A SUMMARY TECHNICAL REPORT ON THE MINERAL RESOURCES AND MINERAL RESERVES OF LKAB, SWEDEN - KIRUNA MINE

December 2023

Kiirunavaara Mine and Kiruna town

REPORT PREPARED UNDER THE PAN-EUROPEAN REPORTING STANDARD, 2021 (PERC)

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1 SUMMARY

This report describes LKAB's mining and processing operations at Kiirunavaara Mine located in Kiruna, northern Sweden. The Company plans to extract a Mineral Reserve of 725 Mt at 41.9% Fe, which are classified as Proven and Probable Mineral Reserves (reference point is the sorting plant). Extraction is planned over a period of 26 years to 2049. Ore will be processed into iron products at the Company's facilities on site and products then transported by rail for shipping to customers from ports at Narvik, Norway and Luleå, Sweden.

Mineral Resources of 816 Mt at 59.7% Fe classified as Measured, Indicated and Inferred Mineral Resources are declared in addition to the Mineral Reserves.

Mining is by the sub-level caving method and is scheduled at average annual production rate of around 28 Mt/y. The mine's main products are iron ore pellets and fines. LKAB recognise risks and uncertainties arise in their operating environment, and the potential impact these may have on future Mineral Resources and Reserves. This includes mining at depth and the potential impact of this on operations; in this regard LKAB conduct extensive technical studies and are implementing measures to mitigate impacts. LKAB also work with regulators and stakeholders to enable the necessary environmental and other permits to be granted so that mining can continue as planned.

An independent financial assessment of the Mineral Reserve has demonstrated the value of the Project, which has potential to be enhanced further particularly given the potential for the Mineral Resource and Mineral Reserve to be increased following ongoing exploration and assessment.

Mineral Resources and Mineral Reserves presented herein have been estimated in accordance with the PERC Reporting Standard (2021).

The observations, comments and conclusions presented in this report represent the opinion of the Competent Persons as of 31 December 2023 and are based on a review of the operations at Kiruna Mine, documentation provided by the Company and discussions with the Company.

2 GENERAL INTRODUCTION

LKAB is a state-owned Swedish mining company that was founded in 1890 and has been operating the Kiirunavaara and Malmberget mines since 1899. Today, the LKAB mines and processing plants are in Kiruna, Malmberget and Svappavaara, which produce some 28 million tonnes of refined iron ore products annually. The main products (iron ore pellets and fines) are transported by rail to ports in Luleå and Narvik and shipped to customers around the world.

LKAB is the largest iron ore producer in the EU with about 80% of annual production coming from the company. It currently employs more than 4500 people in 12 countries.

Kiruna Mine (KUJ) is the world's largest underground iron ore mine.

This summary technical report (STR) outlines the work undertaken by LKAB that has been prepared in accordance with the PERC Reporting Standard (PRS) to support LKAB's Mineral Resource and Mineral Reserve Statement for the Kiruna Mine for the year ended 31 December 2023.

In line with the PERC standard, and included in this STR, LKAB has discussed the Reasonable Prospects for Eventual Economic Extraction (RPEEE) assumptions as well as a summary of the environmental, social and governance (ESG) status and development requirements of the operation. A discussion of the key risks and uncertainties regarding the declaration of the Mineral Resources and Mineral Reserves is provided.

2.1 Company Approach

LKAB's strategy, which aims for zero carbon-dioxide emission from its processes and products by the year 2045, has a focus on "mining iron ore profitably and safely at greater depths", by incorporating the benefits of digitalisation, automation and electrification in its operations; building capacity to produce sponge iron, or DRI (Direct Reduced Iron), and assessing the potential for by-products from iron production including those derived from rare earth metal oxides and phosphorous.

LKAB's participation in the Hybrit project with SSAB and Vattenfall aims to develop technology to use hydrogen instead of coal for the processes of iron and steel making.

2.2 Context for Public Reporting

LKAB is wholly owned by the Swedish state. The Government Offices of Sweden administers companies through the special organisation for administration of state-owned companies that is part of the Ministry of Finance. To achieve active and professional company administration the owner has developed a corporate governance model that includes a number of tools and processes. In the state's ownership policy the government describes missions and objectives, applicable frameworks and important matters of principle related to corporate governance in state-owned companies.

In accordance with the government's requirements, LKAB aims to set an example and to be a leader in sustainable enterprise. In alignment with these aims, LKAB use the definitions and follows the principles and guidance defined in the PERC Reporting Standard for Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves.

The PERC Reporting Standard is aligned with the CRIRSCO International Reporting Template for the Public Reporting of Exploration Targets, Exploration Results, Mineral Resources and Mineral Reserves, November 2019 (the "CRIRSCO International Reporting Template 2019") developed by the Committee for Mineral Reserves International Reporting Standards (CRIRSCO). Participants in The Pan European Reserves and Resources Reporting Committee (PERC), which includes the Fennoscandian Association for Metals and Minerals Professionals (FAMMP), promote the use of the PERC Reporting Standard to promote consistency and best practice in minerals reporting in Europe.

The Competent Persons have satisfied themselves that at the time of reporting extraction of Mineral Reserves are reasonably justified as being technically achievable, environmentally and socially acceptable, economically viable, that all material modifying factors have been considered, and that Mineral Resources have a reasonable prospect of eventual economic extraction. As a state owned, non-listed company LKAB has chosen to not detail information it considers sensitive for commercial reasons such as long-term contract pricing for iron ore and other products, and for technical reasons such as the development of new processes that yield competitive advantage to LKAB's operations.

2.3 Competence

The STR is dependent upon inputs from LKAB and its external advisors. Notably, the technical information as provided to, and taken in good faith by, Mr Howard Baker of Baker Geological Services Ltd (BGS), who is the Competent Person for the Mineral Resources and Mr Tim McGurk of SRK Consulting (UK) Ltd (SRK), who is the Competent Person for the Mineral Reserves. Contributors to this STR are listed in Table 2-1.

Mr Howard Baker (FAusIMM(CP) #224239) of BGS is a geologist with 25 years' industry experience and is the Managing Director of BGS. Mr Baker has extensive experience in the evaluation of iron projects globally and is a recognised Competent or Qualified Person as defined by Internationally Recognised Reporting Codes for Mineral Resources and Mineral Reserves for iron ore projects. Mr Baker has relied upon input from LKAB technical staff, and an independent peer review of the Kiirunavaara MRE by Guy Dishaw (BSc, CPAG, PGeo), a mineral resource geologist at SRK.

Mr Tim McGurk (CEng #487211, FIMMM QMR #47795) of SRK is a mining engineer with 30 years' industry experience and is a Corporate Consultant at SRK. Mr McGurk has extensive experience in the evaluation of mining projects globally and is a recognised Competent or Qualified Person as defined by Internationally Recognised Reporting Codes for Mineral Reserves. Mr McGurk has relied upon input from LKAB technical staff, and independent peer review by colleagues at SRK of the Competent Person Report (CPR), which provides the basis for this summary report.

Table 2-1: Contributions and Responsible Persons for this Report

Description	Contributors	Responsible CP
Compilation of this report	Tim McGurk, Howard Baker	Tim McGurk
Mineral Resource Estimations	Howard Baker	Howard Baker
Mineral Reserve Estimate	Tim McGurk	Tim McGurk
LKAB technical staff	The report has been prepared by LKAB staff from exploration, geology, mine planning, processing, commercial and environmental teams expert in relevant subject matter areas at Kiruna Mine.	
External Reviewers (SRK)	Guy Dishaw; Fiona Cessford; Jamie Spiers; Mike di Giovinazzo; Renzo Misari; Inge Moors	

3 KIRUNA MINE

3.1 Location and Access

Kiruna is located in Norrbotten county in the north of Sweden. Kiruna City is the northernmost town in Sweden and has approximately 18,000 inhabitants. The area around Kiruna is sparsely populated. The northwest, west and southwest of Kiruna municipality are dominated by the Scandinavian mountains, visible from the city centre. The lower-lying east is dominated by boreal forest, stretching hundreds of kilometres into Finland. The city is built near the lake Luossajärvi with outflow to the Luossajoki that flows into the Torneälv river.

Kiruna is located 145 km north of the Arctic Circle. The city is accessed by the E10 road connecting Luleå with the coast of Norway, and with daily flights to Stockholm, Luleå and Umeå. Kiruna has a subarctic climate with short, cool summers and long, cold winters.

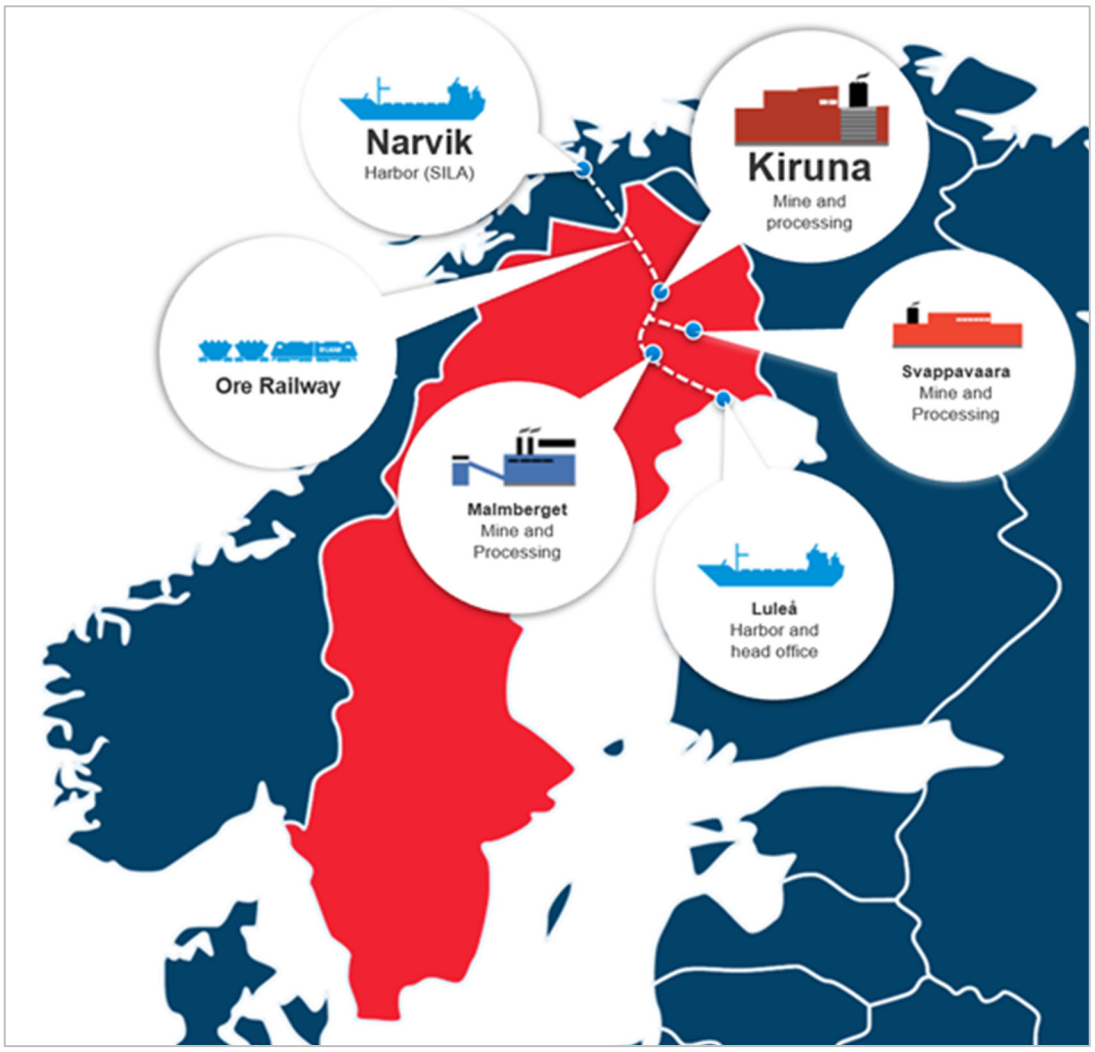


Figure 3-1: Location of LKAB Assets in Norrbotten County (Source: LKAB).

3.2 LKAB Tenure Listing

3.2.1 Exploration Permits

LKAB has nine exploration permits in the Kiirunavaara area (Table 3-1 and Figure 3-2).

Table 3-1: Exploration permits in the Kiirunavaara area.

Exploration permit	License id	Valid from	Valid until	Year	Extension
Kiirunavaara nr 5	2007:121	2007-04-13	2024-04-13	16	expires
Kiirunavaara nr 6	2009:142	2009-09-01	2026-09-01	14	expires
Kiirunavaara nr 7	2011:42	2011-02-17	2028-02-17	12	expires
Kiirunavaara nr 9	2014:60	2014-08-11	2026-08-11	9	3rd
Kiirunavaara nr 10	2014:83	2014-10-06	2026-10-06	9	3rd
Kiirunavaara nr 11	2019:65	2019-08-14	2024-08-14	4	1st
Kiirunavaara nr 12	2020:4	2020-01-29	2025-01-29	3	1st
Kiirunavaara nr 13	2019:87	2019-11-08	2024-11-08	4	1st
Kiirunavaara nr 15	2020:2	2020-01-16	2025-01-16	3	1st

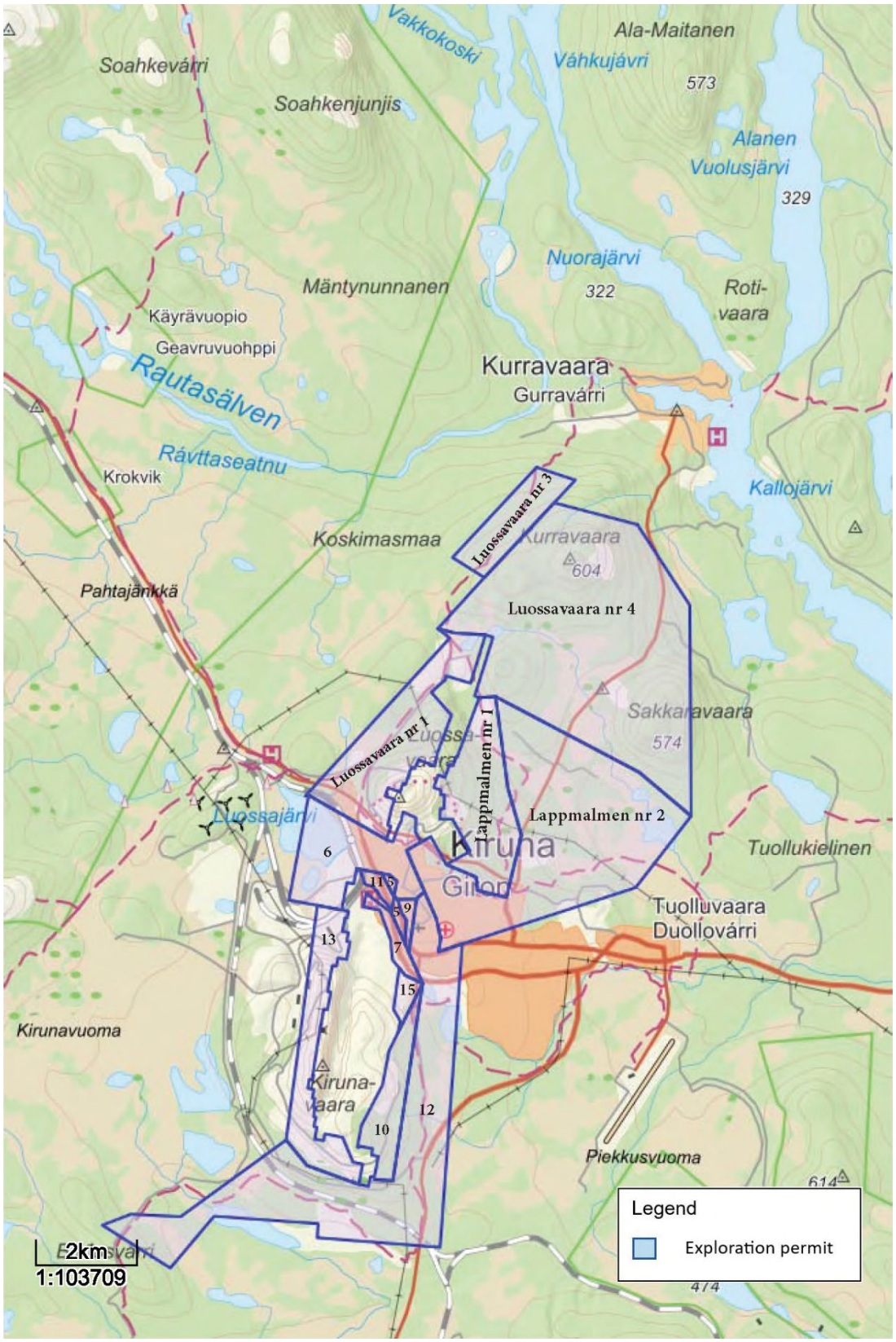


Figure 3-2: Plan view of the exploration permits in the Kiirunavaara area (Source: LKAB).

After exploration permits expire an application for a new exploration permit regarding land in the same area cannot be considered for at least one year without exemptions from the Chief Mining Inspector.

3.2.2 Exploitation Concessions

LKAB has five exploitation concessions in this area (Table 3-2 and Figure 3-3), and will apply for a new concession, proposed designation Kiirunavaara K nr 6, in 2024. The preliminary area for the application includes the exploration permit Kiirunavaara nr 11 and Kiirunavaara nr 5. When an application for an exploitation concession is made within the period of validity of an exploration permit, the permit is valid until a final decision is taken regarding the application.

LKAB has one land designation in favour of Kiirunavaara, one in favour of Luossavaara K nr 1, one in favour of Kiirunavaara K nr 1, K nr 3 and K nr 5 and one in favour of Kiirunavaara K nr 1-5. The land designations are valid provided one of the respective concessions is valid.

Table 3-2: Exploitation concession in the Kiirunavaara area.

Exploitation concession	Valid from	Valid until
Kiirunavaara K nr 1	2000-01-01	2025-01-01
Kiirunavaara K nr 2	2008-11-03	2033-11-03
Kiirunavaara K nr 3	2012-08-28	2037-08-28
Kiirunavaara K nr 4	2013-07-11	2038-07-11
Kiirunavaara K nr 5	2016-12-02	2041-12-02

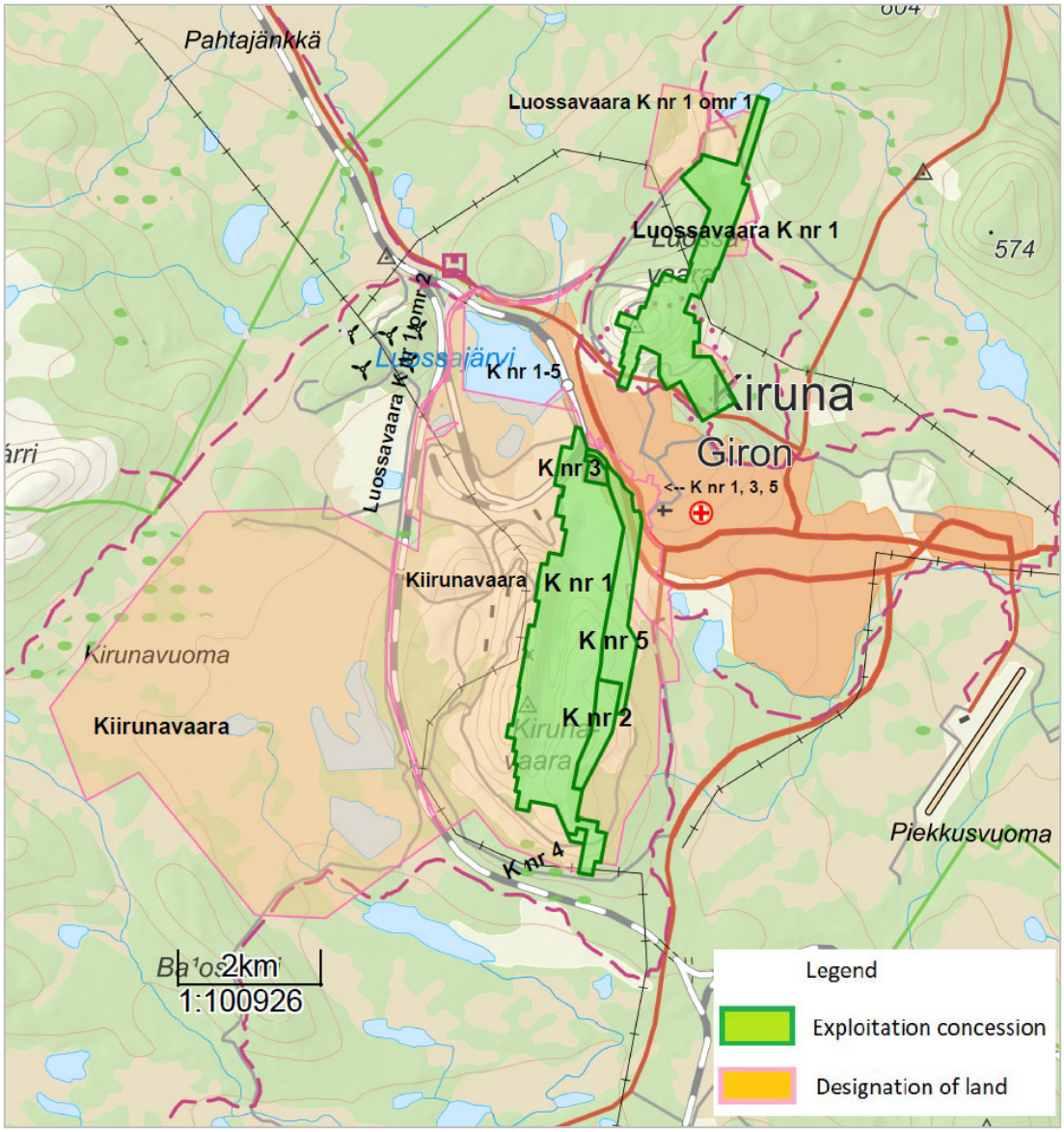


Figure 3-3: Plan view of the exploitation concessions in the Kiirunavaara area.

The exploitation concession Kiirunavaara K nr 1 will be extended without an application as mining is in progress and provided that operations are ongoing in 2024/25.

Figure 3-4 shows the land designations for exploration and exploitation by LKAB and areas of public interest in the Kiirunavaara area.

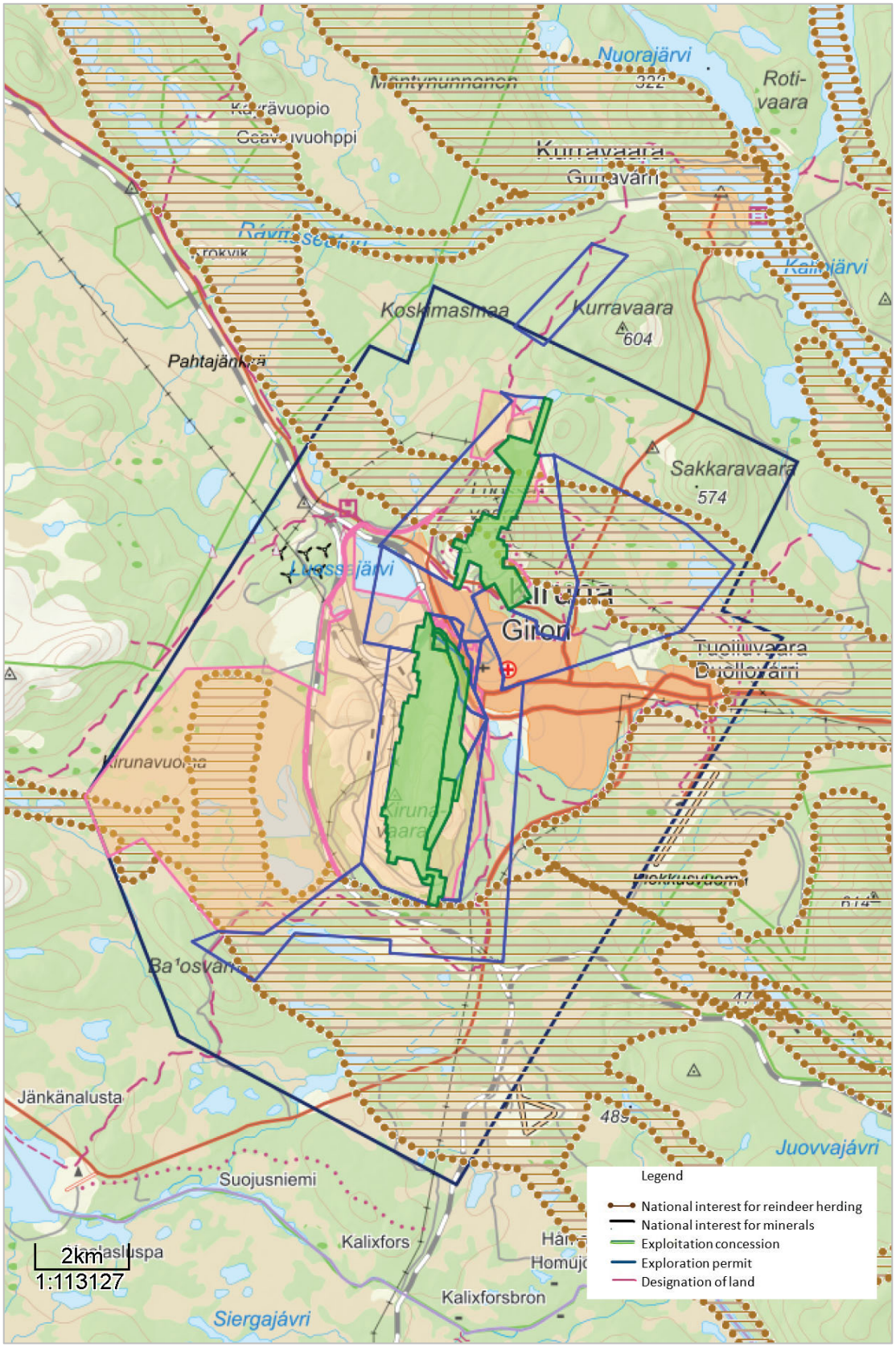


Figure 3-4: Land designations and areas of public interest in the Kiirunavaara area (Source: LKAB).

4 GEOLOGY

4.1 Regional Geological Setting

The bedrock in northern Norrbotten (Figure 4-1) comprises three main elements:

- Archean (2.7-2.8 Ga) basement, dominated by granites and gneisses discordantly overlain by Karelian and Svecofennian rocks.
- Paleoproterozoic (2.5-1.9 Ga) Karelian rift-related metavolcanics (volcanoclastic and chemical metasediments).
- Late Paleoproterozoic (1.9-1.8 Ga) Svecofennian supracrustal sediments, as well as a "Porphyrite Group" comprising andesites and basalts.

These units extend from northern Sweden into Finland and parts of northern Norway and are a result of deposition in volcanic settings related to tectonic subduction.

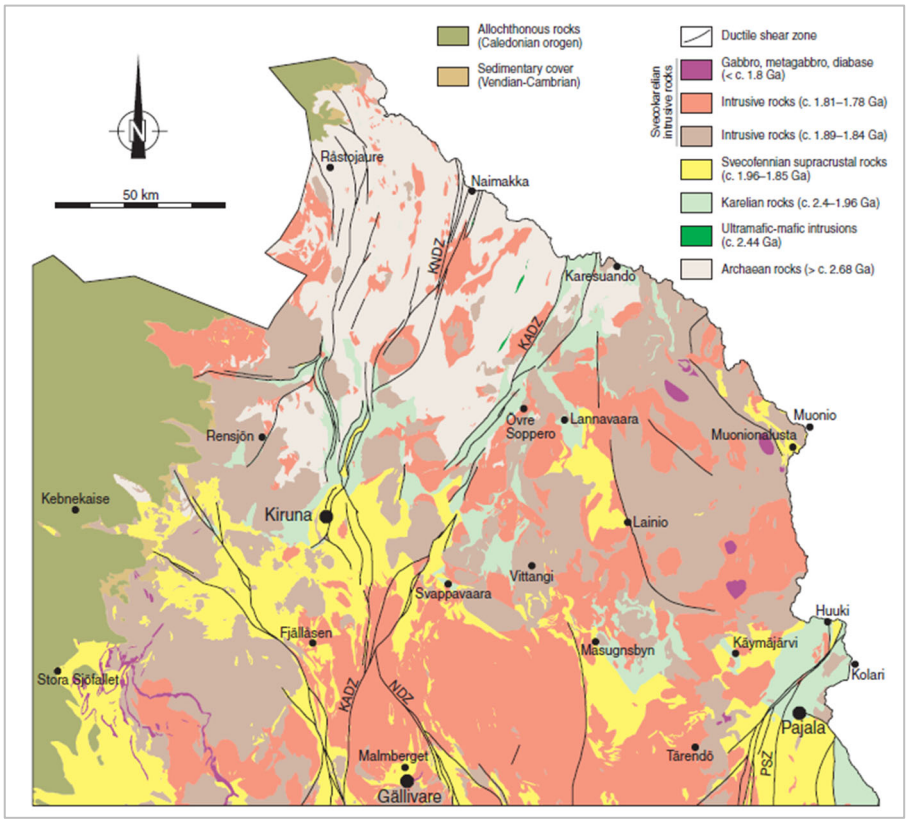


Figure 4-1: Bedrock Map of the Norrbotten Area (Bergman et al., 2001). KNDZ = Kiruna-Naimakka zone, KADZ = Karesuando-Arjeplog zone, NDZ = Nautanen zone, PSZ = Pajala shear zone.

The lithostratigraphy of the northern Norrbotten area is shown in Figure 4-2. In the Kiruna area, the oldest formations are the Karelian (2.3−2.0 Ga) greenstones of the Kiruna group (Martinsson 1997) that occur in the western part of the area. The Archean basement that forms the deposition surface of the Paleoproterozoic formations is not exposed in the Kiruna area. The Kiruna group greenstones are composed of ultramafic volcanic rocks, basalts, sulphide and graphite-bearing volcano-sedimentary rocks and carbonates. Younging directions are consistently towards the east.

The Svecofennian succession begins with the Kurravaara conglomerate that was deposited on top of the Kiruna greenstones. The conglomerate is in turn overlain by the predominantly volcanic/volcano-sedimentary Kiirunavaara group, which hosts the iron oxide-apatite ores in two different stratigraphic positions. The youngest meta-supracrustal unit in the Kiruna area is the Hauki quartzite that overlies the rocks of the Kiirunavaara group.

Intrusions of the Perthite-Monzonite suite (1.88−1.86 Ga) are found in the northwestern part of the area. In addition, in the footwall of the Kiirunavaara deposit, the volcanic trachyandesite of the Hopukka formation grades into a subvolcanic syenite intrusion towards the west (Geijer 1910). Regionally, the youngest intrusive suite is the ~1.80 Ga Lina granite, which is widespread in northern Norrbotten.

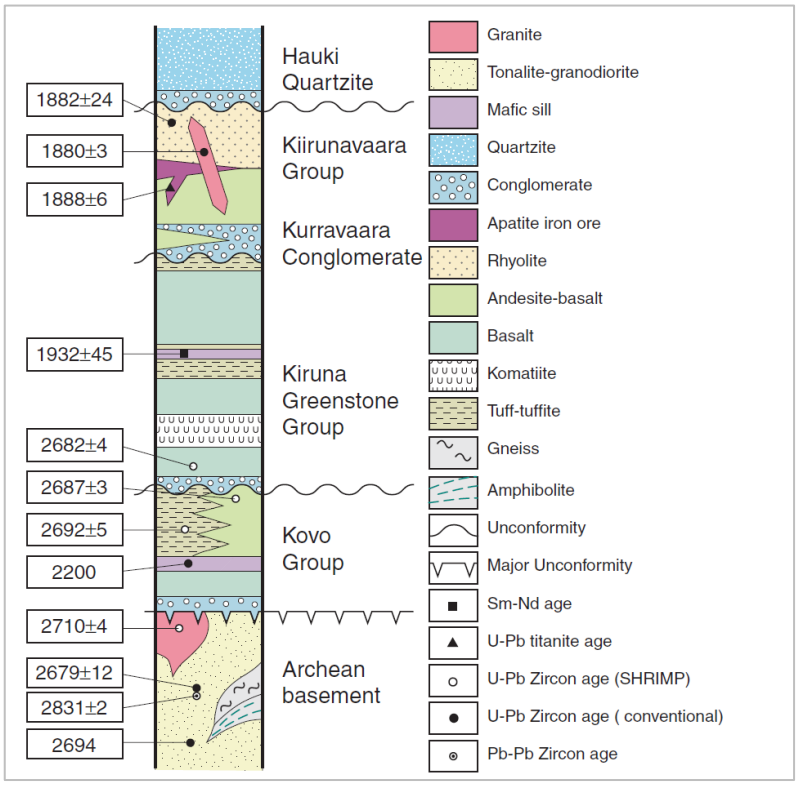


Figure 4-2: Lithostratigraphy of the Norrbotten Area. Modified from Martinsson (2004).

The most important mineral commodities in Norrbotten are iron and copper, which occur throughout the province. The iron oxide-apatite mineralisation varies in size from small metre-scale showings to world-class deposits like Kiirunavaara. In addition, the area hosts banded iron formations, mafic intrusion-hosted iron, and skarn iron ores. The Cu deposits comprise several different types and some of them contain gold (FODD 2019).

4.2 Structural Geology

4.2.1 Regional Structure

There are four major crustal-scale shear zones that affect the northern Norrbotten area. The most prominent is the NNE-SSW-oriented Karesuando-Arjeplog deformation zone that crosscuts the whole area at the eastern margin of the Archean block. The Nautanen deformation zone branches off it towards the southeast in the northern side of the Gällivare-Malmberget area. The Kiruna-Naimakka deformation zone is parallel to the Karesuando-Arjeplog deformation zone but located 50 km west from it. The Pajala shear zone is in the eastern part of Norrbotten. All zones show evidence of multiple reactivations from ductile to brittle conditions.

The Kiruna-Naimakka deformation zone is the main geological structure in the Kiruna area. It is a belt of ductile shear zones extending for at least 100 km in a NNE-SSW direction. The main zone is seen at the eastern margin of the Hauki quartzite, with greenstones of the Kiruna group and volcanic rocks of the Kiirunavaara group repeating on the eastern side of the steeply east-dipping deformation zone. The western margin of the Hauki quartzite is also considered as tectonic, and the quartzite is thought to have been deposited in a graben setting. Reactivations of the ductile shear zone are observed as brittle faults.

4.2.2 Local Structure

More locally, the deformation zones around the Kiirunavaara ore body are steeply-dipping and may be divided broadly into a NW-SE-oriented zone that dominates in the southern part, a NE-SW-oriented zone that dominates in the northern part, and also a NS-orientation that follows the regional structural trend.

4.3 Deposit Geology

The Kiruna iron oxide-apatite mineralisations are located within the volcanic and volcano sedimentary formations of the Kiirunavaara group (Figure 4-3, Table 4-1). Iron mineralisation is found in two stratigraphic positions, with the Kiirunavaara and Luossavaara iron ore bodies and the satellite Konsuln ore body located at the contact of the Hopukka and Luossavaara formations and the Per Geijer mineralisation (Rektorn, Haukivaara, Henry and Nukutus) being located higher in the stratigraphy, at the contact of the Luossavaara and Matojärvi formations and also within the latter.

Table 4-1: Stratigraphic Units of the Kiruna Area

Age (Ga)	Lithological Unit		Rock Types/ Mineralisations	Comments
<1.88 Ga	Savva Group	Hauki quartzite	Quartzite	
			Conglomerate	
1.89-1.87 Ga	Kiirunavaara group	Matojärvi formation	Mudstone	Per Geijer mineralisation
			Greywacke	
			Conglomerate	
			Rektorn porphyry/Basalt	
			Apatite mineralisation	
			Hematite mineralisation	
			Magnetite mineralisation	
		Luossavaara formation	Rhyodacite	Tuolluvaara mineralisation?
		Ore unit	Magnetite mineralisation	Kiirunavaara, Luossavaara and Konsuln ore bodies
		Hopukka formation	Trachyandesite	
>1.89 Ga		Kurravaara conglomerate	Conglomerate, arenite	

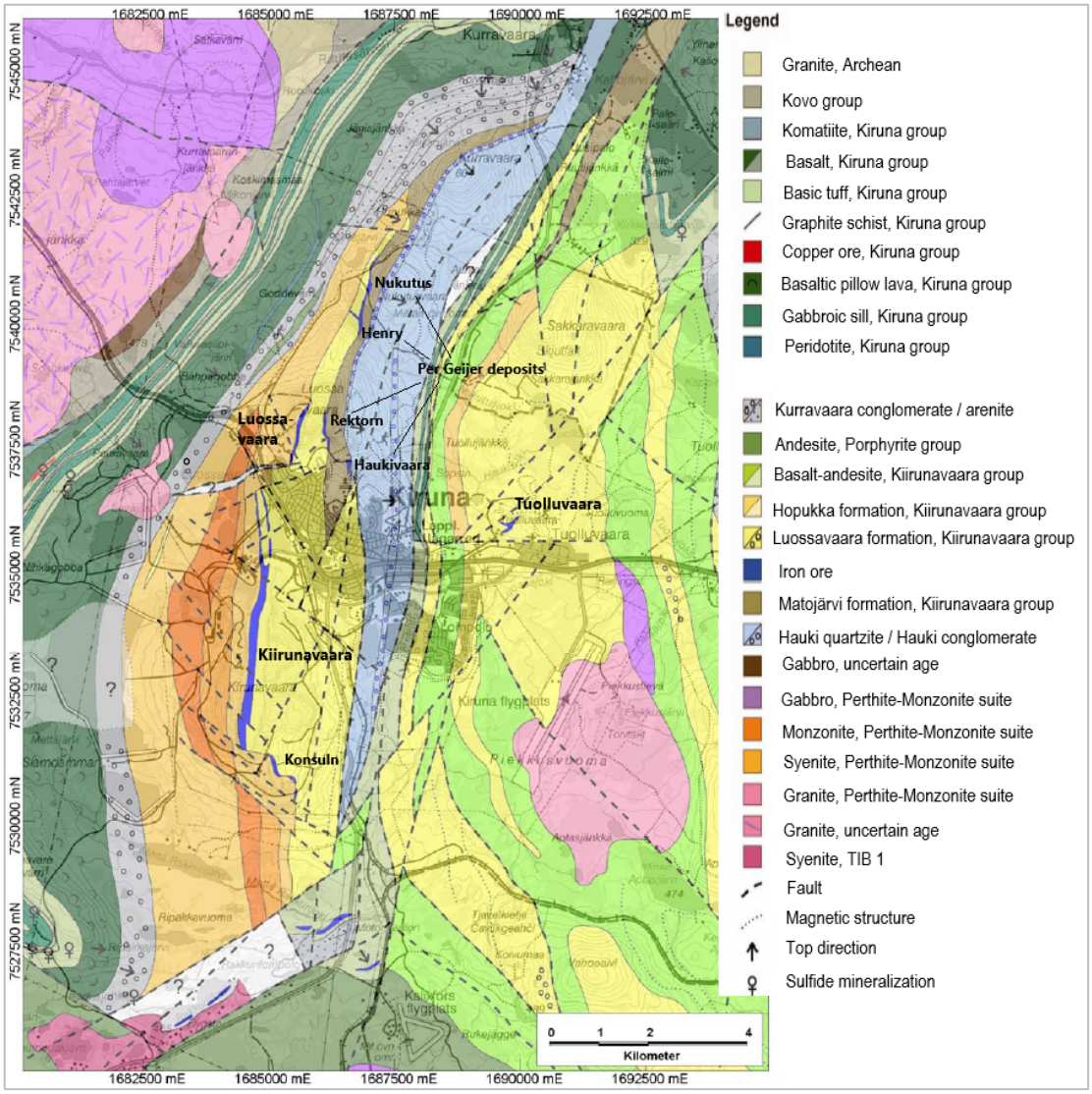


Figure 4-3: Bedrock Map of the Kiruna Area, modified from Martinsson and Erlandsson (2009).

The trachyandesitic Hopukka formation forms the footwall of the Kiirunavaara and Luossavaara iron ore deposits. It is composed of intermediate lavas that commonly show plagioclase phenocrysts in a fine-grained grey groundmass. Magnetite and apatite veins or schlieren are relatively common in the trachyandesite.

Porphyritic rhyodacite of the Luossavaara formation forms the hanging wall of the Kiirunavaara and Luossavaara ore deposits. The unit consists of red, grey, or brown pyroclastic tuffs, ignimbrites, and lavas that in places show flow banding texture. In the middle part of the formation, between the Luossavaara and Rektorn ore bodies, there is at least one zone of agglomerate, which exhibits magnetite nodules (e.g., Geijer 1968).

The magnetite orebodies are crosscut by felsic dykes that are compositionally similar to the rhyodacite. These dike porphyries are present both in the footwall and in the ore, but they have not been recognized in the hanging wall. The orebodies are also crosscut by at least two generations of mafic dykes.

4.4 Mineralisation

4.4.1 Kiirunavaara Mineralisation

The Kiirunavaara iron oxide-apatite orebody intruded the contact of the trachyandesite of the Hopukka formation (footwall) and the rhyodacite of the Luossavaara formation (hanging wall). The orebody is a thick plate that extends from the surface down to a depth of 1300−2400 m, based on current knowledge. Figure 4-4 shows the shape of the ore body at the surface, while Figure 4-5 shows the shape of the ore body at level 713 (Figure 4-5 A) and at level 1022 (Figure 4-5 B), with the level maps showing the ore types mapped during production. The orebody is between 90 and 120 metres thick and dips towards the east at 55−60 degrees. The plunge is towards the north. The original surface of the deposit has been removed by open pit mining.

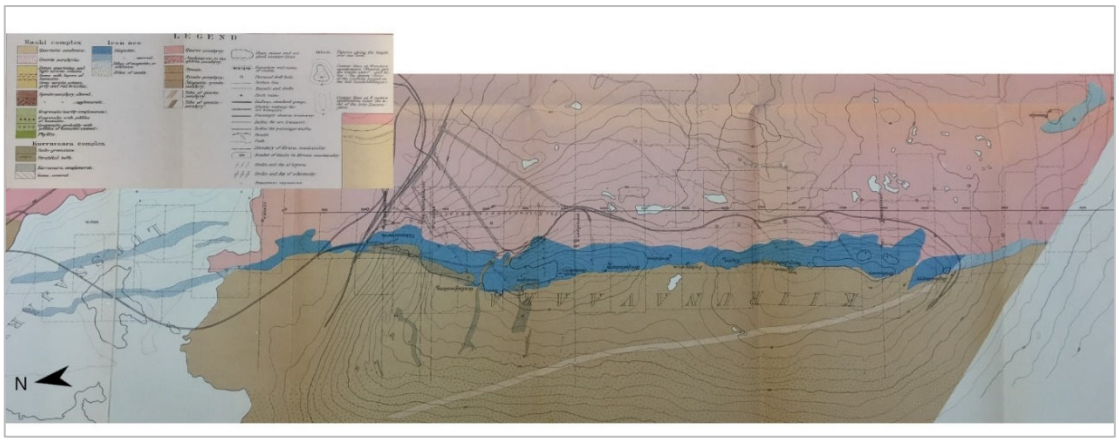


Figure 4-4: Surface Map of the Kiirunavaara Deposit, modified from Geijer (1910).

The Kiirunavaara ore consists of massive magnetite that is commonly very fine-grained to more coarse-grained. Hematite is much rarer. In the low-phosphorus magnetite types (referred to as ‘B-ores’) the apatite content is negligible whereas in the high-phosphorus types (referred to as ‘D-ores’) the apatite content may be up to several percent (Table 4-2 and Figure 4-5). Other commonly occurring minerals include calcite, actinolite, talc, quartz, titanite and anhydrite. Sulphides are rare, but both pyrite and chalcopyrite are present. The ore commonly exhibits a sharp, intrusive contact to the wall rocks. Magnetite veins and dikes are common both in the footwall and in the hanging wall adjacent to the main ore zone.

Table 4-2: Ore Types in the Kiirunavaara Deposit.

Ore Type	Fe%	P%	Description
B1	>66%	<0.1%	Black magnetite ore. Calcite is common as fracture fill and the ore may contain sulphides.
B2	>50%	<0.1%	The B2-ore is characterized by associated amphiboles and carbonates. B2 is divided into two types, a and b, according to the distribution of amphibole.
D1	>50%	0.1-0.8%	Disseminated apatite gives the D1 ore a paler colour than the B-ore types.
D3	>50%	0.8-2.2%	D3-type is lighter grey in colour than B1 and D1, commonly with a “flame”-like texture due to the distribution of apatite.
D5	>50%	>2.2%	Gray-white ore with heterogeneous appearance, abundant apatite, colour ranges from grey to pink and white.
Bbr	40-50%	<0.1%	Breccia ore, which contains B-ore fragments.
Dbr	40-50%	>0.1%	Breccia ore, which contains D-ore fragments.
Mbr	30-40%	Not defined	Ore breccia adjacent to the massive ore, grading 30-40% Fe and may contain either B-ore or D-ore.
Msl	20-30%	Not defined	Veins of magnetite tha occur in the wall rocks adjacent to the massive ore. This type grades 20-30% Fe.

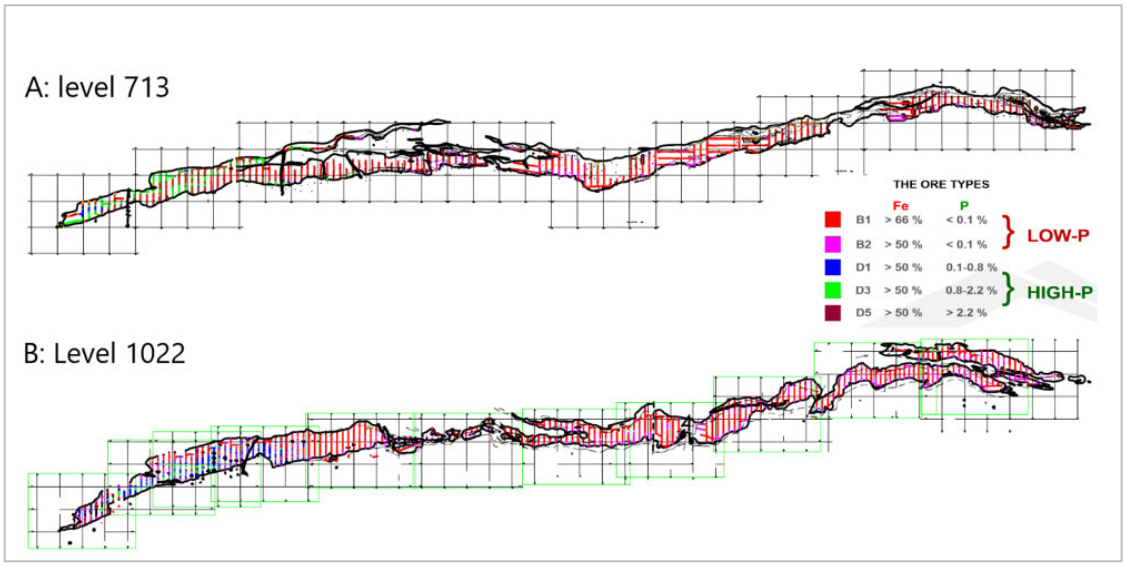


Figure 4-5: The Kiirunavaara Orebody (A) at level 713, local coordinate from Y6 (north, left) to Y46 (south, right) and (B) at level 1022, grid extends from Y2 (north, left) to Y48 (right, south). Mapped ore types in marked figures. Grid unit 100 by 100m.

The Kiirunavaara orebody was most probably formed in several pulses. This is shown in the distribution of the different ore types within the deposit. In general, D-types seem to be more common in the northern part of the orebody (referred to as 'Sjömalmen', or the 'Lake ore'), at the footwall and hanging wall margins and as internal zones throughout the orebody (Figure 4-6).

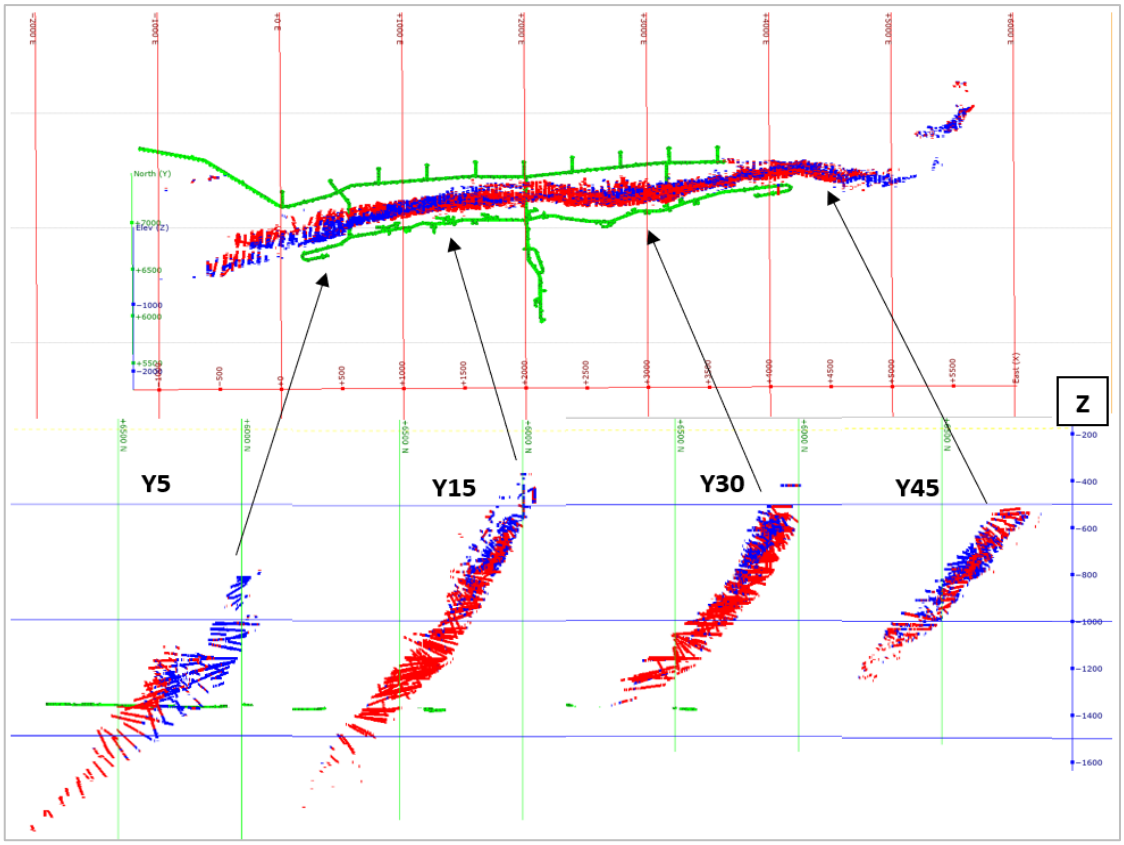


Figure 4-6: Ore Intercepts (Fe >50%), B-ores (red) and D-ores (blue). Upper fig. aligns along the dip of the orebody (-55 degrees), north towards the left. Water tunnel and exploration drift in black and green lines. Vertical sections Y5 (left), Y15, Y30 and Y45 (right).

Although hematite is relatively rare compared with magnetite in the Kiirunavaara orebody, it is present in small concentrations throughout the orebody.

The margins of the Kiirunavaara orebody are richer in silicate minerals than the central parts, with the predominant silicate mineral being actinolite. Titanite is preferentially present near the footwall, where it is found in zones mapped as skarn. The mineral distribution is reflected in the geochemical trends, where SiO_2 and MgO concentrations are higher at the margins of the orebody and in the P_2O_5-rich zones, and the TiO_2 concentration increases towards the footwall (Figure 4-7).

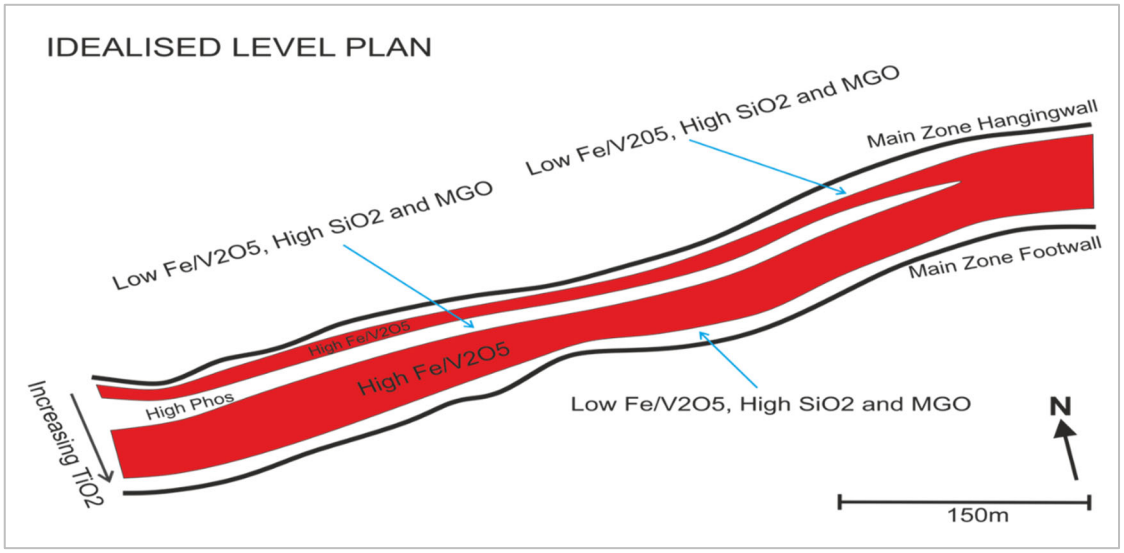


Figure 4-7: Schematic View of Geochemical Trends in the Kiirunavaara Orebody (SRK Consulting 2016).

4.4.2 Other Known Mineralisation in the Area

Konsuln is a satellite orebody of Kiirunavaara deposit (Figure 4-3) approximately 600 m long and commonly 20-40 m wide in the central and southern parts, but not wider than 10 m in the northern part of the orebody (Figure 4-8). Konsuln may have been separated from Kiirunavaara by northeast oriented faults, or that it has formed from one (or more) separate ore lenses.

The Konsuln orebody strikes mainly in a northwest direction and is wider to the south. The dip is approximately 70-90° east and northeast.

The ore quality in Konsuln varies between B (Fe-rich and P-poor) and D (Fe-poor and P-rich), with more consistent and higher quality ore in the thicker southern part.

Sigrid and Viktor deposits are located east and southeast of Konsuln. In the past, these deposits have been mined by open pit methods. Underground mining methods were also used at Sigrid until 1980. Based on previous diamond drilling results the mineralisation occurs in irregular, separate lenses, and veins. The logging and geochemical data shows that the hanging wall mainly consist of rhyolite and the footwall consists of trachyandesite, although there is a mixing between these rock types especially in the footwall.

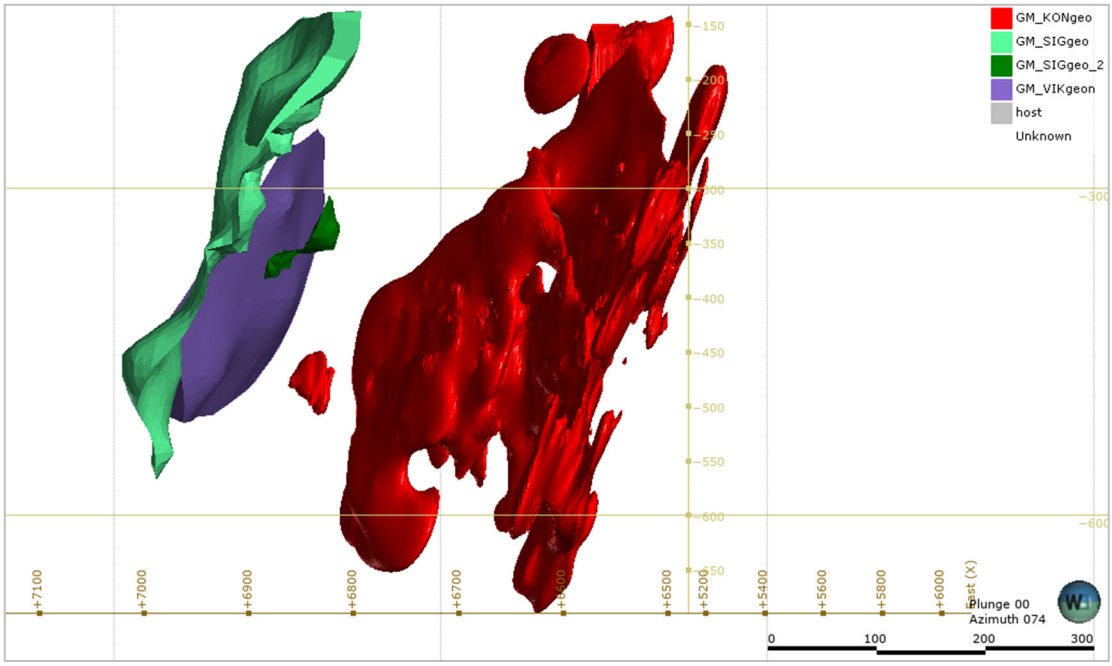


Figure 4-8: Konsuln with Sigrid and Viktor Deposits, looking southeast.

4.5 History

4.5.1 Background

The Kiirunavaara deposit, located close to the Kiruna city in Norrbotten County, Sweden, was first discovered in the mid-17th century.

The Swedish mining company LKAB was established in 1890 and has been mining Kiirunavaara since 1898. LKAB has been 100% state-owned since the 1950s.

In 1902, the Kiruna-Narvik Railway was completed, allowing the shipment of ore through the ice-free port of Narvik. Kiirunavaara mine subsequently underwent a technological transformation, enabling annual ore production to increase from 12 Mt in 1955 to 21 Mt by 1965.

Ore extraction was initially by surface mining. Since the 1960s ore has been mined using the sublevel caving mining method (Figure 4-9). By 1999, the deepest level of the mine was 775 m. Subsequent development of the mine established main levels at 1045 m, which supported full production until 2008. In 2008, LKAB decided to deepen mining to 1365 m by 2012.

Konsuln was first mined in the 1970s as an open pit mine and production continued underground in the 1980s until the beginning of 1990s (Figure 4-10). LKAB restarted mining in Konsuln in 2011 and became a test-mine as part of the Sustainable Underground Mining (SUM) project.

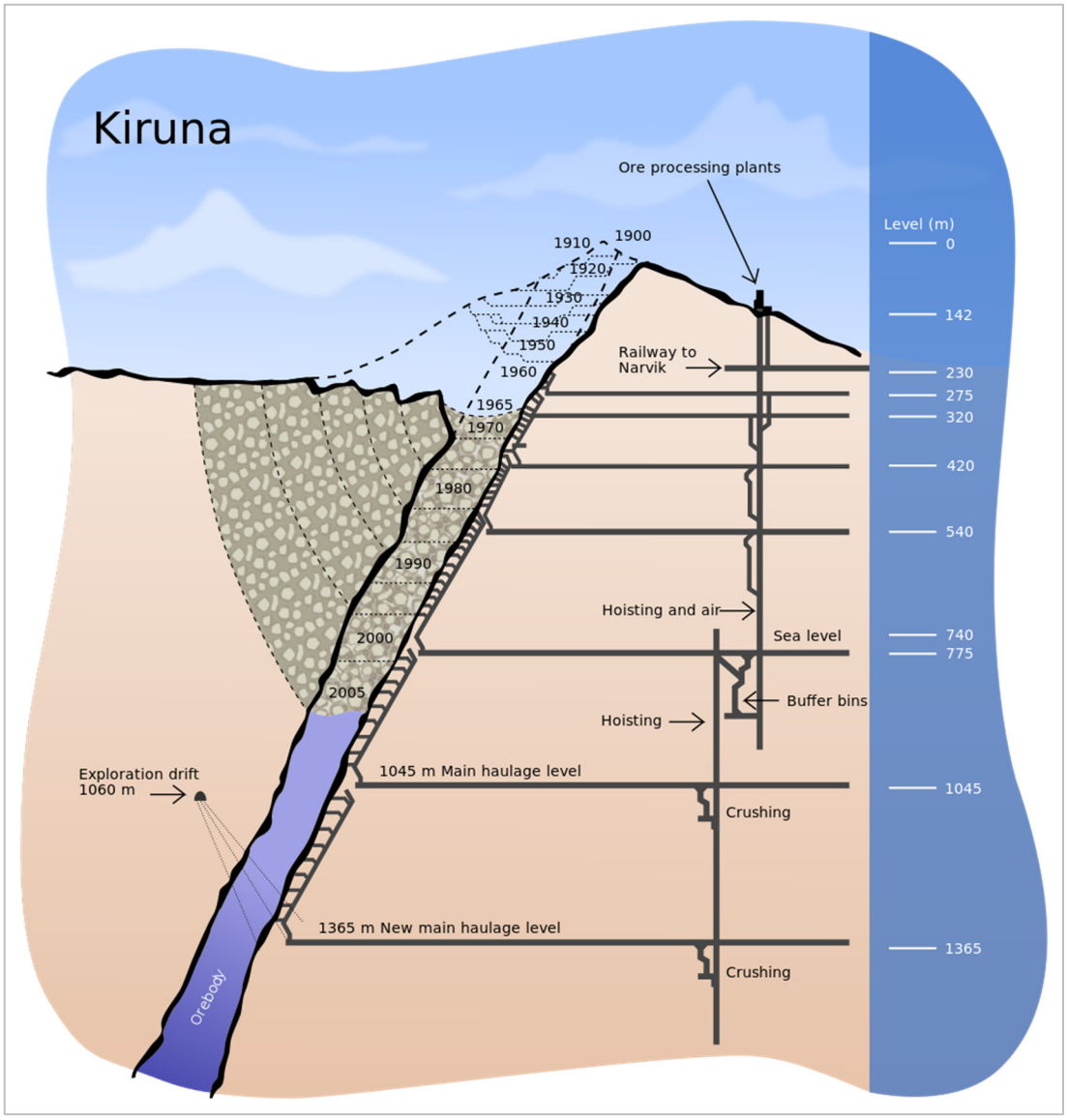


Figure 4-9: Section of Kiruna Mine, showing the Old Exploration Drift at 1060-level.

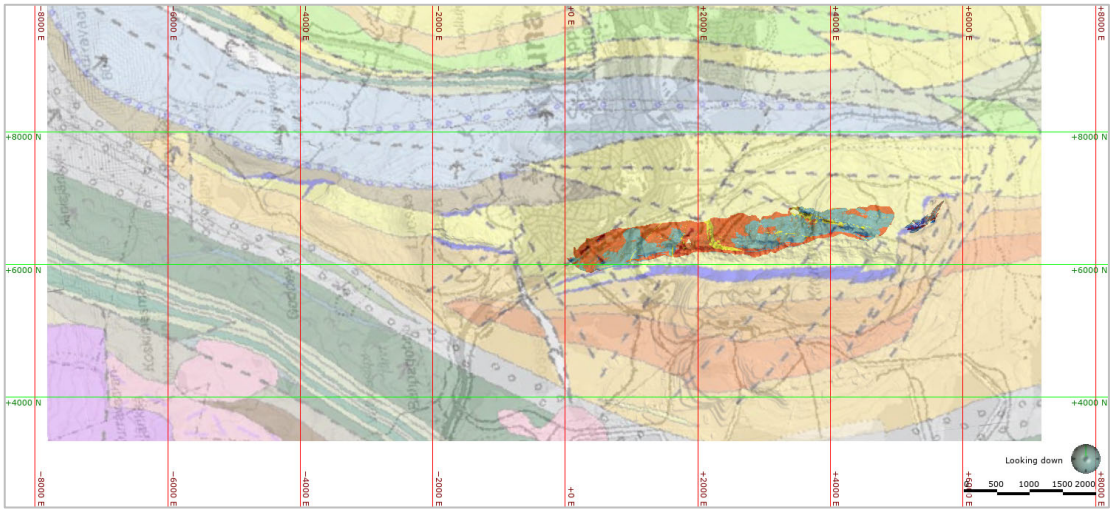


Figure 4-10: Kiirunavaara (-800 to -1365 metres) and Konsuln Orebody with Topography and Geological Map from Martinsson and Erlandson 2010 GVR09018_KUJ.

4.6 Exploration

4.6.1 Historical Exploration

Throughout mining at Kiruna the amount and type of data collected and recorded has varied. Typically, historical logging and sampling procedures (pre-2018) were less comprehensively recorded as currently. Still, historical data collection procedures were known to be very consistent and methodical, and information is largely in agreement with information derived from current practices and mining activities.

4.6.2 Current Exploration

Over 50,000 m of drilling were completed during the reporting period September 2022 to August 2023 with up to 11 underground drill rigs operated concurrently in the Kiruna mine. In addition, drilling operations at the Luossavaara project were conducted from surface in the period June to November. New inputs from the drilling and the updating of the exploration geological model have increased geological understanding of the deposit and helped provide targets and areas of interest for drilling in 2024.

Figure 4-11 shows the underground drillholes completed in the reporting period.

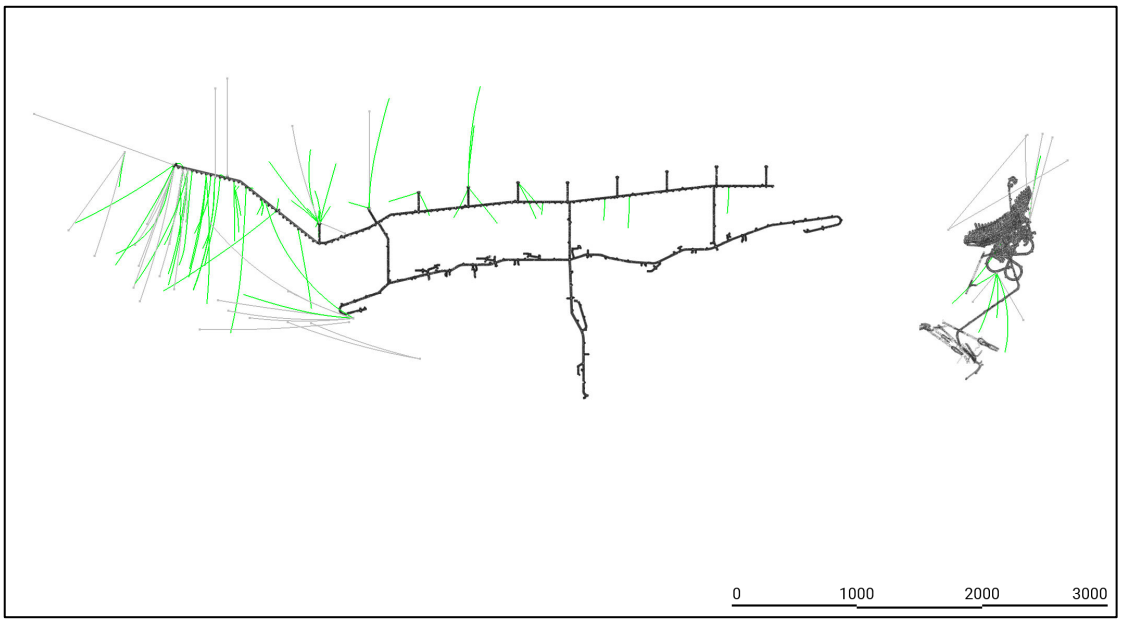


Figure 4-11: Plan view showing the layout of the exploration drift and water drift at the 1375-level and the layout for Konsuln (in black). Source: LKAB.

Logging and Sampling Procedures

Drill cores are transported by truck to the core storage facility for logging and sampling, including geology and geotechnical logging, along with structural measurements for oriented core, sampling for chemical analysis and photographing dry and wet. Sample intervals are determined on a geological basis, as selected by the geologist during logging and marked out on the drill core (Figure 4-12).

Figure 4-12: Representative Images of Drill Core Photographs in a) Dry and b) Wet Conditions.

The drilling undertaken has provided a significant amount of new geological data which has contributed to a better understanding of the extent of the mineralisation and continues to support geological modelling and to improve the general geological understanding of the area.

5 MINING, MINERAL PROCESSING AND INFRASTRUCTURE

5.1 Mining

Kiruna mine has been in continuous production since 1898 and has produced over 1.5 billion tonnes of ore. The mine is technologically advanced and uses the latest equipment and techniques to extract iron ore on a large scale from around 1000 metres below ground level. Iron ore is extracted by the Sub-Level Caving (SLC) mining method at an average annual production of 26.7 Mt/y (for the period 2014-2023), which makes the Kiruna Mine one of the largest underground mines and SLC operations in the world.

Figure 5-1 shows an overview of the Kiruna mine operation. A transverse SLC layout is mainly used. Ore is transported in the mine by LHDs, which load ore from drawpoints, haul to and dump into orepasses. Groups of up to four orepasses (‘Tap grupp’ or ‘TG’) feed loading galleries from where material is transported using an automatic train haulage system located on the 1365 main level to a central crushing and skip hoisting system. Five internal shafts hoist the material from 1465 level to 775 level where hoisted material is redistributed to eight shafts for hoisting from 898 level to surface. Hoisted material is then delivered to the Sorting Plant for beneficiation.

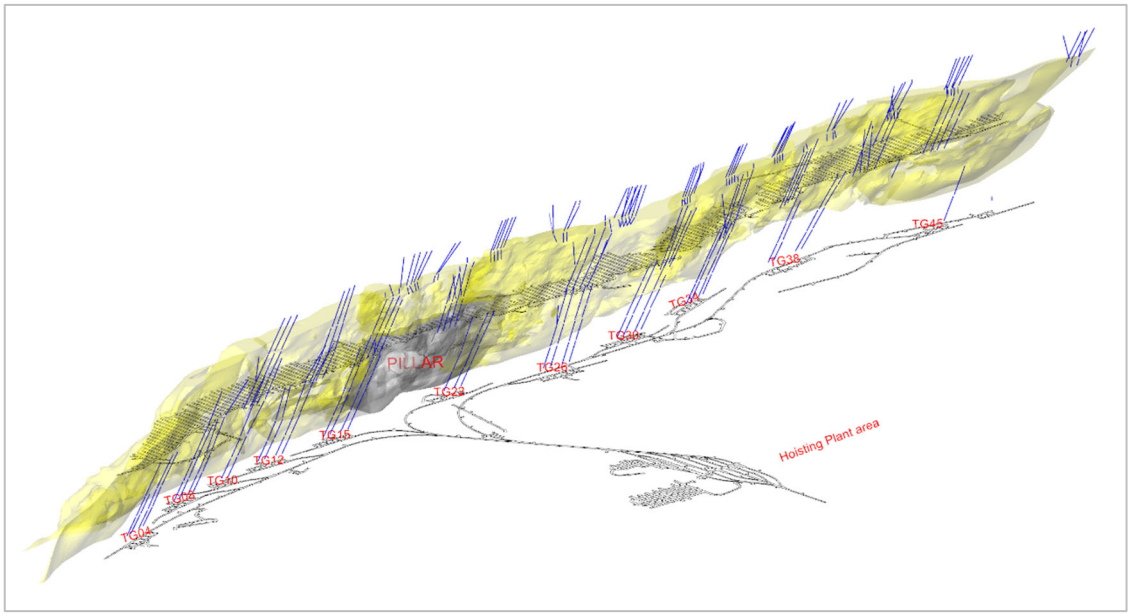


Figure 5-1: KUJ orebody with Production Level 1051, Main Level 1365 and Orepasses (source, LKAB).

5.1.1 Production Status

The sub-level cave operation is based on the establishment of a main level at 1365 level which was commissioned in 2008. Full production was achieved from the 1365 Level in 2016 following a transition of production from the 1045 Main Level. Historical production tonnages including from the Konsuln mine test area at Kiruna Mine are shown in Table 5-1.

Table 5-1: Production from Kiruna Mine (2014 to 2023)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total (Mt)	27.4	26.2	26.8	27.5	29.2	28.5	26.4	26.5	22.9	25.1

In 2023, Kiruna mine completed 12.4 km of development, up from 11.1 km excavated in 2022. This includes development required for capital investment, mine operations and development of a tunnel for exploration of the nearby Per Geijer orebody.

A significant amount of development completed ahead of production has been accumulated over time. This provides a good basis for operational flexibility but can incur some additional cost including need to repair tunnel conditions ahead of mining.

Maintaining orepass availability to achieve the Life of Mine Plan (LOMP) is challenged by a combination of deteriorating rock mass from higher mining induced stress at depth and wear from production loading. LKAB actively plans and prioritises rehabilitation of orepasses on a rolling five year programme to manage production risks associated with orepass availability.

5.1.2 Rock Engineering

To address the challenges of mining at greater depths with more complex geological and associated geo-mechanical properties of the rock being excavated, LKAB is adapting its approach to ensure a safe operating environment in the mine. A new rock engineering section was established during 2023 to improve rock engineering practices to help address these challenges and to support implementation of the outcomes of the Rock Safety KUJ project initiated in 2020, which have provided a basis for a revised approach to management and mitigation of risk in the mine. Key areas are:

- **Seismic Risk Management**: Establishment and implementation of a systematic risk management approach regarding seismicity. This includes the incorporation / update of three governing documents, namely: Ground Control Management Plan, Seismic Risk Management Plan and a Trigger Action Response Plan that comprises all existing operating rules.
- **Rock stress**: expansion of the micro seismic monitoring system and rock stress measurements to support investigation to better understand the mining-induced stress state, as well as possible ways to mitigate the effects of high stress.
- **Actions Haulage Level 1365**: Investigation and implementation of actions to protect the main haulage level 1365 from the increasing seismic risk as mining progresses deeper.
- **Mine layout**: Investigation and recommendations to change production area layout and horizontal sequencing of extraction to reduce the seismic risks.
- **Development**: Investigation and implementation of tunnel profiles that reduce the rock mechanical hazard including changes to drift dimension, ground support installation and control, and drift orientation.

Impact of May 2020 4.2 M_w Seismic Event on LOMP

The 4.2 M_w seismic event on 18 May 2020 has been extensively analysed and the technical and organisational causes leading to this event understood and reported. The event occurred in the central part of the mine around Block 22 and caused major damage to the footwall infrastructure over a length of around 700 m on several sublevels. The orebody in the damaged area is narrow and complex which led to extraction by longitudinal mining and resulted in poor cave propagation. This production area had a slower mining front than other parts of the mine because of previous (less severe) seismic events that caused damage and needed rehabilitation that led to an uneven and slow mining rate.

After starting the work to restore and resume the production from the affected areas around Block 22 during 2020, the outcome of analysis that involved detailed modelling of different production scenarios and which took into account safety, design feasibility, ore reserve, economic impact and future mine plans, led to the decision to keep a non-yielding permanent barrier pillar in the affected area and to proceed with extraction north and south of the pillar.

Measures to Reduce Impacts from Seismicity

LKAB uses systematic installation of ground control in underground to provide increased security and traceable decisions. Standard reinforcement designs “Typförstärkning” are regularly reviewed. The 14th revision, due in 2024, is updated with outcomes from field trials of a new system to deal with stress impacted rock that includes chain-link mesh with high energy absorption capacity (HEA) for surface support supplemented by mesh straps and yielding bolts.

Horizontal and vertical mining sequences are currently being adjusted for large scale geological structures. Analysis has shown a mining front of two vertical chevron mining fronts, one north and the other south of the non-yielding pillar results in lower released energy. Figure 5-2 indicates the location of the permanent pillar relative to the orebody with extracted areas coloured brown and areas of potential future extraction coloured pink.

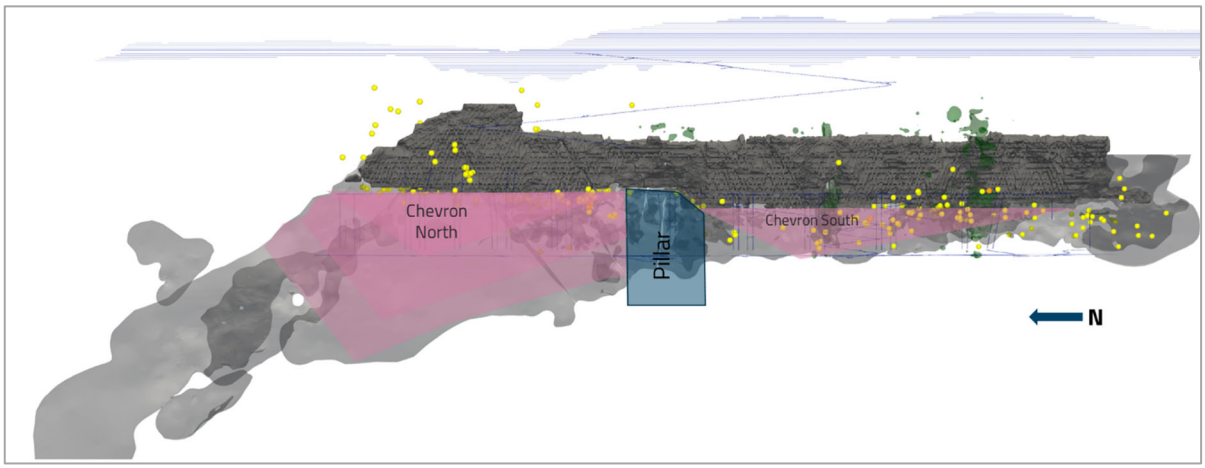


Figure 5-2: Vertical sequence north and south of a permanent pillar

A revised design for the production layout in area 15-1194 is being implemented to minimize the impact of geotechnical structures and mine induced stress by changing the direction of the footwall drifts and locating them further from the orebody. The new layout also allows for more options for using automated equipment and will make it possible for multiple mining activities to happen concurrently, providing better operational flexibility.

A project to test use of hydrofracturing to reduce seismic risk is showing promising results. Hydrofracturing, which commenced at LKAB in 2020-2021 is being applied in other parts of the mine whilst the impacts of the method are being fully assessed.

Risks associated with working underground are also mitigated by using remote-controlled equipment. LKAB operates remote-controlled loading and tramming, and remote-controlled operation of drill rigs, scalers, and bolters. Remote-controlled face charging is being tested. Automatic sensing and inspections are everyday activities in the mine.

5.1.3 Production Plan

The Mineral Reserve totalling 725 Mt at 41.9% Fe (reference point is the sorting plant) is scheduled over 26 years to 2049. A further 13.6 Mt of potential ore located above the 1365 level would be recovered as part of future mining below 1365 level should this eventuate and are currently excluded from the Mineral Reserve.

Mine Planning

LKAB has continued to update their approach to geological block modelling, which provides the basis for the company to now update mine design techniques to incorporate optimiser software.

Mine Reconciliation

Reconciliation processes are being developed and implemented across all mines and plants throughout the business value chain incorporating use of standardised KPIs and dashboards. A key focus is to ensure short-term plans and activities that are structured around the mine's life of mine plans support the company's approved long-term objectives and business plan. Compliance to plan (CTP) measures are being used to provide insights on performance against operational and financial targets utilising monthly reporting, review and action-taking led by senior leadership.

5.1.4 Mine Production Risks and Uncertainties

LKAB recognise the threats to future production from seismicity and the uncertainty in Mineral Reserves that arise from mining at greater depths at the Kiruna mine. The company is instigating organisational, technological and mine design changes to address this.

Mineral Reserves stated that are beyond the capacity of currently permitted waste rock storage and tailings storage facilities are based on the assumption that the work being conducted by LKAB is sufficient to achieve future permits to support the LOMP. This assumption will need to be subject to ongoing review and should there be sufficient uncertainty in the outcome, Mineral Reserves may need to curtail at the limits imposed by existing permits.

Technical studies being conducted by LKAB to assess potential for successful, future deep, high-rate mining are working to identify approaches that mitigate risk from stress and seismicity on mining and infrastructure. Successful technical studies that generate new Mineral Reserves that are integrated into the existing LOMP will support current Mineral Reserves.

5.2 Mineral Processing

Figure 5-3 show a schematic of the ore processing route.

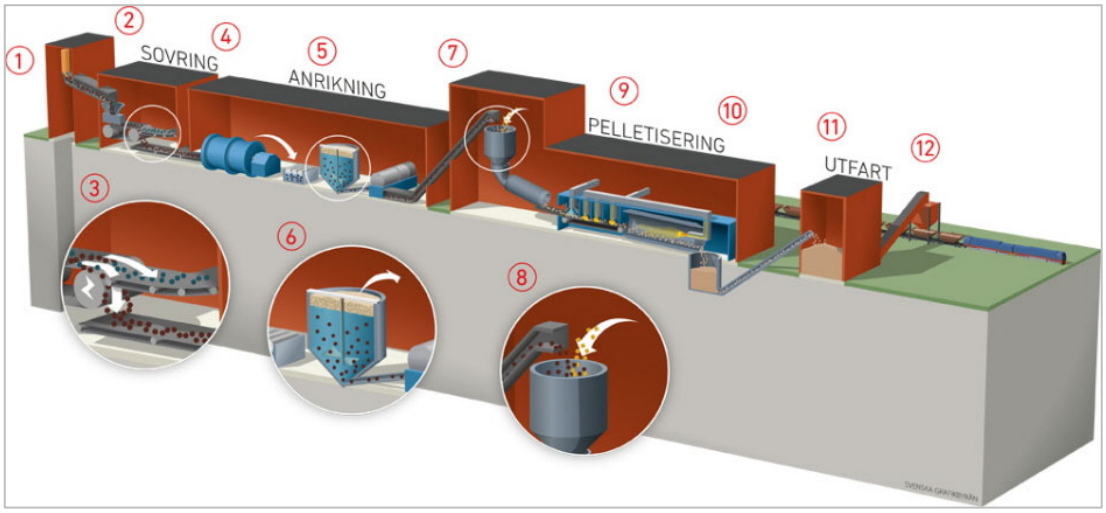


Figure 5-3: Schematic of the ore refinement process (Source, LKAB).

Run of Mine ore is delivered (1 and 2) to the Sorting Plant where it is crushed to -200 mm, screened and passed through magnetic separators (3) to remove non-magnetic waste rock. The Sorting Plant prepares feeds of different particle size distributions and grades for the concentrator plants in Kiruna and Svappavaara.

In the concentrator plants, the ore is further processed in a wet process to increase the iron grade of the magnetite. The magnetite that will become pellets are ground (4) in large mills to a smaller size and are then magnetically separated (5). During grinding, the other elements contained within the magnetite ore are removed, for example silica, sodium, potassium, and phosphorus. Phosphorus, which is bound to the mineral apatite, is removed by flotation (6) to meet the specifications, however, most of the phosphorus is eliminated in the magnetic separation stage. The concentrates (magnetite and additives) are pumped as a slurry to the pelletizing plants and then dewatered by filtration (7) and mixed with binders (8).

In the pelletizing plants, the slurry is converted into finished iron ore pellets. The pellets are dried, preheated and largely oxidized on a moving grate (9). Sintering for achieving mechanical strength of the pellets starts on the grate and continues in the rotary kiln (10) where magnetite is oxidized to hematite. After the pellets have been cooled in a rotary cooler to about 50°C, they are stored (11) before loading and transport by train (12) to port for shipping to customers.

In Kiruna there are three concentrator plants, producing two main types of pellets; blast furnace pellets for iron production in blast furnaces (BF pellets), and direct reduction pellets (DR pellets) to produce Direct Reduced Iron. The DR pellets are named KPRS while blast furnace pellets are produced in two different types, named KPBO and KPBA, with slightly different chemical compositions. In addition, fines produced from crushed and residue of degraded pellets are named PF (Pellet Fines).

In 2023, Kiruna produced 12.8 Mt of pellets and 0.61 Mt of pellet fines materials.

Waste from ore processing comprises waste rock from the sorting plant, tailings from the concentrator plants and used lime from the flue gas cleaning facilities. Waste rock and lime waste are dry deposited on waste rock storage (WRS) facilities, and tailings are wet deposited in a tailings storage facility (TSF).

Around 10 Mt/y of waste rock is separated in the sorting plant and around 50% of sorted waste rock is used for construction purposes in the mine's industrial area or for grinding media in mills. The remainder is transported to and stored on LKAB waste rock storage facilities.

Around 2.5 Mt/y (dry) of tailings are deposited in the TSF annually. Tailings are fine-grained waste from material separated from the ore concentrate by magnetic separation and from the flotation process. Water used to transport tailings is clarified and recycled for use at the ore processing plants.

5.3 Infrastructure

LKAB manages significant infrastructure in support of its mining operations, including water supply, connections to grid power, waste rock and tailings storage facilities, access roads and rail loading yards for pellet transport.

The water system in Kiruna is managed as a large circulating water system with one outer and several inner circuits. Water flows are managed to collect, contain and clarify water before recirculation to the process plants or controlled discharge to various receiving points. Normal water consumption uses around 60-80 m^3/min pumped from the mine, about 30 Mm^3 of water is recirculated in the system per year and about 10 Mm^3 is returned to the environment.

Electrical power is provided to LKAB by Vattenfall Eldistribution AB who owns and operates the 130 kV regional distribution grid in northern Sweden. LKAB production sites are connected by four connection points at Kirunavaara, Vitåfors, Leveäniemi and Mertainen. There will be increased demand for electrical power over the next few years as decarbonization initiatives at LKAB are realized.

There are three active WRS areas at KUJ with sufficient volume to accommodate several years of mine production, but which are insufficient to meet the needs of the LOMP. A preferred area for future WRS located south of the Kiirunavaara open pit was included in LKAB's previously application for a new permit for the entire operation at Kiruna (submitted to the Land and Environmental Court in June 2018) and is now part of a new application process.

The TSF is located west of the mineral processing plants and was commissioned in 1977. The TSF dams, which have been raised several times, contain a tailings pond, clarification pond and KS pond. Dam safety is closely monitored. Calculated factors of safety for the most critical slip surfaces are calculated and exceed requirements.

The tailings pond discharges excess water via a spillway, which is designed to handle the full discharge capacity. A permit to raise the dams around the facility was granted by the Land and Environmental Court in 2013 (M 629-12). The capacity enhancing began in 2013 and will, based on the production plans, secure operation in the TSF for around 15 years at current rates of deposition. Additional TSF capacity will need to be constructed to contain tailings that will be created as part of the LOMP. LKAB's application for a permit to raise two dams using the downstream method was granted by the Land and Environmental Court in June 2021 (M 1990-20).

LKAB's Tailings Advisory Board (TAB) established to review the safe operation of the company's tailings facilities inspected and reviewed the facilities during 2023. The TAB comprises three expert members with extensive experience of tailings and geotechnical competence, who found that the facilities are being safely managed. The board made various recommendations for further documentation to support management practices and data collection to further calibrate numerical models used.

All iron ore products from Kiruna are transported around 170 km by rail to the port at Narvik, Norway. This is a single rail line with passing places that if damaged will prevent product shipments from the mine. In December 2023 rail transport on the Kiruna-Narvik railway was stopped due to a derailment of loaded trains. Difficult winter-weather conditions made the clean-up and repairs very challenging, and the rail line remained closed for about eight weeks into 2024, resulting in iron ore products being stockpiled at the mine site.

5.4 Modifying Factors and Reconciliation

Modifying factors applied in the conversion of Mineral Resources to Mineral Reserves at KUJ includes diluting materials and allowances for losses based on mining and processing factors, and considers other factors for infrastructure, economic, marketing, legal, ESG and permitting / regulatory requirements. The work conducted by LKAB demonstrates to the Competent Persons that, at the time of reporting, extraction can be economically justified. The reference point at which Mineral Reserves are defined is delivery to the sorting plant.

Mining modifying factors are based on recovery of blasted ore as defined by draw rates based on operational experience, and the grade of cave material that dilutes blasted material. Reconciliation processes across LKAB continue to be developed as part of a company-wide initiative to integrate reconciliation processes. Reconciliation processes of mine to mill performance currently focus on compliance to plan measures and are being further developed to reconcile production compared with orebody models.

6 PRICES, TERMS AND COSTS

6.1 Products

LKAB mainly produces Blast Furnace (BF) pellets. The company also produces Direct Reduction (DR) pellets, which are an input material in the production of sponge iron (an area of strategic growth for LKAB) that is also called direct reduced iron (DRI), which is used to make steel in an electric arc furnace (EAF). Pellets that degrade during transport are screened and sold as a separate “fines” product. Kiruna Mine produces around 16.8 Mt of product per year: approximately 1.8 Mt of iron ore product from the Sorting Plant is transferred to Svappavaara; 13.8 Mt of iron ore pellets and 1.2 Mt of fines.

All KUJ product sales are exported by sea. LKAB’s products are sold in Europe, Middle East and North Africa (MENA), the USA and China.

6.2 Iron Market and Product Prices

The iron ore and steel markets are analysed by multiple research companies and banks. LKAB subscribes to reports by leading research companies such as Wood Mackenzie and CRU. Comments below are based on the research from these companies and the view of LKAB.

Weaker demand in China and growth in developing countries is expected to result in slow growth in the coming 10 years. The demand for blast furnace pellets is expected to be stable or grow somewhat while the demand for DR pellets will grow faster. Market conditions for high grade ore is predicted to have a more positive development long term and it is likely that the price differential between high grade and low-grade ore will increase to the benefit of those companies (including LKAB) that produce high grade ore. The demand for DR pellets will increase substantially after 2030 as the steel industry decarbonises steel production from coal-based blast furnaces to EAF production. Long term, as supply of scrap cannot meet the requirements for iron raw materials in Europe and North America particularly, demand for DRI will grow.

LKAB receives a premium price for iron ore fines of standard grade (IODEX 62%) for the higher iron grade and for the pelletized products. Market prices for iron ore fines 62% Fe and 65% Fe and pellet premiums according Platts, a research company, are shown in Figure 6-1.

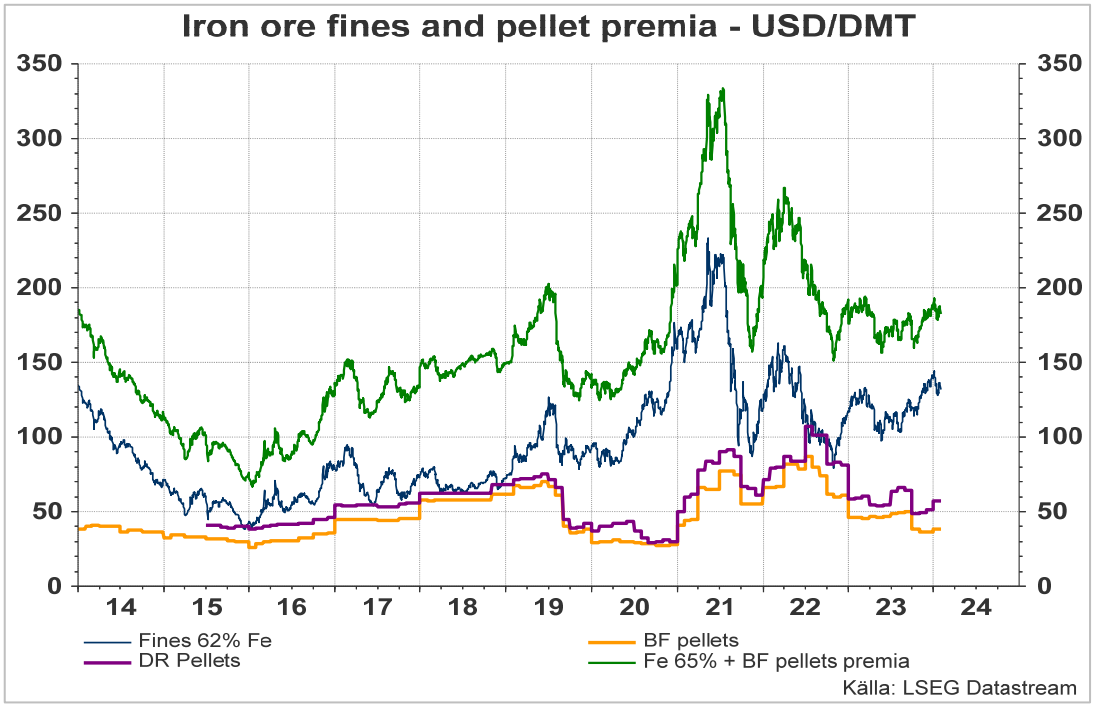


Figure 6-1: Market prices for iron ore fines and pellets, 2014-23. (Source: Reuters Datastream).

LKAB uses a long-term price for fines IODEX 62% of USD 80/t, which is compared with Wood Mackenzie prices for Q4 2022 in Table 6-1, and USD 90/t for fines 65% Fe (both set in the spring of 2023).

Table 6-1: Long term prices based on IODEX fines 62% Fe.

	LKAB (set spring 2023)	Wood Mackenzie Q4 2023	CRU Ltd Q4 2023
IODEX fines 62% Fe (USD/t)	80	75	63-66

6.2.1 Financial Assessment of Mineral Reserves

Assessment to demonstrate the economic viability of the Mineral Reserves has been undertaken independently by SRK, and is based on the LOMP, costs and capital expenditure plan provided by LKAB.

The model is in SEK and in real money terms, post-tax but pre-finance. The start date of the model is 1 January 2024 immediately following the date of the Mineral Reserve statement of 31 December 2023.

Modelling of the processing route has three segments: ore sorter, enrichment, and pelletiser. For the ore sorter stage, recovery is based on a constant tails grade of 7.3% Fe and a product grade of 62% Fe. A small portion of the ore sorter product is sold as fines at an assumed increased grade of 67% Fe. Resulting average recovery is around 94% with a mass yield of 63%. Sorter product is fed to the enrichment stage, which is assumed to have a flat recovery of 98% Fe to produce a 71% Fe product. (Some sorter product is moved between Svappavaara and Kiruna for blending purposes, quantities and impacts of which are estimated). All enrichment product is fed to the pelletiser with a maximum rate of 14.4 Mt/y. A fixed recovery of 97% is assumed, to produce a product of 67% Fe. A positive mass yield of 103% results, which is due to the addition of binding agents. It is noted that assumptions made by SRK with regard to recoveries and products to model run of mine to sales product volumes have differences when compared to historical performance, which are not considered to be material given the purpose of the assessment.

Modelling of revenue incorporates sales prices for pellets and fines FoB Narvik and Luleå, with sorter product sales to Svappavaara based on mine gate, (i.e., receiving plants cover the costs of transporting the material to their processing facilities). Original FoB prices are quoted in USD and have been converted at an exchange rate of 8 SEK/USD. Pellet product prices are a weighted average of the anticipated split of products derived from the LOMP.

Operating costs are split into mining, processing per stage, operational support, G&A, logistics and internal services.

Mining costs are forecast based on historically achieved unit costs, adjusted for inflation, and categorised by development, production and ‘opening’ drilling, blasting, transportation, infrastructure and overheads. Technical drivers such as development metres, production drilling metres, and tonnages mined are provided by LKAB in the LOMP. Historical processing costs are split into three stages each with fixed and variable costs used to project processing costs.

LKAB pay taxes on a corporate level and not on an asset level. For the purposes of this economic viability test, a simplified tax calculation has been incorporated in the technical economic model for the KUJ asset. Depreciation as per the LOMP has been applied as a tax deductible, but no other possible allowances have been applied. The corporate income tax rate applied is 21.4%. Due to the steady state operations at the asset, changes in working capital and VAT have not been taken into consideration. It is understood no mineral royalties are payable.

The Mineral Reserves as stated for the Kiruna mine have passed the economic viability test under the assumptions as assessed by SRK.

7 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

For further description of the Mineral Resources and Mineral Resource Estimation (MRE) process of LKAB, the reader is directed to the similarly published "LKAB 2023 Mineral Resources Estimation Summary Report".

7.1 Mineral Resource Statement

Table 7-1: PERC 2023 Mineral Resource Statement for Kiruna Mine – Fe Only, Exclusive of Reserves. Below -1365 RL, 26% Fe cut-off grade applied to the magnetite mineralisation.

Material	Resource Category	Mass Mt	Fe %
Magnetite	Measured	460	62.5
	Indicated	304	57.2
	Measured and Indicated	764	60.4
	Inferred	51	50.2
	Total	815	59.7
Must Take	Must Take	0.5	39.6
	Total	0.5	39.6
Total	Measured	460	62.5
	Indicated	304	57.2
	Measured and Indicated	764	60.4
	Inferred	51	50.2
	Must Take	0.5	39.6
	Total	816	59.7

Notes:

(1) Mineral Resources, which are not Mineral Reserves, have no demonstrated economic viability but are considered to have reasonable prospects for eventual economic extraction.
(2) The effective date of the Mineral Resource is 31st December 2023.
(3) Mineral Resources have been constrained within optimised stopes based on the mining and production of magnetite pellets.
(4) The optimisation uses reasonable cost, processing and recovery assumptions based on LKAB's operating mines.
(5) Material within the optimised stopes and above the current Reserve base level of -1365 is reported without a cut-off grade.
(6) Material below the base Reserve level of -1365 is reported within the optimised stopes and using a cut-off grade of 26% Fe for the magnetite material. This cut-off grade has been applied to reflect an anticipated increase in general operating costs below the -1365 level.
(7) The optimisation is based upon long-term metal prices for the produced pellets (1030 SEK/t magnetite pellets).
(8) Waste material captured within the stopes is reported as "Must Take" material. This is considered material that will be captured by the mining method employed and cannot be separated out as waste material, therefore forming part of the feed to the plant.
(9) Tonnages are reported in metric units and grades in weight percent (%) for Fe.
(10) Tonnages and grade are rounded appropriately.
(11) Rounding, as required by reporting guidelines, may result in apparent summation differences between tonnes, grade and contained metal content. Where these occur, LKAB does not consider these to be material.
(12) Mineral Resources have been classified according to the PERC Standards 2021, by Howard Baker (FAusIMM(CP)), an independent Competent Person as defined in the PERC Standard 2021. Mr Baker has relied upon LKAB technical staff and an independent review of the Kiruna MRE has been performed by SRK Consulting (UK) Ltd.

7.1.1 Reasonable Prospects of Eventual Economic Extraction

As per the PERC 2021 reporting guidelines, an assessment of the Reasonable Prospects of Eventual Economic Extraction ("RPEEE") is provided for the defined Mineral Resources. The guidance given in the PERC standard is as follows:

The term 'reasonable prospects for eventual economic extraction' implies a judgement (albeit preliminary) by the Competent Person(s) regarding all Modifying Factors. Interpretation of the word 'eventual' in this context may vary depending on the commodity or Mineral involved.

In other words, a Mineral Resource is not an inventory of all mineralisation drilled or sampled, regardless of cut-off grade or quality, likely mining dimensions, location, or continuity. The Mineral Resource is an estimate of mineralisation, which, under assumed and justifiable technical, economic and ESG conditions, may, in whole or in part, become economically extractable.

Any material assumptions made in determining the 'reasonable prospects for eventual economic extraction' must be clearly stated, discussed, and justified in any Public Report and supporting documentation. Any adjustments made to the data to make the MRE, such as cutting or factoring grades or qualities, should be clearly stated and described in the Public Report.

The term Mineral Resource covers any Minerals which have been identified and estimated through exploration and sampling and within which Mineral Reserves may be defined following the consideration and application of Modifying Factors.

7.2 Mineral Reserve Statement

The Mineral Reserve statement has been reported using the terminology and guidelines proposed in the PERC Reporting Standard (2021).

The definition of a Mineral Reserve as defined by the PRS is "the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at the Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified".

The Mineral Reserve Statement for Kiruna Mine is presented below in Table 7-2. The economic viability of exploiting this has been confirmed by the valuation presented later in this report. The financial analysis is based on the mining of this Mineral Reserve only; that is, assuming that no Inferred Mineral Resources will be upgraded to higher levels of geological confidence and also assumes no further Mineral Resources are delineated.

Table 7-2: Mineral Reserve Statement for the Kiruna Mine (31 December 2023).

	Total ROM (Mt)	ROM Grade (% Fe)
Proved	333	42.4
Probable	393	41.4
Total Proved and Probable	725	41.9

Notes:

(1) Mineral Reserves have an effective date of 31 December 2023.

(2) The reference point at which Mineral Reserves are defined is the point where the ore is delivered to the Sorting Plant and therefore does not include allowances for losses that occur during beneficiation or processing.

(3) Tonnages are reported in metric units and grades in percent (%). Tonnages and grades are rounded appropriately. Rounding, as required by reporting guidelines, may result in apparent summation differences between tonnes, grade. Where these occur, SRK does not consider these to be material.

(4) The Mineral Reserves are presented inclusive of losses and dilution incurred during mining. The Mineral Reserves include external waste material introduced in the SLC mining method, and waste development.

(5) The Competent Person confirms that no Inferred Mineral Resources have been converted to Mineral Reserves. Those Inferred Mineral Resources and hematite mineralisation that are included in the mine plan are treated as waste. They are reported as waste at 0% Fe diluting grade in Mineral Reserves and are not material accounting for 0.1% of total Mineral Reserve tonnage.

(6) The Mineral Reserve statement is exclusive of Mineral Resources reported in Table 7-1. The Mineral Reserve is therefore based on Mineral Resources that are not reported in the Mineral Resource statement.

(7) The modifying factors used are based on current mining practice using layouts and approaches to mining that have been developed and established over many years of operation. The Competent Person understands that the Company has legally enforceable mineral title to access the mineral rights for exploration, development and extraction, and through reliance on the Company's legal and permitting experts understands that all permits, ancillary rights and authorisations required for mining, processing and transport of materials are in place for ongoing operations, and where required can be obtained in a timely fashion.

(8) The Mineral Reserves are based on the Life of Mine Plan prepared in December 2023, which:

- *a. Plans extraction from above the 1365 Level only.*
- *b. Includes ore to be extracted from the Konsuln mining area. In total Konsuln's contribution of 5.2 Mt accounts for less than 1% of the Mineral Reserve tonnage.*
- *c. leaves a "non-yielding pillar" as per the revised design around Block 22 and extraction sequence to mitigate risk from mining induced seismicity.*
- *d. is based on the understanding that the application process being taken and time available is sufficient for permits to be granted that allow for expansion of waste rock and tailings storage facilities to meet the requirements of the LOMP*
- *e. Excludes 13.6 Mt of ore which has been scheduled at the end of the LOMP at production rates lower than 15 Mt/y.*

(9) Classification of Probable and Proven Mineral Reserves are based on estimated Mineral Resources incorporated into the LOMP which are classed as Indicated and Measured Resources respectively, except:

- *a. where there is lower confidence in the recoverability of ore from various extraction levels / production blocks where orepass groups have been identified as susceptible to damage, Measured Mineral Resources in the LOMP are converted to lower confidence classification as Probable Mineral Reserves.*
- *b. ore extracted from Konsuln is classified as Probable Mineral Reserves due to uncertainty of ore recoverability due to new extraction techniques being tested in this section of the mine.*

(10) Mineral Reserves have been classified according to the PERC Reporting Standard (2021) by Tim McGurk, CEng, FIMMM QMR, who is employed as a Corporate Consultant with SRK Consulting (UK) Ltd, and is an independent Competent Person as defined in the PERC Reporting Standard. Mr McGurk has relied upon LKAB technical staff and an independent review of the Kiruna CPR has been performed by SRK Consulting (UK) Ltd.

7.2.1 Comparison with Previous Mineral Reserves Statements

LKAB's Mineral Reserve Statements have been prepared and reported in accordance the PRS since 2019.

The Mineral Reserve decreased in 2023 by -32 Mt at 44.2% Fe decreasing contained iron by -13.9 Mt Fe, which is largely based on extraction of the KUJ orebody and leaves a total of 314 Mt Fe in the Mineral Reserve compared with 328 Mt Fe in 2023.

Planned extraction of the Mineral Reserve is to 2048.

Table 7-3 compares Mineral Reserves for the years 2023 and 2022,

Table 7-3: Mineral Reserves reported under the PERC Reporting Standard for 2023 vs 2022

	2023 (Mt)	2022 (Mt)	2023 (% Fe)	2022 (% Fe)
Proven	333	365	42.4	42.4
Probable	393	392	41.4	41.4
Total Proven and Probable	725	757	41.9	41.9

Figure 7-1 shows the change to Mineral Reserves tonnage from 2021 to 2022.

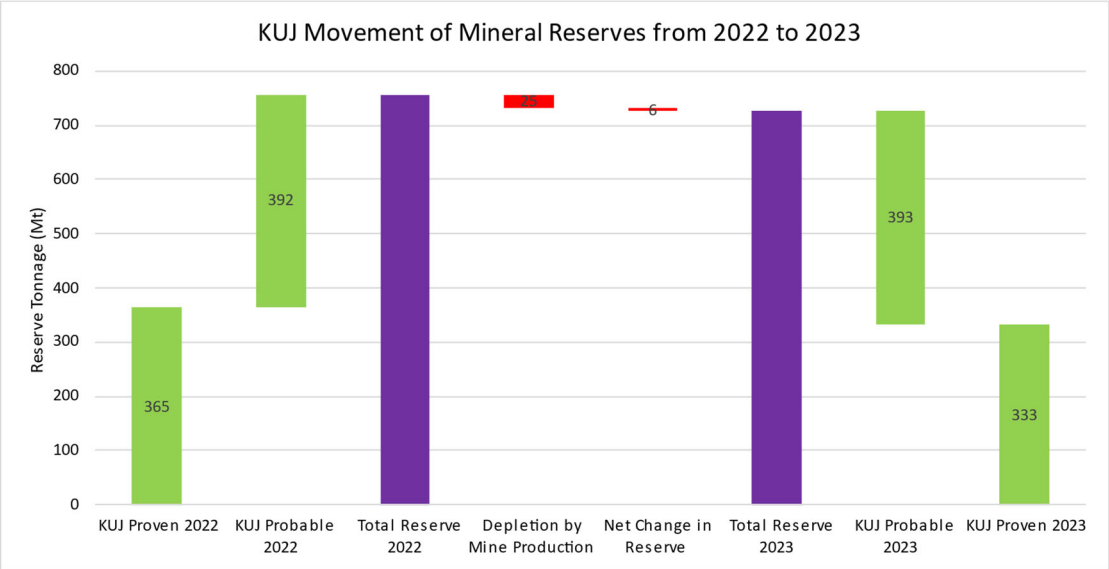


Figure 7-1: Movement of Mineral Reserves from 2022 to 2023

Proven Reserves decreased from 365 Mt to 333 Mt (-9%) and Probable Reserves increased slightly from 392 Mt to 393 Mt in 2023 (0%).

The balance of material incorporated in the Mineral Reserve is largely unchanged from 2022. It comprises 78% Measured Resources compared with 79% in 2022, with material classified as Indicated Resources unchanged at 2%, and the remainder waste material 20% compared with 19% in 2022. This indicates a very high degree of geological confidence and extensive orebody knowledge. Comparison with the proportion of Proven Reserves (46%) and Probable Reserve (54%) indicates there are areas of the mine plan with lower levels of confidence; this is largely characterised by depth of working and the increasingly likelihood of seismicity and orepass damage affecting production rates and total recovery from lower levels.

8 ESG AND PERMITTING

LKAB is wholly owned by the Swedish government and in accordance with the government's requirements, LKAB aims to set an example and to be a leader in sustainable enterprise.

The company has established strategic goals for the period 2022-2030. This includes climate-efficient, sustainable transformation defined by a reduction of CO_2 emissions to well below 2°C with a 25% reduction in its operations, a 10% reduction in energy consumption and increased biodiversity. Each goal has targets to 2026. Official and public follow-up and reporting is through LKAB's Annual and Sustainability Report. Overall corporate governing is outlaid in governing documents, all accessible at lkab.com, as follows:

- The State Ownership policy and guidelines for state-owned enterprises
- The Swedish Code of corporate governance
- Our code of conduct
- Our supplier code of conduct
- Sustainability and human rights policy
- Finance policy
- Risk management policy
- Safety first Guidelines
- Human rights Guideline
- Our management philosophy

LKAB are also certified according to ISO 9001, ISO 14001, ISO 45001, and ISO 50001.

Since 2008 LKAB has prepared its sustainability reports in accordance with the framework for sustainability reporting issued by the Global Reporting Initiative (GRI). For 2021 the report has been prepared in accordance with the GRI Standards: Core option and includes the Mining and Metals Sector Supplement (MM). Where the GRI framework calls for detailed descriptions of specific topics, LKAB has chosen to include supplementary information and clarifications in the sustainability notes. The Annual and Sustainability Report also constitutes LKAB's Communication on Progress (COP) for the UN Global Compact, and it contains information on how LKAB are contributing to Agenda 2030 and the Sustainable Development Goals. LKAB has also begun the process of reporting according to TCFD (Task Force on Climate Related Financial Disclosures) guidelines. In 2023 LKAB commenced preparations to implement the Corporate Sustainability Reporting Directive (CSRD).

Sustainability is central to LKAB's business strategy and by identifying and acting on risks and opportunities LKAB focuses on increasing positive impacts and decreasing negative impacts. To identify important areas where LKAB can have the largest impact, LKAB conducts stakeholder and materiality analysis continuously. A comprehensive list of LKAB's material topics can be found in the Annual and Sustainability Report.

8.1 Environmental Permits

LKAB works continuously to ensure required permits for mining and processing operations and other goals and measures are met. LKAB's preventative measures aim to minimize the impact on natural areas, improve biodiversity and compensate for natural values in accordance with overlaying sustainability goals. For example, actual measures include development of water and land stewardship and extensive work on water purification techniques. LKAB has an active and ongoing dialogue with stakeholders to ensure the interaction required to conduct sustainable mining operations takes place. LKAB places considerable emphasis on being accessible, responsive, and transparent.

8.1.1 Current Permit Status

Table 8-1 summarises current environmental permits for LKAB's operation in Kiruna, for activities in the mine, in the processing plants, for water operations and for the tailings management facilities. Environmental permits are not limited in time, instead they are limited in physical limitations for example when the extraction of ore is completed or when the capacity of dams and deposits are exhausted.

Table 8-1: Environmental permits and exploitation concessions.

Date	Permit reference	Description
1976-02-18	Koncessionsnämnden för miljöskydd (KN nr 14/76)	Permission to a yearly production of 32 million tonnes iron ore, of which about 30 million tonnes from Kiirunavaara mine.
1998-04-02	Koncessionsnämnden för miljöskydd (KN nr 44/98)	Reassessment of the conditions of permits for operations in Kiirunavaara industrial area
2002-12-16	Environmental court (M 67-01)	Permission to make further developments on the tailings management system (executed)
2005-11-30	Environmental court (M 8-05)	Permit for a new concentration plant and a new pellet plant and a yearly production of 14,8 million tonnes ore concentrate and the same amount of pellets
2008-06-09	Environmental court (M 1873-07)	Permission to make further developments on the tailings pond (executed)
2010-06-14	Environmental court (M 262-09)	Permission to construct a first stage of dam C-B, to construct a new pond, named KS pond, and to construct and use required ditches and pumping stations, etc. (executed)
2010-06-23	County Administrative Board (551-11801-08)	Permit for construction of new deposit for non-hazardous waste (waste lime)
2011-01-14	Environmental court (M 2594-10)	Permit for construction of a new spillway out of lake Luossajärvi, a new dam in the lake and to drain the southern part of Luossajärvi.
2013-05-02	Land and Environmental court (M629-12)	Permit for capacity-enhancing measures in the tailings pond, in the form of multistage raises of dams, construction of a new spillway and deposit of tailings via spigots. (ongoing)
2021-05-27	County Administrative Board (551-24)-2021)	Temporary permit (until December 2025) for deposit of waste lime.
2021-06-17	Land and Environmental Court (M 1990-20)	Permit for changing the method for raising two dam sections in the tailing pond. (ongoing)

2022-10-26	Land and Environmental Court (M 446-22)	Legal force extension of working hours prescribed in permission in Umeå district court, land and the environmental court, judgment 2013-05-02, case M 629-12, on raising the dams that surrounds the sand reservoir at Kiirunavaara, Kiruna municipality, Norrbotten county

8.1.2 Upcoming Permits and Future Projects for Assessment

During 2023 LKAB worked on developing a new application. Operations will continue in accordance with existing permits. However, LKAB is investigating possibilities to manage future waste rock and tailings storage as current designs reach capacity during the life of mine. LKAB is confident that new permits will be granted and thereby enable extraction and processing of the LOMP and provide possibility for future deposits. The planned application for the Kiruna operations involves updated investigations and other documents as well as a new consultation procedure with stakeholders and members of the public as an important part of the preparations.

LKAB is also in an early stage of preparing a new permit application for a new plant and plans to extract and increase production quantities of apatite concentrate. Material applications either recently submitted or which are being prepared are presented in Table 8-2.

Table 8-2: Recent and applications in preparation

Description	Authority for assessment	Submission Date
New permit for the entire operation at Kiruna	Land and Environmental Court	Planned to be submitted in 2025. Estimated approval in 2027
Capacity-enhancing measures at the Tailings Management Facilities	Land and Environmental Court	Submitted in 2022. Estimated approval in 2024
Hydrogen production (test plant)	County Administrative Board	Submitted in 2023. Estimated approval in 2024

8.2 Urban Transformation

As mining progresses areas of Kiruna city are affected. So that both LKAB's business and the surrounding communities can continue to develop, a process of urban transformation is implemented in collaboration with those affected. The urban transformation process at Kiruna process involves nearly 3,000 residences, approximately 450,000 m^2 of housing and functional space and around 6,000 people.

Together with the municipalities, LKAB agree when and how the urban transformations are to be conducted and agreements are established to regulate coordination, co-operation and implementation. A local plan developed and adopted by the municipality determines how the land and water will be used and what buildings may look like within a certain area of the municipality. Mine city public parks are constructed after housing is relocated or demolished to smooth transition of the area from the city to the mine.

The urban transformation process requires public consultation and for LKAB to reach agreements with all the property owners and businesses affected. This includes purchase of properties, financing several major infrastructure projects, and payment of compensation. Municipalities are responsible for urban planning and follow legislation such as the Planning and Building Act and the Swedish Environmental Code and to work with government authorities such as the County Administrative Board, the Swedish Transport Administration and the National Property Board as required as well as with other parties and construction companies involved in building these new communities.

Stakeholders affected by the changes include property owners, trade and industry, various associations and the Sami. LKAB work with the municipalities to consult effectively with all stakeholders, to provide information on the mine´s impact on its surroundings and to find good solutions for all concerned in a safe and secure manner.

During 2023 households continued to relocate to the new city centre in Kiruna and businesses move to new commercial facilities established for retail, restaurants and offices. The Swedish Minerals Act requires LKAB to pay for the costs incurred when the company's mining makes the urban transformations necessary.

8.3 Environmental and Social Risks and Uncertainties

Environmental risks and uncertainties outlined include threats and opportunities associated with permitting, management of environmental issues and stakeholder engagement.

8.3.1 Permitting Risks and Uncertainties

- The uncertain permit proceedings, with some rejections of environmental applications at the Land and Environmental Court make it difficult to plan how the upcoming requirements for new approvals shall be executed.
- Extensive and uncertain environmental permit proceedings may lead to consequent delays of investments and to production restrictions.
- Detailed or narrowly defined judgments or permits may restrict freedom of operation within the framework of the permit, which may lead to more permit processes being required.
- Delayed or narrowly defined judgments may impact environmental and safety measures, creating a threat that the operation is consequently not considered to be conducted in accordance with relevant regulations.

  It is noted that in a November 2023 judgement the Supreme Environmental court ruled that water discharge limits for uranium in Sweden are to be measured as total dissolved uranium, as legislated. This contradicts guidance associated with the EU Water Framework Directive which suggests that, where sufficient data are available, those specific metal species that impact bioavailability should be considered when deriving water quality standards. Award of future permits that rely on this ruling may require LKAB to change its modes of water management unless the Swedish regulation is amended in line with the EU guidance. This introduces some uncertainty that such changes can be achieved within timeframes the company has scheduled and if not, potentially delaying the company's plans for extended mine production and new process facilities and thereby putting future Mineral Reserves at risk.

- Uncertain permit proceedings could limit or restrict access to land.

8.3.2 Environmental Management Risks and Uncertainties

- Insufficient international discussions, external monitoring, and ongoing building of knowledge are a threat to the management of environmental issues at Per Geijer.
- Opportunities and ability to influence the design and implementation of new regulations and, consequently, compliance with new legislation.

8.3.3 Stakeholder Engagement Risks and Uncertainties

- There remains a threat of not gaining social acceptance for planned measures, ongoing operation, and urban transformation.
- There is a risk that the decision-making process to implement changes that arise from stakeholder engagement take longer than anticipated and will not meet the company's schedule and objectives.
- There is a threat that an inferior relationship with the Sami arises from LKAB developing plans both for mining operations and the transition to renewable energy sources, by consuming more wind power generated electricity and the need for more wind turbines that may affect reindeer husbandry.

9 RISKS AND UNCERTAINTIES

Increased challenges associated with mining at depth are recognised by LKAB as one of the most significant threats to the declaration of deeper Mineral Resources and future Mineral Reserves of the company. Ongoing technical studies and future Mineral Resource optimisation studies will assist in the application of a depth constraint on future Mineral Resource Statements.

Aside from the technical challenges related to the declaration of Mineral Resources and additional Mineral Reserves, as described above, the time frame to complete the permitting process is a future threat to LKAB, with significant timeframes during the permitting process possible as well as the future threat that the required permits will not be granted. Where permits are granted, there is risk that conditions arising from new legislation which have greater compliance hurdles, threaten the company's plans and schedules.

Future Mineral Reserves rely on successful permitting and future technical studies. Uncertainty how future plans will interact with existing Mineral Reserves to extend the Life of Mine Plan presents some risk to existing Mineral Reserves.

The single track rail infrastructure used to transport iron ore products from Kiruna to the port at Narvik, is a single point of failure risk that makes LKAB vulnerable to the impacts of lower or zero sales from Kiruna mine when the rail line has reduced capacity or cannot be used.

LKAB's strategy to implement Hybrit technology to develop a "fossil-free value chain for iron and steel production" is a long-term commitment with inherent uncertainty as the project develops. However, its outcomes are integral to LKAB's commitment to gradual transition to carbon dioxide-free products and processes by 2045.

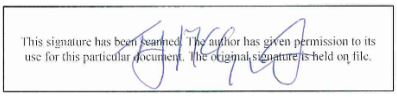
10 CONCLUDING REMARKS

This summary technical report describes LKAB's Mineral Resources and Mineral Reserves, as of 31 December 2023 at the Company's Kiirunavaara iron ore mine in accordance with the PERC Reporting Standard (2021).

Financial assessment of the Mineral Reserves demonstrates to the Competent Person their economic viability. Ongoing technical studies will continue to improve orebody knowledge to enable extraction plans to be enhanced to increase confidence in their technical viability. LKAB's reporting of ESG context and factors that could influence extraction describe their experience of the inherent difficulties around permitting and also demonstrate the company's commitment to meeting the requirements of the permitting process necessary to deliver on the Mineral Reserves stated.

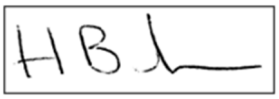
The Competent Person concludes that extraction of the Mineral Reserves can be reasonably justified at the time of reporting.

For and on behalf of SRK Consulting (UK) Limited



Tim McGurk,
Corporate Consultant (Mining Engineering)
SRK Consulting (UK) Limited

For and on behalf of LKAB Sweden



Howard Baker
Baker Geological Services Limited

ABBREVIATIONS

CP	Competent Person
CPR	Competent Persons Report
DRI	Direct Reduced Iron, also known as sponge iron
ESG	Environmental, Social and Governance
FoB	Freight on Board
KUJ	“Kiruna under Jord” - Kiruna Mine
LKAB	Luossavaara-Kiirunavaara AB
LOMP	Life of Mine Plan
Mt	Million metric tonnes
Mt/y	Million tonnes per year
MRE	Mineral Resource Estimate
PERC	Pan-European Reserves and Resources Reporting Committee
PRS	PERC Reporting Standard
QAQC	Quality Assurance and Quality Control
RPEEE	Reasonable Prospects for Eventual Economic Extraction
SEK	Swedish Krona
SLC	Sub Level Caving - mining method
SRK	SRK Consulting (UK) Ltd
STR	Summary Technical Report
TREO	Total Rare Earth Oxide
TSF	Tailings Storage Facility
WRS	Waste Rock Storage

APPENDIX

A CONSENT LETTERS

Competent Person's Consent Statement

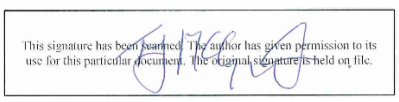
Pursuant to the requirements of paragraph 3.7 of the PERC Reporting Standard 2021

With respect to the report entitled: 'A Competent Person Report on the Mineral Resources and Mineral Reserves of LKAB, Sweden – Kiruna Mine' on behalf of LKAB, with an effective date of report of 31 December 2023, (the "Report").

I, Timothy McGurk, confirm that:

- I am a full-time employee of SRK Consulting (UK) Ltd and have been engaged by LKAB to prepare the Report for the Kiruna Iron Ore Deposit with an effective date for the Mineral Reserve statement of 31 December 2023.
- I am a mining engineer and professional member with required status namely Chartered Engineer of the UK Engineering Council (membership number 487211) and a Fellow of the Institute of Materials, Minerals and Mining (membership number 47795) and Qualified for Minerals Reporting through the IMMM. The IMMM is named on the PERC list of Recognised Professional Organisations as updated October 2021.
- I have a B.Eng in Mining Engineering from the University of Nottingham.
- I meet the requirements of a 'Competent Person' as defined explicitly in the PERC Reporting Standard having at least five years' relevant experience in relation to the style of mineralisation and type of deposit described in the Report, and to the activity for which I am accepting responsibility.
- I completed Mineral Reserve estimates based on information provided by LKAB.
- I visited the site twice in 2023 during January and December for meetings and an inspection of facilities.
- I declare that this Public Report appropriately reflects the Competent Person's view.
- I have reviewed the Report to which this Consent Statement applies and take responsibility as the Lead Competent Person for the reporting of Mineral Reserves.
- I am not aware of any material fact or material change concerning the subject matter of the Public Report that is not reflected in the Public Report, the omission of which would make the Public Report misleading.
- I am independent of LKAB. I do not have, nor do I expect to receive, a direct or indirect interest in the operations of the LKAB. I have no conflicts of interest in respect of the reporting entity/issuer LKAB or the project/operation.
- I have read all the relevant sections of the PERC Reporting Standard 2021. The Public Report has been prepared under the requirements of the PERC Reporting Standard.
- At the effective date of the Public Report, to the best of my knowledge, information and belief, the Public Report contains all scientific and technical information required to be disclosed in order to make the Public Report not misleading.

Signature of Competent Person:



Date:
31/12/2023

Professional Membership:
Institute of Materials, Minerals and Mining

Membership Number:
47795

Competent Person's Consent Statement

Pursuant to the requirements of paragraph 3.7 of the PERC Reporting Standard 2021

Report entitled: 'A Competent Person Report on the Mineral Resources and Mineral Reserves of LKAB, Sweden – Kiruna Mine' on behalf of LKAB, with an effective date of report of 31 December 2023.

I, Howard Baker, confirm that:

I have read and understood the requirements of the PERC Standard for Reporting of Exploration Results, Mineral Resources and Mineral Reserves ("PERC Standard").

I am a Competent Person as defined by the PERC Standard, having at least five years' relevant experience in relation to the style of mineralisation and type of deposit described in the Report, and to the activity for which I am accepting responsibility.

I am a professional Member or otherwise registered professional, with required status Chartered Professional Fellow (FAusIMM(CP)), Membership Number 224239, of the Australasian Institute of Mining and Metallurgy being an institution which is included in the current list of recognised professional organisations or a member institution of the European Federation of Geologists, or an organisation elsewhere included in the RPO list in Appendix 5 of the PERC Standard or as subsequently updated.

I have reviewed the Report to which this Consent Statement applies.

I am a full-time employee of Baker Geological Services Ltd and have been engaged by LKAB to prepare the Report for the Kiruna Iron Ore Deposit with an effective date for the Mineral Resource statement of 31 December 2023.

There is no other direct or indirect financial relationship between myself and the Company.

I verify that the Report is based on, and fairly and accurately reflects in the form and context in which it appears, the information in my supporting documentation relating to Exploration Results and Mineral Resources.

I consent to the release of the Report and this Consent Statement by the directors of LKAB:

Signature of Competent Person:	Date:
HBL	31/12/2023
Professional Membership:	Membership Number:
Australasian Institute of Mining and Metallurgy	224239