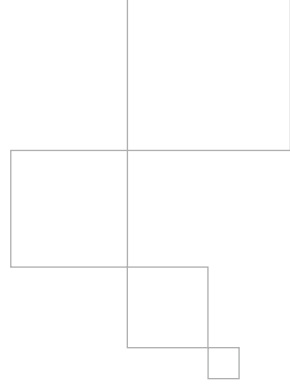




ONE YEAR AFTER
THE FUNDAÇÃO
DAM FAILURE



SAMARCO 



MESSAGE FROM THE CEO

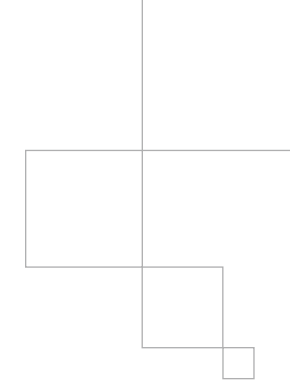
One year after the failure of the Fundão dam in Mariana, Minas Gerais, an event which deeply saddened us and represented a severe blow to both the impacted communities and our Company and its business, we are presenting an update of the actions implemented since then. This document brings an accurate and accessible report of the countless actions undertaken so far and those yet to be carried out, focused on the mitigation of the social, economic and environmental damage caused by the event of the 5th of November of 2015.

It is our view that we are responsible for the enormous task outlined in the Framework Agreement (TTAC in the Portuguese acronym) which was signed in March 2016 by and between Samarco and its shareholders VALE and BHP Billiton Brasil, and the Federal and the State Governments of Minas Gerais and Espírito Santo. The TTAC defined a series of remediation measures so that all of the impacted parties would be able to resume their routines and activities with safety and assurance.

We reiterate our expressions of sincere regret to society and all impacted people. We will not stint any efforts in fulfilling our obligations. We have a tremendous commitment to the communities and the environment. We are giving full support to Fundação Renova - an organization created to lend continuity to the work started by Samarco and to develop new action strategies - with the ethical and transparent approach which has always been our trademark. We also continue contributing to the implementation of programs on all work fronts, as provided in the TTAC.

None of the achievements we describe in this document would have been possible without the admirable effort of our employees over the past 12 months, particularly during the emergency response phase. We also cannot forget to mention the valuable contribution of the city administrations and the residents of the impacted municipalities, the Public Prosecution Service, Civil Defense, environmental and animal protection NGO's, as well as the volunteer and social movements that helped in the recovery process. We thank one and all for your cooperation and partnering in this long term effort which will lead to the recovery of the impacted communities and the environment.

Roberto Carvalho, Samarco CEO



DAMAGE REMEDIATION: SAMARCO'S COMMITMENT

This document, produced in clear and objective language, proposes to provide a report to different publics on all that has been done so far by Samarco to remediate the damage caused by the failure of the Fundão dam on 5 November 2015.

Considering the volume of information involved, we have opted to provide a non linear presentation of the results of this first year of work. The role of the protagonists in the narrative, within this chosen logic, was assigned to certain localities which are seen as emblematic within the framework of events following the dam failure.

Such is the case of Bento Rodrigues, a subdistrict of Mariana, of the town of Barra Longa, of the Candonga dam of the Risoleta Neves hydropower dam - which held back 10.5 million m³ of the mining waste released by Fundão - and the município of Anchieta, in Espírito Santo, where the Ubu port is located.

Focusing on these places and their stories, we have tried to provide an overall idea of the remediation actions carried out by Samarco, which continue to be implemented now by Fundação Renova, on the socioenvironmental and socioeconomic fronts. The same treatment has been given to the Rio Doce and to Governador Valadares, an important city in the eastern portion of Minas Gerais located on the banks of the Rio Doce.

As the reader will perceive, this is therefore an overview containing important technical data which translates the Company's efforts to promote recovery from the impacts of the event.

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General Management of Communication and Institutional Relations

Coordination:

Fernanda Lima (JP06826)

Editorial and graphic design:

Rede Comunicação de Resultado

Production:

Rede Comunicação de Resultado

Head Journalist:

Flávia Rios (JP06013)

Layout:

Clayton Pedrosa



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TIME OF RECONSTRUCTION

REDE COMUNICAÇÃO DE RESULTADOS / 28/09/2016



Work on the new Santarém dam seen at the end of September 2015

The failure of the Fundão dam on 5 November 2015 caused a series of impacts which Samarco has been doing its best to mitigate. Some 32.6 million metric tons of mining waste spilled from the dam, about 60% of its overall capacity at the time. The sediments impacted the Santarém dam which was used to store water, and some of the tailings continued their course down the valley.

The mud flow caused the death of 19 people, destroying buildings and other infrastructure in the districts of Bento Rodrigues and Paracatu de Baixo, in Mariana, Minas Gerais, and a part of the district of Gesteira, in Barra Longa. A considerable number of families lost their homes. Rural properties, covering some 2.2 thousand hectares, were flooded and unable to continue producing. The waste flowed towards the Gualaxo do Norte river, and from there downstream to the Doce River, impairing the public water supply of local municipalities.

About 80% of the tailings which left the Germano unit stayed concentrated between the area just downstream of Fundão and the Candonga dam, next to Santa Cruz do Escalvado (MG), a distance of 113 km. The rest of the material followed the course of the Doce River all the way to the sea, impacting municipalities in Minas Gerais and on the northern coast of Espírito Santo.

Many of these problems will take a long time to be remedied. Samarco, however, is committed to mitigating the socioeconomic and socioenvironmental impact caused by the dam failure. This commitment is currently centered at Fundação Renova, which has been in operation since August 2016 to lend continuity to the initial remediation.

EMERGENCY WORKS AND MONITORING



Employee monitors construction of dike S3 close to Bento Rodrigues

LEO DRUMOND / NITRO / 2013/16

the tailings that stayed at Fundão from reaching the Candonga dam and hindering the dredging operations at the hydropower plant. In February of this year, Samarco concluded the construction of two sediment containment barriers, S1-A and S2-A, located downstream of the Santarém dam on Samarco property. Also in the beginning of the year, the Company finished the first phase of dike S3, on the Santarém creek, which has a larger capacity than the previous structures.

Four barriers are being built inside the Fundão dam to reduce the velocity of the movement of the remaining tailings, should this occur. Barrier 2 was concluded, while barriers 1 and 3 are in construction, and after they are finished, work will begin on Barrier 4.

Other interventions are planned and already in execution. Among them is the erection of another containment structure, called Axis 1, and the new Santarém dam. Dike S3 is also under construction, being raised to increase its storage capacity to 800 thousand m³.

In September 2016, the Government of Minas Gerais authorized Samarco to build another dike, S4, in Bento Rodrigues, using land already impacted by the tailings in this district. This dike is to be temporary. The old stone wall in the town, from the 18th century, will be preserved by means of a special enclosure, and the São Bento chapel and the Bento Rodrigues cemetery will not be flooded with the implementation of this new dike.

Dike S4 is the last structure of the emergency sediment retention system, which includes dikes S1, S2, S3, the new Santarém dam, and the Fundão structures of Axis 1 and the four internal barriers.



LEO DRUMOND / NITRO / 2013/16



Monitoring system of the dams 24/7 with cameras, radar, meteorological stations, drones, accelerometer and sirens

Samarco divided its actions between the recovery of the damaged structures and the containment works. With these measures, the Company seeks to assure the safety of the structures, as well as to retain the tailings in its area. This work is part of the Integrated Environmental Recovery Plan (PRAI) which brings together the measures ultimately aimed at the reclamation of the rivers and impacted areas.

Reinforcement and improvement actions are being undertaken on the four structures which suffered from the dam failure: Sela, Tulipa and Selinha

dikes, as well as the Santarém dam downstream. In addition to the reconfiguration of the eroded areas, the work being done has a preventive purpose, which includes the reinforcement of the walls and the construction of new drainage structures. Some interventions are finished and the rest are scheduled for delivery by mid 2017.

Other changes refer to the monitoring of the dams. The Germano unit received equipment for the inspection of the dikes and other structures. New cameras, five radars of millimetric precision, meteorological station, drones and accelerometers have

allowed the relay of more data to the monitoring room, where a team of 55 professionals follows the status of the remaining areas of the dams 24/7. Twenty sirens have also been installed, five at the plant and 15 at other locations between the dam and the town of Barra Longa downstream. The local population has been instructed on the proper procedures and how to get to the meeting points when alarms go off.

BARRIERS

The sediment containment works have required greater effort. It is necessary to keep

CONTAINMENT STRUCTURES

*IMAGE NOT TO SCALE



Rede Comunicação

DIKE S4

*IMAGE NOT TO SCALE



Rede Comunicação

FUNDAÇÃO RENOVA:

REPAIR, RESTORE, REBUILD

The reconstruction, restoration and recovery of the environment and the communities impacted by the passage of the mine waste are the goals of Fundação Renova. This organization began its operations in August of this year with the mission of lending continuity to the actions initiated by Samarco, who, with the support of its shareholders VALE and BHP Billiton Brasil, assumed its responsibility with regard to the effects of the Fundão dam failure from the very beginning.

Renova is a private, non-profit foundation, with headquarters in Belo Horizonte, Minas Gerais. It was instituted according to the terms of the Framework Agreement (TTAC) signed between Samarco and its shareholders and the federal and state governments of Minas Gerais and Espírito Santo on 2 March 2016. Upon initiating its operations, the Foundation, represented by its executive team, went out into the field to see the conditions of the impacted locations and listen to the expectations of the communities with regard to the work in progress.

The Foundation's values are based on transparency, integrity, collaboration, respect and sustainability. In addition, its actions count upon the participation of the communities, on partnering with government authorities and civil society, intent on defending the rights of all its stakeholders.

PROGRAMS

The TTAC covers 41 socioeconomic and socioenvironmental programs, for short, medium and long



Installing fences on rural property in Barra Longa (MG) area

LEO DRUMOND / INTRO / 17/3/2016

term implementation in the impacted communities in the states of Minas Gerais and Espírito Santo. The initiatives receive the support of the competent entities and are based on scientific studies and technical reports. The projects also have the participation of the community, which is consulted throughout the entire recovery process.

The actions were divided according to two main themes – remediation and compensation. The first involves the actions to restore and reestablish the



Restoration work on religious art pieces in Mariana (MG)

LEO DRUMOND / INTRO / 16/5/2016

communities and resources impacted by the dam failure, while the latter refers to the initiatives aimed and replacing or compensating that which is not possible to remediate. The development of the programs and other actions of the Foundation may be seen on www.fundacaorenova.org.

STRUCTURE

Fundação Renova is autonomous with regard to Samarco and its shareholders. The structure is formed by a Board of Governors, an executive leadership team, a



Impacted house being rebuilt in Barra Longa

LEO DRUMOND / INTRO / 17/8/2016

fiscal committee and an advisory committee, the latter having as members representatives of governments, environmental agencies and civil society entities.

The plurality of voices in the operation of the Foundation is further assured by the Interfederative Committee (CIF) which also serves as an external body independent from the Foundation. The functions of this committee include monitoring, overseeing and inspecting the projects which are implemented. It has among its members representatives of the

Ministry of Environment, the Federal Government and the Governments of the States of Minas Gerais and Espírito Santo, the impacted municipalities, the Doce River Basin Committee, and the Public Defender of the Union. In addition, it will call upon technical experts and independent auditors to assure the efficiency and transparency of its actions.

RESOURCES

Fundação Renova has a solid financial basis to operate and fulfill all the obligations outlined in the TTAC. To this end, the Foundation will invest, over the next years, R\$ 4.9 billion, representing R\$ 4.4 billion plus R\$ 500 million to be made available by 2018 for the impacted city administrations to spend on sanitation, after the relevant projects are duly developed.

RAINY PERIOD

In addition to implementing and managing the recovery programs in the regions impacted by the Fundão dam failure, Fundação Renova has developed a plan focused on preventive and preparatory actions for potential contingencies during the rainy season. The document has been shared with environmental agencies, public authorities and the Civil Defense, with the objective of validating the proposal and receiving important input.

The Foundation also maintains a constant dialogue with the community, municipal authorities and competent institutions to clarify the risks, define the preventive actions and create joint solutions to face the challenges posed by the rains.

One of the main actions of the plan is the implementation of the so-called Command Centers, which are structures responsible for the monitoring of the rivers, directly connected to the Civil Defense and the environmental agencies. The idea is for the Centers to allow rapid decision-making to cope with the adversities of the rainy season.



O diálogo com as comunidades é um dos pilares de atuação da Fundação Renova

FOUNDATION Allocation of resources

R\$
4,9
billion

of which **R\$500 million**
for sanitation to
be transferred by 2018



R\$ 2 bi
(R\$ 240 million*)

+ R\$ 50 million**



R\$ 1,2 bi
(R\$ 240 million*)

+ R\$ 200 million**



R\$ 1,2 bi
(R\$ 240 million*)

+ R\$ 250 million**

Subsequent
years



**R\$ 800 million
to R\$ 1.6 billion**
(R\$ 240 million*)



Total to be defined***
(minimum of R\$ 240 million*)

* For compensatory actions

This amount is part of the annual budget of the Foundation

** Amount included in the R\$500 million fund for basic sanitation.

This amount is not part of the annual budget of the Foundation

*** Based on detailing of technical studies and analyses

CANDONGA: MITIGATING DAMAGES

The path of the Doce River to the sea, with all its meanders, has many stories to tell. One of the most famous ones in recent years is that of Candonga, a point close to the headwaters, in Santa Cruz do Escalvado, in the so-called Zona da Mata of Minas Gerais. This site, little known till then, received in 2004 a hydroelectric power plant, inaugurated by Consórcio Candonga, formed at the time by VALE and Alcan Alumínio do Brasil. In the following year, Candonga took on the name of Risoleta Neves, in a tribute to the grandmother of then governor Aécio Neves.

In November, 2015, the reservoir of this power plant prevented the greatest portion of the Fundão tailings dam spill from flowing downstream to the sea. The generation of energy was interrupted. The structures, which till then had only dammed up water from the Doce River, were tested to withstand the flow of dense material.

The Fundão dam tailings ended up forming small islands around the power plant dam. In all, the estimate is that 10.5 million m³ were retained there. Without the Candonga barrier, the impacts cause by the dam failure would have been much more serious, in terms of infrastructure and environmental damage.

The Candonga dam is monitored by the Consortium of the same name, and the results monitored by Samarco show that the structure is stable. One of the priority actions planned by the Company to remediate the damages was to remove the tailings from the reservoir so that the plant can go back into operation.



**Dredge
cleans up at
Candonga dam**

LEO DRUMOND / NITRO / 24/05/16

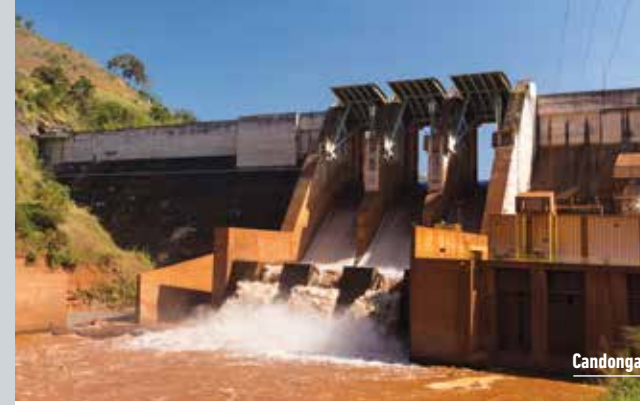
DREDGING AND RESUMING OPERATIONS

The Fundão tailings dam failed in mid afternoon on a Thursday. Before dawn on Friday the tailings had reached the Candonga dam. Upon learning of the dam break, the employees of Consorcio Candonga immediately took the operational steps necessary to prepare the structure for the arrival of the sediments.

When the tailings arrived, the dam was being emptied. At the plant, where operations were halted that same day, the only water left was the so-called dead volume, located below the level of the gates. It was there that the tailings accumulated, mixed with other types of debris carried by the flow and the already existing sediments entrained by the river over the ten year period of the power plant's operation.

The clean-up started on the fifth day after the arrival of the tailings and continued to the first week of January 2016. Companies hired by Samarco removed the material that had accumulated there, totaling 16 thousand m³ of waste, including tree trunks and plants torn from the riparian vegetation along the Doce River. All the removed material was transferred to a nearby farm, remaining available for potential future use.

In parallel, the hardest part of the work started, namely the removal of the sediments from the bottom of the lake. This is being done by three dredging machines, two of them large enough to not only dredge all the material but also transfer it to dikes, structures to be built at safe locations. In all, the average dredging volume per



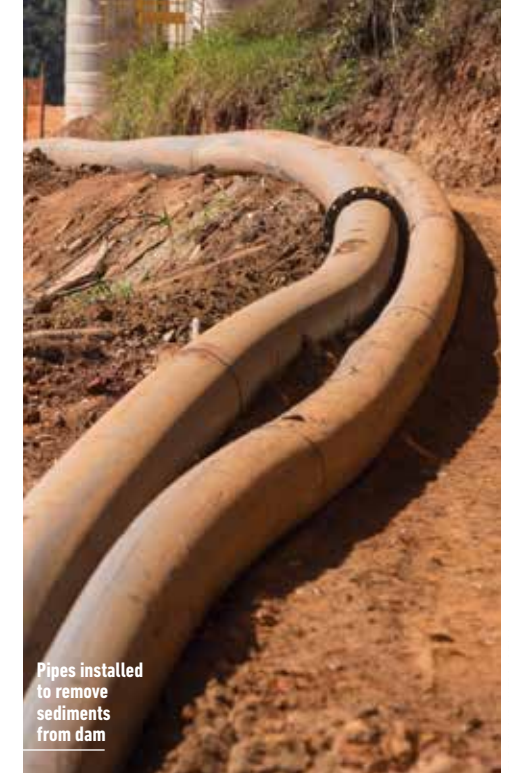
Candonga

LEO DRUMOND / NITRO / 8/7/16



Organic material, such as tree trunks and vegetation, was removed from the Candonga dam in the first three months after the failure of the Fundão dam

LEO DRUMOND / NITRO / 24/5/16



Pipes installed to remove sediments from dam

LEO DRUMOND / NITRO / 8/7/16

day is of 5 thousand m³. Before the dredging work started, a study was made for the correct design of these dikes, duly approved by the environmental agencies.

The process has continued since then. The smaller dredging machine sends the sediments inside large bags made of resistant material, which functions as a sort of filter. The water exits and the sediments remain inside the bags, which end up serving as structures for the building of dikes. As for the other two larger dredges, they pump the slurry with sediments directly behind the dikes.

By 31 October, 500 thousand m³ of tailings had been removed from Candonga. The dredging operation was divided into two phases. In the first, 1.3 million m³ of sediments will be removed by July 2017. This represents the removal of the first 400 meters in front of the plant's gates, necessary for it to be able to resume energy generation. Subsequently, once the structure is viable, the rest of the material will be dredged.

ACTIONS IN CANDONGA

DATA AS OF 31/OCT/2016

10.5 MILLION

m³ of waste held back by Candonga dam and kept from flowing down Doce River to the sea, after the failure of the Fundão dam.

5,000

m³ is the daily dredging volume, for the two larger dredges

16,000

m³ of waste removed during the initial cleanup of the dam, including logs and vegetation torn up along the banks of the Doce River

113 KM

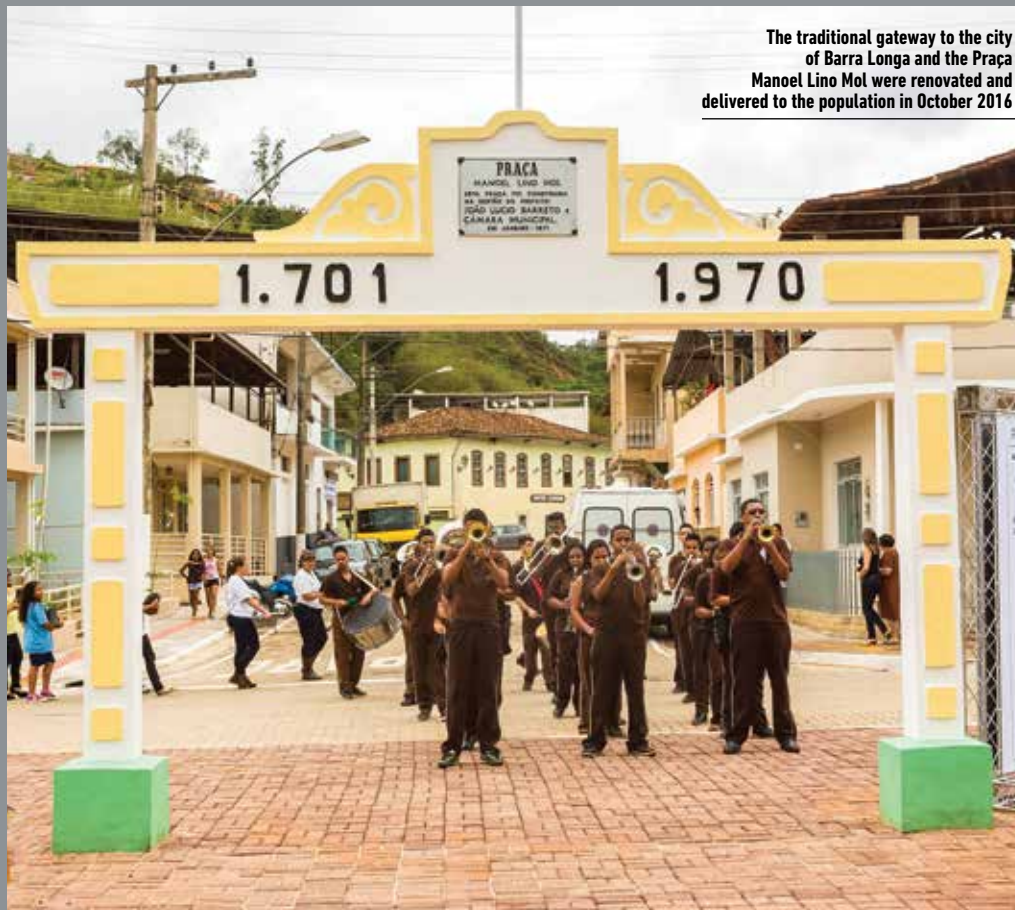
separate the area of the Samarco dam and the Candonga HPP dam

500,000

m³ of tailings removed from Candonga by 31 October 2016. The expectation is to conclude the first phase of operations by June 2017

BARRA LONGA: THE RECONSTRUCTION

The traditional gateway to the city of Barra Longa and the Praça Manoel Lino Mol were renovated and delivered to the population in October 2016



LEO DRUKONDI | INTRO | 30/10/2016

Located 215 km from Belo Horizonte, Barra Longa is a typical town in the hinterlands of Minas Gerais. Its history dates back to three centuries ago, and its development was mainly driven by placer mining in the Carmo and Gualaxo do Norte rivers, where gold was abundant, and farming.

Its population of some 6 thousand inhabitants, counting both the municipal seat and the surrounding rural communities, is proud of its placid day to day, enjoyed ever since they could remember. Both in the field and in town, the simplicity and valuation of popular traditions are elements which charm its visitors.

On 6 November 2015, however, the history of Barra Longa started a new chapter. The tailings waste released the day before by the failure of the Fundão dam flowed to Barra Longa along the bed of the Gualaxo do Norte river, which has its headwaters in Ouro Preto, and its mouth in Barra Longa itself, where it flows into the Carmo river, which in turn

crosses the entire municipality until reaching the Piranga river.

The impacts were felt both by the people living in town and by those on rural properties. In the urban center, the tailings damaged houses, stores, public facilities, community spaces and access routes. One of the most affected sites was the main square, an important gathering place for the community. In the countryside, in addition to the damages to properties and equipment, farming and ranching activities were threatened. Another impact was the damage to the bridges which provide access to the region, preventing people and produce from circulating. The tailings sedimented on the banks and the bottom of the main rivers and their tributaries, changing the local landscape and impairing the use of water.

In view of this scenario, intense work is being carried out, with priority on dialogue with the local community, to repair the socioeconomic and socioenvironmental impacts caused to the population.

FIRST ACTIONS

In Barra Longa, most of the actions carried out by Samarco have been focused on reconstruction and renovation of the impacted structures, in addition to environmental recovery. An emergency plan was adopted which includes, among other measures, the monthly payment of an allowance to help the impacted families.

It is important to remember that all of the initiatives implemented by the Company are

outlined in the Framework Agreement (TTAC) signed with the Federal Government and the State Governments of Minas Gerais and Espírito Santo.

The work involved professionals from the city, from the district of Gesteira and neighboring Acaiaca. Whenever possible, preference was given to the purchase of material among local tradesmen. The works generated R\$ 5 million in tax revenue for the municipality.



Some 700 professionals were involved in various work fronts in the region



Heavy machinery used for Barra Longa cleanup

The projects were developed on the basis of intense dialogue. In all, 146 meetings were held in Barra Longa up to the end of September, during which the population and local authorities were able to express their suggestions, complaints, aspirations and desires.

Aware of the upheaval caused by the works, Samarco implemented an action plan to mitigate matters. One of the initiatives was to establish a system of wetting down the streets to reduce the dust. All of the water used both in the clean-up process and the wetting was abstracted from a point of the Ribeirão do Carmo, with the autho-

rization of public authorities. Due to the significant increase of vehicles and heavy machinery circulating in town, the Company also provided instruction to 800 students in the municipal schools to reinforce safe behavior in traffic.

After almost a year, with some 700 people working and 70 machines working in shifts, the Company delivered over 90% of the work in the town itself, which means one year ahead of schedule. For 2017, the plan is to rebuild the fairgrounds, which received the material removed from the streets, and build 13 homes, among other actions.

BACK TO ROUTINE

The focus of the reconstruction and renovation actions is to allow the residents of the impacted areas to resume their normal daily routine. The work contemplated all of the needs identified by Samarco, especially those expressed by the population during the dialogue meetings.

The efforts also gave priority to the repair of the basic infrastructure of the impacted sites, such as cleanup of access ways, reconstruction of bridges and assurance of basic services such as health care and sanitation.

MANOEL LINO MOL SQUARE

Using the question of “what sort of town square does Barra Longa want”, Samarco, with the support

of consultants Herkenhoff & Prates, held dialogue meetings, workshops, round tables and interviews to learn what the population’s expectations were with regard to the new square.

In general, the community expressed the desire to have the design preserve the identity of Barra Longa and offer equipment to promote interaction among people of different ages, in addition to space for sports, physical exercise in general, and an environment surrounded by nature.

The result was a project which promotes human contact, with the added benefit of accessibility. The new square received ornamental plants and LED lighting, benches and a deck made

with ecoblock, a type of plastic wood produced using plastic waste and industrial fibers. The Avenida Beira Rio was entirely paved with blocks made out of tailings. Workout equipment was installed, together with a playground and a walking trail.

The square was delivered to the community on 30 October 2016.

RECOVERY AND CLEANUP OF STREETS

The streets of Barra Longa and Acaiaca also underwent renovation. Part of the damage to these ways was caused by the intense traffic of heavy vehicles during reconstruction and renovation. The works involved activities of filling in holes and renovating the pavement in nine sections in the two cities. Four thousand square meters of asphalt were recovered on the highway of Edmundo Costa Lana and section of MG 326, in addition to some 14 thousand square meters of pavement within the municipality.

In downtown Barra Longa, the former pavement in gneiss rock was recovered, maintaining the origi-

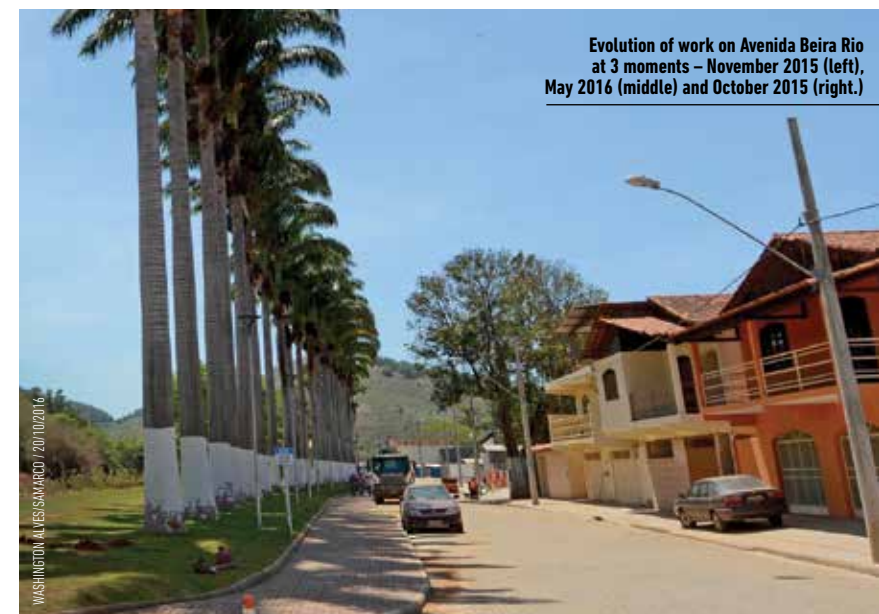
nal characteristics of the streets. The expectation is that this work will be finished in December 2016.

HOMES AND STORES

In all, Samarco identified the need for improvements in 112 homes and 36 stores in Barra Longa. The work involves redoing the flooring, walls, doors, roofs, storefronts and sidewalks, in addition to electric, hydraulic and sewage installations. After this phase, new furniture, home appliances, bed and bath linen and food stores will be provided, according to each demand. By 31 October, 98 homes and 33 stores had been renovated. The plan is to conclude the rest by July of 2017.

RURAL PROPERTIES

In all, 98 properties were impacted in the rural zone of Barra Longa. The recovery work, defined on the basis of the requests submitted by the owners, include the planting of sugar cane, pastures, corn and brachiaria grass, recovery of orchards, reconstruction of corrals, fencing and recovery of water intake points. In parallel, Samarco is supplying feed for the animals, delivering silage.



Evolution of work on Avenida Beira Rio at 3 moments – November 2015 (left), May 2016 (middle) and October 2016 (right.)



LEO DRUMOND / INTRO / 18/08/2016



Replanting orchard in rural property in Paracatu, district of Mariana

LEO DRUMOND / INTRO / 5/5/2016

OTHER IMPACTED LOCALITIES

In Mariana (MG), the action plan to mitigate the effects of the failure of the Fundão dam also includes reconstruction and renovation. These are some of the tasks to be performed in the municipality:

Renovation

The need was identified to renovate 23 rural properties and 18 public spaces in Mariana districts such as Pedras, Campinas, Ponte do Gama and Paracatu. By December 2016, all of these tasks should be concluded.

Reconstruction

By December of this year, work will have started on the reconstruction of 26 rural properties in the region, and should be finished within three years.

During the works, 240 local animals were sheltered at Fazenda Bom Retiro, rented by the Company until the owners would be able to take them back. The deadline for delivery of all these works is December 2016.

YARDS, LOTS, LAND

In Barra Longa, back yards are part of the culture of the residents. Most of the houses that had yards are located on the banks of the river, and therefore the tailings entrained by the water damaged these spaces. Samarco identified the need for renovation of 188 yards, lots and plots in Barra Longa and Gesteira. By 31 October, improvements had been concluded on 67 units, and December 2016 is the deadline for delivering the rest. For 2017, the plan provides for the monitoring of the planting of fruit trees and gardens in the yards.

FAIRGROUNDS

The reconstruction of the municipal fairgrounds will start in 2017, with scheduled conclusion by December of next year. Samarco listened to the suggestions of the residents about the structure and use of the space. During this consultation of the community, with the participation of about 100 of its representatives, the contributions stressed the importance of the site as a space for holding courses, contests, tournaments, shows and animal exhibits and other agribusiness events throughout the year.

CONCERN FOR THE ENVIRONMENT

Environmental actions have also been implemented by Samarco in Barra Longa, with the support of the environmental entities,

such as the State Environmental Agency of Minas Gerais (SEMAD). Some 170 thousand cubic meters of waste have been removed from the municipality. Twenty tributaries of the Carmo and Gualaxo do Norte rivers have been recovered. The work includes the cleanup of the impacted site, the removal of sediments deposited in the water ways and on their banks, and the revegetation of the areas using grasses and leguminous species to control erosion. Rock armoring has also been placed along the banks, using a gabion wall (wire boxes filled with rocks) in the area of Morro Vermelho, 278 meters long and 4 meters high. The objective is to prevent further erosion and protect the banks of the river that runs through Barra Longa.



LEO DRUMOND / INTRO / 7/14/2016

Homes and stores are renovated and newly furnished

RECONSTRUCTION IN NUMBERS

DATA AS OF 31/OCT/2016 / ILLUSTRATIVE IMAGE OF THE NEW SQUARE MANOEL LINO MOL, IN BARRA LONGA

98

homes renovated,
of a total of **112**



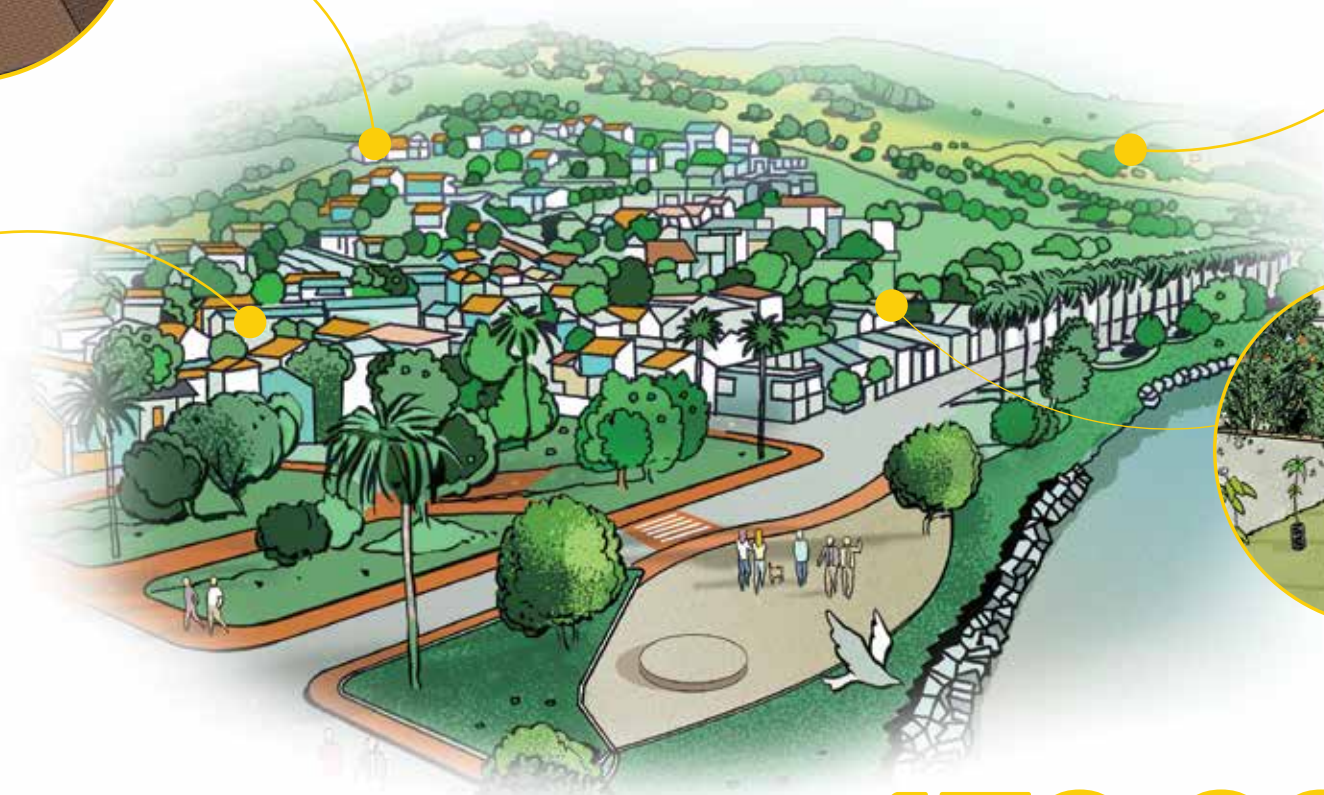
16

corrals reformed
of a total of **19**.



33

stores renovated, of a
total of **36**



67

backyards, lots and orchards
reformed. **121** more will be
worked on, totaling **188**.



IN MARIANA

23 rural properties and **18** public spaces in the districts of Pedras, Campinas, Ponte do Gama and Paracatu will be reformed by December of 2016.

26 rural properties in the region will be re-constructed starting in December of 2016. The scheduled conclusion of the works is three years.

170,000

m³ of tailings removed from the urban área of Barra Longa and farms of Gesteira. This work was finalized. About **10,000 m³** were reused in Gesteira for earthen structures



GERALDO SOUZA

BENTO RODRIGUES, PARACATU DE BAIXO E GESTEIRA: NEW HOMES

Even though small, it stood out in the landscape, marked, basically, by some houses and trees in the surroundings, the hills on the horizon and the sky, one of the few to vary in the typical calm of small towns. And it was not only Baroque architecture and the familiar combination of white and blue on the walls, doors and windows that the Chapel of St. Benedict had for the 600 or so residents of Bento Rodrigues, sub-district of Mariana (Minas Gerais), located 145 kilometers from the mining capital, Belo Horizonte.

Dating from the seventeenth century and erected in the central square of the village, it was a landmark in the history of the locale, whose name, the same name of the saint that designates the church, is a tribute to the pioneer who arrived in the region in search of gold. Owner of a sequential story, the trajectory of Bento and its people, simple people and friendly, changed in the afternoon of November 5, 2015, with the rupture of the dam of Fundão.

Among the impacts were the loss of the lives of four members of the community, the destruction of district infrastructure, the loss of material assets and the breakdown of economic activity, based on family farming and subsistence, through Samarco itself and its subsidiaries. Trade was also impacted, especially in the retail food sector, such as the small pepper factory, managed and operated by women from the community, with its products sold in neighboring cities.



Chapel of São Bento
before the Fundão
dam failure

EMERGENCY MEASURES

Due to the proximity of Bento Rodrigues and the Fundão dam (about 4 km), the sub-district was the first and most affected by the flow of the tailings. Soon after the incident, Samarco took a series of emergency measures, such as integral care for families, with food supplies, personal hygiene items, medical and psychosocial assistance, as well as accommodation for all. By December 24, 2015, all families were in accommodations chosen by them. Nowadays, 291 are lodged in houses by the company in Mariana, and another 44 in Barra Longa, while they await the reconstruction of their homes.

With the immediate decisions taken, Samarco's focus was on the reconstruction of Bento Rodrigues and two other districts impacted: Paracatu de Baixo, Mariana district, and part of Gesteira, district of Barra Longa. The expected

delivery date is until 2019, as stipulated in the Transaction and Adjustment of Conduct Agreement (TTAC) signed with the federal, Minas Gerais and Espírito Santo governments and other governmental entities.

A fundamental point in the course of reconstruction is that it has been drawn together with the three communities. In Mariana and Barra Longa alone, 344 meetings were held to deal with the most diverse issues with the impacted population and authorities until the month of September of this year.

Through meetings and ongoing dialogue, families participated in the entire process of surveying and selecting land for resettlement, including defining the characteristics required by the locale and the expectations for the construction of urban projects.

They received informative materials about the selected sites and visited the available options.

NEXT STEPS

As in the case of Bento Rodrigues, the work of resettlement of impacted families has been carried out with the same care and wide community participation in the districts of Paracatu de Baixo and Gesteira. After choosing the new areas for reconstruction, the process is in the phase of development of the urban design.

The initial work was conducted by Samarco and today is under the responsibility of Renova, a private foundation created to continue the pro-

grams - Social, environmental and economic - of recovery of the impacted regions. Synergia, a consultant contracted to work with the community in the area, has met with families to be aware of their expectations regarding the places where they will live and clarify all phases of the process, seeking to ensure understanding and Participation by the population.

Compiled, the information and suggestions are given to those responsible for the development of the urban plan, in order to give the new districts forms based on the choices of the population. Urban development projects are expected to be approved by three communities by the end of this year.

RESTORATION OF RELIGIOUS ART

About 2,000 architectural assets of churches, such as sacred pieces, documents and fabrics, were rescued in areas impacted by the rupture of the Fundão dam. Sent to the technical reserve area in Mariana, most of the objects were found in the chapels of São Bento and Nossa Senhora das Mercês, in Bento Rodrigues, in Santo Antônio, in Paracatu, and in Nossa Senhora da Conceição, in Gesteira.

After retrieval and cleaning, the items are cataloged by means of photographs and detailed descriptions, analysis of conservation status and treatment proposal. They are then prepared to be stored in rooms with adequate air conditioning.



Photo of road renovation works between the districts of Paracatu and Águas Claras (MG) in May of this year

RESETTLEMENT STEPS

The reconstruction of the three impacted districts (Bento Rodrigues, Paracatu de Baixo and part of Gesteira) goes through four major stages, to be completed in 2019: land selection, environmental licensing, subdivision and buildings, which depend on an intense dialogue with communities, Public Ministry and other government agencies.

After the definition of the land comes the conception of the new urban and architectural plan, in which the location of public facilities, such as churches, schools, health posts, squares and soccer fields, among others, is defined, along with the population, in addition to aspects such as the size of the land and the constructive patterns of the new housing. In parallel, there is the stage of environmental licensing.

Once the new urban layout of the districts has been designed, and after approval by the community and competent bodies, the earthworks, sewage, water and drainage infrastructure will be started. The next step is to dialogue with each family to deal with details of properties such as residence structure and finishing standards. It is only after the conclusion of the individual agreements that the reconstruction of the houses can be started, which will culminate in the last stage: the change and the accompaniment of the families in the new houses. For the accomplishment of the works, the contracting of local labor will be prioritized.

ACTIONS IN THE COMMUNITIES

IN BENTO RODRIGUES

Bento Rodrigues will be rebuilt on the land known as Lavoura. The selection took place on May 7, 2016, by means of an election between representatives of 223 families (92% of the votes). The land of 350 hectares is 8 km from Mariana and presents the conditions demanded by the population, such as soil for planting and animal husbandry, easy access to public transport and good water supply - close to springs. At the moment, the reconstruction process is in the approval phase of the proposal of the urban project, in process in the city hall of Mariana. Then, it will be validated by the community. The district's delivery forecast is March 2019.

Community of Bento Rodrigues celebrated the feast of Our Lady Of Mercy in the impacted district, in September 2016



FERNANDO HEBERT / 25/9/2016

Families from Paracatu visiting potential sites for resettlement, before casting their vote



MARCUS DESIMONI / INTRO / 9/6/2016

IN PARACATU DE BAIXO

Paracatu de Baixo will be rebuilt on the terrain known as Lucila. The selection was made on September 3, 2016, and the venue received 65% of the votes of the 103 families that participated in the election. Monsenhor Horta district, 6 km from where Paracatu de Baixo was located, the area is 84.8 hectares and meets the criteria defined by the community, such as water supply, availability of energy and proximity to the old district. The meetings with the community to get their opinion about reconstruction took place between October 15 and 22. The first urban design concept of the new space is being elaborated by the contracted company, waiting for the finalization of the expectations survey with the families to complement the work. The works should be completed by March 2019.

Families from Gesteira expressing their desires about resettlement



FERNANDO HEBERT / 30/7/2016

IN GESTEIRA

The eight houses, the church, the parish hall and the soccer field of Gesteira will be rebuilt on the land known as Macas. Chosen by the population (95% of the votes) on June 25, 2016, the 7-hectare plot is close to the central square of the district, as requested by the community. A proposal for an urban development project was elaborated and is in progress at the Barra Longa prefecture and then presented to the community. The works are expected to be delivered in early 2018. The reconstruction of the Gustavo Capanema Municipal School, also impacted by the breakup of the Fundão dam, is scheduled to be completed in November of this year. The space will have two classrooms and a cafeteria, as well as a mini-library equipped with computers. The location and project of the new school were discussed and approved by the families and the Municipal Education Department. The teaching unit is now located in the central square of the district, integrated to the sports court.

RIVER DOCE: CARE WITH THE ENVIRONMENT



Company has worked hard on cleaning up the impacted rivers, such as the Carmo, which joins with the Piranga to form the Doce River

LEODRUMOND 20/07/16

From the mountains of Minas Gerais, rivers of great importance emerge in the national scene. In the case of the Doce, one of the main water courses of the state, which arises from the confluence of the waters of the Carmo and Piranga rivers - whose springs are located, respectively, in the Espinhaço and Mantiqueira mountains. The meeting of the two rivers that form the Doce occurs between the municipalities of Ponte Nova, Rio Doce and Santa Cruz do Escavado, in the Zona da Mata of Minas.

Until reaching its mouth near Linhares, Espírito Santo, the Doce River covers some 879 km. In this trajectory, it assumes a social, economic, cultural and relevant environmental role for the 228 municipalities that compose its hydrographic basin. It has a population estimated at 3.5 million inhabitants that depend on the extraction of its waters for domestic, agricultural and industrial use, as well as the generation of electric energy - currently there are ten hydroelectric plants (UHEs) and 29 small ones (PCHs) operating in the region.

With 98% of its area inserted in the Atlantic Forest biome, the Rio Doce Basin is rich in biodiversity. However, due mainly to the intensification of economic activity and the disorderly growth of cities, the region's environmental conditions have been significantly transformed. According to the National Water Agency (ANA), one of the main problems identified is deforestation, as well as the lack of treatment of domestic sewage in cities along its banks.

The Fundão dam incident, in November 2015, discharged mining waste, water and materials used in its construction.

From Fundão, the tailings and debris wave followed the courses of the Santarém stream and the Gualaxo do Norte and Carmo rivers for 77 km until reaching the Doce. After 17 days, sediments reached the mouth of the Doce, on the north coast of Espírito Santo, causing socioeconomic and environmental impacts throughout the stretch.

INTEGRATED RECOVERY

After the incident of the Fundão dam, two main areas of work were established, one socio-economic and the other socio-environmental. The actions to mitigate environmental damages along the length of the impacted stretch are gathered in a single document called the Integrated Environmental Recovery Plan (PRAI).

Initially developed by Samarco, the document demonstrates that the activities carried out, as well as those in progress and those still being planned, and are interconnected and converge towards the recovery of rivers and the environment. The file is aligned with the Transaction Adjustment Term of Conduct (TTAC), signed in March 2016 between Samarco, Vale and BHP Billiton

Brasil and the federal and state governments of Minas Gerais and Espírito Santo.

On an emergency basis, initiatives were carried out regarding the safety of the remaining structures of the company - located in the Germano Unit in Mariana - impacted by the incident of the Fundão dam. Also in the first instance, Samarco focused on two other fronts: expansion of tailings storage capacity and containment and control of the erosion of impacted areas along the Rivers.

In parallel with the initial work, two aspects of the PRAI taken over last August by the Renova Foundation, created in accordance with the TTAC to lead the measures of reparation of the impacts caused

by the incident. The first is the scientific basis of risk analysis and the recovery process, consisting of a series of scientific and social assessments aimed at guiding medium and long-term remediation decisions. The second concerns actions that will contribute to the recovery of rivers. These two work fronts are in progress.

The measures are taken considering the best alternatives and methodologies, with the lowest risk, besides being aligned and accompanied by the competent environmental agencies. The initiatives are being developed in the short, medium and long term, according to the complexity of each Project.

TAILINGS HANDLING

The handling of the tailings released during the dam incident consists of environmental studies to make decisions regarding the removal of materials and recovery of impaired areas. The evolution of activities in this front depends on the assessment of the potential environmental impacts resulting from the removal and destination of the tailings, in the event that they must be removed.

Geomorphological and biogeochemical studies of the river between Fundão and the mouth of the Doce river allowed the company to define the priority points for sediment conservation and retention, as well as providing information for the recovery plan of the Permanent Protection Areas (APPs). This plan foresees the reforestation of 10 thousand hectares and the supervision of natural revegetation of 30 thousand hectares over ten years.

CONTAINMENT AND TREATMENT

As an emergency, the plan foresees the construction and operation of sediment containment structures and / or treatment systems between the Germano Unit and the Risoleta Neves Hydroelectric Power Plant (Candonga). The emergency system is composed of Dikes S1, S2 and S3, in addition to the Axis 1 dam of Fundão and Nova Santarém, whose works have already been started, and DIKE S4, which had the project approved by the Minas Gerais government in September and the works begun in the sequence.

The tailings control also includes the recovery measures of the tributaries of the Doce, Gualaxo do



Recovery of the banks of the Carmo river, close to Barra Longa, in two moments – during the cleanup process in March of this year, and the result of revegetation in June (right)





Replanting work on the banks of a tributary of the Gualaxo do Norte, close to Mariana, in May of 2016

Norte and Carmo rivers. The work includes cleaning the impacted area and removing the sediment deposited inside and along the banks of the streams. In addition, measures will also be implemented to prevent the rejects from returning to the water, such as tributarization of tributaries and revegetation of areas, as will be shown below

REVEGETATION

The plan contemplates the final and definitive plant recovery of 2 thousand hectares in the municipalities of Maria, Barra Longa, Rio Doce and Santa Cruz do Escalvado (MG). In an emergency, grasses and legumes were re-vegetated in 830 hectares, aiming to control wind erosion and the entrainment of solids by rainfall. The deadline for finishing the final planting is four years, and the maintenance period is six-years.

REGULARIZATION OF THE CHANNELS OF THE RIVERS AND RECOVERY OF TRIBUTARIES

Regularization of the channels and banks of the Gualaxo do Norte, Carmo and Doce rivers is also being done, as well as the control of erosion processes in the watercourses. Sixteen areas with erosion risk were identified. In 12 of them, recov-

ery works are being developed. The action is foreseen to terminate in December of 2017.

At the same time, work continues on the recovery of impacted (tributary) tributaries. One hundred and one tributaries of the Doce Basin were mapped, of which 92 are considered for recovery. Of these, Samarco recovered 58, lacking only the final vegetation.

The completion of this activity is scheduled for July of next year the recovery of impacts on terrestrial fauna and flora and aquatic biodiversity is already under study.

MONITORING

From the first moment after the incident of the dam, Samarco implemented actions to monitor water quality. This work, as well as all ongoing measures for environmental recovery, is under the responsibility of the Renova Foundation. Currently, two laboratories accredited by Inmetro, in accordance with ISO 17025, perform the assessments.

Periodically, the quality of water and sediments is analyzed and ecotoxicological tests are carried out.

Studies were carried out on the chemical characterization of the tailings, characterization of soils, sediments and tailings, water potability tests, bathing quality (water quality for bathing / diving purposes), water quality for animal consumption purposes And irrigation etc.

The water samples are collected in 120 points, 31 in the sea, eight in ponds and 81 in the rivers Doce, Gualaxo do Norte and Carmo. Of these 81, 26 are daily monitoring points. The reports are sent every year to the competent bodies and to those who request them - as of October 13, around 71,000 reports had been issued, and the total of parameters accumulated more than 1.9 million results.

Current results indicate that Rio Doce water, in several points, is similar to the historical average. This information is also present in the technical report issued by the Minas Gerais Institute of Water Management (Igam), referring to the month of August of this year.

Likewise, the analyzes show that the tailings of the Fundão dam - basically composed of silicon oxide (sand), iron and aluminum - does not represent a health hazard. These results are backed by tests released in March this year by the Gorceix Foundation, an institution linked to the School of Mines of the Federal University of Ouro Preto (UFOP). The material collected on November 30, 2015 was identified as class II B (non-hazardous waste, inert), i.e. it presents no danger when handled and presents no risk of making contaminants available when exposed to rains by several years.

The Renova Foundation also develops the Permanent Qualitative Quantitative Monitoring Program (PMQQS) for water and sediments for the next ten years, which covers toxicological and ecotoxicological risks. The plan must be approved by December 2016 at the Technical Chamber of Water

Safety and Water Quality. Chaired by the National Water Agency (ANA), this chamber is made up of members of several environmental entities that meet to discuss issues related to water quality.

SITUATION OF THE FISHING

Samarco has conducted bioaccumulation studies and analyzes that corroborate the conclusion that the results of heavy metals found in fish are not directly related to plume. The studies were made available to the Interfederative Committee, a body chaired by Ibama. The latest Igam report also shows that the conditions of the water of the Doce River, in general, are within the parameters. The prohibition of fishing at the mouth of Rio Doce, in the state of Espírito Santo, was a Federal Court decision based on the precautionary principle, based on a Public Civil Action (PPA) proposed by the Federal Public Ministry.



Water samples are constantly analyzed at 120 points

ENVIRONMENTAL BALANCE

DATA AS OF 31/OCT/2016



71

thousand water analysis reports issued, approx. The total of parameters accumulates **1.9 million results**. (Data as of 13/OCT/2016)



58

of **101** mapped tributaries of the Gualaxo and Carmo Rivers were recovered.



228

Municipalities make up the Rio Doce River Basin. There are **3.5 million** people living on its banks, totaling **879 km** in length, between the Zona da Mata and the North of Espírito Santo.



830

hectares revegetated on an emergency basis in the municipalities of Mariana, Barra Longa, Rio Doce and Santa Cruz do Escatvado. At the end, there will be **2,000 hectares** recovered in this region.

GERALDO SOUZA

GOVERNADOR VALADARES: WATER SECURITY



Aerial view of city, crossed by the river that gave it life, in September of this year

LEO DRUMOND / NITRO01/29/9716

The way to get to Governador Valadares, in the eastern part of Minas Gerais, has been well known since colonial days. To find valuable metals and Botocudo Indians, the traveler just followed the Doce River. Two centuries before becoming a municipality and receiving the name of a public official (former governor of Minas Gerais, Benedito Valadares), it was clear that the city's history was intertwined with that of the river on which banks it was born.

The river also helped to define the city's economic vocation. Its fertile banks lent themselves to farming and ranching. After the arrival of the railroad, industry and commerce flourished. The city expanded along the river, not always in a planned way. Some districts grew in places that were often flooded during the rainy season, and still are today. The city also had problems with water pollution, and part of its population still lacks adequate water treatment systems.

In 2015, the river and the city ran into more serious problems. On 05 November, Samarco's Fundão dam ruptured. Two days later, the mining waste arrived in Governador Valadares and compromised the only water source that supplied the municipality, leaving it – and neighboring Alpercata – without water for seven days.

WATER SUPPLY

MARCUS DE SIMONI / NITRO / 300316



Samarco and SAAE of Governador Valadares work together to assure the supply of water fit for consumption



Company distributes over 1.3 billion liters of water to the impacted cities in the Rio Doce basin

LEONARDO MORAES / 1447215



Actions include renovation of water treatment plants, such as in Governador Valadares

LEO DRUMOND / NITRO / 299116



Residents of Governador Valadares re-ceived water in bottles and jugs, in the first months after the Doce River was compromised

LEONARDO MORAES / 1512115

The most urgent measure adopted by Samarco was the distribution of drinking water. Just in the so-called Governador Valadares hub, which gathers the municipalities located between Sem Peixe and Aimorés, the company delivered 75.6 million liters.

The action was replicated in other municipalities of Minas Gerais and Espírito Santo, on the course of the Rio Doce towards the ocean. In total, the quantity distributed exceeds 1.370 billion liters, most of which delivered to the population between November 2015 and January 2016. This volume would fill 138 thousand water trucks with a capacity of 10,000 liters each.

While the distribution was organized, the company sought to recover the water supply from the Doce basin. A strategy that generated efficient

results, carried out in partnership with the Valadares Water and Sewage Service (SAAE), was the use of Tanfloc SG, an organic coagulant extracted from the bark of the black acacia tree. This product forms small flakes with the residues, contributing to the decantation process. With the sediment deposited in the bottom of the Water Treatment Plants (ETAs), the water reached turbidity levels that left it suitable to be treated, filtered and consumed.

Reports from outsourced, independent companies, attested to the potability of the samples collected along the river after treatment with Tanfloc SG. In all, there were 310 samples of tailings, soil and sediment collected from the dam region to the Atlantic Ocean. Just around the city of Governador Valadares, 12 samples were analyzed.

In parallel, Samarco, together with the municipalities, began a series of studies to mitigate the problem. One of the effects of this partnership is the restructuring of the water treatment plans (ETAs). Some have been completely renovated. In all, 19 treatment stations received new equipment, 14 of them at the Governador Valadares hub. In addition, meetings are being held to share experiences and good practices with the operators that work in all the ETAs that capture water from the Rio Doce.

The Renova Foundation - an entity established under the terms of the Framework Agreement (TTAC), signed by Samarco, its stockholders and government entities - is following up on the work done by Samarco. Analyses of all established chemical parameters for treated water

are carried out weekly along the Rio Doce, and the indices are in accordance with ordinance 2914 of the Ministry of Health.

ALTERNATIVE INTAKE

In parallel to the reduction of Rio Doce's turbidity, Samarco carried out some projects for emergency collection in the event of an inability to supply cities in Minas and Espírito Santo, located on the banks of the river. In November 2015, the company delivered to the SAAE water utility of Governador Valadares a 2.7-kilometer pipeline, capable of abstracting raw water from the Suaçuí Grande River and sending it to ETA Recanto dos Sonhos.

220 km from Valadares, Colatina, in the state of Espírito Santo, another municipality dependent

on the Rio Doce, also receives alternative supply projects. Samarco was authorized to build two new catchment systems on the Pancas and Santa Maria rivers. Also for the improvement in the supply of the city, six artesian wells were drilled. In Baixo Guandu, near Colatina, the company and the city hall concluded the installation of three water mains in the Rio Guandu.

The company also completed the construction of a 9-km pipeline in Linhares, in the North of Espírito Santo. The structure is able to take raw water from Lagoa Nova to the city's SAAE pumping station. Its catchment capacity is 200 liters of water per second, supplying 50% of the municipality's consumption.

Another action carried out is the drilling of artesian wells. In Minas Gerais, two were opened in Cachoeira Escura and one in São Vitor district. By the end of the year, a further 15 are planned, adding cities from both states.

As was the case in the municipalities of Minas Gerais, Samarco, in partnership with the Capixaba Institute of Sciences and Administration (ICCA) and Espírito Santo Santana de Saneamento Company (CESAN), produced a series of reports on the quality of the water abstracted.

IRRIGATIONS AND WATER FOR LIVESTOCK

Irrigation with Doce water was released to municipalities between Governador Vata- dares (MG) and Linhares (ES) starting March this year. The release for animal consumption along this same stretch occurred in September. The water analyses at these points comply with Conama regulation 357/2005. Contingency actions for rural properties where water use has not been authorized are the supply of silage and water trucks to irrigate crops and provide water for livestock.



ETA of Valadares, during renovation by Samarco

MARCUS DESMONI / INTRO / 30/2016

Samarco started to rely on ICCA technical assistance to analyze whether the Rio Doce water was suitable for irrigation use in January. Since then, the collection of river water has been made, twice a month, in rural properties along the stretch for the evaluation of 23 different parameters, such as turbidity and the presence of metals in the water.

At present, all activities related to the supply, abstraction, use and quality of water, including the monitoring of the Rio Doce, are being conducted by the Renova Foundation.



Tank trucks were essential to assure emergency supply to the population

LEONARDO MORAES / 14/12/15

ACTION HIGHLIGHTS

DATA AS OF 26/OCT/2016

18

Artesian well drilling operations were started by Samarco in municipalities of both states. The work will be concluded by Fundação Renova.



5

water mains in Minas and Espírito Santo had their pipes laid by Samarco and can be used in the next rainy season. The action is under the responsibility of Fundação Renova.



138,000

tank truck with a capacity of **10 thousand liters** which can be filled with water delivered by the company.



19

Water treatment plants (ETAs) received improvements with the support of Samarco in impacted cities, **14** of them in the region of Governador Valadares.



1.378 BILLION

Liters of drinking water transported and delivered by Samarco, mostly between November 2015 and January 2016, to the cities which had their water supply impaired.

COMMUNITIES: NECESSARY SUPPORT

The rupture of the Fundão Dam has caused a series of damages to the communities, changing lives in many of them. In view of this, since November 2015, Samarco has stinted no effort to repair or at least minimize the impact caused, be it socioeconomic or socioenvironmental.

Under the Framework Agreement (TTAC), signed in March this year by the company, its shareholders, Vale and BHP Billiton Brasil, and public authorities, the socioeconomic and socio-environmental measures adopted by Samarco were systematized in the form of short, medium and long-term programs. The work is now being carried out by the Renova Foundation, a non-profit organization created under the TTAC to repair the impacts generated by the failure of Fundão.



Silage distributed to animals

LEO DRUMOND / INTRO / 7/8/16

FINANCIAL AUTONOMY

Returning to rural workers and professionals linked to the Rio Doce their financial autonomy is also among the main objectives of Samarco. In 2016, the company dedicated itself to the recomposition of the productive areas in the field that can be restored and conditions to produce as before the dam rupture.

Among the actions are the supply of water for animal and human consumption and more than 5,500 tons of silage for animal feed in rural properties in Mariana, Barra Longa, Ponte Nova, Rio Doce and Santa Cruz do Escalvado. Continuing the work, the Renova Foundation planted around 150 hectares of crops to replace affected animal fodder and orchards in 96 properties in these municipalities. Another action developed with the rural producers in this region is the technical assistance rendered by zootechnicians and agronomists.

For aquaculture and fishing activities, the goal is to carry out actions to recompose the conditions for resumption of work and production, including equipment and infrastructure for the conservation, industrialization and commercialization of fish and sand extraction. A term of reference is being developed by the Renova Foundation for the design of the program on the subject and subsequent contracting of the suppliers that will carry out the activities.

SCHOOL ACTIVITIES UP AND RUNNING

All 813 students from the impacted communities in the region of Mariana and Barra Longa completed the academic year 2015 and began the 2016 school year without compromising the school calendar. Among the measures taken by the company are the renovation and construction of new spaces to hold classes, the purchase of furniture and supply of school transport and kits with backpack, pencils and other school and teaching materials for students and teachers. In 2017, the Renova Foundation will conduct emergency drills with education professionals, enabling them to cope with them in an appropriate way. It is expected that these simulations will occur in the first quarter of the year.

MARCUS DESIMONI / INTRO / 19/4/2016



Action celebrating Book Day at Barra Longa school, promoted by Samarco

CONCERN WITH ANIMALS

Almost 7,000 impacted animals received some kind of assistance from Samarco. The company has provided suitable shelter for some of them, where they have been provided with veterinarian follow-up, balanced feed, handling and grazing. The goal is for them to be given back to their original owners or sent to new homes, healthy and vaccinated. The work is done with the support of public agencies and animal protection agencies.

Smaller animals, such as dogs and cats, were taken to the Temporary Animal Shelter Center, located at the Asa Branca Farm, located in the Camargos district of Mariana (MG). Some of them have been recognized by their tutors, and the other part has been directed to adoption events promoted, most of the time, through a partnership between animal protection institutions and the Renova Foundation, which is responsible for the continuity of actions. By September 2016, three adoption events had been held, resulting in 95 adoptions in new homes - another 37 are still available for adoption.

Large animals, such as cattle, horses and pigs, were sent to the Bom Retiro and Santa Tereza farms, located respectively in Mariana and Acaiaca (MG). After being recognized, 107 were returned to their owners and another 187 await, under the care of the Renova Foundation, the resettlement of the families or adjustments of the original properties for their return. It is worth mentioning that animals that have already been returned to their owners and those who remain on impacted properties continue to receive veterinary care, as needed.

Vets take care of large animals impacted by the dam failure



LEO DRUMOND / NITRO / 30/03/16

SUPPORTING TOURISM

Samarco began to prepare a diagnosis of the impacts of the rupture of the Fundão dam on the tourism and culture of the municipalities that were affected in Minas Gerais and Espírito Santo, with an expected conclusion in March 2017. From this survey, made with the representatives of the sector and with the participation of the communities, an action plan will be drawn up for the next five years, to be developed by the Renova Foundation. However, emergency measures are under way to restore the flow of tourists, promote local attractions and revigorate local culture.

In Regência, district of Linhares (ES), where the mouth of the Doce River is located and which has tourism as one of its main sources of income, the Projeto Verão Foz do Rio Doce was promoted between January and February of this year. The company also supported the Caboclo Bernardo Festival in June and Mica Fubica in August, which are traditional events in the district. In Mariana (MG), the Renova Foundation supported the organization of the 24th edition of Iron Biker, which brought together 1,700 cyclists from different parts of the world on 17-18 September.

JEFFERSON RODOI / 04/06/2016



Traditional feast of Caboclo Bernardo held in Regência, ES, in June of this year

INTERACTION WITH THE COMMUNITIES

All of Samarco's actions are preceded by ongoing dialogues with impacted communities. By September 2016, 641 meetings of social dialogue had been held, involving more than 23 thousand people, and about 70 thousand contributions were registered in the relationship channels, such as the Canal 0800 de Atendimento à População. Mechanisms such as website, Facebook page and printed materials are also used for communication actions. Samarco also invested in the creation and dissemination of information campaigns in state and local newspapers, radio and television. The company also provided three in-person service stations in Mariana, Barra Longa and Santa Cruz do Escalvado, in Minas Gerais. In Espírito Santo, two tents were set up provisionally in Baixo Guandu and Marilândia. Now the work is being conducted by the Renova Foundation, which will implement another 10 stations, called Information and Service Centers, in municipalities of the two states, as well as an itinerant unit.

JEFFERSON RODOI / 18/04/16



Dialogue meeting with community of Regência (ES)



Financial assistance card distributed to directly impacted families

FINANCIAL ASSISTANCE

As of November 7, 2016, Samarco had delivered 7,919 emergency financial aid cards to more than 19,000 people, including family heads and dependents, from Minas Gerais and Espírito Santo communities. This is a temporary alternative to defray the personal and residential expenses of impacted families, among the communities and the riverside dwellers.

The amount, deposited by the fifth day of each month, consists of a minimum wage for each person in the family unit who has lost income due to lack of work activity, as a direct result of the rupture of the dam. An additional 20% of the minimum wage for each of the dependents and basic food basket is also furnished, according to the Interdepartmental Department of Statistics and Socioeconomic Studies (Dieese) of Minas Gerais and Espírito Santo. The delivery of the card is made after analyzing the socioeconomic profile and documents that prove the impact.

This action has become the responsibility of the Renova Foundation, as well as the Mediated Indemnity Program (PIM), which is in the implementation phase. Its purpose is to compensate the directly impacted people in a more agile manner, without the red tape and costs of a lawsuit, in a transparent, egalitarian and just way.

HEALTH CARE

On an emergency basis, more than 100 health professionals, including physicians, psychiatrists, nurses, psychologists, nutritionists, dentists and physiotherapists, were hired by Samarco to provide care to the impacted communities in Mariana and Barra Longa. Currently, 48 of them continue to work in Mariana, and another 28 in Barra Longa, with an average of 2,4 thousand visits per month.

The work to ensure the health of the communities is now conducted by the Renova Foundation. Among the measures adopted are actions to combat dengue and other transmissible diseases by agents of endemic disease control, besides the supply of medication, hospital supplies and medical equipment. A property in Mariana is being renovated to house the Basic Health Unit of the communities of Bento Rodrigues and Paracatu de Baixo. Scheduled for delivery in December 2016, the headquarters will be temporary, since the new health service station of each district will be built in the area chosen for resettlement by the families.

The Renova Foundation will carry out an epidemiological and toxicological study to verify if there has been an impact on the health of the population of the 39 municipalities affected by the incident. The document is being drafted, including the development of terms of reference. The study is expected to begin in the first half of 2017.



Over 100 health professionals were hired to provide care to the impacted communities

5,500

tons of silage were supplied to the impacted farmers to feed their livestock

7,919

emergency financial assistance cards distributed to over **19,000** people, among heads of household and dependents, in Minas Gerais and Espírito Santo (data updated to 07 November 2016)

7,000

animals received some sort of assistance by Samarco (approximately)

813

is the total number of students from the impacted communities in Mariana and Barra Longa who finished the school year of 2015 and started the 2016 year on schedule

641

social dialogue meetings held by Samarco with over **23 thousand** people in the overall impacted area, up to September 2016

48

health professionals continue providing care in Mariana and another **28** in Barra Longa, with an average of **2,400** medical visits per month by members of the impacted families

MARIANA AND ANCHIETA: RESTART

The city of Mariana was named in honor of a Portuguese queen, D. Maria Ana of Austria. Already in its early years, however, Mariana, in the Central Region of Minas Gerais, stood out as a city of iron ore. The product boosted its expansion and it reached the twenty-first century occupying more than 80% of the entire local economy.

Mariana is considered as the first town of the state. It was there that the first deposits appeared, later discovered in Ouro Preto, Sabará and other places of the gold cycle, in a region that became known as the Iron Quadrilateral. The

city contributed to the growth and relevance of Minas Gerais.

Almost 300 km away, as the crow flies, is the city of Anchieta, in the south of the state of Espírito Santo, which ended up being linked to Mariana. The town, which was named after the Jesuit priest José de Anchieta in the seventeenth century, had its development driven by its proximity to the sea. First, thanks to fishing, then with the movement in Ubu, the sea port from where the Samarco ore of Mariana is shipped out, a service that generates the greatest tax revenue of the municipality.

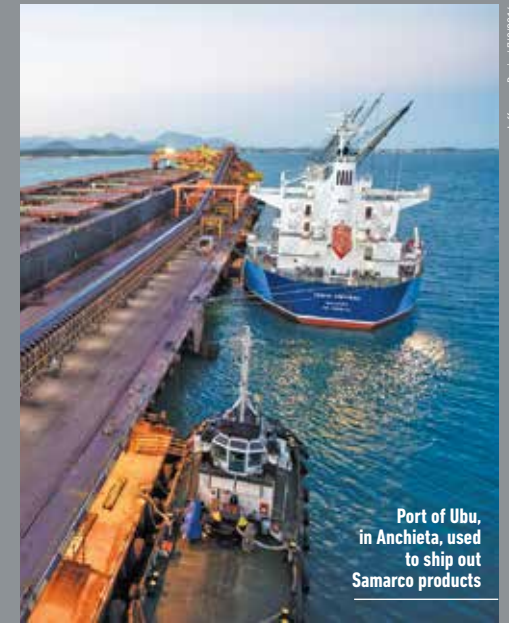


Leo Drummond / NITRO / 30/03/2016

In November of 2015, the rupture of the Fundão dam compromised the main sources of income of the two municipalities. The event, which generated social and environmental impacts, prevented Samarco from continuing operations.

The company is responsible for almost all the mining operations in Mariana, an activity that generates jobs in the region. Data from the Brazilian Institute of Geography and Statistics (IBGE) indicate that 80.4% of the more than R\$ 6.59 billion that corresponded to the Gross Domestic Product (GDP) of the municipality in 2013 originated in the sector. Due to the presence of Samarco, the municipality is one of the greatest beneficiaries of the Financial Compensation for Exploitation of Mineral Resources (CEFEM). In 2013, for example, it was R\$ 140 million, 486% higher than that recorded in 2005, when the municipality received R \$ 28.7 million.

Without extracting and exporting iron ore, Samarco does not generate tax revenue, which now accounts for 54% of the city's income. Another consequence of inactivity is the dismissal of part of its workforce. In this scenario, the public administration may accumulate



Jefferson Rocco / 17/2/2014

problems to maintain schools, health services, urban cleaning, among other services.

As for Anchieta, Samarco has four pellet plants, which transform iron ore, transported as slurry from Mariana by pipelines, into pellets which can be shipped abroad. The revenue of the municipality depends on this operation. The movement in the port is what creates, in addition to jobs, half of all the tax revenue, through the value added tax (ICMS) or Service Tax (ISS).

ALTERNATIVE FOR OPERATION



Pellets on the balling discs at the Ubu Unit (ES) in 2014

Jefferson Rocio / 2014

JEFFERSON ROCIO / 2014

According to the numbers, not only Mariana and Anchieta, but also the states of Minas Gerais and Espírito Santo have been losing with the stoppage, since Samarco is an important agent in the mining industry segment of the country. In Minas Gerais, mining accounts for 7.5% of GDP. According to the Brazilian Institute of Mining (IBRAM), the activity constitutes economic chain development, since it has a multiplier power of 13 times - in other words, for each job generated by a company in the industry, there are 13 new occupations in dependent bran-

ches, such as suppliers of equipment, commerce, repair shops, among others.

Samarco's revenue is equivalent to about 6.4% of Espírito Santo GDP and 1.5% of Minas Gerais GDP. In 2014 and 2015, the company made more than R\$ 5.5 billion in purchases, which helped the states mitigate the effects of the economic crisis. At the time of the rupture of the Fundão dam, Samarco had about seven thousand active suppliers. Of these, 41% were located in the direct area of influence

of the Ubu units in Espírito Santo and the Plant of Germano in Mariana, Minas Gerais.

Samarco, committed to recovering impacted areas and supporting people who have had their lives changed after the incident, is now trying to make it possible to resume operations.

The population of Mariana has already indicated that it wants the restart of mining activity in the city. In February 2016, a survey carried out by Vox Brasil with the community, commissioned by Samarco, revealed that 92% believe that the company should be held liable for the incident, but that it should resume operations. The survey also pointed out that 70% consider it reliable.

Vox Brasil heard people from a total of 51 municipalities, in Minas Gerais and Espírito Santo, including those impacted by the rupture. There were more than a thousand interviews. Generally speaking, most of the interviewees are in the same position as Mariana: they believe that the company should be held responsible for the dam failure and, therefore, must pay for the reparation - however, they believe that it must continue to operate, precisely because it generates jobs and income.

ALEGRIA SUL

After dedicating itself to emergency actions, including assistance to people, and at the same time carrying out works to contain the remainder of the tailings, Samarco is evaluating a new option to return to production. After reviewing the safety bases of its activities and incorporating new procedures to those already in effect, the company proposed the Alegria Sul pit in Mariana as an alternative for disposal of the waste from the beneficiation of iron ore. The Environmental Impact Study (EIA) and the Environmental Impact Report (RIMA) of the project were submitted in June this year at the State Secretariat for the Environment and Sustainable Development (SEMAD) of Minas Gerais.



Crushing process seen at the Germano Unit (MG) in 2014

Marcelo Araújo / 2014

The project foresees the disposal of the tailings generated during the process of beneficiation of the ore in the Alegria Sul pit, an already anthropized site - that is, an area altered as a result of human activity - left over from iron ore mining.

Due to its formation, the Alegria Sul pit will allow that, of the 17 million m³ to be stored, 14.5 million m³ of tailings will be confined within its natural walls. Another 2.5 million will be retained by a barrier that will be built in the upper part of the pit, increasing the storage capacity sufficiently to sustain the continued operation of the concentrators. The safety of the barrier will be guaranteed by its construction method, which provides for the use of compacted soil on the natural terrain. No tailings will be used in its structure, and there is no forecast of future raising works.

In addition, it is planned to install an emergency spillway on the side opposite the barrier, eliminating the risk of water overflowing the structure.

Simulations of hypothetical rupture have also shown that the tailings would remain confined to water courses and would not reach the homes of nearby communities. At the end of the operation period, the structure will be demobilized, and all the tailings will be removed and sent to a definitive structure yet to be built.

The short-term project, which will be evaluated by society and the competent environmental agencies, will allow Samarco to resume operations with 60% capacity. Meanwhile, the company is evaluating other possibilities to regain its total production capacity and allow the continuity of its business.



60%
will be Samarco's production capacity.

6 MONTHS
is the minimum time required for the pit to be prepared for tailings disposal.

17 MILLION
m³ will be the storage capacity of Alegria.

R\$ 32 MILLION
in taxes were paid by Samarco to the municipalities under its direct influence in Espírito Santo, in 2014. Another R\$ 50 million were assigned to the municipalities of direct influence in Minas, in that same year.

13
jobs are created for every job in a mining company, according to the Brazilian Mining Institute (IBRAM).

92%
of the residents of Mariana interviewed by Vox Brasil in February of 2016 believe that the company should be held liable for the damage caused by the rupture, but that it should resume operations.

