

**UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK**

IN RE: VALE S.A. SECURITIES  
LITIGATION

No. 1:15-cv-09539-GHW

Consolidated with 1:16-cv-00658-GHW

Hon. Gregory H. Woods

CLASS ACTION

**CONSOLIDATED AMENDED CLASS ACTION COMPLAINT**

**TABLE OF CONTENTS**

	<u>Page</u>
I. SUMMARY OF THE FRAUD .....	2
II. JURISDICTION AND VENUE .....	7
III. PARTIES .....	8
IV. BACKGROUND OF VALE’S MINING BUSINESS .....	15
A. Company Overview .....	15
B. Vale’s Ownership And Operation Of Samarco .....	16
C. Tailings Dams Pose A Well-Known And Significant Risk Of Failure .....	19
D. Samarco Was Vital To Vale’s Cash Flow And Mining Operations .....	23
E. The Fundão Dam Was An Operating Vale Dam .....	25
V. VALE’S FRAUD.....	28
A. Plunging Iron Prices Lead Vale And Samarco To Increase Production And Cut Costs .....	28
B. The Fundão Dam’s Long History Of Serious Problems.....	30
C. There Was No Real Emergency Action Plan In Place At The Fundão Dam.....	35
D. Vale Ignored Repeated Warnings About The Fundão Dam .....	37
E. The Fundão Dam Collapses .....	41
F. Vale Disclaims Any Responsibility For The Fundão Dam’s Collapse Or The Harm Caused .....	43
G. A Brazilian Court Orders Vale To Pay For The Harm Resulting From The Fundão Dam’s Collapse.....	44
VI. DEFENDANTS’ MATERIALLY FALSE AND MISLEADING STATEMENTS CAUSED SUBSTANTIAL LOSSES TO INVESTORS .....	44
A. False and Misleading Statements Concerning Vale’s Purported Commitment To Health, Safety And The Environment .....	45
B. False and Misleading Statements Concerning Vale’s Risk Mitigation Plans, Policies, And Procedures.....	49

C.	Statements Disclaiming Control Over Samarco’s Operations And Responsibility For The Harm Caused By The Collapse.....	52
D.	False And Misleading Statements Concerning Vale’s Purported Cost And Capital Expenditure Reductions .....	57
E.	False And Misleading Certifications Concerning Accuracy And Completeness Of The Company’s Annual Reports .....	61
VII.	INVESTORS SUFFER LOSSES AS THE TRUTH EMERGES .....	62
VIII.	ADDITIONAL ALLEGATIONS OF SCIENTER.....	67
A.	Defendants Were Aware Of Problems At The Fundão Dam.....	67
B.	Samarco And The Fundão Dam Were Critical to Vale’s Business .....	74
IX.	CLASS ACTION ALLEGATIONS .....	77
X.	INAPPLICABILITY OF STATUTORY SAFE HARBOR .....	79
XI.	PRESUMPTION OF RELIANCE.....	80
XII.	CLAIMS FOR RELIEF .....	81
COUNT I	For Violations of Section 10(b) of the Exchange Act and Rule 10b-5 Against All Defendants.....	81
COUNT II	For Violation of Section 20(a) of the Exchange Act Against The Individual Defendants.....	83
XIII.	PRAYER FOR RELIEF .....	84
XIV.	JURY DEMAND .....	85

Lead Plaintiffs Alameda County Employees' Retirement Association and Orange County Employees Retirement System ("Lead Plaintiffs"), by and through their undersigned counsel, bring this action under Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 (the "Exchange Act"), and Securities Exchange Commission ("SEC") Rule 10b-5 promulgated thereunder, on behalf of themselves and all other similarly situated persons and entities, except Defendants and their affiliates, who purchased or otherwise acquired Vale, S.A. ("Vale" or the "Company") common or preferred stock American Depository Receipts between November 7, 2013 and November 30, 2015, inclusive (the "Class Period"), and were damaged thereby.

Lead Plaintiffs allege the following on information and belief, except as to those allegations concerning Lead Plaintiffs, which are alleged on personal knowledge. Lead Plaintiffs' information and belief is based on, among other things, the independent investigation of Lead Counsel, Bernstein Litowitz Berger & Grossmann LLP. This investigation included (1) interviewing and speaking with former Vale and Samarco Mineração, S.A. ("Samarco") employees, government officials and public prosecutors in Brazil, and other potential witnesses; (2) obtaining, and reviewing records from federal and state public prosecutors, government agencies, and federal and state courts in Brazil; (3) obtaining copies of sworn testimony provided to Brazilian prosecutors by numerous former employees, consultants, and other witnesses with knowledge of relevant events; (4) obtaining and reviewing pleadings, and other evidence gathered in civil and criminal proceedings in Brazil against Vale and its joint venture Samarco; (5) obtaining and reviewing copies of minutes of meetings of Samarco's board of directors and other corporate governance documents. The majority of these documents were in Portuguese and Lead Counsel utilized a certified translation firm to translate the documents to English. The investigation also included a review and analysis of (1) Vale's public filings with the SEC, including Forms 20-F and 6-K;

(2) transcripts of earnings calls and investor conferences with Vale senior management; (3) press releases, investor presentations, and other information issued or disseminated by Defendants; (4) news articles and other media coverage of the events giving rise to this Action; (5) research and other reports by securities and financial analysts; and (6) other publicly available material and data identified herein. Lead Counsel's investigation is continuing, and additional facts supporting the allegations are known only to the Defendants or are exclusively within their custody or control. Lead Plaintiffs believe that further evidentiary support exists for the allegations contained herein after a reasonable opportunity for discovery.

## **I. SUMMARY OF THE FRAUD**

1. This case arises from the catastrophic collapse of the massive Fundão mining dam in the Brazilian state of Minas Gerais, which unleashed millions of tons of toxic mining waste onto unsuspecting villages below. The toxic mud first engulfed the town of Bento Rodrigues, killing five people, destroying homes and wiping the town off the map. From Bento Rodrigues, the toxic waste traveled more than 400 miles across two Brazilian states via the Rio Doce to the Atlantic Ocean. Along the way, the toxic mud polluted numerous rivers and other waterways, killing fish, destroying ecosystems and polluting drinking water supplies. In sum, 19 people lost their lives and more than 600 people lost their homes and possessions. Environmental experts estimate it may take the region 10 to 50 years to recover – if it ever does. The Mariana mining disaster, as it is now known, is widely considered to be Brazil's worst-ever environmental disaster.

2. Almost immediately after the collapse and the enormous environmental and social harm it caused, Brazilian prosecutors opened an investigation into the cause of the disaster. The investigation included sworn testimony from numerous witnesses with percipient knowledge of the events leading to the collapse. Ultimately, Brazilian prosecutors charged Vale as a party responsible for the disaster. Seven individuals were criminally charged with aggravated homicide.

Less than a month later, a Brazilian court found Vale likely responsible for the unprecedented environmental damage as both a “direct polluter” and as an “indirect polluter” through its control of Samarco, Vale’s joint venture that operated the Fundão Dam. The Brazilian court ordered Vale to fund a comprehensive recovery plan estimated at more than five billion U.S. dollars to remediate the environmental and societal harm the collapse caused, and froze Vale’s Brazilian mining assets to ensure that it complied with its obligations.

3. In the years leading up to the collapse, Vale dumped millions of tons of wastes from its nearby mines into the Fundão Dam. According to multiple government and media reports, Vale dumped almost 30% of the total waste in the Fundão Dam at the time of the collapse. Notably, Vale’s use of the Fundão Dam *contractually obligated* it to maintain the dam and share in the expenses of any environmental costs stemming from its use.

4. Vale continued dumping millions of tons of waste in the Fundão Dam despite numerous warnings from experts and other resources that the Dam had cracks and other physical signs evidencing the beginning of a rupture. In testimony provided to Brazilian prosecutors, Joaquim Pimenta de Ávila, Brazil’s foremost tailings-dam engineer and the Dam’s original designer, explained that a little more than a year before the Fundão Dam collapsed he had observed cracks in the Dam and other troubling signs that he believed were the beginning of a rupture. Mr. Pimenta de Ávila provided several critical recommendations, including reinforcing the Dam and installing sensors in the Dam’s walls to monitor water levels and pressure daily. These recommendations were ignored. These were not the only warnings about the Dam.

5. In 2013, in connection with the renewal of the license to operate the Fundão Dam, a Brazilian prosecutor commissioned the Instituto Pristino, a not-for-profit environmental and geotechnical institute affiliated with the University of Minas Gerais, to study the Dam and prepare

a report on its condition. The report warned of serious risks at the Dam, and the immediate need to take steps to ensure the safety of the Dam. Again, the Institute's recommended safety steps were never taken.

6. In addition to warnings from the foremost experts in tailings dams, "emergency" warnings from instruments embedded in the Dam's walls to measure water pressure (called piezometers) were similarly disregarded. A July 2015 "stability evaluation" of the Fundão Dam revealed that readings on certain piezometers had reached "emergency" levels in 2014 and 2015. And according to the *Wall Street Journal* on November 24, 2015, Brazilian prosecutors had evidence that several of the 50 instruments embedded in the Dam's walls to monitor their stability had indicated "emergency" levels of pressure and stress before they collapsed. In sworn testimony, Wagner Alves, the individual responsible for monitoring and inspecting the Fundão Dam, corroborated that one of the piezometers "had continuously indicated an emergency situation in 2014 and 2015." Ignoring these "emergency" warnings, Vale not only continued depositing waste in the Fundão Dam, but was in the process of drastically increasing its size.

7. Exacerbating the situation, there was no emergency action plan in place to mitigate any disaster, despite recommendations from experts. There were no sirens or other audible warning signals to warn residents of the neighboring villages. Instead, the antiquated "plan" relied on word of mouth and telephone calls, leaving residents unaware of the collapse, confused and with no plan of where to go. Sworn testimony confirms that an emergency action plan had not been updated for almost 10 years, and was missing several critical components. Randal Fonseca, a consultant retained in 2009 to develop an effective emergency plan, explained that Samarco and its directors purposefully failed to implement the plan he designed because they were unwilling to incur the cost of doing so given the poor economic climate.

8. Surprisingly, as Brazil and the local communities and residents were dealing with the devastation and cleanup evidenced in the picture below, Defendants embarked on a public relations campaign to protect themselves and the Company's image.



9. Specifically, Defendants disclaimed any responsibility for the collapse or the harm it caused, falsely claiming that Samarco was a separate company with separate management, suggesting that Vale played no role in Samarco's management. Defendants also denied that Vale and Samarco shared systems, resources, or support functions. As detailed below, each of these statements is demonstrably false.

10. The truth is that (i) Vale actively managed Samarco's operations through Vale executives on Samarco's board and Operations Committee; (ii) Vale and Samarco shared employees; (iii) Vale conducted annual audits of Samarco's operations and business; and, most importantly; (iv) *Vale and Samarco shared the use of the Fundão Dam and other tailings dams*

*at the Germano mining complex.* Indeed, the very contract that Defendants claim gave Vale the legal right to dump wastes in Samarco's tailings dams plainly provides that Vale will "*share in the maintenance expenses of the current dam and construction and maintenance of new dams.*"

11. By way of background, Defendant Vale is the world's largest producer of iron ore and operates mines throughout Brazil, both in its own name and through controlled entities and joint ventures. Samarco is one of these controlled entities and operates as a Vale joint venture with partner BHP Billiton. As one of the two controlling shareholders of Samarco, Vale held two of the four seats on Samarco's board of directors. Vale executives also served on various Samarco committees charged with running the business, including the Operations Committee. Vale executives, including Defendant Poppinga, regularly attended Samarco board meetings, where they discussed tailings storage and the ongoing risks that storage presented, needed operational and safety improvements, the licensing of various mining operations and tailings storage facilities, audit results, and the status of various capital projects.

12. Moreover, Samarco was vital to Vale's mining businesses, and Vale regularly touted Samarco's production and results in its financial statements and during conference calls with investors and analysts. During the Class Period, Samarco accounted for 23% of Vale's total iron-ore pellet production. Between 2010 and 2015, Vale reported receiving \$3 billion in dividends from Samarco. Through Samarco, Vale operated and utilized the Fundão Dam. Following the collapse of the Fundão Dam, Vale admitted that its production in the region would decrease almost 40% as a result of the collapse.

13. Throughout the Class Period, Vale and the other Defendants made repeated false statements about the Company's purported commitment to health, safety, and the environment, assuring investors that the Company had "health, safety and environmental standards and risk

management programs and procedures in place to mitigate” the risk of environmental, health, and safety incidents. Defendants also claimed to have adopted “best practices in social and environmental management” and to be focused on “building a positive legacy for communities close to areas where we operate.” In truth, as detailed herein, Vale did not have programs and procedures in place to mitigate the risk of environmental incidents and did not work with the communities near the Fundão Dam. Rather, Defendants ignored multiple reports warning of serious problems with the integrity of the Dam and did not implement the recommended emergency action plan.

14. This action seeks to recover the more than \$1 billion that purchasers of Vale’s common and preferred ADRs lost when the market learned of Defendants’ false and misleading statements regarding Vale’s purported commitment to safety and the environment and the full extent of Vale’s use of and responsibility for the Fundão Dam.

## **II. JURISDICTION AND VENUE**

15. The claims asserted herein arise under Sections 10(b) and 20(a) of the Exchange Act, 15 U.S.C. §§ 78j(b) and 78t(a), and Rule 10b-5 promulgated thereunder by the SEC, 17 C.F.R. § 240.10b-5. This Court has jurisdiction over the subject matter of this action under 28 U.S.C. §§ 1331 and 1337, and Section 27 of the Exchange Act, 15 U.S.C. § 78aa.

16. Vale sponsors a “level 3” ADR program in the United States, the highest level, which includes registration of shares issued under the Securities Act of 1933, filing annual reports on Form 20-F, and registration and listing of the ADRs under the Exchange Act to enable them to trade on the New York Stock Exchange (“NYSE”). In setting up its ADR program, Vale took steps to permit shares of its common and preferred stock to be deposited into the ADR program and traded in the U.S. in order to expand the pool of investors holding its securities and to raise additional capital. By doing so, Vale agreed to abide by the federal securities laws and SEC rules

and regulations, and purposefully availed itself of the benefits and protections of those laws. Vale entered into a deposit agreement governing its deposit of the shares underlying the ADRs in which Vale agreed that both the deposit agreement and the ADRs would be governed by New York law. Vale appointed JPMorgan Chase Bank, whose offices are in New York City, New York, to act as depository for those shares. Vale's ADRs are listed on the NYSE, and many of the false statements alleged below were made or directed to investors in New York.

17. Venue is proper in this District under Section 27 of the Exchange Act and 28 U.S.C. § 1391(b). The Company's securities are listed on the NYSE, which is located in this District, and many of the acts that constitute the violations of law alleged below, including the dissemination and publication of the materially false and misleading statements, occurred or were made, or were directed to investors or analysts, in this District. In connection with the acts alleged herein, Defendants, directly or indirectly, used the means and instrumentalities of interstate commerce, including the mails, interstate telephone communications, and the facilities of the national securities markets.

### **III. PARTIES**

18. Lead Plaintiff Alameda County Employees' Retirement Association ("ACERA") is a public pension plan that provides retirement, disability, and death benefits to more than 21,000 active and retired public employees of Alameda County, California. As set forth in the certification ACERA previously filed with the Court, ACERA purchased Vale common and preferred stock ADRs on the NYSE during the Class Period and suffered damages as a result of the violations of the federal securities laws alleged herein. By Order dated March 7, 2016, the Court appointed ACERA Lead Plaintiff.

19. Lead Plaintiff Orange County Employees Retirement System ("OCERS") is a public pension fund that provides retirement and disability benefits to more than 40,000 active,

deferred, and retired government employees of Orange County, California. As set forth in the certification OCERS previously filed with the Court, OCERS purchased Vale common and preferred stock ADRs on the NYSE during the Class Period and suffered damages as a result of the violations of the federal securities laws alleged herein. By Order dated March 7, 2016, the Court appointed OCERS Lead Plaintiff.

20. Defendant Vale is a mining company incorporated in Brazil and headquartered in Rio de Janeiro, Brazil. During the Class Period, the Company's common stock ADRs traded on the NYSE under the symbol "VALE" and the Company's preferred stock ADRs traded on the NYSE under the symbol "VALE/P." Vale throughout the Class Period published, filed, or disseminated to investors public filings, press releases, investor presentations, and other publicly available reports that contained material misrepresentations and omissions about (1) the Company's commitment to health, safety, and the environment; (2) the Company's policies, procedures, and standards to mitigate against the risks of health, safety, and environmental incidents; (3) the extent of the harm caused by the collapse of the Fundão Dam and the Company's responsibility for the damage caused by the collapse; (4) Vale's mining output, costs, and capital expenses; and (5) the Company's reliance on the Fundão Dam for its nearby mining operations and its contribution to the deteriorating condition of the Dam that led to its catastrophic collapse.

21. Defendant Murilo Pinto de Oliveira Ferreira ("Ferreira") is, and at all relevant times was, Vale's Chief Executive Officer.

- a. During the Class Period, Defendant Ferreira made materially false statements and omissions in Vale's public filings, at investor presentations, and during conference calls about (1) the Company's commitment to health, safety, and the environment; (2) the Company's policies, procedures, and

standards to mitigate against the risks of health, safety, and environmental incidents; (3) the extent of the harm caused by the collapse of the Fundão Dam and the Company's responsibility for that harm; (4) Vale's mining output, costs, and capital expenses; and (5) the accuracy and completeness of the Company's Annual Reports. Ferreira also was present when the other Defendants made statements or omissions on these subjects that he knew to be false and misleading, yet took no steps to correct those statements;

- b. In 2013 and 2014, Defendant Ferreira personally attended and participated in a "Vale Day" at the NYSE in New York City, at which he made materially false and misleading statements about the Company and its business to investors and analysts in attendance;
- c. Defendant Ferreira executed Sarbanes-Oxley ("SOX") and other certifications in conjunction with Vale's false and misleading annual reports on Form 20-F for the fiscal years 2013 and 2014;
- d. In accordance with Sections 13 and 15(d) of the Exchange Act, Defendant Ferreira signed and certified Vale's false and misleading annual reports on Form 20-F during the Class Period for the fiscal years 2013 and 2014; and
- e. Defendant Ferreira directly participated in the management and day-to-day operations of the Company and had actual knowledge of confidential proprietary information concerning the Company and its business, operations, regulatory compliance, growth, financial statements and financial condition. He also shared primary responsibility for ensuring that the Company's SEC filings and other public statements or releases were

complete, accurate, and did not omit material information necessary under the circumstances to make them not misleading. Because of this position of control and authority, his ability to exercise power and influence over Vale's conduct and his access to material inside information about Vale during the Class Period, Defendant Ferreira, at the time of the wrongs alleged herein, was a controlling person within the meaning of Section 20(a) of the Exchange Act.

22. Defendant Luciano Siani Pires ("Pires") is, and at all relevant times was, Vale's Chief Financial Officer.

- a. During the Class Period, Defendant Pires made materially false statements and omissions in Vale's public filings, at investor presentations, and during conference calls about (1) the Company's commitment to health, safety, and the environment; (2) the Company's policies, procedures, and standards to mitigate against the risks of health, safety, and environmental incidents; (3) the extent of the harm caused by the collapse of the Fundão Dam and the Company's responsibility for that harm; (4) Vale's mining output, costs, and capital expenses; (5) Vale's and Samarco's purported adoption of best practices in its mining operations; and (6) the completeness and accuracy of the Company's Annual Reports. Pires also was present when the other Defendants made statements or omissions on these subjects that he knew to be false and misleading, yet took no steps to correct those statements;
- b. Defendant Pires personally attended and participated in the 2014 "Vale Day" at the NYSE in New York City, at which he made materially false and

misleading statements about the Company and its business to investors and analysts in attendance;

- c. Defendant Pires executed certifications in conjunction with Vale's false and misleading annual reports on Form 20-F for the fiscal years 2013 and 2014;
- d. In accordance with Sections 13 and 15(d) of the Exchange Act, Defendant Pires signed and certified Vale's false and misleading annual reports on Form 20-F during the Class Period for the fiscal years 2013 and 2014; and
- e. Defendant Pires directly participated in the management and day-to-day operations of the Company and had actual knowledge of confidential proprietary information concerning the Company and its business, operations, regulatory compliance, growth, financial statements and financial condition. He also shared primary responsibility for ensuring that the Company's SEC filings and other public statements or releases were complete, accurate, and did not omit material information necessary under the circumstances to make them not misleading. Because of this position of control and authority, his ability to exercise power and influence over Vale's conduct and his access to material inside information about Vale during the Class Period, Defendant Pires, at the time of the wrongs alleged herein, was a controlling person within the meaning of Section 20(a) of the Exchange Act.

23. Defendant Gerd Peter Poppinga ("Poppinga") is, and has been since November 2014, the Company's Executive Director, Ferrous Minerals. Before that, Poppinga had been Executive Director, Base Metals and Information Technology since 2011. As Executive Director,

Ferrous Minerals, Poppinga was responsible for and in charge of all aspects of Vale's iron-ore mining and pelletizing operations. During part of the Class Period, Poppinga also was the Chairman of the Board of Directors of Samarco.

- a. During the Class Period, Defendant Poppinga made materially false statements and omissions at investor presentations and during conference calls about (1) the Company's commitment to health, safety, and the environment; and (2) Vale's mining output, costs, and capital expenses. He also was present when the other Defendants made statements or omissions that he knew to be false and misleading about (1) the Company's commitment to health, safety, and the environment; (2) the Company's policies, procedures, and standards to mitigate against the risks of health, safety, and environmental incidents; (3) the extent of the harm caused by the collapse of the Fundão Dam and the Company's responsibility for that harm. Despite knowing that the statements the other Defendants were making were false and misleading, Poppinga took no steps to correct those statements;
- b. Each year during the Class Period, Defendant Poppinga personally attended and participated in a "Vale Day" at the NYSE in New York City, at which he made materially false and misleading statements about the Company and its business to investors and analysts in attendance;
- c. As a member and Chairman of Samarco's board of directors during the Class Period, Defendant Poppinga was responsible for and involved directly in supervising and controlling the business affairs of Samarco, and

participated in strategic decisions and influenced the development of rules and policies concerning, among other things, Samarco's compliance with environmental rules, regulations, and licenses. As a Samarco board member, Defendant Poppinga regularly received or had access to reports and other information about Samarco's mining operations and facilities, including its Germano plant and the Fundão Dam and other tailings dams; and

- d. Defendant Poppinga directly participated in the management and day-to-day operations of the Company and had actual knowledge of confidential proprietary information concerning the Company and its business, operations, regulatory compliance, growth, financial statements and financial condition. Because of this position of control and authority, his ability to exercise power and influence over Vale's conduct and his access to material inside information about Vale during the Class Period, Defendant Poppinga, at the time of the wrongs alleged herein, was a controlling person within the meaning of Section 20(a) of the Exchange Act.

24. Defendants Ferreira, Pires, and Poppinga collectively are referred to herein as the "Individual Defendants." The Individual Defendants, because of their positions with Vale, possessed the power and authority to control the contents of the Company's reports to the SEC, press releases, and presentations to securities analysts, money and portfolio managers, and institutional investors. Each of the Individual Defendants was provided with copies of the Company's reports and press releases alleged herein to be misleading before, or shortly after, their issuance and had the ability and opportunity to prevent their issuance or cause them to be corrected.

Because of their positions and access to material nonpublic information available to them, each of the Individual Defendants knew that the adverse facts specified herein had not been disclosed to, and were being concealed from, the public, and that the positive representations that were being made were then materially false and misleading.

#### **IV. BACKGROUND OF VALE'S MINING BUSINESS**

##### **A. Company Overview**

25. Headquartered in Brazil and with a presence in more than 30 countries, Vale is one of the largest mining companies in the world. It is the world's largest producer of iron ore and iron ore pellets,<sup>1</sup> and the world's second largest producer of nickel. It also produces manganese ore, coal, copper, gold, silver, and phosphates and other fertilizer nutrients. Vale conducts its iron ore business in Brazil at the parent-company level, through wholly owned and other subsidiaries, and as one of two controlling shareholders of Samarco. Vale's iron-ore mines and related operations in Brazil are concentrated in three systems, the Southeastern, Southern, and Northern Systems. The Southeastern System consists of three mining complexes, including the Mariana complex, which has three mines and two major plants at which excavated materials are crushed and separated into iron and waste, a process known as beneficiation. The Mariana mining complex accounted for more than 10% of Vale's total iron-ore output in 2014 and 2015. Analysts estimated that the disruption at the Mariana complex caused by the Fundão Dam's collapse could lead to a \$1.25 billion decrease in Vale's revenues and a \$540 million decrease in EBITDA.

---

<sup>1</sup> Iron ore pellets are small balls of iron ore used in the production of steel. They are made from the powder generated during the ore extraction process.

**B. Vale's Ownership And Operation Of Samarco**

26. In addition to its own mines in Brazil, Vale operates through Samarco, a privately held joint venture between Vale and an affiliate of BHP Billiton ("BHP"), an Australian mining conglomerate. Vale and BHP are the only shareholders of Samarco, with each owning a controlling 50% interest. Samarco conducts its operations principally at the Germano mining complex in Minas Gerais. The Germano complex includes two mines, three beneficiation plants, three slurry pipelines used to move tailings and other materials, and several tailings dams, including the Fundão Dam, the Santarem Dam, and the Germano Dam. All three of Samarco's dams have been classified by the state environmental agency as Class III, indicating they pose the greatest potential for environmental damage. Samarco also owns and operates four pellet plants and a port. Vale has mines in the same area as the Germano complex, with some parts of its Mariana mining complex adjoining the Germano complex.

27. Samarco's board of directors is comprised of eight members, four Vale executives and four BHP executives (two regular members and two alternates each). There are no other board members. During the Class Period, the following Vale executives served as directors of Samarco's board: Defendant Poppinga, Jose Carlos Martins (Poppinga's immediate predecessor as Vale's Executive Director, Ferrous Minerals), Pedro José Rodrigues (Vale's Global Director of Mergers and Acquisitions), Hélio Moreira Cabral, Marcelo Botelho Rodrigues, and Stephen Potter (Vale's Global Director of Strategy). The board has the ultimate responsibility for directing and managing Samarco's business and mining activities, including (according to Samarco's website):

- Assuring compliance with legal and statutory requirements;
- Strategic and general orientation of the company's business;
- Monitoring the company's results;

- Assuring the integrity of company management;
- Appointing the CEO and evaluating the members of the company's executive board;
- Orientation and approval of the business plan and budget;
- Defining general business guidelines and strategy; and
- Approving the distribution to shareholders or reinvestment of dividends

28. In addition to serving on Samarco's board, Vale executives also served on various Samarco committees responsible for operating the mining business, including the Operations Committee. According to Samarco's December 4, 2013 board meeting minutes, the Operations Committee was responsible for monitoring Samarco's operational improvements plan and evaluating and monitoring Samarco's "operational performance [related to] Health and Safety, environment and community, sales, production, costs, inventories, etc." The Operations Committee also was responsible for the "technical evaluation of new resources" and evaluation and monitoring of capital projects. Vale had at least two executives on the Operations Committee during the Class Period, Stephen Potter, Vale's Global Director of Strategy, and Paulo Bandeira, Vale's General Manager for Iron Ore Planning and Development.

29. Vale had several other executives on the Finance and Strategy Committee, Stephen Potter, Hélio Cabral, Cléber Santiago (responsible for managing Vale's controlled companies), and Maria Ines Carvalheiro (Vale General Manager of Mergers and Acquisitions), and three different executives on the Project Management Committee, Luiz Eduardo Lopes, Vale's Director of Budget and Capital Improvements, Maurício Drumond, Vale's Director for Performance and Integration of Capital Projects, and Rodrigo Araújo. Through its controlling ownership, board members and

key executives on various operating committees, Vale was responsible for and involved in virtually all aspects of Samarco's business.

30. Samarco's board met at least three times each year. Vale executives, including Defendant Poppinga after he joined Samarco's board, attended every meeting. According to minutes of the various meetings, the topics discussed included tailings storage and the ongoing risks associated with tailings storage (12/7/12, 12/4/13, 4/2/14, 9/19/14, 12/10/14, and 4/15/15 meetings), needed operational and safety improvements (4/4/12, 8/8/12, 12/7/12, 4/4/13, 8/14/13, 12/4/13, 4/2/14, 9/19/14, 12/10/14, and 4/15/15), the licensing of various mining operations and tailings storage facilities (12/7/12, 12/4/13, 4/2/14, and 4/15/15), shareholder audit results (12/7/12, 12/4/13, 12/10/14 meetings), and the status of various capital projects (4/4/12, 8/8/12, 12/7/12, 4/4/13, 8/14/13, 12/4/13, 4/2/14, 9/19/14, 12/10/14, and 4/15/15 meetings).

31. Vale identified Samarco in the Company's 2013 and 2014 "Sustainability Reports" disseminated to the public as a company over which it exerts significant influence. Those Sustainability Reports list Samarco as a company in which Vale held positions on different governing bodies, including committees dealing with environmental, health and safety, human resources and finance issues, among other topics. Vale admitted that "through these mechanisms, [it] participates in strategic decision making and influences the development of rules and policies at these companies or entities, including in terms of sustainability issues."

32. Vale also audited Samarco every year, with Vale auditors spending significant time onsite at Samarco. Vale's audit team presented the results of those audits to Samarco's board each year, and discussed the proposed scope of the following year's audit. According to Samarco's December 7, 2012 board meeting minutes, the items that warranted special attention in the 2012

audit were “control and monitoring of production costs, analysis of service contracts, *occupational health and safety in the Germano unit* . . . and capital projects (P4P).”

**C. Tailings Dams Pose A Well-Known And Significant Risk Of Failure**

33. Mining for iron generates an enormous amount of waste as the iron is separated from the ore (rock that contains high concentrations of minerals, metals, or other desired product). Once the ore is excavated, a mechanical or chemical process is used to extract the desired product from the ore. This process, known as beneficiation, produces a waste stream known as tailings, a mixture of water, processing chemicals, and finely ground rock. Because of their physical and chemical properties, the handling and storage of tailings is of great and growing concern.

34. While there are a number of ways to store tailings, the most common is to construct gigantic earthen dams, known as tailings dams. These structures, many of which reach more than 100 meters high (equivalent to a 30-story building), often hold an unstable mix of mud, finely ground rock, and water, and often are constructed from the tailings themselves. Tailings typically are pumped into a tailings dam as a slurry consisting generally of 60% water and 40% fine particles.

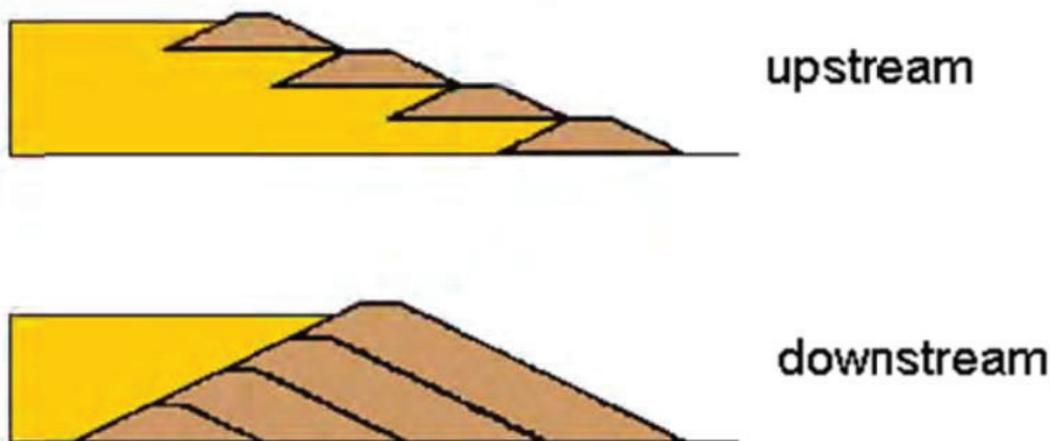
35. Tailings dams are fundamentally different from conventional water-supply or hydroelectric dams. For one thing, water-supply or hydroelectric dams typically are considered an asset, often generating revenue. As a result, their owners and operators take great care in constructing, operating, and maintaining them. Tailings dams, on the other hand, are unprofitable, necessary evils of mining operations. There is, therefore, a tendency and inclination to cut corners when constructing and maintaining tailings dams.

36. Tailings dams typically are built in sequential “lifts” over several years that increase the size and height of the dam throughout the life of the particular mine(s) it services. Typically, a

base or starter dam is constructed and, as it fills with a mixture of tailings and water, is raised to accommodate additional waste. Material used to raise the dam often includes the tailings themselves. These unique features lead to concerns over quality control in both design and construction. The International Commission on Large Dams (“ICOLD”) described those concerns in a 2001 bulletin:

Causes (for dam failures) in many cases could be attributed to lack of attention to detail. The slow construction of tailings dams can span many staff changes, and sometimes changes of ownership. Original design heights often are exceeded and the properties of the tailings can change.

37. Tailings dams typically are built using “upstream” design and construction, a cheaper, less reliable, and less stable method than “downstream” construction, the safest, but most expensive method. Upstream tailings dams are far less secure because they rely on the stability of the tailings themselves as a foundation for the construction. The following graphic shows the difference in construction methods.<sup>2</sup>



38. The *Wall Street Journal* recently explained how upstream construction works:

---

<sup>2</sup> Reprinted from David M. Chambers and Bretwood Higman, *Long Term Risks of Tailings Dam Failure*, October 2011.

‘Upstream’ design . . . involves letting the tailings closest to the dam dry out. These dry tailings are then used as the foundation for new levels, raised by plowing earth or tailings into successive embankments. As it requires the least amount of bulldozing, the upstream method is the least expensive way of building a tailings dam and was employed by Samarco.

39. Upstream dams built on tailings are more susceptible to liquefaction, a physical phenomenon in which the strength and stiffness of soil is reduced by either dynamic forces (like an earthquake or other rapid loading) or static forces (such as slope instability or the buildup of water pressures unrelated to dynamic forces). The authors of one paper on the history of tailings dam failures concluded that static liquefaction likely is the most common cause of tailings dam failures.<sup>3</sup> On April 5, 2016, the *Wall Street Journal* reported that “[s]cientists say the typical culprit for tailings accidents is too much water, which can cause earthen dams to liquefy.” The following graphic reprinted from the *Wall Street Journal* illustrates the risks of upstream tailings dams.

#### Tailings Dam Risks



40. Unlike conventional water-supply or hydroelectric dams, tailings dams are not designed to hold substantial amounts of water. Indeed, water is the number one enemy of tailings dams, as too much water makes tailings dams unstable and greatly increases the risk of collapse. Accordingly, great care must be taken not to raise the level of an upstream dam too quickly to

---

<sup>3</sup> Davies, McRoberts, and Martin, *Static Liquefaction of Tailings – Fundamentals and Case Histories*.

ensure that the tailings used to construct the “lifts” have sufficient time to dry out before additional lifts are added. If the tailings do not dry sufficiently, the risk of a collapse increases significantly. The Fundão Dam, an “upstream” dam, was in the process of being raised when it collapsed.

41. As iron prices fall (as occurred during the Class Period), mining companies must increase production and reduce costs and capital expenditures to remain profitable. One way to increase production is to mine increasingly lower-grade ores. Mining lower-grade ore, however, produces more waste (or tailings). Lower-grade ore also requires mining companies to dig increasingly deeper and larger pits to generate the same volume of end product. The combined result is an exponential growth in waste. The explosive growth in waste, in turn, spawns the need for larger and larger tailings dams. Not surprisingly, as the size of tailings dams increases, so too does the incidence and risk of catastrophic failures. Quite simply, the taller and bigger the dam, the greater the harm if it fails.

42. Experts estimate that tailings dams fail at a rate ten times greater than conventional dams. On average, between 2001 and 2011 there was one tailings dam failure every eight months according to the Chambers and Higman study. There were two catastrophic failures in 2014, including one that killed two people at a mine in Minas Gerais near the Fundão Dam and the Mariana complex.<sup>4</sup> A report on Mining, Minerals and Sustainable Development published by the International Institute for Environment and Development concluded that tailings dams typically represent the most significant environmental liability associated with mining operations. One consultant who has designed a number of very large tailings dams for mining companies was

---

<sup>4</sup> The other occurred at the Mount Polley mine in Canada, resulting in one of the worst environmental disasters in Canadian history.

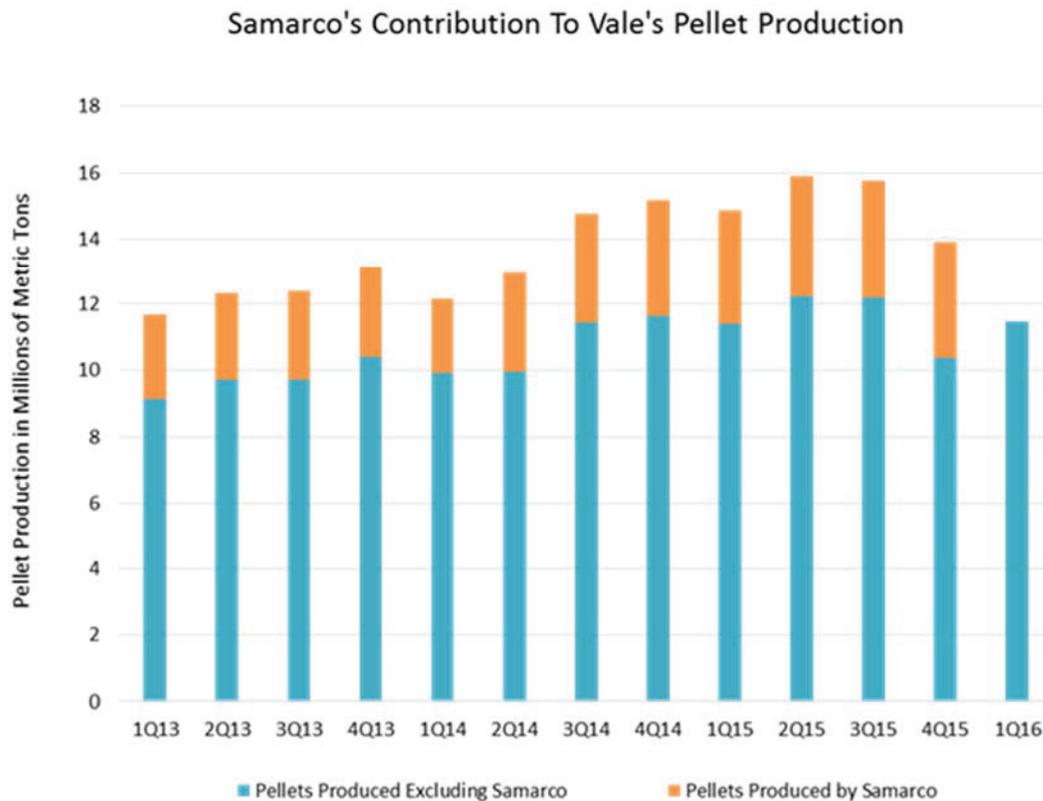
quoted in an April 5, 2016 *Wall Street Journal* article as saying “[o]ur dams and dumps are among the highest-risk structures on Earth.”

43. The same *Wall Street Journal* article also reported that a 2009 study of 42 years of accident data found that tailings dams fail much more frequently when commodity prices fall, possibly reflecting pressure to cut costs “once mines constructed on the basis of rising commodity prices are forced to operate with the reality of lower commodity prices.” According to the Chambers and Higman study, “[t]he mining industry operates with a continual imperative to cut costs due to relentless reduction in real prices for minerals which has been experienced over the long term, plus the low margins and low return on capital which are the norm. The result has been a shedding of manpower to the point where companies may no longer have sufficient expertise in the range of engineering and operational skills which apply the management of tailings.”

44. According to the Center for Science in Public Participation, the rate of serious design failures in tailings dams is increasing. Nearly half of serious tailings dam failures in the last 70 years occurred in the 20 years between 1990 and 2009. The increasing rate of design failures in tailings dams is directly related to the increasing number of tailings dams larger than 5 million cubic meters — the capacity needed to allow the economic extraction of lower grades of ore. During the past three years, the Fundão Dam grew from 5 million cubic meters to an astonishing 55 million cubic meters, and was in the process of being increased even further when it collapsed.

**D. Samarco Was Vital To Vale’s Cash Flow And Mining Operations**

45. Vale is the world’s second largest producer of pellets, due in large part to its operations through Samarco. In 2014 and 2015, Samarco accounted for 23% of Vale’s total pellet production. The chart below demonstrates Samarco’s yearly contribution to Vale’s pellet production.



46. Samarco also was a significant contributor to Vale's publicly reported cash flow and financial performance. Vale received more than \$3 billion in dividends from Samarco in the 5 years before the collapse. The chart below, created from Vale's financial statements, summarizes the yearly dividends Vale received from its Samarco ownership. Before the Fundão Dam collapsed, analysts projected that Samarco would contribute more than 5% of Vale's total EBITDA (cash flow) in 2015.

<b>Vale's Reported Dividends from Samarco</b>	
2010	\$950 million
2011	\$812 million
2012	\$179 million
2013	\$595 million
2014	\$401 million
2015	\$146 million
<b>Total</b>	<b>\$3.08 Billion</b>

**E. The Fundão Dam Was An Operating Vale Dam**

47. The Fundão Dam is one of three interconnected dams that Samarco and Vale used to store and hold tailings from their mining operations. Vale used the Fundão Dam to store wastes from its own mining operations and was dependent upon the Fundão Dam for its operations in the region. The *Wall Street Journal* reported on December 21, 2015, that Brazilian prosecutors indicated they had records from Brazil's federal mining agency showing that Vale's wastes accounted for up to 28% of the tailings volumes in the Fundão Dam.<sup>5</sup>

48. In sworn testimony, at least ten former Samarco employees and directors (Germano Silva Lopes; Kleber Luiz de Mendonca Terra; Paulo Sérgio Machado Ribeiro Filho; João Pedro da Silva; Rafael Cristiano Gomes; Euzimar Augusto da Rocha Rosado; Daviely Rodrigues Silva; Wagner Milagres Alves; Rodrigo Dutra Amaral; and Wanderson Silvério Silva) confirm that Vale dumped tailings from its mines into the Fundão Dam. Indeed, João Pedro da Silva, a master engineer in Samarco's planning and sustainability department, testified that the Fundão Dam was built in part to receive tailings from Vale's Alegria plant, a fact that Mr. Pimenta de Ávila confirmed when he testified that he was told when developing the original design for the Fundão Dam that it would be receiving tailings from Vale's operations.

49. Wagner Alves, Samarco's General Manager for Mining Operations, whose responsibilities included supervising and managing dam operations and maintenance, testified that waste from Vale mines came to the Fundão Dam every day through pipelines linking Vale's Alegria

---

<sup>5</sup> Vale has claimed publicly that it contributed only 5% of the Dam's volume in 2014. It has not disclosed how much it dumped in other years. This factual dispute ultimately is irrelevant because Vale admitted that it dumped more than one million tons of waste in the Dam in 2014 alone, and the contract authorizing it to do so makes it responsible for maintaining the Dam and for the environmental costs of using it.

mine to the Dam. He also testified that Vale was responsible for “all of the installation, maintenance and monitoring of the pipelines transporting wastes from Vale S/A to the Fundão dam.” Paulo Sergio Machado Ribeiro Filho, a Samarco environmental analyst, testified that “only after the dam ruptured did he see the pipes that he was informed were used to direct Vale’s tailings to the dam.”

50. Mr. Alves testified that no quality control was done on the volume of waste Vale discharged into the Dam, only verification of the total volume of the Dam. He believes that Samarco *did not* have a specific environmental permit to receive waste from Vale, and could not explain why Samarco did not include information about Vale’s discharge of wastes into the Fundão Dam in the environmental performance report submitted in connection with the request to renew the Dam’s operating license. Rodrigo Amaral, who was responsible for coordinating environmental licensing at Samarco before joining Vale as its General Manager for the Environment, confirmed that there was no specific environmental license for Vale to dump its tailings into the Fundão Dam.

51. Justiça Global, a non-governmental human rights organization, published a report after the collapse revealing that all of the mines in Vale’s Mariana complex directed all or part of their tailings to the three large dams at Samarco’s Germano complex, including the Fundão Dam. Vale admitted after the collapse that production at the Company’s Mariana mining hub had decreased almost 40% as a result of the disaster, confirming the Fundão Dam’s operational importance to Vale’s mining operations. Analysts confirmed its economic importance, estimating that the disruption could lead to a \$1.25 billion decrease in Vale’s revenues and a \$540 million decrease in EBITDA. Vale’s use of the Fundão Dam to dump millions of tons of its own tailings was never disclosed to investors before the Dam collapsed.

52. Vale was obligated contractually to construct and maintain the Fundão Dam. The contract Samarco provided to Brazilian prosecutors as the basis for Vale's right to dump tailings in the Fundão Dam establishes Vale's contractual obligations. That contract, entitled "Agreement to Use Tailings Dam," initially was entered into between Samarco and S.A. Mineração da Trindade ("SAMITRI") in 1989. In 2000, Vale acquired SAMITRI and its rights under the "Agreement to Use Tailings Dam." The express purpose of the agreement is to allow SAMITRI (now Vale) to dispose of tailings from its Alegria mine in Samarco's tailings dams. The agreement requires Vale to construct at its own cost a tailings disposal system to transport tailings to Samarco's dams. The contract also requires the system to have devices for calculating and recording the quantities of material disposed of in the dams, and requires Vale and Samarco to produce a joint report annually recording the quantity of tailings that Vale dumped in the prior year. It also sets hourly and monthly limits on the volume and weight of materials to be dumped in the dams, and provides that any agreement to permanently raise those limits by more than 10% must be set forth in a written addendum. According to figures released by Vale and posted in a "FAQ" section on its website after the collapse, Vale dumped more than one million tons of waste in the Fundão Dam in 2014, 36% more than the contract allowed.

53. Most importantly, the contract obligates Vale to share in the maintenance expenses of existing dams and the construction and maintenance of any new dams:

SAMITRI [Vale] shall share in the maintenance expenses of the current dam and construction and maintenance of new dams, as well as any environmental costs derived from the use of the SAMARCO dams, in proportion to such degree of utilization as shall occur.

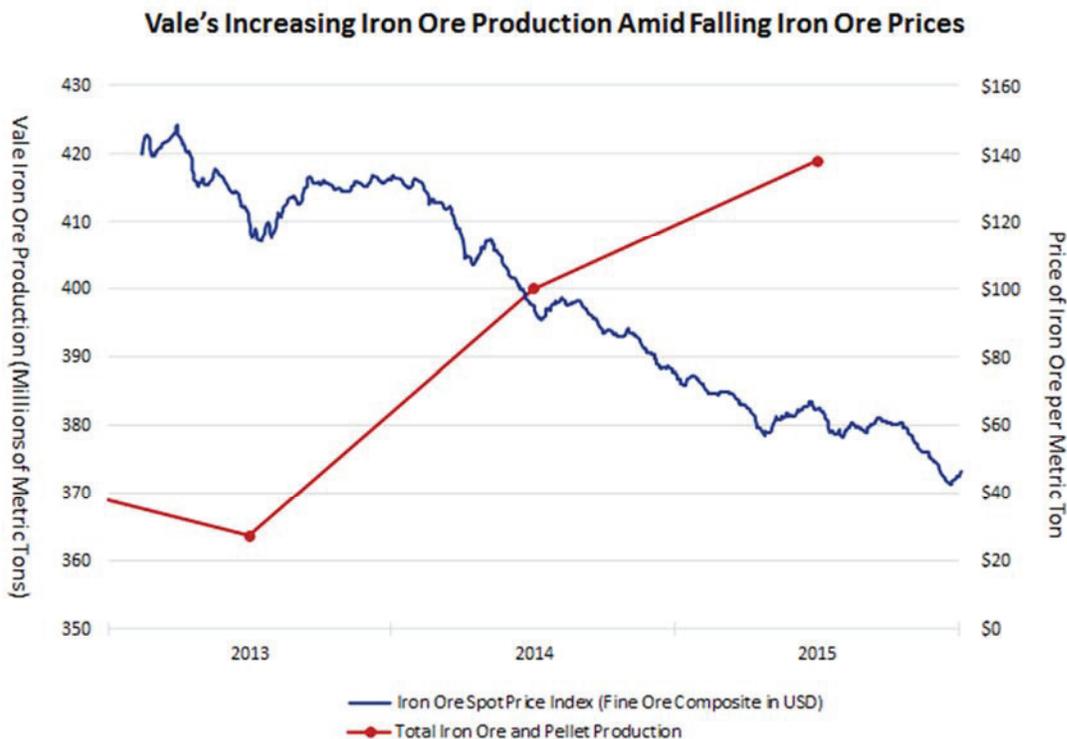
Because the Fundão Dam did not exist when Vale assumed SAMITRI's obligations under the contract, Vale was required to share in the maintenance and construction of the Fundão Dam.

## V. VALE'S FRAUD

### A. Plunging Iron Prices Lead Vale And Samarco To Increase Production And Cut Costs

54. In the three years before the Fundão Dam collapsed, the price of iron ore plummeted. In February 2013, iron ore traded at \$154.64 per dry metric ton. By November 2015 (when the Dam collapsed), the price had sunk to \$46.16, a decline of more than 70%.

55. As detailed above, as iron prices plummet, the pressure on mining companies to increase production and cut costs grows enormously. Vale was not immune to these pressures, and responded by dramatically increasing production to record levels. Vale increased production 36% between 2013 and the third quarter of 2015, the last quarter before the Fundão Dam collapsed. Samarco increased production by 18% and 32% respectively in the years before the collapse. The chart below demonstrates the relationship between falling iron ore prices and Vale's rising iron ore production.



56. This explosive growth in production led to an equally explosive growth in waste. João Pedro da Silva, a master engineer in Samarco's planning and sustainability department, who held several technical and management positions at the Germano complex, testified that "there was a scheduled increase in mining production at the Germano complex starting in April of 2014, *with a proportional increase in the production of tailings.*" Euzimar Augusto da Rocha Rosado, a Samarco environmental coordinator responsible for managing ongoing projects, likewise testified that production of iron ore at the Germano complex increased by "around 9 million tons" in the last year before the collapse, an increase of 30-40% over the previous year. The volume of tailings was expected to grow even more in 2015, according to Germano Lopes' sworn testimony, who said that the Fundão Dam was projected "to receive around 18 million cubic meters of waste" in 2015, approximately 25% more than the previous year.

57. This growth in wastes is reflected in the 1100% increase in the volume of tailings stored in the Fundão Dam, as the Samarco board chose to drastically increase the size of the Fundão Dam rather than expend capital to construct a new dam. According to sworn testimony from Rafael Cristiano Gomes, a Samarco technician in the Soil Sciences Department, the Fundão Dam had in recent years been "*in a continuous process of being raised.*" Despite that dramatic increase, tailings storage capacity remained an issue. The Samarco board acknowledged at its December 4, 2013 meeting that disposal of tailings was "still a point of considerable concern, particularly regarding the future tailings storage capacity."

58. When Samarco's CEO, Roberto Vescovi, reiterated to the board the importance of investing in tailings disposal at the September 19, 2014 board meeting, the board recommended that management "resolve the limitations for tailings disposal at dams and dumps, making that the Company's main priority." But less than three months later, the board, after discussing Samarco's

disappointing operating performance in 2014, instructed management that, after safety, *cost reductions should be the main focus in 2015*. The minutes of that December 10, 2014 board meeting reflect that the board also reiterated “the concern over the risk related to the tailings disposal and sanitary landfill projects, *and the impacts of the amounts of capital needed on the results of the company.*” The decision was made to increase the size and elevation of the Fundão Dam yet again. The board, including Defendant Poppinga and Stephen Potter, expressly authorized the project to increase the size and elevation of the Fundão Dam at the April 15, 2015 board meeting.

59. Investors, securities analysts, and credit rating agencies, among others, also were intensely focused on Vale’s ability to cut costs and capital expenditures to offset the decline in revenue from falling iron prices. During every analyst and earnings call, the Company was questioned about its costs and capital expenses, as well as its assurances that the Company would be able to meet its aggressive cost-cutting targets. As alleged more fully below, the Company repeatedly touted its success in cutting costs and capital expenses, while omitting material information about the Company’s extensive use of the Fundão Dam, the dangerous condition of the Dam, and the Company’s refusal to spend money on a new, safer dam, or on needed repairs and safety improvements at the Fundão Dam.

**B. The Fundão Dam’s Long History Of Serious Problems**

60. Originally constructed in 2007 and 2008, serious problems plagued the Fundão Dam from the beginning. Sworn testimony from Mr. Pimenta de Ávila, the Fundão Dam’s original engineer, as well as numerous Samarco employees responsible for the Dam’s condition and operation, including Germano Lopes, João Pedro da Silva, Daviely Rodrigues Silva, and Wanderson Silva, confirms and details the litany of problems the Dam experienced from day one.

61. Sworn testimony from Lopes, Wanderson Silva, Pimenta de Ávila, and Daviely Rodrigues Silva, for instance, all confirm that shortly after the Fundão Dam was inaugurated in 2009, one of the Dam's main dikes experienced severe drainage problems. Instead of moving the water downstream away from the tailings, the bottom drain damned the water, causing excessive pressure in the embankment near the Dam's foundation. An investigation revealed that faulty construction had caused the drain to become obstructed. As a result, the original conceptual design, which called for draining the Dam through permeable bottom drains, was abandoned. Under the new design, the bottom drains were filled and a new method for draining water was implemented. Mr. Pimenta de Ávila testified that the Samarco board, including the Vale executives on the board, were informed of these problems and authorized the design change. The changes were implemented between 2009 and 2010.

62. Shortly thereafter, according to testimony from Mr. Pimenta de Ávila, Daviely Rodrigues Silva, and Germano Lopes, a deformation or "piping" was noted in the Dam's main gallery spillway on the right shoulder of the Dam.<sup>6</sup> Piping is a serious problem that occurs when water exiting a tailings impoundment picks up soil particles and moves them out of a dam's foundation or embankment.<sup>7</sup> The continued removal of soil particles causes channels or "pipes" to develop in the dam's walls or foundation. If these channels or pipes become big enough to connect to the free-standing water in the reservoir, large flows can develop, leading to a complete dam failure. According to Mr. Pimenta de Ávila, the problem at the Fundão Dam was caused by

---

<sup>6</sup> Spillways are passages or structures through which excess water in a dam is released. Spillways are important features in tailings dams, as removing excess water is critical to avoid saturation.

<sup>7</sup> Earle J. Klohn, *Seepage Control for Tailings Dams*.

an excessive decant within its main spillway, which caused tailings to flood through a concrete joint at the point of the greatest decanting.

63. A similar problem occurred in the Dam's secondary gallery (on the left side of the Dam). Both Germano Lopes and Wanderson Silva testified that a sinkhole occurred in the tailings beach, caused by a break in a concrete joint in the secondary gallery. The deformation caused tailings to be carried back into the gallery and over the Dam, which, Mr. Silva testified, could compromise the safety of the Dam. Mr. Pimenta de Ávila testified that an investigation ultimately showed that the design change necessitated by the initial drainage problems, and a misalignment between the original construction and the changed design, caused these additional problems. A specialized company brought in to examine the problem, Nouh Engenharia, proposed a solution that involved reinforcing the galleries. But because that solution would have limited the height of tailings that could be deposited in the reservoir, thereby reducing the Dam's capacity, it was not implemented. Instead, the galleries were plugged and deactivated so that the Dam could be raised yet again. Mr. Lopes testified that by plugging the main and secondary galleries, "it became necessary to build a new overflow system."

64. Around this time, according to a September 2011 Technical Report that Mr. Pimenta de Ávila authored, Samarco wanted to expand the Fundão Dam to "occupy" the valley between the Dam and the waste dump at Vale's adjacent New Factory Mine. Mr. Pimenta de Ávila explained in his report that in order to expand the Dam in the manner requested, while still maintaining the required safety factor, the axis and geometry of the Dam would have to be modified. He also raised the concern that the expansion would interfere with drainage at Vale's adjacent mine. He therefore recommended that Vale assess the situation to determine whether the

expansion would in fact interfere with drainage from its waste dump. He also reported concerns that surface flows from Vale's adjacent waste pond could negatively impact the Dam.

65. Notwithstanding Mr. Pimenta de Ávila's concerns, the expansion went forward and the axis and geometry of the Dam were changed significantly, both to accommodate the requested expansion and to solve the ongoing drainage problems plaguing the Dam. Mr. Alves testified that Vix Logística performed the work. Mr. Pimenta de Ávila, whose contract was not renewed when it expired in 2012, played no role in the change. Aerial photos of the Dam in 2011 and 2013 show the significant change in its geometry:



66. Part of the solution to the ongoing "piping" and drainage problems, according to Mr. Alves and Mr. Lopes, was to build a recess in the Dam's left abutment, which was in the process of being raised. Additional drainage also was installed in the abutment. Mr. Alves admitted that no license was obtained for construction of the recess, and that there was no provision for the recess in the environmental permit for raising the Dam.

67. When shown pictures of the Dam's modified axis and geometry, Mr. Pimenta de Ávila explained that the "modified condition of the Dam's axis requires strict monitoring of the water level conditions within the tailings in order to check for liquefaction risk conditions." He also testified that the original operating manual recommended that changes not be made to the Dam's geometry for safety reasons, but if changes to the geometry were made, then the stability

analysis should be revised. Again, that recommendation was not followed, as the Dam's geometry was changed without revising the stability analysis.

68. Additional, serious problems with the Fundão Dam continued. Mr. Lopes and Mr. Silva both testified that there were water upsurges in the embankment near the left shoulder of the Dam in 2013 and upsurges in the embankment near the right shoulder in 2014. Upsurges can cause significant saturation in the embankments, which in turn can lead to liquefaction and collapse.

69. Mr. Pimenta de Ávila was brought back as a consultant in the end of November 2013. In September 2014, he performed six inspections on the Fundão Dam and identified several serious risks. The most significant risk involved the beginning of a break in one of the Dam's retreat dikes.<sup>8</sup> Mr. Pimenta de Ávila identified several extended cracks running parallel to the crest of the dike, as well as signs of movement at the foot of the slope. According to his testimony, the nature of the cracks and movement were typical of sliding, which he believed probably was caused by liquefaction of the foundation tailings from the retreat dikes. As he later told the *Wall Street Journal*, he informed Samarco executives he believed this was the beginning of a rupture. He made three recommendations: (1) installing a buttress or reinforcements designed to take into account the likely liquefaction of the dike's foundation, (2) installing piezometers along the wall at least ten meters below the foundation to monitor water pressure and saturation, and (3) daily monitoring of the piezometers' readings and, if the readings indicated saturation in the foundation, drilling pumping wells to reduce the saturation level to guarantee the Dam's stability.

---

<sup>8</sup> Mr. Pimenta de Ávila also noted that excavations for the ongoing construction of the Fundão Dam spillway near the foot of the dike between the Fundão and Germano dams were very near the slope of the dike, which potentially threatened the stability of the dike.

70. Three months later, Mr. Pimenta de Ávila recommended additional stability tests on the Dam, using stricter safety coefficients. When he later inquired about the results of the recommended stability tests, he was told the results had been lost because the “computer’s hard drive had burned up.” In response, he reemphasized the importance of performing the tests, and urged that the tests be made a priority. He testified that he “never received any feedback or request for clarifications about his reports.” He also testified that he reviewed the consulting reports prepared by the company responsible for the stability reports for the Dam (VogBR) and “verified that his recommendations produced in 2014 were not considered by any consulting company.” He also noted that “the results for the piezometers, the installation of which had been recommended in the retreat area, were not found in the reports produced by [the consultant], nor were these results and the risks inherent to them taken into consideration when preparing the document that attested to the stability of the Fundão Dam.”

**C. There Was No Real Emergency  
Action Plan In Place At The Fundão Dam**

71. No adequate emergency action plan (“EAP”) was ever implemented at the Fundão Dam. Germano Lopes, the general manager of soil science for Samarco, testified that the EAP was prepared in 2008 and *never updated or revised*. Paulo Sergio Machado Ribeiro Filho, a member of the accident response team for the dams at the Germano complex, testified that the Dam had no audible alarm system. He testified further that the only training he received on how to respond to an accident at the Dam was to “consult the emergency action plan, and to take the actions that were the responsibility of the environment team in it.” He also testified that on the day the Dam collapsed, he “had not been activated to take any action or to perform the duties inherent to the deputy in the environment department.” Mr. Filho had been involved in only one prior training session, which “consisted only in basic guidance on the plan and information where

to check documents that might be relevant in an emergency situation.” He “never participated in any drill for a situation in which the dam ruptures” and “is unaware of any training or meeting held with the fire department, civil defense, or divisions of the department of the environment on the emergency action plan at the dams.”

72. The EAP had no mechanism for notifying residents in the towns directly below the Fundão Dam in the event of an emergency. Mr. Lopes confirmed that the plan “did not stipulate any type of notification to the district of Bento Rodrigues or to the district of Paracatu de Baixo,” both of which were located directly below the Fundão Dam. Mr. Lopes confirmed that emergency drills conducted in 2013 and 2014 were done only for Samarco’s own teams and did not include off-site entities. He did not participate in a drill in 2015, and could not say whether one was conducted. Gleison Alexandrino Souza, a contractor who worked at the Dam and lived in Bento Rodrigues when the Dam collapsed, testified that Samarco “*never conducted any training with the community for emergency situations,*” and “did not issue any statements or warnings to the community near the rupture.” An emergency response plan that does not include notification to communities at risk below a tailings dam is blatantly inadequate and violates basic rules of safety.

73. In 2009, Samarco retained Rescue Training International (“RTI”) and its director, Randal Fonseca, to create an emergency action plan for its mining units, including the Germano complex and the Fundão Dam and other tailings dams. In interviews with journalists, Mr. Fonseca explained that he was hired because an independent audit of Samarco’s existing emergency action plan had concluded that the plan did not conform to international technical rules of safety. Among other failings, the plan provided for no audible alarms or other viable warning system to alert residents of the towns that were immediately downhill from the massive tailings dams. Mr.

Fonseca designed a new plan to address these and other deficiencies. After the auditors approved his revised plan, he presented it to Samarco.

74. Three years later, while performing other work for Samarco, Mr. Fonseca noticed that the measures he had included in the EAP he created three years earlier *had not been implemented*. He questioned Samarco's officers about this, and was told that Samarco decided to use the simpler plan that the auditors had rejected. He explained in an interview with the Brazilian newspaper *Estado de Minas* that the reason for the decision not to implement the plan he recommended was an unwillingness to spend money on security given the tough economic climate at that time.

**D. Vale Ignored Repeated  
Warnings About The Fundão Dam**

75. In 2013, as production (and the corresponding waste) was dramatically increasing, the decision was made to expand the Fundão Dam rather than invest the capital necessary to build a new dam. In connection with the application to expand the Fundão Dam and "revalidate" the license to operate it, the Minas Gerais State Prosecutor's office retained the Instituto Pristino, a not-for-profit environmental and geotechnical modelling institute affiliated with the University of Minas Gerais, to study the Dam and prepare a report on its condition and whether the license should be renewed. The four experts who prepared the Pristino Report warned of serious risks at the Dam, and recommended that the license not be renewed unless a number of conditions were met.

76. The Pristino Report warned that the Dam's proximity to an adjacent Vale tailings pond posed serious risks that rising water levels, resulting from the natural flow of surface water, could cause several collapses in the Dam's walls, creating a massive flow of waste. The authors concluded that the structures never should have been adjacent to each other because of their

different physical characteristics. The Pristino Report stated that these design defects had been noted in previous technical reports, and should have been included in the application for renewal. These were the same concerns that Mr. Pimenta de Ávila noted in his September 2011 Technical Report. Like Mr. Pimenta de Ávila's earlier report, the Pristino Report also recommended that studies on the possible impact of contact between the structures be undertaken.

77. The Pristino Report specifically recommended that the following conditions be placed on renewing the license:

- More frequent (less than one year between tests) geotechnical and structural testing and monitoring of the Dam and adjacent dikes.
- Creation and presentation of a contingency plan for hazards or accidents that may occur, including evidence of the effectiveness of the contingency plan.
- Performance of a break analysis of the Dam, which was supposed to have been delivered to regulators 6 years earlier. The report noted that this condition was of “extreme importance to ensure the security and integrity of the environment.”

Ultimately, these conditions were not imposed on renewing the license and the recommended steps were not taken, causing the state prosecutor to abstain from the vote approving renewal of the license.

78. The next alert came in September 2014, when Mr. Pimenta de Ávila warned about “severe” structural problems in the Fundão Dam and urged the company to step up monitoring of water pressure and levels and to reinforce the Dam with a buttress. After seeing cracks and sliding in the Dam that he believed were the beginning of a rupture, Mr. Pimenta de Ávila prepared a written report in which he noted that the “geometry of the cracks characterized a vast area with movement typical of sliding *which very probably would have been caused by the occurrence of*

*liquefaction involving foundation tailings from the retreat dikes.*” To protect against liquefaction, he urged the installation of additional sensors to monitor water levels in the Dam, to monitor the readings daily, and to drill wells and pump out excess water if the readings indicated excessive water. As he explained in interviews given to various journalists, “[i]f the observations show that the water level is rising, they have to drill wells and pump out to lower the water level. With that condition, I am convinced you would not have liquefaction there.” The July 2015 VogBR stability report noted that one instrument at the Dam recorded water levels at the emergency level between March and May 2015.

79. Mr. Pimenta de Ávila also recommended the installation of a buttress at the base of the Dam to prevent the kind of collapse that eventually occurred. He attributes the failure to follow his recommendations to a mistaken belief that a collapse would not happen: “What I think was lacking was a belief in the worst-case scenario, that the worst-case scenario was viable.”

80. Testimony from a contractor working at the Fundão Dam in 2014 corroborates Mr. Pimenta de Ávila’s testimony about cracks in the Dam. Gleison Alexandrino Souza, who worked for Vix Logística, testified that while working on the Dam in 2014, he saw a crack in a “corner” of the Dam out of which “water was flowing.” He said that “everybody knew that the crack was there, and the company removed all of the machines from the area and began to repair the cracked spot.”

81. The Brazilian prosecutor has indicated that the principal cause of the collapse was the mine’s ramped-up production and resulting expansion of the Dam in an effort to offset plunging iron ore prices, saying “[i]nstead of planning a new Dam, with a new structure, they looked for a patchwork solution.” According to Brazilian federal prosecutor José Adércio Leite Sampaio, the Dam had undergone a rapid expansion in the years leading up to the collapse, with the volume of

tailings growing by 1100% between 2012 and 2015, from 5 million cubic meters to 55 million cubic meters. Yet according to Brazilian police investigating the collapse, as the volume of waste exploded in 2014 and 2015, the volume of water drained from the dam actually decreased, a recipe for the kind of disaster that ensued.

82. Yet another warning came from instruments, known as piezometers, bored into the Dam's walls to measure the water pressure and saturation of the soils that comprised the walls. As explained above, when soil walls like those at the Fundão Dam become saturated, they lose their ability to withstand dynamic or static stresses and the risk of the wall liquefying and collapsing increases dramatically. According to an article in the *Wall Street Journal* dated November 24, 2015, prosecutor Sampaio said that several of the 50 piezometers in the Fundão Dam's walls indicated "emergency" levels of pressure and stress before the Dam collapsed. His statement is corroborated by both the sworn testimony of Samarco employees and a July 2015 "stability report" prepared by VogBR for submission to mining regulators.

83. Wagner Alves testified that one of the piezometers "continuously indicated an emergency situation in 2014 and 2015." VogBR's July 2015 stability report likewise reported that several piezometers and other instruments recorded emergency levels of water and water pressure in 2014 and 2015, including one that continuously recorded "emergency" levels between August 2014 and July 2015 and another between March and May 2015. Mr. Alves stated that the data from the piezometers was collected weekly, not daily as Mr. Pimenta de Ávila urged. Wanderson Silva confirmed that monitoring was done only once a week. Mr. Silva also testified that the piezometers connected to an online network for automated monitoring had to be read manually because of interference caused by the ongoing work to raise the Dam. Rafael Gomes corroborated that acoustical piezometers had not been working in the last year because of technical problems.

Mr. Gomes and Wanderson Silva also confirmed that there was no radar monitoring of the Dam. And Wagner Alves testified that VogBR's 2014 recommendation to update the structural risk mapping of the Dam also was not followed.

**E. The Fundão Dam Collapses**

84. Late in the afternoon of November 5, 2015, the Fundão Dam began to leak. While employees belatedly – yet futilely – tried to reduce the volume of water in the Dam, the Dam burst, unleashing a colossal torrent of mud and debris hurtling toward the villages below. Within minutes, the deluge swamped Bento Rodrigues, destroying virtually everything in its path. Because there was no warning system in place, residents had little time to flee. In the end, 19 people lost their lives, and hundreds lost their homes and all of their possessions. After destroying Bento Rodrigues and seriously damaging several other nearby towns, the mudflow flooded the Rio Doce, killing fish and wildlife and polluting the water all the way to the Atlantic Ocean 400 miles away. The devastation was immense, as the pictures below demonstrate.



PHOTO: Bento Rodrigues, as seen from the air, is still coated in sludge.





Samarco, AP

**F. Vale Disclaims Any Responsibility For The Fundão Dam’s Collapse Or The Harm Caused**

85. In the days and weeks after the collapse, Defendants made numerous public statements disclaiming any responsibility for the collapse or the harm it caused. On a November 16, 2015 conference call with investors and analysts to discuss the Fundão Dam collapse, for example, Defendant Pires claimed that Brazilian and international law prohibited Vale from directly interfering in Samarco’s management. He claimed further that Vale and Samarco were completely independent and shared no resources, systems, or support functions:

And unlike others sometimes, other affiliates, there were no resources shared between Vale and Samarco or BHP and Samarco whatsoever. So we did not share systems. We did not share support functions. We did not share, not even in Mariana, where Vale and Samarco were neighbors, we did not share any type of operations crews, or let’s say, safety technicians or communications people or community relations people.

**G. A Brazilian Court Orders Vale To Pay For The Harm Resulting From The Fundão Dam's Collapse**

86. Brazilian prosecutors announced on November 27, 2015, that they were going to sue Vale, BHP, and Samarco for \$5.2 billion to pay for the environmental damage they had caused and to compensate victims of the tragedy. A few weeks later, on December 18, 2015, a Brazilian court ordered Vale (along with BHP and Samarco) to fund a comprehensive recovery plan to remediate the environmental and societal harm the collapse caused, and froze Vale's Brazilian mining assets to ensure that it complied with its obligations. In doing so, the Brazilian court found that there was sufficient evidence to support the probability that Vale was responsible as a "direct polluter":

The proof (public confession and technical report) make[s] it evident that Vale S/A is directly responsible for the damage, because it is also classified as a direct polluter, inasmuch as the tailings from its mining operations comprised the mass of mud and tailings that caused the environmental disaster.

The court also found it likely that Vale's control of Samarco made it responsible as an indirect polluter:

In this case, the companies Vale S/A and BHP Billiton Brasil Ltda, as controlling entities of Samarco Mineração S/A, are not only the beneficiaries of the mining activities carried out by Samarco, but also co-responsible for the decisions made by the controlled company.

Shortly thereafter, Vale, along with Samarco and BHP, agreed to pay up to an estimated \$6 billion to compensate victims of the tragedy and remediate the environmental and societal damage the companies caused.

**VI. DEFENDANTS' MATERIALLY FALSE AND MISLEADING STATEMENTS CAUSED SUBSTANTIAL LOSSES TO INVESTORS**

87. During the Class Period, in regular press releases, conference calls, public filings and filings with the SEC, Defendants repeatedly made materially false and misleading statements

and omissions concerning: (1) the Company's dedication and commitment to health, safety, and the environment; (2) the Company's risk mitigation plans, policies, and procedures; (3) the Company's control over Samarco's operations and its responsibility for the devastating harm the Fundão Dam collapse caused; (4) the Company's purported cost cuts and capital expenditure reductions; and (5) the accuracy and completeness of the Company's 2013 and 2014 Annual Reports. These false and misleading statements and omissions misled investors in Vale's ADRs regarding the current and future value of the Company.

**A. False and Misleading Statements  
Concerning Vale's Purported Commitment  
To Health, Safety And The Environment**

88. Throughout the Class Period, Defendants repeatedly touted to investors the Company's focus on the health and safety of employees and the communities in which the Company operates. Defendants emphasized Vale's commitment to the environment and reducing the environmental impact of its operations. Defendants repeatedly assured investors that the Company had plans and procedures in place to mitigate health and safety, as well as environmental risks. As the Fundão Dam disaster and its aftermath made clear, each of these statements was false and misleading.

89. Vale's Capital Markets Day conference was held in New York on December 2, 2014. Company participants included Defendants Ferreira, Pires, and Poppinga, as well as Vania Somavilla, Vale's Executive Director of Human Resources, Health and Safety, Sustainability and Energy. During the conference, Ferreira focused on the Company's commitment to health and safety as well as the environment, stating "I would like to assure you that we are striving to build a company of solid values," including "respect [for] the environment [and] genuine care for the safety and well-being of fellow colleagues and respect [for] the communities in which our company operates." Somavilla, who was authorized to speak on behalf of the Company, further

represented that at Vale, “[w]e seek nothing less than zero harm[.] [W]e work together with governments and civil society to help build a better regulatory framework[.]” Somavilla conveyed the Company’s continued focus on safety, stating that Vale’s “commitment to promoting a zero harm culture has paid off . . . and we want to do more by reinforcing genuine care, improving safety training, improving risk management and control, and encourag[ing] deviation report[ing] and to improve continuously.” Somavilla assured investors that at Vale, we “not only mitigate the impact of our presence, but also leave more than we take when we arrive.” Each of the three Individual Defendants was present when Somavilla made these statements.

90. The above statements were materially false and misleading when made because, among other things, Vale did not respect the environment or the communities in which it operates, did not promote a zero harm culture, did not mitigate the impact of the Company’s presence, was not focused on safety, and did not work together with governments and civil society to help build a better regulatory framework, as evidenced by the following:

- The Fundão Dam had been plagued by problems from the very beginning, including structural problems that caused inadequate drainage, which ultimately led to its catastrophic collapse (¶¶60-70);
- The Company ignored repeated warnings about the dangerous condition of the Dam, and refused to follow numerous recommendations that would have assured the safety and stability of the Dam (¶¶75-83);
- The Company dramatically increased production without appropriately fortifying tailings storage facilities needed to store the proportional increase in wastes (¶¶54-70);
- There was no emergency action plan for the Fundão Dam; there were no alarms or sirens to warn people in the surrounding communities in the event of an emergency; there was no real training for Dam employees, and no effort to involve the community in developing a plan to respond to an emergency (¶¶71-74);
- The company had failed to properly maintain and construct the Fundão Dam, despite its contractual obligation to do so (¶¶52-53; 75-83);

- The Company continued to deposit waste in the Dam, and authorized an increase of its size, even after sensors used to monitor the Dam's stability had indicated "emergency" levels of pressure and stress (¶¶78; 82-83).

91. In April 2014, Vale publicly released its 2013 Sustainability Report. Vale's Sustainability Reports are published annually and publicly disseminated on their website. Additionally, the 2013 report was referenced in a press release that was filed with the SEC on May 8, 2014 on Form 6-K. In the report, Defendants reaffirmed the Company's commitment to "focusing on health and safety, . . . building a positive legacy for communities close to areas where we operate, and adopting best practices in social and environmental management[.]" Ferreira emphasized Vale's focus on health and safety, stating that "caring for health and safety remains a priority for us."

92. Vale's 2014 Sustainability Report, which was referenced in a press release filed with the SEC on June 1, 2015 on Form 6-K, contained nearly identical statements.

93. Defendants' statements above were demonstrably false and misleading because, among other things, Vale was not focused on health and safety, had not adopted best practices in social and environmental management, and caring for health and safety was not a priority for the Company, as evidenced by:

- The Fundão Dam had been plagued by problems from the very beginning, including structural problems that caused inadequate drainage, which ultimately led to its catastrophic collapse (¶¶60-70);
- The Company ignored repeated warnings about the dangerous condition of the Fundão Dam, and refused to follow numerous recommendations that would have assured the safety and stability of the Dam (¶¶75-83);
- The Company dramatically increased production without appropriately fortifying tailings storage facilities needed to store the proportional increase in wastes (¶¶54-70);
- The Company authorized expansion of the Fundão Dam despite the many warnings of its instability and dangerous condition (¶¶57-58; 60-70);

- There was no emergency action plan for the Fundão Dam; there were no alarms or sirens to warn people in the surrounding communities in the event of an emergency; there was no real training for Dam employees, and no effort to involve the community in developing a plan to respond to an emergency (¶¶71-74);
- The Company had failed to properly maintain and construct the Fundão Dam, despite its contractual obligation to do so (¶¶52-53; 75-83);
- The Company continued to deposit waste in the Dam, and authorized an increase of its size, even after sensors used to monitor the Dam's stability had indicated "emergency" levels of pressure and stress (¶¶78; 82-83).

94. Defendants made other, substantially similar statements concerning Vale's focus on health and safety, as well as the environment. For example, on December 2, 2013, the Company held a conference with analysts and investors to discuss the Company's earnings and operations. During the conference – held in New York City – Defendants Ferreira, Pires, and Poppinga emphasized the Company's commitment to safety and environmental responsibility. Specifically, the slides used during the presentation, and filed with the SEC on Form 6-K, emphasized the Company's "culture of genuine care delivering operational excellence," the "implementation of the health and safety management system," and Vale's focus on "[r]isk reduction through technical improvements." The slides also assured investors that Vale would deliver value to shareholders through a focus on "[s]afety, sustainability and [the] environment." During an April 30, 2014 conference call with analysts, Pires stated that "we within Vale want to take this opportunity to repeat that all of the executive officers and our CEO are committed to achieving the highest possible health and safety standards in our operations." During an April 30, 2015 conference call with analysts, Poppinga stated that "[y]ou will see a different Vale in the next months, quarters and years, very focused on . . . health and safety, more and more."

95. These statements were materially false and misleading for the same reasons set forth above in ¶93.

96. Vale's Code of Ethics and Conduct, which is publicly available on the Company's website and referenced in SEC filings, sets forth the Company's values, and provides, in pertinent part, as follows:

Vale's mission is to transform natural resources into prosperity and sustainable development, aiming to be the number one global natural resources company in creating long term value, through excellence and passion for people and the planet. Therefore, Vale conducts its business activities guided by a set of values that reflect high ethical and moral standards, aimed at assuring credibility and preserving the company's image in the markets in which it regularly operates, in the short and long term. The company's positive reputation and image are an asset of its shareholders, management and employees[.]

97. The statements above were materially false and misleading because, as set forth above in ¶93, Vale did not conduct its business activities, in particular its tailings dam management, with high ethical and moral standards.

**B. False and Misleading Statements Concerning Vale's Risk Mitigation Plans, Policies, And Procedures**

98. During the Class Period, Defendants repeatedly represented to investors that the Company had risk mitigation plans and procedures in place to address health and safety risks, as well as environmental risks. These representations were set forth in the Company's 2013 and 2014 Annual Reports.

99. On March 27, 2014, Vale filed with the SEC its annual report on Form 20-F for the fiscal year ended December 31, 2013. In the 2013 Form 20-F, Defendants represented that Vale has a "relentless focus on health and safety," as "[h]ealth and safety [are] . . . critical to [its] long-term competitiveness." Defendants further stated that "[w]e remain focused on achieving a record of zero harm in our operations." Accordingly, Vale has "health, safety and environmental standards and risk management systems and processes in place to mitigate the risk of" environmental, health, and safety incidents. Defendants emphasized that the Company "mitigate[s] operational risk with new controls and improvement of existing ones," and "[a]s a result, the Company seeks to have a

clear view of its major risks, the cost-benefit on mitigation plans and the controls in place to monitor the impact of operational risk closely. . . .”

100. The statements above were materially false and misleading when made because Defendants knew or recklessly disregarded that Vale was not focused on health and safety, did not have health, safety and environmental standards and risk management systems and processes in place to mitigate risks, and did not mitigate operational risks with new controls and improvement of existing ones, as evidenced by:

- The Fundão Dam had no emergency action plan in place; there were no audible alarms or warning systems in place to warn the surrounding communities in the event of an emergency, there was no training for Dam employees, and no emergency drills were conducted with off-site personnel (¶¶71-74);
- Numerous experts warned of the dangerous condition of the Fundão Dam, including cracks in the Dam. Recommendations from these experts were not implemented (¶¶60-70; 75-83);
- Several of the roughly 50 instruments the Company used to monitor the Fundão Dam’s stability had indicated “emergency” levels of pressure and stress prior to its collapse, yet nothing was done (¶¶78; 82-83); and
- The water level and pressure within the dam were not monitored daily, as Mr. Pimenta de Ávila recommended (¶83).

101. In April 2014, Vale publicly released its 2013 Sustainability Report. In the report, Defendants assured investors that Vale “implements actions and measures to prevent, control or compensate for [environmental] impacts,” and that it has “policies, systematic requirements and procedures designed to prevent and minimize risks and protect lives.” Defendants represented that the Company has developed “technical and operational procedures, control devices, qualified teams, specialist consultancies and period audits in order to identify, control and minimize the risks of its operations, and maintain tolerable levels[.]” The report also states that Vale’s “[o]perations are planned and conducted so as to cause the least possible environmental impact[.]” Addressing

iron operations specifically, Defendants represented that their “commitment to environmental and social issues is also reflected in the way [it] manage[s] specific kinds of waste in the production process.” In explaining that iron ore waste is disposed of in tailings dams, Defendants acknowledged the risks of these structures and reassured investors that Vale takes all steps necessary to “ensure that such structures are stable in order to control the risks of impacts.” Defendants also represented that the Company has “invested in processes, systems and tools for the automation of dams monitoring[.]” “Vale dams are constructed and operated following strict safety standards and audited periodically to monitor and reduce all potential risks, including structural failures.”

102. These statements were materially false and misleading because, among other things, the Fundão Dam did not follow strict safety standards; Vale did not have policies, systematic requirements and procedures to prevent and minimize risk and protect lives; and did not implement actions and measures so as to cause the least possible environmental impact, as evidenced by:

- Defendants had been repeatedly warned about the Fundão Dam’s structural problems and potential for structural failure (¶¶60-70);
- Randal Fonseca, the Instituto Pristino, and Joaquim Pimenta de Ávila all warned of significant risks or deficiencies at the Dam and provided recommendations to mitigate potential risks. Defendants failed to implement these recommendations (¶¶75-83);
- Mr. Pimenta de Ávila recommended that the water pressure and water levels be monitored daily, sworn testimony revealed that such monitoring was only done weekly and the monitoring system was no longer automatic due to interference caused by the ongoing work to raise the Dam (¶¶78; 83); and
- Stability reports showed that several piezometers recorded emergency levels of water pressure in 2014 and 2015, including one that continuously recorded “emergency” levels between August 2014 and July 2015 and another between March and May 2015 (¶83).

103. Defendants made similar statements in Vale's annual report for the fiscal year ended December 31, 2014, which was filed with the SEC on March 20, 2015 on Form 20-F (the "2014 Form 20-F"). In the 2014 Form 20-F, Defendants represent that Vale had "health, safety and environmental standards and risk management programs and procedures in place to mitigate" risk of environmental, health, and safety incidents.

104. These statements were materially false and misleading for the same reasons set forth above in ¶102.

**C. Statements Disclaiming Control Over Samarco's Operations And Responsibility For The Harm Caused By The Collapse**

105. Almost immediately following the collapse, the market showed signs of concern regarding Vale's liability. A November 8, 2015 Jefferies analyst report commented that Vale would be negatively impacted by the collapse for "three reasons: 1) lost cash flow, 2) cleanup and legal costs, and 3) reputational damage."

106. As the local communities were coping with the unprecedented disaster, Defendants publicly disclaimed any responsibility for the collapse or the harm that ensued. Puzzlingly, while disclaiming any involvement or responsibility, Defendants assured investors that both Vale's and Samarco's operations had been conducted with the highest regard for health and safety, and that their facilities, including the now-collapsed Fundão Dam, were state of the art. These statements were unquestionably false and misleading.

107. In a November 11, 2015 *Wall Street Journal* article, the Company stated that Samarco has "a management team that's completely independent from its shareholders and responsible for technical and financial matters." The Company represented that, under Brazilian law, "Vale really doesn't have any responsibility for the occurrence of the unfortunate and sad accident."

108. On November 16, 2015, more than ten days after the Dam burst, the Company held its first conference call with analysts and investors to discuss the financial impact the Dam collapse would have on Vale's business. Defendant Pires and Clovis Torres, Vale's General Counsel, participated on behalf of the Company. During the conference, Pires stated, in pertinent part:

With regards to the relationship between Vale . . . and Samarco, let's remember that Vale . . . compete[s] with Samarco. So, in compliance with applicable Brazilian and international competition regulations, we are prohibited to directly interfere in Samarco's management . . .

So therefore, Samarco had an independent management. And unlike other . . . affiliates, there were no resources shared between Vale and Samarco . . . whatsoever. So we did not share systems. We did not share support functions. We did not share, not even in Mariana, where Vale and Samarco were neighbors, we did not share any type of operations crews, or let's say, safety technicians or communications people or community relations people. No, they were all completely independent.

109. The statements and omissions set forth above were materially false and misleading when made because, among other things, Defendants knew or recklessly disregarded that:

- The contract that governs Vale's right to dump waste in the Fundão Dam requires Vale to "*share in the maintenance expenses of the current dam and construction and maintenance of new dams, as well as any environmental costs derived from the use of the SAMARCO dams[.]*" (¶¶52-53)
- Vale is a controlling shareholder of Samarco, occupied four of the eight seats on Samarco's Board, and Vale employees sat on Samarco's advisory committees, including the Operations Committee (¶22);
- Vale received hundreds of millions of dollars, in the form of dividends, from Samarco each year during the Class Period, and more than \$3 billion in dividends over the past 5 years (¶46);
- Samarco's pellet production accounted for 23% of Vale's total pellet production in 2014 and 2105 (¶45);
- Vale conducted annual audits of Samarco's business and operations (¶32); and
- Vale and Samarco shared the use of the Fundão Dam and other tailings dams at the Germano mining complex (¶26).

110. Ultimately a Brazilian court found Vale directly responsible for the harm the Fundão Dam collapse caused, finding Vale responsible both as a “direct polluter” and as a controlling shareholder of Samarco.

111. During the November 16, 2015 conference call, Pires represented to investors that the “practices that [Vale] adopts in [its] tailing dams’ management systems are state of the art, as also they were in Samarco.” Pires further commented that “if we learn something from the investigation, we are open to adopt further security measures that may be found necessary after those causes are identified.”

112. The statements above were materially false and misleading because the management systems that Vale and Samarco adopted at the Fundão Dam were not state of the art, as evidenced by:

- The Fundão Dam had been plagued by problems from the very beginning, including structural problems that caused inadequate drainage, which ultimately led to its catastrophic collapse (¶¶60-70);
- The Company ignored repeated warnings about the dangerous condition of the Dam, and refused to follow numerous recommendations that would have assured the safety and stability of the Dam (¶¶75-83);
- The Company dramatically increased production without appropriately fortifying tailings storage facilities needed to store the proportional increase in wastes (¶¶54-70);
- The Company authorized expansion of the Fundão Dam despite the many warnings of its instability and dangerous condition (¶¶57-58; 60-70);
- There was no emergency action plan for the Fundão Dam; there were no alarms or sirens to warn people in the surrounding communities in the event of an emergency, there was no real training for Dam employees, and no effort to involve the community in developing a plan for how to respond to an emergency (¶¶71-74);
- The Company had failed to properly maintain and construct the Fundão Dam, despite its contractual obligation to do so (¶¶52-53; 75-83);
- Acoustical piezometers at the Dam were not working because of technical problems (¶83);

- Piezometers connected to an online network for automated monitoring had to be read manually because of interference caused by the ongoing work to raise the Dam (§83);
- There was no radar monitoring of the Dam according to Rafael Gomes and Wanderson Silva (§83); and
- The structural risk mapping of the Fundão Dam had not been updated to reflect its significantly modified size, structure, and geometry, even though VogBR expressly had recommended that it be done back in 2014 (§83).

113. In a November 24, 2015 *Wall Street Journal* article, the Company made a statement regarding its involvement with the Fundão Dam, representing that the waste it disposes of at the Dam accounts for “less than 5%” of the tailings deposited in the Fundão Dam each year. In a December 10, 2015 press release on Vale’s website, the Company represented that “in 2014, [it] sent to Samarco the amount of 1,005,581 tons of waste from the Alegria mine, in Minas Gerais. This amount represents 4.4722% of the total amount deposited in the Fundão dam between January 2014 and December 2014.” Notably, the Company omitted the 2015 figures. The contract governing Vale’s right to dump waste in the Fundão Dam specifically required that the Company monitor the volume and type of waste deposited, and “make all the records of the amounts measured available to SAMARCO on a timely basis.”

114. The statements and omissions set forth above were materially false and misleading when made because, among other things, Defendants knew or recklessly disregarded that the waste Vale contributed actually accounted for much more than 4.47% of total volume deposited in the Dam. News articles published shortly after the collapse reported that prosecutors had received records from Brazil’s federal mining agency showing that Vale’s own wastes accounted for up to 28% of the total volume deposited in the Dam. A December 4, 2015 *Folha de S.Paulo* article reported that “a DNPM [National Department of Mineral Production] document shows that, in 2014, the volume of waste deposited by Vale was 28% of the dam.” The same details were reported

in a December 21, 2015 *Wall Street Journal* article. Additionally, a report prepared after the collapse by Justiça Global, a non-governmental human rights organization, commented that “despite [Vale] initially stating that it was only responsible for 5% of the dam, this figure is, in fact, 28%.”

115. During the November 16, 2015 conference call, the Company also discussed the environmental effects of the collapse. In vehemently denying allegations that the refuse emitted from the Dam was toxic, Pires stated that “all the reports from the quality of the material that was deposited in the former Fundão Dam made in 2013 and 2014 classified the tailings as class 2B, which means that they are not dangerous . . .”

116. Further commenting on the nature of the refuse, Vale’s website offered the following statement:

The waste at the dam sites is inert, it has no toxic components. It is mainly composed of silica (sand) from the iron ore processing and contains no chemicals that pose a risk to health. The results of the [November 8, 2015] analysis requested by Samarco . . . attests that the waste from the Fundão Dam offers no harm to people or the environment.

117. The statements above were materially false and misleading because Defendants knew or should have known that the waste spilled from the Fundão Dam contained levels of toxic substances, including arsenic, lead, aluminum, chromium, nickel, and cadmium many times higher than the legal limits. Less than two weeks after Defendants first claimed the refuse was “not dangerous,” the United Nations High Commissioner for Human Rights disclosed that, contrary to the Company’s prior assertions, the tailings Dam contained high levels of toxic chemicals, which were unleashed into the Rio Doce. Specifically, the report stated that tests had revealed levels of arsenic, lead, aluminum, chromium, nickel, and cadmium many times higher than the legal limits. Additionally, a Rio Doce Surface Water Quality Monitoring report, dated November 17, 2015,

found that as of November 12, 2015 “the aluminum values still remain[ed] above the legal limit at all of the Rio Doce channel sites.” The report also provided that “the arsenic, cadmium, lead, chromium, and nickel at the monitoring sites . . . behaved in a similar manner; showing higher levels on the date the peak of the waste plume reached the municipalities and a posterior decrease over the following days.”

**D. False And Misleading Statements Concerning Vale’s Purported Cost And Capital Expenditure Reductions**

118. Throughout the Class Period, Defendants repeatedly reassured investors that the Company was committed to reducing costs and expenses while still delivering strong operational performance. Defendants repeatedly touted the Company’s ability to operate at the bottom of the cost curve and even forecast room for additional reductions.

119. On November 6, 2013, Vale issued a press release announcing its financial results for the third quarter of 2013. In the press release, which was filed with the SEC on Form 6-K, the Company stated that it was taking steps to “build a lean organization,” in part, by “minimizing operating costs and expenses.” The Company touted \$2 billion in savings, which it attributed, in significant part, to decreasing operating costs by \$1.126 billion.

120. Each quarter during the Class Period, on April 30, 2014, July 31, 2014, October 30, 2014, February 26, 2015, April 30, 2015, July 23, 2015 and October 19, 2015, Defendants made nearly identical statements in press releases and SEC filings touting the Company’s record cost reductions and decreases in capital expenditures.

121. On March 27, 2014, Vale filed with the SEC its annual report on Form 20-F for the fiscal year ended December 31, 2013 (the “2013 Form 20-F”). In the 2013 Form 20-F, the Company stated that “[w]e delivered a strong operational performance in 2013, with solid results across all of our lines of business.” The Company attributed its robust financial position to “cost-

cutting efforts [and] discipline in capital expenditures[.]” The Company assured investors that “[e]ven as [Vale’s] sales volumes increased, [it] achieved substantial reductions in costs and expenses[.]”

122. Vale’s 2013 Sustainability Report, filed with the SEC on May 8, 2014 on Form 6-K, identified Vale’s “cost-cutting efforts [and] discipline in investments” as “one of [its] strengths in the market.” The Company further touted its ability to reduce costs, stating that “[i]n 2013, there was a substantial reduction in costs and expenses compared to 2012, even with increased volume of sales.”

123. On April 30, 2014, Vale held a conference call with analysts and investors to discuss the Company’s earnings and operations for the first quarter 2014. During the call, Defendant Pires spoke about the Company’s strong start to the year, stating that “[i]t was the best performance for a first quarter since 2008 for iron ore in terms of production.” Vale’s ability to reduce costs was extensively discussed during the call, with Pires confirming that Vale had “reduced costs and expenditures net of depreciation . . . by \$218 million in comparison first quarter to first quarter.” As Pires explained, this reduction “was due to [Vale’s] continued cost cutting efforts throughout the company.” Pires highlighted that in April, “Moody’s . . . changed [Vale’s] rating outlook from neutral to positive with several nice comments about the way the company is being managed and giving us more confidence that we are on the right track.”

124. Pires made substantially similar statements on a quarterly conference call with analysts and investors on July 31, 2014.

125. On July 31, 2014, Vale held a conference call with analysts and investors to discuss the Company’s earnings and operations for the second quarter 2014. During the call, Defendant Ferreira emphasized the Company’s ability to reduce costs and capital expenditures, commenting

that, “[t]his first half of the year we continue to achieve savings in cost and expenses amounting to close to \$250 million compared with the first half last year.” Ferreira stated that Vale continues to “focus on productivity and continue[s] to ramp[] up important operations and reduce cost expenses and capital expenditure in order to achieve our goal of sustainable shareholder value.” Ferreira explained that “[i]n the first half of 2014 Vale’s capital expenditure amounted [to] over \$5.1 billion, representing a decrease of \$2.1 billion when compared to the \$7.2 billion spent in the first half of 2013.”

126. Ferreira made substantially similar statements on quarterly conference calls with analysts and investors on the following dates: April 30, 2014, October 30, 2014, February 26, 2015, April 30, 2015, July 30, 2015, and October 22, 2015.

127. On December 2, 2014, the Company held a Capital Markets Day conference with analysts and investors to discuss the Company’s earnings and operations. During the conference – which was held in New York – Ferreira, Pires, and Poppinga focused on Vale’s cost reduction initiatives, further emphasizing that the Company’s ability to cut costs is a competitive advantage. Ferreira stated, in pertinent part, as follows:

We have seen market turbulence and ever growing concerns and pressures about sustainability on a global scale. And so we have to be ever more diligent. So this year we have focused even more [on] ensuring the delivery of a big operational improvement . . . . Overall, we expect to increase our EBITDA margin in iron ore, by \$10 per ton. Of this \$10 per ton, \$4 will come from cost reduction. \$1.5 from reduction in expenses[.]

Poppinga clarified that “the \$1.5 expense reduction will mainly come from really cost cutting,” and promised investors that “there are several other initiatives on the way to increase productivity and to reduce cost and control risks.” Pires commented that these numbers “show[] our commitment to continue making the company more lean. The CapEx reductions as well, they’re

noticeable. . . . And pre-operating and stoppage expenses [are] also important reduction[s], and hopefully this will reduce even further next year[.]”

128. On March 20, 2015, Vale filed with the SEC its annual report on Form 20-F for the fiscal year ended December 31, 2014 (the “2014 Form 20-F”). In the 2014 Form 20-F, the Company highlighted its “sound financial performance, despite the decline of commodity prices in the international market,” and attributed such strong performance to “cost-cutting efforts and discipline in capital expenditures.” The Form 20-F goes on to state that, “[i]n 2014, we reduced our expenses by more than US\$1.2 billion, building on the significant reduction in costs and expenses we had achieved in 2013. . . . We reduced capital expenditures for the fourth consecutive year, from US\$14.2 billion in 2013 to US\$12.0 billion in 2014.”

129. In Vale’s 2014 Sustainability Report, filed with the SEC on June 1, 2015 on Form 6-K, Ferreira commented that the “efficient management of Vale’s business requires simplification, discipline and the elimination of waste.” Such management has allowed Vale to “reduce [its] annual expenditure by US\$1.2 billion[.]”

130. On April 30, 2015, Vale held a conference call with analysts and investors to discuss the Company’s earnings and operations for the first quarter 2015. During the conference call, Poppinga assured investors of the Company’s dedication to reducing expenses, stating that “[y]ou will see a different Vale in the next months, quarters and years, very focused on productivity and cost-cutting[.]”

131. The above statements were materially false and misleading and omitted material information when made because, among other things, Defendants knew or recklessly disregarded that Vale’s purported cost cutting and reduction in capital expenditures was due, in part, to the failure to expend the capital measures to ensure the safety of its mining operations, including the

Fundão Dam. As detailed above in ¶¶56-58, in an effort to reduce costs, Defendants increased the size and elevation of the already unstable Fundão Dam rather than expend the capital to build additional tailings storage facilities. Moreover, numerous recommendations from experts to reinforce the Fundão Dam and monitor it on a daily basis were ignored and never implemented.

**E. False And Misleading Certifications Concerning Accuracy And Completeness Of The Company's Annual Reports**

132. On March 27, 2014, Vale filed with the SEC its annual report on Form 20-F for the fiscal year ended December 31, 2013. The 2013 Form 20-F included Sarbanes-Oxley certifications signed by Ferreira and Pires and dated March 27, 2014. These certifications provided, in part, that:

- (1) Based on my knowledge, this report does not contain any untrue statement of material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
- (2) The company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15-d-15(f) for the company and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
- (3) The Annual Report on Form 20-F for the year ended December 31, 2013 of the Company fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (4) [The] information contained in the Form 20-F fairly presents, in all material respects, the financial condition and results of operations of the Company.

133. On March 20, 2015, Vale filed with the SEC its annual report on Form 20-F for the fiscal year ended December 31, 2014. The 2014 Form 20-F included the same Sarbanes-Oxley certifications as set forth above, and was signed by Ferreira and Pires and dated March 20, 2015.

134. The Sarbanes-Oxley certifications, which represented that the 2013 and 2014 Annual Reports were accurate and complete “in all material respects,” were materially false and misleading when made because, among other things, Ferreira and Pires knew and/or recklessly disregarded that the respective Annual Reports they signed contained materially false and misleading statements and omissions, as detailed above in ¶¶56-58; 60-83.

**VII. INVESTORS SUFFER  
LOSSES AS THE TRUTH EMERGES**

135. Throughout the Class Period, the price of Vale’s common and preferred ADRs were artificially inflated as a result of Defendants’ materially false and misleading statements and omissions identified above. The truth behind Defendants’ various false statements and omissions was gradually revealed to the market in a series of corrective disclosures, causing investors to suffer significant losses during the Class Period. In direct and immediate response to each of the corrective disclosures alleged below, the price of Vale’s ADRs fell sharply. As a result of their purchases of Vale ADRs during the Class Period, Lead Plaintiffs and other members of the Class suffered economic loss, *i.e.*, damages under federal securities laws.

136. On May 12, 2015, Moody’s issued a negative outlook for Vale and warned that the ratings outlook could worsen further if Vale “is not able to make meaningful progress in cost reduction.” Moody’s expressed concern about the impact of declining iron ore prices on Vale. This was the first public disclosure questioning Vale’s ability to sufficiently cut costs in order to maintain its overall value as iron ore prices were falling, and was the first indication that to obtain meaningful cost progress in cost reduction, Vale may cut costs in critical non-revenue generating areas, such as tailings dam maintenance. As detailed above, during periods of lower iron ore prices, the only way to maintain or increase overall value of the Company, Vale had to increase overall production and cut costs. The next trading day, the price of Vale’s common stock ADRs

declined 3.39% and Vale's preferred stock ADRs declined 3.25%, erasing almost \$375 million in market capitalization.

137. On November 5, 2015, at approximately 3:20 p.m. (EST), the Fundão Dam burst releasing a massive wave of toxic sludge into the nearby river valley and causing severe flooding and 19 deaths. The collapse caused the equivalent of 20,000 Olympic swimming pools of mud waste to bury a small town of 600 people and affected more than a dozen riverside towns and cities on its way to the Atlantic Ocean. Within two hours, the tailings of iron ore reached the Rio Doce, a river basin that provides potable water to 230 municipalities. Over 250,000 people were left without clean drinking water. The market immediately recognized that the disaster would tarnish Vale's reputation and harm its financial outlook. On November 6, 2015, an HSBC analyst report commented that the collapse would "hurt Vale's results," negatively impacting pellet production and the likelihood that the Company would continue to receive dividends. The next trading day, the price of Vale ADRs fell significantly, with Vale's common stock ADRs losing 5.7% of their value and falling to \$4.14, and Vale's preferred stock ADRs losing 4.1% of their value and falling to \$3.49. In sum, over \$345 million in market capitalization was erased in a single day.

138. New material information was gradually revealed to the market over the next several days. On November 7, 2015, the *Wall Street Journal* reported that Brazilian prosecutors opened an investigation into Samarco's compliance with the technical requirements contained in its license to operate the Fundão Dam. According to the article, back in October 2013, when Samarco was seeking to renew its license to operate the Dam, the local prosecutors' office commissioned a report to test the stability of the Fundão Dam. The Pristino Report included a series of warnings about the Dam and highlighted "the possibility of destabilization." The Report also stated that a Dam collapse would "caus[e] a great mass of waste to flow downstream" towards

communities that house hundreds of thousands of people. The Report recommended, as a condition for renewing Samarco's license, a contingency plan in case of accidents "given the presence of the population in the community of Bento Rodrigues." The Pristino Report also recommended further and more frequent studies be made on the stability of the Dam, including the performance of a break analysis of the Dam, which was supposed to have been delivered to regulators six years earlier. According to the *Wall Street Journal*, in the wake of the Dam collapse, local prosecutors launched an investigation into whether Samarco had ever fulfilled these conditions prior to the renewal of its license. Such disclosures revealed, among other things, that the Fundão Dam had a history of severe structural problems, that contrary to Defendants' repeated assertions, Vale and Samarco did not have sufficient plans and procedures in place to mitigate such risks, and that Vale's liability for the collapse and ensuing harm increased. The market reacted quickly and on November 9, the price of Vale common stock ADRs lost 2.17% of their value and the preferred stock ADRs lost 2.58% of their value, erasing almost \$158 in market capitalization in a single day.

139. Thereafter, on November 10, 2015, after the market closed, the *Wall Street Journal* revealed for the first time evidence that Vale was dumping debris from its own nearby iron-ore mines – not just those operated by Samarco – directly into the Fundão Dam, further pressuring the dam system. This revealed to the market that Vale's own mining operations were heavily dependent on the Company's ability to dispose of waste in the Fundão Dam. On the next trading day, while the Emerging Markets Index went up and Vale's peers stayed relatively flat, the price of Vale common stock ADRs fell 1.70% and the preferred stock ADRs fell 0.30%, causing a \$67 million market capitalization drop.

140. After the market closed on November 24, 2015, the *Wall Street Journal* revealed additional details regarding the arrangement for Vale to use Samarco's dam system. In particular, the *Wall Street Journal* revealed that the Fundão Dam had undergone rapid growth in recent years. Between 2012 and 2015, the volume of tailings grew 1100%, from 5 million cubic meters to 55 million cubic meters. In addition, the *Wall Street Journal* reported that several of the roughly 50 instruments for monitoring Dam stability bored into the Dam's surface indicated "emergency" levels of pressure and stress prior to its collapse. The *Wall Street Journal* also raised questions about the amount of waste Vale was actually contributing, and whether the contract that allowed Vale to dump this waste from its nearby iron-ore mine into the Fundão Dam was properly licensed and monitored. These disclosures revealed, among other things, that Vale and Samarco lacked appropriate procedures and facilities to safely manage their waste, that Vale had cut corners on needed infrastructure at its mining operations near the Fundão Dam, that Vale and Samarco were aware of the risk of a structural failure yet failed to mitigate the risk, and that Vale was heavily involved in and dependent on the Fundão Dam for its operations. The next trading day, Vale's common stock ADRs fell 4.11% and the preferred stock ADRs fell 4.01%, erasing almost \$253 million in market capitalization.

141. After the market closed on Wednesday, November 25, 2015, the night before Thanksgiving, the Office of the United Nations High Commissioner for Human Rights revealed that it received new evidence showing that, contrary to prior assertions that the waste was "not dangerous," the tailings Dam contained high levels of toxic heavy metals and other toxic chemicals, which flowed into the Rio Doce and ultimately spilled into the Atlantic Ocean. The announcement stated that the Rio Doce, once considered one of Brazil's great water sheds, "is now considered by scientists to be dead and the toxic sludge is slowly working its way downstream

towards the Abrolhos National Marine Park where it threatens protected forest and habitat.” On Friday, November 27, 2015, the first trading day following Thanksgiving, Vale cited a report by the Brazilian Institute of Water Management, which tested water samples taken from the Rio Doce between November 7, 2015 and November 12, 2015. The report found that the levels of arsenic, lead, aluminum, chromium, nickel, and cadmium were many times higher than the legal limits. Following this announcement, the Brazilian government stated its intent to file suit against Vale and Samarco for their part in the Dam’s catastrophic failure. That same day, in response to the above disclosures, the value of Vale common stock ADRs fell 4.29% and the preferred stock ADRs fell 4.82%, erasing over \$271 million in market capitalization.

142. On November 30, 2015, the Brazilian government filed a lawsuit against Vale and Samarco, seeking \$5.2 billion in damages and a plan to clean up the worst environmental disaster in Brazil’s history. This disclosure revealed, among other things, that contrary to Vale’s statements disclaiming any involvement or responsibility, Vale was likely responsible as both a controlling shareholder and a direct contributor of tailings to the Fundão Dam. The price of Vale common stock ADRs fell 5.6%, to close at \$3.37. Similarly, Vale preferred stock ADRs fell 9.46%, to close at \$2.68. These drops erased almost \$425 million in market capitalization.

143. On Friday, December 18, 2015, after the close of the New York markets, a Brazilian federal judge issued an order freezing Vale’s Brazilian mining assets and finding Vale responsible for the harm the collapse caused. The Judge found Vale responsible as a “direct polluter,” stating in pertinent part that: “The proof (public confession and technical report) make[s] it evident that Vale S/A is directly responsible for the damage, because it is also classified as a direct polluter, inasmuch as the tailings from its mining operations comprised the mass of mud and tailings that caused the environmental disaster.” The Judge also focused on Vale’s joint responsibility for the

decisions made by the controlled company, finding that under Brazilian law, “the liability of both controllers to bear costs to remediate the damage would also come from the very fact that the company SAMARCO is [a] closed-capital stock company and it is under the controlling power of the companies VALE and BHP.”

144. Over the weekend, news articles and media coverage focused on the Judge’s ruling. On December 19, 2015, Reuters reported that Vale’s assets had been frozen, following the Judge’s finding that Vale could be held responsible for the collapse of the Fundão Dam. *The Sidney Morning Herald*, *The Rio Times*, and the *International Business Times* reported on similar details. On Monday, December 21, 2015, the price of Vale common stock ADRs fell 4.06% and Vale’s preferred stock ADRs fell 3.57%, erasing almost \$191 million in market capitalization.

145. As a result of Defendants’ materially false and misleading statements and omissions, and the precipitous decline in the market value of the Company’s common and preferred ADRs, Lead Plaintiffs and other Class members have suffered significant losses and damages.

## **VIII. ADDITIONAL ALLEGATIONS OF SCIENTER**

146. In addition to the facts alleged above, numerous additional facts raise a strong inference that Defendants knew or were reckless when making the false or misleading statements alleged above.

### **A. Defendants Were Aware Of Problems At The Fundão Dam**

147. As alleged above, the following Vale executives served on Samarco’s board, on various committees, or on both the board and on a number of committees: Defendant Poppinga; Jose Carlos Martins (Poppinga’s immediate predecessor as Vale’s Executive Director, Ferrous Minerals); Pedro José Rodrigues (Vale’s Global Director of Mergers and Acquisitions); Hélio

Moreira Cabral; Marcelo Botelho Rodrigues; Stephen Potter (Vale's Global Director of Strategy); Cléber Santiago (responsible for managing Vale's controlled companies); Paulo Bandeira (Vale's general manager for iron ore planning and development); Maria Ines Carvalheiro (Vale general manager of mergers and acquisitions); Luiz Eduardo Lopes (Vale's director of budget and capital improvements); Maurício Drumond (Vale's Director for performance and integration of capital projects); and Rodrigo Araújo. Through these and other executives, each of whom directly or indirectly reported to Defendants Ferreira or Pires, and through Vale's controlling ownership of Samarco, Defendants were responsible for and involved in virtually all aspects of Samarco's business. As such, they received or had access to the numerous warnings before and during the Class Period about the dangerous condition of the Fundão Dam and the lack of an adequate emergency action plan in the event of an accident or collapse, including the warnings from the Instituto Pristino, Randal Fonseca and Joaquim Pimenta de Ávila.

148. *Vale was responsible for maintaining and constructing the Fundão Dam.* Under the contract allowing Vale to dump wastes in the Fundão Dam, Vale was required to share in the construction and maintenance of any new dams. Accordingly, each time the Dam experienced one of the many drainage or other problems described above, Vale was contractually responsible for sharing in the significant cost of the repairs and maintenance necessary to address the problems. There is therefore no credible basis for Vale to claim that it was not aware of the problems. Moreover, many of the incidents caused the Fundão Dam to shut down for various periods while its various galleries or dikes were drained to make needed repairs or changes. During those shutdowns, tailings, including those from Vale's own mines, could not be deposited in the Dam.

149. *Defendants knew or were reckless in not knowing that Vale was dumping wastes from its own mines into the Fundão Dam and other Samarco tailings dams.* After the collapse,

Vale repeatedly told investors that it bore no responsibility for the harm the collapse caused. When they made those statements, Defendants knew that Vale had been dumping its own mining wastes in the Fundão Dam for years and bore responsibility for maintaining the dam under the contract purportedly allowing Vale to dump tailings in the Dam. Defendant Poppinga, as the Vale executive in charge of the Company's entire iron ore business, and as a member of Samarco's board knew that Vale was dumping tailings from its mining operations in the Fundão Dam. Indeed, Vale, including Defendants Ferreira and Pires, have admitted that the Company had a contract with Samarco to use the Dam and was dumping waste into the Dam.

150. ***Defendant Pires implicitly admitted that Defendants were aware of the Pristino Report before the Dam collapsed.*** On November 16, 2015, Vale held a conference call with analysts and investors to discuss the tragic collapse of the Fundão Dam. During that call, Defendant Pires directly discussed the Pristino Institute Report, which he described as “the report that’s been referred to in the press in 2013.” Pires did not dispute any of the findings in the Pristino Report and did not deny Vale’s awareness of the Report before the Dam collapsed. Pires suggested that the Pristino Report related only to the request to “heighten” the Dam, and pointed out that the increase in height was not completed when it collapsed.

151. ***Defendants knew or were reckless in not knowing about the warnings and recommendations in the Pristino Report.*** As alleged more fully above, when Samarco sought to expand the Fundão Dam and renew the license to operate it in 2013, the public prosecutor commissioned the Instituto Pristino to study the Dam and prepare a report on its condition and whether its license should be renewed. The four experts who prepared the Report warned of serious risks at the Fundão Dam, and recommended that the license not be renewed unless a number of recommended steps were first taken to ensure the safety of the Dam. One of those risks

concerned the adjacent Vale tailings pond. The Pristino Report noted that the location and design of the adjacent Vale facility created a serious risk that rising water levels, resulting from the natural flow of surface water, could cause several collapses in the Dam's walls, creating a massive flow of waste. The authors concluded that the structures never should have been adjacent to each other because of their different physical characteristics. The Report stated that these design defects had been noted in previous technical reports, and should have been included in the application for renewal. This was the same concern that Pimenta de Ávila discussed in his report discussed above. Given the Samarco Board's demonstrated focus on tailings dams and licensing issues, Vale knew, or was reckless in not knowing, about the Pristino Report and the concerns expressed therein.

152. *The ongoing drainage problems at the Fundão Dam, and the concerns raised in the Instituto Pristino Report and Mr. Pimenta de Ávila's September 2011 Technical Report directly affected the safety of Vale's adjacent waste facility.* As alleged more fully above, in order to solve the Dam's drainage problems and address the Samarco board's "critical concern" about future tailings storage capacity, the decision was made to raise the Dam and fundamentally change its geometry. Doing so directly impacted Vale's adjacent waste storage facility by interfering with its internal and surface drainage. Mr. Pimenta de Ávila and the Instituto Pristino both noted these concerns in written reports, and recommended that several steps be taken to ensure the safety of the Dam and Vale's adjacent waste dump. Defendants either received or had access to those reports, and therefore either knew or were reckless in not knowing about the warnings contained therein.

153. *Defendants knew or were reckless in not knowing about Pimenta de Ávila's September 2014 warnings about the Fundão Dam.* In sworn testimony provided to Brazilian prosecutors, Pimenta de Ávila explained that he warned Samarco more than a year before the

Fundão Dam collapsed that he had observed cracks in the Dam and other troubling signs that he believed were the beginning of a rupture. He recommended reinforcing the Dam with a buttress at its base to prevent against precisely the type of collapse that occurred. He also recommended the installation of sensors in the Dam's walls to monitor daily water pressure, and immediate drilling of wells to pump water out of the Dam if the sensors indicated the walls were becoming saturated. His recommendations were not followed. Given the Dam's importance to Vale and Samarco, the long history of serious problems with the Dam, the impact that those problems had directly on Vale, and Vale's obligation to share in the maintenance and construction of the Fundão Dam, Defendants knew or were reckless in not knowing about Pimenta de Ávila's warnings.

154. ***Defendants knew or were reckless in not knowing that the sensors monitoring the water pressure and levels at the Fundão Dam had reached emergency levels in 2014 and 2015.*** A Brazilian prosecutor told the *Wall Street Journal* that several of the 50 piezometers in the Fundão Dam's walls indicated "emergency" levels of pressure and stress before the Dam collapsed. Testimony from Wagner Alves confirms that one piezometer "continuously indicated an emergency situation in 2014 and 2015." The July 2015 "stability report" likewise reported that several piezometers recorded "emergency" levels of water pressure in 2014 and 2015, including one that continuously recorded "emergency" levels between August 2014 and July 2015 and another between March and May 2015. Wagner Alves also testified that the data from these sensors were collected weekly and compiled into written monthly reports. Again, by virtue of their control over Samarco, this membership on the Samarco board and Vale's contractual obligation to maintain the dam, Defendants either received or had access to the July 2015 stability report and the monthly monitoring reports.

155. *Defendants knew or were reckless in not knowing about the lack of an adequate emergency action plan at the Dam.* In 2009, Fonseca was retained to create an emergency action plan for the Germano complex after an independent audit of the existing emergency action plan concluded that the existing plan was inadequate and did not comply with international safety rules. Among other failings, the plan provided for no audible alarms and did not require or provide a method for warning residents of the towns immediately downhill from the massive tailings dams if a disaster were to occur. Fonseca designed a new plan that addressed these and other deficiencies. Samarco never adopted his plan because, Fonseca says, it was unwilling to incur the cost of implementing the changes given the difficult economic climate at the time. Samarco employees Lopes and Filho testified that there were no audible alarms at the Dam when it collapsed and the plan still “did not stipulate any type of notification to the district of Bento Rodrigues or to the district of Paracatu de Baixo,” both of which were located directly below the Fundão Dam.

156. Given Vale’s ownership and control of Samarco, and its positions on Samarco’s board, Vale was responsible for assuring Samarco’s compliance with legal and statutory requirements. One of those legal or statutory requirements was an effective emergency action plan at the Fundão Dam. According to an opinion prepared by regulators examining Samarco’s 2008 request for a license to operate the Fundão Dam, one of the conditions on obtaining that license was a requirement that Samarco adopt an emergency action plan for the Dam. Through its positions on Samarco’s Operations Committee, Vale also was responsible for evaluating and monitoring Samarco’s operational performance related to, among other things, health and safety and the environment and community. Because the lack of an appropriate emergency action plan at the Fundão Dam directly impacted health and safety and the environment and community, Vale either knew or was reckless in not knowing of the deficiencies in the emergency action plan.

157. *Defendants knew or were reckless in not knowing that their statements disclaiming responsibility for the collapse and tragic consequences were false and misleading.*

After the collapse, Defendants disclaimed all responsibility for the collapse and resulting damage. Defendant Pires, for example, claimed during the November 16, 2015 conference call that Samarco was a separate company with separate management, and suggested that Vale played no role in Samarco's management because "international competition regulations" prohibited Vale from "interfering" in Samarco's management. He also represented that Vale and Samarco did not "share systems, resources, or support functions." When Pires made those statements, he knew or recklessly disregarded the following facts necessary to make his statements not misleading given the circumstances under which they were made: (1) *Vale and Samarco shared the use of the Fundão Dam and other tailings dams at the Germano mining complex*; (2) Vale and Samarco shared in the maintenance and construction of the Fundão Dam and in the maintenance of other tailings dams in the Germano complex; (3) Vale actively managed Samarco's operations through Vale executives on Samarco's board and Operations Committee; (4) Vale and Samarco shared employees and participated in joint training programs; and (5) Vale conducted annual audits of Samarco's operations and business.

158. *Defendants made direct statements about Samarco's supposedly "state-of-the-art" tailings dam management systems and "best practices" immediately after the Dam collapsed.* During the November 16, 2015 conference call, Defendant Pires represented that Vale's and Samarco's tailings dam management systems were "state of the art," stating: "The practices that we adopt in our tailing dams' management systems are state of the art, *as also they were in Samarco.*" He repeated those statements at the December 4, 2015 Vale Investor Day Conference when he represented that "Samarco has always had best practices in terms of their structures and

dams.” In making those statements, Pires represented to investors that he had knowledge about Samarco’s practices and management systems governing its tailings dams and structures.

159. *Defendants knew of or had access to information showing that the collapse caused the Rio Doce to be flooded with toxic heavy metals.* As alleged above, shortly after the Fundão Dam burst, Defendants attempted to refute reports that the release of toxic wastes would have long-term environmental impacts by claiming that the substances stored in the Dam were not “dangerous.” They uttered these statements at the same time they claimed they had no control over the Dam and were not responsible for the harm, and before any testing on the toxicity of the wastes was completed. A week later, the UN reported that tests of the river had shown levels of toxic heavy metals like arsenic, lead, aluminum, chromium, nickel, and cadmium many times higher than the legal limits for those substances. Additionally, a Rio Doce Surface Water Quality Monitoring report, dated November 17, 2015, found that as of November 12, 2015 “the aluminum values still remain[ed] above the legal limit at all of the Rio Doce channel sites.” That report also found that “the arsenic, cadmium, lead, chromium, and nickel at the monitoring sites . . . behaved in a similar manner; showing higher levels on the date the peak of the waste plume reached the municipalities and a posterior decrease over the following days.” Moreover, tailings, by their very nature, include numerous substances, many of them toxic, and thus dangerous, at levels above legal limits.

**B. Samarco And The Fundão  
Dam Were Critical to Vale’s Business**

160. Samarco was a vital contributor to Vale’s financial performance and its production of iron ore pellets. Vale received hundreds of millions of dollars in dividends from Samarco each year during the Class Period. And Samarco’s pellet production accounted for 23% of Vale’s total pellet production in 2014 and 2015. Samarco contributed more than \$400 million to Vale’s total

EBITDA in 2014, 3% of Vale's total EBITDA. Before the Fundão Dam collapsed, Samarco was projected to contribute \$500 million to Vale's 2015 EBITDA, more than 5% of Vale's total EBITDA in 2015. Vale highlighted in published annual and quarterly production reports its share of Samarco's production of iron ore and pellets, touting in 2014 Samarco's record pellet output.

161. Samarco's tailings dams, including the Fundão Dam, also were an important component of Vale's mining operations in Mariana. According to the report prepared after the collapse by Justiça Global, all of the mines in Vale's Mariana complex directed all or part of their wet tailings to the three large dams at Samarco's Germano complex. Indeed, Mr. Pimenta de Ávila said he was contracted from the beginning to design the Fundão Dam to receive tailings from Samarco's Germano complex *and from Vale's Alegria complex*. Moreover, Vale constructed a separate tailings delivery system to transport its wastes to the Fundão Dam. Brazilian prosecutors reported that they had received records from the federal mining agency showing that Vale's wastes accounted for up to 28% of the Dam's total volume.

162. Vale's ability to dispose of its wastes at the Fundão Dam was critical to the Company's iron-ore production. Vale has admitted that in 2014 alone, it deposited more than one million tons of waste in the Fundão Dam from its Alegria mine in Minas Gerais. Vale has not revealed how much waste it deposited in 2015.

163. According to figures Vale released after the collapse, production at the Company's Mariana mining hub decreased almost 40% as a result of the Fundão Dam's collapse. Given that the Mariana mining complex accounted for more than 10% of Vale's total iron-ore output in 2014 and 2015, the huge decrease in production caused by the Fundão Dam's collapse has had and will have a significant impact on Vale's financial performance. In fact, analysts estimated that the

disruption at the Mariana complex caused by the Fundão Dam's collapse could lead to a \$1.25 billion decrease in Vale's revenues, and a \$540 million decrease in EBITDA.

164. *Samarco's board, including Defendant Poppinga and the other Vale executives on the board, were intently focused on tailings disposal.* As alleged above, tailings and the dams in which they were disposed was a frequent topic at Samarco board meetings. Minutes from a December 7, 2012 board meeting, for example, reflect that Kleber Terra, Samarco's operations manager, presented a comprehensive overview of the tailings dams. According to the minutes, his overview dealt with all of the following topics: "area of operations, disposal system, dam management model, dam management governance, dam management and risk control, analysis of the stability of the geotechnical structures." This overview came at or around a time when the Fundão Dam was experiencing significant ongoing drainage and other problems that necessitated substantial remedial steps that caused a significant modification to the Dam's axis and geometry. In fact, a year or two earlier, the board was made aware of significant drainage problems at the Dam and expressly authorized the proposed redesign and reconstruction to remedy the problems. Additionally, in a 2011 report that Mr. Pimenta de Ávila prepared in connection with the proposed geometry change, he specifically recommended that Vale study the impact the changed geometry might have on Vale's adjacent tailings storage facility at its New Factory Mine because of "possible interference" with the internal draining system of Vale's facility. That possible interference and direct negative impact on Vale's operations, not to mention Vale's responsibility for maintaining and constructing the Fundão Dam, creates a strong inference that Vale knew, or was reckless in not knowing, about the proposed changes.

165. The Samarco board also regularly received updates regarding ongoing capital projects and project scheduling. Minutes of the April 2, 2014 board meeting, for example, reflect

such a discussion, and stress “that most of the planned investments refer to tailings disposal projects.” The April 2, 2014 minutes also reflect a discussion about the status of the issuance of a license to operate a different dam, as well as the board’s request that the licensing matter “be included in the regular updates provided in future board meetings.”

**IX. CLASS ACTION ALLEGATIONS**

166. Lead Plaintiffs bring this action as a class action pursuant to Rules 23(a) and (b)(3) of the Federal Rules of Civil Procedure on behalf of all persons who purchased or otherwise acquired Vale common or preferred ADRs between November 7, 2013 and November 30, 2015, inclusive, and were damaged thereby. Excluded from the Class are Defendants, Vale’s officers and directors at relevant times, and Defendants’ immediate family members, legal representatives, heirs, agents, affiliates, successors or assigns, liability insurance carriers, and any affiliates or subsidiaries thereof, and any entity in which Defendants or their immediate families have or had a controlling interest.

167. The members of the Class are so numerous that joinder of all members is impracticable. Throughout the Class Period, Vale ADRs were actively traded on the NYSE. Vale has over 826 million common stock ADRs outstanding and 925 million preferred stock ADRs outstanding, owned by hundreds or thousands of investors. While the exact number of Class members is unknown to Lead Plaintiffs at this time and can be ascertained only through appropriate discovery, Lead Plaintiffs believe that there are hundreds, if not thousands, of potential members in the proposed Class. Record owners and other members of the Class may be identified from records maintained by Vale or its transfer agent, and may be notified of the pendency of this action by mail, using the form of notice similar to that customarily used in securities class actions. The disposition of their claims in a class action will provide substantial benefits to the parties and the Court.

168. Common questions of law and fact exist as to all Class members and predominate over any questions solely affecting individual Class members. Those common questions include:

- (a) Whether Defendants violated the Exchange Act;
- (b) Whether Defendants made statements to the investing public during the Class Period that were false, misleading, or omitted material facts necessary to make the statements made not misleading under the circumstances under which the statements were made;
- (c) Whether Defendants knew or recklessly disregarded that their statements or omissions were false and misleading;
- (d) Whether the prices of Vale's ADRs were artificially inflated during the Class Period because of Defendants' misconduct; and
- (e) Whether Defendants' conduct caused the members of the Class to sustain damages and, if so, the proper measure of those damages.

169. Lead Plaintiffs' claims are typical of those of the Class because all members of the Class were similarly affected by and suffered damages from Defendants' wrongful conduct in violation of the federal securities laws.

170. Lead Plaintiffs will fairly and adequately protect the interests of the Class and have retained competent counsel experienced in class action securities litigation. Lead Plaintiffs have no interests that conflict with those of the Class.

171. A class action is superior to other available methods for the fair and efficient adjudication of this controversy because, among other reasons, joinder of all Class members is impracticable and the damage suffered by some individual Class members may be sufficiently small that the burden and expense of individual litigation would make it impossible for such

members to individually redress the wrong done to them. There will be no difficulty in the management of this action as a class action.

**X. INAPPLICABILITY OF STATUTORY SAFE HARBOR**

172. The statutory safe harbor that applies to forward-looking statements under certain circumstances does not apply to any of the false and misleading statements pleaded in this Complaint because none of those statements were forward looking. Rather, they were statements of historical or current facts and conditions at the time the statements were made, including statements about Vale's mining output, costs, and capital expenditures; commitment to health, safety, and the environment; and policies, procedures, and standards to mitigate against the risks of health, safety, and environmental incidents.

173. Even if any of the false and misleading statements alleged herein may be construed as forward looking, those statements were not accompanied by meaningful cautionary language identifying important facts that could cause actual results to differ materially from those in the statements. As set forth above in detail, then-existing facts contradicted Defendants' alleged false statements and any generalized risk disclosures were not sufficient to insulate Defendants from liability for their materially false and misleading statements.

174. Defendants are also liable for any false or misleading forward-looking statements pleaded herein because, at the time each such statement was made, the speaker knew the statement was false or misleading and the statement was authorized or approved by an executive officer of Vale who knew that the statement was false. None of the historic or present tense statements made by Defendants were assumptions underlying or relating to any plan, projection, or statement of future economic performance, as they were not stated to be such assumptions underlying or relating to any projection or statement of future economic performance when made, nor were any

of the projections or forecasts made by Defendants expressly related to, or stated to be dependent on, those historic or present tense statements when made.

**XI. PRESUMPTION OF RELIANCE**

175. At all relevant times, the market for Vale's common and preferred stock ADRs was an efficient market for the following reasons, among others:

(a) Vale ADRs met the requirements for listing, and were listed and actively traded on the NYSE, a highly efficient and automated market;

(b) As a regulated issuer, Vale filed periodic public reports with the SEC and NYSE;

(c) The average weekly trading volume of Vale common stock ADRs during the Class Period was almost 25 million shares and the average volume of Vale preferred stock ADRs was more than 10 million shares;

(d) Vale regularly and publicly communicated with investors via established market communication mechanisms, including through regular disseminations of press releases on the national circuits of major newswire services and through other wide-ranging public disclosures, such as communications with the financial press and other similar reporting services; and

(e) Vale was followed by securities analysts from over 30 major brokerage firms, including JPMorgan, Morgan Stanley, and HSBC, who wrote reports that were distributed to the sales force and certain customers of their respective brokerage firm(s). Each of these reports was widely circulated, publicly available, and entered the public marketplace.

176. As a result of the foregoing, the market for Vale's ADRs promptly digested current information regarding Vale from all publicly available sources and reflected such information in the price of Vale's ADRs. Under these circumstances, all purchasers of Vale ADRs during the

Class Period suffered similar injury through their purchase of Vale ADRs at artificially inflated prices and the presumption of reliance applies.

177. A Class-wide presumption of reliance is also appropriate in this action under the Supreme Court's holding in *Affiliated Ute Citizens of Utah v. U.S.*, 406 U.S. 128 (1972), because the Class' claims are grounded on Defendants' material omissions. Because this action involves Defendants' failure to disclose material adverse information about (1) the condition of the Fundão Dam and warnings it had received about that condition, (2) the Company's mining output, costs, and capital expenditures, (3) the Company's reliance on the Fundão Dam for its nearby mining operations and its contribution to the deteriorating condition of the Dam that led to its catastrophic collapse, (4) the Company's responsibility to ensure that critical recommended improvements and enhancements were made to the Fundão Dam – information that Defendants were obligated to disclose – positive proof of reliance is not a prerequisite to recovery. All that is necessary is that the facts withheld be material in the sense that a reasonable investor might have considered them important in making investment decisions. Given the importance of Vale's iron-mining operations and its commitment to safety and the environment, as set forth above, that requirement is satisfied here.

## **XII. CLAIMS FOR RELIEF**

### **COUNT I**

#### **FOR VIOLATIONS OF SECTION 10(b) OF THE EXCHANGE ACT AND RULE 10b-5 Against All Defendants**

178. Lead Plaintiffs repeat and reallege each and every allegation contained above as if fully set forth herein.

179. During the Class Period, Defendants disseminated or approved the false statements set forth above, which contained misrepresentations or failed to disclose material facts necessary

in order to make the statements made, in light of the circumstances in which they were made, not misleading.

180. In committing the acts alleged above, Defendants violated Section 10(b) of the Exchange Act and Rule 10b-5 promulgated thereunder in that they:

- employed devices, schemes, and artifices to defraud;
- made untrue statements of material fact or omitted to state material facts necessary to make the statements not misleading under the circumstances under which they were made; or
- engaged in acts, practices, and a course of business that operated as a fraud and deceit on Lead Plaintiffs and other similarly situated purchasers of Vale's ADRs during the Class Period.

181. Defendants had actual knowledge of the materially false and misleading statements and material omissions alleged herein, and intended in making or approving them to deceive Lead Plaintiffs and the other members of the Class, or, in the alternative, Defendants were reckless in that they failed or refused to ascertain and disclose such facts as would reveal the materially false and misleading nature of the statements made, although such facts were readily available to Defendants. Said acts and omissions of Defendants were committed willfully or with recklessness. In addition, each Defendant knew or was reckless in not knowing that material facts were being misrepresented or omitted as described above.

182. Information showing that Defendants acted knowingly or recklessly is peculiarly within Defendants' knowledge and control. As the senior executive managers and/or directors of Vale, the Individual Defendants had knowledge of the details of the Company's internal affairs.

183. Defendants, individually and in concert, directly and indirectly, by the use, means or instrumentalities of interstate commerce or of the mails, engaged and participated in a continuous course of conduct to conceal adverse material information about the Company's financial well-being, operations, and prospects, which operated as a fraud and deceit on Lead Plaintiffs and the Class.

184. Defendants had actual knowledge of the misrepresentations and omissions of material fact set forth herein, or recklessly disregarded the true facts that were available to them. Defendants engaged in this misconduct to conceal Vale's true condition from the investing public and to support the artificially inflated prices of the Company's securities.

185. Lead Plaintiffs and the Class have suffered damages in that, in reliance on the integrity of the market for Vale's ADRs, they paid artificially inflated prices for Vale's ADRs. Lead Plaintiffs and the Class members would not have purchased the Company's ADRs at the prices they paid, or at all, had they been aware that the market prices for those securities had been artificially inflated by Defendants' false and misleading statements and fraudulent course of conduct.

186. As a direct and proximate result of Defendants' wrongful conduct, Lead Plaintiffs and the other members of the Class suffered damages attributable to the material misstatements and omissions alleged above in connection with their purchases of Vale's ADRs during the Class Period.

## **COUNT II**

### **FOR VIOLATION OF SECTION 20(a) OF THE EXCHANGE ACT Against The Individual Defendants**

187. Lead Plaintiffs repeat, incorporate, and reallege each and every allegation set forth above as if fully set forth herein.

188. The Individual Defendants acted as controlling persons of Vale within the meaning of Section 20(a) of the Exchange Act. By virtue of their high-level positions, participation in and awareness of the Company's operations, direct involvement in the day-to-day operations of the Company, intimate knowledge of the Company's actual performance, and power and ability to control the actions of Vale and its employees, the Individual Defendants had the power and authority to cause, and did cause, Vale to engage in the wrongful conduct alleged herein, and to control, and did control, the content of Vale's annual and quarterly reports, press releases, investor presentations, and other public statements about the Company. The Individual Defendants were provided with and reviewed copies of the Company's annual reports, press releases, investor presentations, and other public statements about the Company before or shortly after their issuance, and had the ability and opportunity to prevent their issuance or to correct them or cause them to be corrected.

189. By reason of their control of Vale and of the conduct alleged above, the Individual Defendants are liable under Section 20(a) of the Exchange Act for Vale's violations of Section 10(b) and Rule 10b-5 to the same extent as Vale.

### **XIII. PRAYER FOR RELIEF**

WHEREFORE, Lead Plaintiffs pray for judgment as follows:

- A. Determining that this action is a proper class action under Rule 23 of the Federal Rules of Civil Procedure;
- B. Awarding compensatory damages in favor of Lead Plaintiffs and other Class members against all Defendants, jointly and severally, for all damages sustained as a result of Defendants' wrongdoing, in an amount to be proven at trial, including interest thereon;
- C. Awarding Lead Plaintiffs and the Class their reasonable costs and expenses incurred in this action, including attorneys' fees and expert fees; and

D. Awarding such equitable/injunctive or other further relief as the Court may deem just and proper.

**XIV. JURY DEMAND**

Lead Plaintiffs demand a trial by jury.

Dated: April 29, 2016

Respectfully submitted,

**BERNSTEIN LITOWITZ BERGER  
& GROSSMANN LLP**

*/s/ Blair A. Nicholas*

---

Blair A. Nicholas (*Pro hac vice*)  
Timothy A. DeLange (*Pro hac vice*)  
Richard D. Gluck (*Pro hac vice forthcoming*)  
Jenny E. Barbosa (*Pro hac vice forthcoming*)  
12481 High Bluff Drive, Suite 300  
San Diego, CA 92130  
Telephone: (858) 793-0070  
Facsimile: (858) 793-0323  
blairn@blbglaw.com  
timothyd@blbglaw.com  
rich.gluck@blbglaw.com  
jenny.barbosa@blbglaw.com

-and-

Gerald H. Silk  
Avi Josefson  
**BERNSTEIN LITOWITZ BERGER  
& GROSSMANN LLP**  
1251 Avenue of the Americas  
New York, New York 10020  
Telephone: (212) 554-1400  
Facsimile: (212) 554-1444  
jerry@blbglaw.com  
avi@blbglaw.com

*Counsel for Lead Plaintiffs Alameda County  
Employees' Retirement Association and  
Orange County Employees Retirement  
System and Lead Counsel for the Class*