia National Health and Medical Research Council. 2017. Australian Drinking Water Quality Guidelines 6 (2011).
https://www.nhmrc.gov.au/files/nhmrc/file/publications/nhmrc_adwg_6_version_3.4_final.pdf
- CAN Health Canada. 2017. Guidelines for Canadian Drinking Water Quality: Summary Table. Available at: <https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html>
- CHI People's Republic of China. 2006. Standards for Drinking Water Quality. GB 5749-2006. English version available at: http://www.iwa-network.org/filemanager-uploads/WQ_Compendium/Database/Selected_guidelines/016.pdf

EU European Union. 1998. EU Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption. <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:01998L0083-20151027>

PER Peru Ministry of Environment (MINAM). 2015. National Environmental Quality Standards for Water (2015). <http://www.ana.gob.pe/sites/default/files/normatividad/files/ds-ndeg-015-2015-minam.pdf>

PHI Republic of the Philippines. 2016. Water Quality Guidelines and General Effluent Standards of 2016. http://wepa-db.net/3rd/en/topic/waterstandard/Philippines_Water%20Quality%20Guideline_2016.pdf

SAF South Africa. 1996. South African Water Quality Guidelines. Volume 1: Domestic Use. 2nd Ed. http://www.dwa.gov.za/iwqs/wq_guide/Pol_saWQguideFRESH_vol1_Domesticuse.PDF

USA US Environmental Protection Agency. 2018. Drinking Water Standards and Health Advisory Tables. <https://www.epa.gov/sites/production/files/2018-03/documents/dwtable2018.pdf>

WHO World Health Organization. 2011. Guidelines for Drinking Water Quality. http://www.who.int/water_sanitation_health/water-quality/guidelines/en/

REFERENCES FOR TABLE 4.2.D.

AUS-NZ Australian and New Zealand Environment and Conservation Council. 2000. Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Volume 1. <http://www.agriculture.gov.au/SiteCollectionDocuments/water/nwqms-guidelines-4-vol1.pdf>

CAN Canadian Council of Ministers of the Environment. Various years. Canadian Water Quality Guidelines for the Protection of Agriculture. Searched by individual factsheet. <http://ceqg-rcqe.ccme.ca/en/index.html>

FAO Ayers, R and Westcot, D. 1985. Water Quality for Agriculture. FAO Irrigation and Drainage Paper 29 (last updated 1994). <http://www.fao.org/docrep/003/t0234e/t0234e00.HTM>

PER Peru Ministry of Environment (MINAM). 2015. National Environmental Quality Standards for Water (2015). <http://www.ana.gob.pe/sites/default/files/normatividad/files/ds-ndeg-015-2015-minam.pdf>

PHI Republic of the Philippines. 2016. Water Quality Guidelines and General Effluent Standards of 2016. http://wepa-db.net/3rd/en/topic/waterstandard/Philippines_Water%20Quality%20Guideline_2016.pdf

SAF South Africa. 1996. South African Water Quality Guidelines. Volume 4: Agricultural Use: Irrigation. 2nd Ed. http://www.dwaf.gov.za/iwqs/wq_guide/Pol_saWQguideFRESH_vol4_Irrigation.pdf

USA US Environmental Protection Agency. 2012. Guidelines for Water Reuse. EPA/600/R-12/618. <https://www3.epa.gov/region1/npdes/merrimackstation/pdfs/ar/AR-1530.pdf>

REFERENCES FOR TABLE 4.2.E. (IF DIFFERENT FROM TABLE 4.2.D)

SAF South Africa. 1996. South African Water Quality Guidelines. Volume 5: Agricultural Use: Livestock Watering. 2nd Ed. http://www.dwaf.gov.za/iwqs/wq_guide/Pol_saWQguideFRESH_vol5_Livestockwatering.pdf

REFERENCES FOR TABLE 4.2.F. (IF DIFFERENT FROM TABLE 4.2.D)

SAF South Africa. 1996. South African Water Quality Guidelines. Vol. 6: Agricultural Use: Aquaculture. 2nd Ed. http://www.iwa-network.org/filemanager-uploads/WQ_Compendium/Database/Future_analysis/077.pdf

SAF South Africa. 1995. Water Quality Guidelines for Coastal Marine Waters, Vol. 4: Mariculture. Available at: http://www.iwa-network.org/filemanager-uploads/WQ_Compndium/Database/Future_analysis/084.pdf

REFERENCES FOR TABLE 4.2.G. (IF DIFFERENT FROM TABLE 4.2.D)

SAF South Africa. 1996. Water Quality Guidelines. Vol. 2: Recreational Use. Available at: http://www.iwa-network.org/filemanager-uploads/WQ_Compndium/Database/Future_analysis/084.pdf

REFERENCES FOR TABLE 4.2.H. (IF DIFFERENT FROM TABLE 4.2.D)

None.



Chapter 4.3 Air Quality

BACKGROUND

Mine sites can release significant quantities of air contaminants. By volume, the great majority of air contaminants are particulate matter, such as dust from blasting, large truck and equipment traffic, conveyors, and ore crushing. Other air contaminants may represent only a small proportion of a mine's air emissions, but are important because like particulate matter they can significantly affect human health and the environment.

Mines may emit contaminants from 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 makes 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.

Sources of localized air emissions from mining projects include processing facilities for mineral processing, smelting and refining operations, and usually the control mechanisms for these emissions are expensive and complex. The common methods for controlling these emissions include technologies such as bag houses, electrostatic precipitators, wet and dry scrubbers.

OBJECTIVES/INTENT OF THIS CHAPTER

To protect human health and the environment from airborne contaminants.

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant to all mining projects that release to air any of the contaminants in [Table 4.3](#), below, or other contaminants that may present a risk to human or ecosystem health. Air emissions may be from stationary or mobile equipment, mine waste facilities, and other mining-related activities undertaken on the mine site or along transportation routes.

This chapter does not address air contaminants in the workplace. Those issues are addressed in IRMA Chapter 3.2—Occupational Health and Safety. Also, the management of emissions of greenhouse gases and mercury are addressed in Chapters 4.5 and 4.8, respectively.

TERMS USED IN THIS CHAPTER

Affected Community ■ Air Quality Modeling ■ Ambient Air Quality ■ Baseline Air Quality ■ Best Available Practices ■ Biodiversity ■ Conservation Values ■ Critical Habitat ■ Ecosystem Services ■ Existing Mine ■ Mine Waste Facilities ■ Mining Project ■ Mining-Related Activities ■ New Mine ■ Operating Company ■ Priority Ecosystem Services ■ Protected Areas ■ Stakeholders ■ Threatened Species ■

These terms appear in the text with a dashed underline. For definitions see the [Glossary of Terms](#) at the end of the document.

Air Quality Requirements

4.3.1. Air Quality Screening and Impact Assessment

4.3.1.1. The operating company shall carry out air quality screening to determine if there may be significant air quality impacts associated with the mining project and its operations.

4.3.1.2. During screening, or as part of a separate data gathering effort, the operating company shall establish the baseline air quality in the mining project area.

4.3.1.3. If screening or other credible information indicates that air emissions from mining-related activities may adversely impact human health, quality of life or the environment, the operating company shall undertake an assessment to predict and evaluate the significance of the potential impacts.

4.3.1.4. The assessment shall include the use of air quality modeling and monitoring consistent with widely accepted and documented methodologies to estimate the concentrations, transport and dispersion of mining-related air contaminants.²²⁴

4.3.2. Air Quality Management Plan

4.3.2.1. If significant potential impacts on air quality are identified, the operating company shall develop, maintain and implement an air quality management plan that documents measures to avoid, and where that is not possible, minimize adverse impacts on air quality.

4.3.2.2. Air quality management strategies and plans shall be implemented and updated as necessary over the mine life.

4.3.3. Air Quality Monitoring

4.3.3.1. The operating company shall monitor and document ambient air quality and dust associated with the mining project by using personnel trained in air quality monitoring.

4.3.3.2. Ambient air quality and dust monitoring locations shall be situated 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 and dust criteria in 4.3.4.3, and to detect air quality and dust impacts on affected communities and the environment. Where modeling is required (see 4.3.1.4) air monitoring locations shall be informed by the air quality modeling results.

²²⁴ See, e.g., US EPA's Air Quality Guidelines. Appendix W To Part 51—Guideline On Air Quality Models. Pt. 51, App. W, 40 CFR Ch. I (7–1–03 Edition). Available at: www3.epa.gov/scram001/guidance/guide/appw_03.pdf and European Environment Agency. 2011 The Application of Models under the EU Air Quality Directive. [www.eionet.europa.eu/events/EIONET/Technical report_3](http://www.eionet.europa.eu/events/EIONET/Technical_report_3)

4.3.4. Protection of Air Quality

4.3.4.1. New mines and existing mines shall comply with the European Union's Air Quality Standards²²⁵ (EU Standards) as amended to their latest form (see Table 4.3, below) at the boundaries of the mine site and transportation routes, and/or mitigate exceedances as follows:

- a. If a mine is located in an airshed where baseline air quality conditions meet EU Standards, but emissions from mining-related activities cause an exceedance of one or more parameters, the operating company shall demonstrate that it is making incremental reductions in those emissions, and within five years demonstrate compliance with the EU Standards; or
- b. If a mine is located in an airshed where baseline air quality is already degraded below EU Standards, the operating company shall demonstrate that emissions from mining-related activities do not exceed EU Standards, and make incremental improvements to the air quality in the airshed that are at least equivalent to the mining project's emissions.



[flag] 4.3.4 Issues in brief: There is not consensus among IRMA sectors on adopting as best practice either a prescriptive approach that includes defined air emissions criteria or a risk-based approach to managing air emissions.

During Launch Phase, this requirement will not be scored. Instead, IRMA will be asking mine sites to share information on what air emissions standards, if any, they are being required to meet or are meeting voluntarily, and/or whether or not they are using utilizing a risk-based approach (e.g., 4.3.4.2) to manage their air emissions (either in addition to having to meet air quality criteria, or lieu of having to meet them). The information gathered about what those approaches entail, and the effectiveness of those approaches will help IRMA to design a requirement or requirements that align with best practices for managing air emissions to protect human health and the environment.

Also, while there is agreement among IRMA sectors that measuring dust emissions from mine sites is important, there is not consensus on an appropriate dust emission standard for protecting human health and the environment. The current metric being proposed by IRMA is found in 4.3.4.3. During Launch Phase, this requirement will not be scored. Instead, IRMA will be asking mine sites to share information on what dust emissions standards, if any, mine sites are following.

4.3.4.2. As an alternative to 4.3.4.1, the operating company may undertake a risk-based approach to protecting air quality as follows:

- a. New and existing mines shall comply with host country air quality standards at a minimum, and where no host country standard exists mines shall demonstrate compliance with a credible international best practice standard;²²⁶
- b. Where compliance is met for host country standards but the mine experiences a residual risk related to its air emissions,²²⁷ then more stringent international best practice standards shall apply;

²²⁵ The most recent version of the EU Air Quality Standards can be found at: <http://ec.europa.eu/environment/air/quality/standards.htm>

Note that mercury is not included in the list of air pollutants in Table 4.3. Mercury air emissions are addressed in IRMA Chapter 4.8. Similarly, there are no emissions limits for the following greenhouse gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, or nitrogen trifluoride. Greenhouse gas air emissions are addressed in IRMA Chapter 4.5.

²²⁶ For example, EU's Air Quality Standards (See Table 4.3, below) or International Finance Corporation. 2007. Environmental, Health and Safety Guidelines, 1.1 Air Emissions and Ambient Air Quality. <https://www.ifc.org/wps/wcm/connect/532ff4804886583ab4d6f66a6515bb18/1-1%2BAir%2BEmissions%2BAnd%2BAmbient%2BAir%2BQuality.pdf?MOD=AJPERES>

²²⁷ Residual risk may include, for example, a saturated airshed with elevated background levels of pollution, stakeholder grievances, community unrest, impending regulatory changes, media attention and reputational damage, or potential health impacts or harm to sensitive receptors associated with emissions impacts.

- c. Where compliance is met for international best practice standards and a mine still experiences a residual risk from its air emissions, then the mine shall set more stringent self-designed limits, and implement additional mitigation measures to meet those limits; and
- d. For all air-emissions-related risks, the mine shall demonstrate that it is making incremental reductions in emissions, through a multi-year phased plan with defined timelines.

4.3.4.3. Dust deposition from mining-related activities shall not exceed 350 mg/m²/day, measured as an annual average.²²⁸ An exception to 4.3.4.3 may be made if demonstrating compliance is not reasonably possible through ordinary monitoring methods. In such cases the operating company shall utilize best available practices to minimize dust contamination.

4.3.5. Reporting

4.3.5.1. The operating company shall ensure that its air quality management plan and compliance information is up-to-date and publicly available, or made available to stakeholders upon request.²²⁹

NOTES

Air quality standards and requirements were reviewed for various countries, focusing on the most expansive, developed standards. The greatest focus was on the standards of the European Union, Canada, Australia, and United States. With the goal in mind of adopting a standard that would evolve over time the decision was made to adopt the European Union's (EU) numeric air quality standards. There are many developed standards but the EU's stands out for its breadth of contaminants, including some known to be released during mining, and its inclusion of specific metalloid contaminants.²³⁰ 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 predicated IRMA's air quality standard on them will ensure that IRMA's air quality standards also evolve.

²²⁸ IRMA has added a specific dust criteria because dust is not listed on EU list of contaminants as it is not strictly harmful to health rather it is a "nuisance", and can be problematic communities and ecosystems located near mine sites. This requirement is based on the German TA Luft (Technical Instructions on Air Quality Control) Regulation, available at: www.bmub.bund.de/fileadmin/bmu-import/files/pdfs/allgemein/application/pdf/taluft_engl.pdf. The German dust guidelines have been incorporated here as the minimum requirement, but may require further citation and consideration, notably the potential inclusion of both an annual and a monthly mean. More information will be provided in IRMA Guidance.

²²⁹ Compliance information may include air quality monitoring data, air quality reports (to agencies), records related to non-compliance (as per Chapter 1.1) etc.

²³⁰ 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.

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.1—Legal Compliance	As per Chapter 1.1, if there are <u>host country laws</u> governing air quality related to mine sites, the company is required to abide by those laws. If IRMA requirements are more stringent than <u>host country law</u> , the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to violate the <u>host country law</u> .
2.1—Environmental and Social Impact Assessment and Management	Potential air quality impacts may be identified in the Environmental and Social Impact Assessment (ESIA). The ESIA may also contain information and data that can inform the location of air monitoring sites. Air quality issues may be addressed as part of the Environmental Management System, such as a site monitoring plan.
1.4—Complaints and Grievance Mechanism and Access to Remedy	Air quality impacts not anticipated in the ESIA or not adequately <u>mitigated</u> may result in complaints by <u>stakeholders</u> . As per Chapter 1.4, the <u>operating company</u> is required to have an operational-level <u>grievance mechanism</u> available to <u>stakeholders</u> , including procedures for filing complaints, and having complaints recorded, investigated and resolved in a timely manner.
3.2—Occupational Health and Safety	Chapter 3.2 addresses air contaminants in the workplace.
4.5—Greenhouse Gas Emissions	Greenhouse gas air emissions are addressed in Chapter 4.5. As per 4.5.2, companies are required to quantify greenhouse gas emissions, and 4.5.4 requires public reporting on those emissions.
4.6—Biodiversity, Ecosystem Services and Protected Areas	If screening in 4.3.1 indicates that air emissions may result in significant impacts to <u>important biodiversity</u> , <u>priority ecosystem services</u> , <u>critical habitat</u> (including <u>threatened species</u>) or the <u>conservation values of protected areas</u> , then the significance of impacts should be further assessed and <u>mitigation</u> measures developed as per Chapter 4.6.
4.8—Mercury Management	Mercury air emissions are addressed in Chapter 4.8. As per 4.8.1, companies are required to estimate the amount of mercury released to air from <u>mercury emission control systems</u>. Although there are no mercury air criteria in either Chapter 4.3 or 4.8, Chapter 4.8 does provide emissions limits for mercury that, if met, means that no further mitigative actions need to be taken (see 4.8.2.1).c. Criteria 4.8.3 includes requirements related to mercury air emission monitoring, including the development of a mercury air monitoring plan. Mercury air emissions could be incorporated into an air quality monitoring plan that covers all a broader suite of air emissions as per 4.3.3.1. Criteria 4.8.4 requires public reporting on mercury emissions.

TABLE 4.3. – European Union (EU) Numeric Air Quality Standards.¹

Pollutant	Concentration	Averaging period	Permitted exceedances / year
Sulphur dioxide (SO ₂)	350 µg/m ³	1 hour	24
	125 µg/m ³	24 hours	3
Nitrogen dioxide (NO ₂)	200 µg/m ³	1 hour	18
	40 µg/m ³	1 year	not applicable
Fine particles (PM-2.5)	25 µg/m ³	1 year	not applicable
PM-10	50 µg/m ³	24 hours	35
	40 µg/m ³	1 year	not applicable
Lead (Pb)	0.5 µg/m ³	1 year	not applicable
Carbon monoxide (CO)	10 mg/m ³	Maximum daily 8-hour mean	not applicable
Benzene	5 µg/m ³	1 year	not applicable
Ozone	120 µg/m ³	Maximum daily 8-hour mean	25 days averaged over 3 years
Arsenic (As)	6 ng/m ³	1 year	not applicable
Cadmium (Cd)	5 ng/m ³	1 year	not applicable
Nickel (Ni)	20 ng/ m ³	1 year	not applicable
Polycyclic Aromatic Hydrocarbons	1 ng/m ³ (as concentration of Benzo(a)pyrene)	1 year	not applicable
Notes: EU. Air Quality Standards (as of July 3, 2013). http://ec.europa.eu/environment/air/quality/standards.htm			



Chapter 4.4 Noise and Vibration

BACKGROUND

Mining can create significant noise and/or vibration through blasting in both open pit and underground mines; ore and waste rock truck traffic on the mine site; 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.²³¹

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

Studies have also demonstrated that vibrations, such as those created by blasting, can sometimes be felt in nearby communities and even cause damage to buildings or the contents of buildings, such as items on walls or shelves.²³² (This chapter does not seek to cover worker-related vibration issues, which are covered under IRMA Chapter 3.2—Occupational Health and Safety).²³³ However, vibration impacts from blasting can be mitigated, for example, by controlling charge weight diameter and charge coupling within boreholes, or controlling the direction of blast initiation.²³⁴

TERMS USED IN THIS CHAPTER

Affected Community ■ Baseline Ambient Noise Levels ■ Competent Professionals ■ Grievance ■ Grievance Mechanism ■ Ground Vibration ■ Host Country Law ■ Lin Peak/Linear Peak ■ Mining Project ■ Mining-Related Activities ■ Mitigation ■ New Mine ■ Noise Receptor ■ Operating Company ■ Peak Particle Velocity ■ Stakeholder ■ Threatened Species ■ Worker ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

OBJECTIVES/INTENT OF THIS CHAPTER

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

²³¹ 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

²³² See, for example: Victoria (Australia) State Government. Ground Vibration and Airblast Limits for Blasting in Mines and Quarries. <http://earthresources.vic.gov.au/earth-resources-regulation/licensing-and-approvals/minerals/guidelines-and-codes-of-practice/ground-vibration-and-airblast-limits-for-blasting-in-mines-and-quarries>; and Office of Surface Mining Reclamation and Enforcement: "Blasting Vibration." <https://www.osmre.gov/resources/blasting/docs/Citizens/KentuckyBlasting.pdf>; and "Blasting Vibrations and Their Effects on Structures." <https://www.osmre.gov/resources/blasting/docs/USBM/Bul656BlastVibrationsStructures.pdf>. The Office of Surface Mining information comes from coal-mining sources, which are not included in IRMA, but it provides an exemplary discussion of blasting vibration and its impacts.

²³³ The structural vibration issues in this chapter (4.4) relate to buildings and structures. Chapter 3.2 includes job related vibration such as caused by sitting on a vibrating seat (such as operating heavy machinery) or hand vibration while working on a vibrating machine with one's hands. See e.g. <http://www.ohsrep.org.au/hazards/vibration/effects-of-vibration>; and https://www.ccohs.ca/oshanswers/phys_agents/vibration/vibration_effects.html

²³⁴ See e.g. Controlling the Adverse Effects of Blasting. OSMRE Presentation, available at: <https://www.osmre.gov/resources/blasting/docs/WYBlasterCertModules/8AdverseEffectsBlasting.pdf>

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant for all mines applying for IRMA certification. Worker-related noise impacts are addressed in Chapter 3.2, Occupational Health and Safety.

Noise and Vibration Requirements

4.4.1. Noise and Vibration Screening

4.4.1.1. The operating company shall carry out screening to determine if there may be significant impacts on offsite human noise receptors from mining project's noise and/or vibration. Screening is required at all new mines, and also at existing mines if there is a proposed change to the mine plan that is likely to result in a new source of noise or vibration or an increase in existing noise or vibration levels.

4.4.1.2. If screening identifies potential human receptors of noise from mining-related activities, then the operating company shall document baseline ambient noise levels at both the nearest and relevant offsite noise receptors.²³⁵

4.4.2. Management and Mitigation of Impacts on Human Receptors

4.4.2.1. If screening or other credible information indicates that there are residential, institutional or educational noise receptors that could be affected by noise from mining-related activities, then the operating company shall demonstrate that mining-related noise does not exceed a maximum one-hour LAeq (dBA) of 55 dBA during the hours of 07:00 to 22:00 (i.e., day) and 45 dBA at other times (i.e., night) at the nearest offsite noise receptor. These hours may be adjusted if the operating company can justify that alternative hours are necessary and/or appropriate because of local, cultural or social norms.²³⁶

4.4.2.2. The following exceptions to 4.4.2.1 apply:

- a. If baseline ambient noise levels exceed 55 dBA (day) and/or 45 dBA (night), then noise levels shall not exceed 3 dB above baseline as measured at relevant offsite noise receptors; and/or
- b. During periods of blasting the dBA levels may be exceeded as long as the other requirements in 4.4.2.4 are met.

4.4.2.3. If screening or other credible information indicates that there are only industrial or commercial receptors that may be affected by noise from mining-related activities, then noise measured at the mine boundary or nearest industrial or commercial receptor shall not exceed 70 dBA.

4.4.2.4. If screening or other credible information indicates that noise or vibration from blasting activities may impact human noise receptors, then blasting operations at mines shall be undertaken as follows:²³⁷

²³⁵ Relevant offsite human noise receptors should include the closest receptors to the mine, but also any others that have the potential to be affected by noise or vibrations.

Topography and meteorology (e.g., prevailing wind directions, temperature inversions) should be considered, when evaluating which receptors might be relevant. (Australian Department of Industry, Innovation and Science. Leading Practice Sustainable Development Program: 3.0 Noise. <https://industry.gov.au/resource/Programs/LPSD/Airborne-contaminants-noise-and-vibration/Noise/Pages/Meteorological-effects-on-the-propagation-of-noise.aspx>)

²³⁶ The dBA noise limits in 4.2.2.1 and 4.4.2.2, are from IFC Environmental, Health and Safety General Guidelines (2007). As per IFC guidelines, the dBA decibel levels for receptors should be measured out of doors. (IFC. 2007. General Environmental, Health and Safety Guidelines. Noise Management. p. 53 (footnote 54) <https://www.ifc.org/wps/wcm/connect/06e3b50048865838b4c6f66a6515bb18/1-7%2BNoise.pdf?MOD=AJPERES>)

²³⁷ 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

- a. A maximum level for air blast overpressure of 115 dB (Lin Peak) shall be exceeded for no more than 5 % of blasts over a 12-month period;
- b. Blasting shall only occur during the hours of 09:00 to 17:00 on traditionally normal working days; and
- c. Ground vibration (peak particle velocity) shall neither exceed 5 mm/second on 9 out of 10 consecutive blasts, nor exceed 10 mm/second at any time.

4.4.2.5. Mines may undertake blasting outside of the time restraints in 4.4.2.4.b when the operating company can demonstrate one or more of the following:

- a. There are no nearby human noise receptors that will be impacted by blasting noise or vibration;
- b. Alternative hours are necessary and/or appropriate because of local, cultural or social norms; and/or
- c. Potentially affected human receptors have given voluntary approval for the expanded blasting hours.

4.4.2.6. If a credible, supported complaint is made to the operating company that noise or vibration is adversely impacting human noise receptors, then the operating company shall consult with affected stakeholders to develop mitigation strategies or other proposed actions to resolve the complaint. Where complaints are not resolved then other options, including noise monitoring and the implementation of additional mitigation measures, shall be considered.

4.4.2.7. All noise- and vibration-related complaints and their outcomes shall be documented.

4.4.3. Reporting

4.4.3.1. 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.

NOTES

This chapter focuses on the impacts of noise and vibrations on human noise receptors. Noise-related impacts on wildlife receptors should be screened in the Environmental and Social Impact Assessment process in IRMA Chapter 2.1, and if significant impacts are identified then those impacts should be mitigated as per the ESIA process (including consultations with relevant stakeholders, such as government biologists, wildlife conservation organizations, academic experts and community members whose livelihoods or sustenance may be affected by impacts on wildlife). Any related monitoring should occur as per the Environmental and Social Monitoring program.

If noise or vibration may potentially impact threatened species, those impacts should be further evaluated during the Biodiversity, Ecosystem Services and Protected Areas screening process (IRMA Chapter 4.6).

CROSS REFERENCES TO OTHER CHAPTERS	
CHAPTER	ISSUES
1.1—Legal Compliance	As per IRMA Chapter 1.1, if there are <u>host country laws</u> governing noise from mining operations, the company is required to abide by those laws. If IRMA requirements are more stringent than <u>host country law</u> , the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to violate <u>host country law</u> .
1.2—Community and Stakeholder Engagement	Consultations with <u>stakeholders</u> related to the development of noise <u>mitigation</u> plans shall conform to the <u>stakeholder engagement</u> requirements in Chapter 1.2. Reporting shall conform with the Communications and Access to Information requirements in 1.2.4 , which require that communications and information be in culturally appropriate formats and languages that are <u>accessible</u> and understandable to <u>affected communities</u> and <u>stakeholders</u> , and provided in a timely manner.
1.4—Complaints and Grievance Mechanism and Access to Remedy	As per Chapter 1.4, the <u>operating company</u> is required to have an operational-level <u>grievance mechanism</u> available to <u>stakeholders</u> , including procedures for filing mining-related complaints, and having those complaints recorded, investigated and resolved in a timely manner. Noise impacts not anticipated in the screening process/ESIA or not adequately <u>mitigated</u> may result in complaints by <u>stakeholders</u> . These should be documented and addressed through the operational-level <u>grievance mechanism</u> (if not resolved through informal dialogue or other means).
2.1—Environmental and Social Impact Assessment and Management	Potential noise impacts, such as impacts on sensitive wildlife species and populations, should be evaluated as part of the ESIA scoping process (see requirement 2.1.3.3). Where potentially significant impacts on wildlife populations are identified, the <u>operating company</u> should develop <u>mitigation</u> strategies to reduce the impacts on wildlife, and monitoring program to determine if <u>mitigation</u> measures are being effective (as per the requirements in 2.1.7 and 2.1.8).
3.2—Occupational Health and Safety	Chapter 4.4 pertains to the impacts of mine-related noise on local communities. The impacts of harmful noise on workers are covered in Chapter 3.2.
4.6—Biodiversity, Ecosystem Services and Protected Areas	If noise or vibration may potentially impact <u>threatened or endangered species</u> , those impacts should be further evaluated during the Biodiversity, Ecosystem Services and Protected Areas screening process (see criteria 4.6.2).



Chapter 4.5 Greenhouse Gas Emissions

BACKGROUND

Humans are increasingly influencing the climate and the earth's temperature by burning fossil fuels, cutting down rainforests and raising livestock. These activities release gases such as carbon dioxide, methane, nitrous oxide, ozone and a few others that have the ability to trap heat in the Earth's atmosphere. Many of these gases also occur naturally, but human activity is increasing the concentrations of some of them in the atmosphere.²³⁸ Global concern over greenhouse gas emissions and climate change has led to the development of the United Nations Framework Convention on Climate Change, and has spurred the establishment of targets for the reduction of greenhouse gas emissions that are applicable in over 190 countries.²³⁹

Mining is a major energy consumer and emitter of greenhouse gas emissions. According to the International Council on Mining and Metals, the mining industry's greenhouse gas emissions come from two major categories. The first 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 is indirect emissions from electricity use, primarily in refining and smelting operations.

Mining companies can reduce fuel and energy consumption in both of these areas and thereby cut costs and improve competitiveness by adopting best practices in energy efficiency and emissions reductions.

OBJECTIVES/INTENT OF THIS CHAPTER

To minimize climate change impacts through increased energy efficiency, reduced energy consumption and reduced emissions of greenhouse gases.

SCOPE OF APPLICATION

RELEVANCE: This chapter is relevant for all mines.

TERMS USED IN THIS CHAPTER

Affected Community ■ Corporate Owner ■ Existing Mine ■ Host Country Law ■ Mining Project ■ Mining-Related Activities ■ Operating Company ■ Significant Changes to Mining-Related Activities ■ Stakeholder ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

²³⁸ European Commission website: "Causes of Climate Change." https://ec.europa.eu/clima/change/causes_en

²³⁹ For example, see: "Nationally appropriate mitigation commitments or actions by developed country Parties," United Nations Climate Change website. <http://unfccc.int/focus/mitigation/items/7223.php>

Greenhouse Gas Emissions Requirements

4.5.1. Greenhouse Gas Policy

4.5.1.1. The operating company or its corporate owner shall develop and maintain a greenhouse gas or equivalent policy that commits the company to:

- a. Identifying and measuring greenhouse gas emissions from the mining project;
- b. Identifying energy efficiency and greenhouse gas reduction opportunities across the mining project;
- c.  Setting meaningful and achievable targets for reductions in absolute greenhouse gas emissions at the mine site level or on a corporate-wide basis;²⁴⁰ and
- d. Reviewing the policy at least every five years and revising as needed, such as if there are significant changes to mining-related activities, new technologies become available, or there are newly identified opportunities for reductions.



[flag] 4.5.1.1.c. Issue in brief: While there is agreement among IRMA sectors that setting greenhouse gas reduction targets is something that every responsible company should be doing, there is not yet cross-sectoral agreement within IRMA regarding how to set those targets.

There are a number of initiatives underway (e.g., Climate Action 100+, Science Based Targets, Transition Pathway Initiative, etc.) that are encouraging companies to set “science based” targets. These are targets that are consistent with the Paris Agreement’s goal of limiting global average temperature increase to well below 2 degrees above pre-industrial levels. Numerous companies globally have made commitments to setting science based targets, but there is not a lot of information on or evidence of mining companies setting such targets.

IRMA will use the Launch Phase as a time to ask mines whether or not they are setting “science-based targets” for greenhouse gas emissions reductions, and if they are not, what are the barriers are to making such a commitment? The outcome of the queries will help inform the version of the Standard that will be used when IRMA starts certifying mines in 2019.

4.5.2. Emissions Quantification

4.5.2.1. The operating company shall comply with emissions quantification methods described in a widely accepted reporting standard, such as the *Greenhouse Gas Protocol Corporate Standard* or the Global Reporting Initiative’s *GRI 305* emissions reporting standard.²⁴¹

²⁴⁰ A target for reductions in absolute greenhouse gas emissions is defined by a reduction in absolute (or total) emissions over time (e.g., reduce total emissions by 20% below 2007 levels by 2020). For the purposes of this requirement, only targets for Scope 1 and 2 emissions are required to be included in the target, although Scope 3 emissions may also be included. Scope 1 emissions are the direct emissions from the mining project (or company, if setting targets on a corporate-wide basis); Scope 2 are the indirect emissions from consumption of purchased electricity, heat, and steam. Scope 3 are other indirect emissions. See GHG Protocol Standard for more details. <https://ghgprotocol.org/corporate-standard>

²⁴¹ Gas Protocol Corporate Accounting and Reporting Standard. <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>; and *GRI 305* emissions reporting standard. <https://www.globalreporting.org/standards/gri-standards-download-center/gri-305-emissions/>

4.5.3. Emissions Reduction Strategies

4.5.3.1. 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.

4.5.3.2. The operating company shall demonstrate progress toward its greenhouse gas reduction targets.

4.5.3.3. The operating company shall demonstrate that it has investigated greenhouse gas reduction strategies, and shall document the results of its investigations.

4.5.4. Reporting

4.5.4.1. The greenhouse gas policy shall be publicly available.

4.5.4.2. On an annual basis, the operating company or its corporate owner shall:

- a. Disclose to IRMA auditors an accounting of greenhouse gas emissions from the mining project, achievement of and/or progress towards mine-site-level greenhouse gas reduction targets, and efforts taken to reduce emissions from the mining project and mining-related activities; and
- b.  Publicly report on mine-site-level or corporate-level greenhouse gas emissions, progress towards greenhouse gas reduction targets and efforts taken to reduce emissions.



[flag]

4.5.4.2.b. Issue in brief: While there is agreement among IRMA sectors that mines should be measuring their emissions and should have greenhouse gas reduction policies, targets and strategies in place, there is not full agreement on whether reporting of greenhouse gas emissions should occur at the mine site level, the corporate/company-wide level, or both. Many mining companies do report emissions and greenhouse gas reduction targets, but this often occurs on a corporate-wide basis. Since IRMA is certifying mine sites, not companies, the preference expressed by some stakeholders is that every mine site annually report its greenhouse gas emissions and targets. IRMA will use its Launch Phase to gather information on whether mines engaged with IRMA and other leading companies are reporting emissions and targets for individual mine sites, or whether most companies are still only doing this on a company-wide basis. This information will inform how we proceed with this requirement when we release the version of the Standard that will be used for mine certification.

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 <u>host country laws</u> 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 <u>host country law</u> , the company is required to also meet the IRMA requirements, as long as complying with them would not require the operating company to violate <u>host country law</u> .
1.2—Community and Stakeholder Engagement	Reporting to <u>stakeholders</u> shall conform with the Communications and Access to Information requirements in 1.2.4, which require that communications and information be in culturally appropriate formats and languages that are accessible and understandable to <u>affected communities</u> and <u>stakeholders</u> , and provided in a timely manner.
1.4—Complaints and Grievance Mechanism and Access to Remedy	As per Chapter 1.4, the <u>operating company</u> is required to have an operational-level <u>grievance mechanism</u> available to <u>stakeholders</u> , including procedures for filing mining-related complaints, and having those complaints recorded, investigated and resolved in a timely manner. Any complaints from <u>stakeholders</u> related to greenhouse gas emissions and reporting should be addressed through the company's <u>grievance mechanism</u> (if not resolved through informal dialogue or other means).
2.1—Environmental and Social Impact Assessment and Management	Potential impacts from greenhouse gas emissions (e.g., environmental and social impacts related to climate change) should be considered in the ESIA. The assessment may result in the development of <u>mitigation</u> and/or greenhouse gas reduction strategies.



Chapter 4.6 Biodiversity, Ecosystem Services and 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. Biodiversity underpins ecosystem functioning and the provision of ecosystem services essential for human well-being, it is a central component of many belief systems, world views and identities, it provides for food security, human health, clean air and water, and contributes to local livelihoods and economic development. Despite its fundamental importance, however, biodiversity continues to be lost.²⁴²

Mining may take place in landscapes that are already heavily modified or degraded, and therefore, pose little or no threat to global biodiversity loss. When located in areas of high biodiversity value, however, there is the potential that mining may lead to a temporary or permanent loss in biodiversity and ecosystem services.

Globally, a network of protected areas have been put in place, offering various levels of protection for biodiversity, land and seascapes. Developments such as exploration and mining are expected to respect those protections and operate in manner that safeguards biodiversity and other values that led to a protected area designation (e.g., cultural values – see IRMA Chapter 3.7). In many areas of the world, however, an adequate system of protected areas has yet to be established, and even where protections exist there are opportunities to further conserve biodiversity and other important values.

Through adherence to the mitigation hierarchy during the most appropriate stages in project development, mining can proceed in a manner that supports global biodiversity, maintains the ecosystem services that communities need to survive and thrive, and leaves behind structurally safe and functioning ecosystems upon closure. This chapter puts forward a framework for mines to proactively assess and manage impacts on biodiversity and ecosystem services according to the mitigation hierarchy of avoiding and minimizing impacts early in the project life cycle, and if impacts cannot be avoided, restoring and, if necessary, offsetting or compensating for residual impacts throughout the remainder of the mine's life.

TERMS USED IN THIS CHAPTER

Additional Conservation Actions ■ Area of Influence ■ Avoidance ■ Baseline ■ Biodiversity ■ Biosphere Reserves ■ Competent Professionals ■ Conservation Outcomes ■ Conservation Values ■ Collaborate ■ Consultation ■ Critical Habitat ■ Cumulative Impacts ■ Direct/Indirect Impacts ■ Ecological Processes ■ Ecosystem Services ■ Endangered Species ■ Enhancement ■ Existing Mine ■ Habitat ■ Host Country Law ■ Important Biodiversity Values ■ Key Biodiversity Areas ■ Mine Closure ■ Mining Project ■ Mining-Related Activities ■ Minimize ■ Mitigation ■ Mitigation Hierarchy ■ Modified Habitat ■ Natural Habitat ■ New Mine ■ No Net Loss and Net Gain ■ Offset ■ Operating Company ■ Priority Ecosystem Services ■ Protected Area ■ Protected Area Management Categories ■ Residual Impacts ■ Restoration ■ Stakeholder ■ Tentative List for World Heritage Site Inscription ■ World Heritage Site ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

²⁴² Adopted from the Convention on Biological Diversity (CBD) Strategic Plan for Biodiversity 2011-2020. Available at: www.cbd.int/sp/

OBJECTIVES/INTENT OF THIS CHAPTER

To protect biodiversity, maintain the benefits of ecosystem services and respect the values being safeguarded in protected areas.

SCOPE OF APPLICATION

RELEVANCE: This chapter will not be applicable if no risks to biodiversity, ecosystem services or protected areas, including risks related to potential knowledge gaps, are identified through the screening process.

NEW VS. EXISTING MINES: This chapter applies to new mines and existing mines. The requirements are drafted with the intent that the overall impact of a mining project on biodiversity, ecosystem services and protected areas will be considered across the entire period of the mine's life.

Mitigation measures for new mines are expected to be designed to achieve no net loss and preferably a net gain in important biodiversity values and priority ecosystem services. While ideally existing mines would also seek to achieve no net loss in biodiversity and ecosystem services, IRMA recognizes that it may be difficult or impossible to accurately identify the biodiversity values that were present in an area prior to the mine development, which makes it difficult to establish a baseline for calculating a no net loss or net gain in biodiversity. Instead of requiring no net loss/net gain at existing mines, IRMA expects existing mines to document, to the best of their abilities, the impacts that their past activities have had on biodiversity and ecosystem services. Where significant impacts have occurred, existing mines will be expected to undertake conservation actions to enhance biodiversity and ecosystem services. Existing mines are also expected to avoid any additional losses of important biodiversity values or priority ecosystem services (see 4.6.4.2). This approach enables an existing mine to apply for IRMA certification later in its 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.

Biodiversity, Ecosystem Services and Protected Areas Requirements

4.6.1. General Stipulations

4.6.1.1. Biodiversity, ecosystem services and protected areas screening, assessment, management planning, implementation of mitigation measures, and monitoring shall be carried out and documented by competent professionals using appropriate methodologies.

4.6.1.2. Biodiversity, ecosystem services and protected areas screening, assessment, management planning, and the development of mitigation and monitoring plans shall include consultations with stakeholders, including, where relevant, affected communities and external experts.

4.6.1.3. Biodiversity, ecosystem services and protected areas impact assessments, management plans and monitoring data shall be publicly available, or made available to stakeholders upon request.

4.6.2. Biodiversity, Ecosystem Services and Protected Areas Screening

4.6.2.1. New mines and existing mines shall carry out screening or an equivalent process to establish a preliminary understanding of the impacts on or risks to biodiversity, ecosystem services and protected areas from past and proposed mining-related activities.

4.6.2.2. Screening shall include identification and documentation of:

- a. Boundaries of legally protected areas in the mine's actual or proposed area of influence, and the conservation values being protected in those areas;

- b. Boundaries of Key Biodiversity Areas (KBA)²⁴³ in the mine's actual or proposed area of influence, the important biodiversity values within those areas and the ecological processes and habitats supporting those values;
- c. Areas of modified habitat, natural habitat and critical habitat²⁴⁴ within the mine's proposed or actual area of influence, and the important biodiversity values (e.g., threatened and endangered species) present in the critical habitat areas; and
- d. Ecosystems or processes within the mine's proposed or actual area of influence that may or do provide provisioning, regulating, cultural and supporting ecosystem services.

4.6.3. Impact Assessment

4.6.3.1. When screening identifies protected areas or areas of potentially important global, national or local biodiversity or ecosystem services that have been or may be affected by mining-related activities (e.g., KBAs, critical habitat, threatened or endangered species), the operating company shall carry out an impact assessment that includes:

- a. Establishment of baseline conditions of biodiversity, ecosystem services and, if relevant, conservation values (i.e., in protected areas) within the mine's proposed or actual area of influence;
- b. Identification of potentially significant direct, indirect and cumulative impacts of past and proposed mining-related activities on biodiversity, ecosystem services and, if relevant, on the conservation values of protected areas throughout the mine's life cycle;
- c. Evaluation of options to avoid potentially significant adverse impacts on biodiversity, ecosystem services and conservation values of protected areas, prioritizing avoidance of impacts on important biodiversity values and priority ecosystem services; evaluation of options to minimize potential impacts; evaluation of options to provide restoration for potential and actual impacts; and evaluation of options to offset significant residual impacts (see 4.6.4.1 and 4.6.4.2); and
- d. Identification and evaluation of opportunities for partnerships and additional conservation actions that could enhance the long-term sustainable management of protected areas and/or biodiversity and ecosystem services.

4.6.4. Biodiversity and Ecosystem Services Impact Mitigation and Management

4.6.4.1. Mitigation measures for new mines shall:²⁴⁵

- a. Follow the mitigation hierarchy of:
 - i. Prioritizing the avoidance of impacts on important biodiversity values and priority ecosystem services and the ecological processes and habitats necessary to support them;
 - ii. Where impacts are not avoidable, minimizing impacts to the extent possible;
 - iii. Restoring biodiversity, ecosystem services and the ecological processes and habitats that support them; and
 - iv. As a last resort, offsetting the residual impacts.

²⁴³ KBAs include Alliance for Zero Extinction sites (AZE), Important Bird and Biodiversity Areas (IBA), Important Plant Areas (IPA).

²⁴⁴ Modified, natural and critical habitat refers to the biodiversity value of the area as determined by species, ecosystems and ecological processes. Critical habitats are a subset of modified or natural habitats. (See: International Finance Corporation. 2012. Performance Standard 6, Guidance Notes. (GN26 and Para.9) https://www.ifc.org/wps/wcm/connect/a359a380498007e9a1b7f3336b93d75f/Updated_GN6-2012.pdf?MOD=AJPERES

²⁴⁵ This section is meant to align with many other standards and guidelines that address impacts on biodiversity, such as IFC's Performance Standard 6 (see Para. 10 and 14) and the KBA Partners Guidelines on Business and KBAs (KBA Partners. 2018. Guidelines on Business and KBAs: Managing Risk to Biodiversity. <https://portals.iucn.org/library/sites/library/files/documents/2018-005-En.pdf>)

- b. Prioritize avoidance of impacts on important biodiversity values and priority ecosystem services early in the project development process;
- c. Be designed and implemented to deliver at least no net loss, and preferably a net gain in important biodiversity values, and the ecological processes that support those values, on an appropriate geographic scale and in a manner that will be self-sustaining after mine closure.

4.6.4.2. At existing mines:

- a. Where past adverse impacts on important biodiversity values and priority ecosystem services have been identified, the operating company shall design and implement onsite restoration strategies, and also, through consultation with stakeholders, design and implement additional conservation actions to support the enhancement of important biodiversity values and/or priority ecosystem services on an appropriate geographic scale; and
- b. If there is the potential for new impacts on important biodiversity values or priority ecosystem services (e.g., as a result of mine expansions, etc.), the operating company shall follow the mitigation hierarchy, prioritizing the avoidance of impacts on important biodiversity values or priority ecosystem services, but where residual impacts remain, shall apply offsets commensurate to the scale of the additional (new) impacts.

4.6.4.3. Offsetting, if required, shall be done in a manner that aligns with international best practice.

4.6.4.4. The operating company shall develop and implement a biodiversity management plan or equivalent that:

- a. Outlines specific objectives (e.g., no net loss/net gain, no additional loss) with measurable conservation outcomes, timelines, locations and activities that will be implemented to avoid, minimize, restore, enhance and, if necessary, offset adverse impacts on biodiversity and ecosystem services;
- b. Identifies key indicators, and ensures that there is an adequate baseline for the indicators to enable measurement of the effectiveness of mitigation activities over time;
- c. Provides a budget and financing plan to ensure that funding is available for effective mitigation.

4.6.4.5. Biodiversity management shall include a process for updating or adapting the management plan if new information relating to biodiversity or ecosystem services becomes available during the mine life cycle.²⁴⁶

4.6.5. Protected Areas Mitigation and Management

4.6.5.1. An operating company shall not carry out new exploration or develop new mines in any legally protected area unless the applicable criteria in the remainder of this chapter are met, and additionally the company:

- a. Demonstrates that the proposed development in such areas is legally permitted;
- b. Consults with protected area sponsors, managers and relevant stakeholders on the proposed project;
- c. Conducts mining-related activities in a manner consistent with protected area management plans for such areas; and
- d. Implements additional conservation actions or programs to promote and enhance the conservation aims and/or effective management of the area.

4.6.5.2. An operating company shall not carry out new mining-related activities in the following protected areas unless they meet 4.6.5.1.a through d, and an assessment, carried out or peer-

²⁴⁶ For example, new information may be obtained through the implementation and monitoring of mitigation measures.

reviewed by a reputable conservation organization and/or academic institution,²⁴⁷ demonstrates that mining-related activities will not damage the integrity of the special values for which the area was designated or recognized:

- International Union for Conservation of Nature (IUCN) protected areas designated as protected area management category IV;
- Ramsar sites that are not IUCN protected area management categories I-III; and
- Buffer zones of UNESCO biosphere reserves.

4.6.5.3. IRMA will not certify new mines that are developed in or that adversely affect the following protected areas:

- World Heritage Sites, and areas on a State Party's official Tentative List for World Heritage Site Inscription;
- IUCN protected area management categories I-III;
- Core areas of UNESCO biosphere reserves.

4.6.5.4. An existing mine located entirely or partially in a protected area listed in 4.6.5.3 shall demonstrate that:

- a. The mine was developed prior to the area's official designation;
- b. Management plans have been developed and are being implemented to ensure that activities during the remaining mine life cycle will not permanently and materially damage the integrity of the special values for which the area was designated or recognized; and
- c. The operating company collaborates with relevant management authorities to integrate the mine's management strategies into the protected area's management plan.

4.6.6. Monitoring

4.6.6.1. The operating company shall develop and implement a program to monitor the implementation of its protected areas and/or biodiversity and ecosystem services management plan(s) throughout the mine life cycle.

4.6.6.2. Monitoring of key biodiversity or other indicators shall occur with sufficient detail and frequency to enable evaluation of the effectiveness of mitigation strategies and progress toward the objectives of at least no net loss or net gain in biodiversity and ecosystem services over time.

4.6.6.3. If monitoring reveals that the operating company's protected areas and/or biodiversity and ecosystem services objectives are not being achieved as expected, the operating company shall define and implement timely and effective corrective action in consultation with relevant stakeholders.

4.6.6.4. The findings of monitoring programs shall be subject to independent review.

NOTES

Although presented in a different format, many of the requirements in this chapter are meant to generally align with the International Finance Corporation's (IFC) Performance Standard 6—Biodiversity Conservation and

²⁴⁷ E.g., Peer review should be undertaken by an academic institution or environmental NGO with experience in biodiversity assessments. Also, the personnel responsible for carrying out the peer-review or assessment are expected to be competent professionals (i.e., in-house staff or external consultants with relevant education, knowledge, proven experience and necessary skill-sets and training to carry out the required work. Competent professionals are expected to follow scientifically robust methodologies to carry out their work).

Sustainable Management of Living Natural Resources, and also the KBA Partners' Guidelines on Business and Key Biodiversity Areas (KBAs).²⁴⁸

This chapter focuses on the conservation of the most important or critical areas of biodiversity (in some cases these have been designated as protected areas or Key Biodiversity Areas, in other cases they will not have been officially designated but still contain important biodiversity values). Despite this emphasis, it is expected that mines will minimize impacts on biodiversity and ecosystem services generally, according to the mitigation hierarchy (see 3.7.4.1). Similarly, while the objectives of no net loss and preferably net gain are explicitly required to be planned for in the case of impacts on important biodiversity values and priority ecosystem services, it is strongly encouraged that such objectives be considered for any impacts on biodiversity or ecosystem services (e.g., IFC PS6 states that in areas of natural habitat, mitigation measures will be designed to achieve no net loss of biodiversity where feasible).

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 or the protection of biodiversity or ecosystem services, the operating 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 company to violate host country law.
1.2—Community and Stakeholder Engagement	Engagement with stakeholders in the assessment and management of biodiversity, ecosystem services and protected areas shall conform to the requirements in Chapter 1.2. In particular, criterion 1.2.3 is important to ensure that stakeholders have the capacity to participate in assessments and the development of management plans. Also, 1.2.4 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.
1.4—Complaints and Grievance Mechanism and Access to Remedy	As per Chapter 1.4, 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. Stakeholders who have complaints related to the operating company's assessment, mitigation, monitoring or other issues related to biodiversity, ecosystem services or protected areas will have access to raise these issues.
2.1—Environmental and Social Impact Assessment and Management	The screening and assessment of the mining project's impacts on biodiversity, ecosystem services and protected areas as per 4.6.2 and 4.6.3 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. Similarly, the biodiversity management plan or its equivalent may be incorporated into the mine's larger environmental and social management plan.
2.4—Resettlement	IRMA's resettlement chapter addresses both the physical and economic displacement of communities. Resettlement may lead to impacts on biodiversity and ecosystem services, or protected areas depending on the location of resettled communities. The potential impacts of resettlement on biodiversity and ecosystem services, or protected areas should be identified during the Resettlement Risk and Assessment Process (See 2.4.1.2.c), and any necessary mitigation developed accordingly to 4.6.4.

²⁴⁸ IFC. 2012. Performance Standard 6—Biodiversity Conservation and Sustainable Management of Living Natural Resources with Guidance Notes. [https://www.ifc.org/wps/wcm/connect/a359a380498007e9a1b7f3336b93d75f/Updated_GN6-2012.pdf?MOD=AJPERES&KBA Partners.2018.Guidelines.on.Business.and.KBAs.Managing.Risk.to.Biodiversity.%20https://portals.iucn.org/library/sites/library/files/documents/2018-005-En.pdf](https://www.ifc.org/wps/wcm/connect/a359a380498007e9a1b7f3336b93d75f/Updated_GN6-2012.pdf?MOD=AJPERES&KBA%20Partners.2018.Guidelines.on.Business.and.KBAs.Managing.Risk.to.Biodiversity.%20https://portals.iucn.org/library/sites/library/files/documents/2018-005-En.pdf)

CROSS REFERENCES TO OTHER CHAPTERS	
2.6 —Reclamation and Closure	Chapter 2.6 requires companies to come to agreed post-mining land use with <u>affected communities</u> , and communities and <u>stakeholders</u> are included in the development of reclamation and closure plans. So if the post-mining agreed uses require <u>restoration of ecological systems or habitat</u> that may not qualify as <u>important biodiversity values or priority ecosystem services</u> , then companies would still be expected to document that in their reclamation plan and carry out necessary activities to achieve the agreed uses.
3.7—Cultural Heritage	If during the screening process the <u>operating company</u> identifies <u>protected areas</u> specifically designated to protect cultural heritage, the company will be expected to conform with requirements in Chapter 3.7.
4.1—Waste and Materials Management	Mine waste management approaches may pose risks to <u>threatened or endangered species, biodiversity, ecosystem services or protected areas</u> . These risks may be identified and evaluated during the screening, and if necessary, assessment processes in Chapter 4.6. The risks may also be identified during the Waste Facility Assessment process (4.1.4). <u>Mitigation</u> strategies may be developed as per 4.1.5, or developed as part of or integrated into the Biodiversity Management Plan (see 4.6.4). Any assessment and mitigation development processes should include input from experts and <u>stakeholders</u> that have expertise in <u>biodiversity, ecosystem services or protected areas</u> issues.
4.2—Water Management	Chapter 4.2 requires Site Characterization and Prediction of Potential Impacts (4.2.2) of mine water management on communities and the environment. If analyses reveal that there may be water-management-related impacts on biodiversity (e.g., effects on <u>habitat</u> or water supply for <u>threatened and endangered species</u>), <u>ecosystem services</u> (e.g., reduce flood regulation, availability of drinking water), or adverse effects on waters located in <u>protected areas</u> then the significance of the potential impacts should be further assessed (as per 4.6.3), and <u>mitigation</u> measures developed accordingly to 4.6.4.
4.3—Air Quality	The air quality screening process in 4.3.1 may reveal the potential for significant impacts to <u>important biodiversity, priority ecosystem services, critical habitat (including threatened species)</u> or the <u>conservation values</u> of <u>protected areas</u> from <u>mining project</u> air emissions. If this is the case, then the significance of the potential impacts should be further assessed (as per 4.6.3), and <u>mitigation</u> measures developed accordingly to 4.6.4.



Chapter 4.7 Cyanide Management

BACKGROUND

Cyanide is a chemical used in the processing of gold and silver at many mine sites and as a minor processing reagent at some base metal mines. If released to the environment, or if improperly used in mineral processing, cyanide can pose a risk to workers, surrounding communities, aquatic resources and wildlife.

The International Cyanide Management Institute (ICMI) has developed a program for the gold and silver mining industry to improve the life cycle management of cyanide used in gold and silver mining, to enhance the protection of human health, and to reduce the potential for environmental impacts.²⁴⁹ Although the *International Cyanide Management Code* only provides for the certification of gold and silver mines, the same principles can be applied to other types of mining operations that use cyanide for the extraction of commercial quantities of minerals.

This chapter builds on the ICMI Principles and Standards of Practice.

TERMS USED IN THIS CHAPTER

Adaptive Management ■ Baseline Water Quality ■ Existing Mine ■ Mining Project ■ Mixing Zone ■ New Mine ■ Operating Company ■ Process Water ■ Secondary Containment ■ Stakeholders ■ Water Quality Criteria ■ Whole Effluent Testing ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

OBJECTIVES/INTENT OF THIS CHAPTER

To protect human health and the environment through the responsible management of cyanide.

SCOPE OF APPLICATION

RELEVANCE: This chapter is applicable to 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. It applies during operations and decommissioning of the mining project. This does not apply to cyanide for laboratory use or other de minimis testing purposes.

Mining projects must also maintain and provide documentation that cyanide producers and transporters supplying the 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 4.7.2 unless new cyanide storage facilities, mixing, and process tanks are constructed after the IRMA Standard takes effect.

²⁴⁹ International Cyanide Code website: <https://www.cyanidecode.org/>

Cyanide Management Requirements

4.7.1. Compliance with the International Cyanide Management Code (The Cyanide Code)

4.7.1.1. If the operating company is eligible to be a signatory to the Cyanide Code,²⁵⁰ it shall obtain a certification of compliance in accordance with the requirements of the International Cyanide Management Institute (ICMI).²⁵¹

4.7.1.2. If the operating company is not eligible to become a signatory of the Cyanide Code, but the mining project requires the storage onsite of cyanide in bags or bulk containers, or uses cyanide in a mill process, the mine's cyanide management practices shall be:²⁵²

- a. Audited against the Cyanide Code's "Gold Mining Operation Verification Protocol" by auditors meeting ICMI requirements;²⁵³ and
- b. Verified as being generally consistent with Cyanide Code requirements.

4.7.1.3. The operating company shall demonstrate that it has taken steps to ensure that cyanide producers and transporters supplying the mining project are certified as meeting the "Cyanide Production and Transport Practices" of the Cyanide Code.²⁵⁴

4.7.2. Construction

4.7.2.1. In addition to the requirements of the Cyanide Code, the following design criteria shall be met:²⁵⁵

- a. Impermeable secondary containment for cyanide unloading, storage, mixing and process tanks shall be sized to hold a volume at least 110% of the largest tank within the containment and any piping draining back to the tank, and with additional capacity for the design storm event; and
- b. Pipelines containing process water or process solution shall utilize secondary containment in combination with audible alarms, interlock systems, and/or sumps as spill control measures.²⁵⁶

4.7.3. Discharges

4.7.3.1. Discharges to a surface water mixing zone shall not contain cyanide, either alone or in combination with other toxins, that will that will be lethal to resident aquatic life or interfere with the passage of migratory fish.

²⁵⁰ Gold and silver mining companies with either single or multiple operations, and the producers and transporters of cyanide used in gold and silver mining, can become signatories to the Cyanide Code. (International Cyanide Management Code. "Become a Signatory." <http://www.cyanidecode.org/become-signatory>)

²⁵¹ 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 4.7.1.1.

²⁵² This section does not apply to cyanide for laboratory use, or for other de minimis purposes.

²⁵³ Information on auditing protocols and auditor accreditation can be found at: <https://www.cyanidecode.org/auditors-auditing>

²⁵⁴ See Cyanide Production and Transportation verification protocols here: <http://www.cyanidecode.org/auditors-auditing/auditing-cyanide-code>

²⁵⁵ 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.

²⁵⁶ This applies if process water/solution has a concentration of 0.5 mg/l WAD cyanide or greater.

4.7.4. Monitoring

4.7.4.1. The operating company shall carry out baseline water quality sampling and monitor discharges to surface waters or groundwaters for weak acid dissociable (WAD) cyanide.

4.7.4.2. If WAD cyanide is detected in discharges to surface waters, then the operating company shall also monitor total cyanide, free cyanide, and thiocyanate levels.

4.7.5. Reporting

4.7.5.1. Cyanide water quality monitoring data shall be published on at least a quarterly basis in tabular format, and graphical format if available, on the mine or the operating company website, or provided to stakeholders upon request.

4.7.5.2. 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.

NOTES

The International Cyanide Management Institute (ICMI) Principles broadly state commitments that signatories make to manage cyanide in a responsible manner. Standards of Practice identify the performance goals and objectives that must be met in order to comply with the Principles. Separate verification protocols have been developed for cyanide production, transportation, and gold and silver mine operations. Cyanide production, transportation, and operations are certified as being in compliance with the Code following an independent third-party audit (paid for by the 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 Management Chapter 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 <u>host country laws</u> governing cyanide transport, storage, use, etc., the company is required to abide by those laws. If IRMA requirements are more stringent than <u>host country law</u> , the company is required to also meet the IRMA requirements, as long as complying with them would not require the <u>operating company</u> to violate <u>host country law</u> .
1.2—Community and Stakeholder Engagement	Reporting to <u>stakeholders</u> in 4.7.5 shall conform with the Communications and Access to Information requirements in Chapter 1.2, criterion 1.2.4, which require that communications and information be in culturally appropriate formats and languages that are <u>accessible</u> and understandable to <u>affected communities</u> and <u>stakeholders</u> , and provided in a timely manner.
1.4—Complaints and Grievance Mechanism and Access to Remedy	As per Chapter 1.4, the company is required to have a <u>grievance mechanism</u> available to <u>stakeholders</u> for filing complaints, and having them investigated and resolved in a timely manner. <u>Stakeholders</u> with complaints related to an <u>operating company's</u> use of cyanide can raise complaints through the company's operational-level <u>grievance mechanism</u> .
2.1—Environmental and Social Impact Assessment and Management	The potential impacts to nearby communities and the environment from cyanide may be scoped as part of the Environmental and Social Impact Assessment process, and <u>mitigation</u> strategies developed as part of the Environmental and Social Management System.

CROSS REFERENCES TO OTHER CHAPTERS	
2.5—Emergency Preparedness and Response	The transportation of cyanide is a potential <u>hazard</u> to communities and the environment along transportation routes, and releases of cyanide from the handling, storage and use of cyanide at the mine site may also have impacts on <u>workers</u> , nearby communities and the environment. Chapter 2.5 mandates emergency response planning for spills or other incidents that pose risks <u>workers</u> and communities, and requires coordination between the mine and emergency responders in potentially affected communities. If relevant, the emergency response plan should contain procedures related to cyanide that conform with the Cyanide Code (see Standard of Practice 7.1 in the Code’s Implementation Guidance). ²⁵⁷
3.2—Occupational Health and Safety	Cyanide use is an occupational health and safety consideration, and its use, storage and transport should be included in the OHS risk assessment process, <u>mitigation</u> and monitoring processes outlined in Chapter 3.2, and be carried out in conformance with the Cyanide Code (see Implementation Guidance for Standards of Practice 6.1, 6.2 and 6.2). ²⁵⁸
3.3—Community Health and Safety	The use of cyanide at mining operations may present a health risk to local communities, and if transported to, stored or used at the mining project should be analyzed during the community health and safety risk and impact assessment process.
4.1—Waste and Materials Management	If cyanide is present in <u>mine waste facilities</u> (E.g., <u>tailings storage facilities</u> , <u>heap leach facilities</u>) then monitoring for potential impacts on wildlife from cyanide is required as per 4.7.4. Relevant information should be incorporated in the Operations, Maintenance and Surveillance plan) as per 4.1.5.5.c.
4.2—Water Management	IRMA’s <u>water quality criteria</u> for cyanide discharge limits appear in Tables 4.2.a–h. If a <u>mixing zone</u> is used for surface water discharges that contain cyanide, the requirements 4.2.3.2.b.i and ii apply (i.e., the <u>mixing zone</u> cannot be lethal to aquatic life, and shall not interfere with the passage of migratory fish). Monitoring of cyanide in water, as required in 4.7.4, may be incorporated into the water management program in Chapter 4.2 (see criteria 4.2.4).

²⁵⁷ Cyanide Code. Standard of Practice 7.1. <https://www.cyanidecode.org/become-signatory/implementation-guidance#emergency>

²⁵⁸ Cyanide Code. Standards of Practice 6.1, 6.2 and 6.3. <https://www.cyanidecode.org/become-signatory/implementation-guidance#safety>



Chapter 4.8 Mercury Management

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 by air and water to wetlands, streams or some other types of environments, mercury can be converted to methyl-mercury. Methyl-mercury can be transmitted up the food chain and accumulate in the tissues of animals.

Because of mercury's potentially significant health and environmental impacts, mining operations should work to restrict the release of point source mercury emissions to the atmosphere and surface and ground waters by adopting appropriate mercury reduction goals and by applying suitable mercury reduction technologies.

OBJECTIVES/INTENT OF THIS CHAPTER

To protect human health and the environment through the responsible management of mercury.

TERMS USED IN THIS CHAPTER

Affected Community ■ Artisanal and Small-Scale Mining ■ Consultation ■ Existing Mine ■ Facility ■ Indigenous Peoples ■ Mercury Emission Control System ■ Mercury Waste ■ Mining Project ■ Mine Waste Facility ■ New Mine ■ Operating Company ■ Stakeholder ■ Tailings ■ Waste Rock ■

These terms appear in the text with a dashed underline. For definitions see the Glossary of Terms at the end of the document.

SCOPE OF APPLICATION

RELEVANCE: This chapter applies to any mining project, new or existing, that utilizes an autoclave, roaster, carbon kiln, refining furnace, retort or other thermal process that could lead to significant emissions of mercury.

Mercury Management Requirements

4.8.1. Planning

4.8.1.1. A mining project with a mercury emission control system shall perform a mercury mass balance that assesses and documents the amount of mercury in waste rock and ore, and the amount of mercury during or after processing that is:²⁵⁹

- Released to air and water;
- Produced as by-product; and
- Resident in tailings ponds, waste rock dumps and other mine waste facilities.

²⁵⁹ Values may be estimated if measurements are not available.

4.8.2. Mercury Capture and Disposal



4.8.2.1. Any mine facility that uses a thermal process to treat material containing mercury (e.g., ore, concentrate) shall utilize best available techniques (BAT) and best environmental practices (BEP) to control and minimize the amount of mercury released to the atmosphere unless the operating company can demonstrate that mercury emissions from the mining project are unlikely to pose a significant risk to human health or the environment.²⁶⁰



[flag] 4.8.2.1 Issue in brief: Mercury is a potent neurotoxin that negatively impacts human health and the environment around the world. Mercury is transported globally in the atmosphere and in water, so mercury emitted in one location may affect ecosystems and populations far removed from the source.

While global efforts such as the Minamata Convention aim to reduce emissions of mercury, there are very few national or global standards on what are acceptable mercury emission limits for the mining industry. One national example is the US Environmental Protection Agency's National Emission Standards for Hazardous Air Pollutants (NESHAP), which sets out mercury emission limits for industrial-scale gold mines.

During the Launch Phase, IRMA will not score this requirement, but will strive to collect information and test with companies and stakeholders whether there are effective approaches to responsibly manage mercury in addition to the requirements currently laid out in 4.8.2.1 that should be integrated in the IRMA Standard.

4.8.2.2. Mercury-containing wastes from mercury emission control systems:

- 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 or small-scale mining; and
- c. Shall be sold only for an end use listed in Annex A (Products) or Annex B (Processes) of the Minamata Convention on Mercury or sent to a regulated repository for mercury wastes.²⁶¹

²⁶⁰ "thermal processes" may include: roasting operations and autoclaves that are used to pre-treat gold mine ore; carbon kilns; preg tanks; electrowinning cells; mercury retorts; and melt furnaces. Definitions for these processes can be found at: <https://www.law.cornell.edu/cfr/text/40/63.11651>

If gold mines in the US or elsewhere are meeting the mercury emissions limits set out in the U.S. National Emission Standards for Hazardous Air Pollutants (NESHAP) for Gold Mine Ore Processing and Production (Available at: <https://www.law.cornell.edu/cfr/text/40/63.11645>), then those mines would not be required to also demonstrate use of BAT/BEP.

If non-US gold mines are not meeting NESHAP limits, or if other types of mines such as iron, lead, copper, zinc, silver, tin, nickel, silico- and ferro-manganese, etc. are smelting, roasting or using other thermal processes on ores or concentrates that contain mercury, then those mines could:

Demonstrate that they use the NESHAP levels as their criteria for whether or not they need BAT/BEP, or demonstrate that they use a risk assessment process to establish whether or not they need BAT/BEP. If there are significant risks to human health or the environment, they should be able to demonstrate that BAT/BEP are being used (examples of BAT/BEP found at: http://eippcb.jrc.ec.europa.eu/reference/BREF/NFM/JRC107041_NFM_Bref_2017.pdf and https://www.unep.org/fileadmin/DAM/env/documents/2012/EB/ECE_EB.AIR_116_E.pdf).

During IRMA's Launch Phase IRMA will be collecting information on the risk assessments processes followed. At minimum, it is assumed that risk assessments would include quantitative analyses of mercury in ore/concentrate (as required in 4.8.2.1), a modeling exercise to determine potential emissions of mercury to the atmosphere with and without BAT/BEP, and an analyses of the risks to human health or the environment posed by different options.

²⁶¹ 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

"regulated" refers to the certification and regulation of a storage facility by a governmental authority.

4.8.2.3. As an exception to 4.8.2.2.a, mercury-containing wastes from mercury emission control systems may be stored or disposed of on-site only if:

- a. A risk-based evaluation of the on-site storage or disposal of mercury waste demonstrates that the risk of long-term contamination is low; and
- b. Disposal occurs in fully lined tailings storage facilities using synthetic liners that have a permeability of 10^{-9} cm/sec or less.

4.8.3. Monitoring

4.8.3.1. For each mining project with a source of mercury air emissions a mercury monitoring plan shall be developed in consultation with relevant stakeholders.

4.8.3.2. The mercury monitoring plan shall address:

- a. Potential public health impacts (e.g., mercury levels in food sources and blood);
- 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, which shall be conducted at least annually for direct releases to the atmosphere from an autoclave, roaster, carbon kiln, refining furnace, or other thermal process that has a mercury emission control system.

4.8.3.3. The mercury monitoring plan shall include the monitoring of:

- a. The quantity of mercury released to air including fugitive emissions (to the extent technologically and economically feasible with air monitoring equipment);
- b. The quantity of mercury released to water, including the forms of mercury;
- c. The amount of mercury captured in mercury emission control systems; and
- d. The amount of by-product mercury produced (including the mercury captured in mercury emission control systems); and
- e. Methyl mercury and sulfate, if mines have a mercury emission control system. In such cases, sampling shall be regularly conducted in wetlands and water bodies on or near the mine site.

4.8.4. Reporting

4.8.4.1. 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.

NOTES

This chapter of the IRMA Standard seeks to reduce the costs to public health associated with mercury exposure, and the technical challenges of removing mercury once it is in the environment, by encouraging source control and preventing mercury from getting into the environment in the first place.

The United States Environmental Protection Agency's "National Emission Standards for Hazardous Air Pollutants: Gold Mine Ore Processing and Production Area Source Category" regulations, effective December 16, 2010, are the only existing national mercury emissions standards for mining. The EU regulates mercury emissions from major industrial sources, including from non-ferrous ore processing and smelting operations, through EU Directive 96/61/EC on Integrated Pollution Prevention and Control and EU Directive 2010/75/EU on Industrial Emissions.

These standards aim to reduce mercury pollution by prohibiting metallic mercury export and by-product sales, requiring safe metallic mercury storage, and reducing mercury emissions from non-ferrous metals using Best Available Techniques (BAT) and Best Environmental Practices (BEP).

IRMA recognizes both the paucity of existing regulations and the high cost of monitoring and collecting mercury from mine emission sources, and seeks to begin to develop better air monitoring though targeted approaches that use broad, less expensive testing protocols to determine if more testing is necessary.

Given the significant health risks associated with mercury, and the challenges and costs associated with reducing mercury once it enters environmental pathways, it is important that accurate information is available on all mercury emissions from mines certified by IRMA.

Researchers have documented fugitive mercury air emissions from non-thermal sources at mines, most notably heap leach facilities.²⁶² However, mercury air emission testing for fugitive mercury from non-thermal sources can be expensive. Further research is needed to assess the pervasiveness of these non-thermal sources, as well as to verify the reliability of the thermal-source measurements.²⁶³ 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 <u>host country laws</u> governing mercury transport, storage, use, etc., the <u>operating company</u> is required to abide by those laws. If IRMA requirements are more stringent than <u>host country law</u> , the company is required to also meet the IRMA requirements, as long as complying with them would not require the company to violate <u>host country law</u> .
1.2—Community and Stakeholder Engagement	Requirement 4.8.3.1 shall conform with the <u>stakeholder</u> engagement requirements in Chapter 1.2. In particular, criterion 1.2.3 is important to ensure that <u>stakeholders</u> have the capacity to participate in mercury monitoring. Also, regarding reporting of data in 4.8.4, requirement 1.2.4 requires that communications be in formats and languages that are culturally appropriate, <u>accessible</u> and understandable to <u>affected communities</u> and <u>stakeholders</u> .
1.4—Complaints and Grievance Mechanism and Access to Remedy	<u>Stakeholders</u> who have complaints related to an <u>operating company's</u> use of mercury, can raise complaints through the company's operational-level <u>grievance mechanism</u> . As per Chapter 1.4, the <u>operating company</u> is required to have an operational-level <u>grievance mechanism</u> available to <u>stakeholders</u> , including procedures for filing complaints, and having complaints recorded, investigated and resolved in a timely manner.
2.1—Environmental and Social Impact Assessment and Management	If mercury is identified during ESIA as a key risk to human health or the environment, <u>stakeholders</u> shall be provided with the opportunity to propose independent experts to collaborate with the company on the design and implementation of its mercury 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.
2.5—Emergency Preparedness and Response	The protection of communities and <u>workers</u> during emergencies related to the transport and storage of hazardous substances, such as mercury, should be addressed in Emergency Response Planning if it is present in mercury wastes. Chapter 2.5 mandates emergency response planning for a spill, and requires coordination between the mine and emergency responders in potentially <u>affected communities</u> .

²⁶² See: Joyce, P. and Miller, G. January 2007. Mercury Air Concentrations in Northern Nevada: Monitoring Active Metals Mines as Sources of Mercury Pollution. University of Nevada, Reno, Department of Natural Resource & Environmental Science; and most recently: Miller, M. and Gustin, M. June 2013. "Testing and Modeling the Influence of Reclamation and Control Methods for Reducing Non-Point Mercury Emissions Associated with Industrial Open Pit Gold Mines," *Journal of the Air & Waste Management Association*. 63(6):681-93.

²⁶³ Eckley, C.S., Gustin, M., Miller M.B., Marsik, F. 2011. "Nonpoint Source Hg Emissions from Active Industrial Gold Mines - Influential Variables and Annual Emission Estimates," *Environmental Science and Technology*. 45 (2) 392-399.

CROSS REFERENCES TO OTHER CHAPTERS	
3.2—Occupational Health and Safety	Mercury may present an occupational health and safety (OHS) hazard, and if so, should be included in the OHS risk assessment process.
3.3—Community Health and Safety	Mercury emissions may present health risks to communities, and if there are thermal mercury sources at a mine then risks from mercury exposure should be analyzed during the community health and safety risk and impact assessment process.
3.6—Artisanal and Small-Scale Mining	Requirement 4.8.2.2 mentions a prohibition on selling or giving away mercury to <u>artisanal and small-scale mining (ASM)</u> operations, however, the primary requirements related to interactions between the large-scale mines that apply for IRMA certification and <u>ASM</u> entities are addressed in Chapter 3.6.
4.1—Waste and Materials Management	If mercury wastes are generated and recovered from thermal processes, 4.8.2.3 requires a risk based evaluation before the <u>operating company</u> can store or dispose of those wastes on site (e.g., co-disposed in <u>tailings facilities</u>). This requirement may be met through the risk assessment process in Chapter 4.1, requirement 4.1.4.1. As per 4.1.4.1, if mercury is disposed of onsite the risk assessment should be updated if there is a potential that risks from such disposal may increase (e.g., more mercury waste is being produced than initially estimated). If mercury wastes are stored or disposed of on-site, relevant information should be included in the Operation, Maintenance and Surveillance plan as per 4.1.5.5.a.
4.2—Water Management	Mercury monitoring in water, as required in 4.8.3, may be incorporated into the water management program in Chapter 4.2 (see criteria 4.2.4). As per Chapter 4.2, if mercury is expected to be present in any effluent from the mine then monitoring for mercury would be required and concentrations in surface waters and groundwaters would be expected to meet IRMA <u>Water Quality Criteria</u> for relevant end uses of those waters (see Tables 4.2.a through h).
4.3—Air Quality	If mercury is identified as a potential air contaminant in Chapter 4.3 then Chapter 4.8 applies. Mercury monitoring in air, as required in 4.8.3, may be incorporated into the air quality management plan and monitoring program in Chapter 4.3 (see criteria 4.3.2 and 4.3.3).
4.6—Biodiversity, Ecosystem Services and Protected Areas	If there is the potential that mercury emissions from <u>mining-related activities</u> (e.g., thermal processes, effluent) may pose a threat to <u>biodiversity</u> (e.g., <u>threatened or endangered species</u>), <u>ecosystem services</u> or <u>protected areas</u> , then the potential impacts should be further assessed as per Chapter 4.6 (see 4.6.3).

Glossary of Terms

The IRMA Glossary of Terms is not intended to be a complete set of terms associated with mining best practices. However, in drafting the IRMA Standard it was sometimes necessary to develop or adopt rigorous terminology to ensure consistent interpretation and application of the Standard. These terms were added to this Glossary of Terms.

Adaptive Management

Adaptive Management is a structured, iterative process of robust decision-making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring. It includes the development of management practices based on clearly identified outcomes, and monitoring to determine if management actions are meeting desired outcomes. If outcomes are not being met, the process requires development and implementation of management changes to ensure that outcomes are met or re-evaluated.

Source: Adapted from US Forest Service. 2008. *National Forest System Land Management Planning. Final Rule*. Federal Register. Vol. 73, No. 77, §219.16.

Accessible

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

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Acid Rock Drainage (ARD)

The drainage produced when rocks with sulfide or other acid-producing minerals are under oxidizing conditions (exposed to water and oxygen) and generate an acidic water stream. Acid rock drainage generally contains elevated concentrations of metals, sulfate, and other constituents and has a pH < 6. The terms acid mine drainage and acid and metalliferous drainage (both AMD) are sometimes used as synonyms for ARD.

Additional Conservation Actions

A broad range of activities that are intended to benefit biodiversity, where the effects or outcomes can be difficult to quantify.

Source: Biodiversity A to Z website. <http://www.biodiversitya-z.org/themes/terms>

Adverse Human Rights Impact

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

Actual Human Rights Impact

An adverse impact that has already occurred or is occurring.

Affected Community

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

Source: Adapted from IFC. IFC Policy & Performance Standards and Guidance Notes. Glossary of Terms.

Air Quality Modeling

Mathematical and numerical techniques used to simulate the physical and chemical processes that affect air pollutants as they disperse and react in the atmosphere. These include, for example: Air dispersion models, which are used to predict concentrations of pollutants at selected downwind receptor locations; and Receptor models, which use observational techniques and chemical and physical characteristics of gases and particles measured at source and receptor and to identify the presence of and to quantify source contributions to receptor concentrations.

Source: USEPA website: "Air Quality Models." <https://www3.epa.gov/scram001/aqmindex.htm>

Alternatives Assessment

Generally, a process to identify and objectively and rigorously assess the potential impacts and benefits (including environmental, technical and socio-economic aspects) of different options so that an informed decision can be made. For IRMA purposes, it refers to a process to assess options for locating tailings and other waste facilities, and for selecting the site-specific best available technologies and practices for managing wastes throughout the mine life cycle. Technologies and practices may need to be reassessed during different stages of the life cycle, for example if there is a mine expansion that requires additional waste storage and processing, or a mine life extension.

Sources: Adapted from: Environment Canada, 2016. *Guidelines for the Assessment of Alternatives for Mine Waste Disposal*, Chapter 2; and Mining Association of Canada. 2017. *Guide to the Management of Tailings Facilities*.

Ambient Air Quality

The concentrations of pollutants (e.g., chemicals, particulate matter) in air (for IRMA's purposes, outdoor air).

Area of Influence

The area within which a project may potentially directly and indirectly cause impacts. The area of direct impacts caused by mining-related activities includes the physical mine site footprint, areas adjacent to the project site that are affected by emissions and effluents, power transmission corridors, pipelines, borrow and disposal areas, etc., and the area affected by associated facilities that, although not part of the project that is being assessed, would not have been constructed in the absence of the project. Areas indirectly affected by mining-related activities include the physical footprint of non-project activities in the surrounding area that are caused or stimulated by the project plus the area affected by their emissions and effluents.

Source: Adapted from Gullison et al. 2015. *Good Practices for the Collection of Biodiversity Baseline Data*.

Artisanal and Small-Scale Mining (ASM)

Formal or informal operations with predominantly simplified forms of exploration, extraction, processing and transportation. ASM is normally low capital intensive and uses high labour intensive technology. ASM can include men and women working on an individual basis as well as those working in family groups, in partnership or as members of cooperatives or other types of legal associations and enterprises involving hundreds or thousands of miners. For example, it is common for work groups of 4-10 individuals, sometimes in family units, to share tasks at one single point of mineral extraction (e.g. excavating one tunnel). At the organisational level, groups of 30-300 miners are common, extracting jointly one mineral deposit (e.g. working in different tunnels), and sometimes sharing processing facilities.

Source: OECD. 2016. *OECD Due Diligence Guidance on Responsible Mineral Supply Chains from Conflict Affected and High Risk Areas*.

Associated Facility

Any facility owned or managed by the operating company that would not have been constructed, expanded or acquired but for the exploration or development of the mine (including ore processing facilities, stationary physical property such as power plants, port sites, roads, railroads, borrow areas, fuel production or preparation facilities, parking areas, shops, offices, housing facilities, storage facilities, etc.).

Source: Adapted from IFC. 2012. *Performance Standard 1* and other sources.

Avoidance

See Mitigation Hierarchy

Background Water Quality

Established after mining has commenced, it is the water quality in a similarly mineralized area outside of the mine's influence (e.g., surface water quality upstream of the mine site or upgradient for groundwater).

Baseline

A description of existing conditions to provide a starting point (e.g. pre-project condition) against which comparisons can be made (e.g. post-impact condition), allowing the change to be quantified.

Source: Adapted from the Business and Biodiversity Offsets Programme. 2012. Glossary.

Baseline Air Quality

Ambient air concentrations prior to mining project commencement due to emissions from both natural and human-caused sources.

Source: Adapted from BC Ministry of Environment. 2008. Guidelines for Air Quality Dispersion Modelling in British Columbia.

Baseline Water Quality

The water quality at the site or in the area surrounding a proposed mining project, before mining-related activity has occurred.

Basin/Catchment/Watershed

An area of land that drains all the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or the mouth of a stream or river. The word basin, or “drainage basin” is sometimes used interchangeably with catchment or watershed.

Beneficial Owner

The natural person(s) who ultimately owns or controls a company and/or on whose behalf a company is owned. It includes those persons who exercise ultimate effective control over a legal person or arrangement. Reference to “ultimately owns or controls” and “ultimate effective control” refer to situations in which ownership/control is exercised through a chain of ownership or by means of control other than direct control.

Source: Adapted from FATF Guidance: Transparency and Beneficial Ownership. 2014. Chapter III.

Best Available Techniques (BAT)

Techniques that can most effectively achieve a high level of environmental protection and allow implementation in relevant sectors under economically and technically viable conditions. “Techniques” includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned; “Available” techniques means those techniques that are accessible to the operator and that are developed on a scale that allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages; and “Best” means most effective in achieving a high general level of protection of the environment as a whole.

Source: Adapted from the *Stockholm Convention*. 2009.

Best Available Technology (BAT)

Site-specific combination of technologies and techniques that are economically achievable and that most effectively reduce risks (e.g., physical, geochemical, ecological, social, financial and reputational) to an acceptable level during all stages of operation and closure, and support an environmentally and economically viable mining operation.

Source: Adapted from Mining Association of Canada. 2017. *A Guide to the Management of Tailings Facilities* (3rd Ed).

Best Available/Applicable Practice (BAP)

Encompasses management systems, operational procedures, techniques and methodologies that, through experience and demonstrated application, have proven to reliably manage risk and achieve performance objectives in a technically sound and economically efficient manner. BAP is an operating philosophy that embraces continual improvement and operational excellence, and which is applied consistently throughout the life of a facility, including the post-closure period.

Source: Adapted from Mining Association of Canada. 2017. *A Guide to the Management of Tailings Facilities* (3rd Ed).

Best Environmental Practices

The application of the most appropriate combination of environmental control measures and strategies.

Source: *The Stockholm Convention*. 2009.

Best Practice(s)

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

Source: *Convention on Biological Diversity*. 1992, Article 2.

Biological Exposure Indices (BEI)

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

Source: International Labour Organization (ILO) website. "Chemical exposure limits."

Biosphere Reserves

Biosphere reserves are areas comprising terrestrial, marine and coastal ecosystems. Each reserve promotes solutions reconciling the conservation of biodiversity with its sustainable use. Biosphere reserves are 'Science for Sustainability support sites' – special places for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity. Biosphere reserves are nominated by national governments and remain under the sovereign jurisdiction of the states where they are located. Their status is internationally recognized.

Source: UNESCO.

Broad Community Support (BCS)

A collective expression by the community in support of the mining project. Support may be demonstrated through credible (i.e., transparent, inclusive, informed, democratic) local government processes or other processes/methods agreed to by the community and company. There may be BCS even if some individuals or groups object to the business activity.

Source: Adapted from IFC. 2012. *IFC Sustainability Framework*. p. 7.

Business Relationships

Relationships a business enterprise has with business partners, entities in a value chain, and any other non-State or State entity directly linked to its business operations, products or services. They include indirect business relationships in its value chain, beyond the first tier, and minority as well as majority shareholding positions in joint ventures.

Source: UN Office of the High Commissioner for Human Rights. 2012. *The Corporate Responsibility to Respect Human Rights: An Interpretive Guide*. p. 5.

Certificate Holder

The operating company that applies for IRMA certification and, if the application is successful, is issued with a certificate of compliance for a particular mine site. The certificate holder is responsible for ensuring that all the requirements of certification for the certified mine site are met on an ongoing basis, and for demonstrating this to the satisfaction of its certification body.

Certification Body

Also known as a conformity assessment body, is an entity that performs auditing and conformity assessment services to determine if specified requirements are fulfilled (in this case conformity with the IRMA *Standard for Responsible Mining*).

Source: Adapted from ISO/IEC 17000:2005.

Chance Find

A chance find procedure is a project-specific procedure that outlines the actions to be taken if previously unknown cultural heritage is encountered.

Source: IFC. 2012. *Performance Standard 8*. Footnote 2.

Child Labor

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

Source: International Labour Organization (ILO) website: "What is child labour."

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Source: Adapted from South Africa Dept. of Env. Affairs and Tourism. *Stakeholder Engagement*.

Company Union

A workers' organization that is dominated or controlled by an employer.

Competent Authority

The government department or other authority having power to issue and enforce regulations, orders or other instructions having the force of law in respect of the subject matter of the provision concerned.

Source: International Labour Organization (ILO). *Maritime Labour Convention, 2006*.

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, necessary skills and training to carry out the required work. Competent professionals would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals. Other equivalent terms used may include: competent person, qualified person, qualified professional. For independent reviews (in IRMA Chapter 4.1) competent professionals must not be in-house staff.

Comprehensible Manner

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

Source: International Labour Organization (ILO). Code of Practice. *Ambient Factors in the Workplace*.

Conceptual Flow Model (CFM)

A Conceptual Flow Model (CFM) is a description of sources and flow paths for groundwater flow through an aquifer from points of recharge to points of discharge. It may be a qualitative description with as much quantification as possible based on the descriptions.

Sources: Anderson and Woessner (1992). *Applied Groundwater Modeling: Simulation of Flow and Advective Transport*; Fetter CW (2001). *Applied Hydrogeology*, 4th Ed; and Myers T (2013). "Remediation scenarios for selenium contamination," *Hydrogeology Journal*.

Conceptual Site Model (CSM)

A qualitative description, based on site measurements and observations, of what is known about the release, transport and fate of contaminants at a site. A CSM includes a schematic or diagram and an accompanying narrative description.

Confidential Business Information

Material that contains trade secrets or commercial or financial information that has been claimed as confidential by its source. The information must be secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question; it must have commercial value because it is secret; and it must have been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.

Sources: US EPA Terms and Acronyms Search, and World Intellectual Property Organization: “What is the international legal framework of trade secret protection?”

Conflict Analysis

The systematic study of the profile, issues and stakeholders that shape an existing or potential conflict, as well as factors in the interaction between the three. It helps companies gain a better understanding of the environment in which they operate and their role in that context.

Source: Adapted from International Alert. 2005. *Conflict-sensitive Business Practice: Guidance for extractive industries*.

Conflict-Affected and High-Risk Areas

Areas identified by the presence of armed conflict, widespread violence, including violence generated by criminal networks, or other risks of serious and widespread harm to people. Armed conflict may take a variety of forms, such as a conflict of international or non-international character, which may involve two or more states, or may consist of wars of liberation, or insurgencies, civil wars. High-risk areas are those where there is a high risk of conflict or of widespread or serious abuses as defined in paragraph 1 of Annex II of the Guidance (link below). Such areas are often characterized by political instability or repression, institutional weakness, insecurity, collapse of civil infrastructure, widespread violence and violations of national or international law.

Source: OECD. 2016. *Due Diligence Guidance on Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*.

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.

Conservation Outcome

A conservation outcome is the result of a conservation intervention aimed at addressing direct threats to biodiversity or their underlying socio-political, cultural, and/or economic causes. Conservation outcomes are typically in the form of: (a) extinctions avoided (i.e. outcomes that lead to improvements in a species’ national or global threat status); (b) sites protected (i.e. outcomes that lead to designation of a site as a formal or informal protection area, or to improvement in the management effectiveness of an existing protected area); and (c) corridors created (i.e. outcomes that lead to the creation of interconnected networks of sites at the landscape scale, capable of maintaining intact biotic assemblages and natural processes, and, thereby, enhancing the long-term viability of natural ecosystems). Conservation outcomes would also include any other intervention that leads to conservation gains.

Source: Business and Biodiversity Offsets Programme. 2012. Glossary.

Conservation Values

The ecological, biological, geomorphological, geological, cultural, spiritual, scenic or amenity values, features, processes or attributes that are being conserved.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle the company should take into account the concerns and views expressed by stakeholders in the final decision.

Source: Adapted from South Africa Department of Environmental Affairs and Tourism. *Stakeholder Engagement*.

Contracted Workers

Workers engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work or providing services directly related to core business processes of the mining project for a substantial duration (i.e., employment other than on a casual or intermittent basis) who are geographically working at the project location. These workers may be engaged at any point during the mine life cycle (including prior to or during construction phase).

Source: IFC. 2012. *Performance Standard 2*. Guidance Notes.

Contractor

An individual, company, or other legal entity that carries out duties related to a mining project that are subject to a contractual agreement that defines, for example, work, duties or services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. This includes sub-contractors.

Control

An act, object (engineered) or system (combination of act and object) intended to prevent or mitigate an unwanted event.

Source: ICMM. 2015. *Health and Safety Critical Control Management: Good Practice Guide*.

Corporate Owner(s)

The corporation(s) or other business institution(s) including any private or state-run enterprises that have complete or partial financial interest in or ownership of a mining project.

Critical Cultural Heritage

Consists of: (i) the internationally recognized heritage of communities who use, or have used within living memory the cultural heritage for long-standing cultural purposes, (ii) legally protected cultural heritage areas, including those proposed by host governments for such designation; or (iii) natural areas with cultural and/or spiritual value such as sacred groves, sacred bodies of water and waterways, sacred trees, and sacred rocks.

Source: Adapted from IFC. 2012. *Performance Standard 7*. Para. 16; and *Performance Standard 8*, Para. 13.

Critical Habitat

Areas with high biodiversity value, including but not necessarily limited to: (i) habitat of significant importance to critically endangered, endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes. Other recognized high biodiversity values might also support a critical habitat designation, based on case-by-case evaluation.

Source: Adapted from IFC. 2012. *Performance Standard 6*, Para. 13 and GN55, GN56, 57.

Critical Control

An action, object (engineered) or system (combination of action and object) put in place to prevent or reduce the likelihood of an unwanted event, or to minimize or mitigate the negative consequences if an unwanted event occurs, in particular for high-consequence risks.

Sources: Adapted from ICMM. 2015. *Health and Safety Critical Control Management: Good Practice Guide*, and Mining Association of Canada. 2017. *A Guide to the Management of Tailings Facilities (3rd Ed)*.

Cumulative Impacts

Additive, synergistic, interactive or nonlinear outcomes of multiple development or disturbance events that aggregate over time and space.” Examples of cumulative impacts (or effects) may include: reduction of water flows in a watershed due to multiple withdrawals; increases in sediment loads to a watershed over time; interference with migratory routes or wildlife movement; or more traffic congestion and accidents due to increases in vehicular traffic on community roadways.

Source: Adapted from International Association for Impact Assessment. 2005. *Biodiversity Impact Assessment*. Special Publication Series No. 3, with examples from IFC. 2012. *Performance Standard 1*, page 4, footnote 16.

Cumulative Impacts (on biodiversity)

Cumulative impacts refer to the incremental impacts of the mining project on biodiversity values, when also considering other current and reasonably foreseeable future stressors affecting a biodiversity value in the landscape. Cumulative impacts can be similar in type (e.g., emissions to air from multiple projects) or distinct (e.g., the cumulative effect of habitat loss, habitat fragmentation, and vehicular mortality on wildlife).

Source: Adapted from Gullison et al. 2015. *Good Practices for the Collection of Biodiversity Baseline Data*.

Dewatering (of mines)

The extraction of water to lower the water table to a level lower than the deepest point of the mine, thereby keeping the mine dry.

Direct/Indirect Impacts

Direct impacts are those caused by activities that are undertaken, and facilities that are owned and managed by the mining company. Indirect impacts are those that are caused or stimulated by the mining project’s presence (e.g., impacts related to the influx of workers or others seeking economic opportunities due to the mine development).

Source: Adapted from Gullison et al. 2015. *Good Practices for the Collection of Biodiversity Baseline Data*.

Displacement

A process by which projects cause people to lose land or other assets, or access to resources. This may result in physical dislocation, loss of income, or other adverse impacts.

Source: World Bank website: “What is Involuntary Resettlement?”

Ecological Processes

Biophysical processes (e.g., hydrologic regimes, local climatic regimes, soil chemistry/nutrient cycling, fires, floods and other natural disturbance regimes, herbivory, predation, ecological corridors, migration routes) necessary for the habitat to persist in a landscape or seascape for the long term.

Source: Adapted from IFC. 2012. *Performance Standard 6*. Guidance Note.

Economic Displacement

The loss of assets or access to assets that leads to a loss of income sources or other means of livelihood (i.e., the full range of means that individuals, families, and communities utilize to make a living, such as wage-based income, agriculture, fishing, foraging, other natural resource-based livelihoods, petty trade, and bartering). Economic displacement results from an action that interrupts or eliminates people’s access to jobs or productive assets, whether or not the affected persons must move to another location.

Source: Adapted from IFC. 2012. *Performance Standard 5*.

Ecosystem

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

Source: Convention on Biological Diversity 1992, Art. 2.

Ecosystem Services

The benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fibre; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling.

Source: Business and Biodiversity Offsets Programme. 2012. Glossary.

Endangered Species

A species that is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future, as defined by IUCN.

Source: Adapted from IUCN Red List.

Enhancement (of biodiversity values)

The improvement of the ability of a degraded ecosystem to support biodiversity, through conservation measures such as alteration to the soils, vegetation and / or hydrology. The term is sometimes used for a type of restoration that enhances the biodiversity present but is not couched in terms of restoring the ecosystem to some prior state.

Source: Business and Biodiversity Offsets Programme. 2012. Glossary.

Equitable

In reference to grievance mechanism, means seeking to ensure that aggrieved parties have reasonable access to sources of information, advice and expertise necessary to engage in a grievance process on fair, informed and respectful terms.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Existing Mine

A mine that was operational prior to the date that the IRMA Certification System becomes operational (estimated late 2019).

Exploration Activity

Any landscape disturbance by a mining company to ascertain whether a deposit is economically viable, including drilling, trenching and road construction.

Facility

The term facility is widely utilized in this Standard, and for the most part is associated with a specific type of facility that is that is self-described (e.g., stormwater facilities, waste rock facilities, tailings facility, etc.). However, in a number of instances the term facility is used more generically. For example, “mine facilities” include any facilities owned by the operating company that are located on the mine-lease property.

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. *Basic Principles and Guidelines on Development-Based Evictions and Displacement*.

Forced Labor

Any work or service not voluntarily performed that is exacted or coerced from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements required to pay off a debt; or slavery or slavery-like practices. It also includes requirements of excessive monetary deposits, excessive limitations on freedom of movement, excessive notice periods, substantial or inappropriate fines, and loss or delay of wages that prevent workers from voluntarily ending employment within their legal rights.

Source: Adapted from IFC. 2012. *Performance Standard 2*. Guidance Note 2, GN67.

Free, Prior and Informed Consent (FPIC)

Consent based on: engagement that is free from external manipulation, coercion and intimidation; notification, sufficiently in advance of commencement of any activities, that consent will be sought; full disclosure of information regarding all aspects of a proposed project or activity in a manner that is accessible and understandable to the people whose consent is being sought; acknowledgment that the people whose consent is being sought can approve or reject a project or activity, and that the entities seeking consent will abide by the decision.

Free, Prior and Informed Consent (FPIC) Scoping

Identification of the indigenous peoples that need to be involved in an FPIC process, and an evaluation of the information and capacity needs that must be addressed in order for indigenous peoples to make a free, prior and informed consent decision.

Grievance

A perceived injustice evoking an individual's or a group's sense of entitlement, which may be based on law, contract, explicit or implicit promises, customary practice, or general notions of fairness of aggrieved communities.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Grievance Mechanism

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

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Ground Vibration

The level of vibration (peak particle velocity) measured in mm/second in the ground. The measurement point should be at least the longest dimension of the foundations of a building or structure away from the building or structure, if possible. If this is not possible, the measurement point should be as far from the building or structure as is practical.

Source: Adapted from Victoria (Australia) State Government. *Ground Vibration and Airblast Limits for Blasting in Mines and Quarries*.

Habitat

A terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the non-living environment. The place or type of site where an organism or population naturally occurs.

Sources: IFC. 2012. *Performance Standard 6; Convention on Biological Diversity*, Article 2.

Hazard (in relation to the workplace):

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

Source: Canadian Centre for OHS website: "Hazard and Risk."

Hazardous Work (in relation to child labor)

Work that, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children.

Source: ILO. 1999. *Convention Concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour*. No. 182. Article 3 (d).

Health Surveillance

Procedures and investigations to assess workers' health in order to detect and identify an abnormality. The results of surveillance should be used to protect and promote health of the individual, collective health at the workplace, and the health of exposed working population. Health assessment procedures may include, but are not limited to, medical examinations, biological monitoring, radiological examinations, questionnaires or a review of health records.

Source: ILO. 1997. *Technical and Ethical Guidelines for Workers Health Surveillance*. OSH No. 72.

Heap Leach/Heap Leaching

An industrial mining process to extract precious metals, copper and other compounds from ore. Typically, mined ore is crushed and heaped on an impermeable leach pad, and chemicals (reagents) are applied that percolate through the ore and absorb specific minerals and metals. The solution is collected and target metals are recovered from the solution.

Holding Costs

The costs that would be incurred by a regulatory agency immediately after bankruptcy of a company responsible for maintaining a mine site, and before reclamation begins. Examples of such costs include continuing water treatment, routine maintenance, and the other operating costs involved with holding a piece of severely disturbed land.

Host Communities

With respect to resettlement, any communities receiving displaced persons.

Source: IFC. 2012. *Performance Standard 5*.

Host Country Law

May also be referred to as national law, if such a phrase is used in reference to the laws of the country in which the mining project is located. Host country law includes all applicable requirements, including but not limited to laws, rules regulations, and permit requirements, from any governmental or regulatory entity, including but not limited to applicable requirements at the federal/national, state, provincial, county or town/municipal levels, or their equivalents in the country where the mine is located. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Human Rights Defenders

Any person or group of persons working to promote human rights and contributing to the effective elimination of all violations of human rights and fundamental freedoms of peoples and individuals. Defenders can be of any gender, of varying ages, from any part of the world and from all sorts of professional or other backgrounds, i.e.,

not only found within NGOs and intergovernmental organizations but might also, in some instances, be government officials, civil servants or members of the private sector and individuals working within their local communities.

Source: Adapted from UN Office of the High Commissioner for Human Rights website: “Who is a defender.”

Human Rights Risks

Human rights risks are understood to be the business enterprise’s potential adverse human rights impacts. (May also be referred to as potential human rights impacts).

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*. Commentary on Principle 17.

Hyporheic Zone

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

Important Biodiversity Values

The particular biodiversity elements or features, such as individual species, assemblages of species, particular ecological processes, etc., that trigger an area’s designation as having significant biodiversity value (e.g., designation as critical habitat, a Key Biodiversity Area, a Protected Area), as well as the ecological context needed to support the maintenance of the trigger elements.

Source: Adapted from IUCN.

In Kind Payments

Payments made to a government (e.g. royalty) in the form of the actual commodity (oil, gas, or minerals) instead of cash.

Source: Extractives Industries Transparency Initiative (EITI) Glossary.

Inclusive

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

Source: Adapted from IFC. 2012. *Performance Standard 1*.

Independent Review (related to mine waste management)

Independent evaluation of all aspects of the design, construction, operation, maintenance of a tailings or other mine waste facility by competent, objective, third-party review on behalf of the operating company/mine owner.

Source: Adapted from Mining Association of Canada. 2017. *A Guide to the Management of Tailings Facilities*.

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.

Source: Adapted from South Africa Dept. of Env. Affairs and Tourism. *Stakeholder Engagement*.

Intangible Cultural Heritage

Knowledge, innovations and/or practices, including oral expressions of folklore, performing arts, rituals, festivals, that are inherited from past generations, maintained in the present and bestowed for the benefit of future generations.

International Accounting Standards

Several accounting standards are commonly recognized as an international accounting standard; for example, the International Financial Reporting Standards (IFRS), which are set by the International Accounting Standards Board (IASB).

Source: *Extractives Industries Transparency Initiative (EITI) Standard*. 2013.

Involuntary Resettlement

Physical displacement (relocation or loss of shelter) and to economic displacement (loss of assets or access to assets that leads to loss of income sources or other means of livelihood) as a result of project-related land acquisition and/or restrictions on land use. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in physical or economic displacement. This occurs in cases of (i) lawful expropriation or temporary or permanent restrictions on land use and (ii) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller fail.

Source: IFC. 2012. *Performance Standard 5*.

Key Biodiversity Areas (KBA)

Sites that contribute to the global persistence of biodiversity, including vital habitat for threatened or geographically restricted plant and animal species in terrestrial, freshwater and marine ecosystems.

Source: IUCN.

Landscape

A geographical mosaic composed of interacting ecosystems resulting from the influence of geological, topographical, soil, climatic, biotic and human interactions in a given area.

Source: IUCN.

Legitimate

In reference to grievance mechanism, means enabling trust from the stakeholder groups for whose use they are intended, and being accountable for the fair conduct of grievance processes.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Leverage

Leverage is an advantage that gives power to influence. In the context of Chapter 1.3, it refers to the ability to effect change in the wrongful practices of the party that is causing or contributing to an adverse human rights impact.

Source: UN Office of the High Commissioner for Human Rights. 2012. *The Corporate Responsibility to Respect Human Rights: An Interpretive Guide*.

Lin Peak/Linear Peak

The maximum level of air pressure fluctuation measured in decibels without frequency weighting.

Livelihood

The full range of means that individuals, families, and communities utilize to make a living, such as wage-based income, agriculture, fishing, foraging, other natural resource-based livelihoods, petty trade, and bartering.

Source: IFC. 2012. *Performance Standard 5*.

Livelihood Restoration Plan

A plan that establishes the entitlements (e.g., compensation, other assistance) of affected persons and/or communities who are economically displaced, in order to provide them with adequate opportunity to reestablish their livelihoods.

Living Wage

Remuneration received for a standard work week by a worker in a particular place sufficient to afford a decent Standard of living for the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, health care, transport, clothing, and other essential needs including provision for unexpected events.

Source: Social Accountability International. 2014. *SA8000 Standard*.

Long-Term Water Treatment

Long-term water treatment is defined as any water treatment that requires active water treatment after mine closure. After mine closure long-term water treatment is assumed to be required until it can be empirically demonstrated that water treatment is no longer needed.

Material Payments

If not defined in a mandatory transparency regime or through an EITI country-specific multi-stakeholder process, material payments are those that exceed US\$100,000 (or its equivalent in other currencies). Payments may occur as a single installment or be the aggregate of a series of related payments that are made in the same fiscal/financial year. Material payments may be monetary or in kind.

Mercury Emission Control System

Any system that will limit mercury emissions (either designed specifically for mercury, or mercury capture is a co-benefit), including sorbent technologies that can remove mercury from the gas stream during processing, or oxidation technologies that will increase the percentage of particulate-bound mercury removed by particulate scrubbers.

Mercury Waste

Wastes consisting of, containing, or contaminated with mercury (i.e., elemental mercury (Hg(0)) or mercury compounds.

Source: *Basel Convention*. Technical Guidelines.

Metals Leaching

The release of metals by contact with solvents. Leaching may be natural or induced (e.g., related to mining operations). Mining commonly accelerates metal leaching. Metals leaching can also be referred to as “contaminant” leaching.

Mine Closure

A period of time when ore-extracting and processing activities of a mine have ceased, and final decommissioning and mine reclamation are occurring. It typically includes pre-closure (detailed closure design and planning), closure (actual activities of closure of mine workings and construction/decommissioning) and post-closure (mainly long-term reclamation, monitoring, and treatment) periods, each with its own specific activities.

Mine Waste Facility

Facilities that contain, store, are constructed of, or come in contact with wastes that are generated or created during mining (e.g., waste rock, pit walls, pit floors or underground workings, runoff or discharge from exposed mined areas) and mineral processing (e.g., tailings, spent ore, effluent). These facilities include, but are not limited to open pits, underground mine workings and subsidence areas, waste rock facilities, tailings storage facilities, heap leach facilities, process water facilities, stormwater facilities, borrow areas for construction and/or reclamation, water treatment facilities, and water supply dams/impoundments.

Mining Impacted Waters (MIW)

Any water whose chemical composition has been affected by mining or mineral processing. Also referred to as mining influenced waters or mine impacted waters. Includes acid rock drainage (ARD), acid mine drainage or acid and metalliferous drainage (AMD), neutral mine drainage, saline drainage, and metallurgical process waters of potential concern. A key characteristic of most mining impacted waters (also known as mining influenced waters) is that they contain elevated metals that have leached from surrounding solids (e.g., waste rock, tailings, mine surfaces, or mineral surfaces in their pathways). This fact is commonly acknowledged by the phrase “metals leaching” (ML), frequently resulting in acronyms such as ARD/ML.

Mining Project

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

Mining-Related Activities

Physical activities (e.g., land disturbance and clearing, road building, sampling, airborne surveys, facility construction, ore removal, ore processing, waste management, reclamation, etc.) carried out during any phase of the mine life cycle (planning, impact assessment, exploration, mine construction, mining, mine closure, post-closure).

Mitigation (including in relation to Human Rights Impacts)

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

Source: Adapted from UN Office of the High Commissioner for Human Rights. 2012. *The Corporate Responsibility to Respect Human Rights: An Interpretive Guide*.

Mitigation Hierarchy

The mitigation hierarchy is a set of prioritized steps to alleviate environmental (or social) harm as far as possible through avoidance, minimization and restoration of adverse impacts. Compensation/offsetting are only considered to address residual impacts after appropriate avoidance, minimization and restoration measures have been applied. The biodiversity mitigation hierarchy is as follows (but the steps can be applied for any environmental or social impacts):

- i. Avoidance:* measures taken to avoid creating impacts from the outset, such as careful spatial or temporal placement of elements of infrastructure, in order to completely avoid impacts on certain components of biodiversity. This results in a change to a ‘business as usual’ approach.
- ii. Minimization:* Measures taken to reduce the duration, intensity and/or extent of impacts that cannot be completely avoided, as far as is practically feasible.
- iii. Restoration:* measures taken to assist the recovery of ecosystems that have been degraded, damaged or destroyed. Involves altering an area in such a way as to re-establish an ecosystem’s composition, structure and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original.
- iv. Offset:* Measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse impacts on biodiversity arising from project development after appropriate prevention and mitigation actions have been taken. The goal of biodiversity offsets is no net loss or a net gain of biodiversity on

the ground with respect to species composition, habitat structure, ecosystem function and people's use and cultural values associated with biodiversity.

Mixing Zone

A volume of surface water or groundwater containing the point or area of discharge and within which an opportunity for the mixture of wastes with receiving surface waters or groundwaters has been afforded, and where water quality is allowed to exceed otherwise specified standards.

Source: Adapted from US Environmental Protection Agency.

Modified Habitat

Areas that may contain a large proportion of plant and/or animal species of non-native origin, and/or where human activity has substantially modified an area's primary ecological functions and species composition. (This excludes habitat that has been converted in anticipation of the project.) Modified habitats may include areas managed for agriculture, forest plantations, reclaimed coastal zones, and reclaimed wetlands.

Source: IFC. 2012. *Performance Standard 6*.

Natural Habitat

Areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition.

Source: IFC. 2012. *Performance Standard 6*.

Natural Seep/Spring

A natural seep is a moist or wet place where water reaches the earth's surface from an underground aquifer. Seeps are usually not of sufficient volume to be flowing much beyond their above-ground location.

A natural spring is a discharge of water formed when the side of a hill, a valley bottom or other excavation intersects a flowing body of groundwater at or below the local water table, below which the subsurface material is saturated with water. A natural spring is differentiated from a seep in that water flows at a greater rate from an aquifer to the earth's surface.

Source: Adapted from USGS and others.

New Mine

A mine that becomes operational and applies for IRMA certification after the date that the IRMA Certification System becomes operational (estimated late 2019).

No Net Loss and Net Gain (of biodiversity)

Targets for development projects in which the impacts on biodiversity caused by the project are balanced or outweighed by measures taken to first avoid and minimize the impacts, then to undertake on-site rehabilitation and/or restoration, and finally to offset the residual impacts (if appropriate). No net loss, in essence, refers to the point where biodiversity gains from targeted conservation activities match the losses of biodiversity due to the impacts of a specific development project, so that there is no net reduction overall in the type, amount and condition (or quality) of biodiversity over space and time. A net gain (sometimes referred to as Net Positive Impact) means that biodiversity gains exceed a specific set of losses.

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.

Source: 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: ILO and others.

Offset

Measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse impacts on biodiversity arising from project development after appropriate prevention and mitigation actions have been taken. The goal of biodiversity offsets is no net loss or a net gain of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function and people's use and cultural values associated with biodiversity. (See also Mitigation Hierarchy)

Operating Company

An operating entity, effectively in control of managing a mine site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Operational-Level Grievance Mechanism

An operational- or project-level grievance mechanism is a formalized means through which individuals or groups can raise concerns about the impact an enterprise has on them—including, but not exclusively, on their human rights—and can seek remedy.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Peak Particle Velocity

The instantaneous sum of the velocity vectors (measured in millimetres per second) of the ground movement caused by the passage of vibration from blasting.

Pit Lake

Lake formed in a mine pit when mine dewatering pumpage ceases.

Point of Compliance

For IRMA purposes, is the physical location where water quality must meet IRMA use-based standards (See IRMA Water Quality By End-Use Tables 4.2.a – 4.2.h). The location will vary based on the following scenarios:

Surface water compliance points: are located where point source discharges enter surface waters. Points of compliance for non-point-source discharges are located downstream of but as close as practicable to known mine-related nonpoint sources.

Groundwater compliance points: are located outside the groundwater capture zone (which extends from the land surface to the depth at which groundwater is not affected by mining activities) or area of hydrologic control for mine facilities or sources but as close as practicable to those sources.

Stormwater compliance locations: are in industrial stormwater collection impoundments when water is present.

If a mixing zone is used: the point of compliance is at the downstream or downgradient edge of the mixing zone. The edge of the mixing zone is where the diluted plume meets background water quality. In no case shall mine-related contaminants extend beyond the mine boundary, unless a mixing zone authorized by a regulatory agency extends beyond the boundary.

If a mine is providing water to another entity for a designated use: the water must meet IRMA use-based standards, or legal documentation must be received from the entity verifying that they will be responsible for treating water to meet use-based standards.

Post-Closure

The period after the reclamation surety holder declares the activities required by the reclamation and closure plan are complete; any significant objections raised during the public comment period on the final release of the

financial surety have been resolved; and the reclamation surety has been returned to the operator, or it has been converted to a post-closure trust fund or equivalent (i.e., if there is a need to fund long-term management and monitoring of the site). This phase continues until final sign-off and relinquishment can be obtained from the regulator and stakeholders.

Potential Human Rights Impact

An adverse impact on human rights that may occur but has not yet done so. (May also be referred to as human rights risk).

Source: Adapted from UN Office of the High Commissioner for Human Rights. 2012. *The Corporate Responsibility to Respect Human Rights: An Interpretive Guide*.

Practicable

Practicable means giving equal weight to environmental, social, and economic benefits and costs. This is not a technical definition. It is the discussion between the affected parties on the balance between these interrelated costs and benefits that is important.

Predictable

In reference to grievance mechanism, means providing a clear and known procedure with an indicative time frame for each stage, and clarity on the types of process and outcome available and means of monitoring implementation.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Priority Ecosystem Services

Ecosystem services are considered priority under the following circumstances: (i) Project operations are likely to result in a significant impact on the ecosystem service; the impact will result in a direct adverse impact on affected communities' livelihood, health, safety and/or cultural heritage; and the project has direct management control or significant influence over the service; or (ii) The project directly depends on the service for its primary operations; and the project has direct management control or significant influence over the service.

Source: IFC. 2012. *Performance Standard 6*.

Process Water

Water that is used to process ore using hydrometallurgical extraction techniques. It commonly contains process chemicals.

Source: Lottermoser, B. 2010. *Mine Wastes: Characterization, Treatment and Environmental Impacts*.

Protected Area / Protected Area Management Categories (IUCN)

A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. The definition is expanded by six "protected area management categories" (one with a sub-division), summarized below.

Ia *Strict nature reserve*: Strictly protected for biodiversity and also possibly geological/ geomorphological features, where human visitation, use and impacts are controlled and limited to ensure protection of the conservation values

Ib *Wilderness area*: Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition

II *National park*: Large natural or near-natural areas protecting large-scale ecological processes with characteristic species and ecosystems, which also have environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities

III Natural monument or feature: Areas set aside to protect a specific natural monument, which can be a landform, sea mount, marine cavern, geological feature such as a cave, or a living feature such as an ancient grove

IV Habitat/species management area: Areas to protect particular species or habitats, where management reflects this priority. Many will need regular, active interventions to meet the needs of particular species or habitats, but this is not a requirement of the category

V Protected landscape or seascape: Where the interaction of people and nature over time has produced a distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values

Protected areas with sustainable use of natural resources: Areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims

Source: Dudley. 2008. *Guidelines for Applying Protected Area Management Categories*. IUCN.

Remediation/Remedy (including in relation to Human Rights Impacts)

Remediation and remedy refer to both the processes of providing remedy for an adverse (human rights) impact and the substantive outcomes that can counteract, or make good, the adverse impact. These outcomes may take a range of forms, such as apologies, restitution, rehabilitation, financial or non-financial compensation, and punitive sanctions (whether criminal or administrative, such as fines), as well as the prevention of further harm through, for example, injunctions or guarantees of non-repetition.

Source: UN Office of the High Commissioner for Human Rights. 2012. *The Corporate Responsibility to Respect Human Rights: An Interpretive Guide*.

Replacement Cost

The market value of the assets plus transaction costs. In applying this method of valuation, depreciation of structures and assets should not be taken into account. Market value is defined as the value required to allow affected communities and persons to replace lost assets with assets of similar value.

Source: IFC. 2012. *Performance Standard 2*.

Replicable Cultural Heritage

Tangible forms of cultural heritage that can themselves be moved to another location or that can be replaced by a similar structure or natural features to which the cultural values can be transferred by appropriate measures. Archeological or historical sites may be considered replicable where the particular eras and cultural values they represent are well represented by other sites and/or structures.

Source: IFC. 2012. *Performance Standard 8*. Guidance Note.

Resettlement

Voluntary Resettlement: voluntary land transactions (i.e., market transactions in which the seller is not obliged to sell and the buyer cannot resort to expropriation or other compulsory procedures sanctioned by the legal system of the host country if negotiations fail) that lead to the relocation of willing sellers.

Involuntary Resettlement: physical displacement (relocation or loss of shelter) and to economic displacement (loss of assets or access to assets that leads to loss of income sources or other means of livelihood) as a result of project-related land acquisition and/or restrictions on land use. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in physical or economic displacement. This occurs in cases of (i) lawful expropriation or temporary or permanent restrictions on land use and (ii) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller fail.

Source: IFC. 2012. *Performance Standard 5*.

Resettlement Action Plan

A plan designed to mitigate the negative impacts of displacement; identify development opportunities; develop a resettlement budget and schedule; and establish the entitlements of all categories of affected persons (including host communities). Such a plan is required when resettlement involves physical displacement of persons.

Source: Adapted from IFC. 2012. *Performance Standard 5*, paragraph 19.

Residual Impacts

Project-related impacts that remain after on-site mitigation measures (avoidance, minimization, restoration) have been applied.

Restoration

Measures taken to assist the recovery of ecosystems that have been degraded, damaged or destroyed. Involves altering an area in such a way as to re-establish an ecosystem's composition, structure and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original.

Retrenchment

The elimination of a number of work positions or the dismissal or layoff of a number of workers by an employer, generally by reason of plant closing or for cost savings. Retrenchment does not cover isolated cases of termination of employment for cause or voluntary departure. Retrenchment is often a consequence of adverse economic circumstances or as a result of a reorganization or restructuring.

Source: IFC. 2012. *Performance Standard 2*, Guidance Note GN 48.

Revegetation

Revegetation is the task of reseeding or replanting forbs, grasses, legumes and other plants (sometimes including shrubs and trees) so as to provide cover to decrease erosion, provide for soil stability and provide forage for wildlife or livestock or to otherwise return the site to a useable state.

Rights Holder

Rights holders are individuals or social groups that have particular entitlements in relation to specific duty bearers (e.g., State or non-state actors that have a particular obligation or responsibility to respect, promote and realize human rights and abstain from human rights violations). In general terms, all human beings are rights-holders under the Universal Declaration of Human Rights. In particular contexts, there are often specific social groups whose human rights are not fully realized, respected or protected.

Source: Adapted from UNICEF. *Gender Equality, UN Coherence & You*. Glossary.

Rights-Compatible

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

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Risk Control

An action, object (engineered) or system (combination of action and object) put in place to prevent or reduce the likelihood of an unwanted event, or to minimize or mitigate the negative consequences if an unwanted event occurs.

Source: See Critical Control definition.

Salient Human Rights

Those human rights that are at risk of the most severe negative impacts through a company's activities or business relationships. They therefore vary from company to company.

Source: UN Guiding Principles Reporting Framework website. Glossary.

Secondary Containment

Requires that areas be designed with appropriate containment and/or diversionary structures to prevent a discharge in quantities that may be harmful.

Serious Human Rights Abuses

i) any forms of torture, cruel, inhuman and degrading treatment; ii) any forms of forced or compulsory labour, which means work or service which is exacted from any person under the menace of penalty and for which said person has not offered himself voluntarily; iii) the worst forms of child labour (as per ILO Convention 182); iv) other gross human rights violations and abuses such as widespread sexual violence; v) war crimes or other serious violations of international humanitarian law, crimes against humanity or genocide.

Source: OECD. 2016. *Due Diligence Guidance on Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*.

Shall

Indicates a requirement of the standard.

Shall Not

Indicates a prohibition.

Should/Should Not

Indicates a recommendation.

Source: ISO Guide 2, General Vocabulary section 7.1; and ISO/IEC Directives Part 2, Fifth edition. 2004.

Significant Changes to Mining-Related Activities

Changes in scale or scope (e.g., production increases, new or expanded activities or facilities, alterations in waste management activities, closure, etc.) that may create significant environmental, social and/or human rights impacts, or significantly change the nature or degree of an existing impact.

Source of Continuous Learning

In reference to grievance mechanism, means drawing on relevant measures to identify lessons for improving the mechanism and preventing future grievances and harms.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Stakeholders

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

Source: Adapted from IFC. 2007. *Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets*.

Stormwater

Industrial stormwater (also known as contact water) is runoff of rainfall, snow or snowmelt that has contacted mined materials (e.g., waste rock, tailings, mine openings, mine processing facilities and associated mining roads). Non-industrial stormwater (also known as non-contact water) is runoff of rainfall, snow or snowmelt from land and impervious surface areas such as non-mining related roads that do not contain mined materials.

Subsidence

Subsidence is a sinking of the ground surface that results in a fracture of the surface which could change surface water hydrology, or pose a threat to human health or property.

Suppliers

Those who provide goods, services or materials to the project.

Tailings

The waste stream resulting from milling and mineral concentration processes that are applied to ground ore (i.e., washing, concentration, and/or treatment). Tailings are typically sand to clay-sized materials that are considered too low in mineral values to be treated further. They are usually discharged in slurry form to a final storage area commonly referred to as a tailings storage facility (TSF) or tailings management facility (TMF).

Source: Global Acid Rock Drainage Guide and others.

Tangible Cultural Heritage

A unique and often non-renewable resource that possesses cultural, scientific, spiritual, or religious value, and are considered worthy of preservation for the future. Includes moveable or immovable objects, sites, structures, groups of structures, natural features, or landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural value.

Tentative List for World Heritage Site Inscription

The list of sites that relevant State Parties are formally considering for nomination as a World Heritage Site in the next five to ten years.

Threatened (and Endangered) Species

Species that meet the IUCN (2001) criteria for Vulnerable (VU), Endangered (EN) or Critically Endangered (CR), and are facing a high, very high or extremely high risk of extinction in the wild. These categories may be re-interpreted for IRMA purposes according to official national classifications (which have legal significance) and to local conditions and population densities (which should affect decisions about appropriate conservation measures).

Source: Adapted from IUCN. 2001. *IUCN Red List Categories and Criteria: Version 3.1*.

Traditional Knowledge

A cumulative body of knowledge, innovations practices and representations maintained and developed by peoples with extended histories of interaction with the natural environment.

Trafficking in Persons

The recruitment, transportation, transfer, harboring or receipt of a person by means of the threat or use of force or other means of coercion, or by abduction, fraud, deception, abuse of power or of a position of vulnerability, or by the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation includes, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs. Women and children are particularly vulnerable to trafficking practices.

Source: *UN Convention against Transnational Organized Crime and the Protocols*. Article 3(a).

Transparent

In reference to grievance mechanism, means keeping parties to a grievance informed about its progress, and providing sufficient information about the mechanism's performance to build confidence in its effectiveness and meet any public interest at stake.

Source: Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*.

Trigger Level

A concentration between baseline or background values and IRMA water quality criteria or other applicable compliance limits that can warn of mine-related effects to water quality and trigger adaptive management or corrective actions to improve water quality.

Voluntary Resettlement

Voluntary land transactions (i.e., market transactions in which the seller is not obliged to sell and the buyer cannot resort to expropriation or other compulsory procedures sanctioned by the legal system of the host country if negotiations fail) that lead to the relocation of willing sellers.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, or that has some specific characteristics that make it more susceptible to health impacts or lack of economic opportunities due to social biases or cultural norms (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, at-risk children and youth, ex-combatants, internally displaced people and returning refugees, HIV/AIDS-affected individuals and households, religious and ethnic minorities, migrant workers, and groups that suffer social and economic discrimination, including indigenous peoples, minorities and in some societies, women).

Sources: IFC. 2002. *Handbook for Preparing a Resettlement Action Plan*, FAO, and World Bank: "Vulnerable Groups."

Waste Rock

Barren or mineralized rock that has been mined but is of insufficient value to warrant treatment and, therefore, is removed ahead of the metallurgical processes and disposed of on site. The term is usually used for wastes that are larger than sand-sized material and can be up to large boulders in size; also referred to as waste rock dump or rock pile.

Water Balance

An accounting of the inflow to, outflow from, transfers and storage changes of water over a fixed period.

Source: Adapted from *Global Acid Rock Drainage Guide* Glossary.

Water Quality Criteria

Numerical concentrations or a narrative statement recommended to support and maintain a designated water use. Criteria are based on scientific information about the effects of water pollutants on a specific water use

(Source: Adapted from UNEP. 2015. *Compendium of Water Quality Regulatory Frameworks: Which Water for Which Use?*)

Water Quantity

For IRMA purposes, water quantity refers generally to the amount of water present or passing a certain location in water bodies that exist on the earth's surface, such as lakes, ponds, rivers, streams, etc., (i.e., referred to as surface waters) and water present in water bodies that exist underground (i.e., groundwaters). It also includes the amount of water that originates underground but expresses itself at the surface (e.g., natural springs or seeps). Water quantity measurements may be expressed as volumes, however, for IRMA's purposes measurements for rivers, streams and natural springs/seeps maybe expressed as a flow (in ft³/sec or m³/sec), while measurements for lakes and groundwater may be expressed as a level or elevation (e.g., feet or meters above a reference point such as sea level).

Whole Effluent Toxicity

Whole Effluent Toxicity (WET) refers to the aggregate toxic effect to aquatic organisms from all pollutants contained in a mine's effluent.

World Heritage Site

A site/property inscribed on the World Heritage List, which has outstanding universal value and meets the conditions of authenticity and integrity. The World Heritage property includes within its borders all of the attributes that are recognized as being of outstanding universal value.

Source: UNESCO.

Worker

All non-management personnel.

Workers' Organizations

Typically called trade unions or labor unions, these organizations are voluntary associations of workers organized on a continuing basis for the purpose of maintaining and improving their terms of employment and workplace conditions.

Source: Adapted from *SA8000 Guidance* and IFC. 2012. *Performance Standard 2*.

Workers' Representatives

A worker chosen to facilitate communication with senior management on matters related to working conditions, occupational health and safety or other workers' concerns. This is undertaken by the recognized trade union(s) in unionized facilities and, elsewhere, by a worker elected by non-management personnel for that purpose.

Source: Adapted from *SA8000 Guidance*.