

# **DMT Consulting Limited**

#### **Technical Memorandum**

From: Tim Horner – Principal Geologist (DMT)

To: Lennart Eliasson VP & CFO (NIO)

**Date:** 4<sup>th</sup> June 2018

Project Number: 2067 6813

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Subject: Addendum & Consent for the 2017 Nordic Iron Ore

Competent Persons Report for the purposes of a Rights Issue.

### 1 TERMS OF REFERENCE

DMT Consulting Limited ("DMT" or "the Consultant"), has been retained by Nordic Iron Ore ("NIO" or "the Client"), to prepare a full technical statement on the current status and development of the Blötberget Iron Ore Project ("the Project"), in order to fulfil the requirements of the rights issue and public listing requirements of the Swedish Financial Supervisory Authority ("SFSA") and the European Securities and Markets Authority ("ESMA").

An updated Mineral Resource Estimate ("MRE") is required, that has been prepared in accordance with an internationally accepted Mineral Resource reporting code.

The current DMT Competent Persons Report ("CPR"), dated May 2017, updated the earlier DMT report(dated April 2015) for the Blötberget Iron Ore Project and accompanying M R E, taking account of new and revised geological data available at that time, largely as a result of the pending 'Guldkannan' (Blötbergsgruva K nr 1) mining application, which was subsequently approved in August 2017.

The 2017 CPR, including the MRE statement, forms a standalone report which, since it's issue date of 5<sup>th</sup> May 2017 remains unchanged, as there has been no subsequent exploration, testing or analytical work carried out by NIO that would constitute a 'material change' under the JORC (2012) guidelines.

# **2 PROJECT SUMMARY**

# 2.1 Historical background

NIO is a mining company aiming to reopen the main Ludvika mines - Blötberget and Håksberg, and resume iron ore production.

The Blötberget Project is situated in Dalarnas County in central Sweden, approximately 500 m south east of the village of Blötberget, and near to the town of Ludvika.



The Project region is known as the Bergslagen District, famous for its very long mining and steelmaking history, with notable former and current production areas within this region.

Blötberget started operations in 1944, regaining Swedish ownership after the Second World War, and continued production until the mine closed in 1979.

The last mining company, Stora Kopparbergs Bergslags AB, submitted a closure report to the Inspector of Mines at the cessation of mining activities in 1979. The 'reserves' (non-compliant) at that time were estimated to be 25 Mt at an average grade of 43 % Fe.

The final production achieved in 1979 at Blötberget was 400 Ktpa (thousand tonnes per annum).

Since 1979, the deposit has been controlled by several companies, through exploration leases, until NIO was formed in 2008.

NIO currently holds 12 exploration permits, which together cover an area of 3,044.36 hectares ("ha"). NIO currently holds three mining concessions - Blötbergsgruva K nr 1(Blötberget), Blötbergsgruva K nr 2 (Guldkannan – approved August 2017) and Håksbergsgruva K nr 1, covering an area of 299.35 ha.

## 2.2 Geological Summary

The geological interpretation has been based on the geological environment, deposit type and geological features controlling the style and characteristics of the mineralisation. The majority of the iron bearing lenses or zones at Ludvika are classified as magnetite rich lava flows, and generally form seam-shaped bodies.

The mineralised zone at Blötberget appears as a set of sub-vertical, narrow, elongated lenses dipping 50°–70° to the SE. Airborne geophysical surveys and historical drillholes indicate that mineralisation extends to a depth of at least 900 m below surface (Figure 1-1).

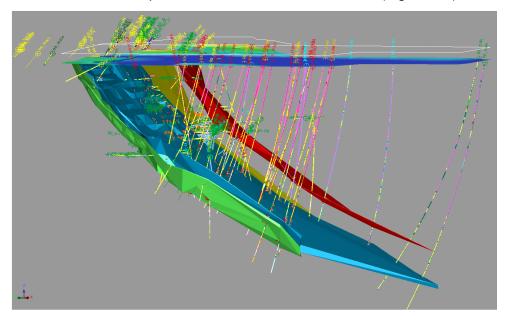


Figure 1-1 Wireframe looking NW showing the mineralised lenses of Sandellman (Red); Hugget/Flygruven (Blue); Kalvgruven (Green) and Carlsvard (Yellow). Individual sub-vertical lines are drillhole locations)



The Blötberget licence area (Blötbergsgruva K nr 1) consists of five mineralised bodies, from west to east, these are:

- Kalvgruvan;
- Flygruvan;
- Hugget & Betstamalmen; and
- Sandellmalmen.

Within the Guldkannan licence area (Blötbergsgruva K nr 2), there are two mineralised areas, from east to west referred to as;

- Guldkannan, the north easterly continuation of Sandellmalmen and;
- CarsIvard, the north easterly continuation of Hugget-Flygruvan.

The Blötberget deposit is referred to as a Kiruna type deposit, although the exact origin is still disputed.

## 2.3 Geological (Drilling) Data

From 1942 until 1977, the deposits were systematically diamond drilled for definition and extension.

Some 456 drillholes have been drilled historically at Blötberget, mainly from the underground workings, totalling 50,270 m.

In 2012, a 16 hole drill programme, which included 'twinned' drilling to confirm the quality of historical drilling data, was completed by NIO. Drilling for this programme totalled 7,430 m and although it was predominantly targeting the Blötberget mining licence area, three holes of the 16 hole programme were drilled into the Guldkannan area for a total of 397 m.

Additional drilling was carried out in 2014 in order to improve the confidence of the geological model. Thirteen (13) holes, totalling 7,093 m, were drilled.

#### 2.4 Mineral Resource Estimate

The geology of the deposit is fairly well understood and DMT has constructed a wireframe geological model for the Blötberget and Guldkannan deposit based upon a combination of logged lithologies, analytical and Saturation Magnetisation Analyser ("SATMAGAN") magnetite results, which has allowed the splitting of the deposit into geological domains comprising of the magnetite-rich material of Kalvgruven and the hematite-rich material of Hugget / Flygruven and Sandellman (Figure 1-1).

DMT has undertaken a statistical study of the data to investigate the grade continuity and to provide grade estimation parameters for geostatistical analysis. 3D computer solid and block models were created using all of the available geological and sample analytical test data to define an iron ore resource.

DMT subsequently applied preliminary mining and economic parameters and assumptions to the geological wireframe model to estimate a preliminary cut-off grade ("**COG**").

The total Measured and Indicated Resources estimated for the Blötberget Project (including the Guldkannan licence) at a COG of 25% Fe are, 55.1 Mt at a grade of



**40.7** % Fe (Total) and **0.5** % P. (Error! Reference source not found. Table 1-1). Of these Measured and Indicated Resources, 54 % is magnetite and 46 % is hematite.

Cut-off Magnetite % Magnetite proportion Tonnage Mt Fe % Fe t/m³ prop % Measured 11.9 45.4 3.8 41.7 34.5 23.8 0.58 0.42 0.48 Indicated 2.7 9.6 3.6 36.2 16.9 34.3 0.34 0.66 0.51 25 Measured + 14.5 55.1 3.8 40.7 31.4 25.7 0.54 0.46 0.49 Indicated Inferred 11.8 3.6 15.9 35.1 0.33 0.67 3.3 36.1 0.51

Table 1-1 Mineral Resources for the Blötberget Iron Ore Project - April 2017

#### Notes:

- 1) JORC 2012 definitions were followed for estimating Mineral Resources;
- 2) Mineral Resources are estimated at a cut-off grade of 25 % Fe;
- Mineral Resources are estimated using a five year historical average price of US\$ 90 per tonne (Source: IndexMundi.com); and
- 4) Figures may not total due to rounding.

### 2.5 Cautionary Note

The figures for Mineral Resources presented in the above (statement / table ) and the attached MRE Report (effective May 2017) are estimates, and no assurance can be given that the anticipated tonnage and grades will be achieved or that the indicated level of recovery will be realised.

Mineral Resources that are not Ore Reserves do not have demonstrated economic viability. Establishment of an Ore Reserve and development of a mine does not assure a profit on the investment or recovery of costs.

In addition, geological complexity, mining hazards or environmental damage could greatly increase the cost of operations, and various field operating conditions may adversely affect the production from a mine. These conditions include delays in obtaining governmental approvals or consents, or other geological and mechanical conditions. While diligent mine supervision and effective maintenance operations can contribute to maximizing production rates over time, production delays from normal field operating conditions cannot be eliminated and can be expected to adversely affect revenue and cash flow levels.

The quantity of a given mineral tends to vary in all types of deposits. Due to the nature of drilling and building reserves, small variances, both positive and negative, must be anticipated.

#### 2.6 Sources of Information

Initial site visits were carried out by DMT's Principal Geologist, Mr Tim Horner CGeol P.Geo. on 14/08/2014 and 15/08/2015 in which the core storage and logging facilities in Grängesberg were inspected. Discussions were held with senior technical personnel from NIO.

Mr Florian Lowicki Pr.Sci.Nat Geol. (400425/13; SACNASP), DMT's Resource Geologist, visited the NIO Ludvika site offices on five separate occasions between September 2014 and



January 2015 to review the data acquisition procedures applied to the drilling programme and the database.

In early 2017, technical discussions relating to the onsite mineralogical testing and the geological model were held with various NIO technical and associate personnel preceding the updating of the geological model and subsequent revision of the MRE in May 2017.

The individuals responsible for this report have extensive experience in estimating and evaluating mineral resources and are members in good standing of appropriate professional institutions and hence are Competent Persons ("CPs") under the terms of the JORC Code.

Neither DMT, nor any of its employees or associates involved in the preparation of this report have any beneficial interest in NIO or in the assets of NIO.

DMT understands that no additional work has been undertaken by NIO at the Blötberget Project that would materially affect or change the geological model and Mineral Resource Estimate produced by DMT and issued in May 2017.

## 3 CONSENT OF QUALIFIED PERSON

I, Timothy Horner, consent to the public filing by Nordic Iron Ore (NIO) of the technical report titled "Mineral Resource Estimate For the Blötberget Iron Ore Project, Ludvika, Sweden" with an effective date of 5 May, 2017.

Dated as of the 4th day of June, 2018.

THE GEOLOGICAL SOCIETY

CGeol
CHARTERED GEOLOGIST

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