

IGO 2019 TAILINGS DAM DISCLOSURE

Introduction

Tailing storage facilities (TSFs) are reservoirs or dams that store mine tailings. Mine tailings are the fine-grained waste rock material, suspended in a water slurry, that are discharged from an ore processing plant following the extraction of the desired metal or mineral. Inappropriate storage of tailings can lead to safety, health and or environmental hazards.

Independence Group NL (IGO) has received a disclosure request dated 26 April 2019 relating to the management of TSFs at sites where IGO has an economic interest. The disclosure request was submitted by a group of investors led by the Church of England Pensions Board (CoE) and the Council on Ethics – Swedish National Pension Funds. A copy of this request is included as Appendix A. IGO supports the need for this disclosure.

IGO has a direct economic interest in two mines; each with a single TSF. IGO operates and 100% owns the Nova nickel-copper-cobalt mine (Nova) and owns a 30% economic interest in the Tropicana gold mine (Tropicana), which is wholly-operated by AngloGold Ashanti Limited (AGA) who own the remaining 70% economic interest.

In addition, up until 31 May 2019, IGO managed and 100% owned the Long nickel mine (Long), which was put into care and maintenance in 2018. Long was acquired by Mincor Resources NL (Mincor) on 31 May 2019, however, for completeness, this disclosure also addresses Long.

A summary of operation, ownership, facility name and TSF status is provided in Table 1. All three mines and their associated TSFs are located in Western Australia.

Table 1 List of Tailings Dams

Operation	Project Status	IGO Economic Interest	TSF Name	Status
Long	Care & maintenance	100%	OK TSF	Closed
			SK TSF	Decommissioned
Nova	Operational	100%	TSF1	Active
Tropicana	Operational	30%	Tropicana TSF	Active

The Long and Tropicana TSFs utilise the 'downstream' construction and raising methodology. In contrast, the Nova TSF has been designed and constructed as a dual tailings and water storage facility. Consequently, it was built to a fixed design height and is fully lined with a HDPE (high density polyethylene) liner. The Nova TSF has sufficient capacity to provide for the mine's 'life of mine' and hence no expansion of the TSF is currently anticipated. All of the aforementioned facilities are 'paddock' style TSFs (ie none are valley-fill).

It is noted that BHP Limited (BHP) owns and operates a tailings storage facility associated with its Kambalda Nickel Concentrator (known as the BHP Kambalda TSF, 31.167589°S, 121.690390°E) that is located on land that forms part of Long. IGO has no economic interest nor liability for the BHP Kambalda TSF and therefore this TSF is not addressed in this disclosure.



Tailings Management Systems

All of the aforementioned TSFs are operated subject to the Western Australian Mines Safety and Inspection Act 1994 and the Mining Act 1978 as administered by the Western Australian Department of Mines, Industry Regulation and Safety (DMIRS). DMIRS has produced a code of practice to assist industry to meet the legislative TSF management obligations. IGO conforms to these requirements as independently verified by specialist tailings management consultants. IGO currently engages SRK Consulting (SRK) for this purpose.

Beyond the statutory obligations, all TSFs at IGO-operated sites are subject to **IGO's Environmental Group Standard 3 – Mineral Waste Management** which applies to management of waste rock and tailings. A copy of this standard is available on the IGO website at <https://www.igo.com.au/site/caring/environment>.

IGO's Environmental Group Standard 3 specifically addresses the minimum requirements for development of a Mineral Waste Management Plan (MWMP) – also known as a Tailings Management Plan. The MWMP includes a risk assessment, completed in accordance with **IGO's Common Management System Standard 3 – Risk Management**, and changes to the design or operation of tailings dams are managed in accordance with **IGO's Common Management System Standard 12 – Management of Change**. Copies of the Common Management System Standards are available on the IGO website at <https://www.igo.com.au/site/our-business/governance>.

Response to CoE Questions

In the CoE correspondence of 26 April 2019, IGO is requested to:

“Confirm whether your approach to tailings management has changed or will change in light of the recent tailings disasters at Brumadinho, Mariana, Mt Polley and others. Have you, for example, reviewed all tailings storage facilities with upstream dam construction, and taken steps necessary to protect local communities and the environment e.g. buttressing, evacuation? “

IGO Response to the 2015 Samarco TSF failure

IGO is confident that our approach to TSF management is robust. Notwithstanding this, in response to the November 2015 Samarco TSF failure, IGO undertook a 'high-impact function' audit of IGO's tailings storage facilities. The audit, completed by Klohn Crippen Berger (KCB) using DMIRS guidelines, found no material issues with respect to the integrity of IGO's TSFs.

IGO Response to the 2019 Brumadinho TSF failure

In response to the Brumadinho TSF failure, IGO commissioned SRK Consulting in February 2019 to complete a “dam breach assessment” of the Nova TSF. The purpose of this assessment was to examine various “worst credible case” dam breach scenarios and define the likely area of impact given a dam breach and a resultant catastrophic release of tailings. This study validated the original dam breach assessment completed as part of the original feasibility study process.

These studies in the aggregate provide an acceptable level of assurance that the potential environmental impacts associated with a dam failure will be contained within the Nova mining lease boundaries. Similarly, the studies provide assurance that the other 'as-built' facilities at Nova, including the accommodation camp, the mine and processing plant, all lie outside the likely potential flow paths of released tailings hence minimising the risk to our people in the unlikely event of a failure of the Nova TSF.



Notwithstanding this, IGO has established and tested its Emergency and Crisis Management planning to ensure that IGO is well positioned to mitigate potential impacts on our people and the environment in the unlikely event of a dam failure.

AGA completes comparable studies and has implemented similar Emergency and Crisis Management planning for Tropicana.

No dam breach assessments were completed for the Long in 2019 as: (i) they have been inactive for many years, (ii) are low and dry paddock style structures, and (iii) contain only a relatively small volumes of tailings (375,000m³).

In the CoE correspondence, it is stated that:

“We strongly recommend that your disclosure is accompanied by plans to communicate directly with communities that may be affected by your tailings footprint”.

The Long TSFs have no potential to impact on the nearby community of Kambalda given their small size, the flat topography of the landscape, and the absence of water course that could convey the tailings off-site towards the town. The Nova TSF and Tropicana TSF have no potential to impact on any communities, simply because of the enormous distance between these TSFs and the nearest communities, and the absence of any permanent water courses. Notwithstanding this, in the event of a TSF failure, IGO would make the required disclosures to the relevant government agencies and community.

The remainder of the information requested by CoE is provided in Table 2.

Peter Bradford

Managing Director & CEO
Independence Group NL

List of abbreviations used

AGA	AngloGold Ashanti Limited
ANCOLD	Australian National Committee on Large Dams
CoE	Church of England Pensions Board
IGO	Independence Group NL
JV	Joint Venture
Kambalda TSF	Kambalda Nickel Concentrator TSF
KCB	Klohn Crippen Berger
MCP	Mine Closure Plan
Mincor	Mincor Resources NL
MWMP	Mineral Waste Management Plan (also known as a Tailings Management Plan)
NOJV	Non-Operated Joint Venture
Nova	Nova nickel-copper-cobalt mine
SK TSF	Long South Kambalda TSF
SRK	SRK Consulting
Tropicana	Tropicana gold mine
TSF	Tailing storage facilities

Table 2 IGO 2019 TSF Data

	Facility				
	Notes	Long OK TSF	Long South Kambalda TSF	Nova TSF	Tropicana TSF
1. "Tailings Dam" Name/identifier	Note 1	Long OK TSF	Long South Kambalda TSF	Nova TSF	Tropicana TSF
2. Location	Note 2	Latitude: -31.186989° Longitude: 121.685968°	Latitude: -31.183229° Longitude: 121.682546°	Latitude: -31.826496° Longitude: 123.176961°	Latitude: -29.232408° Longitude: 124.55277°
3. Ownership (March 2019)	Note 3	Owned and Operated (IGO - 100%)	Owned and Operated (IGO - 100%)	Owned and Operated (IGO - 100%)	Owned (AGA 70% & IGO 30%) and Operated (AGA 100%)
4. Status	Note 4	Closed	Decommissioned (Partially Rehabilitated)	Active	Active
5. Date of initial operation	Note 5	Approx. late-1960s	Approx. late-1960s	2016	2013
6. Is the Dam currently operated or closed as per currently approved design?	Note 6	Yes	No. Additional works are required to complete rehabilitation of the TSF in accordance with closure plan. These works are being progressively completed by IGO	Yes	Yes
7. Raising method	Note 7	Downstream	Downstream	Other – constructed to maximum design height and fully lined prior to tailings deposition	Downstream
8. Current Maximum Height	Note 8	<3m	<5m	13.5m	23.6m
9. Current Tailings Storage Impoundment Volume	Note 9	Approx. (75,000) m ³	Approx. (300,000) m ³	Approx. 1,150,000 m ³	Approx. 28,500,000 m ³
10. Planned Tailings Storage Impoundment Volume in 5 years' time.	Note 10	No change	No change	Approx. 3,380,000 m ³ [+2,230,000 m ³]	89,300,000 m ³
11. Most recent Independent Expert Review	Note 11	Audit-type review completed in 2016 by Klohn Crippen Berger	Audit-type review completed in 2016 by Klohn Crippen Berger	Audit-type review completed in 2016 by Klohn Crippen Berger	Dec-18

	Facility				
	Notes	Long OK TSF	Long South Kambalda TSF	Nova TSF	Tropicana TSF
12. Do you have full and complete relevant engineering records including design, construction, operation, maintenance and/or closure.	Note 12	No. Facility was operated from late-1960s thru early-1970s and IGO holds no records on design, construction or operation of the facility.	No. Facility was operated from late-1960s thru early-1970s and IGO holds no records on design, construction or operation of the facility.	Yes.	Yes.
13. What is your hazard categorisation of this facility, based on consequence of failure?	Note 13	Unknown - likely to be Category 3 under DMP (2013). Facility was decommissioned prior to formal categorisation requirements in design and operation.	Unknown - likely to be Category 3 under DMP (2013). Facility was decommissioned prior to formal categorisation requirements in design and operation.	Category 2 - DMP, 2015 High C - ANCOLD, 2012	High C - ANCOLD, 2012
14. What guideline do you follow for the classification system?	Note 14	No formal classification of the dam has been made due to vintage of facility. Classification under DMP, 2013 would apply.	No formal classification of the dam has been made due to vintage of facility. Classification under DMP, 2013 would apply.	Facility is classified under both the DMP, 2013 and ANCOLD, 2012 guidelines and standards.	ANCOLD, 2012 guidelines and standards.
15. Has this facility, at any point in its history, failed to be confirmed or certified as stable, or experienced notable stability concerns, as identified by an independent engineer (even if later certified as stable by the same or a different firm).	Note 15	No.	Yes. Dam breach occurred in 1995 as a result of Cyclone Bobby resulting in limited release of tailings. See attached response for further information.	No.	No.
16. Do you have internal/in house engineering specialist oversight of this facility? Or do you have external engineering support for this purpose?	Note 16	Yes. Internal oversight provided by Environmental Department due to non-operational status. External support for closure design provided by KCB.	Yes. Internal oversight provided by Environmental Department due to non-operational status. External support for closure design provided by KCB.	Yes. Internal oversight provided by Processing Manager. External support for design and operations provided by SRK.	Yes. Both.

	Facility				
	Notes	Long OK TSF	Long South Kambalda TSF	Nova TSF	Tropicana TSF
17. Has a formal analysis of the downstream impact on communities, ecosystems and critical infrastructure in the event of catastrophic failure been undertaken and to reflect final conditions? If so, when did this assessment take place?	Note 17	No. Facility decommissioned prior to development of state-of-practice that includes failure impact assessments. Potential for flow runout is very low as stored tailings are dry and water cannot pond after extreme rainfall events	No. Facility decommissioned prior to development of state-of-practice that includes failure impact assessments. Potential for flow runout is very low as stored tailings are dry and water cannot pond after extreme rainfall events	Yes. Most recent assessment in 2019 by SRK.	Yes. Most recent assessment in 2016
18. Is there a) a closure plan in place for this dam, and b) does it include long term monitoring?	Note 18	Yes & Yes	Yes & Yes	Yes & Yes	Yes & Yes
19. Have you, or do you plan to assess your tailings facilities against the impact of more regular extreme weather events as a result of climate change, e.g. over the next two years?	Note 19	Yes. Facility does not retain water after extreme rainfall events and is insensitive to increases in rainfall.	Yes. Facility does not retain water after extreme rainfall events and is insensitive to increases in rainfall.	Yes. Facility has no external catchment and operational freeboard to store a rainfall event up to 220% of the design storm (1:100-year, 72-hour).	Yes
20. Any other relevant information and supporting documentation. Please state if you have omitted any other exposure to tailings facilities through any joint ventures you may have.	Note 20	The OK TSF is a legacy facility inherited by IGO as part of tenement acquisition for the Long operation in 2002. The OK TSF was operated in the late- 1960s through to the early- 1970s and has been rehabilitated by IGO. Due to the vintage and historic ownership of the facility, IGO holds no records for its design, construction or operation. The facility is small (<3m high dam) with dry tailings and the rehabilitated profile does not allow for ponding of water under extreme rainfall events. There are	The SK TSF is a legacy facility inherited by IGO as part of tenement acquisition for the Long operation in 2002. The SK TSF was operated in the late- 1960s thru early-1970s and has been rehabilitated by IGO. Due to the vintage and historic ownership of the facility, IGO holds no records for its design, construction or operation. The facility is small (<5m high dam) with dry tailings and the rehabilitated profile does not allow for ponding of water under extreme rainfall events. There are no populations at risk	See attached response for further information.	No additional comment.

	Facility				
	Notes	Long OK TSF	Long South Kambalda TSF	Nova TSF	Tropicana TSF
		no populations at risk downstream and the facility is considered to present a very low hazard.	downstream and the facility is considered to present a very low hazard.		

Instructions to support completion and associated notes

Note 1 TSF Name

Requested Information: Please identify every tailings storage facility and identify if there are multiple dams (saddle or secondary dams) within that facility.

IGO notes: The register includes all above ground Tailings Storage Facilities (TSFs) that are, or have been, used to store slurry tailings. In-pit TSFs and stockpiles of dry tailings, e.g., for use as paste backfill production, have not been included due to negligible risk of failure runoff.

Note 2 Location

Requested Information: Coordinates in decimal degrees taken from Google Earth.

Note 3 Ownership

Requested Information: Please specify: Owned and Operated, Subsidiary, JV, NOJV, as of March 2019.

IGO notes: IGO's stake in ownership of each asset whether through subsidiary, joint venture or partnership is listed as a percentage.

Note 4 Status

Requested Information: Status of each TSF has been assigned as one of the following:

- Active: Tailings has been deposited within the last 12-months
- Inactive: Tailings has not been deposited within last 12-months and infrastructure remains in place for tailings deposition to recommence.
- Decommissioned / Care and Maintenance: No more tailings will be deposited in the facility. Some rehabilitation works may have been undertaken but are incomplete.
- Closed: Facility has been rehabilitated in accordance with the closure plan and no further works of significance are likely to be required.

IGO notes: We define closed as: a closure plan was developed and approved by the relevant local government agency, and key stakeholders were involved in its development; a closed facility means the noted approved closure plan was fully implemented or the closure plan is in the process of being implemented. A facility that is inactive or under care and maintenance is not considered closed until such time a closure plan has been implemented.

Note 5 Date of Initial Operation

Requested Information: The Month/Year when tailings was first deposited into the completed facility reported. For legacy facilities (>25 years since operation ceased), the approximate period for first deposition is reported.

Note 6 Is the Dam currently operated or closed as per currently approved design?

Requested Information: Yes/No. If 'No', more information can be provided in the answer to Q20

IGO notes: Where an operational or closure design exists, and the facility is generally in agreement with the design, the question has been answered in the affirmative.

Note 7 Raising Method

Requested Information: Requested Information: Raising method(s) are reported as one of the following categories:

- Downstream – includes filtered tailings dry-stack facilities;
- Centreline;
- Upstream; or,
- Hybrid – includes combinations of different methods.

IGO notes: The Nova TSF1 has been built to maximum height during initial construction and is fully lined.

Note 8 Current Maximum Height

Requested Information: The current height of the largest dam is reported in meters as at March 2019.

Note 9 Current tailings storage impoundment volume

Requested Information: Volume (m³).

IGO notes: For facilities with records of deposition, stored volume is based on measured data to end of April, 2019 or on most recent assessment of the facility (e.g., annual audit) with a pro-rata estimate to end of April, 2019. For facilities without records of deposition, stored volume is based on an estimate of depth of tailings over surface area of facility. These estimates are reported in brackets, e.g., (#####).

Note 10 Planned tailings storage impoundment volume in 5 years

Requested Information: Volume (m³) as planned for January 2024.

IGO notes: For active facilities, an estimate of stored volume is based on tailings management plans. All other facilities are assumed to have no change in stored volume.

Note 11 Most recent Independent Expert Review

Requested Information: Date of most recent Independent Expert Review.

IGO notes: For this question we take 'Independent' to mean a suitably qualified individual or team, external to the Operation, that does not direct the design or construction work for that facility. Where completed, the date of the review and name of the reviewer is listed. The type of review is also listed based on the following types:

- **Comprehensive-type:** Detailed review of all functional aspects of the facility design, construction, and operation. May also include additional data collection and analyses as required.
- **Audit-type:** Review of available records and performance data against design and operational criteria. May also include physical inspection of the facility.

Note 12 Do you have full and complete relevant engineering records including design, construction, operation, maintenance, and/or closure?

Requested Information: Yes or No answer.

IGO Notes: We take the word "relevant" here to mean that you have all necessary documents to make an informed and substantiated decision on the safety of the dam, be it an old facility, or an acquisition, or legacy site. Where complete records are available, the question has been answered in the affirmative.

For legacy facilities (>25 years since operation ceased), records are expected to be limited and judgement on the risk profile of the facility has been used to answer the question. Further discussion on the risk profile of legacy facilities is included in Section 4 of this disclosure.

Note 13 What is your hazard categorisation of this facility, based on the consequence of failure?

IGO notes: Hazard categorisation is applied based on the applicable guidelines and standards for each dam. The applicable guidelines and standards are discussed under (Q14) and the relevant hazard categorisation for each dam is listed in the register.

Note 14 What guideline do you follow for the classification system?

IGO notes: All of the IGO-operated assets with tailings dams are located in Western Australia, Australia. Applicable guidelines and standards within this jurisdiction include the following:

- Department of Mines and Petroleum¹, 2013, Tailings storage facilities in Western Australia – code of practice: Resources Safety and Environment Divisions, Department of Mines and Petroleum, Western Australia. 2013
- Australian National Committee on Large Dams (ANCOLD), 2012. Guidelines on Tailings Dams: Planning, Design, Construction, Operation and Closure. May 2012.

The guidelines and standards knowingly applied to each dam are listed.

Note 15 Has this facility, at any point in its history, failed to be confirmed or certified as stable, or experienced notable stability concerns, as identified by an independent engineer (even if later certified as stable by the same or a different firm).

Requested information: Yes or No answer. If yes, have appropriately designed and reviewed mitigation actions been implemented?

IGO Notes: Where there has been a known incidence of stability concerns, the question is answered in the affirmative and the date and cause of the concern is noted. Where an affirmative response has been given, the status for rectification of the concern is included.

Note 16 Do you have internal/in house engineering specialist oversight of this facility? Or do you have external engineering support for this purpose?

Requested Information: Yes, No or "Both".

IGO notes: Each of IGO's active tailings facilities has an internal designated responsible person. This person is typically not dedicated solely to management of the tailings facility but completes this as part of a wider set of duties and responsibilities. Where a facility has a designated person responsible for oversight of this facility within IGO, the question is answered in the affirmative and the qualifications and experience of the designated person are listed.

Where a facility has recently had involvement from an external consultant to provide specialist advice, the question is answered in the affirmative and the name of the company providing these services is noted.

Note 17 Has a formal analysis of the downstream impact on communities, ecosystems and critical infrastructure in the event of catastrophic failure been undertaken and to reflect final conditions? If so, when did this assessment take place?

Requested Information: Please answer 'yes' or 'no', and if 'yes', provide a date.

IGO notes: Where a dam breach assessment has been completed, the question is answered in the affirmative and date of the most recent assessment noted.

¹ Department of Mines and Petroleum now known as the Department of Mines, Industry Regulation and Safety (DMIRS)



Note 18 Is there a) a closure plan in place for this dam, and b) does it include long term monitoring?

Requested Information: Please answer both parts of this question (e.g. Yes and Yes).

IGO notes: IGO is required to submit and update a Mine Closure Plan (MCP) for each asset that includes domain specific closure plans including for each TSF facility. The MCP is required to include increasing levels of design detail as an asset moves closer to closure. All MCPs include provision for long-term monitoring during the post-closure phase. Where an MCP exists, the question is answered in the affirmative.

Note 19 Have you, or do you plan to assess your tailings facilities against the impact of more regular extreme weather events as a result of climate change, e.g. over the next two years?

Requested Information: Yes or no answer.

IGO notes: Where explicit consideration of climate change impacts has been made in design, operation, or closure of a facility, the question is answered in the affirmative. Where there has been no explicit consideration, but the facility includes adequate contingency in terms of flood storage, the question is also answered in the affirmative with appropriate commentary.

Note 20 Any other relevant information and supporting documentation.

Requested Information: Supplementary information as appropriate. IGO notes: Provided in the cover letter and in the table.



Appendix A Disclosure request from Church of England Pensions Board

26th April 2019

Mr Peter Bradford
Chief Executive & Managing Director
Independence Group NL
Suite 4, Level 5 South Shore Centre
85 South perth Esplanade
South Perth WA 6151
Australia

Dear Mr Bradford,

Re: Urgent request for information concerning tailings dam management

We write as 96 investors in the mining sector, who together represent over \$10.3 trillion in assets under management. This urgent engagement is being led by the Church of England Pensions Board and Swedish Council on Ethics for the AP Funds and backed by the UN-supported Principles for Responsible Investment (PRI).

The tragic loss of life from the Brumadinho and Samarco catastrophic tailings dam failures highlighted the devastating consequences when something goes wrong.

As responsible investors, we are committed to working with the mining sector to ensure that verifiable best practice standards are developed, implemented and maintained. To enable proper engagement on tailings dam management we need to assess the risks and the current state of tailings dam facilities that individual mining companies are associated with and/or have responsibility for, whether under construction, operation or retired/decommissioned.

Disclosure Request:

As institutional investors in the mining industry and in the absence of common public reporting standards on tailings storage facilities we respectfully request that you provide specific disclosures of all the tailings facilities of your company, as set out below. We ask that you provide this information, in accordance with the disclosure request included below (Annex 2), in table format. This disclosure should also include:

- All tailings facilities where the company has any interest, through subsidiaries, partnerships, joint ventures both incorporated and unincorporated and any other enterprises of whatever legal form.
- All joint venture partners reporting on jointly owned facilities, even if you are not the operating partner (“NOJV’s”), should use the same facility name/identifier in the disclosure statement.

Given the urgency and magnitude of this issue, we request that the public disclosure of this information, certified by either the Chairperson of the Board of Directors and/or the Chief Executive Officer*, be placed on your company website within 45 days of the date of this letter. We are in the process of

developing a public investor register of those companies that make the disclosures requested.

Once your disclosure is complete please can you confirm this by emailing emily.richards@churchofengland.org, providing the details of a contact person for future correspondence.

This disclosure is urgent and essential for investors to be able to understand how your company manages tailings facilities and any associated risks. If you are unable to answer a question, or do not have the requested information, please explain why this is the case and what action the company is taking to address this.

We strongly recommend that your disclosure is accompanied by plans to communicate directly with communities that may be affected by your tailings footprint.

This request follows a public call by a group of investors with \$6 trillion in AUM for an independent tailings classification and monitoring system pursuant to a high-level investor roundtable on mining and tailings safety held in London on 4th March 2019. The roundtable considered a series of presentations from some of the world's leading tailings experts that left investors deeply concerned.

We acknowledge and are fully aware that good practice in tailings management exists, but it is of critical importance that this can be transparently verified for all mining companies.

We look forward to receiving your response and to working with the industry to support best practice in governance and tailings management. If you have any questions, please contact Emily Richards at: emily.richards@churchofengland.org. We have also set up a webpage at: <https://www.churchofengland.org/investor-mining-tailings-safety-initiative> that will serve as repository for further information on the initiative and this disclosure request.

The list of investors supporting this request are detailed below (Annex I).

Yours sincerely,



Adam C.T. Matthews
Co-Lead
Investor Mining & Tailings Safety Initiative
Director of Ethics & Engagement
Church of England Pensions Board



John Howchin
Co-Lead
Investor Mining & Tailings Safety Initiative
Secretary General
Swedish Council on Ethics
for the AP Public Pension Funds

* attesting that the information presented is true to the best of your knowledge, based on your governance, technical and review systems.

Annex I: Investor Signatories

Aberdeen Standard Investments

Achmea Investment Management

Adrian Dominican Sisters, Portfolio Advisory Board

Aegon Asset Management

Airways Pension Scheme and New Airways Pension Scheme

Allianz Global Investors GmBH

Alphinity Investment Management

Andra AP-fonden (AP2)

APG Asset Management

AustralianSuper

Aviva Investors

Baillie Gifford

BlueBay Asset Management LLP

BMO Global Asset Management

BNP Paribas

Border to Coast Pensions Partnership

British Airways Pension Investment Management Limited

British Columbia Investment Management Corporation (BCI)

Brunel Pension Partnership

CalSTRS

CCLA

Central Finance Board of the Methodist Church

Church Commissioners for England

Church of England Pensions Board

Conference for Corporate Responsibility Indiana and Michigan

Congregation of St Joseph

CoreCommodity Management, LLC

Daughters of Charity, Province of St Louise

DNB Asset Management

Domini Impact Investments

EdenTree Investment Management

EFG Asset Management

Environment Agency Pension Fund

ESG Portfolio Management GmbH

Ethos Foundation Switzerland

Epworth Investment Management

FIM/S-Bank Wealth Management

Fjärde AP-fonden (AP4)

Första AP-fonden (AP1)

Friends Fiduciary Corporation

GAM

Gemway Assets

Government Superannuation Fund Authority

Greater Manchester Pension Fund

GW&K Investment Management

Hermes

Invesco Asset Management

Investec Asset Management

Annex I: Investor Signatories

Janus Henderson
Jesuit Committee on Investment Responsibility
Karner Blue Capital, LLC
KBI Global Investors
Länsförsäkringar AB
LAPFF
LGIM
Local Pensions Partnership
Lothian Pension Fund
M & G
Mercy Investment Services
Merseyside Pension Fund
MFS Investment Management
Moneda Asset Management
MP Pension
National Employment Savings Trust (NEST)
Newton Investment Management
New Zealand Superannuation Fund
Northern LGPS
Öhman Fonder
OIP Trust
Pax World Funds
Pensions Caixa 30
PGGM
Rathbone Brothers Plc
Richmond Global Compass
Robeco
Royal London Asset Management (RLAM)
RRSE (Le Regroupement pour la responsabilité sociale des entreprises)
Ruffer LLP
Sarasin & Partners
Schroders
SHARE (Shareholder Association for Research & Education)
Sisters of St. Francis of Philadelphia
Sjunde AP-fonden (AP7)
Skandia
Solaris Investment Management
Storebrand Asset Management
Strathclyde Pension Fund
Sustainable Value Investors
SYZ Asset Management
Tredje AP-Fonden (AP3)
Trillium Asset Management
Tyne and Wear Pension Fund
Universities Superannuation Scheme (USS)
Vancity Investment Management Ltd.
Water Asset Management LLC
Zevin Asset Management

Annex 2: Disclosure requirements

Overview question:

Please:

- a) Provide an overview of your tailings management system, and how you manage risk
- b) Confirm whether your approach to tailings management has changed or will change in light of the recent tailings disasters at Brumadinho, Mariana, Mt Polley and others. Have you, for example, reviewed all tailings storage facilities with upstream dam construction, and taken steps necessary to protect local communities and the environment e.g. buttressing, evacuation?

Question	Notes
1. "Tailings Facility" Name/identifier	Please identify every tailings storage facility and identify if there are multiple dams (saddle or secondary dams) within that facility. Please provide details of these within question 20.
2. Location	Please provide Long/Lat coordinates
3. Ownership	Please specify: Owned and Operated, Subsidiary, JV, NOJV, as of March 2019
4. Status	Please specify: Active, Inactive/Care and Maintenance, Closed etc. We take closed to mean: a closure plan was developed and approved by the relevant local government agency, and key stakeholders were involved in its development; a closed facility means the noted approved closure plan was fully implemented or the closure plan is in the process of being implemented. A facility that is inactive or under C&M is not considered closed until such time a closure plan has been implemented.
5. Date of initial operation	(date)
6. Is the Dam currently operated or closed as per currently approved design?	Yes/No. If 'No', more information can be provided in the answer to Q20
7. Raising method	Note: Upstream, Centerline, Modified Centreline, Downstream, Landform, Other.
8. Current Maximum Height	Note: Please disclose in metres
9. Current Tailings Storage Impoundment Volume	Note: (m ³ as of March 2019)
10. Planned Tailings Storage Impoundment Volume in 5 years time.	(m ³ as planned for January 2024)
11. Most recent Independent Expert Review	(date) For this question we take 'Independent' to mean a suitably qualified individual or team, external to the Operation, that does not direct the design or construction work for that facility.

Question	Notes
<p>12. Do you have full and complete relevant engineering records including design, construction, operation, maintenance, and/or closure?</p>	<p>(Yes or No) We take the word “relevant” here to mean that you have all necessary documents to make an informed and substantiated decision on the safety of the dam, be it an old facility, or an acquisition, or legacy site. More information can be provided in your answer to Q20</p>
<p>13. What is your hazard categorisation of this facility, based on the consequence of failure?</p>	
<p>14. What guideline do you follow for the classification system?</p>	
<p>15. Has this facility, at any point in its history, failed to be confirmed or certified as stable, or experienced notable stability concerns, as identified by an independent engineer (even if later certified as stable by the same or a different firm).</p>	<p>(Yes or No) We note that this will depend on factors including local legislation that are not necessarily tied to best practice. As such, and because remedial action may have been taken, a “Yes” answer may not indicate heightened risk.</p> <p>Stability concerns might include toe seepage, dam movement, overtopping, spillway failure, piping etc. If yes, have appropriately designed and reviewed mitigation actions been implemented?</p> <p>We also note that this question does not bear upon the appropriateness of the criteria, but rather the stewardship levels of the facility or the dam. Additional comments/information may be supplied in your answer to Q20.</p>
<p>16. Do you have internal/in house engineering specialist oversight of this facility? Or do you have external engineering support for this purpose?</p>	<p>Note: Answers may be "Both".</p>
<p>17. Has a formal analysis of the downstream impact on communities, ecosystems and critical infrastructure in the event of catastrophic failure been undertaken and to reflect final conditions? If so, when did this assessment take place?</p>	<p>Note: Please answer 'yes' or 'no', and if 'yes', provide a date.</p>
<p>18. Is there a) a closure plan in place for this dam, and b) does it include long term monitoring?</p>	<p>Please answer both parts of this question (e.g. Yes and Yes)</p>

Question	Notes
<p>19. Have you, or do you plan to assess your tailings facilities against the impact of more regular extreme weather events as a result of climate change, e.g. over the next two years?</p>	<p>(Yes or No)</p>
<p>20. Any other relevant information and supporting documentation.</p> <p>Please state if you have omitted any other exposure to tailings facilities through any joint ventures you may have.</p>	<p>Note: this may include links to annual report disclosures, further information in the public domain, guidelines or reports etc.</p>

NOTES:

- Please note that a website is currently under construction (<https://www.churchofengland.org/investor-mining-tailings-safety-initiative>) that will provide additional guidance e.g. frequently asked questions to aid the completion of this disclosure.