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PT NUSA HALMAHERA MINERALS – GOSOWONG GOLD MINE RECERTIFICATION AUDIT CORRECTIVE ACTION PLAN IMPLEMENTATION LETTER

Dear Sir

BACKGROUND

The PT Nusa Halmahera Minerals (NHM) Gosowong Gold Mine was found to be non-compliant with the *International Cyanide Management Code for the Manufacture, Transport, and use of Cyanide in the Production of Gold* (the Code) on 18 November 2015 based on the ICMI Recertification audit held from 27-29 January and 22-23 April 2015. Accordingly the NHM developed a Corrective Action Plan (CAP) to address the identified deficiencies (*PT Nusa Halmahera Minerals – Gosowong Gold Mine Recertification Audit – Corrective Action Plan* (Report No. 1413542-009-R-Rev0, Golder Associates, October 2015)).

This letter details the successful implementation of the necessary actions to bring the operation into full compliance with the Code.

VERIFICATION OF CORRECTIVE ACTION PLAN IMPLEMENTATION

A review of the evidence presented by NHM supporting the full implementation of the Corrective Action Plan was conducted by Golder Associates (Golder) in April, May and June 2016. A site visit to verify the implementation of some elements of the CAP was conducted on 21 and 22 June 2016. The review is summarised in the tables below.

Table 1: Standard of Practice 2.1

Description of deficiency - NHM does not currently have written agreements between the operation, the cyanide producer and transporters designating responsibility for all items a) to I) for its supply chain.

The Recertification Audits of the cyanide suppliers and cyanide transport supply chains were used by NHM to assure that the designation of responsibilities has been adequately addressed.

(Questions 2.1.1 & 2.1.2)

Corrective Action	Finding/Evidence
Recertify the NHM Gosowong Supply Chain.	The corrective actions identified for the NHM Gosowong Supply Chain have been assessed and completed. Corrective Action Plan Implementation Letter 1413642-017-R-Rev0 details the completion and accordingly the NHM Gosowong Supply Chain can be recertified in Full Compliance meeting this requirement.



Table 2: Standard of Practice 2.2

Description of deficiency - The operation's contracts with its respective transporters do not specifically require all cyanide transporters to be certified under the Code. With the exception of the Gosowong Mine Supply Chain, all transporters involved in the transportation of cyanide from the point of manufacture to the Gosowong Gold Mine are fully compliant with the Code.

The Recertification Audits of the cyanide suppliers and cyanide transport supply chains were used by NHM to assure that the designation of responsibilities has been adequately addressed.

(Questions 2.1.1 and 2.1.2).

Corrective Action	Finding/Evidence
Recertify the NHM Gosowong Supply Chain.	Refer to 2.1

Table 3: Standard of Practice 4.1

Description of deficiency - The audit identified systemic failures in the management system that contributed to the specific deviations contained throughout this action plan. Specifically there was a lack of knowledge with regards to the ICMC and specific commits made by NHM to maintain compliance with the ICMC. (Question 4.1.1)

Corrective Action	Finding/Evidence
Re-establish awareness and knowledge of the ICMC and NHM's commitments across the management team, with a focus on front line supervisors. The operational decisions and actions of frontline supervisors have a significant bearing on ICMC compliance.	In relation to the systemic failures in the management system that contributed to a number of specific deviations attributed to the lack of knowledge. NHM has implemented measures to rebuild the knowledge base amongst management team personnel with regards to the ICMC and specific commits made by NHM to maintain compliance with the ICMC.
Re-establishment of awareness and knowledge would typically involve the following activities:	NHM has developed and implemented a training package that details responsibilities and commitments under the Code and are tailored to each department. ICMC awareness package provides information on the Code, the commitments of NHM, organisational arrangements to comply with the Code and
 Development or re-establishment of a consolidated commitment register Allocation of responsibilities for 	individual department responsibilities. Training packages have been developed that are tailored to each department and rolled out to inform and clarify responsibilities for Code compliance. These training packages will be delivered
commitments within the register, frequency of monitoring and method of assessment	periodically to maintain a level of awareness of Code commitments and compliance activities throughout the operation.
 Training of personnel accountable for achieving commitments 	The roll out of this program was confirmed through interviews with line management and supervisory personnel from a number of departments together with a review of training
 Implement a process to formally track compliance with commitments and correct deviations 	records. Personnel interviewed could describe the actions necessary for compliance with the Code within their area of responsibility.
 Retention of records of compliance activities 	NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.
Note, the commitment register could be part of an overall site register and if this is the case, the register should be able to	



be sorted to enable focus on Code commitments as needed.

Develop and deliver a training program for front line supervisors and managers that details departmental roles and responsibilities with respect to the ICMC commitments and maintaining ICMC compliance.

Consideration should also be given to maintaining the level of knowledge of the management team over time to prevent non-compliance from omissions or lack of knowledge.

Description of deficiency - NHM engaged a Corrosion Consultant (Extrin) to assess the state of corrosion on the plant as part of its 2 yearly assessment. The assessment was conducted approximately 12 months later than scheduled and the resultant Corrosion Report identified and prioritised deficiencies based on risk (Priority 1, 2 and 3). Priority 1 deficiencies were defined by Extrin as representing a risk to the health and safety of workers or the environment and required immediate rectification. NHM has progressed but not completed the Priority 1 deficiencies. Priority 2 deficiencies were recommended by the Corrosion Consultant to be completed within two years. (Question 4.1.6)

To re-establish and maintain compliance NHM is required to:

- Address all Priority 1 deficiencies identified within the Extrin Corrosion Report.
- Schedule works for the Priority 2 deficiencies identified within the Extrin Corrosion Report and implement those actions that are scheduled within 12 months.
- Schedule works for the Priority 3 deficiencies identified within the Extrin Corrosion Report and implement those actions that are scheduled within 12 months.

A site inspection and maintenance records confirmed that the priority 1 actions provided in the Extrin corrosion report have been addressed. Progress has been made on a number of priority 2 items and a schedule has been developed for the completion of the remaining identified items.

A review of the preventative maintenance system (SAP) confirmed that schedule for this items has uploaded together with a planned inspection process for corrosion with the next inspection scheduled for April 2017.

NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.

Description of deficiency - Preventive maintenance programmes are partly implemented and activities documented to ensure that equipment and devices function as necessary for safe cyanide management. As noted in 4.1.6, NHM engaged a Corrosion Consultant (Extrin) to assess the state of corrosion on the plant as part of its 2 yearly assessment. The assessment was conducted approximately 12 months later than scheduled and the resultant Corrosion Report identified and prioritised deficiencies based on risk (Priority 1, 2 and 3). (Question 4.1.9)

Refer to 4.1.6 Refer to 4.1.6



Table 4: Standard of Practice 4.3

Description of deficiency - A probabilistic water balance to prevent unintentional releases to the environment has not been consistently in use during the recertification period (Question 4.3.1)

Corrective Action	Finding/Evidence
Demonstrate continued use of the water balance over a twelve month period.	NHM has completed the requirements of the CAP with a GoldSIM based probabilistic water balance to prevent unintentional releases to the environment having been consistently used since October 2014. The GoldSIM model is probabilistic and is based on Monte Carlo simulations. Monte Carlo simulations describe a method for propagating uncertainties in model inputs (e.g. climatic conditions) into uncertainties in model outputs (e.g. pond water levels).
	The probabilistic water balance does consider the rainfall, and the manual states that the model is to be run every three months. Monitoring data updates will also be run every three months while calibration runs will be run two years after operation. Whenever a condition changes, the model should also re-run. The operation was in the process of having the model updated to incorporate the commissioning of a new TSF facility. A review of model outputs and updated inputs demonstrated that the operation has effectively integrated use of the model into operations. Accordingly, the operation has demonstrated consistent use of the water balance model in line with manual requirements.
	The operation has also modified its monthly metallurgical accounting report to require the update and running of the water balance model. This procedural modification is considered sufficient to provide evidence of a system or process that will trigger the consistent use of the water balance and escalate to senior management in the event that the water balance is not run in accordance with schedule and parameters as the monthly metallurgical accounting report is a core business process and has oversight by the senior management team.
	In addition the operation has developed training packages that detail accountability for various Code compliance activities organised by department including a package for senior managers to familiarise them with their responsibilities.
	NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.



Table 5: Standard of Practice 4.5

Description of deficiency - NHM has a direct discharge to surface water and it is generally no greater than 0.5 mg/LWAD cyanide.

With the exception of the event 1-3 November 2013, all elevated sampling events were either followed by a resample later that day which returned a compliant result or the release was stopped until levels dropped to 0.5 mg/L WAD cyanide or below. The event on the 1-3 November 2013 occurred over 1.5 days (three sampling events) before the release was stopped.

Section 5.7 of the *CERP* notes that any release of solution to the environment with a WAD Cyanide concentration of more than 0.5 mg/L will be regarded as an environmental emergency event that requires NHM to follow a set process, including raising the alarm, notifying the ERT Captain, taking samples and mitigating the release event. As with all incidents, an accompanying incident and investigation report following the event shall be documented. NHM could not produce evidence that it complied with these requirements, including incident investigation and reporting for each event. (Question 4.5.1).

Finding Corrective Action Set trigger levels within the NHM has a direct discharge to surface water via a gate valve at the polishing pond. Sample point S10PP is used to environmental monitoring database that alerts the Environmental monitoring cyanide levels at this point prior to allowing Manager of an exceedance with discharge. NHM have revised their procedure NHM-SWPrespect to ICMC compliance. ENV-06-21 to clarify monitoring requirements and release parameters under their license and Code commitments. Review response actions in relation to exceedances and the most Analytical results for polishing pond monitoring point (S10PP) appropriate personnel to undertake indicate that discharges to surface water have not exceeded the 0.5 mg/L WAD cyanide level in the last 12 months. The those actions. Multiple trigger levels could be used to differentiate response actions to an exceedance of these limits is detailed in NHMs Cyanide Emergency Response Plan. abnormal operations response and

Provide 12 months of WAD cyanide data for S10PP. Where exceedances greater than 0.5 mg/L are observed, provide evidence that the CERP was followed.

emergency response.

NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.

Description of deficiency - A mixing zone has been established by NHM's Environmental personnel and endorsed by the Government (Department of Mines and Energy) through acceptance of quarterly AMDAL reports, in which the mixing zone was reported, along with the monitoring results.

The sampling point (S12KR) immediately downstream of the established mixing zone is within the Kobok River. At this point, NHM monitors free cyanide levels. A review of monitoring results for S12KR, from January 2011 to January 2015, showed free cyanide has been consistently recorded as being <0.05 mg/L which is greater than the compliance level of <0.022 mg/L. The detection limit of the laboratory or test does not appear to be appropriate. (Question 4.5.2)

- Select and use a laboratory and testing method that allows water sampling results for S12KR to be assessed against the compliance level of <0.022 mg/L free cyanide.</p>
- Amend sampling procedures and chain of custody documentation to reflect the selected laboratory and testing method.

Sampling point S12KR within the Kobok River, is immediately downstream of an established mixing zone. At this point, NHM monitors free cyanide levels. NHM commenced using an independent laboratory to analyse free cyanide levels with the necessary sensitivity to detect free cyanide levels above 0.005 mg/L in January 2015. Monitoring results for S12KR, from January 2015 to June 2016 were reviewed and showed free cyanide has been consistently below the 0.022 mg/L compliance level of <0.022 mg/L.

Recently NHM has undertaken a review of its test method and verification that the method is reliable for a 0.002 mg/L



Provide 12 months of data showing that the concentration of free cyanide at sampling point S12KR is <0.022 mg/L. Where exceedances >0.022 mg/L are observed, provide evidence that the CERP was followed. detection level. NHM has completed verification trials and concluded that their in-house analytical method can reliably detect free cyanide at levels above 0.002 mg/L. NHM has benchmarked its results against two independent laboratories for both free and WAD cyanide analysis and has shown comparable results between the laboratories. NHM has completed a MOC for the change in sampling to daily in house analysis with monthly external duplicates for QA/QC.

As the operation can now show that free cyanide levels at S12KR are consistently less than the compliance level of <0.022 mg/L, and that is has a reliable and suitably sensitive test method NHM is now considered to be have completed the corrective action and is Fully Compliant with this Standard of Practice.

NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.

Table 6: Standard of Practice 4.7

Description of deficiency - During the Certification Audit, NHM identified three solution tanks and three leach tanks situated on ring beam foundations that did not provide spill prevention or containment beneath the tank floor. NHM engaged SGS to develop a risk based inspection (RBI) programme that specified an inspection programme that was to be adopted for its ring beam tanks. NHM advised that this programme would be adopted for all solution and leach tanks regardless of the tank foundation type. At the time of the Recertification Audit, the operation has not been able to demonstrate that the RBI programme has been adopted.

Although all process solution tanks are now confirmed as having appropriate containment measures; RBI programme was developed but not followed for the duration of the Recertification Audit period

Corrective Action	Finding
Refer to 4.1	Refer to 4.1

Table 7: Standard of Practice 5.1

Description of deficiency - NHM has developed a *Cyanide Facilities Decommissioning Plan* for Gosowong; however the level of detail within that plan was not sufficient to meet Code requirements. (Question 5.1.1)

Corrective Action	Finding
Update the existing Cyanide Facilities Decommissioning Plan or develop procedures that detail the processes that address cyanide remaining on site at the cessation of production activities.	NHM has revised its Cyanide Facilities Decommissioning Plan for Gosowong Gold Mine to provide sufficient detail on processes to decontaminate equipment, remove residual cyanide, control of surface or ground water during decommissioning works. NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.

Description of deficiency - The Decommissioning Schedule has been inserted as an Appendix within the Cyanide Facilities Decommissioning Plan, however the Plan does not appear to provide context for this schedule. Without adequate supporting documentation providing context to the provided Decommissioning Schedule. (Question 5.2.2)



Update of the existing Cyanide Facilities Decommissioning Plan or the development of other documentation that provides the context for the Decommissioning Schedule.

The decommissioning schedule provided within decommissioning plan is has been updated and aligned to the activities and tasks detailed within the plan. The decommissioning schedule provides a timeline of tasks commencing 6 months from decommissioning through to completion and the level of detail is considered sufficient for the current life of mine.

NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.

Table 8: Standard of Practice 6.2

Description of deficiency - A review of incident reports indicates the operation does not report all cyanide related incidents and hazards. Incident reporting and investigation is a core element of an effective management system. (Question 6.2.9)

Corrective Action Finding Conduct competency based incident NHM has reviewed incident investigation training and rolled investigation training for staff responsible out training to supervisors. Interviews with personnel for the instigation and review of incident confirmed that they were aware of the incident reporting reports. At least one trained person processes including classification and the associated must participate in (preferably) or review investigation based on the incidents. A review of NHMs incident investigations. The training incident database confirmed that incidents had been correctly should also focus on educating entered and investigations completed. personnel on reporting incidents and the NHM is now considered to have completed the corrective development of corrective actions. The action and is Fully Compliant with this Standard of Practice. design and delivery of the program is important in re-establishing a positive reporting culture together with the operations response to reports and the actions taken as a result.

Table 9: Standard of Practice 6.3

Description of deficiency - NHM has not been able to demonstrate that the ICMC requirements for periodically conducting mock drills have been met for the duration of the Recertification Audit Period. (Question 6.3.7)

	Corrective Action	Finding
Refer	to 4.1.1	NHM has undertaken a review of emergency response
Invest	tigate why:	capability and processes that identified a number of actions that it has addressed.
	ne cyanide procedures were ot followed	NHM has systematically addressed identified gaps through the implementation of a structured training process and mentoring
7.7	nere was a lack of awareness mock drills.	of site personnel by experienced emergency response professionals. The focus has been on upskilling local responders and establishing a clear command and control
For ex	kample, is this due to	structure for the ERT.
capab or insu mecha	isation design, capacity, bility, lack of resources, poor ufficient communication anisms, training content, ng availability of individuals,	In addition to the ERT, NHM has developed and rolled a training package that details responsibilities and commitments under the Code and are tailored to each department including emergency response commitments and responsibilities. The



role clarity, lack of internal auditing or performance evaluation or lack of direction. Implement any corrective actions derived from the investigation.

- Ensure a minimum of one senior manager that understands emergency management principals and commitments made within NHMs documentation to achieve Code compliance. This should enable suitable direction and oversight of emergency response activities.
- Ensure a minimum of one superintendent level person that has a sound understanding of management systems with established coaching and coordination skills.
- Ensure the Emergency Response Team understands that the quality, frequency and content of training, inspections and drills that have a direct impact on their ability to protect themselves, others and the operation.

Ensure there is a clear link between the actions identified during the mock exercises and the improvement actions made as a result. operations response to reports and the actions taken as a result.

roll out of this program was confirmed through interviews with line management and supervisory personnel from a number of departments together with a review of training records. Personnel interviewed could describe the actions necessary for compliance with the Code within their area of responsibility.

A series of mock drills have been conducted to train, test and re-establish the capability of the ERT to respond to cyanide. A review of mock drill reports and interviews with trainers and ERT captain confirmed that capability had been restored and a system for conducting, reviewing and improving response from mock drills had been re-established.

NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.

Table 10: Standard of Practice 7.6

Description of deficiency - A passage in the CERP requires it to be reviewed on an annual basis. The CERP document revision history demonstrates that the CERP was not reviewed between 8 April 2011 and 2 October 2014. The most recent version of the CERP (version 7) was provided on 22 May 2015.

Corrective Action	Finding
Implement a system or process that will trigger the review of this plan in accordance with committed schedule and scope.	NHM has re-established processes that will trigger the review of the CERP. The mock drills include a specific debrief process that assesses performance of the drill against the plan and consideration if the plan requires modification. A series of mock drills have been conducted and the debrief process has been implemented. An action has been included in the CHESS system to prompt periodic review of the CERP in addition to the mock drill process.



NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.

Description of deficiency - As noted in 6.3.7, the operation has not been able to demonstrate compliance with its own commitments in relation to emergency exercises. NHM has not been able to demonstrate that the ICMC requirements for periodically conducting mock drills have been met for the duration of the Recertification Audit Period. (Question 7.6.2)

A series of mock drills have been conducted train, test and reestablish the capability of the ERT to respond to cyanide. A review of mock drill reports and interviews with trainers and ERT captain confirmed that capability had been restored and a system for conducting, reviewing and improving response from mock drills had been re-established.

NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.

Description of deficiency - The CERP has a requirement for review following its activation for a cyanide related emergency. There have been cyanide related incidents requiring the activation of the CERP (water quality exceedances) but the CERP has not been reviewed. (Question 7.6.3)

NHM has developed and rolled a training package that details responsibilities and commitments under the Code and are tailored to each department. ICMC awareness package provides information on the Code, the commitments of NHM, organisational arrangements to comply with the Code and individual department responsibilities. This has included personnel with the remit for Emergency Response. NHM have also implemented actions within the CHESS system to review the CERP on a periodic basis.

In addition NHM has had an independent review of its ERT function and developed an improvement plan. Interviews with site personnel and review of records confirmed that significant progress made in addressing the identified actions. The main component of the improvement plan is the re-establishing the capacity of the ERT and to a lesser extent the management team to respond to emergencies including cyanide related emergencies. The onsite team have developed an understanding of the response plans and response planning process which will enable NHM to complete reviews post activation of the plan.

NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.

Table 11: Standard of Practice 8.3

Description of deficiency - NHM has been unable to provide sufficient evidence to demonstrate that personnel, including unloading, mixing, production and maintenance workers, are trained in decontamination and first aid procedures. (Questions 8.3.2)

Corrective Action	Finding
Train unloading, mixing, production and maintenance workers, in	NHM has retrained unloading, mixing, production and maintenance workers in the procedures to be followed in the event of cyanide release. NHM have developed and delivered



decontamination and first aid procedures.

training packages in the local language that describe first aid response and decontamination procedures.

Interviews with personnel and review of training records confirmed that training had been rolled out and that personnel were aware of the response actions to take.

NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.

Description of deficiency - NHM has provided some evidence; however the provided material is not sufficient to demonstrate full compliance with the CERP training commitments or Code requirement that Emergency Response Coordinators and members of the Emergency Response Team are trained in the procedures included in the Emergency Response Plan regarding cyanide, including the use of necessary response equipment. (Question 8.3.3)

Train Emergency Response
Coordinators and members of the
Emergency Response Team in the
procedures included in the Emergency
Response Plan regarding cyanide,
including the use of necessary response
equipment.

NHM had an independent review of its ERT function and developed an improvement plan. Interviews with site personnel and review of records confirmed that significant progress made in addressing the identified actions. The main component of the improvement plan is the re-establishing the capacity of the ERT and to a lesser extent the management team to respond to emergencies including cyanide related emergencies.

The operation has established a training program for the ERT including retraining the team in technical skills such as hazardous materials response, use of self-contained breathing apparatus and incident command and control. Training has been provided through theory sessions, practical demonstrations and a series of mock drills to re-establish the capability of the ERT to respond effectively.

Interviews with personnel and review of training records confirmed that training had been rolled out and that personnel were aware of the response actions to take.

NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.

Description of deficiency - NHM has provided some evidence; however the provided material is not sufficient to demonstrate full compliance with the CERP training commitments or Code requirement that refresher training for response to cyanide exposures and releases is conducted regularly. (Question 8.3.5)

- Conduct an effectiveness review of the training program to identify aspects for improvement to address the identified deficiencies in this report.
- Revise the Training Matrix to show the current training status at any time, module refresher frequencies and training expiry dates. The Training Matrix should indicate whether personnel meet the minimum training requirements for their roles.

A series of mock drills have been conducted to train, test and re-establish the capability of the ERT to respond to cyanide exposure and releases. A review of mock drill reports and interviews with trainers and ERT captain confirmed that a system for refresher training had been re-established. A key component of this program is the mock drills together with regular theory and practical training sessions on the technical aspects of emergency response on a rotational program.

NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.



Description of deficiency - NHM has not been able to demonstrate compliance with the code requirement to conduct simulated cyanide emergency drills periodically for training purposes that cover both worker exposures and environmental releases. (Question 8.3.6)

 Conduct the emergency drills specified in the approved training matrix. A series of mock drills have been conducted to train, test and re-establish the capability of the ERT to respond to cyanide exposure and releases. A review of mock drill reports and interviews with trainers confirmed that mock drills have covered both worker exposure and environmental release scenarios.

Actions within the CHESS system will prompt the conduct of both worker exposure and environmental releases for future drills.

NHM is now considered to have completed the corrective action and is Fully Compliant with this Standard of Practice.

STATEMENT OF COMPLIANCE

Based on the evidence observed, I am satisfied that NHM has fully implemented the Corrective Action Plan submitted to the ICMI and consequently the operation is fully compliant with the Code.

Should you require any additional information, please do not hesitate to contact me.

Yours faithfully

GOLDER ASSOCIATES PTY LTD

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