


**Appendix A: Corrective Action Requests**

Bogoso/Prestea Mine  
Name of Mine

  
\_\_\_\_\_  
Signature of Lead Auditor

3 September 2009  
Date

**CORRECTIVE ACTION PLAN**  
**ICMC Audits**

**Control No.:** GSBPL-ICMC-CAR-01

**Date issued:** 3 September 2009

**ICMC Standard of Practice Section Reference:** 4.1(5); see also 4.1(7)

**Description of Deficiency:** Documentation has been provided showing evidence that procedures are in place to address upsets in the operational water balance, prior to and to avoid overtopping of all ponds and impoundments. Nonetheless, there are inconsistencies between the field procedures and associated written procedures concerning the process water pond, which require rectification.

The process water pond overflows into the raw water pond, which in turn overflows to Event Pond 1 via a concrete channel. Event Pond 1 also functions as secondary containment for the CIL tank farms. Written inspection, monitoring and contingency procedures must be updated to accurately reflect this configuration.

**Corrective Action Required (describe/attach supplemental information as necessary):**

- Update Procedure 041, Procedure for Temporary Closure or Cessation of Operations, so that the description for managing and inspecting water management facilities includes the raw water pond and accurately describes its relation to the process water pond.


**Evidence Required for Verification of Corrective Action Completion:** Documentation providing evidence that Procedure 041 has been modified and implemented to address the corrective action, including:

- Updated copy of Procedure 041 – Procedure for Temporary Closure or Cessation of Operations; and
- Training records demonstrating implementation of the updated procedure.

**Corrective Action Completion Date:** 30 November 2009

<p><b>Approved:</b> _____ <b>Date:</b> _____ <b>Lead Auditor</b></p>	<p><b>Approved:</b> _____ <b>Date:</b> _____ <b>Auditee Representative</b></p>
<p><b>Closure Verified:</b> _____ <b>Date:</b> _____ <b>Lead Auditor</b></p>	<p><b>Comments:</b></p>

Bogoso/Prestea Mine  
Name of Mine

  
Signature of Lead Auditor

3 September 2009  
Date

**CORRECTIVE ACTION PLAN**  
**ICMC Audits**

**Control No.:** GSBPL-ICMC-CAR-02

**Date issued:** 3 September 2009

**ICMC Standard of Practice Section Reference:** 4.1(7)

**Description of Deficiency:** Documentation was not provided showing evidence that all secondary containment facilities are being inspected on a routine basis. Secondary containment facilities identified by the onsite verification audit include:

- Concrete bunds for all cyanide facilities (i.e., sparge facility, mill, CIL tank farms, and carbon wash and elution circuits);
- Concrete containment channel and culvert for tailings pipelines;
- Geomembrane-lined containment channel for tailings pipelines;
- Event Pond 1;
- Event Pond 2;
- Raw water pond; and
- Concrete channels linking secondary containment facilities.

**Corrective Action Required (describe/attach supplemental information as necessary):** Modify inspection procedures and checklists to include the secondary containment facilities noted above. Inspections of secondary containments must document the physical integrity, presence of fluids and available capacity, and ensure that any drains are closed and locked, if necessary, to prevent accidental releases to the environment.

**Evidence Required for Verification of Corrective Action Completion:** Documentation providing evidence that the inspection procedures and checklists have been modified and implemented to address the corrective actions, including:

- Updated copy of Procedure 044 – Cyanide Equipment Inspection Training Procedure;
- Updated and completed copies of Cyanide Facilities Daily Inspection Checklist; and
- Training records demonstrating implementation of the updated procedure and checklist.

**Corrective Action Completion Date:** 30 November 2009


**Approved:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
**Lead Auditor**

**Approved:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
Auditee Representative

**Closure Verified:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
**Lead Auditor**

**Comments:**

Bogoso/Prestea Mine  
Name of Mine

  
\_\_\_\_\_  
Signature of Lead Auditor

3 September 2009  
Date

**CORRECTIVE ACTION PLAN**  
**ICMC Audits**

**Control No.: GSBPL-ICMC-CAR-03**

**Date issued:** 3 September 2009

**ICMC Standard of Practice Section Reference:** 4.3(4)

**Description of Deficiency:** The tailings storage facility (TSF) design engineer (Knight Piésold Consulting) indicated in its January 2009 quarterly inspection report regarding the TSF, that the supernatant ponds in cells 1, 2 and 2A remain larger than recommended and need to be reduced. Additionally, the report noted that beach widths were insufficient because of high pond levels, and recommended that an emergency spillway be constructed between Cell 2 and 2A to reduce the risk of overtopping. The large supernatant ponds and narrow beaches are a result of problems GSBPL has been experiencing with its cyanide detoxification plant.

**Corrective Action Required (describe/attach supplemental information as necessary):** Provide documentation verifying that the water management issues identified in the January 2009 Knight Piésold Consulting quarterly inspection report, noted above, have been rectified and that the recommendations made in the report have been implemented. Additionally, provide evidence that the cyanide detoxification plant has been re-commissioned (or an alternate treatment system has been commissioned) and is capable of effectively reducing cyanide levels to acceptable discharge standards at the design throughput capacity (400 cubic meters per hour).

**Evidence Required for Verification of Corrective Action Completion:** Documentation providing evidence of completion of the required corrective actions:

- Updated inspection report or certified statement by Knight Piésold Consulting confirming that the water management issues at the TSF (i.e., pond levels, beach widths and spillway construction) have been rectified; and
- Data demonstrating that the existing cyanide detoxification plant (or alternate treatment system) is in operation and is effectively reducing cyanide levels to acceptable discharge standards at or above the design throughput capacity noted above.

**Corrective Action Completion Date:** 31 August 2010


**Approved:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
**Lead Auditor**

**Approved:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
**Auditee Representative**

**Closure**  
**Verified:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
**Lead Auditor**

**Comments:**

Bogoso/Prestea Mine  
Name of Mine

  
\_\_\_\_\_  
Signature of Lead Auditor

3 September 2009  
Date

**CORRECTIVE ACTION PLAN**  
**ICMC Audits**

**Control No.: GSBPL-ICMC-CAR-04**

**Date issued:** 3 September 2009

**ICMC Standard of Practice Section Reference:** 4.4(1)


**Description of Deficiency:** Subsequent to the January 2009 onsite verification audit, GSBPL discovered that elevated thiocyanate concentrations in the tailings slurry had been causing interference with the analytical methods used to measure cyanide concentrations at the spigots and supernatant ponds, and that an analytical pre-treatment of the solution is required to appropriately determine cyanide concentrations. GSBPL concluded that the presence of thiocyanate at these elevated levels is associated with the BIOX<sup>®</sup> circuit and the oxidation of sulfides in that circuit, which subsequently results in thiocyanate forming in the CIL circuit.

As of late June 2009, cyanide analyses for samples collected at the active tailings discharge spigots and decant ponds are performed with a pre-treatment step to eliminate any interference caused by thiocyanate and to provide a more accurate assessment of WAD cyanide concentrations. GSBPL has presented analytical results for initial samples collected in July 2009 at the TSF II, Cell 2A discharge spigots and decant pond, which demonstrate WAD cyanide concentrations well below 50 mg/l. However, additional data using the revised analytical method is required as confirmation that WAD cyanide concentrations are being consistently maintained at or below 50 mg/l in open process solutions at the TSF and that these levels are protective of wildlife.

**Corrective Action Required (describe/attach supplemental information as necessary):**

- Continue daily sampling of solutions at the active tailings discharge spigots and all supernatant ponds over a period of three months to establish a dataset confirming that WAD cyanide concentrations are being consistently maintained at or below 50 mg/l in open process solutions at the TSF. This database shall be continuously evaluated as it is developed throughout the three-month sampling period. GSBPL shall implement adaptive management if there is any indication that WAD cyanide concentrations are increasing from the current levels (<5 mg/l) to a point where wildlife could be endangered.
- In lieu of completing an independent peer review of the 2008 GWS wildlife survey, complete the independent assessment of the GWS study, which is currently being conducted by the outside ecologist.
- Enhance daily wildlife monitoring procedures at the TSF by incorporating the abovementioned ecological assessment findings and by including documentation of wildlife sightings and secondary indicators of wildlife use (e.g., footprints and scat).

Bogoso/Prestea Mine  
Name of Mine

  
 \_\_\_\_\_  
 Signature of Lead Auditor

3 September 2009  
Date

GSBPL wildlife observers shall attend a training program designed to provide proper instruction for performing the updated wildlife monitoring procedures.

- If ongoing assessment of the abovementioned corrective actions indicate the potential for wildlife mortality due to elevated WAD cyanide concentrations in open process solutions at the TSF, GSBPL must immediately install protective measures (e.g. fencing and netting) to prevent wildlife access to the active beaches and mixing zones in the supernatant ponds.


**Evidence Required for Verification of Corrective Action Completion:** Documentation demonstrating completion of the required corrective actions, which would include:

- Analytical results from the ongoing monitoring of WAD cyanide concentrations at the TSF. Daily results shall be provided to auditors on a weekly basis for the first 30 days and the initial dataset shall include all results available since the pre-treatment for thiocyanate was first implemented. The frequency of reporting will be reevaluated after the first 30 days.
- Findings of the independent assessment of the GWS study, which is currently being conducted by the outside ecologist.
- Updated wildlife monitoring procedures and training records.
- Documentation of any procedural changes and/or implementation of any protective measures if either becomes necessary based on the implementation and ongoing assessment of the corrective actions.

**Corrective Action Completion Date:** 31 August 2010

<b>Approved:</b> _____ <b>Date:</b> _____ <b>Lead Auditor</b>	<b>Approved:</b> _____ <b>Date:</b> _____ <b>Auditee Representative</b>
<b>Closure</b> <b>Verified:</b> _____ <b>Date:</b> _____ <b>Lead Auditor</b>	<b>Comments:</b>

Bogoso/Prestea Mine  
Name of Mine

  
\_\_\_\_\_  
Signature of Lead Auditor

3 September 2009  
Date

**CORRECTIVE ACTION PLAN**  
**ICMC Audits**

**Control No.: GSBPL-ICMC-CAR-05**

**Date issued:** 3 September 2009

**ICMC Standard of Practice Section Reference:** 4.7(1); see also 4.7(4)

**Description of Deficiency:** The Oxide CIL tanks are situated on concrete plinths (ring beams). As-built drawings or construction documentation does not exist for these tank foundations, and design drawings reviewed during the onsite audit do not include foundation details for the tanks. Therefore, it is not conclusive that an impermeable barrier exists between the tank bottoms and the ground.

**Corrective Action Required (describe/attach supplemental information as necessary):**

- Provide documentation confirming that the foundation construction for the Oxide CIL tanks provides an impermeable barrier between the tank bottoms and the ground. A professional engineer or other qualified person involved in the construction of the tank foundations must certify the documentation. The documentation must present the materials and construction methods used to create an impermeable barrier between the tank bottoms and the ground.
- If GSBPL concludes that an impermeable barrier does not exist for the CIL tank foundations, then leak collection and recovery systems within the CIL tank ring foundations to allow for identification of leakage prior to entering the environment; or alternatively, a combination of environmental monitoring (e.g., groundwater or vadose zone monitoring) and a risk-based inspection program must be implemented.

**Evidence Required for Verification of Corrective Action Completion:** Documentation (i.e., photographic or other documentary evidence certified by a Professional Engineer or other qualified person that was involved in the design or construction of the Oxide CIL tank foundations) providing evidence of completion of the required corrective actions.

**Corrective Action Completion Date:** 31 August 2010

<b>Approved:</b> _____ <b>Date:</b> _____ <b>Lead Auditor</b>	<b>Approved:</b> _____ <b>Date:</b> _____ Auditee Representative
<b>Closure Verified:</b> _____ <b>Date:</b> _____ <b>Lead Auditor</b>	<b>Comments:</b>

Bogoso/Prestea Mine  
Name of Mine

  
 \_\_\_\_\_  
 Signature of Lead Auditor

3 September 2009  
Date

**CORRECTIVE ACTION PLAN**  
**ICMC Audits**

**Control No.: GSBPL-ICMC-CAR-06**

**Date issued:** 3 September 2009

**ICMC Standard of Practice Section Reference:** 4.7(2); see also 4.7(4)

**Description of Deficiency:** The Oxide CIL and BIOX<sup>®</sup> CIL secondary containment bunds are interconnected and provide a cumulative secondary containment volume, which is 50 percent of the largest tank volume (Oxide CIL tank) within the linked containment area. Consequently, in the event the sump pumps fail or cannot remove spillage to the tailings hopper quickly enough, the CIL bund drain valve is opened allowing the slurry to flow by gravity via a concrete channel to the concrete containment basin (Event Pond 1) located near the crushed ore stockpile. Including the capacity of Event Pond 1, the cumulative secondary containment volume provides 130 percent of the largest CIL tank volume. However, due to the relatively large drainage area collected by Event Pond 1, GSBPL must provide documentation demonstrating that the 30 percent surplus secondary containment volume provides adequate capacity to contain the design storm event and any solution draining back to the CIL bund area.

**Corrective Action Required (describe/attach supplemental information as necessary):**


Provide documentation demonstrating that the cumulative concrete bund capacity for the Oxide CIL and BIOX<sup>®</sup> CIL tanks, in combination with Event Pond 1, provides adequate secondary containment capacity (i.e., the volume of the largest tank within the bund plus any piping draining back to the tanks and additional capacity to contain the design storm event). Due to the relatively large drainage area (stormwater runoff) collected by Event Pond 1, GSBPL must provide documentation demonstrating that the 30 percent surplus secondary containment volume is equal to or greater than the volume of the design storm event collected by Event Pond 1 and the banded area, and any solution draining back to the banded area.

**Evidence Required for Verification of Corrective Action Completion:** Documentation providing evidence of completion of the required corrective actions (i.e., engineering report with supporting calculations).

**Corrective Action Completion Date:** 30 November 2009

<p><b>Approved:</b> _____ <b>Date:</b> _____  <b>Lead Auditor</b></p>	<p><b>Approved:</b> _____ <b>Date:</b> _____  Auditee Representative</p>
<p><b>Closure Verified:</b> _____ <b>Date:</b> _____  <b>Lead Auditor</b></p>	<p><b>Comments:</b></p>

Bogoso/Prestea Mine  
Name of Mine

  
Signature of Lead Auditor

3 September 2009  
Date

**CORRECTIVE ACTION PLAN**  
**ICMC Audits**

**Control No.: GSBPL-ICMC-CAR-07**

**Date issued:** 3 September 2009

**ICMC Standard of Practice Section Reference:** 4.8(5); see also 4.8(1)

**Description of Deficiency:** Original QQ/QC documentation for all cyanide facilities was not available for review during the onsite verification audit. Therefore, to supplement the original QA/QC documentation that was available, GSBPL commissioned Topsy Ventures and Knight Piésold Consulting to conduct inspections of various additional cyanide facilities, including the Oxide and BIOX<sup>®</sup> CIL tanks, cyanide pipelines, the original tailings storage facility (TSF I), and the concrete secondary containments for the mixing, storage and CIL tanks. These inspection reports identify issues and provide recommendations that GSBPL must address.

**Corrective Action Required (describe/attach supplemental information as necessary):**

- Provide documentation verifying and certifying that the recommendations made in the February 13, 2008 Topsy Ventures inspection report, the March 2009 Knight Piésold inspection report for TSF I, and the March 24, 2009 Topsy Ventures inspection report, have been properly implemented; and
- Provide clarification regarding the scope of the inspections documented in the addendum to the March 24, 2009 Topsy Ventures inspection report (i.e., items G through J).

**Evidence Required for Verification of Corrective Action Completion:** Documentation (i.e., photographic or other documentary evidence certified by Knight Piésold Consulting and Topsy Venture, as appropriate) providing evidence of completion of the required corrective actions.

**Corrective Action Completion Date:** 31 August 2010

<b>Approved:</b> _____ <b>Date:</b> _____ <b>Lead Auditor</b>	<b>Approved:</b> _____ <b>Date:</b> _____ Auditee Representative
<b>Closure Verified:</b> _____ <b>Date:</b> _____ <b>Lead Auditor</b>	<b>Comments:</b>

Bogoso/Prestea Mine  
Name of Mine

  
 \_\_\_\_\_  
 Signature of Lead Auditor

3 September 2009  
Date

**CORRECTIVE ACTION PLAN**  
**ICMC Audits**

**Control No.:** GSBPL-ICMC-CAR-08

**Date issued:** 3 September 2009

**ICMC Standard of Practice Section Reference:** 6.2(4)

**Description of Deficiency:** Fixed “D-Guard” ambient HCN monitors located at the sparging plant, CIL tails hopper, and BIOX<sup>®</sup> CIL were recently fitted with audible and visual alarms. The monitors have also been connected via the SCADA system to provide readouts on the plant control room screens. In addition, GSBPL has committed to install a fixed HCN monitor at the Oxide CIL plant prior to start up of that plant. The modified units have yet to be calibrated using a method recommended by the manufacturer. GSBPL has ordered a calibration test kit and will calibrate the monitors once the kit is received. In the interim the monitors are being tested by comparison with the readout from calibrated portable HCN units.

**Corrective Action Required (describe/attach supplemental information as necessary):**

- Calibrate each fixed HCN monitor as recommended by the manufacturer and develop a program to maintain records for at least 1 year. Develop a program to test the alarms on a periodic basis.

**Evidence Required for Verification of Corrective Action Completion:** Provide calibration records stating the monitors have been calibrated as per the manufacturer’s recommendations, Provide a schedule for testing the alarms and recalibration of each HCN monitor.

**Corrective Action Completion Date:** 31 March 2010

<p><b>Approved:</b> _____ <b>Date:</b> _____ <b>Lead Auditor</b></p>	<p><b>Approved:</b> _____ <b>Date:</b> _____ <b>Auditee Representative</b></p>
<p><b>Closure</b> <b>Verified:</b> _____ <b>Date:</b> _____ <b>Lead Auditor</b></p>	<p><b>Comments:</b></p>

Bogoso/Prestea Mine  
Name of Mine



Signature of Lead Auditor

3 September 2009  
Date