Gold Mining Operations

Summary Audit Report Form

For the
International Cyanide Management Code

JACOBINA MINERAÇÃO E COMÉRCIO Ltda.

YAMANA GOLD GROUP

1 st. RECERTIFICATION AUDIT
APRIL 23th to 25th, 2014

www.cyanidecode.org

SUMMARY AUDIT REPORT
FOR GOLD MINING OPERATIONS

Instructions

Lead Auditor Signature
Julio C. M. Monteiro

1. The basis for the finding and/or statement of deficiencies for each Standard of Practice should be summarized in this Summary Audit Report. This should be done in a few sentences or a paragraph.

2. The name of the mine operation, lead auditor signature and date of the audit must be inserted on the bottom of each page of this Summary Audit Report.

3. An operation that is in substantial compliance must submit a Corrective Action Plan with the Summary Audit Report.

4. The Summary Audit Report and Corrective Action Plan, if appropriate, with all required signatures must be submitted in hard copy to:

   International Cyanide Management Institute (ICMI)
   1400 I Street, NW, Suite 550
   Washington, DC 20005, USA

5. The submittal must be accompanied by 1) a letter from the owner or authorized representative which grants the ICMI permission to post the Summary Audit Report and Corrective Action Plan, if necessary, on the Code web site, and 2) a completed Auditor Credentials Form. The lead auditor's signature on the Auditor Credentials Form must be certified by notarization or equivalent.

6. Action will not be taken on certification based on the Summary Audit Report until the application form for a Code signatory and the required fees are received by ICMI from the applicable gold mining company.

7. The description of the operations should include sufficient information to describe the scope and complexity of the gold mining operation and gold recovery process.

SUMMARY AUDIT REPORT

GENERAL INFORMATIONS

Name of Mine:	JACOBINA MINERAÇÃO E COMÉRCIO Ltda.
Name of Mine Owner:	Yamana Gold
Name of Mine Operator:	Yamana Gold
Name of Responsible Manager:	Jose Ivanildo Lima (Plant Manager)
Address:	Fazenda Itapicuru, S/N – Jacobina
State/Province:	City of Jacobina – Bahia State
Country:	Brazil
Telephone:	55 (74) 3621-8000

E-Mail: jose.ivanildo@yamanagold.com

Location detail and description of operation:

The Operation of the JMC is located in a complex at underground mines called: Morro do Vento, Joao Belo, Serra do Córrego, Lagartixa and Canavieiras.
Mines are located in north-central portion of Bahia State, on the western most edge of Chapada Diamantina.
A Metallurgical Plant with a production capacity of 10000 tons per day is situated ill the Serra da Jacobina, Jacobina City, Bahia State. The administrative complex and operate mining are situated near the Itapicuru Village 10 km from the Jacobina City and 358 km of Salvador northwest
The JMC Metallurgical Plant operates in CIP (Carbon in Pulp) equipped with primary and secondary crushing and tertiary with two ball mills and a set of 13 tanks for the metallurgical process of leaching and CIP. The complex also endowed with a tailings dam provided with a set of pumps called closed-loop pickup water from the tailings dam for the operation of the plant.

Lead Auditor Signature
Julio C. M. Monteiro

SUMMARY AUDIT REPORT

Auditor's Finding

This operation is

X in full compliance
□ in substantial compliance ***(see below)
□ not in compliance

With the International Cyanide Management Code.

This Operation has maintained full compliance with the International Cyanide Management Code throughout the previous three-year audit cycle.

Audit Company: **JULIO MONTEIRO AUDITORES DA QUALIDADE LTDA.**
Audit Team Leader: **JÚLIO C. M. MONTEIRO**
E-mail: **jmaq@ig.com.br**
Names and Signatures of Other Auditors: None
Date(s) of Audit: 1 st. RECERTIFICATION AUDIT - APRIL 23th to 25th, 2014

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Verification Auditors.
I attest that this Summary Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conduct in a professional manner in accordance with the International Cyanide Management Code Verification Protocol for Gold Mine Operations and using standard and accepted practices for health, safety and environmental audits.

Lead Auditor Signature
Julio C. M. Monteiro

SUMMARY AUDIT REPORT

1. PRODUCTION: ***Encourage responsible cyanide manufacturing by purchasing from manufacturers who operate in a safe and environmentally protective manner.***

Standard of Practice1.1: *Purchase cyanide from manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide, and to prevent releases of cyanide to the environment.*

The operation is
- **X** in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 1.1

Summarize the basis for this Finding/Deficiencies Identified:

The Operation contract with Proquigel clearly address the requirement that the cyanide shall be produced in a facility that is in compliance with the Code for cyanide producers and be transported by a transporter also both recertified by ICMI. Proquigel has two facilities (Camaçari and Candeias in Bahia State - Brazil) certified in conformance with ICMI protocol for cyanide producers and Concórdia Transport is also recertified by ICMI, as evidenced at the ICMI website.
There is a formal agreement dated Dec./02/2013, where in the contract has been explicit duties of the contractor. The Proquigel was audit and recertified, as “In Full Compliance” is therefore a signatory to the International Cyanide Code, Item also required in Section 5.12 of the contract.

The following contracts were review:
a) Jacobina Mining and Proquigel - Nr 2335 (dated December / 02 / 2013 – Valid at December / 01 / 2015).
b) Proquigel and Concórdia (dated December / 02 / 2013 – Valid at December / 01 / 2015).
Supply of Sodium Cyanide is performing on presentation solution with the following specifications:
30.0 ~ 35.0% with minimum of 0.5%.
The container has a capacity of 26,000 liters - isotank.

Lead Auditor Signature
Julio C. M. Monteiro

2. TRANSPORTATION: ***Protect communities and the environment during cyanide transport.***

Standard of Practice 2.1: *Establish clear lines of responsibility for safety, security, and release prevention, training and emergency response in written agreements with producers, distributors and transporters.*

The operation is
- **X** in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 2.1

Summarize the basis for this Finding/Deficiencies Identified:

The cyanide solution (30 to 35 %) is transport in isotank specifically designed for this purpose, according to international and Brazilian Road Transport Legislation. The cargo labeling is in Portuguese in accordance with the Brazilian Road Transport Legislation. The transport truck departs from Proquigel facilities straight to the Operation both are in the same state (around 300Km 1 each other). The route between the Producer and Operation is establish by the board. The route risks are identify and evaluate. The route is properly paved.

The transport truck is receive at the Operation by a safety officer who inspects the cargo documentation, the truck condition, the Driver permits, and the safety equipment. After that, if approved, the truck is authorize to go into the operation and parks in the cyanide reception area, specifically assigned for this activity. From this moment on, the reception Employees precede the cyanide unloading, which is monitor, from the operation control room, by an internal TV system. Concórdia Transportes is recertify by ICMI, and has procedures to maintain their truck fleet operational. Before to be assign to the cyanide transportation, the truck is inspect and approved for the transportation. Records of these inspections are keep by the Driver and were evidence during the field audit (reception of cyanide at the Mine Operation). Concórdia Transportes is recertify by ICMI. All trucks are online monitor since its Depart from the producer until arriving in the Operation through a tracking system (auto-track), controlled by the Concórdia Operation Center. All inputs are record in the onboard computer and were evidence during the field audit.

The Concórdia Transportes recertify by ICMI and implement emergency response procedures. The cyanide truck is fully monitor during the trip. The communication between the driver and operation center is also maintain and recorded during the whole trip. In case of any type of emergencies, the transport control center automatically launches an emergency alert, involving all stakeholders. These

procedures are test time to time. The written agreement, as previously referred, addresses all the responsibilities and authorities including the extension to subcontractors, although the producer or transporter are allowed by the Operation to subcontract anybody without prior acceptance by Operation. The Proquigel also had previous contract with Concordia Transportation it was renovated.
The Operation maintains a system to monitor the contracts with the Producer and the Transporter.

Standard of Practice 2.2: *Require that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management.*

The operation is
X in full compliance with
☐ in substantial compliance with
☐ not in compliance with
Standard of Practice 2.2

Summarize the basis for this Finding/Deficiencies Identified:

As previously refer and evidenced, the contract between operation, producer and transporter clearly addresses the requirement that the transporter must be recertify by ICMI.
The contract with Concordia Transportation is the responsibility of Proquigel. Item 3.2 of the Agreement between Concordia and Proquigel stipulates that delivery of the product go to the Operation of Mine that makes unloading at appropriate locations and with all available resources, including trained personnel for the activity. All the production (origin) and transport cyanide documentation has brought to the Operation by the truck Driver. This documentation is review by the Operation before the truck allowance comes in the operation. The complete documentation verification is part of the established controls by the plant in order to receive the cyanide into the operation. The other one are relate to the truck (including the emergency kit), license and the Driver qualification. The travel records are report in an onboard computer in the truck it is also check. This practice was evidence during the field audit related to the cyanide reception in the operation.

Lead Auditor Signature
Julio C. M. Monteiro

3. HANDLING AND STORAGE: Protect workers and the environment during cyanide handling and storage.

Standard of Practice 3.1: *Design and construct unloading, storage and mixing facilities consistent with sound, accepted engineering practices, quality control/quality assurance procedures, spill prevention and spill containment measures.*

The operation is
- **X** in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 3.1

Summarize the basis for this Finding/Deficiencies Identified:

The Operation has a receiving / storage area for the reception of the cyanide solution. It was evidence through the project documentation and it was design and constructed in accordance with acceptable Brazilian Engineering Standards.

The reception / storage area (and the cyanide unloading activity) of the Operation is monitored (from the control room) by an internal TV circuit. Operation of Jacobina Mine only uses cyanide in solution and all facilities are structure for this type of product.

The access to the process plant is controlled. Once inside the plant process, the unloading and storage areas are separate from people and far from open waters. The area has a robust drainage system what is link to a specific containment pool.

It was evidenced the design / construction documentation.

The unloading area has a robust drainage system connected with a specific containment pool. Tanks level is control by the Plant Operator in the Control Room. High-level alarms are in place.

The Operation established lower levels alarm values in order in to work in a preventive and safe way. As previously referred the cyanide reception and storage area were built in concrete and HDPE, inside a secondary

containment pool, as evidence in design / construction documentation. The cyanide solution (33%) is store in specific tanks in a well ventilate area. The deposition for the tailings dam is consider in water balance.

HCN detectors and alarm systems are in place and evidenced in the field audit. The Operation does not use solid cyanide in its leaching process, using a liquid cyanide solution that is stored in specific tanks. There are in place two controls to access the process plant. The cyanide tanks area is fenced, signed and locked. Only authorized and qualified operators are allow to access this area. The cyanide tanks area is isolated and apart from other storage areas. It was evidence that it is well maintained, clearly signed, and clean and ordered. Food and tobacco products are not allow in this area.

Standard of Practice 3.2: *Operate unloading, storage and mixing facilities using inspections, preventive maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.*

The operation is	X in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 3.2

Summarize the basis for this Finding/Deficiencies Identified:

It was evidenced that the defined, documented and implemented a procedure (POP 04-09-3.5-088 – Version 6 dated Feb. 13 - 2013) to unload the cyanide during the reception. The Operators are training and qualified in this procedure. Records of such training activities and the field audit evidenced that. The operational procedure clearly addresses the couplings activities as well the valves maneuvers, as is fully monitored (through an internal TV circuit) at the Control Room.

In the event of any real spills, the operational procedure covers the neutralization and cleaning of the spills, which is force to the drainage system. Procedure 04-09-3.5-174 Neutralization of NaCN – Version 4 dated Mar. 03 – 2013. An qualified Operator, using appropriate PPE (including calibrated HCN detectors), is observed full time by a second operator that remains in a safe area and also by the operator at the control room, through an internal TV circuit. This practice was evidence in the field audit.

4. OPERATIONS: ***Manage cyanide process solutions and waste streams to protect human health and the environment.***

Standard of Practice 4.1: *Implement management and operating systems designed to protect human health and the environment utilizing contingency planning and inspection and preventive maintenance procedures.*

The operation is	X in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 4.1

Summarize the basis for this Finding/Deficiencies Identified:

A procedure for unloading cyanide solution was confirm by POP-04-09-3.5-088, as well as a procedure for leaching POP-04.09-3.5-005 Version 10 and a procedure for operation of tailing dam POP-04-09-3.5-020 Version 8. The Operation uses only liquid cyanide and does not use briquette cyanide in the process.

A procedure for tailing dam operation was present in POP-04-09-3.5-020. Definitions of Limits of the Concentration of Cyanide WAD - item 4; the freeboard for tanks is establish on the procedure POP-04.09-3.5-005 the safety freeboard for tailing dam is established by the guide “Operation Manual of the DAM of Jacobina – JM-113-RL-18506-0A”. Operation does not discharge to surface water, as its system is a closed circuit. It was present a Maintenance Program managed by the software DATASUL. Monitoring records to measure thickness of tanks, pipelines and valves were evidence. In the POP-04-03-3.5-251 there contingency procedures when there hydric disorder.The procedures POP-04-09-3.5- 295 and 296 (in revision) comprehend decontamination of tanks, steel frame and pipelines prior maintenance. The POP-04-03-3.5-251 - Operating Plan Process for Emergencies Involving Cyanide is also mention in Item 12.6 the Emergency Action Plan for Tailings Dam. Evidences of application of changes management were present, one related to improvement of containment system, and “adequacy of cyanide reagent area”, related to the area waterproofing.
The Operation inspects facilities, as described on the procedure Leaching operation - POP 04.04-09-3.5-005. It mentions that the inspections should be performed each shift work by the Operator of the area. The checklist used for the leaching area does not focus on the checking of items related to SHE issues. The procedure for cyanide unloading POP-04-09-3.5-088 refers to the inspections that should be perform and its frequencies. Inspections are carry out at suitable intervals, which are checked: physical structure, tanks, containment basins, pipes, HCN detection systems, among others, and ensure that the facilities of the unit are within the design parameters.

Verified evidence of the following documents: Manual Operations Dams, Water Balance - Version 2014, Checklists of Operation, Checklists of pumping, leaching operation Inspection of channels, basins, pipes emergency pumps. Regular inspection of dams and Report of the FMEA risk analysis of tailings disposal operation system - YG-150-RL-33053 dated July/2013.
The Maintenance Plan "Preventive and Corrective Maintenance of Civil Structures" is in place for cyanide leaching and unloading areas plant, including ponds, pipelines and valves and found in compliance. The checking of tailing dam freeboard and integrity of watercourses is record in the RDOS - Daily Report of Operation and Safety.
The Plan of Metallurgical Plant Maintenance uses a system of generation of Work Orders and related preventive inspections that have been carry out by Inspectors. The Operation have necessary emergency power resources to operate pumps and other equipment to prevent unintentional releases and exposures in the event its primary source of power is interrupted, as confirmed in the maintenance plan managed by the software DATA SUL. The Operation has reservations generators, ensuring that if necessary can become active. Evidences are available in the document Schedule of Inspection to ensure the functionality of the power generators.

Standard of Practice 4.2: *Introduce management and operating systems to minimize cyanide use, thereby limiting concentrations of cyanide in mill tailings.*

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 4.2

Summarize the basis for this Finding/Deficiencies Identified:

Operation has ball mill in its process, however no cyanide is added into it, but in the leaching – Tank 03. A work was develop with INDG using PDCA (Deming Cycle) to determine and reduce appropriate cyanide addition rates are in place. The mineralogical conditions are stable according to the 2012 and 2013 Annual Mining Reports so do not present significant variations that demand frequent analysis to determine the optimal cyanide concentration to be use in the leaching process. The latest reports Optimization of Cyanide Consumer – Metallurgical Plant of Operation related to June 2013 and February 2014, presented the same result. (That reassert the mineralogical characteristics are stable).

Operation has concluded that no other strategy to determine the optimal cyanide level for gold recovering is need, as the characteristic of ore in the mine is constant.

Standard of Practice 4.3: *Implement a comprehensive water management program to protect against unintentional releases.*

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 4.3

Summarize the basis for this Finding/Deficiencies Identified:

The Operation has developed a comprehensive and probabilistic water balance, as checked in the water balance document Water Balance of Metallurgical Plant – Revision January 2014 with Analysis of 2013 and Water Balance of the Tailing Dan.

They found according to the established, as they consider the applicable items to Operation reality (as per Auditor Guidance item 4.3.1). The balance found probabilistic as pluviometric data was obtain from Jacobina Pluviometric Station 01140016 and the evaporation obtained from Meteorology National Institute INMET, and extreme conditions were accounted.

The rates at which solutions are apply to leach pads and tailings that are deposited into tailings storage facilities is not applicable to JMC, as the leaching process does not perform heap leach.
The water balance considers design storm duration and storm return interval in the study Water Balance of the Tailing Dan. Quality of precipitation and evaporation data is reliable and representative, as they are from official sources: precipitation data from Jacobina Pluviometric Station 01140016, evaporation obtained from Meteorology National Institute - INMET.
It was evidence that there is no precipitation entering a pond or impoundment resulting from surface run-on from the up gradient watershed, as there are drainers (corta-rios) to deviate precipitation and avoid variations in the total volume of ponds and impoundments.
Evidence were found that besides evaporation, infiltration and reducing of river depth were considered in the studies show that Operation adopts good practices with regard to the control of water balance of all its facilities, especially those that may result in contamination of the environment.
Operation has already defined daily and shift work inspections in the metallurgical plant and tailing dam, a checklist for leaching operation and a checklist for tailing dam. Maintenance procedures for equipment's were present as such as pipelines, tanks and pumps to ensure their availability and reliability.
Reviews documents: Operation Manual Dam - JM-113-18506 RL OA to Table I;
Executive Tailings Dam Project, prepared by the Company in July 2013 DAM - No. BLH-EJ 01-1 - Operation and JMC 02-390-CMO-0002 - Construction.
Plan for Recovery of Degraded Areas PRAD. Responses to the request for additional information - Study of riparian areas and aspects of the interactions flora-fauna - Jacobina Mine - Belo Horizonte / December 2012.
The Operation measure precipitation, compare the results to design assumptions and revise operating practices in a daily basis, according to the records of the report RDOS (Diary Report of Operation and Security). The report Monthly Evaluation Security Report consolidates the information obtained in the RDOS, interpreting the records and comparing to the design parameters.

Standard of Practice 4.4: *Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.*

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 4.4

Lead Auditor Signature
Julio C. M. Monteiro

Summarize the basis for this Finding/Deficiencies Identified:

A WAD cyanide concentration over 50 ppm found in the leaching tanks. A screen protection to prevent access of wildlife was install over the leaching tanks TK03, TK04 e TK05. The other leaching tanks TK30, TK31, TK32 e TK33 do not have screen, but the agitation caused by the air process in the slurry become a natural hazing. Monthly monitoring is perform, as described by the Procedure POP-04-02-4.1-170 Monitoring of surface water, groundwater and wastewater, results are record on the appraisal Quality Report, and results are satisfactory and below 50-ppm WAD cyanide limit.

According to the JMC records, there is no wildlife mortality. The results are record on the appraisal Quality Report, are satisfactory, and below 50-ppm WAD cyanide limit.

The results do not indicate WAD cyanide concentration in the tailings dam lake that exceed 50 mg / L. The monitoring of containment, thickener, and CAT, supernatant and dumper funds, the new dam and percolation basins are perform. Records presented indicate undetectable result (SHEC Records). There is monitoring of surface waters as POP-04-01-4.1-170 - Monitoring Plan for Waters, which are analyzed free, full Cyanide and two points before and after the plant (01 and 36) also WAD cyanide are analyzed and demonstrate that free cyanide concentrations have been less than 0.022 mg/l throughout the audit period.

<u>*Standard of Practice 4.5*</u>: *Implement measures to protect fish and wildlife from direct and indirect discharges of cyanide process solutions to surface water.*

The operation is	**X** in full compliance with ☐ substantial compliance with ☐ not in compliance with	Standard of Practice 4.5

Summarize the basis for this Finding Deficiencies Identified:

The Operation of the JMC operates in a closed circuit, and does not discharge direct to surface water. The Operation is located at Bahia State inland, a desert climate region with few surface waters surrounding.

According to the monitoring records, the concentration complies with this Standard of Practice. The mixing zone was define as per Environment Resolution CONAMA 357 / 05 Chapter I, item XXXVIII.

The Operation does not have any indirect discharge to surface water.

Standard of Practice 4.6: *Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of ground water.*

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 4.6

Summarize the basis for this Finding/Deficiencies Identified

The cyanide unloading area is waterproof, according to the appraisal report presented by the Company HTP do Brazil and signed by the Civil Engineer Mauricio Pavese - Register CREA-BA # 50073. According to the monitoring results for groundwater performed by the Technical institute SENAI, certified under ISO/IEC 17025, CRL100 WAD cyanide concentrations are below levels that are protective of identified beneficial uses of the groundwater. The results were in compliance to environment parameters request by Brazilian Legislation- CONAMA 396/08.

There is no history of seepage has cause contamination of groundwater.

Standard of Practice 4.7: *Provide spill prevention or containment measures for process tanks and pipelines.*

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 4.7

Summarize the basis for this Finding/Deficiencies Identified:

It was evidence during the audit that prevention or containment measures were provide for all cyanide unloading, distribution tank and process solution tanks.

Secondary containments are properly designed, as confirmed in the drawing JMC03-300-C-DW-2002. The volume of the tanks exceed 10% of the biggest tank, but, as this is an old plant, the return and storm draining were not considered in the original design of these containment ponds. The drawings and a calculations sheet, signed by a qualified professional, were present to the Auditor.

All secondary containments have sump pump to drive any liquid that may occur in its interior back to the process and it was evidence that the plant has all its tanks with secondary containments protecting them. The audit has checked again that all pipelines carrying cyanide solution are protect by lining to avoid any leakage and further contamination of environment. It was present the performing of risk analysis accounting for a short pipeline segment crossing Itapicuruzinho. Drawing checked for the pipeline protected: JMC02-360-M-2021, JMC02-360-M-2019, and JMC02-360-M-2018. It was evidence that the construction was perform according to the design during the

commissioning and that materials used were compatible to cyanide and high PH conditions. In the POP-04-09-35-088 - (35% approx.) Unloading Operation NaCN solution methodology is to store only a volume of 59.86 m³ each tank, so the containment basin has the ability to store 110% of the volume of the larger tank. Pipes pumping waste are located in trenches lined with plaid pad, and there blockage of valves. A pipe that carries waste have secondary containment.

Standard of Practice 4.8: *Implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.*

The operation is
X in full compliance with
☐ in substantial compliance with
☐ not in compliance with
Standard of Practice 4.8

Summarize the basis for this Finding/Deficiencies Identified:

Because of JMC operation time, the original QA/QC documents were not available. The compliance Report Conformity Result date October 2009, sign by Civil Engineer Wilton Carlos Muricy Nunes Filho - CREA 92714/D MG was check and it states that all facilities built according to design and Brazilian Legislation and operate in adequate condition and QA/QC program has address materials and soil compaction. This documents check in the compliance Report Conformity Result – Metallically Structure sign by the same Mechanical Engineer.

As built studies presented were, develop by qualified personnel, as described previously, who concluded that facilities meet the quality requirements.

Standard of Practice 4.9: *Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and ground water quality.*

The operation is
X in full compliance with
☐ in substantial compliance with
☐ not in compliance with
Standard of Practice 4.9

Summarize the basis for this Finding/Deficiencies Identified:

There is a Procedure POP-04-02-4.1-170 Version 5 - Monitoring of Surface Water, Groundwater and Wastewater, results are record on the appraisal Quality Report, and results are satisfactory and below 50-ppm WAD cyanide limit. The sampling and

analytical protocols were establish by the document Standard Methods for The Examination of Water and Wastewater, 21th. Edition.

The record Water Monitoring - JMC – Field File was checked, but it has no field for wildlife or livestock activity to be filled or wildlife mortality, although some records present evidences of livestock during the data collection. The Operation carries out in a closed circuit and does not discharge process water to surface waters. However, as detailed in the Standard of Practice 4.5 and 4.6, JMC monitors WAD, free and total cyanide in its facilities. A procedure to investigate wildlife mortality is in place. Records of wildlife mortality were evidenced during the inspection of tailing and plant and no mortality was associated to contact with or ingestion of cyanide. The surface water monitoring has a daily frequency defined, monitoring of surface water is perform monthly and monitoring of wildlife is perform daily. The Auditor considers that these frequencies are adequate.

5. DECOMMISSIONING: ***Protect communities and the environment from cyanide through development and implementation of decommissioning plans for cyanide facilities***

Standard of Practice 5.1: *Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.*

The operation is
X in full compliance with
☐ in substantial compliance with
☐ not in compliance with
Standard of Practice 5.1

Summarize the basis for this Finding/Deficiencies Identified:

Procedures is implement and assure the decontamination of the cyanide facilities. The decommissioning process also defines how to act to remove residual reagents from leaching process. Formal actions to manage surface water and groundwater are included in the Decommission Plan.

The decommissioning activities have a schedule for the three years planned for total decommissioning. Evidence was available in the Final Closure Plan. The Environmental Management System has a Document Control – Master List of Internal Documents of the Operation defines which decommissioning procedures should be take annually.

Standard of Practice 5.2: *Establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.*

The operation is
- **X** in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 5.2

Summarize the basis for this Finding/Deficiencies Identified:

There is a cost estimation consolidated in the corporative document “Closure”, which is provided by the detailed costs reported on the document.

Evidences: "PRAD - Plan for Recovery of Degraded Areas and Report and Financial Statements for Fiscal Year 2012 and Report of Independent Auditors on the Financial Statements dated Dec. 31/2102, prepared by Deloitte Touche Tohmatsu. Auditor's opinion: "The object to financial statements present fairly, in all material respects, the financial position of the JMC on Dec. 31/2012, the performance of its operations and its cash flows for the year ended that date, in accordance with accounting practices adopted in Brazil"

The estimated closure costs described in the response are for third party implementation, and the bases for the estimates, such as rates quoted by or applicable to an outside contractor. In addition, the Operation has been audit by Audimax Company, which issued a report stating that the operation has the necessary resources for decommissioning the plant at closing. There is also the financial report conducted annually by Deloitte Touche Tohmatsu, which also proves the yearly allocation of funds for this purpose.

The corporate document for cost estimation “Closure” is review quarterly. Operation has decide to have a self-insurance to cover the estimated costs for cyanide decommissioning activities.

The document issued by the third-party company Report and Financial Statements for Fiscal Year 2012 and Report of Independent Auditors on the Financial Statements date Dec. 31/2012 prepared by Deloitte Touche Tohmatsu. Auditor's opinion: "The object to financial statements present fairly, in all material respects, the financial position of the JMC on Dec. 31/2012, the performance of its operations and its cash flows for the year ended that date, in accordance with accounting practices adopted in Brazil"

Note: In Brazil, there is no legal requirement for approval by jurisdiction of the closure costs, excluding insurance and bond.

6. WORKER SAFETY: ***Protect workers’ health and safety from exposure to cyanide.***

Standard of Practice 6.1: *Identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce or control them.*

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 6.1

Summarize the basis for this Finding/Deficiencies Identified:

The Operation identified and evaluated all the SHE risks associated with the cyanide in order to have the risks under control and mitigated, the Operation defined, documented and implemented specific operational procedures for cyanide related activities. Documented procedures, plans and Regulatory references were review and verified during the field audit. All the documented operational procedures address the required personnel protective equipment (EPP). The documented operational procedures were develop by Operators & Supervisors and approved by responsible Manager. All Operators and Supervisors are training in the operational procedures and at least once a year the work force review the risk profile, the operational procedures and, when necessary, these ones updated. Planned job observations are also part of the operation management system. The work force participates effectively in the risk identification and evaluation and in the development of operational procedures.

Standard of Practice 6.2: *Operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.*

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 6.2

Summarize the basis for this Finding/Deficiencies Identified:

The Operation determined that the minimum pH value should be equal or greater than 10, 5. The pH is effectively controlled and monitored (through calibrated ph meter) in the operation. Alarm systems are in place. Verified, during the field audit, that the usual pH value is around 13, 0. The pH is control through the online addition of a CaOH solution (concentration above 30%).

The Operation has fix calibrates HCN detector in the tank leaching area and the Operators use portable calibrate HCN detectors. Both cases evidenced in the field audit.

The Operation has fixed calibrated HCN detectors in the tank leaching area and the Operator also use portable calibrated HCN detectors. Both cases evidenced in the field

audit. Beyond these controls, all the Operators use adequate personal protective equipment. There are automatic sensors in the storage area and acacia, which are running.

- 2 ppm high alarm
- 4 ppm alarm too high (for evacuation)

It was evidenced during the field audit that the signage is effective, covering the presence of cyanide, that eating, drinking and smoking is not allow and opened flames are prohibited. All the required auxiliary installations (showers, low-pressure eyewash stations and dry powder or non-acidic sodium bi-carbonate fire extinguishers) were evidenced to be in place and operational. They were test during the audit and worked properly. The operation has also implemented a system to manage all the fire extinguishers available at the plant. There are two types (CO_2 for electrical installations and dry powder for the other ones) of fire extinguishers, identified through a specific number and the maintenance seals and stickers. It was evidenced the fire extinguishers master list, which is used to support the maintenance frequency. All cyanide tanks and piping are clearly paint, very well identified and the flow direction clearly showed, as evidenced in the field audit. This is a strong point in the plant.

It was evidence that the operation implemented an emergency office inside the plant where all cyanide relate information is available in Portuguese. This emergency room is also equipped with telephone and first aid products, which are monthly inspected. During interviewed with Operator showed good understanding about cyanide management, including first aid response. The Operation has defined, documented and implemented a procedure to investigate and evaluate any kind of incidents or accidents. Up to now, no one cyanide related incident / accident has occur. Inspections and tests showers and eyewash stations are carry out monthly Technical Work Safety.

Standard of Practice 6.3: *Develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.*

The operation is
X in full compliance with
☐ in substantial compliance with
☐ not in compliance with
Standard of Practice 6.3

Summarize the basis for this Finding/Deficiencies Identified:

The Operation has an emergency office inside the leaching plant and a health care center, fully equipped with two resuscitator (one fix and the other mobile), two ambulances, antidote kits, telephone, radio, oxygen cylinders. These facilities were evidence in the field audit.

The first aid equipment is effectively inspect by the local Nurses in a monthly basis, including the ambulances. Evidenced was available of the inspection records. The antidotes are stored under controlled conditions, into a refrigerator and their validity is monthly checked.

The Operation developed specific emergency response procedures for cyanide exposures. Verify the Operational Process Standard POP-04-03-3.5-251 Version 02, dated Mar/26/2014. As previously mentioned the operation implanted an emergency office inside the leaching plant, fully equipped with oxygen, antidotes, first aid procedures, telephone, filters and masks. The Operation has also a Health Care Center (one Doctor, one Occupational Health Nurse and four Technical Nurses), also equipped with oxygen center, antidotes, two ambulances and two resuscitator. Both installations and personnel were evidence during the field audit.

The Operation has two ambulances and qualify the local clinic (Santa Bárbara Clinic, or other Health Units at Jacobina City). The transportation procedures are test, at least, once a year. The Santa Bárbara Hospital was visited during the field audit and found to have an adequate infrastructure to assist cyanide contaminate personnel, including the Antidotes Kit.

It was evidence that emergency drills cyanide related are effectively performed by the Operation, including the local clinic team in the exercises. Evidence - 2014 Annual Emergency Mock Drills Plan.

7. EMERGENCY RESPONSE Protect communities and the environment through the development of emergency response strategies and capabilities.

Standard of Practice 7.1: *Prepare detailed emergency response plans for potential cyanide releases.*

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 7.1

Summarize the basis for this Finding/Deficiencies Identified:

The Operation defined, documented, implemented and developed specific emergency response procedure for cyanide exposures. Verify the Operational Process Standard POP-04-03-3.5-251 Version 02 date Mar. / 26 / 2014 and Emergency Response Plan (PAE) PIS-04-00-3.6-028 Version 03 date Sep. / 04 / 2013.

The above-mentioned Operational Process Standard POP-04-03-3.5-251 Version 02 dated Mar/26/2014 Item 9.1 detail for types of Incidents (Scenarios) and describes specifically the response for all cyanide related emergencies.

The Operation has an integrated drainage system, with six emergency pools, beyond the secondary containment of the cyanide tanks area. The plan is share with Proquigel (NaCN producer) and Concórdia Transportes (NaCN transporter), both ICMI certified suppliers, for emergencies related to external NaCN transportation activities. In addition, addresses the responses related to internal NaCN transportation activities. The Operational Process Standard POP-04-03-3.5-251 and Emergency Response Plan (PAE) PIS-04-00-3.6-028 Version 03 date Sep. / 04 / 2013 clearly addresses Specific responses to that situation, considering internal and external interested people.

Standard of Practice 7.2: *Involve site personnel and stakeholders in the planning process.*

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 7.2

Summarize the basis for this Finding/Deficiencies Identified:

The Operational Process Standard POP-04-03-3.5-251 and Emergency Response Plan (PAE) PIS-04-00-3.6-028 Version 03 dated Sep./04/2013 was reviewed, approved and communicated to several stakeholders (internal and external), including Security and Health Authorities, Public Authorities, Emergency Response Suppliers (Suastran Cotec), and Community Representatives. When performing emergency drills, the Operation invites specific stakeholders to participate in the drills. Another implemented control is to perform periodic meetings with stakeholders, in order to discuss and updated (if necessary) in the POP-04-03-3.5-251.

Standard of Practice 7.3: *Designate appropriate personnel and commit necessary equipment and resources for emergency response.*

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 7.3

Summarize the basis for this Finding/Deficiencies Identified:

The Operation defined, documented and implemented procedures to respond to cyanide related emergencies. Evidenced Operational Process Standard POP-04-03-3.5-251 Version 02 date Mar. / 26 / 2014 and Emergency Response Plan (PAE) PIS-04-00-3.6-028 Version 03 dated Sep. / 04 / 2013. Also, evidence the 2014 Annual Emergency Drills

Plan. Responsibilities and Authorities are clearly define and communicate to all involved stakeholders (internal and external). The Emergency Committee Organizational Flowchart was evidence. The Operational Process Standard POP-04-03-3.5-251 Version 02 dated Mar/26/2014 and Emergency Response Plan (PAE) PIS-04-00-3.6-028 Version 03 dated Sep./04/2013 establishes the designate of primary and alternate emergency response Coordinators who have explicit authority to commit the resources necessary.

The Emergency Response Brigade Members are voluntary but passed through a selection process (medical, theoretical and practical), to be assigned as a Brigade Member. The Brigade Members were training by the Firemen Brigade of the Juazeiro County.

The Emergency Brigade and Help Mans master list addresses all the necessary information about the Brigade Members, including contact details.

The basic emergency response hardware is consisted of two ambulances, one complete equipped emergency truck, one pick-up car 4X4, and auxiliary equipment (PPEs) for the brigade members, such as chemical/flame resistant overall, chemical gloves, oxygen masks and cylinders, chemical masks. The emergency response hardware is monthly inspect by the Safety Officers of the operation. Records of such inspections were evidence and found in place. When performing emergency drills, the Operation invites specific stakeholders to participate in the drills. Another implemented control is to perform periodic meetings with stakeholders, in order to discuss and updated (if necessary) in The Operational Process Standard POP-04-03-3.5-251.

Standard of Practice 7.4: *Develop procedures for internal and external emergency notification and reporting.*

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 7.4

Summarize the basis for this Finding/Deficiencies Identified:

The Operational Process Standard POP-04-03-3.5-251 and Emergency Response Plan (PAE) PIS-04-00-3.6-028 Version 03 dated Sep./04/2013 was review, includes procedures and contact information for notifying management, regulatory agencies, outside response providers and medical facilities of the cyanide emergency. The POP-04-03-3.5-25, approved and communicated to several stakeholders (internal and external), including security and health authorities, public authorities, emergency response suppliers (Suastran Cotec), community representatives. The plan clearly defines the communication procedures to be used during an cyanide related emergency including

(but not limited to) a list of emergency telephones (24h) of all Emergency Brigade Members, Leaders, Managers and General Manager (emergency response leader), Public Authorities, Hospital and Clinics, Response Suppliers, Cyanide Supplier, Cyanide Transporter. The communication procedures also involve the security process of the operation. Resources, such as radios and fixed, cell and satellite phones were evidence during the audit, these communication procedures were check and it worked fine. When performing emergency drills, the Operation invites specific stakeholders to participate in the drills. Another implemented control is to perform periodic meetings with stakeholders, in order to discuss and updated (if necessary) The Operational Process Standard POP-04-03-3.5-251. The emergency communication loop is clearly define and contact information is available in the plan and at the security process. In all potential emergencies, the Public Authorities are the ones (external stakeholder) to be informed in order to participate in the mitigation efforts.

Standard of Practice 7.5: *Incorporate into response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.*

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 7.5

Summarize the basis for this Finding/Deficiencies Identified:

The Operation defined, documented and implemented procedures that included in the Plan to: recovery or neutralization of solutions or solids, decontamination of soils or other contaminated media, management and/or disposal of spill clean-up debris, provision of an alternate drinking water supply. Verify the procedures and consider appropriate to this activities. Sodium Hypochlorite, Hydrogen Peroxide and Ferrous Sulfate: chemicals not permitted to be use in the treatment of surface water, for example should not be use.

Plan states that these chemicals are not allow being use in surface water treatment. The Operation emergency brigade does not have these kinds of chemical products in their emergency response kit, as evidenced in the field audit. Evidences in the POP-04-03-3.5-251 Version 02 date Mar/26/2014 and Emergency Response Plan (PAE) PIS-04-00-3.6-028 Version 03 dated Sep./04/2013. The Operation in the POP-04-03-3.5-251 and Emergency Response Plan (PAE) clearly defines the required monitoring procedures to be implement in the event of soil and water potential contamination. An Environmental Monitoring Plan is address into the Emergency Response Plan.

Standard of Practice 7.6: Periodically evaluate response procedures and capabilities and revise them as needed.

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 7.6

Summarize the basis for this Finding/Deficiencies Identified:

The Operation defined, documented and implemented procedures to respond to cyanide related emergencies. Evidenced that the Operation in the POP-04-03-3.5-251 and Emergency Response Plan (PAE) PIS-04-00-3.6-028 was reviewed, approved and communicated to several stakeholders (internal and external), including Security and Health Authorities, Public Authorities, Emergency Response Suppliers (Suastran Cotec), Community Representatives. When performing emergency drills, the Operation invites specific stakeholders to participate in the drills. Another implemented control is to perform periodic meetings with stakeholders, in order to discuss and updated (if necessary) the Emergency Response Plan). The emergency communication loop is clearly define and contact information is available in the plan. The plan is review at least once a year.

As evidenced the "2014 Annual Emergency Drill Plan". Evidenced two emergency drills performed up to date, involving NaCN leakage during unloading dated Feb./10/2013, and NaCN, leak in the Pump Reagents Area dated Feb./20/2014.

Verify by Auditor reports and action plans.

After each emergency drill, the drill results are review and discuss among the participants. The opportunities of improvement raise-up during the drill are consider as corrective or preventive actions and managed adequately. Reports relate to the drills and their reviews was find in place. In 2/2 years is conducted a review.

8. TRAINING: Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.

Standard of Practice 8.1: Train workers to understand the hazards associated with cyanide use.

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 8.1

Summarize the basis for this Finding/Deficiencies Identified:

The procedure Internal Training – POP-04-05-3.4-255 and the Annual Training Plan 2014 defines the training strategies for the personnel working in cyanide areas. Training records were find and they include cyanide hazard recognition for security, maintenance and plant personnel.
Evidences were available of Brazilian Standard NR- 33 - Confined Space of the Mr. Sergio Ramon Bustos, dated Oct./04/2013 (Presence List and Effectiveness Evaluation), and refresh of Brazilian Standard – NR 10 – Security in Services and Electric Installations – Instructor Mr. Reinaldo Santana – Certify by Federal Technical School of Bahia State.
Records of contractor training were present as well as records of trainings held for the Employees, including training evaluation records according the procedure of documents control by Certified Integrated Management System. There are training records available in Human Resources Department. Training records are keep for 20 years, according to Brazilian Legislation - Labor Law Consolidation (CLT).

Standard of Practice 8.2: *Train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.*

The operation is
X in full compliance with
☐ in substantial compliance with
☐ not in compliance with
Standard of Practice 8.2

Summarize the basis for this Finding/Deficiencies Identified:
All trainings divided by position and its duration was insert into the software DATASUL. It was find evidences of trainings Employees are training to perform liquid cyanide unloading, operate facilities and several production and maintenance activities. All trainings present safety, health and environment hazards. The procedure POP-04-05-3.4-255 defines the qualification of Instructors. All Instructors where training in pedagogical teaching techniques and comply with the procedure requirements. All new or transferred Employees have introduction training covering general and specific cyanide hazards. There is refresher training on cyanide management provided to ensure that Employees continue to perform their jobs in a safe and environmentally protective manner. The document Activities Plan mentions that refresh training is link to procedures and processes review. Records were present. Training records were present, including Employee and Instructor names, topics cover and test records. During the audit, the attendance lists and certifications for these trainings were verify.

Lead Auditor Signature
Julio C. M. Monteiro

Standard of Practice 8.3: *Train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.*

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 8.3

Summarize the basis for this Finding/Deficiencies Identified:

There are evidences that Plant Operators and Maintenance Employees have collaborated to elaborate with the Operation in the POP-04-03-3.5-251 Version 02 dated Mar/26/2014 and Emergency Response Plan (PAE) PIS-04-00-3.6-028 Version 03 dated Sep./04/2013. Training records for rescue team and first aid were find, including plant Operators and maintenance Employees. The decontamination training was held by the company specialized Suastran Cotec.

Records of training in the procedures included in the Emergency Response Plan regarding cyanide, including the use of necessary Response Equipment, to Emergency Response Coordinators and Members of Emergency Response Team, was verify by the Auditor. Evidences were verify by the Auditor of communication with Community Members, Medical Providers, Santa Barbara Clinic, and Police Officer about the elements of Emergency Response Plan related to cyanide. Was verified the records of refresher training for response to cyanide exposures and releases, conducted annually. Records, Reports and Action Plans were verify about simulated cyanide emergency drills periodically conducted for training purposes. This mock drill covers the work exposures and environmental releases.

Evidenced of two emergency drills performed up to date, involving NaCN leakage during unloading dated Feb./10/2013, and NaCN, leak in the Pump Reagents Area dated Feb./20/2014. Verified the reports prepare after drills that include strong performances and opportunity for improvement. The PAE define that with some deficiency are identified the procedure must to be changed. Verified records retained documenting the cyanide training, including the names of the Employee and the Trainer, the date of training, the topics covered, and how the employee demonstrated an understanding of the training materials.

9. DIALOGUE: Engage in public consultation and disclosure.

Standard of Practice 9.1: *Provide stakeholders the opportunity to communicate issues of concern.*

The operation is	**X** in full compliance with ☐ in substantial compliance with ☐ not in compliance with	Standard of Practice 9.1

Summarize the basis for this Finding/Deficiencies Identified:

An opening program named “Portas Abertas” (Open Door) is in place to meet Community Members, Local Organization Members, Public Prosecutor and Associations. A contract has signed between JMC and a telephone company to provide a free number 0800 so that Community Members can communicate its concerns more easily. Reception phone numbers were also publish to the Community and Stakeholders. There is also a contract between JMC and a local newspaper “A Semana” (The Week) to allow JMC to release safety, health and environment issues weekly.
There are evidences of visits from Itapicuru Community, located close to JMC, and information material were distributed containing cyanide information, emergency phone numbers and others. The Sustainability Report was also delivery to the City Hall, District Associations, Radios Stations, Public Prosecutor and Universities.

Standard of Practice 9.2: *Initiate dialogue describing cyanide management procedures and responsively address-identified concerns.*

The operation is
X in full compliance with
☐ in substantial compliance with
☐ not in compliance with
Standard of Practice 9.2

Summarize the basis for this Finding/Deficiencies Identified:

The Operation give opportunities for the operation to interact with stakeholders and provide them with information regarding cyanide management practices and procedures
There are evidences of visits from Itapicuru Community, located close to JMC, and information material were distributed containing cyanide information, emergency phone numbers and others. The Sustainability Report was also delivery to the City Hall, District Associations, Radios Stations, Public Prosecutor and Universities.

Standard of Practice 9.3: *Make appropriate operational and environmental information regarding cyanide available to stakeholders.*

The operation is
X in full compliance with
☐ in substantial compliance with
☐ not in compliance with
Standard of Practice 9.3

Summarize the basis for this Finding/Deficiencies Identified:

Lead Auditor Signature
Julio C. M. Monteiro

There is an information material with simplified information about cyanide management at JMC. Evidences of meetings with several Municipal Organizations, Police, Municipal Secretariat, Hospitals, Communities were checked, where the material was also distributed.
During the 3 year cycle elapsed audit no history of incidents that could jeopardize.

Lead Auditor Signature
Julio C. M. Monteiro