

Samarco update

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Samarco Mineração S.A (50/50 BHP Billiton and Vale)



Summary of event



Tailings Composition

Tailings are considered to be non-reactive and non-toxic.

- Heavy metals in tailings are consistent with or below background levels in the river system and International experts confirm that the tailings are not hazardous to human health
- The Brazilian Geological Service and National Water Agency reports support assessments that the tailings material is non-toxic. Further supported by eco-toxicity studies
- Tailings meets Australian regulatory standards for use as clean fill in residential and recreational applications
- Fish kill caused by initial high sediment load and low oxygen levels
- Fish have been observed in the river system, however, impacts on diversity and relative abundance to be determined. Metal levels in fish remain unchanged

Rio Doce



BHP Billiton Governance

We are committed to supporting Samarco's response efforts.

- Growing team of experts on the ground
- Project office and Brazil Country Director
- Board Sub-Committee
- Forum on Corporate Responsibility



Andrew Mackenzie on Samarco visit, 11 November 2015

Investigation and Reviews

Vale, BHP Billiton and Samarco have commissioned an external investigation.

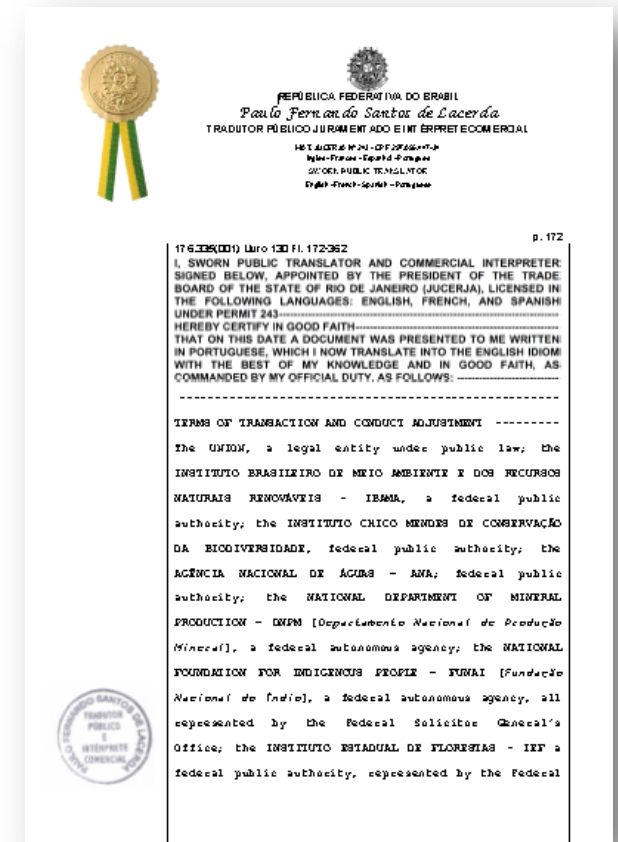
- Conducted by Cleary Gottlieb Steen & Hamilton (New York)
- Led by an expert panel of four leading engineers from the United States, Canada, and Brazil
- Findings will be published
- All tailings dams across BHP Billiton are being reviewed
- ICMM has commissioned a global review of surface tailings management across membership including a review of standards, critical control strategies and emergency preparedness

Settlement Agreement

On 2 March 2016 Samarco, Vale and BHP Billiton Brazil entered into an agreement with the Federal Government of Brazil, the States of Minas Gerais and Espírito Santo and certain other public authorities (Brazilian Authorities).

- Sets out general rules to remediate and compensate environmental and socioeconomic impacts through the implementation of 17 environmental and 22 socioeconomic programs
- **Reparatory Programs** – are designed to restore the environmental and socioeconomic situation to the baseline
- **Compensatory Programs** – are designed to deal with impacts that cannot be mitigated or restored
- Programs will be based on scientific studies to restore the environment and socioeconomic conditions to those existing immediately prior to the event
- Does not prevent prosecutors and other parties from bringing further claims – e.g. the BRL 155 billion claim lodged by the Federal Public Prosecution Service
- May act as a defence against other claims covering the same subject matter as that covered by the Settlement Agreement

The Agreement was ratified by the courts in Brasilia on 5 May 2016.



Agreement Funding Obligations and Costs

Samarco is responsible for the funding contributions to the Foundation. If Samarco fails to meet its funding obligations, BHP Billiton Brazil and Vale will be responsible for any shortfall in the proportion of 50% each.

- **2016:** BRL 2 billion (~US\$500 million), less the amount of funds already spent on, or allocated to, remediation and compensation activity
- **2017:** BRL 1.2 billion (~US\$300 million)
- **2018:** BRL 1.2 billion (~US\$300 million)
- **2019 – 2021:** Between BRL 800 million (~US\$200 million) and BRL 1.6 billion (~US\$400 million), depending on the remediation and compensation projects which are to be undertaken in the particular year
- **Post-2021:** Funding requirements expected to decrease

An additional BRL 500 million will be spent on a special project for sewage treatment and landfill works from 2016 to 2018.

Foundation administrative costs are in addition to Program costs.

Agreement Socioeconomic Programs

1. Social Organisation

- Registration of impacted individuals and Compensation/Indemnity for those affected
- Indigenous Peoples and other Traditional Communities
- Communication, Participation & Dialogue
- Animal Rescue and Assistance Program

2. Infrastructure

- Reconstruction of Bento Rodrigues, Paracatu and Gesteira
- Recovery of other community infrastructure e.g. hydroelectric plant, roads, restoration of homes and businesses

3. Education, Culture and Leisure

- Restoration of schools and reintegration of the school community
- Preservation of historical, cultural and artistic memory
- Compensation for tourism, culture, sports and leisure



Barra Longa, 6 November 2015



Barra Longa, March 2016

Agreement Socioeconomic Programs

4. Health

- Support physical and mental health of impacted populations

5. Innovation

- Support research for development and use of socioeconomic technologies applied to remediation of impacts

6. Economy

- Resumption of aquaculture fishing and agricultural activities
- Diversification of regional economy program to stimulate industry
- Restoration of micro and small commercial enterprises
- Provision of emergency financial support to impacted Persons
- Stimulate local employment
- Reimbursement for additional public expenditure



Animal welfare March 2016



Animal welfare March 2016

Agreement Environmental Programs

1. Waste management

- Stabilisation of Fundao basin and recovery of tailings from river and Candonga dam
- Erosion control and Water quality improvement

2. Reforestation and Water Production

- Temporary stabilisation of tailings deposits (800 ha)
- Restoration of riparian vegetation (2,000 ha) and restoration and protection of natural springs (5,000 ha)
- Reforestation (10,000 ha) and programs to promote natural regeneration (30,000 ha)

3. Biodiversity Conservation

- Ecological recovery programs both riverine and estuarine
- Monitoring and evaluation including eco-toxicity testing (acute & chronic)

4. Water Safety and Water Quality

- Upgrading of sewage treatment plants, water supply systems and reduction in reliance on Rio Doce
- Eradication of illegal landfills and creation of new facilities



Tailings stabilisation, Rio Gualaxo



Tailings stabilisation, Rio Gualaxo

Agreement Environmental Programs

5. Education, Communication and Information

- Emergency response and awareness.
- Creation of centre of technical information to promote awareness of environmental issues and programs

6. Preservation and Environmental Safety

- Detailed environmental monitoring programs

7. Sustainable Land Management

- Assessment of impacts on protected areas and implementation of remedial actions if required
- Consolidation of two existing conservation areas
- Promotion of alternative land management and land use programs



The Foundation

A private foundation to be incorporated by the Companies will manage and implement all the projects and measures to be developed within the scope of the Programs.

The Foundation:

- is to be incorporated within 120 days of the Agreement – 30 June 2016
- must be operational within 30 days of incorporation – 30 July 2016
- is to submit an initial planning of the PROGRAMS, PROJECTS, activities, actions and measures of each one of the PROGRAMS, to be validated by the Interfederative Committee within 60 days of incorporation – 30 August 2016

CEO recruitment and design of the organisational structure is currently underway.

Foundation Structure

Group	Composition	Role
Board	Representatives from Vale (two), BHP Billiton Brazil (two), Samarco (two) and Interfederative Committee (one)	Governance - decide the Foundation's strategic management actions, such as annual and multi-annual planning, budgeting and contracting
Fiscal Council	Seven members, of which one will be appointed by the Board of Governors of the Foundation, one for each of the three companies, one by the Union, one by the state of Minas Gerais and one by the state of Espirito Santo	Supervise and examine the accounts and verify the consistency of the transactions
Advisory Committee	Members from key stakeholder groups (17 in total including five from the impacted communities)	Advise the Foundation Board and ensure a strong community voice in all aspects of the Foundation
Expert Panel	Representatives from subject matter experts (one appointed by Foundation, one by the I-FC and a third by the first two)	Facilitates resolution of disputes between the parties
Ombudsman		Address community complaints about the performance of the Foundation

Independent Oversight

An Inter-Federative Committee has been established as an external and independent body.

The Inter-Federative Committee

- is comprised of 12 **government representatives** from the Brazilian Authorities
- **approves** the actions and measures to be taken by the Foundation in relation to the Programs
- **monitors** the work of the Foundation, provide advice and guidance
- determines when program goals and objectives are **achieved** by reviewing indicators and technical data
- held its first meeting on 11 April 2016
- has convened 9 technical **Chambers** – 4 Environmental, 4 Social and 1 Interdisciplinary

In addition all the Foundation's activities will be monitored and supervised by an independent external audit company (to be chosen among the four top auditing firms in Brazil).

Progress to Date – Samarco Infrastructure

- **Germano and Santarem Dams are stable** – work progressing on Germano with planned completion end May 2016 and new Santarem Dam has been approved with planned completion Nov 2016
- **Tulipa and Sela Dams** – require reinforcing to ensure they remain stable
- **Axis 1 Dam** – new dam to be built over a three year period to provide a large, secure tailings holding volume
- Three **containment dykes** built to prevent tailings from reaching Carmo, Gualaxo and Doce rivers
- **Water Management** – plans for the diversion of water out of the Fundao valley to reduce the potential for further erosion during the next wet season



Santarem Dam, November 2015



Rebuilt Santarem Dam, March 2016

Progress to Date – Environment

- **Emergency infrastructure works** – stabilisation of river bank to prevent impacts to houses, roads and bridges between Samarco site and Candonga Dam completed
- **River water quality and turbidity management** – 10 tributaries (46 ha) of river margins have been cleaned and contoured between Bento Rodrigues and Barra Longa (17% of the total works planned). Water quality is being monitored at 84 sites along the Doce River and 34 sites at sea
- **Short term revegetation works to reduce erosion** – 795 of 800 hectares revegetated along the river banks and 4.8 km revegetated along the tributaries
- **Dredging Candonga Dam** – dredge is beginning to dredge forward to relocate close to the dam wall
- **Upgrading drinking water treatment plants** – prioritisation process completed to schedule town drinking water supply upgrades for 18 facilities. Water supply works for all other towns (R\$21 million) expected to be completed in 2016.



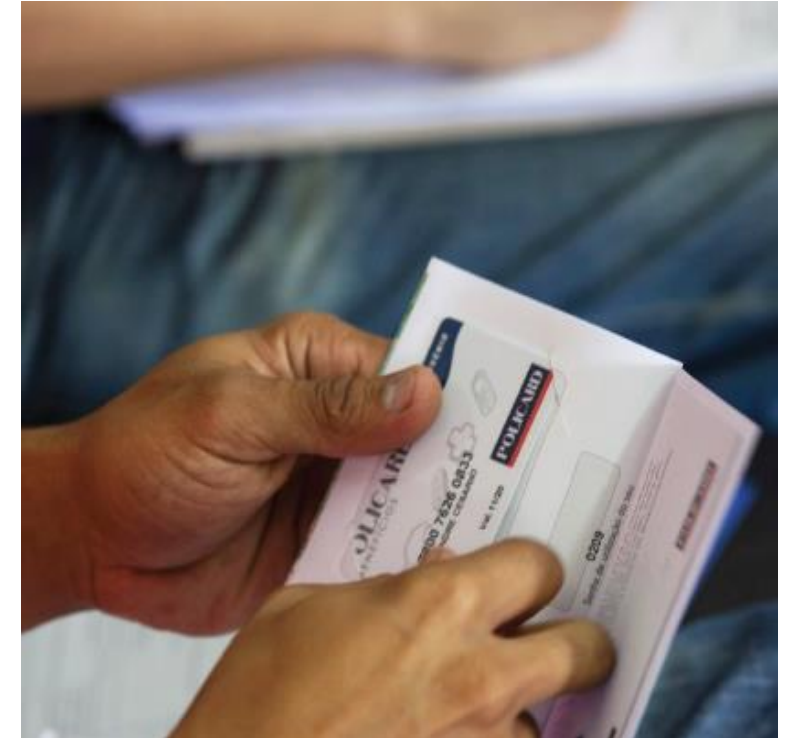
Barra Longa, November 2015



River stabilisation at Barra Longa, March 2016

Progress to Date – Financial Compensation

- Current focus is on **registration of impacted persons**. Registrations include:
 - over **3,000 people** in the high impact areas close to the mine, and
 - close to **7,500 people** further downstream in the Rio Doce and its estuary whose river dependent livelihoods have been affected
- Of the individual registrations, over **5,200 people** have qualified for and have been issued with emergency assistance cards loaded with the Brazilian minimum wage plus 20% for every dependent and the cost of a food basket
- **Priority compensation** has been paid to families that have lost loved ones, houses and motor vehicles
- It is expected that a **comprehensive compensation program** will be launched by the end of June



Progress to Date – Rebuilding and Resettlement

- Samarco has been working with communities in a participatory process to determine the best location for each of the **resettlements**
- The **Bento Rodrigues** community agreed criteria for the new site, identified a short list of three sites and selected Lavoura as their preferred site on 7 May 2016.
- **Paracatu** and **Gesteira** communities have commenced the process but are not as far advanced
- Construction of community infrastructure continues and **all impacted bridges** have been rebuilt
- In the **Mariana region**:
 - 74/115 houses have been completely rebuilt or restored (64%)
 - 34/52 commercial establishments have been restored (65%)
 - 10/18 public buildings have been completed (56%)



All seven bridges reconstructed

Progress to Date – Health and Wellbeing

- All impacted people have been provided with access to psycho-social support – around **1,200 individuals** have received support so far
- Samarco has hired **27 qualified professionals** including doctors and psychologists
- A detailed **epidemiological study** is under development to provide a comprehensive understanding of the health status of potentially impacted communities
- **Grievance mechanism** in place with around 150 issues being raised per week (70% closed out to date)
- Key issues include: general financial support, assistance with temporary housing, compensation, registration for assessment of loss and house repairs



Progress to Date – Education

- All students from the affected schools in Barra Longa and in the Mariana districts have completed the 2015 school year and have started 2016 as planned
- Renovations to schools have been completed and school transportation has been offered
- Students received kits comprising of backpack, pencils, crayons, pens, paint, play dough, and other school supplies
- Teachers and students received psychological support





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