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PT ERABARU TIMUR LESTARI

NICKEL RESOURCE ESTIMATE

Qualified Persons Report using
JORC Code, 2012

MARCH 2024

EXECUTIVE SUMMARY

PT Erabaru Timur Lestari (ETL) nickel laterite project is located near the village of Batupali, within the Regency of Morowali, in the Province of Central Sulawesi, Indonesia.

PT Danmar Explorindo has estimated Nickel Resources using the JORC Code with a data cut-off at the 18th December 2023. This is the first formal Nickel Resource estimate for ETL.

The ETL nickel mining license is valid until June 2031 and covers 1,159ha.

Since January 2023, Ultra Ground Penetrating Radar (GPR) surveys have covered 839.8ha of the ETL license area and the results suggest more than 130,000,000 BCM of laterite in the area.

Validated drill data, used in this Resource estimate totals, 1,337 holes with a cumulative total depth of 32,798m and 32,933 XRF analyses performed on drill core samples to document the grade characteristics in the main ETL target area.

The estimated Nickel Resource, covering 340ha, at this time, is as follows:

ETL Project Mineral Resource Statement Cut off grade > 0.8% Ni

Lithology	Mineral Resource Category	Mass (Dry Million ton)	Ni	Co	Fe	MgO	SiO2	Cr2O3	METAL CONTENT EQUIVALENT (Ni)
			%	%	%	%	%	%	
LIMONITE	Indicated	47	1.1	0.11	41.0	1.9	6.6	2.9	510,000
	Inferred	4	1.1	0.11	40.9	2.0	7.5	2.9	45,000
	Sub-Total	**51**	**1.1**	**0.11**	**41.0**	**1.9**	**6.7**	**2.9**	**555,000**
SAPROLITE	Indicated	8	1.4	0.04	17.4	12.8	35.2	1.4	110,000
	Inferred	2	1.1	0.04	17.0	13.2	36.7	1.3	20,000
	Sub-Total	**10**	**1.3**	**0.04**	**17.3**	**12.9**	**35.5**	**1.4**	**130,000**
Total ETL Project	Indicated	55	1.1	0.10	37.9	3.3	10.3	2.7	620,000
	Inferred	6	1.1	0.09	33.4	5.5	16.7	2.4	65,000
	Project Total	**61**	**1.1**	**0.10**	**37.4**	**3.5**	**11.0**	**2.7**	**685,000**

Exploration Targets, covering 50ha, still remain unexplored where an additional 1-8million wet tons of nickel laterite are possible. Although it should be noted that there is insufficient data at this time to estimate a Nickel Resource and there is no guarantee further exploration will result in a Nickel Resource.

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LIST OF ABBREVIATIONS

Al_2O_3	Auminum oxide
APL	Areal penggunaan lain (Forestry status for land with no Forestry restriction)
CAD	Computer-Aided Design
CaO	Calcium Oxide
Cm	Centimeter
Co	Cobalt
CoG	Cut off Grade
Cr_2O_3	Chromium Oxide
CRM	Certified reference material
CV	Coefficient of Variation
DA	Pulp duplicate sample
DEX	PT Danmar Explorindo
DMT	Dolomite
DR	Coarse reject duplicate sample
EOH	End of hole
ETL	PT Erabaru Timur Lestari
Fe	Iron
FLS	Flysch
g	Gram
GPR	Ground Penetrating Radar
GPS	Global Positioning System
Ha	Hectare
HM	PT Hengjaya Mineralindo
HPAL	High Pressure Acid Leach
IMIP	Indonesia Morowali Industrial Park
IUP	Izin Usaha Pertambangan
JORC	Joint Ore Reserve Committee
km	Kilometer
KNA	Kriging Neigborhood Analysis
LiDAR	Laser imaging Detection And Ranging
LIM	Limonite
m	Meters
MgO	Magnesium oxide
MLS	Molasse Congolomerate
MnO	Manganese Oxide
Mt	Million metric tons
MUD	Mud
Ni	Nickel
OK	Ordinary Kriging
OREAS	Ore Research and Exploration Australia Limited
QA/QC	quality assurance/ quality control
R^2	Coefficient of correlation
RKEF	Rotary Kiln Electric Furnace

REP	Replicate sample
RTK	Real-Time Kinematic GPS
SAP	Saprolite
Sg	Specific Gravity
SiO_2	quartz/silica
t	metric tons
VO	Variable Orientation
XRF	X-ray refraction
µm	Micrometer

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5. RESUME OF COMPETENT PERSONS AND CONTRIBUTING AUTHORS
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    ii. TOBIAS MAYA
    iii. YORRIS WIBRIANA
    iv. HARMAN ADDITYO

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AUTHOR AND CONTRIBUTOR

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REPORT OBJECTIVES

This report was prepared for PT Erabaru Timur Lestari (ETL) for the purpose of a Nickel Resource estimate at the ETL project area Morowali, Central Sulawesi Province, Indonesia. The report utilizes exploration data until 18 December, 2023.

REPORTING STANDARD

This report is intended to comply with the 2012 Code, of the Joint Ore Reserve Committee (JORC) of Australia for the reporting of Mineral Resources and Reserves (http://www.jorc.org/docs/jorc_code2012.pdf). All the information used in this report was assessed for compliance with the JORC Code and only information that was considered compliant was included in the estimate of a Nickel Resource as specified in the JORC Code of 2012. The competent persons, contributing to this report, have memberships to the Australasian Institute of Mining and Metallurgy that are current and in good standing.

AUTHORS QUALIFICATION STATEMENTS

The information in this report that relates to Exploration Results and Mineral Resources based on information compiled by Daniel Madre, Australasian Institute of Mining and Metallurgy member no: 100878, and Tobias Maya, member no: 304661.

Daniel Madre has a Master of Science degree majoring in geology and more than 40 years of experience as an exploration geologist of which more than 35 years has been working in Indonesia. Since 2003, Daniel Madre has been involved in numerous laterite nickel exploration and mining projects in Indonesia and has held several senior roles in laterite nickel projects including, Managing Director of PT Telen Paser Prima, which opened the first laterite nickel mine in Kalimantan in 2005 and President Director of PT Itamatra Nusantara, that discovered laterite nickel in Morowali Regency in Central Sulawesi. Daniel Madre is currently managing director of PT Danmar Explorindo and a consultant to PT Erabaru Timur Lestari for the purpose of this study. PT Danmar Explorindo has also been the exploration contractor to PT Erabaru Timur Lestari since June 2023, providing exploration management services including geology, drilling, well site geology and core sample preparation.

Tobias Maya has a Bachelor of Science degree majoring in Spatial Science from Charles Sturt University, Australia. Tobias Maya is a Mineral Resource modeling specialist with more than 18 years of experience in exploration and modeling lateritic nickel resources in Indonesia. Tobias Maya is currently a director of PT Geo Search. PT Geo Search has also provided UltraGPR (Ground Penetrating Radar) survey services to PT Erabaru Timur Lestari.

Daniel Madre and Tobias Maya have sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity that they are undertaking, Reporting of Exploration Results and Mineral Resources. Daniel Madre and Tobias Maya consent to the inclusion in the report of the matters based on this information in the form and context in which it appears. Resumes for Daniel Madre and Tobias Maya are attached in Appendix 5.

Daniel Madre, Tobias Maya and PT Danmar Explorindo partners, directors, substantial shareholders and their associates are independent of PT Erabaru Timur Lestari, its directors and substantial shareholders, its advisers and their associates.

Neither Daniel Madre and Tobias Maya or PT Danmar Explorindo nor any of its partners, directors, substantial shareholders, advisor's and their associates have any interest, direct or indirect in PT Erabaru Timur Lestari (ETL), its subsidiaries, associated companies, or any related entities in Indonesia or elsewhere in the world.

Daniel Madre, Tobias Maya and PT Danmar Explorindo have no conflicts of interest that might affect their objectivity in writing this report. PT Danmar Explorindo's fee for completing this report is based on normal commercial terms and the payment is not contingent upon the outcome and findings of this report.

DISCLAIMER

PT Danmar Explorindo has used the results of exploration programs provided by PT Erabaru Timur Lestari as well as the results of exploration drilling done on their behalf for the purpose of writing this report. In making this Mineral Resource estimation PT Danmar Explorindo has assumed as follows:

1) all the relevant data available was provided without prejudice
2) key assumptions are accepted as described in this report

In view of the above assumptions PT Danmar Explorindo has made reasonable enquiries and exercised their judgment on the reasonable use and validity of the data and found no reason to doubt its accuracy and reliability. For this reason, we believe that this report is an objective, accurate and reliable representation of the laterite nickel project at ETL nickel IUP, based on the exploration results until 18th December 2023. PT Danmar Explorindo makes no warranty to PT Erabaru Timur Lestari or any third parties with regard to any commercial investment on the basis of this report. The use of this report by PT Erabaru Timur Lestari or any other parties shall be at their own risk. The report must always be read in its entirety so that all the data and assumptions are fully considered and properly understood.

1. INTRODUCTION

1.1. Background

PT Danmar Explorindo (DEX) has been asked to provide an estimate of the Nickel Resources at the PT Erabaru Timur Lestari (ETL) laterite nickel project. Since January 2023, UltraGPR surveys have been completed in the ETL project area and drilling has started on the UltraGPR targets. The objective is to delineate sufficient Resources of nickel laterite to support the mining operation into the future. A haul road design, to link the ETL mine to the IMIP smelter facility, is well advanced. This will allow saprolite and limonite to be trucked directly to IMIP nickel smelter complex. This greatly enhances the potential for eventual economic extraction of the ETL nickel laterite deposit.

1.2. Location and Access

The ETL lease is located in the village of Batupali, within the Regency (Kabupaten) of Morowali in the Province of Central Sulawesi, Indonesia. The location of the area is shown in Figure 1. Access to the ETL concession, from Jakarta, is by a commercial flight (3 hours) to Kendari, then approximately 9 and half hours by car to the ETL camp site. Figure 2 shows the access from Kendari airport to the ETL project.

1.3. Mining Lease Details

The ETL project mining lease (IUP) area covers 1,159Ha for operation and production of nickel and its associated minerals. The IUP is located in the East Indonesian Ophiolite Belt and for this reason, is surrounded by numerous other nickel mining tenements. The location is also within 50km, of one of Indonesia’s largest nickel smelting and industrial hubs known as Indonesia Morowali Industrial Park (IMIP). The concession map for the area is shown in Figure 3.

Figure 1 Project location map in Indonesia

Figure 2 Project access from Kendari City

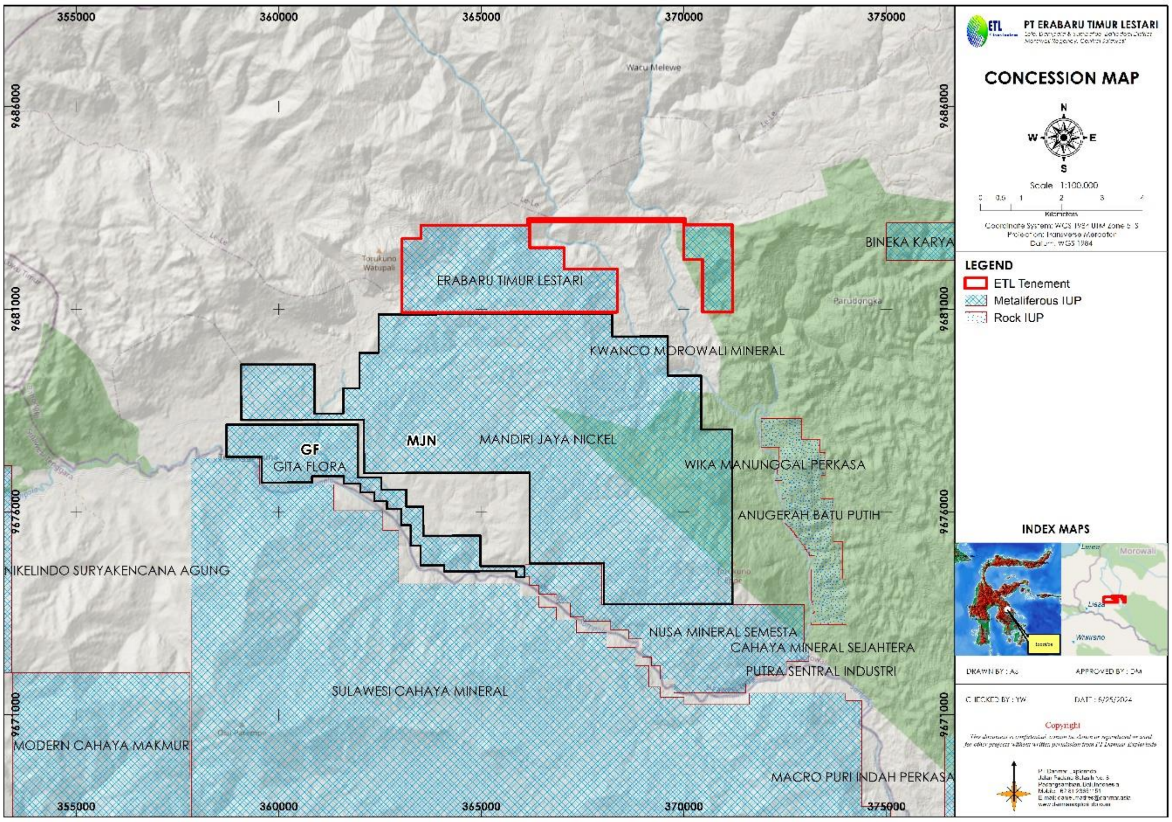


Figure 3 PT Erabaru Timur Lestari concession map

1.4. Forestry and Land Use

Approximately 95% of the ETL IUP area is covered by “area for other uses” (APL), which has no requirement for Forestry permits for exploration or mining. Approximately 5% Conversion Production Forest (HPK) where Forestry permits will be required. Figure 4 shows the ETL lease area on the published Forestry Map of Indonesia.

Figure 5 is a satellite image that displays the forest condition in the area. No villages are located within the concession boundaries and no formal, commercial plantations or farms occur within the project area. Subsistence agriculture, by local people, is occuring in some parts of the concession.

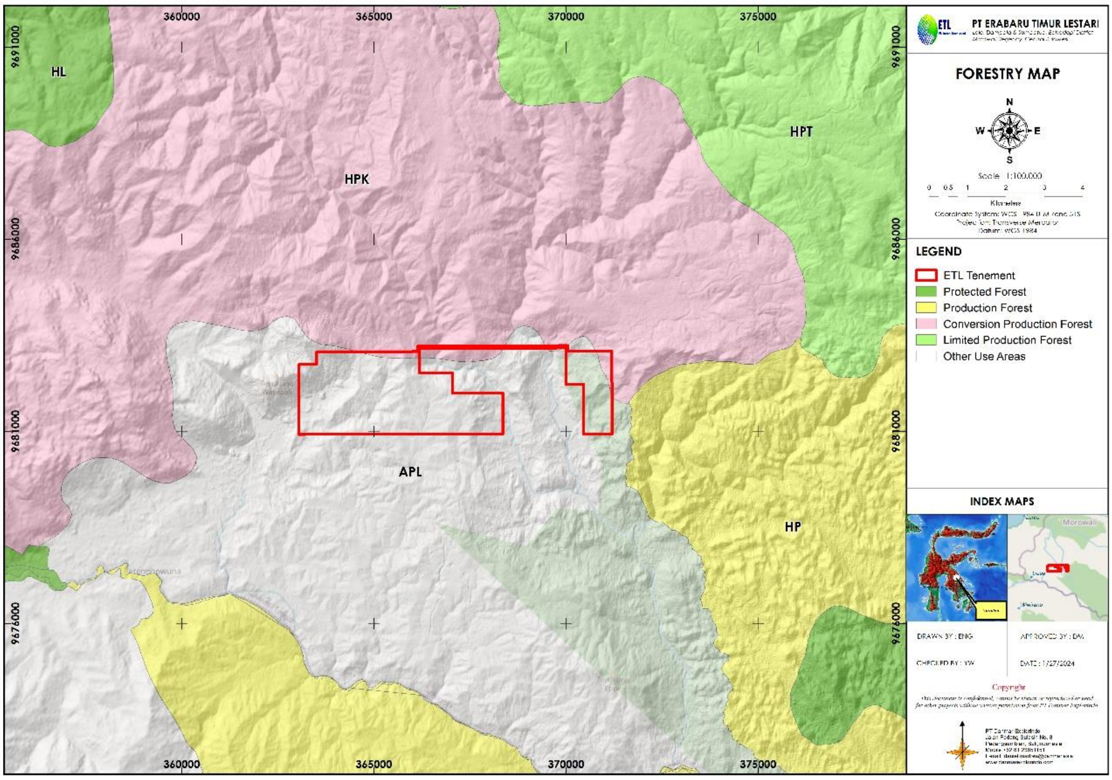


Figure 4 Forestry map of the ETL project area

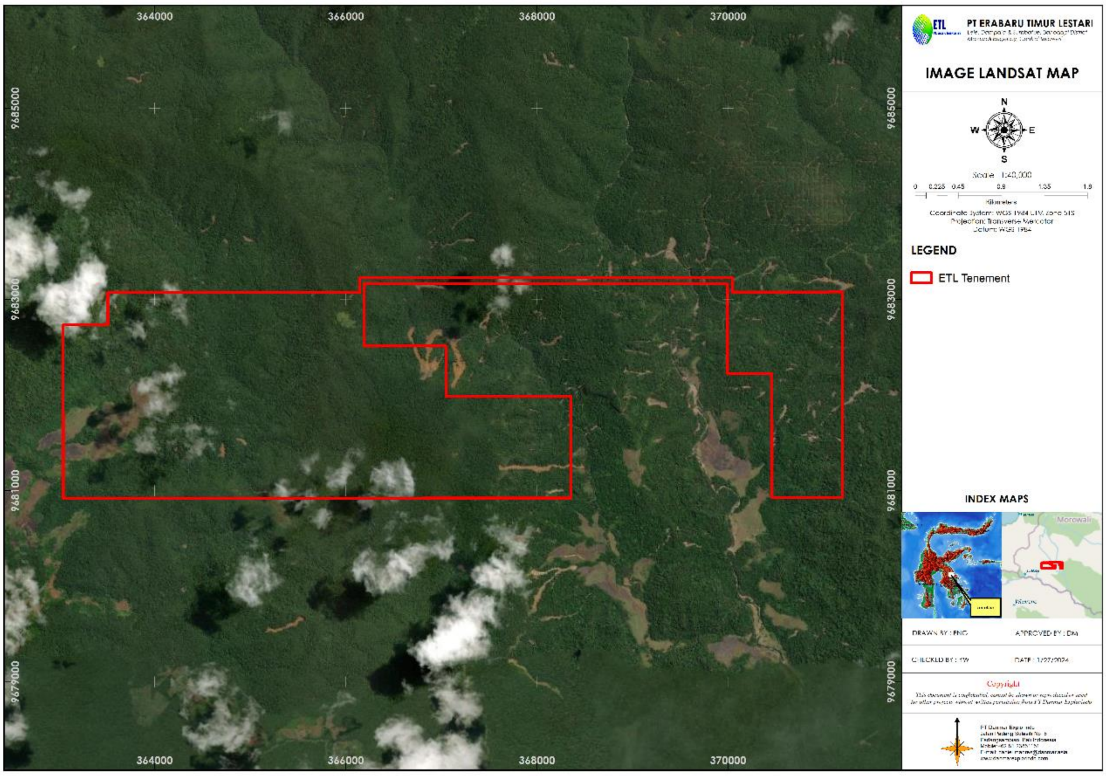


Figure 5 Satellite map displaying forest and land condition of the ETL project area

2 GEOLOGY

2.1. Regional Geology

The regional tectonic setting for Central Sulawesi is the result of a complex collision between 3 of the earth's major crustal plates namely, the Australian plate, the Pacific plate, and the Eurasian plate. As a result, three smaller plates have formed in this collision zone known as the Sunda Plate, Philippine Plate and Caroline Plate. The complex interaction between all these tectonic plates has resulted in of sections of the seafloor to be uplifted and deposited onshore in Sulawesi, North Maluku, and Papua. This is the origin of the East Indonesian Ophiolite Belt which is one of the largest ophiolite regions in the world and the source of nickel laterite deposits in East Indonesia. Ophiolites are the result of the process of obduction of oceanic crust and mantle to a position on top of continental rocks. This intense structural geological setting is also the reason major geological structures such as the Palu, Matano and Lawanopo faults dissect the Central Sulawesi region and control the distribution of rocks in the area.

The ETL project area is located on the southeast arm of Sulawesi where large gravitational collapse structures of the offshore Tolo Trough, east of Morowali, are interpreted to be caused by the regional exhumation of this part of Sulawesi (modified after Rudyawan and Hall, 2012; Titu-Eki and Hall, 2020), see Figure 6.

From the geological map of the Bungku Quadrangle of Sulawesi, published by the Indonesian Geological Research and Development Center (Simandjuntak, Rusmana, Supandjono & Koswara, 1993), the ETL project area is covered by the Matano Formation (Km) and Salodik Formation (Tems) as shown in Figure 7.

Description of the rock types on the Regional Geology Map are as follows:

Salodik Formation (Tems): Calcilutite, sandy limestone, marl, sandstone, and intercalation of chert.

Matano Formation (Km): Calcilutite, marl and shale with radiolaria chert intercalation.

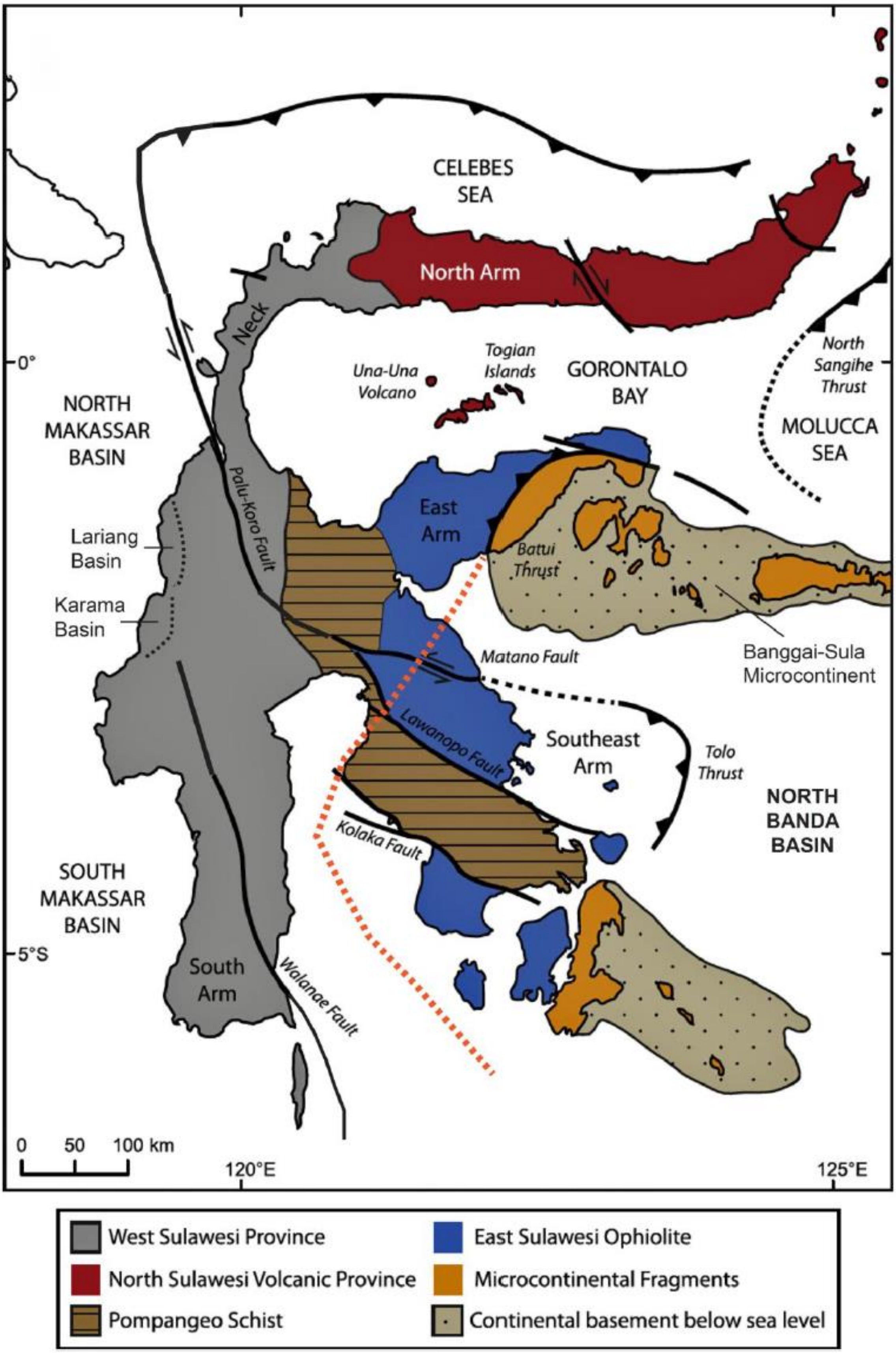
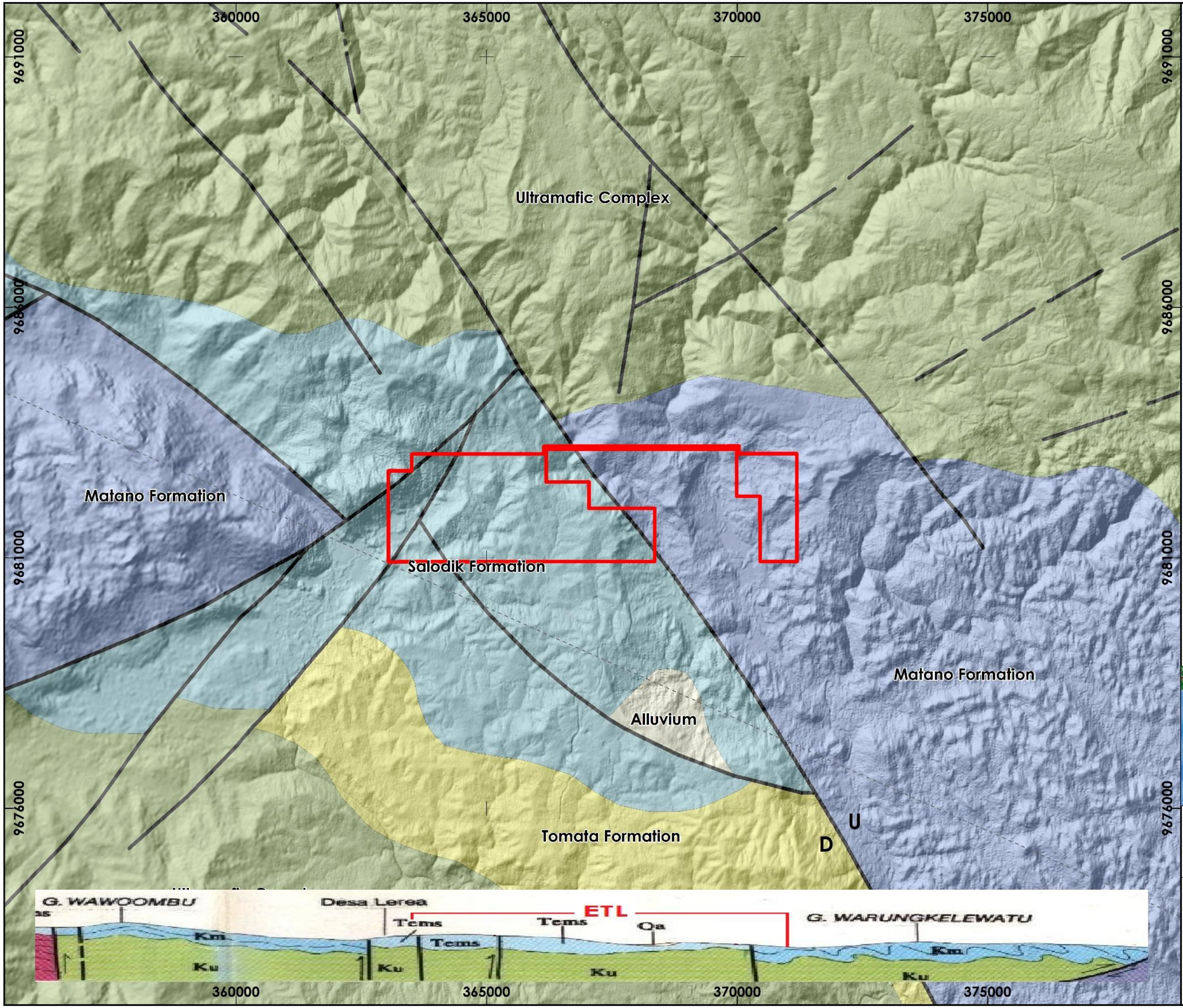


Figure 6 Major geological unit and faults of Sulawesi (Modified after White er al., 2014)



PT ERABARU TIMUR LESTARI
Lele, Dampala & Sumbatue, Bahodopi District
Morowali Regency, Central Sulawesi

REGIONAL GEOLOGY MAP

N
W E
S

Scale 1:100,000
0 0.5 1 2 3 4
Kilometers

Coordinate System: WGS 1984 UTM Zone 51S
Projection: Transverse Mercator
Datum: WGS 1984

LEGEND

🟥	ETL Tenement
Qa	Alluvium *Mud, clay, sand, granule and pebble*
Tmpt	Tomata Formation *Alternating of sandstone, claystone, tuff and conglomerate with lignite intercalations*
Tems	Salodik Formation *Calcilutite, sandy limestone, marl, sandstone and intercalation of chert*
Km	Matano Formation *Calcilutite, marl and shale with radiolaria chert intercalation*
Ku	Ultramafic Complex *Harzburgite, lherzolite, wehrlite, websterite, serpentinite, dunite, diabase and gabbro*

INDEX MAPS

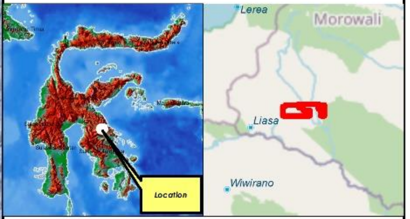


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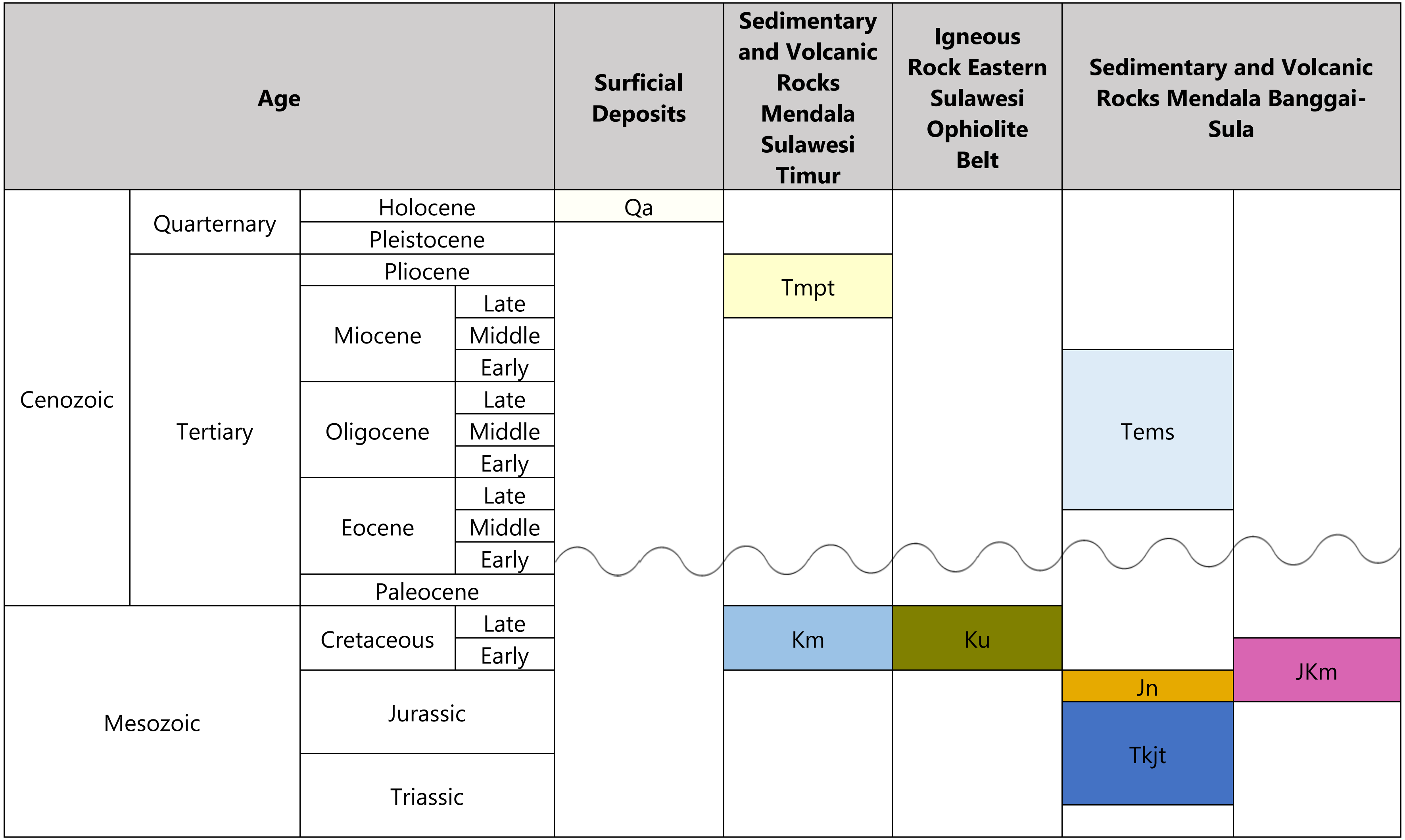
Table 1 Generalized chronostratigraphy of the project area



<table>
<tr><th colspan="4">Age</th><th>Surficial Deposits</th><th>Sedimentary and Volcanic Rocks Mendala Sulawesi Timur</th><th>Igneous Rock Eastern Sulawesi Ophiolite Belt</th><th colspan="2">Sedimentary and Volcanic Rocks Mendala Banggai-Sula</th></tr>
<tr><td rowspan="13">Cenozoic</td><td rowspan="2">Quarternary</td><td colspan="2">Holocene</td><td>Qa</td><td rowspan="2"></td><td rowspan="13"></td><td rowspan="5"></td><td rowspan="14"></td></tr>
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<tr><td rowspan="3">Miocene</td><td>Late</td></tr>
<tr><td>Middle</td><td rowspan="9"></td></tr>
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<tr><td>Middle</td></tr>
<tr><td>Early</td></tr>
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<tr><td>Early</td><td rowspan="2">JKm</td></tr>
<tr><td colspan="2" rowspan="2">Jurassic</td><td rowspan="4"></td><td rowspan="4"></td><td>Jn</td></tr>
<tr><td rowspan="2">Tkjt</td><td rowspan="3"></td></tr>
<tr><td colspan="2" rowspan="2">Triassic</td></tr>
<tr><td></td></tr>
</table>

2.2. Local Geology

Although the regional geology map shows that the ETL concession area is part of the Salodik and Matano formations, in the central part of the area (Block D), the lithology is almost entirely a molasse conglomerate deposit. The fragments and the matrix of the conglomerate, consist of predominently olivine rich rocks such as peridotite and other igneous rocks such as gabbro and andesite. The conglomerate contains well rounded, poorly sorted fragments ranging in size from boulders to pebbles, sand and silt. The conglomerate probably formed after ultramafic rocks were transported in the intense erosion of recently uplifted mountains by rivers and streams and redeposited unconformably on top of the Salodik Formation. This molasse conglomerate is the source rock for the nickel laterite at ETL. The conglomerate tend to have a porous sand matrix that is often filled by supergene silicate precipitates.

When the molasse conglomerates are exposed to humid, tropical climates over a long period of time laterization can occur as the rocks are weathered. In this process of weathering by rain, soluble minerals are leached away and less soluble minerals such as iron, nickel and cobalt are left behind in the weathering profile. This laterization process is influenced by the climate, geological structure, rock type, permeability, and topography over long periods of time, to form a soil profile in which minerals containing nickel and other elements can be depleted in some places and concentrated in other areas. Within the ground, the leaching process is enabled by the permeability of the bedrock, often as a result of tectonic movement, causing fracturing and shearing creating conduits for the flow of mineral rich solutions leached from above.

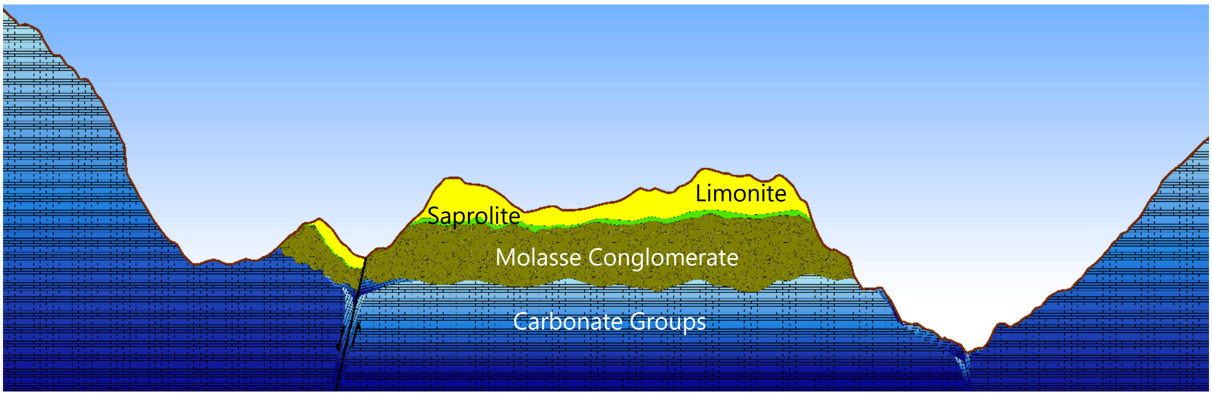
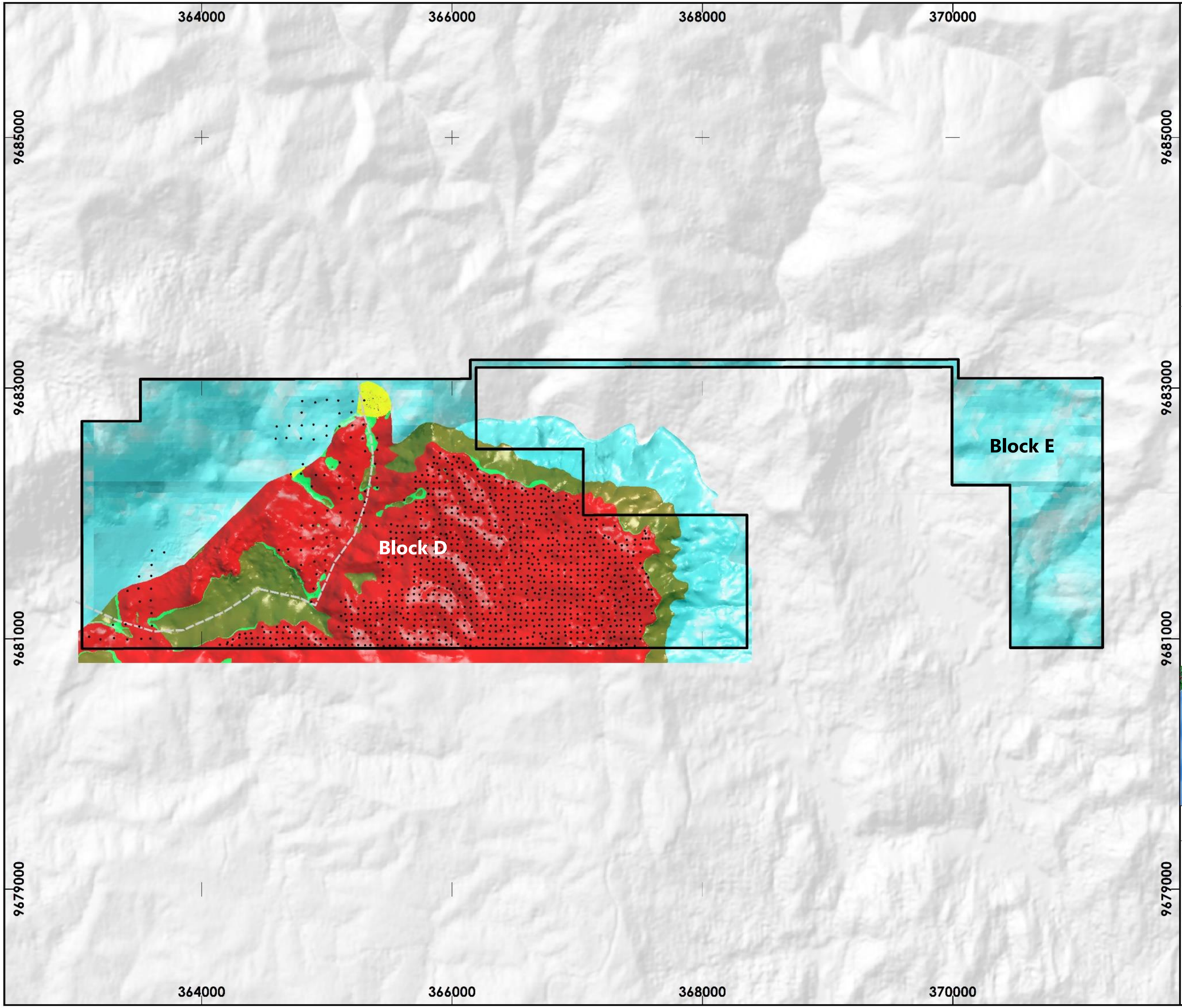


Figure 8 Conceptual geology of the project area

Photo 1 Molasse conglomerate outcrop at ETL

Photo 2 Garnierite mineral filled the conglomerate matrix

In the northern part of the ETL area, several drill holes intersected sedimentary rocks such as dolomite, siltstone and limestone. At this time, this area is considered as carbonate group from Salodik Formation.



PT ERABARU TIMUR LESTARI

Lele, Dampala & Sumbatue, Bahodopi District
Morowali Regency, Central Sulawesi

LOCAL GEOLOGY MAP

Scale 1:40,000

0 0.225 0.45 0.9 1.35 1.8
Kilometers

Coordinate System: WGS 1984 UTM Zone 51S
Projection: Transverse Mercator
Datum: WGS 1984

LEGEND

- ▭ ETL Tenement
- · Drill Hole Location
- - - Fault
- ETL Tenement

Lith Type

- 🟥 LIM
- 🟩 SAP
- 🟫 MLS
- 🟨 MUD
- 🟦 CARBONATE

INDEX MAPS

DRAWN BY : AS
APPROVED BY : DM

CHECKED BY : YW
DATE : 2/26/2024

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2.3. Mineralisation

The nickel laterite in the project area is assumed to occur as a product of supergene enrichment during the laterization of the molasse conglomerate. Fragments and matrix of the conglomerate, that are relatively high in nickel content, such as dunite and high-olivine peridotites, are the likely to yield higher concentrations of nickel in the resulting laterite.

Certain elements such as nickel (Ni), cobalt (Co) and manganese (Mn) are relatively soluble in the acidic terrestrial (rain)waters which tend to percolate down the laterite profile from the surface but become insoluble as the waters reach the low ph ground water and are precipitated.

In the project area, nickel grade in the limonite layer has the average of 1.05% Ni while the saprolite layer has an average nickel grade of 1.32%. This is likely be a consequence of the poorly sorted molasse conglomerate composition and the fluctuation of the acidic terrestrial waters and ground water table during chemical weathering process of the laterite.

Chromite (Cr_2O_3) is relatively immobile, compared to nickel, in acidic rainwater and for this reason is found concentrated in the limonite profile. Chromite tends to be concentrated at the upper and middle part of the limonite zone and have a good correlation with Fe (see Figure 7). The average grade for Chromite in the limonite zone is 2.88%, while in the saprolite 1.38%.

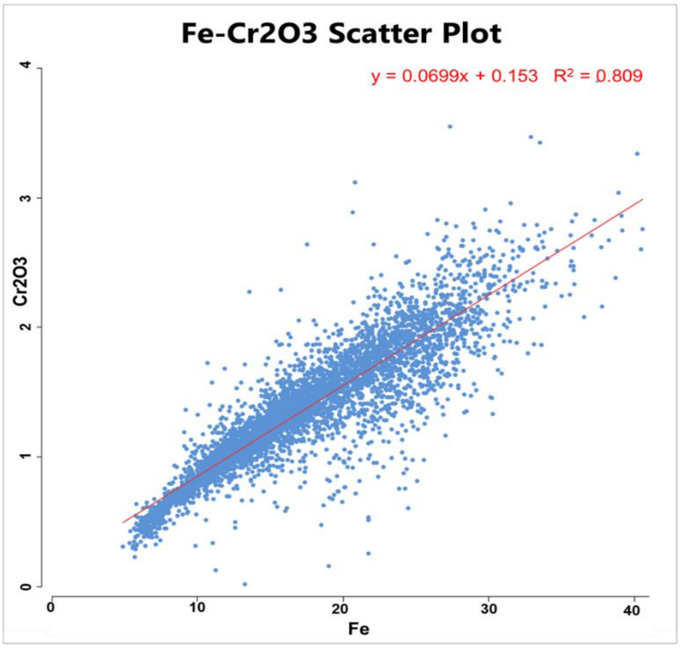


Figure 10 Correlation between Fe and Cr_2O_3 from all samples

Cobalt has relatively lower mobility than nickel in acidic rainwater and for this reason is found more concentrated in the limonite profile. Cobalt tends to be precipitated either at the lower part of the limonite zone or in the saprolite/ limonite transition zone. The average grade for cobalt in the limonite is 0.11%, while in the saprolite 0.04%.

2.4. Previous Exploration, Resource Studies and Reports

In 1999, Rio Tinto began exploring a large area that covered the northern part of Konawe and the the southern part of Morowali Regencies, which apparently included at least some of the current ETL area. Eventually, PT Rio Tinto took up an IUP license in 2010 and subsequently entered into a joint venture with Sherritt International from Canada. Mapping, GPR and drilling were carried out in the areas where, PT Bintang Delapan is currently located. From the data available at the time of writing this report, it appears that no previous work is documented within the ETL area.

During 2010, PT Hengjaya Nickel Utama and PT Mandiri Jaya Nickel did field mapping in the area, where ETL is located today and nickel laterite was identified in the area.

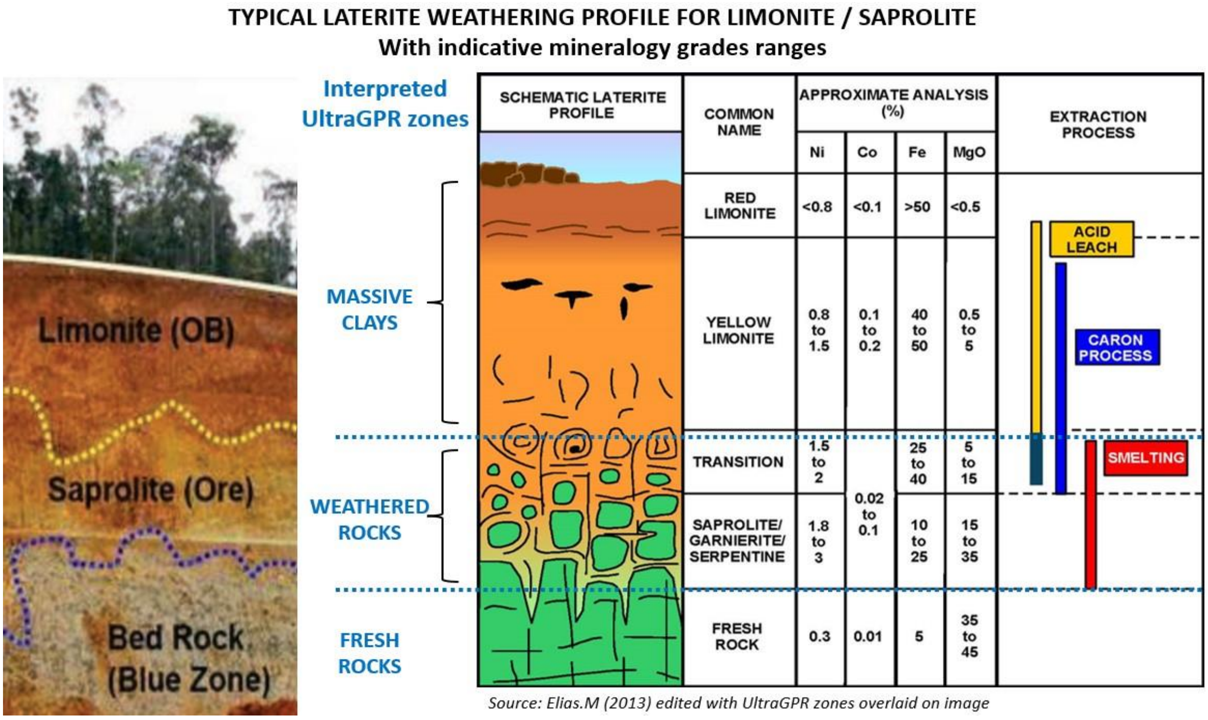
3. CURRENT EXPLORATION PROGRAM METHOD

3.1. Ultra Ground Penetrating Radar Survey

Groundradar's UltraGPR technology is a geophysical survey technique that can be used to detect subsurface geological layering and structure in nickel laterite. Relatively quick and easy to apply in the field, UltraGPR enhances the exploration process for laterites by detecting laterite thickness and bedrock morphology. The use of the UltraGPR survey is designed to increase the confidence of geological interpretation, provide a guide to thickness and depth of the target layers and help to optimize drill programs to focus on the best areas. As with all geophysical methods, UltraGPR provides supportive data for points of observation provided by drilling for Resource estimation using the JORC Code.

Photo 3 Example survey acquisition using UltraGPR (source: Groundradar.com)

At ETL, UltraGPR has been a useful exploration tool to indicate the lithological contact between limonite (massive clays) and the saprolite (weathered rocks) as well as the bedrock. Results provide indicative volumes of potential limonite and saprolite located within the survey area. Results combined with drilling data can give greater confidence of nickel laterite ore body structure, dimensions, and distribution. Figure 8 shows the close correlation of the interpreted GPR zones to the commonly named weathering profiles of nickel laterite.


TYPICAL LATERITE WEATHERING PROFILE FOR LIMONITE / SAPROLITE
With indicative mineralogy grades ranges

COMMON NAME	APPROXIMATE ANALYSIS (%)			
	Ni	Co	Fe	MgO
RED LIMONITE	<0.8	<0.1	>50	<0.5
YELLOW LIMONITE	0.8 to 1.5	0.1 to 0.2	40 to 50	0.5 to 5
TRANSITION	1.5 to 2	0.02 to 0.1	25 to 40	5 to 15
SAPROLITE/ GARNIERITE/ SERPENTINE	1.8 to 3		10 to 25	15 to 35
FRESH ROCK	0.3	0.01	5	35 to 45

Source: Elias.M (2013) edited with UltraGPR zones overlaid on image

Figure 11 Diagrammatic representation of a typical laterite profile in Sulawesi

Highly weathered laterite zones are typically structurally controlled. Geological structure can influence the distribution of where thicker, higher grade limonite and saprolite may be found. Although these structures can often be interpreted from the topographic surface relief, with the help of UltraGPR, these structures can be delineated with relative confidence providing drill targets to optimize drill programs towards the thickest and most prospective locations. Figure 9 shows an example of typical survey results using UltraGPR technologies on laterite deposits of Sulawesi.

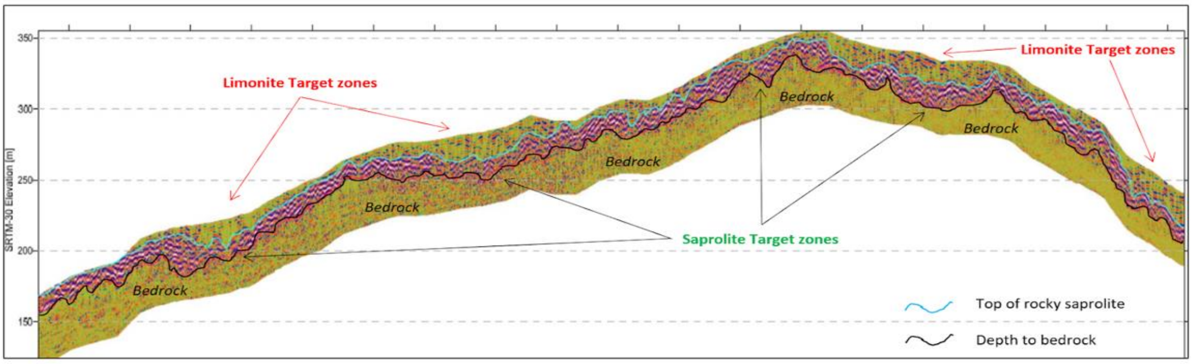


Figure 12 Example UltraGPR survey of a typical laterite profile in Sulawesi

3.2. Drilling

In June 2023, four units of Dexdrill 200 started to systematically drill the ETL nickel laterite project. The drills are ideally suited to laterite core drilling as they are lightweight and man portable. They have the added advantages of providing local people employment for manual moving between drill locations and also have low environmental impact with no need for road access or dozer support. The drills use HQ triple tube core barrels.

Photo 4 Dexdrill 200 operating at ETL

Drilling was carried out using standard operating procedures designed to ensure drill data complies with the JORC Code to be used as points of observation in this study.

3.2.1. Core Recoveries

In the current drill program core runs are restricted to a maximum of 1m intervals to optimize core recoveries. Core is extracted from the inner tube and directly transferred to the core box. core based each core run. The core is then immediately measured for length to determine core recovery and or swelling. Core is arranged, in maximum 1m runs, inside the core box with each run filling a new row in the core box. Consecutive core runs are also arranged in new rows starting on the left side of the core box to avoid any mixing or contamination from other core samples. The bottom of each core interval is labeled for its depth so that the depth of the core is clearly displayed. Core boxes that are partially filled at the wellsite, and not yet completed, are carefully covered so that the samples are kept free from contamination and damage while drilling of the hole is completed.

3.2.2. LiDAR and Drill Collar Survey

The topography of the ETL IUP has been surveyed using LiDAR to produce a digital terrain model of the ground surface in the area. The accuracy of the LiDAR is within 15cm vertical and 40cm in the horizontal plain which is appropriate to support Resource estimates. Drill collar survey using E-Survey RTK GPS equipment, was used to ground survey the drill hole locations.

3.2.3. Geological Logging of Cores

The well site geologists follow a standard operating procedure for the core logging process so that all geological logs are standardized. The core description starts at the surface and follows each 1m core run until the total depth is reached. The core description in a standard format allows the data is easily usable and recognizable by the mine technical team. Core that contains more than 20cm of solid rock is recorded as a geological boundary. The core length is checked against the actual depth recorded in the core box. The detailed description is completed as required in the logging form.

Photo 5 Drill collar survey at ETL

Photo 6 Logging cores at wellsite at ETL

3.2.4. Core Photography

With the core boxes in position, in a level place with no cover, in consecutive order, core photos can take place. Checks are carried out to make sure that the depth labels are clearly visible and in position at the bottom of each core run. Cores with swelling or core loss are clearly marked. The well site geologist checks to make sure the core box label show the correct Hole Identification, sequential arrangement, depth interval, date of start and finish drilling, EOH (end of hole), initials of the wellsite geologist and the rig identification number. When this is ready photos are taken in good light conditions making sure to minimize shadows and reflections.

Photo 7 Core photo example from ETL

3.2.5. Drill Hole Sample Handling

Plastic sample bags are always double layered to protect the integrity of the samples against accidental contamination, damage, or loss. Samples are bagged according to the geological horizon from which they belong and or in 1meter intervals, if there is no geological boundary and the plastic identity label placed inside. After each core box is emptied the outer layer sample bag is tied with string in a bow so that it can easily be undone at the camp for rechecking and final labeling. During the sampling process, the sample form is continuously filled out so that as samples are bagged every sample is recorded. Checks are made to ensure the sample intervals and labels are correct. Rechecks are done so that the sample intervals can be reconciled and there are no gaps in the depth intervals. Samples are then packed in sacks and tied with flagging tape showing the hole identification. If stored in the field the sacks are covered for protection from the weather. Samples are normally transported to the field camp daily. Sample numbers and the depth interval labels are recorded on sampling forms which are photographed and sent to Danmar head office for recording in the ETL database. During this sample labeling process, the condition of the sample bag is checked and changed if damaged. The total number of samples are rechecked against the total number of samples logged in the field at the wellsite.

Photo 8 Sample packing at the well site

3.3. Laboratory Sample and Analysis Procedures

3.3.1. Field Sample Preparation

Once samples from the field are packed and labeled at the well site and delivered to the ETL sample preparation facility, a reconciliation and checking of sample numbers, labels and condition is carried out before being packed and transported to internal laboratory operated by PT Hengjaya Mineralindo.

Photo 9 Core sample processing at ETL camp

3.3.2. Sample Security, Audits and Review

Sample core store at the ETL field office is locked when unattended and has security which operates 24 hours per day. Sample number checks are carried out at the drill site, sample store shed and again at the assay laboratory to make sure samples are not missed or lost in transpotation.

3.3.3. Laboratory QA/QC Protocol

Full cores are bagged, labeled and sent to the internal laboratory operated by PT Hengjaya Mineralindo where strict QA/QC protocols are used to ensure assay result accuracy. The Henjaya Mineralindo QA/QC laboratory Standard Operational Prosedure is documented in the Appendix 3.

4. RESULTS

4.1. GPR Survey

UltraGPR survey results are summarized in Table 2.

Table 2 UltraGPR survey summary

Block-ID	Total Length Plan	2D Length (km)
Block D	Total Line clearing Completed	68.7
	Total Line GPR acquisition	68.7
	Total Line GPR processed	68.7
Block E	Total Line clearing Completed	17.9
	Total Line GPR acquisition	17.9
	Total Line GPR processed	17.9
UltraGPR completed	Total Line clearing Completed	86.6
	Total Line GPR acquisition	86.6
	Total Line GPR processed	86.6

The survey lines shown in Figure 10 below. The UltraGPR survey data from all areas were of good quality and were easily interpretable. Maps were created showing the interpreted thickness of limonite, saprolite and depth to bedrock. The total area surveyed was approximately 839.8Ha. The nominal spacing between GPR lines is 200m spacing. The UltraGPR survey grid, where possible, is in the same location as the drill lines. Table 3 shows the resulting interpretation for laterite volumes using the UltraGPR data.

Table 3 UltraGPR survey laterite volume interpretation

Prospect	Block-ID	Material Type	Area	Volume	Tonnes (Wet)
PT Erabaru Timur Lestari	Block D	Sediments	159.7	18,000,000	32,400,000
		Massive Clays (Lim/Sap)	651	42,000,000	75,600,000
		Weathered Rocks (Rocky Sap)		65,000,000	104,000,000
		Sub-total	651	125,000,000	212,000,000
	Block E	Massive Clays (Lim/Sap)	188.8	2,000,000	3,600,000
		Weathered Rocks (Rocky Sap)		5,000,000	8,000,000
		Sub-total	188.8	7,000,000	11,600,000
	Total Laterite		839.8	132,000,000	223,600,000

**Note: Using density assumptions for limonite 1.8 and saprolite 1.6*

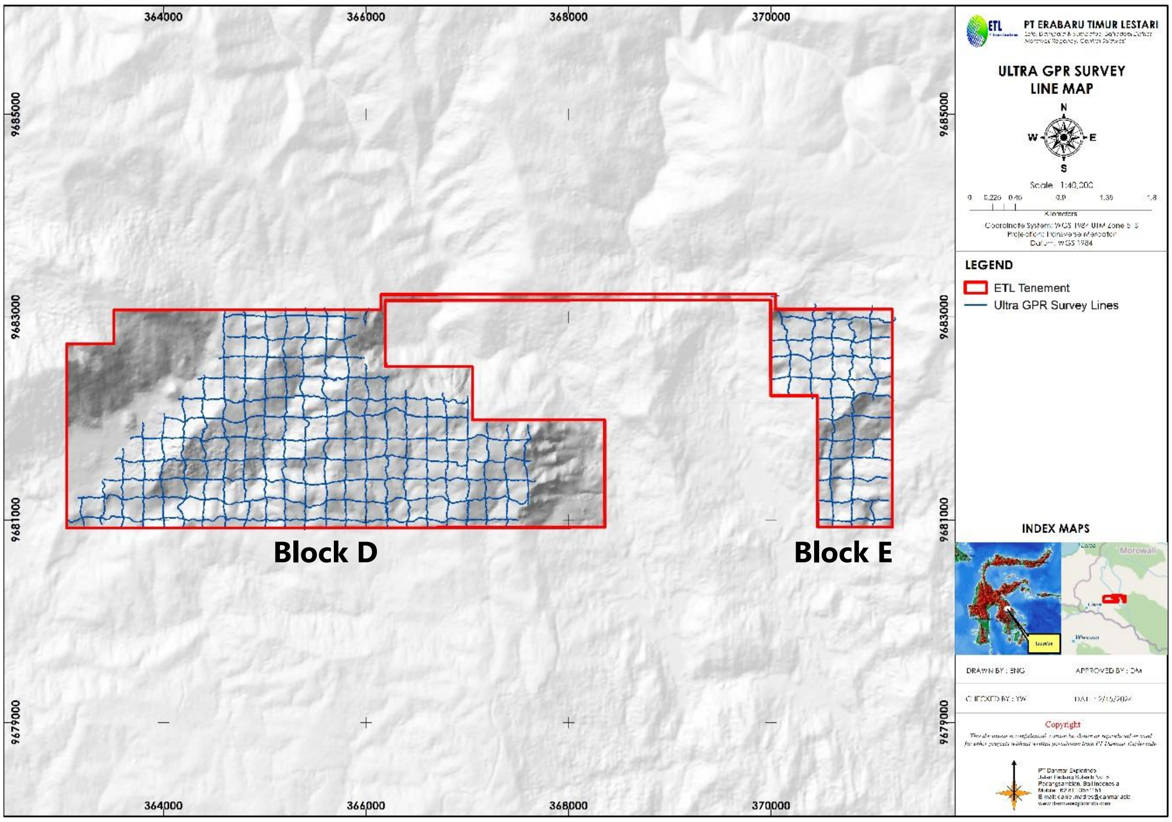


Figure 13 UltraGPR survey lines on topographic map

An example of an UltraGPR section interpretation covering 1,350m in Block D area is shown in Figure 11.

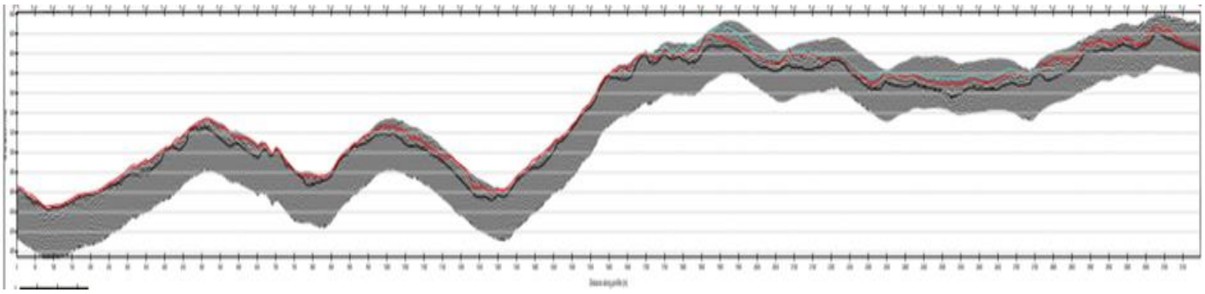


Figure 14 UltraGPR section line interpretation example ETL Block D

From The UltraGPR data in Block D, the thickness of limonite appears to average around 6.3m over the survey area, with only some relatively limited zones showing thickness up to 32.3m. The thickness of rocky saprolite, which we now know included conglomerate bedrock, varies from 0 – 40.4m, with an average 9.8m across all target zones. The total thickness of laterite varies from 0 m to 48.1m with average of 19m of total combined thickness of limonite and saprolite and conglomerate.

In Block E, from the UltraGPR data, the thickness of limonite appears to average around 1.2m over the survey area, with only some relatively limited zones showing thickness up to 9.1m. The thickness of rocky saprolite varies from 0 – 18.6m, with an average 2.6m across all target zones. The total thickness of laterite varies from 0 m to 25.9m with average of 3.8m of total combined thickness of limonite and rocky saprolite.

The limonite thickness, saprolite thickness and depth to bedrock, interpreted from UltraGPR survey data, is shown in Figure 12, Figure 13, and Figure 14 respectively.

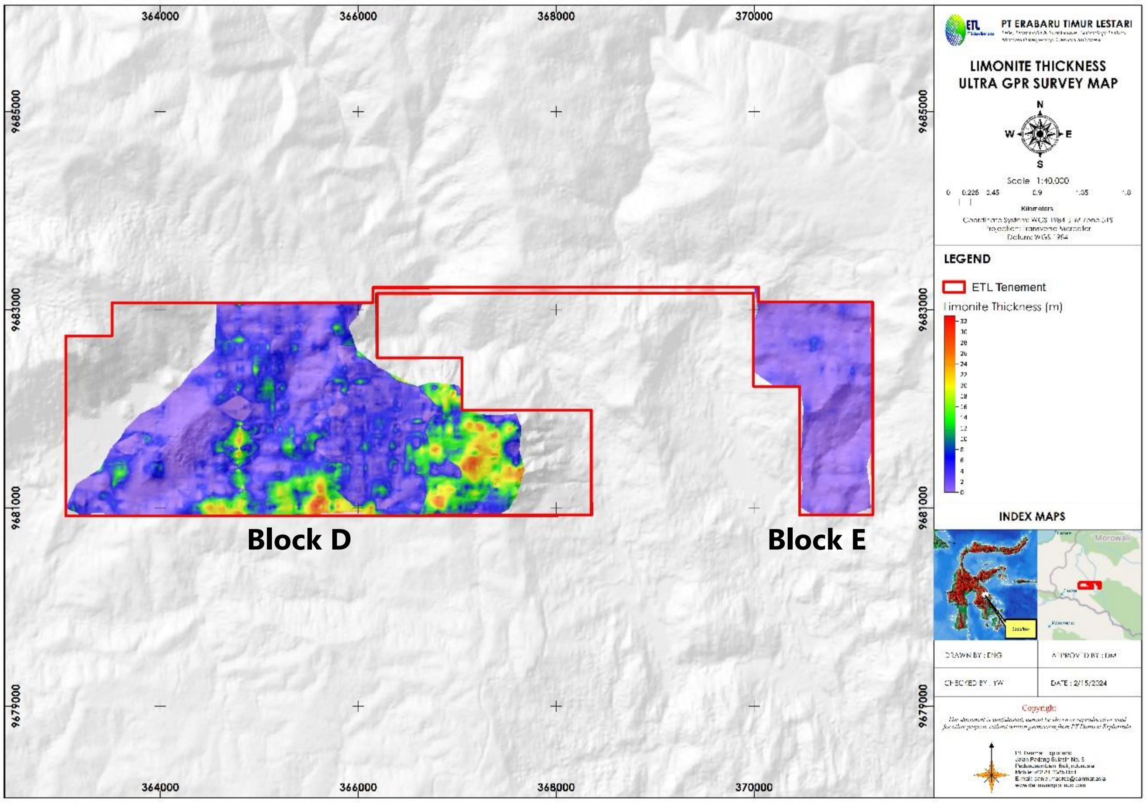


Figure 15 Limonite thickness interpreted from the UltraGPR survey

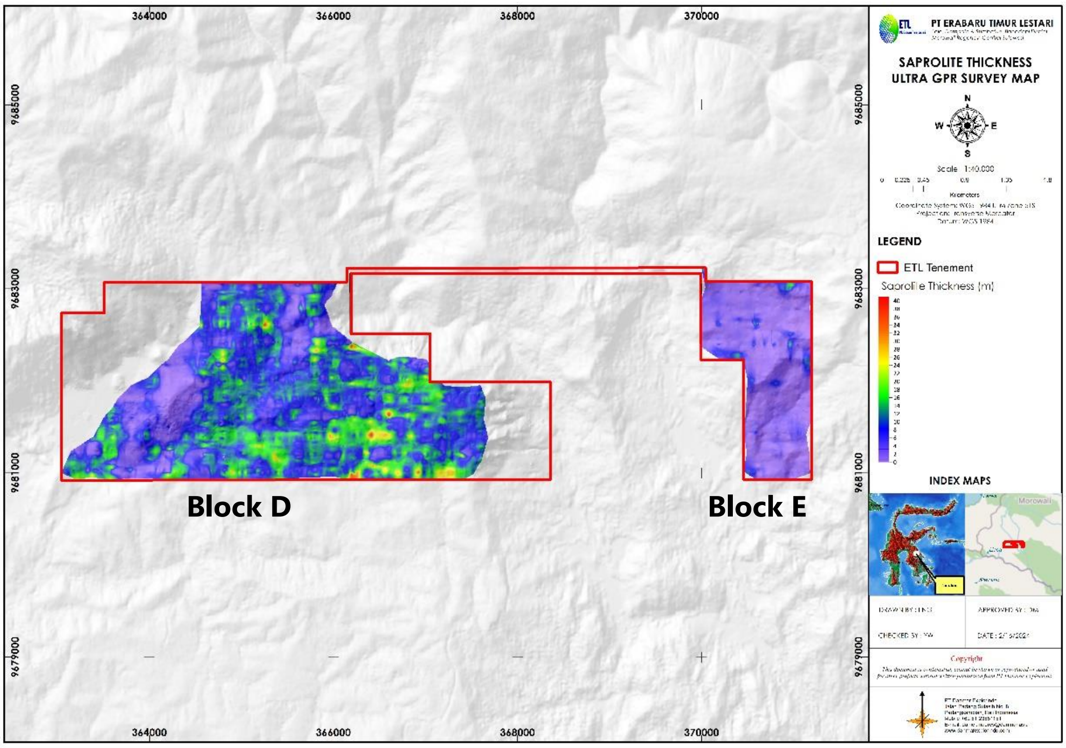


Figure 16 Saprolite thickness interpreted from the UltraGPR survey

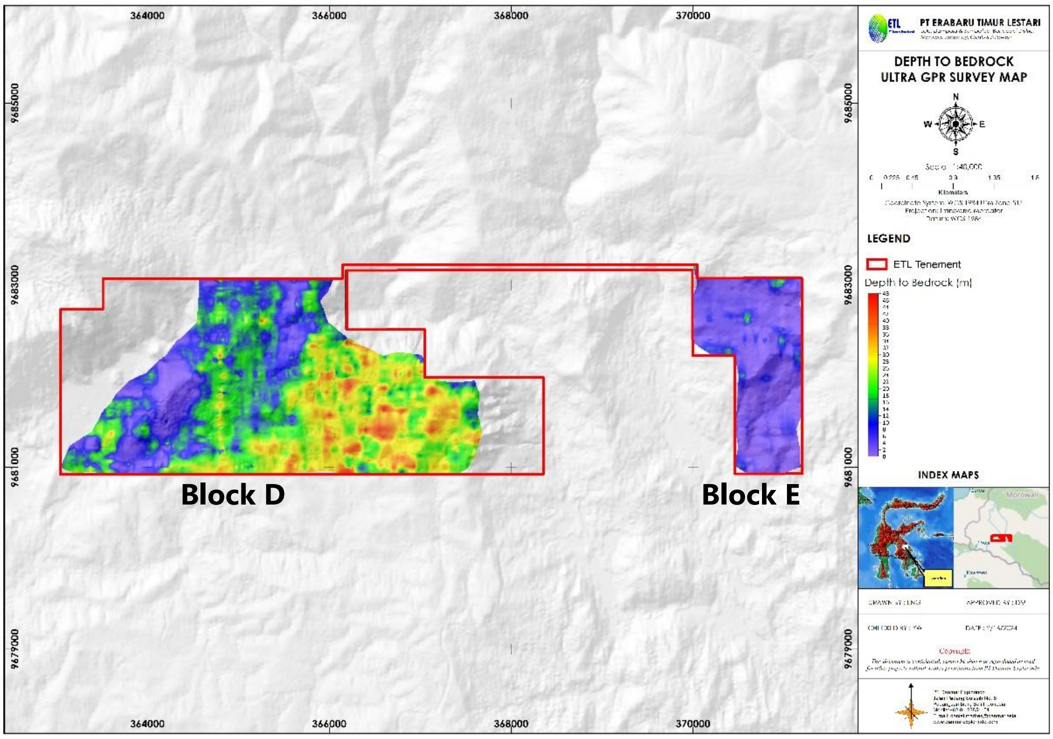


Figure 17 Depth to bedrock interpreted from UltraGPR survey

4.2. Drill Results

Validated drill data used in this study is summarized below in Table 4.

Table 4 Drill data statistics

Block	Area (Ha)	Drilling Used in Resource			Drilling Excluded from Resource		
		Drillholes	Cummulative (m)	Assays	Drillholes	Cummulative (m)	Assays
Block D	340	1,337	32,798	32,933	1	40	52

For the purpose of this Resource estimate, a database of validated drilling data including 1,337 drill holes with a cumulative total depth of 32,798m and 32,933 analyses results has been constructed. Most of the drilling is on a systematic grid, providing a regular spread of drill data over most of the laterite areas in Block D. Geotechnical drill holes are excluded from the geological model since they do not have the geochemical (assay) analysis data. One hole (DE_D50_1896) was excluded from the Resource estimates because of the drillhole location was clearly eroneous as it was only 16m from a pre-existing drillhole.

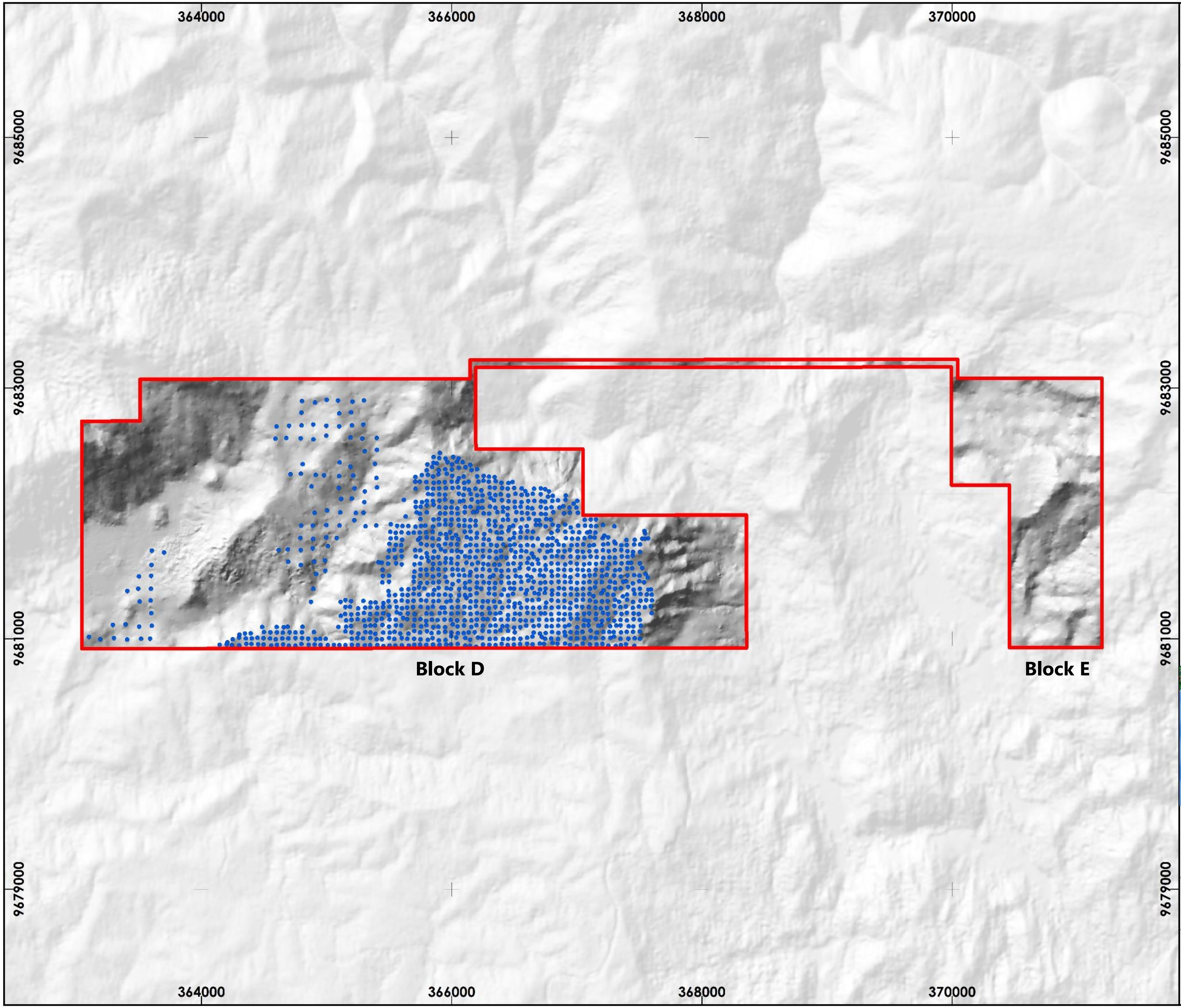
Drill spacing has been done at 50m and 100m spacing with the objective of Resource definition in these areas. Figure 15 shows the drill location map.

The distribution of drilling in each Resource block area is summarized in Table 5.

Table 5 Drilling distribution per Block

Block	Drilling Spacing (m)			
	<25-25	25-50	50-100	Exploration
Block D	-	1240	98	-
% of Total Holes	0.0%	92.7%	7.3%	0.0%

Core recovery data is summarized below. Data from the latest drilling programs was systematically recorded and includes core recovery measurements supported by core photography. Core recovery data is summarized in Table 6.



PT ERABARU TIMUR LESTARI

Lele, Dampala & Sumbalue, Bahodopi District
Morowali Regency, Central Sulawesi

DRILL HOLE LOCATION MAP

N
W E
S

Scale 1:40,000

0 0.225 0.45 0.9 1.35 1.8
Kilometers

Coordinate System: WGS 1984 UTM Zone 51S
Projection: Transverse Mercator
Datum: WGS 1984

LEGEND

🟥 ETL Tenement
● Drill Hole Location

INDEX MAPS

DRAWN BY : ENG
APPROVED BY : DM
CHECKED BY : YW
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Table 6 Core recoveries

Data Source	Lithology	Recorded Core Recovery				Not Recorded
		≥ 95%	95%-90%	90%-85%	< 85%	
Danmar Explorindo	Limonite	99.94%	0.01%	0.03%	0.02%	0.00%
	Saprolite	99.21%	0.32%	0.32%	0.15%	0.00%
	Molasse	98.98%	0.41%	0.49%	0.11%	0.00%
	Carbonate	100.00%	0.00%	0.00%	0.00%	0.00%
	Average	**99.53%**	**0.19%**	**0.21%**	**0.07%**	**0.00%**

4.3. Survey Results

LiDAR topography survey was carried out by PT Hengjaya Mineralindo and covers the entire ETL IUP. The work was carried out between March and July 2023.

The resulting topography survey map of the IUP area is shown in Figure 16.

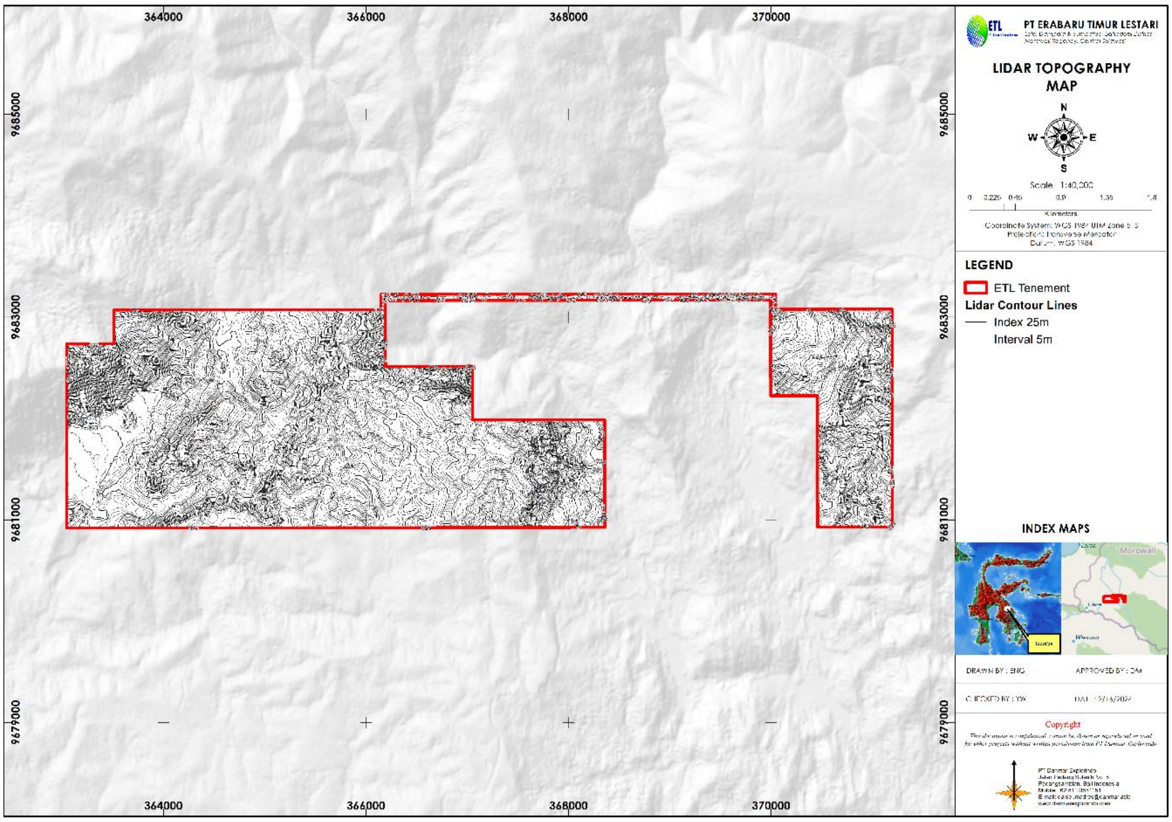


Figure 19 Topography map of the IUP area

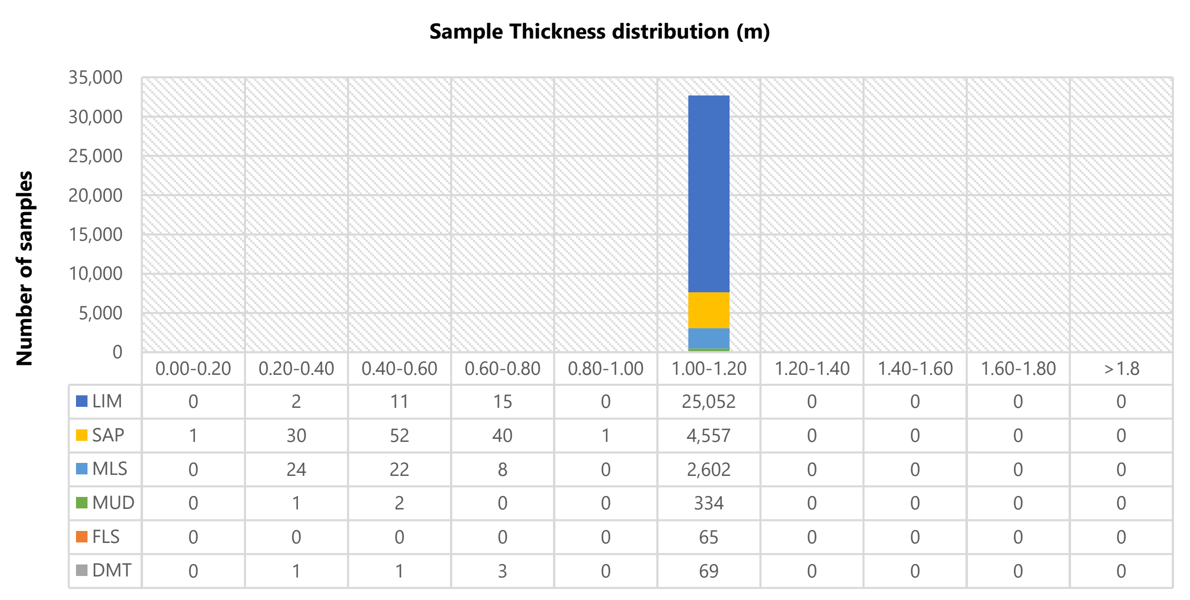
Drill collars have been surveyed by ground survey and these results are summarized in Table 7.

Table 7 Drill collar ground survey

Survey Company	Date of Survey	Total Drill holes
PT Hengjaya Mineralindo	2023	1,337

4.4. Assay Analysis Results

32,945 XRF sample analyses have been performed on drill core samples to document the grade characteristics throughout the Block D, Nickel Resource area at ETL at this time. Sample interval has been predominantly 1m as per each core run. Figure 17 displays the sample interval data.



	0.00-0.20	0.20-0.40	0.40-0.60	0.60-0.80	0.80-1.00	1.00-1.20	1.20-1.40	1.40-1.60	1.60-1.80	>1.8
LIM	0	2	11	15	0	25,052	0	0	0	0
SAP	1	30	52	40	1	4,557	0	0	0	0
MLS	0	24	22	8	0	2,602	0	0	0	0
MUD	0	1	2	0	0	334	0	0	0	0
FLS	0	0	0	0	0	65	0	0	0	0
DMT	0	1	1	3	0	69	0	0	0	0

Figure 20 Sample interval per lithology

4.5. Insitu Density and Moisture Measurements

Insitu density measurements of drill core samples were made for each lithological layer in each hole drilled since June 2023. A total of 3,908 density measurements on drill core samples have been performed. These are insitu density measurements for laterite layers in the ground. Samples relating to limonite, saprolite and molasse conglomerate, used in this Resource assessment are summarised below;

Table 8 Density measurement from core samples

Lithology	Density t/m3 (Wet)	No. of Sample
Limonite	1.76	1,328
Saprolite	1.60	1,252
Molasse	2.70	1,328
Total		**3,908**

Moisture measurements were made by PT Hengjaya laboratory for all samples. Since June 2023, every drill core sample was measured for Moisture Content. A total 32,460 moisture measurement were performed. The results are summarized in Table 9 below.

Table 9 Moisture measurement from core sample by Hengjaya laboratory

Lithology	Average Moisture Content	Standard deviation	No. of samples
Limonite	44.96	6.90	25,080
Saprolite	39.95	10.75	4,681
Molasse	5.98	5.58	2,656
Carbonate	26.5	13.83	476

4.6. Assay Sample Quality Assurance and Control Results

A summary of the 32,933 sample assays results is shown in Table 10.

Table 10 Sample assay summary

Lithology	Assay Observations	Core Recovery (%)	Average Assay results XRF dry						
			Ni %	Co %	Fe %	MgO %	SiO_2 %	Cr_2O_3 %	SM-Ratio
Limonite	25,113	99.99	1.05	0.110	41.06	1.75	6.33	2.88	3.629
Saprolite	4,688	99.88	1.32	0.040	17.58	12.37	35.15	1.38	2.842
Molasse	2,656	99.87	0.39	0.016	6.47	23.79	39.06	0.46	1.642
Carbonate	476	100.00	0.10	0.015	7.13	2.47	47.59	0.20	19.251
Total	**32,933**	**99.97**	**1.02**	**0.091**	**34.44**	**5.05**	**13.67**	**2.44**	**2.709**

4.6.1. Coarse Blanks and Standard

Contamination is assessed by using coarse blank samples which are samples that are barren the elements being tested. At ETL these are Ni and Fe. Limestone was used as coarse blank because of low Ni and Fe. For the ETL analysis, blank samples and OREAS are inserted within exploration batch streams at rate of 4 OREAS and 4 coarse blanks for every 92 exploration core samples to test for cross contamination.

4.6.2. Coarse Duplicates

Double roll crush duplicate samples (DR) are the duplicate samples that are taken from the double roll crusher. The coarse duplicate samples were inserted into the sampling stream at a rate of 1 per every 50 sample.

A scatterplot (Figure 18) showing the results for the four elements Ni, Fe, MgO and SiO_2 from the original and double roll crush duplicate sample results from 639 exploration assays were taken over the period of June 2023 to January 2024. The graphs show the original and double roll crush duplicate elemental values in black plotted on a middle red line representing the mean elemental values of these samples. The two yellow dashed lines above and below the mean line represent the correlation between the assay variables with a variance of +5% and -5%, and the outer green dashed lines represent the variance between the assay variables of +10% and -10%. Scatterplots, where the results slope from the lower left to upper right, indicate a positive correlation.

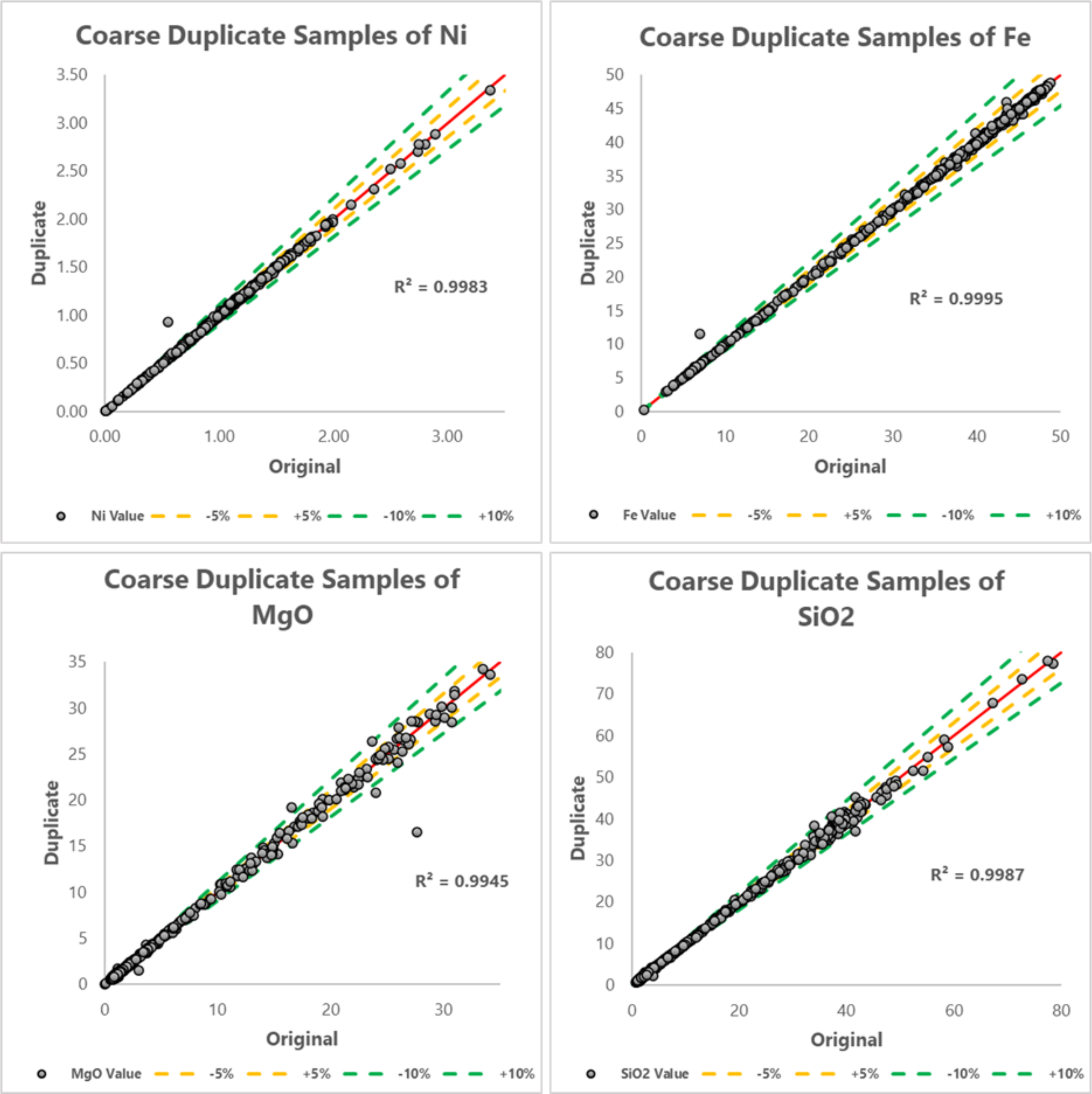


Figure 21 Scatterplot results of 639 double roll crush duplicate vs original assays

The figures above show that with all four elements the black dots plot within the +10% and -10% variance lines. In fact, the majority plotted between the +5% and -5% yellow dashed lines, showing there is a high correlation between the original and the duplicate assay values. This is further confirmed with the correlation coefficient (R^2) values more than 0.99 for the elements being assayed. These figures confirm the high precision of the double roll crushing reflecting an excellent sub-sampling precision and preparation quality.

4.6.3. Pulverizer Duplicates

Pulverize duplicates samples (DA) are second splits of the fine-grained pulp samples that are collected in the final incremental splitting of the samples after pulverizing. The pulp duplicates are indicators of the analytical precision, which can be affected by the quality of the pulverization process and the homogenization of the sample. The duplicate samples were inserted to analyzed every 50 sample with the size of the sample is ~ 200 Mesh (75 µm).

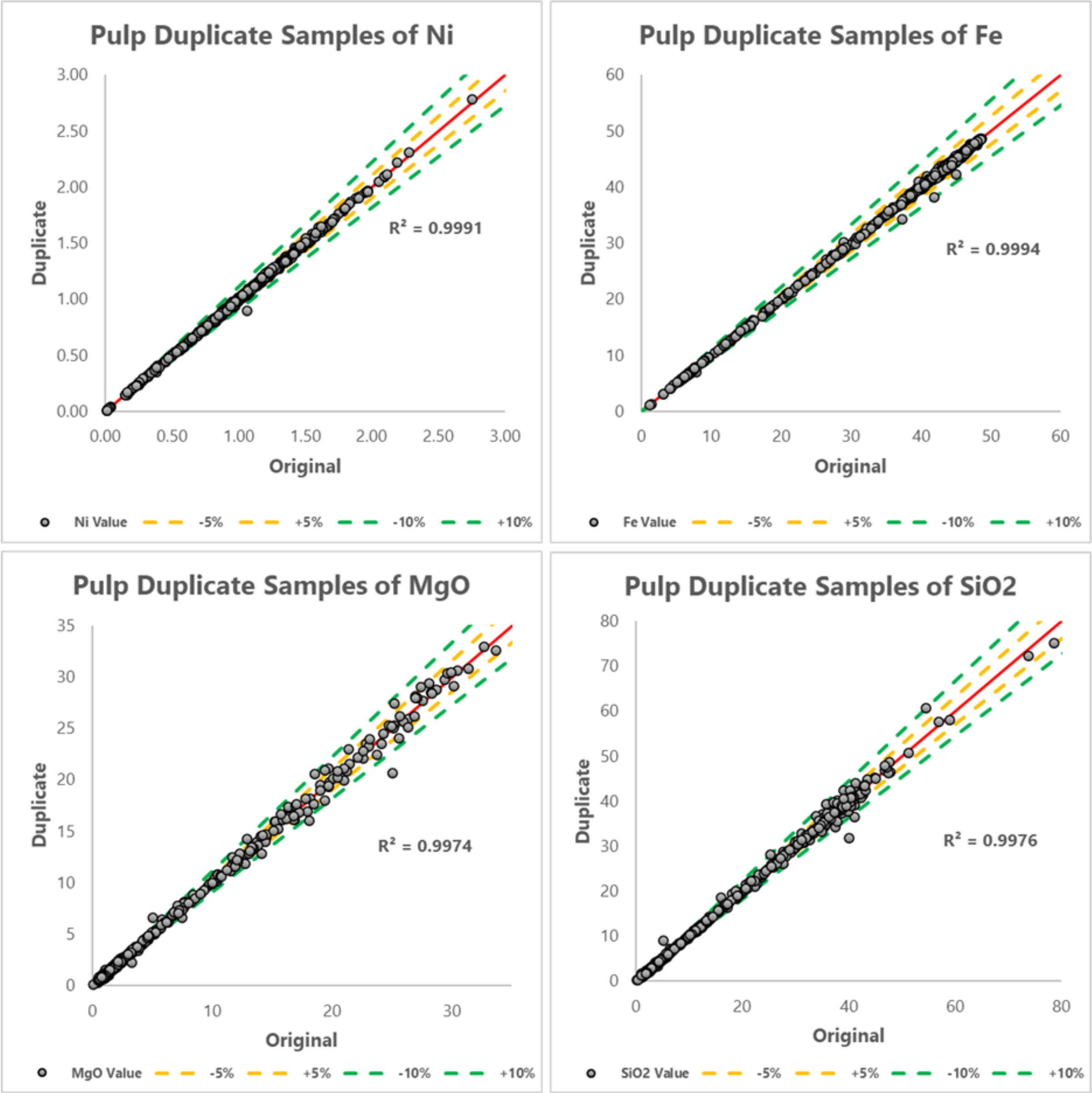


Figure 22 Scatterplot results of 637 plots for pulp duplicate vs original assays

The scatterplots (Figure 19) for the elements Ni, Fe, MgO and SiO_2 from pulp duplicate and original assays from 637 pulp samples analysed between June 2023 to January 2024. The scatterplots are similar to those shown in Figure 18 for the double roll crush duplicate assays, where the majority plotted between the +5% and -5% yellow dashed lines, showing there is a high correlation between the original and the pulp duplicate assay values and reflected with correlation coefficients more than 0.99. These figures confirm the high precision of the pulp duplicate samples indicates the pulverization process and the homogenization of the sample are good.

4.6.4. Certified Reference Materials

Certified Reference Materials, (CRM's), are samples with certified grades, prepared under specially controlled conditions and have a certified mean value for the contained elements in that standard, along with associated confidence and tolerance limits. They are used in Quality Control to monitor the values of the standard against those of the unknown samples being assayed and allow the accuracy of the assay process to be monitored. Hengjaya Assay Laboratory use CRMs produced by OREAS (Ore Research & Exploration P/L, from Victoria, Australia). OREAS CRMs used are 7 Standards with certified Nickel values shows in the Table 11.

Table 11 Certified Nickel values of OREAS CRMs

CRMs	Certified Nickel Values
OREAS 182	0.71
OREAS 184	1.02
OREAS 187	1.37
OREAS 192	1.77
OREAS 193	1.93
OREAS 194	2.13
OREAS 195	2.94

In addition, these standards have certified standard deviations and state the 95% Confidence and Tolerance Limits with low and high values.

Figures 20, 21, and 22 are Shewhart Control Charts for the results of assays using the OREAS standards 182, 187, and 192 over eight months period. The assay results obtained, over a period of time, are plotted on a chart of showing certified values against the number of samples assayed, with one dotted line showing the certified mean value and the zone between two yellow lines showing the expected value plus/minus two standard deviations, also referred to as Upper and Lower Warning Limits, and the zone between two red lines representing the Upper and Lower Control Limits at three standard deviations.

Good quality analyses will be characterized by random distribution points around the certified mean value, with 95% of the data points lying within two standard deviations of the mean. The same number of analyses should fall above and below the mean.

The OREAS Standard 182 (Figure 20) with total 737 samples show the results plotting within three standard deviations of the mean for both Ni and Fe, even though the mean value not really precise or shows a tendency to underestimation, the result still showing a good accuracy.

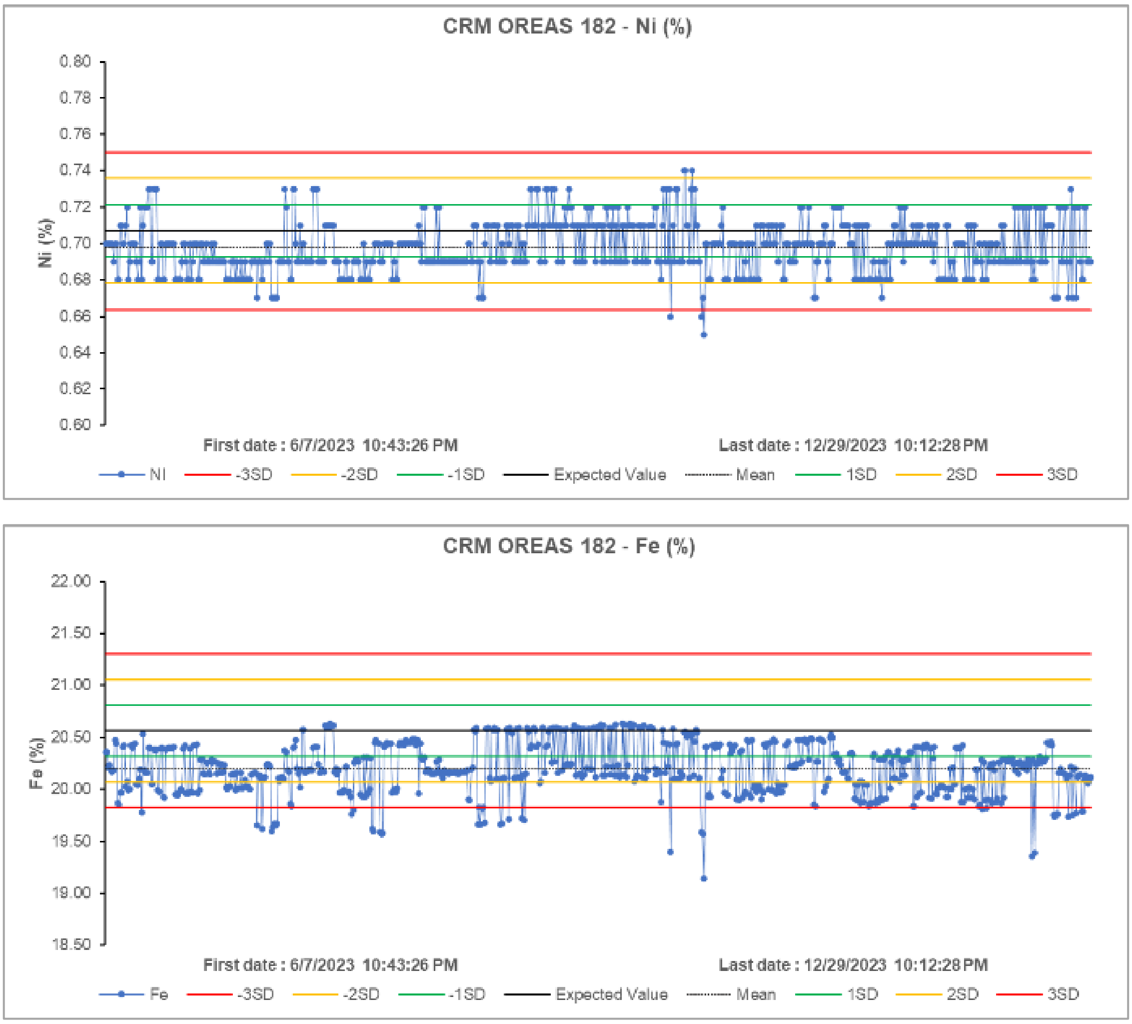


Figure 23 CRM OREAS182 - 737 samples analysis

Figure 21 shows the results for 797 samples of OREAS187 for Ni and Fe, with Ni and Fe showing good accuracy, 95% of the results plotting within two standard deviations of the mean, and similar numbers of samples above and below the mean. Some samples are showing a great variance from the expected value probably because of error while typing the type of Standard.

Figure 24 CRM OREAS187 - 797 samples analysis

The OREAS Standard 192 (Figure 22) with total 958 samples show the results plotting majority within two standard deviations of the mean for both Ni and Fe and showing a good accuracy. Same with OREAS Standard 187, some samples are showing a great variance from the expected value probably because of error while typing the type of Standard.

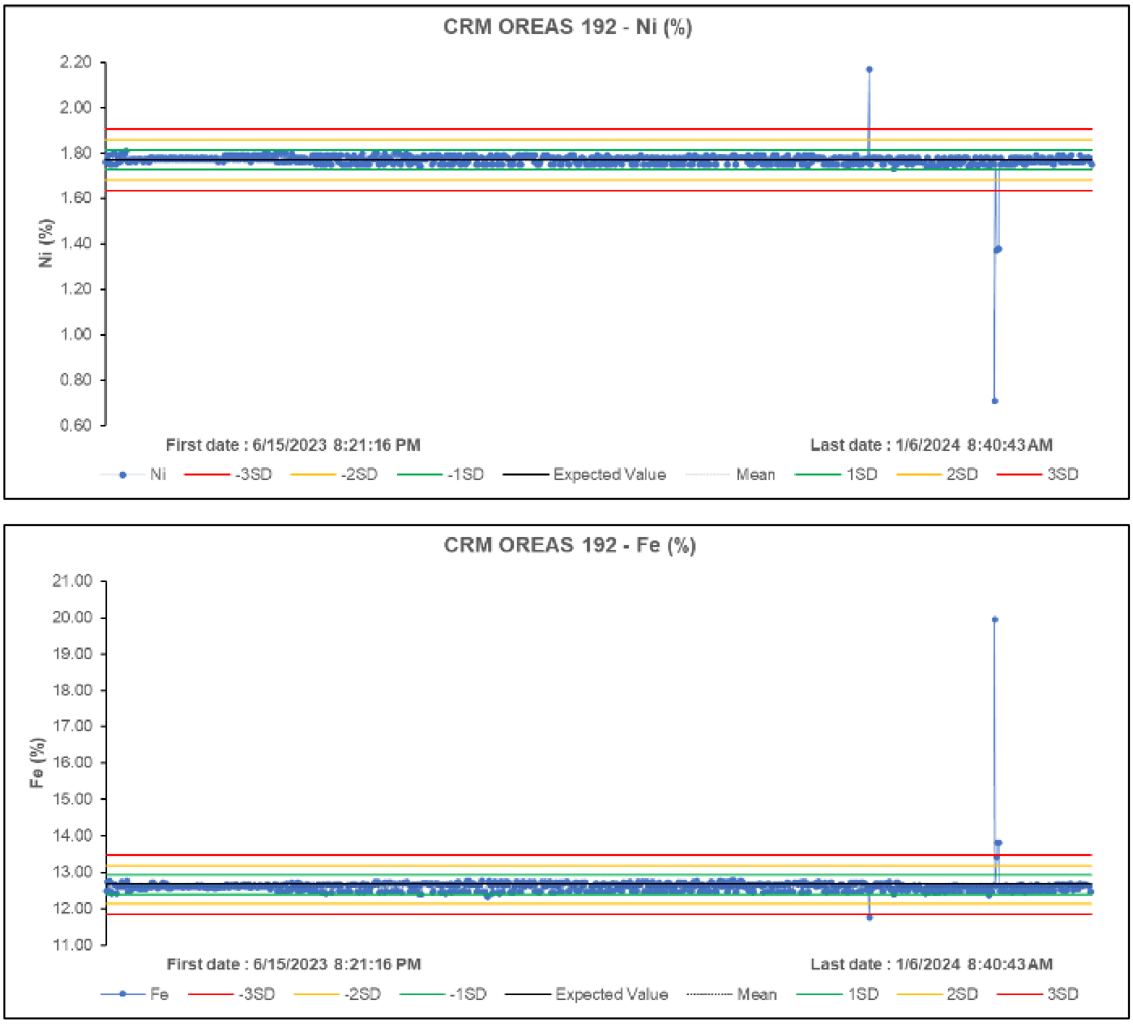


Figure 25 CRM OREAS192 - 958 samples analysis

For details of the CRM analysis see Appendix 3.

4.6.5. Replicate Samples

Replicate samples (REP) are the samples that were taken from the original sample before the preparation. Total 1,270 replicate samples were taken between June 2023 to January 2024 shows in scatterplots (Figure 26) for Ni, Fe, MgO and SiO_2. The format of the scatterplots is the same as for the previous scatterplots.

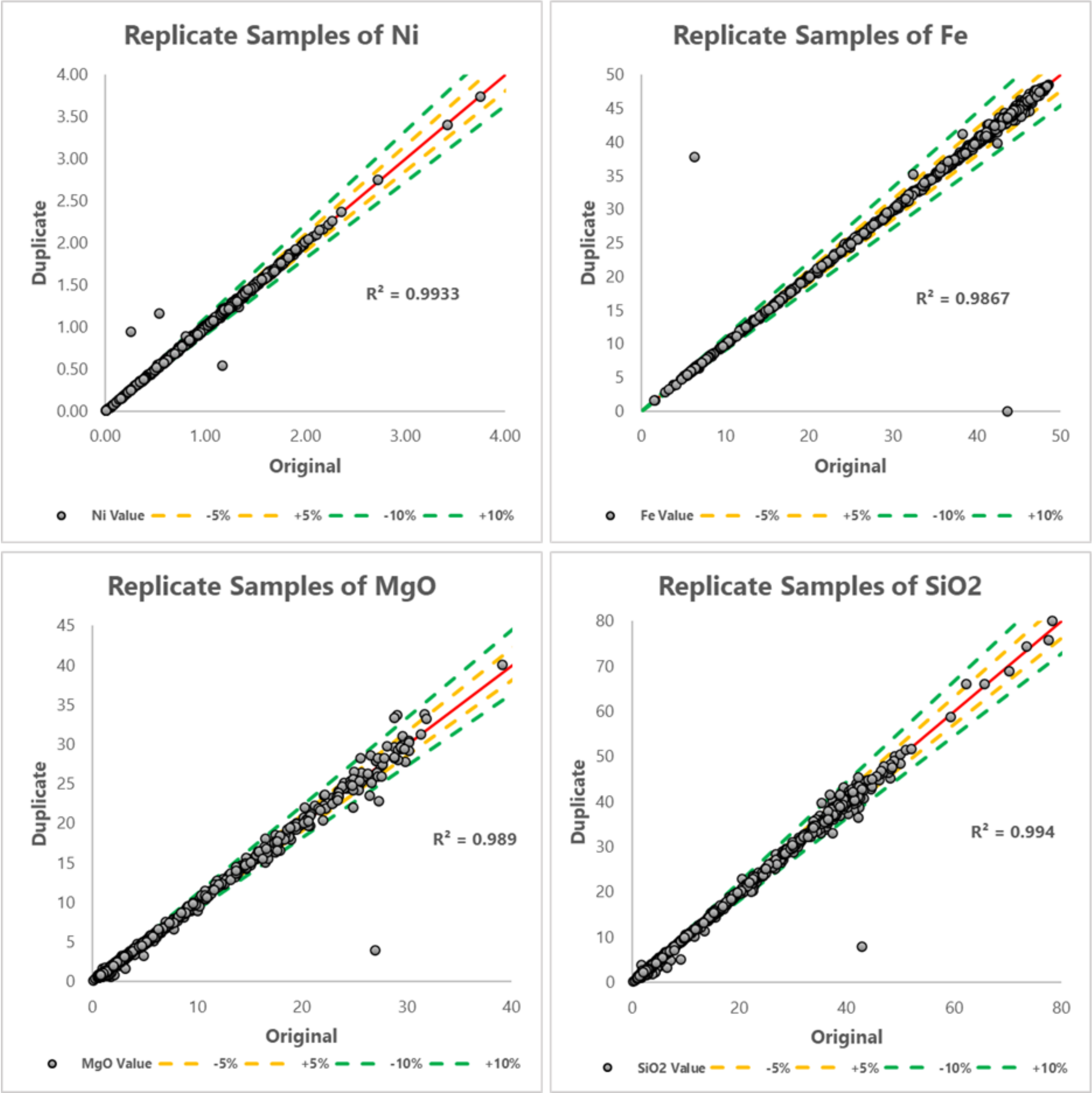


Figure 26 Scatterplot results of 1,270 plots for replicate vs original assays

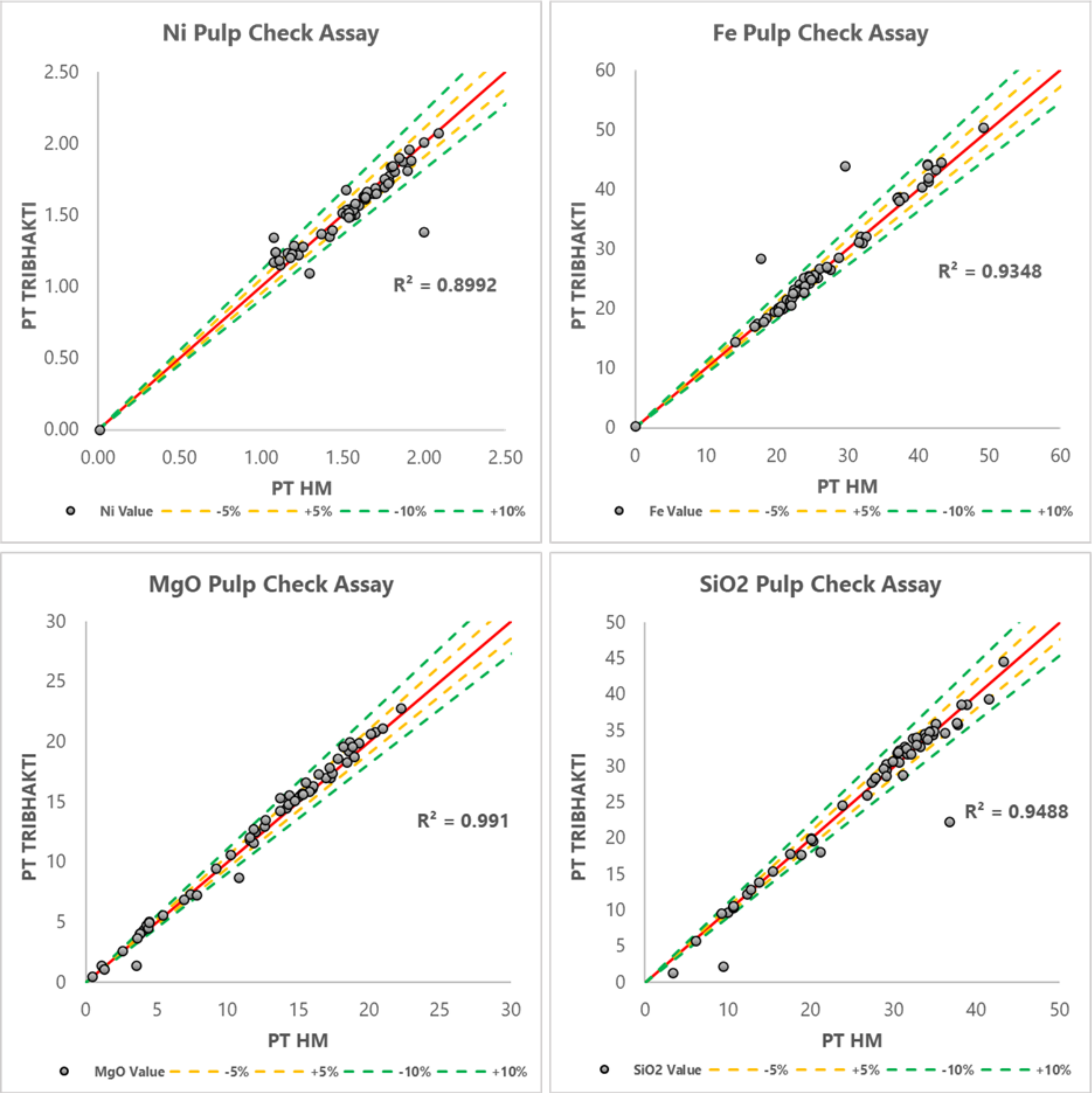
The scatterplots for replicate sample assays show the majority of the results plotting within the two yellow dashed lines indicating a 95% confidence in the result plotting within these limits and is considered an excellent result. The graphs also show correlation coefficients of more than 0.98 which is indicating high precision on assay quality.

4.6.6. Interlaboratory Check Samples

Interlaboratory Check samples are second splits of both the coarse reject samples and the finer 200 # pulp samples that are routinely assayed at the HM Assay Lab and submitted to second, commercial, laboratories under a different sample number. These samples are used to assess the assay accuracy of the HM laboratory relative to the secondary, Tribhakti Inspektama Laboratory and Geoservices Laboratory.

The first batch was sent in September 2023 with total 60 samples to be checked. This batch of exploration samples were sent to the Tribhakti Inspektama Laboratory in Kendari where the coarse reject samples underwent pulverizing and incremental splitting, to be sent off for XRF assay, along with duplicate pulp assay samples. Once the samples assayed, the results were returned to the Assay Laboratory at the Tangofa site.

Figure 24 shows the results of the inter laboratory check sample tests comparing the results of 60 split Exploration coarse reject and 200# pulp samples assayed at the original HM assay laboratory with samples sent to the Tribhakti Inspektama assay Laboratory in Kendari.



Ni Pulp Check Assay

Fe Pulp Check Assay

MgO Pulp Check Assay

SiO2 Pulp Check Assay

Figure 27 Scatterplot of HM original vs Tribhakti Inspektama duplicate assays

The scatterplots show differing precision for the different elements, with the best correlation between the results for MgO and SiO_2, 0.991 and 0.9488 respectively, Fe and Ni have lower correlations at 0.9348 and 0.8992.

Data for the results for the two laboratories shows a difference between the mean for the Ni and Fe values for the HM Lab as 1.54 % Ni and 26.54 % Fe against 1.56 % Ni and 27.09 % Fe for Tribhakti Inspektama, a difference of 0.02% for Ni and 0.55% for Fe. These represent a +/-

5% variance from the assay, a good precision and reflected with correlation coefficients of 0.8992 and 0.9348 with some of samples are outside the control line.

These results show lesser precision than the internal checks using Coarse Rejects, Pulp Assays and Replicate Assays at the HM Lab. This indicates the difference is likely to be due to different sample processing procedures at the two laboratories, and different accuracies and precision due to different equipment.

In October and November 2023, total 1,030 samples were sent for interlaboratory check at different labs. This batches of exploration samples were sent to the Geoservices Laboratory in Kendari where the coarse reject samples underwent pulverizing and incremental splitting, to be sent off for XRF assay at Geoservices Analytical Laboratory in Bandung, along with duplicate pulp assay samples. Geoservices then forwarded the HM pulp sample checks to their analytical lab as a different consignment and once the samples assayed, the results were returned to the Assay Laboratory at the Tangofa site.

Figure 25 shows the results of the inter laboratory check sample tests comparing the results of 1,030 split Exploration coarse reject and 200# pulp samples assayed at the original HM assay laboratory with samples sent to the Geoservices assay Laboratory in Bandung.

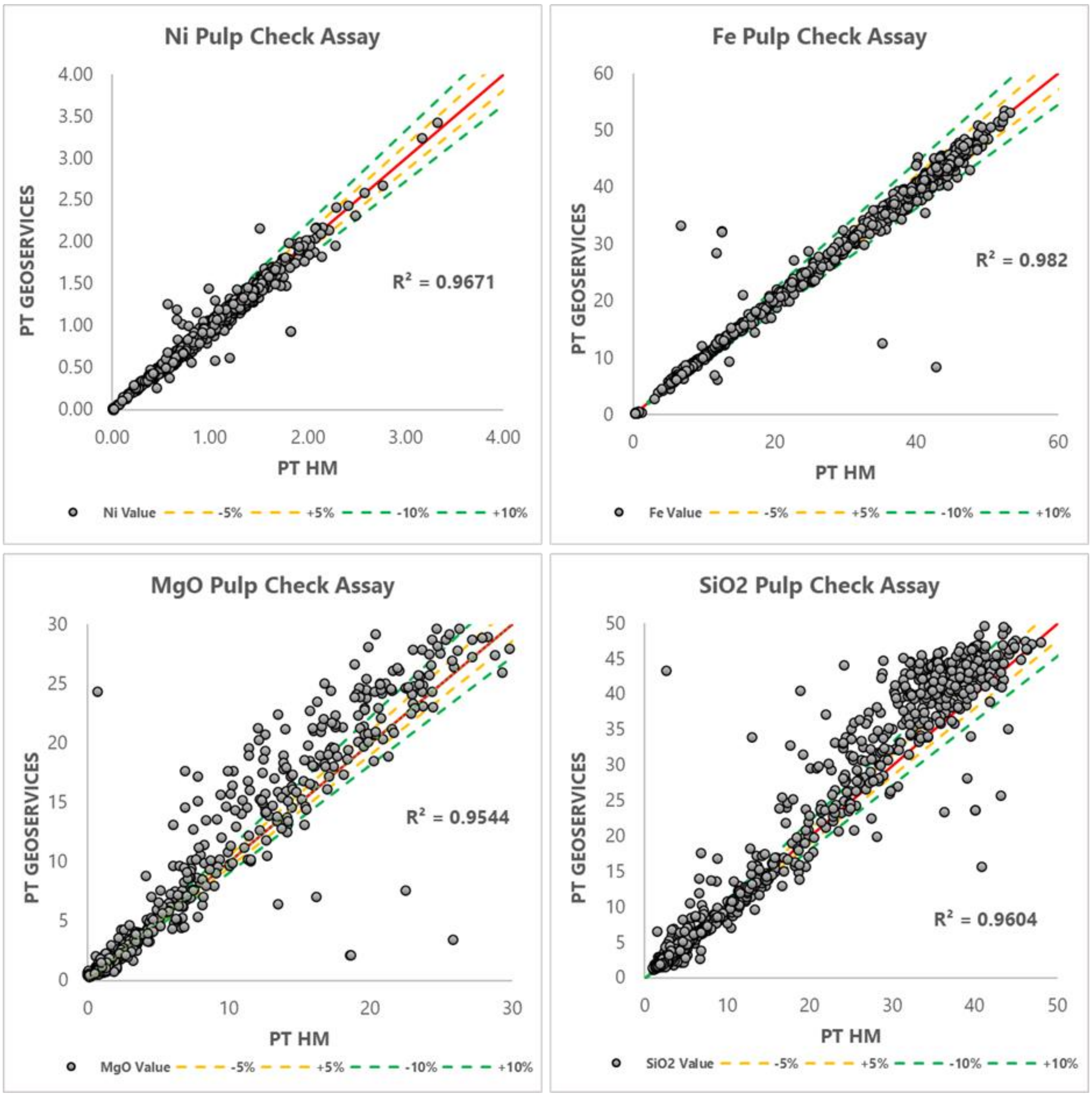


Figure 28 Scatterplot results of 1,030 plots of HM original vs Geoservices duplicate assays

Data for the results for the two laboratories shows a difference between the mean for the Ni and Fe values for the HM Lab as 0.99 % Ni and 31.19 % Fe against 0.97 % Ni and 31.12 % Fe for Geoservices, a difference of 0.02% for Ni and 0.07% for Fe. These represent a +/- 5% variance from the assay, a high precision and reflected with correlation coefficients of 0.9671 and 0.982 with some of samples are outside the control line.

These results also show lesser precision than was the case with the internal checks using Coarse Rejects, Pulp Assays and Replicate Assays at the HM Lab. This indicates the difference is likely to be due to different sample processing procedures at the two laboratories, and different accuracies and precision due to different equipment. There is a difference between the pressed powder pellets used at the HM Lab with the Fused Bead system used at Geoservices. Similarly, the HM Assay Lab uses a Malvern Panalytical Epsilon 4 XRF and a Buker Puma S2 XRF that was brought into operation in 2021 and any differences between these XRF Units and those used at Geoservices could result in the small differences being recorded.

4.6.7. Control Sample Insertion Rates

During the period June 2023 to January 2024 a total of 32,945 exploration samples were processed at the Internal Hengjaya Assay Laboratory. The following check samples were added into this original sample stream:

Table 12 Sample Insertion Rates June 2023 – January 2024

Pediod	Exploration Samples	Double Roll Crush Duplicate		Pulverized Duplicate		Replicate		CRM's		Interlab Checks	
		Total Samples	%	Total Samples	%	Total Samples	%	Total Samples	%	Total Samples	%
June 2023 - Jan 2024	32,933	639	2%	637	2%	1,270	4%	4,187	13%	1,090	3%

The Coarse Reject and Pulp Duplicate samples each comprise 2% of the samples submitted which are considered to be good insertion rates. CRM’s comprise 13% of the samples inserted which is also considered to be an appropriate rate.

1,270 Replicate samples were inserted as laboratory check samples at Hengjaya Assay Laboratory, with insertion rates 4%. The twin samples were not collected at the sample collection stage, because the whole drill core is sent for sample preparation and assay. Coarse blank and CRM were inserted with total insertion rates 8% to check for cross contamination.

In summary, a total of 7,823 check samples were inserted into the sample stream of 32,933 exploration samples and submitted for assay at the Hengjaya Assay Laboratory, which is 23.7% of the total samples. These insertion rates are considered to be sufficient to support good sample quality control appropriate for Mineral Resource estimation.

5. DATA VERIFICATION

The author visited the site in August 2023 during the exploration drilling program. The objective of the site visit was to review the protocols and processes in place to verify the data acquisition is suitable for use in this Resource study. Since then, field program datasets have also been reviewed, checked, and verified by comparing the original field data and core tray photos against the official Certificates of Analysis. A flowsheet for the data verification procedure is shown below.

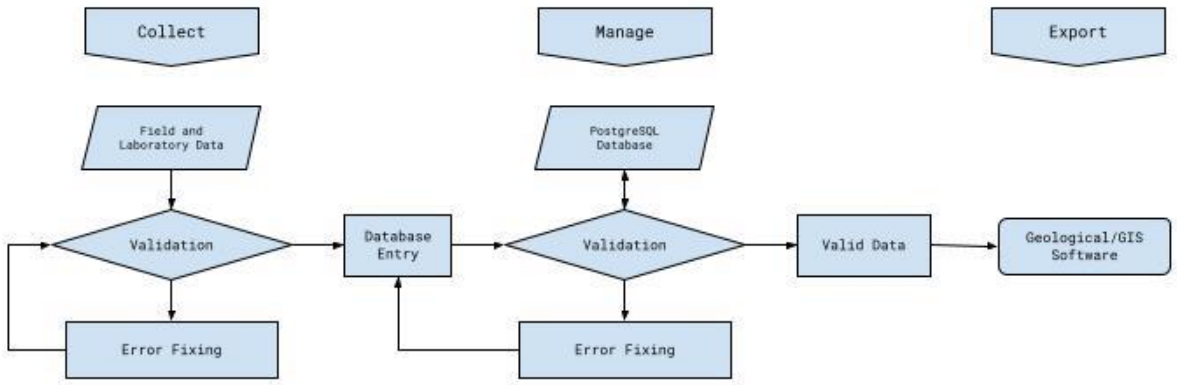


Figure 29 Simplified data verification workflow

5.1. Drill Hole Collar Elevation and LiDAR Topography

ETL has supplied a digital copy of LiDAR topographic data in CAD format. As this data was reviewed, not many variances between drill hole collar elevation and LiDAR topographic surface were identified. This is summarized in Figure 27 below.

From Figure 27, only 0.3% or 4 holes have difference in elevation greater than 0.5m and less than 1m between ground survey elevation and LiDAR elevation, which indicates the ground survey elevation is accurate and representative of the actual ground surface. The 4 holes, with the anomalous elevation, are currently being drapped onto the LiDAR surface for the purpose geological modelling in this report.

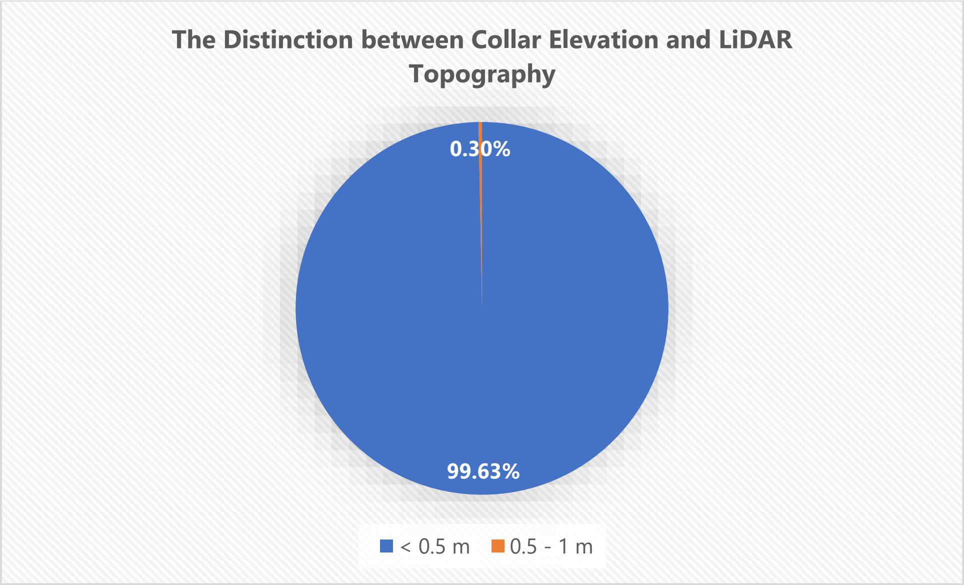


Figure 30 Discrepancy between collar elevation and LiDAR Topography

5.2. Database Validation

Data supplied by ETL field team has been checked and validated using PostgreSQL relational database software built specifically for this project by the authors of this report.

The database validation has been done for common errors and mistakes but not limited to;

1. Typing errors
2. Numbering errors
3. Incorrect codes
4. Missing intervals data
5. Overlapping intervals
6. Missing assay values
7. Negative or non numeric data handling
8. Switched collar easting and northing data

5.3. Geological Domains

As the exploration assay results have accumulated it appears that these can be regarded as distinct lithological domains where the exploration drilling work was completed. At this time, 4 separate geological domain lithology in Block D have been identified for constructing the geological model:

1. MUD; Soft material deposited on top LIM, SAP or MLS
2. LIM; Limonite
3. SAP; Saprolite
4. MLS; Molasse Conglomerate as source/bed rock of the nickel laterite deposit

Other geological domains such as DMT (dolomite) and FLS (other sedimentary rocks) are not modeled since they are outside the nickel laterite boundary.

Visual lithological description from field geologists has been checked using assay data to make better geological definition of the lithological domains intersected in the drilling. As a result, a generalized geochemical characteristic for each lithological domain has been defined as shown in Table 13. Each geological domain has been coded into the database and used for geological modelling.

Table 13 Generalized geological domain based on chemistry data.

Laterite Layers	**Non Laterite**	**Fe**	**MgO**	**SiO_2**	**CaO**	**Ni**
	MUD	≥ 30%	≤ 5%	≥ 30%		<0.1%
LIM		≥ 30%	≤ 7%	≤ 20%		
SAP		8% > x < 30%	7% > x ≤ 20%	20% > x < 40%		
	MLS	≤ 8%	> 20%	≥ 40%		< 0.8%
	DMT				≥ 20%	<0.1%
	FLS	≤ 10%		≥ 30%		<0.1%

Figure 31 Shows the average lithological thickness at each domain area based on the drilling results.

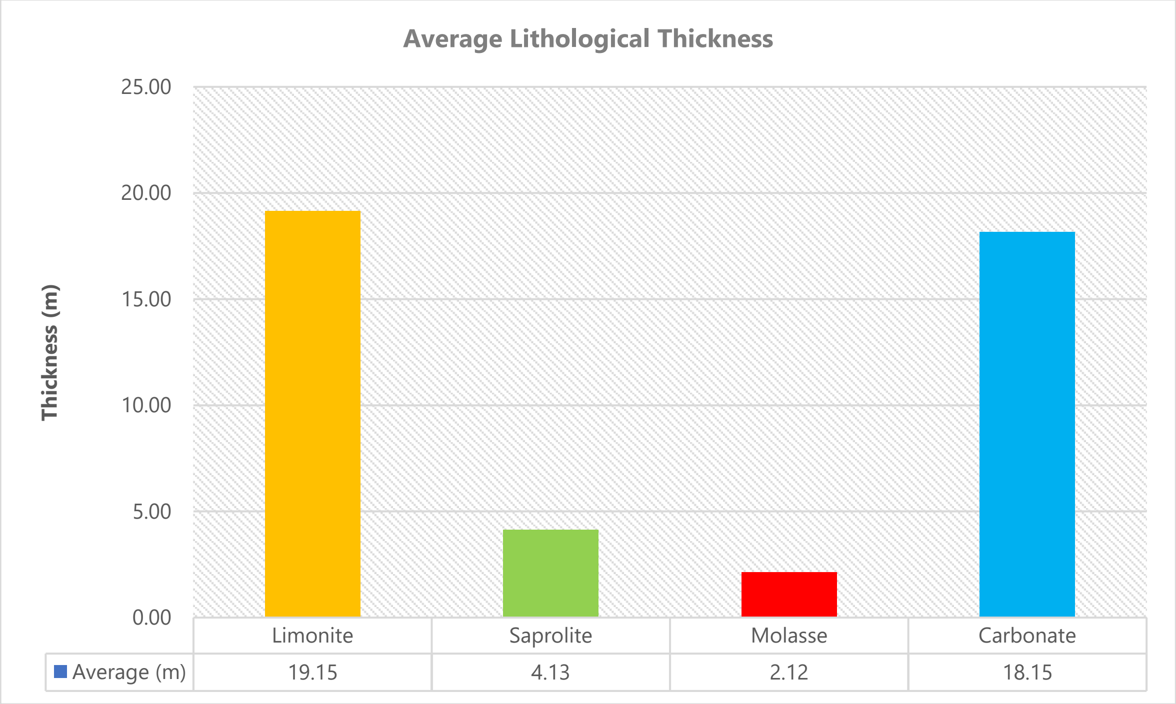


Figure 31 Average lithological thickness chart Block D

Based on the drilling and assay results the thickness of limonite appears to be relatively consistent around 19.22m. Saprolite appears also be relatively consistent at around 4.17m.

Complete descriptive statistics for each domain are summarized in Appendix 4.

6. MINERAL RESOURCE ESTIMATE

6.1. Software

Geological modelling, geostatistical study and Mineral Resource estimation were completed using Seequent Leapfrog Geo 2023.2.1 software.

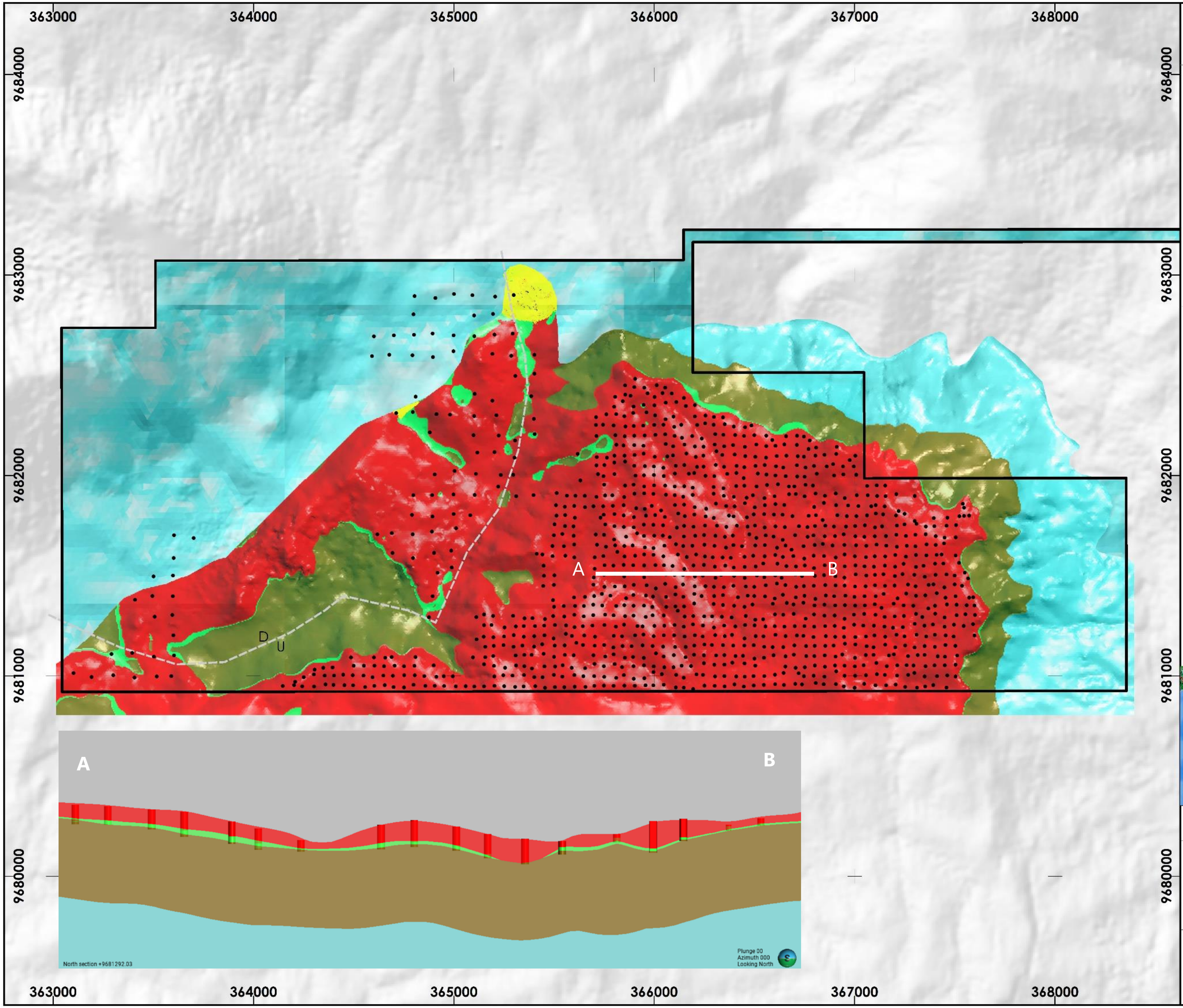
6.2. Geological Modeling

Each lithology in the drill hole data has been coded into distinct geological layers, based on their chemical composition determined by the assay results. Each contact of the layer has been modelled in the 25 x 25meter grid surfaces and visually checked by easting and northing cross sections to ensure the surface fit the drill hole data. The topography surface was used to limit the limonite, saprolite and molasse conglomerate.

The cumulative thickness of the domain layers was compared to the original drill hole data to check the accuracy of the geological model. The cumulative thickness is summarized in the Table 14 below.

Table 14 Drillhole and geological model cumulative thickness comparison

Lithology	Total Drill Hole Thickness (m)	Total Model Thickness (m)	% Matching Length
Limonite	25,077.32	24,939.56	99.45
Saprolite	4,618.42	4,612.80	99.88
Molasse Conglomerate	2,630.26	2,625.91	99.83



PT ERABARU TIMUR LESTARI
Tele, Dampala & Sumbatue, Bahodopi District
Morowali Regency, Central Sulawesi

Geological Model

N
W E
S

Scale 1:25,000

0 0.125 0.25 0.5 0.75 1
Kilometers

Coordinate System: WGS 1984 UTM Zone 51S
Projection: Transverse Mercator
Datum: WGS 1984

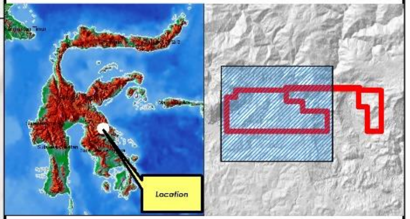
LEGEND

☐ ETL Tenement
• Drill Hole Location
--- Fault

Lith Type

🟥 LIM
🟩 SAP
🟫 MLS
🟨 MUD
🟦 CARBONATE

INDEX MAPS



DRAWN BY : AS
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6.3. Extrapolatory Data Analysis

The drill hole samples were composited in 1m lengths. The 1m compositing was selected because it represents the modal length of the samples taken during exploration and would preserve the detail information obtained in the samples. Several compositing strategies for sample length with less than 1m have been tested in the geological model by adding it to the previous interval or distribute it equally between previous and subsequent samples or ignoring it completely. The three compositing method show very little change in the coefficient of variation (CV), so that for the current geological model, sample length less than 1m are added to the previous interval composite to include all analyses in the geological model.

Table 15 Composite statistics for Limonite (LIM)

Parameter	Ni	Co	Fe	MgO	SiO2	Cr2O3
Mean	1.05	0.11	41.06	1.75	6.33	2.88
Standard deviation	0.30	0.05	5.42	1.55	6.94	0.57
Variance	0.09	0.00	29.43	2.40	48.18	0.32
Coefficient of variation	0.29	0.49	0.13	0.89	1.10	0.20
Maximum	3.49	0.89	52.05	23.49	59.83	6.16
Median	1.04	0.1	42.76	1.14	2.96	2.94
Minimum	0.08	0	5.02	0.01	0.01	0.01

Table 16 Composite statistics for Saprolite (SAP)

Parameter	Ni	Co	Fe	MgO	SiO2	Cr2O3
Mean	1.32	0.04	17.63	12.33	35.14	1.38
Standard deviation	0.57	0.02	6.25	5.76	7.16	0.49
Variance	0.32	0.00	39.09	33.22	51.29	0.24
Coefficient of variation	0.43	0.44	0.35	0.47	0.20	0.35
Maximum	7.41	0.25	40.61	39.1	77.16	3.91
Median	1.23	0.04	17.02	11.86	35.25	1.36
Minimum	0.1	0.01	4.78	0.11	11.48	0.01

Complete descriptive statistics for each element are summarized in Appendix 4.

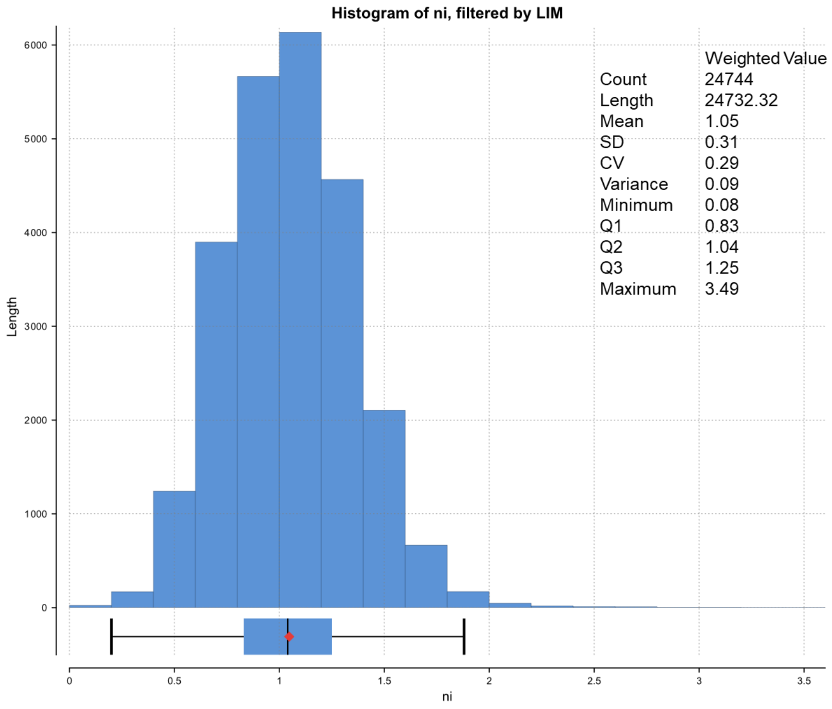


Figure 33 Histogram for Ni Limonite in Block D

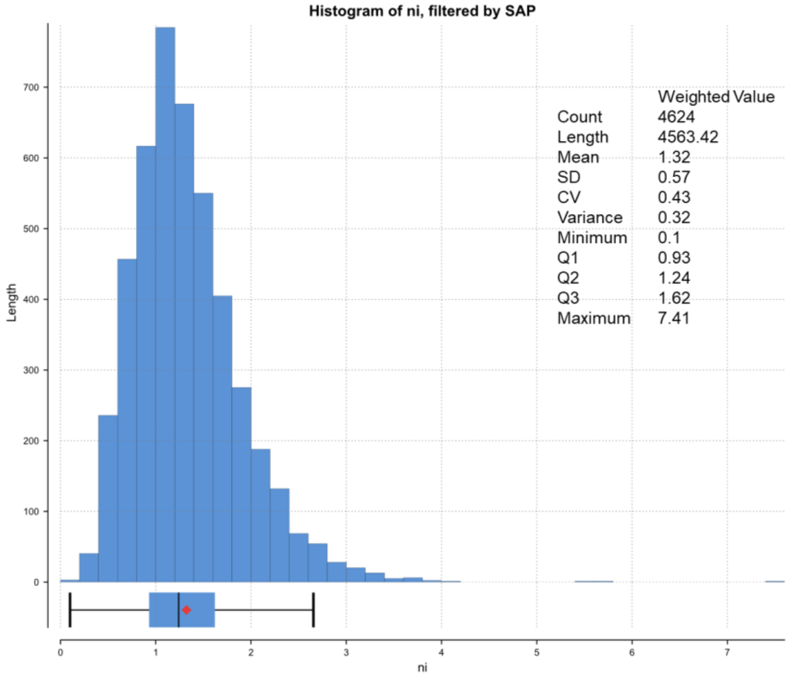


Figure 34 Histogram for Ni Saprolite in Block D

6.4. Variography

6.4.1. Variogram

The variograms for all elements were modelled using the spherical formula in the normalized type of data. A lag distance of 1m was used for the downhole variogram and 25m to 50m was used for horizontal pairing. During fitting the variogram, all data was transformed into normal score data to reduce the noise of the variogram and then transformed back again when exporting the variogram for grade estimation.

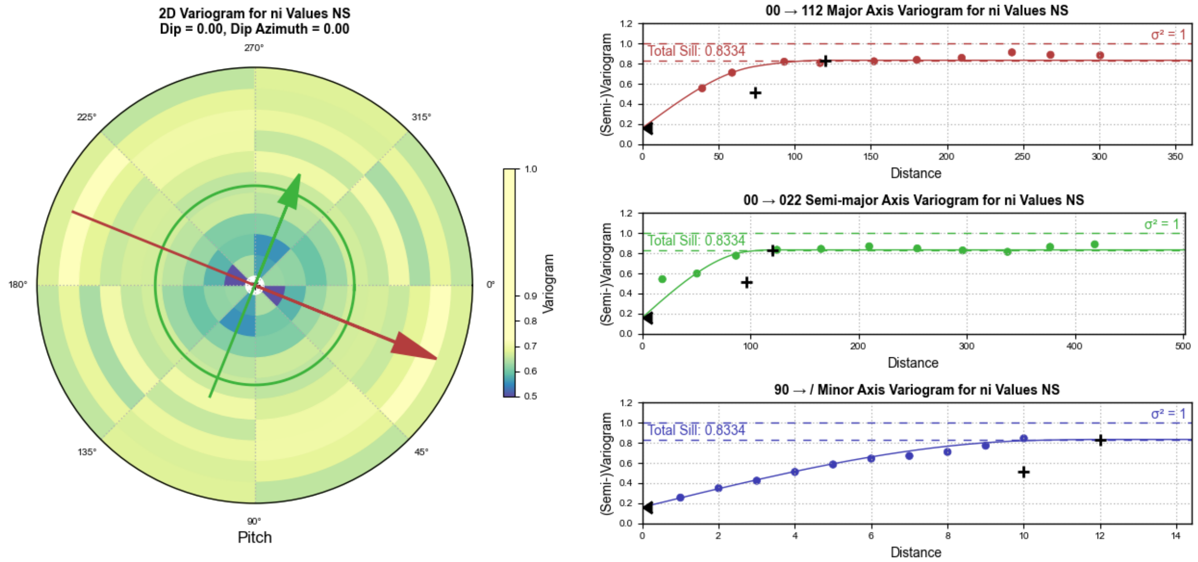
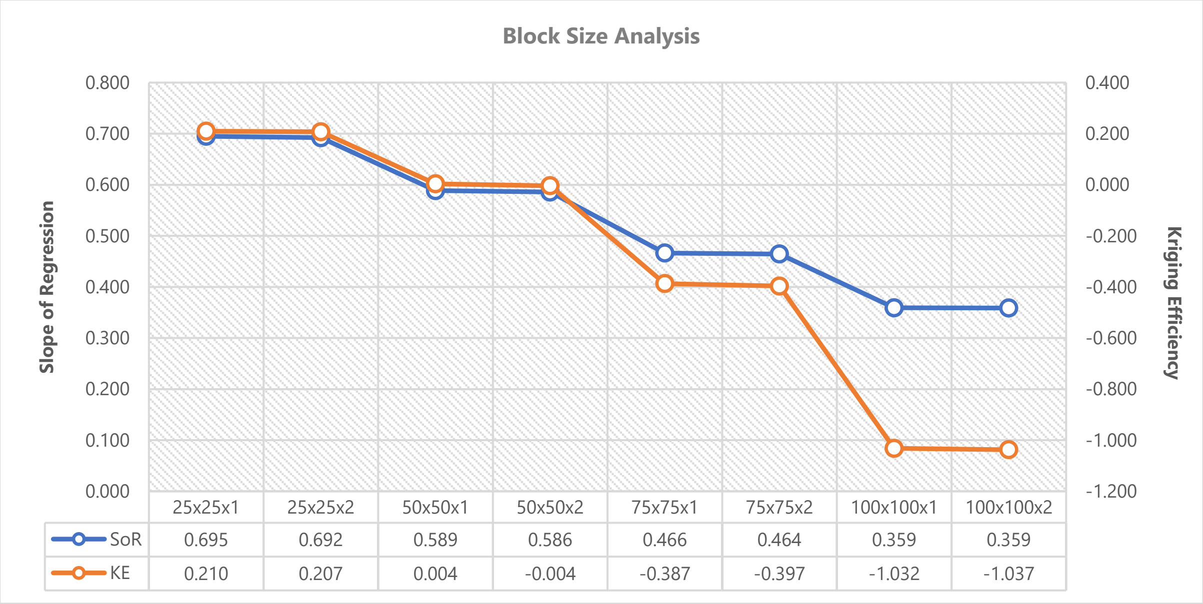


Figure 35 Example of variogram of Ni Saprolite in Block D

Complete variogram modelling for each element and domain are summarized in Appendix 4.

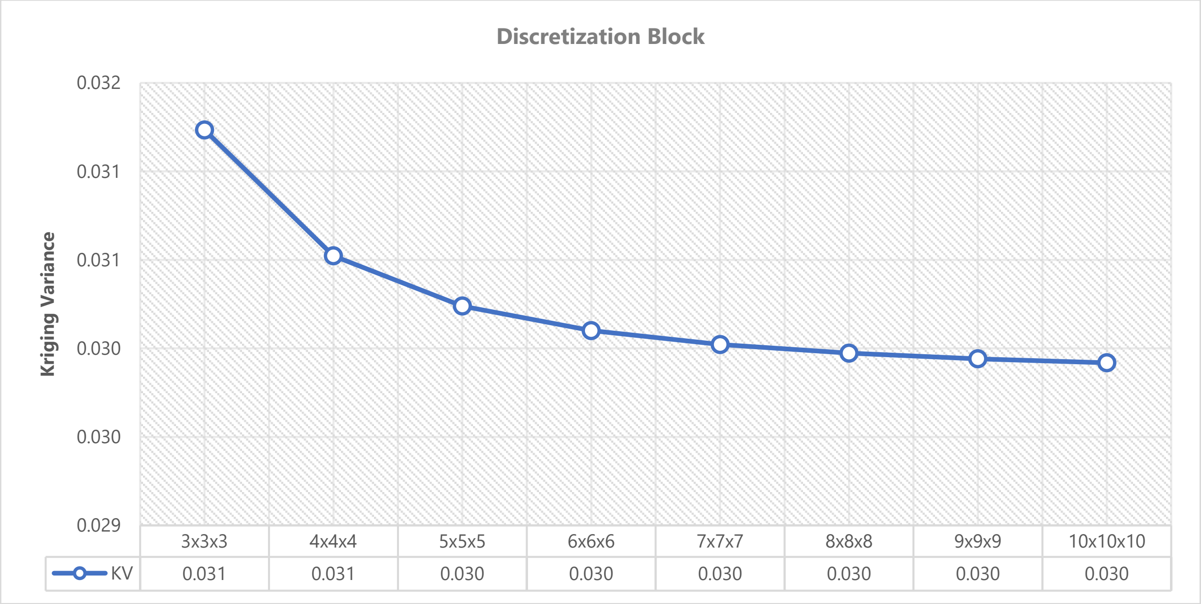
6.4.2. Kriging Neighbourhood Analysis (KNA)

The smoothing effect by Ordinary Kriging is the main source of conditional bias. To minimize the conditional bias, quantitative Kriging neighbourhood analysis (KNA) was performed to determine the optimum block size, discretization block, number of samples and search ellipsoid ranges on the selected variogram model. The Kriging efficiency, Kriging variance and conditional bias slope is used to measure the degree of over smoothing in the local grade.



	25x25x1	25x25x2	50x50x1	50x50x2	75x75x1	75x75x2	100x100x1	100x100x2
SoR	0.695	0.692	0.589	0.586	0.466	0.464	0.359	0.359
KE	0.210	0.207	0.004	-0.004	-0.387	-0.397	-1.032	-1.037

Figure 36 KNA for optimum block model size in Block D



	3x3x3	4x4x4	5x5x5	6x6x6	7x7x7	8x8x8	9x9x9	10x10x10
KV	0.031	0.031	0.030	0.030	0.030	0.030	0.030	0.030

Figure 37 KNA for optimum discretization block for saprolite in Block D

The results of the discretization block study show that the value of Kriging Variance has no significant difference, so that in the Resource estimation the discretization block chosen is 5x5x4 because it is commonly used in the Indonesian nickel industry.

Table 17 KNA Summary

Parameter	Limonite	Saprolite
Block Size	25x25x1	
Discretization Block	5x5x4	
Max. Horizontal Search	80	80
Max. Samples	30	30
Max. Vertical Search	5	4

Complete KNA results are summarized in Appendix 4.

6.5. Block Model

Three-dimensional block models were constructed for the ETL project to cover all the interpreted lithological domain layers. As suggested by KNA, a block model size of 25 x 25 x1m with no rotation has been selected for Block D, the block model size also will support the drill holes with less than 50m spacing.

The position of the block model centroid is placed as close as possible to the location of the drill hole collar. No sub-blocking was applied to the parent block to reduce the grade bias of the Resource estimation. The percentages of material in each block from the interpreted geological wireframes has not been applied in the block model.

The block model dimension and attributes, coded into the block models, including interpreted generic lithology, estimated grades and Kriging estimation attributes are as shown in Table 18 and Table 19 respectively.

Table 18 Block model dimensions

Type	Y	X	Z
Minimum Coordinates	9680837.833	363039.909	302.322
Maximum Coordinates	9683087.833	367714.909	672.322
User Block Size	25	25	1
Min. Block Size	25	25	1
Rotation	0	0	0

Table 19 Block model attributes for all blocks

Attribute	Type	Decimals	Background	Description
al2o3	Float	4	-999	OK interpolated grades for Aluminum Oxide (Al2O3%)
cao	Float	4	-999	OK interpolated grades for Calcium Oxide (CaO%)
co	Float	4	-999	OK interpolated grades for Cobalt (Co%)
cr2o3	Float	4	-999	OK interpolated grades for Chromium Oxide (Cr2O3%)
fe	Float	4	-999	OK interpolated grades for Iron (Fe%)
lithology	Character	-	UNDEF	
material	Character	-	UNDEF	OB, LGL, HGL, LGSO, MGSO, HGSO, WASTE
mgo	Float	4	-999	OK interpolated grades for Magnesium Oxide (MgO%)
mno	Float	4	-999	OK interpolated grades for Mangan Oxide (MnO%)
ni	Float	4	-999	Estimated Ni
ni_avgd	Float	4	-999	Average Distance
ni_dom	Character	-	UNDEF	Geological domain LIM, SAP, MLS
ni_est	Character	-	UNDEF	Krigging Pass; Pass 1, Pass 2, and Pass 3
ni_ke	Float	4	-999	Krigging Efficiency
ni_kv	Float	4	-999	Krigging Variance
ni_ndh	Float	4	-999	Number of drillhole
ni_ns	Float	4	-999	Number of Negatif Weight
ni_sor	Float	4	-999	Slope of Regression
res_class	Character	-	UNDEF	Measured, Indicated, Inffered, Undef
sg	Float	4	-999	Insitu lab density measurement (wet s.g)
sio2	Float	4	-999	OK interpolated grades for Silica Oxide (SiO2%)

6.6. Insitu Density and Moisture Content

As discussed in section 4.5 of this report the results of Insitu Density and Moisture Content measurements are considered be representative of the Density and Moisture instu at ETL, as they were taken from almost all drill holes. For this reason, these measurements have been used for this Resource estimate, to be as follows;

Table 20 Insitu Density and Moisture Content applied in this Resource estimate

Laterite Layers	Density (g/cm3)	Moisture Content (%)
Limonite	1.76	44.96
Saprolite	1.6	39.95

6.7. Grade Estimation

Ordinary Kriging grade estimate has been applied for all chemical elements. The number of samples, search radius and discretization block for each domain were taken from block size analysis results. Several run tests (passes) have been applied to the grade estimate to cover all the laterite domains in the block model. The first search radius (pass 1) obtained from KNA and then multiplied by 2 for the subsequent passes.

Table 21 Example of grade estimation nickel for limonite and saprolite

Parameter	**Limonite (Ni)**			**Saprolite (Ni)**		
	Pass 1	**Pass 2**	**Pass 3**	**Pass 1**	**Pass 2**	**Pass 3**
Minimum Sample	5	3	1	5	3	1
Maximum Sample	30	30	30	30	30	30
Max. Search Radius	80	160	320	80	160	320
Max. Vertical Distance	5	10	20	4	8	16
Pitch	90			90		
Dip Azimuth	0			0		
Dip	0			0		
Major/Semi-major 1	0.595			0.771		
Major/Semi-major 2	1.000			1.000		
Major/Minor 1	2.500			7.400		
Major/Minor 2	8.800			10.000		
Nugget	0.086			0.161		
Structure 1	0.383			0.356		
Structure 2	0.397			0.317		
Range 1	25			74		
Range 2	88			120		
Block Discretization	5 X 5 X 4			5 X 5 X 4		

For details about grade estimation see Appendix 4.

In classic geostatistical estimation, a single constant orientation for search and variogram is applied across the geological domain. This type of estimation is considered not appropriate to be applied in the project area since the nickel laterite deposits are mostly flat and undulated. To overcome the problem, Leapfrog Edge’s Variable Orientation (VO) was used to allow re-orientation of the search and variogram to better match the local geometry (see Figure 35).

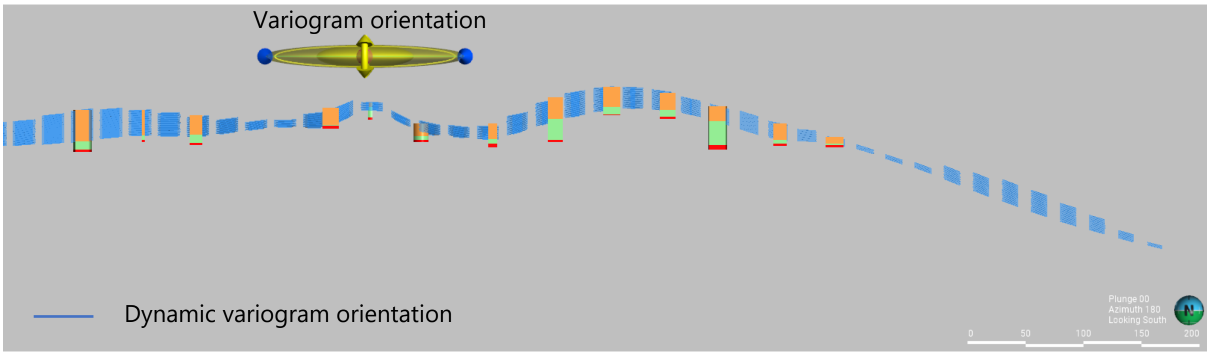


Figure 38 Example of variable orientation (Leapfrog) applied in limonite

6.8. Block Model Validation

The estimated block model was validated visually on screen as well as by the statistical means.

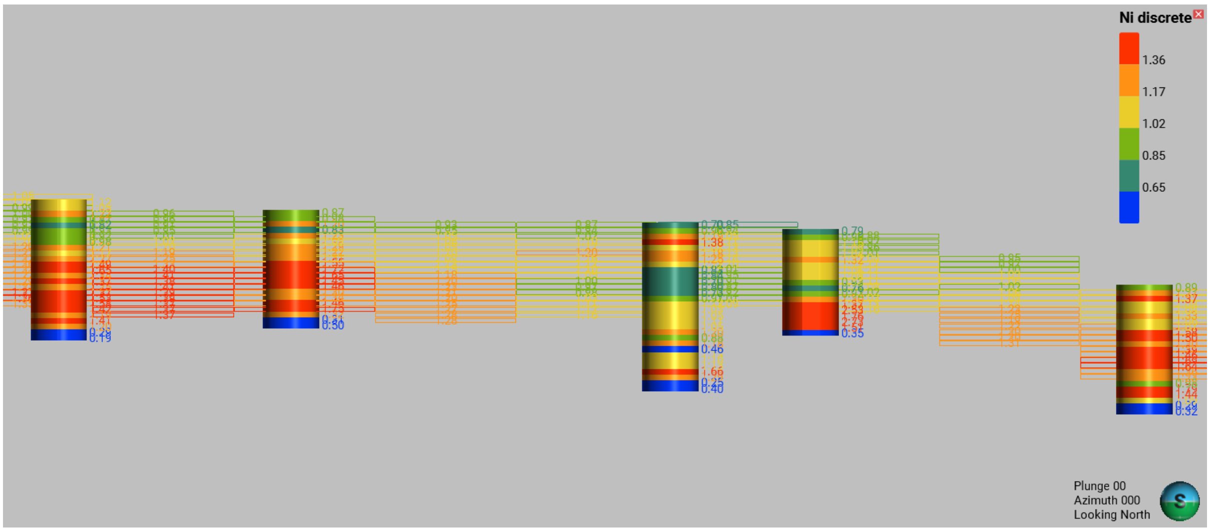


Figure 39 Example of block model validation for limonite using visual method

The block model was compared with drill hole sample data on cross sections to verify the geological interpretation and estimated grades. Swath plots were used to visualize the statistical mean and magnitude of error between composite samples and the estimated grades.

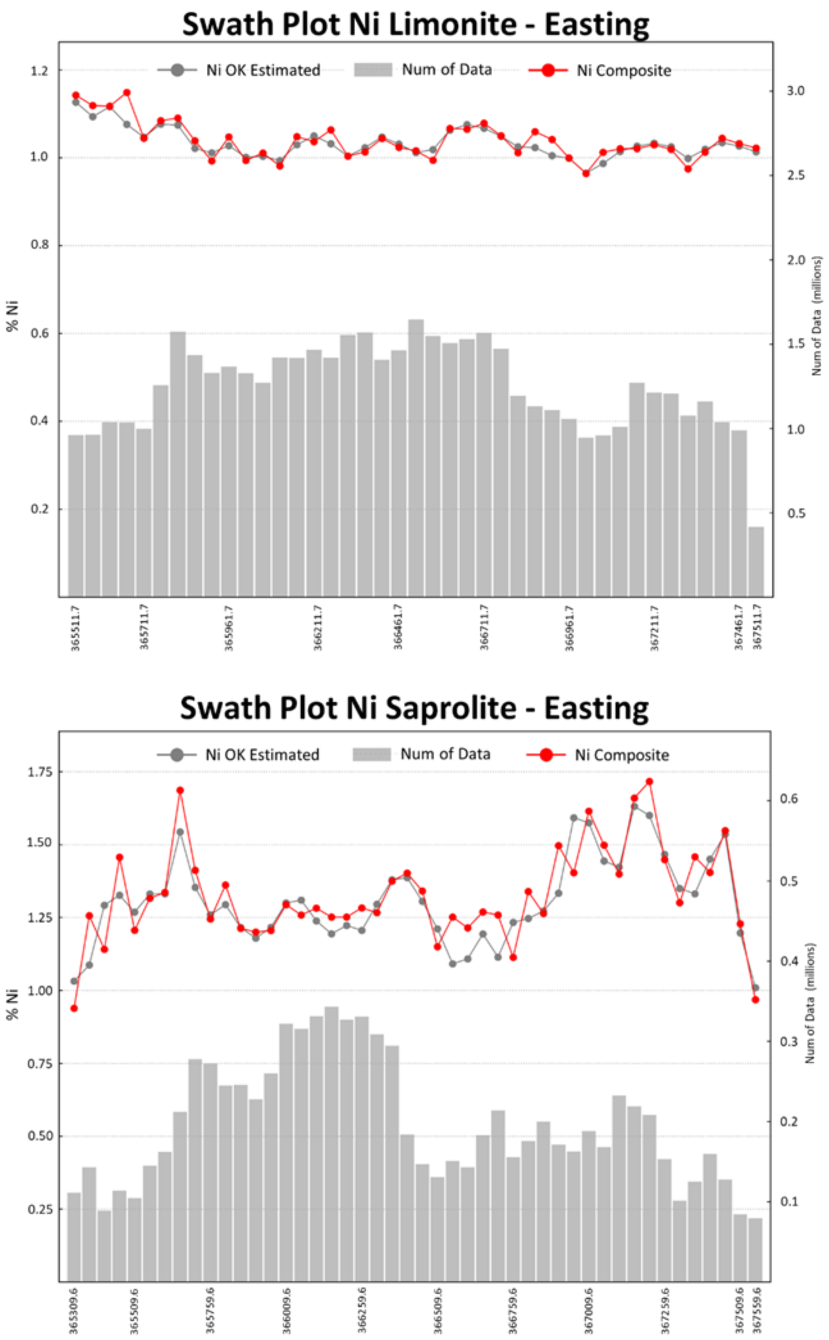


Figure 40 Block model validation using swath plot

For details about block model validation see Appendix 4.

6.9. Resource Classification

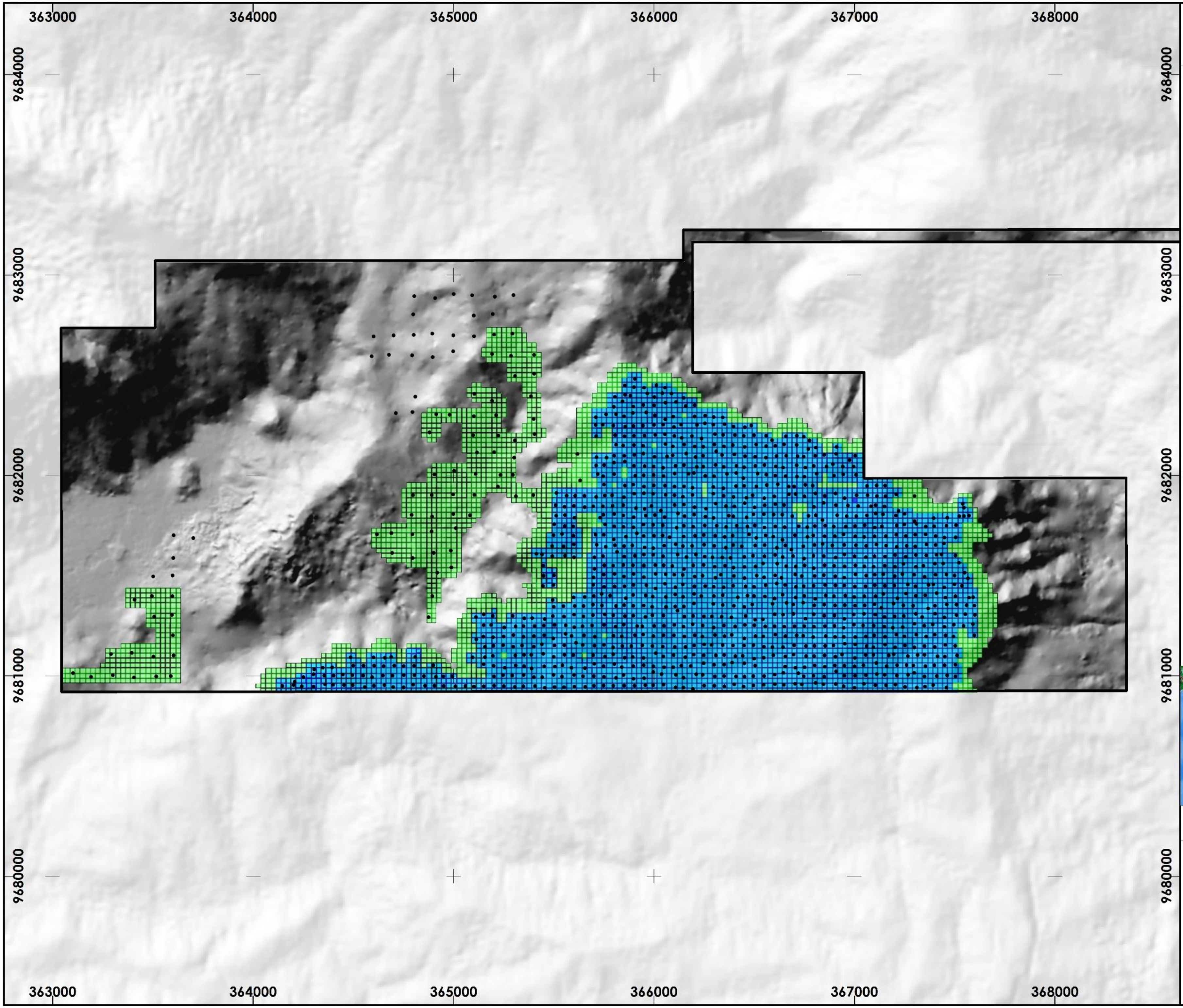
The Mineral Resource has been classified on the basis of drill hole spacing grid, grade continuity with geostatistical considerations such as Kriging variance, slope of regression and average influence from surrounding samples.

The vast majority of the deposit is drilled in a 50x50m grid although in the western part of the IUP, a 100x100m of drill hole spacing grid also has been drilled. At this time, the current drill hole spacing grid is considered to be too widely spaced to support a Measured Resource category.

The Kriging Variance, slope of regression and average distance to samples has been used to assess the confident level of estimation. Kriging variance less than 0.02 and slope of regression more than 0.90 has been considered as high level confidence. Medium level confidence has Kriging Variance between 0.02 and 0.05 and slope of regression between 0.45 and 0.90 which means coherent and spatially consistent with 50x50m drill spacing. Whereas low level confidence has Kriging Variance higher than 0.05 and slope of regression less than 0.45 which means coherent and spatially consistent with 100x100m drill spacing.

Table 22 Kriging properties to assess the Resource classification in ETL Project

Kriging Variance	Slope of Regression	Average Distance to samples	Category
KV <= 0.02	SoR > 0.9	<= 25m	Measured
0.02 < KV <= 0.05	0.45 < SoR <= 0.9	25m < AvD < 55m	Indicated
KV > 0.05	SoR <= 0.45	55 >= AvD < 100m	Inferred



PT ERABARU TIMUR LESTARI
Lele, Dampala & Sumbatue, Bahodopi District
Morowali Regency, Central Sulawesi

RESOURCE CLASSIFICATION MAP

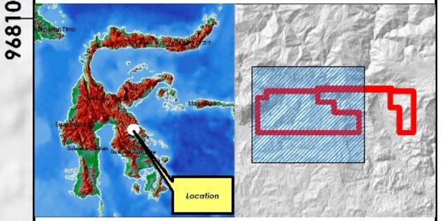
Scale 1:25,000
0 0.125 0.25 0.5 0.75 1
Kilometers

Coordinate System: WGS 1984 UTM Zone 51S
Projection: Transverse Mercator
Datum: WGS 1984

LEGEND

▭ ETL Tenement
• Drill Hole Location
🟦 **Indicated Resource**
🟩 **Inferred Resource**

INDEX MAPS



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6.10. Prospect for Economic Extraction

The ETL company management is currently targeting the sale of nickel ore to the PT Indonesia Morowali Industrial Park (IMIP) nickel smelter located 50km east of the project area. The requirement for HPAL is limonite whereas the requirement for RKEF smelters is saprolite. Based on these requirements, cut off grade (CoG) of 0.8% Ni for limonite and 0.8 Ni for saprolite have been applied in the Resource estimate. See Figure 39 and 40.

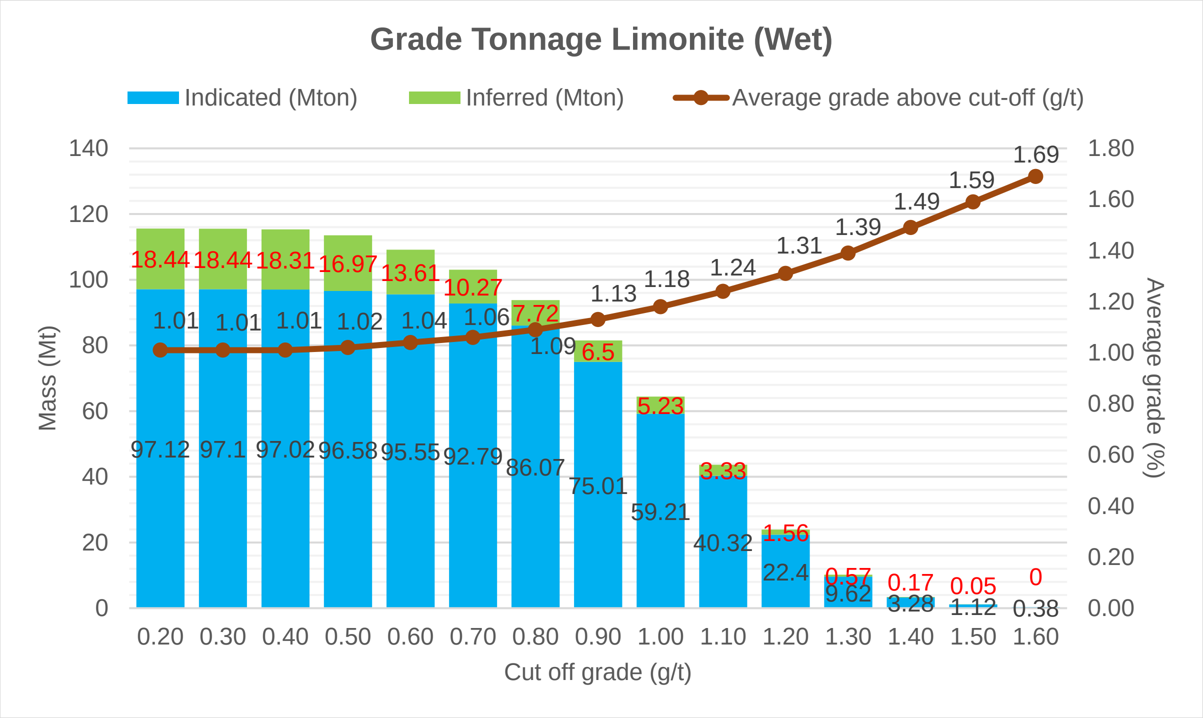

Figure 42 Grade tonnage of Limonite

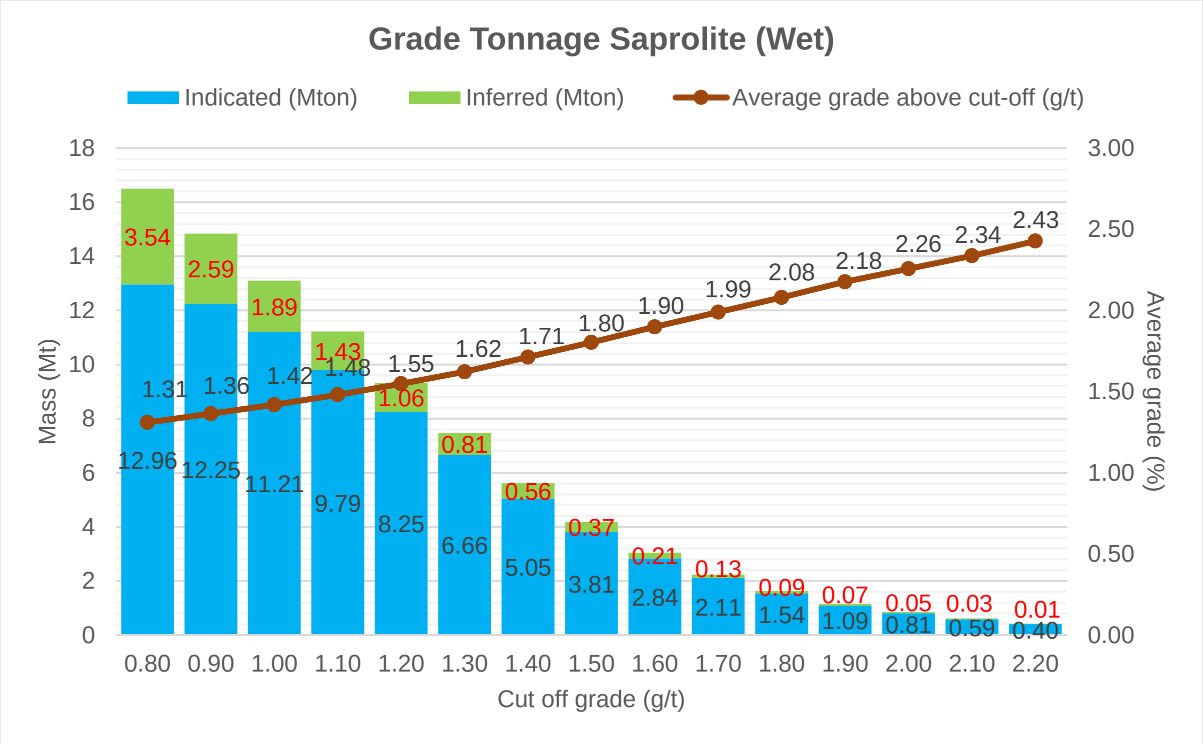

Figure 43 Grade tonnage of Saprolite

6.11. Statement of Mineral Resources

The Mineral Resource estimate for ETL project has been completed with data until the 18th December 2023. The numbers have been rounded to reflect the relative accuracy of the estimate.

Table 23 Nickel Laterite Resource

Lithology	Mineral Resource Category	Mass		Ni	Co	Fe	MgO	SiO2	Cr2O3	Metal Content Ni
		Wet Mt	Dry Mt	%	%	%	%	%	%	000' t
LIMONITE (Ni Cut off Grade 0.8%)	Indicated	86	47	1.1	0.11	41.0	1.9	6.6	2.9	510
	Inferred	8	4	1.1	0.11	40.9	2.0	7.5	2.9	45
	Sub-Total	**94**	**51**	**1.1**	**0.11**	**41.0**	**1.9**	**6.7**	**2.9**	**555**
SAPROLITE (Ni Cut off Grade 0.8%)	Indicated	13	8	1.4	0.04	17.4	12.8	35.2	1.4	110
	Inferred	3	2	1.1	0.04	17.0	13.2	36.7	1.3	20
	Sub-Total	**16**	**10**	**1.3**	**0.04**	**17.3**	**12.9**	**35.5**	**1.4**	**130**
Total ETL Project	Indicated	99	55	1.1	0.10	37.9	3.3	10.3	2.7	620
	Inferred	11	6	1.1	0.09	33.4	5.5	16.7	2.4	65
	Project Total	**110**	**61**	**1.1**	**0.10**	**37.4**	**3.5**	**11.0**	**2.7**	**685**

6.12. Risk and Opportunities

Systematic grid drilling spaced at 50m and 100m and the supportive data provided by UltraGPR surveys and detailed core analyses has greatly enhanced the confidence in the geological interpretation and resulting geological model at ETL, Block D.

The database has been validated and rechecked for errors. Drill holes collar coordinates used in the geological model, have been surveyed with high accuracy giving relatively high confidence to the current Nickel Resource estimate.

The final geological models for Limonite (LIM), Saprolite (SAP) and Molasse Conglomerate (MLS) have been interpreted separately using lithological logs and analysis results so that all blocks in the geological model are correctly coded according to their occurrence in the laterite profile. For this reason, it is considered unlikely that any misallocation of lithology will have significant influence on the Nickel Resource.

Relative confidence in the laboratory analysis results is supported by proper quality assurance and quality control protocols including, sample blanks, sample standards, duplicate samples and interlaboratory checks samples.

The planned haul road to IMIP provides a direct road transportation opportunity for ore from ETL to the market. This greatly enhances the economic potential of the ETL nickel project area and potential for production of saprolite and limonite ore for processing at IMIP.

7. EXPLORATION TARGET

Mapping carried out by PT Hengjaya Nickel Utama and PT Mandiri Jaya Nickel in 2010 identified nickel laterite in Blocks D and E. Block E has not yet been drilled. Based on recent mapping data, approximatly 50ha of area may provide an Exploration Target for additional nickel laterite. Figure 41 shows the location identified as laterite in the historic data.

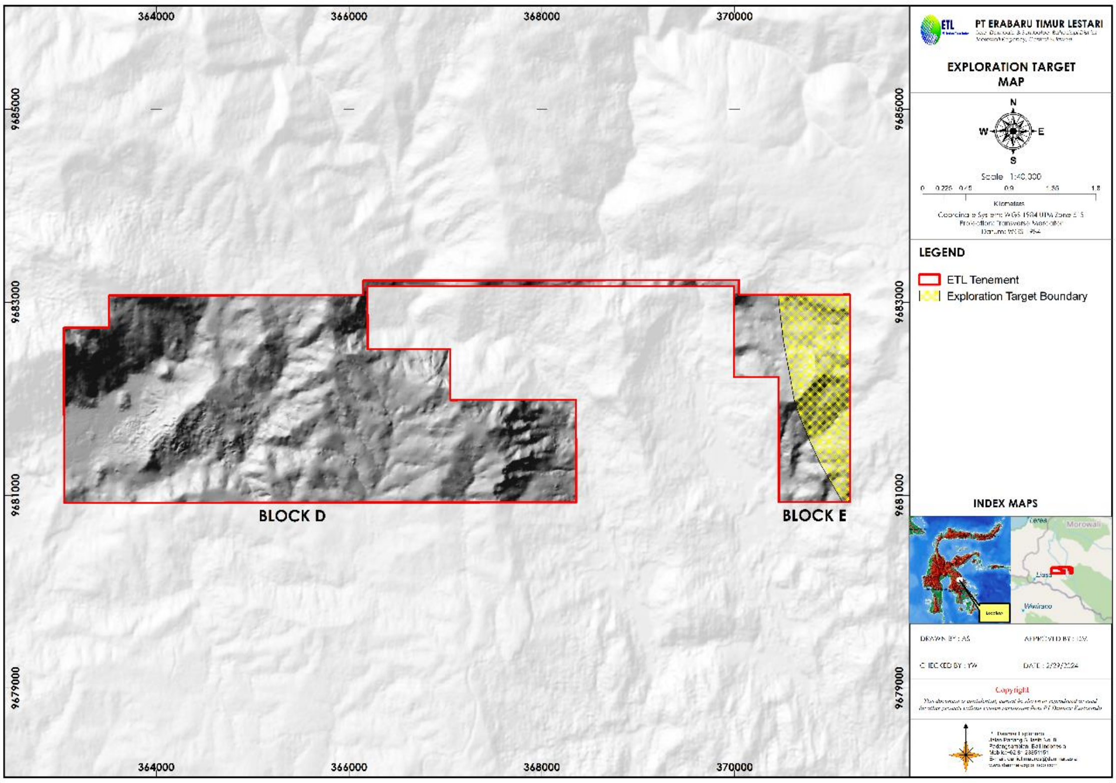

Figure 44 Exploration target location

Table 24 shows an estimated range of potential additional nickel laterite, based on the recent mapping results in the Block E area. Although it should be noted that there is insufficient data at this time to estimate a Nickel Resource and there is no guarantee further exploration will result in a Nickel Resource.

Table 24 ETL Exploration Target

Layer	Target Area (Ha)	Thickness Assumption		Estimate Wet Ton (Million)		Density
		Min (m)	Max (m)	Min (Mt)	Max (Mt)	
Limonite	50	1	5	1	4	1.76
Saprolite		0.5	5	0	4	1.6
Total	**50**	**1**	**5**	**1**	**8**	

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JIS M-8109-1996 METHOD FOR SAMPLING AND DETERMINATION OF MOISTURE CONTENT OF GARNIERITE ORE

LIPTON AND HORTON, MEASUREMENT OF BULK DENSITY FOR RESOURCE ESTIMATION GUIDELINES AND QUALITY CONTROL

SILVER AND McCAFFERY 1981, OPHIOLITE EMPLACEMENT BY COLLISION BETWEEN THE SULA PLATFORM AND THE SULAWESI ISLAND ARC, INDONESIA

SIMANDJUNTAK T.O., RUSTAMA E., SUPANDJONO J.B., KOSWARA A,, 1993, GEOLOGICAL MAP OF BUNGKU QUADRANGLE, SULAWESI

SURATMAN (INCO) GEOLOGY OF NICKEL LATERITE WEATHERING DEPOSIT IN THE SOUTHEAST ARM OF SULAWESI

APPENDIX

1. TABLE 1 OF THE JORC CODE
2. PT ERABARU TIMUR LESTARI LEGAL DOCUMENTATION
3. PT HENGJAYA MINERALINDO LABORATORY QAQC REPORT
4. ETL BLOCK MODEL DOCUMENTATION
5. RESUME OF COMPETENT PERSONS AND CONTRIBUTING AUTHORS
    i. DANIEL MADRE
    ii. TOBIAS MAYA
    iii. YORRIS WIBRIANA
    iv. HARMAN ADHITTYO

APPENDIX 1

PT ERABARU TIMUR LESTARI
TABLE 1 OF THE JORC CODE

JORC Code, 2012 Edition – Table 1 report template

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• HQ core samples taken in 1m intervals and all core photographed and filed as a reference • Most drilling to date is on a systematic 50 X 50m grid (92.7%) and some drill at 100m grid (7.3%) over GPR targets for this reason the estimate has been classified as an Indicated Resource in the 50mgrid and Inferred in the wider spaced drill areas. Future infill drilling will be required to raise confidence to estimate additional Indicated and Measured Resource status. • All core photographed and described by well site geologists. Sample preparation and moisture determination follow the Japanese Industrial Standard (JIS), Method for Sampling and the Determination of Moisture Content of Garnieritic Nickel Ore, 1996 • Full core 1m sample intervals were analysed at PT Hengjaya Mineralindo lab. High confidence in the laboratory analyses results are supported by rigorous quality assurance and quality control protocols including; sample blanks, sample standards, duplicate samples and interlaboratory checking. More than 32,900 samples were analysed to support the Resource estimate.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• HQ wireline triple tube coring in 1m runs to ensure accurate measurement of core expansion (swelling) and recovery • Vertical drilling, core orientation not required
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Full coring used and core recovery data collected for all runs (1,337 holes with total cumulative meters 32,798), core recoveries documented by photography • Minimum 95% recovery maintained for all holes • If 3 consecutive runs are less than 95% the hole is re-drilled • Some lower recoveries in silica boxwork zones were tolerated due to geological conditions but overall drilling conditions are relatively good and recoveries remain consistently high

Criteria	JORC Code explanation	Commentary
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• 100% of laterite layers drilled have been logged by geologists and photographed in the drilling to date • Logging includes core recoveries and core swelling measurements • Every meter of the core is logged using standard format and sampled progressively for lab analysis
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• With the exception of a small density sample weighing 700-800g taken from each of the 4 main geological horizons observed in each drill hole, full drill core was submitted to the lab for analysis • Industry standard laboratory sample preparation methods suitable for nickel laterite mineralization style and involve drying, crushing, incremental splitting & pulverizing to -75um pulps for assay. • Most of the samples were were analysed at PT Hengjaya Mineralindo's internal laboratory following JIS M-8109-1996 SOP to maintain accuracy and precision at all sub-sampling stages eg coarse blanks, coarse replicates and 200# pulp sieve tests, whilst reducing sample particle size and volume. Interlaboratory checks were carried out at PT Tribakti Inspektama and PT Geoservices (commercial labs) • Sample sizes are according to JIS M-8109-1996 Industry Standard and have shown to be effective regarding accuracy and precision during life of project to date and show good correlation with samples analysed at external labs adding confidence to the accuracy of the results (see Chapter 4.6.6 in the Mineral Resource Report).
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Industry standard laboratory sample preparation methods suitable for nickel laterite mineralization style and involve drying, crushing, incremental splitting and pulverizing to -75um pulps for assay. • Representivity at sub-sampling stages at sample prep lab maintained by following JIS M-8109-1996 SOP to maintain accuracy and precision at all sub-sampling stages eg coarse blanks, coarse replicates and 200# pulp sieve tests, whilst reducing sample particle size and volume.

Criteria	JORC Code explanation	Commentary

Verification of sampling and assaying	- *The verification of significant intersections by either independent or alternative company personnel.*
	- *The use of twinned holes.*
	- *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*
	- *Discuss any adjustment to assay data.*
		- Geological logs of the drill core are reconciled against assay results to verify lithology for any misallocation.
		- All geological data are stored and validated in PostgreSQL database software before exported to the Leapfrog Geo 2023 geological model software. Several checks have been carried out, including:
		  - Duplicate points error
		  - Duplicate hole id error
		  - Collar and survey depth error
		  - Lithological depth exceeds collar depth error
		  - Overlapping segments error
		  - Invalid assay value handling

Location of data points	- *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* - *Specification of the grid system used.* - *Quality and adequacy of topographic control.*	- All recent drilling located by ground RTK GPS survey methods - UTM (Universal Traverse Mercator) Projection; WGS 1984 UTM Zone 51S grid is being applied in the Resource estimation - LiDAR topographic surface was used - The distinction between drill hole collar elevation and LiDAR topography surface in general is less than 0.5m which sufficient for mineral resource estimation
Data spacing and distribution	- *Data spacing for reporting of Exploration Results.* - *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* - *Whether sample compositing has been applied.*	- Ultra GPR targets and geological surface mapping were used for Exploration Targets recognition only - 50 X 50m grid drilling was drilled in the center and southern part of Block D, while 100 x 100 m grid drilling was drilled in the west part of Block D. - The drill hole samples were composited in 1m lengths. The 1m compositing was selected because it represents the modal length of the samples taken during exploration and would preserve the detail information obtained in the samples. Several compositing strategies for sample length with less than 1m have been tested in the geological model by adding it to the previous interval or distribute it equally between previous and subsequent samples or ignoring it completely. The three compositing method show very little change in the coefficient of variation (CV), so that for the current geological model, sample length less than 1m are added to the previous interval composite to include all analyses in the geological model.
Orientation of data in relation to	- *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	- Vertical drilling is appropriate for nickel laterite as the laterite is relatively horizontal, so the drilling intersects a true thickness of each lithological horizon

Criteria	JORC Code explanation	Commentary
geological structure	- *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	- No bias is considered to be introduced as a result of the drilling orientation
Sample security	- *The measures taken to ensure sample security.*	- Samples left in the field are properly stored, covered and guarded by night security - Sample stores are locked at night and continuously guarded
Audits or reviews	- *The results of any audits or reviews of sampling techniques and data.*	- Comparisons between internal lab results and 2 external labs showed close correlation between results suggesting relative accuracy acceptable for use in Resource estimation

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	- *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* - *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	- Mining rights are held under an Operation and Production Mining Business Permit (IUPOP), Area Code 540.3/SK.0017/DESDM/VI/2011. The area covers 1,159Ha and gives ETL the right to mine nickel and its associated minerals. The IUPOP was granted by the Regent of Morowali in 2011 and is valid until June 2031.The Operation Production IUP may be renewed twice, each for a period of 10 years. - Land has been compensated, no Forestry restrictions in the main Resource area
Exploration done by other parties	- *Acknowledgment and appraisal of exploration by other parties.*	- The exploration work has been carried out over various stages since 2010 by Rio Tinto, Sherrit and other groups. Historic data records from this work are incomplete and cannot be validated for use in Resource estimation
Geology	- *Deposit type, geological setting and style of mineralisation.*	- Laterization of molasse conglomerate containing of ophiolite rocks, formed in a tropical climate environment through a process of surface leaching over time, two distinct enriched zones of Limonite clays and Saprolite clays & weathered rocks are typically found in this type of geological setting where concentrations of Ni, Co, Fe and other

Criteria	JORC Code explanation	Commentary
		associated metals are characteristic and diagnostic

Drill hole Information	- *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*
	  - *easting and northing of the drill hole collar*
	  - *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  - *dip and azimuth of the hole*
	  - *down hole length and interception depth*
	  - *hole length.*
	- *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*
		- The drill database at ETL contains 1,337 holes with a cumulative total depth of 32,738m. Assays total 32,933 samples.
		- A table of drill data is attached to this document summarizing the drill hole details as required
		- The Resource can be also represented by a compilation of large numbers of points of observation. For this reason, the report has described the deposit using maps of borehole locations, diagrammatic cross-sections, descriptive statistical analyses of assay results, variograms and swath plots of the data to understand the data and check its validity and variability

Data aggregation methods	- *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* - *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* - *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	- Only assay data from the validated database were extracted for use in the compositing process. Composite lengths of 1m were used, which correlates with the majority of the sample length records. Composites were split into 4 lithologies namely; mud, limonite, saprolite and molasse conglomerate bedrock - Cutting of high grades was done as required by looking at the data distribution, cumulative histogram & log probability plots. - Metal equivalents for Nickel content were shown in the Resource table with ore grades as wet and dry tons
Relationship between mineralisation widths and intercept lengths	- *These relationships are particularly important in the reporting of Exploration Results.* - *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* - *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	- Vertical drilling provides good representation of the deposit geometry and depth and reasonably assumed to represent true thickness, 1m core and assay sampling procedures were sufficient to provide accurate wellsite observations and reconciliation of logs - Mineralization is basically horizontally orientated - Total depths of drilling were guided by the interpretation of the Ultra GPR surfaces to target at least 2-3m of bedrock was intersected at the end of each hole
Diagrams	- *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	- Diagrams, maps, sections are all included in the body of the report

Criteria	JORC Code explanation	Commentary
Balanced reporting	- *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	- All reliable(validated) data included without prejudice - Thickness established through drilling intercepts supported with Ground Penetrating Radar (UltraGPR) geophysics, reliable assays and exposed lithological layers observed in outcrops
Other substantive exploration data	- *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	- 86.6km of ground penetrating radar (UltraGPR) survey lines were completed, providing excellent section profiles views of limonite, saprolite and bedrock layers, global volumes and thickness grids were used for exploration planning and understanding of the weathering patterns of the nickel laterites to best optimize the drilling patterns by domains
Further work	- *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* - *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	- Plans for infill drilling in the Indicated Resource area - Exploration Target at ETL have already been surveyed using Ultra GPR and are planned to be drilled to delineate a Resource area if successful - Exploration Target areas map is provided

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary

Database integrity	- *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*
	- *Data validation procedures used.*
		- The collar survey, assay and geology tables were validated to correct data error issues such as:
		  - missing or duplicate collar records
		  - overlapping intervals in the assay records
		  - collar elevation errors compared to current LiDAR topography
		  - downhole accuracy issues, total depths, from/to intervals
		  - core recoveries and swelling
		  - lithology description from wellsite geologists
		  - reconciliation of lithology with laboratory assay results
		  - moisture records from core lab analysis
		  - downhole statistical analysis
		- All data was validated and included in the Resource estimate

Criteria	JORC Code explanation	Commentary
Site visits	- *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* - *If no site visits have been undertaken indicate why this is the case.*	- Two site visits by the CP (Daniel Madre) were completed. The objective was to review exploration progress; including drilling, and sampling procedures, review sample handling, preparation and analyses. Site inspection of molasse conglomerate bedrock as the source of the nickel laterite
Geological interpretation	- *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* - *Nature of the data used and of any assumptions made.* - *The effect, if any, of alternative interpretations on Mineral Resource estimation.* - *The use of geology in guiding and controlling Mineral Resource estimation.* - *The factors affecting continuity both of grade and geology.*	- Due to a systematic drill program on the same grid as more than 86.6km of UltraGPR survey, allows for a relatively high confidence in geological interpretation of the ETL nickel laterite deposit. Historical records for surface mapping, combined with the more recent UltraGPR survey traverse on 200m spaced grids over 100% of the Resource area provides good correlation and understanding if the laterization distribution, bulk volumes and mineralization. This is considered to be sufficient for estimation of the Mineral Resource - All data included into the geological interpretation was validated to be free of errors and downhole wellsite logging reconciled with assay results into composited zones of Mud, Limonite, Saprolite & Molasse Conglomerate lithology zones - Use of Ground Penetrating Radar (UltraGPR) interpretative data source was used in combination with points of observations from the validated database in extrapolating between drill holes - Geological structure and bedrock topology, which are often displayed on Ultra-GPR interpretations, helped to target thick, high grade laterite areas
Dimensions	- *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	- Resource dimensions are determined by the drilling area at this stage which are approximately 2,000m in length, 1,500m in width and covering 564ha. Laterization thickness for up to 40m to bedrock in some places - Limonite thickness average in the Resource area is approximately 18m and saprolite thickness is averaging around 6m.
Estimation and modelling techniques	- *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* - *The availability of check estimates, previous estimates and/or mine*	- Geological modeling and Mineral Resource estimate were completed using Leapfrog Geo 2023.2. The domain modeling in the software use implicit modelling with FastRBF, a mathematical algorithm developed from radial basis functions. The surface resolution for each domain model is 25 x 25m (half distance of the 50x50m drill hole spacing) with adaptive interpolation ability. - Kriging Neighborhood Analysis (KNA) has been done to minimize the smoothing effect by Ordinary kriging. Quantitative KNA was

Criteria	JORC Code explanation	Commentary
	production records and whether the Mineral Resource estimate takes appropriate account of such data. - *The assumptions made regarding recovery of by-products.* - *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* - *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* - *Any assumptions behind modelling of selective mining units.* - *Any assumptions about correlation between variables.* - *Description of how the geological interpretation was used to control the resource estimates.* - *Discussion of basis for using or not using grade cutting or capping.* - *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	performed to determine the optimum block size, discretization block, number of samples and search ellipsoid range for each element. - Three-dimensional block models were constructed for the ETL project to cover all the interpreted lithological domain layers. As suggested by KNA, a block model size of 25 x 25 x1m with no rotation has been selected for Block D, the block model size also will support the drill holes with less than 50m spacing. - The block model was compared with drill hole sample data on cross sections to verify the geological interpretation and estimated grades. Swath plots were used to visualize the statistical mean and magnitude of error between composite samples and the estimated grades. - Ordinary Kriging grade estimate has been applied for all geochemical elements. The number of samples, search radius and discretization block for each domain were taken from block size analysis results. Several run tests (passes) have been applied to the grade estimate to cover all the laterite domains in the block model. The first search radius (pass 1) obtained from KNA and then multiplied by 2 for the subsequent passes. - Leapfrog Edge's Variable Orientation (VO) was used to allow re-orientation of the search and variogram to better match the undulated laterite geometry - A comparison against previous Mineral Resource could not be made as this is the first formal nickel Resource estimate in this area - Deleterious elements such as MgO and SiO2 were reported. Acid drainage of the Mineral Resource was not considered in the model at this time as there has been no mining activity yet in the project area. Pits are relatively shallow and plan to be backfilled and rehabilitated progressively
Moisture	- *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	- Moisture measurements were performed every 1m drill core sample - In areas where Moisture content measurements were not available from core lab analysis the domain default weighted average was applied to the corresponding composite zone - Mineral Resource was reported on a wet basis
Cut-off parameters	- *The basis of the adopted cut-off grade(s) or quality parameters applied.*	- The ETL company management is currently targeting the sale of nickel ore to the PT Indonesia Morowali Industrial Park (IMIP) nickel smelter located 50km east of the project area. The requirement for

Criteria	JORC Code explanation	Commentary
		HPAL smelters is assumed to be 1% of Ni from limonite whereas the requirement for RKEF smelters is assumed to be 1.6% of Ni from saprolite. Based on these requirements, cut off grade (CoG) of 0.8% Ni for limonite and 1.3% Ni for saprolite have been applied in the Resource estimate • Based on statistical analysis of the domain databases & ongoing ore mining operations at nearby mining projects a 0.80% cut off for nickel was applied to both Limonite and Saprolite to best represent the global Mineral Resource estimate for representation of eventual economic extraction. A range of Ni cut-off grades up to 2.0%, split by laterite type to better understand the other elements (Co, Fe, MgO, SiO2, Al2O3, CaO, Density & Moisture) in relation to Nickel (Ni), was also supplied
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• no mining or modifying factors were applied to the Mineral Resource statement that would result in a conversion to Ore Reserve at this time. • assumptions for open cut mining operation similar to current production at the Hengjaya Project nearby and supply agreements with nearby IMIP smelter provide sufficient evidence for determination of reasonable prospects of eventual economic extraction of the MJN Mineral Resource • proximity to the smelter and the prospect of direct haul road access indicates excellent prospect for eventual economic extraction • based on geotechnical reports to date reflecting similar moisture content and geotechnical stability to HM, we are assuming the open pit has the following design parameters: a) bench height 3m b) single slope angles 55 degrees c) overall slope 30-33 degrees • productivity factors and mining costs are still under investigation but shallow mining, low strip ratio mine products of limonite and saprolite within a proposed 50km truck haul distance supports good potential for eventual economic extraction. • production volumes are not yet determined. • ETL & MJN are contiguous mining concessions on the same nickel deposit. At this relatively early-stage, mining assumptions and metallurgical factors are identical as it is the same deposit.

Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Metallurgical factors and assumption based on ongoing supply requirement to the smelters, (majority owned by NIC) at the IMIP smelter facility were considered for the Resource grade the cutoffs • 5 drill hole locations were also sampled for limonite by excavator to a depth of 5 m and approximately 5wmt of limonite was recovered • this sample was then reduced by quartering and mixed to produce a representative composite sample of 263kg of Sampala limonite which was sent to the IMIP lab for size analysis and acid leach testing • Sampala sample had 1.5 hour of leaching time with 250 kg/t acid-to-ore ratio. The metal contained in the liquid was 6.043 g/L, 0.265 g/L, 2.07 g/L, 0.95 g/L, 1.228 g/L and 0.251 g/L respectively for Ni, Co, Mn, Mg and Cr with pH 1.96 which is considered to be a relatively good recovery for acid leaching • there have not been any metallurgical factors or assumptions applied at this early stage pending further test work to be done.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• Limonite below 0.8% Ni content and Saprolite below 1.3% were extracted separately and considered as waste for future mine planning • Environmental Impact studies will be completed as part of the mining operation permitting process,
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Density measured on samples from every hole from each of the 4 layers. This represents the insitu density of the laterite
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie*	• The Mineral Resource has been classified on the basis of drill hole spacing grid, grade continuity with geostatistical considerations such as Kriging variance, slope of regression and

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td>*relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*
• *Whether the result appropriately reflects the Competent Person’s view of the deposit.*</td><td>average influence from surrounding samples. The Kriging Variance, slope of regression and average distance to samples has been used to assess the confident level of estimation. Kriging variance less than 0.02 and slope of regression more than 0.90 has been considered as high level confidence. Medium level confidence has Kriging Variance between 0.02 and 0.05 and slope of regression between 0.45 and 0.90 which means coherent and spatially consistent with 50x50m drill spacing. Whereas low level confidence has Kriging Variance higher than 0.05 and slope of regression less than 0.45 which means coherent and spatially consistent with 100x100m drill spacing.
<table>
<tr><th>Kriging Variance</th><th>Slope of Regression</th><th>Average Distance to samples</th><th>Category</th></tr>
<tr><td>KV <= 0.02</td><td>SoR > 0.9</td><td><= 25m</td><td>Measured</td></tr>
<tr><td>0.02 < KV <= 0.05</td><td>0.45 < SoR <= 0.9</td><td>25m < AvD < 55m</td><td>Indicated</td></tr>
<tr><td>KV > 0.05</td><td>SoR <= 0.45</td><td>55 >= AvD < 100m</td><td>Inferred</td></tr>
</table>
• The vast majority of the deposit is drilled in a 50x50m grid although in the western part of the IUP, a 100x100m of drill hole spacing grid also has been drilled. At this time, the current drill hole spacing grid is considered not sufficient to support Measured Resource category.
• Determination of the Resource classes, at this stage, was applied to the Mineral Resource with a digitized polygon boundary based on the spatial continuity of each geological domain around a regular spaced drilling grid 50m from included points of observation in the final validated database. Also taken into account was the Ultra GPR grid lines between the drilling locations increasing confidence in interpretation of the laterization contact surface between the points of observation in the model. Resources were classified as Indicated at this time as drill spacing was all at 50m intervals.
    • INDICATED - Areas of 50m of drilling spacing on a continuous grid pattern, where significant influence from</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
		Pass 1, 2 and 3 dominate the search ellipsoids, with 50m extrapolation from the last line of drilling. • Another factor in selection of resource polygon limits used for the Mineral Resource was a review of the geostatistical inputs and the weighting on each category. This was done by comparing the influence of each pass within the polygon boundaries. The results show that 96% of the blocks in Inferred class are interpolated by Pass 1 & 2. These results give sufficient confidence in the polygon strategy respectively.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• No formal audit was carried out on the geological model at this time. • The Resource numbers were compared against estimates made by the ETL team and our own internal manual estimate, which showed similar volumes of limonite and saprolite giving confidence that the Resource estimate is within an acceptable range of accuracy.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• Sufficient exploration has been carried out at the ETL project to delineate a significant deposit of laterite nickel. The drilling used for the Mineral Resource estimate is based on a systematic drill grid of 50X50m. The resource classification is mostly Indicated at this time based on this spacing of points of observation. According to the geostatistical analysis, provides sufficient detail for the purpose of the Indicated Mineral Resource stated in this report • It is likely with further infill and exploration drilling in all domains the Mineral Resources estimated in this report will increase • Long term supply contracts to refining facilities already in operation nearby significantly increase the potential for eventual economic extraction of the ETL nickel laterite Mineral Resource

No	Hole ID	Easting	Northing	Elevation	Depth	Dip	Azimuth	Survey_Type
1	DE_D50_1821	367572.397	9681391.87	607.709	26	-90	0	RTK GPS
2	DE_D50_1823	367550.402	9681516.766	595.341	12	-90	0	RTK GPS
3	DE_D50_1836	367522.372	9681566.017	602.257	7	-90	0	RTK GPS
4	DE_D50_1879	367370.466	9681455.769	592.275	32	-90	0	RTK GPS
5	DE_D50_2048	366840.988	9681779.556	580.256	22	-90	0	RTK GPS
6	DE_D50_2078	366745.486	9681366.703	549.366	32	-90	0	RTK GPS
7	DE_D50_2085	366766.346	9681695.627	564.05	9	-90	0	RTK GPS
8	DE_D50_2103	366686.242	9681631.434	547.363	26	-90	0	RTK GPS
9	DE_D50_2104	366723.269	9681748.309	566.805	12	-90	0	RTK GPS
10	DE_D50_2117	366662.585	9681365.149	535.97	41	-90	0	RTK GPS
11	DE_D50_2124	366641.763	9681680.545	550.913	20	-90	0	RTK GPS
12	DE_D50_2128	366673.839	9681908.01	569.982	20	-90	0	RTK GPS
13	DE_D50_2129	366673.241	9681946.633	573.92	22	-90	0	RTK GPS
14	DE_D50_2499	365801.672	9682066.353	590.216	18	-90	0	RTK GPS
15	DE_D50_2212	366453.09	9682144.644	569.507	23	-90	0	RTK GPS
16	DE_D50_2526	365751.956	9682053.465	588.313	24	-90	0	RTK GPS
17	DE_D50_2580	365549.137	9681350.056	529	11	-90	0	RTK GPS
18	DE_D50_2172	366559.803	9682147.612	576.724	16	-90	0	RTK GPS
19	DE_D2822	365344.16	9680848.94	517.411	47	-90	0	RTK GPS
20	DE_D2823	365299.646	9680849.551	527.86	35	-90	0	RTK GPS
21	DE_D2742	365948.957	9680898.889	501.527	18	-90	0	RTK GPS
22	DE_D2724	366848.898	9680899.775	548.002	15	-90	0	RTK GPS
23	DE_D2824	365249.785	9680849.926	531.645	34	-90	0	RTK GPS
24	DE_D2825	365199.196	9680850.304	525.449	32	-90	0	RTK GPS
25	DE_D2741	366000.002	9680902.21	497.653	24	-90	0	RTK GPS
26	DE_D2793	366800.957	9680851.374	537.353	20	-90	0	RTK GPS
27	DE_D2754	365349.964	9680900.066	512.723	37	-90	0	RTK GPS
28	DE_D2826	365149.734	9680850.254	520.162	29	-90	0	RTK GPS
29	DE_D2740	366052.214	9680901.015	486.095	32	-90	0	RTK GPS
30	DE_D2739	366100.012	9680900.002	479.116	24	-90	0	RTK GPS
31	DE_D2792	366850.062	9680850.715	553.268	30	-90	0	RTK GPS
32	DE_D2723	366897.968	9680900.399	568.005	23	-90	0	RTK GPS
33	DE_D2791	366901.264	9680851.077	562.572	22	-90	0	RTK GPS
34	DE_D2755	365300.188	9680900.356	525.149	34	-90	0	RTK GPS
35	DE_D2810	365949.586	9680851.131	493.207	17	-90	0	RTK GPS
36	DE_D2738	366150.482	9680899.49	477.458	20	-90	0	RTK GPS
37	DE_D2737	366200.326	9680900.42	479.238	25	-90	0	RTK GPS
38	DE_D2790	366949.068	9680851.032	564.655	27	-90	0	RTK GPS
39	DE_D2743	365900.825	9680902.275	502.815	17	-90	0	RTK GPS
40	DE_D2744	365850.392	9680902.044	505.937	24	-90	0	RTK GPS
41	DE_D2756	365249.885	9680899.608	532.37	34	-90	0	RTK GPS
42	DE_D2827	365099.636	9680850.227	518.742	33	-90	0	RTK GPS
43	DE_D2828	365049.449	9680849.958	512.347	32	-90	0	RTK GPS
44	DE_D2809	366001.07	9680850.817	485	15	-90	0	RTK GPS
45	DE_D2736	366250.131	9680901.407	483.313	30	-90	0	RTK GPS

46	DE_D2722	366950.221	9680901.036	576.249	36	-90	0	RTK GPS
47	DE_D2811	365893.848	9680864.595	495.78	15	-90	0	RTK GPS
48	DE_D2745	365801.049	9680899.792	507.468	24	-90	0	RTK GPS
49	DE_D2757	365200.236	9680900.095	532.618	30	-90	0	RTK GPS
50	DE_D2758	365150.239	9680900.689	528.136	36	-90	0	RTK GPS
51	DE_D2829	365000.12	9680850.984	507.653	33	-90	0	RTK GPS
52	DE_D2808	366049.86	9680850.099	484.388	24	-90	0	RTK GPS
53	DE_D2721	366997.645	9680895.507	567.544	29	-90	0	RTK GPS
54	DE_D2812	365848.826	9680851.103	502.713	27	-90	0	RTK GPS
55	DE_D2746	365752.081	9680901.503	511.484	12	-90	0	RTK GPS
56	DE_D2747	365700.003	9680900.611	529.086	26	-90	0	RTK GPS
57	DE_D2760	365050.754	9680900.683	516.704	30	-90	0	RTK GPS
58	DE_D2807	366099	9680848.766	480.025	26	-90	0	RTK GPS
59	DE_D2789	367008.62	9680848.519	557.595	27	-90	0	RTK GPS
60	DE_D2788	367051.426	9680849.728	548.489	21	-90	0	RTK GPS
61	DE_D2813	365800.774	9680850.886	509.508	23	-90	0	RTK GPS
62	DE_D2814	365744.382	9680849.597	518.074	22	-90	0	RTK GPS
63	DE_D2748	365649.092	9680899.344	538	26	-90	0	RTK GPS
64	DE_D2759	365099.619	9680900.579	521.637	31	-90	0	RTK GPS
65	DE_D2761	364999.042	9680899.838	514	33	-90	0	RTK GPS
66	DE_D2830	364950.122	9680850.958	505.39	28	-90	0	RTK GPS
67	DE_D2831	364899.865	9680849.664	504.313	30	-90	0	RTK GPS
68	DE_D2806	366156.287	9680849.976	476.882	20	-90	0	RTK GPS
69	DE_D2720	367050.745	9680900.006	552.641	32	-90	0	RTK GPS
70	DE_D2815	365698.405	9680853.578	526.595	22	-90	0	RTK GPS
71	DE_D2816	365648.502	9680850.498	533.489	34	-90	0	RTK GPS
72	DE_D2749	365599.567	9680900.336	530.475	26	-90	0	RTK GPS
73	DE_D2762	364948.722	9680900.236	510.67	33	-90	0	RTK GPS
74	DE_D2763	364900.456	9680900.15	507.784	32	-90	0	RTK GPS
75	DE_D2832	364850.238	9680851.085	500.812	37	-90	0	RTK GPS
76	DE_D2833	364799.958	9680849.928	489	9	-90	0	RTK GPS
77	DE_D2805	366199.041	9680851.414	479.579	25	-90	0	RTK GPS
78	DE_D2804	366247.706	9680850.588	483.539	29	-90	0	RTK GPS
79	DE_D2719	367096.541	9680896.887	539.31	25	-90	0	RTK GPS
80	DE_D2817	365600.784	9680850.141	530.881	26	-90	0	RTK GPS
81	DE_D2750	365549.458	9680900.335	517.635	13	-90	0	RTK GPS
82	DE_D2751	365500.357	9680900.373	515.469	24	-90	0	RTK GPS
83	DE_D2735	366301.31	9680898.899	488.34	33	-90	0	RTK GPS
84	DE_D2786	367153.687	9680849.07	511.469	19	-90	0	RTK GPS
85	DE_D2787	367102.849	9680849.218	531.985	12	-90	0	RTK GPS
86	DE_D2718	367151.509	9680897.904	517.658	22	-90	0	RTK GPS
87	DE_D2818	365549.424	9680848.137	518.753	31	-90	0	RTK GPS
88	DE_D2819	365502.261	9680848.335	504.941	21	-90	0	RTK GPS
89	DE_D2820	365450.27	9680847.606	500.167	28	-90	0	RTK GPS
90	DE_D2821	365405.207	9680847.221	500.948	18	-90	0	RTK GPS
91	DE_D2752	365450.952	9680898.366	510.383	39	-90	0	RTK GPS
92	DE_D2753	365399.88	9680900.203	502.755	23	-90	0	RTK GPS

93	DE_D2764	364850.516	9680897.963	504.384	40	-90	0	RTK GPS
94	DE_D2765	364800.913	9680895.887	493.7	25	-90	0	RTK GPS
95	DE_D2766	364750.81	9680898.973	502.246	35	-90	0	RTK GPS
96	DE_D2834	364749.869	9680849.103	501.651	33	-90	0	RTK GPS
97	DE_D2835	364699.501	9680849.177	508	24	-90	0	RTK GPS
98	DE_D2734	366347.773	9680899.764	494.886	34	-90	0	RTK GPS
99	DE_D2767	364700.319	9680899.708	505.817	36	-90	0	RTK GPS
100	DE_D2768	364650.68	9680899.592	506.515	31	-90	0	RTK GPS
101	DE_D2803	366303.54	9680851.505	490.52	35	-90	0	RTK GPS
102	DE_D2802	366348.885	9680849.318	499.363	26	-90	0	RTK GPS
103	DE_D2717	367202.31	9680898.295	507	11	-90	0	RTK GPS
104	DE_D2769	364600.328	9680899.591	505.57	32	-90	0	RTK GPS
105	DE_D2836	364650.968	9680848.377	506.541	23	-90	0	RTK GPS
106	DE_D2837	364599.351	9680850.049	494.026	18	-90	0	RTK GPS
107	DE_D2838	364550.049	9680849.533	488.514	20	-90	0	RTK GPS
108	DE_D2839	364499.816	9680850.677	482.037	18	-90	0	RTK GPS
109	DE_D2801	366399.355	9680848.22	511.721	35	-90	0	RTK GPS
110	DE_D2716	367253.438	9680895.002	520.116	23	-90	0	RTK GPS
111	DE_D2770	364549.91	9680902.152	503.895	26	-90	0	RTK GPS
112	DE_D2771	364500.302	9680901.875	498.67	26	-90	0	RTK GPS
113	DE_D2840	364444.437	9680851.905	492.769	27	-90	0	RTK GPS
114	DE_D2733	366402.709	9680899.02	506.374	27	-90	0	RTK GPS
115	DE_D2715	367312.413	9680887.035	545.142	23	-90	0	RTK GPS
116	DE_D2841	364399.642	9680849.637	497.844	21	-90	0	RTK GPS
117	DE_D2842	364350.367	9680850.056	488.43	24	-90	0	RTK GPS
118	DE_D2732	366449.657	9680899.841	514.621	26	-90	0	RTK GPS
119	DE_D2800	366449.67	9680850.33	517.729	24	-90	0	RTK GPS
120	DE_D2714	367347.382	9680897.253	551.585	31	-90	0	RTK GPS
121	DE_D2772	364450.036	9680900.795	501.389	30	-90	0	RTK GPS
122	DE_D2773	364397.501	9680901.569	500.207	22	-90	0	RTK GPS
123	DE_D2843	364303.692	9680846.458	475.959	28	-90	0	RTK GPS
124	DE_D2799	366500.758	9680851.262	521.961	33	-90	0	RTK GPS
125	DE_D2713	367400.222	9680897.182	559.981	16	-90	0	RTK GPS
126	DE_D2731	366502.096	9680898.828	523.476	24	-90	0	RTK GPS
127	DE_D2712	367450.153	9680903.698	570.223	24	-90	0	RTK GPS
128	DE_D2711	367501.11	9680901.425	576	16	-90	0	RTK GPS
129	DE_D2779	367503.385	9680847.085	573.981	25	-90	0	RTK GPS
130	DE_D2780	367449.498	9680851.594	577.06	20	-90	0	RTK GPS
131	DE_D2774	364350.687	9680898.639	487.718	27	-90	0	RTK GPS
132	DE_D2775	364300.223	9680900.163	470	11	-90	0	RTK GPS
133	DE_D2730	366549.696	9680899.423	527.862	32	-90	0	RTK GPS
134	DE_D2798	366550.023	9680850.312	519.402	21	-90	0	RTK GPS
135	DE_D2797	366599.686	9680849.434	510.09	36	-90	0	RTK GPS
136	DE_D2729	366599.071	9680900.267	519.247	26	-90	0	RTK GPS
137	DE_D2781	367400.787	9680850.078	564.719	14	-90	0	RTK GPS
138	DE_D2782	367349.253	9680847.799	550.232	34	-90	0	RTK GPS
139	DE_D2783	367299.785	9680849.451	539.135	25	-90	0	RTK GPS

140	DE_D2777	364199.304	9680899.042	489.71	25	-90	0	RTK GPS
141	DE_D2778	364139.212	9680903.579	492.782	23	-90	0	RTK GPS
142	DE_D2784	367244.557	9680845.21	518.301	21	-90	0	RTK GPS
143	DE_D2785	367200.431	9680849.872	505.119	25	-90	0	RTK GPS
144	DE_D2728	366650.209	9680901.698	521.975	20	-90	0	RTK GPS
145	DE_D2796	366649.377	9680849.504	513.266	39	-90	0	RTK GPS
146	DE_D2795	366700.702	9680850.917	518.29	22	-90	0	RTK GPS
147	DE_D2844	364250.934	9680853.414	459.196	8	-90	0	RTK GPS
148	DE_D2727	366712.561	9680903.159	529.711	38	-90	0	RTK GPS
149	DE_D2726	366751.375	9680901.778	530.271	9	-90	0	RTK GPS
150	DE_D2794	366750.627	9680850.391	523.714	21	-90	0	RTK GPS
151	DE_D1307	363101.921	9681015.135	400.143	16	-90	0	RTK GPS
152	DE_D1310	363291.838	9681110.579	344.482	6	-90	0	RTK GPS
153	DE_D1312	363408.486	9681381.504	354.149	23	-90	0	RTK GPS
154	DE_D1313	363394.553	9681115.486	356.681	20	-90	0	RTK GPS
155	DE_D1320	363517.642	9680998.946	368.852	19	-90	0	RTK GPS
156	DE_D1322	363601.971	9681589.45	362.355	37	-90	0	RTK GPS
157	DE_D1328	363604.097	9681703.176	353.392	5	-90	0	RTK GPS
158	DE_D1329	363702.164	9681689.718	376.554	33	-90	0	RTK GPS
159	DE_D1339	364207.942	9680971.875	498.071	25	-90	0	RTK GPS
160	DE_D1350	364486.967	9681094.188	511.398	12	-90	0	RTK GPS
161	DE_D1355	364618.024	9681708.221	496.436	18	-90	0	RTK GPS
162	DE_D1363	364678.666	9682603.18	466	8	-90	0	RTK GPS
163	DE_D1364	364712.651	9682312.777	470.303	13	-90	0	RTK GPS
164	DE_D1370	364690.928	9681713.634	482.084	8	-90	0	RTK GPS
165	DE_D1371	364694.222	9681614.965	466.021	16	-90	0	RTK GPS
166	DE_D1376	364689.401	9681095.954	509.642	19	-90	0	RTK GPS
167	DE_D1382	364810.111	9682394.347	483.715	18	-90	0	RTK GPS
168	DE_D1383	364795.548	9682318.239	479.839	29	-90	0	RTK GPS
169	DE_D1390	364796.223	9681589.35	485	16	-90	0	RTK GPS
170	DE_D1398	364908.698	9682886.243	500.658	20	-90	0	RTK GPS
171	DE_D1400	364894.048	9682709.441	489.845	10	-90	0	RTK GPS
172	DE_D1403	364914.063	9682307.869	521.592	19	-90	0	RTK GPS
173	DE_D1404	364880.254	9682216.6	470.216	13	-90	0	RTK GPS
174	DE_D1409	364890.635	9681722.335	449.483	14	-90	0	RTK GPS
175	DE_D1410	364901.885	9681614.951	435.647	18	-90	0	RTK GPS
176	DE_D1411	364919.064	9681516.172	413	22	-90	0	RTK GPS
177	DE_D1413	364876.334	9681294.209	415.934	17	-90	0	RTK GPS
178	DE_D1416	364912.889	9680996.413	505.525	28	-90	0	RTK GPS
179	DE_D1419	364998.684	9682621.018	528.21	14	-90	0	RTK GPS
180	DE_D1422	364980.634	9682304.903	529.139	19	-90	0	RTK GPS
181	DE_D1425	365004.126	9682024.403	437.913	13	-90	0	RTK GPS
182	DE_D1429	364987.469	9681626.219	425.749	23	-90	0	RTK GPS
183	DE_D1444	365117.656	9682116.665	449.426	15	-90	0	RTK GPS
184	DE_D1445	365110.153	9682009.138	426.946	14	-90	0	RTK GPS
185	DE_D1447	365082.526	9681803.364	427.108	25	-90	0	RTK GPS
186	DE_D1452	365112.534	9681294.789	516.498	16	-90	0	RTK GPS

187	DE_D1453	365114.421	9681183.519	517.096	34	-90	0	RTK GPS
188	DE_D1460	365192.81	9682607.384	543.962	8	-90	0	RTK GPS
189	DE_D1462	365192.805	9682373.984	502.115	16	-90	0	RTK GPS
190	DE_D1463	365213.046	9682302.444	476.84	18	-90	0	RTK GPS
191	DE_D1464	365224.503	9682200.707	449.532	16	-90	0	RTK GPS
192	DE_D1465	365203.233	9682118.154	434.714	16	-90	0	RTK GPS
193	DE_D1477	365293.9	9682709.438	510.419	15	-90	0	RTK GPS
194	DE_D1478	365287.303	9682598.014	508.284	13	-90	0	RTK GPS
195	DE_D1481	365306.74	9682175.901	455.831	13	-90	0	RTK GPS
196	DE_D1484	365311.663	9681898.212	448.795	14	-90	0	RTK GPS
197	DE_D1499	365386.35	9682396.967	459.434	16	-90	0	RTK GPS
198	DE_D1500	365399.847	9682283.653	480.101	12	-90	0	RTK GPS
199	DE_D1503	365413.683	9681610.682	530	23	-90	0	RTK GPS
200	DE_D1506	365393.19	9681289.426	538.554	28	-90	0	RTK GPS
201	DE_D1508	365388.68	9681105.94	522.08	35	-90	0	RTK GPS
202	DE_D1511	365513.743	9681914.523	518.941	11	-90	0	RTK GPS
203	DE_D1512	365513.236	9681801.675	529.524	15	-90	0	RTK GPS
204	DE_D1516	365495.536	9681380.066	520.982	17	-90	0	RTK GPS
205	DE_D1518	365497.605	9681188.292	519.603	18	-90	0	RTK GPS
206	DE_D1521	365618.783	9682108.775	544.265	9	-90	0	RTK GPS
207	DE_D1524	365604.345	9681790.976	547.093	28	-90	0	RTK GPS
208	DE_D1535	365710.409	9682292.724	616.279	14	-90	0	RTK GPS
209	DE_D1536	365711.815	9682198.358	590.391	10	-90	0	RTK GPS
210	DE_D1537	365713.702	9682093.039	574.306	11	-90	0	RTK GPS
211	DE_D1538	365720.201	9682008.215	585	28	-90	0	RTK GPS
212	DE_D1539	365712.089	9681894.435	581	24	-90	0	RTK GPS
213	DE_D1541	365708.97	9681706.761	532.29	22	-90	0	RTK GPS
214	DE_D1555	365810.75	9682308.094	628	11	-90	0	RTK GPS
215	DE_D1561	365800.598	9681682.323	554	54	-90	0	RTK GPS
216	DE_D1562	365816.337	9681620.173	551.121	30	-90	0	RTK GPS
217	DE_D1563	365803.599	9681510.443	521.654	22	-90	0	RTK GPS
218	DE_D1564	365781.521	9681401.61	520.078	29	-90	0	RTK GPS
219	DE_D1568	365811.122	9680991.753	516.834	40	-90	0	RTK GPS
220	DE_D1573	365905.743	9682483.458	637.77	32	-90	0	RTK GPS
221	DE_D1574	365882.68	9682398.935	631.881	25	-90	0	RTK GPS
222	DE_D1575	365895.705	9682313.466	605.221	8	-90	0	RTK GPS
223	DE_D1579	365901.745	9681910.782	559.491	13	-90	0	RTK GPS
224	DE_D1581	365915.399	9681713.158	526	13	-90	0	RTK GPS
225	DE_D1588	365898.484	9680987.526	514.745	31	-90	0	RTK GPS
226	DE_D1595	365995.85	9681909.618	563.796	8	-90	0	RTK GPS
227	DE_D1599	366008.582	9681510.127	523.068	28	-90	0	RTK GPS
228	DE_D1603	366009.22	9681113.877	513.709	30	-90	0	RTK GPS
229	DE_D1604	365997.439	9681020.568	489	22	-90	0	RTK GPS
230	DE_D1605	366088.159	9682410.069	612.967	14	-90	0	RTK GPS
231	DE_D1609	366103.601	9682011.518	559.028	23	-90	0	RTK GPS
232	DE_D1611	366120.869	9681811.65	546.285	20	-90	0	RTK GPS
233	DE_D1612	366078.349	9681693.891	518	31	-90	0	RTK GPS

234	DE_D1613	366118.809	9681606.91	511.492	27	-90	0	RTK GPS
235	DE_D1615	366106.925	9681407.638	526.902	25	-90	0	RTK GPS
236	DE_D1619	366109.906	9681006.647	497.025	31	-90	0	RTK GPS
237	DE_D1623	366207.973	9682093.935	575.729	30	-90	0	RTK GPS
238	DE_D1624	366200.298	9682014.266	554.397	17	-90	0	RTK GPS
239	DE_D1628	366209.302	9681607.372	523.317	27	-90	0	RTK GPS
240	DE_D1630	366201.3	9681410.443	516.632	33	-90	0	RTK GPS
241	DE_D1634	366211.245	9681009.225	483.986	29	-90	0	RTK GPS
242	DE_D1637	366310.998	9682122.444	553.829	9	-90	0	RTK GPS
243	DE_D1639	366297.475	9681911.109	548	21	-90	0	RTK GPS
244	DE_D1640	366298.248	9681789.866	553.928	29	-90	0	RTK GPS
245	DE_D1642	366292.921	9681592.798	534.105	33	-90	0	RTK GPS
246	DE_D1643	366306.492	9681490.99	520.456	32	-90	0	RTK GPS
247	DE_D1647	366309.67	9681103.473	486.661	26	-90	0	RTK GPS
248	DE_D1652	366410.758	9682013.652	547.141	17	-90	0	RTK GPS
249	DE_D1656	366383.048	9681590.168	519	28	-90	0	RTK GPS
250	DE_D1658	366418.807	9681393.622	497	15	-90	0	RTK GPS
251	DE_D1659	366386.866	9681292.779	493.152	18	-90	0	RTK GPS
252	DE_D1660	366388.8	9681205.665	490.202	26	-90	0	RTK GPS
253	DE_D1662	366410.127	9680998.188	503.42	34	-90	0	RTK GPS
254	DE_D1665	366517.183	9682011.034	560.609	32	-90	0	RTK GPS
255	DE_D1668	366510.31	9681690.354	529.011	11	-90	0	RTK GPS
256	DE_D1670	366512.798	9681502.056	517.051	33	-90	0	RTK GPS
257	DE_D1672	366504.897	9681281.793	518.556	41	-90	0	RTK GPS
258	DE_D1674	366500.845	9681087.663	499.131	31	-90	0	RTK GPS
259	DE_D1676	366589.961	9682178.344	575.363	14	-90	0	RTK GPS
260	DE_D1677	366612.192	9682098.772	580.531	22	-90	0	RTK GPS
261	DE_D1684	366601.979	9681387.372	527.908	45	-90	0	RTK GPS
262	DE_D1689	366713.667	9682199.997	588.099	24	-90	0	RTK GPS
263	DE_D1690	366716.742	9682097.835	592.923	22	-90	0	RTK GPS
264	DE_D1691	366714.598	9681995.97	583.897	26	-90	0	RTK GPS
265	DE_D1692	366706.992	9681908.813	570.935	18	-90	0	RTK GPS
266	DE_D1697	366707.366	9681392.523	547.253	32	-90	0	RTK GPS
267	DE_D1698	366696.281	9681311.049	525	8	-90	0	RTK GPS
268	DE_D1699	366712.533	9681202.975	535.578	24	-90	0	RTK GPS
269	DE_D1701	366721.101	9681014.755	545.655	37	-90	0	RTK GPS
270	DE_D1704	366812.066	9682010.669	612.591	30	-90	0	RTK GPS
271	DE_D1705	366806.369	9681911.557	575.23	24	-90	0	RTK GPS
272	DE_D1710	366804.754	9681385.917	561.438	19	-90	0	RTK GPS
273	DE_D1716	366909.463	9682109.238	643.534	25	-90	0	RTK GPS
274	DE_D1718	366906.558	9681911.81	579.621	13	-90	0	RTK GPS
275	DE_D1719	366914.254	9681803.183	584.543	14	-90	0	RTK GPS
276	DE_D1721	366906.738	9681592.557	574	9	-90	0	RTK GPS
277	DE_D1727	366909.146	9681024.398	585	30	-90	0	RTK GPS
278	DE_D1729	367009.025	9682005.078	618.108	8	-90	0	RTK GPS
279	DE_D1730	367011.859	9681902.559	609.368	11	-90	0	RTK GPS
280	DE_D1731	367010.218	9681798.473	616.018	13	-90	0	RTK GPS

281	DE_D1740	367113.366	9681899.446	636.008	22	-90	0	RTK GPS
282	DE_D1741	367106.442	9681811.684	631.592	31	-90	0	RTK GPS
283	DE_D1749	367112.055	9681010.43	536.012	25	-90	0	RTK GPS
284	DE_D1750	367208.871	9681908.316	623.057	8	-90	0	RTK GPS
285	DE_D1752	367209.174	9681706.359	635.222	37	-90	0	RTK GPS
286	DE_D1755	367215.039	9681388.244	581.3	30	-90	0	RTK GPS
287	DE_D1757	367209.631	9681206.959	562.077	21	-90	0	RTK GPS
288	DE_D1759	367212.52	9681003	515.175	22	-90	0	RTK GPS
289	DE_D1761	367300.594	9681773.921	636.838	30	-90	0	RTK GPS
290	DE_D1766	367307.221	9681310.6	548	16	-90	0	RTK GPS
291	DE_D1767	367309.652	9681206.38	536	16	-90	0	RTK GPS
292	DE_D1768	367315.786	9681105.063	543.416	29	-90	0	RTK GPS
293	DE_D1769	367298.785	9681015.813	541.859	23	-90	0	RTK GPS
294	DE_D1770	367396.283	9681788.901	615.855	17	-90	0	RTK GPS
295	DE_D1772	367410.248	9681605.347	634.331	33	-90	0	RTK GPS
296	DE_D1774	367410.943	9681413.677	583.63	28	-90	0	RTK GPS
297	DE_D1775	367403.111	9681311.61	578.245	21	-90	0	RTK GPS
298	DE_D1777	367415.727	9681099.261	568.677	26	-90	0	RTK GPS
299	DE_D1778	367411.894	9681000.673	564.688	18	-90	0	RTK GPS
300	DE_D1780	367524.063	9681799.036	609.007	16	-90	0	RTK GPS
301	DE_D1785	367510.261	9681304.578	589.451	18	-90	0	RTK GPS
302	DE_D1787	367512.793	9681103.77	583.617	28	-90	0	RTK GPS
303	DE_D1789	367572.34	9681801.7	595.947	20	-90	0	RTK GPS
304	DE_D50_1807	367592.086	9681259.654	610.117	31	-90	0	RTK GPS
305	DE_D50_1819	367554.53	9681309.163	601.424	32	-90	0	RTK GPS
306	DE_D50_1820	367559.936	9681354.145	605.35	30	-90	0	RTK GPS
307	DE_D50_1822	367537.468	9681451.269	603.226	37	-90	0	RTK GPS
308	DE_D50_1834	367509.692	9681356.636	596.358	25	-90	0	RTK GPS
309	DE_D50_1840	367459.937	9680943.387	562.945	17	-90	0	RTK GPS
310	DE_D50_1841	367463.075	9681004.005	578.581	20	-90	0	RTK GPS
311	DE_D50_1848	367461.513	9681358.023	590.168	20	-90	0	RTK GPS
312	DE_D50_1851	367459.663	9681507.305	611.075	28	-90	0	RTK GPS
313	DE_D50_1852	367443.877	9681562.07	624.141	36	-90	0	RTK GPS
314	DE_D50_1853	367435.248	9681606.988	631.448	33	-90	0	RTK GPS
315	DE_D50_1854	367447.65	9681662.383	633.78	30	-90	0	RTK GPS
316	DE_D50_1857	367463.888	9681790.425	606.352	20	-90	0	RTK GPS
317	DE_D50_1862	367391.971	9681258.258	562.973	30	-90	0	RTK GPS
318	DE_D50_1865	367402.551	9681561.684	626.487	36	-90	0	RTK GPS
319	DE_D50_1876	367338.459	9681295.327	561.838	27	-90	0	RTK GPS
320	DE_D50_1877	367368.712	9681337.994	572.373	22	-90	0	RTK GPS
321	DE_D50_1883	367359.911	9681657.106	637.307	43	-90	0	RTK GPS
322	DE_D50_1888	367312.285	9680942.628	534.172	23	-90	0	RTK GPS
323	DE_D50_1891	367300.881	9681261.621	546.664	16	-90	0	RTK GPS
324	DE_D50_1899	367268.148	9681006.869	532.061	26	-90	0	RTK GPS
325	DE_D50_1900	367260.206	9681055.128	531.44	29	-90	0	RTK GPS
326	DE_D50_1901	367267.616	9681099.643	527.378	33	-90	0	RTK GPS
327	DE_D50_1907	367258.677	9681411.883	577.192	22	-90	0	RTK GPS

328	DE_D50_1908	367267.166	9681457.035	588.149	34	-90	0	RTK GPS
329	DE_D50_1909	367240.363	9681508.944	604.102	37	-90	0	RTK GPS
330	DE_D50_1910	367245.29	9681560.365	613.45	37	-90	0	RTK GPS
331	DE_D50_1912	367261.249	9681650.277	634.643	39	-90	0	RTK GPS
332	DE_D50_1919	367213.216	9681054.247	518.523	14	-90	0	RTK GPS
333	DE_D50_1921	367192.32	9681242.262	569.159	29	-90	0	RTK GPS
334	DE_D50_1922	367196.102	9681361.635	579.671	31	-90	0	RTK GPS
335	DE_D50_1925	367211.63	9681645.896	631.679	34	-90	0	RTK GPS
336	DE_D50_1926	367211.475	9681751.635	635.813	38	-90	0	RTK GPS
337	DE_D50_1930	367161.453	9681049.479	535.02	26	-90	0	RTK GPS
338	DE_D50_1931	367171.971	9681103.543	536.235	20	-90	0	RTK GPS
339	DE_D50_1936	367135	9681340.676	594.582	35	-90	0	RTK GPS
340	DE_D50_1937	367145.48	9681410.109	602.769	37	-90	0	RTK GPS
341	DE_D50_1944	367137.498	9681747.272	617.672	13	-90	0	RTK GPS
342	DE_D50_1950	367109.813	9681065.917	549.512	19	-90	0	RTK GPS
343	DE_D50_1956	367110.425	9681657.073	605.833	13	-90	0	RTK GPS
344	DE_D50_1959	367111.609	9681952.097	633.421	12	-90	0	RTK GPS
345	DE_D50_1960	367048.413	9680961.254	543.315	15	-90	0	RTK GPS
346	DE_D50_1964	367060.948	9681149.681	571.776	19	-90	0	RTK GPS
347	DE_D50_1967	367048.981	9681311.251	599.531	25	-90	0	RTK GPS
348	DE_D50_1977	367062.985	9681802.251	629.165	27	-90	0	RTK GPS
349	DE_D50_1979	367066.562	9681903.039	620.635	10	-90	0	RTK GPS
350	DE_D50_1980	367063.667	9681949.508	621.919	10	-90	0	RTK GPS
351	DE_D50_1990	367019.579	9681848.919	612.618	11	-90	0	RTK GPS
352	DE_D50_1996	366938.889	9681107.865	586	46	-90	0	RTK GPS
353	DE_D50_1997	366952.345	9681161.844	587	25	-90	0	RTK GPS
354	DE_D50_2000	366950.765	9681286.319	575.881	24	-90	0	RTK GPS
355	DE_D50_2010	366961.802	9681798.664	605.982	22	-90	0	RTK GPS
356	DE_D50_2011	366968.411	9681852.003	599.59	11	-90	0	RTK GPS
357	DE_D50_2012	366951.838	9681888.987	595.193	6	-90	0	RTK GPS
358	DE_D50_2018	366907.544	9680960.892	574.686	25	-90	0	RTK GPS
359	DE_D50_2029	366893.143	9682058.271	634.256	16	-90	0	RTK GPS
360	DE_D50_2030	366912.097	9682144.51	643.215	18	-90	0	RTK GPS
361	DE_D50_2031	366846.794	9680959.944	552.833	14	-90	0	RTK GPS
362	DE_D50_2045	366842.47	9681660.371	585.065	29	-90	0	RTK GPS
363	DE_D50_2049	366847.88	9681864.439	574.874	23	-90	0	RTK GPS
364	DE_D50_2053	366861.657	9682046.458	629.496	26	-90	0	RTK GPS
365	DE_D50_2057	366807.307	9680965.879	549.403	19	-90	0	RTK GPS
366	DE_D50_2063	366798.386	9681538.946	571.515	38	-90	0	RTK GPS
367	DE_D50_2069	366808.349	9682140.749	615.768	20	-90	0	RTK GPS
368	DE_D50_2070	366737.859	9680958.665	544.688	44	-90	0	RTK GPS
369	DE_D50_2077	366756.726	9681286.918	543.203	31	-90	0	RTK GPS
370	DE_D50_2081	366738.059	9681499.866	567.874	36	-90	0	RTK GPS
371	DE_D50_2083	366749.792	9681586.862	559.601	46	-90	0	RTK GPS
372	DE_D50_2086	366765.709	9681743.567	570.098	13	-90	0	RTK GPS
373	DE_D50_2087	366771.578	9681800.441	566.588	9	-90	0	RTK GPS
374	DE_D50_2092	366755.913	9682041.101	598.157	15	-90	0	RTK GPS

375	DE_D50_2094	366770.331	9682133.74	607.375	23	-90	0	RTK GPS
376	DE_D50_2096	366704.785	9680961.136	540.496	42	-90	0	RTK GPS
377	DE_D50_2097	366706.749	9681041.539	540.97	39	-90	0	RTK GPS
378	DE_D50_2101	366709.116	9681445.83	556.737	40	-90	0	RTK GPS
379	DE_D50_2107	366712.741	9682052.29	588.83	25	-90	0	RTK GPS
380	DE_D50_2108	366712.892	9682154.536	595.18	33	-90	0	RTK GPS
381	DE_D50_2110	366646.476	9681016.247	529.372	30	-90	0	RTK GPS
382	DE_D50_2120	366636.91	9681491.165	548.626	39	-90	0	RTK GPS
383	DE_D50_2121	366660.443	9681548.896	552.055	43	-90	0	RTK GPS
384	DE_D50_2126	366641.265	9681805.787	551.027	12	-90	0	RTK GPS
385	DE_D50_2131	366644.371	9682041.54	579.331	20	-90	0	RTK GPS
386	DE_D50_2132	366660.883	9682100.11	584.982	21	-90	0	RTK GPS
387	DE_D50_2135	366604.054	9680959.916	532	27	-90	0	RTK GPS
388	DE_D50_2139	366592.334	9681360.697	524.634	31	-90	0	RTK GPS
389	DE_D50_2140	366613.235	9681462.921	542.899	30	-90	0	RTK GPS
390	DE_D50_2141	366615.66	9681561.06	540.574	47	-90	0	RTK GPS
391	DE_D50_2142	366613.779	9681641.049	542.371	21	-90	0	RTK GPS
392	DE_D50_2144	366606.113	9681858.32	563.75	27	-90	0	RTK GPS
393	DE_D50_2145	366617.988	9681957.85	567.265	12	-90	0	RTK GPS
394	DE_D50_2155	366544.234	9681283.553	521.945	29	-90	0	RTK GPS
395	DE_D50_2160	366544.494	9681561.898	527.565	30	-90	0	RTK GPS
396	DE_D50_2167	366550.901	9681888.9	558.223	15	-90	0	RTK GPS
397	DE_D50_2168	366563.092	9681953.925	559.443	23	-90	0	RTK GPS
398	DE_D50_2169	366560.659	9682006.335	566.979	27	-90	0	RTK GPS
399	DE_D50_2171	366559.159	9682090.77	574.981	21	-90	0	RTK GPS
400	DE_D50_2178	366490.77	9681357.65	509.591	44	-90	0	RTK GPS
401	DE_D50_2184	366511.409	9681947.147	551.054	25	-90	0	RTK GPS
402	DE_D50_2186	366510.559	9682156.366	575.356	19	-90	0	RTK GPS
403	DE_D50_2187	366485.944	9682251.372	569.756	12	-90	0	RTK GPS
404	DE_D50_2193	366451.261	9681188.582	503.886	32	-90	0	RTK GPS
405	DE_D50_2197	366467.504	9681401.676	509.644	29	-90	0	RTK GPS
406	DE_D50_2199	366452.464	9681489.956	508.855	25	-90	0	RTK GPS
407	DE_D50_2202	366439.111	9681648.652	521.104	8	-90	0	RTK GPS
408	DE_D50_2203	366475.383	9681708.061	523.114	10	-90	0	RTK GPS
409	DE_D50_2204	366466.22	9681746.454	525.454	11	-90	0	RTK GPS
410	DE_D50_2205	366463.243	9681792.441	529.618	10	-90	0	RTK GPS
411	DE_D50_2206	366453.513	9681862.874	537	19	-90	0	RTK GPS
412	DE_D50_2207	366461.744	9681890.139	538.902	18	-90	0	RTK GPS
413	DE_D50_2209	366446.896	9681988.161	549.475	22	-90	0	RTK GPS
414	DE_D50_2219	366413.81	9681751.295	543	21	-90	0	RTK GPS
415	DE_D50_2222	366411.563	9682048.895	552.864	21	-90	0	RTK GPS
416	DE_D50_2228	366334.114	9681506.178	522.006	27	-90	0	RTK GPS
417	DE_D50_2230	366342.221	9681592.014	525.692	24	-90	0	RTK GPS
418	DE_D50_2231	366358.549	9681641.762	538.894	22	-90	0	RTK GPS
419	DE_D50_2233	366360.327	9681744.561	551.512	38	-90	0	RTK GPS
420	DE_D50_2234	366373.632	9681801.658	541.067	23	-90	0	RTK GPS
421	DE_D50_2237	366346.344	9681938.453	544.583	22	-90	0	RTK GPS

422	DE_D50_2238	366364.779	9682009.651	544.039	22	-90	0	RTK GPS
423	DE_D50_2240	366340.154	9682103.928	558.364	21	-90	0	RTK GPS
424	DE_D50_2244	366344.015	9682291.566	582.239	34	-90	0	RTK GPS
425	DE_D50_2245	366297.012	9681360.114	502.237	20	-90	0	RTK GPS
426	DE_D50_2249	366314.053	9681750.794	557	30	-90	0	RTK GPS
427	DE_D50_2250	366308.504	9681861.179	546.804	27	-90	0	RTK GPS
428	DE_D50_2256	366237.255	9681400.114	508.563	26	-90	0	RTK GPS
429	DE_D50_2262	366260.338	9681836.093	549.78	25	-90	0	RTK GPS
430	DE_D50_2269	366238.03	9682185.489	561.662	11	-90	0	RTK GPS
431	DE_D50_2270	366254.946	9682261.48	574.372	29	-90	0	RTK GPS
432	DE_D50_2274	366192.752	9681940.539	550.58	27	-90	0	RTK GPS
433	DE_D50_2275	366214.001	9682045	564.874	31	-90	0	RTK GPS
434	DE_D50_2277	366215.366	9682253.849	569.403	26	-90	0	RTK GPS
435	DE_D50_2283	366173.354	9682010.104	555.381	12	-90	0	RTK GPS
436	DE_D50_2285	366160.753	9682111.372	584.448	30	-90	0	RTK GPS
437	DE_D50_2287	366138.848	9682189.442	590.249	28	-90	0	RTK GPS
438	DE_D50_2288	366135.187	9682254.87	584.387	26	-90	0	RTK GPS
439	DE_D50_2295	366035.012	9681827.214	544.256	10	-90	0	RTK GPS
440	DE_D50_2296	366059.067	9681905.463	565.764	40	-90	0	RTK GPS
441	DE_D50_2299	366046.599	9682040.445	563.128	15	-90	0	RTK GPS
442	DE_D50_2300	366065.917	9682096.463	572.336	15	-90	0	RTK GPS
443	DE_D50_2301	366058.109	9682158.176	583.349	14	-90	0	RTK GPS
444	DE_D50_2304	366057.226	9682281.841	603.048	39	-90	0	RTK GPS
445	DE_D50_2305	365988.121	9681850.124	558.477	18	-90	0	RTK GPS
446	DE_D50_2308	365954.087	9681835.002	562.661	15	-90	0	RTK GPS
447	DE_D50_2309	365950.2	9681912.632	576.295	30	-90	0	RTK GPS
448	DE_D50_2313	365910.287	9681838.11	544.47	16	-90	0	RTK GPS
449	DE_D50_2323	366390.224	9681067.014	498.843	37	-90	0	RTK GPS
450	DE_D50_2333	366338.87	9681297.13	495.628	33	-90	0	RTK GPS
451	DE_D50_2336	366287.846	9681155.295	492.953	18	-90	0	RTK GPS
452	DE_D50_2341	366248.438	9681064.287	486.919	33	-90	0	RTK GPS
453	DE_D50_2351	366195.145	9680936.001	478.889	22	-90	0	RTK GPS
454	DE_D50_2352	366184.241	9681051	481	25	-90	0	RTK GPS
455	DE_D50_2354	366194.134	9681258.591	516.549	24	-90	0	RTK GPS
456	DE_D50_2355	366199.976	9681362.527	520.305	24	-90	0	RTK GPS
457	DE_D50_2362	366137.006	9681052.184	492.605	26	-90	0	RTK GPS
458	DE_D50_2372	366150.558	9681534.684	513.098	24	-90	0	RTK GPS
459	DE_D50_2373	366163.077	9681594.996	516.322	22	-90	0	RTK GPS
460	DE_D50_2377	366148.848	9682388.295	602.073	12	-90	0	RTK GPS
461	DE_D50_2378	366108.608	9680944.143	485.292	29	-90	0	RTK GPS
462	DE_D50_2385	366108.76	9681658.539	523.32	30	-90	0	RTK GPS
463	DE_D50_2386	366113.198	9681741.36	532.46	32	-90	0	RTK GPS
464	DE_D50_2387	366110.503	9682368.208	598.948	17	-90	0	RTK GPS
465	DE_D50_2389	366038.381	9681009.608	489.876	21	-90	0	RTK GPS
466	DE_D50_2396	366060.63	9681345.984	503.444	21	-90	0	RTK GPS
467	DE_D50_2397	366059.933	9681395.345	517.01	13	-90	0	RTK GPS
468	DE_D50_2398	366055.753	9681460.581	528.316	24	-90	0	RTK GPS

469	DE_D50_2399	366058.455	9681508.104	530.61	23	-90	0	RTK GPS
470	DE_D50_2406	366058.139	9682365.287	600.67	9	-90	0	RTK GPS
471	DE_D50_2407	366042.28	9682411.688	614.808	7	-90	0	RTK GPS
472	DE_D50_2408	366055.659	9682439.098	622.912	6	-90	0	RTK GPS
473	DE_D50_2415	366008.495	9681437.53	513.204	26	-90	0	RTK GPS
474	DE_D50_2417	365997.059	9681638.6	530.205	25	-90	0	RTK GPS
475	DE_D50_2422	366013.02	9682451.565	630.315	13	-90	0	RTK GPS
476	DE_D50_2424	365951.451	9680989.642	502.336	35	-90	0	RTK GPS
477	DE_D50_2433	365962.464	9681453.566	504.312	27	-90	0	RTK GPS
478	DE_D50_2445	365961.875	9682316.473	606.191	9	-90	0	RTK GPS
479	DE_D50_2447	365967.093	9682410.773	633.237	24	-90	0	RTK GPS
480	DE_D50_2448	365951.152	9682438.739	635.597	28	-90	0	RTK GPS
481	DE_D50_2452	365887.382	9681149.241	504.084	14	-90	0	RTK GPS
482	DE_D50_2453	365917.211	9681249.694	530.238	30	-90	0	RTK GPS
483	DE_D50_2466	365840.012	9681045.221	502.881	25	-90	0	RTK GPS
484	DE_D50_2469	365839.785	9681199.18	517.803	25	-90	0	RTK GPS
485	DE_D50_2473	365860.795	9681389.317	513.468	30	-90	0	RTK GPS
486	DE_D50_2479	365860.73	9681696.707	543.657	22	-90	0	RTK GPS
487	DE_D50_2481	365854.956	9682071.065	596.948	25	-90	0	RTK GPS
488	DE_D50_2487	365843.828	9682371.501	623.845	27	-90	0	RTK GPS
489	DE_D50_2491	365803.125	9681060.221	499	19	-90	0	RTK GPS
490	DE_D50_2494	365811.241	9681350.179	530.788	35	-90	0	RTK GPS
491	DE_D50_2500	365812.057	9682155.261	597.134	18	-90	0	RTK GPS
492	DE_D50_2513	365739.662	9681410.657	529.755	24	-90	0	RTK GPS
493	DE_D50_2518	365760.084	9681645.96	542.976	19	-90	0	RTK GPS
494	DE_D50_2527	365763.925	9682090.971	586.327	18	-90	0	RTK GPS
495	DE_D50_2531	365761.773	9682306.48	623.837	18	-90	0	RTK GPS
496	DE_D50_2534	365702.053	9681060.916	516	13	-90	0	RTK GPS
497	DE_D50_2539	365703.002	9681536.21	533	21	-90	0	RTK GPS
498	DE_D50_2540	365715.139	9681656.137	527.648	13	-90	0	RTK GPS
499	DE_D50_2544	365712.475	9682051.894	580.715	11	-90	0	RTK GPS
500	DE_D50_2549	365655.517	9681040.021	526.468	22	-90	0	RTK GPS
501	DE_D50_2565	365588.895	9681041.976	539.967	45	-90	0	RTK GPS
502	DE_D50_2566	365611.458	9681166.602	551.279	29	-90	0	RTK GPS
503	DE_D50_2577	365559.942	9681211.34	549.352	34	-90	0	RTK GPS
504	DE_D50_2578	365560.218	9681253.676	552.298	24	-90	0	RTK GPS
505	DE_D50_2584	365542.242	9681709.585	525.365	25	-90	0	RTK GPS
506	DE_D50_2588	365564.722	9681900.992	534.397	12	-90	0	RTK GPS
507	DE_D50_2598	365510.406	9681853.087	518.1	12	-90	0	RTK GPS
508	DE_D50_2602	365448.398	9681111.364	513	17	-90	0	RTK GPS
509	DE_D50_2603	365441.694	9681159.348	518.318	34	-90	0	RTK GPS
510	DE_D50_2606	365455.102	9681284.951	541.878	32	-90	0	RTK GPS
511	DE_D50_2612	365442.674	9681607.379	520.952	19	-90	0	RTK GPS
512	DE_D50_2614	365390.012	9681038.223	515.972	30	-90	0	RTK GPS
513	DE_D50_2624	365353.389	9681288.892	534.506	25	-90	0	RTK GPS
514	DE_D50_2626	365310.877	9681053.342	512.235	18	-90	0	RTK GPS
515	DE_D50_2631	365256.205	9681041.784	522.565	31	-90	0	RTK GPS

516	DE_D50_2640	365188.481	9681255.168	534.339	26	-90	0	RTK GPS
517	DE_D50_2687	364658.185	9681092.438	515	23	-90	0	RTK GPS
518	DE_D50_2701	364359.502	9680958.426	490.926	26	-90	0	RTK GPS
519	DE_D50_2705	364304.807	9681032.583	489.195	29	-90	0	RTK GPS
520	DE_D1309	363191.975	9680995.809	378.823	9	-90	0	RTK GPS
521	DE_D1314	363406.081	9680993.596	359.128	12	-90	0	RTK GPS
522	DE_D1316	363494.985	9681400.089	364.237	29	-90	0	RTK GPS
523	DE_D1317	363506.761	9681296.973	376.112	16	-90	0	RTK GPS
524	DE_D1321	363589.889	9681000.509	377.808	30	-90	0	RTK GPS
525	DE_D1325	363594.708	9681305.936	379.699	28	-90	0	RTK GPS
526	DE_D1327	363603.705	9681103.792	359.542	5	-90	0	RTK GPS
527	DE_D1343	364301.363	9681008.777	490.867	27	-90	0	RTK GPS
528	DE_D1351	364496.047	9681005.103	517.511	38	-90	0	RTK GPS
529	DE_D1352	364601.119	9682695.026	471.517	11	-90	0	RTK GPS
530	DE_D1353	364591.739	9682596.476	479.729	14	-90	0	RTK GPS
531	DE_D1360	364601.942	9681093.808	505.625	11	-90	0	RTK GPS
532	DE_D1361	364594.541	9680995.015	509.612	33	-90	0	RTK GPS
533	DE_D1378	364804.247	9682896.35	492.934	20	-90	0	RTK GPS
534	DE_D1379	364799.297	9682805.38	481.609	21	-90	0	RTK GPS
535	DE_D1381	364793.922	9682600.354	492.779	17	-90	0	RTK GPS
536	DE_D1388	364791.518	9681804.845	482.169	20	-90	0	RTK GPS
537	DE_D1389	364794.427	9681708.152	469.529	11	-90	0	RTK GPS
538	DE_D1395	364808.428	9681095.521	504.79	24	-90	0	RTK GPS
539	DE_D1396	364805.432	9681004.614	515.11	45	-90	0	RTK GPS
540	DE_D1401	364896.307	9682591.826	509.373	39	-90	0	RTK GPS
541	DE_D1406	364904.648	9682006.423	475.113	14	-90	0	RTK GPS
542	DE_D1407	364892.17	9681903.219	464.839	9	-90	0	RTK GPS
543	DE_D1408	364893.465	9681797.159	464.148	20	-90	0	RTK GPS
544	DE_D1412	364894.56	9681398.842	420.91	13	-90	0	RTK GPS
545	DE_D1417	365001.168	9682906.863	525.913	30	-90	0	RTK GPS
546	DE_D1426	364998.253	9681907.291	441.561	14	-90	0	RTK GPS
547	DE_D1427	364999.231	9681808.867	439.354	14	-90	0	RTK GPS
548	DE_D1428	365011.722	9681738.991	427.615	18	-90	0	RTK GPS
549	DE_D1430	364989.96	9681542.481	412.891	13	-90	0	RTK GPS
550	DE_D1435	364994.649	9680999.606	482.909	14	-90	0	RTK GPS
551	DE_D1436	365092.646	9682900.283	548.913	27	-90	0	RTK GPS
552	DE_D1438	365102.516	9682695.526	546.029	6	-90	0	RTK GPS
553	DE_D1441	365104.168	9682408.258	510.043	10	-90	0	RTK GPS
554	DE_D1446	365104.246	9681904.548	434	15	-90	0	RTK GPS
555	DE_D1454	365095.28	9681094.08	513.601	24	-90	0	RTK GPS
556	DE_D1457	365207.058	9682893.459	521.047	25	-90	0	RTK GPS
557	DE_D1458	365195.991	9682807.225	527.564	40	-90	0	RTK GPS
558	DE_D1466	365234.569	9682004.098	438.375	18	-90	0	RTK GPS
559	DE_D1467	365221.597	9681945.852	426.504	10	-90	0	RTK GPS
560	DE_D1472	365198.181	9681193.99	538	34	-90	0	RTK GPS
561	DE_D1479	365306.947	9682497.505	490.881	12	-90	0	RTK GPS
562	DE_D1482	365302.51	9682090.918	460.996	12	-90	0	RTK GPS

563	DE_D1483	365296.571	9682005.191	448.659	12	-90	0	RTK GPS
564	DE_D1490	365298.926	9681205.22	541.153	25	-90	0	RTK GPS
565	DE_D1491	365309.001	9681103.126	522.311	33	-90	0	RTK GPS
566	DE_D1492	365293.089	9681002.843	518.083	30	-90	0	RTK GPS
567	DE_D1498	365402.107	9682508.647	484.709	19	-90	0	RTK GPS
568	DE_D1501	365404.371	9682207.724	477.057	13	-90	0	RTK GPS
569	DE_D1514	365493.07	9681599.286	507.728	27	-90	0	RTK GPS
570	DE_D1520	365499.632	9681006.071	532.201	31	-90	0	RTK GPS
571	DE_D1522	365632.169	9681976.454	559.736	11	-90	0	RTK GPS
572	DE_D1523	365607.143	9681900.077	545.467	22	-90	0	RTK GPS
573	DE_D1526	365601.99	9681593.263	499.753	20	-90	0	RTK GPS
574	DE_D1527	365599.881	9681393.236	532.631	24	-90	0	RTK GPS
575	DE_D1528	365601.913	9681306.039	555.253	29	-90	0	RTK GPS
576	DE_D1530	365597.992	9681104.743	535.836	36	-90	0	RTK GPS
577	DE_D1531	365601.765	9681005.64	541	30	-90	0	RTK GPS
578	DE_D1540	365732.673	9681791.156	561.847	30	-90	0	RTK GPS
579	DE_D1542	365702.925	9681593.423	529.645	21	-90	0	RTK GPS
580	DE_D1543	365698.768	9681492.882	530.808	19	-90	0	RTK GPS
581	DE_D1545	365696.074	9681304.791	547.01	29	-90	0	RTK GPS
582	DE_D1546	365704.734	9681197.412	533.895	23	-90	0	RTK GPS
583	DE_D1547	365697.102	9681104.261	523.607	19	-90	0	RTK GPS
584	DE_D1554	365805.748	9682392.998	625.992	41	-90	0	RTK GPS
585	DE_D1556	365806.868	9682202.531	600.344	14	-90	0	RTK GPS
586	DE_D1558	365801.977	9682008.21	573.571	13	-90	0	RTK GPS
587	DE_D1559	365791.205	9681903.051	569.622	41	-90	0	RTK GPS
588	DE_D1560	365802.016	9681808.995	557.072	22	-90	0	RTK GPS
589	DE_D1567	365797.976	9681108.564	503.955	33	-90	0	RTK GPS
590	DE_D1578	365907.276	9682000.994	591.34	28	-90	0	RTK GPS
591	DE_D1580	365898.933	9681793.389	533	10	-90	0	RTK GPS
592	DE_D1582	365905.487	9681600.845	536.347	32	-90	0	RTK GPS
593	DE_D1583	365899.393	9681509.936	517.989	23	-90	0	RTK GPS
594	DE_D1584	365896.642	9681405.59	501.705	21	-90	0	RTK GPS
595	DE_D1586	365905.175	9681204.282	523.552	28	-90	0	RTK GPS
596	DE_D1587	365894.717	9681095.775	495	8	-90	0	RTK GPS
597	DE_D1590	366002.697	9682392.003	621.586	15	-90	0	RTK GPS
598	DE_D1591	366004.921	9682301.231	605.853	13	-90	0	RTK GPS
599	DE_D1592	366006.384	9682204.188	584.989	17	-90	0	RTK GPS
600	DE_D1593	366002.929	9682094.825	574.006	21	-90	0	RTK GPS
601	DE_D1596	366004.739	9681804.029	548.565	28	-90	0	RTK GPS
602	DE_D1598	365997.221	9681605.114	532.074	28	-90	0	RTK GPS
603	DE_D1600	365994.517	9681397.519	498.069	28	-90	0	RTK GPS
604	DE_D1601	365993.009	9681303.521	509.172	28	-90	0	RTK GPS
605	DE_D1606	366096.363	9682295.297	593.131	28	-90	0	RTK GPS
606	DE_D1608	366094.361	9682102.024	580.624	21	-90	0	RTK GPS
607	DE_D1614	366102.421	9681505.392	529.859	32	-90	0	RTK GPS
608	DE_D1616	366118.394	9681326.871	510.168	36	-90	0	RTK GPS
609	DE_D1618	366098.63	9681105.623	496.15	34	-90	0	RTK GPS

610	DE_D1621	366203.777	9682296.58	578.114	19	-90	0	RTK GPS
611	DE_D1622	366190.541	9682198.325	574.85	36	-90	0	RTK GPS
612	DE_D1625	366192.673	9681904.592	553	29	-90	0	RTK GPS
613	DE_D1626	366200.647	9681806.505	557	25	-90	0	RTK GPS
614	DE_D1627	366205.3	9681700.395	542.794	26	-90	0	RTK GPS
615	DE_D1632	366203.381	9681204.438	512.744	18	-90	0	RTK GPS
616	DE_D1633	366199.067	9681107.495	493.166	33	-90	0	RTK GPS
617	DE_D1635	366298.818	9682293.828	583.121	27	-90	0	RTK GPS
618	DE_D1636	366304.865	9682208.127	574.923	33	-90	0	RTK GPS
619	DE_D1641	366305.806	9681701.158	547.605	20	-90	0	RTK GPS
620	DE_D1645	366290.4	9681298.342	501.741	31	-90	0	RTK GPS
621	DE_D1646	366305.2	9681204.543	497.761	39	-90	0	RTK GPS
622	DE_D1650	366404.818	9682203.811	575.454	31	-90	0	RTK GPS
623	DE_D1651	366402.193	9682106.693	559.516	33	-90	0	RTK GPS
624	DE_D1653	366397.368	9681894.694	533	14	-90	0	RTK GPS
625	DE_D1655	366393.352	9681701.587	544.29	29	-90	0	RTK GPS
626	DE_D1661	366406.377	9681100.304	502.853	45	-90	0	RTK GPS
627	DE_D1664	366505.254	9682095.314	566.597	17	-90	0	RTK GPS
628	DE_D1666	366492.848	9681902.348	542.145	12	-90	0	RTK GPS
629	DE_D1667	366496.91	9681807.189	539.872	16	-90	0	RTK GPS
630	DE_D1669	366494.41	9681600.936	525.417	20	-90	0	RTK GPS
631	DE_D1673	366507.211	9681199.448	519.194	33	-90	0	RTK GPS
632	DE_D1678	366605.939	9682001.161	572.807	30	-90	0	RTK GPS
633	DE_D1680	366598.035	9681806.435	548.154	17	-90	0	RTK GPS
634	DE_D1681	366596.348	9681696.06	548	12	-90	0	RTK GPS
635	DE_D1682	366604.749	9681604.921	534.313	27	-90	0	RTK GPS
636	DE_D1683	366605.166	9681503.176	541.811	27	-90	0	RTK GPS
637	DE_D1685	366603.047	9681308.308	514	8	-90	0	RTK GPS
638	DE_D1686	366605.872	9681206.656	533.058	30	-90	0	RTK GPS
639	DE_D1687	366596.432	9681104.025	512.253	31	-90	0	RTK GPS
640	DE_D1688	366603.049	9681007.717	527.338	39	-90	0	RTK GPS
641	DE_D1693	366690.229	9681798.674	554	10	-90	0	RTK GPS
642	DE_D1695	366694.575	9681599.389	552.227	45	-90	0	RTK GPS
643	DE_D1696	366705.283	9681507.76	563.661	27	-90	0	RTK GPS
644	DE_D1700	366697.907	9681106.846	533.79	23	-90	0	RTK GPS
645	DE_D1702	366776.579	9682176.477	608.118	16	-90	0	RTK GPS
646	DE_D1703	366805.56	9682100.749	614.647	24	-90	0	RTK GPS
647	DE_D1706	366807.569	9681803.08	572.163	16	-90	0	RTK GPS
648	DE_D1707	366795.368	9681702.681	569.974	13	-90	0	RTK GPS
649	DE_D1711	366797.806	9681308.034	549.349	14	-90	0	RTK GPS
650	DE_D1712	366795.884	9681195.716	548.257	24	-90	0	RTK GPS
651	DE_D1722	366904.988	9681498.415	584.754	16	-90	0	RTK GPS
652	DE_D1725	366903.651	9681195.771	577.591	18	-90	0	RTK GPS
653	DE_D1726	366905.5	9681097.782	585.929	29	-90	0	RTK GPS
654	DE_D1732	367004.832	9681697.789	602	18	-90	0	RTK GPS
655	DE_D1734	367006.565	9681507.185	597.287	11	-90	0	RTK GPS
656	DE_D1736	366997.625	9681306.87	585.261	27	-90	0	RTK GPS

657	DE_D1737	367004.593	9681195.242	588	19	-90	0	RTK GPS
658	DE_D1738	367003.106	9681091.195	571.861	25	-90	0	RTK GPS
659	DE_D1744	367102.814	9681505.726	618.938	28	-90	0	RTK GPS
660	DE_D1745	367105.608	9681398.934	608.532	26	-90	0	RTK GPS
661	DE_D1746	367104.678	9681306.02	596.201	19	-90	0	RTK GPS
662	DE_D1748	367099.486	9681203.11	574.306	17	-90	0	RTK GPS
663	DE_D1751	367207.772	9681802.509	639	31	-90	0	RTK GPS
664	DE_D1753	367203.859	9681604.829	627.718	27	-90	0	RTK GPS
665	DE_D1758	367196.606	9681108.909	538.75	23	-90	0	RTK GPS
666	DE_D1762	367304.095	9681706.232	639.819	29	-90	0	RTK GPS
667	DE_D1763	367307.099	9681604.917	625.554	35	-90	0	RTK GPS
668	DE_D1764	367299.474	9681506.092	604	32	-90	0	RTK GPS
669	DE_D1765	367307.116	9681400.739	576.788	24	-90	0	RTK GPS
670	DE_D1771	367405.93	9681699.044	636.298	35	-90	0	RTK GPS
671	DE_D1773	367405.01	9681505.422	608.816	20	-90	0	RTK GPS
672	DE_D1776	367401.713	9681206.36	563.74	22	-90	0	RTK GPS
673	DE_D1779	367540.464	9681860.457	592.823	9	-90	0	RTK GPS
674	DE_D1781	367505.787	9681692.847	627.081	20	-90	0	RTK GPS
675	DE_D1782	367504.737	9681601.915	603.528	17	-90	0	RTK GPS
676	DE_D1786	367495.363	9681198.086	582.154	29	-90	0	RTK GPS
677	DE_D1788	367505.074	9680998.881	582.212	15	-90	0	RTK GPS
678	DE_D1792	367567.286	9681488.581	593.666	8	-90	0	RTK GPS
679	DE_D1793	367593.187	9681393.534	606.507	15	-90	0	RTK GPS
680	DE_D1794	367601.602	9681305.662	615.299	27	-90	0	RTK GPS
681	DE_D50_1818	367545.061	9681250.99	599.931	24	-90	0	RTK GPS
682	DE_D50_1830	367547.321	9681841.219	594.688	16	-90	0	RTK GPS
683	DE_D50_1831	367504.419	9681057.156	591	29	-90	0	RTK GPS
684	DE_D50_1833	367496.885	9681256.586	588.601	29	-90	0	RTK GPS
685	DE_D50_1835	367500.604	9681458.591	604.404	25	-90	0	RTK GPS
686	DE_D50_1838	367506.95	9681753.631	623.506	17	-90	0	RTK GPS
687	DE_D50_1844	367454.066	9681155.476	572.924	23	-90	0	RTK GPS
688	DE_D50_1845	367455.036	9681202.803	575.876	27	-90	0	RTK GPS
689	DE_D50_1847	367449.927	9681293.491	578.835	23	-90	0	RTK GPS
690	DE_D50_1849	367454.348	9681392.288	591.181	24	-90	0	RTK GPS
691	DE_D50_1850	367448.865	9681443.106	595.692	39	-90	0	RTK GPS
692	DE_D50_1855	367450.062	9681691.757	632.656	29	-90	0	RTK GPS
693	DE_D50_1856	367459.531	9681751.336	615.956	24	-90	0	RTK GPS
694	DE_D50_1859	367393.581	9680955.558	546.301	24	-90	0	RTK GPS
695	DE_D50_1864	367394.763	9681458.322	593.856	28	-90	0	RTK GPS
696	DE_D50_1866	367405.669	9681654.82	638	41	-90	0	RTK GPS
697	DE_D50_1872	367350.624	9681106.243	551.431	29	-90	0	RTK GPS
698	DE_D50_1874	367358.039	9681198.041	551.252	38	-90	0	RTK GPS
699	DE_D50_1882	367359.115	9681602.65	631.167	43	-90	0	RTK GPS
700	DE_D50_1884	367355.69	9681707.854	638.424	26	-90	0	RTK GPS
701	DE_D50_1885	367356.898	9681746.459	635.599	35	-90	0	RTK GPS
702	DE_D50_1889	367294.757	9681053.23	541.528	24	-90	0	RTK GPS
703	DE_D50_1890	367300.222	9681143.38	530	18	-90	0	RTK GPS

704	DE_D50_1892	367294.181	9681351.019	559.177	37	-90	0	RTK GPS
705	DE_D50_1893	367305.169	9681448.59	588.362	27	-90	0	RTK GPS
706	DE_D50_1894	367307.216	9681545.14	610.987	21	-90	0	RTK GPS
707	DE_D50_1895	367304.441	9681647.534	634.464	35	-90	0	RTK GPS
708	DE_D50_1904	367242.105	9681244.392	558.188	24	-90	0	RTK GPS
709	DE_D50_1906	367245.382	9681353.552	566.15	26	-90	0	RTK GPS
710	DE_D50_1911	367256.471	9681596.843	622.967	32	-90	0	RTK GPS
711	DE_D50_1913	367256.399	9681699.989	638.235	41	-90	0	RTK GPS
712	DE_D50_1914	367249.444	9681757.403	639.625	38	-90	0	RTK GPS
713	DE_D50_1915	367250.915	9681809.909	634.646	25	-90	0	RTK GPS
714	DE_D50_1918	367205.347	9680957.823	514.922	31	-90	0	RTK GPS
715	DE_D50_1920	367203.951	9681143.889	540.526	24	-90	0	RTK GPS
716	DE_D50_1927	367220.404	9681824.104	636.012	29	-90	0	RTK GPS
717	DE_D50_1928	367157.802	9680954.037	522.223	37	-90	0	RTK GPS
718	DE_D50_1929	367151.478	9681006.151	530.329	31	-90	0	RTK GPS
719	DE_D50_1932	367153.302	9681157.431	555.38	27	-90	0	RTK GPS
720	DE_D50_1933	367153.995	9681196.759	560.03	23	-90	0	RTK GPS
721	DE_D50_1939	367145.066	9681508.253	616.087	30	-90	0	RTK GPS
722	DE_D50_1942	367159.326	9681651.262	616.663	16	-90	0	RTK GPS
723	DE_D50_1943	367157.418	9681699.331	620.422	26	-90	0	RTK GPS
724	DE_D50_1945	367143.224	9681807.25	630.711	22	-90	0	RTK GPS
725	DE_D50_1947	367155.626	9681898.742	641.915	27	-90	0	RTK GPS
726	DE_D50_1949	367105.361	9680954.81	527.772	27	-90	0	RTK GPS
727	DE_D50_1951	367095.376	9681143.828	560.862	22	-90	0	RTK GPS
728	DE_D50_1953	367101.488	9681358.418	603.811	28	-90	0	RTK GPS
729	DE_D50_1957	367102.241	9681742.616	613.251	13	-90	0	RTK GPS
730	DE_D50_1958	367105.918	9681853.425	638.966	31	-90	0	RTK GPS
731	DE_D50_1961	367057.778	9681004.647	548.456	26	-90	0	RTK GPS
732	DE_D50_1962	367045.935	9681054.299	557.99	23	-90	0	RTK GPS
733	DE_D50_1963	367056.628	9681104.89	561.521	22	-90	0	RTK GPS
734	DE_D50_1965	367057.444	9681197.808	579.727	21	-90	0	RTK GPS
735	DE_D50_1966	367043.781	9681252.883	591.85	14	-90	0	RTK GPS
736	DE_D50_1970	367055.45	9681448.456	611.154	29	-90	0	RTK GPS
737	DE_D50_1971	367059.189	9681502.134	613.401	30	-90	0	RTK GPS
738	DE_D50_1973	367057.765	9681594.033	599.646	16	-90	0	RTK GPS
739	DE_D50_1974	367059.492	9681650.286	600.095	16	-90	0	RTK GPS
740	DE_D50_1978	367084.161	9681848.327	635.149	29	-90	0	RTK GPS
741	DE_D50_1981	367000.974	9680941.726	564.133	37	-90	0	RTK GPS
742	DE_D50_1983	367004.136	9681158.551	582.916	29	-90	0	RTK GPS
743	DE_D50_1984	366998.491	9681257.038	584.626	13	-90	0	RTK GPS
744	DE_D50_1987	367005.836	9681552.532	595.093	12	-90	0	RTK GPS
745	DE_D50_1988	367008.265	9681653.119	601.45	15	-90	0	RTK GPS
746	DE_D50_1999	366947.236	9681241.58	578.413	27	-90	0	RTK GPS
747	DE_D50_2002	366955.28	9681402.053	602.372	36	-90	0	RTK GPS
748	DE_D50_2004	366949.735	9681491.549	594.573	21	-90	0	RTK GPS
749	DE_D50_2006	366950.465	9681607.579	582.864	11	-90	0	RTK GPS
750	DE_D50_2007	366950.229	9681655.065	589.957	19	-90	0	RTK GPS

751	DE_D50_2008	366946.008	9681708.083	593.633	10	-90	0	RTK GPS
752	DE_D50_2009	366957.699	9681746.204	603.807	20	-90	0	RTK GPS
753	DE_D50_2014	366944.565	9682006.421	612.529	11	-90	0	RTK GPS
754	DE_D50_2015	366942.447	9682046.43	625.721	15	-90	0	RTK GPS
755	DE_D50_2016	366976.112	9682078.113	630.282	20	-90	0	RTK GPS
756	DE_D50_2022	366903.986	9681353.52	583.356	33	-90	0	RTK GPS
757	DE_D50_2023	366905.286	9681452.712	591.731	27	-90	0	RTK GPS
758	DE_D50_2025	366890.647	9681651.897	584.981	16	-90	0	RTK GPS
759	DE_D50_2027	366908.05	9681853.536	580.518	18	-90	0	RTK GPS
760	DE_D50_2036	366857.271	9681199.966	563.367	22	-90	0	RTK GPS
761	DE_D50_2039	366850.078	9681357.091	566.761	14	-90	0	RTK GPS
762	DE_D50_2040	366857.158	9681402.514	575.846	9	-90	0	RTK GPS
763	DE_D50_2041	366854.646	9681454.771	581.773	28	-90	0	RTK GPS
764	DE_D50_2064	366801.753	9681655.263	566.421	27	-90	0	RTK GPS
765	DE_D50_2066	366798.914	9681844.228	562	8	-90	0	RTK GPS
766	DE_D50_2067	366792.828	9681951.658	588.822	14	-90	0	RTK GPS
767	DE_D50_2072	366752.561	9681044.407	552.843	43	-90	0	RTK GPS
768	DE_D50_2073	366759.583	9681100.321	548.326	37	-90	0	RTK GPS
769	DE_D50_2074	366758.371	9681150.586	543.441	40	-90	0	RTK GPS
770	DE_D50_2090	366755.716	9681954.514	585.748	15	-90	0	RTK GPS
771	DE_D50_2091	366751.175	9681994.947	593.489	25	-90	0	RTK GPS
772	DE_D50_2093	366747.966	9682094.812	598.837	18	-90	0	RTK GPS
773	DE_D50_2100	366695.458	9681358.01	539.995	28	-90	0	RTK GPS
774	DE_D50_2102	366708.013	9681546.858	562.437	39	-90	0	RTK GPS
775	DE_D50_2109	366648.002	9680956.001	533.56	34	-90	0	RTK GPS
776	DE_D50_2111	366655.625	9681048.35	528.539	49	-90	0	RTK GPS
777	DE_D50_2112	366655.672	9681099.215	525.628	34	-90	0	RTK GPS
778	DE_D50_2113	366644.958	9681144.777	523	30	-90	0	RTK GPS
779	DE_D50_2114	366656.474	9681199.941	532.524	30	-90	0	RTK GPS
780	DE_D50_2116	366644.67	9681306.717	522.486	10	-90	0	RTK GPS
781	DE_D50_2118	366642.488	9681405.787	539.528	29	-90	0	RTK GPS
782	DE_D50_2119	366655.366	9681454.85	550.432	36	-90	0	RTK GPS
783	DE_D50_2122	366642.693	9681594.45	544.381	39	-90	0	RTK GPS
784	DE_D50_2123	366656.401	9681652.621	547.197	18	-90	0	RTK GPS
785	DE_D50_2125	366652.232	9681743.857	555.534	18	-90	0	RTK GPS
786	DE_D50_2130	366657.291	9681998.163	576.2	20	-90	0	RTK GPS
787	DE_D50_2133	366649.496	9682157.229	582.227	15	-90	0	RTK GPS
788	DE_D50_2134	366658.385	9682197.658	578.15	15	-90	0	RTK GPS
789	DE_D50_2137	366592.009	9681145.215	522.249	34	-90	0	RTK GPS
790	DE_D50_2143	366605.535	9681747.841	549.297	22	-90	0	RTK GPS
791	DE_D50_2146	366608.039	9682047.073	577.911	22	-90	0	RTK GPS
792	DE_D50_2147	366605.375	9682149.405	578.888	15	-90	0	RTK GPS
793	DE_D50_2148	366547.46	9680956.498	531.483	27	-90	0	RTK GPS
794	DE_D50_2151	366548.332	9681092.204	508.584	40	-90	0	RTK GPS
795	DE_D50_2154	366555.319	9681248.155	528.336	31	-90	0	RTK GPS
796	DE_D50_2158	366557.054	9681453.681	528.347	27	-90	0	RTK GPS
797	DE_D50_2159	366550.501	9681493.221	527.32	37	-90	0	RTK GPS

798	DE_D50_2163	366557.297	9681702.291	541.488	22	-90	0	RTK GPS
799	DE_D50_2164	366551.711	9681742.007	543.027	22	-90	0	RTK GPS
800	DE_D50_2165	366549.24	9681808.158	547.044	21	-90	0	RTK GPS
801	DE_D50_2173	366559.711	9682200.141	573.32	18	-90	0	RTK GPS
802	DE_D50_2175	366505.228	9681052.115	506.566	34	-90	0	RTK GPS
803	DE_D50_2176	366497.229	9681155.074	512.139	31	-90	0	RTK GPS
804	DE_D50_2180	366506.678	9681547.677	524	41	-90	0	RTK GPS
805	DE_D50_2181	366504.81	9681651.944	528.09	15	-90	0	RTK GPS
806	DE_D50_2183	366502.651	9681843.062	542.869	22	-90	0	RTK GPS
807	DE_D50_2185	366506.423	9682049.033	561.471	28	-90	0	RTK GPS
808	DE_D50_2189	366452.13	9680997.851	513.144	36	-90	0	RTK GPS
809	DE_D50_2190	366451.008	9681063.594	496.23	24	-90	0	RTK GPS
810	DE_D50_2191	366443.587	9681102.002	502.277	42	-90	0	RTK GPS
811	DE_D50_2194	366453.925	9681255.282	504.478	42	-90	0	RTK GPS
812	DE_D50_2195	366457.868	9681299.875	502.078	11	-90	0	RTK GPS
813	DE_D50_2198	366457.988	9681447.325	509.397	33	-90	0	RTK GPS
814	DE_D50_2200	366452.736	9681545.219	514.897	25	-90	0	RTK GPS
815	DE_D50_2210	366450.263	9682042.692	558.43	21	-90	0	RTK GPS
816	DE_D50_2211	366455.271	9682097.275	562.412	26	-90	0	RTK GPS
817	DE_D50_2214	366454.013	9682242.52	571.134	22	-90	0	RTK GPS
818	DE_D50_2215	366398.964	9681351.194	496.423	22	-90	0	RTK GPS
819	DE_D50_2217	366397.818	9681542.112	514.619	33	-90	0	RTK GPS
820	DE_D50_2218	366395.867	9681653.837	538.798	26	-90	0	RTK GPS
821	DE_D50_2221	366409.798	9681949.047	542.896	18	-90	0	RTK GPS
822	DE_D50_2223	366393.928	9682153.243	568.113	24	-90	0	RTK GPS
823	DE_D50_2224	366397.409	9682245.478	579.578	32	-90	0	RTK GPS
824	DE_D50_2225	366343.87	9681354.516	502.009	28	-90	0	RTK GPS
825	DE_D50_2226	366343.61	9681404.602	507.016	24	-90	0	RTK GPS
826	DE_D50_2227	366348.188	9681444.087	510.831	31	-90	0	RTK GPS
827	DE_D50_2229	366354.839	9681551.464	520.341	35	-90	0	RTK GPS
828	DE_D50_2232	366353.62	9681695.366	551.926	25	-90	0	RTK GPS
829	DE_D50_2235	366359.467	9681849.198	542.231	22	-90	0	RTK GPS
830	DE_D50_2239	366349.347	9682044.991	548.546	33	-90	0	RTK GPS
831	DE_D50_2242	366345.13	9682204.755	580.294	30	-90	0	RTK GPS
832	DE_D50_2243	366352.497	9682257.102	588	39	-90	0	RTK GPS
833	DE_D50_2251	366297.193	9681944.426	547.523	27	-90	0	RTK GPS
834	DE_D50_2252	366307.186	9682054.646	547.886	12	-90	0	RTK GPS
835	DE_D50_2253	366302.34	9682156.352	560.629	13	-90	0	RTK GPS
836	DE_D50_2254	366297.06	9682254.848	582.695	17	-90	0	RTK GPS
837	DE_D50_2257	366256.221	9681449.118	505.426	18	-90	0	RTK GPS
838	DE_D50_2258	366250.933	9681655.684	533.921	14	-90	0	RTK GPS
839	DE_D50_2261	366257.357	9681796.625	556.196	39	-90	0	RTK GPS
840	DE_D50_2265	366256.187	9681999.777	552.169	33	-90	0	RTK GPS
841	DE_D50_2266	366246.82	9682045.519	559.692	29	-90	0	RTK GPS
842	DE_D50_2268	366246.818	9682145.494	561.955	21	-90	0	RTK GPS
843	DE_D50_2271	366256.756	9682300.629	578.772	31	-90	0	RTK GPS
844	DE_D50_2272	366196.708	9681745.591	549.833	27	-90	0	RTK GPS

845	DE_D50_2273	366202.379	9681843.762	556.159	36	-90	0	RTK GPS
846	DE_D50_2276	366203.875	9682146.176	573.912	27	-90	0	RTK GPS
847	DE_D50_2280	366149.977	9681856.229	556.411	28	-90	0	RTK GPS
848	DE_D50_2281	366145.188	9681895.329	558.761	33	-90	0	RTK GPS
849	DE_D50_2286	366151.518	9682155.576	587.802	32	-90	0	RTK GPS
850	DE_D50_2290	366104.112	9681854.123	551.899	26	-90	0	RTK GPS
851	DE_D50_2292	366108.047	9682050.433	566.304	15	-90	0	RTK GPS
852	DE_D50_2293	366095.437	9682147.105	588.684	17	-90	0	RTK GPS
853	DE_D50_2294	366100.633	9682244.358	595.34	22	-90	0	RTK GPS
854	DE_D50_2297	366054.983	9681951.17	567.73	37	-90	0	RTK GPS
855	DE_D50_2302	366055.254	9682207.508	591.663	14	-90	0	RTK GPS
856	DE_D50_2303	366046.828	9682254.37	599.783	24	-90	0	RTK GPS
857	DE_D50_2314	365897.818	9681955.605	571.712	14	-90	0	RTK GPS
858	DE_D50_2315	365848.743	9681744.794	540.152	28	-90	0	RTK GPS
859	DE_D50_2318	365850.809	9681893.955	555.744	14	-90	0	RTK GPS
860	DE_D50_2319	365855.505	9681951.709	567.789	22	-90	0	RTK GPS
861	DE_D50_2321	365794.413	9681849.734	567.485	39	-90	0	RTK GPS
862	DE_D50_2322	366401.008	9680959.119	502.47	36	-90	0	RTK GPS
863	DE_D50_2324	366395.34	9681153.01	500.243	28	-90	0	RTK GPS
864	DE_D50_2325	366405.307	9681247.859	491.15	23	-90	0	RTK GPS
865	DE_D50_2328	366351.028	9681057.228	494.858	43	-90	0	RTK GPS
866	DE_D50_2329	366350.936	9681105.376	497.744	39	-90	0	RTK GPS
867	DE_D50_2330	366343.934	9681154.559	489.711	21	-90	0	RTK GPS
868	DE_D50_2331	366352.716	9681199.922	489	18	-90	0	RTK GPS
869	DE_D50_2335	366300.71	9681056.961	486.458	24	-90	0	RTK GPS
870	DE_D50_2337	366298.698	9681243.187	502.071	42	-90	0	RTK GPS
871	DE_D50_2340	366243.684	9681006.697	482.437	20	-90	0	RTK GPS
872	DE_D50_2343	366251.55	9681158.048	501.337	22	-90	0	RTK GPS
873	DE_D50_2344	366242.746	9681197.712	510.609	24	-90	0	RTK GPS
874	DE_D50_2345	366244.295	9681253.054	513.853	28	-90	0	RTK GPS
875	DE_D50_2347	366243.114	9681501.124	512.21	18	-90	0	RTK GPS
876	DE_D50_2348	366248.955	9681555.62	521.965	31	-90	0	RTK GPS
877	DE_D50_2358	366191.065	9681650.655	532.425	22	-90	0	RTK GPS
878	DE_D50_2360	366148.112	9680942.617	482.292	27	-90	0	RTK GPS
879	DE_D50_2361	366148.021	9680992.221	489.413	32	-90	0	RTK GPS
880	DE_D50_2363	366156.989	9681094.333	482	14	-90	0	RTK GPS
881	DE_D50_2364	366157.65	9681145.901	493.035	22	-90	0	RTK GPS
882	DE_D50_2367	366152.057	9681297.577	514.214	32	-90	0	RTK GPS
883	DE_D50_2369	366146.204	9681396.174	526.309	29	-90	0	RTK GPS
884	DE_D50_2370	366144.244	9681457.416	528.322	23	-90	0	RTK GPS
885	DE_D50_2371	366144.499	9681505.189	522.099	23	-90	0	RTK GPS
886	DE_D50_2374	366144.903	9681649.725	523.26	14	-90	0	RTK GPS
887	DE_D50_2376	366158.627	9682347.963	590.016	21	-90	0	RTK GPS
888	DE_D50_2379	366097.129	9681044.513	501.152	23	-90	0	RTK GPS
889	DE_D50_2380	366104.667	9681145.56	488.694	23	-90	0	RTK GPS
890	DE_D50_2381	366102.002	9681255.362	493.085	9	-90	0	RTK GPS
891	DE_D50_2382	366106.328	9681348.306	512.104	30	-90	0	RTK GPS

892	DE_D50_2383	366107.746	9681444.404	532	25	-90	0	RTK GPS
893	DE_D50_2384	366092.388	9681549.542	522.371	24	-90	0	RTK GPS
894	DE_D50_2388	366048.394	9680957.071	484	23	-90	0	RTK GPS
895	DE_D50_2390	366050.893	9681044.868	502.941	25	-90	0	RTK GPS
896	DE_D50_2392	366044.543	9681147.239	506.69	30	-90	0	RTK GPS
897	DE_D50_2403	366044.054	9681701.832	522.761	30	-90	0	RTK GPS
898	DE_D50_2404	366044.427	9681752.791	533.095	18	-90	0	RTK GPS
899	DE_D50_2405	366053.132	9681794.333	537.459	19	-90	0	RTK GPS
900	DE_D50_2410	365996.017	9680954.495	497.879	27	-90	0	RTK GPS
901	DE_D50_2412	365992.852	9681150.301	521.913	26	-90	0	RTK GPS
902	DE_D50_2414	365992.058	9681345.851	500.441	21	-90	0	RTK GPS
903	DE_D50_2416	366006.789	9681553.977	527.6	26	-90	0	RTK GPS
904	DE_D50_2418	365995.823	9681755.159	538.866	19	-90	0	RTK GPS
905	DE_D50_2423	365957.231	9680954.549	507.24	20	-90	0	RTK GPS
906	DE_D50_2426	365948.201	9681091.201	505.055	27	-90	0	RTK GPS
907	DE_D50_2427	365942.676	9681153.822	518.662	24	-90	0	RTK GPS
908	DE_D50_2428	365946.712	9681207.657	529.431	27	-90	0	RTK GPS
909	DE_D50_2429	365942.093	9681248.156	529.1	19	-90	0	RTK GPS
910	DE_D50_2430	365958.628	9681295.668	518.024	29	-90	0	RTK GPS
911	DE_D50_2432	365959.397	9681402.863	495	27	-90	0	RTK GPS
912	DE_D50_2434	365950.413	9681494.049	509	25	-90	0	RTK GPS
913	DE_D50_2436	365949.961	9681607.122	533.147	27	-90	0	RTK GPS
914	DE_D50_2437	365954.137	9681642.412	535.132	31	-90	0	RTK GPS
915	DE_D50_2439	365948.835	9681756.269	537.494	21	-90	0	RTK GPS
916	DE_D50_2440	365959.585	9681801.499	548.586	25	-90	0	RTK GPS
917	DE_D50_2441	365947.479	9682110.681	588.498	13	-90	0	RTK GPS
918	DE_D50_2455	365898.538	9681455.725	503.817	29	-90	0	RTK GPS
919	DE_D50_2456	365895.477	9681553.659	527.271	18	-90	0	RTK GPS
920	DE_D50_2457	365893.38	9681652.617	543.83	30	-90	0	RTK GPS
921	DE_D50_2458	365898.281	9681743.029	528.452	14	-90	0	RTK GPS
922	DE_D50_2462	365897.466	9682345.22	609.747	6	-90	0	RTK GPS
923	DE_D50_2463	365900.862	9682442.016	638.503	25	-90	0	RTK GPS
924	DE_D50_2465	365848.931	9681005.46	513.422	29	-90	0	RTK GPS
925	DE_D50_2467	365854.102	9681092.114	500.096	24	-90	0	RTK GPS
926	DE_D50_2468	365843.106	9681150.437	511.644	23	-90	0	RTK GPS
927	DE_D50_2470	365849.936	9681256.806	532.435	21	-90	0	RTK GPS
928	DE_D50_2476	365848.135	9681555.166	531.695	20	-90	0	RTK GPS
929	DE_D50_2485	365857.006	9682245.9	615.086	12	-90	0	RTK GPS
930	DE_D50_2488	365856.048	9682403.537	628.442	27	-90	0	RTK GPS
931	DE_D50_2489	365855.068	9682450.872	635.153	33	-90	0	RTK GPS
932	DE_D50_2492	365797.005	9681143.217	511.561	19	-90	0	RTK GPS
933	DE_D50_2493	365808.791	9681247.358	534.266	25	-90	0	RTK GPS
934	DE_D50_2495	365804.295	9681447.291	509.361	28	-90	0	RTK GPS
935	DE_D50_2497	365805.93	9681653.082	554	30	-90	0	RTK GPS
936	DE_D50_2507	365756.655	9681098.039	508.111	17	-90	0	RTK GPS
937	DE_D50_2508	365751.112	9681156.014	512.705	10	-90	0	RTK GPS
938	DE_D50_2510	365752.098	9681255.05	539.546	16	-90	0	RTK GPS

939	DE_D50_2511	365755.729	9681307.727	539.664	25	-90	0	RTK GPS
940	DE_D50_2512	365741.688	9681352.571	532.256	17	-90	0	RTK GPS
941	DE_D50_2515	365750.311	9681506.784	526.488	25	-90	0	RTK GPS
942	DE_D50_2520	365756.032	9681756.888	558	36	-90	0	RTK GPS
943	DE_D50_2521	365748.193	9681805.52	565.963	27	-90	0	RTK GPS
944	DE_D50_2523	365755.68	9681901.518	578.097	30	-90	0	RTK GPS
945	DE_D50_2524	365751.088	9681955.36	578.444	24	-90	0	RTK GPS
946	DE_D50_2530	365744.808	9682254.327	611.728	8	-90	0	RTK GPS
947	DE_D50_2536	365691.95	9681252.849	545.974	21	-90	0	RTK GPS
948	DE_D50_2537	365696.473	9681356.873	541.634	21	-90	0	RTK GPS
949	DE_D50_2538	365696.938	9681456.184	539.195	27	-90	0	RTK GPS
950	DE_D50_2546	365709.156	9682253.528	607.393	8	-90	0	RTK GPS
951	DE_D50_2547	365657.908	9680946.347	537.711	21	-90	0	RTK GPS
952	DE_D50_2551	365645.003	9681155.654	545.836	29	-90	0	RTK GPS
953	DE_D50_2553	365643.936	9681248.824	556.195	30	-90	0	RTK GPS
954	DE_D50_2556	365654.812	9681395.376	541.956	25	-90	0	RTK GPS
955	DE_D50_2562	365654.613	9681843.276	559.38	37	-90	0	RTK GPS
956	DE_D50_2567	365602.422	9681244.254	558	28	-90	0	RTK GPS
957	DE_D50_2568	365605.402	9681350.872	549.151	32	-90	0	RTK GPS
958	DE_D50_2569	365601.281	9681657.094	510.21	20	-90	0	RTK GPS
959	DE_D50_2572	365551.303	9680944.673	528.442	27	-90	0	RTK GPS
960	DE_D50_2573	365541.719	9680998.099	538.845	25	-90	0	RTK GPS
961	DE_D50_2574	365543.644	9681054.391	539.954	35	-90	0	RTK GPS
962	DE_D50_2575	365554.283	9681106.332	539.668	25	-90	0	RTK GPS
963	DE_D50_2582	365556.612	9681601.425	497.787	16	-90	0	RTK GPS
964	DE_D50_2585	365555.306	9681749.114	535.867	32	-90	0	RTK GPS
965	DE_D50_2586	365556.153	9681804.216	539.821	16	-90	0	RTK GPS
966	DE_D50_2587	365553.917	9681845.617	533.178	9	-90	0	RTK GPS
967	DE_D50_2589	365504.581	9680945.721	528.998	25	-90	0	RTK GPS
968	DE_D50_2590	365506.145	9681048.221	532.485	32	-90	0	RTK GPS
969	DE_D50_2591	365504.343	9681152.895	523.293	30	-90	0	RTK GPS
970	DE_D50_2592	365504.747	9681254.949	538.2	22	-90	0	RTK GPS
971	DE_D50_2594	365499.371	9681455.331	484	6	-90	0	RTK GPS
972	DE_D50_2596	365492.946	9681649.541	513.886	25	-90	0	RTK GPS
973	DE_D50_2597	365502.982	9681757.719	535.859	28	-90	0	RTK GPS
974	DE_D50_2599	365455.273	9680941.69	517.76	26	-90	0	RTK GPS
975	DE_D50_2600	365442.924	9680994.681	512.113	15	-90	0	RTK GPS
976	DE_D50_2604	365453.029	9681204.475	534.31	28	-90	0	RTK GPS
977	DE_D50_2613	365406.859	9680949.964	503.06	25	-90	0	RTK GPS
978	DE_D50_2616	365405.254	9681249.759	543	26	-90	0	RTK GPS
979	DE_D50_2618	365350.542	9681005.785	506.057	28	-90	0	RTK GPS
980	DE_D50_2620	365352.117	9681105.893	527.168	33	-90	0	RTK GPS
981	DE_D50_2621	365342.17	9681152.966	535.115	24	-90	0	RTK GPS
982	DE_D50_2625	365306.225	9680946.952	517.441	32	-90	0	RTK GPS
983	DE_D50_2628	365309.773	9681248.103	537.527	23	-90	0	RTK GPS
984	DE_D50_2633	365248.053	9681154.819	535.366	36	-90	0	RTK GPS
985	DE_D50_2635	365253.209	9681242.591	526.495	15	-90	0	RTK GPS

986	DE_D50_2643	365151.068	9681059.162	527.662	21	-90	0	RTK GPS
987	DE_D50_2644	365157.54	9681094.923	527.175	28	-90	0	RTK GPS
988	DE_D50_2645	365156.947	9681146.511	526.56	21	-90	0	RTK GPS
989	DE_D50_2648	365151.53	9681308.583	526.723	33	-90	0	RTK GPS
990	DE_D50_2653	365059.348	9680949.62	504.42	27	-90	0	RTK GPS
991	DE_D50_2661	365009.591	9680949.068	503.956	22	-90	0	RTK GPS
992	DE_D50_2668	364905.358	9680952.145	512.582	31	-90	0	RTK GPS
993	DE_D50_2671	364858.388	9680951.622	512.304	31	-90	0	RTK GPS
994	DE_D50_2676	364799.372	9680957.076	508.409	36	-90	0	RTK GPS
995	DE_D50_2678	364751.716	9680944.299	504.571	39	-90	0	RTK GPS
996	DE_D50_2683	364704.893	9681052.186	511.817	37	-90	0	RTK GPS
997	DE_D50_2684	364655.169	9680954.93	505	36	-90	0	RTK GPS
998	DE_D50_2690	364557.872	9680945.721	509.382	36	-90	0	RTK GPS
999	DE_D50_2696	364454.406	9680955.659	512.127	32	-90	0	RTK GPS
1000	DE_D50_2697	364448.147	9681007.569	516.878	39	-90	0	RTK GPS
1001	DE_D50_2699	364399.872	9680956.607	499.883	30	-90	0	RTK GPS
1002	DE_D50_2700	364395.04	9681043.141	502.718	25	-90	0	RTK GPS
1003	DE_D50_2702	364355.083	9681002.875	497.16	25	-90	0	RTK GPS
1004	DE_D50_2703	364348.801	9681041.433	492.962	29	-90	0	RTK GPS
1005	DE_D50_2706	364243.156	9680948.83	494.823	24	-90	0	RTK GPS
1006	DE_D50_2709	364202.822	9680955.035	499	33	-90	0	RTK GPS
1007	DE_D1311	363300.749	9681004.781	356.513	20	-90	0	RTK GPS
1008	DE_D1315	363501.325	9681497.897	354.508	27	-90	0	RTK GPS
1009	DE_D1319	363503.009	9681097.124	355.445	7	-90	0	RTK GPS
1010	DE_D1323	363598.335	9681502.183	366.263	15	-90	0	RTK GPS
1011	DE_D1324	363597.644	9681399.018	380.4	26	-90	0	RTK GPS
1012	DE_D1326	363600.396	9681203.956	363.463	15	-90	0	RTK GPS
1013	DE_D1347	364402.539	9681002.876	508.452	19	-90	0	RTK GPS
1014	DE_D1362	364701.338	9682699.875	470	13	-90	0	RTK GPS
1015	DE_D1377	364695.565	9681002	508.106	36	-90	0	RTK GPS
1016	DE_D1380	364801.906	9682702.966	480.166	10	-90	0	RTK GPS
1017	DE_D1387	364798.687	9681903.258	474.446	11	-90	0	RTK GPS
1018	DE_D1418	364999.495	9682700.396	523.06	13	-90	0	RTK GPS
1019	DE_D1437	365101.77	9682799.077	548	23	-90	0	RTK GPS
1020	DE_D1442	365101.621	9682297.533	491.388	26	-90	0	RTK GPS
1021	DE_D1443	365098.129	9682203.014	482.27	44	-90	0	RTK GPS
1022	DE_D1459	365202.842	9682703.579	533.966	23	-90	0	RTK GPS
1023	DE_D1471	365196.009	9681300.063	520.38	22	-90	0	RTK GPS
1024	DE_D1473	365196.938	9681100.77	528.712	37	-90	0	RTK GPS
1025	DE_D1474	365202.738	9680998.98	533	29	-90	0	RTK GPS
1026	DE_D1476	365299.35	9682901.581	519.884	23	-90	0	RTK GPS
1027	DE_D1489	365295.79	9681301.31	519.113	22	-90	0	RTK GPS
1028	DE_D1497	365402.252	9682603.345	495.97	29	-90	0	RTK GPS
1029	DE_D1502	365398.288	9681903.547	474.76	19	-90	0	RTK GPS
1030	DE_D1507	365402.019	9681199.404	534.341	36	-90	0	RTK GPS
1031	DE_D1509	365401.628	9680995.393	502.8	18	-90	0	RTK GPS
1032	DE_D1513	365499.621	9681703.384	530.185	22	-90	0	RTK GPS

1033	DE_D1515	365502.031	9681503.445	487.953	17	-90	0	RTK GPS
1034	DE_D1517	365496.156	9681300.162	544.309	37	-90	0	RTK GPS
1035	DE_D1519	365500.047	9681096.588	531.888	26	-90	0	RTK GPS
1036	DE_D1525	365598.115	9681700.347	521.515	27	-90	0	RTK GPS
1037	DE_D1529	365590.001	9681200.224	555.128	34	-90	0	RTK GPS
1038	DE_D1544	365700.54	9681400.175	536.959	24	-90	0	RTK GPS
1039	DE_D1548	365700.425	9681000.128	529.078	29	-90	0	RTK GPS
1040	DE_D1557	365802.007	9682100.785	597.698	15	-90	0	RTK GPS
1041	DE_D1565	365798.031	9681303.837	538.134	24	-90	0	RTK GPS
1042	DE_D1566	365798.744	9681201.076	524.117	30	-90	0	RTK GPS
1043	DE_D1576	365901.214	9682200.073	599.237	25	-90	0	RTK GPS
1044	DE_D1577	365902.928	9682103.777	599.29	14	-90	0	RTK GPS
1045	DE_D1585	365896.995	9681302.02	530.602	32	-90	0	RTK GPS
1046	DE_D1594	365999.316	9682003.824	577.498	41	-90	0	RTK GPS
1047	DE_D1597	366000.468	9681700.552	521	20	-90	0	RTK GPS
1048	DE_D1602	365998.144	9681199.989	524.368	32	-90	0	RTK GPS
1049	DE_D1607	366102.283	9682199.221	595.873	23	-90	0	RTK GPS
1050	DE_D1610	366103.142	9681902.687	562.826	25	-90	0	RTK GPS
1051	DE_D1617	366099.926	9681204.301	486.306	19	-90	0	RTK GPS
1052	DE_D1629	366203.229	9681498.088	507.666	22	-90	0	RTK GPS
1053	DE_D1631	366195.3	9681300.221	519.831	35	-90	0	RTK GPS
1054	DE_D1638	366300.168	9681998.083	548.957	25	-90	0	RTK GPS
1055	DE_D1644	366300.03	9681399.776	505.096	22	-90	0	RTK GPS
1056	DE_D1648	366303.777	9680998.696	483	36	-90	0	RTK GPS
1057	DE_D1654	366396.64	9681797.802	537.166	14	-90	0	RTK GPS
1058	DE_D1657	366399.002	9681500.231	509.686	26	-90	0	RTK GPS
1059	DE_D1663	366500.355	9682202.886	577	32	-90	0	RTK GPS
1060	DE_D1671	366499.554	9681399.74	515.009	41	-90	0	RTK GPS
1061	DE_D1675	366496.118	9681000.092	521.74	37	-90	0	RTK GPS
1062	DE_D1679	366601.329	9681897.819	562.694	22	-90	0	RTK GPS
1063	DE_D1694	366703.807	9681703.093	556.164	12	-90	0	RTK GPS
1064	DE_D1708	366796.373	9681601.472	559	31	-90	0	RTK GPS
1065	DE_D1709	366802.321	9681500.197	576.414	19	-90	0	RTK GPS
1066	DE_D1713	366799.579	9681100.23	560.63	37	-90	0	RTK GPS
1067	DE_D1714	366796.03	9681002.354	563.155	43	-90	0	RTK GPS
1068	DE_D1717	366898.244	9682001.787	616.057	24	-90	0	RTK GPS
1069	DE_D1720	366903.356	9681699.153	592	23	-90	0	RTK GPS
1070	DE_D1723	366898.432	9681399.242	585.425	14	-90	0	RTK GPS
1071	DE_D1724	366901.226	9681302.674	572.01	26	-90	0	RTK GPS
1072	DE_D1728	367004.166	9682100.158	638.854	23	-90	0	RTK GPS
1073	DE_D1733	367001.613	9681598.493	588.086	23	-90	0	RTK GPS
1074	DE_D1735	366999.863	9681395.443	608.808	33	-90	0	RTK GPS
1075	DE_D1739	367003.478	9681002.46	557.301	23	-90	0	RTK GPS
1076	DE_D1742	367101.971	9681698.156	606.978	9	-90	0	RTK GPS
1077	DE_D1743	367101.256	9681598.577	607.676	10	-90	0	RTK GPS
1078	DE_D1747	367095.545	9681106.25	557.251	18	-90	0	RTK GPS
1079	DE_D1754	367202.307	9681499.383	604.73	19	-90	0	RTK GPS

1080	DE_D1756	367201.524	9681298.1	574.715	28	-90	0	RTK GPS
1081	DE_D1760	367301.097	9681898.892	607	20	-90	0	RTK GPS
1082	DE_D1783	367500.687	9681502.677	612.324	24	-90	0	RTK GPS
1083	DE_D1784	367504.374	9681398.693	600.528	20	-90	0	RTK GPS
1084	DE_D1795	367598.945	9681203.434	599.639	21	-90	0	RTK GPS
1085	DE_D50_1808	367599.123	9681352.398	612	31	-90	0	RTK GPS
1086	DE_D50_1829	367547.094	9681799.72	603.358	16	-90	0	RTK GPS
1087	DE_D50_1832	367503.712	9681150.825	580.462	16	-90	0	RTK GPS
1088	DE_D50_1842	367450.746	9681054.013	583.638	32	-90	0	RTK GPS
1089	DE_D50_1843	367451.98	9681097.699	578.331	33	-90	0	RTK GPS
1090	DE_D50_1846	367449.766	9681246.59	575.11	29	-90	0	RTK GPS
1091	DE_D50_1860	367399.468	9681054.269	570.22	28	-90	0	RTK GPS
1092	DE_D50_1861	367401.214	9681146.024	561.164	36	-90	0	RTK GPS
1093	DE_D50_1863	367402.25	9681351.706	579.985	31	-90	0	RTK GPS
1094	DE_D50_1867	367399.18	9681748.308	625.5	31	-90	0	RTK GPS
1095	DE_D50_1869	367352.794	9680948.335	534.043	11	-90	0	RTK GPS
1096	DE_D50_1870	367350.325	9680998.964	545.823	11	-90	0	RTK GPS
1097	DE_D50_1871	367354.579	9681049.983	557.749	31	-90	0	RTK GPS
1098	DE_D50_1873	367350.562	9681150.695	547.021	33	-90	0	RTK GPS
1099	DE_D50_1875	367349.349	9681251.451	556.91	27	-90	0	RTK GPS
1100	DE_D50_1878	367353.448	9681403.103	576.721	25	-90	0	RTK GPS
1101	DE_D50_1880	367351.081	9681496.157	607.62	19	-90	0	RTK GPS
1102	DE_D50_1881	367345.292	9681550.624	619.7	33	-90	0	RTK GPS
1103	DE_D50_1898	367253.344	9680946.299	513	21	-90	0	RTK GPS
1104	DE_D50_1902	367253.044	9681153.106	541.556	25	-90	0	RTK GPS
1105	DE_D50_1903	367249.783	9681198.384	554.082	24	-90	0	RTK GPS
1106	DE_D50_1905	367247.404	9681300.494	560.937	42	-90	0	RTK GPS
1107	DE_D50_1923	367200.295	9681452.026	593.322	29	-90	0	RTK GPS
1108	DE_D50_1924	367203.232	9681546.504	615.921	41	-90	0	RTK GPS
1109	DE_D50_1934	367149.729	9681247.74	576.593	26	-90	0	RTK GPS
1110	DE_D50_1935	367150.906	9681295.616	585.087	32	-90	0	RTK GPS
1111	DE_D50_1938	367152.61	9681450.682	604.354	43	-90	0	RTK GPS
1112	DE_D50_1940	367152.172	9681551.42	622.262	37	-90	0	RTK GPS
1113	DE_D50_1941	367153.555	9681597.971	620.773	23	-90	0	RTK GPS
1114	DE_D50_1946	367150.541	9681847.484	640.661	38	-90	0	RTK GPS
1115	DE_D50_1948	367153.882	9681951.681	643.884	30	-90	0	RTK GPS
1116	DE_D50_1952	367097.052	9681252.114	588.669	28	-90	0	RTK GPS
1117	DE_D50_1954	367102.146	9681453.38	612.522	33	-90	0	RTK GPS
1118	DE_D50_1955	367097.408	9681546.1	617.76	28	-90	0	RTK GPS
1119	DE_D50_1968	367052.188	9681352.814	604.665	32	-90	0	RTK GPS
1120	DE_D50_1969	367050.732	9681399.173	611.688	32	-90	0	RTK GPS
1121	DE_D50_1972	367050.092	9681548.509	606.661	15	-90	0	RTK GPS
1122	DE_D50_1975	367049.596	9681695.774	602	14	-90	0	RTK GPS
1123	DE_D50_1976	367052.137	9681752.889	616.14	17	-90	0	RTK GPS
1124	DE_D50_1982	367001.615	9681048.574	570.792	26	-90	0	RTK GPS
1125	DE_D50_1985	367003.95	9681351.982	598.687	30	-90	0	RTK GPS
1126	DE_D50_1986	367002.585	9681447.169	603.887	16	-90	0	RTK GPS

1127	DE_D50_1989	367003.695	9681749.318	609.322	17	-90	0	RTK GPS
1128	DE_D50_1992	366997.017	9682046.815	626.343	14	-90	0	RTK GPS
1129	DE_D50_1993	366947.022	9680949.517	578	24	-90	0	RTK GPS
1130	DE_D50_1994	366950.682	9681001.68	574.605	29	-90	0	RTK GPS
1131	DE_D50_1995	366951.141	9681052.574	582.745	39	-90	0	RTK GPS
1132	DE_D50_1998	366948.433	9681196.051	584.977	19	-90	0	RTK GPS
1133	DE_D50_2001	366952.323	9681354.181	592.773	21	-90	0	RTK GPS
1134	DE_D50_2003	366950.512	9681452.009	598.802	25	-90	0	RTK GPS
1135	DE_D50_2005	366952.024	9681547.852	586.14	10	-90	0	RTK GPS
1136	DE_D50_2019	366903.188	9681053.676	585.107	38	-90	0	RTK GPS
1137	DE_D50_2020	366896.334	9681152.97	581.354	33	-90	0	RTK GPS
1138	DE_D50_2021	366901.133	9681250.938	569.222	14	-90	0	RTK GPS
1139	DE_D50_2024	366899.793	9681550.477	580.925	15	-90	0	RTK GPS
1140	DE_D50_2026	366897.525	9681746.622	598.669	16	-90	0	RTK GPS
1141	DE_D50_2032	366850.408	9680997.419	565.949	24	-90	0	RTK GPS
1142	DE_D50_2033	366853.181	9681047.071	577.405	35	-90	0	RTK GPS
1143	DE_D50_2034	366851.518	9681103.516	575.374	37	-90	0	RTK GPS
1144	DE_D50_2035	366854.359	9681151.484	571.616	27	-90	0	RTK GPS
1145	DE_D50_2037	366853.658	9681250.208	557.468	23	-90	0	RTK GPS
1146	DE_D50_2038	366850.292	9681301.997	560.748	24	-90	0	RTK GPS
1147	DE_D50_2042	366848.682	9681504.265	584.73	20	-90	0	RTK GPS
1148	DE_D50_2043	366851.824	9681553.143	577.796	22	-90	0	RTK GPS
1149	DE_D50_2044	366848.569	9681599.677	569.239	32	-90	0	RTK GPS
1150	DE_D50_2046	366851.997	9681698.457	589	23	-90	0	RTK GPS
1151	DE_D50_2047	366854.687	9681751.014	588.715	21	-90	0	RTK GPS
1152	DE_D50_2050	366852.432	9681900.118	581.484	18	-90	0	RTK GPS
1153	DE_D50_2054	366850.31	9682104.781	627.207	20	-90	0	RTK GPS
1154	DE_D50_2058	366802.645	9681053.56	565.868	36	-90	0	RTK GPS
1155	DE_D50_2059	366801.668	9681151.174	556.256	35	-90	0	RTK GPS
1156	DE_D50_2060	366799.21	9681247.469	547.539	21	-90	0	RTK GPS
1157	DE_D50_2061	366800.851	9681353.031	555.351	19	-90	0	RTK GPS
1158	DE_D50_2062	366797.616	9681451.126	574.81	41	-90	0	RTK GPS
1159	DE_D50_2065	366802.985	9681749.181	576.089	13	-90	0	RTK GPS
1160	DE_D50_2068	366798.039	9682049.507	612.622	20	-90	0	RTK GPS
1161	DE_D50_2071	366747.628	9680999.151	552.853	41	-90	0	RTK GPS
1162	DE_D50_2075	366745.581	9681201.066	539.038	40	-90	0	RTK GPS
1163	DE_D50_2076	366750.562	9681250.02	543.537	38	-90	0	RTK GPS
1164	DE_D50_2079	366750.422	9681400.729	556.14	36	-90	0	RTK GPS
1165	DE_D50_2080	366747.382	9681449.031	563.727	33	-90	0	RTK GPS
1166	DE_D50_2082	366752.65	9681552.169	565.698	42	-90	0	RTK GPS
1167	DE_D50_2084	366746.012	9681648.459	555.549	30	-90	0	RTK GPS
1168	DE_D50_2089	366751.766	9681897.066	572.22	11	-90	0	RTK GPS
1169	DE_D50_2095	366747.854	9682195.558	597.142	32	-90	0	RTK GPS
1170	DE_D50_2098	366700.175	9681153.576	530.854	46	-90	0	RTK GPS
1171	DE_D50_2099	366702.145	9681248.697	538.646	27	-90	0	RTK GPS
1172	DE_D50_2106	366700.064	9681947.137	577.408	25	-90	0	RTK GPS
1173	DE_D50_2115	366651.046	9681246.953	533.238	30	-90	0	RTK GPS

1174	DE_D50_2127	366650.052	9681853.85	562.188	28	-90	0	RTK GPS
1175	DE_D50_2138	366602.327	9681248.714	529.639	34	-90	0	RTK GPS
1176	DE_D50_2149	366550.5	9681000.177	527.619	23	-90	0	RTK GPS
1177	DE_D50_2152	366549.358	9681147.089	518.183	32	-90	0	RTK GPS
1178	DE_D50_2153	366546.221	9681199.022	525.069	31	-90	0	RTK GPS
1179	DE_D50_2157	366553.638	9681398.038	522.117	40	-90	0	RTK GPS
1180	DE_D50_2161	366551.824	9681598.127	531.328	26	-90	0	RTK GPS
1181	DE_D50_2162	366552.79	9681654.111	538.025	19	-90	0	RTK GPS
1182	DE_D50_2166	366552.764	9681853.169	558.596	28	-90	0	RTK GPS
1183	DE_D50_2170	366551.944	9682053.746	570.891	28	-90	0	RTK GPS
1184	DE_D50_2174	366497.488	9680953.354	522.572	30	-90	0	RTK GPS
1185	DE_D50_2177	366501.702	9681253.627	520.222	33	-90	0	RTK GPS
1186	DE_D50_2179	366499.975	9681445.563	518.038	42	-90	0	RTK GPS
1187	DE_D50_2182	366503.734	9681752.004	532.833	7	-90	0	RTK GPS
1188	DE_D50_2188	366447.726	9680948.349	512.229	39	-90	0	RTK GPS
1189	DE_D50_2192	366450.333	9681152.764	504.113	31	-90	0	RTK GPS
1190	DE_D50_2196	366451.834	9681346.462	506.211	33	-90	0	RTK GPS
1191	DE_D50_2201	366451.002	9681596.149	518	20	-90	0	RTK GPS
1192	DE_D50_2208	366450.602	9681950.544	545.896	18	-90	0	RTK GPS
1193	DE_D50_2213	366448.488	9682198.746	573.463	31	-90	0	RTK GPS
1194	DE_D50_2216	366396.172	9681451.402	501	11	-90	0	RTK GPS
1195	DE_D50_2220	366402.436	9681847.399	531.887	10	-90	0	RTK GPS
1196	DE_D50_2236	366348.508	9681900.064	545.621	25	-90	0	RTK GPS
1197	DE_D50_2241	366349.978	9682147.167	568.669	24	-90	0	RTK GPS
1198	DE_D50_2246	366299.224	9681446.174	510.506	20	-90	0	RTK GPS
1199	DE_D50_2247	366303.211	9681546.201	526.899	41	-90	0	RTK GPS
1200	DE_D50_2248	366301.547	9681650.199	539.431	19	-90	0	RTK GPS
1201	DE_D50_2259	366249.319	9681704.159	546.355	14	-90	0	RTK GPS
1202	DE_D50_2260	366253.623	9681752.156	556.644	33	-90	0	RTK GPS
1203	DE_D50_2267	366245.655	9682100.547	564.27	26	-90	0	RTK GPS
1204	DE_D50_2278	366149.372	9681750.542	543.579	21	-90	0	RTK GPS
1205	DE_D50_2279	366153.496	9681798.905	552.431	31	-90	0	RTK GPS
1206	DE_D50_2282	366150.387	9681947.759	551.349	28	-90	0	RTK GPS
1207	DE_D50_2284	366150.185	9682053.654	573.372	25	-90	0	RTK GPS
1208	DE_D50_2291	366102.569	9681946.797	558.852	31	-90	0	RTK GPS
1209	DE_D50_2298	366048.092	9681998.658	566.052	21	-90	0	RTK GPS
1210	DE_D50_2306	366000.081	9681952.598	576.802	34	-90	0	RTK GPS
1211	DE_D50_2307	365998.965	9682046.665	572.696	17	-90	0	RTK GPS
1212	DE_D50_2310	365950.525	9681946.642	580.797	28	-90	0	RTK GPS
1213	DE_D50_2311	365949.139	9682002.136	587.792	30	-90	0	RTK GPS
1214	DE_D50_2312	365953.697	9682048.373	584.33	11	-90	0	RTK GPS
1215	DE_D50_2316	365848.201	9681801.789	544.589	21	-90	0	RTK GPS
1216	DE_D50_2317	365848.202	9681853.128	544.438	20	-90	0	RTK GPS
1217	DE_D50_2320	365802.022	9681748.472	550.758	30	-90	0	RTK GPS
1218	DE_D50_2326	366351.443	9680949.049	493.594	36	-90	0	RTK GPS
1219	DE_D50_2327	366351.2	9681000.018	488.419	21	-90	0	RTK GPS
1220	DE_D50_2332	366350.056	9681252.857	491.506	28	-90	0	RTK GPS

1221	DE_D50_2334	366302.224	9680952.008	487.6	39	-90	0	RTK GPS
1222	DE_D50_2339	366251.221	9680953.11	483.337	32	-90	0	RTK GPS
1223	DE_D50_2342	366248.903	9681104.45	498	25	-90	0	RTK GPS
1224	DE_D50_2346	366249.898	9681298.904	511.397	31	-90	0	RTK GPS
1225	DE_D50_2349	366253.641	9681597.372	527.557	26	-90	0	RTK GPS
1226	DE_D50_2353	366201.012	9681153.018	502.265	21	-90	0	RTK GPS
1227	DE_D50_2356	366202.352	9681448.602	514.254	22	-90	0	RTK GPS
1228	DE_D50_2357	366196.847	9681552.304	512.901	26	-90	0	RTK GPS
1229	DE_D50_2359	366203.647	9682352.954	582.596	13	-90	0	RTK GPS
1230	DE_D50_2365	366152.214	9681197.514	503.207	21	-90	0	RTK GPS
1231	DE_D50_2366	366147.982	9681247.48	507.394	23	-90	0	RTK GPS
1232	DE_D50_2368	366149.887	9681347.709	519.902	26	-90	0	RTK GPS
1233	DE_D50_2375	366149.104	9681697.054	533.569	22	-90	0	RTK GPS
1234	DE_D50_2391	366047.622	9681098.107	506.982	26	-90	0	RTK GPS
1235	DE_D50_2393	366048.562	9681204.374	504.991	23	-90	0	RTK GPS
1236	DE_D50_2394	366050.973	9681251.737	502.703	26	-90	0	RTK GPS
1237	DE_D50_2395	366048.492	9681302.607	493.907	15	-90	0	RTK GPS
1238	DE_D50_2400	366048.946	9681553.062	527.351	22	-90	0	RTK GPS
1239	DE_D50_2401	366046.671	9681598.5	524.36	24	-90	0	RTK GPS
1240	DE_D50_2402	366051.466	9681651.02	519.792	22	-90	0	RTK GPS
1241	DE_D50_2411	365997.57	9681049.142	495.687	26	-90	0	RTK GPS
1242	DE_D50_2413	366001.318	9681250.793	519.155	23	-90	0	RTK GPS
1243	DE_D50_2420	366001.036	9682253.544	588.472	10	-90	0	RTK GPS
1244	DE_D50_2421	366001.903	9682351.677	616.965	26	-90	0	RTK GPS
1245	DE_D50_2425	365949.282	9681053.77	493.358	12	-90	0	RTK GPS
1246	DE_D50_2431	365949.345	9681352.719	510.659	36	-90	0	RTK GPS
1247	DE_D50_2435	365950.233	9681552.264	521.133	16	-90	0	RTK GPS
1248	DE_D50_2438	365949.083	9681699.561	524.267	17	-90	0	RTK GPS
1249	DE_D50_2442	365946.657	9682149.792	590.424	23	-90	0	RTK GPS
1250	DE_D50_2443	365952.918	9682201.318	586.901	18	-90	0	RTK GPS
1251	DE_D50_2444	365946.072	9682250.32	592.241	6	-90	0	RTK GPS
1252	DE_D50_2446	365948.124	9682353.236	616.482	7	-90	0	RTK GPS
1253	DE_D50_2450	365903.37	9680951.926	516.5	23	-90	0	RTK GPS
1254	DE_D50_2451	365897.07	9681049.471	497.683	19	-90	0	RTK GPS
1255	DE_D50_2454	365897.491	9681351.485	518.689	26	-90	0	RTK GPS
1256	DE_D50_2459	365901.323	9682050.487	598.176	23	-90	0	RTK GPS
1257	DE_D50_2460	365900.557	9682153.101	601.004	25	-90	0	RTK GPS
1258	DE_D50_2461	365898.052	9682248.365	605.623	12	-90	0	RTK GPS
1259	DE_D50_2464	365851.289	9680952.972	520	28	-90	0	RTK GPS
1260	DE_D50_2471	365854.697	9681299.27	533.724	26	-90	0	RTK GPS
1261	DE_D50_2472	365851.892	9681354.068	524.559	12	-90	0	RTK GPS
1262	DE_D50_2474	365853	9681448.76	503	23	-90	0	RTK GPS
1263	DE_D50_2475	365850.919	9681497.895	515.879	33	-90	0	RTK GPS
1264	DE_D50_2477	365852.279	9681597.627	542.26	25	-90	0	RTK GPS
1265	DE_D50_2478	365851.726	9681649.276	551.106	24	-90	0	RTK GPS
1266	DE_D50_2482	365852.047	9682100.662	603.593	18	-90	0	RTK GPS
1267	DE_D50_2483	365846.784	9682151.624	608.374	21	-90	0	RTK GPS

1268	DE_D50_2484	365853.413	9682197.392	610	24	-90	0	RTK GPS
1269	DE_D50_2486	365851.319	9682297.059	621.651	14	-90	0	RTK GPS
1270	DE_D50_2490	365798.185	9680951.874	520.688	38	-90	0	RTK GPS
1271	DE_D50_2496	365797.223	9681551.575	533.332	17	-90	0	RTK GPS
1272	DE_D50_2501	365797.877	9682251.381	618.371	11	-90	0	RTK GPS
1273	DE_D50_2502	365800.115	9682345.013	628	26	-90	0	RTK GPS
1274	DE_D50_2504	365748.885	9680953.091	525.88	27	-90	0	RTK GPS
1275	DE_D50_2505	365751.211	9680996.884	524.342	29	-90	0	RTK GPS
1276	DE_D50_2506	365749.001	9681050.115	511.671	23	-90	0	RTK GPS
1277	DE_D50_2514	365751.622	9681445.893	524.094	32	-90	0	RTK GPS
1278	DE_D50_2516	365752.633	9681553.013	534.325	20	-90	0	RTK GPS
1279	DE_D50_2517	365746.828	9681599.439	539.162	25	-90	0	RTK GPS
1280	DE_D50_2519	365749.97	9681704.858	543.406	18	-90	0	RTK GPS
1281	DE_D50_2522	365745.902	9681847.93	576.578	25	-90	0	RTK GPS
1282	DE_D50_2525	365747.065	9681998.041	583.414	18	-90	0	RTK GPS
1283	DE_D50_2533	365701.37	9680951.61	532.144	20	-90	0	RTK GPS
1284	DE_D50_2535	365703.728	9681151.725	528.865	23	-90	0	RTK GPS
1285	DE_D50_2542	365697.492	9681848.262	571.359	23	-90	0	RTK GPS
1286	DE_D50_2548	365646.577	9680999.241	536.166	16	-90	0	RTK GPS
1287	DE_D50_2552	365651.468	9681202.803	552.269	31	-90	0	RTK GPS
1288	DE_D50_2554	365648.783	9681298.43	555.055	36	-90	0	RTK GPS
1289	DE_D50_2555	365649.105	9681350.106	548.087	32	-90	0	RTK GPS
1290	DE_D50_2563	365654.051	9681900.447	560.553	26	-90	0	RTK GPS
1291	DE_D50_2564	365603.642	9680947.564	534.664	22	-90	0	RTK GPS
1292	DE_D50_2570	365597.849	9681747.844	537.35	30	-90	0	RTK GPS
1293	DE_D50_2571	365600.732	9681849.726	544.615	19	-90	0	RTK GPS
1294	DE_D50_2576	365553.23	9681153.627	541.983	34	-90	0	RTK GPS
1295	DE_D50_2579	365552.005	9681298.005	548.7	20	-90	0	RTK GPS
1296	DE_D50_2583	365549.479	9681648.71	511.44	37	-90	0	RTK GPS
1297	DE_D50_2593	365500.621	9681346.06	535.523	27	-90	0	RTK GPS
1298	DE_D50_2601	365453.114	9681049.113	516.021	23	-90	0	RTK GPS
1299	DE_D50_2605	365451.391	9681252.787	542.138	32	-90	0	RTK GPS
1300	DE_D50_2609	365446.882	9681450.064	481.267	12	-90	0	RTK GPS
1301	DE_D50_2610	365450.439	9681501.358	488.665	28	-90	0	RTK GPS
1302	DE_D50_2611	365448.744	9681551.812	509.221	14	-90	0	RTK GPS
1303	DE_D50_2615	365400.384	9681147.979	515.159	11	-90	0	RTK GPS
1304	DE_D50_2617	365348.779	9680948.88	506.845	29	-90	0	RTK GPS
1305	DE_D50_2619	365352.025	9681050.011	515.127	34	-90	0	RTK GPS
1306	DE_D50_2622	365349.245	9681197.369	539.905	31	-90	0	RTK GPS
1307	DE_D50_2623	365349.902	9681250.284	541.561	27	-90	0	RTK GPS
1308	DE_D50_2627	365298.845	9681146.545	534.362	31	-90	0	RTK GPS
1309	DE_D50_2629	365251.998	9680949.63	529.255	36	-90	0	RTK GPS
1310	DE_D50_2630	365247.68	9681004.407	527.13	33	-90	0	RTK GPS
1311	DE_D50_2634	365251.125	9681197.49	537.435	26	-90	0	RTK GPS
1312	DE_D50_2637	365203.48	9680951.668	534	34	-90	0	RTK GPS
1313	DE_D50_2638	365200.146	9681051.879	532.065	30	-90	0	RTK GPS
1314	DE_D50_2639	365199.834	9681151.183	534.533	31	-90	0	RTK GPS

1315	DE_D50_2641	365151.569	9680948.728	526.433	25	-90	0	RTK GPS
1316	DE_D50_2646	365149.002	9681197.239	530.761	38	-90	0	RTK GPS
1317	DE_D50_2647	365150.829	9681254.107	533.905	20	-90	0	RTK GPS
1318	DE_D50_2649	365102.729	9680948.235	512.336	27	-90	0	RTK GPS
1319	DE_D50_2663	364951.827	9680951.096	509.921	25	-90	0	RTK GPS
1320	DE_D50_2664	364949.745	9680999.575	495.57	22	-90	0	RTK GPS
1321	DE_D50_2669	364899.907	9681053.723	498.633	20	-90	0	RTK GPS
1322	DE_D50_2672	364853.315	9681000.603	515.851	30	-90	0	RTK GPS
1323	DE_D50_2677	364803.637	9681051.18	513.573	32	-90	0	RTK GPS
1324	DE_D50_2679	364752.121	9681004.507	509.75	38	-90	0	RTK GPS
1325	DE_D50_2680	364751.349	9681049.987	510.803	32	-90	0	RTK GPS
1326	DE_D50_2682	364699.312	9680945.638	504	39	-90	0	RTK GPS
1327	DE_D50_2685	364648.059	9681002.533	508.277	38	-90	0	RTK GPS
1328	DE_D50_2686	364652.128	9681049.407	514.012	39	-90	0	RTK GPS
1329	DE_D50_2688	364603.462	9680951.422	507.322	37	-90	0	RTK GPS
1330	DE_D50_2689	364603.874	9681051.999	512.38	33	-90	0	RTK GPS
1331	DE_D50_2691	364549.28	9681002.664	513.088	31	-90	0	RTK GPS
1332	DE_D50_2692	364550.835	9681052.307	513.095	29	-90	0	RTK GPS
1333	DE_D50_2694	364497.787	9680954.273	512.898	32	-90	0	RTK GPS
1334	DE_D50_2695	364500.406	9681052.428	518.77	32	-90	0	RTK GPS
1335	DE_D50_2704	364302.86	9680947.835	480.614	15	-90	0	RTK GPS
1336	DE_D50_2708	364250.977	9680995.236	493.369	25	-90	0	RTK GPS
1337	DE_D50_2710	364146.047	9680950.891	495.716	37	-90	0	RTK GPS

APPENDIX 2

PT ERABARU TIMUR LESTARI
LEGAL DOCUMENTATION

BUPATI MOROWALI
Komplex Perkantoran Bumi Fonuasingko
Telp. (0411) 402355, 402356 Fax. (0411) 402356 BUNGKU

KEPUTUSAN BUPATI MOROWALI
NOMOR : 540.3 / SK 017 / DESDM / VI / 2011

TENTANG
PERSETUJUAN PENINGKATAN IZIN USAHA PERTAMBANGAN EKSPLORASI MENJADI IZIN USAHA PERTAMBANGAN OPERASI PRODUKSI KEPADA PT. ERABARU TIMUR LESTARI

BUPATI MOROWALI

Membaca : Surat Direktur PT. ERABARU TIMUR LESTARI Nomor : 12/ETL/VI/2011 Tanggal 19 Juni 2011 perihal Permohonan Peningkatan Izin Usaha Pertambangan Eksplorasi menjadi Izin Usaha Pertambangan (IUP) Operasi Produksi;

Menimbang :
- a. bahwa berdasarkan hasil evaluasi kegiatan IUP Pertambangan Eksplorasi PT. ERABARU TIMUR LESTARI telah memenuhi syarat untuk diberikan persetujuan peningkatan IUP Eksplorasi menjadi IUP Operasi Produksi;
- b. Keputusan Bupati Morowali Nomor : 660.1/73.B/KLH/VI/2011 tanggal 14 Juni 2011 tentang Kelayakan Lingkungan Kegiatan Penambangan Bijih Nikel di Desa Lele, Dampala dan Siumbatu Kecamatan Bahodopi Kabupaten Morowali Provinsi Sulawesi Tengah kepada PT. ERABARU TIMUR LESTARI.

Mengingat :
1. Undang-Undang Nomor 13 Tahun 2000 tentang Ketenagakerjaan (Lembaran Negara RI Tahun 2000 Nomor 39, Tambahan Lembaran Negara RI Nomor 33817);
2. Undang - Undang Nomor 32 Tahun 2004 tentang Pemerintahan Daerah (Lembaran Negara RI Tahun 2004 Nomor 125, Tambahan Lembaran Negara RI Nomor 4437) sebagaimana telah diubah dengan Undang-Undang Nomor 8 Tahun 2005 tentang Penetapan Peraturan Pemerintah Pengganti Undang-Undang Nomor 3 Tahun 2005 tentang Perubahan atas Undang-Undang Nomor 32 Tahun 2004 tentang Pemerintahan Daerah (Lembaran Negara RI Tahun 2005 Nomor 108, Tambahan Lembaran Negara RI Nomor 4548);
3. Undang-Undang Nomor 25 Tahun 2007 tentang Penanaman Modal (Lembaran Negara RI Tahun 2007 Nomor 67, Tambahan Lembaran Negara RI Nomor 4724);
4. Undang-Undang Nomor 26 Tahun 2007 tentang Penataan Ruang (Lembaran Negara RI Tahun 2007 Nomor 68, Tambahan Lembaran Negara RI Nomor 4725);
5. Undang-Undang Nomor 20 Tahun 2008 tentang Usaha Milik Mikro, Kecil dan Menengah (Lembaran Negera RI Tahun 2008 Nomor 93, Tambahan Lembaran Negara RI Nomor 4866);
6. Undang-Undang Nomor 4 Tahun 2009 tentang Pertambangan Mineral dan Batubara (Lembaran Negara RI Tahun 2009 Nomor 4, Tambahan Lembaran Negara RI Nomor 4959);

7. Undang-Undang Nomor 28 Tahun 2009 tentang Pajak Daerah dan Retribusi Daerah (Lembaran Negara RI Nomor 5049);
8. Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (Lembaran Negara RI Tahun 2009 Nomor 140, Tambahan Lembaran Negara RI Nomor 5059);
9. Peraturan Pemerintah Nomor 27 Tahun 1999 tentang Analisis Mengenai Dampak Lingkungan Hidup (Lembaran Negara RI Tahun 1999 Nomor 59, Tambahan Lembaran Negara RI Nomor 3838);
10. Peraturan Pemerintah Nomor 38 Tahun 2007 tentang Pembagian Urusan antara Pemerintah Pusat, Pemerintahan Daerah Provinsi, Pemerintahan Daerah Kabupaten/Kota (Lembaran Negara RI Tahun 2007 Nomor 82, Tambahan Lembaran Negara RI Nomor 4737);
11. Peraturan Pemerintah Nomor 26 Tahun 2008 tentang Rencana Tata Ruang Wilayah Nasional (Lembaran Negara RI Tahun 2008 Nomor 48, Tambahan Lembaran Negara RI Nomor 4833);
12. Peraturan Pemerintah Nomor 22 Tahun 2010 tentang Wilayah Pertambangan (Lembaran Negara RI Tahun 2010 Nomor 28, Tambahan Lembaran Negara RI Nomor 5110);
13. Peraturan Pemerintah Nomor 23 Tahun 2010 tentang Pelaksanaan Kegiatan Usaha Pertambangan Mineral dan Batubara (Lembaran Negara RI Tahun 2010 Nomor 29, Tambahan Lembaran Negara RI Nomor 5111);
14. Peraturan Pemerintah Nomor 55 Tahun 2010 tentang Pembinaan dan Pengawasan Penyelenggaraan Pengelolaan Usaha Pertambangan Mineral dan Batubara (Lembaran Negara RI Tahun 2010 Nomor 85, Tambahan Lembaran Negara RI Nomor 5142);
15. Peranturan Menteri Energi dan Sumber Daya Mineral Nomor 28 Tahun 2009 tentang Penyelenggaraan Usaha Jasa dan Pertambangan Mineral dan Batubara (Berita Negara RI Tahun 2009 Nomor 341);
16. Peraturan Menteri Energi dan Sumber Daya Mineral Nomor 34 Tahun 2009 tentang Pengutamaan Pemasokan Kebutuhan Mineral dan Batubara dalam Negeri (Berita Negara RI Tahun 2009 Nomor 546);
17. Peraturan Daerah Kabupaten Morowali Nomor 20 Tahun 2003 tentang Penyelenggaraan Pengelolaan Usaha Pertambangan Umum (Lembaran Daerah Tahun 2003 Nomor 41);
18. Keputusan Bupati Morowali Nomor : 540.2/SK.017/DESDM/III/2009 tanggal 23 Maret 2009 tentang Persetujuan Izin Usaha Pertambangan Eksplorasi Kepada PT. ERABARU TIMUR LESTARI

MEMUTUSKAN:

Menetapkan : KEPUTUSAN BUPATI MOROWALI TENTANG PERSETUJUAN PENINGKATAN IZIN USAHA PERTAMBANGAN EKSPLORASI MENJADI IUP OPERASI PRODUKSI KEPADA PT. ERABARU TIMUR LESTARI

KESATU : Memberikan Izin Usaha Pertambangan Operasi Produksi kepada :

Nama Perusahaan : PT. ERABARU TIMUR LESTARI
Nama Direktur : MARTHEN HENTIANA
Nilai Saham : RP. 750.000.000,-
Pemegang Saham
1. Nama : MARTHEN HENTIANA
   Nilai saham : Rp. 450.000.000,-
   Pekerjaan : Swasta
   Alamat : Taman Anggrek Tower RT.012 RW.001 Kel. Tanjung Duren Sawit Kec. Grogol Petamburan Jakarta Barat

   Kewarganegaraan : Indonesia

2. Nama : MARTIN UNSULANGI HENG
Nilai saham : Rp. 262.500.000,-
Pekerjaan : Swasta
Alamat : Jl. Albasia I Blok F No. 21 RT.018 RW.004 Kel. Kedoya Selatan Kec. Kebon Jeruk – Jakarta Barat

Kewarganegaraan : Indonesia

3. Nama : ANTONIUS KAMARGA
Nilai saham : Rp. 37.500.000,-
Pekerjaan : Swasta
Alamat : Jl. Pelepah Hijau IV TT 1 No. 1 RT.012 RW.001 Kel. Gading Timur Kec. Gading – Jakarta Utara

Kewarganegaraan : Indonesia

Alamat Perusahaan : Taman Anggrek Tower RT.012 RW.001 Kel. Tanjung Duren Sawit Kec. Grogol Petamburan – Jakarta Barat

Komoditas : Nikel DMP

Lokasi penambangan
Desa : Lele, Dampala dan Siumbatu
Kecamatan : Bahodopi
Kabupaten : Morowali
Propinsi : Sulawesi Tengah
Kode wilayah : MW316
Luas : 1.159 Ha

Peta dan daftar koordinat WIUP yang diterbitkan oleh Bupati Morowali sebagaimana tercantum dalam Lampiran I dan Lampiran II Keputusan ini.

Lokasi Pengolahan dan Pemurnian : Desa Lele, Dampala dan Siumbatu
Pengangkutan dan Penjualan : Desa Lele, Dampala dan Siumbatu
Jangka waktu berlaku IUP : 20 Tahun
Jangka waktu Tahap Kegiatan :
a. Konstruksi selama 3 Tahun
b. Produksi selama 17 Tahun

KEDUA : Pemegang IUP Operasi Produksi mempunyai hak untuk melakukan kegiatan konstruksi, produksi, pengangkutan dan penjualan serta pengolahan dan pemurnian dalam WIUP untuk jangka waktu 20 Tahun dan dan dapat diperpanjang 2 (dua) kali masing-masing 10 tahun. Terhitung mulai tanggal ditetapkannya Keputusan ini sampai dengan tanggal 27 Juni 2031 ***apabila dalam WIUP terdapat Kawasan Hutan (Hutan Lindung, Hutan Produksi Terbatas, Hutan Produksi Tetap dan Hutan Produksi yang dapat di Konversi dan areal Izin Usaha Pengelolaan Hasil Hutan Kayu (IUPHHK), maupun perijinan lainnya yang sah menurut peraturan perundang-undangan dilarang melakukan kegiatan apapun sebelum mendapat izin dari pejabat yang berwenang.***

KETIGA : IUP Operasi Produksi ini dilarang dipindahtangankan kepada pihak lain tanpa persetujuan Bupati Morowali.

KEEMPAT : PT. ERABARU TIMUR LESTARI sebagai Pemegang IUP Operasi Produksi dalam melaksanakan kegiatannya mempunyai hak dan kewajiban sebagaimana tercantum dalam Lampiran III keputusan ini.

KELIMA : Selambat-lambatnya 60 (enam puluh) hari kerja setelah diterbitkannya Keputusan ini Pemegang IUP Operasi Produksi sudah harus menyampaikan RKAB kepada Bupati Morowali untuk mendapat persetujuan.

KEENAM : Terhitung sejak 90 (sembilan puluh) hari kerja sejak persetujuan RKAB sebagaimana dimaksud dalam diktum Kelima Pemegang IUP Operasi Produksi sudah harus memulai aktifitas di lapangan.

KETUJUH : Tanpa mengurangi ketentuan peraturan perudang-undangan maka IUP Operasi Produksi ini dapat diberhentikan sementara, dicabut, atau dibatalkan, apabila pemegang IUP Operasi Produksi tidak memenuhi kewajiban dan larangan sebagaimana dimaksud dalam diktum Ketiga, Keempat, dan Kelima dalam Keputusan ini.

KEDELAPAN : Keputusan Bupati ini mulai berlaku pada tanggal ditetapkan.

Ditetapkan di : Bungku
Pada Tanggal : 27 JUNI 2011

BUPATI

ANWAR HAFID

Tembusan disampaikan kepada Yth :

1. Menteri Energi dan Sumber Daya Mineral di Jakarta;
2. Menteri Keuangan di Jakarta;
3. Sekretaris Jenderal Departemen Energi dan Sumber Daya Mineral di Jakarta;
4. Inspektur Jenderal Departemen Energi dan Sumber Daya Mineral di Jakarta;
5. Direktur Jenderal Pajak, Departemen Keuangan di Jakarta;
6. Direktur Jenderal Perbendaharaan, Departemen Keuangan di Jakarta;
7. Direktur Jenderal Pendapatan Daerah, Departemen Dalam Negeri di Jakarta;
8. Gubernur Sulawesi Tengah di Palu;
9. Kepala Biro Hukum dan Humas/Kepala Biro Keuangan/Kepala Biro Perencanaan dan Kerjasama Luar Negeri, Setjen Departemen Energi dan Sumber Daya Mineral di Jakarta;
10. Sekretaris Direktorat Jenderal Mineral, Batubara dan Panas Bumi di Jakarta;
11. Direktur Teknik dan Lingkungan Mineral, Batubara dan Panas Bumi di Jakarta;
12. Direktur Pembinaan Program Mineral, Batubara dan Panas Bumi di Jakarta;
13. Direktur Pembinaan Pengusahaan Mineral dan Batubara di Jakarta;
14. Direktur Pajak Bumi dan Bangunan, Departemen Keuangan di Jakarta;
15. Kepala Dinas Energi dan Sumber Daya Mineral, Prop. Sulawesi Tengah di Palu;
16. Kepala Dinas Energi dan Sumber Daya Mineral, Kab. Morowali di Bungku;
17. Direksi PT. ERABARU TIMUR LESTARI di Jakarta;

LAMPIRAN II :

Surat Keputusan (SK) Bupati Morowali
Nomor : 540.3 / Sk. 017 / DESDM / VI / 2011
Tanggal : 27 JUNI 2011

KOORDINAT WILAYAH IZIN USAHA PERTAMBANGAN OPERASI PRODUKSI
PT. ERABARU TIMUR LESTARI

LOKASI
PROVINSI : SULAWESI TENGAH
KABUPATEN : MOROWALI
KECAMATAN : BAHODOPI
DESA : LELE, DAMPALA DAN SIUMBATU
KOMODITAS : NIKEL DMP
LUAS WILAYAH : 1.159 Ha
KODE WILAYAH : MW316

NO	GARIS BUJUR BUJUR TIMUR (BT)				GARIS LINTANG LINTANG UTARA (LU)/ LINTANG SELATAN (LS)			
	°	'	"	BT/E	°	'	"	LS/LU
1	121	50	27,95	BT	2	53	10,04	LS
2	121	50	4,05	BT	2	53	10,04	LS
3	121	50	4,05	BT	2	52	27,75	LS
4	121	49	49,04	BT	2	52	27,75	LS
5	121	49	49,04	BT	2	51	57,07	LS
6	121	47	45,94	BT	2	51	57,07	LS
7	121	47	45,94	BT	2	52	18,27	LS
8	121	48	13,64	BT	2	52	18,27	LS
9	121	48	13,64	BT	2	52	35,47	LS
10	121	48	55,98	BT	2	52	35,47	LS
11	121	48	55,98	BT	2	53	10,04	LS
12	121	46	3,92	BT	2	53	10,04	LS
13	121	46	3,92	BT	2	52	10,9	LS
14	121	46	19,09	BT	2	52	10,9	LS
15	121	46	19,09	BT	2	52	0	LS
16	121	47	44,46	BT	2	52	0	LS
17	121	47	44,46	BT	2	51	55,06	LS
18	121	49	50,66	BT	2	51	55,06	LS
19	121	49	50,66	BT	2	52	0	LS
20	121	50	27,95	BT	2	52	0	LS

BUPATI MOROWALI

ANWAR HAFID

LAMPIRAN III

Surat Keputusan (SK) Bupati Morowali :
Nomor : 540.3 /SK. 017 / DESDM / VI / 2011
Tanggal : 27 JUNI 2011

Hak dan Kewajiban :

A. Hak

1. Memasuki WIUP sesuai dengan peta dan daftar koordinat;
2. Melaksanakan kegiatan IUP Operasi Produksi (Konstruksi, Produksi, Pengolahan Pemurnian dan Pengangkutan Penjualan) sesuai dengan ketentuan peraturan perundang-undangan;
3. Membangun fasilitas penunjang kegiatan IUP Operasi Produksi (Konstruksi, Produksi, Pengolahan Pemurnian dan Pengangkutan Penjualan) di dalam maupun diluar WIUP;
4. Dapat menghentikan sewaktu-waktu menghentikan kegiatan IUP Operasi Produksi (Konstruksi, Produksi, Pengolahan Pemurnian dan Pengangkutan Penjualan) di setiap bagian atau beberapa bagian WIUP dengan alasan bahwa kelanjutan dari kegiatan IUP Operasi Produksi (Konstruksi, Produksi, Pengolahan Pemurnian dan Pengangkutan Penjualan), tersebut tidak layak atau praktis secara komersial maupun karena keadaan kahar, keadaan yang menghalangi sehingga menimbulkan penghentian sebagian atau seluruh kegiatan usaha pertambangan;
5. Mengajukan permohonan pengusahaan mineral lain yang bukan merupakan asosiasi mineral utama yang diketemukan dalam WIUP;
6. Mengajukan pernyataan tidak berminat terhadap pengusahaan mineral lain yang bukan merupakan asosiasi mineral utama yang diketemukan dalam WIUP;
7. Memanfaatkan sarana dan prasarana umum untuk keperluan kegiatan IUP Operasi Produksi (Konstruksi, Produksi, Pengolahan Pemurnian dan Pengangkutan Penjualan) setelah memenuhi ketentuan peraturan perundang-undangan;
8. Dapat melakukan kerjasama dengan perusahaan lain dalam rangka penggunaan setiap fasilitas yang dimiliki oleh perusahaan lain baik yang berafiliasi dengan perusahaan atau tidak sesuai dengan ketentuan peraturan perundang-undangan;
9. Dapat membangun sarana dan prasarana pada WIUP lain setelah mendapat izin dari pemegang IUP yang bersangkutan.

B. Kewajiban

1. Memilih yurisdiksi pada Pengadilan Negeri tempat dimana lokasi WIUP berada;
2. Selambat-lambatnya 6 bulan setelah ditetapkannya keputusan ini, pemegang IUP Operasi Produksi harus sudah melaksanakan dan menyampaikan laporan pematokan batas wilayah IUP Operasi Produksi kepada Bupati;
3. Hubungan antara pemegang IUP Operasi Produksi dengan pihak ketiga menjadi tanggung jawab pemegang IUP Sesuai ketentuan perundang-undangan;
4. Melaporkan Rencana Investasi;
5. Menyampaikan rencana reklamasi;
6. Menyampaikan rencana pasca tambang;
7. Menempatkan jaminan penutupan tambang (sesuai umur tambang);
8. Menyampaikan RKAB selambat-lambatnya pada bulan November yang meliputi rencana tahun depan dan realisasi kegiatan setiap tahun berjalan kepada Bupati dengan tembusan kepada Menteri dan Gubernur;
9. Menyampaikan Laporan Kegiatan Triwulanan yang harus diserahkan dalam jangka waktu 30 (tiga puluh) hari setelah akhir dari triwulan takwim secara berkala kepada Bupati dengan tembusan kepada Menteri dan Gubernur;
10. Apabila ketentuan batas waktu penyampaian RKAB dan pelaporan sebagaimana dimaksud pada angka 8 (delapan) dan 9 (sembilan) tersebut di atas terlampaui, maka kepada pemegang IUP Operasi Produksi akan diberikan peringatan tertulis;
11. Menyampaikan laporan produksi dan pemasaran sesuai dengan ketentuan peraturan perundang-undangan.
12. Menyampaikan Rencana Pengembangan dan Pemberdayaan Masyarakat sekitar

wilayah pertambangan kepada Bupati;

13. Menyampaikan RKTTL setiap tahun sebelum penyampaian RKAB kepada Bupati;
14. Memenuhi ketentuan perpajakan sesuai dengan ketentuan peraturan perundang-undangan;
15. Membayar Iuran Tetap setiap tahun dan membayar Royalty sesuai dengan ketentuan peraturan perundang-undangan;
16. Menempatkan jaminan reklamasi sebelum melakukan kegiatan produksi dan rencana penutupan tambang sesuai ketentuan peraturan perundang-undangan;
17. Menyampaikan RPT (Rencana Penutupan Tambang) 2 Tahun sebelum kegiatan produksi berakhir;
18. Mengangkat seorang Kepala Teknik Tambang yang bertanggung jawab atas Kegiatan IUP Operasi Produksi (Konstruksi, Produksi, Pengolahan Pemurnian dan Pengangkutan Penjualan), Keselamatan dan Kesehatan Kerja Pertambangan serta Pengelolaan Lingkungan Pertambangan;
19. Kegiatan produksi dimulai apabila kapasitas produksi terpasang sudah mencapai 70% yang direncanakan;
20. Permohonan Perpanjangan IUP untuk Kegiatan Produksi harus diajukan 2 (dua) tahun sebelum berakhirnya masa izin ini dengan disertai pemenuhan persyaratan;
21. Kelalaian atas ketentuan tersebut pada butir 20, mengakibatkan IUP Operasi Produksi berakhir menurut hukum dan segala usaha pertambangan dihentikan. Dalam jangka waktu paling lama 6 (enam) bulan sejak berakhirnya keputusan ini. Pemegang IUP Operasi Produksi harus mengangkat keluar segala sesuatu yang menjadi miliknya, kecuali benda-benda/bangunan-bangunan yang dipergunakan untuk kepentingan umum;
22. Apabila dalam jangka waktu sebagaimana dimaksud dalam butir 21, pemegang IUP Operasi Produksi tidak melaksanakan maka barang/aset pemegang IUP menjadi milik pemerintah;
23. Pemegang IUP Operasi Produksi harus menyediakan data dan keterangan sewaktu-waktu apabila dikehendaki oleh pemerintah;
24. Pemegang IUP Operasi Produksi membolehkan dan menerima apabila pemerintah sewaktu-waktu melakukan pemeriksaan;
25. Menerapkan kaidah pertambangan yang baik;
26. Mengelola keuangan sesuai dengan sistem akuntansi Indonesia;
27. Melaporkan pelaksanaan pengembangan dan pemberdayaan masyarakat setempat secara berkala;
28. Mengutamakan pemanfaatan tenaga kerja setempat, barang dan jasa dalam negeri sesuai dengan ketentuan peraturan perundang-undangan;
29. Mengutamakan pembelian dalam negeri dari pengusaha lokal yang ada di daerah tersebut sesuai dengan ketentuan peraturan perundang-undangan;
30. Mengutamakan seoptimal mungkin penggunaan perusahaan jasa pertambangan lokal dan/atau nasional;
31. Dilarang melibatkan anak perusahaan dan/atau afiliasinya dalam bidang usaha jasa pertambangan di WUP yang diusahakannya, kecuali dengan izin Menteri;
32. Melaporkan data dan pelaksanaan penggunaan usaha jasa penunjang;
33. Menyerahkan seluruh data yang diperoleh dari hasil kegiatan IUP Operasi Produksi kepada Bupati dengan tembusan Menteri dan Gubernur;
34. Menyampaikan proposal yang sekurang-kurangnya menggambarkan aspek teknis, keuangan, produksi dan pemasaran serta lingkungan sebagai persyaratan pengajuan permohonan perpanjangan IUP Operasi Produksi;
35. Memberikan ganti rugi kepada pemegang hak atas tanah dan tegakan yang terganggu akibat kegiatan IUP Operasi Produksi;
36. Mengutamakan pemenuhan kebutuhan dalam negeri (DMO) sesuai ketentuan perundang-undangan;
37. Penjualan produksi kepada afiliasi harus mengacu kepada harga pasar;
38. Kontrak penjualan jangka panjang (minimal 3 tahun) harus mendapat persetujuan terlebih dahulu dari Menteri;
39. Perusahaan wajib mengolah produksinya didalam negeri.
40. Pembangunan sarana dan prasarana pada kegiatan konstruksi antara lain meliputi :
    a. Fasilitas-fasilitas dan peralatan pertambangan;

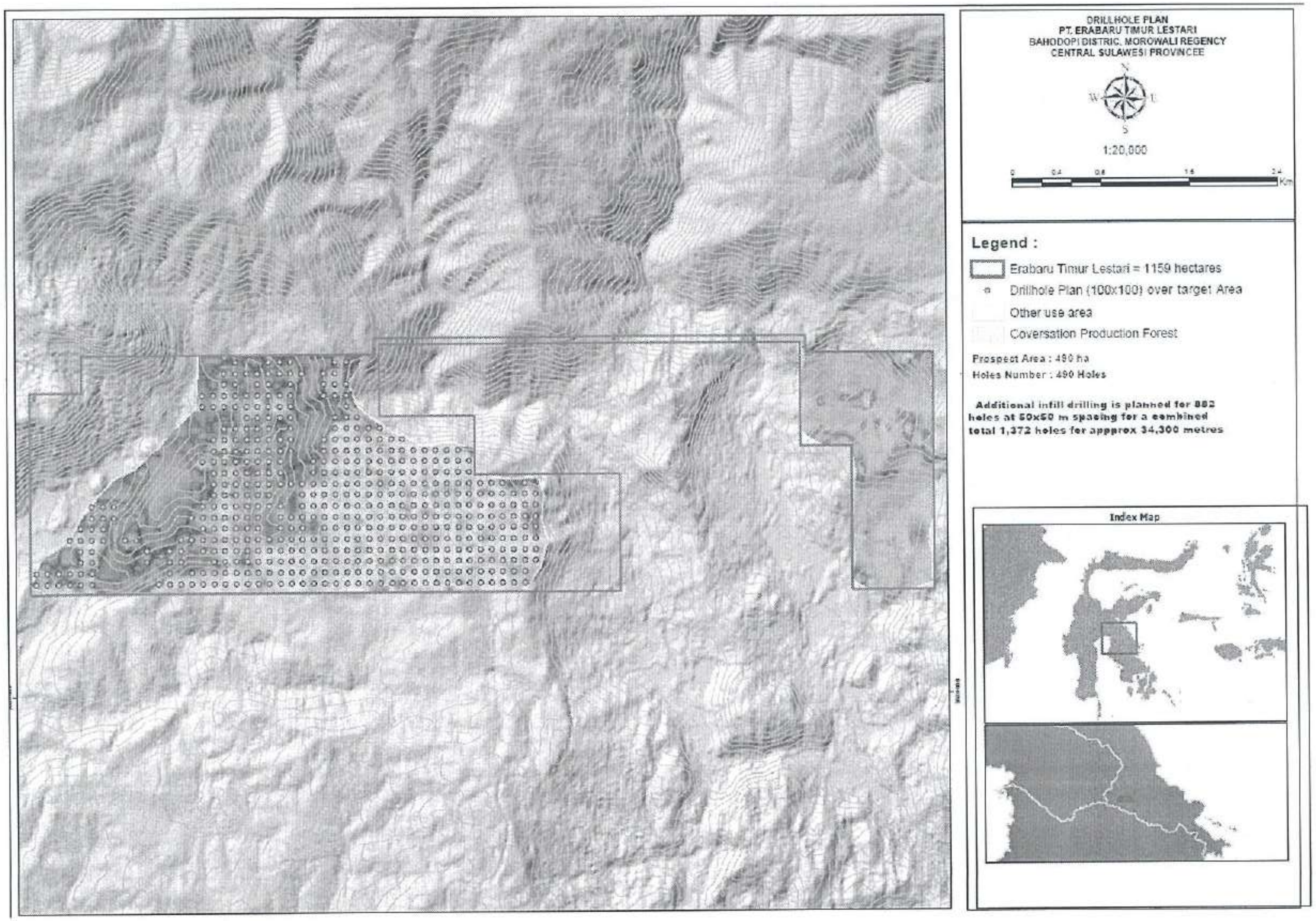
b. Instalasi dan peralatan peningkatan mutu mineral/batubara;
c. Fasilitas-fasilitas Bandar yang dapat meliputi dok-dok, pelabuhan-pelabuhan, dermaga-dermaga, jembatan-jembatan, tongkang-tongkang, pemecah-pemecah air, fasilitas-fasilitas terminal, bengkel-bengkel, daerah-daerah penimbunan, gudang-gudang, dan peralatan bongkar muat;
d. Fasilitas-fasilitas transportasi dan komunikasi yang dapat meliputi jalan-jalan, jembatan-jembatan, kapal-kapal, feri-feri, pelabuhan-pelabuhan udara, rel-rel, tempat-tempat pendaratan pesawat, hanggar-hanggar, garasi-garasi, pompa-pompa BBM, fasilitas-fasilitas radio dan telekomunikasi, serta fasilitas-fasilitas jaringan telegraph dan telepon;
e. Perkotaan, yang dapat meliputi rumah-rumah tempat tinggal, toko-toko, sekolah-sekolah, rumah sakit, teater-teater dan bangunan lain, fasilitas-fasilitas dan peralatan pegawai kontraktor termasuk tanggungan pegawai tersebut;
f. Listrik, fasilitas-fasilitas air dan air buangan dan dapat meliputi pembangkit-pembangkit tenaga listrik (yang dapat berupa tenaga air, uap, gas atau diesel), jaringan-jaringan listrik, dam-dam, saluran-saluran air, sistem-sistem penyediaan air dan sistem-sistem pembuangan limbah (tailing), air buangan pabrik dan air buangan rumah tangga;
g. Fasilitas-fasilitas lain-lain yang dapat meliputi namum tidak terbatas, bengkel-bengkel mesin, bengkel-bengkel pengecoran dan reparasi;
h. Semua fasilitas tambahan atau fasilitas lain, pabrik dan peralatan yang dianggap perlu atau cocok untuk operasi pengusahaan yang berkaitan dengan WIUP atau untuk menyediakan pelayanan atau melaksanakan aktifitas-aktifitas pendukung atau aktifitas yang sifatnya insidentil.

BUPATI

BUPATI MOROWALI

ANWAR HAFID

APPENDIX B / *LAMPIRAN B*
INITIAL EXPLORATION PROGRAM / *PROGRAM EKSPLORASI AWAL*



COMMERCIAL TERMS OF THE ACQUISITION

MJN and ETL IUPs

- Nickel Industries to acquire 60% of the control and economic rights in each of MJN and ETL.
- Refundable commitment fee of US$3.0 million for each of MJN and ETL (US$5.9 million in total) (**Commitment Fee**), payable upon completion of the due diligence period, which is up to 90 days.
- Following the issuance of a positive due diligence notice, Nickel Industries will carry out an agreed Initial Exploration Program (**IEP**) within 18 months and for the purpose of determining the purchase consideration payable to the vendor at completion.
- After the IEP, Nickel Industries shall pay to the Vendor the purchase consideration, calculated as:

60% * the JORC Resource[1] * US$2.50 per dmt above 1.70% nickel.

- Nickel Industries will provide an Exclusive Financing Commitment (**EFC**) in the form of interest-bearing loans, repayable prior to any dividend distributions.
- Nickel Industries shall receive an agency fee from the first production from the IUPs, as compensation for the Commitment Fee.

GF IUP

- Nickel Industries to acquire 60% of the control and economic rights in GF for a total consideration of US$7 million, payable as follows:
  - an advance payment of US$2 million (already paid);
  - a first milestone payment of US$3 million (already paid); and
  - a final payment of US$2 million upon the transfer of 60% of GF to Nickel Industries.
- Nickel Industries will provide an EFC in the form of interest-bearing loans, repayable prior to any dividend distributions.
- **An application has been submitted to extend GF by an area of 491ha of prospective laterite**. Should this application be successful, Nickel Industries is to pay the vendor an additional US$4 million.

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[1] Measured, indicated and inferred in dmt

APPENDIX 3

PT HENGJAYA MINERALINDO LABORATORY QAQC REPORT

PT. Hengjaya Mineralindo

PT HENGJAYA MINERALINDO
NICKEL MINES LIMITED
DEPARTEMENT QUALITY CONTROL
Site Tangofa. Desa Tangofa Kecamatan Bungku Pesisir Kabupaten Morowali Sulawesi Tengah
Head Office Menara Rajawali 22nd Jln.DR Ide Anak Agung Gede Agung Lot 5#1 Mega Kuningan Jakarta Selatan 12950 Indonesia
Telp / Fax : (021) 29408230 - (021) 29408228 Email : sop@hengjaya.co.id

STANDAR OPERASIONAL PROSEDUR
QAQC LABORATORIUM

UTAMAKAN KESELAMATAN DAN KESEHATAN KERJA

PT. Hengjaya Mineralindo

PT HENGJAYA MINERALINDO
NICKEL MINES LIMITED
JOB SITE MOROWALI SULAWESI TENGAH INDONESIA

DEPARTMENT
QUALITY CONTROL
DIVISI
LABORATORIUM

STANDAR OPERASIONAL PROSEDUR
IMPLEMENTASI QUALITY CONTROL/QUALITY ASSURANCE DI LABORATORIUM

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4. DEFINISI/DEFINITION --------------------3
5. PROSEDUR/PROCEDURE --------------------4
6. REFERENSI/REFERENCE --------------------7
7. LAMPIRAN/ATTACHMENTS --------------------8

DEPARTMENT		OTORISASI/AUTHORIZATION			
Quality Control		DISIAPKAN/PREPARED	DIPERIKSA/CHECKED	DISETUJUI/APPROVED	DIKETAHUI/ ACKNOWLEDGE
DOCUMENT NO 023/SOP-QAQC/HM-QC/LAB/VII/2020 EFFECTIFE DATE Sept 25th, 2020 DISTRIBUTED			25/09/20		
Quality Control		LILIK KRISMAWANTO	WILLEM DIQUE	MUHAMMAD ILHAM	TONY LEE GREEN
REVISION 00	PAGE 01 - 07	HEAD OF DEPT. QUALITY CONTROL	OPERATIONS MANAGER	CHIEF TECHNICAL OF MINE	CHIEF OPERATION OFFICER

1. TUJUAN

Tujuan dari *Quality Assurance* (QA) adalah menjamin kualitas produk yang dihasilkan dan memastikan proses pembuatan produk tersebut sesuai dengan standar dan persyaratan yang telah ditentukan. Kegiatan Quality Assurance diantaranya memastikan Presisi dan akurasi pengerjaan.

Tujuan utama *Quality Control* (QC) adalah memastikan bahwa produk yang akan dikirimkan ke pelanggan adalah sesuai dengan spesifikasi dan kualitas yang telah disepakati dan dapat diterima sesuai dengan persyaratan kualitas yang ditentukan. Jika ditemukan produk yang tidak sesuai dengan spesifikasi dan kualitas yang telah ditentukan maka diperlukan tindakan perbaikan yang sesuai.

PURPOSE

Quality Assurance (QA) is a proactive approach to ensure that the chemical analyses of samples are correct and accurate. It involves the addition of check samples such as blanks, duplicates, replicates and standards. Quality Assurance activities ensure work precision and accuracy.

Quality Control (QC) is a reactive process analysing the data collected from the lab to ensure that the information given to customers are in accordance with agreed specifications and quality. It occurs through controlling sub-sampling precision and contamination during sample preparation and controlling analytical precision and analytical precision during the sample assaying process. If a product is not in accordance with the specified specifications and quality, then appropriate corrective action is required.

2. RUANG LINGKUP

SOP ini berlaku untuk seluruh area PT Hengjaya Mineralindo, terutama di QA/QC Departement.

SCOPE

This SOP describes the activities specifically undertaken at the PT Hengjaya Mineralindo QA/QC Department.

3. PENANGGUNG JAWAB

Supervisor/Pengawas memastikan bahwa seluruh area kerja, dan timnya sudah siap untuk melakukan pekerjaan dengan baik, sudah memahami alur kerja yang benar sesuai dengan metode standar yang akan dilakukan.

Foreman memastikan seluruh peralatan kerja dalam kondisi baik, crew yang bekerja sudah dilengkapi dengan APD yang sesuai, dan lingkungan tempat bekerja sudah bersih untuk menghindari kontaminasi saat proses berlangsung.

Crew memastikan sudah siap dengan APD yang sesuai, dan sudah memahami tugas yang diberikan oleh foreman.

RESPONSIBILITY

Supervisor *ensures that the entire work area, and his team, are ready to do the job properly, have understood the correct flowsheet as described in the SOP. Is responsible for ensuring all analyses are accurate and correct and remedying any errors before the final results are entered onto the database and circulated to internal, and especially, external recipients.*

Foreman *ensures that all work equipment is in good condition, the working crew is equipped with appropriate PPE, and the workplace environment is clean to avoid contamination during the process.*

Crew *ensures that they are ready with the appropriate PPE, and that they understand the assignment given by the foreman.*

4. DEFINISI

Akurasi adalah tingkat ketidakadaan "bias" (kekeliruan) dalam sampel. Dengan kata lain makin sedikit tingkat kekeliruan yang ada dalam sampel, makin akurat sampel tersebut. Tolak ukur adanya "bias" atau kekeliruan adalah populasi. Biasanya akurasi menyatakan seberapa dekat nilai hasil pengukuran dengan nilai sebenarnya *(true value)* atau nilai yang dianggap benar *(accepted value)*. Jika tidak ada data sebenarnya atau nilai yang dianggap benar tersebut maka tidak mungkin untuk menentukan beberapa akurasi pengukuran tersebut.

Presisi adalah mengacu pada persoalan sedekat mana estimasi kita dengan karakteristik populasi. Presisi diukur oleh simpangan baku *(standart error)*. Makin kecil perbedaan diantara simpangan baku yang diperoleh dari sampel (S) dengan simpangan baku dari populasi (S), makin tinggi pula tingkat presisinya. Biasanya presisi menyatakan seberapa dekat nilai hasil dua kali atau lebih pengulangan pengukuran. Semakin dekat nilai – nilai hasil pengulangan pengukuran maka semakin presisi pengukuran tersebut.

DR Sample adalah control sample pada proses penghancuran sample menjadi ukuran 2mm (10mesh) menggunakan *double roll crusher* dan dibagi menjadi dua bagian yang sama (homogen) menggunakan splitter.

DA Sample adalah control sample pada proses penghalusan sample menjadi ukuran 0.07mm (200mesh) menggunakan *pulverizer* dan dibagi menjadi dua bagian yang sama (homogen) dengan matrix 4x5 skop 0.25D.

Blank Sample berupa control sample tanpa kandungan elemen Nikel, Besi dan Kobalt seperti batu kapur atau pasir kuarsa, dan biasanya digunakan untuk mengecek ada atau tidaknya kontaminasi saat proses pengerjaan sample.

Sieving Test adalah control yang dilakukan pada proses pengayakan sample untuk pengecekan kehalusan sample (-200 mesh). Standard yang kami tetapkan yaitu 95% sample yang lolos dari ayakan, apabila kurang dari 95% ini akan menjadi control pada tingkat kehalusan sample dan efeknya akan berpengaruh kepada homogenitas sample.

DEFINITION

Accuracy *is the degree of absence of "bias" (error) in the sample. In other words, the less errors there are in the sample, the more accurate the sample. The benchmark of "bias" or error is the population. Usually accuracy states how close the value of the measurement results to the true value (true value) or the value that is considered true (accepted value). If no actual data or values are considered correct then it is not possible to determine some of the accuracy of these measurements.*

Precision *is referring to the problem as close as our estimation to the characteristics of the population. Precision is measured by the standard deviation (standard error). The smaller the difference between the standard deviation obtained from sample (S) and the standard deviation from population (S), the higher the precision level. Usually precision states how close the result is to two or more measurements. The closer the values of the measurement results are, the more precise the measurement is.*

DR sample *is a control sample collected from the double roll crusher product where two splits are taken from the same sample to test the homogeneity and precision of the splitting and crushing process.*

DA Sample *is a control sample collected from the final 200# (75 micron) fines product where two splits are taken from the same sample to test the analytical precision of the pulverizing and incremental splitting process using a matrix of 4 x 5 and a 0.25D scoop.*

Blank Sample *is a control sample barren in the elements being analysed, eg Ni, Fe and Co, such as limestone or quartz sand, and are used to test for contamination during the sample preparation and assay stages.*

Sieving Test *is a particle sizing test exercise to test the fineness of the sample crushing and pulverizing stages. A standard of 95% of the 200# screened product is required to pass the 200# screen to ensure adequate homogeneity of the sample to be assayed.*

Replicate Sample adalah sample control dimana satu bagian dari sample pulp digunakan untuk menghasilkan dua sample pellet yang diberi nomor sample berbeda dan dimasukkan kedalam batch atau lembar kerja yang sama. Replikat sample dilakukan untuk menghetahui keakuratan hasi Analisa sampel.

Certified Reference Material (CRM) Sample adalah sample yang disiapkan secara khusus dengan nilai rata-rata yang tersertifikasi dari element misalnya Ni, Fe, dan Co dalam standar dengan batas kepercayaan dan toleransi yang terkait. CRM digunakan untuk memantau nilai sample yang sedang diuji, unutk memungkinkan kami memantau keakuratan proses pengujian.

Cross Check Sample adalah hasil split dari sample yang diuji pertama kali di PT HM dan kemudian dikirim ke laboratorium komersial atau independen untuk membandingkan keakuratan Lab HM terhadap laboratorium yang lain.

5. PROSEDUR

1. DR Sample :

1.1. Sample dihancurkan menggunakan Double Roll Crusher.
1.2. Membagi sample menjadi dua bagian yang sama menggunakan Splitter (Bagian A dan Bagian B).
1.3. Bagian A sebagai sample original dan Bagian B sebagai sample DR.
1.4. Sample DR dianalisa bersama dengan sample Original.
1.5. Untuk sample Explorasi pengambilan sample DR dilakukan dua kali setiap satu Batch sample (jumlah 100sample/job) secara sistematis. Dan untuk sample mining dan sample produksi, pengambilan sample secara acak.

***Replicate Sample** is a control sample where one portions of the same pulp sample are used to produce two separate pressed powder pellets that are given different sample numbers and inserted into the same batch, or Job Sheet. Replicate samples are carried out to determine the accuracy of the results of sample analysis.*

Certified Reference Materials (CRMs) are especially prepared samples with certified mean values of elements eg Ni, Fe and Co, in the standard, with associated confidence and tolerance limits. They are used to monitor the values of the standard against the values of the unknown samples being assayed, to allow us to monitor the accuracy of the assay process.

***Check Sample / Interlaboratory Check** are second splits of samples assayed first at the PT HM and sent to commercial or independent laboratories to compare the accuracy of the HM lab relative to the another laboratory.*

PROCEDURE

1. DR Sample :

1.1. The sample is crushed using a Double Roll Crusher.
1.2. Divide the sample into two equal parts using a Jones Riffle Splitter (Part A and Part B).
1.3. Part A is the original sample and Part B is the DR sample.
1.4. DR samples are analyzed in the same batch together with the original sample.
1.5. For exploration samples, DR samples are taken twice per batch of samples (total 100 samples), and systematically. For mining samples and production samples are taken with random sampling.

2. DA Sample :

2.1. Sample yang berukuran ± 2mm (Bagian A) Dihaluskan menggunakan Pulverizer hingga berukuran 200mesh.

2.2. Membagi sample menjadi dua bagian yang sama (Bagian A1 dan Bagian A2) dengan menggunakan Martix 4x5 skop 0.25D.

2.3. Bagian A1 sebagai sample original dan Bagian A2 sebagai sample DA.

2.4. Sample DA dianalisa bersama dengan sample Original.

2.5. Untuk sample Explorasi pengambilan sample DA dilakukan dua kali setiap satu Batch sample (jumlah 100sample/job) secara sistematis. Dan untuk sample mining dan sample produksi, pengambilan sample secara acak.

3. Blank Sample :

3.1. Sample Batuan (batu gamping) yang tidak mengandung Unsur Ni Dan Fe kemudian di hancurkan dengan menggunakan Jaw Crusher hingga berukuran ± 5mm.

3.2. Sampel tersebut kemudian di hancurkan kembali menggunakan Double Roll Crusher hingga berukuran 2mm.

3.3. Dihaluskan menggunakan Pulverizer hingga menghasilkan partikel yang berukuran 200mesh (0.07mm).

3.4. Sample kemudian di press menggunakan press cup.

3.5. Dianalisa menggunakan ED-XRF.

4. Sieving Test :

4.1. Sample pulp yang berukuran 200mesh kemudian ditimbang sebanyak ±50gr, dan dicatat sebagai W_1.

4.2. Diayak menggunakan ayakan dengan ukuran partikel 200mesh.

4.3. Sample yang lolos dari ayakan kemudian ditimbang, dan dicatat sebagai W_2.

4.4. Perhitungan : $(W_2/ W_1) \times 100$.

4.5. Sieving yang bagus diatas 95%.

2. DA Sample :

2.1. Samples of ± 2mm material (Part A) were pulverised using a Pulverizer to 200mesh, -75 micron size.

2.2. Incremental splitting of the sample into two equal parts (Part A1 and Part A2) using a 4x5 Matrix and 0.25D scoop.

2.3. Part A1 is the original sample and Part A2 is the DA sample.

2.4. The DA sample is analyzed in the same batch as the original sample.

2.5. For exploration samples, DA sample is taken twice in every one Batch of samples (total 100 samples / job) systematically. And for mining sample and production sample is taken in random sequence.

3. Blank Sample :

3.1. Rock samples (limestone) that do not contain Ni and Fe elements are crushed using a Jaw Crusher to a size of ± 5mm.

3.2. The sample is then crushed again using Double Roll Crusher to +/- 2mm in size.

3.3. Pulverised using a Pulverizer to produce particles passing 200mesh screen (75 micron).

3.4. The sample is then pressed into a pressed powder pellet using a press cup.

3.5. Analyzed using ED-XRF.

4. Sieving Test :

4.1. Pulp samples passing 200mesh screen are weighed ± 50g, and are referred to as W1.

4.2. Screened using a sieve with a particle size of 200mesh.

4.3. The samples that passed the sieve were weighed and recorded as W2.

4.4. Calculation: (W2 / W1) x 100.

4.5. Test is positive test when >95% sample passes the 200# screen.

5. ***Replicate Sample :***

5.1. Sample pulp yang berukuran 200mesh kemudian di press sebagai original sampel.

5.2. Sample yang sama kemudian di press kembali seperti proses awal sebagai Replicate Sample.

5.3. Dianalisa menggunakan ED-XRF.

6. **Certified Reference Material (CRM) *Sample :***

6.1. 10 gram CRM sample (Oreas) di press menggunakan alat pres cup.

6.2. Dianalisa menggunakan ED-XRF dengan mengikutkan sample original yang lain.

7. **Cross Check Assay Sample :**

7.1. Mengambil arsip sample Explorasi sebanyak empat sample setiap batch secara sistematis .

7.2. Mengambil arsip sample Mining dan sample produksi sebanyak satu sample setiap batch secara Random.

7.3. Total jumlah sample Cross Check sebanyak 4% dari jumlah total sample setiap bulannya.

7.4. Sample siap dikirim ke LAB Independen.

8. **AKURASI :**

8.1 Mengumpulkan semua data CRM Sample (OREAS) hasil pembacaan WD-XRF.

8.2. Menghitung standar deviasi dari data yang telah dikumpulkan.

8.3 Standar deviasi tersebut sebagai acuan untuk Upper dan lower garis batas toleransi ukuran (dua dan tiga kali dari nilai standar deviasi).

8.4. Nilai acuan akurasi diambil dari nilai CRM yang bersertifikat.

8.5. Dibuat Grafik (XY Scatter) berdasarkan data yang didapatkan.

8.6. Akurasi yang bagus menunjukkan nilai original dan sampel adalah sama.

5. ***Replicate Sample :***

5.1. Approx. 10 gr of 200# pulp sample is used to make a pressed powder pellet, the original sample.

5.2. A further split of the same sample is also processed into a Replicate Sample.

5.3. Analyzed using ED-XRF.

6. ***Certified Reference Material (CRM) Sample :***

6.1. A 10 gr sample of the OREAS standard sample (OREAS) is pressed into a powdered pellet.

6.2. This pellet analyzed using ED-XRF along with original samples in that particular batch.

7. ***Cross Check Assay Sample :***

7.1. Four exploration samples systematically taken from each batch (from stored sample archive).

7.2. With mining and production samples, one sample taken randomly from each batch.

7.3. The total number of Cross Check Assay samples is 4% of the total number of samples assayed each month.

7.4. Samples are sent to the Independent LAB (Geoservices, Intertek, Other) for independent assay.

8. ***ACCURACY***

8.1. Collect all CRM Sample (OREAS) data from WD-XRF readings.

8.2. Calculate the standard deviation of the data that has been collected.

8.3 The standard deviation is a reference for the upper and lower limits of the tolerance (twice and three times the standard deviation value) and confidence limits.

8.4. The accuracy reference value is taken from the certified CRM value.

8.5. Produce scatterplots (XY Scatter) for the data obtained.

8.6. Good accuracy shows that the original and sample values are the same.

9. PRESISI :

9.1 Mengumpulkan semua data dari sample DA, DR, Duplikat, Cross check assay dan data original dari berbagai jenis sampel tersebut.

9.2. Menghitung koefisien determinasi (R^2) dari perbandingan data originalnya.

9.3. Dibuat Grafik (XY Scatter) berdasarkan data yang didapatkan.

9.4. Presisi yang bagus menunjukkan nilai R^2 sama dengan 1.

9. PRECISION

9.1 Collect all data from DA, DR, Replicate, Cross check assay and original data from differen sample types.

9.2. Calculate the correlation coefficient (R^2) for th data set for the original data.

9.3. Produce scatterplot (XY Scatter) based on the dat obtained.

9.4. Excellent precision shows R^2 is equal to 1.

6. REFERENSI

References

7. Lampiran *Attachment*

SOP LOG SHEET SOCIALIZATION

No	Name	Position	Department	Signature	
1				1	
2					2
3				3	
4					4
5				5	
6					6
7				7	
8					8
9				9	
10					10
11				11	
12					12
13				13	
14					14
15				15	
16					16
17				17	
18					18
19				19	
20					20
21				21	
22					22
23				23	
24					24

Coarse Duplicate Samples

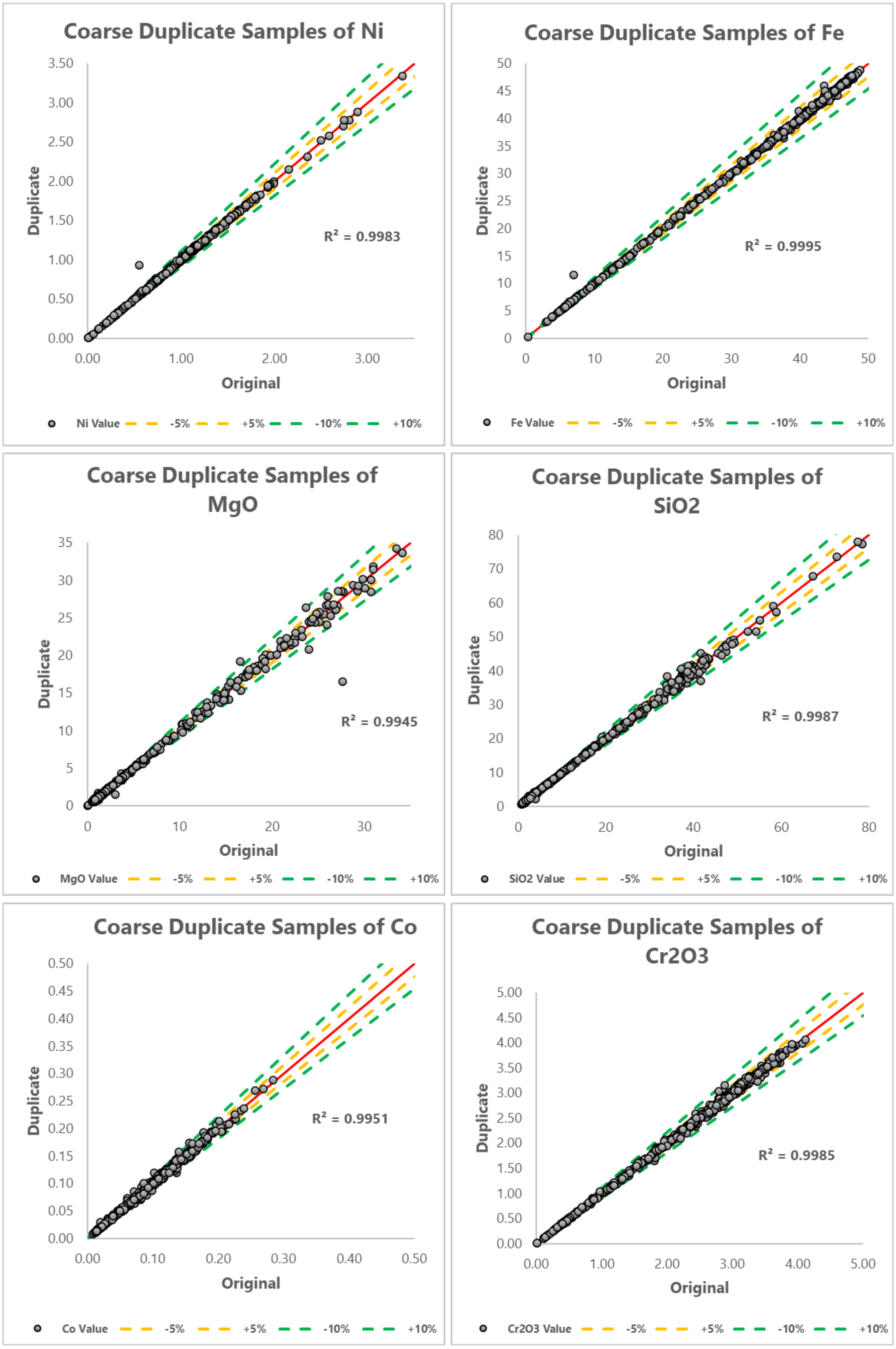


Figure 1 QAQC of Coarse duplicate samples

Pulverize Duplicate Samples

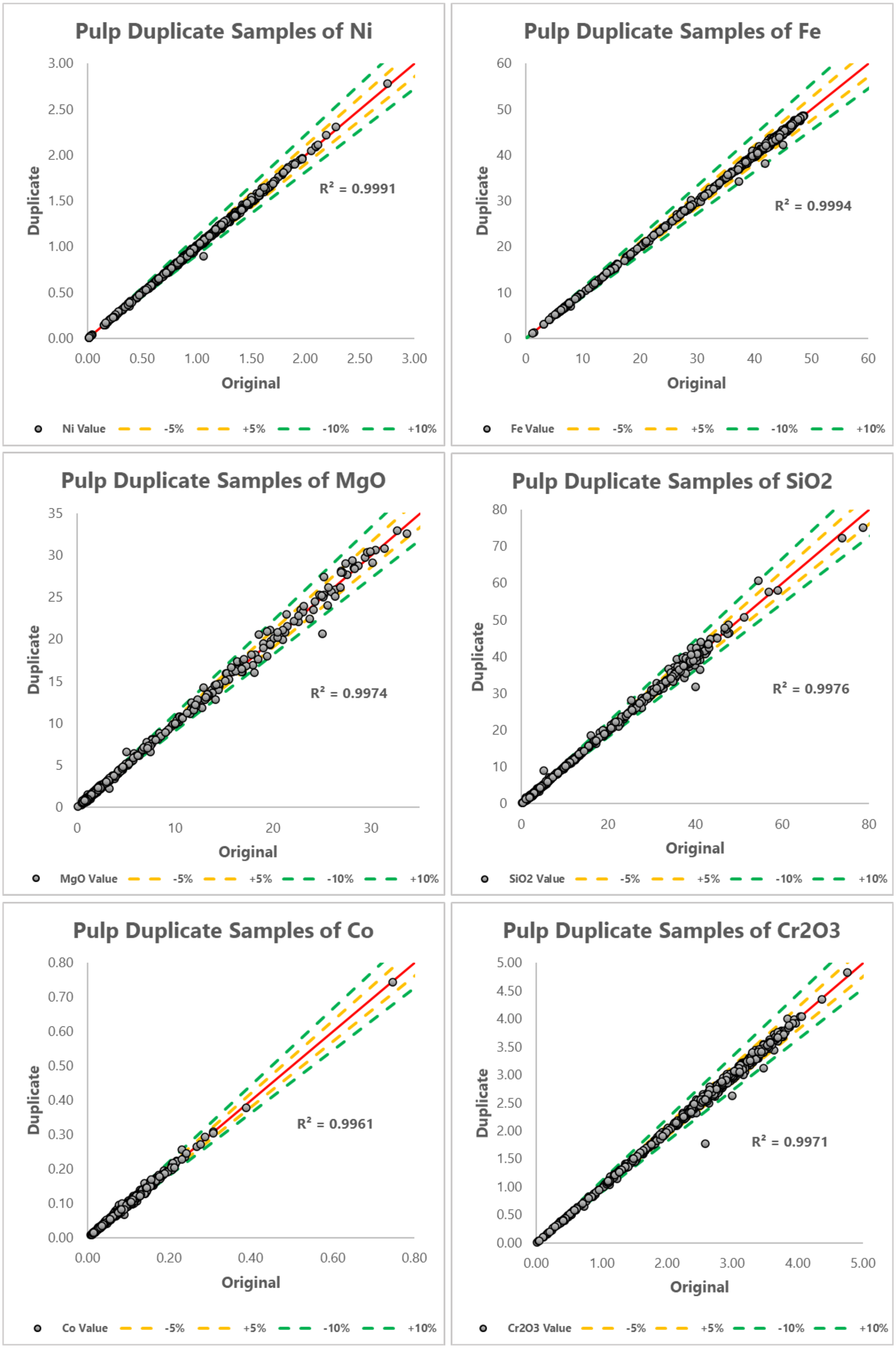
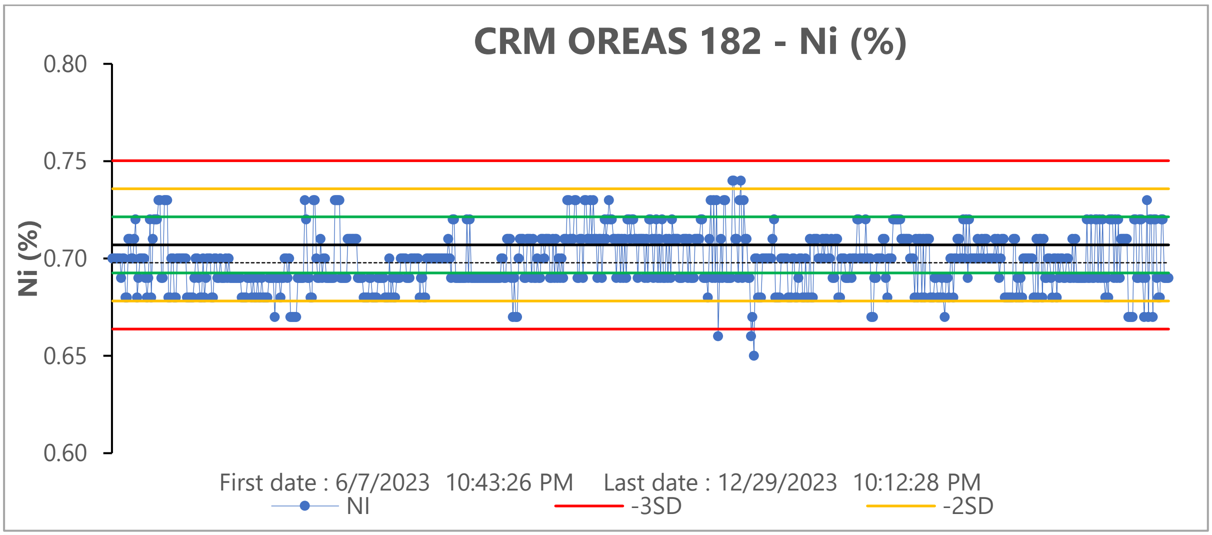
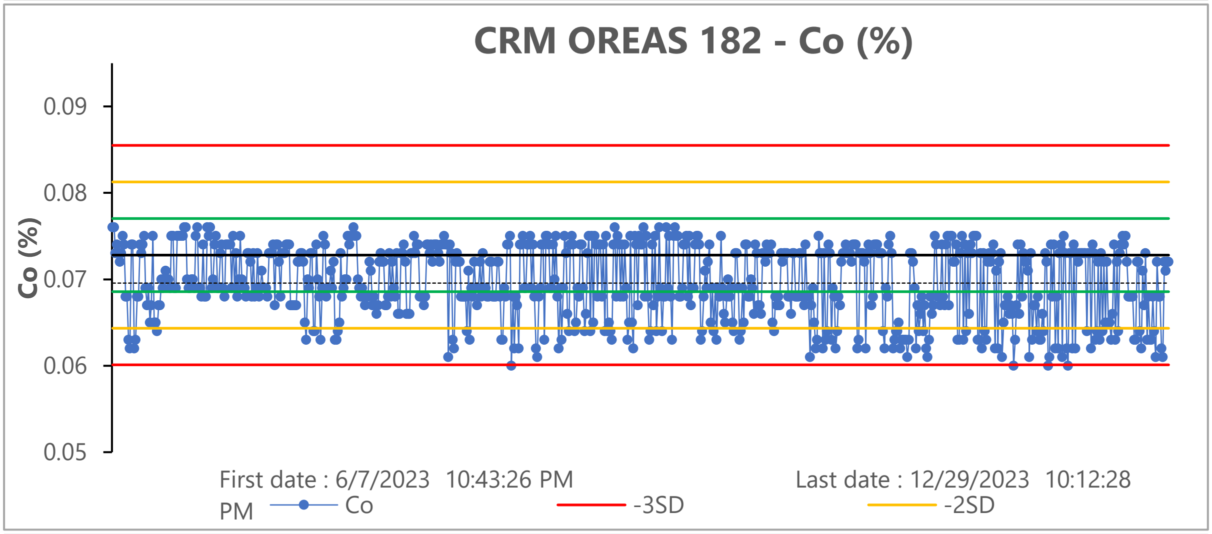


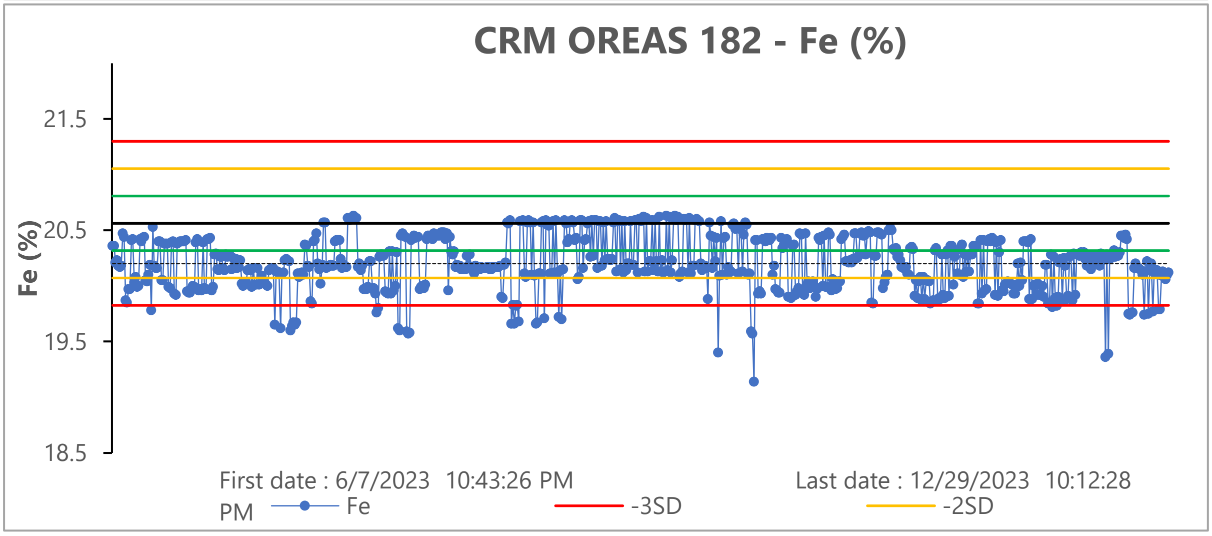
Figure 2 QAQC of pulverize duplicate samples

Certified Reference Materials

OREAS182







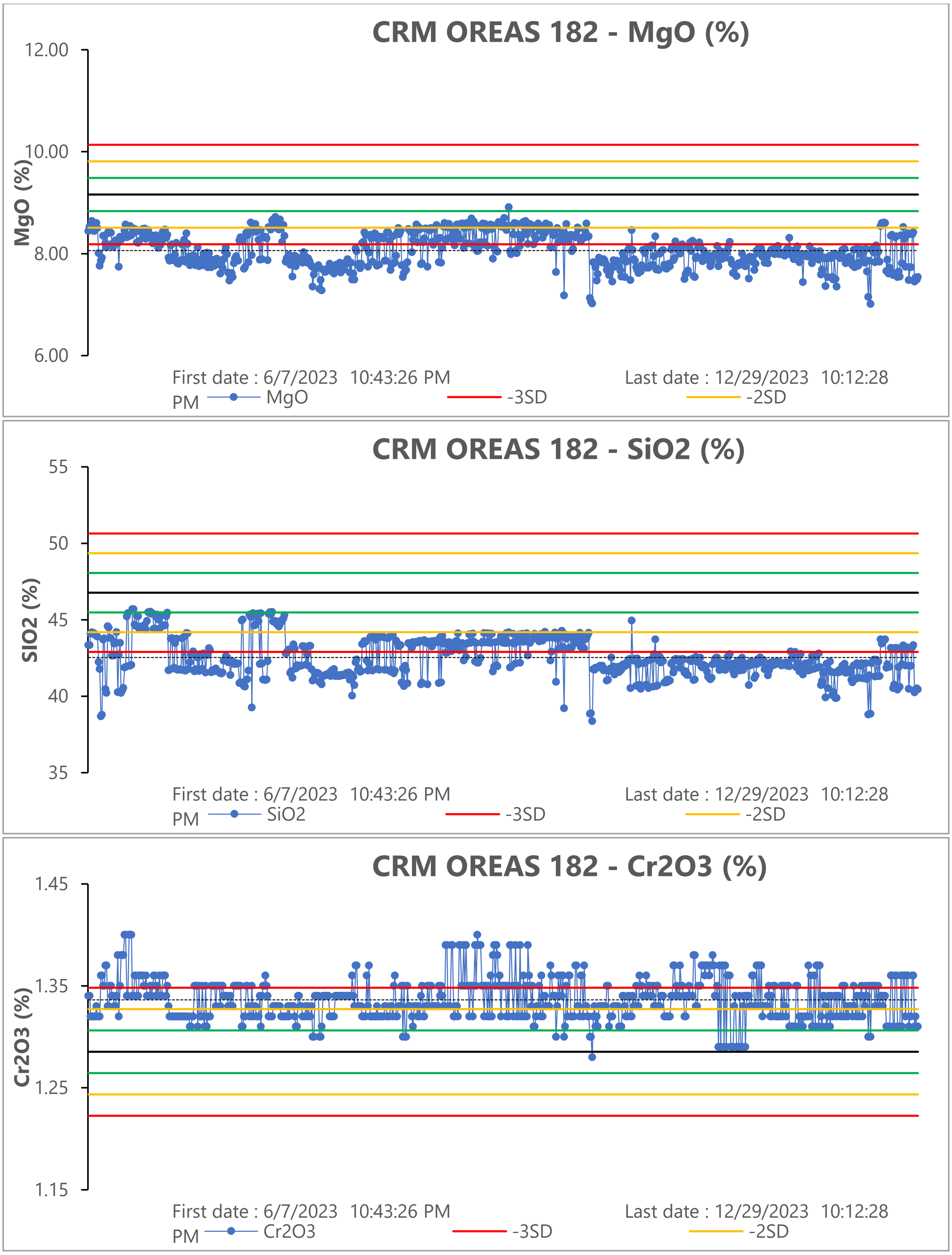
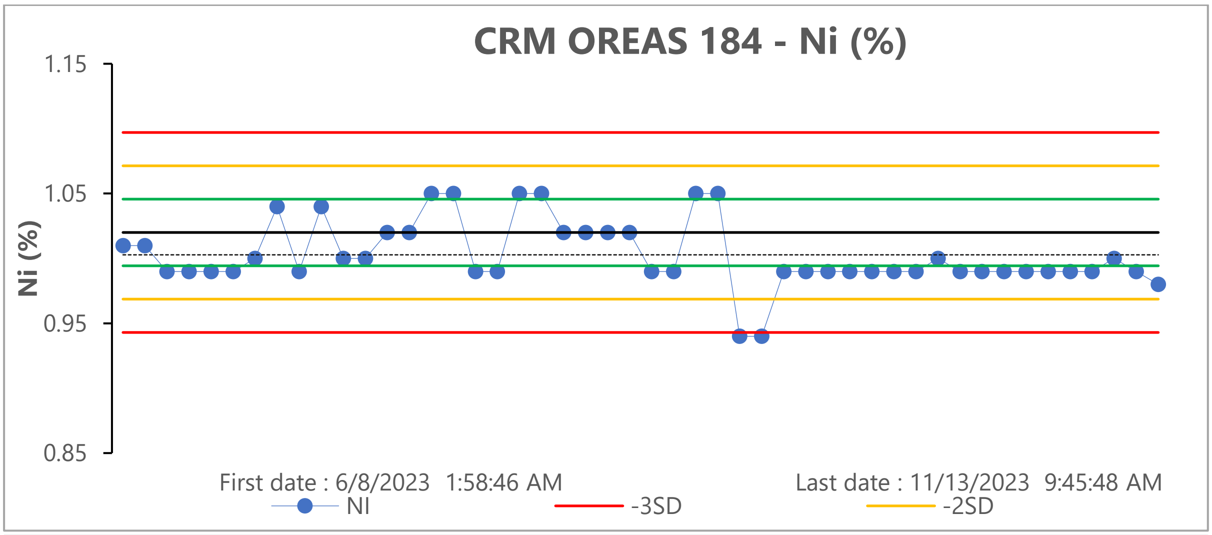
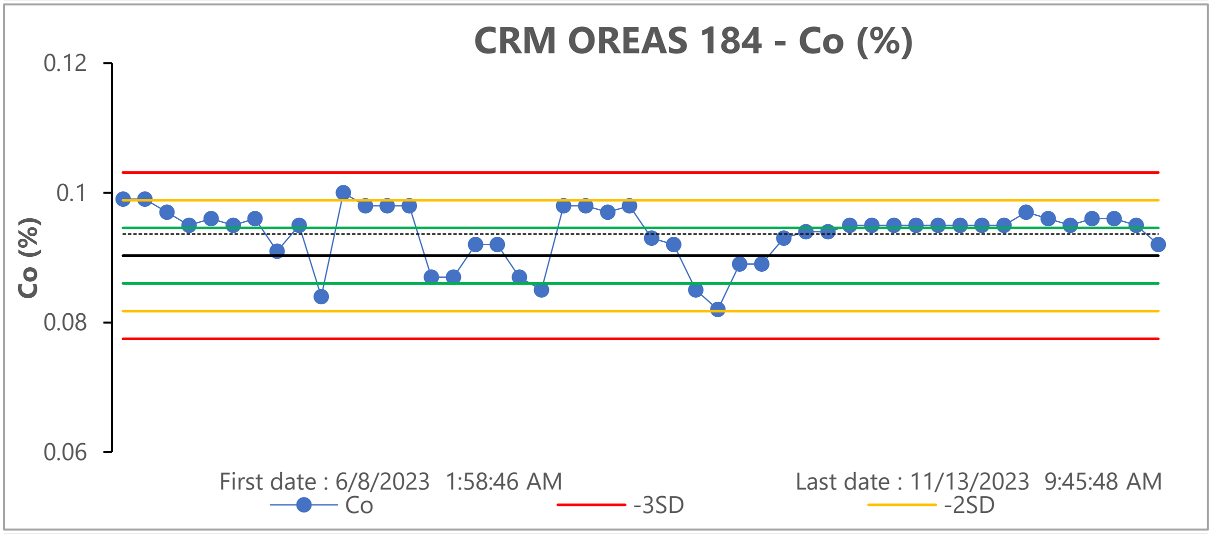
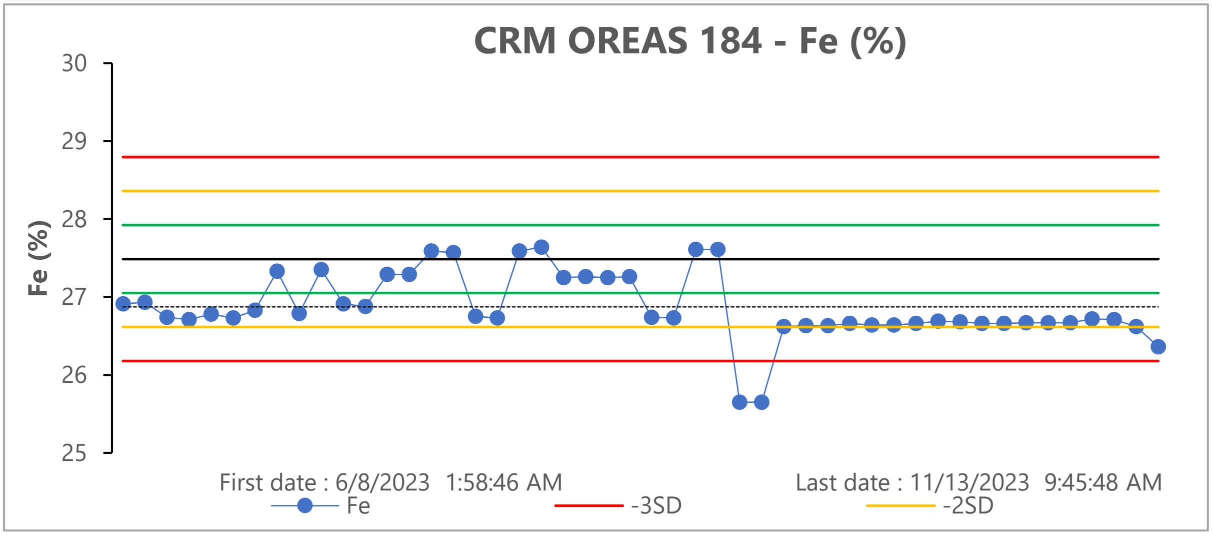


Figure 3 QAQC of CRM, OREAS182

OREAS184


CRM OREAS 184 - Ni (%)
1.15
1.05
0.95
0.85
Ni (%)
First date : 6/8/2023 1:58:46 AM
Last date : 11/13/2023 9:45:48 AM
NI
-3SD
-2SD


CRM OREAS 184 - Co (%)
0.12
0.1
0.08
0.06
Co (%)
First date : 6/8/2023 1:58:46 AM
Last date : 11/13/2023 9:45:48 AM
Co
-3SD
-2SD


CRM OREAS 184 - Fe (%)
30
29
28
27
26
25
Fe (%)
First date : 6/8/2023 1:58:46 AM
Last date : 11/13/2023 9:45:48 AM
Fe
-3SD
-2SD

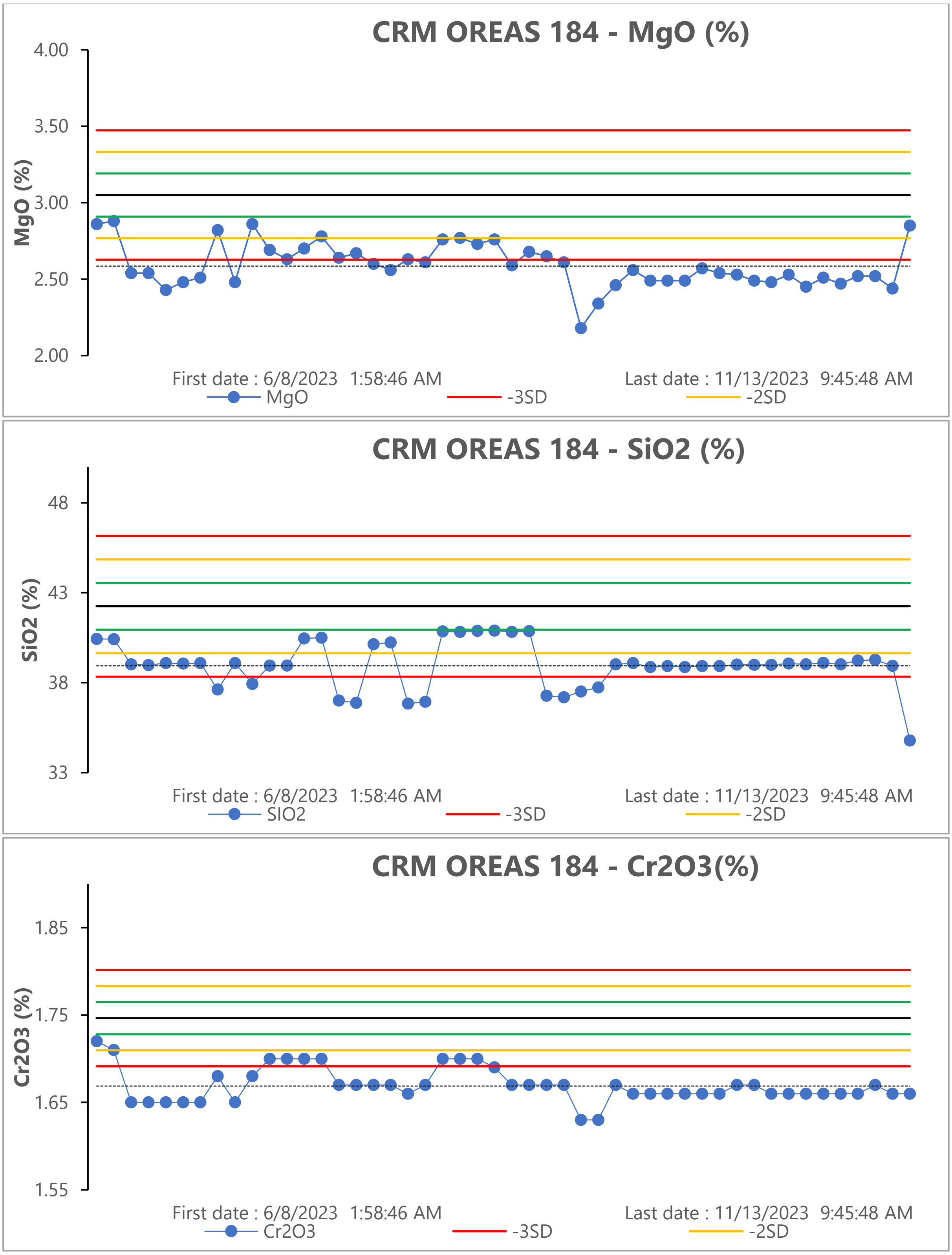
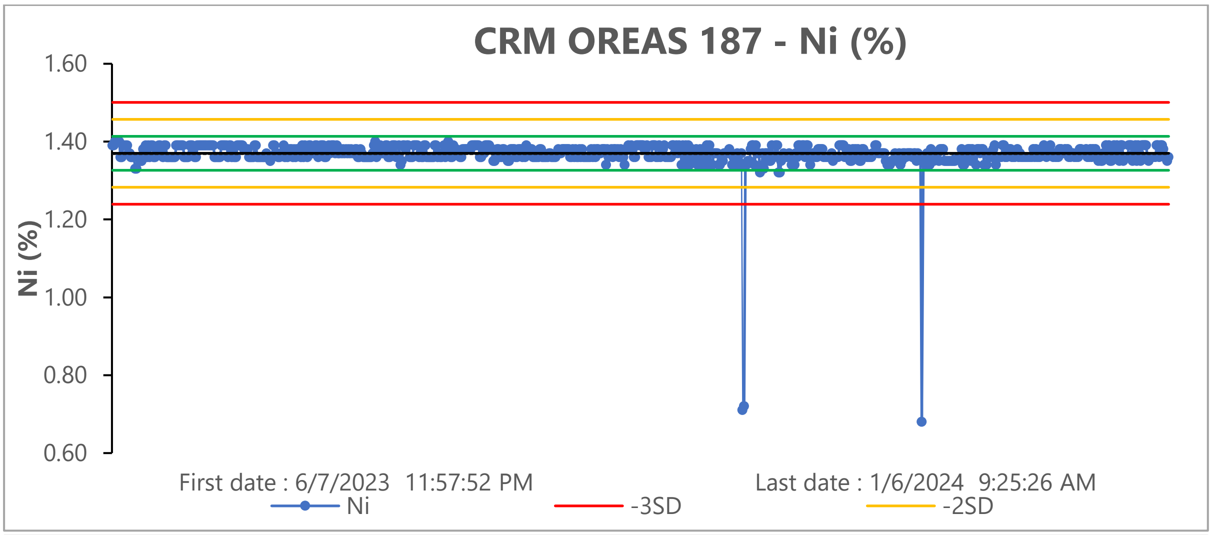
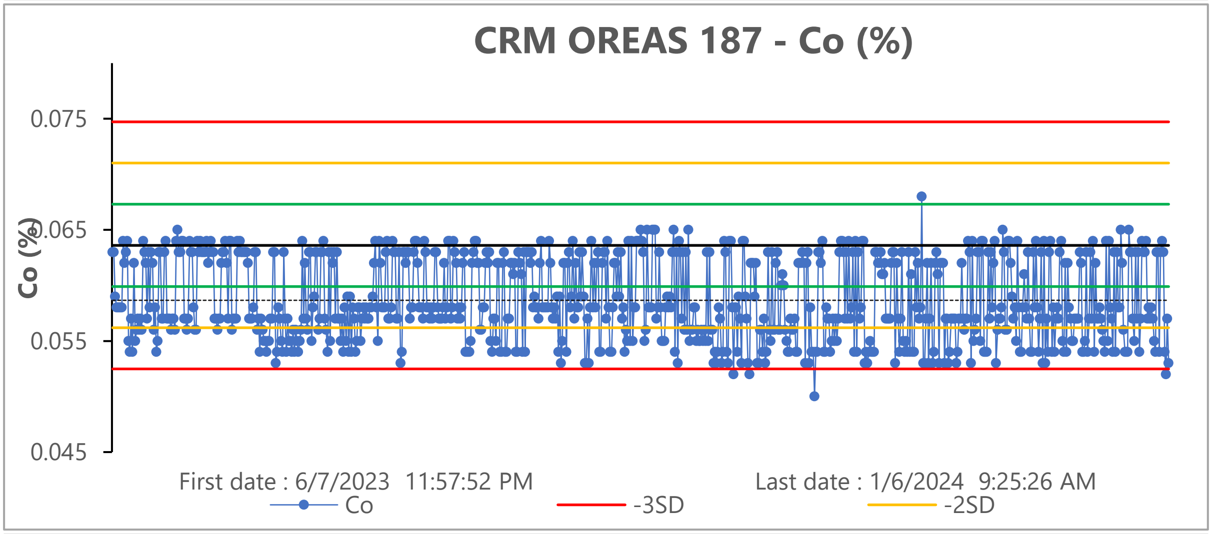
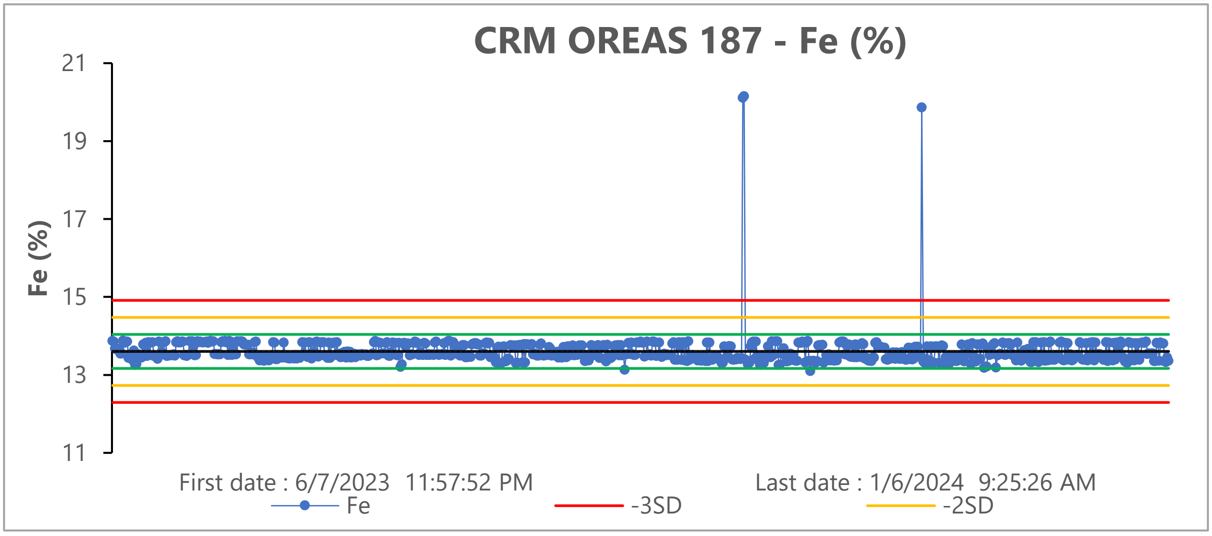


Figure 4 QAQC of CRM, OREAS184

OREAS187


CRM OREAS 187 - Ni (%)
Ni (%)
1.60
1.40
1.20
1.00
0.80
0.60
First date : 6/7/2023 11:57:52 PM
Last date : 1/6/2024 9:25:26 AM
Ni
-3SD
-2SD


CRM OREAS 187 - Co (%)
Co (%)
0.075
0.065
0.055
0.045
First date : 6/7/2023 11:57:52 PM
Last date : 1/6/2024 9:25:26 AM
Co
-3SD
-2SD


CRM OREAS 187 - Fe (%)
Fe (%)
21
19
17
15
13
11
First date : 6/7/2023 11:57:52 PM
Last date : 1/6/2024 9:25:26 AM
Fe
-3SD
-2SD

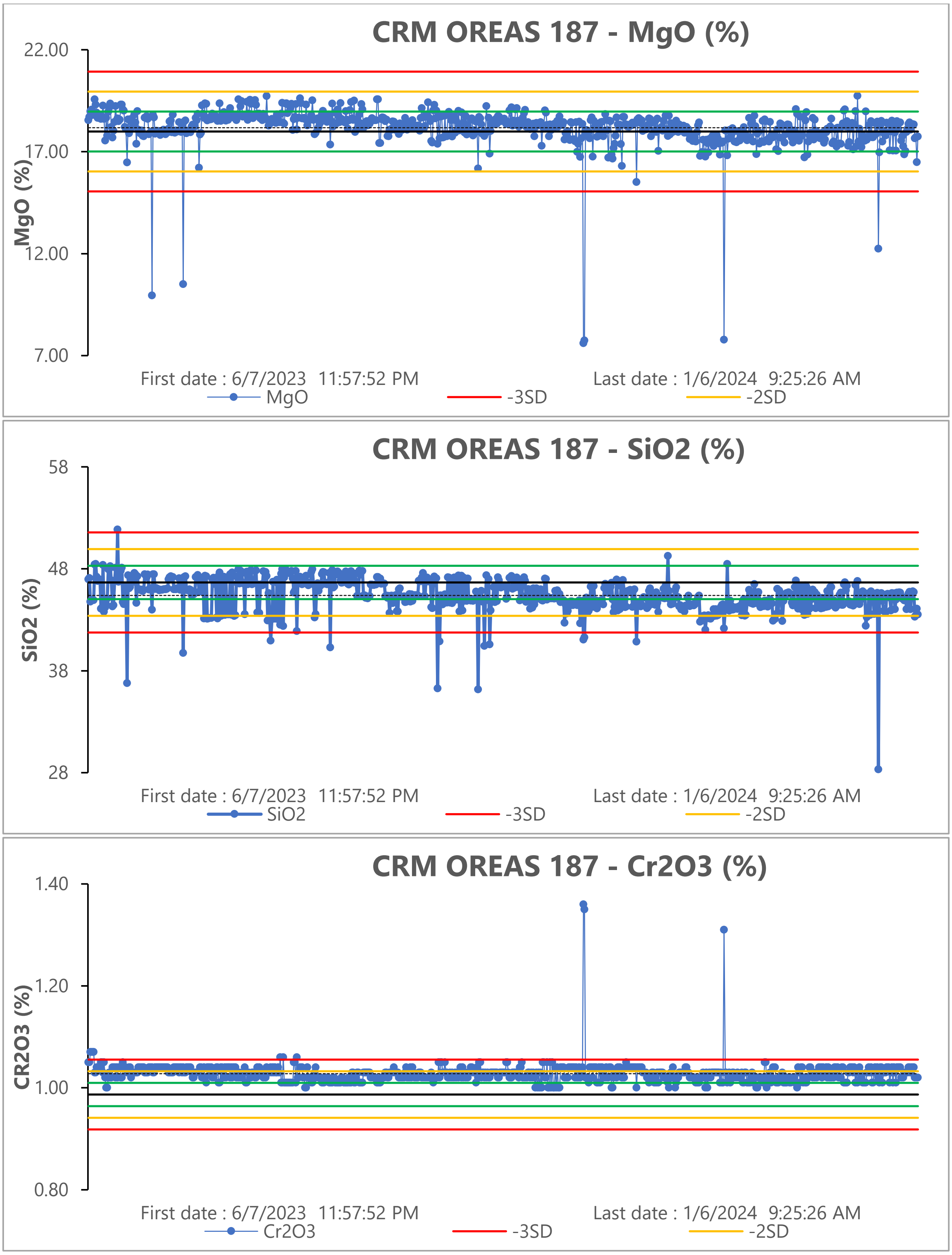
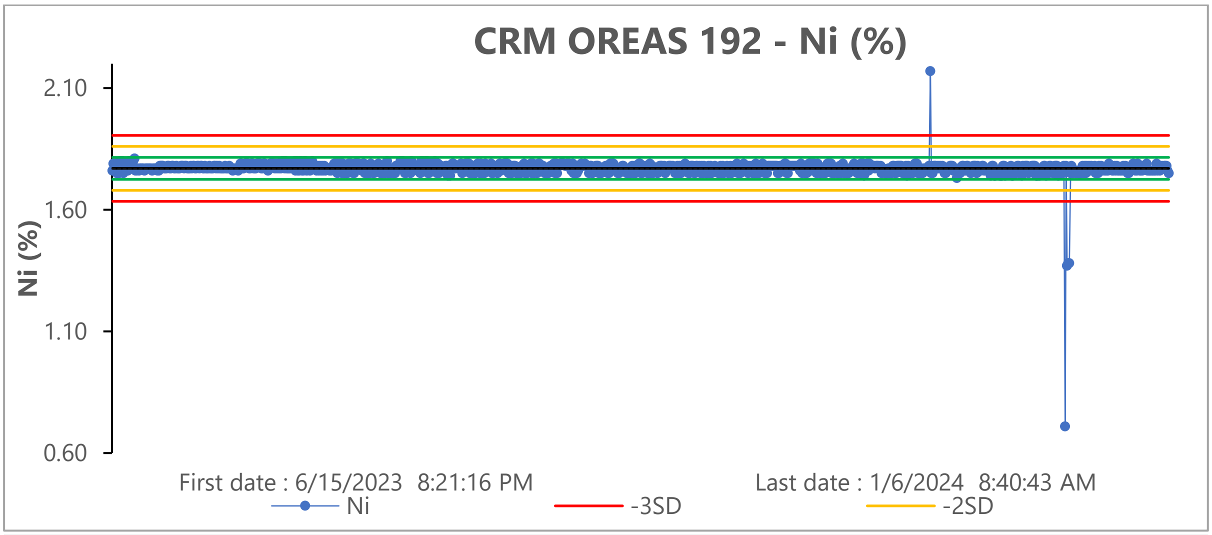
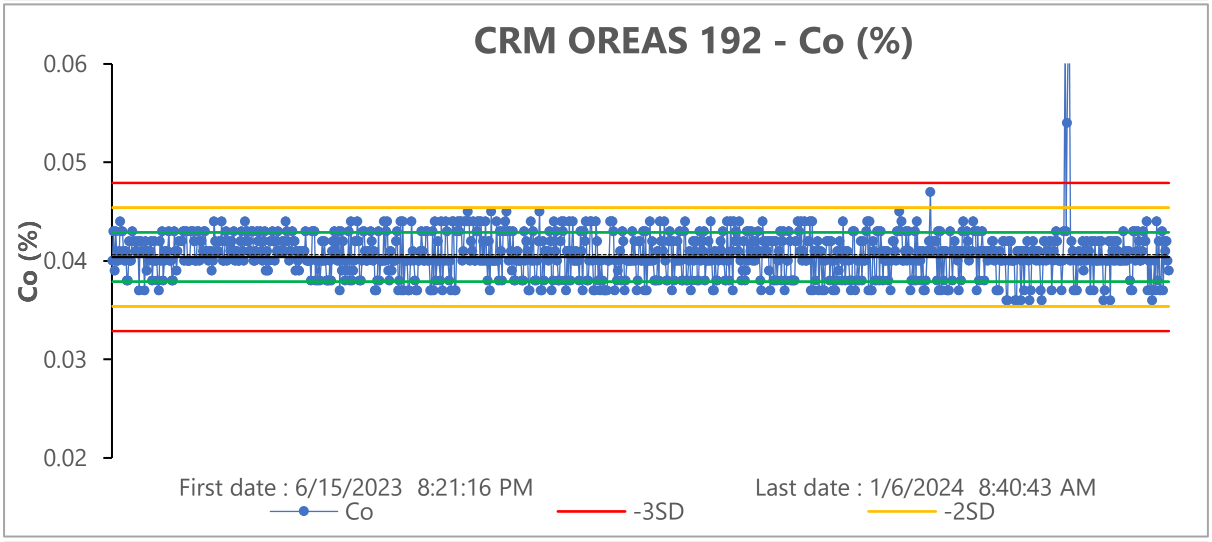
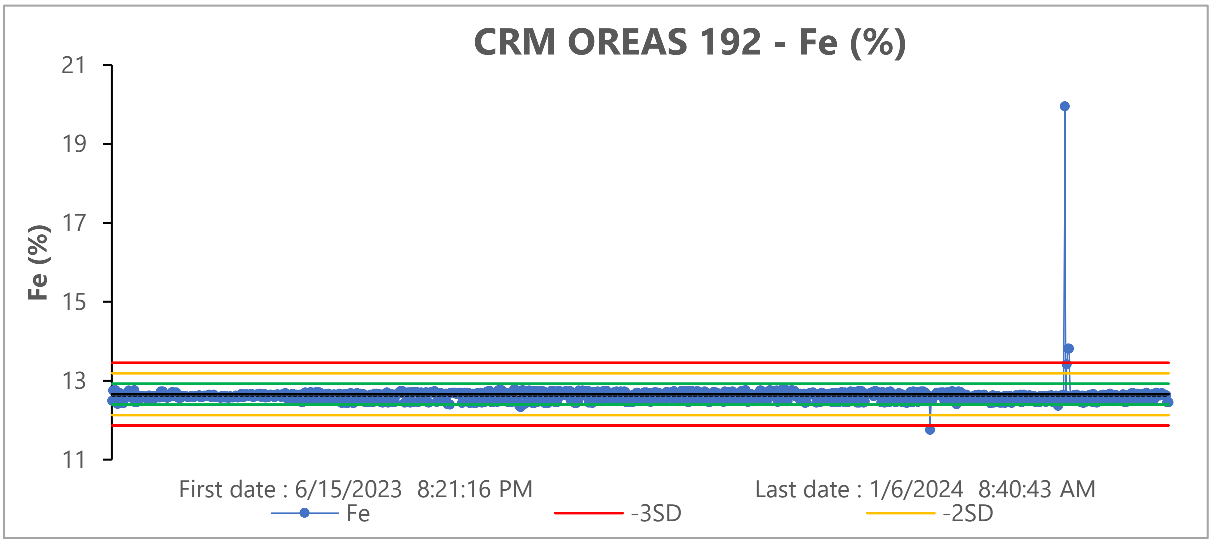


Figure 5 QAQC of CRM, OREAS187

OREAS192


CRM OREAS 192 - Ni (%)
2.10
1.60
1.10
0.60
Ni (%)
First date : 6/15/2023 8:21:16 PM
Last date : 1/6/2024 8:40:43 AM
Ni
-3SD
-2SD


CRM OREAS 192 - Co (%)
0.06
0.05
0.04
0.03
0.02
Co (%)
First date : 6/15/2023 8:21:16 PM
Last date : 1/6/2024 8:40:43 AM
Co
-3SD
-2SD


CRM OREAS 192 - Fe (%)
21
19
17
15
13
11
Fe (%)
First date : 6/15/2023 8:21:16 PM
Last date : 1/6/2024 8:40:43 AM
Fe
-3SD
-2SD

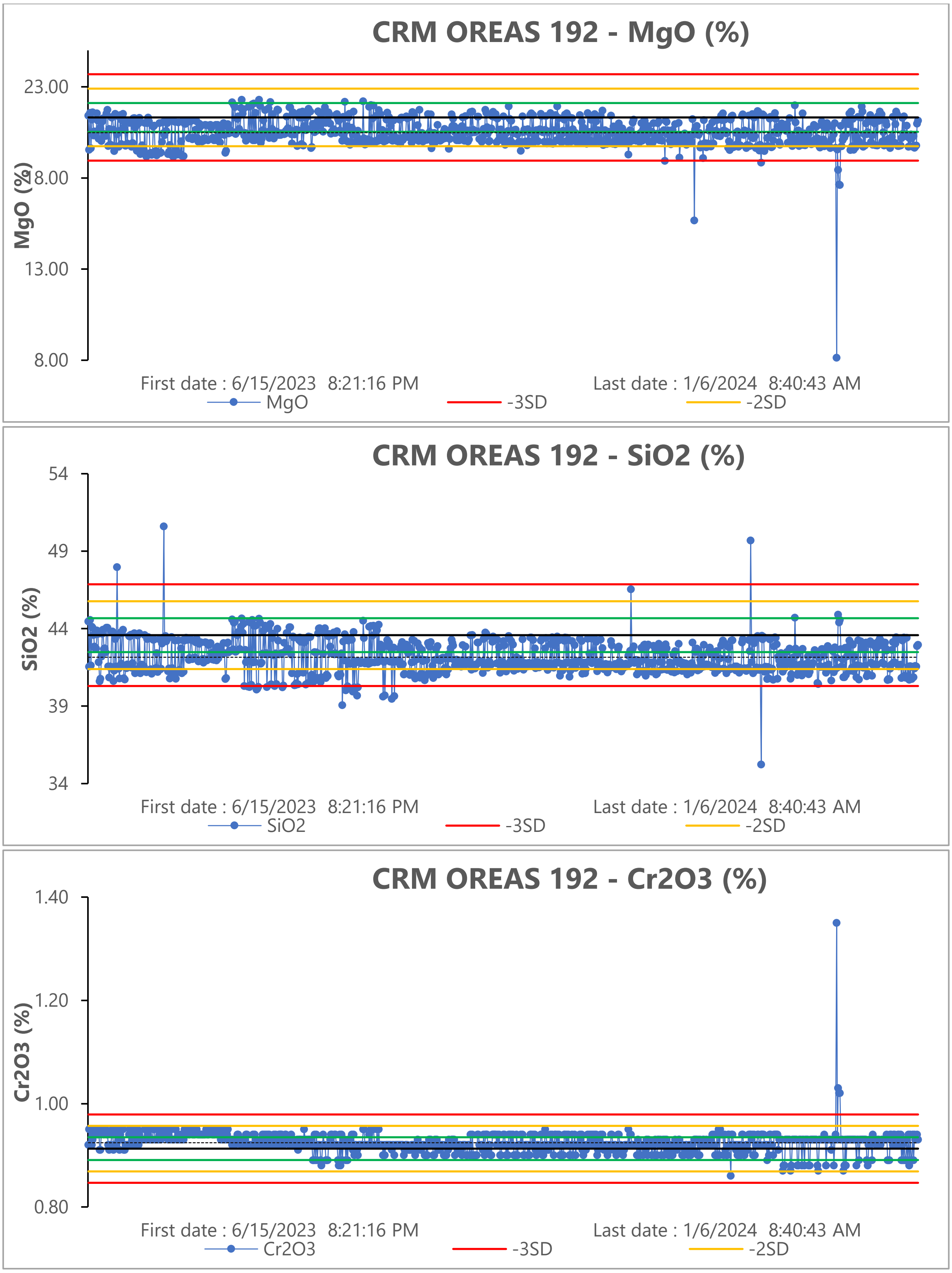
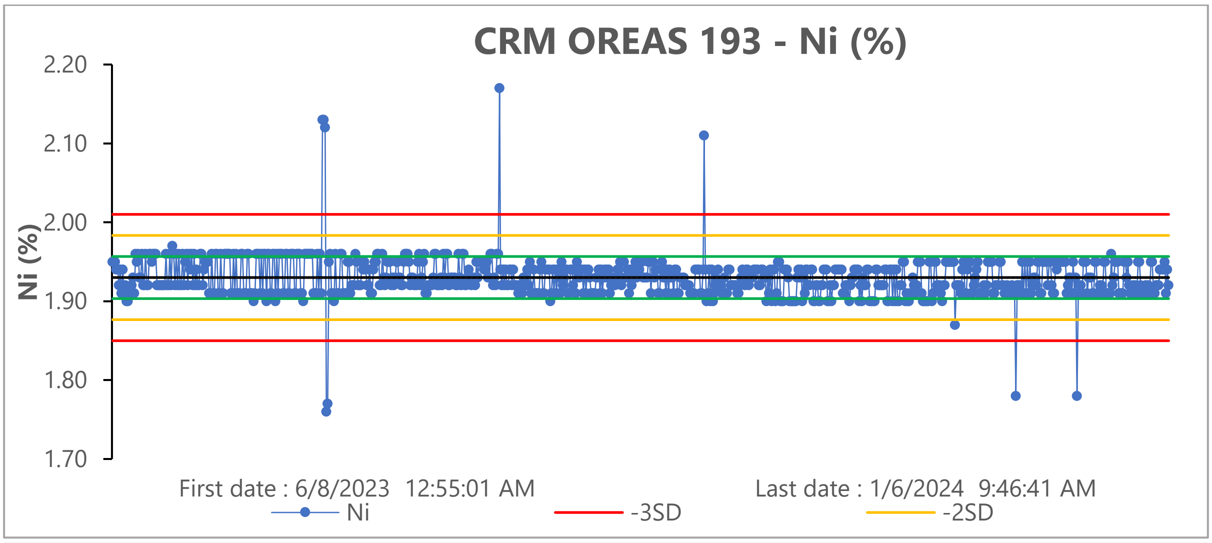
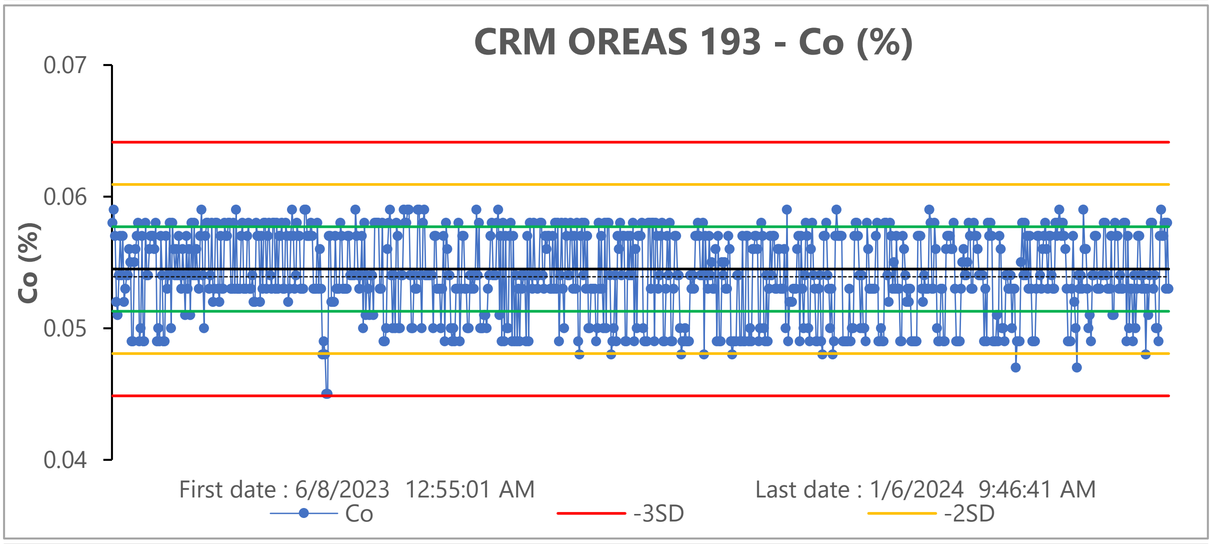
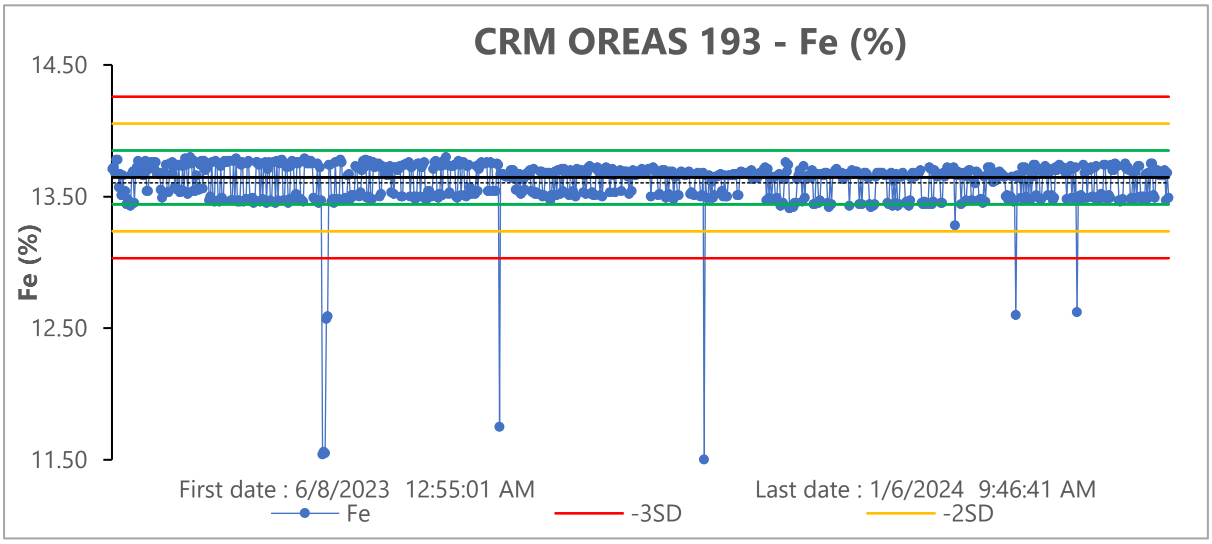


Figure 6 QAQC of CRM, OREAS192

OREAS193


CRM OREAS 193 - Ni (%)
2.20
2.10
2.00
1.90
1.80
1.70
Ni (%)
First date : 6/8/2023 12:55:01 AM
Last date : 1/6/2024 9:46:41 AM
Ni
-3SD
-2SD


CRM OREAS 193 - Co (%)
0.07
0.06
0.05
0.04
Co (%)
First date : 6/8/2023 12:55:01 AM
Last date : 1/6/2024 9:46:41 AM
Co
-3SD
-2SD


CRM OREAS 193 - Fe (%)
14.50
13.50
12.50
11.50
Fe (%)
First date : 6/8/2023 12:55:01 AM
Last date : 1/6/2024 9:46:41 AM
Fe
-3SD
-2SD

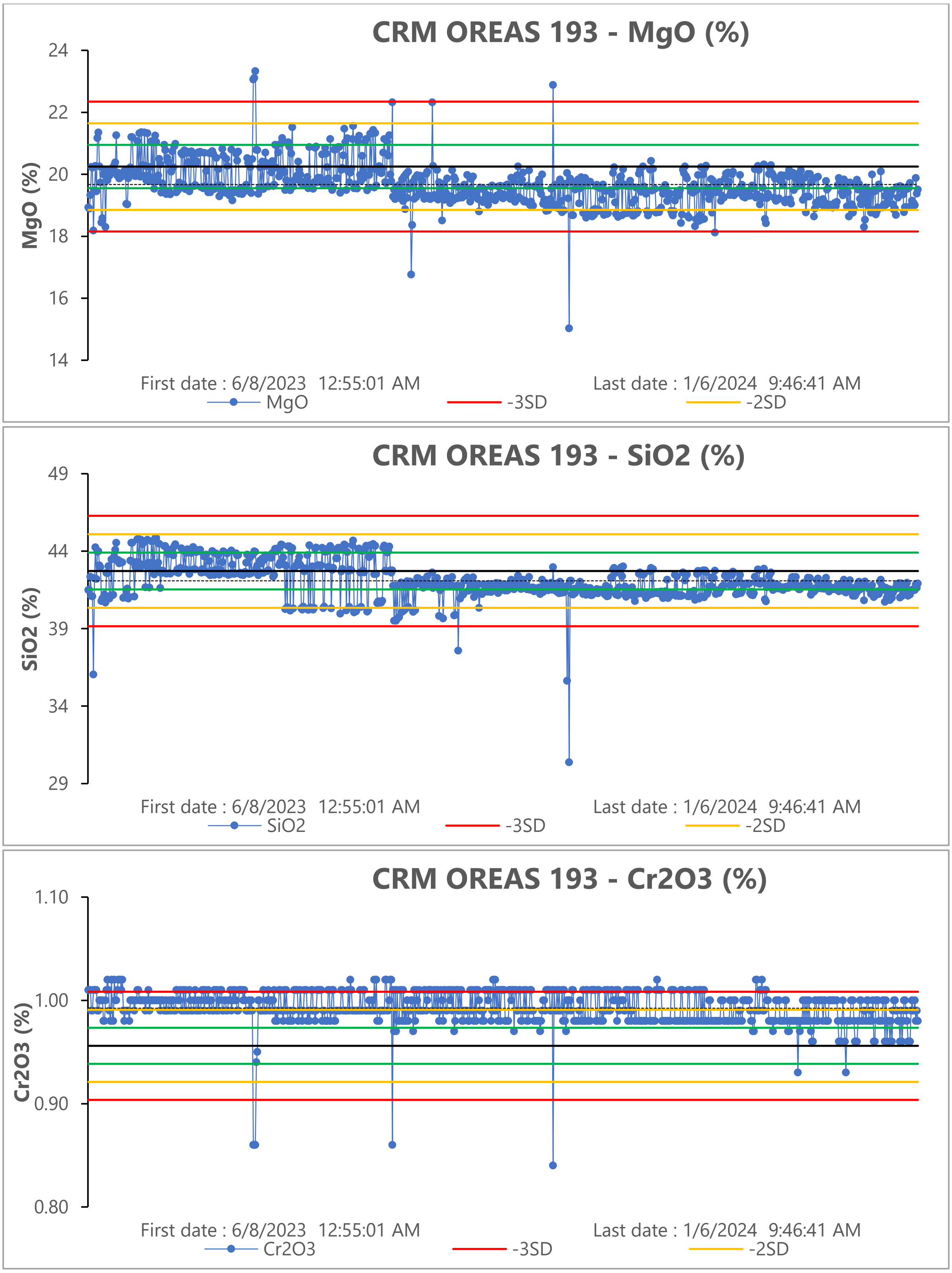
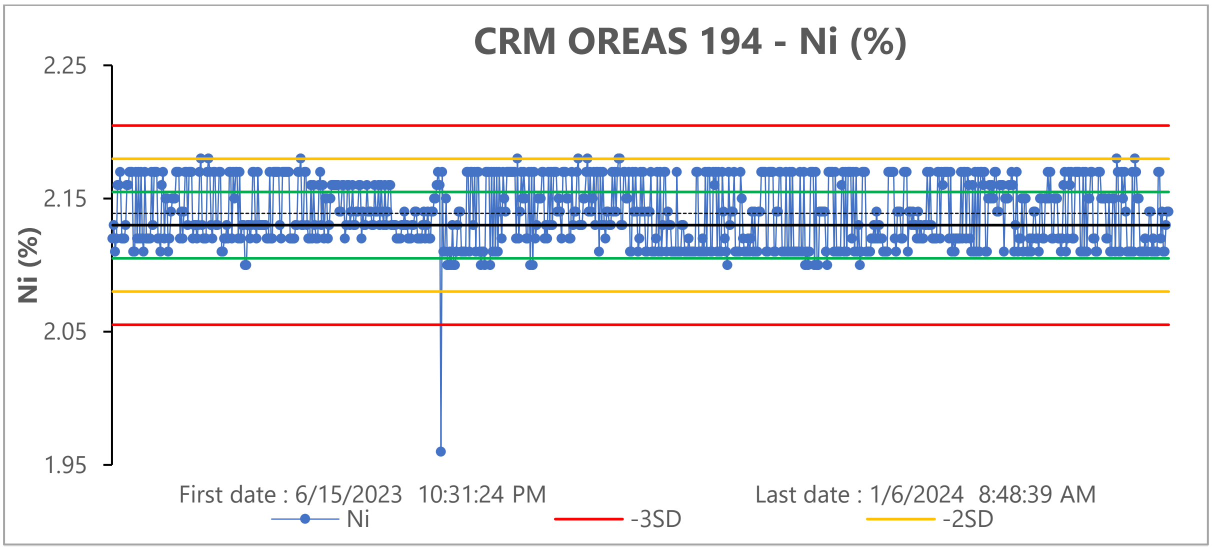
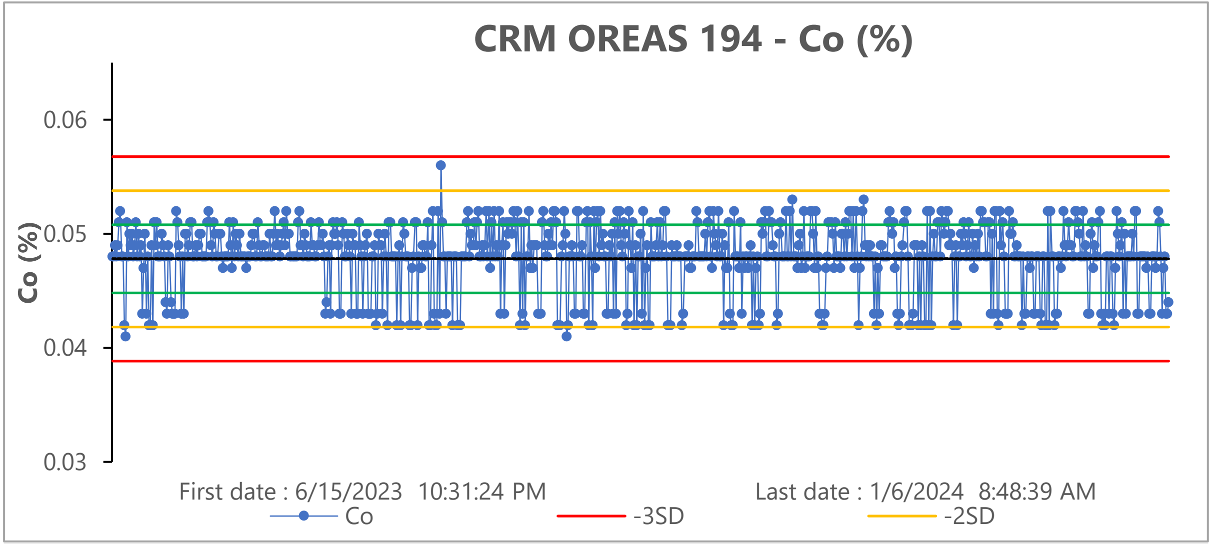
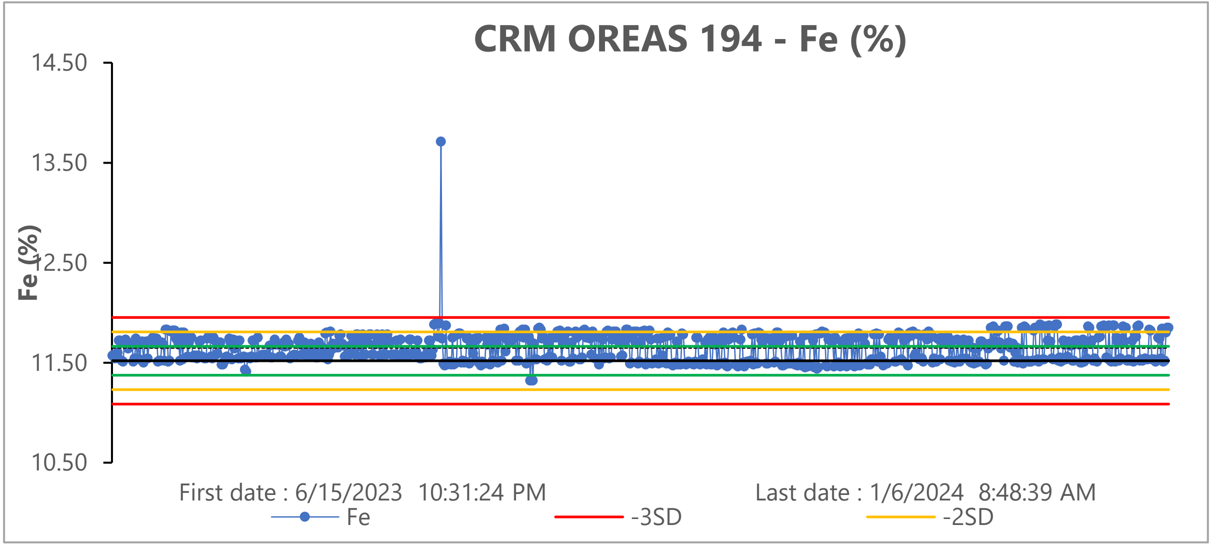


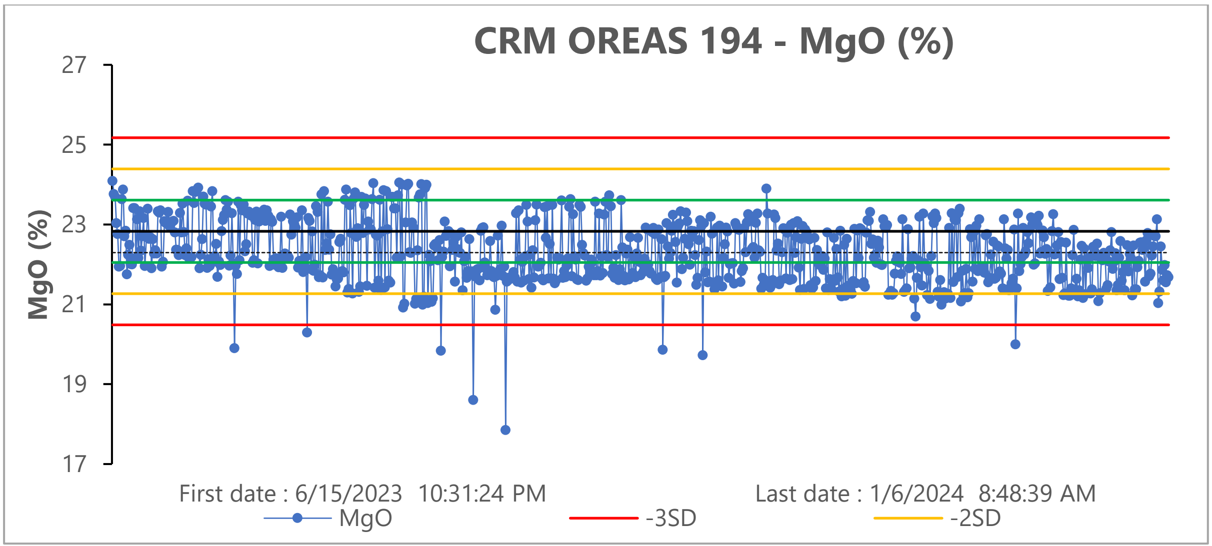
Figure 7 QAQC of CRM, OREAS193

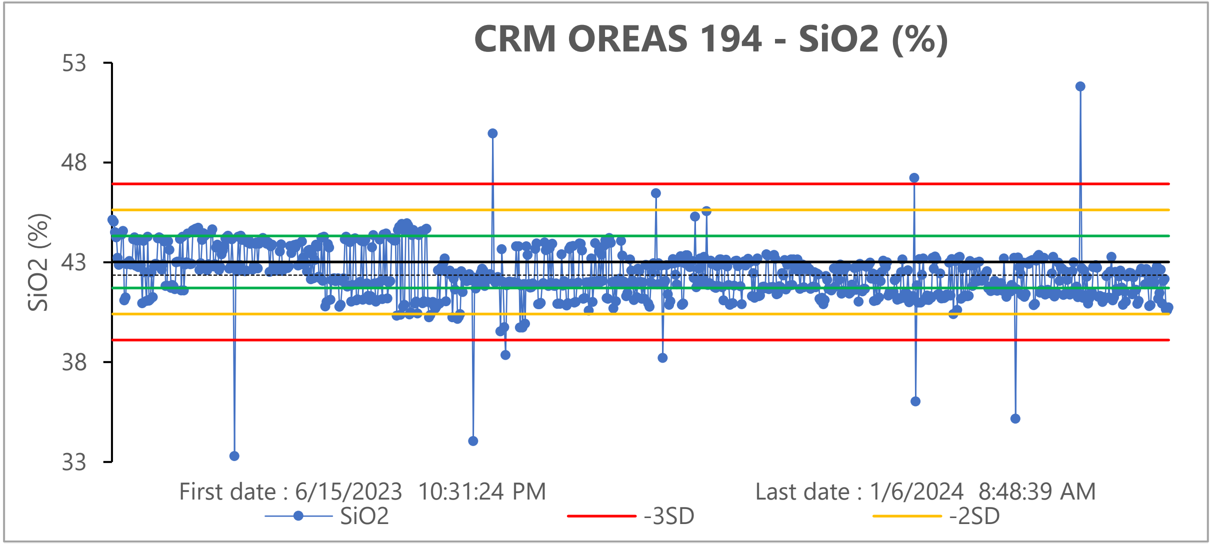
OREAS194


CRM OREAS 194 - Ni (%)
2.25
2.15
2.05
1.95
Ni (%)
First date : 6/15/2023 10:31:24 PM
Last date : 1/6/2024 8:48:39 AM
Ni
-3SD
-2SD


CRM OREAS 194 - Co (%)
0.06
0.05
0.04
0.03
Co (%)
First date : 6/15/2023 10:31:24 PM
Last date : 1/6/2024 8:48:39 AM
Co
-3SD
-2SD


CRM OREAS 194 - Fe (%)
14.50
13.50
12.50
11.50
10.50
Fe (%)
First date : 6/15/2023 10:31:24 PM
Last date : 1/6/2024 8:48:39 AM
Fe
-3SD
-2SD





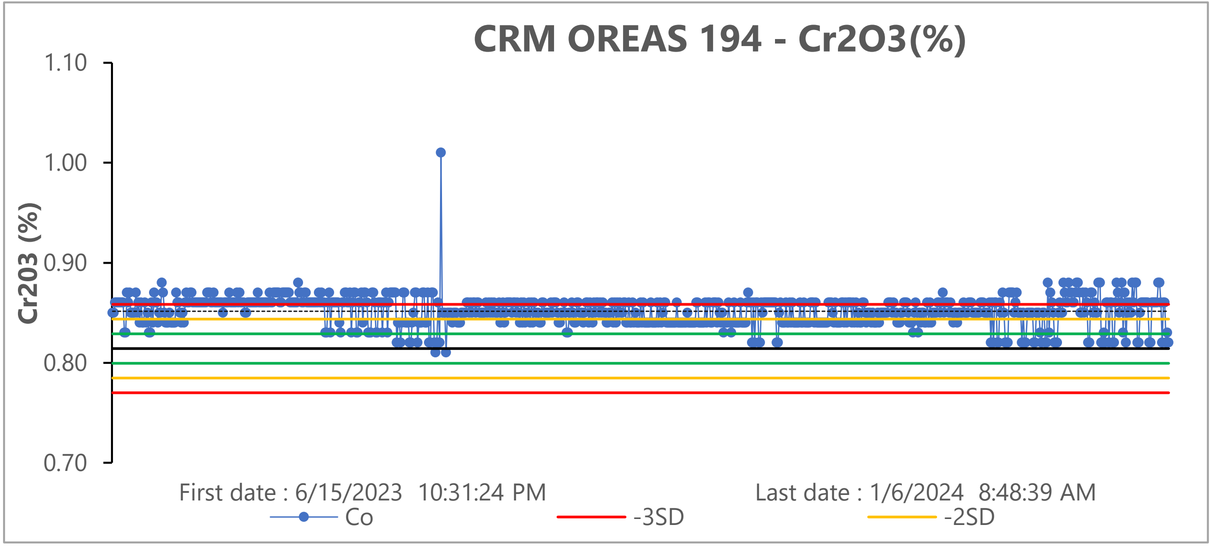


Figure 8 QAQC of CRM, OREAS194

Replicate Samples

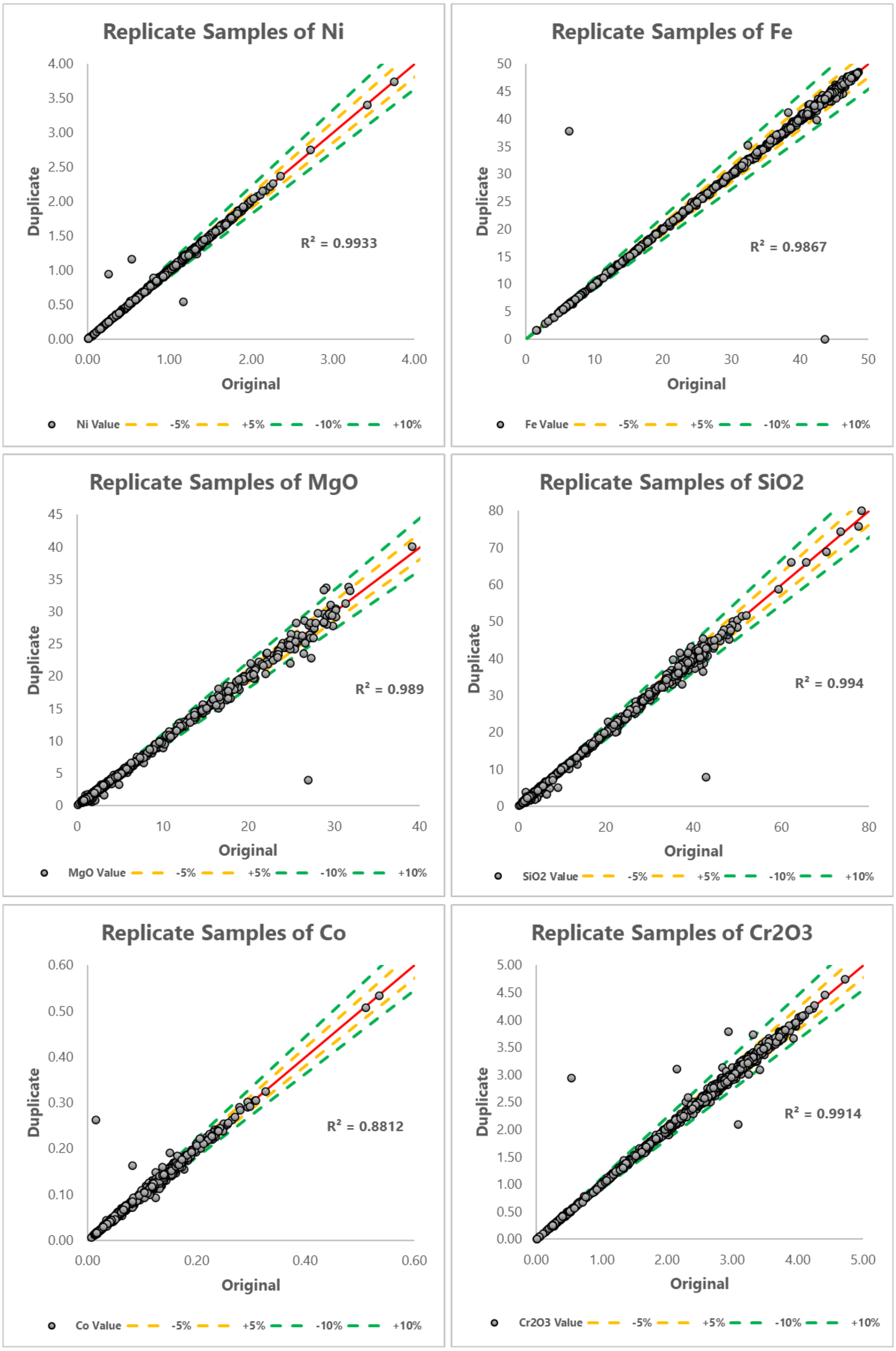
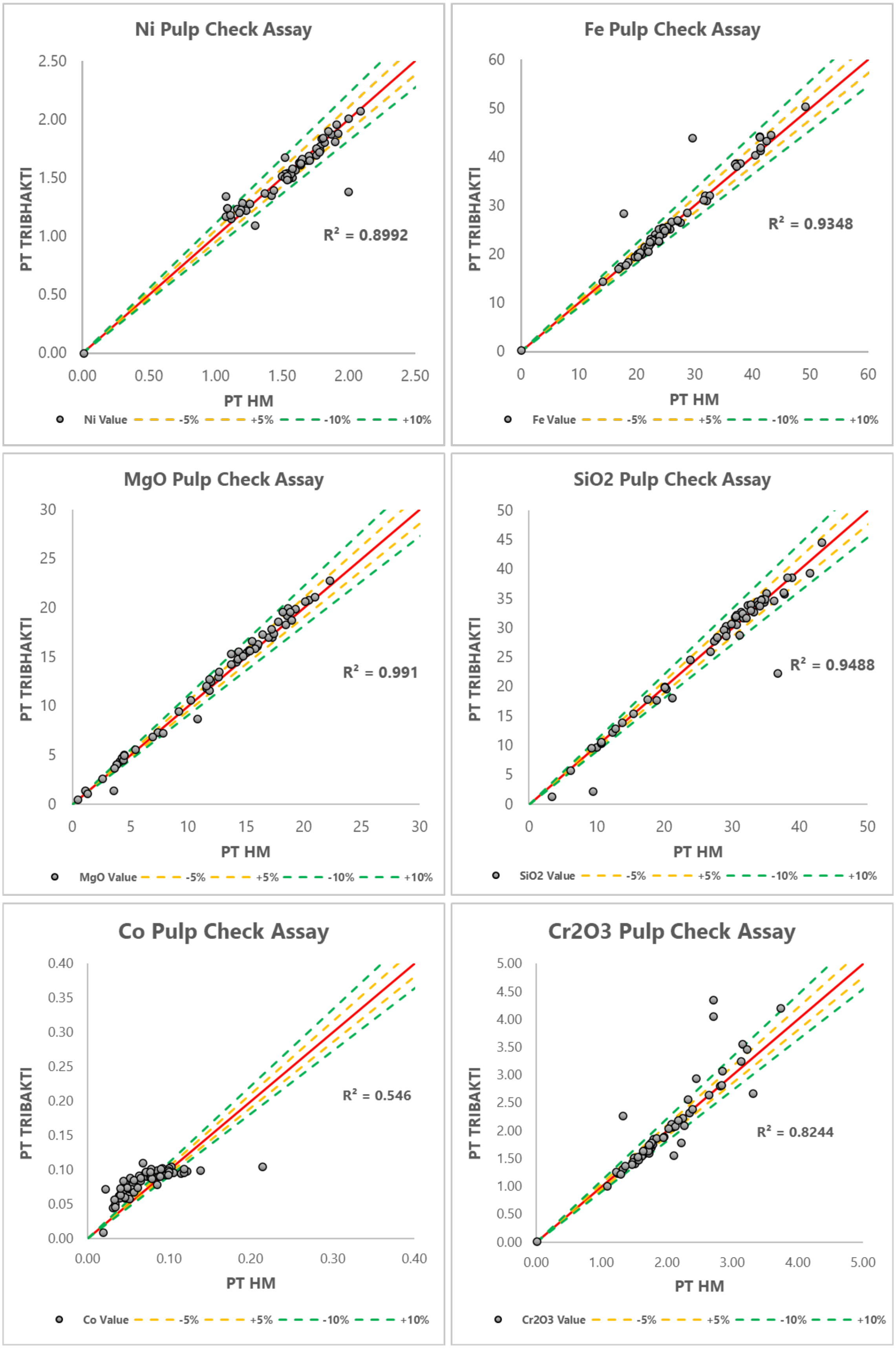


Figure 9 QAQC of replicate sample

Check Samples PT HM vs PT Tribhakti Inspektama


Ni Pulp Check Assay

Fe Pulp Check Assay

MgO Pulp Check Assay

SiO2 Pulp Check Assay

Co Pulp Check Assay

Cr2O3 Pulp Check Assay

Figure 10 QAQC of check samples PT HM vs PT Tribhakti Inspektama

Check Samples PT HM vs PT Geoservices

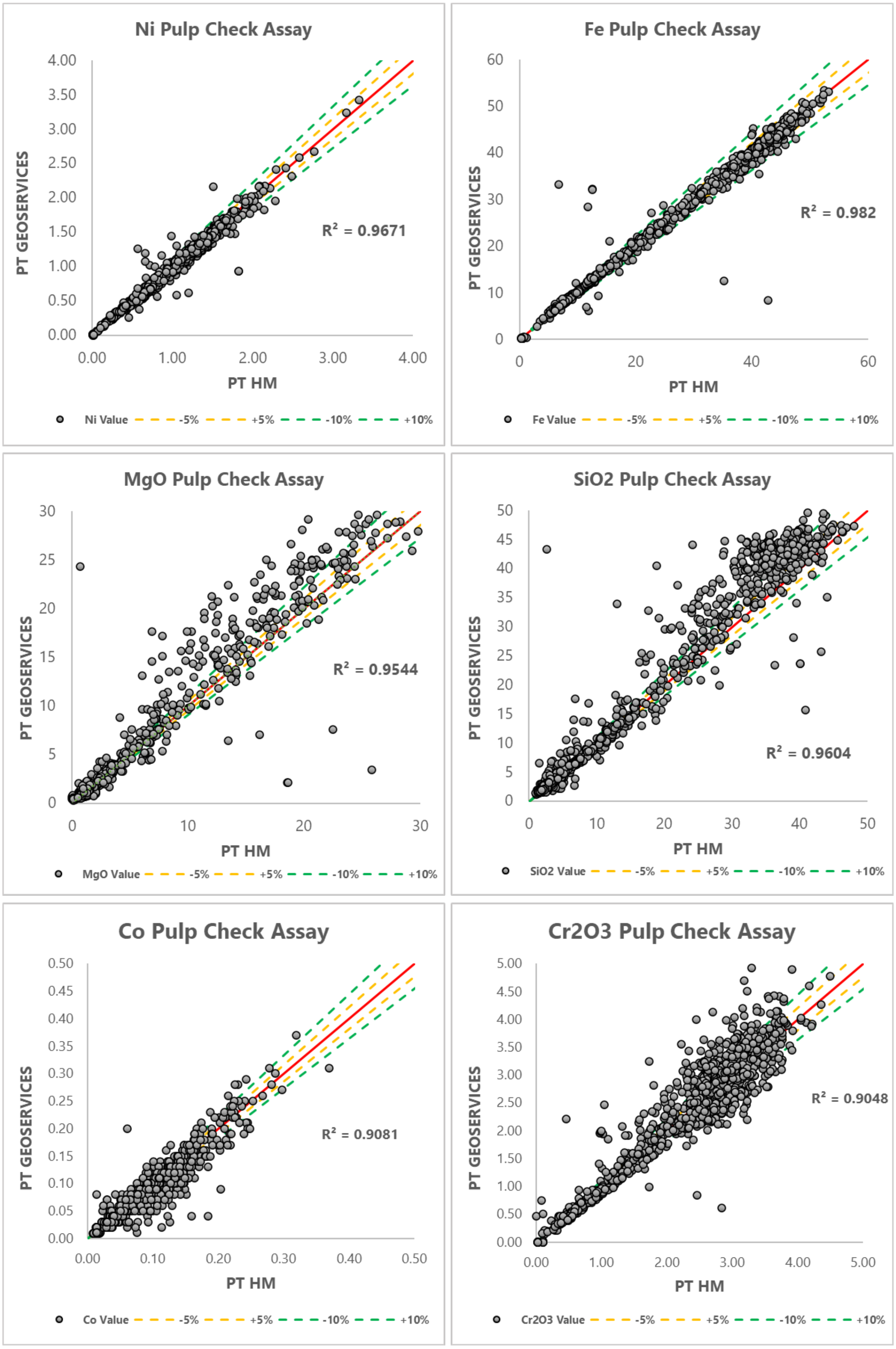


Figure 11 QAQC of check samples PT HM vs PT Geoservices

APPENDIX 4

PT ERABARU TIMUR LESTARI
BLOCKMODEL DOCUMENTATION

PT DANMAR EXPLORINDO

BLOCK MODEL DOCUMENTATION

FOR

PT ERABARU TIMUR LESTARI

18 JANUARI 2023

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1. BLOCKMODEL DOCUMENTATION

1.1. Block Model Geometry

Table 1 Block model size and geometry

Type	Y	X	Z
Minimum Coordinates	9680837.833	363039.909	302.322
Maximum Coordinates	9683087.833	367714.909	672.322
User Block Size	25	25	1
Min. Block Size	25	25	1
Rotation	0	0	0

1.2. Extrapolatory Data Analysis

PT ETL only has one domain based on topography and drill point distribution with a majority of 50 meters spacing and some drill holes have 100 meters spacing.

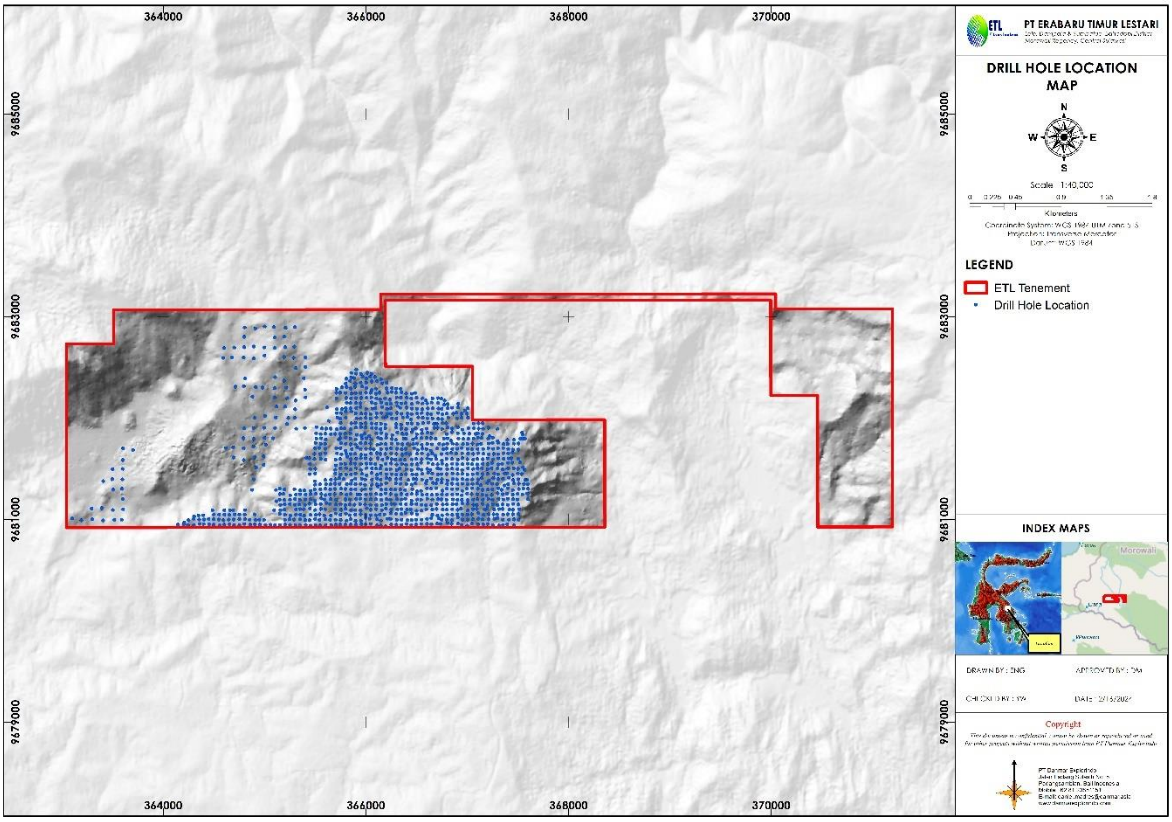


Figure 1 Drilling location Map

1.2.1. Descriptive Statistics

Table 2 Descriptive Statistics of Limonite

Variable	Ni	Fe	Co	MgO	SiO2	Cr2O3
No. of Sample	25,113	25,113	25,113	25,113	25,113	25,113
Length	25,101.32	25,101.32	25,101.32	25,101.32	25,101.32	25,101.32
Mean	1.05	41.06	0.11	1.74	6.33	2.88
SD	0.30	5.42	0.05	1.55	6.94	0.57
CV	0.29	0.13	0.49	0.89	1.10	0.20
Variance	0.09	29.42	0.00	2.40	48.15	0.32
Minimum	0.08	5.02	0.001	0.01	0.01	0.01
Q1	0.83	38.63	0.075	0.83	1.95	2.57
Q2	1.04	42.76	0.102	1.14	2.96	2.94
Q3	1.25	44.92	0.134	2.03	7.92	3.25
Maximum	3.49	52.05	0.892	23.49	59.83	6.16

Table 3 Descriptive Statistics of Saprolite

Variable	Ni	Fe	Co	MgO	SiO2	Cr2O3
No. of Sample	4,688	4,688	4,688	4,688	4,688	4,688
Length	4,626.42	4,626.42	4,626.42	4,626.42	4,626.42	4,626.42
Mean	1.32	17.62	0.04	12.33	35.15	1.38
SD	0.57	6.26	0.02	5.77	7.16	0.49
CV	0.43	0.36	0.44	0.47	0.20	0.35
Variance	0.32	39.13	0.00	33.28	51.24	0.24
Minimum	0.1	4.78	0.012	0.11	11.48	0.01
Q1	0.93	12.91	0.028	7.76	30.38	1.03
Q2	1.24	17.01	0.037	11.87	35.27	1.36
Q3	1.62	22.07	0.05	16.18	39.29	1.71
Maximum	7.41	40.61	0.248	39.1	77.16	3.91

1.2.2. Histogram

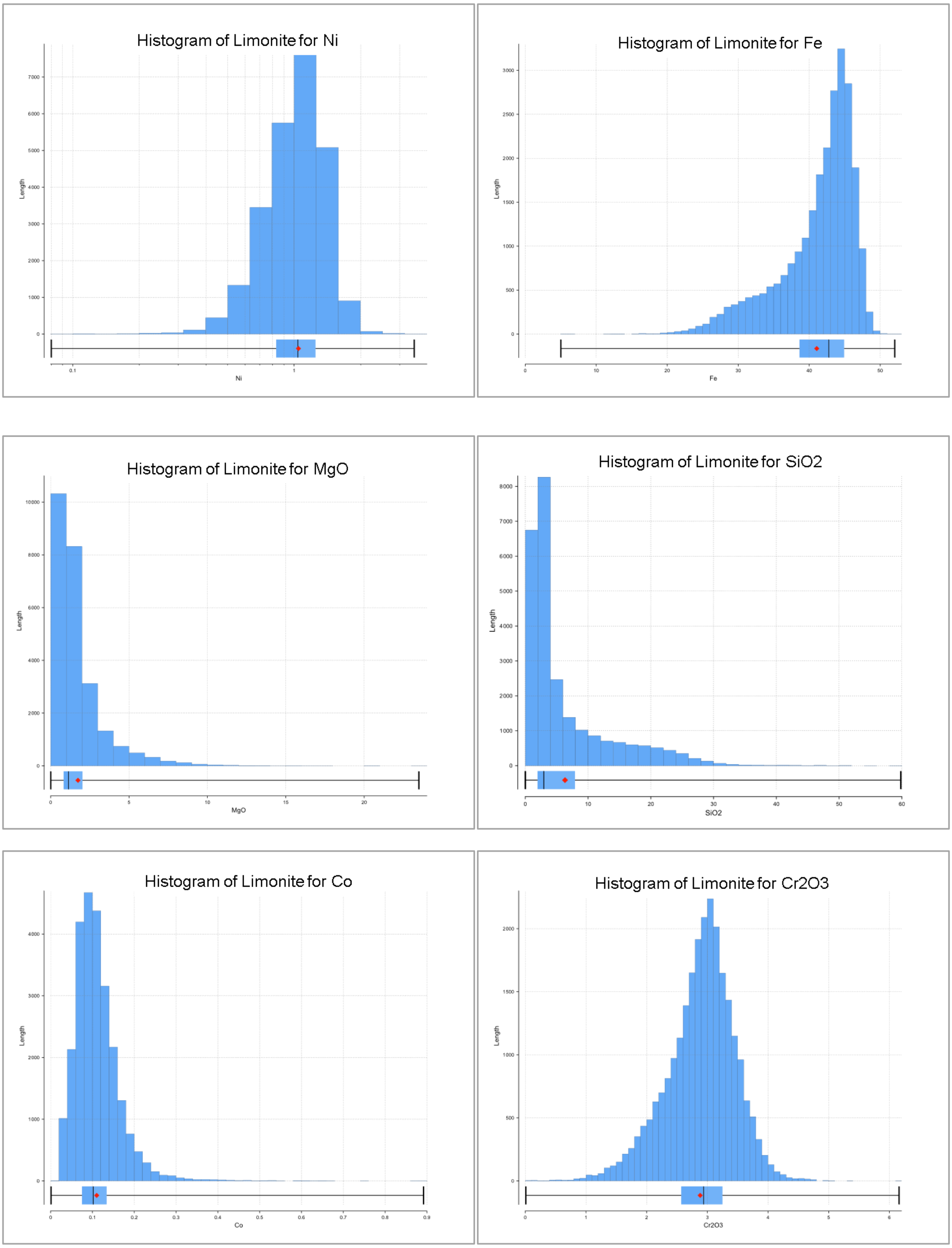


Figure 2 Histogram of Limonite

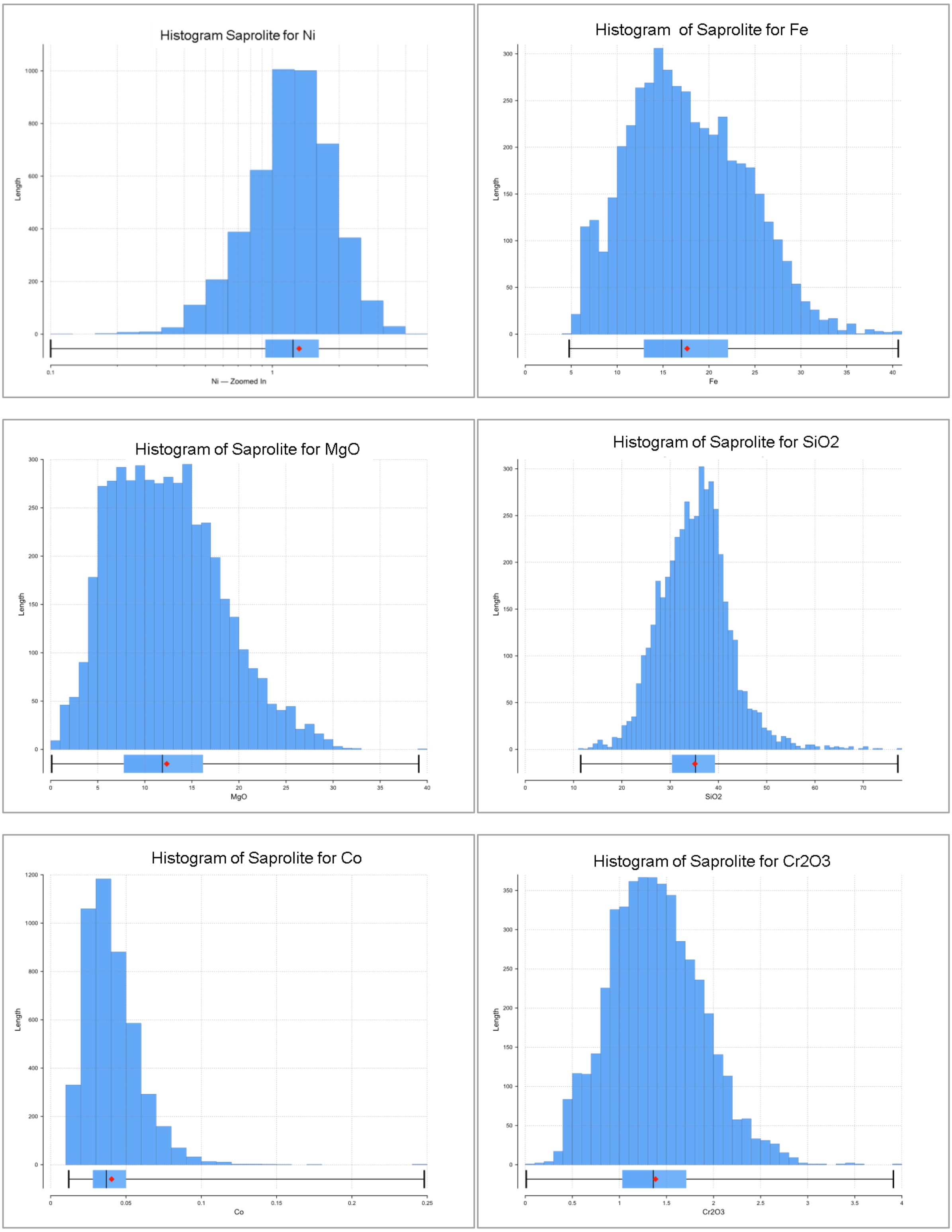
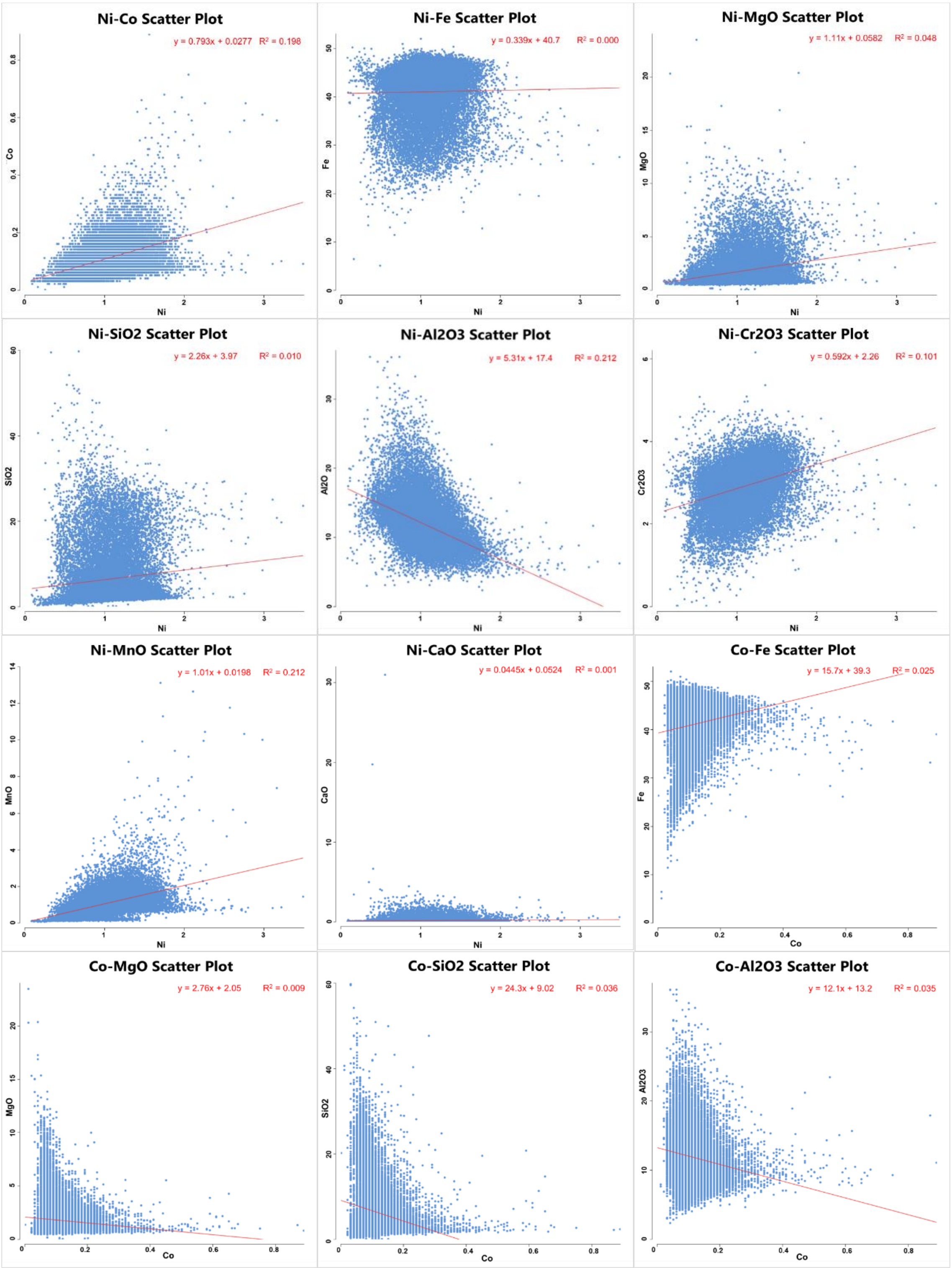
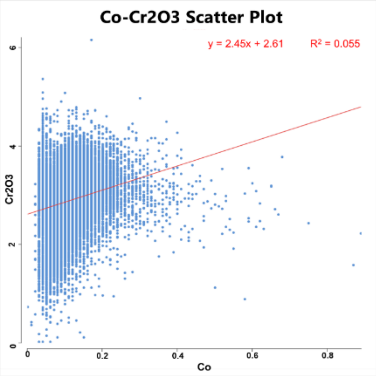


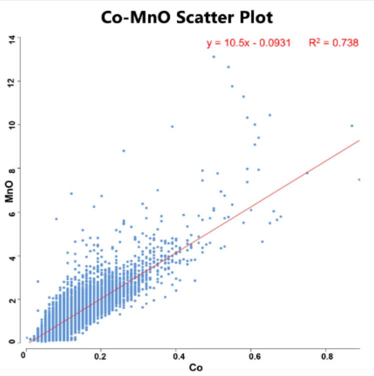
Figure 3 Histogram of Saprolite

Mineral Correlation

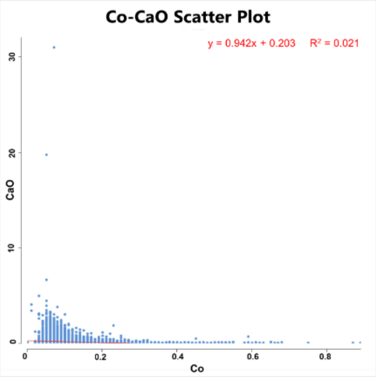




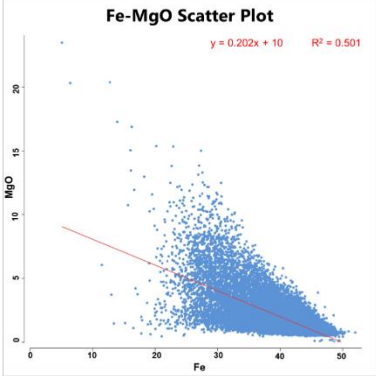
Co-Cr2O3 Scatter Plot



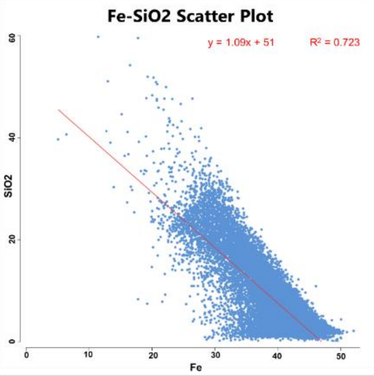
Co-MnO Scatter Plot



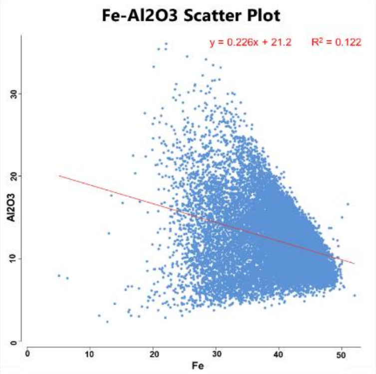
Co-CaO Scatter Plot



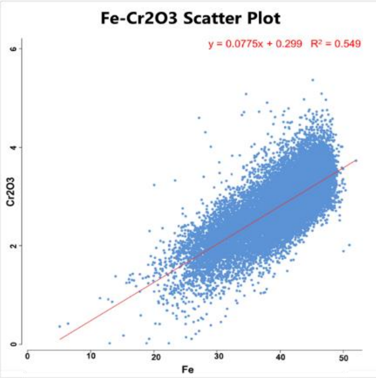
Fe-MgO Scatter Plot



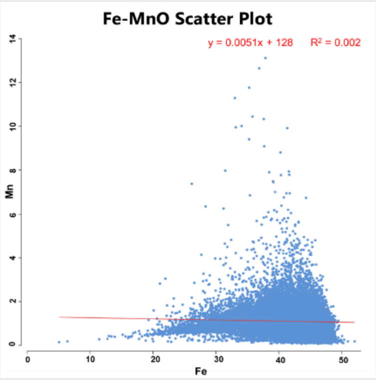
Fe-SiO2 Scatter Plot



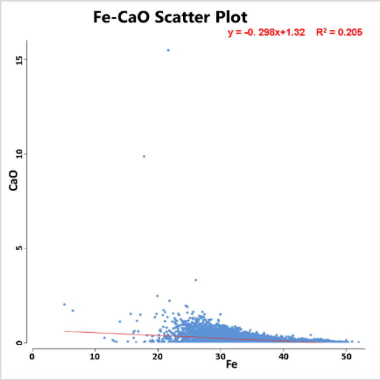
Fe-Al2O3 Scatter Plot



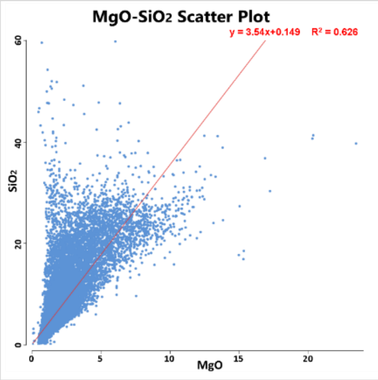
Fe-Cr2O3 Scatter Plot



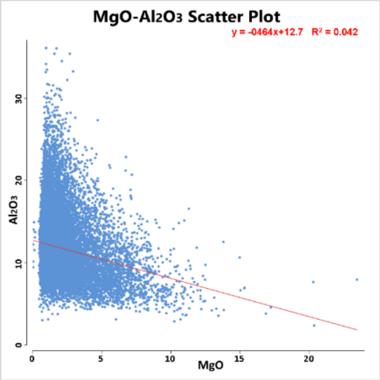
Fe-MnO Scatter Plot



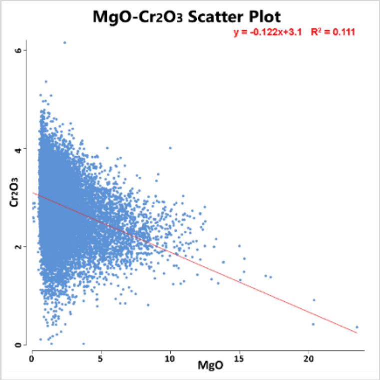
Fe-CaO Scatter Plot



MgO-SiO₂ Scatter Plot



MgO-Al₂O₃ Scatter Plot



MgO-Cr₂O₃ Scatter Plot

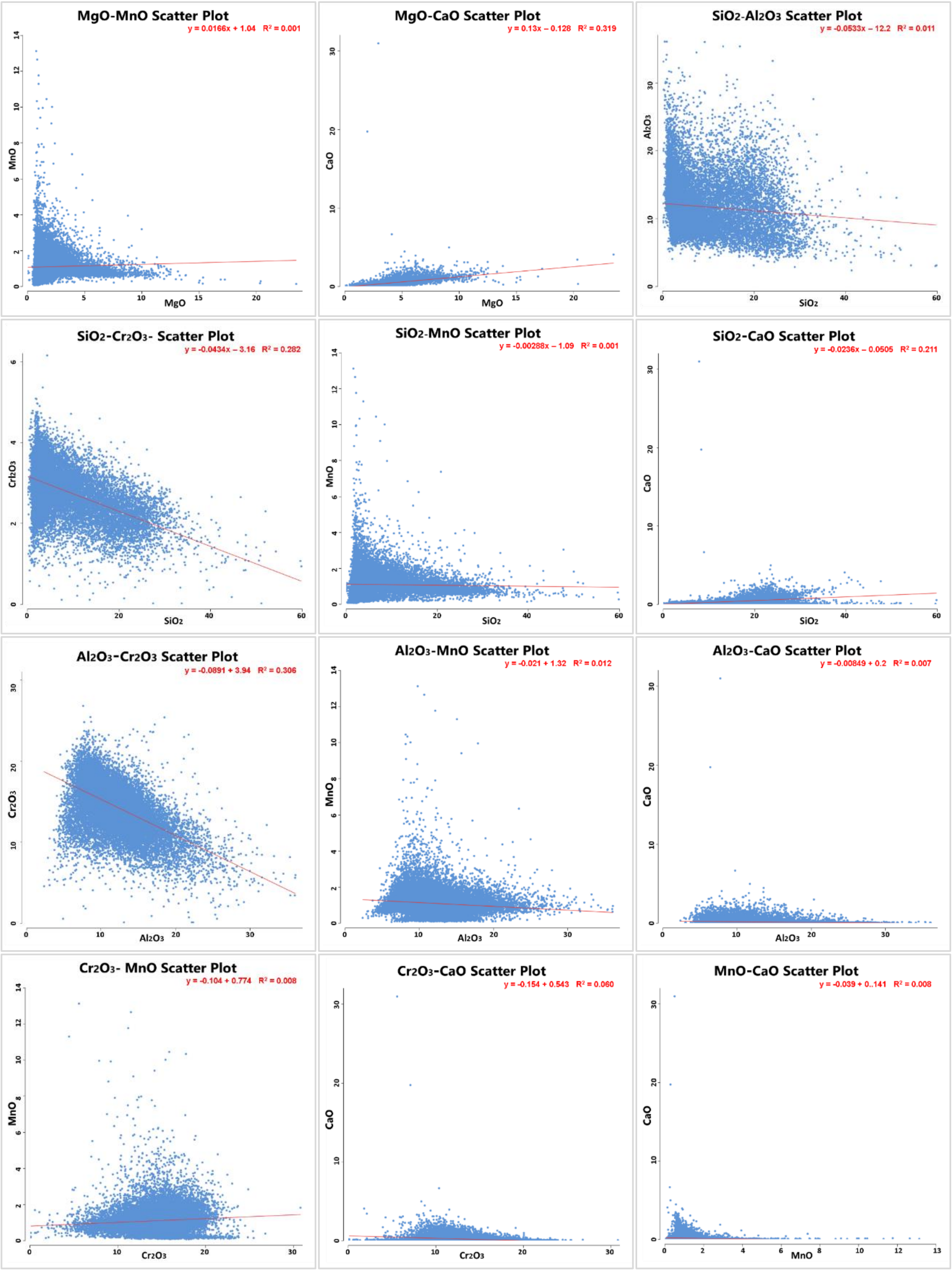
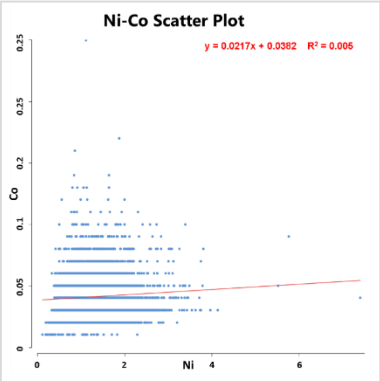
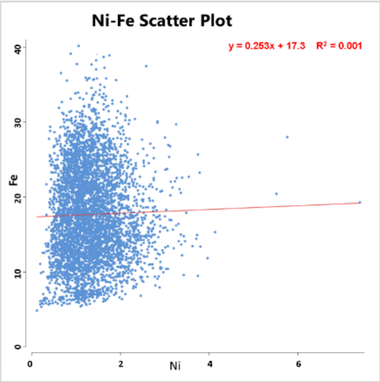
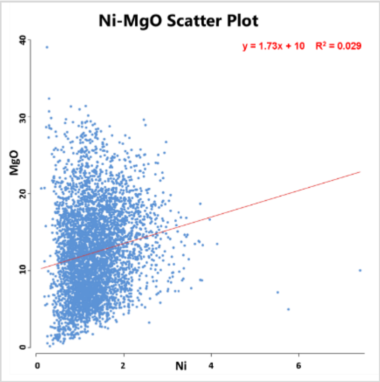
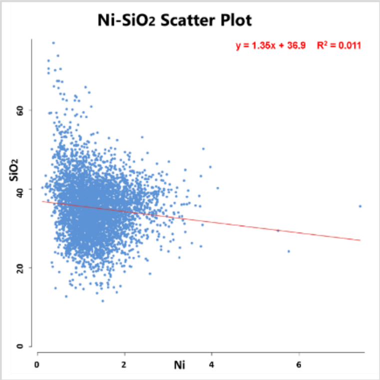


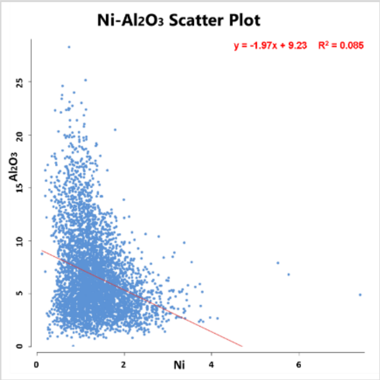
Figure 4 Mineral correlation scatter plot for Limonite

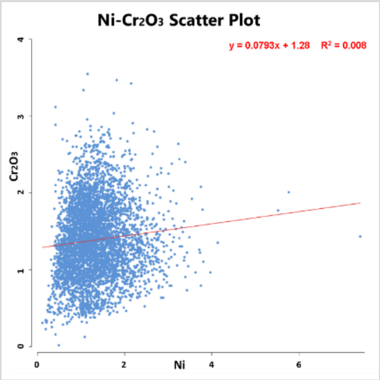

Ni-Co Scatter Plot
y = 0.0217x + 0.0382 R^2 = 0.005
Co
0
0.05
0.1
0.2
0.25
0.25
Ni
0
2
4
6

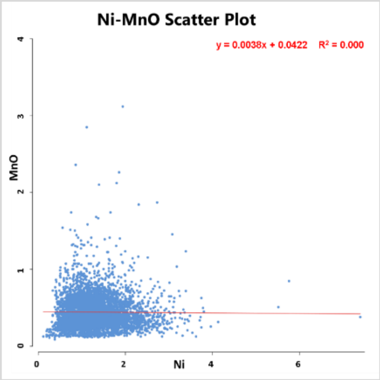

Ni-Fe Scatter Plot
y = 0.253x + 17.3 R^2 = 0.001
Fe
0
10
20
30
40
Ni
0
2
4
6

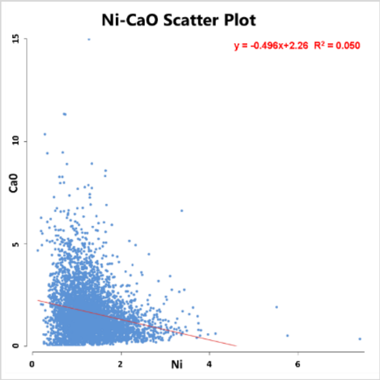

Ni-MgO Scatter Plot
y = 1.73x + 10 R^2 = 0.029
MgO
0
10
20
30
40
Ni
0
2
4
6

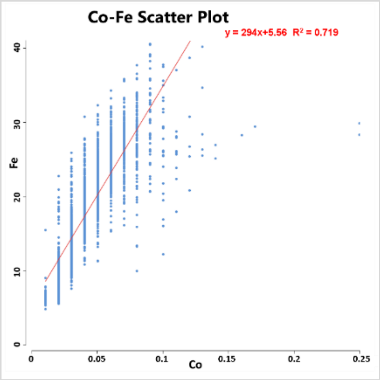

Ni-SiO_2 Scatter Plot
y = 1.35x + 36.9 R^2 = 0.011
SiO_2
0
20
40
60
Ni
0
2
4
6

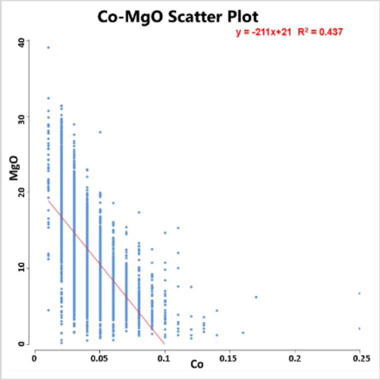

Ni-Al_2O_3 Scatter Plot
y = -1.97x + 9.23 R^2 = 0.085
Al2O3
0
5
10
15
20
25
Ni
0
2
4
6

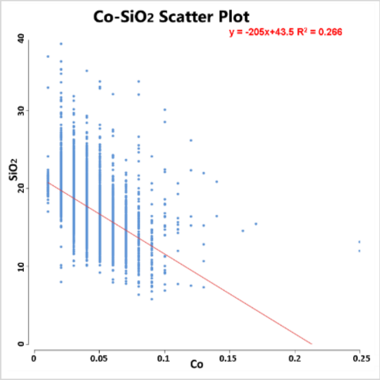

Ni-Cr_2O_3 Scatter Plot
y = 0.0793x + 1.28 R^2 = 0.008
Cr2O3
0
1
2
3
4
Ni
0
2
4
6

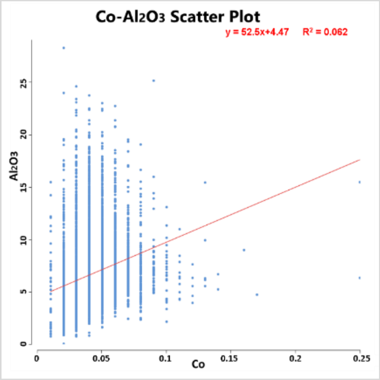

Ni-MnO Scatter Plot
y = 0.0038x + 0.0422 R^2 = 0.000
MnO
0
1
2
3
4
Ni
0
2
4
6

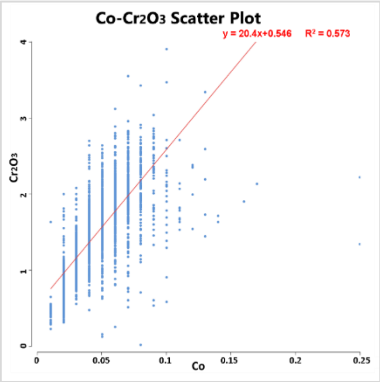

Ni-CaO Scatter Plot
y = -0.496x+2.26 R^2 = 0.050
CaO
0
5
10
15
Ni
0
2
4
6

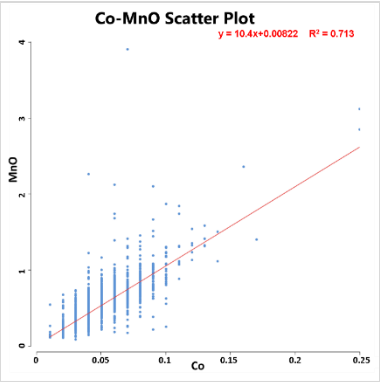

Co-Fe Scatter Plot
y = 294x+5.56 R^2 = 0.719
Fe
0
10
20
30
40
Co
0
0.05
0.1
0.15
0.2
0.25

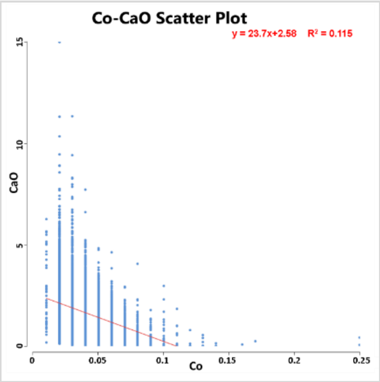

Co-MgO Scatter Plot
y = -211x+21 R^2 = 0.437
MgO
0
10
20
30
40
Co
0
0.05
0.1
0.15
0.2
0.25

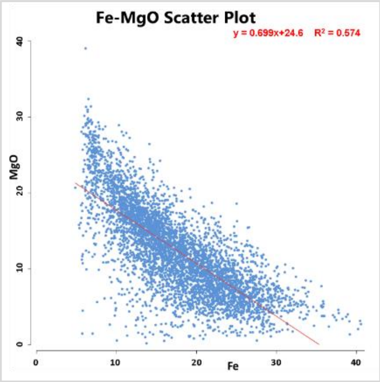

Co-SiO_2 Scatter Plot
y = -205x+43.5 R^2 = 0.266
SiO_2
0
10
20
30
40
Co
0
0.05
0.1
0.15
0.2
0.25

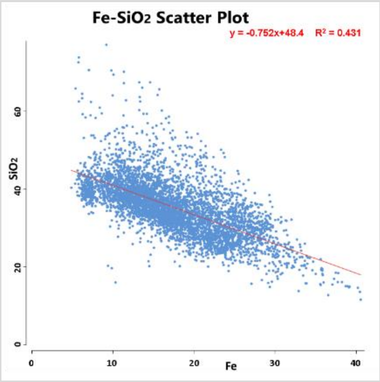

Co-Al_2O_3 Scatter Plot
y = 52.5x+4.47 R^2 = 0.062
Al2O3
0
5
10
15
20
25
Co
0
0.05
0.1
0.15
0.2
0.25

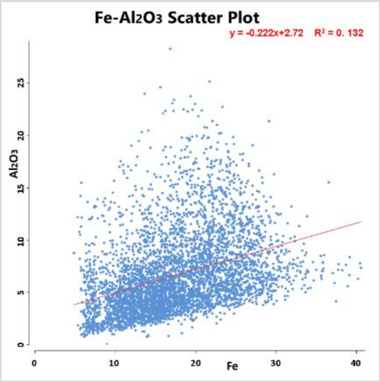

Co-Cr_2O_3 Scatter Plot
y = 20.4x+0.546 R^2 = 0.573
Cr_2O_3
0
1
2
3
4
Co
0
0.05
0.1
0.15
0.2
0.25

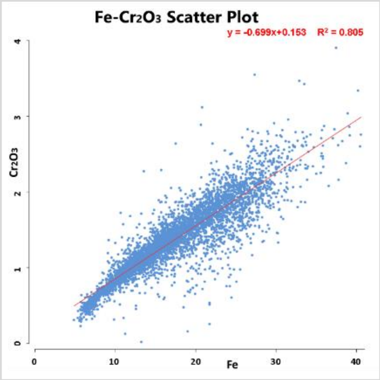

Co-MnO Scatter Plot
y = 10.4x+0.00822 R^2 = 0.713
MnO
0
1
2
3
4
Co
0
0.05
0.1
0.15
0.2
0.25

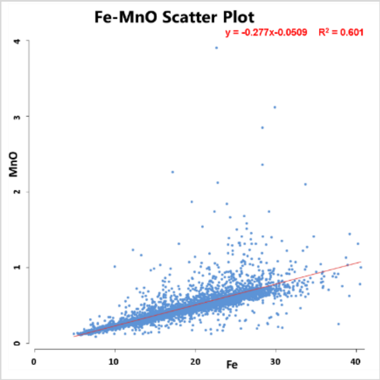

Co-CaO Scatter Plot
y = 23.7x+2.58 R^2 = 0.115
CaO
0
5
10
15
Co
0
0.05
0.1
0.15
0.2
0.25

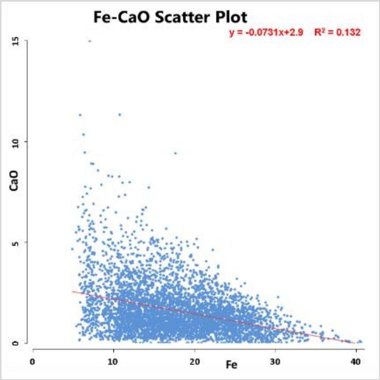

Fe-MgO Scatter Plot
y = 0.699x+24.6 R^2 = 0.574
MgO
0
10
20
30
40
Fe
0
10
20
30
40

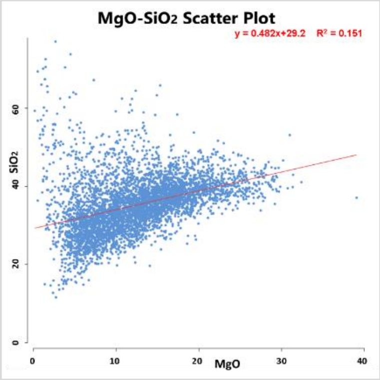

Fe-SiO_2 Scatter Plot
y = -0.752x+48.4 R^2 = 0.431
SiO_2
0
20
40
60
Fe
0
10
20
30
40

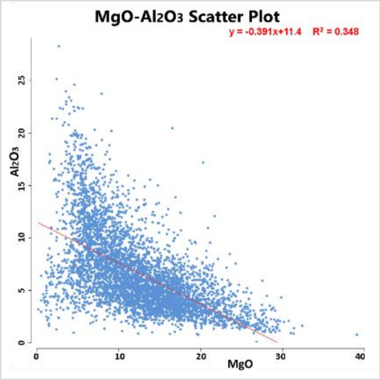

Fe-Al_2O_3 Scatter Plot
y = -0.222x+2.72 R^2 = 0. 132
Al_2O_3
0
5
10
15
20
25
Fe
0
10
20
30
40

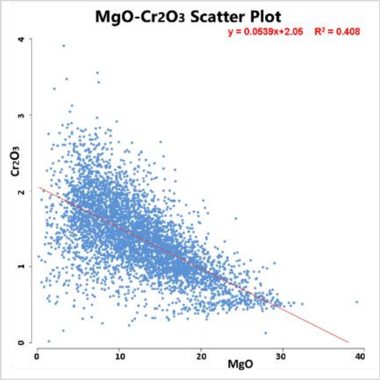

Fe-Cr_2O_3 Scatter Plot
y = -0.699x+0.153 R^2 = 0.805
Cr_2O_3
0
1
2
3
4
Fe
0
10
20
30
40


Fe-MnO Scatter Plot
y = -0.277x-0.0509 R^2 = 0.601
MnO
0
1
2
3
4
Fe
0
10
20
30
40


Fe-CaO Scatter Plot
y = -0.0731x+2.9 R^2 = 0.132
CaO
0
5
10
15
Fe
0
10
20
30
40


MgO-SiO_2 Scatter Plot
y = 0.482x+29.2 R^2 = 0.151
SiO_2
0
20
40
60
MgO
0
10
20
30
40


MgO-Al_2O_3 Scatter Plot
y = -0.391x+11.4 R^2 = 0.348
Al_2O_3
0
5
10
15
20
25
MgO
0
10
20
30
40


MgO-Cr_2O_3 Scatter Plot
y = 0.0539x+2.05 R^2 = 0.408
Cr_2O_3
0
1
2
3
4
MgO
0
10
20
30
40

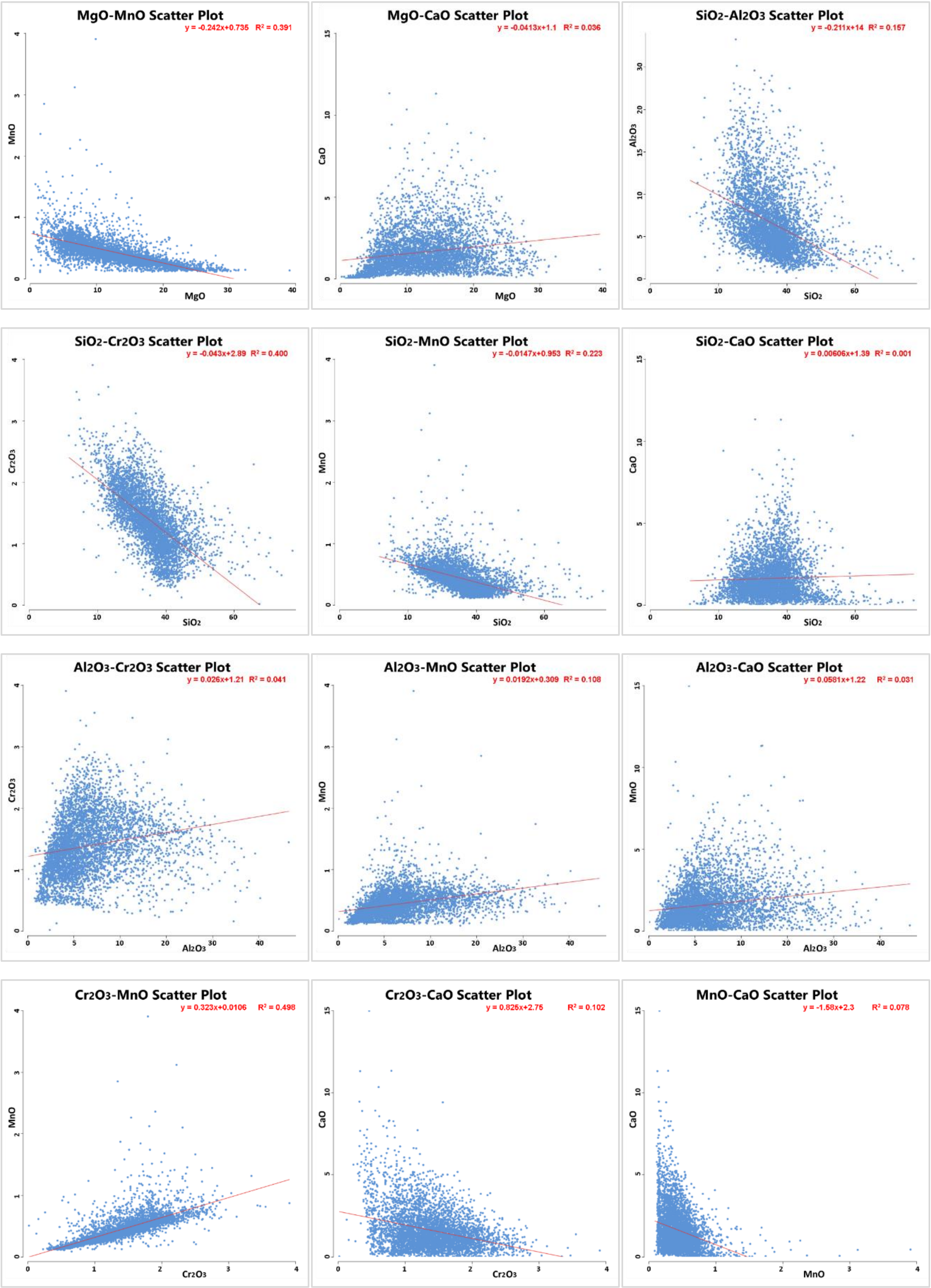


Figure 5 Mineral correlation scatter plot for Saprolite

Table 4 Summary of mineral correlation for Limonite

Limonite	**Ni**	**Co**	**Fe**	**MgO**	**SiO_2**	**Al_2O_3**	**Cr_2O_3**	**MnO**	**CaO**
Ni	1.000								
Co	0.198	1.000							
Fe	0.000	0.025	1.000						
MgO	0.048	-0.009	**-0.501**	1.000					
SiO_2	0.010	-0.036	**-0.723**	**0.626**	1.000				
Al_2O_3	-0.212	-0.035	-0.122	-0.042	-0.011	1.000			
Cr_2O_3	0.101	0.055	**0.549**	-0.111	-0.282	-0.306	1.000		
MnO	0.212	**0.738**	-0.002	0.001	-0.001	-0.012	0.008	1.000	
CaO	0.001	-0.021	-0.205	0.319	0.211	-0.007	-0.060	-0.005	1.000

Table 5 Summary of mineral correlation for Saprolite

Saprolite	**Ni**	**Co**	**Fe**	**MgO**	**SiO_2**	**Al_2O_3**	**Cr_2O_3**	**MnO**	**CaO**
Ni	1.000								
Co	0.005	1.000							
Fe	0.001	**0.719**	1.000						
MgO	0.029	-0.437	**-0.574**	1.000					
SiO_2	-0.011	-0.266	-0.431	0.151	1.000				
Al_2O_3	-0.085	0.062	0.132	-0.348	-0.157	1.000			
Cr_2O_3	0.008	**0.573**	**0.805**	-0.408	-0.400	0.041	1.000		
MnO	0.000	**0.713**	**0.601**	-0.391	-0.223	0.108	0.498	1.000	
CaO	-0.050	-0.115	-0.132	0.036	0.001	0.031	-0.102	-0.078	1.000

1.4. Variography

1.4.1. Variogram of Limonite

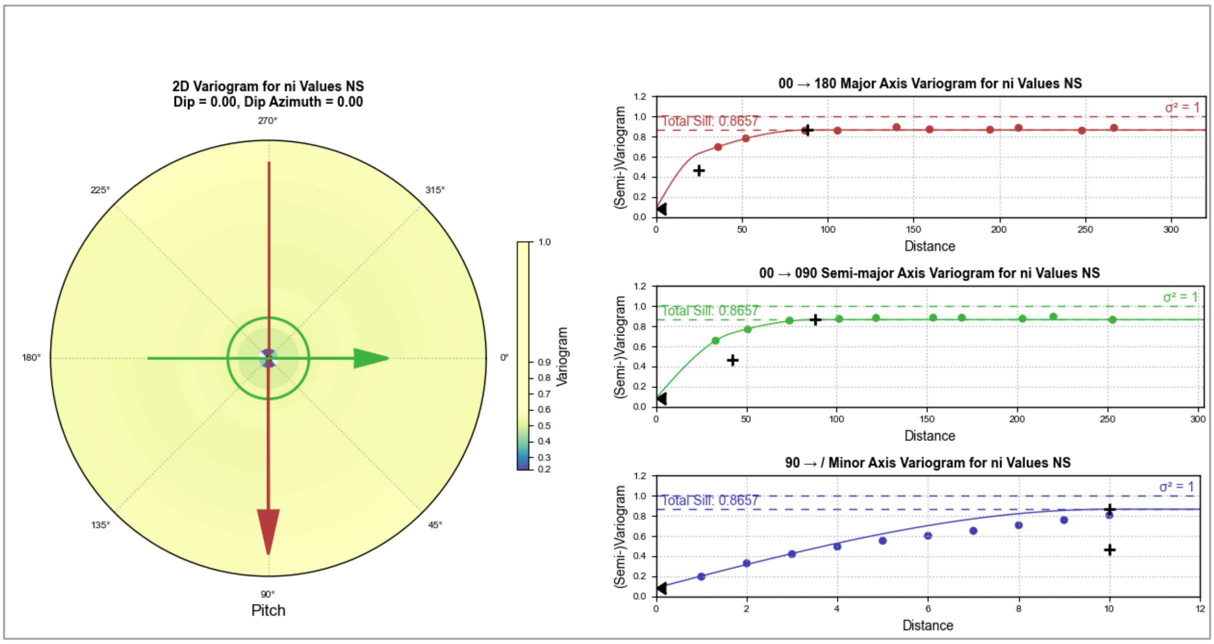


Figure 6 Variogram of Limonite Ni

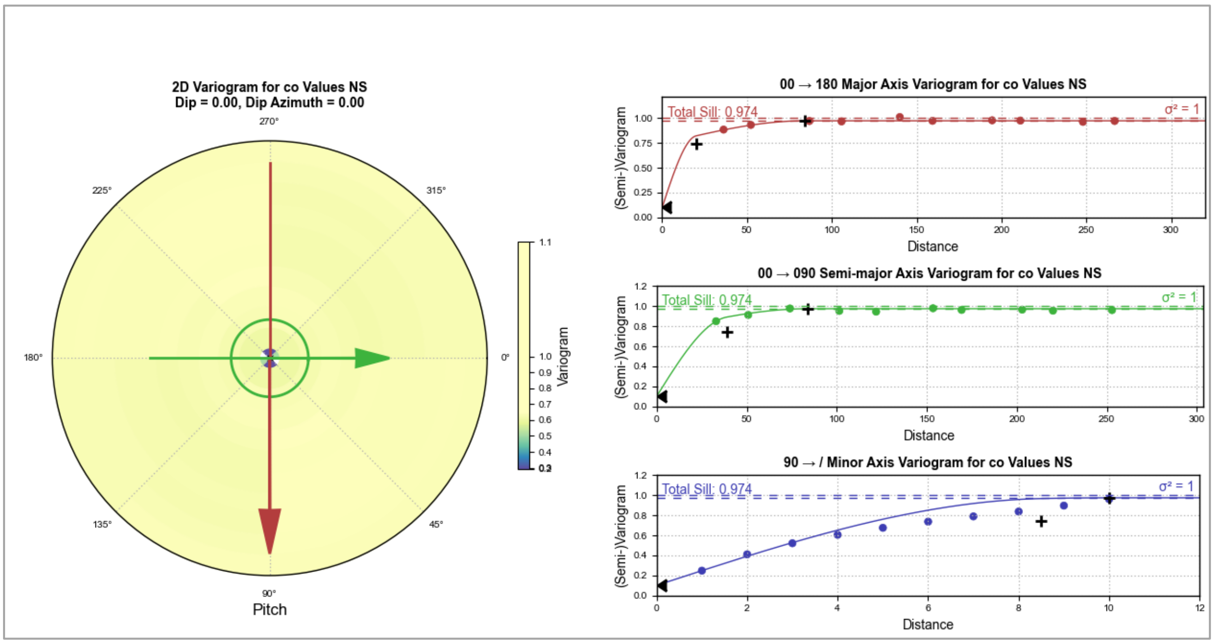


Figure 7 Variogram of Limonite Co

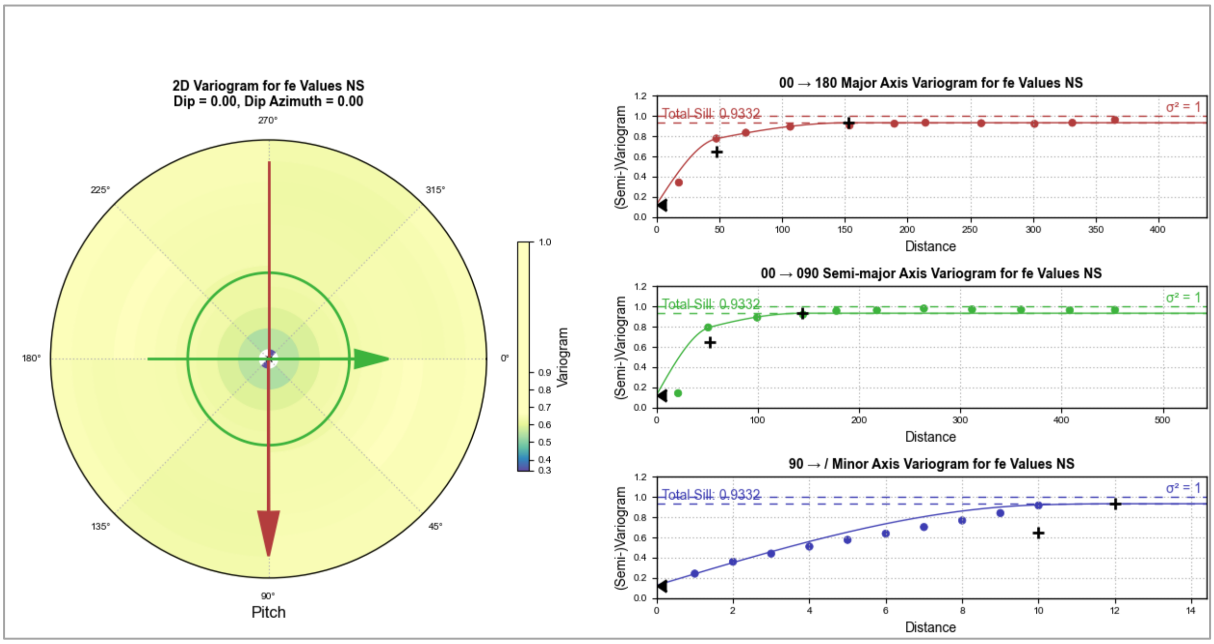


Figure 8 Variogram of Limonite Fe

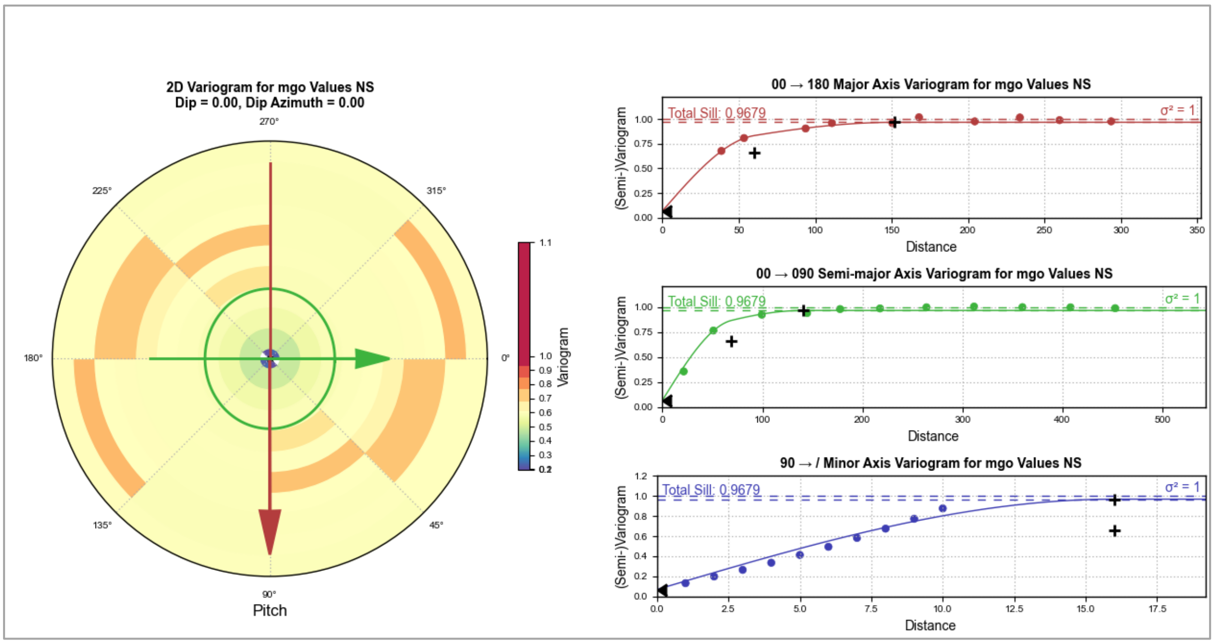


Figure 9 Variogram of Limonite MgO

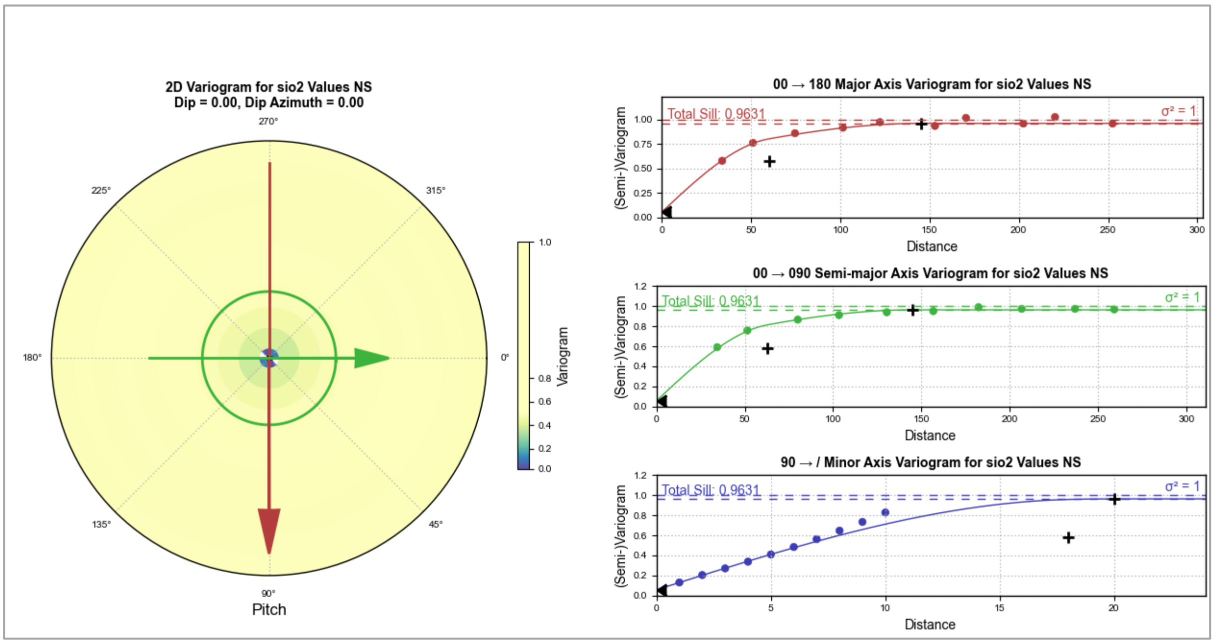


Figure 10 Variogram of Limonite SiO_2

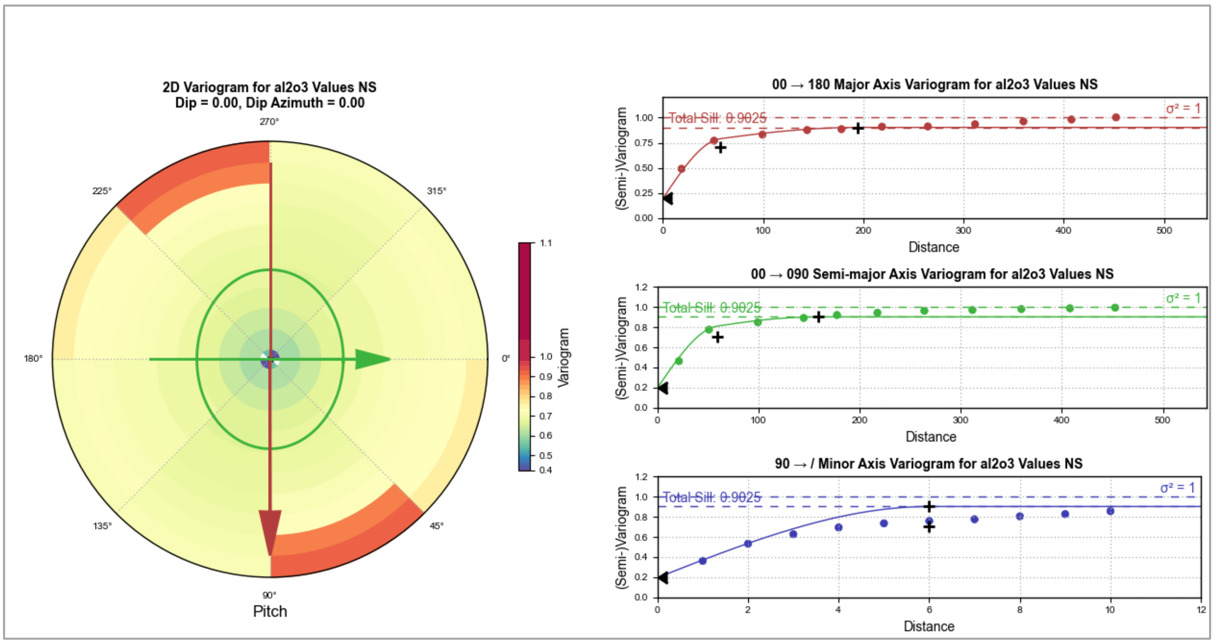


Figure 11 Variogram of Limonite Al_2O_3

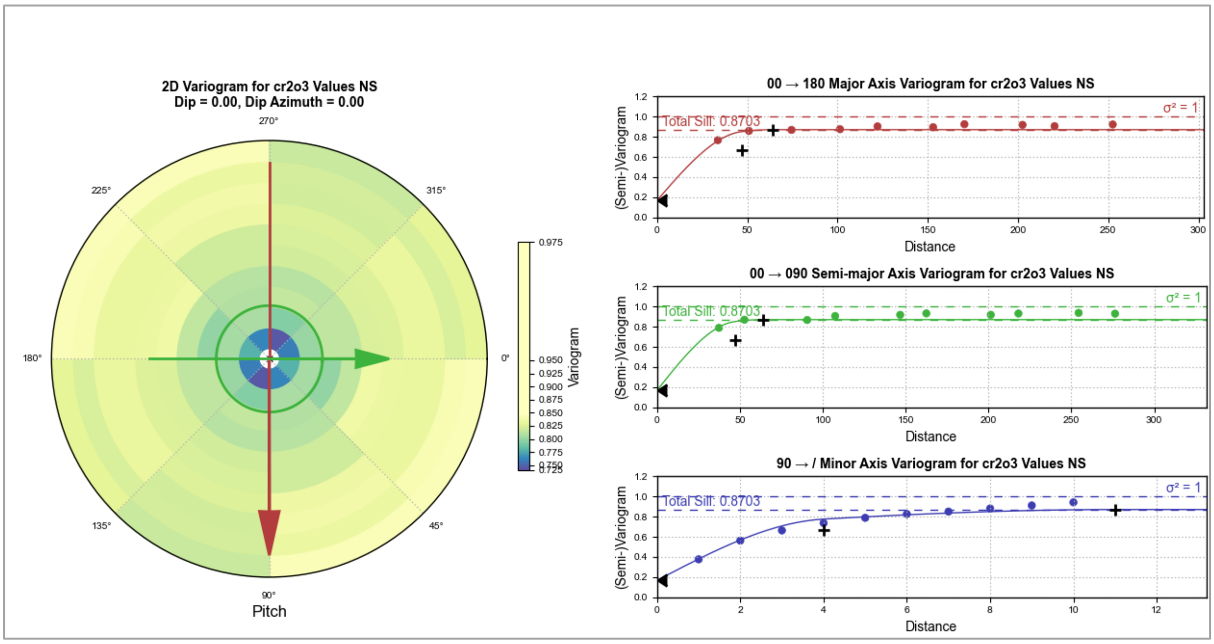


Figure 12 Variogram of Limonite Cr_2O_3

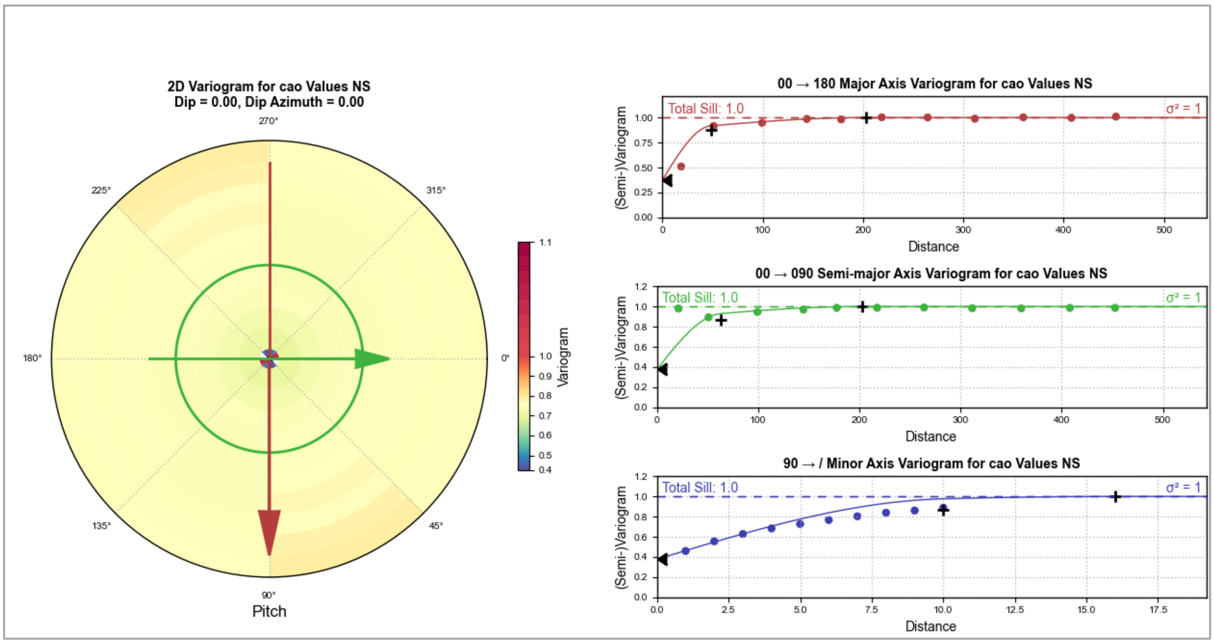


Figure 13 Variogram of Limonite CaO

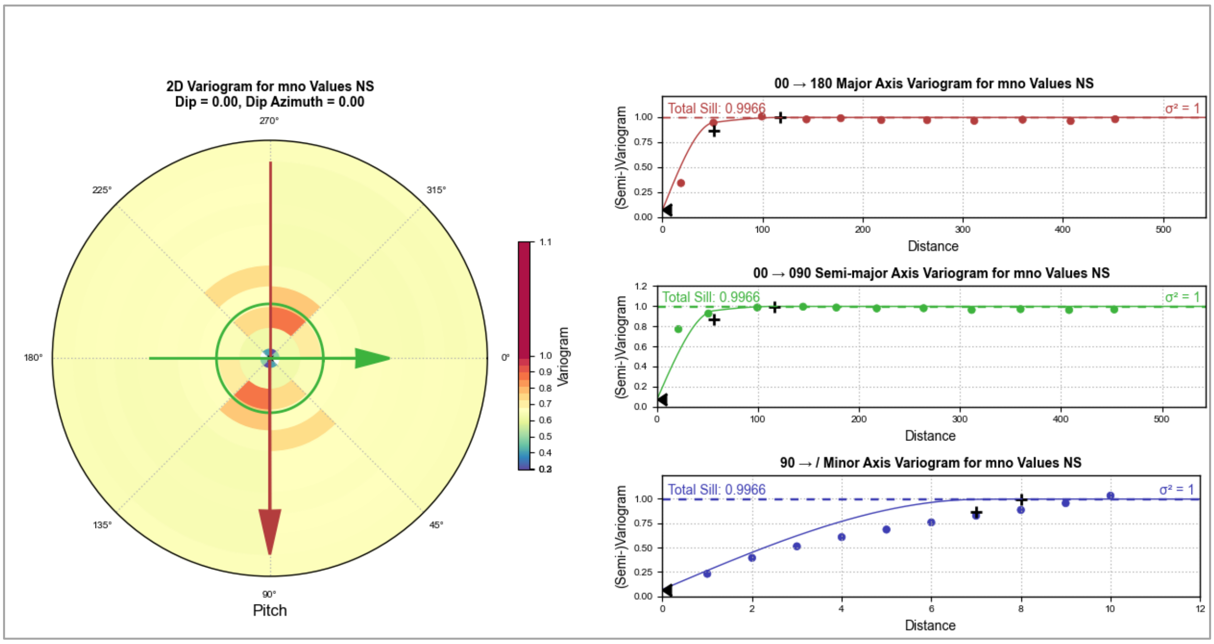


Figure 14 Variogram of Limonite MnO

1.4.2 Variogram of Saprolite

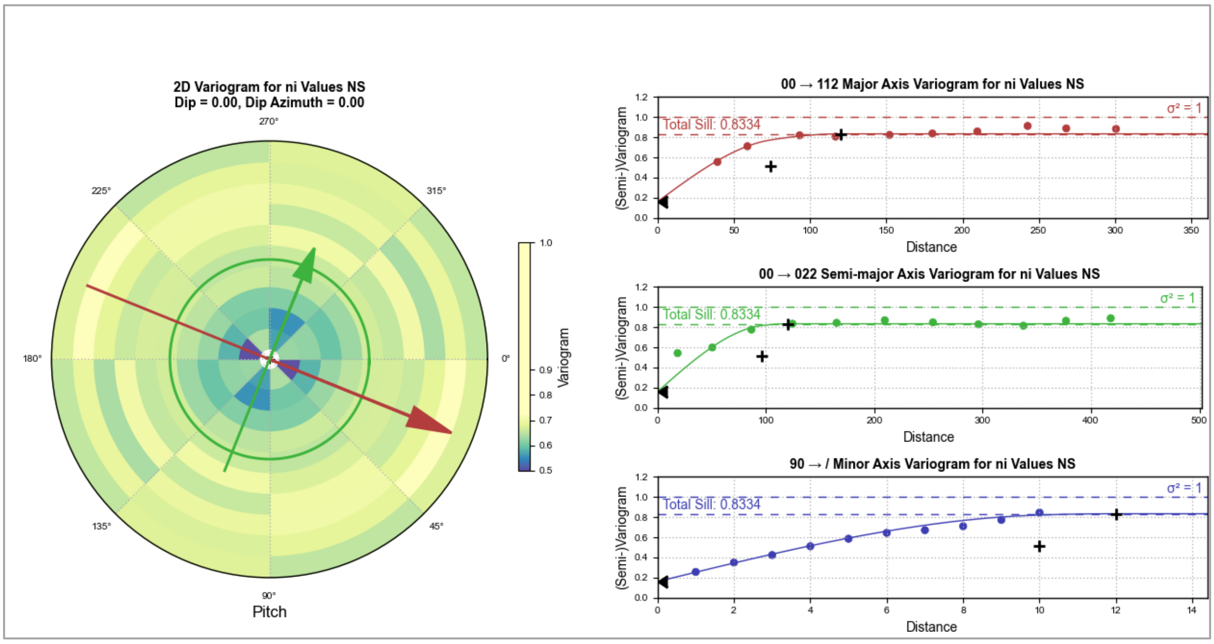


Figure 15 Variogram of Saprolite Ni

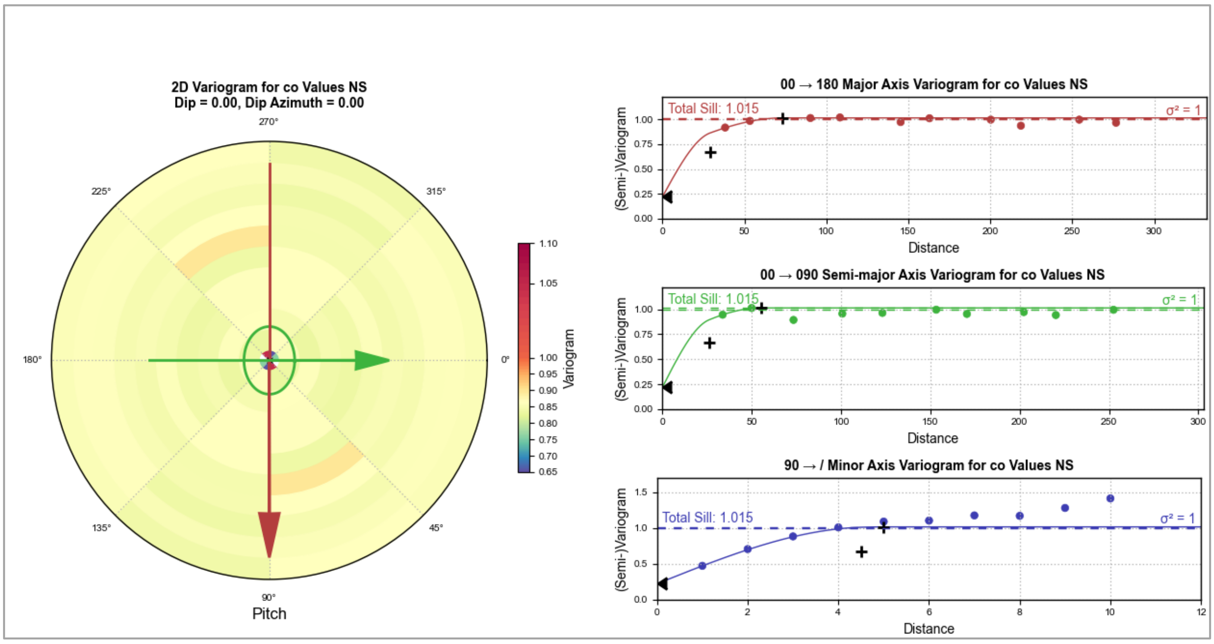


Figure 16 Variogram of Saprolite Co

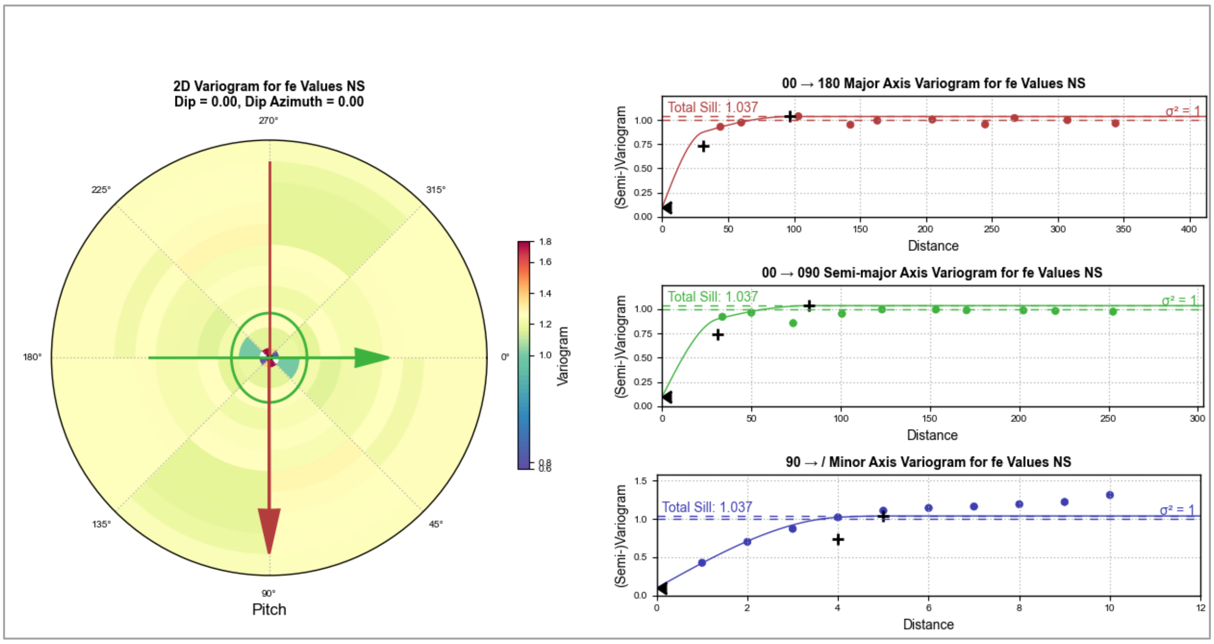


Figure 17 Variogram of Saprolite Fe

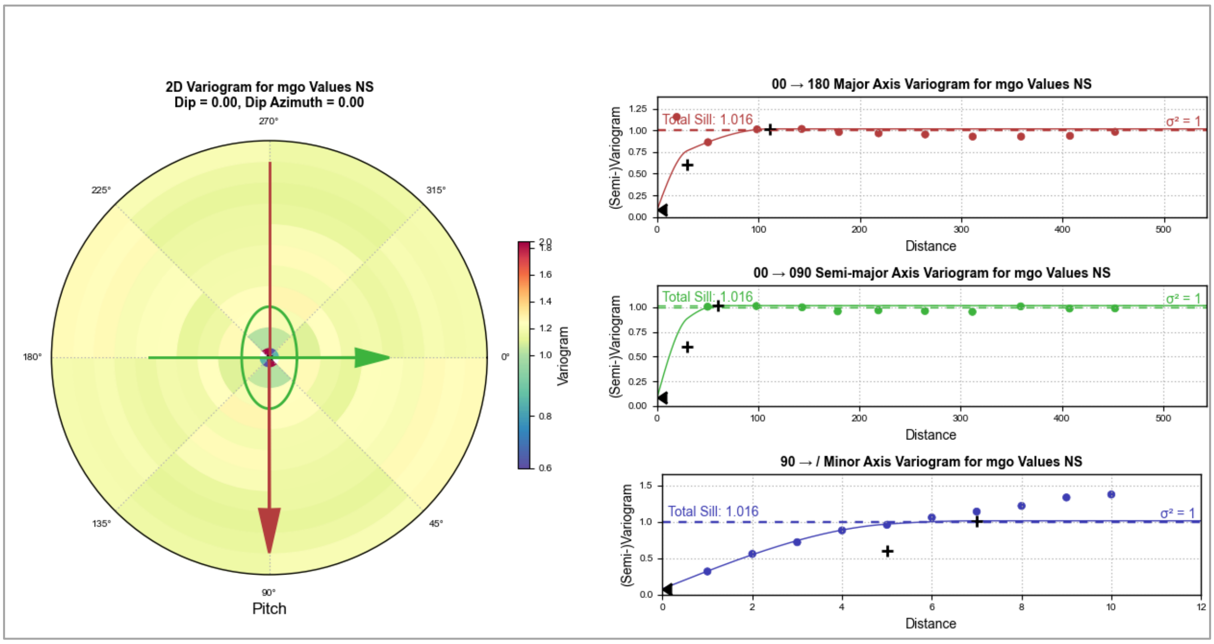


Figure 18 Variogram of Saprolite MgO

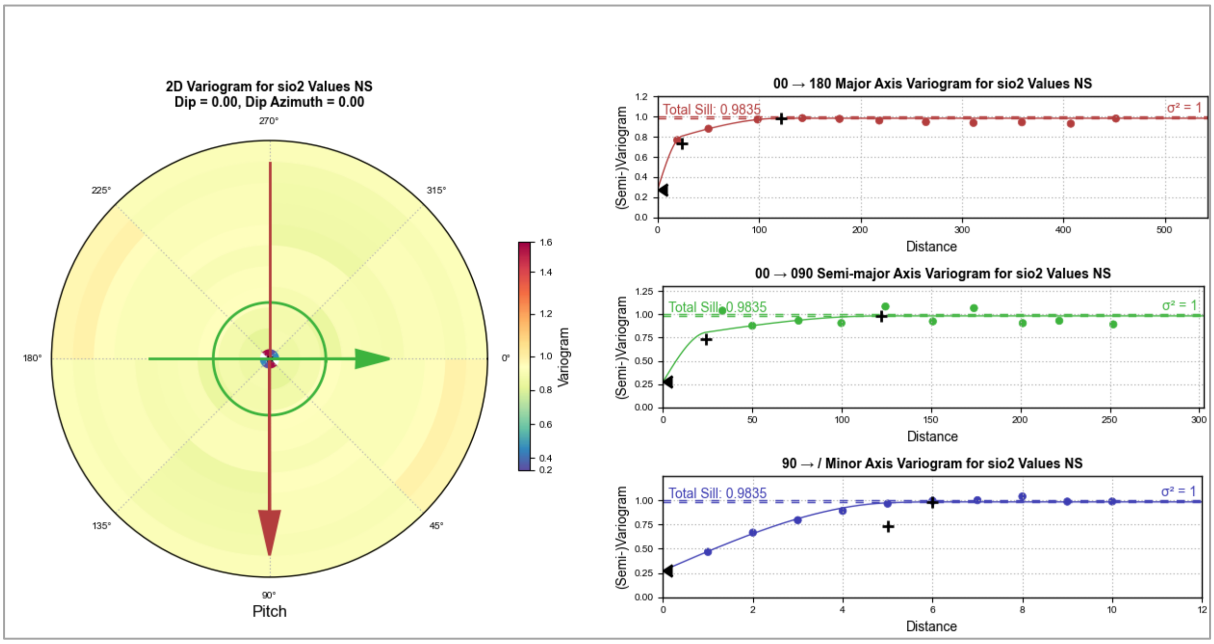


Figure 19 Variogram of Saprolite SiO_2

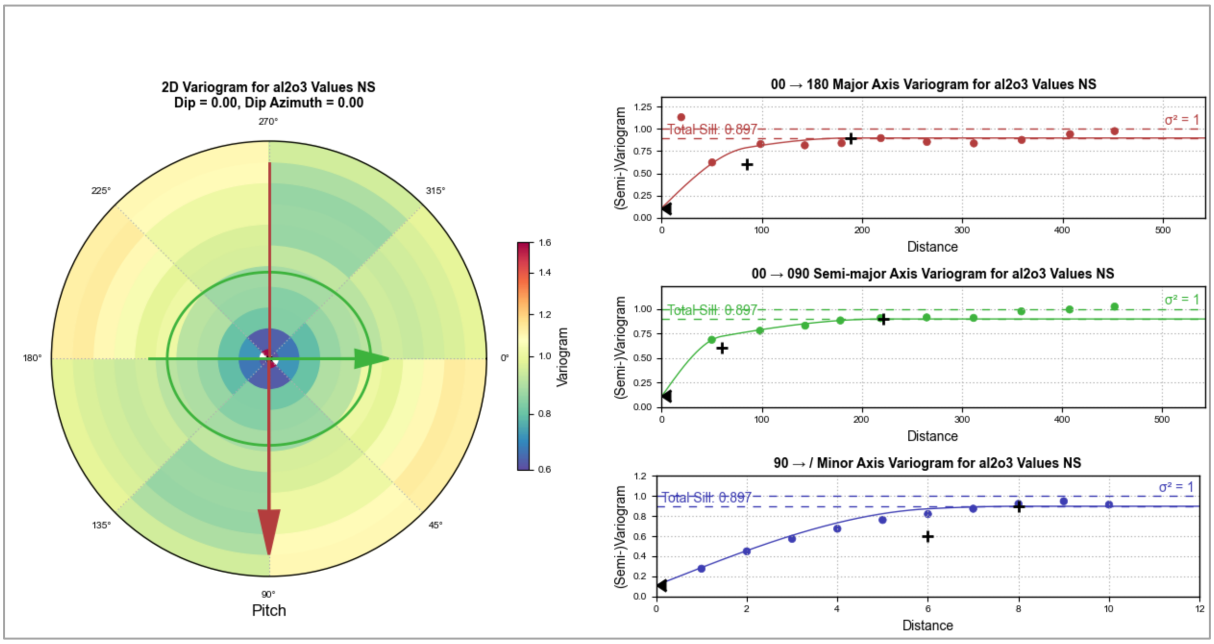


Figure 20 Variogram of Saprolite Al_2O_3

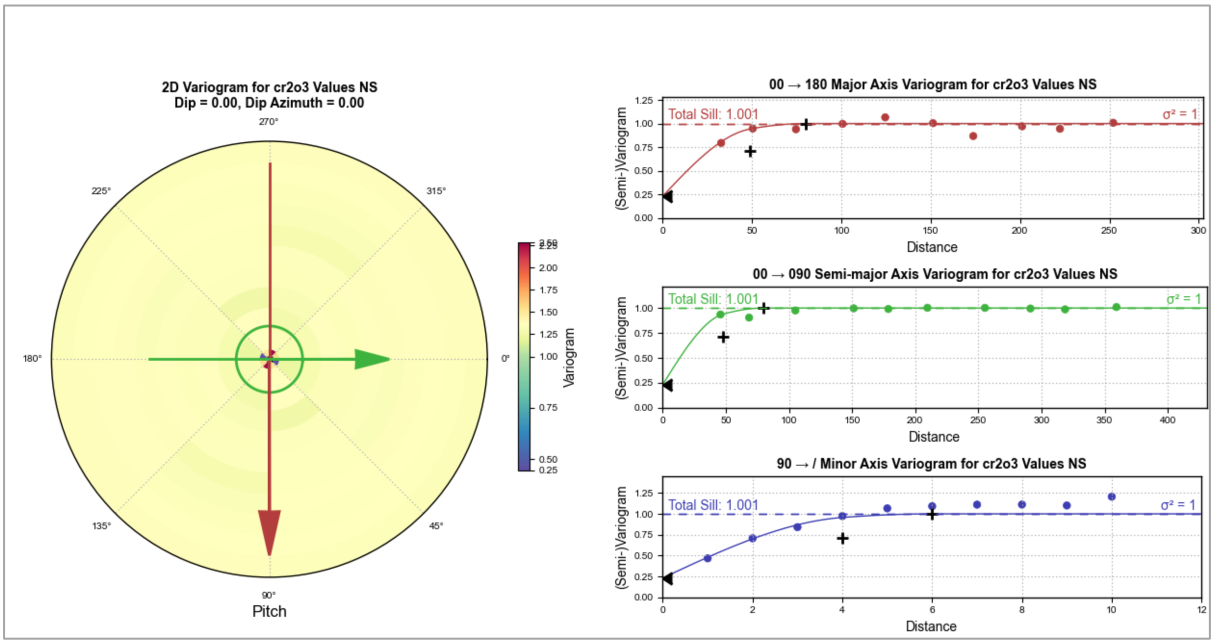


Figure 21 Variogram of Saprolite Cr_2O_3

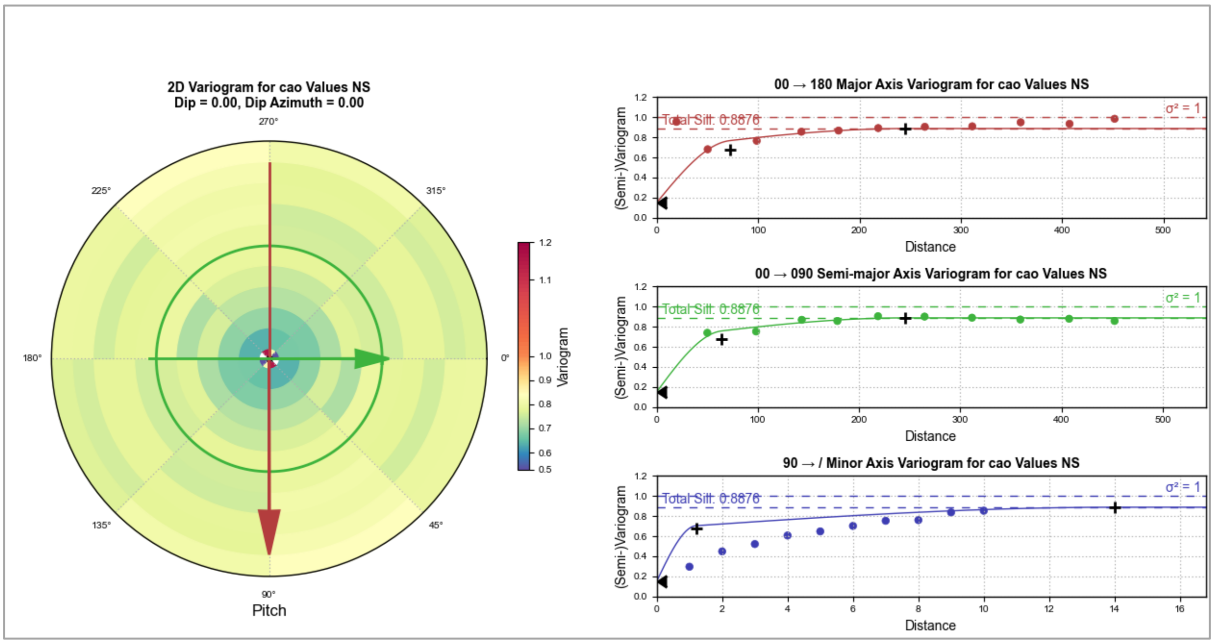


Figure 22 Variogram of Saprolite CaO

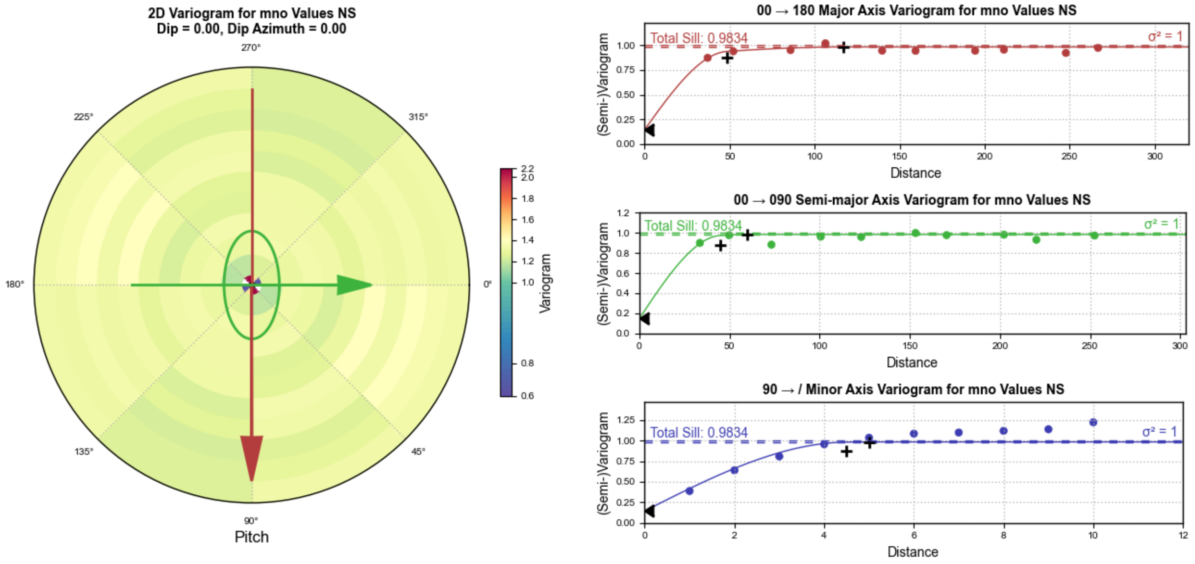
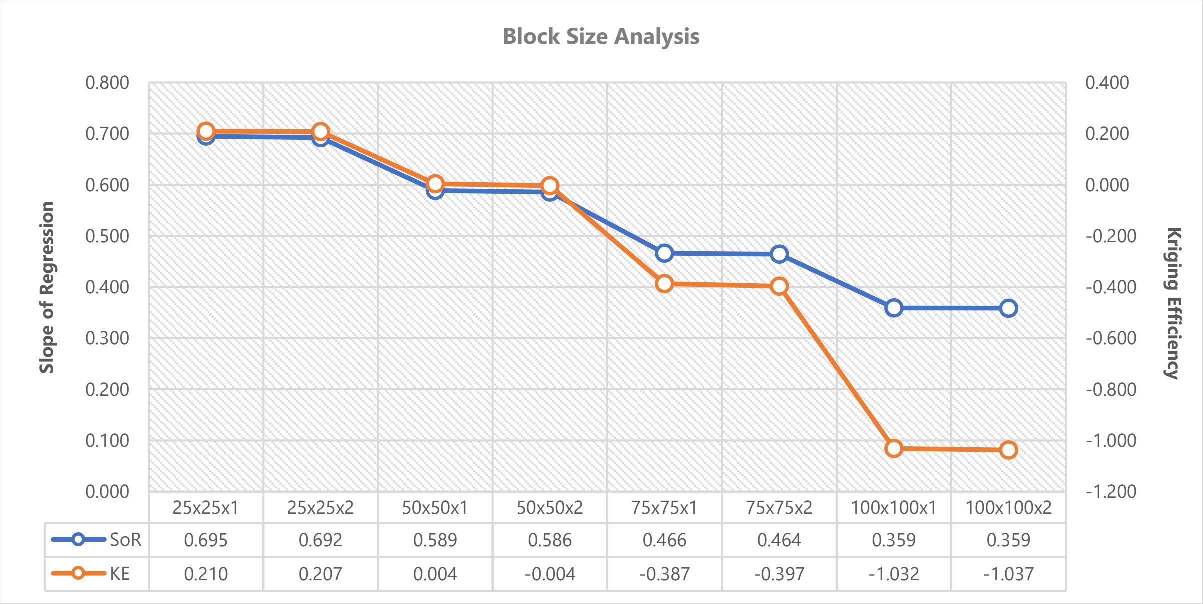


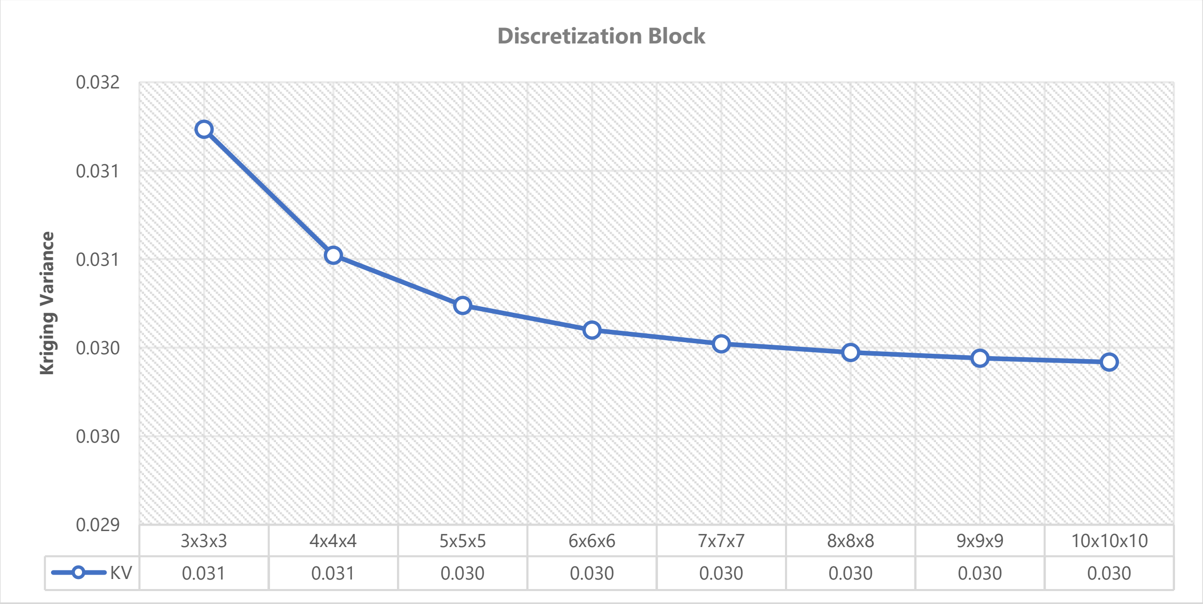
Figure 23 Variogram of Saprolite MnO

1.4.2. Kriging Neighborhood Analysis (KNA)



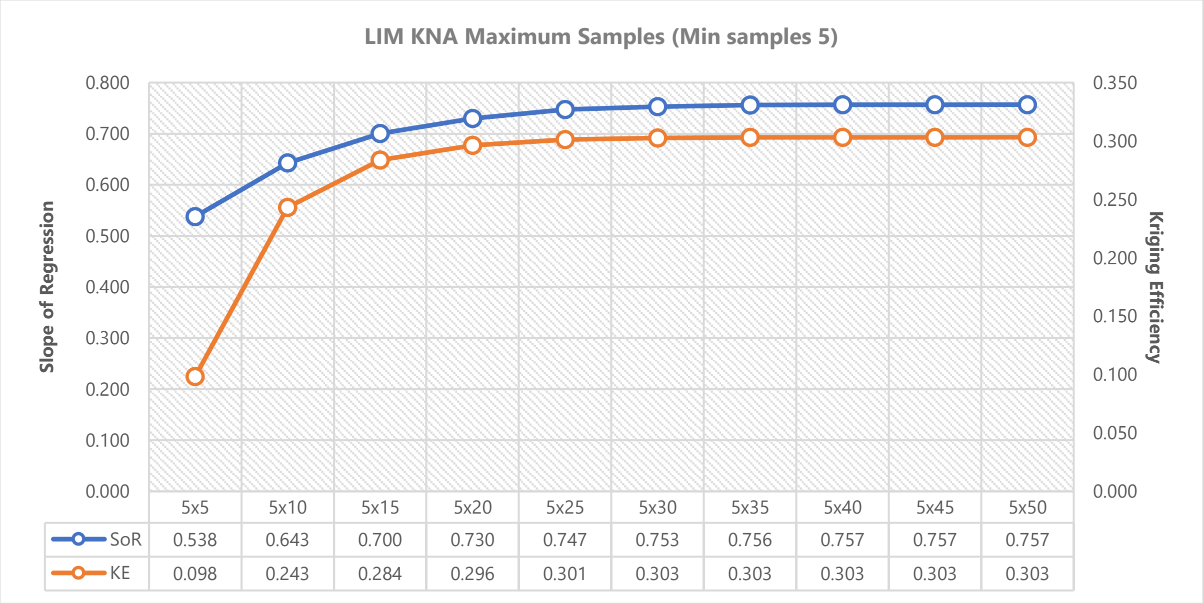
	25x25x1	25x25x2	50x50x1	50x50x2	75x75x1	75x75x2	100x100x1	100x100x2
SoR	0.695	0.692	0.589	0.586	0.466	0.464	0.359	0.359
KE	0.210	0.207	0.004	-0.004	-0.387	-0.397	-1.032	-1.037

Figure 24 KNA for optimum block model size in Block D



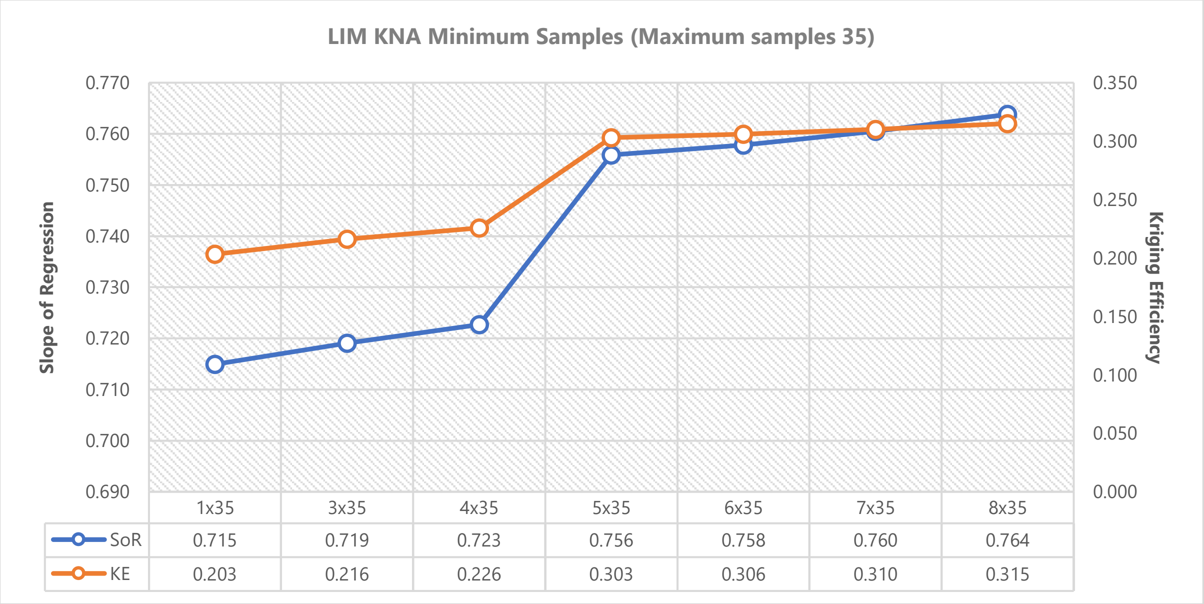
	3x3x3	4x4x4	5x5x5	6x6x6	7x7x7	8x8x8	9x9x9	10x10x10
KV	0.031	0.031	0.030	0.030	0.030	0.030	0.030	0.030

Figure 25 KNA for optimum discretization block in Block D



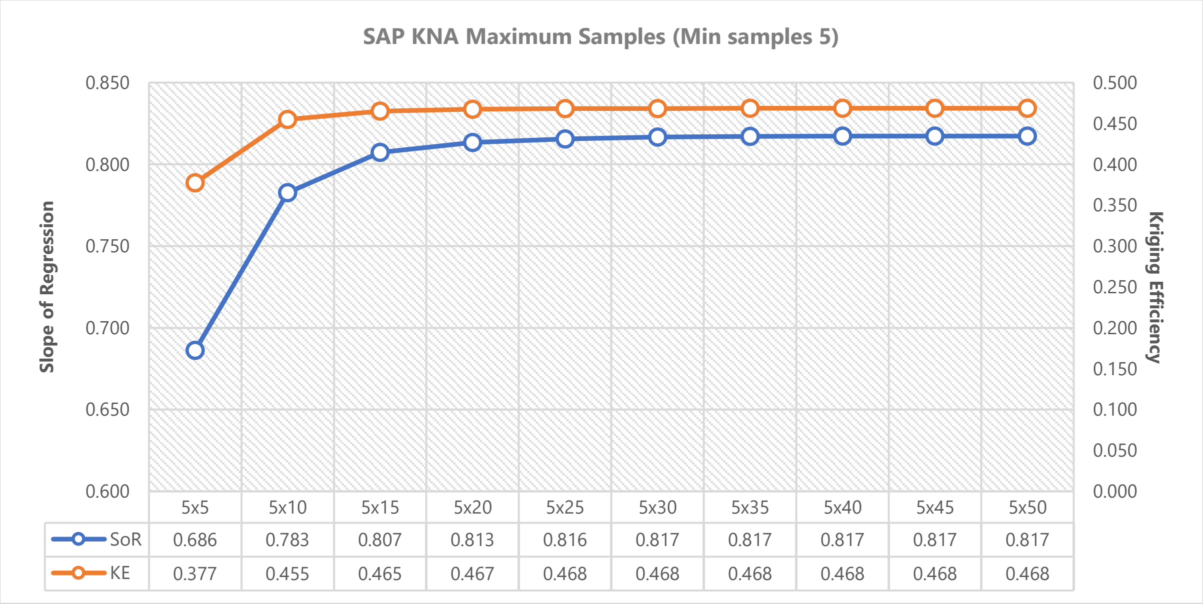
	5x5	5x10	5x15	5x20	5x25	5x30	5x35	5x40	5x45	5x50
SoR	0.538	0.643	0.700	0.730	0.747	0.753	0.756	0.757	0.757	0.757
KE	0.098	0.243	0.284	0.296	0.301	0.303	0.303	0.303	0.303	0.303

Figure 26 KNA for maximum samples Limonite in Block D



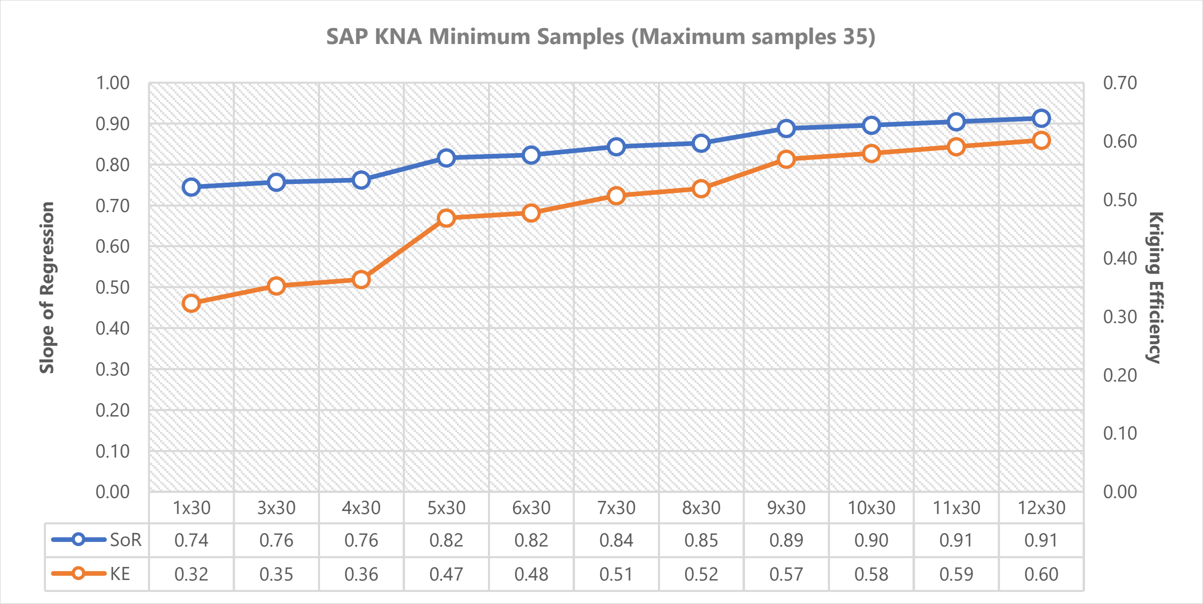
	1x35	3x35	4x35	5x35	6x35	7x35	8x35
SoR	0.715	0.719	0.723	0.756	0.758	0.760	0.764
KE	0.203	0.216	0.226	0.303	0.306	0.310	0.315

Figure 27 KNA for minimum samples Limonite in Block D



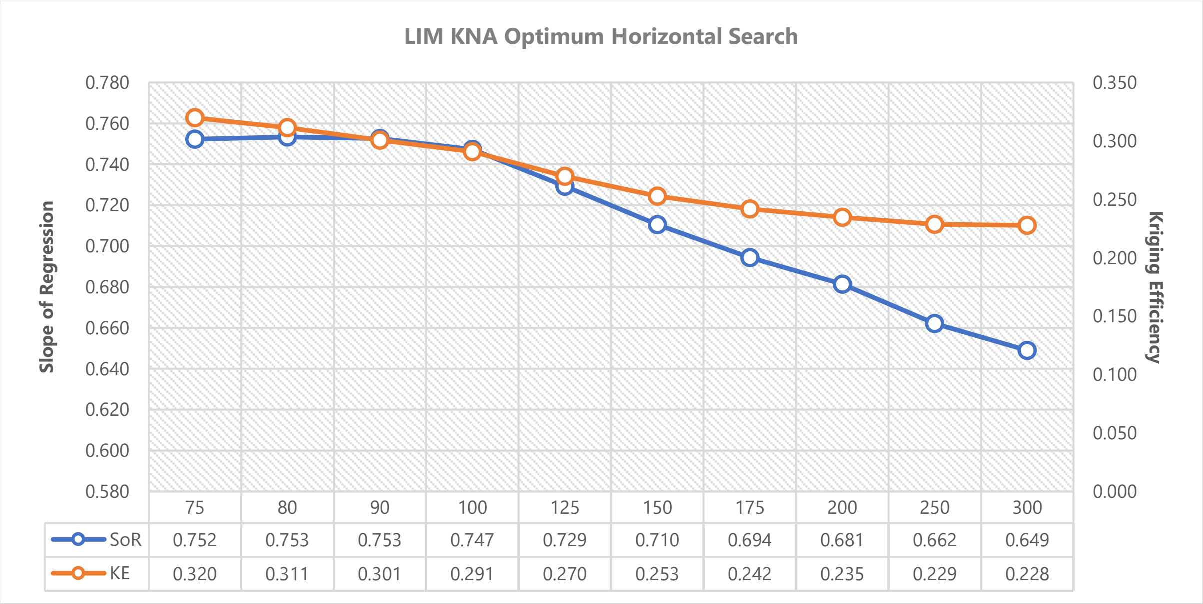
	5x5	5x10	5x15	5x20	5x25	5x30	5x35	5x40	5x45	5x50
SoR	0.686	0.783	0.807	0.813	0.816	0.817	0.817	0.817	0.817	0.817
KE	0.377	0.455	0.465	0.467	0.468	0.468	0.468	0.468	0.468	0.468

Figure 28 KNA for maximum samples Saprolite in Block D



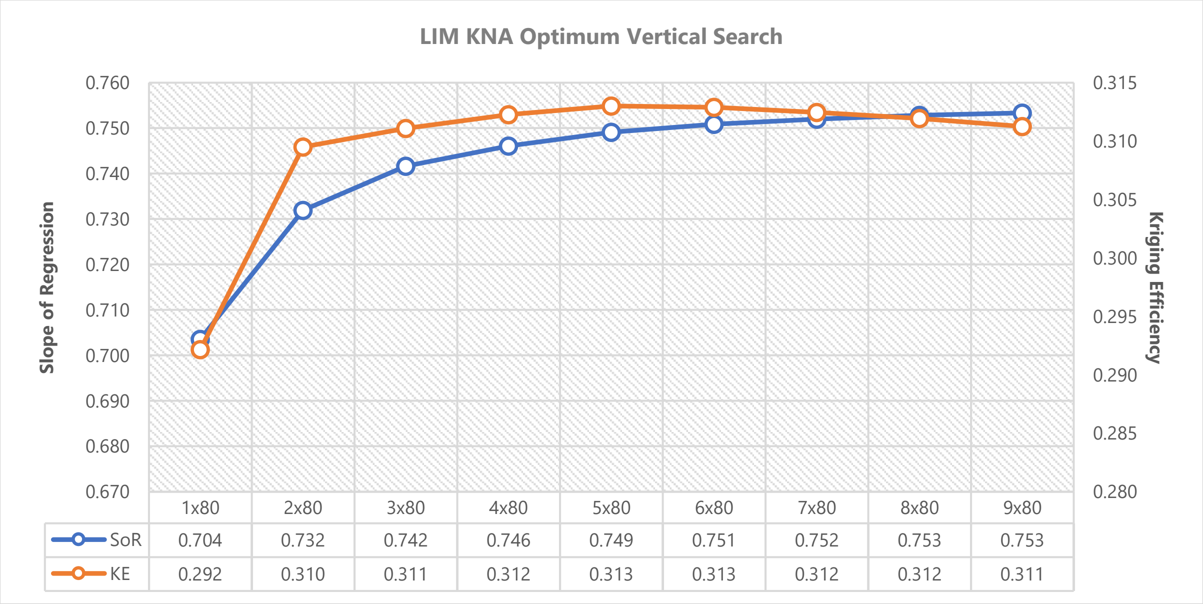
	1x30	3x30	4x30	5x30	6x30	7x30	8x30	9x30	10x30	11x30	12x30
SoR	0.74	0.76	0.76	0.82	0.82	0.84	0.85	0.89	0.90	0.91	0.91
KE	0.32	0.35	0.36	0.47	0.48	0.51	0.52	0.57	0.58	0.59	0.60

Figure 29 KNA for minimum samples Saprolite in Block D



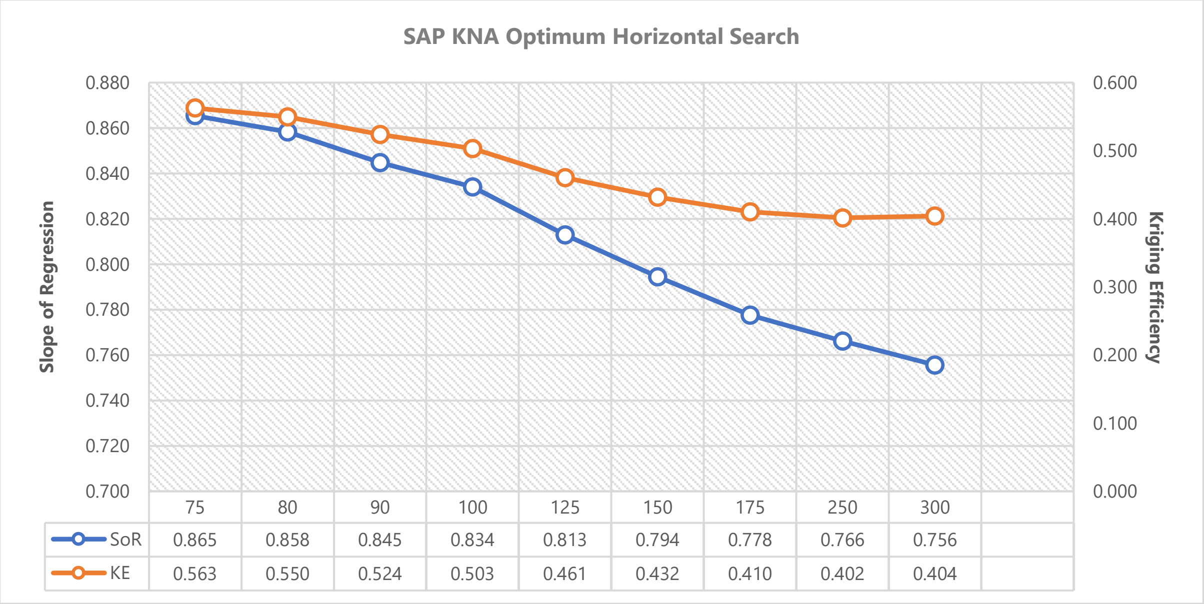
	75	80	90	100	125	150	175	200	250	300
SoR	0.752	0.753	0.753	0.747	0.729	0.710	0.694	0.681	0.662	0.649
KE	0.320	0.311	0.301	0.291	0.270	0.253	0.242	0.235	0.229	0.228

Figure 30 KNA for optimum horizontal search Limonite in Block D



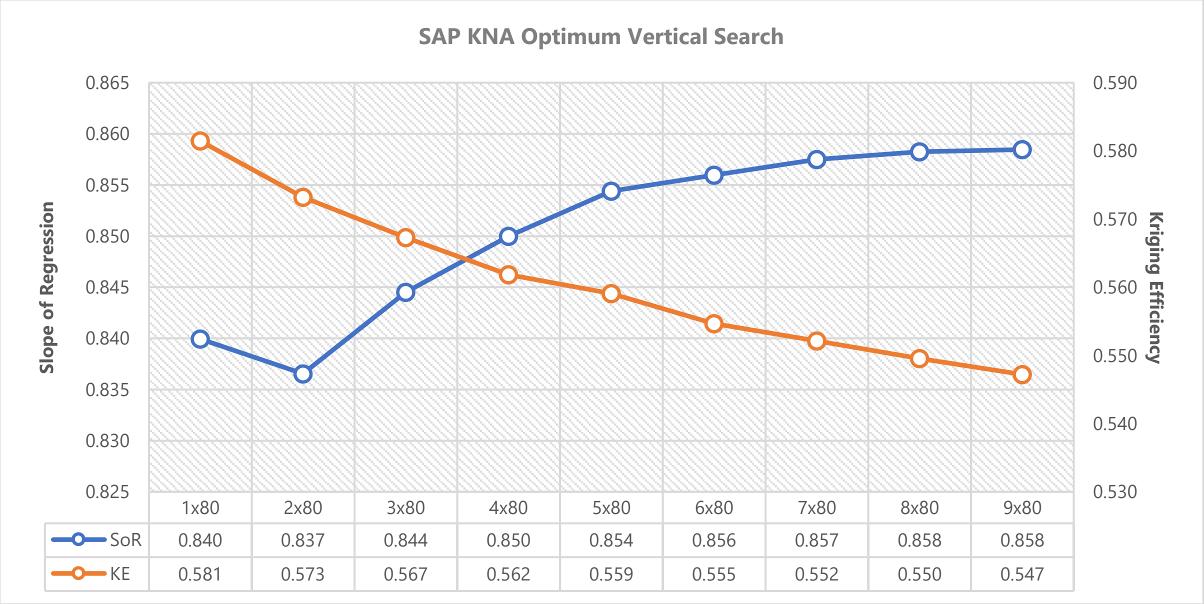
	1x80	2x80	3x80	4x80	5x80	6x80	7x80	8x80	9x80
SoR	0.704	0.732	0.742	0.746	0.749	0.751	0.752	0.753	0.753
KE	0.292	0.310	0.311	0.312	0.313	0.313	0.312	0.312	0.311

Figure 31 KNA for optimum vertical search Limonite in Block D



	75	80	90	100	125	150	175	250	300
SoR	0.865	0.858	0.845	0.834	0.813	0.794	0.778	0.766	0.756
KE	0.563	0.550	0.524	0.503	0.461	0.432	0.410	0.402	0.404

Figure 32 KNA for optimum horizontal search Saprolite in Block D



	1x80	2x80	3x80	4x80	5x80	6x80	7x80	8x80	9x80
SoR	0.840	0.837	0.844	0.850	0.854	0.856	0.857	0.858	0.858
KE	0.581	0.573	0.567	0.562	0.559	0.555	0.552	0.550	0.547

Figure 33 KNA for optimum vertical search Saprolite in Block D

Table 6 KNA summary

Parameter	Limonite	Saprolite
Block Size	25x25x1	
Discretization Block	5x5x4	
Max. Horizontal Search	80	80
Max. Samples	30	30
Max. Vertical Search	5	4

1.5. Grade Estimation

Table 7 Search parameters of Limonite

Parameter	Ni			Co			Fe			MgO			SiO2			Al2O3			Cr2O3			CaO			MnO		
	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3
Minimum Sample	5	3	1	5	3	1	5	3	1	5	3	1	5	3	1	5	3	1	5	3	1	5	3	1	5	3	1
Maximum Sample	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Max. Search Radius	80	160	320	80	160	320	80	160	320	80	160	320	80	160	320	80	160	320	80	160	320	80	160	320	80	160	320
Max. Vertical Distance	5	10	20	5	10	20	5	10	20	5	10	20	5	10	20	5	10	20	5	10	20	5	10	20	5	10	20
Dip	0			0			0			0			0			0			0			0			0		
Dip Azimuth	0			0			0			0			0			0			0			0			0		
Pitch	90			90			90			90			90			90			90			90			90		
Major/Semi-major 1	0.595			0.513			0.906			0.870			0.950			0.966			1.000			0.762			0.911		
Major/Semi-major 2	1.000			1.000			1.063			1.078			1.000			1.220			1.000			1.000			1.017		
Major/Minor 1	2.500			2.353			4.800			3.750			3.324			9.500			11.750			4.800			7.286		
Major/Minor 2	8.800			8.400			12.750			9.500			7.250			32.333			5.818			12.688			14.750		
Nugget	0.086			0.101			0.127			0.070			0.058			0.196			0.168			0.378			0.071		
Structure 1	0.383			0.639			0.518			0.591			0.523			0.509			0.504			0.495			0.795		
Structure 2	0.397			0.234			0.289			0.307			0.382			0.197			0.199			0.128			0.130		
Range 1	25			20			48			60			59.83			57			47			48			51		
Range 2	88			84			153			152			145			194			64			203			118		
Block Discretization	5 X 5 X 4			5 X 5 X 4			5 X 5 X 4			5 X 5 X 4			5 X 5 X 4			5 X 5 X 4			5 X 5 X 4			5 X 5 X 4			5 X 5 X 4		
Drillhole Limit	4			4			4			4			4			4			4			4			4		

Table 8 Search parameters of Saprolite

Parameter	Ni			Co			Fe			MgO			SiO2			Al2O3			Cr2O3			CaO			MnO		
	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3
Minimum Sample	5	3	1	5	3	1	5	3	1	5	3	1	5	3	1	5	3	1	5	3	1	5	3	1	5	3	1
Maximum Sample	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Max. Search Radius	80	160	320	80	160	320	80	160	320	80	160	320	80	160	320	80	160	320	80	160	320	80	160	320	80	160	320
Max. Vertical Distance	4	8	16	4	8	16	4	8	16	4	8	16	4	8	16	4	8	16	4	8	16	4	8	16	4	8	16
Dip	0			0			0			0			0			0			0			0			0		
Dip Azimuth	0			0			0			0			0			0			0			0			0		
Pitch	22			90			90			90			90			90			90			90			90		
Major/Semi-major 1	0.771			1.115			1.000			1.000			1.000			1.419			1.021			1.125			1.074		
Major/Semi-major 2	1.000			1.327			1.183			1.850			1.000			0.851			1.000			1.000			1.950		
Major/Minor 1	7.400			6.444			7.750			6.000			4.800			14.167			12.250			60.000			10.744		
Major/Minor 2	10.000			14.600			19.400			15.857			20.333			23.500			13.333			17.500			23.400		
Nugget	0.161			0.221			0.100			0.081			0.276			0.111			0.234			0.152			0.146		
Structure 1	0.356			0.445			0.637			0.521			0.458			0.494			0.477			0.525			0.727		
Structure 2	0.317			0.349			0.300			0.414			0.250			0.292			0.290			0.211			0.110		
Range 1	74			29			31			30			24			85			49			72			48.35		
Range 2	120			73			97			111			122			188			80			245			117		
Block Discretization	5 X 5 X 4			5 X 5 X 4			5 X 5 X 4			5 X 5 X 4			5 X 5 X 4			5 X 5 X 4			5 X 5 X 4			5 X 5 X 4			5 X 5 X 4		
Drillhole Limit	4			4			4			4			4			4			4			4			4		

1.6. Blockmodel Validation

1.6.1. Visual Validation

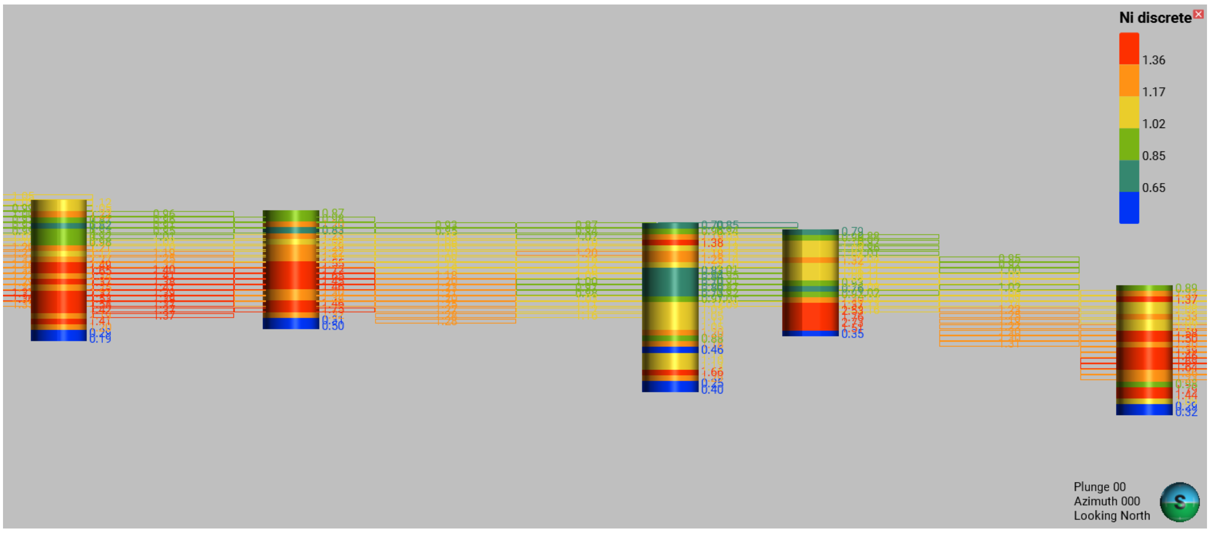


Figure 34 Visual validation for Ni Limonite

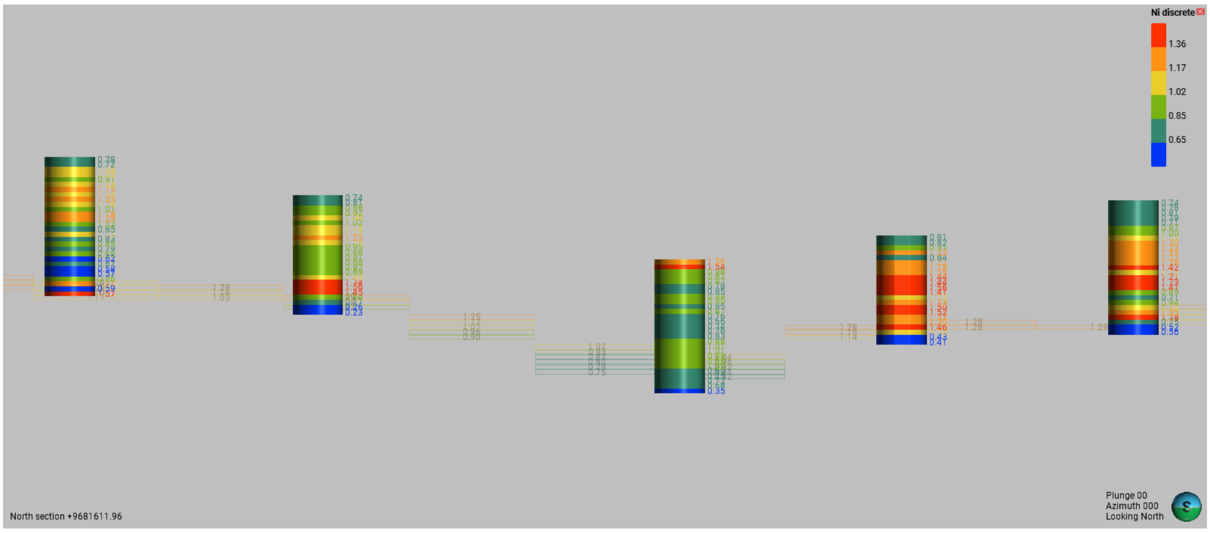


Figure 35 Visual validation for Ni Saprolite

1.6.2. Swath Plot

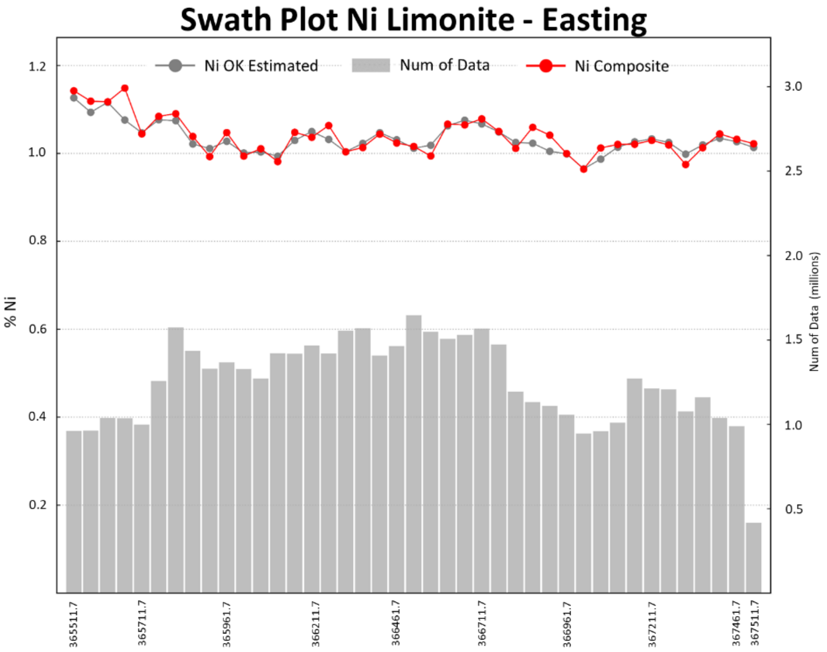


Figure 36 Swath plot of Ni Limonite – Easting

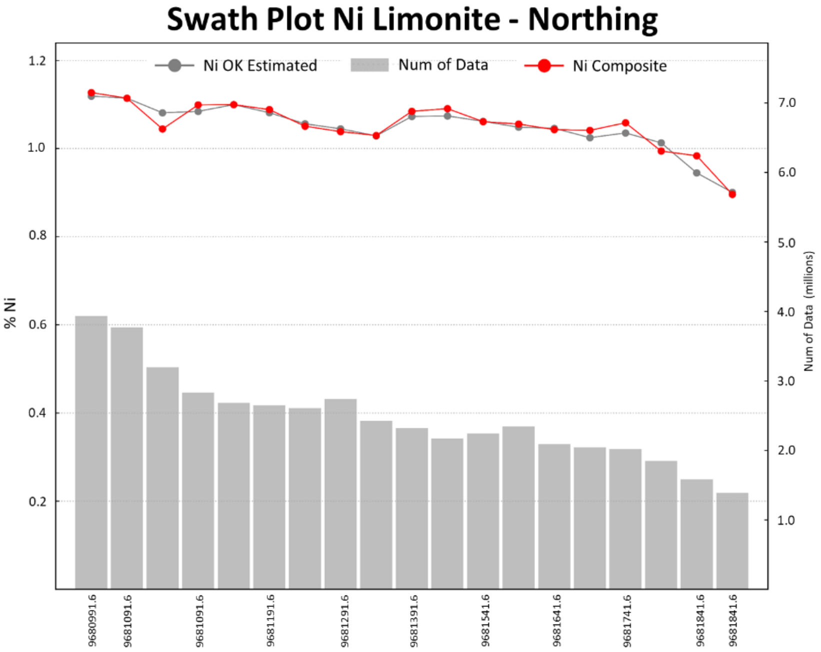


Figure 37 Swath plot of Ni Limonite – Northing

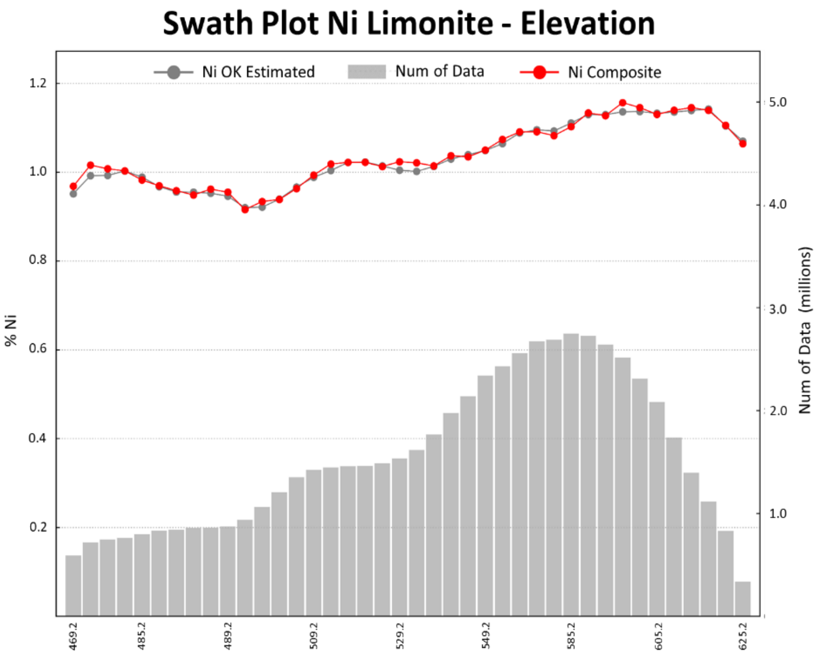


Figure 38 Swath plot of Ni Limonite – Elevation

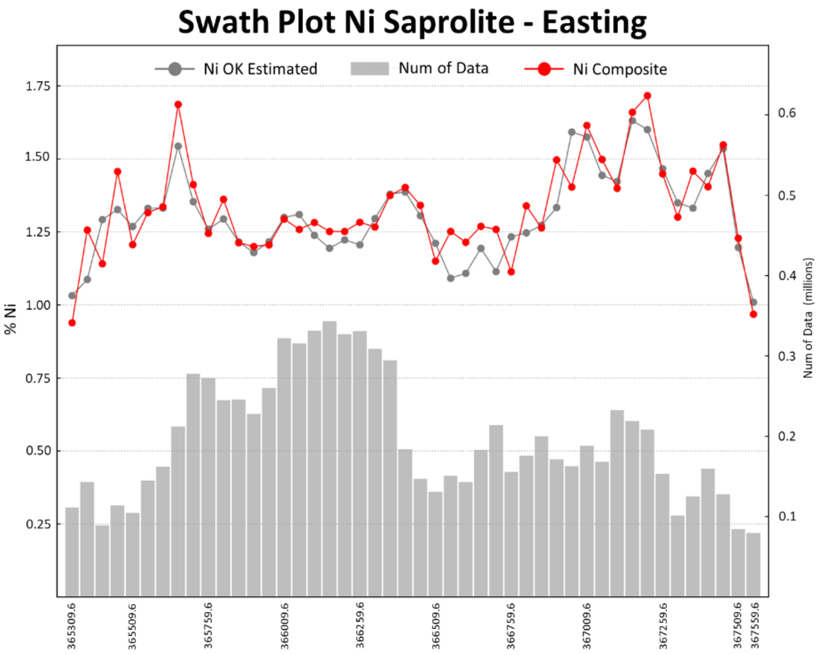


Figure 39 Swath plot of Ni Saprolite – Easting

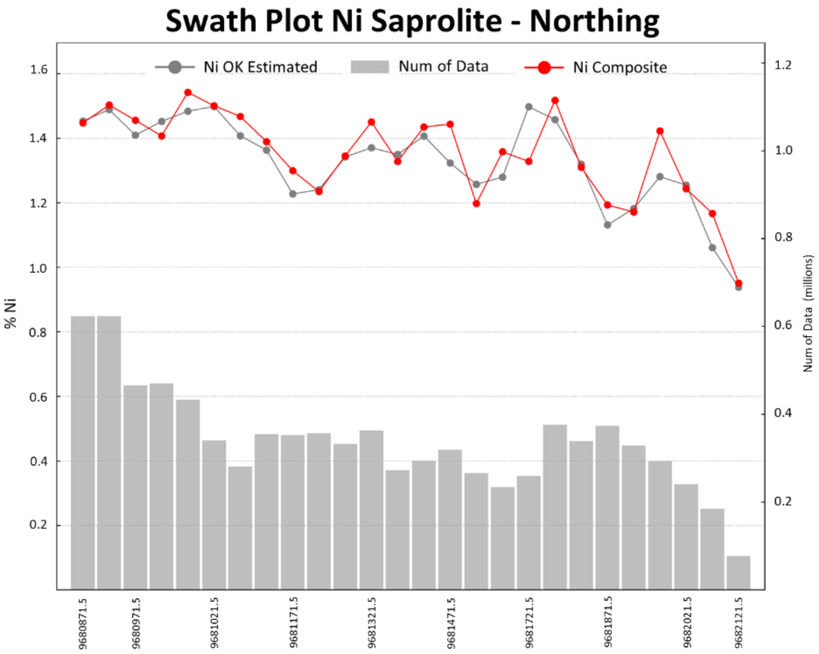


Figure 40 Swath plot of Ni Saprolite – Northing

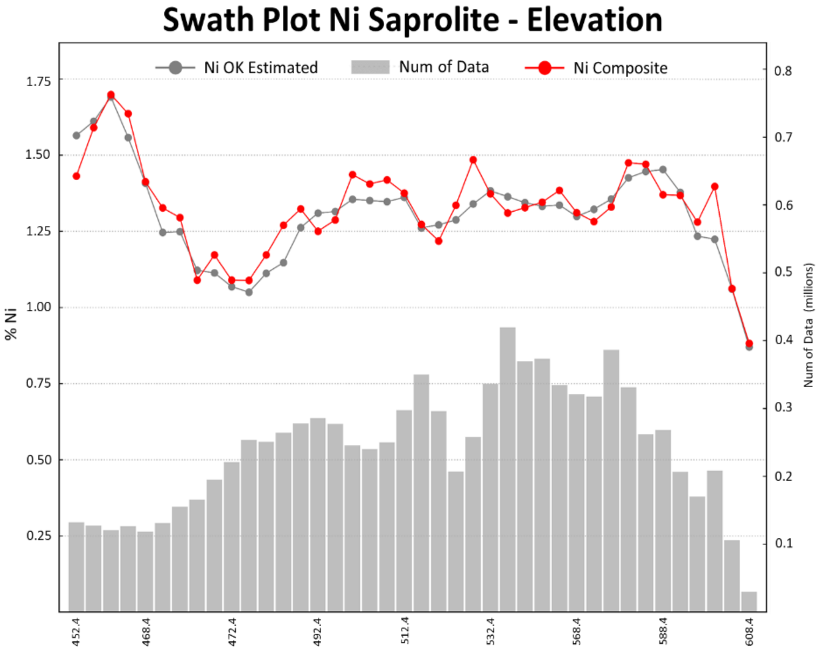


Figure 41 Swath plot of Ni Saprolite – Elevation

1.7. Resource Estimation

1.7.1. Grade Tonnage

Table 9 Limonite estimated Resource breakdown

LIMONITE - GLOBAL MINERAL RESOURCE ESTIMATE												
GRADE CUT-OFF RANGE	MINERAL RESOURCE	XRF (DRY ANALYSIS)										Relative Density (sg Wet)
	MILLION TONNES (Wet)	Ni %	Co %	Fe %	MgO %	SiO2 %	SM Ratio	Al2O3 %	Cr2O3 %	CaO %	MnO %	
≥0.2	115.56	1.01	0.11	40.54	7.24	1.87	0.26	11.83	2.83	0.11	1.03	1.76
≥0.3	115.55	1.01	0.11	40.54	7.24	1.87	0.26	11.83	2.83	0.11	1.03	1.76
≥0.4	115.33	1.01	0.11	40.55	7.24	1.88	0.26	11.82	2.83	0.11	1.03	1.76
≥0.5	113.55	1.02	0.11	40.63	7.13	1.87	0.26	11.78	2.85	0.11	1.04	1.76
≥0.6	109.16	1.04	0.11	40.80	6.91	1.86	0.27	11.70	2.87	0.11	1.06	1.76
≥0.7	103.06	1.06	0.11	40.93	6.74	1.85	0.27	11.61	2.89	0.10	1.08	1.76
≥0.8	93.79	1.09	0.11	40.97	6.67	1.86	0.28	11.52	2.91	0.10	1.12	1.76
≥0.9	81.51	1.13	0.12	40.86	6.84	1.91	0.28	11.40	2.92	0.10	1.16	1.76
≥1.0	64.44	1.18	0.12	40.70	7.09	2.00	0.28	11.22	2.94	0.11	1.21	1.76
≥1.1	43.66	1.24	0.12	40.53	7.41	2.10	0.28	10.96	2.97	0.12	1.27	1.76
≥1.2	23.95	1.31	0.13	40.13	8.10	2.30	0.28	10.63	2.99	0.13	1.34	1.76
≥1.3	10.19	1.39	0.13	39.61	9.09	2.57	0.28	10.16	3.01	0.14	1.39	1.76
≥1.4	3.46	1.49	0.13	38.81	10.43	2.96	0.28	9.65	2.99	0.17	1.43	1.76
≥1.5	1.16	1.59	0.13	37.86	11.90	3.34	0.28	9.22	2.96	0.18	1.48	1.76
≥1.6	0.39	1.69	0.13	36.69	13.44	3.75	0.28	8.92	2.88	0.21	1.52	1.76
≥1.7	0.14	1.79	0.13	36.32	14.18	3.92	0.28	8.61	2.86	0.21	1.54	1.76
≥1.8	0.04	1.91	0.13	35.44	15.69	4.26	0.27	8.14	2.82	0.23	1.50	1.76
≥1.9	0.02	1.99	0.13	35.60	15.41	4.08	0.27	8.32	2.76	0.20	1.62	1.76

Table 10 Saprolite estimated Resource breakdown

SAPROLITE - GLOBAL MINERAL RESOURCE ESTIMATE												
GRADE CUT-OFF RANGE	MINERAL RESOURCE	XRF (DRY ANALYSIS)										Relative Density (sg Wet)
	MILLION TONNES (Wet)	Ni %	Co %	Fe %	MgO %	SiO2 %	SM Ratio	Al2O3 %	Cr2O3 %	CaO %	MnO %	
≥0.2	19.01	1.23	0.04	17.33	12.69	35.68	2.81	6.43	1.36	1.57	0.43	1.6
≥0.3	19.01	1.23	0.04	17.33	12.69	35.68	2.81	6.43	1.36	1.57	0.43	1.6
≥0.4	19.01	1.23	0.04	17.33	12.68	35.68	2.81	6.43	1.36	1.57	0.43	1.6
≥0.5	18.91	1.23	0.04	17.33	12.70	35.68	2.81	6.41	1.36	1.57	0.43	1.6
≥0.6	18.44	1.25	0.04	17.34	12.73	35.64	2.80	6.36	1.36	1.56	0.43	1.6
≥0.7	17.65	1.28	0.04	17.34	12.81	35.54	2.78	6.31	1.36	1.56	0.43	1.6
≥0.8	16.51	1.31	0.04	17.33	12.86	35.50	2.76	6.27	1.37	1.56	0.43	1.6
≥0.9	14.84	1.36	0.04	17.35	12.91	35.31	2.73	6.25	1.37	1.56	0.43	1.6
≥1.0	13.10	1.42	0.04	17.33	13.00	35.19	2.71	6.22	1.37	1.56	0.43	1.6
≥1.1	11.22	1.48	0.04	17.27	13.15	35.14	2.67	6.13	1.37	1.54	0.43	1.6
≥1.2	9.31	1.55	0.04	17.21	13.32	35.15	2.64	5.95	1.36	1.51	0.43	1.6
≥1.3	7.47	1.62	0.04	17.14	13.51	35.20	2.61	5.75	1.36	1.46	0.43	1.6
≥1.4	5.61	1.71	0.04	17.05	13.70	35.33	2.58	5.51	1.36	1.40	0.43	1.6
≥1.5	4.18	1.80	0.04	17.05	13.84	35.39	2.56	5.29	1.36	1.33	0.43	1.6
≥1.6	3.05	1.90	0.04	16.98	14.05	35.51	2.53	5.05	1.36	1.27	0.43	1.6
≥1.7	2.24	1.99	0.04	17.01	14.14	35.60	2.52	4.90	1.37	1.23	0.43	1.6
≥1.8	1.63	2.08	0.04	16.98	14.25	35.81	2.51	4.75	1.36	1.17	0.43	1.6
≥1.9	1.15	2.18	0.04	17.00	14.23	36.05	2.53	4.59	1.37	1.10	0.44	1.6

Table 11 All nickel laterite estimated Resource breakdown

LIMONITE AND SAPROLITE - GLOBAL MINERAL RESOURCE ESTIMATE												
GRADE CUT-OFF RANGE	MINERAL RESOURCE	XRF (DRY ANALYSIS)										Relative Density (sg Wet)
	MILLION TONNES (Wet)	Ni %	Co %	Fe %	MgO %	SiO2 %	SM Ratio	Al2O3 %	Cr2O3 %	CaO %	MnO %	
≥0.2	134.57	1.04	0.10	37.26	8.01	6.65	0.83	11.07	2.62	0.32	0.95	1.74
≥0.3	134.56	1.04	0.10	37.26	8.01	6.65	0.83	11.07	2.62	0.32	0.95	1.74
≥0.4	134.34	1.04	0.10	37.26	8.01	6.66	0.83	11.06	2.63	0.32	0.95	1.74
≥0.5	132.46	1.05	0.10	37.30	7.93	6.70	0.85	11.01	2.63	0.32	0.95	1.74
≥0.6	127.60	1.07	0.10	37.41	7.75	6.74	0.87	10.93	2.65	0.32	0.97	1.74
≥0.7	120.71	1.09	0.10	37.48	7.63	6.78	0.89	10.84	2.67	0.32	0.99	1.74
≥0.8	110.30	1.13	0.10	37.43	7.60	6.90	0.91	10.73	2.68	0.32	1.01	1.74
≥0.9	96.35	1.17	0.10	37.24	7.77	7.06	0.91	10.61	2.68	0.33	1.04	1.74
≥1.0	77.54	1.22	0.11	36.75	8.09	7.60	0.94	10.38	2.68	0.36	1.08	1.73
≥1.1	54.88	1.29	0.11	35.77	8.58	8.86	1.03	9.97	2.64	0.41	1.10	1.73
≥1.2	33.26	1.38	0.10	33.72	9.56	11.49	1.20	9.32	2.54	0.51	1.08	1.72
≥1.3	17.66	1.49	0.09	30.10	10.96	16.38	1.49	8.29	2.31	0.70	0.98	1.69
≥1.4	9.07	1.63	0.08	25.35	12.45	22.99	1.85	7.09	1.98	0.93	0.81	1.66
≥1.5	5.34	1.76	0.06	21.57	13.42	28.43	2.12	6.15	1.71	1.08	0.66	1.63
≥1.6	3.43	1.88	0.05	19.19	13.98	31.94	2.28	5.48	1.53	1.15	0.55	1.62
≥1.7	2.38	1.98	0.05	18.13	14.14	33.76	2.39	5.11	1.45	1.17	0.50	1.61
≥1.8	1.67	2.08	0.05	17.44	14.29	35.02	2.45	4.84	1.40	1.15	0.46	1.60
≥1.9	1.17	2.17	0.05	17.28	14.25	35.57	2.50	4.64	1.39	1.09	0.45	1.60

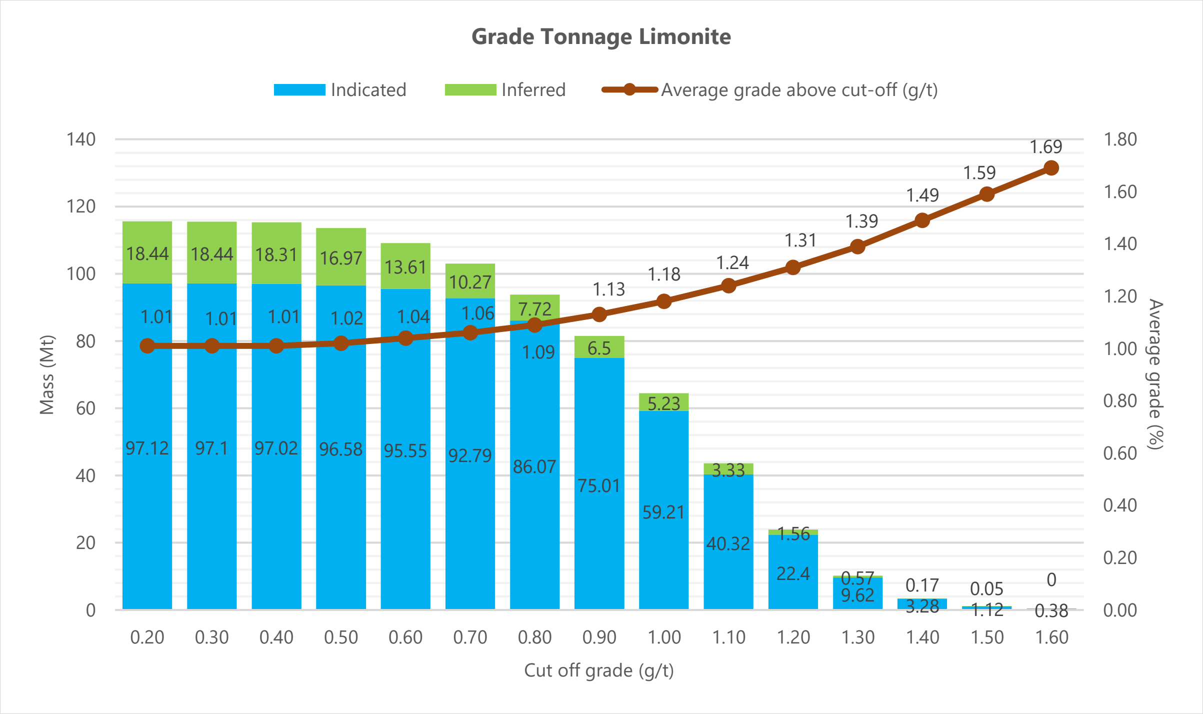


Figure 42 Grade Tonnage of Limonite

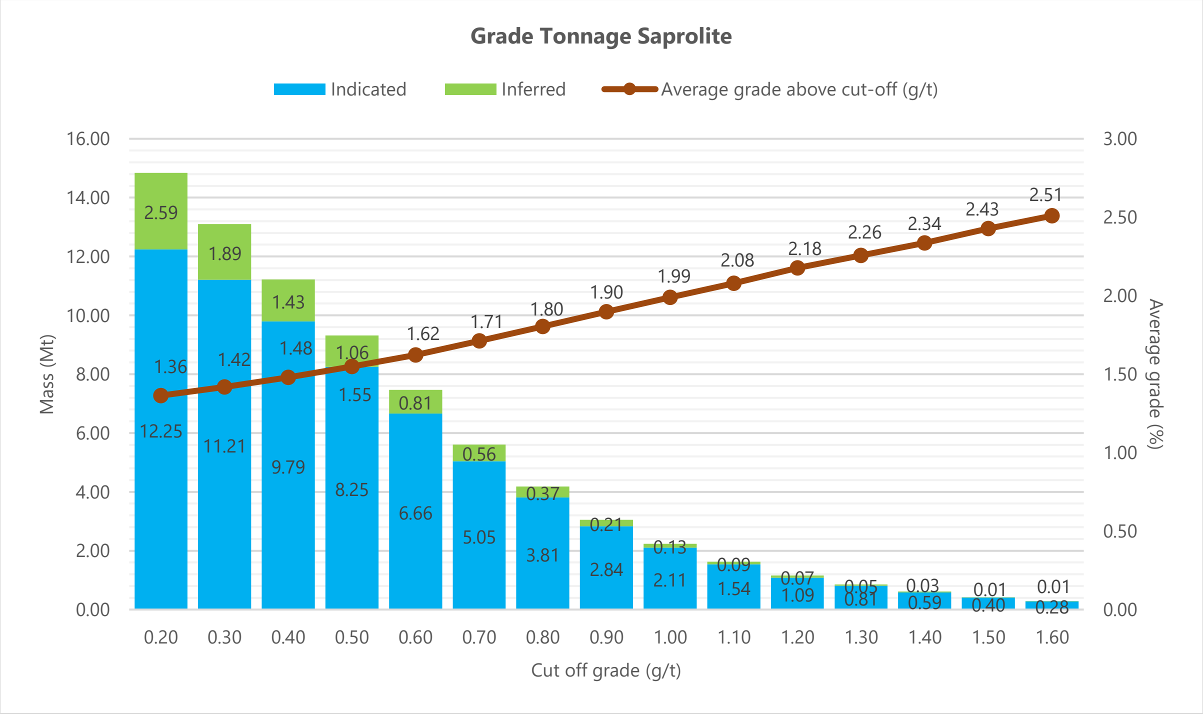


Figure 43 Grade Tonnage of Saprolite

1.7.2. Resource Estimation

Table 12 Resource summary estimated for ETL Nickel Project

Layer	**Category**	**Mass**	**Ni**	**Co**	**Fe**	**SiO2**	**MgO**	**Cr2O3**	**Al2O3**	**MnO**	**CaO**	**Material Content**
												Ni
		Mt	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**Mt**
LIM (CoG 0.8%)	Indicated	86.07	1.09	0.11	40.97	6.60	1.85	2.91	11.56	1.12	0.10	0.94
	Inferred	7.72	1.07	0.11	40.92	7.50	2.02	2.94	11.03	1.08	0.13	0.08
	Total	93.79	1.09	0.11	40.97	6.67	1.86	2.91	11.52	1.12	0.10	1.03
SAP (CoG 1.3%)	Indicated	6.66	1.63	0.04	17.11	35.07	13.55	1.36	5.79	0.42	1.48	0.11
	Inferred	0.81	1.54	0.04	17.45	36.33	13.22	1.37	5.34	0.46	1.27	0.01
	Total	7.47	1.62	0.04	17.14	35.20	13.51	1.36	5.75	0.43	1.46	0.12
Total	**Indicated**	**92.73**	**1.13**	**0.10**	**39.26**	**8.64**	**2.69**	**2.80**	**11.15**	**1.07**	**0.20**	**1.05**
	Inferred	**8.53**	**1.11**	**0.10**	**38.69**	**10.24**	**3.08**	**2.79**	**10.49**	**1.02**	**0.24**	**0.10**
	Total	**101.26**	**1.13**	**0.10**	**39.21**	**8.77**	**2.72**	**2.80**	**11.09**	**1.07**	**0.20**	**1.15**

APPENDIX 5

RESUME OF COMPETENT PERSONS AND CONTRIBUTING AUTHORS

DANIEL MADRE , MSc (GEOLOGY)

EXPLORATION SPECIALIST

Summary

Daniel Madre has been an Australian coal and mineral geologist since 1980, with full time work experience in Indonesia since 1988. He is specialist in exploration and for this reason is familiar with most coal and mineral projects in the country since their earliest stage of development. He has a diverse network of professionals throughout the industry. Daniel has a Master of Science degree in Geology. Daniel Madre is a member of the Australasian Institute of Mining and Metallurgy (no: 100878), the Australian Institute of Geoscientists (no: 5632), Ikatan Ahli Geologi Indonesia (no: 5000) and Masyarakat Geologi, Ekonomi Indonesia (no: B-0718). Daniel is a Competent Person in Indonesia for KCMI Code for Coal Resources.

Daniel runs a successful exploration consultancy and has in-house capabilities that range from geology, geophysics, drilling, geological modelling, mine design and planning. The company has discovered coal in East Kalimantan and Sumatra which has resulted in numerous coal mine developments. The company is formally registered by the Indonesian Department of Minerals and Energy to carry out exploration surveys and report coal and mineral resources.

Since 2005, the company diversified into nickel and mineral sands exploration and resource development. This work resulted in the development of the first nickel mine in Kalimantan. Other nickel projects investigated by the company are located in Sulawesi, Halmahera and Papua. Mineral sands projects have been investigated in Sumatra and Papua.

Commodities

Coal, oil shale, nickel laterites, phosphate, gold, manganese and mineral sands

Countries

Indonesia, Australia, USA, PNG, Kenya

Experience

Nov, 2000 - present	PT Danmar Explorindo	Jakarta, Indonesia
Managing Director		
1996–Nov 2000	Independent Consultant	Jakarta, Indonesia
Consultant Geologist		
1988–1996	PT Petrosea	Jakarta, Indonesia
Manager of Geology		
1982–1988	Greenvale/Esperance group	Sydney, Australia
Exploration Manager		
1981–1982	Oil Refining & Exploration PL	Sydney, Australia
Field geologist		
1980 – 1981	NSW Coastal Engineers	Sydney, Australia
Lab attendant		

Education

1986- 1989	University of Wollongong	Australia
Master of Science (geology)		
1978- 1980	University of Sydney	Australia
Bachelor of Science (geology and marine science)		

Some Articles & Publications

- 1987, The Geology of the Alpha Oil Shale Deposit, Fuel, Vol.66, Butterworths UK
- 1990, Torbanite Deposits of the World, Thesis: University of Wollongong
- 2000, Coal Geology of the Bengkulu Block, Journal Asian Earth Science, Elsevier Advances in Sedimentology Series, Elsevier Special editions
- 2005, Coal Geology of the Bengkulu Block. Proc. SE Asian Coal Geology Conference, Bandung
- 2012, Coal Deposits of Sumatra, Coal Trans Conference Bali
- 2012, Low Rank Coal Deposits of Indonesia, Coal Trans Conference Bali
- 2013, Tectonic Framework of Sumatra & the Distribution of Coal Deposits, Ozmine Conference, Jakarta
- 2014, Coal Potential of Sumatra, Coal Markets Workshop, Singapore
- 2014 Adding Value Through Optimizing Exploration Techniques, 2nd Asian Nickel Conference
- 2014 Coal Potential of Sumatra, World Coal Magazine volume 23
- 2016 The Exploration Potential of Sumatra, Sumatra Miner Conference, Palembang Sumatra
- 2016 Why Things are Improving in the Indonesian Coal Industry, RTC Kalimantan, Conference Balipapan, Indonesia
- 2019 The Coal and Mineral Potential of Sumatra, Sumatra Miner Conference, Palembang Sumatra

Resume

Name: Tobias Geoffrey Maya
Date of Birth: 26 March 1981
Marital Status: Married
Nationality: Australian

Address: Jl. H. Saidi II No. 16 RT.011 RW.07,
Cipete Utara, Kebayoran Baru,
Jakarta Selatan 12150,

Mobile: (+62) 0812 3869379 ;
Email : tobiasmaya@yahoo.com.au
tobias.maya@danmar.asia

Since 2004, Tobias has been working full time in the Indonesian coal and minerals exploration industry specializing in exploration geology, regional mineral studies, due diligence work, database validation and resource development. Tobias has a Bachelor of Science degree from the Charles Sturt University in NSW, Australia. He has also held a membership with the AusIMM since 2009.

Tobias has more than 18 years exploration experience throughout the country. This work includes the exploration and development of numerous nickel laterite projects. providing a key role in the optimization of exploration techniques that can be used to minimize costs & maximize project value, increasing confidence in estimation of Nickel laterite volumes to determine what are the controlling factors for project development within Indonesian deposits.

EDUCATION AND TRAINING

2006-2013	Completed BSc with major in Spatial Science with 2 minors in information technology and management Charles Sturt University, Wagga Wagga, NSW
2013	Certificate for successful completion of Valuation and Technical-Economic Assessment of Mining Projects, SRK Consultancy
2009	Certificate for successful completion of Mining and Minerals optimization course, Whittle Consultancy
1999-2001	Completed Geographic Information Systems (GIS)Diploma Wollongong TAFE
1998	Higher School Certificate; Bulli High School
1996	School Certificate; Bulli High School
1994	St Johns Ambulance First Aid Certificate

MEMBERSHIP OF PROFESSIONAL ORGANIZATIONS

Since 2009	Member of the AusIMM (No.304661)

EMPLOYMENT & WORK EXPERIENCE

2013 – Present **PT. Geo Search (full-time) part of the Danmar Group**

- President Director.
- Geophysical surveys
- Principle Geological consultant to PT Danmar Explorindo

2004 – 2013 **PT. Danmar Explorindo (full-time)**

- Head GIS/Resource Geologist (SURPAC).
- Management Coal and Mineral Exploration, (Drilling, Survey, Resource Estimates).
- Business development / client relationship manager
- Mine Reconciliations of Ongoing operations (monthly)
- Database validation (JORC)
- Training Personnel in Software (SURPAC, GIS,).
- Drafting JORC reports under Principle Mr Daniel Madre, MSc (AusIMM member - 100878)

Provided above Consultancy services for following projects:

2018-present **PT.Hengjaya Mineralindo (HM) -** Morowali, Sulawesi. for **Nickel Industries Limited (ASX : NIL)**
-Laterite Nickel Exploration and database validation
-Resource Geology assessments
-Mine planning and production reconciliations
-UltraGPR survey 265km
-JORC (2012) compliant reports 2020 & 2022

2018-present **PT.Halmahera Sukses Minerals (HSM)** - Halmahera, Maluku.
-Laterite Nickel Exploration and database validation
-Resource Geology assessments
-UltraGPR survey 75km

2018-Present **PT.Sulawesi Cahaya Mineral (SCM)** – North Konawe, Sulawesi
-Laterite Nickel Exploration and Project support
-UltraGPR survey 2,000km

2020-Present **PT.Iriana Mutiara Mining (IMM) -** Sarmi, Papua for **Nickel Industries Limited (ASX : NIL)**
- Laterite Nickel Exploration and database validation
-Resource Geology assessments
-UltraGPR survey 185km

2022-Present **PT.Vale Indonesia (PTVI)** – Sorowako, Sulawesi
-Laterite Nickel Exploration and Project support
-UltraGPR survey 300km

2020-Present	**PT.Abadi Nikel Nusantara (ANN)** - Routa, Sulawesi for **Nickel Industries Limited (ASX : NIL)** - Laterite Nickel Exploration and database validation -Resource Geology assessments -UltraGPR survey 485km
2018-Present	**PT.Kumamba Mining (KM)** - Sarmi, Papua, Indonesia -Exploration management and database validation - Geology assessments - Trial UltraGPR survey 30km - Trial Ground Magnetometer survey 30km
2019-2021	**PT.Bumi Liputan Teknik (BLT)** - Ketapang, West kalimantan -Laterite Bauxite Exploration and project Due diligence -UltraGPR survey 80km
2017-2019	**PT.Sarana Mineralindo Perkasa (SMP)** - Morowali, Sulawesi.. - Laterite Nickel Exploration and database validation -Resource Geology assessments -Mine planning and pit optimization -UltraGPR survey 85km
2017-2018	**PT.Ceria Nugraha Indotama (CNI)** - Kolaka, Sulawesi.. -Laterite Nickel Exploration and database validation -UltraGPR survey 175km
2017-2018	**PT.Tiga Samudra Perkasa (TPS)** - Malili, Sulawesi -Laterite Nickel Exploration and database validation -Resource Geology assessments -UltraGPR survey 75km
2005-2019	**PT.Ratu Samban Mining (RSM)** - Bengkulu, Sumatra. -Thermal Coal Exploration management and database validation -Resource Geology assessments -Mine planning and production reconciliations -Nedo regional study 2011 -Jogmec regional study 2013 -Bathymetric survey
2009-2018	**PT.Gunung Bara Utama (GBU)** - Kutai Barat, East Kalimantan. -Thermal Coal Exploration management and database validation -Resource Geology assessments -Pre-JORC study 2010 -JORC (2004) compliant reports 2011 & 2012
2005-2011	**PT.Itamatra Nusantara (ITM)** - Morowali, Central Sulawesi. -Laterite Nickel Exploration management and database validation -Resource Geology assessments -Bathymetric survey

2004-2010 **PT.Telen Indoclay (TIC) Long Ikis Nickel -** Pasir, East Kalimantan
-Laterite Nickel Exploration management
-database validation
-Resource Geology assessments
-Mine Construction and Production
-Mine planning, Grade control and production reconciliations -
-Bathymetric survey

2010-2016 **PT.Trisula Kencana Sakti (TKS) -** Barito Utara, Central Kalimantan
for **Golden Energy Mines (GEMS)**
-Thermal Coal Exploration management and database validation
-Resource Geology assessments
-JORC (2004) compliant reports 2010 & 2012
-JORC (2012) compliant reports 2013

2010-2018 **PT.Moa Maju Kurina Utama (MMKU) -** Bulungan, North Kalimantan
-Lignite Exploration management and database validation
-Resource Geology assessments
-Mine planning
-JORC (2004) compliant reports 2010 & 2011
-JORC (2012) compliant reports 2013
2011-2015 **PT.Delta Samudra (DS) -** Kutai Barat, East Kalimantan
-Lignite Exploration management and database validation
-Resource Geology assessments
-JORC (2004) compliant reports 2013

2012-2018 **PT.Berau Usaha Mandiri (BUM) -** Berau, East Kalimantan
-Lignite database validation
-Resource Geology assessments
-Mine planning

2010-2015 **PT.Inti Putera Kanaan (IPK) -** Musi banyuisn, South Sumatra
-Lignite Exploration management and database validation
-Resource Geology assessments
-Mine planning
-JORC (2004) compliant report 2012

2006-2014 **PT.Mulawarman Putra Abadi Sakti (MPAS) -** East Kalimantan
-PCI Coal Exploration management and database validation
-Resource Geology assessments
-JORC (2012) compliant reports 2014

2011-2013 **PT.Satria Lestari (SL) -** Tenggarong, East Kalimantan
-Thermal Coal exploration management and database validation
- Resource Geology assessment

2013 **Jingella Resources Pty Ltd -** Dingo, Queensland, Australia
-PCI Coal database validation
-Resource Geology assessments

2013	**Greenvale Mining Pty Ltd - (Alpha Oil shale)** Alpha, Queensland, Australia -Torbanite / Cannel Coal database validation -Resource Geology assessments
2013	**PT.Bumi Merapi Energi (BME) -** Lahat, South Sumatra -Thermal Coal database validation -Resource Geology assessments -Mine planning -JORC (2004) compliant report 2012
2010-2012	**PT.Komunitas Bangun Bersama (KBB) -** Samarinda, East Kalimantan -Lignite Resource Geology assessment -JORC (2004) compliant reports 2010 & 2012
2012	**PT.Delma Mining Corporation (DMC) -** Bulungan, North Kalimantan -Lignite database validation -Resource Geology assessments -JORC (2004) compliant report 2012
2012	**PT.Indonesia Pacific Energy (IPE) & PT.Mega Multi Cemerlang (MMC) -** Meulaboh, Aceh Barat & Nagan Raya, Aceh -Lignite database validation -Resource Geology assessments -JORC (2004) compliant report 2012
2012	**Draig Resources Pty. Ltd -** Teeg & Nariin Teeg mining license, ovorhangay Province, Central Mongolia -PCI COAL database validation -Resource Geology assessments -JORC (2004) compliant report 2012
2004-2010	**PT.Tunas Inti Abdai (TIA) -** Tanah Bumbu, South Kalimantan for **ABM investama (ABM)** -Thermal Coal Exploration management and database validation -Resource Geology assessments -JORC (2004) compliant reports 2010 & 2011
2010	**PT.Bukit Utama Sehjatera (BUS) -** Sorong, West Papua -Lignite Exploration management and database validation -Resource Geology assessments
2006-2010	**PT.Mifa Bersaudara (MIFA) & PT.Bara Energy Leastari (BEL)** - Meulaboh, Aceh Barat & Nagan Raya, Aceh -Lignite Exploration management and database validation -Resource Geology assessments -Mine planning -JORC (2004) compliant report 2010

2009 **PT.Bakti Pertiwi Nusantara (BPN)** –
Weda Utara, Central Halmahera, maluku
-Laterite Nickel database validation
-Resource Geology assessments
-JORC (2004) compliant report 2009

2009 **Bildan.Pty.Ltd -** Pulau Talud, North sulawesi
-Manganese Exploration management

2008 **PT.Berau Bara Energy (BBE)** - Berau, East Kalimantan
-Thermal Coal database validation
-Resource Geology assessments
-JORC (2004) compliant report 2008

2007-2008 **PT.Ratu Samban Mining (RSM) -** Krui, Lampung. Sumatra.
-Iron Sand Exploration management

2006-2008 **PT.Tekno Marina Cipta (TMC)** - Kota Bangun, East Kalimantan
-Thermal Coal Exploration management and database validation
-Resource Geology assessments

2004-2007 **CV. Gudang Hitam Prima (GHP/BBM) -** Sanga Sanga Coal Mine, Samarinda, East Kalimantan
-Thermal Coal Exploration management and database validation
-Resource Geology assessments
-Mine planning and production reconciliations

2006 **PT.Borneo Indobara (BIB) -** Tanah Bumbu, south kalimantan for SINAR MAS MINING
- Project Due diligence study Grimulya Block

2004-2006 **PT. Multi Prima Energy (MPE) -** Loa Raya Coal Mine, Tenggarong, East Kalimantan.
-Thermal Coal Exploration management and database validation
-Resource Geology assessments
-Mine planning and production reconciliations

Previous Employment

1999- 2004 Natural Beauty Floor Sanding (full-time)
- Surface preparation; punch & fill, sanding & edging
- Applying coating products

September 2000 Hydrographic Sciences Australia (2 weeks work experience)
- Re-editing Hydrographic charts
- Hydrographic chart compilation
- Sounding selection

CONFERENCE PAPER PRESENTATIONS

August 2022	**"Nickel Laterites – Adding Value by Optimizing Exploration"** - Nickel Summit by Indonesia Miner, Jakarta, Indonesia
November 2018	**"Indoneisa, Hi-CV coal supply?"** - 7th annual Coaltrans Emerging Asia Markets, Hanoi, Vietnam
May 2018	**" Developing efficiency in the Indonesian coal supply chain"** - 24th annual Coaltrans Asia, Bali,
September 2017	" **Exploration potential for new Nickel supplies in Indonesia"** - Metal Bulletin: 5th Asian Nickel Conference, Jakarta,
July 2016	**" Which Indonesian coal energy projects will attract Korean investors through 2020?"** - Korea Coaltrans Asia, Seoul,
March 2015	**"The Coal Potential of Sumatra"** - Sumatra Miner 2015 conference
September 2014	**"Adding value through optimizing exploration techniques"** - 2nd Asian Nickel Conference
December 2012	**"Low Rank Coal Deposits of Indonesia"** - IHS Mcloskey Asia Pacific Coal Outlook Conference 2012, Bali
June 2012	**"The Coal Deposits of Sumatra"** - 18th annual Coaltrans Asia, Bali

SOFTWARE EXPERIENCE

- SURPAC Mining software – Expert Knowledge of Geodatabase, Surface modelling, Block Modelling, Pit optimisation, Pit design modules.
- WHITTLE Pit optimisation Software – good knowledge of Pit optimisation procedure and analysis of results
- ArcGIS 9.3 GIS Software – Good knowledge of Spatial interpolation techniquies and map design
- MapINFO, Global mapper and Surfer GIS software
- Microsoft 7-10, VISTA, XP and NT operation systems
- Microsoft office 2003, 2007 & 2010 Word, Excel, Access, Powerpoint
- Adobe acrobat 8 Professional
- AutoCAD 2009

REFERENCES

Daniel Madre (Director)
PT.Danmar Explorindo
SANUR, BALI
Ph. +62 81 23851151
daniel.madre@danmar.asia

YORRIS WIBRIANA

Resource Geologist, Competent Person Indonesia

yorris.wibriana@danmar.asia | +62-8122-1795-84

PROFILE

I am qualified as Competent Person Indonesia (CPI) for public reporting of Coal Exploration and Resource Estimation under KCMI Code with more than 19 years of professional experience in geological exploration and mining development across Indonesia. I have strong knowledge in exploration data validation, geological modelling, geostatistics and Resource estimation for several mining commodities.

SKILLS

- Minescape Stratmodel (5/5)
- Qgis & Arcgis (4/5)
- Surpac (3/5)
- Leapfrog Geo(5/5)
- MySQL and PostgreSQL Database (4/5)

EDUCATION

Bachelor of Geological Engineering, Padjadjaran University Indonesia
Graduated 2004

AWARDS

Best Technical Discovery in IAGI Exploration Award 2021

WORK EXPERIENCE

- PT DANMAR EXPLORINDO (2021 – current)
  Resource Estimation, Geological Exploration Manager
- PT BARAMULTI SUGIH SENTOSA (2020 – 2021)
  Senior Geologist, Mining Business Development
- PT DANMAR EXPLORINDO & PT GEOSEARCH (2015 – 2020)
  Resource Estimation, Geological Exploration Manager
- PT MINESERVE CITRA TEKNIK (2012 – 2015)
  Coal Resource & Geological Exploration
- PT CSA GLOBAL (2012)
  Coal Resource Geologist
- PT RIDA JAYA MANDIRI (2011 – 2012)
  Coal Resource Geologist
- PT MINESERVE CITRA TEKNIK (2007- 2011)
  Field & Coal Resource Geologist, Short term mine planning
- PT KALTIM BATU MANUNGGAL (2006 – 2007)
  Coal Pit Geologist
- PT BUMI MAKMUR SELARAS (2005 – 2006)
  Nickel Geologist

GEOLOGICAL MODELING & EXPLORATION REPORT

1. **PT Halmahera Sukses Mineral, Halmahera (2023)**
   Geological modeling and contributor to Nickel Resource Estimation Report (JORC Report)

2. **PT Iriana Mutiara Mining (2023)**
   Geological modeling and contributor to Nickel Resource Estimation Report (JORC Report)

3. **PT Ratu Samban Mining (Blok 9), Bengkulu (2023)**
   Geological modeling and Author of Coal Exploration and Resouce Estimation Report (KCMI Report)

4. **PT Komunitas Bangun Bersama, East Kalimantan (2022)**
   Geological modeling and Author of Coal Exploration and Resource Estimation Report (KCMI Report)

5. **PT Petroindo Utama (2021)**

   PT Multi Tambangjaya Utama (MUTU) Due Diligence of Remaining Coal Resources and Reserves Report (Author)

6. **PT Pada Idi, East Kalimantan (2021)**
   Geological modeling and Author of Coal Exploration and Resource Estimation Report (KCMI Report)

7. **PT Chaido Mega Mineral, East Kalimantan (2021)**
   Author of Preliminary Coal Mapping Report (SNI Report)

8. **PT Borneo Indo Bara, South Kalimantan (2021)**

   Geological model validation and Author of Coal Resource Estimation Report (KCMI Report)

9. **PT Dayak Membangun Pratama, Central Kalimantan (2021)**

   Geological model validation and Author of Coal Resource Estimation Report (KCMI Report)

10. **PT Bima Putra Abadi Citranusa, South Sumatera (2021)**

    Geological model validation and Contributor to Coal Resource Estimation Report (JORC Report)

11. **PT Komunitas Bangun Bersama, East Kalimantan (2019)**

    Geological modeling and Author of Coal Exploration and Resource Estimation Report (KCMI Report)

12. **PT Bangun Banua Persada Kalimantan (2019)**

    Geological modeling and Author of Coal Exploration and Resource Estimation Report of Block Banta & Batu Tungku (KCMI Report)

13. **PT Dinasty Maha Karya & PT Bukit Eno Persada, East Kalimantan (2018)**

    Geological modeling and Author of Due Diligence Study of KPR Coal Project Report

14. **PT Kalimantan Energi Lestari, South Kalimantan (2018)**

    Geological modeling and Author of Coal Exploration and Resource Estimation Report (KCMI Report)

15. **PT Gunung Bara Utama, East Kalimantan (2017)**

    Geological modeling and Author of Coal Resource Estimation Report (KCMI Report)

16. **PT Borneo Indo Bara, South Kalimantan (2017)**

    Geological model validation and Author of Coal Resource Estimation Report (KCMI Report)

17. **PT Mantimin Coal Mining, South Kalimantan (2016)**

    Contributor to PT Mantimin Coal Mining Qualified Person's Report of Coal Resources & Reserves of Coal

18. **PT Mantimin Coal Mining, South Kalimantan (2016)**

    Author of Mantimin Coal Mapping Exploration Report

19. **PT Wira Rimba Lestari, South Sumatera (2016)**

    Geological modeling and contributor to PT Wira Rimba Lestari Coal Resource & Reserve Report (JORC Report)

20. **PT Minemex Indonesia, South Sumatera (2015)**

    Geological modeling and contributor to PT Minemex Indonesia Coal Resource & Reserve Report (JORC Report)

21. **PT Bukit Bara Alam, South Sumatera (2013)**

    Geological modeling and contributor to PT Bukit Bara Alam Coal Resource Report (JORC Report)

22. **PT Bara Alam Utama, South Sumatera (2012)**

    Geological modeling and contributor to PT Bara Alam Utama Coal Resource & Reserve Report (JORC Report)

23. **CV Datra Katama Jaya, South Kalimantan (2011)**

    Geological modeling and Author of Coal Resource & Reserve Report

24. **PT Laskar Semesta Alam, South Kalimantan (2011)**

    Geological modeling and Author of Coal Exploration & Resource Estimation Report

25. PT Rida Jaya Mandiri, West Kalimantan (2011)

Geological modeling and Author of Coal Exploration & Resource Estimation Report

26. CV Prima Mandiri, East Kalimantan (2011)

Geological modeling and contributor to CV Prima Mandiri Coal Resource & Reserve Report (JORC Report)

27. PT Kartika Sela Bumi Mining, East Kalimantan (2011)

Geological modeling and contributor to PT Kartika Sela Bumi Mining Coal Resource & Reserve Report (JORC Report)

28. PT Bara Indah Lestari, Bengkulu (2010)

Geological modeling and Author of Coal Exploration & Resource Estimation Report

29. PT Nusa Kencana Riau, Riau (2010)

Geological modeling and Author of Coal Exploration & Resource Estimation Report

30. PT Inti Bara Perdana, Bengkulu (2008-2010)

Exploration manager, geological modeling, Coal Exploration & Resource Estimation Report, and short term mine planning

31. PT Dian Rana Petrojasa, South Sumatera (2009)

Geological modeling and Author of Coal Exploration & Resource Estimation Report

32. PT Semesta Centramas, South Kalimantan (2007)

Geological modeling and Author of Coal Exploration & Resource Estimation Report

Harman Adhittyo

Resource Geologist

Jl. Pengantin Ali II No. 26, Ciracas
East Jakarta 13740
DKI Jakarta, Indonesia

Tel (M) : +62 813 1951 3181 (Indonesia)
e-mail : harmanadhittyo@gmail.com

Place and date of birth	: Jakarta, February 6th 1987
Sex	: Male
Religion	: Islam
Marital Status	: Married
Nationality	: Indonesian

Geologist with 8+ years of experience in epithermal low sulphidation deposit and 5 years of experience in modelling and resource estimating nickel laterite deposit. Expertise from exploration to mining. Core competencies include:

Exploration Mapping and Sampling ● Core and RC Logging ● Grade Control Mapping and Sampling ● Wireframing ● Block Modeling ● Resource Estimation ● Database

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Professional Experience

PT Danmar Explorindo

Resource Geologist, January 2019 – Present, South Jakarta, DKI Jakarta

Primary Duties Include:

- Responsible for quality control of database
- Responsible for updating database
- Responsible for updating wireframe, composite data, statistics and domaining
- Responsible for updating resource estimation

Sumatra Copper and Gold, Plc.

Mine Geologist, September 2017 – August 2018, Tembang, South Sumatra

Primary Duties Include:

- Responsible for quality control of database
- Responsible for updating wireframe, composite data, data statistics and domaining
- Responsible for updating open pit block model using GCX module in Surpac software
- Responsible for updating underground block model manually in Surpac software
- Responsible for monthly reconciliation report
- Responsible for grade control mapping and sampling (face, floor, wall) in underground
- Responsible for production data (tonnes production, ore to crusher, ore stock)

Harman Adhittyo

Resource Geologist

Jl. Pengantin Ali II No. 26, Ciracas
East Jakarta 13740
DKI Jakarta, Indonesia

Tel (M) : +62 813 1951 3181 (Indonesia)
e-mail : harmanadhittyo@gmail.com

Junior Resource Mine Geologist, January 2016 – September 2017, Tembang, South Sumatra

Primary Duties Include:

- Responsible for quality control of database
- Responsible for updating wireframe, composite data, data statistics and domaining
- Responsible for updating open pit block model using GCX module in Surpac software
- Responsible for updating underground block model manually in Surpac software
- Responsible for monthly reconciliation report
- Responsible for grade control mapping and sampling (trench, blast hole, RC drill, channel) in open pit
- Responsible for grade control mapping and sampling (face, floor, wall) in underground
- Responsible for logging both RC drilling and blast hole drilling
- Responsible for density and moisture sampling project

Junior Mine Geologist, June 2015 – January 2016, Tembang, South Sumatra

Primary Duties Include:

- Responsible for grade control mapping, sampling and geology interpretation
- Responsible for logging both RC drilling and blast hole drilling
- Responsible for plotting data to map
- Responsible for density and moisture sampling project
- Responsible for monthly report to Senior Geologist

Junior Exploration Geologist, July 2012 – June 2015, Lebong Tandai, Bengkulu

Primary Duties Include:

- Responsible for mapping, sampling and geology interpretation
- Responsible for quick logging and detail logging diamond drill
- Responsible for plotting data to map
- Responsible for monthly report to Project Geologist and Senior Geologist
- Supervised activities for fly camp

Junior Exploration Geologist, June 2010 – July 2012, Pasaman, West Sumatra

Primary Duties Include:

- Responsible for mapping, sampling and geology interpretation
- Responsible for quick logging and detail logging diamond drill
- Responsible for plotting data to map
- Responsible for monthly report to Project Geologist and Senior Geologist

Graduate Geologist, April 2010 - June 2010

Harman Adhittyo

Resource Geologist

Jl. Pengantin Ali II No. 26, Ciracas
East Jakarta 13740
DKI Jakarta, Indonesia

Tel (M) : +62 813 1951 3181 (Indonesia)

e-mail : harmanadhittyo@gmail.com

Formal Education

Bachelor of Geological Engineering, Bandung Institute of Technology, Indonesia, 2010

Languages

English	: Enough
Bahasa Indonesia	: Fluent

Computer Software Literacy

MapInfo ● ArcGis ● QGIS ● GlobalMapper ● Microsoft Office Applications ● Surpac ● Micromine ● Minescape ● Leapfrog