



NORNICKEL

PJSC Norilsk Nickel

**Special report on safety of tailings
storage facilities**

February 6, 2020

Dear Investors,

Nornickel, the world's largest producer of palladium and refined nickel, is a signatory to the United Nations Global Compact, which encourages businesses worldwide to embrace and adopt the key principles in the areas of human rights, labour, environment, and anti-corruption. Being fully committed to these principles, Nornickel implements large scale initiatives, involving modernization of production assets and installation of new equipment aiming at the reduction of environmental impact.

Most of the Company's waste is non-hazardous rock, overburden, tailings, and slag generated from its metals and mining operations. Our strategic approach to waste management has always been to extract value through reuse. Non-processable waste is stockpiled at special storage facilities to reduce environmental footprint. Ensuring safe and reliable operation of our tailings storage facilities is an integral part of our health and industrial safety policies. Nornickel closely monitors the conditions of these facilities, thoroughly assesses all risks and introduces improvements through new technology solutions.

We are committed to maintain high level of transparency and openness of our operations to our stakeholders. Nornickel publishes annual Sustainability Report with an overview of our tailing facilities, waste management approach, and progress on sustainable development. We believe that this Special Report, prepared at the request of the [Church of England Pensions Board](#), will provide our investors and stakeholders with more insight into our approach to ensuring safe and reliable operation of our tailings storage facilities.

Please see below a detailed response to the investors' inquiry on the Company's tailings management. The report has been certified by the Company's COO.

Sergey Dyachenko
First Vice President – Chief Operating Officer

1. Provide an overview of your tailings management system, and how you manage risks.

Tailing dams' integrity has been historically among industrial safety priorities for Nornickel. The Company conducts regular environmental monitoring at tailings facilities and within affected areas to track, assess and forecast changes in the environment as well as to prevent and mitigate potential adverse environmental impacts.

All of the Company's tailing dams have permits required by the Russian law as well as independent expert assessments legally required prior to the launch of construction of such facilities. In addition, Nornickel has designed specific safety criteria for each operating tailings facility, which have been approved by the government's supervisory agencies and which have to be met in order to operate such facilities. Primary oversight over tailing dams is carried out by the Environmental, Industrial and Nuclear Supervision Service of Russia (Rostekhnadzor). The agency conducts mandatory comprehensive audits of tailing dams every five years and certifies their Safety Declaration for Hydraulic Structures (HSs). This declaration is prepared by an independent expert certified by Rostekhnadzor following a detailed inspection of a HS.

The safety of all of the Company's HSs is monitored by internal and external operating and environmental controls. Independent expert review of tailings dam integrity and stability is conducted by specialized technical audit firms based on geotechnical surveys as part of the preparation of Safety Declarations for HS, supervision and design of monitoring systems, or conducting other activities, which aim to ensure safe operation of tailings facilities. On a permanent basis, Nornickel operates a comprehensive industrial safety monitoring system covering all of its hydraulic structures. The Company's operations personnel and environmental department carry out quarterly internal control inspections. Additional annual pre-flood season inspections of HSs are conducted jointly with Rostekhnadzor. Nornickel employees, who operate tailings facilities, receive annual trainings and undergo knowledge assessments by Rostekhnadzor.

Potential industrial accident impact assessment studies for all of the Company's HSs are prepared by third-party contractors. The impact assessment includes the potential impact on human lives and health as well as on individual and public property resulting from a disaster at the tailing facilities, involving hydrodynamic accident at the tailings dam, which also evaluates the potential parameters of the dam break wave, potential flooding area and the distribution area of the tailings stream.

2. 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?

The management believes that the current principles of tailings management are in line with the world's best practices and therefore is not contemplating any change to tailings management.

All tailings facilities of Nornickel are located far enough from production sites or local communities. According to potential damage estimates, prepared for the HS Safety Declarations, risks of adverse impact on communities, eco-systems and critical infrastructure in case of a disaster or a tailings dam failure are assessed as minimal. No environmental accidents have been recorded at the Company's hydraulic structures over the last five years, neither any orders have been received from the government supervisory agencies mandating to fix any potential accident issues.

In case of emergency, local communities are alerted in accordance with the relevant plans prepared by Civil Defence and Emergency Situations local offices. There is an Emergency Response Plan (ERP) prepared and certified annually with the local department of Rostekhnadzor. The ERP lists the officials, organizations, and institutions, which should be immediately notified of any emergency at a HS. The emergency itself, its scale and potential impact on population and the environment are communicated to local authorities and communities in accordance with the alert procedure designed in the ERP using local warning systems and individual notifications.

Nornickel has the necessary reserve of all material and financial resources required for a prompt fixture of possible HS damages and response to an emergency at its tailings dams, including a sufficient fleet of excavators, dump trucks and other vehicles (as outlined in the ERPs).

The Church of England Pensions Board's Questions	Response
1. Tailings facility name/identifier	1. Talnakh Concentrator's tailings facility, Polar Division of Norinickel (Russian Register of Hydraulic Structures ID 217040001112200) 2. Nadezhda Metallurgical Plant's tailings facility, Polar Division of Norinickel (Russian Register of Hydraulic Structures ID 217040000104900) 3. Lebyazhye tailings facility (Russian Register of Hydraulic Structures ID 217040000519000) 4. Tailings Facility No. 1 (Russian Register of Hydraulic Structures ID 217040000521700) 5. Zapolyarny Concentrator's tailings facility, Kola MMC (Russian Register of Hydraulic Structures 18-18(04)0113-00) 6. Bystrinsky GOK's tailings facility – application for entry to Russian Register of Hydraulic Structures is currently being prepared 7. Concentrator No. 2's tailings facility at Nickel settlement, Kola MMC – on care and maintenance, decommissioned in 1995 and removed from Russian Register of Hydraulic Structures
2. Location	1. 5 km away from the Talnakh Concentrator site 2. 12 km away from the Nadezhda Metallurgical Plant site 3. 8 km away from the Norilsk Concentrator site 4. 2.5 km away from the Norilsk Concentrator site 5. 2.5 km away from the Kola MMC site 6. 4.5 km away from the Bystrinsky Concentrator site 7. 1 km away from the smelting shop at Kola MMC
3. Ownership	1-5,7 Owned and operated by Norilsk Nickel 6. owned and operated by GRK Bystrinskoye ¹
4. Status	1. Active (Phase 1 is completed, Phase 2 is under construction until 2023) 2. Active (Phase 1 reconstruction is completed) 3. Active 4. Active 5. Active 6. Active 7. Decommissioned in 1995; under liquidation since 2001 scheduled for completion in 2030
5. Date of initial operation	1. December 2017 2. Phase 1 – from 1979 to 1981, Phase 2 – December 1989 3. Section 1 – December 1983, Section 2 – December 2005 4. October 1948 5. 1965 6. November 2019 7. Launched in 1969, decommissioned in 1995
6. Is the dam currently operated or closed as per currently approved design?	Dams 1–6 are operated as per currently approved design 7. On care and maintenance, liquidation on track to complete by 2030
7. Raising method	1. Upstream 2. Downstream 3. Upstream

¹ Norilsk Nickel Group owns 50.01% of Bystrinsky GOK (Chita Copper Project)

	4. Upstream
	5. Upstream
	6. Upstream
	7. Upstream
8. Current maximum height	1. upstream side – 32,5m, downstream side – 14m 2. 36m 3. section 1 – 46m, section 2 – 30m 4. 49m 5. north side 60m/south side 43m 6. 28m 7. 36m
9. Current tailings storage impoundment volume (mln m3)	1. 12.203 2. 31.784 3. 181.976 4. 144 5. 257.06 6. 8.7 7. -
10. Planned tailings storage impoundment volume in five years time (mln m3)	1. 28 2. 40 3. 200 4. 144 5. 284 6. 35.05 7. -
11. Most recent independent expert review	1. February 2019 (LLC GTS EXPERT) 2. April 2016 (LLC GTS EXPERT) 3. March 2018 (LLC SPETCPROMGIDROTEK) 4. March 2018 (LLC SPETCPROMGIDROTEK) 5. October 2019 (ROSTECHNADZOR) 6. August 2019 (ROSTECHNADZOR) 7. September 2018 (ROSPRIRODNADZOR)
12. Do you have full and complete relevant engineering records including design, construction, operation, maintenance and/or closure?	Yes – for all hydraulic structures
13. What is your hazard categorization of this facility, based on the consequence of failure? (Note: Hazard class of the facility ² /hazard class of waste ³)	1. Hazard Class 2/5 2. Hazard Class 2 dams/4 3. Hazard Class 2 dams/5 4. Hazard Class 2 dams/5 5. Hazard Class 1 dams/5 6. Hazard Class 2 dams/5 7. N/a, decommissioned
14. What guideline do you follow for the classification system?	Orders and resolutions by the Ministry of Natural Resources and Environment of the Russian Federation
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)?	No – for all hydraulic structures

² According to the Resolution of the Government of the Russian Federation On the Classification of Hydraulic Structures, Hazard Class 1 is defined as extremely high hazard and Hazard Class 4 as low

³ According to the Order of the Ministry of Natural Resources and Environment of the Russian Federation On the Approval of the Criteria for Classifying Wastes as Hazard Classes 1–5 by the Degree of Negative Impact on the Environment, Class 1 is defined as hazardous, Class 5 is defined as practically non-hazardous

16. Do you have internal/in-house engineering specialist oversight of this facility? Or do you have external engineering support for this purpose?	Yes, both (internal/in-house engineering specialists) – for all hydraulic structures
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?	Yes – for all hydraulic structures Safety Declarations are approved every five years for every tailings facility. 1. February 2019 2. April 2016 3. March 2018 4. March 2018 5. October 2019 6. August 2019 7. September 2018 (decommissioned)
18. Is there a) a closure plan in place for this dam, and b) does it include long-term monitoring?	a) Yes, Concentrator No. 2's tailings facility (Nickel settlement at Kola Peninsula) has been decommissioned in 1995 as per a closure plan due to the closure of the concentrator b) Yes, a long-term monitoring process is in place as per currently approved design
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?	The assessment of tailings facilities against the impact of more regular extreme weather events is expected to be completed by 2024.
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	The Company prepares annual reports on the technical condition of all hydraulic structures and files them with relevant state authorities (Rostekhnadzor)