DAMANG MINE: SWINGING BACK TO PROFITS
ALFRED BAKU
EVP & Head of West Africa
May 2015
Where we’ve come from

Reversing the trend

Transformation pillars

Sustaining the turnaround

Way forward
WHERE WE’VE COME FROM

Key Financial Metrics

[Graph showing AISC/Gold Price/Cash Flow over time from Q4 2012 to Q4 2014, with markers for actual and planned cashflows.]
WHERE WE’VE COME FROM

Production Profile

- 2012-2013: implementation of a 3-cycle, 4 shift roster.
- Reduced tons mined in Apr – May 2013 due to industrial strike and ‘Go slow’
- Reduced production in 2014 due to a strategic decision to reposition the mine in 2014.
- Implementation of 2-cycle, 3 shift pattern from 2014.
WHERE WE’VE COME FROM

Significant Negative Cash Flows and Financial Loss

2012

- High AISC/Gold Price Ratio
  - 2012 Average US$1,753/oz (Av. gold price US$1,668/oz)
  - 2013 Average US$1,450/oz (Av. gold price US$1,412/oz)

- Lower grades mined (Huni Sandstone)

- Lower gold production (average 39koz per quarter)

2013

- Closure/Care & Maintenance considered

- Reserve dropped to 1 moz due to significant fall in gold price

- Damang “4moz Super Pit” Project shelved due to low gold price.
Key Strategic Steps

Put in place a turnaround strategy

Consolidate and stabilize – increase waste strip, extend life of mine, and stabilize the processing plant

Increase relevance – put Damang back on the map as a Productive member of the Gold Fields family
Damang’s Turnaround Strategy driven by:

- Safety
- Human Resources
- Processing
- Business Improvement
- Efficiency and Productivity
- Financial Discipline and Cost Management
- Sustainable Development and Social Responsibility
- Effective Planned Maintenance

While maintaining the company’s core values of:

- Safety
- Respect
- Responsibility
- Innovation
- Honesty
- Delivery
TRANSFORMATION PILLARS

Safety

If we cannot mine **safely**, we will not mine

- Visible Leadership exemplified by HOD walk-the-talk
- Focus on the correct, job specific PPE.
- Focus on Vehicular Safety.
- Zero tolerance approach to safety.

Human Resources

- 866 GF Employees; 637 Contractors
- Rigorous Talent Management Strategy
- Review Employee Value Proposition
- Accelerated training and development programs
- Employee Wellbeing Programme/Facilities:

<table>
<thead>
<tr>
<th>Description</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees in Service</td>
<td>1,038</td>
<td>845</td>
<td>886</td>
</tr>
<tr>
<td>Contractors</td>
<td>474</td>
<td>637</td>
<td>530</td>
</tr>
<tr>
<td>TE+C</td>
<td>1,512</td>
<td>1,482</td>
<td>1,416</td>
</tr>
<tr>
<td>Tonnes mined/TE+C</td>
<td>1,491</td>
<td>1,078</td>
<td>1,064</td>
</tr>
<tr>
<td>Oz sold/TE+C</td>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
</tbody>
</table>
Improved on plant recovery to **reduce** metallurgy **cost** by ~25%  

<table>
<thead>
<tr>
<th>Metric</th>
<th>UoM</th>
<th>C2012 - C2013</th>
<th>2014</th>
<th>New Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leach efficiency</td>
<td>%</td>
<td>30.9</td>
<td>56.1</td>
<td>Added aqueous instead of solid lead nitrate to passivate sulphides in the leach feed.</td>
</tr>
<tr>
<td>Adsorption efficiency</td>
<td>%</td>
<td>33.0</td>
<td>89.2</td>
<td>Adopted optimal carbon movement and the installation of the CIL TK08.</td>
</tr>
<tr>
<td>Acid wash efficiency</td>
<td>%</td>
<td>29.1</td>
<td>44.0</td>
<td>Acid-washed every batch of elution at the CIL train to remove all inorganic foulants</td>
</tr>
<tr>
<td>Electrowinning efficiency</td>
<td>%</td>
<td>94.7</td>
<td>97.9</td>
<td>Improved upon the caustic strength and closely monitored the purity of every batch of caustic soda from the supplier</td>
</tr>
<tr>
<td>Regeneration efficiency</td>
<td>%</td>
<td>81</td>
<td>102</td>
<td>Adopted continuous running of the kiln to remove all organic contamination.</td>
</tr>
<tr>
<td>Elution efficiency</td>
<td>%</td>
<td>77.0</td>
<td>92.5</td>
<td>Closely monitored elution temps, pressures, caustic strengths/concentrations. Adopted monthly maintenance in the elution circuit. Improve upon water quality.</td>
</tr>
<tr>
<td>Gravity circuit efficiency</td>
<td>%</td>
<td>13.7</td>
<td>30.4</td>
<td>Frequent planned maintenance of the knelsons.</td>
</tr>
<tr>
<td>Grind efficiency</td>
<td>%</td>
<td>77.6</td>
<td>77.8</td>
<td></td>
</tr>
<tr>
<td>Fine Carbon in the CIL train (passing 1 mm)</td>
<td>%</td>
<td>5.0</td>
<td>2.0</td>
<td>Adopted single stage pumping for the carbon advance pumps, reduced carbon attrition losses.</td>
</tr>
</tbody>
</table>
TRANFORMATION PILLARS

Processing – What next?

Crushing and Milling Circuit
- Adopt full fine crushing
- Improve on the quality of grinding media for both mills
- Continue to modify the milling circuit parameters.
- Modify milling system to allow single-stage Ball Mill operation.

Gold Extraction Circuit
- 100% usage of oxygen in place of hydrogen peroxide to improve recovery
- Injection of lead nitrate in solution, directly into the adsorption circuit

Tailings Dam
- Adopt 25m deposition distance.
- Change the tailings distribution pipeline diameter to 450 mm and upgrade tailings pumps.
- Detailed engineering analysis and design studies to determine safe maximum lift height.
Process Optimization: 2012 – 2013 metrics

- Plant throughput was averaging 16% below plan
- Plant recovery was averaging 1% below plan
- Gold produced was averaging 21% below plan
- Metallurgy unit cost was averaging 16% above plan

<table>
<thead>
<tr>
<th>Output</th>
<th>UoM</th>
<th>Actual Avg</th>
<th>Plan Avg</th>
<th>% Var</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold produced</td>
<td>koz</td>
<td>39.2</td>
<td>49.5</td>
<td>-21%</td>
<td>😞</td>
</tr>
<tr>
<td>Yield</td>
<td>g/t</td>
<td>1.16</td>
<td>1.27</td>
<td>-9%</td>
<td>😞</td>
</tr>
<tr>
<td>Plant recovery</td>
<td>%</td>
<td>89.6</td>
<td>90.5</td>
<td>-1%</td>
<td>😞</td>
</tr>
<tr>
<td>Plant throughput</td>
<td>kt</td>
<td>1,036</td>
<td>1,228</td>
<td>-16%</td>
<td>😞</td>
</tr>
<tr>
<td>Plant utilization</td>
<td>%</td>
<td>85.7</td>
<td>92.8</td>
<td>-8%</td>
<td>😞</td>
</tr>
<tr>
<td>Metallurgy Cost</td>
<td>US$/t</td>
<td>17.48</td>
<td>15.13</td>
<td>16%</td>
<td>😞</td>
</tr>
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Process Optimization: strategic intervention

- Adopted single stage milling. The SAG Mill can now be run independently.
- Improve the SAG effect by ensuring 10-15% “oversize” rocks in the SAG mill feed.
- Weekly planned maintenance at the crushing circuit.
- Postponed US$25million capital spend on the new FETSF, by raising the ETSF
- Improved upon the tailings dam management.
- Modified the milling circuit operating parameters
Efficiency and Productivity

- Switch from V-71 to SV-2
- Juno Go-Line Fuel Facility
- Operation Sneipner
- Blast Optimization
- Pre-Split Drilling
- Components’ Rebuild Centre
- Fuel Capping for Light Vehicles
- Operation Fly the Rigs
- 9m to 12m Blasts
- Extending Lubricant Life
- Geological and Dilution Control
## Business Improvement

### Cost Usage Initiatives
- Benefits delivered in 2013: US$6.9 Million
- Benefits delivered in 2014: US$2.4 Million

### Throughput Initiatives
- Benefits delivered in 2013: US$7.8 Million
- Benefits delivered in 2014: US$6.4 Million
Strong relationships with stakeholders, based on trust, open, honest and frequent engagement (Consultative Committee Meetings, Durbars etc)

- Work with stakeholders to create and share value with our investors, and society in general to ensure we leave an enduring and positive legacy for host communities
# SUSTAINING THE TURNDOWN

## Action Plans and Initiatives

<table>
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<th>Total Mine Cost Control</th>
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<tbody>
<tr>
<td>- Greater focus on maintaining and improving the cost base</td>
</tr>
<tr>
<td>- Stringent Cost Review Approach – daily and weekly.</td>
</tr>
<tr>
<td>- Departmental monthly peer review with all HoD’s</td>
</tr>
<tr>
<td>- Weekly/Monthly/Quarterly Dashboards</td>
</tr>
<tr>
<td>- Cost accountants assigned to departments</td>
</tr>
<tr>
<td>- Departmental Interventions – GM and Finance Team will hold intervention meetings if a Departments costs blow out.</td>
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<th>Owner Blast Hole Drilling and Maintenance</th>
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<td>- Consider including grade control.</td>
</tr>
<tr>
<td>- Look at equipment that can do both blast hole and RC grade control.</td>
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<tr>
<th>Conceptual Studies of Underground Mining</th>
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</thead>
<tbody>
<tr>
<td>- Damang: High volume, medium grade</td>
</tr>
<tr>
<td>- Amoanda: Low volume, high grade</td>
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<th>Continued Processing Plant Optimization</th>
</tr>
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<tbody>
<tr>
<td>- Improving availability and utilization</td>
</tr>
<tr>
<td>- Improving operational flexibility</td>
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<th>Synergies with Tarkwa Mine</th>
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<td>- Exchange of equipment as required</td>
</tr>
<tr>
<td>- HME and Fixed Plant Engineering</td>
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</tbody>
</table>
THE WAY FORWARD

Exploration

**Saddle-Huni Bridge**
- Part of “Greater Damang”
- AGC down to 42m yielded 14,442oz
- Resource/information gap observed below 50m depth

**2015 Plan**
*Detailed drilling to model and evaluate of prospective zone below 50m*

**Juno East and South**
- Possible dip and strike extension of favourable geological horizon in pit
- First pass drilling has given indication of mineralisation in the target areas

**Plan 2015**
*Close drill spacing for robust geological and resource models to be built*

**Tamang**
- Southern extension of Juno South
- Potential for both hydrothermal and palaeo-placer mineralisation
- 7 Scout holes drilled in 2014 to prepare for detailed drilling in 2015

**2015 Plan**
*Detailed drilling to delineate, model and evaluate the Banket quartzite host*

**Nyame**
- Strike extension of Damang orebody
- Potential for high grade oxide ore in close proximity to the plant

**Plan 2015**
*RC and DD drilling to develop the oxide potential and delineate the Damang Fault*

**Tomento North**
- Strike extension of the Tomento Pit 1 reefs
- Initial program in 2014 generated an potential resource of 209koz @1.63g/t

**2016 Plan**
*Close-up drill spacing to refine geological domains and re-evaluate the project*

**Amoanda South**
- Strike extension of Amoanda orebody
- Limited drill testing

**Plan 2016**
*Close drill spacing from current 40X20m to 20X20m and re-evaluate the orebody*
Thank you