The CODE

The Newsletter of
the International Cyanide
Management Institute
www.cyanidecode.org

1st Quarter 2024 Edition

What's Inside

Welcome to the 1st Quarter 2024 edition of *The Code*.

Cyanide Code Adds Five Mining Signatories in Q1 2024

The roster of the Cyanide Code's mining signatories increased in the first quarter of 2024, with the addition of five companies operating in Brazil, Canada, Chile, Ethiopia, Peru, and Turkey. With the addition of these companies, the Cyanide Code has 54 mining signatories worldwide, which are operating in 31 countries.

The new entrants to the Cyanide Code include Brazauro Recursos Minerais, a subsidiary of G Mining Ventures, which is developing the Tocantinzinho project in Brazil, and Ethiopia-based MIDROC Gold Mine PLC, which operates the Legadembi Gold Mine in that country.

Minera Florida Limitada, located in Chile, which registered as a signatory to the Code, is a subsidiary of Pan American Silver. The Minera Florida mine, which was acquired by Pan American Silver in 2023, is currently certified under the Cyanide Code, having achieved certification three times while operated by prior owner Yamana Gold.

Also joining the Code this year is Denver-based SSR Mining, an intermediate gold mining company with a diverse portfolio of assets across three continents. It has four producing mines; three of which use cyanide to process ore at gold mines in Canada, Turkey, and the United States. One of those mines, the Marigold Mine in Valmy, Nevada, USA, was the first operating mine to be Cyanide Code certified in 2007; SSR Mining acquired the mine in 2014.

The industrial ore processor Minera Veta Dorada, a subsidiary of Montreal-based Dynacor, also has come aboard. The Canadian company's Minera Veta Dorada plant in Peru does not mine minerals, rather it operates a carbon-in-leach plant that processes ore purchased from artisanal and small-scale mining operations.

Tim Ihle Elected IAG Chair; Josée Noël to be Vice Chair

Tim Ihle

Tim Ihle has been elected as Chair of the Cyanide Code's Industry Advisory Group (IAG). The IAG is a forum to advance the education, communication, and discussion about the implementation of the Cyanide Code among the program's participating signatory companies. Mr. Ihle was appointed to his current position at Orica in July 2021 and is responsible for leading the cyanide product category for Orica's global business. Prior to this role, he served for four years in Orica's Strategy and M&A team. His last role in this team was as Head of Corporate Development, where he led the strategy function and several technology M&A deals. Prior to joining Orica, Mr. Ihle worked as a strategy consultant with L.E.K. Consulting, and prior to that served as an engineer across large infrastructure projects in both technical and project management capacities. He has a Bachelor of Engineering and MBA degrees.

Josée Noël

The IAG's incoming Vice Chair is Josée Noël, Agnico Eagle Mines' corporate Sustainability Systems Manager. A biologist by training, Ms. Noël has been with Agnico Eagle since 2007, and while there she has worked on project development and impact assessments, operations, and closure and reclamation, and more recently dedicates her efforts in Sustainability.

Both will serve two-year terms.

Observed Trends in Certified Cyanide Production Facilities;

A Focused Look at the Contributions of Production Operations to the Cyanide Code

As many of our readers know, the Cyanide Code is a risk-based assurance program focused on the safe and environmentally responsible management of cyanide by companies producing gold and/or silver and by companies manufacturing, warehousing, and transporting cyanide. Accordingly, signatories to the Cyanide Code include mining companies, transporters, and cyanide producers. Critical to the success of the Cyanide Code assurance process is the strong partnership between cyanide producers and their customers in advancing safe management.

The Cyanide Code currently has 32 signatory producers that together are responsible for 44 participating production operations globally. In the context of the Cyanide Code there are three fundamentally different types of production operations:

- Manufacturing operations where sodium cyanide is manufactured as either a solution or as a solid.
- Transloading operations where cyanide is transferred from one form of packaging into another, such as the transfer of briquettes from Intermediate Bulk Containers to Isotanks for delivery to mining operations, or transfer of liquid cyanide from rail cars to liquid Isotanks for delivery.
- Warehouses where cyanide is stored for further distribution.

Several signatory producers have multiple operations, such as several manufacturing operations or various warehouses, and some signatory producers have multiple manufacturing and transloading operations.

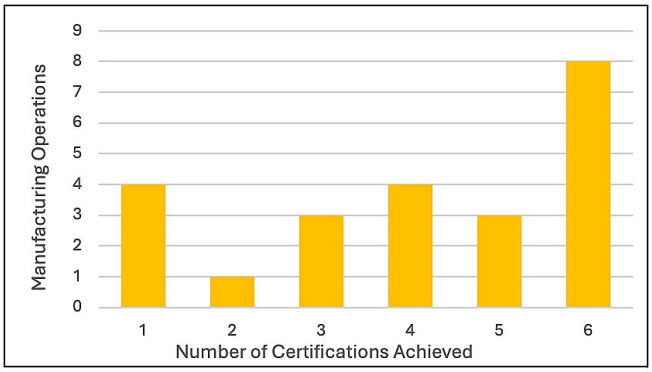
As shown in the table below, of the 44 production operations participating in the Cyanide Code 25 are manufacturing operations, 11 are transloading operations, and nine are warehouse operations. A high percentage of overall production operations are Cyanide Code certified. Of particular note are the high percentages of manufacturing operations (92%) and transloading operations (100%) that are certified.

Production Operations

Production Operation Type	Designated for Certification	Currently Certified	Percentage Currently Certified	Average Time Certified (year)	Operations Certified 4 or more times	Operations Certified 4 or more times (%)
All Types	44	40	91%	9.5	21	48%
Manufacturing	24	23	92%	11.3	15	65%
Transloading	11	11	100%	9.5	6	55%
Warehousing	9	6	66%	2.6	0	0%

An important part of the Cyanide Code program's success since its initial implementation in 2005 has been the consistent, continued, and growing participation of cyanide producers. The average certification length of manufacturing operations (11.3 years and transloading operations (9.5 years) stands out, as do the high percentages of these types of operations that are certified. Longevity and commitment to the program is also indicated by the numbers and percentages of manufacturing and transloading operation that have been certified four or more times. Also of note is that certified production warehouses are more transient participants in the program; these warehouses tend to be dependent on smaller sets of mining customers, and tend to enter and withdraw from the Cyanide Code at a greater rate.

Another aspect of the success and development of the Cyanide Code has been the continued commitment and participation of cyanide producers. The figure below illustrates the long-term commitment of manufacturing operations. Fifteen of the 23 certified manufacturing operations have undergone four or more triennial certification audits. Eight of the 23 certified manufacturing operations have successfully undergone six certifications, representing a minimum of 16 years of continuous compliance for each of these operations. Since 2006, a total of 24 cyanide manufacturing operations have been certified under the Code, and of those 24, 23 remain certified; only one has withdrawn from the Code.



Early participation of manufacturing and transloading operations in the program is evident in that of the first 10 operations certified in full compliance, five were production operations. Of the first 50 operations certified, nine were production operations.

ICMI notes the exemplary commitment of the signatory producers and acknowledges the companies and their operations for their commitment to safe management of cyanide for their workforce, neighboring communities and the environment.

Auditor's Corner

ICMI Completeness Review Comments: Discussion of Five Comments Frequently Made on Mining Reports

Welcome to this installment of the Auditor's Corner, a continuing feature of *The Code*. As readers know, this column is intended not only for auditors but also for operations preparing for audits or gap analyses. We welcome your suggestions for future topics at info@cyanidecode.org.

This edition focuses on several specific comments that auditors sometimes receive as part of ICMI's review of audit reports for compliance and completeness. ICMI's "Completeness Review" of the Detailed Audit Findings Report evaluates whether all relevant Protocol questions have been answered and whether sufficient details are provided in support of the auditor's findings. The Summary Audit Report is reviewed to ensure that it accurately represents the results of the Detailed Audit Findings Report, and that it includes sufficient information to demonstrate the basis for each finding. Completeness reviews of audit reports for Mining operations are based on ICMI's Mining Operations Verification Protocol and the Guidance for Use of the Mining Operations Verification Protocol.

In reviewing audit reports for mining operations, ICMI has noted several Protocol questions where the auditors' responses frequently do not completely address an important part of the question. Although parts of the Protocol questions that the report omits may seem small, they are nevertheless important in terms of overall compliance with the Standard of Practice, and for the protection of human health and the environment.

The following five Protocol questions are often incompletely addressed in audit reports, resulting in comments by ICMI. ICMI asks auditors to pay special attention to these questions to make sure they are addressed when writing audit reports.

Verification Protocol Question 3.1.7(b) asks whether cyanide is stored with adequate ventilation to prevent the build-up of hydrogen cyanide gas. The associated Guidance notes that cyanide storage applies to liquid cyanide such as tanks storing high-strength cyanide after mixing as well as to solid cyanide. Auditors are reminded to include in their responses to this question their evaluation of whether there is adequate ventilation in areas having storage tanks containing reagent strength liquid cyanide, in addition to ventilation of areas storing solid cyanide. Auditors should note, for example, whether any such liquid cyanide tanks are located outside or within buildings, and if inside buildings, whether there is adequate ventilation. Indoor tanks are frequently vented, and if so, auditors should note whether these tanks vent outdoors.

Verification Protocol Question 3.2.2(a) asks whether the operation has developed and implemented plans or procedures to prevent exposures and releases during cyanide unloading and mixing activities, including items such as operation and maintenance of all hoses, valves and couplings for unloading liquid cyanide and mixing solid or liquid cyanide. While auditors typically note whether procedures are in place and implemented for the operation of hoses, valves, and couplings, auditors frequently do not note whether maintenance procedures exist for these items. Noting both operating procedures and maintenance programs is of particular importance for these items as responsibilities are not always clear. In particular, when cyanide deliveries are made as liquid, or by using solid-to-liquid systems, the procedures implemented and the associated equipment used may be the responsibility of the mine, the transporter, or a combination of both. Similarly, maintenance of equipment used in delivery may be divided among the mine, the transporter, and in some cases the cyanide producer. Auditors should note whether the mining operation is responsible for these items, or whether the transporter or producer is responsible. With the increased use of solid-to-liquid systems for delivering cyanide, the importance of clarity with respect to responsibility for safe offloading activities has increased.

Verification Protocol Question 4.1.6(e) asks whether ponds and impoundments are inspected for the parameters identified in their design documents as critical to their containment of cyanide and solutions and maintenance of the water balance, such as available freeboard and integrity of surface water diversions. In responding to this question, auditors are asked to ensure that they address whether any surface water diversions are present, and if so whether they are routinely inspected. ICMI underlines this item, because routine inspection of surface water diversions is vital in preventing releases from ponds and other impoundments.

Verification Protocol Question 6.2.8 asks whether unloading, storage, mixing and process tanks and piping containing cyanide solution are identified to alert workers of their contents, and whether the direction of cyanide flow in pipes designated. Auditor responses are sometimes unclear as to whether operations properly label tailings delivery and return water pipelines and pipelines conveying solutions to and from heap leach facilities. Checking on and noting whether these pipelines are labelled is important due to their remoteness from core plant facilities at many operations, and because they often run alongside other long pipelines such as freshwater pipes. Auditor responses are also often unclear as to whether operations properly label pipelines within the plant area that do not convey reagent-strength cyanide solution.

Verification Protocol Question 6.3.3 asks whether the operation has developed specific written emergency response plans or procedures to respond to cyanide exposures. The associated Guidance states that the operation should have a written procedure detailing the necessary response to cyanide exposure through ingestion, inhalation and absorption through skin and eyes. These different types of exposure call for different responses, and auditors are asked to be clear in their reports whether procedures account for the different types of response to these various types of exposure.

ICMI thanks auditors in advance for paying closer attention to how these questions are addressed in audit reports, and for their continued efforts in providing quality reports.