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NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

Erdene Resources Development Corp

Job Number: ADV-MN-00161
Date: 4 February 2019

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Igor Bojanic
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ibojanic@rpmglobal

I, Igor Bojanic, am working as Head of Metals – Australasia, Russia and CIS for RPMGlobal, of Level 10, 201 Miller Street, North Sydney, New South Wales, Australia, 2060. This certificate applies to the Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project, Bayankhongor Aimag, Southwest Mongolia, prepared for Erdene Resource Development Company, dated 31st January 2019 (the "Technical Report"). I do hereby certify that:

1. I am a Fellow of the Australasian Institute of Mining and Metallurgy ("FAusIMM").

2. I am a graduate of the University of New South Wales (Australia) and hold a Bachelor of Engineering (Honours) in Mining Engineering. Additionally, I have post graduate qualifications of Master of Environmental Management from the University of New South Wales (Australia) and a Graduate Diploma in Business from Curtin University (Australia).

3. I have worked as a mining engineer for a period in excess of thirty years since my graduation from university. My first employment in 1985 was at the Mt Whaleback iron ore operation (BHP) and this was followed by over 6 years at a number of gold operations. From 1996 I have worked as a consulting mining engineer on over 200 mine planning studies and due diligences worldwide including gold projects in Mongolia.

4. I have worked on a large number of relevant projects in various operational, technical and review capacities over my career with similar mineralization.

5. I am a Qualified Person for the purposes of the National Instrument 43-101 of the Canadian Securities Administrators ("NI 43-101").

6. I am responsible for the preparation and the supervision of the overall report and have directly contributed to the technical work outlined in Sections 1 through to 6, and Sections 5, 16, 21 and 22 of the Technical Report.

7. I have limited involvement with the properties that are the subject of the Technical Report, namely discussions on processing options as well as recommendations on mineralogy and subsequent diagnostic leaching analysis for an arsenic rich ore sample.

8. To the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading as of the effective date of the report, 31st January 2019.

9. I am independent of Erdene Resource Development Company in accordance with the application of Section 1.5 of NI 43-101.

10. I have read NI 43-101 and Form 43-101F1 and consider that the Technical Report has been prepared in compliance with that instrument and form.

11. I consent to the filing of the Technical Report with any stock exchange or any other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their website and accessible by the public, of the Technical Report.

Dated at Sydney, Australia, this 31st January 2019

"Igor Bojanic" ("Signed and Sealed")
Signature of Qualified Person

Jeremy Lee Clark
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I, Jeremy Lee Clark, am working as a Principal Geologist for RPMGlobal Asia Limited, Level 13, 68 Yee Woo Street, Hong Kong. This certificate applies to the Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project, Bayankhongor Aimag, Southwest Mongolia, prepared for Erdene Resource Development Company, dated 31st January 2019 (the "Technical Report"). I do hereby certify that:

1. I am a registered member of the Australian Institute of Geoscientists ("AIG").

2. I am a graduate of the Queensland University of Technology and hold a B App Sc in Geology, which was awarded in 2001. In addition, I am a graduate of Edith Cowan University in Australia and hold a Graduate Certificate in Geostatistics, which was awarded in 2006.

3. I have been continuously and actively engaged in the assessment, development, and operation of mineral Projects since my graduation from university in 2001.

4. I am a Qualified Person for the purposes of the National Instrument 43-101 of the Canadian Securities Administrators ("NI 43-101").

6. I am responsible for the preparation of Sections 1.3, 1.4, 6 to 14 of the Technical Report.

7. I have had no prior involvement with the properties that are the subject of the Technical Report.

8. To the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading as of the effective date of the report, 31st January 2019.

9. I am independent of Erdene Resource Development Company in accordance with the application of Section 1.5 of NI 43-101.

10. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.

11. I consent to the filing of the Technical Report with any stock exchange or any other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their website and accessible by the public, of the Technical Report.

Dated at Hong Kong, 31st January 2019

"Jeremy Lee Clark" ("Signed and Sealed")
Signature of Qualified Person

Tony Cameron
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I, Anthony Cameron am working as a Consultant for RPMGlobal, Room 501, Building A, Borui Plaza, 26 North Road of East 3rd Ring, Chaoyang District, Beijing, 100026, China

This certificate applies to the Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project, Bayankhongor Aimag, Southwest Mongolia, prepared for Erdene Resource Development Company, dated 31st January 2019 (the "Technical Report"). I hereby certify that:

1. I am a professional mining engineer having graduated with an undergraduate degree of Bachelor of Engineering (Mining) from the University of Queensland in 1988. In addition, I have obtained a First Class Mine Manager's Certificate (No. 509) in Western Australia, a Graduate Diploma in Business from Curtin University (Western Australia) in 2000, and a Masters of Commercial Law from Melbourne University in 2004.

2. I am a Fellow of the Australasian Institute of Mining and Metallurgy (108264).

3. I have worked as a mining engineer for a period in excess of thirty years since my graduation from university. Over the last eighteen years I have worked as a consulting mining engineer on mine planning and evaluations for Au operations and development projects worldwide.

4. I am a Qualified Person for the purposes of the National Instrument 43-101 of the Canadian Securities Administrators ("NI 43-101").

5. I personally inspected the Khundii Gold Project in May 2018.

6. I am responsible for the preparation of Sections 1.2, 2.4, 4, and 5 of the Technical Report.

7. I have had no prior involvement with the properties that are the subject of the Technical Report.

8. To the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading as of the effective date of the report, 31st January 2019.

9. I am independent of Erdene Resource Development Company in accordance with the application of Section 1.5 of NI 43-101.

10. I have read NI 43-101 and Form 43-101F1 and Sections 1.2, 2.4 and 11 of the Technical Report has been prepared in compliance with that instrument and form.

11. I consent to the filing of the Technical Report with any stock exchange or any other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their website and accessible by the public, of the Technical Report.

Dated in Beijing, China, 31st January 2019

"Tony Cameron" ("Signed and Sealed")
Signature of Qualified Person

Richard Addison, P.E.
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I, Richard Addison, am a Principal Process Engineer with RPM Global of 7921 Southpark Plaza., Suite 210, Littleton, Colorado, United States. This certificate applies to the Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project, Bayankhongor Aimag, Southwest Mongolia, prepared for Erdene Resource Development Company, dated 31st January 2019 (the “Technical Report”). I do hereby certify that:

2. I graduated from the Colorado School of Mines in 1968 with a M.Sc. degree in metallurgical engineering. I have practiced my profession continuously since 1964.

3. I am designated by the state of Nevada as a Professional Engineer.

4. I have worked as a metallurgical engineer for a total of 53 years since my graduation from college and have been involved in the evaluation and/or operation of mineral properties for copper, molybdenum, gold, silver, lead, zinc, iron, manganese, pyrite, tin, tungsten, uranium, niobium, bauxite, potash, phosphate, fluorite, perlite, gypsum, barite, and kaolin in Argentina, Australia, Bolivia, Botswana, Brazil, Canada, Chile, Colombia, Costa Rica, Dominican Republic, DRC, Ecuador, Ethiopia, Guinea, Ghana, Guyana, Haiti, Honduras, Japan, Kazakhstan, Mexico, Nicaragua, Peru, the Philippines, Portugal, Serbia, Sierra Leone, South Africa, Spain, Turkey, the United States, Venezuela, Zambia, and Zimbabwe.

5. I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a “qualified person” for the purposes of NI 43-101.

6. I am responsible for the preparation of Section 17, and parts of Sections 1, 25, 26, and 27.

7. I have not had prior involvement with the property that is the subject of the Technical Report.

8. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.

9. I am independent of the Issuer in accordance with Section 1.5 of NI 43-101.

10. I have read NI 43-101 and Form 43-101F1, and the “Technical Report” has been prepared in compliance with that instrument and form.

11. I consent to the filing of the “Technical Report” with any security’s regulatory authority, stock exchange or other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated in Denver, Colorado, this 31st January 2019.

“Richard Addison” (“Signed and Sealed”)
Signature of Qualified Person

Andrew Kelly, P.Eng.
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I, Andrew Kelly, P.Eng., am employed as the General Manager and Senior Metallurgist with Blue Coast Research Ltd., 2-1020 Herring Gull Way, Parksville, BC, Canada, V9P 1R2. This certificate applies to the Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project, Bayankhongor Aimag, Southwest Mongolia, prepared for Erdene Resource Development Company, dated 31st January 2019 (the "Technical Report"). I do hereby certify that:

1. I am a licensed Professional Engineer with the Association of Professional Engineers and Geoscientists of British Columbia (License No. 39900) and with the Association of Professional Engineers of Ontario (License No. 100073664)

2. I am a graduate of the University of New Brunswick and obtained a Bachelor of Science in Engineering (Chemical) degree in 2003.

3. I have worked as metallurgist for a total of 15 years. My experience includes both plant operations and laboratory settings and covers base and precious metals.

5. I am a Qualified Person for the purposes of the National Instrument 43-101 of the Canadian Securities Administrators ("NI 43-101").

6. I am responsible for the preparation and the supervision and final editing of Section 13 of the Technical Report.

7. I have not visited the property.

8. I have had prior involvement in the property that is the subject of the Technical Report. I have been involved in the management and supervision of various metallurgical testwork programs for Bayan Khundii and Altan Nar between 2015 and the date of the report.

9. To the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading as of the effective date of the report, 31st January 2019.

10. I am independent of Erdene Resource Development Company in accordance with the application of Section 1.5 of NI 43-101.

11. I have read NI 43-101 and Form 43-101F1 and Section 13 of the Technical Report has been prepared in compliance with that instrument and form.

12. I consent to the filing of the Technical Report with any stock exchange or any other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their website and accessible by the public, of the Technical Report.

Signed and Dated at Parksville, British Columbia, this 31st January 2019

"Andrew Kelly" (Signed and Sealed)
Signature of Qualified Person

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1. EXECUTIVE SUMMARY

1.1 Introduction

RPMGlobal Asia Limited ("RPM"), was requested by Erdene Resource Development Corporation ("Erdene", or the "Company") to complete a Preliminary Economic Assessment Technical Report ("PEA" or the "Report") for the Khundii Gold Project ("KGP" or the "Project"). This Report has been prepared in accordance with the requirements of 'Canadian National Instrument 43-101' ("NI 43-101") of the Canadian Securities Administrators.

This Report discloses a first-time release of a PEA by Erdene for the Khundii Gold Project. It follows on from the technical reports, "Bayan Khundii Gold Project Mineral Resource Technical Report", dated November 1, 2018 and "Altan Nar Gold Project Mineral Resource Technical Report", dated June 21, 2018, which provided Mineral Resource estimates for the Project. Both reports were authored by RPM. The content of these reports is largely current.

This PEA is preliminary in nature. It includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. There is no certainty that the PEA will be realized. This Technical Report also includes technical information which requires subsequent calculations or estimates to derive sub-totals, totals, and weighted averages. Such calculations or estimations involve a degree of rounding, and as a result introduce a margin of error, which is typical at the PEA level.

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability but meet the requirement of having a reasonable prospect for eventual economic extraction.

1.2 Property Description and Ownership

The Project is in Bayankhongor Aimag, Southwest Mongolia and involves the synergistic development of the Bayan Khundii and Altan Nar deposits as the Khundii Gold Project. The Bayan Khundii and Altan Nar areas are 16 km apart and located on two separate exploration licences.

The Project is located approximately 980 km southwest of Ulaanbaatar and 300 km south of the Aimag capital, Bayankhongor City. The nearest towns (soum centres) are Shinejinst and Bayan Undur, located 70 km northeast and 80 km north, respectively. The Project is also located 40 km west of Erdene's Zuun Mod molybdenum-copper deposit. The area is sparsely populated with nomadic pastoral activity being the main industry.

The Bayan Khundii deposit is located on the Khundii exploration license which is 100% held by Erdene Mongol LLC, a wholly owned subsidiary of Erdene. It was first acquired in April of 2010 and hence is currently in its ninth year of issue. Exploration licenses in Mongolia are renewed annually with a maximum tenure of 12 years before needing to be converted to a Mining Licence or relinquished.

The Altan Nar deposit is located on the Tsenkher Nomin license which is 100% held by Erdene Mongol LLC. The original Tsenkher Nomin license (XV-015356) was issued in 2009 and in 2012, Erdene split the original license into two separate licenses. The current license (also called Tsenkher Nomin, number XV-016956) is the focus of the Mineral Resource estimate and mine planning. The Tsenkher Nomin exploration license is currently in its tenth year of issue.

The Khundii and Tsenkher Nomin exploration licenses are subject to a 2% Net Smelter Return royalty agreement with Sandstorm Gold Ltd. Erdene may buy-back 50% of the NSR Royalty for CDN $1.2 million and reduce the Sandstorm NSR Royalty to 1.0% at any time prior to April 2019. RPM is not aware of any environmental liabilities to which the properties are subject.

1.3 Geological Setting and Exploration

The Project is located within Trans Altai Terrane, part of the Central Asian Orogenic Belt along the southern margin of Mongolia, including the border with China. This region is host to the Oyu Tolgoi copper-gold porphyry mine to the east and the Tian Shan Gold Belt to the west. The Trans Altai Terrane is located immediately south of the Main Mongolian Lineament that separates the dominantly Precambrian and Lower Paleozoic terranes to the north from the dominantly Upper Paleozoic terranes to the south. The Trans Altai Terrane consists mostly of Middle Paleozoic volcanic, sedimentary and metasedimentary rocks that were intruded by Middle Paleozoic calc-alkaline and alkaline plutons.

1.3.1 Bayan Khundii

The bedrock geology of the Khundii license is dominated by a sequence of Devonian and/or Carboniferous volcanic (andesite, andesite porphyry) and pyroclastic rocks (ash, lapilli, and block and ash tuffs). These were intruded by Carboniferous intrusions, with these rocks unconformably overlain by Jurassic volcanic and sedimentary units. All rocks in the region are overlain by unconsolidated sediments of Quaternary or Recent age.

Bayan Khundii is a low sulphidation epithermal gold deposit. Gold mineralization is associated with: comb-textured quartz veins; multi-stage quartz-chalcedony-adularia-hematite/specularite veins; quartz-hematite/specularite breccias; angular hematite/specularite veinlets; disseminations (commonly associated with hematite/specularite) and fracture fillings that are hosted by an intensely altered (quartz-illite) sequence of pyroclastic rocks. With the exception of very minor, finely-disseminated pyrite in a few drill holes, Bayan Khundii is devoid of sulphide minerals. The presence of disseminated hematite/specularite with rare remnant pyrite and hematite/specularite veins and veinlets are interpreted as hypogene in origin, having formed as part of the widespread quartz-illite alteration and gold mineralizing event. Gold mineralization is present in numerous sub-parallel, NW-SE trending, SW-dipping zones that have been traced up to 200 m along strike. These zones include very high-grade veins and breccias over a centimetre to meter scale with gold grades exceeding 15 g/t, and up to 2,200 g/t, over 1 m intervals. Enveloping these higher-grade zones, are lower grade mineralization zones in the 0.1 to 2 g/t gold range that can extend for significant widths. The widest interval intersected to date was in the Midfield Zone where a 149 m interval averaged 2.1 g/t gold.

Bayan Khundii was discovered in 2015 when surface rock-chip samples of gold-bearing quartz veins were collected at the Striker and Gold Hill zones. The initial sampling results were followed by geological, geochemical, geophysical, and trenching work and a 15-hole (695 m) maiden drilling program in the second half of 2015. The 2016 drilling program, which included 81 drill holes totalling 10,645 m, confirmed strike and down-dip extensions of mineralized zones at the Striker and Gold Hill zones. In addition, drilling beneath the Jurassic aged cover rocks resulted in the discovery of the Midfield Zone, approximately 170 m northeast of Striker. Drilling has concentrated on these primary locations within a zone approximately 1.6 km x 1.3 km. Up to the drilling cut-off date (29th June 2018) Erdene drilled 255 holes, including 12 extended re-drills over 42,670m, and excavated 22 trenches totalling 1,060 m. There is no evidence of modern exploration or production on the license, other than as undertaken by Erdene.

1.3.2 Altan Nar

The Altan Nar deposit is hosted by a series of Devonian to Carboniferous shallow-dipping trachy-andesite and andesite tuff units that were intruded by several but volumetrically minor, late stage porphyritic dykes. Trachy-andesite rocks dominate to the north of the Discovery Zone whereas tuffaceous rocks are the dominant lithology to the south of the Discovery Zone. Rhyolite and rhyodacite rocks are the dominant lithologies in the western part of the license. Based on the available exploration data the gold-polymetallic mineralisation appears to be structurally controlled within a large (5.6 km by 1.5 km) NNW-trending zone. The presence of NE/SW-trending and lesser N/S-trending quartz breccia zones with associated white mica alteration within this zone, suggests the principal factor controlling the distribution of mineralisation was structure, with steeply-dipping breccia zones providing locii or conduits for fluids. Depth of burial during the mineralizing event is presumed to also be a controlling factor for deposition of gold and base metals.

Altan Nar is an intermediate sulphidation epithermal style gold-silver-lead-zinc mineralized deposit, which has similar characteristics to the carbonate-base metal gold deposits. These characteristics include a moderate Ag:Au value (5-8:1), high base metal concentrations, epithermal quartz textures and abundant gangue minerals which are dominated by Ca-Fe-Mn-Mg carbonate minerals. These styles of mineralization have close magmatic relationships, often being associated with porphyry deposits. This style of gold mineralization represents the most prolific style of gold mineralization in the southeast Asia region and includes Kelian, Porgera and Anatok, and elsewhere in the world, Fruta del Norte, Cripple Creek and Montana Tunnels and Rosia Montana and in Mexico five of the world's top silver producers including Penasquito. They are often associated with breccia pipes (diatremes) and can extend vertically for greater than 1 kilometre.

Erdene has drilled 125 surface holes totalling 19,565.2 m and excavated 42 trenches totalling 3,151 m between 2011 and 2018, concentrated within a zone approximately 5.6 km x 1.5 km. There has been no previous production from the area, however RPM is aware some small pits were undertaken centuries ago.

1.4 Mineral Resource Estimate

RPM independently estimated the Mineral Resources contained within the Project, based on the data collected by Erdene as of 27th June 2018. The Mineral Resource estimate and underlying data complies with the guidelines provided in the CIM Definition Standards under NI 43-101 and the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines. Therefore, RPM considers it is suitable for public reporting. The Mineral Resources were completed by Mr. David Princep of RPM and under the supervision of Mr. Jeremy Clark of RPM. The Mineral Resources are reported at a number of Au Equivalent cut-off values.

The Bayan Khundii Mineral Resources were reported in the NI 43-101 Technical Report titled "Bayan Khundii Gold Project Mineral Resource Technical Report", dated November 1, 2018 and the Altan Nar Mineral Resources were reported in the NI 43-101 Report titled "Altan Nar Gold Project Mineral Resource Technical Report", dated June 21, 2018. Both reports were authored by RPMGlobal Asia Limited.

The Khundii Gold Project Mineral Resources for the PEA study are presented in **Table 1-1** below as of September 12, 2018 and there has been no material change to the Altan Nar Mineral Resource since it was reported on May 7, 2018.

Table 1-1 Khundii Gold Project Combined Mineral Resource Estimate as of September 12, 2018

Cut-Off Grade(1)	Resource Classification	Quantity (Mt)	Grade Au g/t	Gold Koz	Grade AuEg g/t	AuEg Koz
0.2	Measured	4.3	1.4	194	1.4	194
	Indicated	19.3	1.1	710	1.4	852
	M+I	**23.6**	**1.2**	**904**	**1.4**	**1,046**
	Inferred	16.8	0.8	416	1.0	511
0.4	Measured	2.4	2.3	177	2.3	177
	Indicated	12.7	1.6	647	2.0	788
	M+I	**15.1**	**1.7**	**824**	**2.0**	**965**
	Inferred	8.6	1.2	342	1.6	436
Recommended(2)	Measured	**1.4**	**3.6**	**161**	**3.6**	**161**
	Indicated	**8.7**	**2.1**	**590**	**2.6**	**725**
	M+I	**10.1**	**2.3**	**751**	**2.7**	**886**
	Inferred	**5.2**	**1.8**	**291**	**2.3**	**382**
1.0	Measured	0.8	5.6	148	5.6	149
	Indicated	6.0	2.8	530	3.4	655
	M+I	**6.8**	**3.1**	**678**	**3.7**	**803**
	Inferred	3.9	2.1	261	2.9	349
1.4	Measured	0.8	5.9	145	5.9	145
	Indicated	4.7	3.3	497	4.1	610
	M+I	**5.5**	**3.7**	**642**	**4.3**	**755**
	Inferred	3.4	2.3	250	3.0	333

1. Cut-off grades for Altan Nar are AuEq and for Bayan Khundii are gold only.
2. RPMGlobal recommended cut-off grade for Bayan Khundii is 0.6 g/t gold and Altan Nar is 0.7 g/t AuEq above a pit shell and 1.4 g/t AuEq below the same pit shell. Refer to Section 1.4.1 and 1.4.2 for further details.
3. * see **Table 1-2** and **Table 1-3** below for notes on individual deposit mineral resource estimates.

1.4.1 Bayan Khundii

The results of the Mineral Resource estimate for the Bayan Khundii deposit are presented in **Table 1-2** and RPM suggests using a 0.6 Au g/t as a reporting cut-off based on the mining and process cost parameters for the Project. A variety of cut-off grades is provided in Section 14 for reference as well as a breakdown by oxidation state.

Table 1-2 Bayan Khundii Deposit as of September 12, 2018

Type	Measured			Indicared			Inferred		
	Tonnes T	Au g/t	Au Ounces	Tonnes T	Au g/t	Au Ounces	Tonnes T	Au g/t	Au Ounces
Oxide	1,101,000	3.6	127,900	2,343,000	2.2	167,400	348,000	1.5	16,400
Fresh	298,000	3.5	33,200	1,371,000	2.4	104,400	1,407,000	2.0	88,400
Total	**1,399,000**	**3.6**	**161,100**	**3,714,000**	**2.3**	**271,800**	**1,755,000**	**1.9**	**104,900**

Note:

1. *The Statement of Estimates of Mineral Resources has been compiled under the supervision of Mr. Jeremy Clark who is a full-time employee of RPM and a Member of the Australian Institute of Geoscientists. Mr. Clark has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity that he has undertaken to qualify as a Qualified Person as defined in the CIM Standards of Disclosure*
2. *All Mineral Resources figures reported in the table above represent estimates based on drilling completed up to 27th June 2018. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate. Rounding may cause some computational discrepancies.*
3. *Mineral Resources are reported on a dry in-situ basis.*
4. *The Mineral Resources is reported at a 0.6 g/t Au cut-off. Cut-off parameters were selected based on an RPM internal cut-off calculator, which indicated that a break-even cut-off grade of 0.6 g/t Au, assuming an open cut mining method, a Au price of US $1500 per ounce, an open mining cost of US $6 per tonne and a processing cost of US $20 per tonne milled and processing recovery of 95% Au.*
5. *Mineral Resources referred to above, have not been subject to detailed economic analysis and therefore, have not been demonstrated to have actual economic viability*

1.4.2 Altan Nar

The results of the Mineral Resource estimate for the Altan Nar deposit are presented in **Table 1-3**. RPM suggests using a 0.7 g/t AuEq above and 1.4g/t AuEq below a pit shell as a reporting cut-off, based on mining / process and cost parameters for the Project as outlined below **Table 1-3**.

Table 1-3 Altan Nar – Mineral Resource Estimate Summary as of May 7, 2018

Type	Indicated Mineral Resource										
	Quantity Mt	Au g/t	Ag g/t	Zn %	Pb %	AuEq* g/t	Au koz	Ag koz	Zn kt	Pb kt	AuEq koz
Oxide	0.6	2.0	12.7	0.6	1.0	3.1	39.3	244.3	3.8	6.3	59.6
Fresh	4.4	2.0	15.0	0.6	0.5	2.8	278.4	2,105.4	27.8	22.7	393.4
Total	**5.0**	**2.0**	**14.8**	**0.6**	**0.6**	**2.8**	**317.7**	**2,349.7**	**31.6**	**29.0**	**453.0**
Type	**Inferred Mineral Resource**										
	Quantity Mt	**Au g/t**	**Ag g/t**	**Zn %**	**Pb %**	**AuEq* g/t**	**Au koz**	**Ag koz**	**Zn kt**	**Pb kt**	**AuEq koz**
Oxide	0.8	1.8	7.5	0.6	0.9	2.6	43.3	183.7	4.3	6.5	64.2
Fresh	2.7	1.7	8.0	0.7	0.6	2.5	142.4	682.1	19.4	15.8	212.8
Total	**3.4**	**1.7**	**7.9**	**0.7**	**0.7**	**2.5**	**185.7**	**865.8**	**23.7**	**22.3**	**277.1**

Note:

1. *The Statement of Estimates of Mineral Resources has been compiled under the supervision of Mr. Jeremy Clark who is a full-time employee of RPM and a Member of the Australian Institute of Geoscientists. Mr. Clark has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity that he has undertaken to qualify as a Qualified Person as defined in the CIM Standards of Disclosure.*
2. *All Mineral Resources figures reported in the table above represent estimates based on drilling completed up to 7th May 2018. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate. Rounding may cause some computational discrepancies.*
3. **Au Equivalent (AuEq) calculated using long term 2023 - 2027 "Energy & Metals Concensus Forecasts" March 19, 2018 average of US$1310/oz for Au, US$17.91/oz for Ag, US$1.07/pound for Pb and US$1.42/pound for Zn. Adjustment has been made for metallurgical recovery and is based company's preliminary testwork results which used flotation to separate concentrates including a pyrite concentrate with credits only for Au and Ag. Based on grades and contained metal for Au, Ag, Pb and Zn, it is assumed that all commodities have reasonable potential to be economically extractable.*
    a. *The formula used for Au equivalent grade is: AuEq g/t = Au g/t + Ag g/t*0.0124+Pb%*0.509+Zn%*0.578 with metallurgical recovery of 88.8% Au, 80.6% Ag, 80.4% Pb and 69.1% Zn.*
    b. *Au equivalent ounces are calculated by mulitplying Mineral Resource tonnage by Au equivalent grade and converting for ounces. The formula used for Au equivalent ounces is: AuEq Oz = [Tonnage x AuEq grade (g/t)]/31.1035.*
4. *Mineral Resources are reported on a dry in-situ basis.*
5. *Reported at a 0.7 g/t AuEq cut-off above pit shelland 1.4g/t AuEq below the pit shell. Cut-off parameters were selected based on an RPM internal cut-off calculator, which indicated that a break-even cut-off grade of 0.7g/t Au Equivalent above pit and 1.4g/t AuEq below pit, assuming a gold price of US$1310 per ounce, an open mining cost of US$6 per tonne and a processing cost of US$20 per tonne milled and processing recovery of 88.8% Au, 80.6% Ag, 80.4% Pb and 69.1% Zn.*
6. *Mineral Resources referred to above, have not been subject to detailed economic analysis and therefore, have not been demonstrated to have actual economic viability*

1.5 Mine Development and Operations

1.5.1 Mining Methods

The Project Mine plan is based on an open-pit mining operation targeting 600,000 tonnes per year of feed material for the process plant. The total mineable mineralised plant feed is 4.6 million tonnes at an average diluted head grade of 3.42 g/t gold and strip ratio of 10.5:1 (waste tonne: plant feed tonne), giving an eight-year mine life.

Mining will use hydraulic excavators in backhoe configuration. Drilled and blasted material will be loaded into haul trucks, with waste rock deposited in engineered dumps adjacent to the pits, and plant feed hauled to a crusher or run-of-mine ("ROM") pad adjacent to the processing plant which is to be located at Bayan Khundii. At Altan Nar the estimated 19 kilometre road distance to the processing plant means that plant feed hauled from the pit will need to be placed nearby and transferred into road-trains for haulage to Bayan Khundii.

1.5.2 Pit Limit Determination

The open pit limits were determined by considering the physical and economic constraints to mining using Whittle 4X pit limit optimisation software. The Whittle 4X software uses the industry-standard Lerchs-Grossman algorithm to define a three-dimensional ("3D") shape for the open pit which is considered the "optimal" economic shell for mining. Based on the pit optimisation results, RPM selected the 90% Revenue Factor pit shells for each deposit to guide the detailed ultimate pit designs. This selection results in a high potential project value while providing a pit limit with a 10% RF risk margin at the pit limits.

Erdene also engaged Sardonyx Geotechnical Consulting Services to perform a geotechnical analysis focused on Bayan Khundii and the Discovery Zone of Altan Nar. The geotechnical recommendations for both deposits were provided across a number of pit sectors. RPM reviewed the results and consolidated the various sectors into more simplified geotechnical criteria as set out in **Table 1-4**. The modified criteria are not considered materially different than the detailed results and enabled more practical pit limit optimisation and pit design.

Table 1-4 Slope Parameters Used for Design

Description	Batter Angle deg	Inter Ramp Slope Angle deg	Bench Height m	Berm Width m
Bayan Khundii - Oxide	60	46	15	6
Bayan Khundii - Fresh	60	46	15	6
Altan Nar - Oxide	61	48	15	5
Altan Nar - Fresh	67	53	15	5

1.5.3 Pit and Dump Design

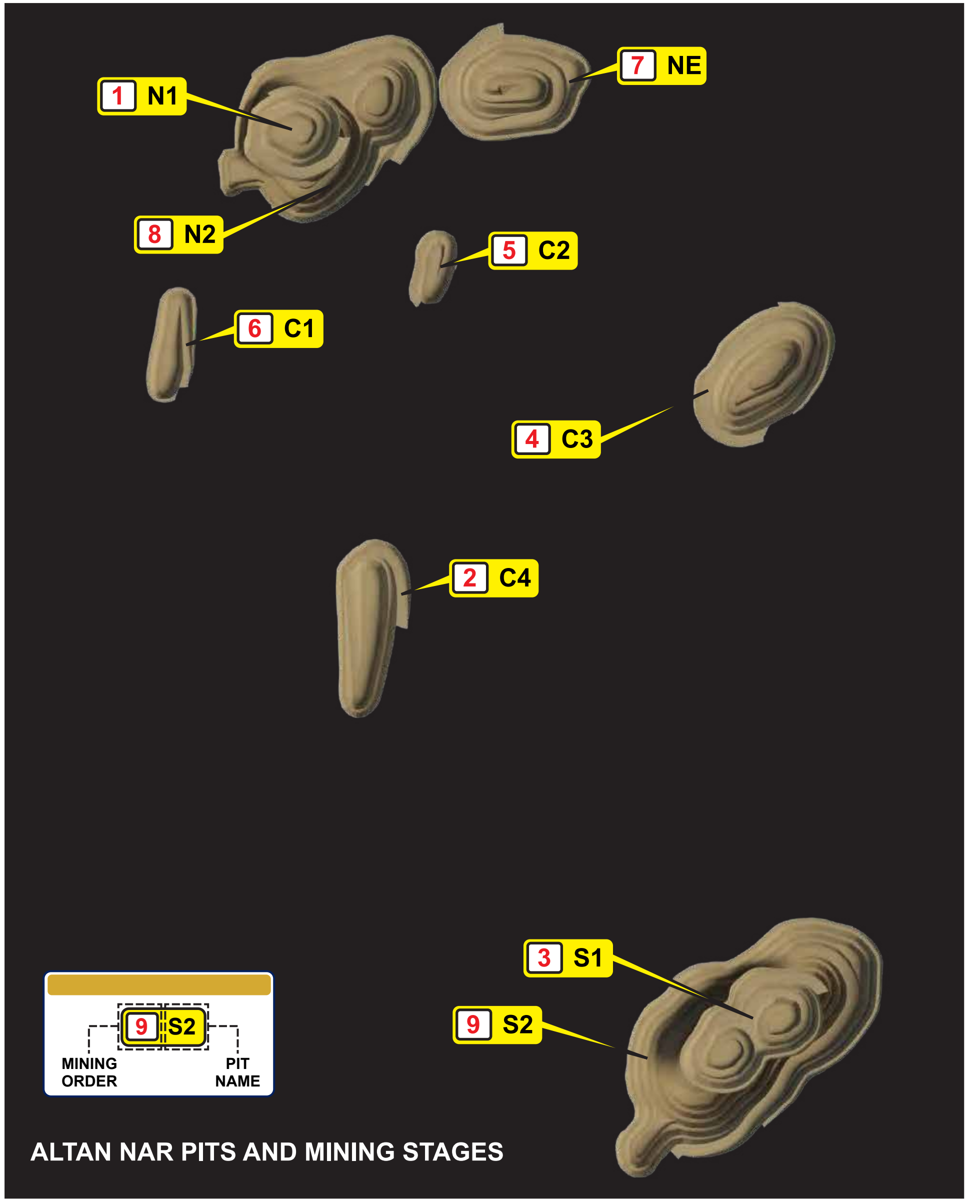
All pit designs were prepared based on the selected pit shells obtained from pit limit optimisation. The completed designs were compared against the Whittle results and any tonnage differences found to be within expected ranges.

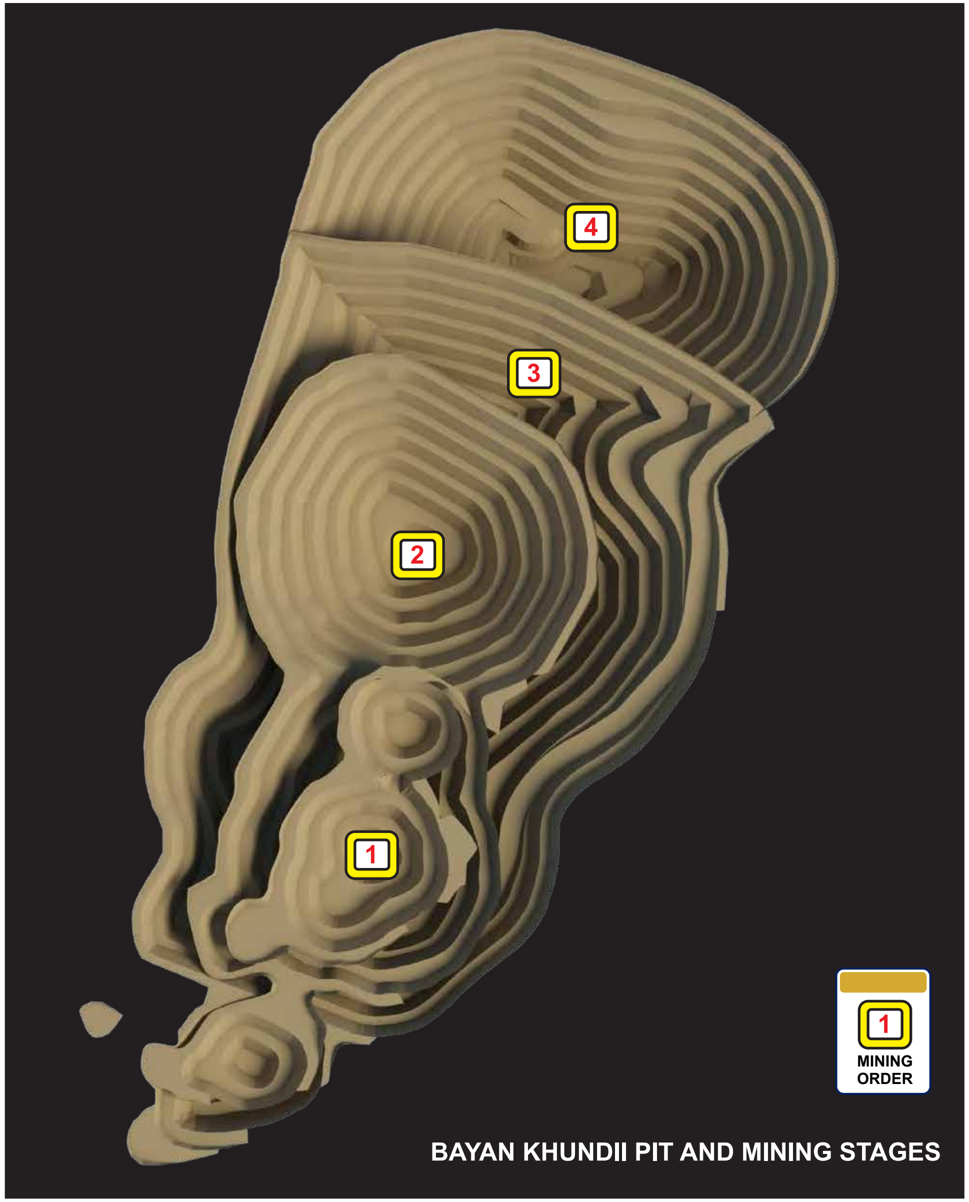
In addition to the ultimate pit designs, three cutback stages were prepared for Bayan Khundii referred to as BK_01, BK02 and BK03 with BK04 being the final pit. The Altan Nar deposit has 9 designs in total, seven ultimate pit designs and two cutback stage designs. Cutback stages were only designed for the South Pit and the North Pit. The location and layout of the designs is illustrated in **Figure 1-1.**

Dumps were designed using a 34-degree batter face, 10 m berms at 15 m lifts. This results in an overall slope of 25 degrees which is considered suitable for rehabilitation.

1.5.4 Mineable Quantities

The pit design mineable quantities were estimated from the ROM models using a positive Net Processing Return as the marginal cut-off. The tonnages and grades for the pits and mining stages are shown in **Table 1-5**Error! Reference source not found. and **Table 1-6**. The coding and sequencing for each pit stage is provided in **Figure 1-1**.





CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING PIT DESIGNS AND MINING STAGES		
	FIGURE No. 1-1	PROJECT No. ADV-MN-00161	Date January 2019

DO NOT SCALE THIS DRAWING - USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE

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Table 1-5 Bayan Khundii Mineable Quantities as of September 12, 2018

Pit/Stage	Waste kt	Plant Feed kt	Strip Ratio t/t	Feed Grade Au g/t
BK_01	845	115	7.3	5.4
BK_02	7,346	875	8.4	4.4
BK_03	15,866	977	16.2	2.9
BK_04	11,359	682	16.7	3.5
Total	**35,417**	**2,649**	**13.4**	**3.6**

All the estimates are on dry tonne basis.

Table 1-6 Altan Nar Mineable Quantities as of September 12, 2018

Pit/Stage	Waste kt	Plant Feed kt	Strip Ratio t/t	Feed Grade Au g/t	Feed Grade Ag g/t
AN_C1	136	27	4.9	1.7	10.5
AN_C2	99	9	11.3	3.3	1.8
AN_C3	1,207	176	6.8	2.7	8.4
AN_C4	589	83	7.1	4.1	11.9
AN_N1	362	139	2.6	3.9	19.0
AN_N2	2,666	398	6.7	2.6	9.4
AN_NE	957	198	4.8	1.8	5.2
AN_S1	662	133	5	3.7	21.9
AN_S2	6,070	765	7.9	3.5	23.7
Total	**12,747**	**1,928**	**6.6**	**3.1**	**16.2**

All the estimates are on dry tonne basis.

1.5.5 Production Schedule

Several plant feed processing rates were examined to identify the highest production rate that is practically achievable. Upon review the 600 ktpa plant feed option was selected as the Base Case to be used for planning and Project valuation.

The 600ktpa plant feed schedule is presented graphically in **Figure 1-2** with detailed annual quantities included in **Table 1-7**.

Figure 1-2 Production Schedule

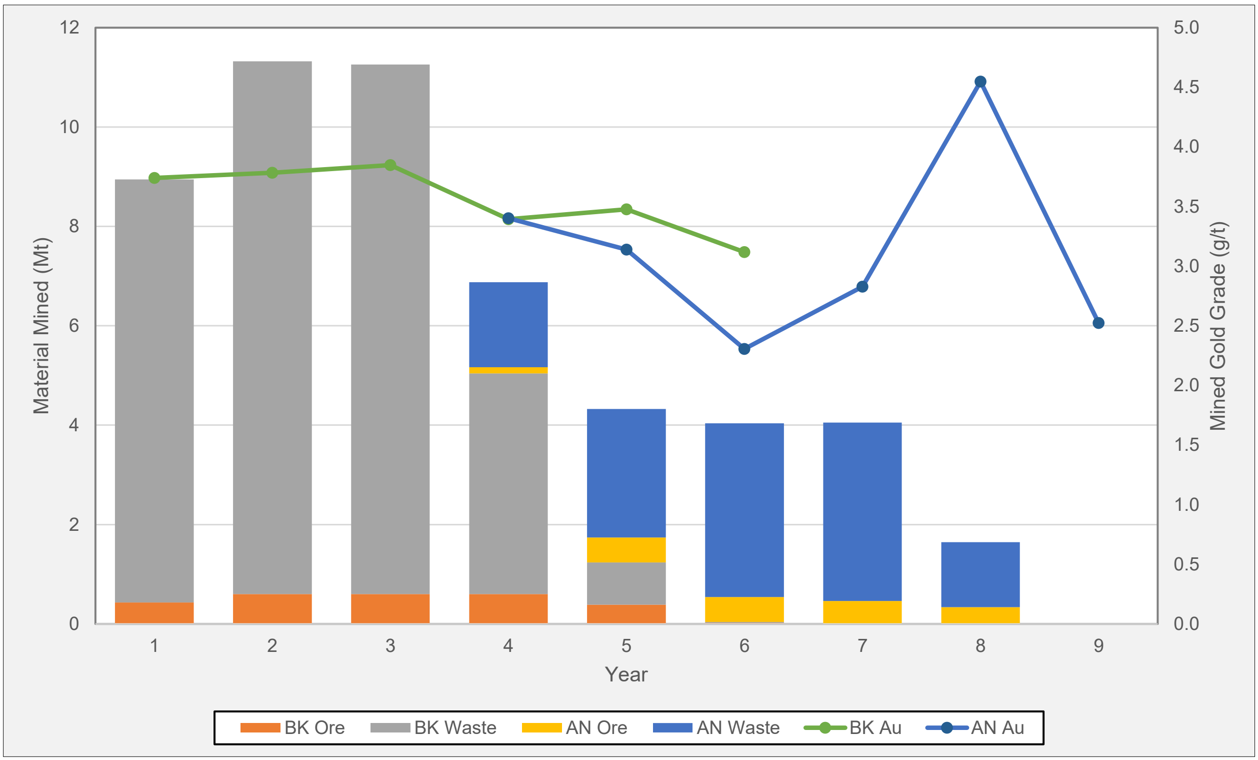


Table 1-7 Production Schedule Summary

Item	Units	Pre - Strip	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	TOTAL
Total Tonnes Mined	kt	37	8,943	11,324	11,259	6,876	4,326	4,037	4,050	1,647	-	52,498
Waste Tonnes Mined	kt	26	8,555	10,778	10,712	6,181	3,454	3,536	3,607	1,314	-	48,164
Plant Feed Tonnes Mined	kt	11	430	600	600	725	888	519	462	339	-	4,575
Gold Grade Feed Tonnes Mined	g/t	2.6	3.7	3.8	3.8	3.4	3.3	2.3	2.8	4.5	-	3.4
Silver Grade Feed Tonnes Mined	g/t	-	-	-	-	2.6	9.1	9.8	20.3	30.3	-	15.3
Strip Ratio	t:t	-	19.8	17.9	17.8	8.5	3.9	6.8	7.8	3.9	-	10.5
BK Feed Movement	kt	11	430	600	600	599	387	19	-	-	-	2,647
BK Waste	kt	26	8,557	10,780	10,714	4,465	855	20	-	-	-	35,417
AN Feed Movement	kt	-	-	-	-	126	501	500	462	339	-	1,928
AN Waste Movement	kt	-	-	-	-	1,716	2,598	3,514	3,605	1,313	-	12,747
BK Au Grade	g/t	2.6	3.7	3.8	3.8	3.4	3.5	3.1	-	-	-	3.6
AN Au Grade	g/t	-	-	-	-	3.4	3.1	2.3	2.8	4.5	-	3.1
Total Tonnes into Crusher	kt	-	341	600	600	600	602	600	600	600	32	4,575
Gold Grade into Crusher	g/t	-	4.1	3.8	3.9	3.4	3.0	2.5	2.9	4.1	4.3	3.4
Silver Grade into Crusher	g/t	-	-	-	-	-	1.6	9.1	15.2	26.2	27.2	16.2

1.5.6 Ore Loss and Dilution

To model the loss and dilution the in situ geological model was re-blocked with sub-blocks combined to a constant selective mining unit ("SMU") block size. Note that dilution added to plant feed comes from the adjacent waste model blocks and thus includes actual waste grades.

The plant feed loss and dilution estimates are reflective of the mineralization thickness, preferred mining method and the grade control strategy. As Bayan Khundii has substantially higher plant feed grades than Altan Nar, it is proposed to minimise plant feed loss and accept higher dilution for a given mining accuracy. A more balanced plant feed loss and dilution approach was targeted for Altan Nar. On this basis, the resulting modifying factors modelled were:

- Bayan Khundii: average global 3% plant feed loss and 23% dilution, and
- Altan Nar: average global 17% plant feed loss and 13% dilution.

1.5.7 Cut-off Grades

To determine the split between plant feed and waste for the Bayan Khundii and Altan Nar deposits, a Net Smelter Return ("NSR") was calculated for the blocks in the ROM geological model using metal prices, variable grade recoveries and operating costs up to the plant. The NSR was then compared to the relevant plant feed processing costs to determine a Net Process Return ("NPR") or profit margin for each block. Blocks with a positive margin are considered profitable and classed as "plant feed". The remaining blocks are flagged as "waste rock" or allocated to a "subgrade" stockpile.

1.5.8 Hydrological

Between August and October 2018, the Okhi-Us Company carried out hydrogeological survey work at the Project. The subsequent reports provided to RPM in November 2018 estimate groundwater flow into the Altan Nar pits to be 25 m^3 per day and for the Bayan Khundii pit at 106 m^3 per day.

These results do not highlight any impediment to the mining process. Hydrological considerations will be reviewed further when the Project progresses to a more detailed study stage.

1.5.9 Mining Equipment

Conventional truck and loader mining equipment composed of hydraulic excavators and rear-dump haul trucks was selected as it offers the following advantages:

- Cost effective;
- Proven technology;
- Operational flexibility;
- Relatively easy to manage and maintain;
- Good access to spare parts; and
- Better suited for contractor mining, if required.

RPM used its in-house, proprietary MiMaSo Fleet Calculator to determine equipment requirements for the Project. This required estimating the operating times and productivities for major equipment. The key assumptions made for this process were as follows:

- 3 panel roster;
- 2 x 12 hour shifts per day;
- 7 days per week operation for 365 days per year;
- 6 days lost per year due extreme weather conditions;
- Mechanical availability 87%;

- Truck presentation 90%, and
- Utilisation of available time 81%.

1.6 Recovery Methods

The processing plant will be a conventional, cyanide leach, Carbon In Pulp (CIP) processing plant. The plant will incorporate crushing, grinding, gravity separation, cyanide leaching, CIP, carbon stripping, electro-winning, smelting, tailings detoxification, tailings filtration, and tailings co-disposal with mine waste. Plant throughput will be 600 ktpa, nominally 1,800 tonnes per day. Plant feed grade will average approximately 3.4 grams of gold per tonne over the life of the Project.

Plant feed from the Bayan Khundii deposit is free-milling, while plant feed from Altan Nar is primarily free milling but also includes arsenopyritic plant feed with associated low recovery. The arsenopyritic plant feed at Altan Nar will not be mined or processed. Though both Bayan Khundii and Altan Nar ores contain some silver in addition to gold, the ratio of silver for Bayan Khundii is low (about 1:1) and hence negligible recovery and value. For Altan Nar plant feed, the silver to gold ratio is about 5: 1. The silver: gold ratio is such that it is debatable as to whether a carbon-adsorption or Merrill-Crowe plant is the most suitable. This project will use carbon adsorption with CIP pump cells to achieve high metal loading to accommodate the silver: gold ratio.

Projected gold recovery is 90% for Bayan Khundii plant feed and 75% for Altan Nar plant feed and over the Life of the Project, an average of 82%. Average annual gold production is expected to be approximately 51,200 ounces per year.

The processing plant will be located adjacent to the Bayan Khundii open pit and plant feed from the Altan Nar deposit will be trucked to the plant by road trains.

1.7 Project Infrastructure

The Project is a “greenfields” site and has only minor infrastructure present associated with the exploration activity which is similar to other remote sites found in the region. In developing the infrastructure plan and cost estimates for the proposed Project a number of high-level assumptions have been made about the Project’s operating philosophy. These include:

- The need to develop the site with a minimal capital expenditure;
- A self-contained remote site;
- Fly In Fly Out (FIFO) personnel transfer with onsite accommodation; and
- Connections to regional electrical power infrastructure.

It is planned for the Bayan Khundii site to be developed first with all infrastructure located there, and the Altan Nar site will be developed later as a satellite operation with minimal facilities.

1.8 Market Studies and Contracts

The selling prices used in the PEA were US$1,200/oz for gold and US$18/oz. for silver.

The gold and silver price selected was based on the long-term metal price as published in the Energy and Metals Consensus Forecasts (“Consensus”), November 2018 edition. The Consensus forecast is understood to be derived from reviewing forward forecast data from over 20 institutions. RPM considers this approach reasonable for the purposes of the PEA.

1.9 Environment

Mongolia’s environmental assessment process for mining involves a three-step process:

1. Environmental and Social Baseline Survey;
2. General Environmental Impact Assessment ("GEIA"), and
3. Detailed Environmental Impact Assessment ("DEIA") and Environmental Management Plan ("EMP").

From 2016 to 2018, Erdene engaged Eco Trade LLC, a Mongolian certified EIA consultant, to complete the Environmental and Social Baseline surveys for the Altan Nar and Bayan Khundii deposits, in accordance with Mongolian rules and regulations.

No environmental issues have been identified by studies to date that would prevent or delay the development of the Project. The Project is located in a remote area that is not appreciably populated and vegetated. No items of historical or archaeological importance have been found in the areas of proposed disturbance.

Further environmental studies are being undertaken to support future technical work including consultation with local stakeholders.

1.10 Capital and Operating Costs

1.10.1 Capital Costs

Capital costs were estimated by RPM with support from Erdene. A summary of all capital expenditure is given in **Table 1-8**. The initial capital expenditure for Project establishment is estimated at US$32.2M, incurred at the Bayan Khundii site. The remaining US$7.8M comprises US$1.2M to commence Altan Nar, sustaining costs of US$2.6M and US$4M for mine closure.

Table 1-8 Project Capital Costs (US$M)

Item	Bayan Khundii (US$ M)	Altan Nar (US$ M)	Total (US$ M)
Process Plant	16.1	0.0	16.1
Site Est. + Buildings	2.8	0.4	3.2
Accommodation Village	1.8	0.0	1.8
Airstrip	1.6	0.0	1.6
Roads	1.0	0.5	1.5
Engineering + Support	3.6	0.1	3.7
Contingency (20%)	5.4	0.2	5.6
Subtotal Plant and Infrastructure	**32.2**	**1.2**	**33.5**
Mine Closure	2.8	1.2	4.0
Sustaining Capital	1.5	1.1	2.6
Total	**36.5**	**3.5**	**40.0**

The engineering accuracy of the capital cost estimate is +/-35% commensurate with a PEA. The above estimates are inclusive of a 20% contingency (refer Section 18.12). Sustaining costs are assumed to be ~2% on key capital items for upgrade.

1.10.2 Operating Costs

A summary of operating costs is set out in **Table 1-9**.

Table 1-9 Project Operating Costs

Cost Centre	Life of Mine (US$ M)	Unit Cost (US$/oz Au)	Unit Cost (US$/t Feed)
Mining Contractor	131.5	319	28.75*
Transport AN to BK	2.7	7	0.59
Processing and Infrastructure	75.3	183	16.47
Product Transport	0.5	1	0.10
Smelting & Refining Charges	2.0	5	0.43
Overheads	30.1	73	6.58
Royalty and Govt Charges	25.5	62	5.57
Contingency	24.0	58	5.25
Total	**291.6**	**708**	**63.73**

** At a strip ratio of 10.5:1, the total contractor mining cost averages $2.50/t rock.*

The mining contractor costs were developed from first principles based on the selected equipment fleet and the mining activity requirements. Equipment costs were based on RPM's internal database and a 10% contractor margin was assumed.

The processing and infrastructure costs were estimated from the RPM database and extrapolated based on the Project characteristics.

Key operating cost assumptions include:

- Equipment maintenance by the mine owner's workforce;
- Diesel fuel price = US$0.90 per litre;
- Power price = US$0.10/kWh;
- Local labour costs generally ranging from US$10,000 / annum to US$15,000 / annum; and
- Government royalty at 5% of revenue, less selling costs;
- 10% contingency on operating costs (excluding royalty and refining); and
- No Value Added Tax (VAT).

1.11 Economic Analysis

RPM has prepared an economic model for the Project using its in-house economic modelling software. The economic model results are summarised in a constant-dollar (REAL) cash flow analysis, from which both a net present value ("NPV") and a discounted cash flow internal rate-of-return ("IRR") were calculated.

Both measures were based on after-tax net cash flows as outlined in **Table 1-10**.

Table 1-10 Key Economic Indicators

Item	Units	Value
Mill Feed	Mt	4.6
Gold Sold	k oz.	412
Silver Sold	k oz.	604
Mine Operating Life	Years	8
Total Revenue	**US$ M**	**505**
Capital Requirements		
Pre-production Capital Cost	US$ M	32.3
Remaining Capital Cost	US$ M	7.7
Total Capital Cost	US$ M	**40.0**
Total Operating Costs	**US$ M**	**292**
DCF @ 5%	US$ M	99
DCF @ 7.5%	US$ M	86
DCF @ 10%	US$ M	76
CAPEX	US$ M	40
Total Operating Cost	US$/oz. Gold Sold	708
Sustaining Cost	US$/oz. Gold Sold	6
AISC Operating Cost	**US$/oz. Gold Sold**	**714**
Pre-Tax IRR	%	70%
After-Tax IRR	%	56%
Payback Period	years	2

1.11.1 Sensitivity Analysis

The base case long term gold price selected for the PEA was US$1,200/oz. However, in reviewing various pricing publications, long-term gold price forecasts generally ranged between US$1,150/oz and US$1,300/oz. A sensitivity analysis was hence undertaken across this range to understand the sensitivity to the Project value, as set out in **Table 1-11**.

Table 1-11 Post Tax Gold Price Sensitivity Analysis

Sensitivity Analysis on Gold Price	Units	1,150	1,200	1,250	1,300
NPV (5% discount rate)	US$M	86	99	111	124
NPV (7.5% discount rate)	US$M	75	86	98	110
NPV (10% discount rate)	US$M	65	76	86	97
IRR	%	50%	56%	62%	68%

A sensitivity analysis was also undertaken assuming a range of +/-15% for capital costs, operating costs and revenue. It indicates that the Project is most sensitive to revenue, that is, a change in metal price followed by operating costs. A 15% change in metal price alters the Project value (NPV@10%) by 50%. A 15% change in operating cost alters the Project value by 30%.

1.12 Conclusions

The key outcomes reported in the PEA include:

- The PEA includes 2.7 million mineable tonnes from the Bayan Khundii resource at an average head grade of 3.65 g/t gold, of which 98% are Measured and Indicated Resources.
- The Altan Nar deposit for the PEA contributes 1.9 million minable tonnes at an average head grade of 3.11 g/t gold, of which 70% are Measured and Indicated Resources.
- These deposits are being developed as a single project and are discussed herein as the Khundii Gold Project.
- Both Bayan Khundii and Altan Nar are near-surface high-grade deposits that are well suited to open pit mining methods.
- Bayan Khundii pit will be mined in four stages to balance the waste stripping. The larger North and South pits in Altan Nar will be mined in one or two stages with smaller adjacent pits not requiring staged mining.
- Target processing rate of 600 ktpa grading approximately 3.4 grams/tonne gold.
- Mine life of 8 years plus one-year pre-production and two-year mine closure periods.
- A single processing plant to be located adjacent to the Bayan Khundii deposit and feed from Altan Nar to be hauled 19 km to the Bayan Khundii processing plant.
- The processing plant will be a conventional, cyanide leach, CIP plant. The plant will incorporate crushing, grinding, gravity separation, cyanide leaching, CIP, carbon stripping, electro-winning, smelting, tailings detoxification, tailings filtration, and tailings co-disposal with mine waste.
- Projected gold recovery is 90% for Bayan Khundii plant feed and 75% for Altan Nar plant feed and over the Life of the Project, an average of 82%.
- After-tax Net Present Value for a US$1,200/ounce (“oz”) gold price:
  - US$99 million at 5% discount rate
  - US$86 million at 7.5% discount rate
  - US$76 million at 10% discount rate
- Internal Rate of Return (“IRR”) of 56%.
- Initial capital expenditure of US$32 million, using a contract mining fleet.
- All-in sustaining cash cost (“AISC”) of US$714/oz of gold recovered.
- Average annual gold production of 51,200 oz and total LOM production of 412,000 oz.
- A payback of less than 2 years.

1.13 Recommendations

1.13.1 Geology

- Additional Drilling:
  - Approximately 30% of the Altan Nar Project has been classified as Inferred Mineral Resource. RPM recommends drilling to increase confidence in the existing Inferred Mineral Resource, focussing on the highest-grade portions as well as additional extensional exploration drilling in the Discovery Zone and Union North areas of the deposit.
  - Infill drilling to confirm the continuity of the high-grade zones at local scale including the Striker West Zone and Northeast Zone of the current Bayan Khundii.
  - Additional scout exploration drilling in un-drilled and partly drilled parts of the Project.
  - Estimated cost during the next phase of drilling US$1.1 M.
- QAQC: Further monitoring of the slight bias and underestimation observed in high grade assays at the SGS Laboratory is recommended. RPM suggests more frequent use of ore grade base metal standards to closely monitor the base metal assays. Estimated costs during future drilling US$10k.

- Bulk Density: RPM recommends that Erdene continue recording density measurements, ensuring that measurements cover a variety of Fe grades to further refine the regression equation. Erdene should undertake a bulk density program using the remaining Altan Nar core. This should include up to 200 samples focusing on a range of grades (low to high) with each sample having a density determination as well as assays for Au, Pb, Zn and S. Total cost is estimated at US$10k.

1.13.2 Mining

- Consider an underground / open cut trade-off study for the Bayan Khundii deposit. Approximate cost of high-level mining trade-off study of US$60k.
- RPM recommends that the technical studies proceed to a pre-feasibility study ("PFS") stage. The PEA results suggest that there is sufficient confidence in the underlying data and the robustness of the Project economics to warrant advancement of the Project.
- Approximate cost of total PFS inclusive of mining and preliminary plant and infrastructure designs is ~US$900k.

1.13.3 Recovery Methods

- Complete additional trade-off studies to refine the project parameters such ore storage, crushing circuit, ILR circuit, thickener circuit, tailings filtration and geotechnical assessment for tailings parameters.
- Consider test work to understand economic potential for heap leach of lower grade mineralization.
- Additional metallurgical test work cost included in PFS estimate above.

1.13.4 Infrastructure

- Engineering details of the infrastructure components have been developed to a limited scale consistent with the level of accuracy of this PEA. In progressing this project to PFS / DFS levels, a number of items will require further work to confirm the selection of the proposed solution and more accurately define the associated costs.
- Complete additional investigations into the Mine Infrastructure Area ("MIA") site location and earthworks, site dams, site structures, borefield water quality, electrical supply, airstrip and site access.
- Additional infrastructure study cost included in PFS estimate above.

1.13.5 Environmental

- Assessment of waste rock and tailings material to understand leachate composition.
- Mine closure study including costing.
- Further environmental impact studies. Approximate cost of US$100k.

1.13.6 Geotechnical and Hydrological Studies

- Hydrological studies to increase confidence in water supply to the Project.
- Additional geotechnical assessment, particularly at Altan Nar where much of the work was only on the southern zone.
- Additional geotechnical and hydrological study cost included in PFS estimate above.

1.14 Opportunities and Risks

1.14.1 Opportunities

The key opportunities are listed below.

- Resource Expansion:

- At Altan Nar, mineralization is open north and south of the currently defined Mineral Resource where several medium to high grade intersections occur. Mineralization is open along strike and down-dip at all prospects and extensional drilling of the main zones may delineate continuations of the known mineralization, some of which may be high grade.
- Mineralization at Bayan Khundii is open north-east, north-west and east of the currently defined Mineral Resource, with several medium to high grade intersections occurring which require follow up exploration works.
- RPM recommends targeting near surface medium to high grade mineralization at both Projects, which if successfully delineate additional mineralization will potentially have a positive impact on future mining studies undertaken on the Project.
- There are large areas of low grade (0.1~0.2 g/t Au) mineralization halos outside of currently defined Bayan Khundii mineralization wireframes, changing modelling cut-off grade should substantially increase global mineralization volume. This material is currently excluded from the reported resource due to its low grade, however, could impact the dilution grade applied during the mining studies.

- Optimisation of Mining Strategy
  - Future technical studies should investigate stockpile strategies to elevate feed grade in the short term and improve extraction sequence using additional cutbacks. Further work should be undertaken to confirm the production rate is optimal.
- Underground Mining at Bayan Khundii
  - The high grades at Bayan Khundii would highly likely support an underground mining method. An underground mining study could consider the optimal transition between open cut and underground methods.
- Heap Leach of Low-Grade Mineralization
  - RPM estimated the amount of sub-grade material that has a potential for future processing using alternate methods such as leaching. Using an indicative gold cut-off of 0.35 g/t and within the existing pit designs, Bayan Khundii was estimated to have 1.0 Mt at 0.7 g/t Au and Altan Nar 1.8 Mt at 0.5 g/t Au. The sub-grade material is currently being considered as waste rock for the purposes of the PEA. Metallurgical Test work is required to confirm if heap leach is viable as well as technical studies to confirm economics.
- Metallurgical Plant Performance and Recovery
  - There are a number of opportunities to improve plant performance such as whether a three stage crushing circuit feeding a ball mill or a single stage crushing circuit feeding a SAG (semi-autogenous) mill is preferable to two stage crushing circuit feeding a rod mill/ball mill circuit currently selected; is it better to have the ILR produce cathode sludge or have the ILR leach slurry pass to the leach circuit; or is it worth having a thickener prior to leaching? These should be considered as part of the PFS.

1.14.2 Risks

The key risks are:

- Geology Structural Complexity:
  - Altan Nar exhibits a moderate degree of structural complexity. The mineral resource block model is defined by drilling on a 50m by 50m drill spacing with some areas with 25m by 25m, therefore there is potential for tonnage and overall geometry variations between modelled and actual mineralization. RPM does not envisage any material variations in the closer spaced drilling areas, however this could potentially occur in the areas of greater than 50m spacing, as a result these areas are classified as Inferred.
  - Bayan Khundii exhibits a moderate degree of structural complexity. The mineralized envelopes were defined by drilling on a 20 m by 20 m drill spacing in some areas, with the majority based on 40 m by 40 m, and 80m by 80 m in extensional areas, therefore there is potential for tonnage and overall geometry variations between modelled and actual mineralization. RPM does not envisage

any material variations in the closer spaced drilling areas, however this could potentially occur in the areas of greater than 40 m spacing, as a result these areas are classified as Inferred.

- Altan Nar has a number of barren dykes have been mapped and logged at the Union North, Maggie and Union East Zones. These dykes have been modelled by RPM and no grades have been estimated within these units. The interpretation of these dykes is, at present, based on wide spaced 25-100m sections. A better understanding of the dyke geometry will be gained through closer spaced infill and extensional drilling.

- Altan Nar Assay Data Bias and Density
  - Further monitoring of the slight bias and underestimation observed in high grade assays at the SGS Laboratory is recommended.
  - Bulk density data needs further checking to confirm application. No cost would be incurred.
- Consistently Achieve Feed Rate to Plant
  - The target 600 ktpa feed rate is towards the upper practical limits of what can be extracted from the pits. Further assessment is required in future technical studies to confirm and optimise the production rate.
- Metallurgical Recovery
  - Further test work is required to understand the implications of some elements such as arsenic on recovery at Altan Nar.

1.14.3 Notes

The opinions and conclusions presented in this report are based largely on the data provided to RPM during the site visit, during meetings with the Company, and in reports supplied by Erdene. RPM considers that the information and estimates contained herein are reliable under these conditions, and subject to the qualifications set forth.

RPM operates as an independent technical consultant providing resource evaluation, mining engineering and mine valuation services to the resources and financial services industries. This Report was prepared on behalf of RPM by technical specialists, details of whose qualifications and experience are set out in Annexure B.

RPM has been paid, and has agreed to be paid, professional fees for its preparation of this report. However, none of RPM staff or sub-consultants who contributed to this Report has any interest in the Company, securities of the Company or companies associated with the Company; or the Project;

Drafts of the Report were provided to the Company, for the purpose of confirming the accuracy of factual material and the reasonableness of assumptions relied upon in the report. This Report is mainly based on information provided by Erdene, either directly from the Project site and other associated offices or from reports by other organisations whose work is the property of the Company. The Report is based on information made available to RPM before December 2018.

2. Introduction and Terms of Reference

2.1 Background

RPMGlobal Asia Limited ("RPM"), was requested by Erdene Resource Development Corporation ("Erdene", or the "Company") to complete a Preliminary Economic Assessment Technical Report ("PEA" or the "Report") for the Khundii Gold Project ("KGP" or the "Project") for the purpose of the Report's filing on SEDAR in accordance with the requirements of 'Canadian National Instrument 43-101' ("NI 43-101") of the Canadian Securities Administrators and the Company's reporting obligations as a Reporting Issuer in Canada. This is the first PEA report filed for the Project on SEDAR. The Khundii Gold Project is located in Bayankhongor Aimag, Southwest Mongolia.

The Project involves the synergistic development of the Bayan Khundii deposit and Altan Nar deposit as the Khundii Gold Project. The Altan Nar and Bayan Khundii areas are 16 km apart and located on two separate exploration licences. Altan Nar is contained within the Exploration license Tsenkher Nomin (XV-016956) while Bayan Khundii is contained within the Exploration license Khundii (XV-015569).

Erdene is a Canadian-based resource company with over 18 years' experience in precious and base metal exploration in Mongolia.

2.2 Terms of Reference

The following terms of reference are used in the Technical Report:

- Erdene or the Company refers to Erdene Resource Development Corporation;
- RPM refers to RPMGlobal Asia Limited and its representatives;
- Khundii Gold Project refers to the proposed combined development of the Altan Nar and Bayan Khundii deposits;
- Altan Nar Project refers to activities undertaken at the Altan Nar site including proposed extraction of the deposit;
- Bayan Khundii Project refers to activities undertaken at the Bayan Khundii site including proposed extraction of the deposit;
- Gold and silver grades are described in terms of grams per dry metric tonne (g/t), zinc and lead grades as a percent (%) with tonnage stated in dry metric tonnes;
- "Plant Feed" refers to run-of-mine rock that is economically viable to treat through a processing plant. Should the term "ore" be used in this Report, it is only on a descriptive basis and does not imply Mineral Reserves or Ore Reserves have been estimated; and
- Resource definitions are as set forth in the "Canadian Institute of Mining, Metallurgy and Petroleum, CIM Standards on Mineral Resource and Mineral Reserves – Definitions and Guidelines" adopted by CIM Counsel on 30th June 2011.

2.3 Source of Information

The primary source documents supporting the Altan Nar Project Mineral Resource estimate were:

- "Altan Nar Gold Project", (Tsenkher Nomin Exploration License), Bayankhongor Aimag, Southwest Mongolia, NI 43-101 Technical Report, J. C. Cowan, Erdene Resource Development Corporation, February 2014.
- The key files supplied to RPM included:
  - Drilling database – supplied in multiple spreadsheets:
- TND_Drill_Collars to TND133_vV_DGPS.xlsx

- TND_Flexit_Survey TND09-133_vV.xlsx
- TND-09_to_133_Drill_Log_Combined_vWorking.xlsx
- TND-09-133_Combined_Magsus.xlsx
- TND-Vein Log_31-133_Combined.xlsx
- AN_LithoCodes_2017.xlsx
- AN_Lith_TND09-133_vV.xlsx
- AN_Assay_TND09-133_wAuEq_vFinal.xlsx
- SGS original assay reports.
- TND2017_SpecivicGravity_Summary.xlsx
- TND_66-TND_108 Assay_DB_v03Apr16_Comlpete_wQA-QC_Analysis.xlsx
- TND_109-TND_133 Assay_DB_v30Jan18_Complete_wQA-QC_Analysis.xlsx
  - Topography:
- Detailed topographic survey points and smoothed contour lines (Mapinfo created) were provided by Erdene and surveyed by DGPS total station in UTM WGS84 Datum, Zone N47 in end of 2017. Topographic elevation differences were 0.3m-5m from surveyed one against the SRTM created top surface which used in 2015 resource estimate. RPM created topographic surface from point data.

The primary source documents supporting the Bayan Khundii Project Mineral Resource estimate were:

- Bayan Khundii Gold Project (Khundii Exploration License), Bayankhongor Aimag, Southwest Mongolia, NI43-101 Technical Report prepared by Erdene Resource Development Corp, MacDonald, M.A., March 2018.
- Applied Petrologic Services & Research (APSAR), 2017.Petrologic Studies of Drill Core from the Bayan Khundii Gold project, Bayankhongor Aimag, Southwest Mongolia. Independent report prepared for Erdene Resource Development Corp., 40 p.
- Badarch, G., Cunningham, W.D., and Windley, B.F., 2002. A new terrane subdivision for Mongolia: implications for the Phanerozoic crustal growth of Central Asia. Journal of Asian Earth Sciences 21. Pp. 87-110.
- Buchanan, L.J. (1981): Precious Metal Deposits associated with Volcanic Environments in the Southwest; in Relations of Tectonics to Ore Deposits in the Southern Cordillera; Arizona Geological Society Digest, Volume 14, pages 237-262.
- Fossen, H. and Rotevatn, A., 2016. Fault Linkage and relay structures in extensional settings – A review. Earth Science Reviews. No. 154. Pp 14-28.
- Kloppenberg, A., 2017. Structural framework analysis, Bayan Khundii and Altan Nar assets, Mongolia. Independent project report 1268 prepared for Erdene Resource Development Corp., 110 p.
- MacDonald, M.A., 2017 Bayan Khundii Gold Project (Khundii Exploration License), Bayankhongor Aimag, Southwest Mongolia, National Instrument 43-101 Technical Report. Internal report Erdene resource Development Corp., 67 p.
- Mineral Resource Authority of Mongolia 1:200,000 scale geology maps of Mongolia; include L-47-XXXII, L-47-XXXIII, L-47-XXXIV, K-47-II, K-47-III, and K-47-IV.
- RungePincockMinarco, 2015. Altan Nar and Bayan Khundii Site Visit. Independent report prepared for Erdene resource Development Corp. 21 pp.
- Windley, B.F., Alexeiev, D., Xiao, W., Kr ner, A. and Badarch, G. (2007). Tectonic models for accretion of the Central Asian Orogenic Belt. Journal of the Geological Society. No. 164 (1), pp. 31-47.
- Yakubchuk, A. 2002. Geodynamic reconstructions of Mongolia and Central Asia. Internal report for Gallant Minerals.

The key files supplied to RPM included:

Drilling database – supplied in multiple spreadsheets:

- BKD_AssayDB_to_255_vFinal.xlsx
- BKD_Collar_to_255_DGPSv2.xls
- BKD_Flexit_Survey_Combined_to_255_v3.xls
- BKD_Spacific_Gravity_v2018-July_Check.xlsx
- BKD_Struc Log_Combined_To255.xlsx
- BKD-01 to BKD-255_MagSus.xls
- BKD01-255_Lithology_v2.xls
- BKD-VienLog_BKD-255_all.xlsx
- ScrMet Assay List_BKD01-234_Final.xlsx
- The Project_base_of_oxidation.xlsx
- Topography
- Detailed topographic data were provided by Erdene and surveyed by DGPS total station in UTM WGS84 Datum, Zone N47 in end of 2017.

The primary documents for this Khundii Project PEA include:

- "Altan Nar Gold Project", Bayankhongor Aimag, Southwest Mongolia, NI 43-101 Mineral Resource Technical Report, prepared by RPM Global Asia Limited, 21 June 2018.
- Bayan Khundii Gold Project, Bayankhongor Aimag, Southwest Mongolia, NI43-101 Mineral Resource Technical Report prepared by RPM Global Asia Limited, 1 November 2018.
- Sardonyx Geological, Geotechnical Consulting Services, September 2018. Recommendations for Open Pit Rock Slope Design Altan Nar and Bayan Khundii Project.
- Sardonyx Geological, Geotechnical Consulting Services, 25 October 2018. Report on Open Pit Geotechnical Study Work Conducted At Discovery Zone Ore Body Of The Altan Nar Epithermal Gold And Polymetallic Deposit.
- Sardonyx Geological, Geotechnical Consulting Services, 25 October 2018. Report on Open Pit Geotechnical Survey Work Undertaken At the Bayan Khundii Epithermal Gold Deposit.
- Okhi-Us LLC, November 2018. Draft – Altan Nar Hydrology Report on Work Completed August-September 2018.
- Okhi-Us LLC, November 2018. Draft – Bayan Khundii Hydrology Report on Work Completed September-October 2018.
- Rogans, J, and McArthur, D., May/June 2002. The evaluation of the AAC Pump-Cell circuits at Anglogold's West Wits operations. The Journal of The South African Institute of Mining and Metallurgy.
- ActLabs Asia Metallurgical Test work Spreadsheets
  - 2013 Data on composite samples from the following drill holes: TDN09. TDC29, TDN35, TDN38, TDN40. TDN41, TDN45, TDN46, TDN50, TDN58
  - 2015 Data on composite samples labelled DZN15-1 through DZN15-8, DZS15-08 through DZS17-09 through DZS15-15, and UN15-16 through UN15-21
- Andrew Kelly, Blue Coast Research, September 24, 2015. Altan Nar Preliminary Metallurgical Test work Report
- Andrew Kelly, Blue Coast Research, November 9, 2015. Altan Nar Preliminary Metallurgical Test work Report – Phase 2
- Andrew Kelly and Alex Hall, Blue Coast Research, October 17, 2018. PJ5253 Altan Nar Discovery Zone South Preliminary Metallurgical Test work Report

- Andrew Kelly, Blue Coast Research, March 2, 2016. Bayan Khundii Preliminary Metallurgical Test work Report
- Andrew Kelly, Blue Coast Research, August 16, 2017. PJ5213 Bayan Khundii Metallurgical Test work Report

2.4 Participants

The Report has been prepared or supervised by Mr. Igor Bojanic who is a Qualified Person under National Instrument 43-101 for the preparation of a PEA. Mr. Bojanic supervised the work of RPM staff and edited or reviewed all portions of the final report. Other key PEA study participants include:

RPM Study Team

- Jeremy Clark, Principal Geologist, (Manager Toronto - Canada). The Resource estimates reported in this Report for the Altan Nar and Bayan Khundii were prepared or supervised by Mr. Clark and filed on SEDAR in 2018.
- Ian Booth, Principal Mining Consultant, (Australia),
- Tony Cameron Executive Mining Consultant, (China),
- Andrew Newell, Executive Consultant, Processing, (Australia)
- Ben Hall, Executive Consultant, Infrastructure, (Australia),
- Robert Dennis, Executive Consultant, Geology and Mining, (Australia),
- Richard Addison, Principal Process Engineer, (USA), and
- Oyunbat Bat-Ochir, Senior Resource Geologist (Mongolia).

Blue Coast Research Limited Study Team

- Andrew Kelly, Metallurgist, Blue Coast Research Limited (Canada).

The Altan Nar Project site was first visited by Mr. Stewart Coates, Manager – Mongolia, RPM, from 18th to 21st November 2014.

The Bayan Khundii Project site was first visited by Executive Consultant Bob Dennis and Resource Geologist Oyunbat Bat-Ochir of RPM, from 18th to 19th November 2015.

An additional site visit was undertaken by RPM to both the Bayan Khundii and Altan Nar sites in May 2018 by Tony Cameron and Oyunbat Bat-Ochir.

Details of the key participants' relevant experience are outlined in Appendix A.

RPM notes that the Mining Qualified Person (Mr. Igor Bojanic) has not visited the site, however, as per the requirements of NI 43-101, a Qualified Person (Mr Tony Cameron) has visited the site and assumes responsibility for Section 4 and 5 of this Report.

2.5 Limitations and Exclusions

The review was based on various reports, plans and tabulations provided by the Company either directly from the mine sites and other offices, or from reports by other organisations whose work is the property of the Company. The Company has not advised RPM of any material change, or event likely to cause material change, to the operations or forecasts since the date of asset inspections.

The work undertaken for this report is that required for a technical review of the information, coupled with such inspections as the participants considered appropriate to prepare this report.

RPM has specifically excluded making any comments on the competitive position of the KGP compared with other similar and competing gold producers around the world. RPM strongly advises that any potential investors make their own comprehensive assessment of both the competitive position of the KGP in the market, and the fundamentals of the gold market at large.

2.6 Capability and Independence

RPM provides advisory services to the mining and finance sectors. Within its core expertise it provides independent technical reviews, resource evaluation, mining engineering and mine valuation services to the resources and financial services industries.

All opinions, findings and conclusions expressed in this Technical Report are those of RPM and its specialist advisors as outlined in Section 2.4. Drafts of this report were provided to Erdene, but only for the purpose of confirming the accuracy of factual material and the reasonableness of assumptions relied upon in this Technical Report.

RPM has been paid, and has agreed to be paid, professional fees based on a fixed fee estimate for its preparation of this Report.

This Technical Report was prepared on behalf of RPM by the signatory to this Technical Report whose experiences are set out in Annexure A to this Technical Report. The specialists who contributed to the findings within this Report have each consented to the matters based on their information in the form and context in which it appears.

2.7 Units and Currency

Unless otherwise stated all references to currency in this study are to United States Dollars.

All units of measurement used in this report are metric unless otherwise stated. Tonnages are reported as metric tonnes (“t” or “mt”). Within this text, “kt” means 1,000 metric tonnes and “Mt” means 1,000,000 metric tonnes.

Precious metal grade values are in grams per tonne (“g/t”) or troy ounces per tonne (t/oz.). A conversion of 31.1035 grams per troy ounce is applied to covert between precious metal units.

3. Reliance on Other Experts

All Sections of this Report, with the exception of Item 3 were prepared using information provided by ERD or other third parties and verified by RPM, where applicable, or based on observations made by RPM.

The Qualified Persons have relied on and believe there is a reasonable basis for this reliance, upon the contribution by Erdene and specialist consultants engaged by Erdene as noted below. The Qualified Persons do not disclaim any responsibility for this information.

A list of the reports that contributed to the PEA is provided in Item 27.

3.1 Project Background, History, Ownership and Tenure

RPM has relied on information provided by Erdene including land ownership and tenure status. RPM's scope has specifically excluded all aspects of legal, political, land titles and agreements, excepting such aspects as may directly influence technical, operational or cost issues. RPM has not conducted land status evaluations.

Information on these technical areas as provided by Erdene forms the basis of Chapters 4 to 6 of this Report.

3.2 Geological Setting, Exploration and Sampling

RPM has not performed any sampling or assaying, geological mapping, excavated any trenches, drilled any holes or carried out any independent exploration work to assist in validating project assumptions. RPM has relied on geological and sampling information as provided by Erdene. RPM has reviewed the data to confirm and verify there is no material issues and there is a reasonable basis for reliance in the preparation of the Resource estimate and subsequent PEA.

Information on these technical areas as provided by Erdene forms the basis of Chapters 7 to 12 of this Report.

3.3 Mineral Processing and Metallurgical Testing

The investigation into mineral processing and the metallurgical testing of samples was undertaken by Blue Coast Research Limited. RPM completed a high-level review of the data to confirm there is a reasonable basis for reliance in support of the PEA.

Information on this technical area has been provided by Blue Coast Research Limited and forms the basis of Chapter 13 of this Report.

3.4 Mineral Resource Estimate, Mining, Processing and Infrastructure Planning

Chapters 14 to Chapter 19 of this Report, being the Mineral Resource and Reserves estimates and the PEA mine and infrastructure design, and marketing were prepared by RPM. The technical mine planning completed in these chapters were supported by:

- Sardonyx LLC, a Mongolian-based consulting company engaged by Erdene, completed the geotechnical assessment summarised in Section 16.4;
- Okhi-Us LLC, a Mongolian-based consulting company engaged by Erdene, completed the hydrological assessment summarised in Section 16.5
- 02 Mining Consultants Pty Limited, are a mining consultancy specialising in Mongolian mining projects were engaged by Erdene. 02 Mining provided technical support ensuring the project assumptions and approach aligned with the Mongolian operating environment.

3.5 Environmental Studies, Permitting and Social or Community Impact

RPM has relied on information provided by Erdene. Erdene engaged Eco Trade LLC, a Mongolian certified EIA consultant, to complete the Environmental and Social Baseline surveys for the Project in accordance with Mongolian rules and regulations.

Information on this technical area as provided by Erdene forms the basis of Chapter 20 of this Report.

3.6 Capital and Operating Costs and Economic Analysis

RPM prepared estimates for capital and operating costs and completed the economic evaluation as outlined in Chapters 21 and 22. Erdene provided advice on tax and royalty for the economic evaluation.

4. Property Description and Location

The Project is located approximately 980 km south-west of Ulaanbaatar and 300 km south of the Aimag capital, Bayankhongor City. The nearest towns (soum centres) are Shinejinst and Bayan Undur, located 70 km northeast and 80 km to the north, respectively. The property is also located 40 km west of Erdene's Zuun Mod molybdenum-copper deposit. The distance between the Bayan Khundii and Altan Nar deposits is approximately 19 km on unsealed road.

An exploration camp was located on the Tsenkher Nomin license from 2013 to 2015. Since 2016, field work has been carried out from an exploration camp located at the Bayan Khundii site.

The area is sparsely populated with nomadic pastoral activity being the main industry.

The UTM license centre coordinates for the licenses are:

- Altan Nar
  - Easting: 475,716.5 m, and
  - Northing: 4,878,958.2 m (Zone 47N, WGS84).
- Bayan Khundii
  - Easting: 484,012 m, and
  - Northing: 4,866,207 m (Zone 47N, WGS84).

The general location of the Project is shown in **Figure 4-2**.

4.1 Property Ownership

RPM provides this information for reference only and recommends that land titles and ownership rights be reviewed by legal experts.

The Bayan Khundii deposit is located on the Khundii exploration license which was first acquired in April of 2010 and hence is currently in its ninth year of issue. The Altan Nar deposit is located on the Tsenkher Nomin license which was first issued in December of 2009 and is currently in its tenth year of issue (as of Dec 2018). Both licenses are 100% held by Erdene Mongol LLC, a wholly owned subsidiary of Erdene. Exploration licenses in Mongolia are renewed annually with a maximum tenure of 12 years. At any time during the 12-year tenure, an exploration license can be converted into a mining license by meeting the requirements of the Minerals Law of Mongolia.

The Khundii and Tsenkher Nomin exploration licenses are subject to a 2% Net Smelter Return royalty agreement with Sandstorm Gold Ltd. The transaction provides Erdene with a 3-year option (to April 2019) to buy-back 50% of the NSR Royalty for CDN $1.2 million and reduce the Sandstorm NSR Royalty to 1.0%. RPM is not aware of any environmental liabilities to which the properties are is subject.

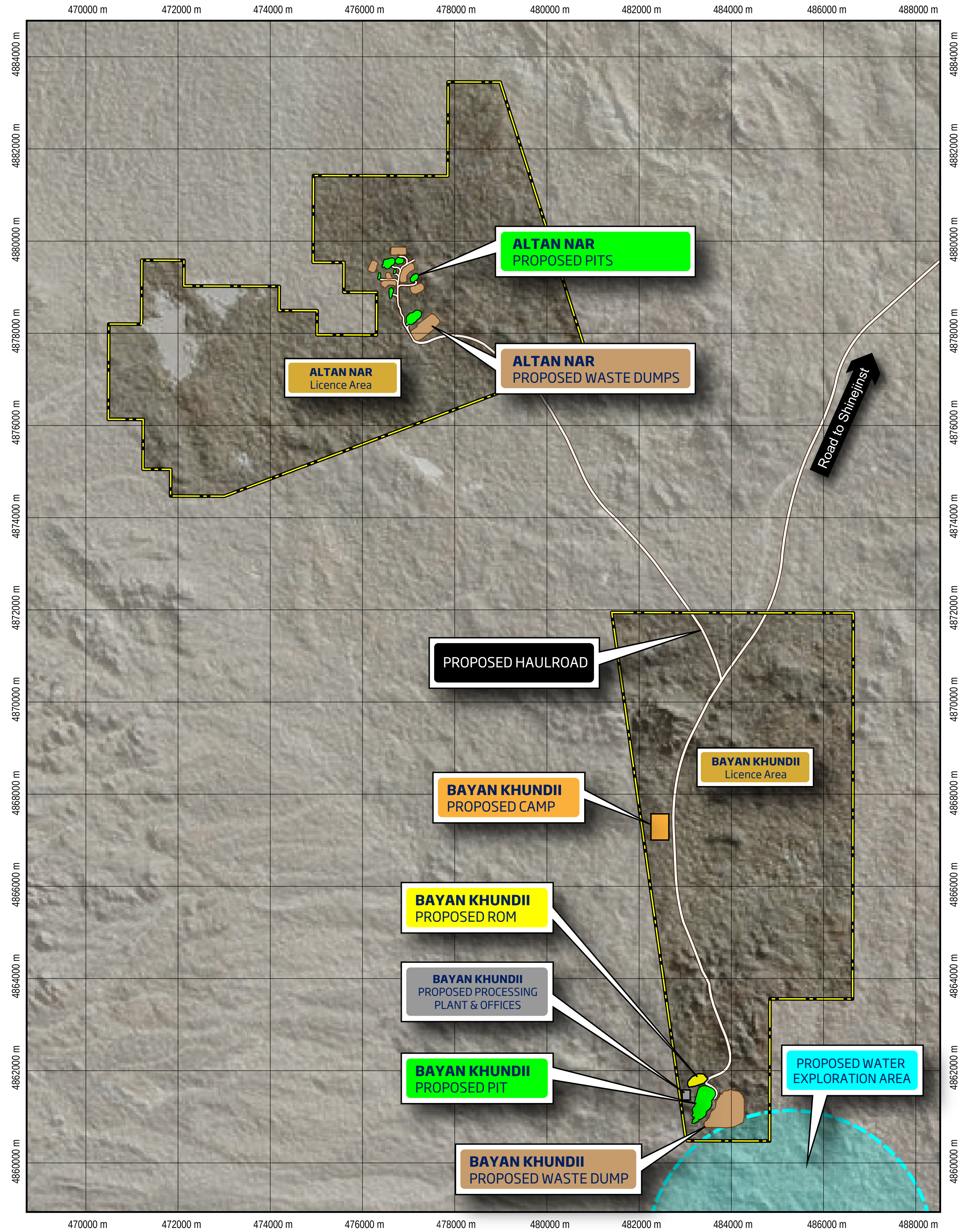
A summary of the license status is provided in **Table 4-1** and the license location is shown in **Figure 4-3**.

Table 4-1 Altan Nar - Mining Licence Details

Property Name	License Number	Province	Date of Issue dd/mm/yy	Hectares	2019 Renewal Fees	Minimum 2019 Work Requirement
Khundii	XV-015569	Bayankhongor	14/04/10	4,514.33	US$ 13,543	US$ 6,772
Tsenkher Nomin	XV-016956	Bayankhongor	11/12/09	4,669	US$ 14,045	US$ 7,003

Source: Annual License Document, MRAM, Mongolia

A site general layout as located within th lease boundaries is illiustrated in **Figure 4-1**.



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CLIENT

ERDENE
RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING BAYAN KHUNDII and ALTAN NAR PROPOSED PITS, DUMPS, ROM and MIA LOCATIONS

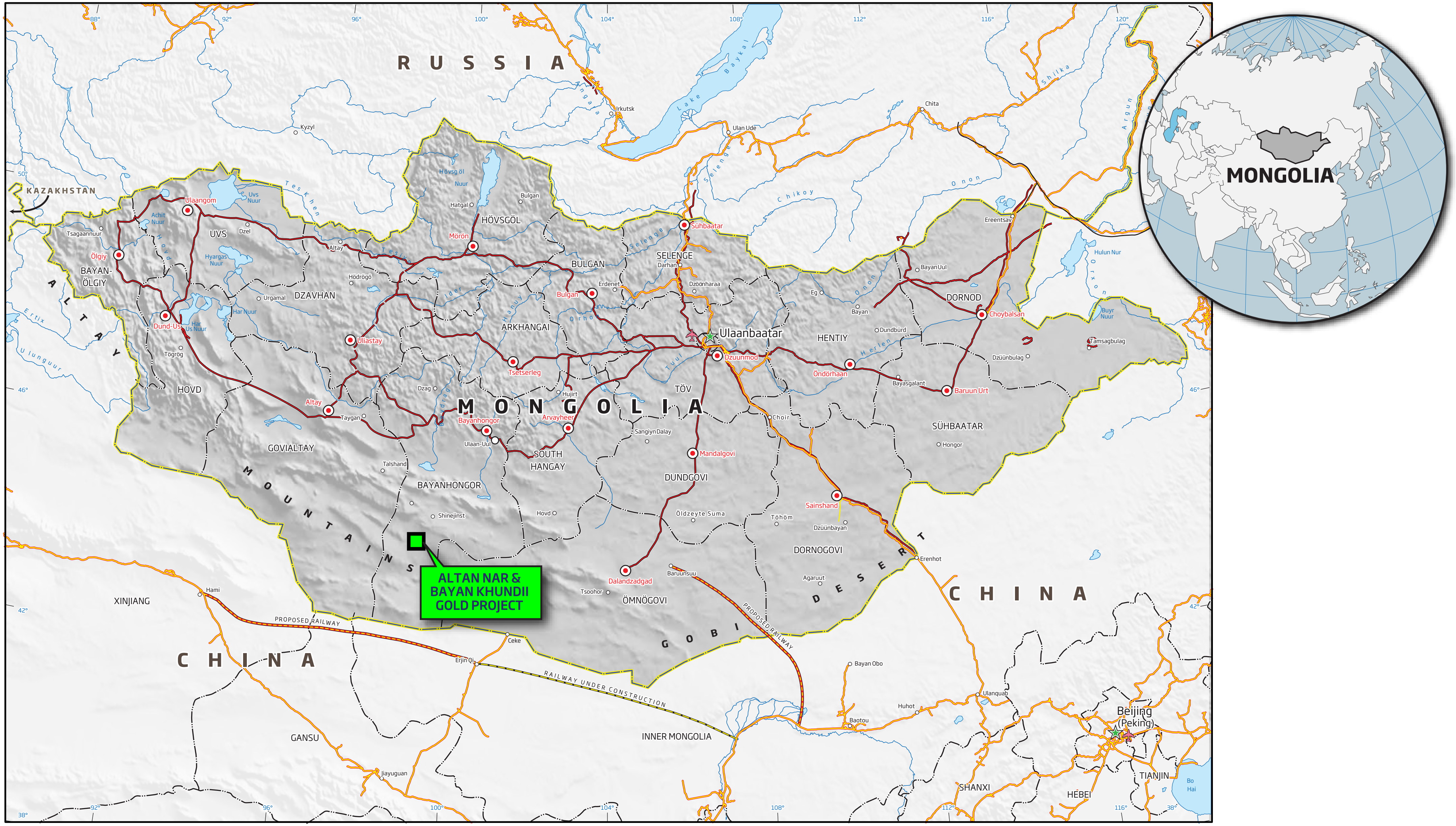
FIGURE No.	PROJECT No.	Date
4-1	ADV-MN-00161	January 2019

4.2 Review of Ownership Documents

RPM was supplied with the MRPAM Annual Licence Document that indicates Erdene's ownership of the two exploration licences for the Project. RPM reviewed these license details against the MRPAM license database. RPM checked the Erdene licenses' corner points and found these points correspond to the position on the maps provided by Erdene. To the best of RPM's knowledge, the applicable licenses are in good standing.

Through its Mongolian-certified contractor, Erdene has completed baseline environmental studies for the Project in accordance with applicable Mongolian standards as part of the Company's mining license application for the Project. Permits required to carry out planned exploration work on the licence include annual environmental plans and bonds and water use permits. Similar permits have been obtained in previous years and Erdene does not anticipate any issues with obtaining these permits for the 2019 exploration season.

In addition, RPM is not aware of any other issues or liabilities (including surface rights or access) which could impact the future mining operations. RPM notes that Erdene will need to obtain additional and separate licenses permissions for land and water use to support any future mining operation. RPM provides the exploration license information for reference only and recommends that land titles and ownership rights be reviewed by legal experts.



LEGEND

☆	National Capital	✈	Major Airport	▬	Main Road
◉	Provincial Capital	▬	International Boundary	▬	Railroad
○	Town, Village	−·−	Provincial Boundary		

N

0 500 1000 kilometres

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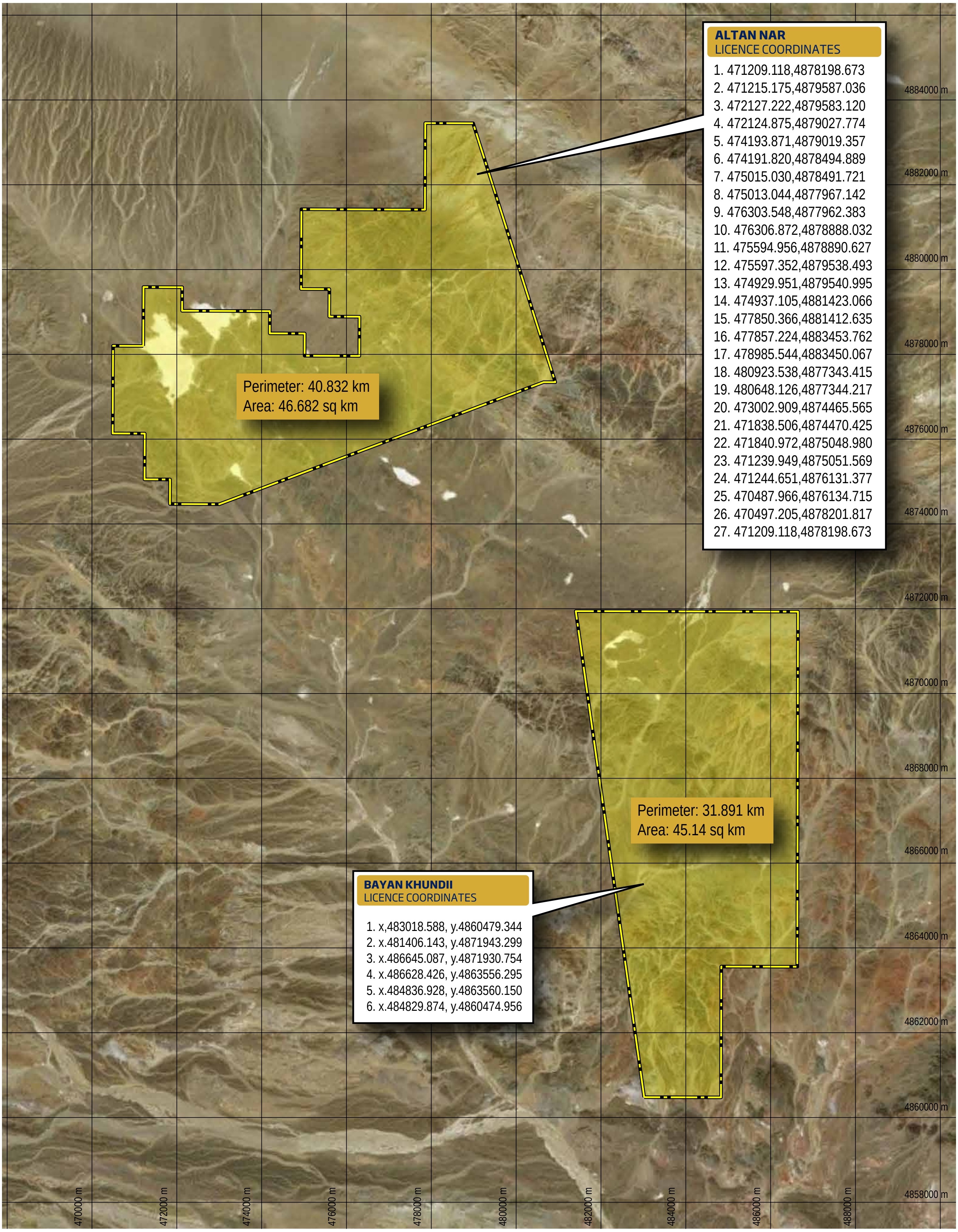
ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING PROJECT GENERAL LOCATION PLAN

FIGURE No.	PROJECT No.	Date
4-2	ADV-MN-00161	January 2019



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CLIENT

ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING BAYAN KHUNDII and ALTAN NAR LICENCES

FIGURE No.	PROJECT No.	Date
4-3	ADV-MN-00161	January 2019

5. Accessibility, Climate, Local Resources, Infrastructure and Physiography

5.1 Accessibility and Infrastructure

The Project is accessible on sealed roads from Ulaanbaatar to Bayanhongor (8 hours), followed by unsealed regional gravel roads from Bayankhongor to Shiinjinst (5 hours), then another 2 hours on to site. The Project is located approximately 160km from the Chinese Mongolian border. The Bayan Khundii and Altan Nar deposits are located approximately 20 km apart and approximately 80 km (straight line) southwest of the soum centre, Shinejinst.

Each year between 2012 and 2018 a temporary landing strip, located 20 km to the northwest of the Khundii exploration camp and located on the Tsenkher Nomin exploration license, was approved by the Mongolian Aviation Authority for light aircraft. Annual approval is required to use the temporary landing strip. The landing strip is located on a dry lakebed. A private flying service is available from Ulaanbaatar and a one-way trip takes approximately 3 hours.

Bayankhongor is the Provincial capital of the Bayankhongor Aimag. Bayankhongor city has a population of approximately 30,000 while the Aimag has a population of approximately 84,000 over an area of 116,000sq.km.

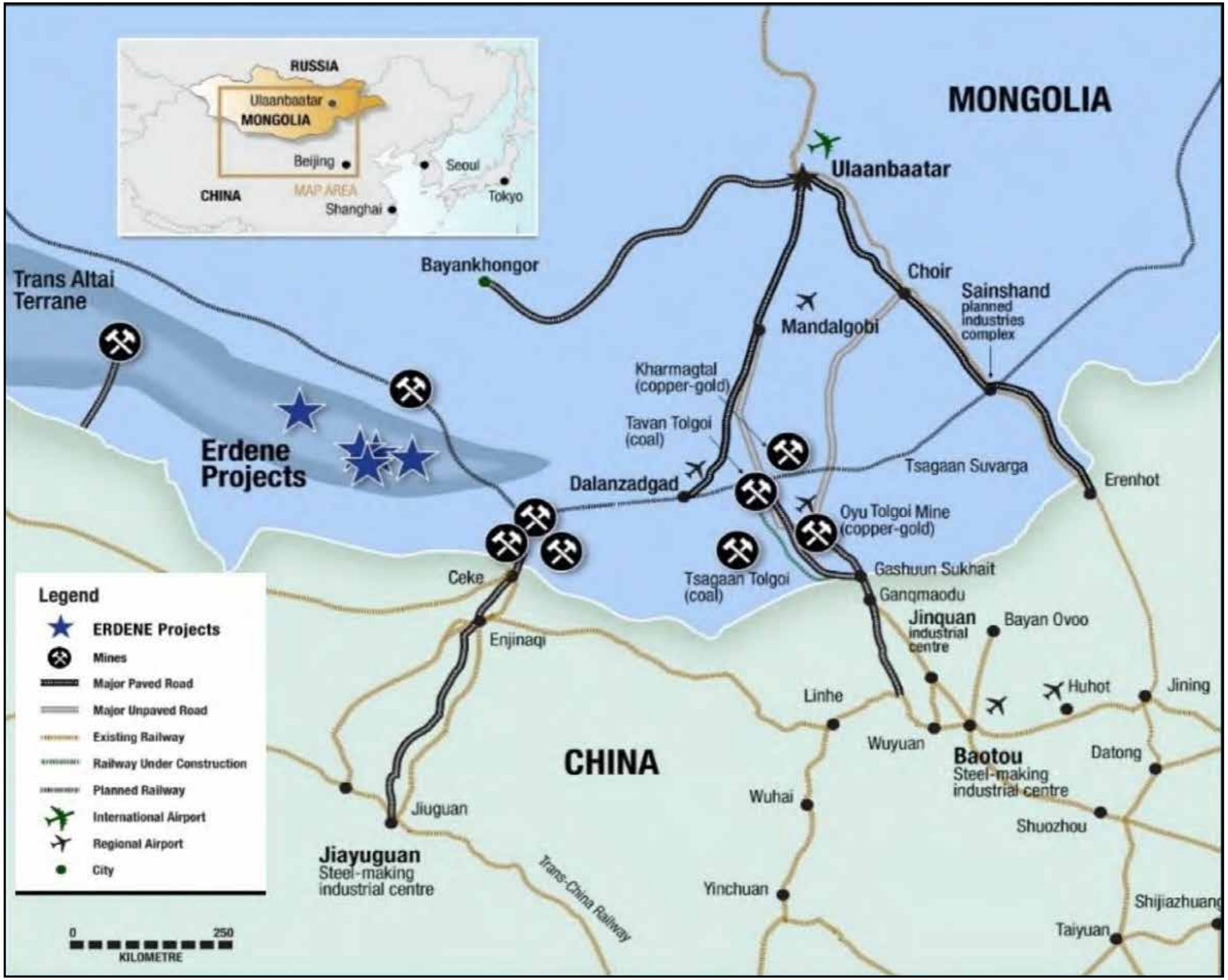
The region hosting the Project is one of the least densely populated areas globally, however, infrastructure to access south-western Mongolia's natural resources from China is developing rapidly. The Project is located approximately 200 km northwest of the Nariin Sukhait mining complex (Ovoot Tolgoi) from which South Gobi Resources (TSX:SGS), TerraCom Limited (ASX:TER) and MAK all produce (or have in the past) coal and transport product through the Ceke (PRC) / Shivee Khuren (Mongolia) border point. This border crossing includes a paved eight-lane highway and a major automated railcar coal loading facility with three railway terminals where coal trucked in can be loaded on train and shipped out over the Jiayuguan–Ceke Railway, Ejin–Hami Railway or Linhe–Ceke Railway. Planning is underway to extend the standard gauge rail into Mongolia's coal mining districts refer to **Figure 5-1**. Having noted this, any mining operation would produce only high-value doré which could be trucked and not railed to the border.

Due to the early stage of the Project, limited infrastructure is on site, however, an exploration camp has been established to provide exploration support.

5.2 Water and Power

To date, power has been generated locally and water has been sourced from local wells. These sources are sufficient to carry out planned exploration work in the near term. Potential future electrical power sources include the recent connection of the Mongolian State Grid with the local sub-province centre (Shinejinst) via a 35 kV line which could be extended.

The site water and power options have been investigated as part of the PEA and are discussed in Section 18 of this Report.



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CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING ERD PROJECTS AND INFRASTRUCTURE		
	FIGURE No. 5-1	PROJECT No. ADV-MN-00161	Date January 2019

RPMGLOBAL

5.3 Climate and Physiography

The area surrounding the Project is characterized by low hills of exposed rock and lower plains of unconsolidated sediments. There is very little to no soil profile developed, with fresh rock generally occurring from or very near to surface. The elevation of the undulating low hills ranges from 1,300 m to 1,350 m above sea level. Vegetation is sparse and restricted to grasses, saxaul bushes (Haloxylon ammodendron - a local low shrub to small tree) and shrubs.

The Project area is subject to the extreme climate of the continental Gobi Desert region, with four seasons much like the other territories of Mongolia. Orographic conditions and local micro wind affect the air current formation and creates a dry and drier micro region where precipitation and humidity are relatively low, with hot summers and cold winters. Cloudiness, precipitation and snow cover are generally low. Absolute low temperature reaches -37.4°C and absolute high temperature reaches 44.9°C. Annual mean temperature is around 0.7°C. The region has mean annual precipitation of 105 mm. Although relatively little precipitation falls in this region, there is a one in 50-year chance that the maximum amount of 50 to 60 mm precipitation may fall within a single day. In summer, rain falls an average of 15 to 20 days.

6. History

Apart from regional geological mapping and prospecting carried out at a scale of 1:200,000 under the direction of the Mongolian government, no recorded exploration work is known to have taken place on the Property other than that completed by Erdene since acquisition in 2009-2010.

The Project was covered by Erdene's 2009 SW Porphyry evaluation program which included a regional stream sediment survey and limited prospecting over the license areas. The regional stream sediment results identified an area of highly anomalous base metal and gold in the area of the Project.

6.1 Altan Nar

In 2010, as a follow-up to the 2009 SW Porphyry evaluation program, prospecting was carried out on the eastern part of the Tsenkher Nomin license. Previously undocumented ancient workings (shallow pits) were found on the property in an area referred to as the Nomin Tal project. Based on vegetation characteristics, these pits are estimated to be in excess of 200 years old.

Magnetic and induced polarization (IP) dipole-dipole surveys were carried out in the autumn of 2010. The results of these surveys, which have since been expanded, are discussed below in Section 9.3.

Encouraging results from exploration at Nomin Tal, led to additional geological mapping, prospecting, geochemical and geophysical surveys over the central part of the Tsenkher Nomin license during the 2011 field season. The soil sampling program (400 m grid) outlined a 3 km by 2 km area with highly anomalous values for gold (up to 1.5 g/t) and lead (up to 2.6%) and associated anomalies for zinc, molybdenum, silver and copper. Geological mapping and prospecting confirmed the presence of multiple prospects containing gold-bearing epithermal-style quartz veins within the large soil anomaly at Altan Nar.

Resource delineation drilling and trenching carried out between 2012 and 2014 led to the maiden Mineral Resource Estimate for Altan Nar deposit dated March 2015. Since then additional exploration work has been carried out, including 53 surface infill, extensional drill holes as well scout diamond drilling and an additional trenching programs completed post 2014 on the Tsenkher Nomin license by Erdene. All work to date is summarized in the appropriate sections of this Report.

6.2 Bayan Khundii

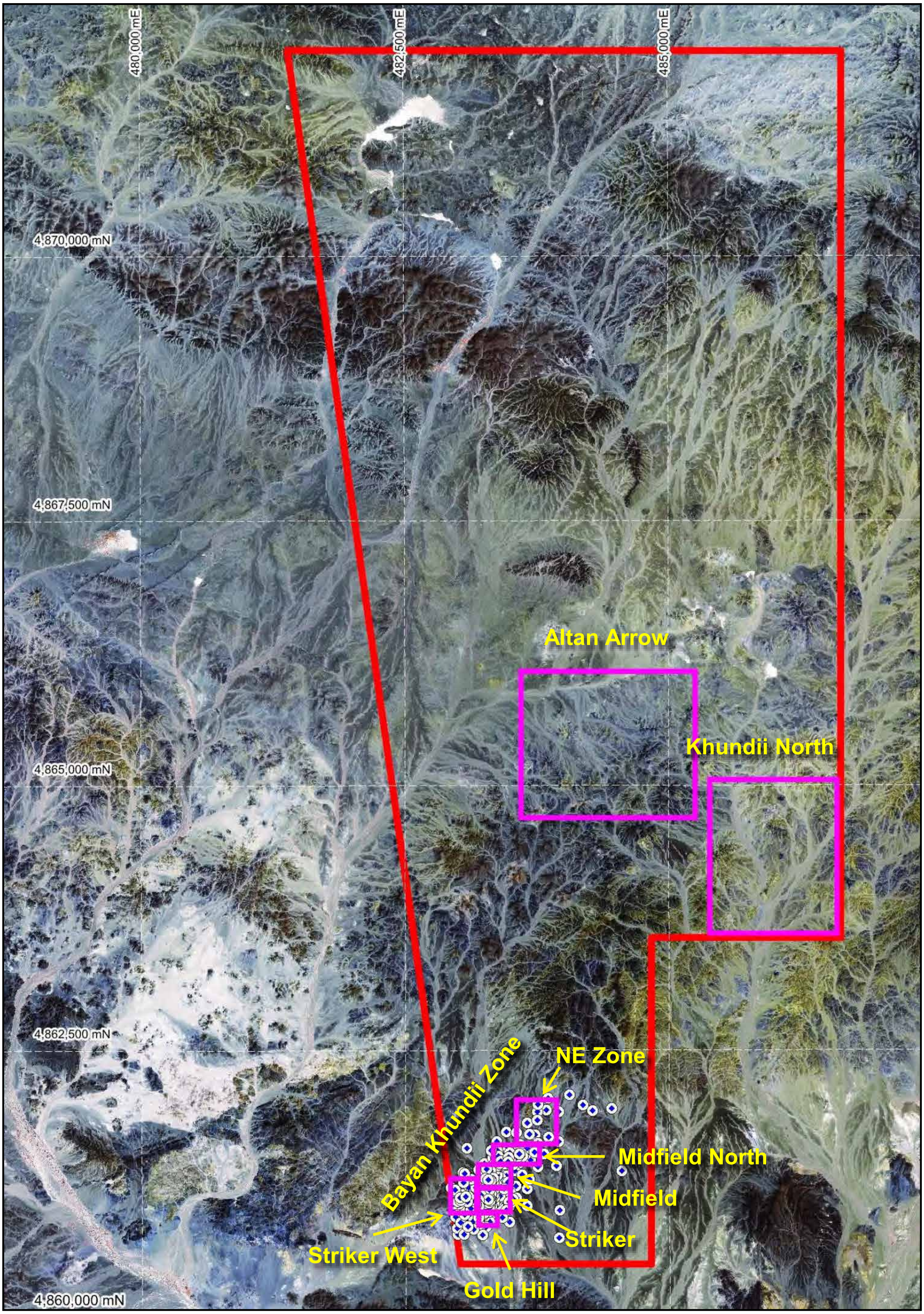
Between 2010 and 2014, exploration on the Khundii license included property-wide geological mapping, soil sampling and a magnetic survey while more detailed exploration, including detailed geological mapping, rock chip sampling and trenching was focused on the central part of the license on a project referred to as Altan Arrow (refer **Figure 6-1**).

The rock chip sampling program for the Khundii license identified a number of significant anomalies for Au and Ag, with lesser base metal anomalism. Generally, the anomalous rock chip samples were from two distinct and adjacent quartz vein systems located at Altan Arrow in the central part of the Khundii license.

The mineralized quartz vein systems were trenched in late 2013. Four trenches were excavated across the mineralized Main Zone and one trench was excavated across an area hosting high-grade Au mineralization within epithermal quartz veins.

Results indicate the Main Zone consists of a 1 m to 11 m wide quartz breccia zone. This breccia is multi-stage and has hydrothermal-epithermal characteristics with anomalous, however, somewhat low Au concentrations (7m @ 0.29 g/t Au) and positive Ag-As-Sb inter-element geochemical correlations.

While the exploration results at Altan Arrow were encouraging, most of the exploration efforts were focused on the Altan Nar. The identification of high-grade Au mineralization associated with epithermal style quartz veins, however, prompted additional prospecting and mapping in the southern portion on the Khundii exploration license. In early 2015, Erdene geologists identified, through rock chip sampling, new high-grade Au mineralization associated with a zone of intensely altered (quartz-illite) pyroclastic lithologies located ~5 km south of Altan Arrow. This area, referred to as the Bayan Khundii (Rich Valley) Project (refer to **Figure 6-1**), was the focus of a detailed exploration program carried out in 2015 - 2018 which is summarized in the subsequent sections of this Report.



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LEGEND	CLIENT	PROJECT
Drillhole Khundii License Main Prospects	ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project
		DRAWING: Khundii License and Main Prospects
DO NOT SCALE THIS DRAWING - USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE		FIGURE No. 6-1 / PROJECT No. ADV-MN-00161 / Date January 2019

6.3 Previous Mineral Resources

In addition to the Mineral Resources included in this report, a Mineral Resource estimate has previously been reported for the Altan Nar deposit by RungePincockMinarco (RPM) dated 19th February 2015. The 2015 Mineral resource utilised the following information:

- 71 surface diamond drilling for total 10,819m as well as 39 trenches for total 2,927m from 2011 to 2014.
- Utilised 0.3 g/t Au cut-off to delineate the gold mineralized lode with minimum width of 2 m and in addition zinc/lead mineralized lodes were interpreted using 1,200 ppm Zn cut-off.
- Mineral Resource is reported at 1g/t AuEq cutoff grade. AuEq formula calculation use USD metal prices of $1,200/oz gold, $18/oz silver, and $0.90/lb for lead and zinc and no allowances have been made for recovery and losses.

The Mineral Resource estimate is summarised in **Table 6-1**.

Table 6-1 Summary of Previous Mineral Resource Estimate for Altan Nar

AuEq g/t Cut-off	Class	Tonnes Mt	Au g/t	Ag g/t	Zn %	Pb %	AuEq g/t	Au kOz	Ag kOz	Zn Mlbs	Pb Mlbs	AuEq kOz
0.6	Indicated	3.4	1	9.4	0.57	0.47	1.7	112	1,014	42.4	34.8	185
0.6	Inferred	3	0.8	9.4	0.51	0.35	1.4	83	913	33.9	23.5	139
1	Indicated	1.8	1.7	11.1	0.61	0.54	2.5	102	657	24.7	22.1	147
1	Inferred	1.5	1.5	10.4	0.54	0.39	2.1	72	498	17.7	12.8	102
1.4	Indicated	1.3	2.3	12.1	0.61	0.58	3.1	92	486	16.8	15.9	124
1.4	Inferred	1	2	10.8	0.53	0.4	2.6	63	342	11.5	8.6	83

No previous Mineral Resource Estimates for Bayan Khundii have been published that RPM is aware of.

6.4 Historical Production

No historic mining apart from undocumented ancient shallow pits at Altan Nar have been completed on the Project area.

7. Geological Setting and Mineralization

The majority of the regional geology information presented below has been summarised from internal Company technical reports on the Altan Nar and Bayan Khundii gold projects

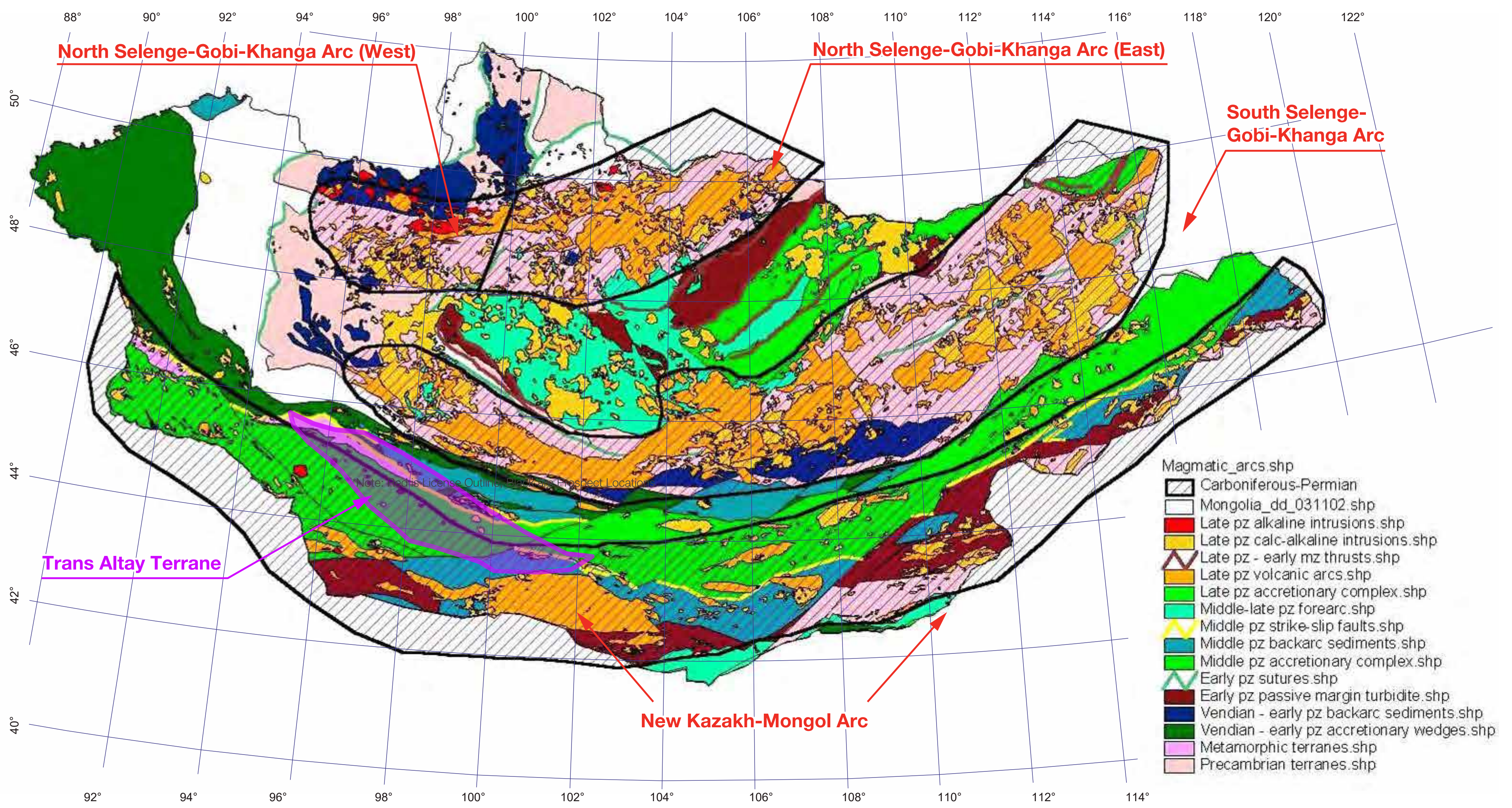
7.1 Regional Geology and Tectonic Setting

The Project is located within the Trans Altai Terrane ("TAT"). The TAT forms part of the western end of the large, composite, arcuate-shaped Carboniferous-Permian New Kazak-Mongol Arc terrain ("NKMA") as described by Yakubchuk (2002). The Khundii exploration license is located within the Edren island arc terrane, as described by Badarch et al. (2002), which is part of the larger composite Trans Altai Terrane ("TAT") and is comprised by island arc terranes, back-arc and fore-arc basins, and ophiolite, accretionary wedges and metamorphic terranes. The TAT forms part of the western end of the large, composite, arcuate-shaped Paleozoic New Kazakh-Mongol Arc terrane ("NKMA") as described by Yakubchuk (2002). The NKMA extends along the southern margin of Mongolia, including the border region with China, and contains the Gurvansaikhan Terrane that is host to the Oyu Tolgoi copper-gold porphyry mine (see **Figure 7-1**).

The TAT is located immediately south of the Main Mongolian Lineament (Badarch et. al., 2002) that separates the dominantly PreCambrian and Lower Paleozoic terranes to the north from the dominantly Upper Palaeozoic terrains to the south. The TAT consists mostly of Middle Paleozoic volcanic, sedimentary and meta-sedimentary rocks that were intruded by Middle Paleozoic calc-alkaline plutons. The TAT is comprised of three tectono-stratigraphic terrains (refer **Figure 7-1**) as defined by Badarch et al. (2002). These include:

- Zoolen Accretionary Wedge, consisting of a lowermost ophiolite sequence of mafic and ultramafic intrusive rocks that are overlain by a sequence of greenschist rocks, pillow lavas, intermediate volcanic and shallow marine sedimentary rocks. The middle stratigraphic portion of the Zoolen Wedge is dominated by intermediate volcanic rocks and rhyolite flows which are overlain by the uppermost sequence of non-marine sedimentary rocks.
- Baraan Back-arc/Fore-arc Terrane, is dominated by a lower sequence of intermediate volcanic and volcaniclastic rocks with interbedded shallow marine sedimentary rocks. The upper portion of the Baraan terrane consists of non-marine sedimentary rocks.
- Edren Island Arc Terrane, which hosts the Project, consists of a lowermost minor sequence of mafic volcanic rocks that are overlain by an interbedded sequence of intermediate volcanic and volcaniclastic rocks, shallow marine clastic deposits, and minor turbidite sedimentary rocks. This sequence is overlain by rhyolite and alkaline volcanic and volcaniclastic rocks. The uppermost portion of the Edren terrane is dominated by non-marine sedimentary deposits.

All three tectono-stratigraphic terrains were intruded by Middle Paleozoic calc-alkaline and alkaline intrusions and is overlain by Late Paleozoic, Mesozoic and Cenozoic sedimentary rocks within a series of NW trending sedimentary basins. The geological setting of the TAT, especially the presence of Middle Paleozoic (Silurian-Devonian) island arc rocks intruded by calc-alkaline intrusions, is very similar to the geological setting for the Oyu Tolgoi mine, located approximately 670 km east of the Project and Erdene's Zuun Mod porphyry Mo-Cu deposit.



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ERDENE
RESOURCE DEVELOPMENT

PROJECT

NAME
NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING
Carboniferous-Permian Arcs of Mongolia showing the location of the Trans Altai Terrain (TAT)

FIGURE No.	PROJECT No.	Date
7-1	ADV-MN-00161	January 2019

7.2 General Geology of Eastern Trans Altai Terrain

The regional geology of the Project is outlined in a series of 1:200,000 scale geology maps available through the Mineral Resource Authority of Mongolia (MRAM). The specific maps for the eastern TAT include L-47-XXXII, L-47-XXXIII, L-47-XXXIV, K-47-II, K-47-III, and K-47-IV.

The oldest rocks in the eastern TAT comprise a series of Devonian to Early Carboniferous intermediate volcanic and volcaniclastic rocks, minor felsic (rhyolite) volcanic and volcaniclastic rocks, and sedimentary units including sandstone, conglomerate and minor limestone. Bedding orientations in sedimentary and volcanic map units are predominantly northwest trending throughout the eastern TAT, thus paralleling the overall regional scale faults and structural trends. Primary bedding orientations on MRPAM maps were interpreted from lineaments derived from air photograph interpretation, and from regional mapping.

The volcanic and sedimentary rocks were intruded by a series of Devonian and Carboniferous calc-alkaline and alkaline granitoid plutons that range in composition from granodiorite and granite, to plagiogranite and syenite, and range in texture from fine- to coarse-grained seriate to equigranular and minor pegmatite. A few small (<5 km2) Carboniferous age gabbro intrusions are exposed in the study area and are thought to represent the most mafic end-members of intrusive suites. Late-stage and mostly post-mineralization dykes cross-cut both granitic intrusions and volcanic-sedimentary country rocks and range in composition from microdiorite to granite, syenite and lamprophyre. Some dykes may be pre- or syn-mineralization. Dyke orientations may be quite variable on a local scale, as noted in the Altan Nar area, however, most dykes are oriented NE-SW, especially within and near larger granite intrusions, with some dykes also having N-S or E-W orientations.

There are several NW-SE trending sedimentary basins throughout the eastern TAT and elsewhere in the western NKMA. These basins were in-filled by Late Paleozoic, Mesozoic and Cenozoic aged sedimentary sequences, including Carboniferous, Permian and Jurassic aged coal bearing strata and overlying, unconsolidated, Quaternary age sediments. The origin of these sedimentary basins is generally thought to be associated with widespread extensional tectonics resulting in large graben structures during the Mesozoic Era. Basin margins cut across all Devonian and Carboniferous rocks including both volcanic-sedimentary map units and granite intrusions. Previous work by Erdene in the Zarman Basin to the north of the Project, including limited drilling, geological mapping, magnetic and seismic surveys indicated the basin consists of an asymmetric wedge of Jurassic to Quaternary sedimentary rocks that thickens toward the northern basin margins, to at least 450 m depth, and interpreted as half-graben extensional structures. Based on observations elsewhere in the eastern TAT, basin thicknesses may range from 200 m to as much as 1,500 m.

7.3 Geology of Altan Nar Area

The Tsenkher Nomin license area was mapped, in increasing detail, between 2011 and 2014. The current detailed geology map for the license area is shown in **Figure 7-2**. The geology of the license area is dominated by two separate sequences of volcanic rocks, both assumed to be Devonian to Carboniferous in age, based on the 1:200,000 scale MRAM map L-47-XXXIII. These include:

A package of predominantly andesite flows (referred to as ‘Sequence A’) dominate the east-central part of the license area. These volcanic rocks have pronounced NW-SE trending linear features that are evident on satellite images. These rocks are interpreted to be a steeply dipping volcanic sequence that was intruded by sub-parallel, NW-trending granite porphyry and fine-grained granite intrusions interpreted to be sills, or possibly laccoliths. These intrusions are up to 250 m in width with maximum length of 6 km. Several narrow, NW-trending granitic dykes (<100 m in width) that are similar in composition to the large granite intrusion along the eastern margin of the license, intrude the andesite rocks near the Altan Nar area. A few isolated, narrow (10-100 m wide), NW-SE and NE-SW trending trachy dykes intrude the andesite rocks. Widespread development of hornfels textures was noted in the andesite rocks, presumably resulting from contact metamorphism related to the large granite sills or laccoliths. The wedge-shaped package of extrusive-intrusive rocks has a pronounced NW-trending series of linear topographical features that are clearly visible on satellite images. A ground magnetic survey was completed over most of the license in 2011 (**Figure 7-3**). The wedge-shaped Sequence A volcanic rocks and associated granite intrusions were noted to have a much higher magnetic response than the Sequence B volcanic rocks to the west and the granite intrusion situated along the eastern margin of the Tsenkher Nomin license. Areas of low magnetic response within the wedge-shaped sequence correspond to granite sills.

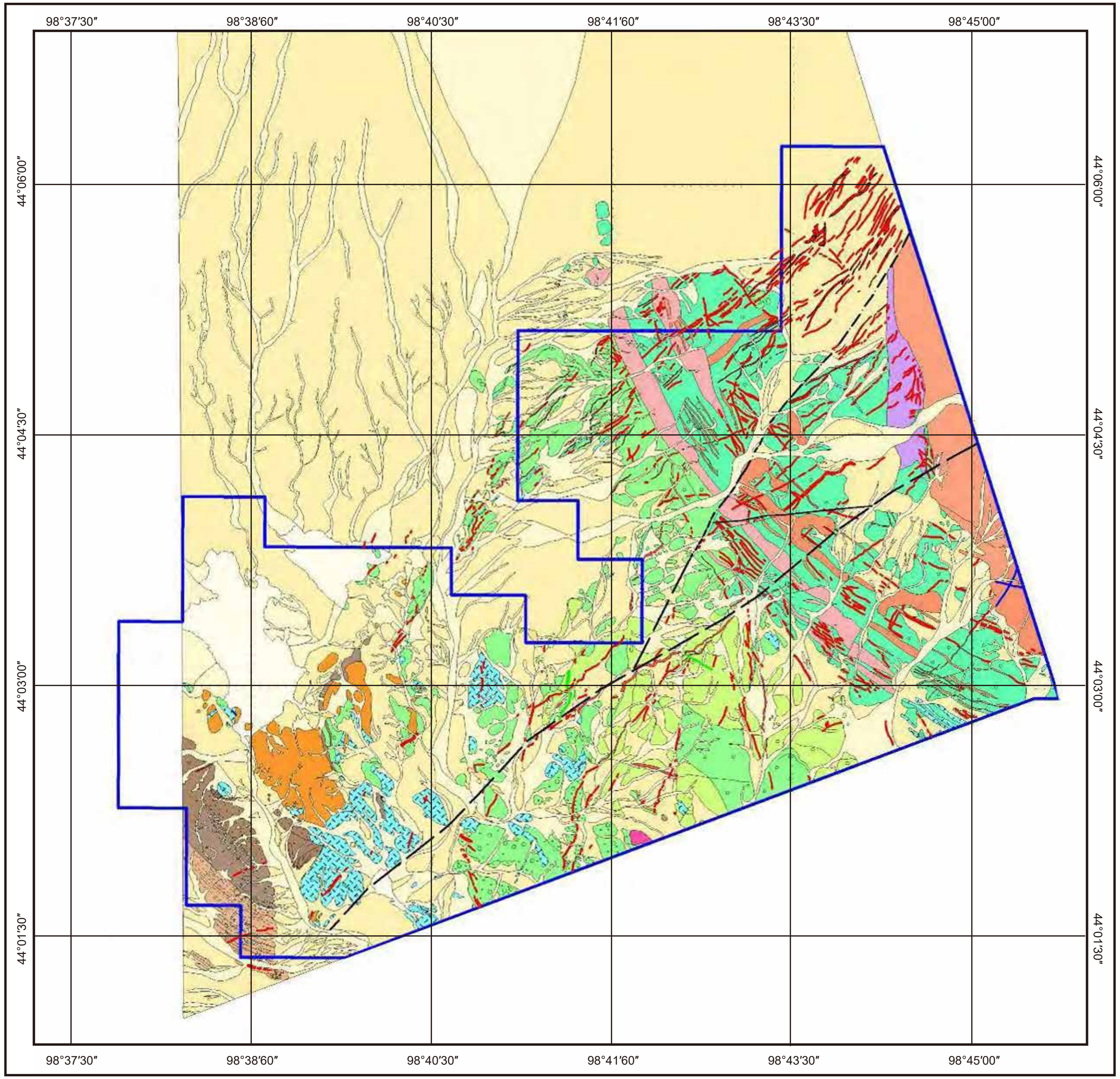
The geology of the central and western portion of the Tsenkher Nomin license area consists mostly of a sequence of volcanic flows and tuffaceous rocks of andesite composition (referred to as ‘Sequence B’), with subordinate rhyolite, rhyodacite, andesite tuff, and green-coloured andesite. Satellite images for this portion of the license indicate Sequence B volcanic rocks lack the well-developed lineaments and topographical features noted above for the Sequence A rocks. Bedding orientations for the Sequence B volcanic rocks, obtained from 2017 oriented core drilling, indicate these volcanic units strike to the northwest and dip at approximately 20-30 degrees to the northeast. Intrusive rocks are much less abundant in the west and central parts of the license and include a small granodiorite plug (approximately 200 by 300 m) near the southern license boundary, and several variably-oriented trachy-andesite and rhyolite dykes (generally < 50 m wide and up to 1 km in length). The magnetic response of Sequence B volcanic rocks is generally lower than for Sequence A (**Figure 7-3**) and lacks linear orientations, which supports the shallow-dip interpretation for these rocks.

Topographic low areas throughout the Tsenkher Nomin license area are underlain by unconsolidated Quaternary sediments. The pattern and distribution of various facies of Quaternary deposits reflects paleo-drainage systems that were developed along bedrock features including faults and lineament ridges. The abundance and patterns of distribution of Quaternary sediments differs significantly over the Sequence A and B volcanic rocks.

Sequence A andesite and granite rocks are cross-cut by a series of narrow (generally 50 to 200 m wide) regularly spaced (approximately 0.5 to 1.0 km) paleo-drainage valleys that are interpreted to reflect sub-parallel, NE-trending bedrock faults.

Minor north-south and east-west oriented Quaternary valleys may reflect localized structural offsets along some NE faults. Several NE- and ENE-trending faults were mapped in bedrock in the eastern portion of the license. These faults were noted to offset both andesite and later granite dykes and sills, suggesting these structures were developed late in the geological history of this area.

Quaternary deposits and paleo-drainage patterns over Sequence B rocks in the western and central parts of the license are much more abundant than over Sequence A rocks and have more randomly oriented drainage systems. A few narrow NE-SW and N-S oriented Quaternary deposits in the east-central part of the license may reflect extensions of bedrock structures developed over Sequence A rocks.



LEGEND

- Modern quarternary-upper quarternary cover.

Lower Devonian Ulgii formation (D_1ul)

- Moderate to pervasive strong biotite-hornfelsed andesite, rarely dacite and rhyolite. Strong magnetic. Locally potassic altered.
- Propylitic altered green, dark green trachyandesite, andesite.
- Light green andesitic fall tuff, tuff sandstone, tuff breccia, rare tuffisite. Pervasive propylitic altered, locally strong silica, phyllic and epidote altered.
- Dark green andesite, andesite ash flow-tuff. Greenstone metamorphosed.
- Dark green andesitic graystone, sandstone, argillite, siltstone, very fine banded. Greenstone metamorphosed.

Early carboniferous(λC_1)

- Rhyolite, rarely dacite, pervasive phyllic alterated.

Early-middle Carboniferous granitoids($qm_{2\gamma 3}C_{1-2}bb$)

- Coarse-middle grained quartz monzodiorite, quartz monzonite. Locally potassic altered.
- Riebeckite-arfvedsonite fine-medium grained granite granite porphyry intrusions and sills. Weak to moderate phyllic and K-spar altered.
- Subvolcanic stock of Rhyodacite. Pervasive phyllic altered, weathered.
- Dacite porphyry dykes and sills. Pervasive silica and selective K-spar altered.
- Trachyrhyodacite, trachydacite porphyry dykes, rarely sienite dykes. Pervasive phyllic and selective K-spar altered.
- Quartz-Fluorite veins
- License boundary
- Granite porphyry dykes, aplite dykes.
- Faults.

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SOURCE

Altan Nar Gold Project (Tsenkher Nomin Exploration License), Bayankhongor Aimag, Southwest Mongolia, National Instrument 43-101 Technical Report, Erdene Resource Development Corporation, J. C. (Chris) Cowan, MSc, Peng, March 10, 2014

LEGEND

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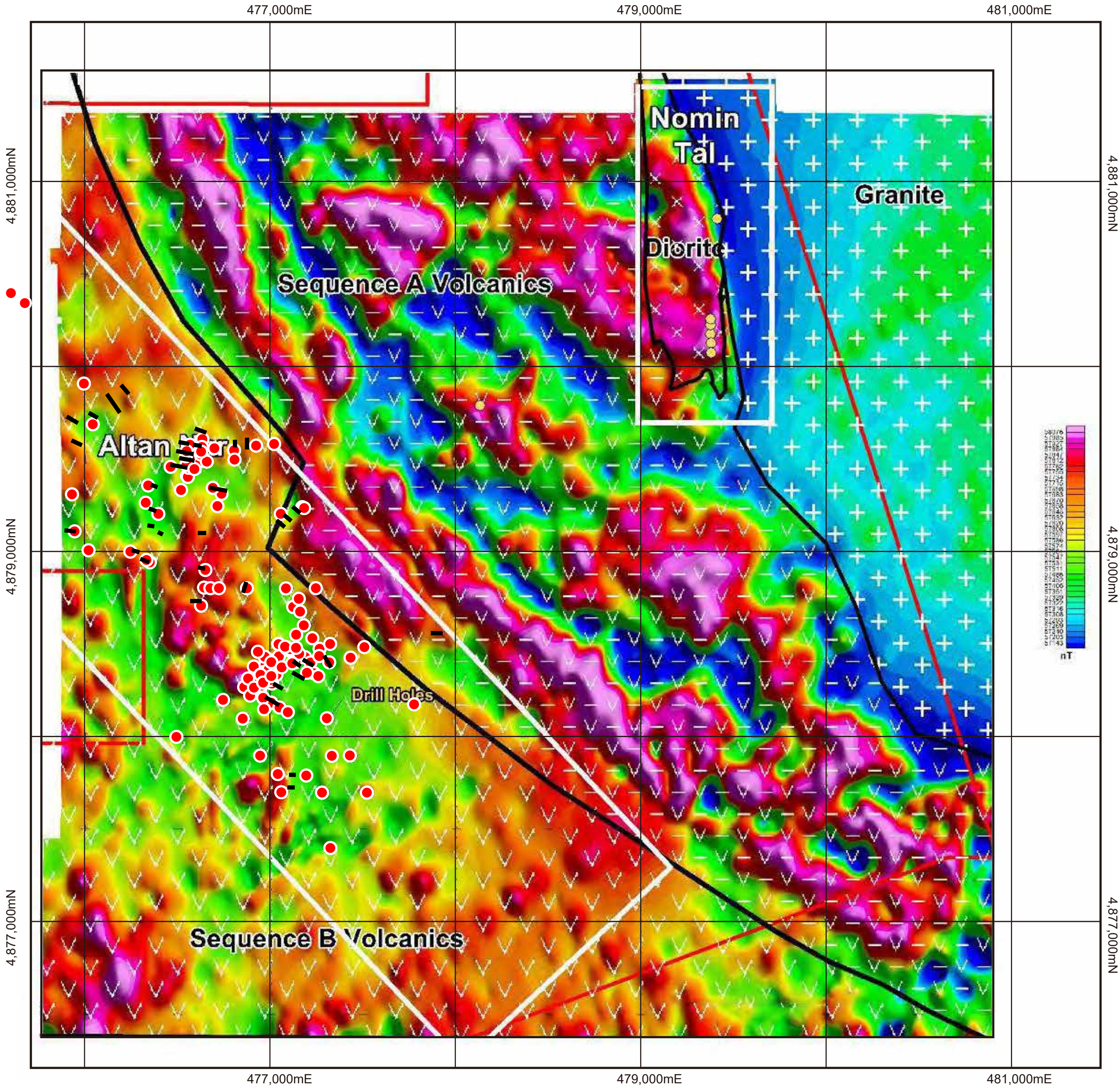
ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING: Tsenkher Nomin Geology Map

FIGURE No.	PROJECT No.	Date
7-2	ADV-MN-00161	January 2019



SOURCE

Altan Nar Gold Project
(Tsenkher Nomin Exploration License),
Bayankhongor Aimag, Southwest Mongolia,
National Instrument 43-101 Technical Report,
Erdene Resource Development Corporation,
J. C. (Chris) Cowan, MSc, Peng,
March 10, 2014

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LEGEND

Drill hole — Trench lines

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PROJECT

NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING: Tsenkher Nomin property- Reduced to pole (RTP) ground magnetic with generalized geology

FIGURE No.	PROJECT No.	Date
7-3	ADV-MN-00161	January 2019

7.4 Geology of Bayan Khundii Area

The bedrock geology of the Bayan Khundii license area (refer **Figure 7-4**) is dominated by a sequence of Devonian and/or Carboniferous volcanic (andesite, andesite porphyry) and pyroclastic rocks (ash, lapilli, and block and ash tuffs). These were intruded by Carboniferous intrusions, with these rocks unconformably overlain by Jurassic volcanic and sedimentary units. All rocks in the region are overlain by unconsolidated sediments of Quaternary or Recent age. Geochronological constraints are based on the 1:200,000 scale regional mapping completed by the Mineral Resources and Petroleum Authority of Mongolia (MRPAM). No detailed geochronological work has been undertaken to determine the ages of either host rocks or mineralized material at Bayan Khundii.

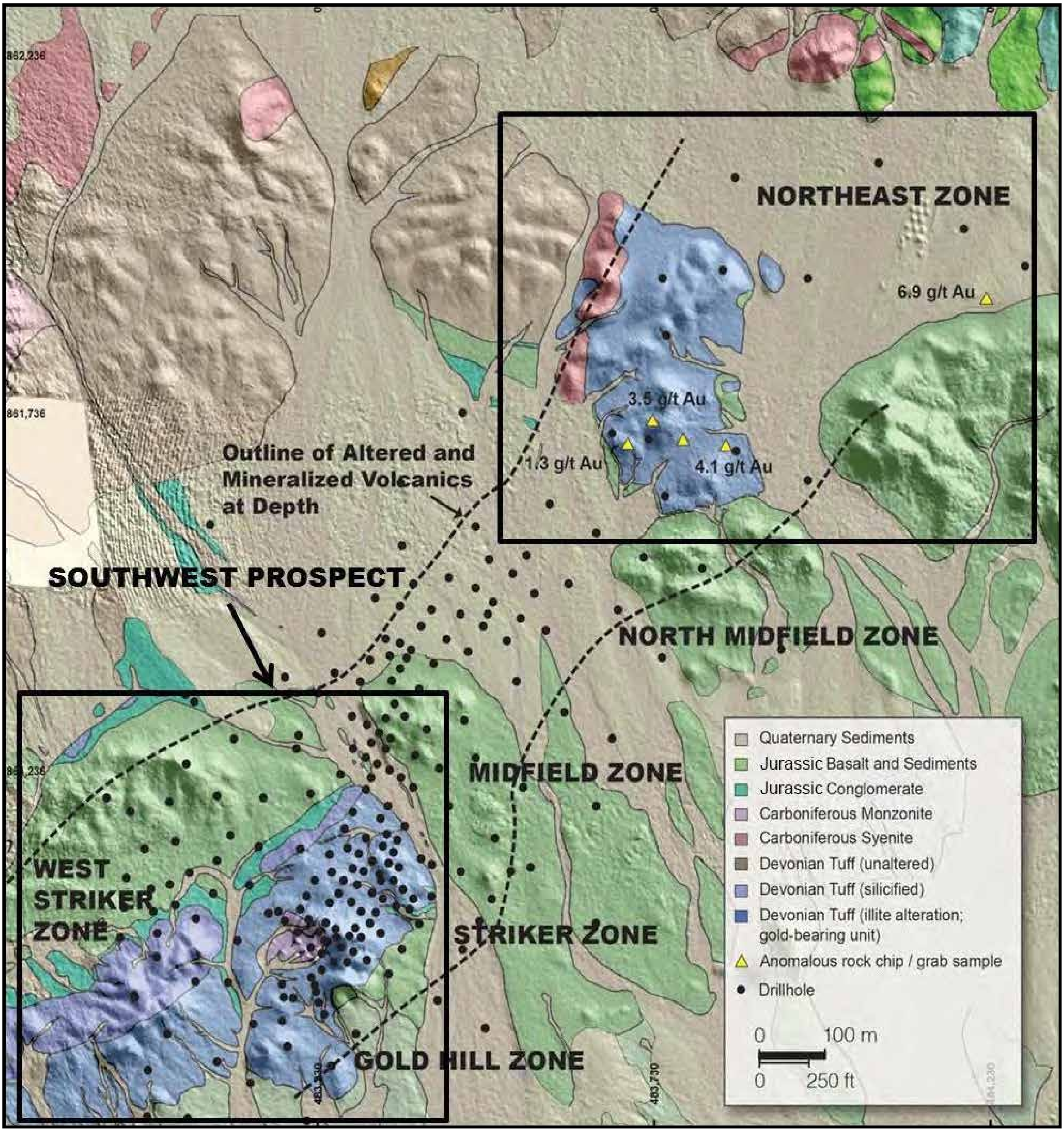
Carboniferous volcanic rocks are present throughout the license area and include several texturally-distinct units of intermediate composition including andesite, porphyritic andesite and basalt. A unit of block and ash tuff is the dominant lithology in the west-central part of the license area. Pyroclastic rocks, that are host to and restricted to the immediate area surrounding the Bayan Khundii mineralization, are interpreted to be Middle-Upper Devonian in age, possibly belonging to the Baruunhuurai Formation that is part of a large area of undifferentiated Devonian units to the south and west of the license area. Pyroclastic rocks include lapilli and ash tuff, and welded tuff with very minor block and ash units. Fine grained Devonian andesite to the northeast of Bayan Khundii was intruded by a series of dacite porphyry plugs which are also interpreted as Devonian.

Carboniferous granitoid rocks intrude both the Devonian and Carboniferous volcanic and pyroclastic units and have a wide range in composition from least-evolved medium and coarse-grained diorite, monzodiorite, monzonite and granodiorite, to the most evolved phases of fine-grained granite, granite porphyry, syenite and quartz syenite.

Most Jurassic volcanic rocks are present in the southern part of the license area and consist mostly of basalt (commonly amygdaloidal) units. In addition, a Jurassic sedimentary unit, consisting of a basal conglomerate and overlying red to red and white mottled sandstone and siltstone, has been mapped in the southern part of the license area where it disconformably underlies the Jurassic volcanic rocks. Jurassic lithologies have been observed to unconformably overly the older Devonian and Carboniferous lithologies.

Unconsolidated Quaternary to Recent sediments is present throughout the license area with a large area of colluvial-dominated sediments in the central part of the license north of the Bayan Khundii area area. Alluvial sediment-filled stream channels are present throughout the license area and overlie all aforementioned Devonian, Carboniferous, Jurassic and Quaternary rocks and sediments. These ‘stream’ channels are mostly dry, however, flash flooding associated with episodic storm events have recently been observed to deposit additional alluvial sediments.

Several northeast-, northwest- and east-west trending faults were inferred in the license area and these cross-cut, or form contacts of, Carboniferous intrusive and volcanic map units. Faults do not appear to off-set Quaternary or Recent sediment deposits; however, some inferred faults form the contacts with older Devonian, Carboniferous or Jurassic lithologies. A detailed structural study at Bayan Khundii and surrounding areas puts these faults into a regional context and are interpreted to represent arc-parallel and arc-normal faults, including northeast-trending extensional faults interpreted as associated with the low sulphidation Au mineralization (see Section 7.4.1 Structure for additional details).



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ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING BAYAN KHUNDII PROJECT GEOLOGY MAP

FIGURE No.	PROJECT No.	Date
7-4	ADV-MN-00161	January 2019

7.4.1 Structure

In Q3-Q4 2017 Dr. Armelle Kloppenberg, 4DGeo, was engaged to complete a comprehensive structural analysis of Bayan Khundii and the surrounding region including the area around Erdene's Altan Nar deposit. The following are highlights from this structural analysis:

Bayan Khundii

- **Overall Structural Model**: Consists of a series of tilted, extensional, domino-style fault blocks with NE-trending, SE-verging extensional faults;
  - The main NNE-trending mineralized Striker-Midfield-North Midfield zone is interpreted as a 'relay ramp' (Fossen and Rotevatn, 2016) whereby stress is transferred from the ends ('tip points') of adjacent NE-trending, SE-verging extensional faults via a series of parallel structures (refer **Figure 7-5**);
  - The formation of the parallel structures within the relay ramp is thought to explain the SSE-trending, SW dipping 'stacked vein zones' at Bayan Khundii;
  - The limited post-Jurassic tilting observed in the volcanic and sedimentary units (~10-25o SW) also modified the dip of the epithermal veins, currently ~45o;
  - The proposed model of NE-trending / SE-dipping extensional faults and 'domino-style' fault blocks at the Project can be used to explain the abrupt changes in alteration and geochemistry observed between Striker West and Striker-Midfield zones (e.g. white mica/illite alteration intensity, K2O concentration), with successive blocks to the southeast representing down-faulted blocks;
- **NW-trending Structure between Striker and Midfield zones**: A major NW-trending fault through the NE end of the Striker Zone is interpreted to have formed over a basement structure with individual N-trending en-echelon faults at surface that are interpreted to coalesce at depth. The structural report proposes that the Midfield block was down-faulted with respect to the Striker Zone along this fault;
- **Fault Timing**: Many of the faults at the Project are thought to have been active in Devonian and were re-activated such that they displaced Jurassic sedimentary and volcanic units. The report suggests that the NE-trending faults were the earliest faults and NW-trending faults are younger and have off-set the earlier NE faults. The report also suggests that Jurassic units may have in-filled fault-bounded paleo-valleys;
- **Under-represented Veins**: The report notes that there is a NE-trending/SE-dipping vein set (dip= Az. 120o/50o; strike =030o) that is sub-parallel to the predominant azimuth of Erdene's drilling to date and is therefore an under-represented vein set. Erdene drilled several holes in the 2018 drill program to test the abundance of these veins., Results from this work indicated only a few NE-trending veins, thus indicating that these veins orientations were not under-represented in previous drilling.;
- **NE Extensional Faults:** The report suggested that the NE-trending, SE-verging extensional faults that bound the Striker-Midfield zones may have been active during the mineralizing event and may host auriferous veins. A hole was drilled during the Q4 2017 program to test this hypothesis, although no evidence for mineralized veins in NE faults were observed;
- **Metre-scale Veins in Midfield:** The multiple m-scale veins in Midfield (e.g. in drillholes BKD-98, BKD-99) are interpreted as forming at the intersection of the NE-trending/SE-verging and NW-trending/NE-verging extensional faults and are thought to represent zones of dilatancy, possibly representing 'feeder zones. As noted above, drilling in Q2 2018 was successful in testing of the feeder zone concept at the intersection of a deep-seated northwest-trending fault and the interpreted relay ramp structure in the Midfield Zone, and returned an average of 34.4 g/t Au over 7 m (BKD-244) from the widest zone of Au-bearing quartz-adularia veins intersected to date at Bayan Khundii;
- **Bedding Orientation:** Data from outcrop and oriented core measurements indicate that bedding in Striker and peripheral areas of the Project have NE strike and NW dips whereas the lithologies in the NE and Midfield zones have NW-trending/SW-dipping orientations. The report suggests that these SW dips may reflect deposition in active (re-activated) half grabens and do not represent a widespread (i.e. terrane-wide) tilting event;

- **Jurassic:** Flood basalt flows were interpreted as being deposited in fault-bounded paleo-valleys. The NW-trending valley fill shows tilting of the basalts, indicating reactivation of extensional faults (i.e. to form half-grabens). These Jurassic faults have offset the Bayan Khundii mineralized system.

Figure 7-5 NNE Trend of the High-Grade Striker-Midfield Mineralized Zone

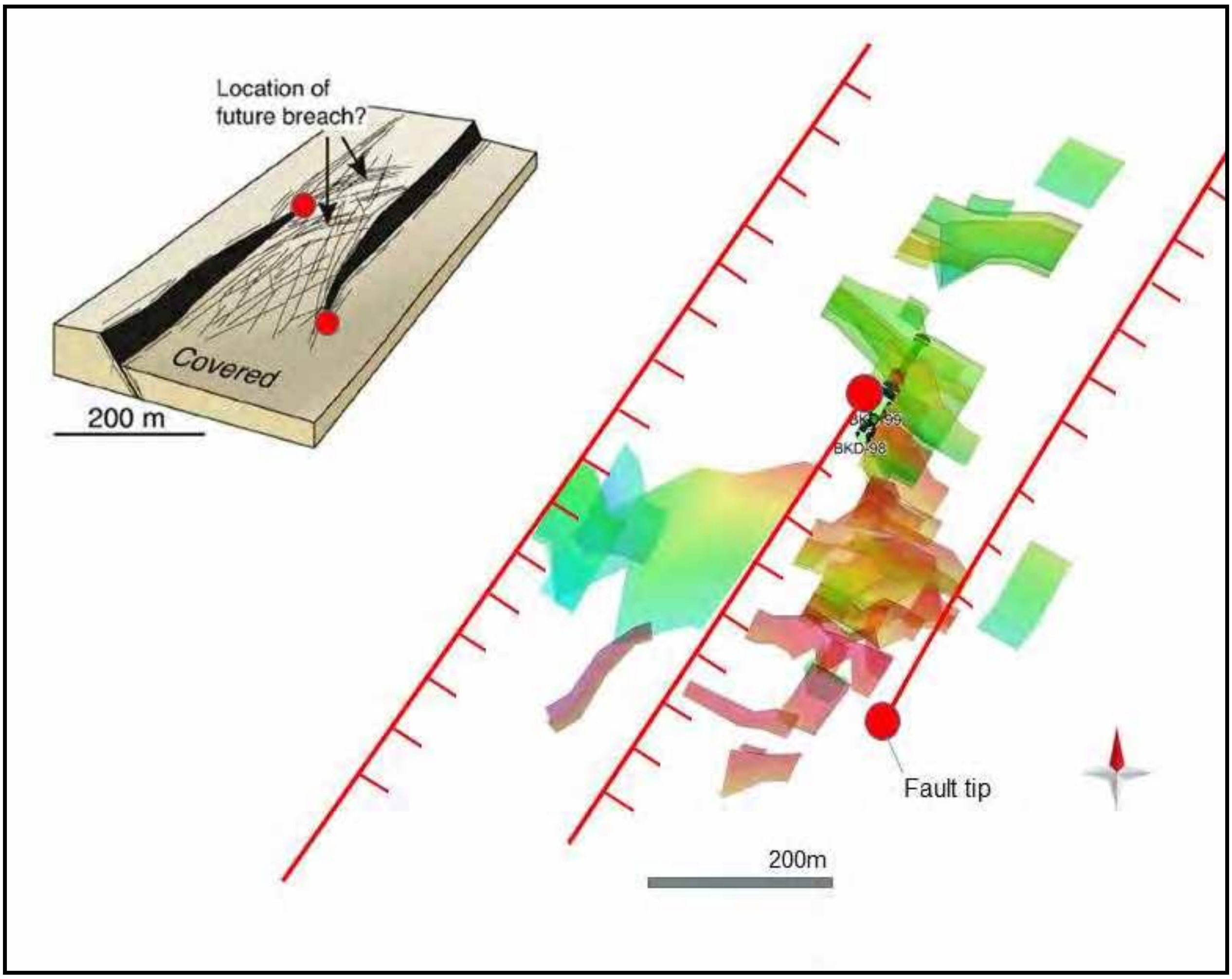


Image in upper left is from Fossen and Rotevatn (2016). The model consists of a 'relay ramp' where stress is transferred between the fault tips on 2 adjoining extensional faults. Extensional faults are not likely to be straight, and probably consist of a series of structures within a fault zone, rather than one single discrete fault plane. This proposed model explains the limited lateral extent of SSE-trending, SW-dipping mineralized zones.
Source: Bayan Khundii Gold Project (Khundii Exploration License), Bayankhongor Aimag, Southwest Mongolia, NI43-101 Technical report dated March 2018

Altan Nar

Kloppenburg's focus was the Bayan Khundii deposit, however, regionally, she concluded that long-lived NE- and NW-trending structures were active throughout the Carboniferous to post-Jurassic history on this part of the Edren Terrane. Kloppenburg (2017) concluded that at Altan Nar, dilatant zones developed at 'jogs' along NE-trending structures, resulted in accumulation of mineralizing fluids (e.g. Discovery Zone and Union North). Additional jogs were identified and present future exploration targets.

7.5 Mineralization Style

7.5.1 Altan Nar

Within the Discovery Zone, gold mineralization appears to be structurally controlled within NNE to NE trending sub-parallel shear zones that are steeply dipping to sub-vertical. Gold-bearing zones are associated with multi-phase gold-silver-lead-zinc mineralization related to epithermal quartz and quartz-chalcedony veins and breccias in a northeast-southwest trending, steeply northwest dipping, fault / breccia zone. Preliminary evidence suggests that andesite units, particularly near the contact with more competent silicified volcanic breccia units, act as a favourable host for mineralization.

There are multiple phases of quartz veins / breccia (+/- mineralization) within the structurally-controlled mineralized zones at Altan Nar. Only preliminary work has been completed to date regarding the paragenetic sequence for these phases. Accordingly, no definitive sequence is provided for the following mineralizing phases, based on petrographic observations, coupled with other field and mineralogical data, the following preliminary paragenetic sequence is proposed for Altan Nar:

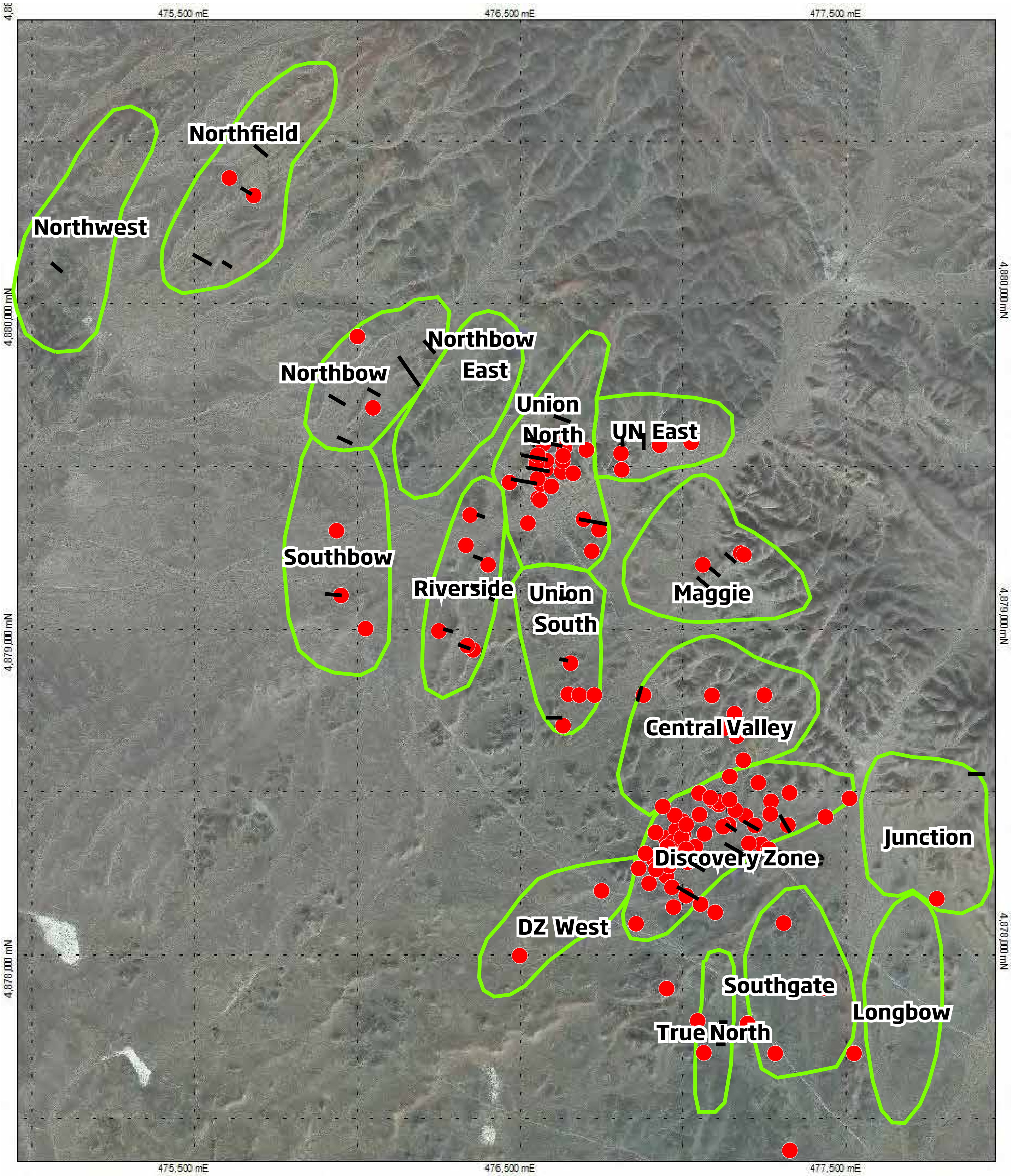
- Early stage massive quartz veining and brecciation.
- Brecciation, silicification and comb quartz veining and associated white mica alteration (sericite-pyrite-quartz) and deposition of galena-sphalerite-chalcopyrite-gold ±arsenopyrite (low-arsenopyrite gold mineralization).
- Localized arsenopyrite-pyrite-gold overprint on above sequences, with some associated chalcedony veining and silicification (high-arsenopyrite gold mineralization).
- Mn-Ca carbonate veining (rhodochrosite, calcite, etc.) – late hypogene
- Late-stage (supergene) oxidation – limonite, Mn oxides, malachite.

Zones of high-arsenic gold mineralization were initially reported and tested. However, additional drilling and trenching across the Altan Nar property has shown that this type of mineralization is localized when compared to the dominant low-arsenic style gold-silver-lead-zinc mineralization.

Six low-arsenic samples (averaging 6.3 g/t Au, 18.7 g/t Ag, 1.8% Pb, 1.2% Zn, 0.2% As) were submitted for both transmitted and reflected light petrographic analysis. Visible gold was observed in three of the six samples, in contrast to previous analysis of high-arsenic samples where very fine-grained gold was only noted in two of 20 mineralized samples. In addition, arsenopyrite was absent in four of the six low-arsenic samples, and only present in trace amounts in the other two samples. This is in contrast to previous work on high-arsenic samples where arsenopyrite was observed, in varying amounts, in all samples and constituted up to 1% of the mode.

A Maiden Mineral Resource estimate dated 24th March 2015, was only carried out for Discovery and Union North zones while the May 2018 estimate presented in this Report was based on nine prospects: Discovery, Union North, True North, Central Valley, Union South, Riverside, Maggie, Union East and Northfield zones. Each is briefly discussed for completeness.

The location of the major Altan Nar Prospects is located in **Figure 7-6**.



RPMGLOBAL

LEGEND

- Drill hole
- Trench lines
- Prospects

N

0 250 500 m

DO NOT SCALE THIS DRAWING - USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE

CLIENT

ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING: Altan Nar Prospect Location Map

FIGURE No.	PROJECT No.	Date
7-6	ADV-MN-00161	January 2019

Discovery Zone

Drilling to date at the Discovery Zone ("DZ") has identified a minimum strike length of 650 m and has demonstrated both vertical and lateral continuity of gold, silver, lead and zinc mineralization. Exploration work has identified north-northeast trending, sub-vertical zones of gold and silver mineralization over variable widths (up to 50 m apparent width) averaging in excess of 1 g/t gold, including drill intervals up to 29 m averaging 4.3 g/t gold and 24.1 g/t silver in DZ South.

Within the DZ, gold mineralization is structurally controlled and is associated multi-stage epithermal comb-quartz and quartz-chalcedony veins with variable brecciation and minor 'boiling textures' including bladed calcite and adularia, along with common hydrothermal breccia zones, with mineralized zones being steeply dipping to sub-vertical. The DZ remains open along strike to the north and at depth. Drilling has tested the mineralization to a vertical depth of 397 m (DZ South) to 390 m (DZ North).

The deepest longest holes at the DZ are ~450m (~390m-397m vertical depth) (TND-31 and TND-129). TND-31 intersected 2m of 9.57 g/t Au, 7g/t Ag, 0.22% combined Zn and Pb at 369-371m depth.

In the DZ, trench results confirmed that mineralization begins within 1 to 2 metre of surface, is structurally controlled and is associated with quartz veins and breccias within zone of intense white mica alteration.

The majority of the Mineral Resources reported in the Report are from the DZ.

Union North

Union North is located 1.3 km northwest of the DZ. As a series of seven trenches and 24 diamond holes drilled at 50 m to 50 m spacing, with minor amount closer spaced area (15-20m), have identified mineralization associated with a structural dilation zone. This zone is located on a large northeast-southwest trending structure that hosts wide, parallel zones of intensely altered and mineralized breccias. Drilling in 2012 included a single hole (TND-46) at Union North which intersected 47 m of 1.3 g/t gold, including 9 m of 4.3 g/t gold, 12 g/t silver, and 1.7% combined lead-zinc. Drilling in Q2 2014 returned the widest zone of higher-grade mineralization to date and an indication of intensifying grades at depth, including 22 m of 2.1 g/t and 25 m vertically below expanding to 24 m of similar grade with a high-grade core of 12 m of 4 g/t gold, 10 g/t silver and 2.5% combined lead and zinc.

An extensional drill hole drilled at NE end of the Union North mineralization trend came up barren and potential for additional mineralization at northern extension is considered low, whereas the south western end remains open and there is potential for additional mineralization in this area. In contrast to the DZ, which is mostly devoid of granitoid dykes, Union North has several granitoid dykes that have both NE and E-W orientations and follow the overall trend of mineralized vein and breccia zones. The dykes are mostly considered to be post-mineral; however, some dykes may be pre-mineral.

Outside of the DZ and Union North, scout drilling (2011-2012), trenching (2013, Q3 2014) and target drilling (Q2 and Q4 2014, 2015-2018) have been carried out over a 5.0 km portion of the Altan Nar property to test a number of high priority targets. The following prospects have Inferred Resources defined as part of the overall Altan Nar resources included in this report.

Maggie Prospect

Located 700 m north of the DZ and 700 m east of the Union North Prospect, the Maggie Prospect area is a 500 m x 400 m triangular shaped area along a major NE structure and bounded to the east by a large granite sill/stock. This target is characterized by a 10 to 40 m wide linear white mica alteration zone with gold, silver, lead and zinc mineralization traced for over 300 m on a NE trend through the centre of the target. At the NE end of this NE structure is a 90m by 130m magnetic low feature with a coincident low-level IP chargeability anomaly (11 mSec).

A series of trenches and drill holes have been completed over the Maggie Prospect including an initial trench that uncovered a well mineralized zone, 38 m wide and hosted by an altered andesite cut by two barren post-mineralization dykes (7 m and 2 m wide). Excluding the 9 m of post mineralization dyke, the central mineralized zone returned 17 m of 3.4 g/t gold, 4.9 g/t silver and 1.41% combined lead-zinc. Drilling in 2017 included two diamond holes (TND-123 and TND-133) collared as drill fans and both holes intersected high grade gold and base metal mineralization. TND-123 intersected 16m of 3.8g/t Au, 9.4g/t Ag, 0.4% combined Pb and Zn from 28m however mineralization was cut by 8.8m thick barren post mineralization dykes. TND-133 intersected a 4-metre-wide interval that averaged 2.2g/t Au, 7.5g/t Ag, 1.04% combined Pb and Zn from 32m.

Mineralization at the Maggie Project is open along strike (NE-SW) and down-dip and the mineralization looks to be thicker in the NE direction. Resource modelling has been carried out for the Maggie Prospect.

Union South Prospect

This prospect is largely a linear N-S feature which continues over 700 m south from the Union North Prospect. Underlying the main trend there are zones of intense dipole chargeability highs extending to surface that are most pronounced in the northern portion of the target area (near the south end of the Union North Prospect) where there is evidence of a structural offset. Drilling has included the identification of two parallel, 10 m wide zones, with 1.5 g/t and 2.3 g/t gold equivalent. High grade mineralization was also discovered in trenching (ANT-24) in the southern area with 10 m of 4.46 g/t gold, 8.9 g/t silver and 2.2% lead. However, continuity has not been well established albeit with limited drilling (four holes in south and one in north).

Resource modelling was carried out in this area and mineralization still remains open along NE/SW and down-dip directions.

Riverside Prospect

This prospect is located approximately 200 m south and west of Union North and is characterized by an 800 m long gradient IP and geochemical anomaly that follows the trend of white mica alteration, quartz/breccia rubble fields and porphyry dykes all of which follow the same structural pathway, although much of the prospect area is covered by recent sediments. Trenching on the prospect returned 6 m of 3 g/t gold. Induced polarization studies completed in 2014 and 2016 indicate moderate chargeability at depth although increasing in the northern portion of the target area and a high-resolution magnetic survey completed in 2016 revealed a NNE-trending intense magnetic low feature in the northern target area, trending into the Union North target. A series of five holes have been drilled in the target several of intersected some notable mineralization. TND-88 intersected 16m at 0.5g/t Au, 0.5% combined Pb and Zn from 45m including 1m at 3.8g/t Au. This hole also intersected 2m of 1.2g/t Au from 32m and 2m of 1.6g/t from 20m. TND-128 intersected 38m at 0.21g/t Au, 0.56% combined Pb and Zn from 62m.

Resource modelling was carried out on the Riverside Prospect and mineralization is still open in each direction.

Union North East Prospect

This prospect is located on the east side of the Union North Prospect and extends eastward for approximately 350m. Both of these prospects are potentially connected. Two trenches (ANT-40 and ANT-41) tested surface geochemical anomalies, with ANT-41 returning 27.5m averaging 1.98g/t Au, 4.4 g/t Ag, 0.57% combined Pb and Zn, including 2m at 8.4g/t Au, 10g/t Ag, and 1.9% combined Pb and Zn. Trench results indicate that grades increase toward the Union North Prospect. Five holes were drilled in this prospect and all holes intersected zones of gold-silver-lead-zinc mineralization with holes TND-97 and TND-120 returning the best intersections. TND-97 intersected an 11m interval which averaged 1.77 g/t Au, 5.8 g/t Ag, and 1.29% combined Pb and Zn starting at 44m depth, whereas drillhole TND-120 intersected a 5.1m interval which averaged 1.08g/t Au, 29.4 g/t Ag, 1.05% Pb and 2.25% Zn, starting at 37m depth.

Resource modelling has been carried out on this Prospect however mineralization is still open along strike to the east and down-dip direction.

Other Prospects

Of the remaining 14 prospects, five have had limited scout drilling and trenching, seven are at a low level of understanding and may improve in ranking as additional data is generated; however, all display evidence of gold and base metal mineralisation at surface and two are outside the main mineralized trend and are of different styles of mineralization, albeit with high grades of copper and gold mineralization over narrow widths.

7.5.2 Bayan Khundii

Mineralization at Bayan Khundii consists of Au ± Ag in massive-saccharoidal, laminar and comb-textured quartz± hematite veins, multi-stage quartz-adularia-chalcedony± hematite veins, quartz-hematite breccias, along late fractures (±hematite/ specularite), and as disseminations within intensely illite-quartz altered pyroclastic rocks, where it is commonly associated with hematite that partially or completely replaced pyrite grains. Gold mineralization is mostly hosted in parallel NW-SE trending, moderately-dipping (~45o) zones that range in width from 4 to 149 m (refer **Figure 7-5**)).

No Au± Ag mineralized veins or breccias have been noted in the unconformably overlying Jurassic sedimentary rocks or basalt, indicating these rocks represent an unmineralized cover sequence. Some Au± Ag enrichment has been noted in basal conglomerate containing angular, altered, and possibly mineralized Devonian tuff clasts, near the unconformity.

Gold mineralization at surface is present in three separate areas over a 1.7 km northeast trend. These include the Southwest Prospect area (550m x 300m), the Northeast Prospect area (300 m x 300 m), located approximately 0.7 km to the northeast, and the NE Extension located an additional 500 m to the northeast. Most of the exploration work to date, and all of the Bayan Khundii mineral resource, lies within the Southwest Prospect area which includes the Gold Hill, Striker, Midfield and Midfield North zones. The Northeast, and Northeast Extension Prospect areas have undergone limited exploration drilling with anomalous gold mineralization intersected in a number of drill holes. The remainder of observations in this section are based on mapping, trenching and drilling within the Gold Hill, Striker, Midfield and Midfield North zones.

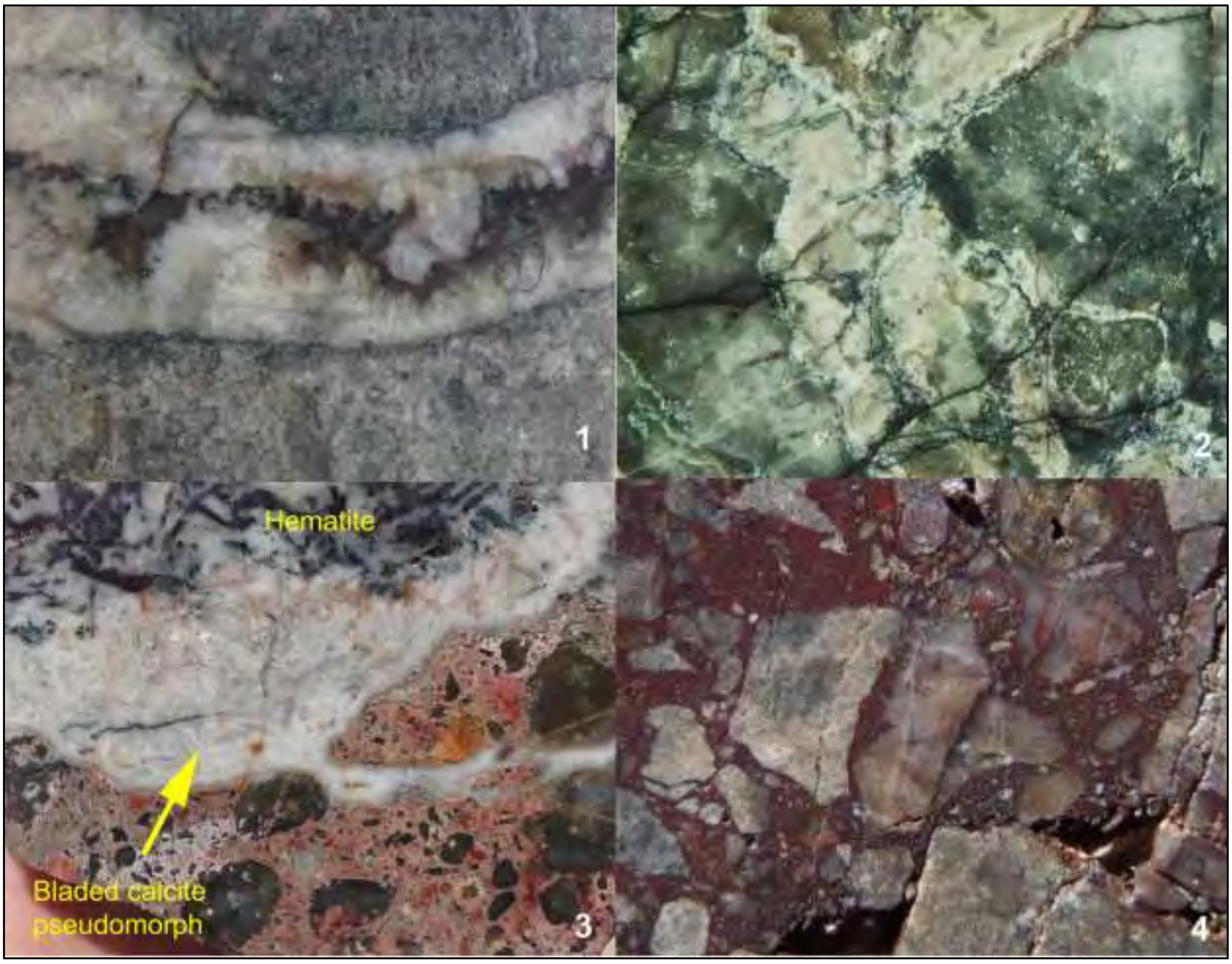
Visible Gold

Visible Au (VG) was noted in 31% of the holes drilled from 2015 to 2017 at Bayan Khundii (N=73). It should be noted that visible Au is not always a good indicator of Au grade as numerous samples have returned moderate to high Au values for samples where no visible Au was noted during logging. Visible Au was observed in several modes of occurrence, including:

- In quartz veins with a range of textures (refer to **Figure 7-7**) including:
  - Whitish-grey comb-textured quartz veins (mostly <1 – 2 cm wide), commonly with hematite ±specularite and/or open space in vein centres. Within these veins Au is present: 1) along prismatic quartz grain boundaries; 2) within the vein centres ±hematite/specularite; and 3) along vein margins at contact with host tuffs;
  - Multi-stage composite quartz-chalcedony-adularia± hematite veins, commonly with a mottled-texture (mostly <1 -10 cm wide) with sub-round 'clasts' or fragments of milky light grey-buff quartz-adularia or dark-coloured chalcedony, some having very abundant disseminated Au, commonly rimmed by euhedral adularia crystals;
  - Multi-stage quartz-adularia-chalcedony veins with bladed calcite, now pseudomorphed by quartz (i.e. boiling textures) and medium-dark grey Au-rich vein margins;
  - Large composite veins (up to ≥1 m wide) composed of a, b and c veins described above and commonly with evidence of brecciation with hematite matrix;
- In quartz-hematite breccias (from ~5 to 40 cm wide) that contain sub-angular to sub-rounded fragments of quartz or tuffaceous rocks in a hematite ±specularite matrix.
- Along late angular fractures, micro-fractures and joints, commonly associated with hypogene hematite and/or specularite; and

- As very fine-grained disseminations in host tuffaceous rocks, frequently associated with hematite partially or totally replacing early-stage pyrite.

Figure 7-7 Photographs of Gold-Bearing Veins and Breccias



1) Comb-textured quartz-hematite/specularite vein from BKD-02; 2) Composite multi-stage quartz-chalcedony-adularia vein from BKD-01; 3) Composite quartz-adularia-chalcedony vein from outcrop with bladed calcite (i.e. 'boiling') textures, now pseudomorphed by quartz; and 4) Hematite-specularite-quartz breccia from BKD-60.

Source: Bayan Khundii Gold Project (Khundii Exploration License), Bayankhongor Aimag, Southwest Mongolia, NI43-101 Technical report dated March 2018.

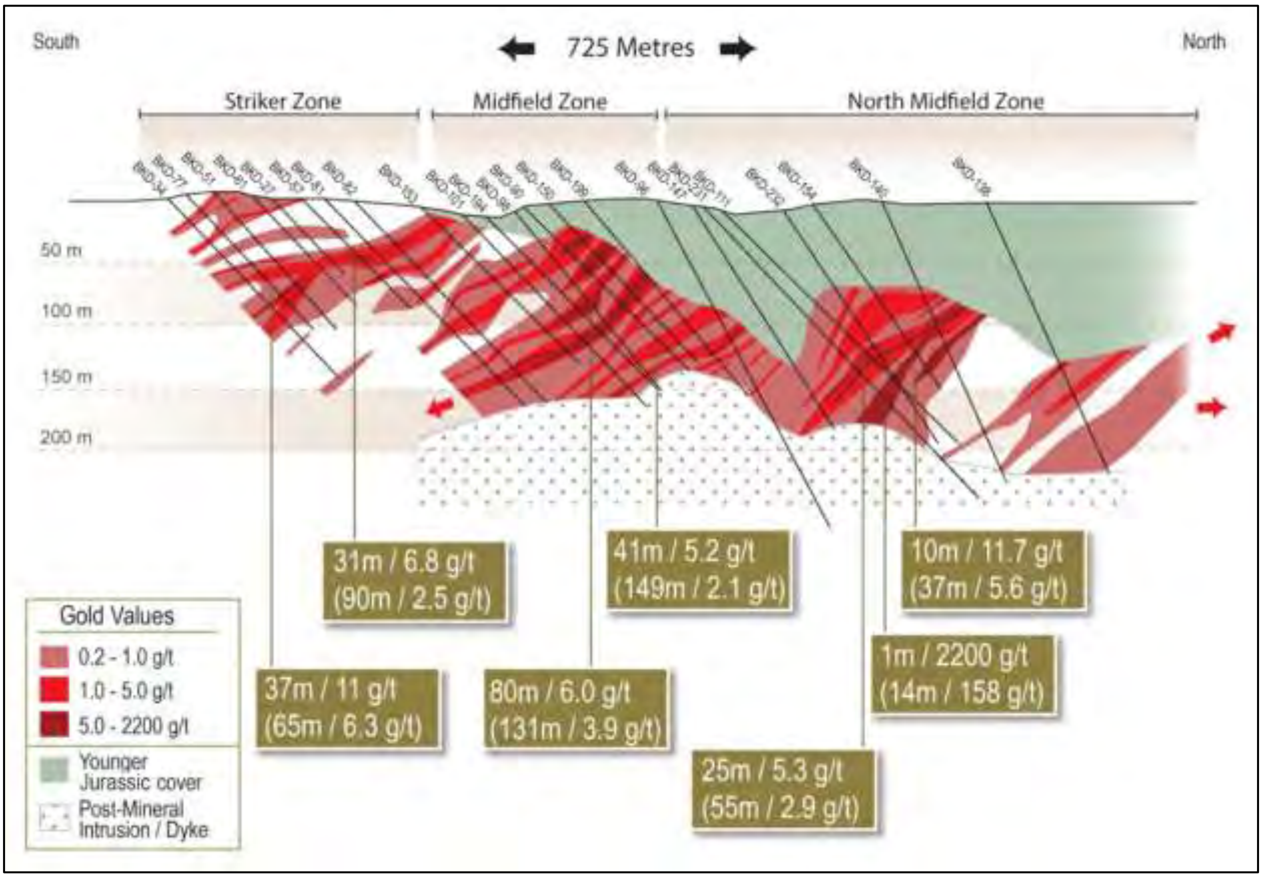
Quartz Veins and Breccia Zones

Quartz veins and hematite and/or quartz breccias were observed to have variable orientations and commonly form irregular networks of quartz and hematite veins and breccias within SE-NW and E-W trending, SW-dipping, structures. Individual quartz veins, commonly with comb-textures, were observed to vary in width from <1 mm to 2-3 cm over 10 to 30 cm along individual veins. Some quartz veins were noted to form bifurcating veins sets, whereas other veins were noted to form along parallel fractures with common 'jump over' structures. The vein orientations are thought to reflect the orientation of pre-existing fractures, with comb-textured veins possibly representing open-space infillings of structurally-controlled void spaces within a main relay ramp extensional structure as noted in Section 7.4.1 above. Some quartz veins have narrow (<1-2 mm wide) illite-quartz alteration selvages; however, most quartz veins at Bayan Khundii do not have alteration selvages.

Several large composite quartz veins (≤2 m wide) were noted to include comb-textured quartz±adularia, brecciated and mottled-textured massive quartz, and minor chalcedony with hematite ±specularite veins and veinlets and, in a few veins, hematite breccias. These large composite veins are interpreted as forming from multiple pulses of silica and Fe-oxide rich auriferous fluids. The two largest multi-stage auriferous quartz-adularia-chalcedony veins were intersected in drillholes BKD-98 and BKD-99 (2.0 and 1.7 m wide respectively). These two drillholes were drilled near the intersection of a major NW-trending fault and the NE-trending faults interpreted as forming extensional structures within a relay ramp as described in Section 7.4.1 above.

Some tourmaline breccias and tourmaline alteration zones to the west of the Striker Zone contain brecciated fragments of quartz veins and also comb-textured quartz overgrowths on tourmalinized fragments, suggesting a complex inter-relationship between quartz veining and tourmaline alteration events. The relationship between Au mineralization and tourmaline is unclear, however, most tourmaline was observed to the west of the Striker Zone where limited Au mineralization has been encountered to date and there is only rare to trace tourmaline in the Striker and Midfield zones, suggesting these features may be from separate events (refer **Figure 7-8**).

Figure 7-8 NE-SW Trending Cross Section Striker and Midfield zones at Bayan Khundii



Note the consistent moderate SW dip to the parallel mineralized zones. Overlying Jurassic cover rocks are indicated in green colour and post-mineralization syenite intrusion is indicated by stippled pattern.
Source: Bayan Khundii Gold Project (Khundii Exploration License), Bayankhongor Aimag, Southwest Mongolia, NI43-101 Technical report dated March 2018

Alteration

Perhaps one of the most striking features of Bayan Khundii is the intense alteration that overprints all Devonian tuffaceous rocks at Bayan Khundii, including the outcropping Southwest and Northeast Prospects that is evident on high resolution satellite images (e.g. GeoEye). This alteration is in sharp contrast to the relatively unaltered unconformably overlying Jurassic sedimentary rocks and basalt. In many locations at

Bayan Khundii it is difficult to identify the protolith, as virtually all primary minerals have been variably replaced by quartz and illite.

Alteration at Bayan Khundii can be grouped into two main events, based on observed textures and mineralogical studies. These include:

- An early high-temperature alteration event that formed poorly-developed vuggy quartz lithocaps and underlying well-developed gusano (i.e. 'wormy') replacement textures and small isolated zones of advanced argillic alteration (pyrophyllite-dickite-kaolinite) in the vicinity of the Striker Zone. Widespread chlorite-pyrite-magnetite-K-feldspar-biotite alteration that is easily recognized outside the illite alteration zone is considered to have formed during this early alteration event. Fluid inclusion results have identified a hypersaline population of inclusions that may be associated with this early alteration event, possibly associated with a porphyry intrusion at depth;
- A later, lower temperature pervasive illite-quartz alteration event that is interpreted as part of the low-sulphidation epithermal mineralization at Bayan Khundii. There is a second population of lower-temperature aqueous fluid inclusions that are interpreted as forming during this alteration/mineralizing event. There is no chlorite, pyrite, or magnetite, or obvious K-feldspar, within the illite alteration zone, although there is some 'retrograded' alkali feldspar that was identified in thin section.

The chlorite ±pyrite ±magnetite ±K-feldspar ±biotite alteration assemblage that surrounds the mineralized and illite altered zones at Bayan Khundii are thought to represent a widespread propylitic alteration that may have formed either during the early intrusion-related alteration, or perhaps as a distal alteration assemblage related to the deposition of the low sulphidation Au mineralization and associated illite alteration.

Sulphide Minerals

The majority of the Southwest Prospect area at Bayan Khundii is either devoid or contains only trace modal amounts of sulphide minerals, including pyrite, sphalerite, galena and chalcopyrite. Most drillholes at Bayan Khundii, especially within the intensely illite-altered areas within the Gold Hill-Striker-Midfield-North Midfield zones, contain only trace to minor amounts of disseminated pyrite. Some zones were noted to contain 1-2% pyrite, however, pyrite-bearing zones have low Au concentrations and a general antithetic relationship between pyrite and Au concentration was noted in the holes drilled to date. This relationship is interpreted as reflecting the replacement of pyrite by hematite as part of the low-sulphidation Au mineralizing event.

Petrographic work has identified relict disseminated pyrite that has been mostly replaced by hypogene hematite/specularite and has associated visible Au. This relict pyrite may have been associated with the early high-temperature alteration or perhaps it may have formed during an early stage of the low sulphidation Au event that was then overprinted and replaced by Fe-oxides during late stages of the low-sulphidation alteration/mineralization event.

As noted in Section 9.3.2 Induced Polarization (IP) Surveys, there are several induced polarization (IP) chargeability anomalies at Bayan Khundii that may reflect the presence of disseminated specularite, as noted in some zones intersected in drilling to date, or conversely could be caused by sulphide rich rocks below the current erosional level at Bayan Khundii.

Fe-Oxide Minerals

Hematite, often with associated specularite, is a ubiquitous feature at Bayan Khundii, and was observed in surface outcrop, trenches and in drill core, where it is present as:

Fracture/vein infilling, commonly within very sharp-sided angular fractures or veins that may contain wallrock fragments;

- As central vein infilling and vein margins in comb-textured quartz veins;
- As matrix in quartz-hematite breccias, commonly with angular fragments of illite-quartz altered wall-rock;

- As rare round disseminations that are interpreted as pseudomorphic replacement of early pyrite; and
- Alteration selvages along the margins of fine grained dark grey quartz or chalcedony veins.

In drillhole BKD-01 there are several narrow specularite veinlets (<1-2 mm wide) with wide medium grey alteration selvages (≤2 cm) consisting of intense silicification and illite alteration. The lack of hematite alteration selvages surrounding quartz-hematite veins at Bayan Khundii, where hematite may reside in the central parts of comb-textured veins, or as vein-parallel bands near vein margins, supports a hypogene versus supergene origin for the iron-oxide minerals at Bayan Khundii. The presence of visible Au in some hematite veinlets establishes a genetic relationship between the Au and hematite-forming fluids. Accordingly, hematite is considered to be associated with the intense silica-illite alteration and deposition of low-sulphidation Au mineralization. The presence of hematite (and minor specularite) indicates oxidizing conditions and suggests the mineralizing fluids at Bayan Khundii may have interacted with oxygenated surface (i.e. meteoric) waters.

8. Deposit Types

8.1 Altan Nar

Altan Nar is an intermediate sulphidation epithermal style deposit which has similar characteristics to the carbonate-base metal gold deposits. These characteristics include a moderate Ag:Au value (7-8 at AN), high base metal concentrations, epithermal quartz textures and abundant gangue minerals which are dominated by Ca-Fe-Mn-Mg carbonate minerals. These styles of mineralization have close magmatic relationships, often being associated with porphyry deposits. This style of gold mineralization represents the most prolific style of gold mineralization in the southeast Asia region and includes Kelian, Porgera and Anatok, and elsewhere in the world, Fruta del Norte, Cripple Creek & Montana Tunnels and Rosia Montana and in Mexico five of the world's top silver producers including Penasquito. They are often associated with breccia pipes (diatremes) and can extend vertically for greater than 1 kilometre. The Kelian open pit, for example, is 500 metres deep.

8.2 Bayan Khundii

Several features support a low sulphidation model for the Bayan Khundii mineralization, including: the presence of quartz-adularia-sericite (illite) veins and adularia alteration zones in Au mineralized zones; the low Ag : Au values (0.1->5, avg. ~1) local colloform bands of chalcedony (often with finely disseminated Au), bladed calcite (now pseudomorphed by quartz) textures that indicate boiling; the generally low concentrations of base metals, widespread intense illite-quartz alteration zones; the ubiquitous presence of hypogene hematite as fractures, veins and breccias; and the presence of comb-textured quartz veins and chalcedony, albeit minor in abundance.

Pre-epithermal alteration is present, including chlorite, K-feldspar, biotite and granular quartz with hypersaline inclusions. This alteration assemblage was followed by tourmaline and magnetite along with a muscovite alteration overprint and structurally-controlled advanced argillic alteration and residual quartz alteration. This high-temperature alteration, characteristic of intrusion-centred systems at depths >1 km, was uplifted, eroded and potentially tilted prior to initiation of the subsequent low-sulphidation epithermal system, including the formation of low-temperature illite-quartz alteration and deposition of quartz cement in brecciated structures along with adularia and Au (electrum). The general absence of smectite at Bayan Khundii suggests erosion to at least 150 m depth below the paleo-groundwater table.

Based on the features and discussion above, Bayan Khundii Au±silver mineralization is considered to be a low sulphidation epithermal type Au deposit.

9. Exploration

9.1 Altan Nar

A summary of the activity, including methodologies and results, for the exploration work carried out between March 2010 and February 2018 on the Altan Nar Area is outlined below.

9.1.1 Geological Mapping

Erdene has carried out progressively more detailed and extensive geological mapping on the Tsenkher Nomin exploration license since discovery of the historic workings and associated mineralization at Nomin Tal in the eastern portion of the license in 2010. This work has been principally carried out by Erdene geologists over an area of approximately 50 sq km.

9.1.2 Geochemical Surveys

Erdene carried out a series of geochemical surveys including soil and rock surveys which are detailed below.

9.1.3 Soil Geochemical Survey

All soil surveys were supervised and carried out by Erdene's field geologists in 2011, 2012 and 2014. Because the Project is located within the Gobi region and therefore virtually devoid of organic materials, no A (depleted), or B (enriched) soil horizons exist. Soil samples in the regions therefore consist, for the most part, of residual weathered bedrock along with Aeolian sediments. Samples were taken from shallow hand-dug pits (average depth 25 cm) to minimize Aeolian contamination. Samples were dry sieved in the field with the -2 mm size fraction bagged and sent for analysis. See "Section 11.0 – Sample Preparation, Analyses, and Security" for more details. All sample locations were determined by hand-held GPS devices with a location accuracy of approximately 3 m.

Analysis of samples was carried out at SGS Laboratories in Ulaanbaatar. All samples from 2011 were assayed for Au, Ag, Cu, Pb, Zn, As and Mo. Samples from 2012 were assayed for Au and a suite of 45 elements (SGS Code ICP40B). Samples from 2014 were analyzed for Au and a suite of 33 elements (SGS Code ICP40B-2014). See "Section 11.0 - Sample Preparation, Analyses and Security" for more details.

In 2011, soil sampling was carried out initially on a 400 m square grid with subsequent infill sampling carried out at 200 m and 100 m spacing along similarly spaced lines (i.e. square grid pattern). The initial 2011 soil sampling program identified a wide zone (2 km by 3 km) of anomalous base-metal-in-soil (Pb and Zn) mineralization with coincident gold-in-soil mineralization (Altan Nar Area).

In 2012, an approximately 9 sq.km area was selected for detailed soil sampling with samples taken at 25 m intervals along 100 m spaced E-W lines. Sample analysis included Au and 45 additional elements, including Cu, Pb, Zn, As, Mo and Mn. All of these elements have anomalous signatures coincident with zones of known epithermal mineralization identified through surface mapping and drilling. Maps showing the results for Au, As, Pb, Zn, Cu, Mo and Mn from the 2011-2012 soil geochemical survey over Altan Nar are included as **Figure 9-1** – A through G. The geochemical signature shown on the Altan Nar soil geochemistry maps clearly show an extensive zone of base metal mineralization across the large (~ 1.5 km by 5 km) area of Altan Nar. A significant portion is also covered by coincident Au-Mn-As (and to a lesser extent Mo) anomalies. These results reflect the types of mineralization intersected in drilling.

In Q2 2014, samples were collected at 12.5 m intervals along 50 m spaced infill lines over select prospect areas at Altan Nar. The objective of this detailed soil program was to provide greater definition of gold, base-metal and associated alteration-element soil anomalies.

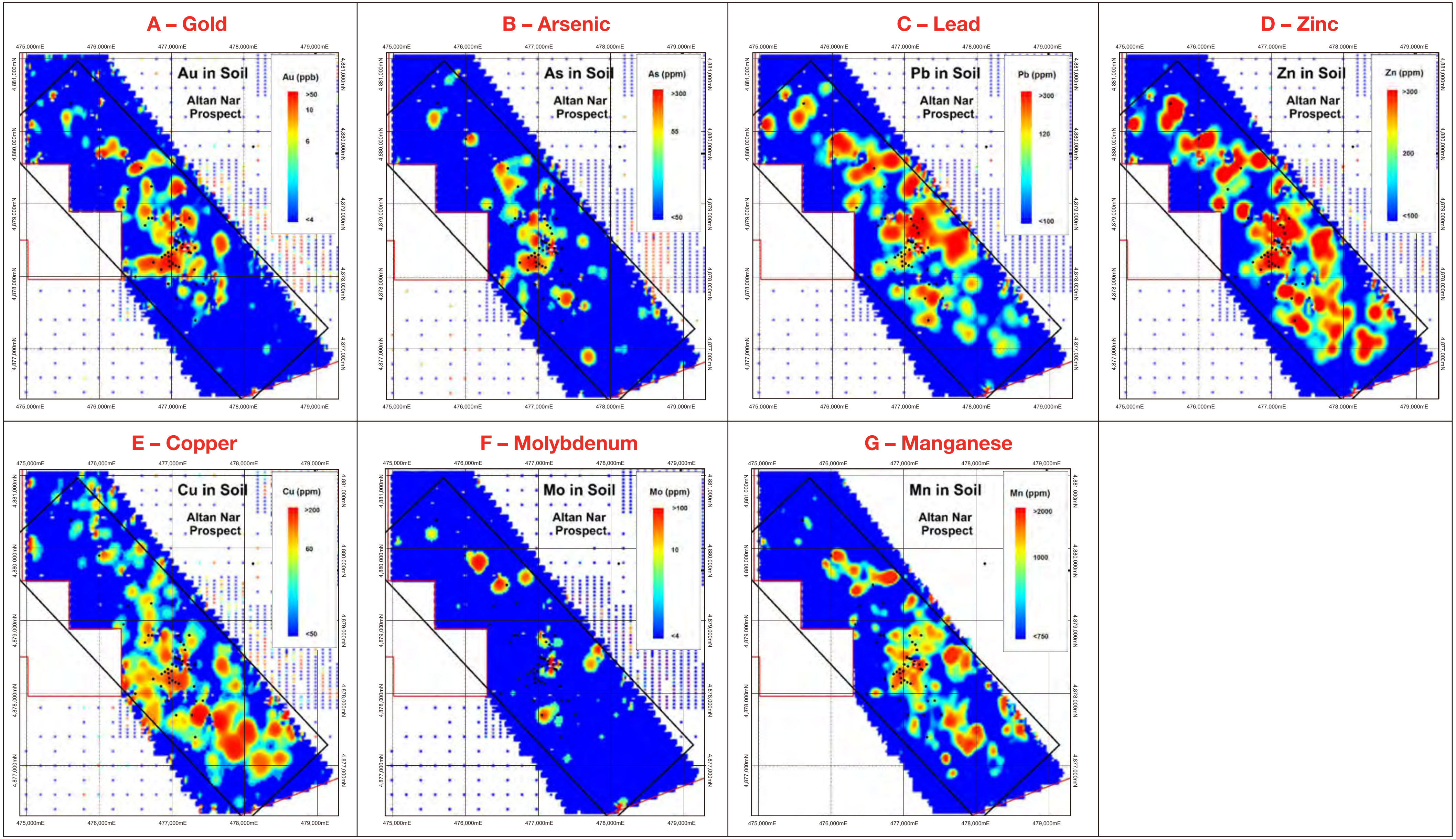
The soil sampling program on the Tsenkher Nomin license has proven to be an effective exploration tool and has resulted in the location of a number of mineralized zones. There is also a correlation between IP gradient array chargeability highs and geochemical anomalies. Geochemical, geophysical and geological data sets have been used to identify a large number of drill and trenching targets, many of which remain untested by drilling.

9.1.4 Rock Geochemical Survey

Rock-chip (outcrop) and rock-grab (float) samples were collected from across the Tsenkher Nomin license as part of the geological mapping and prospecting programs that have been carried out intermittently as work on the property and various prospects has advanced. No grid-based rock sampling programs have been carried out to date although detailed geological mapping has been completed. Results from all rock samples taken from 2009 to 2014 are included herein.

All rock sample locations were determined by hand-held GPS units with approximate 3 m location accuracy. All samples were sent to SGS Laboratory in Ulaanbaatar for analysis. All samples were assayed for Au, Ag, Cu, Pb, Zn, As and Mo. See “Section 10.0 - Sample Preparation, Analyses and Security” for more details.

Graduated bubble plots of each of Au, Ag, As, Mo, Cu, Pb and Zn are presented in **Figure 9-2**. These plots indicate the rock data is similar to soil geochemistry, that is, the mineralization associated with each of the three projects identified to date, Nomin Tal, Altan Nar and Oyut Khundii each have unique geochemical signatures. For example, Nomin Tal has high Cu-Ag-Au values while Altan Nar has high Au-Ag-Pb-Zn (±As-Mo) but low Cu and Oyut Khundii has high Cu and As values. These differences are likely related to either different mineralization styles, or perhaps different modes of emplacement of the mineralization, and may represent metal zonation within a large overall mineralized system.



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SOURCE

Altan Nar Gold Project
(Tsenkher Nomin Exploration License),
Bayankhongor Aimag, Southwest Mongolia,
National Instrument 43-101 Technical Report,
Erdene Resource Development Corporation,
J. C. (Chris) Cowan, MSc, Peng,
March 10, 2014

LEGEND

N

0 1 2
km

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CLIENT

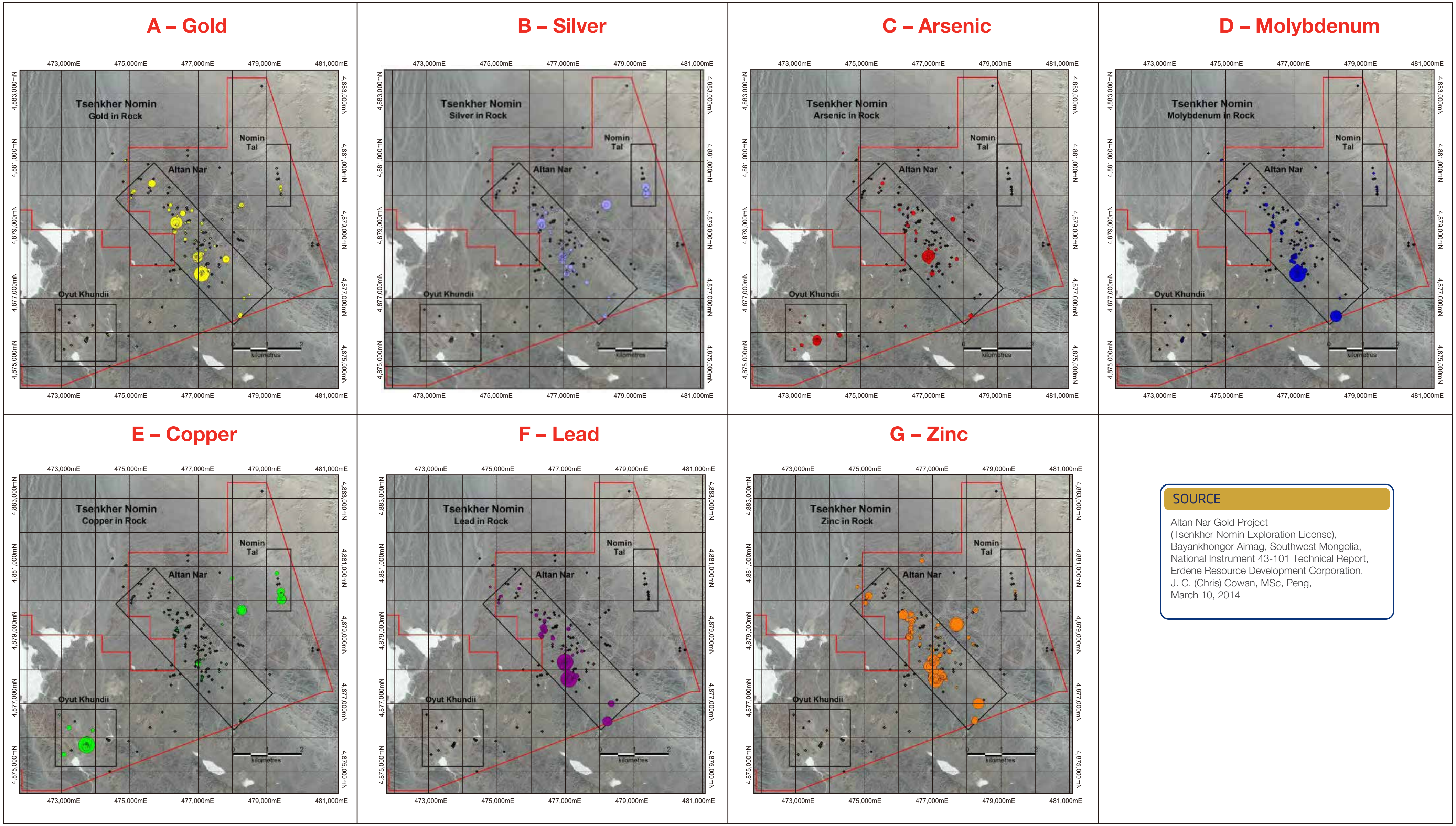
ERDENE
RESOURCE DEVELOPMENT

PROJECT

NAME
NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING
2011 and 2012 Soil Geochemistry - Altan Nar Prospect

FIGURE No.	PROJECT No.	Date
9-1	ADV-MN-00161	January 2019



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Altan Nar Gold Project
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Bayankhongor Aimag, Southwest Mongolia,
National Instrument 43-101 Technical Report,
Erdene Resource Development Corporation,
J. C. (Chris) Cowan, MSc, Peng,
March 10, 2014

RPMGLOBAL

LEGEND

◆ Rock sample location

Au in Rock (ppb)	Ag in Rock (ppm)	Cu in Rock (ppm)	Pb in Rock (ppm)	Zn in Rock (ppm)	Mo in Rock (ppm)	As in Rock (ppm)
20,000	100	50,000	50,000	15,000	1,000	5,000
10,000	50	25,000	25,000	7,500	500	2,500
2,000	10	5,000	5,000	1,500	100	500

N

0 2 4
km

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CLIENT

ERDENE
RESOURCE DEVELOPMENT

PROJECT

NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING: Rock Geochemistry

FIGURE No.	PROJECT No.	Date
9-2	ADV-MN-00161	January 2019

9.1.5 Geophysical Surveys

Magnetic Survey

A regional magnetic survey (100 m line spacing) was completed over a 41 km2 area covering most of the Tsenkher Nomin exploration license (2010-2012). In addition, two areas have been surveyed in more detail, i.e closer line spacing. Nomin Tal (1.4 km2 area) and Altan Nar (14.5 km2 area) prospects was surveyed at 25m line spacing in 2011. In Q2 2017, the high-resolution ground magnetic survey was carried out over Altan Nar area, using 10 metre line spacing, with a total of 1,000 survey line kilometres. All of the magnetic surveys have been conducted by Erdenyn Erel LLC, a Mongolian geophysical consulting firm based in Ulaanbaatar. All data was processed by Chet Lide of Zonge Geosciences Inc. of Sparks NV, USA. Mr. Lide compiled all magnetic datasets and produced a series of magnetic map products for each of the surveys, including: 1) Total Magnetic Field; 2) Calculated First Vertical Derivative; 3) Total Field, Reduced to Magnetic North Pole (RTP); 4) Analytical Signal of the Total Magnetic Field. For the regional scale magnetic survey Mr Lide also produced maps for; 5) Pseudo-Gravity of Total Magnetic Field; and 6) Pseudo-Gravity Horizontal Gradient Magnitude. **Figure 9-3** show the RTP magnetic survey results for the Tsenkher Nomin license and shows the location of the various survey outlined above.

The results of the regional magnetic survey show distinct magnetic signatures for the main lithological units within the Tsenkher Nomin license area. The large granite pluton on the eastern edge of the license area has a low magnetic signature and shows the sharp, steeply dipping (fault?) contact with the higher magnetic response Sequence A volcanic unit to the west. The central portion of the magnetic survey area (Altan Nar) is underlain by Sequence B which have a magnetic response that is generally lower than for Sequence A and lacks linear orientations, which supports the shallow-dip (i.e. 20-30o) interpretation for these rocks. The western portion of the magnetic survey is underlain by trachy-andesite, pervasive white mica altered rhyolite and sub-volcanic rhyodacite. The magnetic high located just north of the Oyut Khundii project may represent a buried intrusive and the magnetic signatures of the lithologies to the north of this feature appear to wrap-around the central magnetic high.

The 25m detailed magnetic survey carried out over the Altan Nar and Nomin Tal projects has been helpful in identifying possible structural features and lithologic contacts and has been incorporated into the dataset used to interpret and extrapolate the results from the drilling program. There appears to be a correlation between magnetic low features and zones of epithermal mineralization, which is supported by petrographic studies which show evidence of widespread magnetite destruction (‘martitization’) in the host lithologies. This feature is thought to reflect widespread epithermal fluid alteration; however, this relationship needs to be investigated further.

The 2017 high-resolution ground magnetic survey successfully outlined the known mineralized zones and associated white-mica alteration zones (magnetic lows) in much greater detail than previously available. For example, areas which were previously defined as containing broad magnetic low features were shown to contain multiple linear zones with low magnetic response, which reflect structurally-controlled zones of white mica alteration where primary magnetite in the host andesite rocks was altered (‘martitized’), with intervening high magnetic zones of weakly to unaltered andesite. The increased detail in the high-resolution magnetic survey has been and will continue to be used, in conjunction with soil and rock chip geochemistry and IP chargeability data, to defined drill targets.

Induced Polarization (IP) Surveys

To date, both IP dipole-dipole (“Dp-Dp”) and IP gradient array surveys have been completed on the Tsenkher Nomin property over, and in the vicinity of, the Nomin Tal and Altan Nar areas. All of the IP surveys were carried out by Erdenyn Erel LLC, a Mongolian geophysical contractor based in Ulaanbaatar. All of the IP surveys were also conducted under the direction of geophysicist Chet Lide of Zonge Geosciences Inc. of Sparks NV, USA, who also completed the post-acquisition data processing, quality control and interpretation.

Dipole-Dipole Surveys

A series of 31, east-west oriented, IP Dp-Dp line, spaced from 100 m to 400 m apart, have been completed with a 50m dipole spacing for a total of 55 line-km. These lines were run at four different times, October 2010, August 2011, October 2011 and April 2014. In addition, in Q2 2017 a six-line induced polarization (IP) dipole-dipole survey was completed with 150-metre dipole spacing. The survey lines were oriented at 135 degrees and were centred over the DZ, and were 2,850 metre in length, for a total of 17.1 line-km. The objective of the IP surveys was to identify any significant chargeability anomalies that could represent sulphide mineralization. **Figure 9-4** shows the location, spacing and extent of the various IP Dp-Dp surveys carried out to so far.

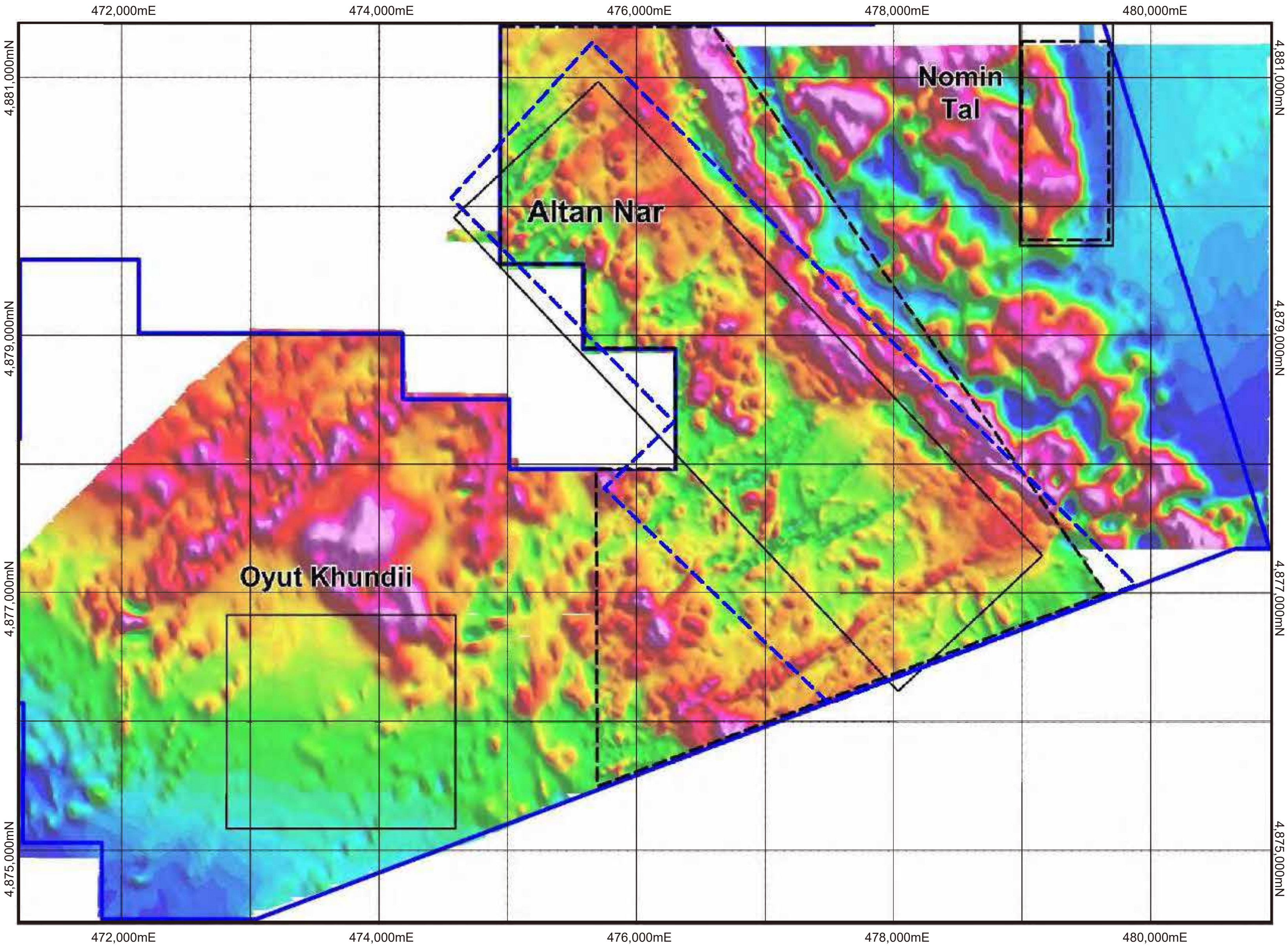
High chargeability anomalism has been an important guide, in conjunction with rock and soil geochemical anomalies and magnetic data to identify drill targets. The 2011 IP gradient-array survey (see below) identified a series of high chargeability anomalies, up to 190 m wide that are interpreted as representing broad zones of sulphide mineralization. The IP Dp-Dp survey results show the presence of multiple, locally intense, chargeability high anomalies, extending from near-surface to depth, often continuing below the IP survey detection limit of approximately 150 m.

The 2017 IP survey used 150-metre dipole spacing and therefore provided data to approximately 450 metre depth (i.e. 3 x dipole spacing) which was considerably deeper than the 150-metre depth for data from previous surveys which used a 50-metre dipole spacing. The purpose of this survey was to provide information for possible zones of disseminated sulphide at depths greater than 150 metres. This survey clearly defined a major structural/lithological break at the Discovery Zone where tuffaceous rocks to the south of the DZ have a much higher IP resistivity response than the andesite flows north of the DZ. A broad zone (1-2 km wide) of moderate coincident IP chargeability and high IP resistivity response is evident in the southern part of the survey, to the southeast of the DZ. In addition, several smaller (100-200 m wide) coincident IP resistivity and chargeability anomalies were noted in the north-western part of the survey near the Southbow target and between the Riverside and Union South target areas. Several of these anomalies remain untested by drilling.

Gradient Array Survey

In addition to the IP Dp-Dp surveys, an IP gradient array survey was completed in 2011 over both the Nomin Tal and Altan Nar prospects for a total coverage area of 6.83 km2. In 2012, the gradient array survey at Altan Nar was expanded, for a total area of coverage at Altan Nar of 16 km2. Line spacing for the gradient array surveys was 100m. The results of the IP gradient array survey for Altan Nar are shown in **Figure 9-5** (chargeability) and **Figure 9-6** (resistivity).

The IP gradient-array survey corresponds to an area of anomalous soil geochemistry at Altan Nar. Results from the IP gradient-array survey identified a series of high chargeability anomalies, up to 190 m wide that are interpreted as representing broad zones of sulphide mineralization. The morphology of these IP anomalies, coupled with the geometry of the lineaments evident on satellite imagery, suggests the sulphide mineralization may intensify within dilation zones along a NNW trending dextral fault system over a distance of approximately 5 km. A review of drill and trenching data to date shows a strong, positive correlation between mineralized intersections and IP gradient array chargeability highs.



SOURCE

Altan Nar Gold Project
(Tsenkher Nomin Exploration License),
Bayankhongor Aimag, Southwest Mongolia,
National Instrument 43-101 Technical Report,
Erdene Resource Development Corporation,
J. C. (Chris) Cowan, MSc, Peng,
March 10, 2014

LEGEND

Licence Boundary

Area of 25m Coverage

Outline of 10m spaced Magnetic Survey Line Orientation SE-NW

N

0 1 2 km

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ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

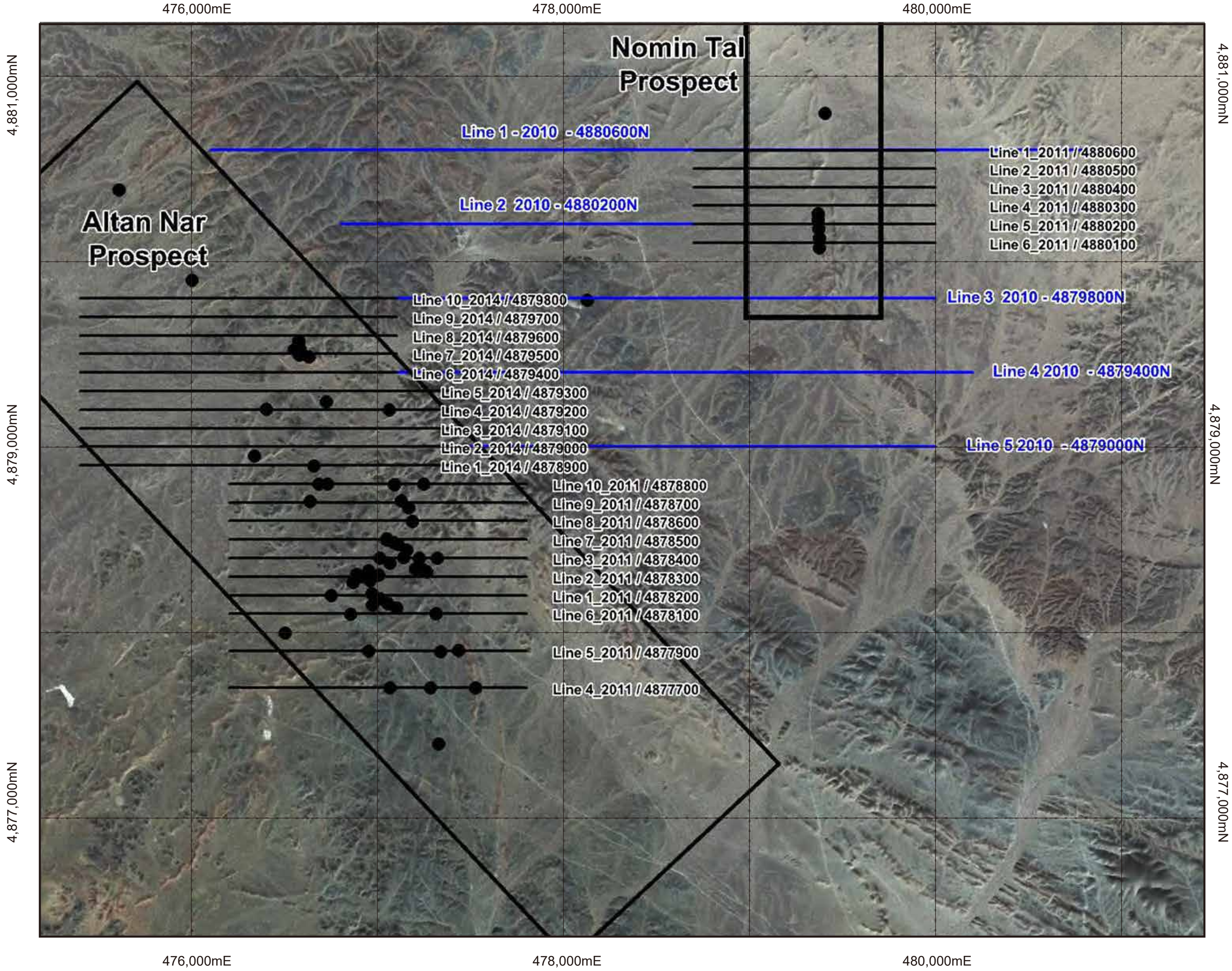
DRAWING: Magnetic Survey Coverage, Tsenkher Nomin license (showing RTP)

FIGURE No. 9-3

PROJECT No. ADV-MN-00161

Date January 2019

RPMGLOBAL



SOURCE

Provided by ERD

LEGEND

2010 Dipole-Dipole Line

2011 Dipole-Dipole Line

N

0 500 1000 m

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CLIENT

ERDENE RESOURCE DEVELOPMENT

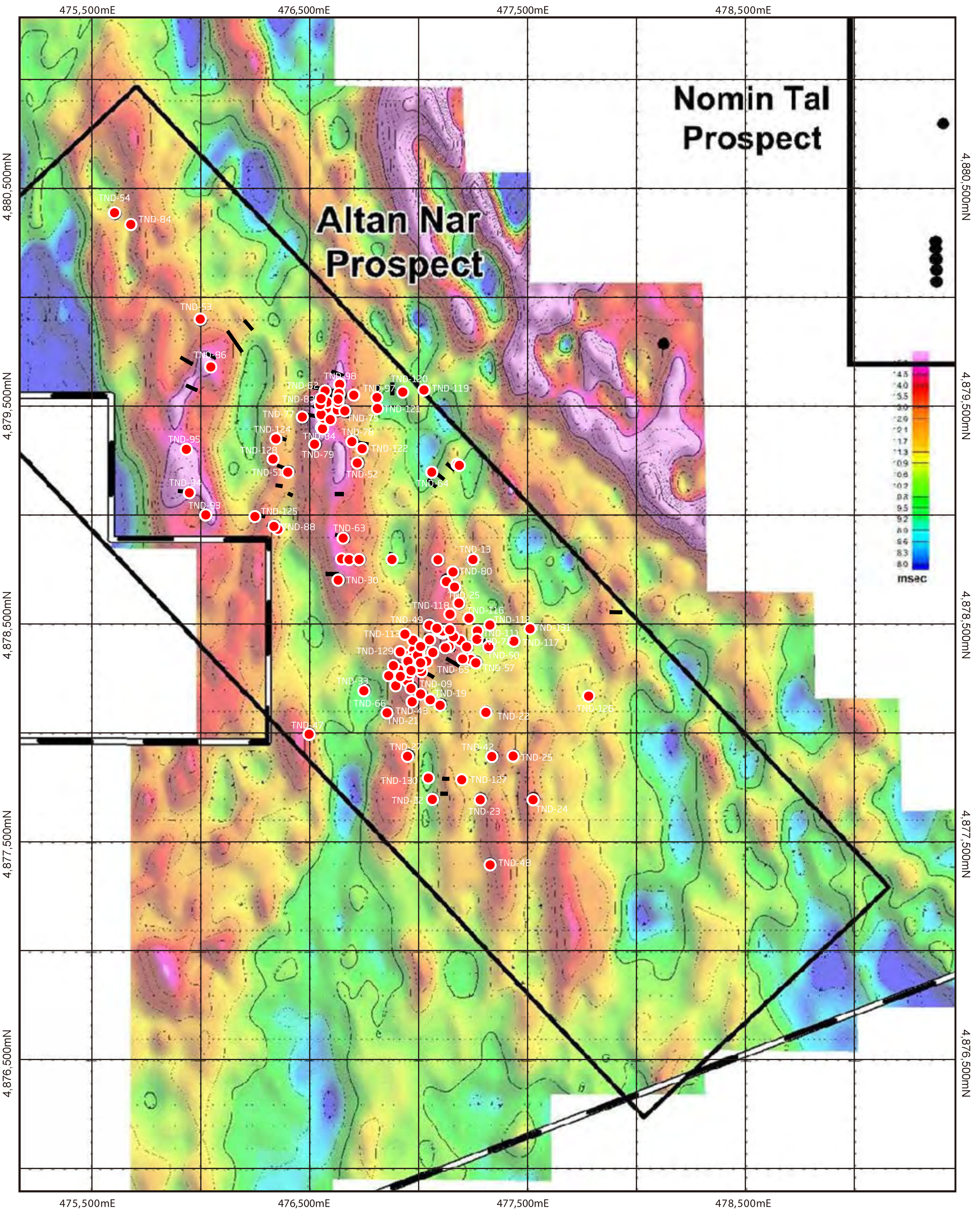
PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING IP Dipole-Dipole (2010 & 2011) Coverage, Tsenkher Nomin License

FIGURE No.	PROJECT No.	Date
9-4	ADV-MN-00161	January 2019

RPMGLOBAL



SOURCE

Provided by ERD

RPMGLOBAL

LEGEND	
Drill hole	Trench lines

N

0 500 1000 m

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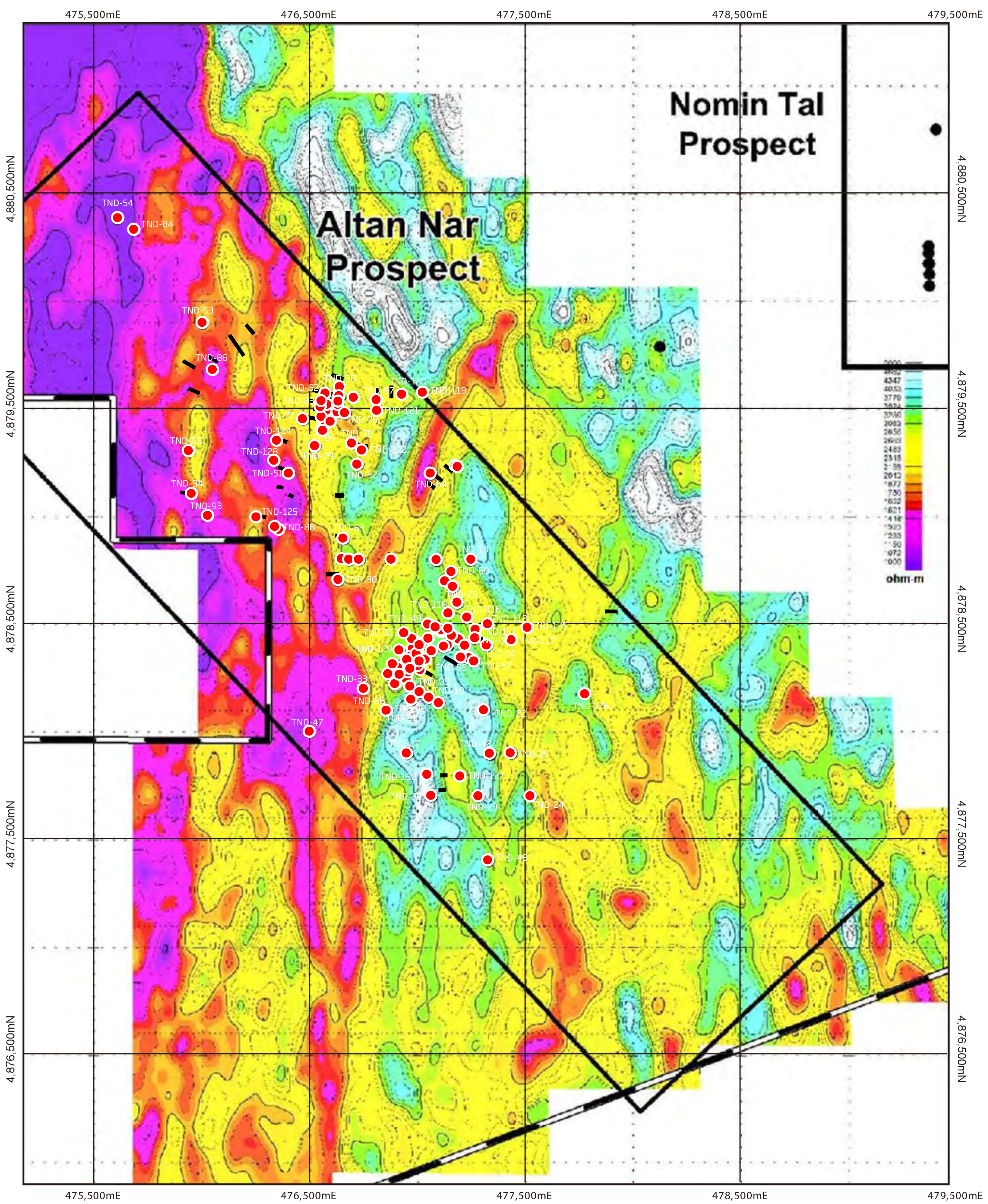
ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING IP Gradient Array Chargeability (2011-2012) with location of drill holes

FIGURE No.	PROJECT No.	Date
9-5	ADV-MN-00161	January 2019



SOURCE

Altan Nar Gold Project (Tsenkher Nomin Exploration License), Bayankhongor Aimag, Southwest Mongolia, National Instrument 43-101 Technical Report, Erdene Resource Development Corporation, J. C. (Chris) Cowan, MSc, Peng, March 10, 2014

RPMGLOBAL

LEGEND	CLIENT	PROJECT
Drill hole — Trench lines; N; 0 500 1000 m	ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project
		DRAWING: IP Gradient Array Resistivity (2011-2012) with location of drill holes.
		FIGURE No. 9-6 · PROJECT No. ADV-MN-00161 · Date January 2019

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Trenching Program

Erdene has carried out a series of trenching programs across the Altan Nar Area (Oct. 2013, Sept.2014 and Aug 2015) that included 42 trenches, totalling 3,151 m and ranging in length from 14 m to 202 m. The principal objectives of the trenching programs were to further define the near-surface mineralization identified to date, improve the understanding of the gold mineralized system and prioritize areas for the next phase of delineation drilling (refer **Figure 9-7**).

Trenching was carried using an excavator (Hyundai 290) supplied and operated by Falcon Drilling. Trench locations were selected by Erdene's exploration team, oriented normal to the projected trend of mineralization. Trenches were excavated to a depth of between 1 and 3m. Trench samples were collected at 1m or 2m intervals, as determined by the senior project geologist, based on the lithology and mineralization. Samples were chipped from the bottom of the trenches and care was taken to ensure each sample was representative of the entire interval being sampled. Representative hand samples for each interval were also collected for reference.

All trench samples were organized into batches of 30 and included a commercially prepared certified reference standard and an analytical blank. Each batch was stored in the field camp in sealed bags. Sample batches were periodically shipped directly to SGS in Ulaanbaatar via Erdene's logistical contractor, Monrud Co. Ltd.

All trench samples from 2013 and select samples from 2014 and 2015 were analysed for gold (fire assay) and a multi-element suite (45 elements in 2013, 33 elements in 2014 and 2015) using 4 acid digestions with ICP-OES finish (SGS analytical code ICP40B). For details of analytical protocols and detection limits please refer to "Section 11 – Sample Preparation, Analysis and Security".

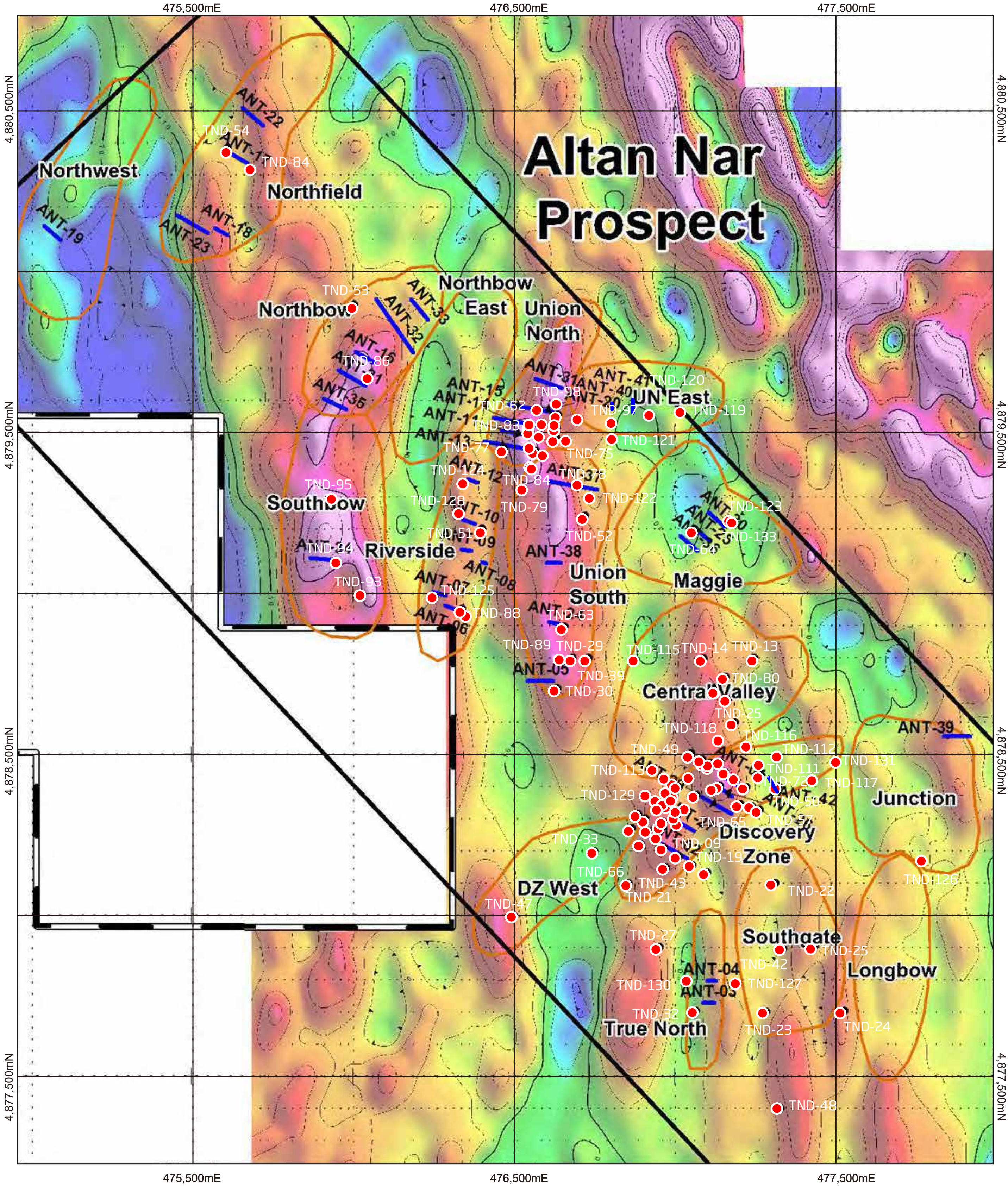
The trenching programs include six trenches within the DZ and six trenches at Union North. Also, an additional 30 trenches were excavated to test eleven targets across a 5.6 km length of the Altan Nar Area (refer **Figure 9-7**).

Outside the DZ and Union North, twelve of the prospects have been tested by scout drill holes, so far, and have intersected anomalous gold-silver-polymetallic mineralization (Northfield, Northbow, Southbow, Riverside, Union South, Union East, Maggie, Central Valley, DZ west, True North, Southgate and Junction). Resource modelling has been completed on nine of these prospects. The remaining eight target areas have had very limited or no scout drilling but have coincident geochemical anomalies (soil and/or rock) and geophysical anomalies (IP gradient chargeability highs and/or magnetic lows).

The trenching program met the planned objectives, to further define the near-surface mineralization identified to date, improve the understanding of the gold mineralized system and prioritize new areas for the next phase of exploration.

The surface expression of the Altan Nar area is one of low relief with thin Quaternary cover over much of the area, interspersed with low rolling hills. The intense weathering of the altered, sulphide-rich, stockwork breccia zones leaves little surface expression of the targets and little indication of their size other than remnant quartz rubble. As a result, the extent of alteration and mineralization observed in the trenches commonly exceeded that indicated by surface expression. A combination of mapping, geochemical and geophysical surveys has been successful in guiding exploration to date; however, results from the trenching program would suggest that even the subtlest of anomalies may indicate significant mineralization under shallow cover.

The trench results, in conjunction with previous drill results, confirm the potential for a series of gold-silver-lead-zinc mineralized systems at Altan Nar outside of the DZ and Union North.



SOURCE

Altan Nar Gold Project
provided by ERD

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LEGEND

Drill hole — Trench lines

0 250 500 m

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ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING: Altan Nar and trench location map on IP gradient chargeability

FIGURE No.	PROJECT No.	Date
9-7	ADV-MN-00161	January 2019

9.2 Bayan Khundii

While Erdene has held the Khundii exploration license since 2010, and has carried out license wide geological mapping, soil geochemical sampling and magnetic surveys, detailed work between 2010 and 2014 was focused on the Altan Arrow property in the north central portion of the property (see Section 6 History for further details). In mid-2015, Erdene geologists identified, through rock chip sampling, new high-grade Au mineralization associated with a zone of intensely altered (silica and sericite) volcanic lithologies located ~3.5 km south of Altan Arrow. This area, referred to as the Bayan Khundii (rich valley) project has been the focus of the 2015 to 2018 exploration programs. The following sections provide a summary of the activity, including methodologies and results, for the exploration work carried out on the Bayan Khundii area to date.

9.2.1 Geological Mapping

A detailed geological mapping programhas been completed over the 2km by 2 km Bayan Khundii area. This work has been principally carried out by G. Bat-Erdene, one of Erdene's senior exploration geologists, with the assistance of other Erdene geologists. A detailed description of the geology at Bayan Khundii is provided in Section 7.4 – Bayan Khundii Geology. In addition, more detailed mapping of the entire Khundii license was carried out in 2017 resulting in the greater understanding of the distribution of lithological units and zone of alteration across the Khundii license.

9.2.2 Geochemical Surveys

Erdene carried out a series of geochemical surveys including rock and soil surveys which are detailed below.

9.2.3 Rock Geochemical Survey

In 2015, rock-chip (outcrop) and rock-grab (float) samples were collected from across the Bayan Khundii area as part of the geological mapping and prospecting programs. No grid-based rock sampling programs have been carried out to date.

All rock sample locations were determined by hand-held GPS units with approximately 3 m location accuracy. All samples were sent to SGS Laboratory in Ulaanbaatar for analysis via fire assay along with a 32-element suite (ICP). See "Section 11.0 - Sample Preparation, Analyses and Security" for more details.

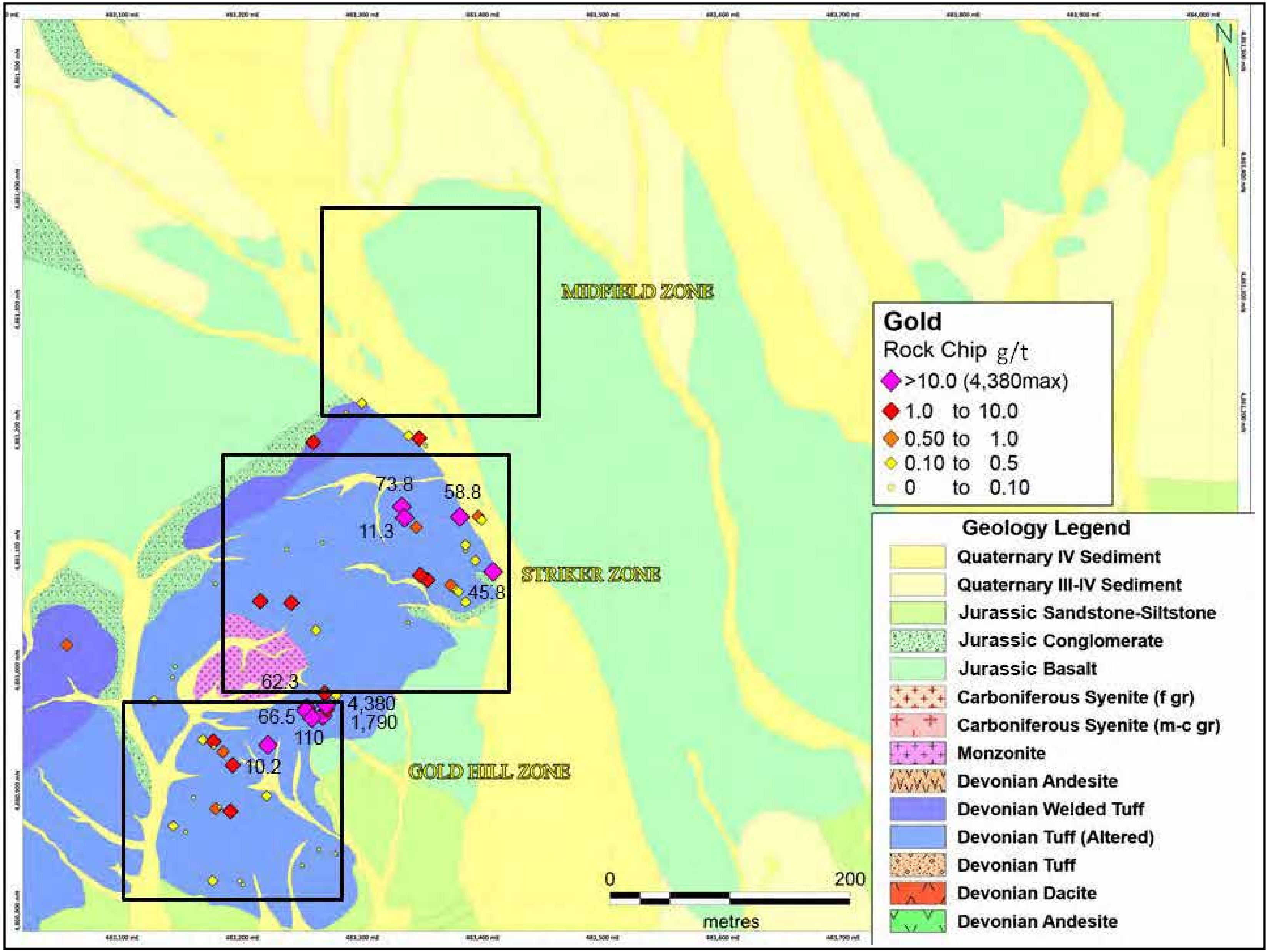
Across the Southwest prospect area, a total of 78 rock chip and grab samples from surface outcrop and sub-crop, and channel samples were collected, principally from quartz veins within multiple mineralized areas, with the majority returning highly anomalous values, and over 20% of the samples returning values in excess of 3.0 g/t Au and up to 4,380 g/t Au. A map showing the sample locations and graduated Au grades symbols has been included for reference (refer to **Figure 9-8**).

While the highest grade Au mineralization identified to date is located within the Southwest Prospect, an area located approximately 700 m to the northeast, and aptly named the Northeast Prospect (300 m x 300 m), returned numerous anomalous Au assays (>200 ppb) from mineralized rock chip samples (up to 4.1 g/t Au), and two rock grab samples (from float material) collected a further 500 m to the northeast (NE Extension) returned Au assay values of 7.0 g/t and 0.4 g/t Au (refer to **Figure 9-9**).

9.2.4 Soil Geochemical Sampling

A grid based soil sampling program was carried out in April and May 2016. The entire area on the Khundii license, from Bayan Khundii to Altan Arrow (an area approximately 4 km by 6 km) was sampled at a 200 m spacing (infilling from a previous 400 m spaced soil sampling grid). The Bayan Khundii area (approximately 2 km x 2 km) was covered by a 100 m grid and areas of altered pyroclastic rocks exposed on surface, namely the Southwest and Northeast prospect areas, covered by 25 m spaced grid sampling.

A total of 1,088 samples were collected. All samples were sent to SGS Laboratory in Ulaanbaatar for analysis. All samples were assayed for Au (fire assay) and a 32-element suite (ICP). See "Section 10.0 - Sample Preparation, Analyses and Security" for more details. Gold assay results ranged from below detection limit (1 ppb Au) to a high of 1,570 ppb Au (1.6 g/t). **Figure 9-10** shows the distribution of the anomalous soil geochemical results, which are mainly focused in and around the two areas of exposed, altered, Devonian pyroclastic rocks at the Southwest and Northeast prospects.



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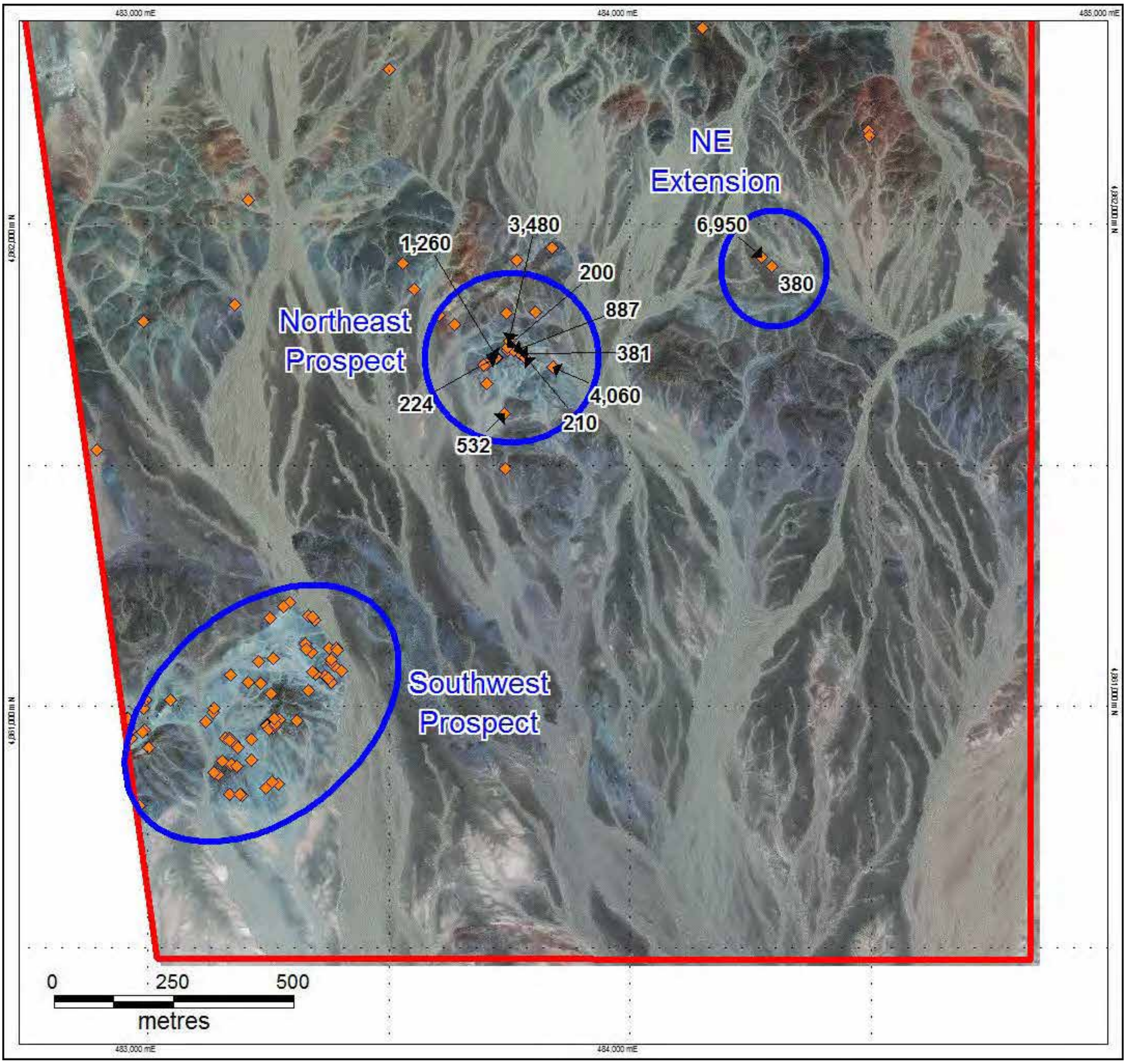
RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING
Southwest Prospect area geology map with location of 78 rock chip and rock grab samples, with labels for gold assay values 10 gt Au

FIGURE No.	PROJECT No.	Date
9-8	ADV-MN-00161	January 2019



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RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING Gold values (ppb) for rock chip and rock grab samples from the Northeast and NE Extension Prospect areas with labels for gold assay values >200 ppb

FIGURE No.	PROJECT No.	Date
9-9	ADV-MN-00161	January 2019

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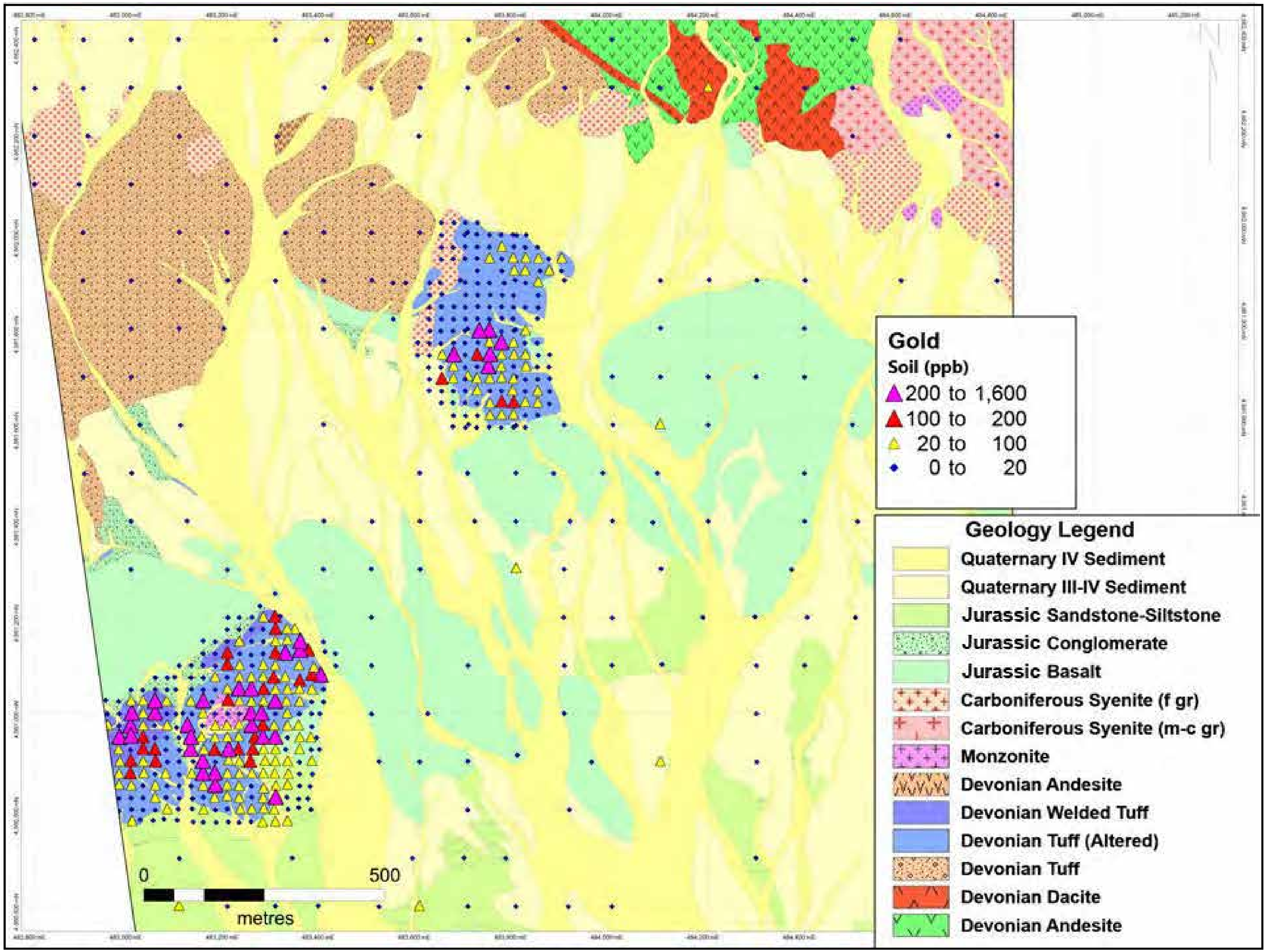

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ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING Soil Geochemistry Results for Gold

FIGURE No.	PROJECT No.	Date
9-10	ADV-MN-00161	January 2019

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9.2.5 Geophysical Surveys

Magnetic Survey

In 2012, a license wide magnetic survey (100 m line spacing) was completed over a 28 sq.km area covering most of the Khundii exploration license. In October 2015, a detailed (25 m line spacing), magnetic survey was carried out over the Bayan Khundii area (1.7 km by 1.8 km). In June 2017, the area of the magnetic survey was expanded to cover an area of 2.05 km by 1.8 km. All of the magnetic surveys have been conducted by Erdenyn Erel LLC, a Mongolian geophysical consulting firm based in Ulaanbaatar.

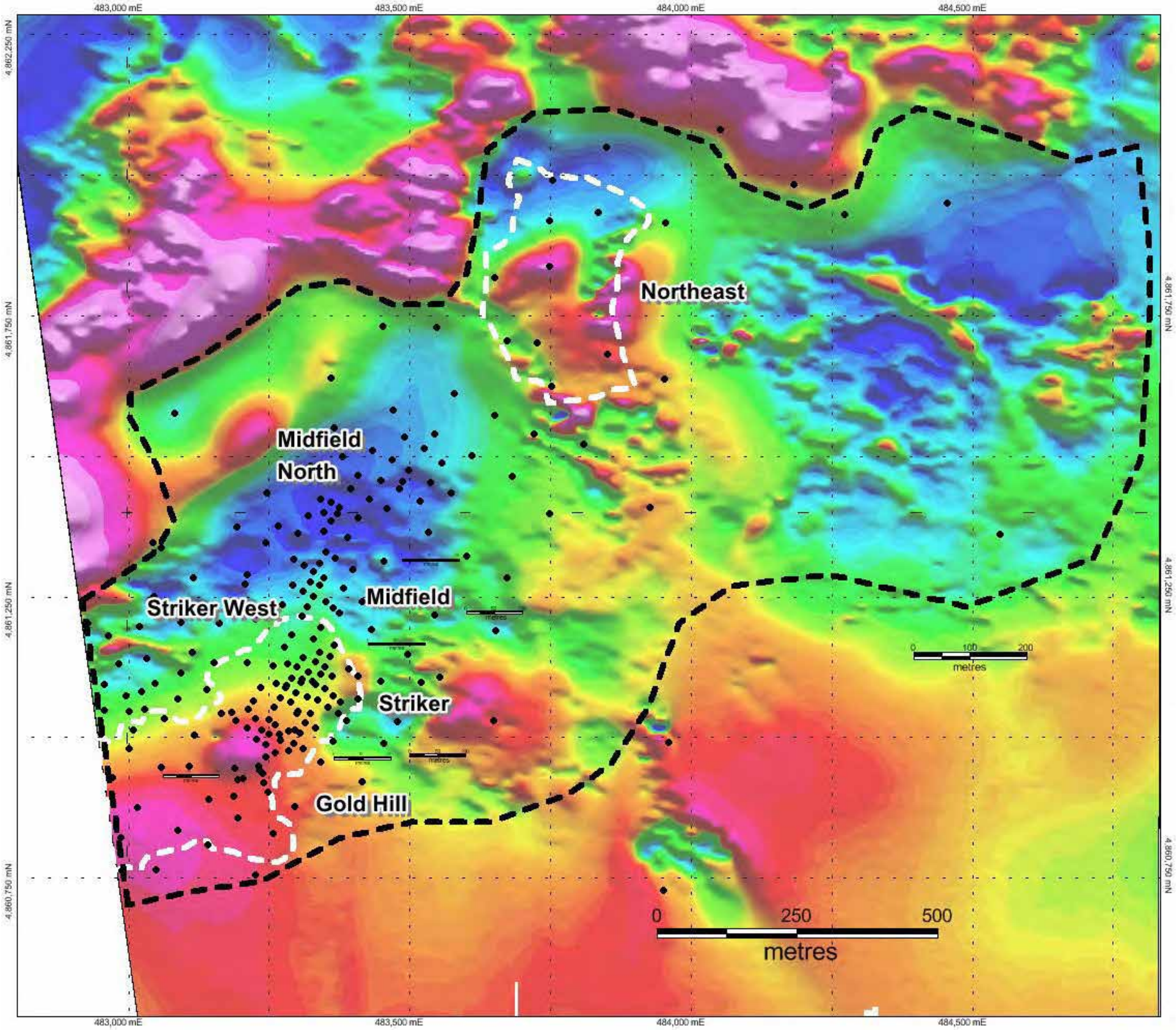
Data from the detailed magnetic survey was processed, including quality control analysis, by geophysicist Chet Lide of Zonge International Inc. of Reno NV, USA. Mr. Lide compiled all magnetic datasets and produced the following products for the Bayan Khundii map area: 1) Total Magnetic Intensity, Reduced to North Magnetic Pole (RTP), (UC2 and UC10); 2) Calculated First Vertical Derivative of the RTP-TMI (UC10 and UC20); 3) Tilt Derivative of the RTP TMI (UC3); 4) Analytical Signal of the Total Magnetic Field (UC2); 5) Pseudogravity Transform of the Total Magnetic Intensity; and 6) Horizontal Gradient Magnitude of the Pseudogravity.

The analytical signal of the total magnetic field provides the magnetic response for near-surface rock units and outlines the distribution of the Jurassic basalt. In contrast, other magnetic products including Reduced to Pole (RTP), 1st Derivative RTP, and Pseudo-gravity provide magnetic response for at-depth rock units.

Gold mineralization at Bayan Khundii is associated with intensely altered (silica-illite) Devonian pyroclastic lithologies. Magnetic susceptibility measurements from drill core have demonstrated that these units have a low magnetic response, interpreted as reflecting the destruction of primary magmatic magnetite present in unaltered pyroclastic lithologies.

Low magnetic response, or ‘quiet zones’ in the Bayan Khundii area are interpreted as reflecting areas of magnetite destruction from hydrothermal alteration. **Figure 9-11** shows the RTP (UC10) magnetic response for the Bayan Khundii area and shows the locations of the known zone of mineralization, Gold Hill, Striker, Midfield, North Midfield, West Striker and Northeast prospects. A broad zone of low magnetic response is outlined (black dashed line) in **Figure 9-11**, measures approximately 1.8 km by 1 km and reflects the extent of the exploration target area at Bayan Khundii. In addition, the outline of the intensely altered Devonian pyroclastic units, as defined by surface mapping, is shown with white dashed lines.

Several smaller areas of moderate to higher magnetic response are observed within the broader low-response area. These have been interpreted, based on results from drilling and geological mapping, as most likely related to post mineral intrusions (monzonite) near Gold Hill, east of Striker and in the southern part of Northeast prospect; and younger Jurassic volcanic (basalt) unit, located south-southeast of the Northeast prospect, that unconformably overly the Devonian lithologies (possibly masking underlying altered Devonian lithologies) (see **Figure 9-11**).



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DRAWING Reduced to pole (RTP-UC 10) magnetic response for the Bayan Khundii area

FIGURE No.	PROJECT No.	Date
9-11	ADV-MN-00161	January 2019

Induced Polarization (IP) Surveys

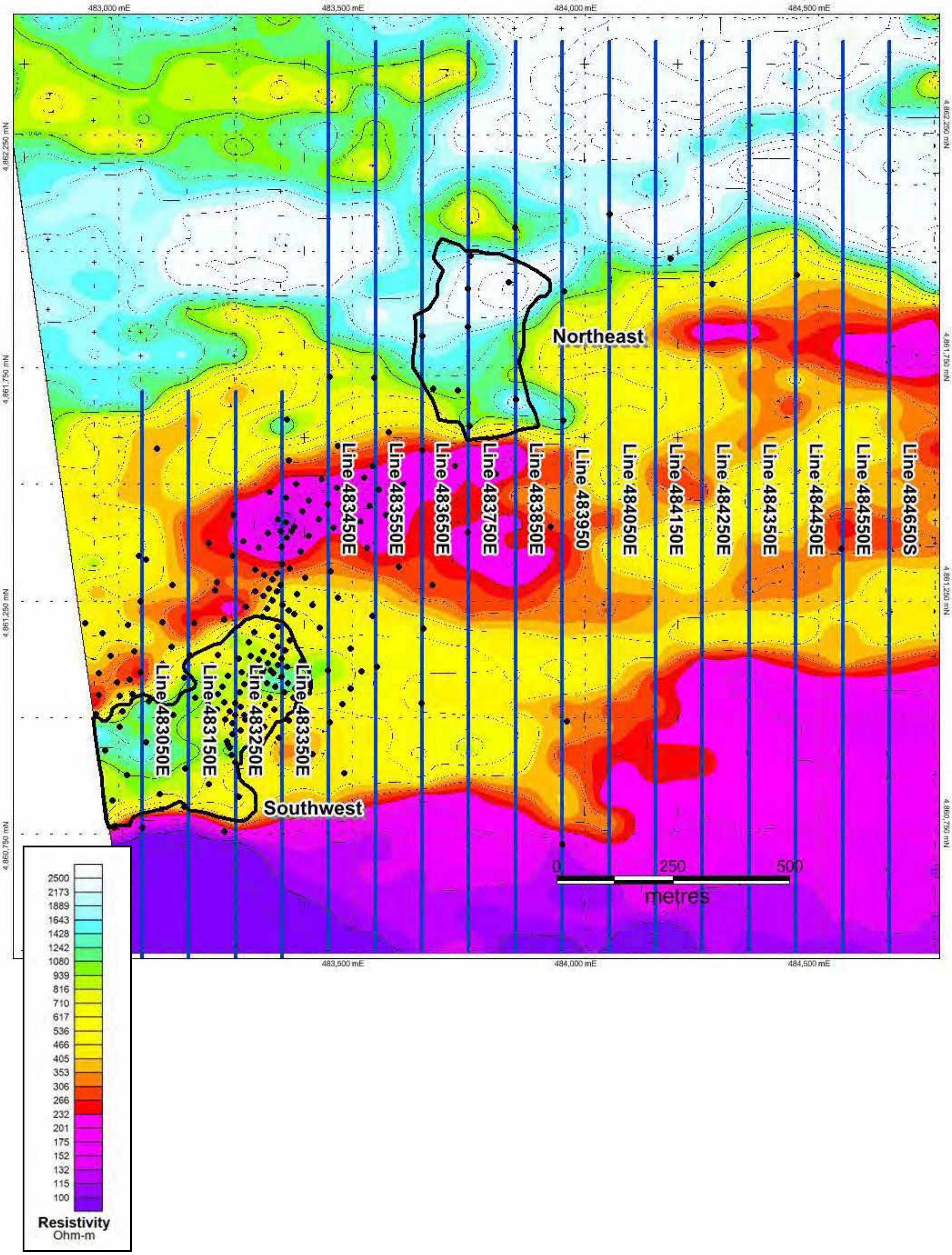
Both IP gradient array and IP dipole-dipole ("Dp-Dp") surveys have been completed on the Bayan Khundii. All of the IP surveys were carried out by Erdenyn Erel LLC, a Mongolian geophysical contractor based in Ulaanbaatar. The work was performed using Zonge Universal IP/R equipment and supporting equipment (generator, cables, electrodes etc). The surveys were conducted under the direction of geophysicist Chet Lide of Zonge International Inc. of Reno NV, USA, who also completed all of the post-acquisition data processing, quality control and interpretation. The surveys were conducted in November 2015 and April-May 2016.

Gradient Array Survey

The IP gradient array survey was completed over a 2 km by 2 km area. Survey lines were oriented N-S and spaced at 100 m intervals. Plots of the IP gradient array results for Bayan Khundii are shown in **Figure 9-12** (resistivity) and **Figure 9-13** (chargeability).

Gradient array induced polarization (IP) data show a correlation between the intense alteration zone at the Southwest and Northeast prospects (outlined on **Figure 9-13**) and a positive resistivity response that is interpreted as reflecting the intense silicification of host volcanic rocks. The transition from low to high IP resistivity response (red-pink-purple) along the southern margin of the Southwest prospect and between the Southwest and Northeast prospects reflects the mapped Jurassic volcanic and sedimentary units that unconformably overlie the strongly altered (quartz-illite) Devonian pyroclastic units mapped at surface. The high resistivity responses in the northern third of the survey area correspond to an area in and around the Northeast prospect where limited work has been carried out to date and much of this area has little or no outcrop. Additional work will be required to determine the reason for the high resistivity response in this area.

The plot of IP gradient array chargeability data for the Bayan Khundii area indicates a moderate intensity, positive chargeability anomaly (≤ 9 mSec) that corresponds to the Southwest Prospect and has a similar size and orientation as the resistivity data described above. As noted in Section 7.5 Mineralization, there are very few sulphide minerals observed either at surface or in drill core. Specularite has been documented to be a weak charge source for IP chargeability surveys. Specularite commonly accompanies hematite in veins, however, is also present as fine disseminations within altered host rocks and is considered a possible source for the chargeability anomalies. Similarly, clay minerals that are present throughout the alteration zone may also provide a charge source at Bayan Khundii. The moderate chargeability responses over the mineralized and altered rocks in the Southwest Prospect are believed to be related to either specularite or possibly clay minerals. There is a stronger IP chargeability response associated with the Northeast Prospect. This is interpreted to reflective of an increase is sulphide content (pyrite) observed in limited drilling in this area.



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IP Gradient Array Resistivity plot for the Bayan Khundii project area showing the locations of outcropping, altered Devonian pyroclastic units (black outline).

N-S oriented Dipole-Dipole survey lines show the location of the inversion sections

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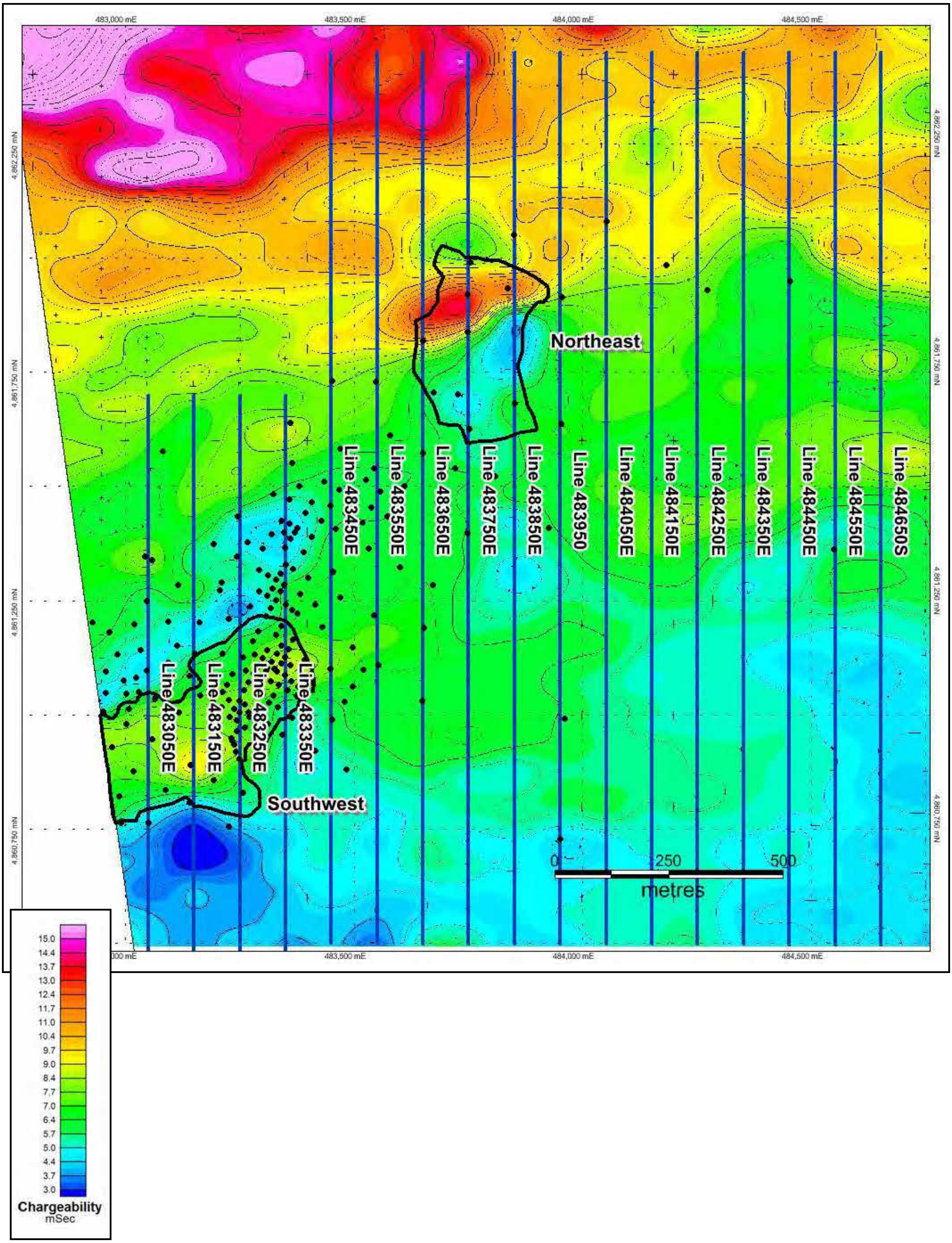
DRAWING IP Gradient Array Resistivity plot for the Bayan Khundii Area

FIGURE No.	PROJECT No.	Date
9-12	ADV-MN-00161	January 2019



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Area showing the locations of outcropping, altered, Devonian pyroclastic units

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DRAWING IP Gradient Array Chargeability plot for the Bayan Khundii project

FIGURE No.	PROJECT No.	Date
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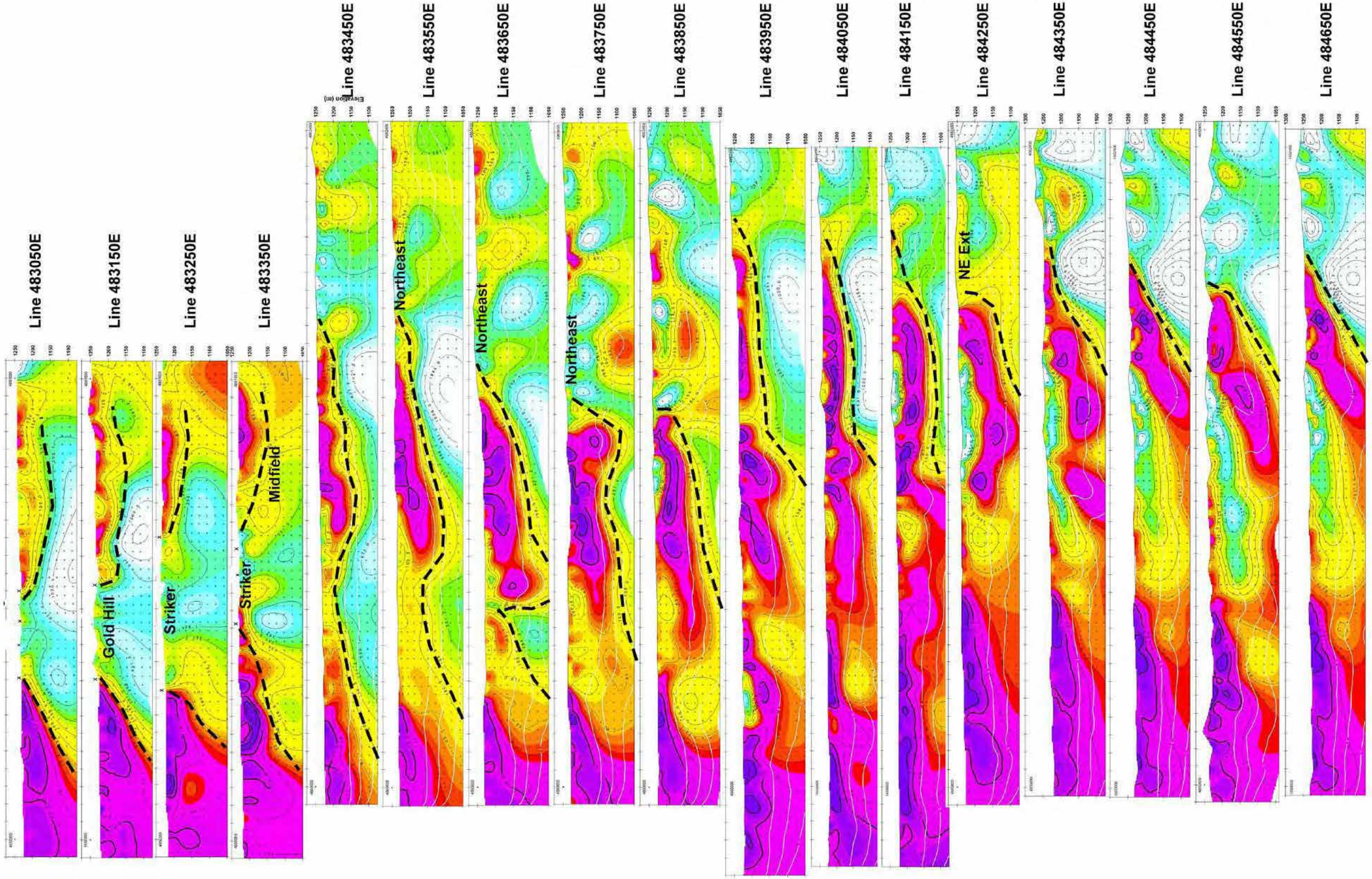
Dipole-Dipole Survey

The dipole-dipole survey consisted of a series of 17, north-south oriented lines, spaced 100 m apart, with 50 m spacing of dipoles along the survey lines with a total of 31 line-km surveyed. The location of the IP Dp-Dp survey lines are included on the plan maps of the gradient array IP survey (**Figure 9-12** and **Figure 9-13**). Stacked inverted sections for the 17 IP Dp-Dp survey lines completed over the Bayan Khundii prospect area are provided in **Figure 9-14** (resistivity) and **Figure 9-15** (chargeability). A dashed black line representing the interpreted unconformity surface between the Jurassic lithologies at surface (poorly resistive) and the quartz-illite altered Devonian tuffs at surface and below the unconformity (highly resistive) has been drawn on each of the DpDp section based on the interpretation of the resistivity signature.

On the south side (south is to the bottom of **Figure 9-14** and **Figure 9-15**) of the southwest prospect (Lines 483050 to 483350) resistivity data show a sharp transition from low resistivity material (red-pink-purple), which is interpreted as Jurassic volcanic (basalt) and sedimentary rocks, to moderate to high resistivity rocks (green-blue white) interpreted as intensely quartz-illite altered Devonian pyroclastic lithologies, that outcrop on surface and host the Au mineralization at Bayan Khundii. These data, together with results from drill holes, confirm the extension of the quartz-illite alteration zone beneath the Jurassic lithologies. The shallow dip of the unconformity, towards the north, beneath the Jurassic rocks, as seen on a number of lines and is similar to the 10o to 25o dips for Jurassic sedimentary strata observed during geological mapping. In some area the unconformity contact appears to be more irregular, likely reflecting undulations in the pre-Jurassic paleo-surface.

As can be seen in **Figure 9-15**, there is generally a higher chargeability response within the altered Devonian units that outcrop at surface in the Southwest and Northeast prospects and underlie the interpreted unconformity (dashed black line). Several low to moderate positive IP chargeability responses on the dipole-dipole stacked sections generally correlate to the resistivity high response anomalies above. Chargeability high responses, though sometimes small and shallow, generally correlate to the Striker, Gold Hill, and Midfield zones, despite the general lack of sulphide minerals, as noted above. At present, the observed chargeability responses are thought to reflect specularite-rich or clay-rich zones. Chargeability response in the Northeast Prospect is notably higher. This may be a reflection of an increase in sulphide (pyrite) content in this area as noted in limited drilling.



LEGEND

possible location of unconformity surface between altered Devonian lithologies at depth and Jurassic lithologies at surface.

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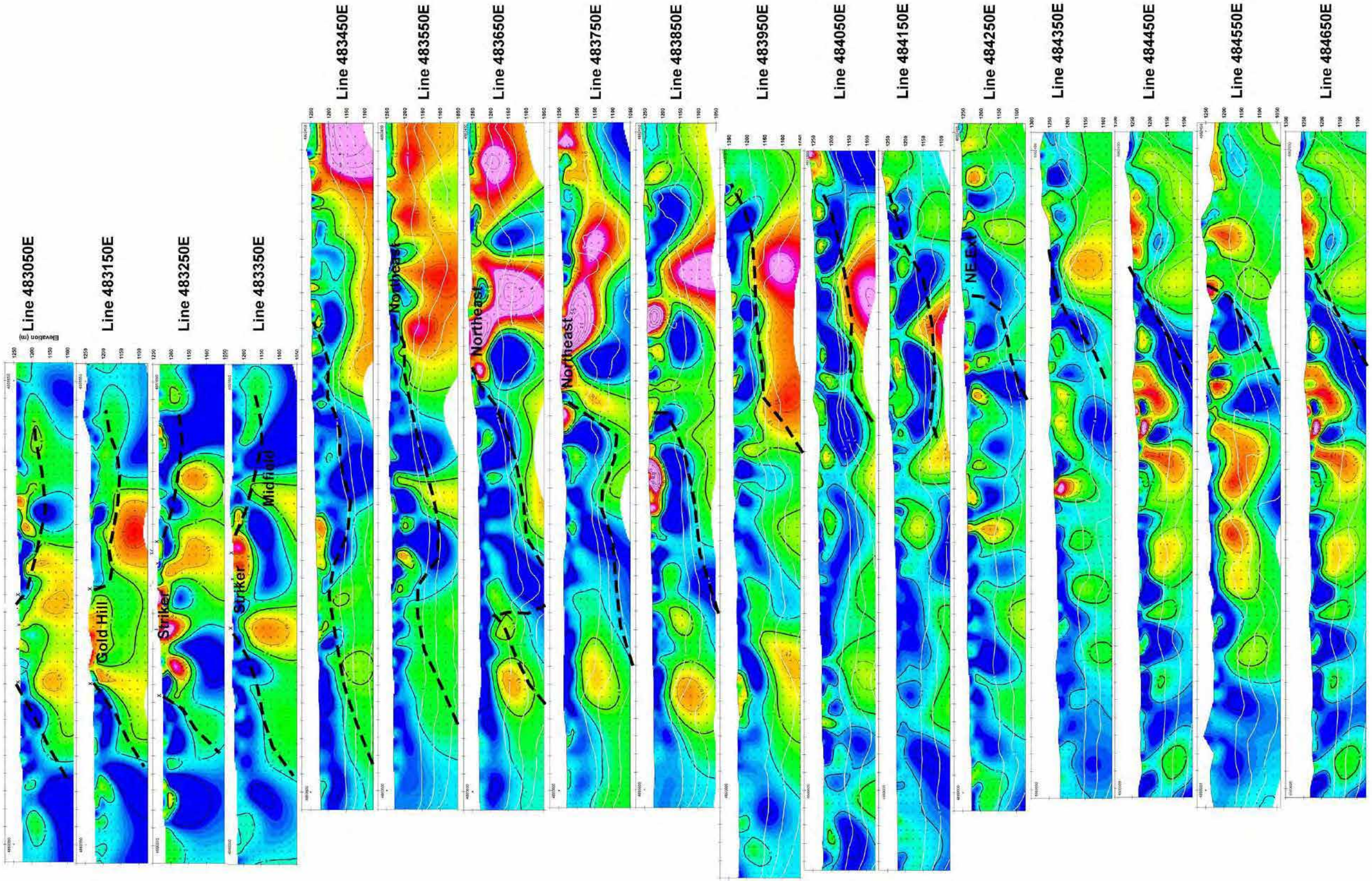
DRAWING Stacked IP Dp-Dp Resistivity Inversion sections, Bayan Khundii Area, (looking north with westerly most line on the left)

FIGURE No.	PROJECT No.	Date
9-14	ADV-MN-00161	January 2019



LEGEND

possible location of unconformity surface between altered Devonian lithologies at depth and Jurassic lithologies at surface.

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DRAWING Stacked IP Dp-Dp Chargeability Inversion sections Bayan Khundii Area, (looking north with westerly most line on the left)

FIGURE No.	PROJECT No.	Date
9-15	ADV-MN-00161	January 2019

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9.2.6 Trenching Program

In August 2015 and May 2016, Erdene carried out a trenching program across the Southwest and Northeast Bayan Khundii prospects that included a series of 22 trenches, totalling 1060m and ranging in length from 8 m to 94 m (refer **Figure 9-16**). The principal objectives of the trenching program were to further define the near-surface mineralization identified through rock chip sampling, improve the understanding of the Au mineralized system and prioritize areas for the planned maiden drilling program.

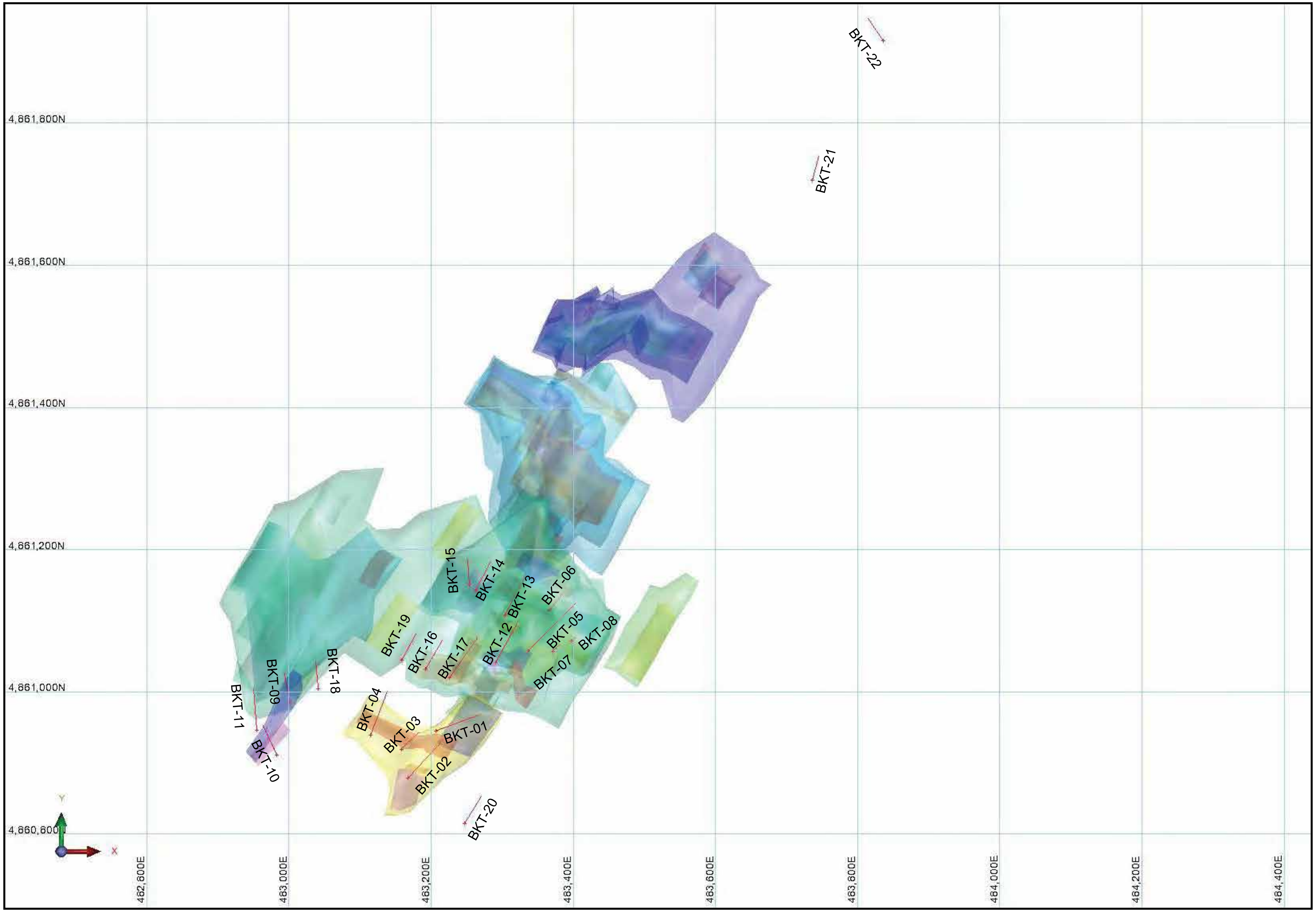
Trenching was carried out with Falcon Drilling supplying the excavator (Hyundai 290), operator and assistants. Trench locations were selected by Erdene's exploration team, oriented normal to the projected trend of mineralization. Trenches were excavated to a depth of between <1 and 2 m. Trench samples were collected at 1 m or 2 m intervals, as determined by the senior project geologist, based on the lithology and mineralization. Samples were chipped from the base of the trench walls and care was taken to ensure each sample was representative of the entire interval being sampled. Representative hand samples for each interval were also collected for reference.

All trench samples were organized into batches of 20 and included a commercially prepared certified reference standard and an analytical blank. Each batch was stored in the field camp in sealed bags. Sample batches were periodically shipped directly to SGS in Ulaanbaatar via Erdene's logistical contractor, Monrud Co. Ltd.

All trench samples are analysed for Au (fire assay) and a suite of 32 elements using 4 acid digestions with ICP-OES finish (SGS analytical code ICP40B). For details of analytical protocols and detection limits please refer to "Section 11 – Sample Preparation, Analysis and Security".

Most of the trenches were dug on surface exposure area of Devonian pyroclastic volcanic rocks and the program was successful in demonstrating wide zones of lower grade Au mineralization in the wall rock and confirming the intensity of mineralization in narrow, high-grade veins, as well as demonstrating continuity over a wide area. For example, trench BKT-17, returned 37 m of 2.12 g/t Au and included a 7 m interval of 8.68 g/t Au.

As a result, the extent of alteration and mineralization observed in the trenches commonly exceeded that indicated by surface expression. A combination of mapping, rock geochemical survey and trenching has proven to be successful in guiding exploration in areas of exposed Devonian pyroclastic volcanic rocks.



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DRAWING: Trench Location Map and Interpreted Mineralization Wireframes

FIGURE No.	PROJECT No.	Date
9-16	ADV-MN-00161	January 2019

10. Drilling

10.1 Altan Nar

A staged exploration and resource delineation drilling program has been carried out across the Altan Nar prospect between 2011 and 2017. **Table 10-1** provides a breakdown of the number of holes and metres drilled over this time period. All drilling on the Tsenkher Nomin license was carried out by independent drilling contractor, Falcon Drilling Limited. All holes were diamond drilled using a truck mounted Longyear 44 wireline drilling rig with all core's HQ sized. First drilling at the project started in 2011 at Nomin Tal Project (8 holes) and all remaining hole (125) were drilled on the Altan Nar prospect.

Table 10-1 Altan Nar Drilling Summary

Company	Period	Drilling Method	Number of Holes	Metres
Erdene	2011	Diamond Drilling	24	4,043.4
	2012		26	4,611.1
	2014		22	2,604.3
	2015		13	1,057.9
	2016		9	1,380.0
	2017		31	5,793.9
	Drilling total		**125**	**19,490.6**
		Trenching	**42**	**3,151.0**
Total			**292**	**22,641.6**

Drilling across the Project area had an average hole length of 156m (average vertical depth 117m) and extend in a couple of holes to a maximum vertical depth of approximately 390 m. Drill hole spacing over the deposit area is approximately 50 m by 50 m with closer spaced drilling in select areas (20-25 m by 20-25 m spaced holes).

The drilling programs were designed and carried out under the direction of Erdene's senior technical staff. In the field, the drilling program was under the supervision of Erdene geologists who were responsible for communicating and confirming the program's technical details with the drilling contractor as well as logging and sampling the drill core.

Out of 125-hole collars, 99 holes were DGPS surveyed while the remaining diamond and trench locations were surveyed with handheld GPS. Down-hole orientation surveys were carried out by Falcon at 50-100 m intervals and/or at the bottom of each hole. Down-hole readings included both dip and azimuth of the hole at the recorded depths. RPM observes that there is little dip movement and minor amounts of azimuth movement in the surveyed holes.

During drilling, core was placed in core boxes and a marker showing the depth in the hole was placed in the core box at the end of each drill run. All drill cores were photographed and logged by Erdene geologists prior to sampling. Standard sampling protocol involved the halving of all drill core using a core saw and sampling over either 1 m intervals (in clearly mineralized sections) or 2 m intervals (elsewhere). Half of the core was placed in a sealed sample bag and dispatched to SGS's Ulaanbaatar laboratory for analysis and the other half remains on site in core boxes. Core recoveries are between 90 -100 % throughout the mineralized zones. No relationship exists between sample recovery and grade. Mineralization is generally sub-vertical.

Since the discovery of mineralized epithermal quartz veins on surface and widespread soil geochemical anomalism across the Altan Nar Area in August 2011, there have been a number of rounds of drilling over a seven year period (see **Table 10-1**). Resource delineation drilling has taken place over the Discovery Zone and Union North deposits while exploration and scout drilling has taken place across a number of identied prospects. A drilling exploration summary by prospect is provided in **Table 10-2**.

Table 10-2 Drilling Summary by Project

Company	Method	Prospects	Number of Holes	Metres
Erdene	Drilling	**Discovery Zone**	56	10,557
		Union North	24	2,449
		Central Valley	8	1,276
		Discovery Zone West	2	250
		Junction	1	200
		Maggie	3	446
		Northbow	2	173
		Northfield	2	197
		Riverside	6	806
		Southbow	3	539
		Southgate	6	897
		True North	2	320
		UN East	3	400
		Union South	5	782
		Others	2	200
Total			**125**	**19,490.6**

In the following descriptions of the drilling results from the Altan Nar prospects it should be noted that all Altan Nar drill holes were drilled at a dip between -70 to -45 degrees and intersected zones interpreted to be steeply-dipping to vertical. Additional information is required to determine true widths. Also, gold equivalent (AuEq.) has been used to express the combined value of gold, silver, lead and zinc as a percentage of gold, and is provided for illustrative purposes only. No allowances have been made for recovery losses that may occur should mining eventually result. Calculations use US$ metal prices of $1200/oz gold, $18/oz silver, and $0.90/lb for lead and zinc.

The following sections summarize the drilling carried out on to the end of 2017 on the main prospects (Discovery Zone and Union North) that have Indicated Resources identified followed by those prospects that have had scout drilling and have Inferred Resources, namely, Central Valley, Maggie, Riverside, UN East, Union South, True North and Northfield.

10.1.1 Discovery Zone

Drilling to date at the Discovery Zone ("DZ") has identified a minimum strike length of 650 m. Fifty-six, mostly shallow (<150 m vertical extent) drill holes with hole length ranges from 57.3m (TND-93) to 450m (TND-31 and TND-129) have been drilled at the DZ and drill spacing was generally at 50 m to 50m intervals, but including some areas with infill holes at 25m spacing, along with six trenches (pre 2015) and additional single trench (ANT-42) in 2015 across zones of surface mineralization, have demonstrated vertical and lateral continuity of gold, silver, lead and zinc mineralization (see **Figure 10-1**). The DZ is located in the central part of the Altan Nar Area. Within the DZ, gold mineralization appears to be structurally controlled within NNE to NE trending sub-parallel shear zones that are steeply dipping to sub-vertical. Gold-bearing zones are associated with epithermal quartz veins and breccias in a northeast-southwest trending fault/breccia zone. Preliminary evidence suggests that andesite units, particularly near the contact with more competent silicified volcanic breccia units, act as a favourable host for mineralization.

Drilling results to date at the DZ have culminated in the modelling of a series of near vertical and sub-parallel mineralized lodes as displayed in **Figure 10-1** (plan view) and **Figure 10-3** (cross section A). The mineralized lodes have been coloured in order to distinguish the individual lodes. RPM notes that the colouring of the objects has no other significance and is a reflection of the software object colouring only.

Hole TND-58, one of the deepest holes drilled to date (~230 vertical metres) within the DZ, terminated in 5 m at 4.8 g/t Au, 6.0 g/t Ag and 1.1% combined Pb-Zn. This intersection demonstrating that significant potential remains to intersect high-grade mineralization at depth and that the true vertical extent of the mineralization within the DZ is yet to be determined.

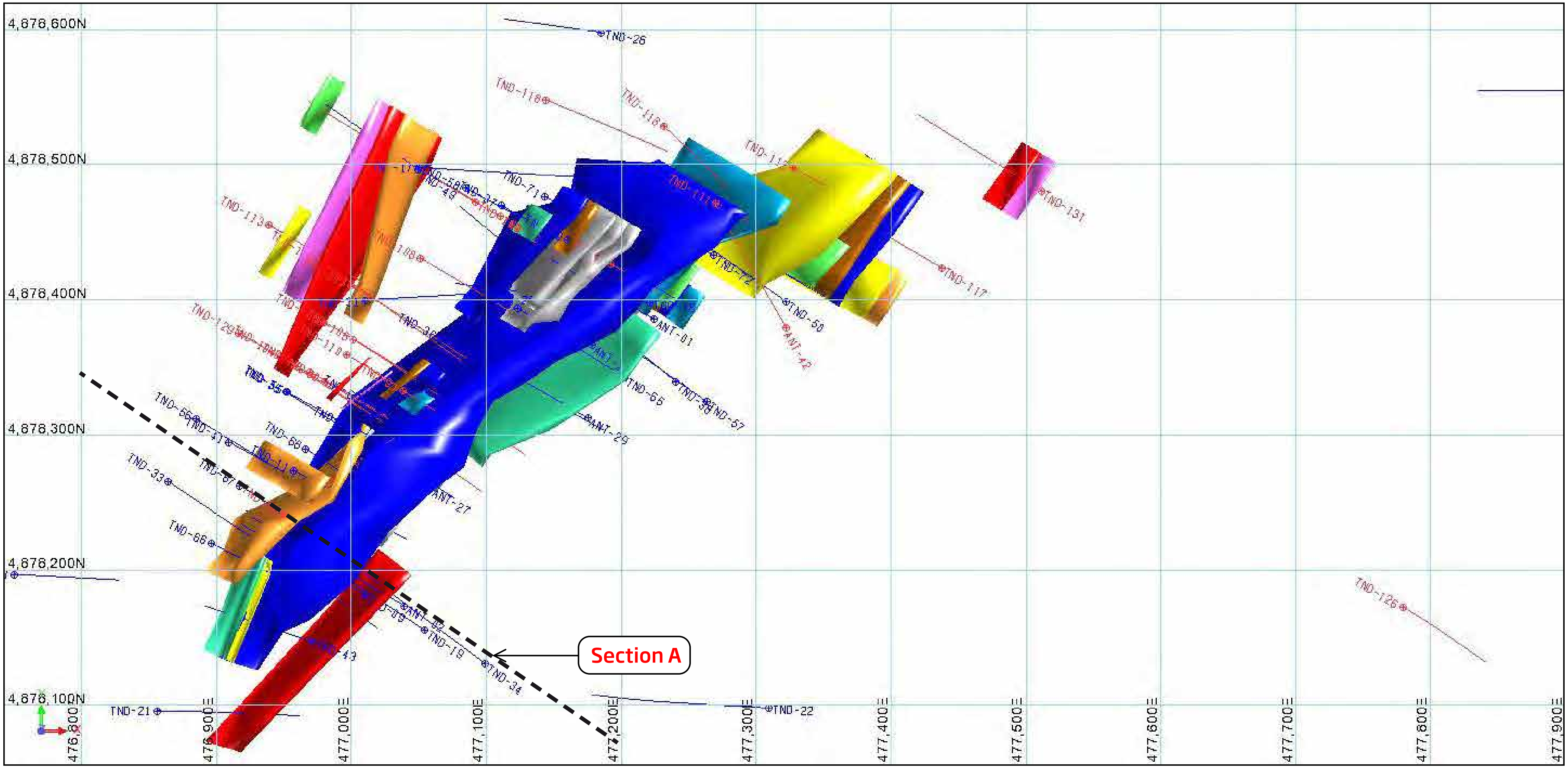
Hole TND-101 was an exploratory hole drilled at a 45-degree dip, to a depth of 300 m perpendicular to an interpreted cross-cutting feature observed in geophysical surveys but at a low oblique angle to the mineralized DZ trend and to the lithologic boundary. The hole was oriented to test the intersection of these three structures, and to test possible extensions of mineralization at depth under DZ North. Due to the hole orientation the wide intervals reported do not represent the true width of the intersected zone, however, adjacent holes reported in 2015, immediately south of TND-101 (TND-69 and 90), returned some of the most continuous zones of mineralization at the DZ, including 51 m of 2.5 g/t AuEq and 43 m of 2.4 g/t AuEq respectively. These holes were drilled at a 45-degree dip, perpendicular to the interpreted vertical structure, implying a true width to the NE trending mineralized zone in the range of approximately 25 to 35 m.

Hole TND-101 intersected 110 m at 10.5 g/t AuEq (9.3 g/t gold, 32.0 g/t silver, and 1.42% combined lead-zinc) from 32 to 142 m depth. This intersection included 14 m at 60.4 g/t AuEq (55.6 g/t gold, 131.1 g/t silver, and 5.65% combined lead zinc). This hole was consistently mineralized from surface to 170 m with high gold grades not previously observed at Altan Nar. Of particular note, 10 samples in the high-grade portion of hole TND-101 contained in excess of 31.1 g/t gold (i.e. 1 ounce of gold per tonne), whereas only two samples from the more than 9,000 previously assayed drill core samples from Altan Nar drilling between 2011 and 2015, exceeded this grade-threshold. In addition to the high base metal gold zones intersected in TND-101, a distinct zone of high copper-gold mineralization was intersected that may reflect a new fluid phase at the DZ. Copper levels reached as high as 2.43%. The host rocks include lapilli tuffs and andesites that have been moderately to intensely altered (quartz, mica, pyrite), mineralized (precious metals and carbonate base metal suite), and cut by comb quartz veins, breccias and chalcedony veins.

Drilling to date has confirmed lateral and vertical continuity of gold-silver mineralization within the Discovery Zone. The DZ remains open along strike to the north and additional drilling will be required to determine the true vertical extent of the gold mineralization. Drilling to date has tested to a vertical depth of 175 m (south) to 230 m (north). **Figure 10-3** shows schematic sections across the DZ (Section A) and Union North East (Section B) that display the extent of gold mineralization intersected by the drilling program.

10.1.2 Union North Prospect

Union North ("UN") is located 1.3 km northwest of the Discovery Zone. During 2014 the drilling density of the prospect was increased. The prospect has been tested by 24 holes to date (2018). Drilling results to date at UN have culminated in the modelling of a series of steeply dipping and sub-parallel mineralized lodes as displayed in **Figure 10-2** (plan view). Stronger co-incidence of gold and base metal mineralization compared to the Discovery Zone was noted. Strong development of porphyritic dyke development is also a characteristic of this area.



LEGEND

Holes drilled pre 2014

Holes drilled since 2014

Section Line

N

0 50 100

m

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DRAWING Drill hole location map with Interpretation of Mineralised Bodies, Discovery Zone

FIGURE No.	PROJECT No.	Date
10-1	ADV-MN-00161	January 2019

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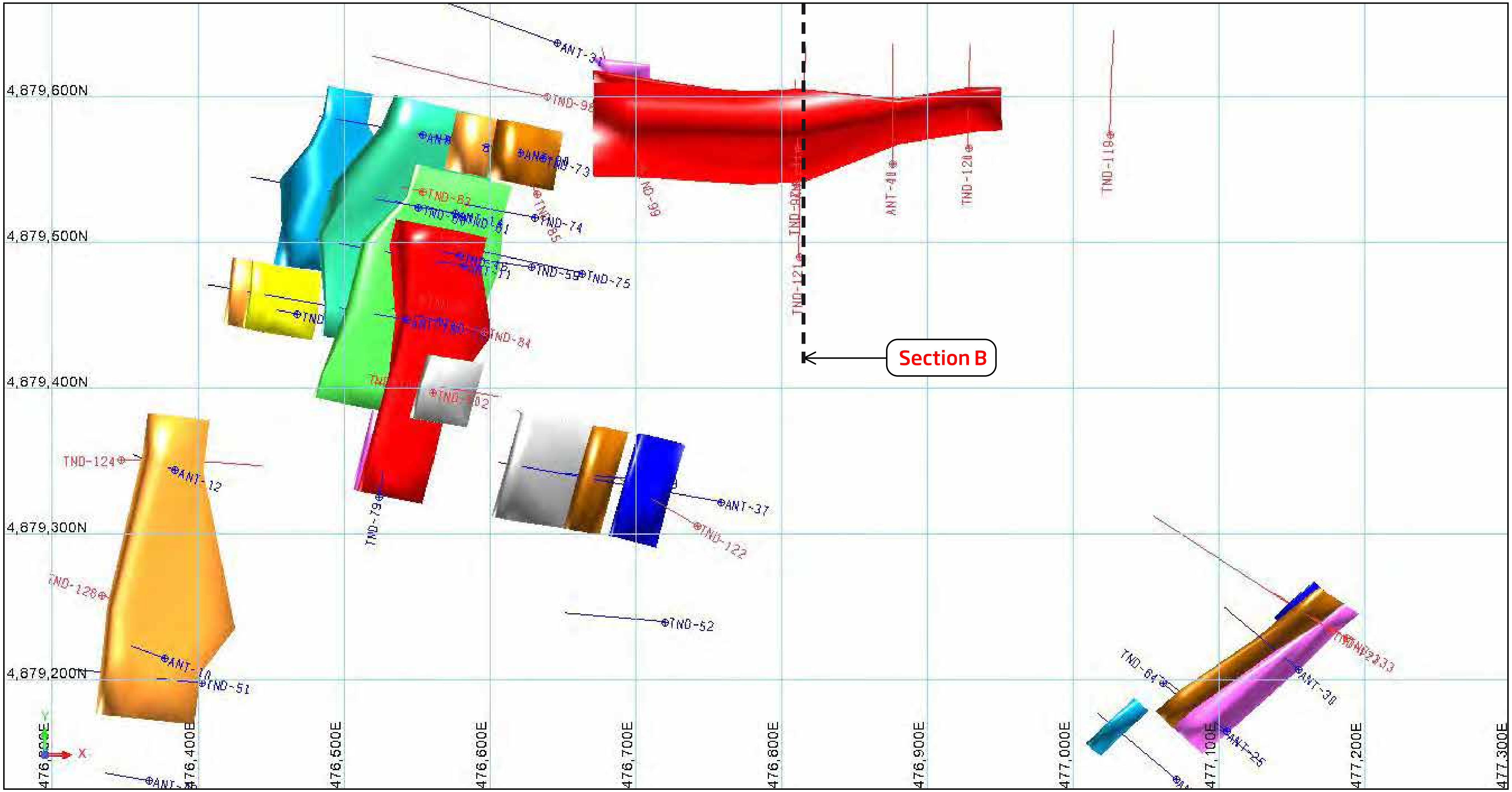

LEGEND	
Holes drilled pre 2014	Section Line
Holes drilled since 2014	

N

0 50 100 m

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DRAWING Drill hole location map with interpretation of Mineralized bodies - Union North Area

FIGURE No.	PROJECT No.	Date
10-2	ADV-MN-00161	January 2019

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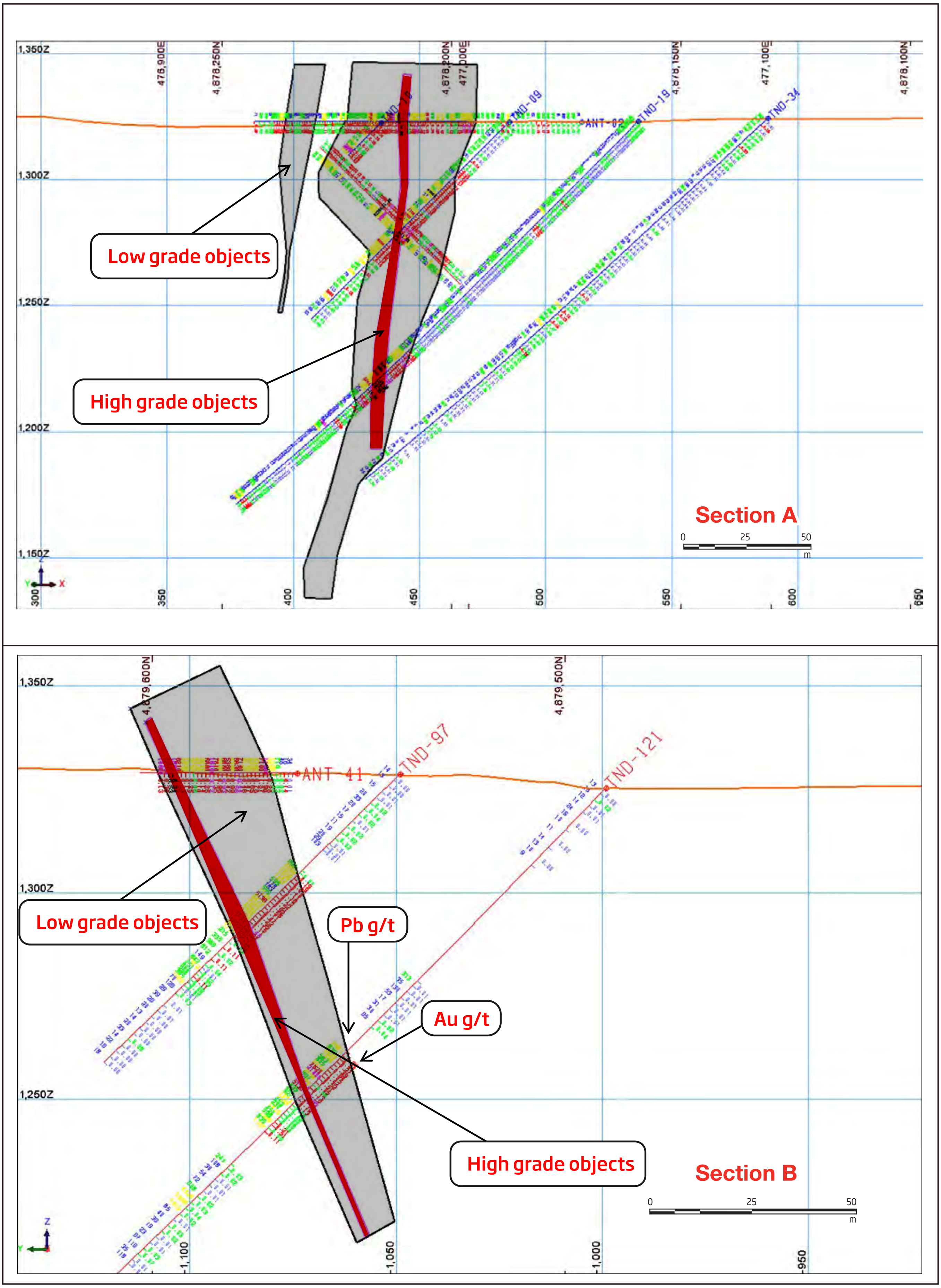

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LEGEND

Au_ppm				Pb_ppm			
	-1-0.02		2-8		0-200		5000-10000
	0.02-0.1		8-156		200-1000		10000-50000
	0.1-2				1000-5000		50000-327000

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DRAWING: Schematic sections showing zone of low and high grade gold mineralization intersected in drill holes within the Discovery Zone and Union North East Zone; Section A Discovery Zone, Section B Union North zone

FIGURE No.	PROJECT No.	Date
10-3	ADV-MN-00161	January 2019

10.1.3 Altan Nar – Scout Drilling

To date, exploration programs at Altan Nar have included close-spaced-soil and rock geochemical sampling as well as detailed IP gradient array and magnetic geophysical surveys. This work has resulted in the identification of numerous exploration drill targets along the 5.6 km strike length of the Altan Nar Area, outside the area of the DZ and UN. This work significantly expanded the identified gold-bearing epithermal mineralization on the Altan Nar property. To date, 45 scout holes have been drilled across the Altan Nar Area, outside of the DZ and Union North Zones (see **Figure 10-4**).

The following sections summarize the drilling carried out on to the end of 2017 on those prospects that have had scout drilling, and have Inferred Resources identified, namely, Central Valley, Maggie, Riverside, UN East, Union South, True North and Northfield.

Union South Prospect

Union South is located directly south of Union North and represents the possible continuation of the Union North mineralization, slightly offset to the east as suggested by the IP gradient chargeability anomaly in the area. A series of widely spaced drill holes (100m spacing) returned from 6 to 13 m intervals with 1.2 g/t to 3.4 g/t Au Eq values indicating the significant potential of this area which has also returned rock chip samples up to 15.4 g/t Au and trench intervals up to 10 m of 4.46 g/t Au.

Riverside Prospect

Riverside is located 300 m to the west, and is sub-parallel to, Union South and at the northern end it appears to merge with Union North. This prospect is characterized by an 800 m long gradient IP and geochemical anomaly that follows the trend of white mica alteration and quartz/breccia rubble fields. Four of six widely spaced drill holes returned significantly anomalous results. TND-45, returned 18 m of 1.0 g/t Au Eq (20 to 38 m), THD-51 returned 6 m of 0.84 g/t Au Eq from 10 m, TND-88 returned three intervals of 2-3m with Au between 1.2 and 1.6 g/t Au and TND-128 returned 16m of 0.9 g/t AuEq.

Maggie Prospect

Located 1 km north of the DZ and 700 m east of the Union North Prospect, the Maggie Prospect area is a 500 m x 400 m triangular shaped area. This target is characterized by a 10 to 40 m wide linear white mica alteration zone with gold, silver, lead and zinc mineralization traced for over 300 m on a NE trend through the centre of the target. A single drill hole, TND-64, returned two narrower zones with mineralization apparently displaced by a post-mineral porphyry dyke. These two zones, 4 m and 5.35 m wide returned 2.6 g/t Au Eq and 1.8 g/t AuEq, respectively. Trenching completed to test soil and IP anomalism northeast and southwest of the drill established a 120 m strike length that remains open.

In 2017, two diamond holes were drilled in the Maggie Prospect and these holes were collared as a drill fans and both holes intersected high grade gold and base metal mineralization. TND-123 intersected 16m at 4.3 g/t AuEq (3.75g/t Au, 9.3g/t Ag, 0.8% combined Pb and Zn) from 28m.

TND-133 intersected 4 m of 2.89g/t AuEq (2.24g/t Au, 7.5g/t Ag, 1.04% combined Pb and Zn from 32m. Low grade gold and base metal mineralization was intersected at the end of this holes (45m at 0.17g/t Au, 3.8g/t Ag, 0.29% combined Pb and Zn, excluding 6.6 m of post mineralization dyke). This hole also intersected the same andesitic barren dykes that occurred in TND-123. Mineralization at Maggie Prospect is open along strike (NE-SW) and down-dip directions and mineralization appears to get wider towards the northeast.

Central Valley Prospect

Holes TND-15 and 16 were drilled within the Central Valley Prospect, 300 m north of the DZ. These holes were drilled at the same collar location, one oriented east and the other west. When combined, these holes intersected a very wide zone of mineralization; greater than 200 m of 0.2% zinc with multiple anomalous gold zones including six widely spaced 1-metre samples of 0.5 g/t to 1.9 g/t gold. Two other holes in this prospect, TND-14 and TND-44 returned broad zone of anomalous lead-zinc mineralization including 47 m of 0.08g/t Au, 2.5g/t Ag and 0.53% combined Pb and Zn and 50m of 0.08g/t Au, 1.5g/t Ag and 0.61% combined Pb and Zn, respectively.

Two additional holes have been drilled in the Central Valley Prospect (TND-80 in late 2014, TND-115 in 2017). TND-80 was collared halfway between TND-14 and TND-15 and intersected broad low grade halos and a 1-metre sample of 0.61g/t Au, 11g/t Ag, 1.3% combined Pb and Zn.

TND-115 did not hit any significant gold mineralization however it intersected 12 m at 0.71g/t AuEq (4.2g/t Ag, and 1.19% combined Pb and Zn) from 179m.

True North Prospect

The True North Prospect, located 200m south of the DZ, returned significant results from a single drill hole, TND-32, which returned 3 m at 1.42 g/t Au and a combined Pb and Zn value of 6.9% from 51 m. This result was reflected at surface by a subsequent trench that returned a 4 m zone at 1.3 g/t Au and a high combined Pb-Zn content of 3.8%.

An additional single hole (TND-130) drilled in 2017 collared 100m north of TND-32 and intersected 2m of 0.32g/t Au, 0.4% combined Pb and Zn at 110m. Mineralization appears to increase to the south.

Northfield Prospect

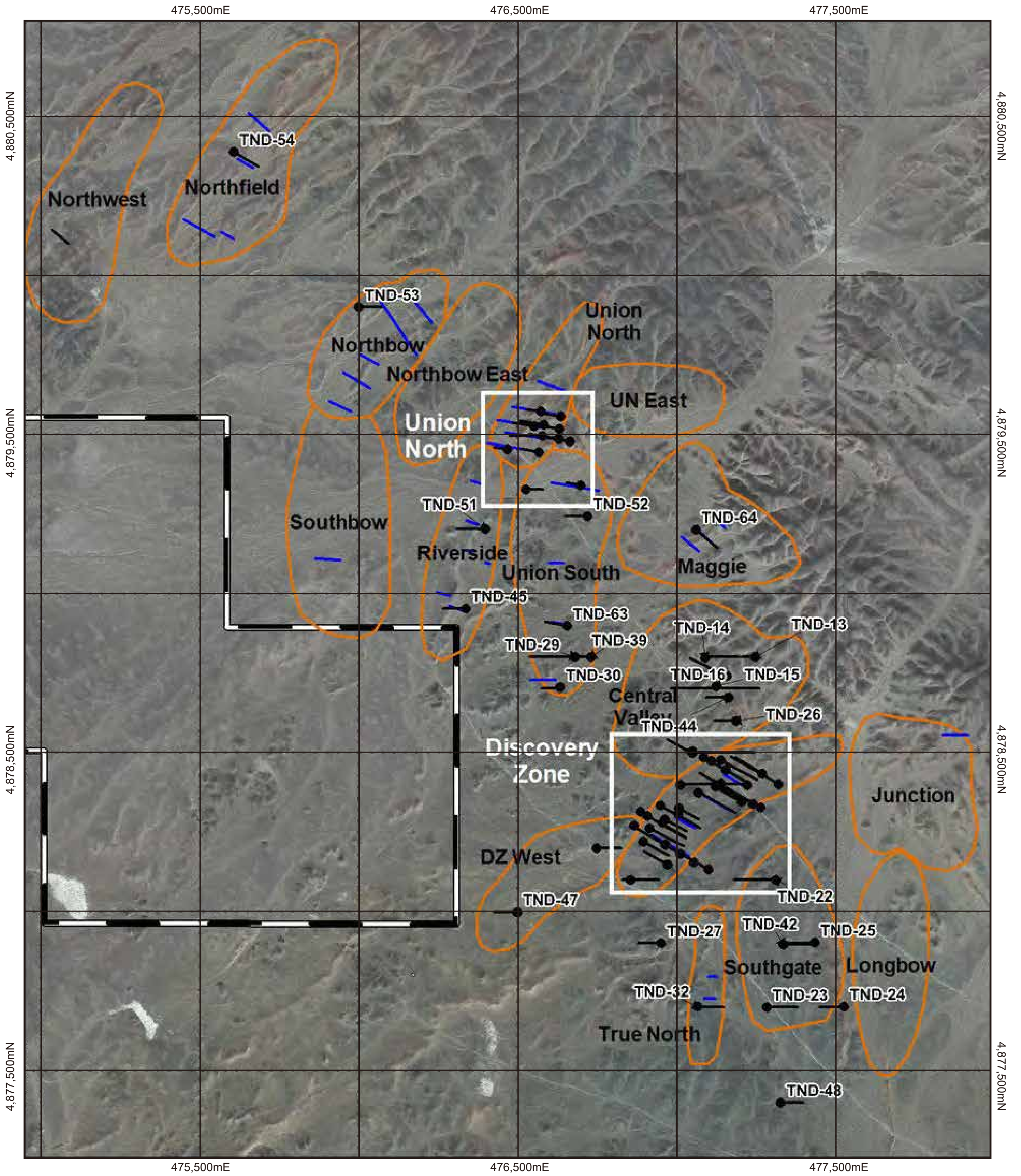
A total four trenches and two scissor holes drilled in the prospect. The best results to date are trench ANT-17 where it intersected 28m at 0.41 g/t Au, 10g/t Ag, 0.4% combined Pb and Zn. Two scissor holes (TND-54 and TND-87) were drilled near trench ANT-17 and hole TND-54 intersected 2m at 1.16g/t Au while TND-87 intersected broad low-grade gold mineralization.

Union North East Prospect

This prospect is located 250m east of Union North Zone and both zones are potentially connected to each other. Two trenches (ANT-40 and ANT-41) tested a surface geochemical anomaly and ANT-41 returned 27.5m at 1.95g/t Au, 4.4 g/t Ag, 1.16% combined Pb and Zn and includes 2m at 8.4g/t Au, 10g/t Ag, 3.82% combined Pb and Zn. Trench and drill hole results indicate that grades are increasing toward Union North Prospect. Initial scout hole TND-97 intersected 22m at 1.1g/t Au, 5g/t Ag, 0.8% combined Pb and Zn from 34m.

In 2017, three diamond holes (TND-119 to TND-121) were drilled in this prospect. TND-121 was collared as a 50m step back to the south of TND-97 and intersected 14.5m at 0.93g/t Au, 6.8g/t Ag, 0.89% combined Pb and Zn from 89.5 m. TND-120 was collared 120m east of TND-97 and intersected 5m at 1.1g/t Au, 29.4g/t Ag, 3.3% combined Pb and Zn from 36.9 m. Mineralization looks be have been thicker at one stage which has subsequently been cut by barren volcanic dykes.

The prospects described above as having Inferred Resources, along with a number of un-drilled high priority prospects, with strong geochemical and geophysical anomalies, require additional exploration, including trenching and drilling, to determine their full mineral potential. Resource modelling has been carried out on 9 prospects out of 20 and the remaining prospects have been tested by very limited (shallow) drilling or no drilling.



RPMGLOBAL

LEGEND

Drill Holes

Target Areas

N

0 250 500
m

DO NOT SCALE THIS DRAWING - USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE

CLIENT

ERDENE
RESOURCE DEVELOPMENT

PROJECT

NAME
NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING
Drill Hole Location Map, Scout Drilling, Altan Nar Prospect

FIGURE No.	PROJECT No.	Date
10-3	ADV-MN-00161	January 2019

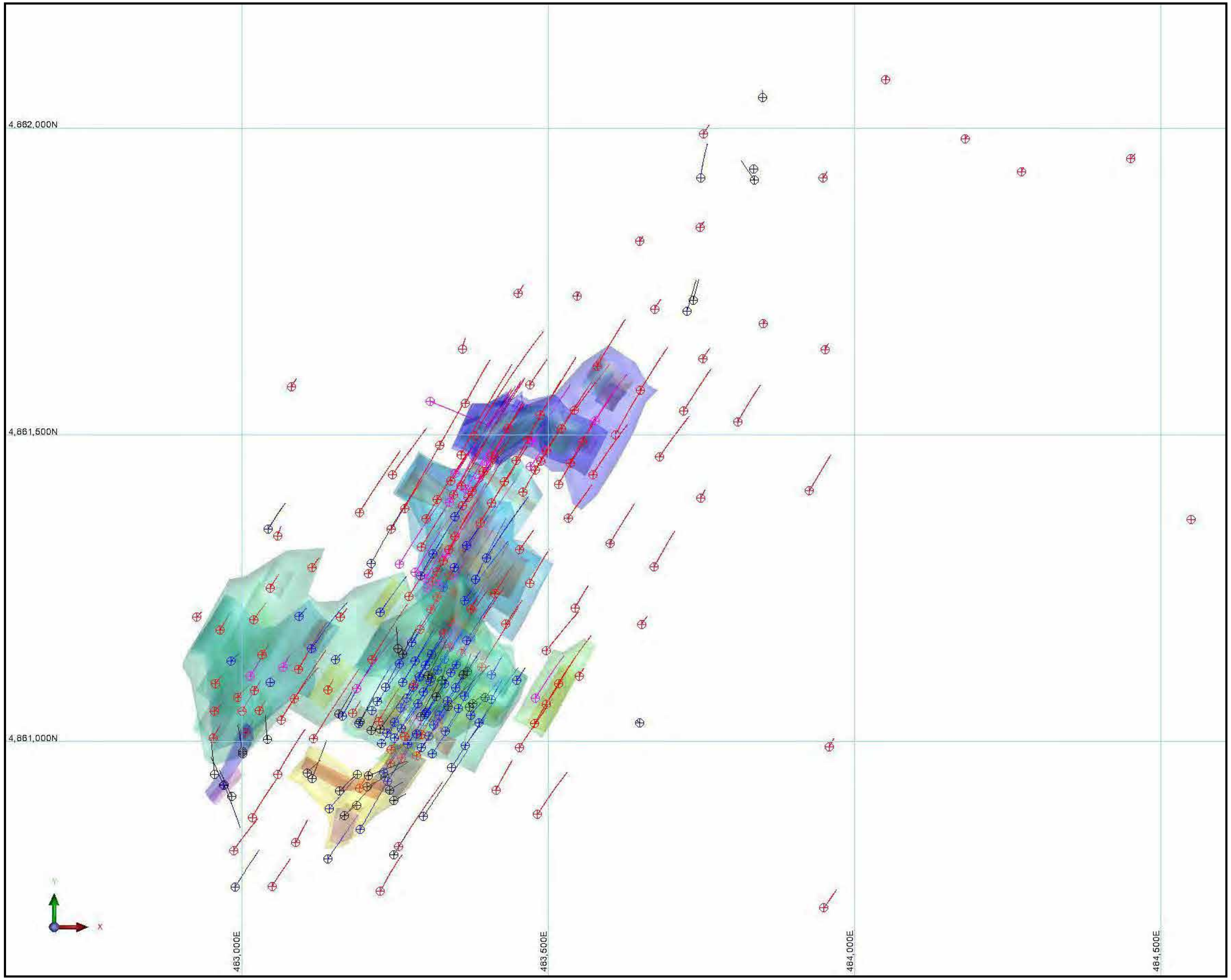
10.2 Bayan Khundii

Four phase of drilling program conducted on the Khundii property. All phases of drilling and Interpreted Mineralization Wireframes are shown in **Figure 10-5**. Initial shallow 15 scout holes drilled (2015) for total 696m to test surface high grade zones identified from rock geochemical survey, geological mapping, ground magnetic and dipole-dipole geophysics surveys. Those holes demonstrated continuity of high-grade mineralization within broader low-grade mineralization at Bayan Khundii. The second phase (2016) of drilling comprises of 81 diamond drill for total 11,808.9m holes and mostly concentrated on Gold hills and Striker Zones and drill spacing were nominally 40m apart. The third phase (2017) of drilling comprises of 138 drill holes for total 25,638.35m drilling and start testing extension of previously defined high- and low-grade zones as well testing other prospective targets on the property. The latest and fourth phase (2018) of drilling comprises of 21 drill holes for total 4,527.3m those holes mostly concentrated on Midfield and North Midfield zones. A breakdown on holes per prospect is shown below.

10.2.1 Striker Zone

Since the first hole at Bayan Khundii in Q4 2015 (BKD-01: 7 m of 27.5 g/t Au at 14 m depth; northern Striker Zone), more than 60 drill holes have been completed in the prospect, with approximately 70% intersecting intervals of greater than 10 g/t Au, indicative of the high-grade nature of the Bayan Khundii mineralization. The Company has identified very good continuity of multiple, near-surface, high-grade Au zones, including both very high concentrations of Au (e.g. 306 g/t Au over 1 m; hole BKD-77), wide intervals of high-grade Au (e.g. 5.3 g/t Au over 63 m; hole BKD-17), and broad, lower grade intervals surrounding the high-grade mineralization (ex. 1.2 g/t Au over 112 m; hole BKD-51).

In 2017, the Company completed several holes at 40-m centres along the northern end of Striker to test between the very high-grade Striker and Midfield Zones. The holes were completed over a 180 by 100 m area between Striker and Midfield and all intersected broad zones of lower-grade Au mineralization beginning at shallow depths. Additional holes drilled in Q3-Q4 2017, including the extension of several previous holes, confirmed the continuity of mineralization between Striker and Midfield zones, including a 128 m wide zone of mineralization in BKD-194 that averaged 1.1 g/t Au, including a 22 m wide interval that averaged 3.3 g/t Au.



LEGEND

Year 2015	Year 2017
Year 2016	Year 2018

N

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CLIENT

ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING Drill Location Map and Interpreted Mineralization Wireframes

FIGURE No.	PROJECT No.	Date
10-5	ADV-MN-00161	January 2019

RPMGLOBAL

10.2.2 Striker Midfield Connection

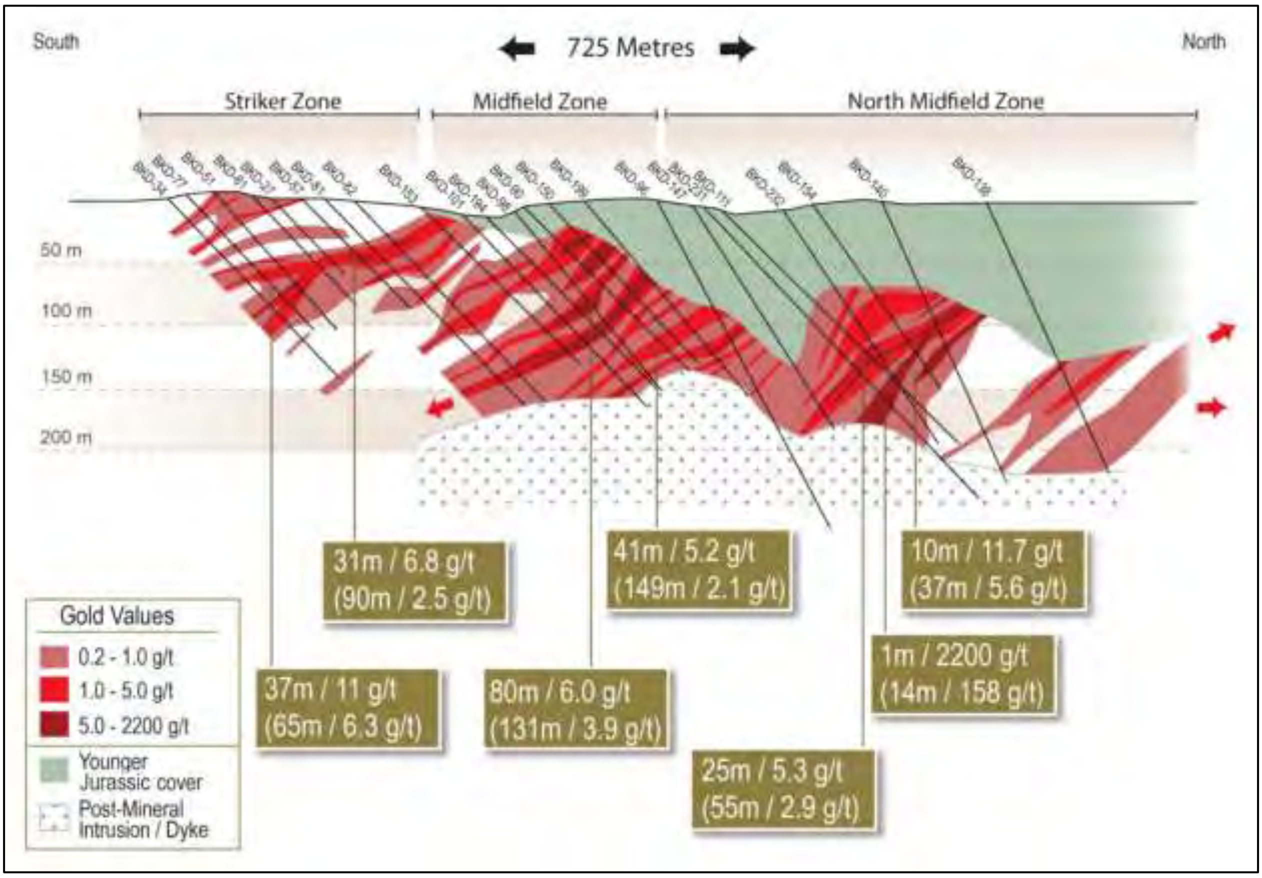
In Q2 2017, the Company completed several holes at 40 m centres along the northern end of Striker to test between the very high-grade Striker and Midfield Zones. Additional drilling in Q3/Q4 2017, including the extension of several previous holes, confirmed the continuity of mineralization between Striker and Midfield zones, including a 128 m wide zone of mineralization in BKD-194 that averaged 1.1 g/t Au, including a 22 m wide interval that averaged 3.3 g/t Au. This recent drilling has begun to define a new near-surface, high-grade zone between Striker and Midfield. Hole BKD-222, announced in Q4 2017, intersected 23 m at 6.7 g/t Au with individual 1 m samples up to 139 g/t Au within 50 m of the surface. Two earlier holes, north and south of this intersection (BKD-153 and BKD-86), returned individual samples of 94.8 g/t Au and 31.4 g/t Au, respectively, within wider mineralized intervals, again within 50 m of surface. Prior to the 2017 exploration season, limited drilling had taken place in a 200 m wide zone separating Striker from Midfield.

10.2.3 Midfield and North Midfield Zones

As drilling results continued to be received and interpreted throughout 2017, and in conjunction with independent technical experts, a greater understanding of the controls on mineralization at Bayan Khundii was conceived. As a result, high priority drill targets were identified in Q4 2017. These included:

- Testing the recently discovered North Midfield Zone with more detailed, closer-spaced drilling and testing structural concepts and extensions at depth;
- Testing the Midfield area for the presence of shallower zones of mineralization; and testing the continuity of broad mineralized zones in the central portion of the North Midfield target area (**Figure 10-6**).

Figure 10-6 Bayan Khundii Cross Section 2017 with Selective Results Highlighted



Drilling within the Midfield and North Midfield Zones in 2017 and 2018 extended the area of Au mineralization down dip to the south and strengthened the continuity of the high Au grades reported previously in the central Midfield area. Results included the intersection of the highest-grade Au interval to date in hole BKD-231 which intersected one meter of 2,200 g/t Au and 948 g/t silver within a 14 m interval of 158 g/t Au at 193 m depth (140 m vertical depth). The results support the observation that this area contains the most intense hydrothermal activity and the most pervasive Au mineralization at Bayan Khundii. Several holes confirmed the continuity within the Midfield and North Midfield Zones. BKD-179 returning 40 m of 3.3 g/t Au, including 9 m of 12.5 g/t Au, which was drilled in the North Midfield Zone, 165 m to the northeast of the main Midfield Zone. Hole BKD-178, drilled 80 m north of the main Midfield Zone, returned 71.6 m of 1.6 g/t Au, including 19 m of 4.6 g/t Au, and hole BKD-182, drilled 200 m north of Midfield returned 39 m of 2.1 g/t Au, including 9 m of 8.2 g/t Au.

In Q4 2017, the Company intersected a new extension to the east of Midfield. While most of the drilling in the Midfield area has focused on pushing the northern limits of the Au mineralized zone towards the Northeast Zone, hole BKD-210, located 80 m east of Midfield's eastern boundary, returned 43 m of 1.8 g/t Au and included Au values up to 44.8 g/t, establishing a new eastern extension to the Midfield Zone that justifies further follow-up drilling.

Six holes (BKD-229 to BKD-234), totalling 1,192 m, were completed at Bayan Khundii in November. Two of these holes (BKD-231 and BKD-232) were completed in the North Midfield Zone to test the down-dip extension of the high-grade Au intervals in this area. Hole BKD-231 intersected one meter of 2,200 g/t Au and 948 g/t silver within a 14 m interval of 158 g/t Au at 193 m depth (140 m vertical depth). The mineralization was hosted by multi-phase quartz-adularia-specularite veins and hematite breccia, with abundant fine-grained visible Au. This high-grade intersection confirms strong continuity down-dip from earlier holes, including BKD-110, 30 m north, which intersected one meter of 115 g/t Au and one meter of 108 g/t Au, and BKD-111, 30 m northwest, which intersected one meter of 44 g/t Au and one meter of 33 g/t Au. The discovery of this high-grade vein represents an important new target area that will require additional, closer-spaced drilling in 2018.

Hole BKD-232 was completed approximately 65 m north of BKD-231 and 100 m north of the Midfield Zone, within an area that previously had 80-m hole spacing and relatively lower grade results. This hole returned 22 m of 8.3 g/t Au, and included multiple zones grading over 10 g/t Au. The top of the mineralized interval was intersected at 91 m depth (74 m vertical depth).

In Q4 2017, three holes were completed along the south and southeast end of the Midfield Zone (BKD-229, 230 and 233). Hole BKD-230, completed near the centre of Midfield, intersected a continuously mineralized 127 m interval starting at 31 m depth (24 m vertical) that averaged 1.8 g/t Au, and included a 25 m wide interval that averaged 5.8 g/t Au. Two additional holes (BKD-229 and BKD-233) successfully intersected high-grade Au mineralization, and in the case of BKD-233, although lower grade, expanded the southeast boundary of the Midfield Zone which remains open to the east while BKD-229 intersected Au mineralization at the shallowest levels to date.

On May 8, 2018 the Company announced initial results from its Q2-2018 drill program, which commenced on April 11, 2018. The results were for the first six holes (BKD-235 to BKD-240), totalling 1,423 m, which were completed at the North Midfield Zone and were designed to test high-priority structural targets and to test continuity and potential extensions of the high-grade mineralization in this area. Hole BKD-236 was also drilled to test the interpreted controlling structure on the western boundary of the Au mineralization and a sub-set of Au-bearing, north-south trending veins, approximately perpendicular to the main trend of mineralization (azimuth of 108 degrees). Holes BKD-239 and BKD-240 were step-out holes, located near previously completed hole BKD-232 (Q1-2018) that returned 36.6 m of 5.6 g/t Au.

The results from this initial drilling confirmed strong continuity within the North Midfield high-grade zone, with all six holes intersecting visible Au mineralization and assays ranging from 22 to 169 g/t Au. Very high-grade assay results were encountered in the core of the North Midfield Zone, with hole BKD-238 returning 18 m of 21.6 g/t Au, including 2 m of 169 g/t Au.

All holes intersected broad Au mineralized zones enveloping the high-grade cores, ranging from 16 m to 102 m of greater than 1 g/t Au. In addition, drilling provided evidence of Au-bearing feeder zones, with multi-stage quartz-chalcedony veins and breccias being intersected in holes BKD-236 and BKD-237.

10.2.4 West Striker Zone

Erdene has completed a total of 27 holes in the area west of the Striker Zone at 20 to 80 m spacing, over a 375 by 250 m area. The depth of drilling has ranged from 97 to 340 m vertical depth, with an average of 223 m. Of the 27 holes, 26 have intersected anomalous Au mineralization, with 13 returning high-grade intervals of greater than 10 g/t Au. In Q4 2017, the Company reported results for three holes (BKD-219 to 221) including the highest-grade intersection to date within this zone, 116 g/t Au over one meter within 15 m averaging 9.2 g/t Au in hole BKD-220, 250 m west of the Striker zone, further establishing the potential that exists at West Striker to identify additional significant high-grade zones.

Results to date from the drill program have:

- Confirmed the orientation, grade and continuity of mineralization initially identified through mapping and trenching;
- Extended the area of known Au mineralization to include the Midfield and Midfield North Zones beneath Jurassic cover rocks;
- Discovered significant additional Au mineralization west of Striker, also under Jurassic cover rocks; and
- Identified Au mineralization in ash and welded tuff host rocks up to 1.3 km northeast of the Striker Zone.

Gold mineralization is mostly hosted in parallel NW-SE, moderately-dipping (~45^{o}) zones that range in width from 4 to 174 m (see **Figure 10-2**). Drilling results indicate that individual higher-grade mineralized zones can be correlated between drill holes. Higher grade Au± Ag intersections are located within widespread lower-grade envelopes, for example hole BKD-90 has several high-grade intervals including a 41 m wide high-grade zone (41 m at 5.2 g/t Au) within a 149 m wide mineralized envelope that averages 2.1 g/t Au (**Figure 10-2**).

10.2.5 Northeast Zone

The Company has completed eight holes in the Northeast Zone over a 600 m by 400 m area. Hole BKD-122, on the southern boundary of the Northeast Zone (500 m northeast of Midfield), returned 14 m of 0.75 g/t Au from surface, including 2 m of 4.4 g/t Au, and 21 m of 0.72 g/t Au at 65 m depth. Two rock chip samples collected 600 m northeast of hole BKD-122 returned Au assay values of 6.9 g/t and 0.4 g/t Au.

11. Sample Preparation, Analyses and Security

The details of the sample preparation, analytical methodology and sample security protocols in place for soil, rock, trench and drill-core samples from the exploration programs carried out to date on the Tsenkher Nomin exploration license and the Bayan Khundii exploration license are included in this section. The same methods have been applied by the Company across both prospects as outlined below.

11.1 Primary Sample Protocols

Soil samples were taken at regular intervals on a grid varying between 400 m intervals on 400 m spaced lines to down 12.5 m intervals along 50 m spaced lines. Sample locations were determined by hand-held GPS devices with a precision of approximately 3 m in lateral directions. All samples were taken using a consistent sampling methodology which included digging shallow holes (avg. 25 cm) and dry sieving to -2 mm.

Rock chip and rock grab samples were taken from outcrop / sub-crop, respectively, by Erdene's geologists with locations determined by hand-held GPS devices (also ±3 m lateral precision). Samples were taken from mineralized and un-mineralized surface rocks that are, as much as possible, representative of the lithological unit identified while in the field. No grid-based rock chip sampling was carried out over the prospect areas.

All trenches were excavated to bedrock, although zones of intense alteration and deep weathering were encountered and therefore the term 'bedrock' is used loosely. Trench samples were collected at 1 m or 2 m intervals, as determined by the senior project geologist, based on the lithology and mineralization. Samples were chipped from the bottom of the trenches and care was taken to ensure each sample was representative of the entire interval being sampled. Representative hand samples for each interval were also collected for reference.

Erdene's sampling protocol for drill core consisted of routine collection of samples at 1 m, 2 m or 3 m intervals (depending on the lithology and style of mineralization) over the entire length of the drill hole, with the exception of more recent drilling where late stage dykes were not sampled. Sample intervals were generally based on meterage, not geological controls or mineralization. However, in the case of early stage or scout drilling programs, samples were sometimes selected based on geological controls to get a better understanding of the distribution of mineralization. At Altan Nar, some of the mineralized zones were selectively sampled in the initial drill holes (TND-09 to 12). However, subsequent drill holes (TND-13 to 133) were all sampled at 1 m, 2 m or 3 m intervals, depending on the lithology and intensity of mineralization. For example, all clearly mineralized zones were sampled at 1 m intervals while late-stage, un-mineralized dykes were sampled at 3 m intervals, or not at all. All other drill-hole sections were sampled at 2 m intervals. Drill core recovery was excellent and did not impact the accuracy and reliability of the assay results. All drill-core was sawn in half using a rock saw and it is RPM's opinion that the samples assayed are representative and that it is unlikely there has been sampling bias.

11.2 Sample Handling Protocols and Security

Erdene's sampling protocol for drill core consisted of routine collection of samples at one or two metre intervals (depending on the lithology and style of mineralization) over the entire length of the drill hole. All sample intervals were based on meterage, not geological controls or mineralization. For example, all mineralized and strongly altered zones were sampled at one metre intervals while un-mineralized material was sampled at two metre intervals. Drill core recovery was excellent and did not impact the accuracy and reliability of the assay results. All drill-core was sawn in half using a rock saw and it is the Report Author's opinion that the samples assayed are representative with no sampling bias.

Drill core was delivered directly from the drill site to the Company's exploration camp at the end of every shift. All logging and sampling were done in camp by Erdene geologists. Drill core was logged for geology and RQD, and sample intervals were marked. Core was then photographed before being sawn in half with a core saw after which half-core samples for assay were bagged. Magnetic susceptibly readings were taken for each sample interval. For Altan Nar, the remaining half-core prior to and including 2014 drilling (up to TND-80) is securely stored at the Company's Zuun Mod exploration camp while post 2014 drilling half core samples were stored at Bayan Khundii camp site (TND-81 to TND-133). For Bayan Khundii, the remaining half-core is securely stored at the Company's Bayan Khundii exploration camp.

For Altan Nar, all samples (soil, rock, trench and drill core) were organized into batches of 20 or 30 samples and included a commercially prepared certified reference standard and an analytical blank. Each batch was stored in the field camp in sealed bags. Sample batches were periodically shipped directly to SGS in Ulaanbaatar via Erdene's logistical contractor, Monrud Co. Ltd.

For Bayan Khundii, all rock, trench and 2015-2016 drill core samples were organized into batches of 20, while all soil sample and 2017 drill core samples were organized into batches of 30. All sample batches included two commercially-prepared certified reference material (CRMs) standards, including a gold standard (generally alternating between a high-level Au-bearing standard and low-level Au bearing standard) and a 'blank' consisting of either 'basalt blank chip' (2015) with very low Au concentration (<1 ppb Au) or coarse silica sand (OREAS 24p, 2016-17). Both of these samples were used as an analytical blank for Au. Batches with 30 samples (all soil and 2107 drill core) included duplicate samples. For soil samples, this included duplicate samples taken from the same location. For drill core batches in 2017, duplicate samples alternated between a field duplicate, consisting of two ¼ core samples from the same interval, or a laboratory duplicate, consisting of duplicate pulps created from the same coarse grind material. Each batch was stored in the field camp in sealed bags. Sample batches were periodically shipped directly to SGS in Ulaanbaatar via Erdene's logistical contractor, Monrud Co. Ltd.

11.3 Assay Laboratory Sample Preparation and Analysis Protocols

11.3.1 Altan Nar

All first assay samples have been prepared and assayed at the Ulaanbaatar laboratory of SGS Mongolia LLC ("SGS"). The laboratory is one of largest commercial laboratories in Mongolia and operated to ISO17025 specifications.

Analytic methods are summarised in **Table 11-1**.

At SGS, all rock samples (drill core, chip and grab) are handled as follows:

- Samples as received are initially sorted and verified against the client Sample Submission Form.
- Samples are air dried at 90°C.
- All samples are crushed to 3.35 mm using a jaw crusher and Boyd crusher in a two-stage process.
- Sample split by rotary sample divider to 600-700 g, with reject retained.
- Whole sample is pulverised to 90% <75 µm
- The pulverised sample is mixed and divided manually, with approximately 200 g retained for the client and 300 g retained for laboratory analysis
- Gold by fire assay 30 g, other metals by AAS21R 300 mg
- If any metals are over range on the AAS21R analysis (eg. Cu>10,000 ppm) then they are rerun using either AAS22S (e.g. Cu range 0.01-5%) or AAS43B (e.g. Cu range 0.01-40%) using the laboratory split (AAS22S – 400 mg, AAS43B – 250 mg used)

At SGS, all soil samples taken in 2011 were handled as follows:

- Samples are air dried at 110°C
- Sample is sieved to 180 µm to yield a +180 and -180 fraction
- The -180 µm fraction is then pulverised to 90% <75 µm
- The pulverised sample is mixed and divided manually, with approximately 200 g retained for the client and 300 g retained for laboratory analysis

- Fire Assay 30 g, base metals by AAS21R 300mg
- Soil sample taken in 2012 and 2014 were handled in a similar manner to the 2011 samples with the following exceptions:
  - Sample were not sieved to 180 µm, a portion of the whole sample was pulverized to 90% <75 µm
  - 2012 analysis included Fire Assay 30 g, 45-element analysis by ICP40B 300 mg
  - 2014 analysis included Fire Assay 30 g, 33-element analysis by ICP40B 300 mg

Prior to 2013, rock samples (rock-chip/grab, trench, drill core) were assayed for Au, Ag, Cu, Pb, Zn, As and Mo. Samples from TND-09 to 12 were also analysed for Bi and Sb. In 2013, rock samples were analysed for Au and a suite of 45 elements using a four-acid digest and ICO-OES finish with 'ore-grade' analysis completed on over detection limit samples. Since 2014, the standard suite of elements analysed by SGS has been reduced from 45 to 33 (see **Table 11-1** for details).

All soil samples from 2011 were assayed for Au, Ag, Cu, Pb, Zn, As and Mo, however, soil samples from 2012 were assayed for Au and a suite of 45 elements and samples from 2014 were assayed for Au and a suite of 33 elements. **Table 11-1** provides a summary of the analytical methods used by SGS to analyse all of the samples. All drill core sample rejects are saved and stored at a secure facility and are available to carry out check-analyses as necessary.

Standard and blank analyses were monitored by Erdene and if SGS analysis varied from the determined assay value by more than 15% then Erdene's protocol is to request that the entire batch be re-analysed. No re-analysis has been required to date.

At SGS, all client-submitted material is retained under cover in the secure Ulaanbaatar facility where 24-hour security is maintained. Sample integrity is maintained during the analysis process by laboratory LIMS generated sample labelling throughout the analytical process. SGS's QA/QC protocols included a 10% internal QC run on analysis; so that each 50-sample batch consists of 45 samples, two duplicates, two standards and one blank.

RPM is of the opinion that adequate procedures for sample preparation, security and analysis are in place, and were used, to ensure accuracy of analytical results.

Table 11-1 SGS Analytical Methods and Detection Limits – Altan Nar

Gold Analysis			Detection Limits	
SGS Code	**Description**	**Element**	**LDL**	**UDL**
FAE303	Fire Assay, Solvent Extraction, AAS[1] finish, 30g sample	Au	1 ppb	10000 ppb
FAA303	Fire Assay, AAS[1] finish, 30g sample	Au	0.01 ppm	100 ppm
Multi-Element Analysis				
SGS Code	**Description**	**Element**	**LDL**	**UDL**
AAS21R	DIG21R (3 acid digest[2]) with AAS[1] finish	Cu Ag Pb Zn As Mo	2 ppm 1 ppm 3 ppm 2 ppm 50 ppm 5 ppm	10000 ppm 100 ppm 5000 ppm 10000 ppm 5000 ppm 10000 ppm
Multi-Element Ore-Grade Analysis				
SGS Code	**Description**	**Element**	**LDL**	**UDL**
AAS22S	DIG22S (3 acid digest[2]) with AAS[1] finish	Cu Ag Pb Zn As Mo	10 ppm 5 ppm 10 ppm 10 ppm 0.01% 20 ppm	5000 ppm 500 ppm 2% 2% 2.50% 5%
Multi-Element Ore-Grade Analysis - Higher Detection Limits				
SGS Code	**Description**	**Element**	**LDL**	**UDL**
AAS43B	DIG43B (4 acid digest[3]) with AAS[1] finish	Ag Pb Zn As Mo	500 ppm 0.01% 0.01% 0.02% 0.02%	2% 20% 40% 40% 40%
45-Element Analysis				
SGS Code	**Description**	**Element: LDL-UDL;**		
ICP40B	4 acid digestion[3] with ICP OES[4] finish	Ag: 2 ppm – 10 ppm; Al: 0.01% - 15%; As: 3 ppm - 1%; Ba: 1 ppm - 1%; Be: 0.5 ppm - 0.25%; Bi: 5ppm - 1%; Ca: 0.01% - 15%; Cd: 1 ppm - 1%; Ce: 0.05 ppm-1000 ppm, Co: 1 ppm - 1%; Cr: 1 ppm - 1%; Cu: 0.5 ppm - 1%; Eu: 0.05 ppm -1000 ppm, Ga: 0.05 ppm – 500 ppm, Ho: 0.05 ppm – 1000 ppm, Fe: 0.01% - 15%; K: 0.01% - 15%; K2O: 0.01% - 35%; La: 0.5 ppm - 1%; Li: 1 ppm - 1%; Mg: 0.01% - 15%; Mn: 2 ppm - 1%; Mo: 1 ppm - 1%; Na: 0.01% - 15%; Na2O: 0.01% - 35%; Nb: 3 ppm – 1%; Nd: 0.05 ppm to 1%; Ni: 1 ppm - 1%; P: 0.01% - 15%; P2O5: 0.01% - 35%; Pb: 2 ppm - 1%; S: 0.01% - 5%; Sb: 5 ppm - 1%; Sc: 0.5 ppm - 1%; Se: 2 ppm to 1000 ppm; Sn: 10 ppm - 1%; Sr: 0.5 ppm - 1%; Ta: 0.05 ppm to 1%; Te: 0.05 ppm – 500 ppm; Th: 2 ppm to 1%; Ti: 0.01% - 15%; U: 3 ppm to 1%; V: 2 ppm - 1%; W: 10 ppm - 1%; Y: 0.5 ppm - 1%; Yb: 0.5 ppm to 1000 ppm; Zn: 1 ppm - 1%; Zr: 0.5 ppm - 1%		
33-Element Analysis				
SGS Code	**Description**	**Element: LDL-UDL;**		
ICP40B (2014)	4 acid digestion[3] with ICP OES[4] finish	Ag: 2 ppm – 50 ppm; Al: 0.03% - 15%; As: 5 ppm - 1%; Ba: 5 ppm - 1%; Be: 0.5 ppm - 0.25%; Bi: 5ppm - 1%; Ca: 0.01% - 15%; Cd: 1 ppm - 1%; Co: 1 ppm - 1%; Cr: 10 ppm - 1%; Cu: 2 ppm - 1%; Fe: 0.1% - 15%; K: 0.01% - 15%; La: 1 ppm - 1%; Li: 1 ppm - 1%; Mg: 0.02% - 15%; Mn: 5 ppm - 1%; Mo: 2 ppm - 1%; Na: 0.01% - 15%; Ni: 2 ppm - 1%; P: 0.01% - 15%; Pb: 2 ppm - 1%; S: 0.01% - 5%; Sb: 5 ppm - 1%; Sc: 0.5 ppm - 1%; Sn: 10 ppm - 1%; Sr: 5 ppm - 1%; Ti: 0.01% - 15%; V: 2 ppm - 1%; W: 10 ppm - 1%; Y: 1 ppm - 1%; Yb: 0.5 ppm to 1000 ppm; Zn: 5 ppm - 1%; Zr: 3 ppm - 1%		

1. *AAS: Atomic Absorption Spectrophotometer*
2. *3-Acid Digest: Perchloric (HClO4), Hydrochloric (HCl) and Nitric (HNO3)*
3. *4-Acid Digest: Same as 3-acid plus Hydrofluoric (HF)*

4. ICP OES: Inductively Coupled Plasma Optical Emission Spectrometry
LDL Lower Detection Limit
UDL Upper Detection Limit
Source: Altan Nar Gold Project (Tsenkher Nomin Exploration License), Bayankhongor Aimag, Southwest Mongolia, National Instrument 43-101 Technical Report, Erdene Resource Development Corporation, J. C. (Chris) Cowan, MSc, PEng, March 10, 2014

11.3.2 Bayan Khundii

All first assay samples have been prepared and assayed at the Ulaanbaatar laboratory of SGS Mongolia LLC ("SGS"). The laboratory is one of largest commercial laboratories in Mongolia and operated to ISO17025 specifications. **Table 11-2** provides a summary of the analytical methods used by SGS to analyze all of the samples. At SGS, all rock samples (drill core, chip and grab) are handled as follows:

- Samples as received are initially sorted and verified against the client Sample Submission Form.
- Samples are air dried at 90°C.
- All samples are crushed to 3.35 mm using a jaw crusher and Boyd crusher in a two-stage process.
- Samples were then split by rotary sample divider to 600-700 g, with reject retained.
- Whole samples are pulverised to 90% <75 µm.
- The pulverised samples are mixed and divided manually, with approximately 200 g retained for the client and 300 g retained for laboratory analysis.
- Gold analysed by fire assay 30 g.
- All other metals analysed by ICP40B, 4 acid digestion with ICP OES finish (see **Table 11-2** for details).

At SGS, all soil samples are handled as follows:

- Samples as received are initially sorted and verified against the client Sample Submission Form.
- Samples are air dried at 90°C.
- Whole samples are pulverised to 90% <75 µm.
- Gold analysed by fire assay 30 g.

All other metals analysed by ICP40B, 4 acid digestion with ICP OES finish (see **Table 11-2** for details).

All drill core sample rejects are saved and stored at a secure facility and are available to carry out check-analyses as necessary.

Standard analyses were monitored by Erdene and if SGS analysis varied from the determined assay value by more than 15% for one or more elements then Erdene's protocol is to request that the entire batch be re-analyzed. The average difference between Au assay values and Au certificate values for the Bayan Khundii drilling program was -2.9 %. No re-analysis has been required to date.

At SGS, all client-submitted material is retained under cover in the secure Ulaanbaatar facility where 24-hour security is maintained. Sample integrity is maintained during the analysis process by laboratory LIMS generated sample labeling throughout the analytical process. SGS's QA/QC protocols included a 10% internal QC run on analysis; so that each 50-sample batch consists of 45 samples, two duplicates, two standards and one blank.

RPM is of the opinion that adequate procedures for sample preparation, security and analysis are in place, and were used, to ensure accuracy of analytical results.

In late 2017, a series of 500 samples were selected for analysis by ALS Chemex Laboratory ("ALS") in Ulaanbaatar, Mongolia. The samples selected were duplicate pulps prepared by SGS as part of the regular sample preparation process, where SGS has been instructed to prepare duplicate pulps for all samples ending in the number eight (8) and then place them in secure storage for future use, including third party analysis. The ALS facility in Ulaanbaatar is ISO certified. All samples were analyzed for Au from pulp material using the same methodology as the original assays at SGS, i.e. 30 g fire assay with AAS finish.

Table 11-2 SGS Analytical Methods and Detection Limits Bayan Khundii

SGS Code	Description	Element	LDL	UDL
FAE303	Fire Assay, Solvent Extraction, AAS1 finish, 30g sample	Au	1 ppb	10000 ppb
FAA303	Fire Assay, AAS[1] finish, 30g sample	Au	0.01 ppm	1000 ppm
FAG303	Fire Assay, gravimetric, 30g sample	Au	0.03 ppm	100,000 ppm
SGS Code	**Description**	**Element: LDL-UDL;**		
ICP40B	4 acid digestion2 with ICP OES3 finish	Ag: 2 ppm – 50 ppm; Al: 0.03% - 15%; As: 5 ppm - 1%; Ba: 5 ppm - 1%; Be: 0.5 ppm - 0.25%; Bi: 5ppm - 1%; Ca: 0.01% - 15%; Cd: 1 ppm - 1%; Co: 1 ppm - 1%; Cr: 10 ppm - 1%; Cu: 2 ppm - 1%; Fe: 0.1% - 15%; K: 0.01% - 15%; La: 1 ppm - 1%; Li: 1 ppm - 1%; Mg: 0.02% - 15%; Mn: 5 ppm - 1%; Mo: 2 ppm - 1%; Na: 0.01% - 15%; Ni: 2 ppm - 1%; P: 0.01% - 15%; Pb: 2 ppm - 1%; S: 0.01% - 5%; Sb: 5 ppm - 1%; Sc: 0.5 ppm - 1%; Sn: 10 ppm - 1%; Sr: 5 ppm - 1%; Ti: 0.01% - 15%; V: 2 ppm - 1%; W: 10 ppm - 1%; Y: 1 ppm - 1%; Yb: 0.5 ppm to 1000 ppm; Zn: 5 ppm - 1%; Zr: 3 ppm - 1%		

1. *AAS: Atomic Absorption Spectrophotometer*
2. *3-Acid Digest: Perchloric (HClO4), Hydrochloric (HCl) and Nitric (HNO3)*
3. *4-Acid Digest: Same as 3-acid plus Hydrofluoric (HF)*
4. *ICP OES: Inductively Coupled Plasma Optical Emission Spectrometry*

LDL Lower Detection Limit
UDL Upper Detection Limit
Source: Bayan Khundii 43-101Report, Bayan (Khundii Exploration License), Bayankhongor Aimag, Southwest Mongolia, National Instrument 43-101 Technical Report, Erdene Resource Development Company, M. A. (MacDonald), MSc, P.Geo., March 1, 2018

11.4 Altan Nar Petrographic Work

A suite of 34 representative samples from the Altan Nar epithermal gold-silver deposit, including volcanic and volcaniclastic host rocks, nearby granite and granodiorite intrusive rocks and a suite of late-stage intrusive dykes were submitted to the Mongolian University of Science and Technology (“MUST”) for petrographic analysis. In addition, eight samples of high-arsenic (“high-As”) and six samples of low-arsenic (“low-As”) ‘ore-grade’ drill core were submitted to MUST. Polished thin sections and standard thin sections were prepared for each of the 48 samples and submitted for reflected light and transmitted light petrographic analysis. The eight high-As samples submitted to MUST, which represented mineralized samples from the south end of the DZ (TND-09, -12, -19), were also submitted to SGS Lakefield laboratory for a comprehensive QEMSCAN analysis, coupled with X-ray Diffraction and electron microscope analysis to determine gangue and plant feed mineralogy.

While zones of high-As gold mineralization were initially reported and tested, additional drilling and trenching across the Altan Nar property has shown that this type of mineralization is a localized (e.g. approximately 75% of DZ south), compared to the more volumetrically extensive low-As gold mineralization in the DZ.

The results from the MUST and SGS studies yield several important insights into the Altan Nar gold-silver-base metal deposit, including:

- Free gold grains were detected in the reflected light examination at MUST in three of the six samples of low-As samples and in two of the eight polished high-As samples from the Discovery Zone. In addition, arsenopyrite was absent in four of the six low-As samples, and only present in trace amounts in the other two samples. This is in contrast to the high-As samples where arsenopyrite was observed in varying amounts in all samples.
- Ore minerals at Altan Nar, as defined by SGS QEMSCAN analysis, include: arsenopyrite, galena, sphalerite, chalcopyrite, pyrite, pyrrhotite, tetrahedrite and a silver-antimony sulphosalt (pyrargyrite?), a silver-copper sulphosalt (polybasite? or pearceite?). In addition to gold, reflected light petrography indicated the presence of additional copper minerals in the Altan Nar mineralized zones, including: chalcocite, covellite, bornite and malachite.
  - Iron (Fe) content in sphalerite ranges from 1.5 – 4.9% and is consistent with the 'honey sphalerite' observed in drill core. This may reflect a low Fe fugacity in the mineralizing fluids.
  - Manganese (Mn) content in sphalerite is relatively low, ranging from 0.1 – 0.7%, and is somewhat surprising in light of the high Mn concentrations encountered in geochemical analysis of some mineralized samples (up to >20 weight % Mn). One possible explanation is that sphalerite may have crystallized separately from Mn-rich gold-silver mineralization.
- Silver as Ag-Sb and Ag-Cu sulfosalts were detected with QEMSCAN analysis (SGS Lakefield) and is tentatively identified as pyrargyrite (Ag3SbS3). Ag-Cu sulphides were identified also identified by SGS and is tentatively identified as polybasite or pearceite (Ag-Cu-Sb-As sulphides).
- Gangue minerals at Altan Nar include: quartz, mica, calcite, kutnohrite (Ca-Mn carbonate), an un-named Mn-Cr oxide, pyroxmangite, rhodochrosite (Mn-carbonate), jacobsite (Mn-Fe oxide), ankerite (Fe carbonate), chlorite, K-feldspar, amphibole, Mn-silicates, phosphate minerals, titanite, and Fe oxides.
- K-feldspar is pseudomorphed by sericite/muscovite and therefore it was not possible, using X-ray Diffraction techniques (XRD), to determine if adularia was present at Altan Nar. Visual examination of drill core, however, has revealed the presence of adularia, with characteristic 'chisel-pointed' pseudo-orthorhombic crystal shapes, in some quartz veins.
- Manganese in mineralized zones at Altan Nar – Altan Nar mineralization in the DZ south contains a complex mineral assemblage including manganese carbonate, manganese oxides and manganese silicates. Identified Mn-bearing minerals include rhodochrosite (Mn-carbonate), jacobsite (Mn-Fe-oxide), manganite (Mn-oxide-hydroxide), kutnohorite (Ca-Mn-carbonate), pyroxmanganite (Mn-silicate) and an unidentified Mn-Cr-oxides mineral.

Based on petrographic observations, coupled with other field and mineralogical data, the following provisional paragenetic sequence is proposed for Altan Nar:

- Early stage massive quartz veining and brecciation.
- Brecciation, silicification and comb quartz veining and associated white mica alteration (sericite-pyrite-quartz) and deposition of galena-sphalerite-chalcopyrite-arsenopyrite (Au?). Note: some replacement of chalcopyrite by covellite and chalcocite may be later, but part of this mineralizing phase.
- Arsenopyrite-pyrite (+Au?) overprint on above sequences, with some associated (?) chalcedony veining and silicification.
- Mn-Ca carbonate veining (rhodochrosite, calcite, etc.) – late hypogene
- Late-stage (supergene) oxidation – limonite, Mn oxides, malachite.

With respect to depth of formation, several mineralogical features at Altan Nar are consistent with intermediate portions of epithermal deposits, including the presence of quartz veins with colloform and crustiform textures, chalcedony veins and geopetal structures in multi-stage veins, and adularia and bladed calcite textures which are evidence of boiling.

In general, mineralogical and geological features of Altan Nar are consistent with intermediate sulphidation and carbonate-base metal deposits, including:

- mineralization occurs mostly in veins and breccias (with evidence of multiple brecciation events);

- adularia and bladed calcite textures in quartz veins represent boiling features;
- multi-stage quartz veins with late-stage geopetal structures in chalcedony;
- veins with quartz and Ca-Fe-Mn-Mg carbonates host the Au mineralization;
- Au is present as native metal with a variety of base metal sulfides and sulfosalts (e.g. Pb- and Sb sulphosalts identified by SGS);
- low-Fe sphalerite, tetrahedrite-tennantite (tentatively identified optically at MUST) and galena often dominate in base metal assemblages;
- Au-bearing veins can show classical banded crustiform-colloform textures; and
- white-mica alteration associated with mineralized zones, consisting of quartz-sericite (i.e. illite)-pyrite.

Additionally, a few features are consistent with high-sulphidation affinities, including ubiquitous presence, albeit in low modal concentrations, of Cu-sulphide minerals and high concentrations of Mo in a few samples. Tennantite-tetrahedrite are also diagnostic of high-sulphidation epithermal deposits and were identified in the MUST study, however, the identification of only Ag-Sb and Ag-Cu sulphide minerals by SGS places uncertainty on the optical mineralogy observations.

Widespread evidence for magnetite destruction ('martitization') was documented in volcanic and volcaniclastic rock samples. In these samples, magnetite is replaced by non-magnetic Fe oxide minerals and this feature is thought to reflect widespread epithermal fluid alteration, and deposition of gold-silver mineralization. Fresh magnetite, along with altered magnetite, was observed in the andesite sample from the high magnetite response area, as predicted. The most intense martitization was developed in the white-mica alteration zones immediately adjacent to strongly mineralized zones in DZ, where no fresh magnetite was observed. These zones have low magnetic response, as noted above in the geophysical sections.

Petrographic data provides insight into geology of the volcanic and volcaniclastic host rocks at Altan Nar, including:

- These rocks are pervasively altered (propylitic alteration with chlorite, epidote, carbonate), however, based on a consistent plagioclase composition and mafic mineral assemblage of biotite and amphibole most samples are interpreted to be of andesite composition.
- Some volcaniclastic samples contain felsic rock fragments including rhyodacite and rhyolite, suggesting minor bi-modal (i.e. intermediate-felsic) volcanism at Altan Nar, or possibly pyroclastic origin.
- Most volcanic rocks are pervasively altered and contain complex intergrowths of copper minerals (chalcopyrite, covellite, chalcocite and malachite) +/- sphalerite and galena indicating widespread metasomatism by metal-bearing fluids at Altan Nar.

The presence of Cu-Pb-Zn sulphides and Ag-bearing minerals throughout the volcanic rocks at Altan Nar demonstrates widespread alteration of the volcanic pile by metal-rich epithermal fluids.

Petrographic analysis of a single high-grade gold sample from drill hole TND-101 was completed in 2017 at Applied Petrologic Services and Research (APSAR) in New Zealand. This sample was collected from the164-165m interval that returned assays of 17.3 g/t Au, 21 g/t Ag, 1.19% As, 0.65% Mn, 0.14 % Pb, and 0.22% Zn. Results from this work indicated that:

1. Hydrothermal breccia cement comprises early, very fine-grained mosaic quartz and adularia, and later, less voluminous mosaic-drusy quartz interposed with interstitial sericite/illite and overgrown by Fe/Mg/Ca-carbonate. Fe/Mg/Ca-carbonate is also contained along late-stage fracturing and cavities along multiple shears and micro-fractures. Kaolin clay and hydrated Fe-oxides fill residual cavities and late fracturing.

2. A general paragenetic sequence of fracture/cement infilling was established, including:

    a. Mosaic quartz, adularia (i.e. indicating boiling conditions; altered to illite/kaolin), pyrite, arsenopyrite;

b. Mosaic-drusy quartz, pyrite, arsenopyrite, sphalerite, galena, gold/electrum, chalcopyrite, argentite; sericite/illite; Fe/Mg/Ca-carbonate; and

c. Fe/Mg/Ca-carbonate, chalcopyrite; kaolin, hydrated Fe-oxides;

3. Relict secondary K-feldspar/adularia after groundmass of porphyritic andesite wallrock is impregnated with ultra-fine-grained supergene hematite;

4. Very fine-grained galena is locally abundant, both filling cavities and occurring as inclusions within pyrite.

5. Gold/Native Electrum: occurs as:

- Intergrowths with galena and some amounts of argentite, filling cavities within and overgrowing pyrite. Gold grains (~15μm) were observed to be intergrown with galena, and contained as inclusions in pyrite (3-35 μm);
- Interstitial grains to, and as inclusions within, quartz;
- In-filling along micro-fractures within pyrite;

6. Very fine to fine grained acicular to prismatic arsenopyrite is concentrated in relation to earliest mosaic quartz and adularia of hydrothermal breccia cement;

7. Coarser grained arsenopyrite, together with pyrite, is mutually interlocking with fine grained mosaic to drusy quartz of later stage silica cement;

8. Subhedral to anhedral galena, chalcopyrite and sphalerite are intergrown with, but are mostly interstitial to, quartz and overgrowing pyrite and arsenopyrite;

11.5 Sample and Assaying Methods

RPM accepts that the sampling and assaying methods and approach are reasonable for this style of mineralization. The samples are representative and there appears to be no sample biases introduced during sampling. SGS laboratory is independent from Erdene and any relationship is commercial in nature and SGS laboratory is accredited/certified to ISO 9001.

11.6 Data Quality Control for Altan Nar

Due to the reporting of the previous resource in 2015 for the Altan Nar Area, the QAQC is presented pre and post the data included in the resource.

11.6.1 Pre-2015 Estimate

The Quality Assurance and Quality Control (QA/QC) data provided to RPM consist of 14 types of commercial standards, laboratory internal standards as well as internal repeats. In addition, RPM arranged for 53 independent coarse reject samples from all phase of drilling program to be re-submitted these samples for check analysis to ALS Lab in Ulaanbaatar, Mongolia.

The QA/QC samples for the Project are summarised in **Table 11-3**.

Table 11-3 Summary of QA/QC samples for the Altan Nar (Pre-2015)

2014 diamond drilling program	
QA/QC Sample Type	**Number of Samples**
SGS internal standards	568
SGS internal repeats	185
External standards	157
External checks	31
Subtotal	**941**
2012 diamond drilling program	
SGS internal standards	214
SGS internal repeats	250
External standards	383
External checks	12
Subtotal	**859**
2011 diamond drilling program	
SGS internal standards	301
SGS internal repeats	135
External standards	315
External checks	10
Subtotal	
Total	**761**

Internal repeats were selected randomly by the laboratory while no check sampling was routinely carried out by the company. Subsequent to the end of the program, 51 external repeats were selected from reject material and sent for assay by Erdene.

For the all phase of drilling, standards were inserted at a rate of approximately 1:20 and blank samples were inserted at a rate of approximately 1:20. Monitoring of standards was undertaken by Erdene geologists.

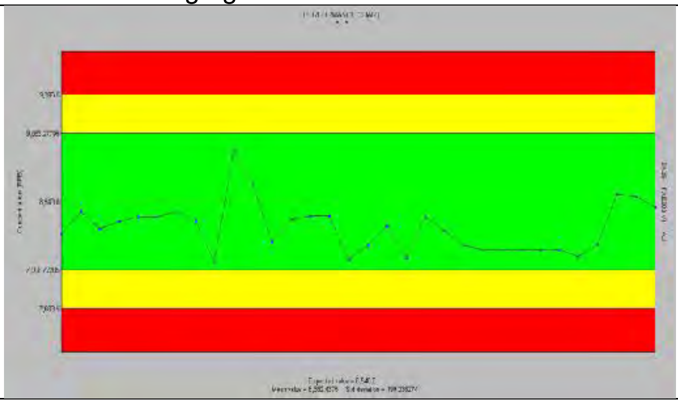
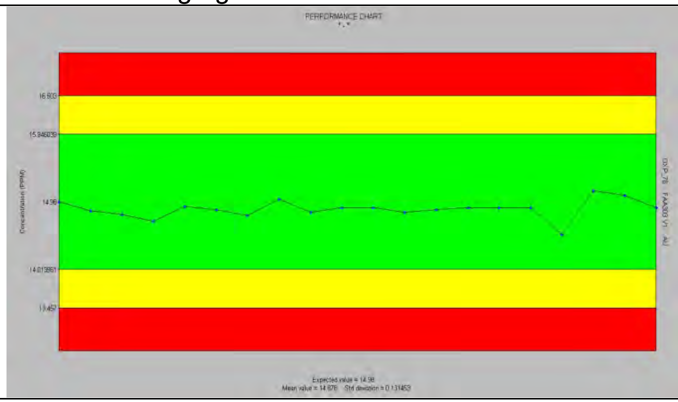
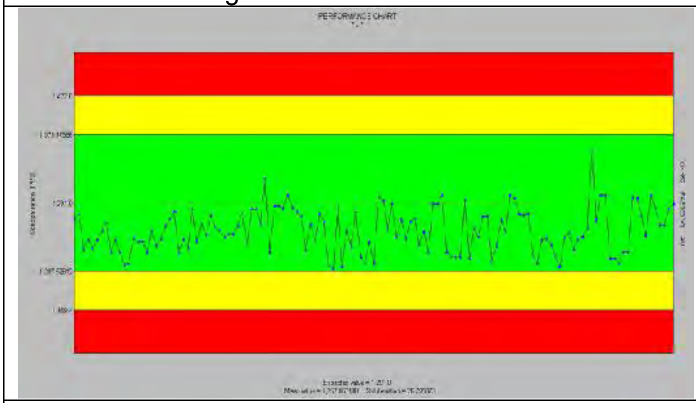
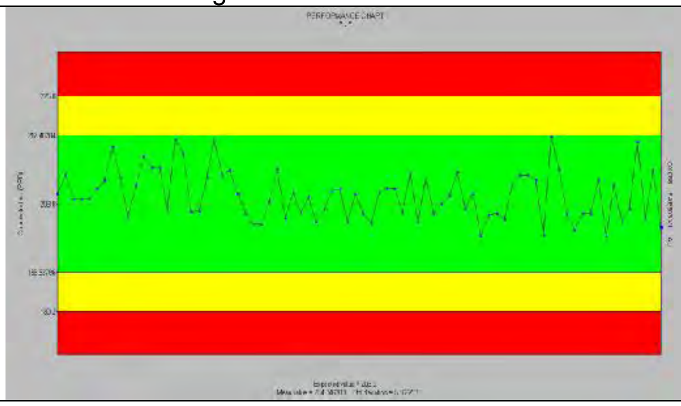
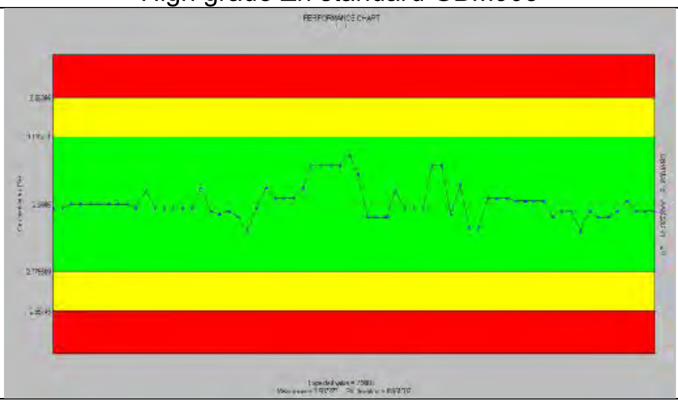
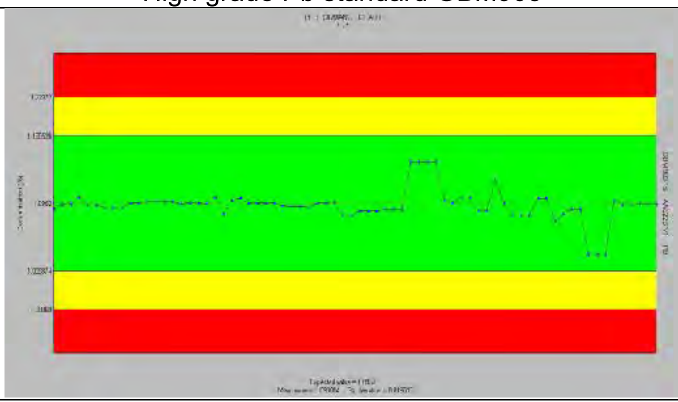
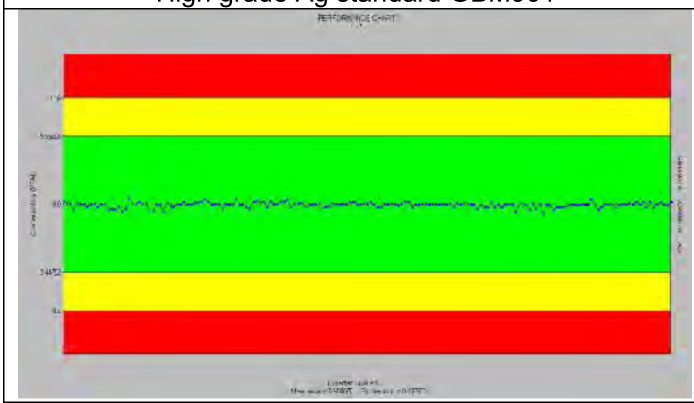
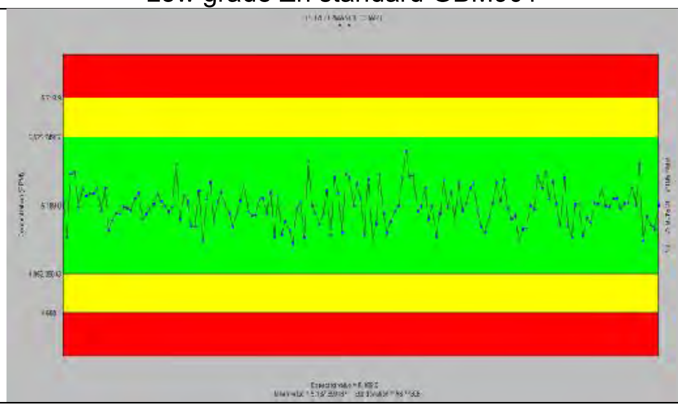
Internal Laboratory Standards

SGS provided RPM with 1083 results (12% of all assays) for the 20 Certified Reference Materials ("CRM") used for internal laboratory QA/QC for the Project (**Table 11-4**). The results of the SGS internal standards for Au, Zn, Pb and Ag are shown in **Figure 11-1**.

Table 11-4 Numbers of internal SGS standards used for the Project (Pre 2015)

Standard ID	Elements	2011	2012	2014	Description
GBCU.M02	Ag, Cu, Pb, Zn	50			Low grade
GBCU.M04	Ag, Cu, Pb, Zn	42			Low grade
GBM903	Ag, Cu, Pb, Zn	21	7	33	High grade
GBM996	Ag, Cu, Pb, Zn	2	3	6	High grade
GXR-1	Ag, Cu, Pb, Zn, As, Mo	2			Low grade
OXA45	Au	144	46	127	Low grade
OXH52	Au	38	37	39	medium grade
OXP76	Au	2	6	11	High grade
OXL51	Au		10	24	Low grade
OXC102	Au		3		Low grade
OXC88	Au		28	37	Low grade
GXR4	Ag, Cu, Pb, Zn, As		17	51	Low grade
GBM901	Ag, Cu, Pb, Zn, As		28	184	Low grade
GBCU.M01	Ag, Cu, Pb, Zn, As		19		Low grade
AUOE	Au		10	5	medium grade
SN26	Au			19	High grade
GBCU.M99	Pb			21	high grade
GBCU.M98-4c	Ag			6	high grade
CGL108	Ag			3	high grade
AUOI	Au			2	high grade
Total		**301**	**214**	**568**	

Analysis of the plots indicate that the results show an acceptable range of variability over time and between sample batches for Au, Zn, Pb and Ag with all analysis occurring within the upper and lower warning limits (two standard deviations). In addition, RPM notes that no material assay bias can be observed and as such the results highlight the good performance of the SGS laboratory.

High grade Au standard SN26	High grade Au standard OXP76
	
Low grade Au standard OXH52	Low grade Au standard OXC88
	
High grade Zn standard GBM903	High grade Pb standard GBM903
	
High grade Ag standard GBM901	Low grade Zn standard GBM901
	

Green - 1SD, Yellow - 2SD, Red – 3SD

RPMGLOBAL

LEGEND

DO NOT SCALE THIS DRAWING - USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE

CLIENT

ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING: FSGS internal standards results for Au, Zn, Pb, Ag, Cu (Pre 2015)

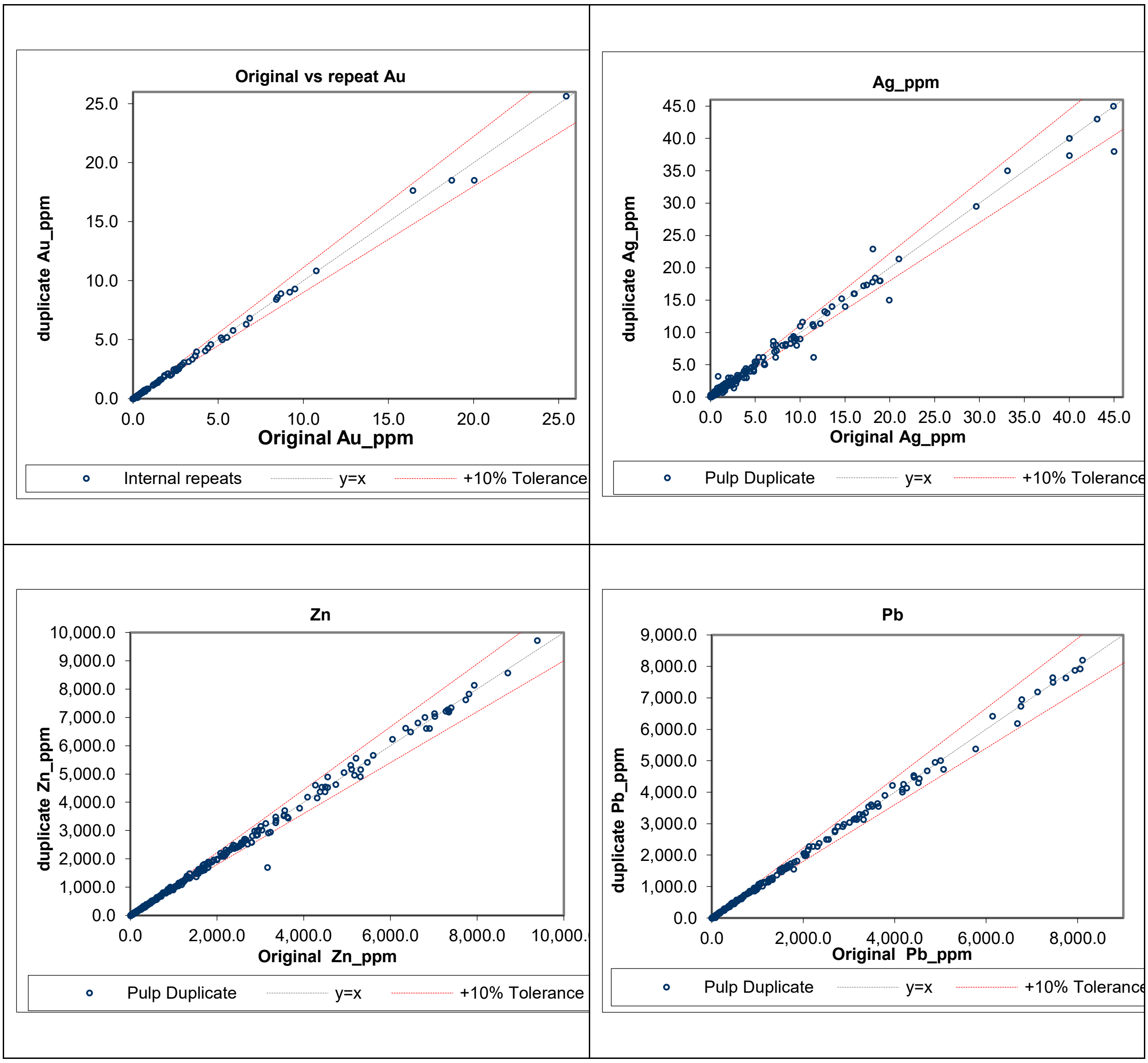
FIGURE No.	PROJECT No.	Date
11-1	ADV-MN-00161	January 2019

SGS Internal Repeats

A total of 570 internal laboratory repeats (6% of all drill hole assays) were analysed for Au, Zn, Pb, As and Ag. The scatterplots of these results are shown in **Figure 11-2**.

Analysis of these plots indicates that the majority of the results for Au, Zn, Pb and Ag are within the 10 % error limits. This indicates good repeatability of the primary pulverized samples and that the pulps appear to be homogenous. In addition, no assay bias can be observed in the data highlighting the precision of the sample preparation and analysis by SGS.

Figure 11-2 SGS Internal Repeats for Au, Zn, Pb and Ag (Pre-2015)



Erdene CRM Standards and Blanks

Commercial standards were used during the Erdene drill programs and were obtained and certified by OREAS Pty. A total of 855 external standards (10% of all drill assays) were analysed at SGS. A summary table of standards used is shown in **Table 11-5**. Blank standards were sourced from silica sand and barren basalt (OREAS 26a).

Table 11-5 External Standards Details (Pre-2015)

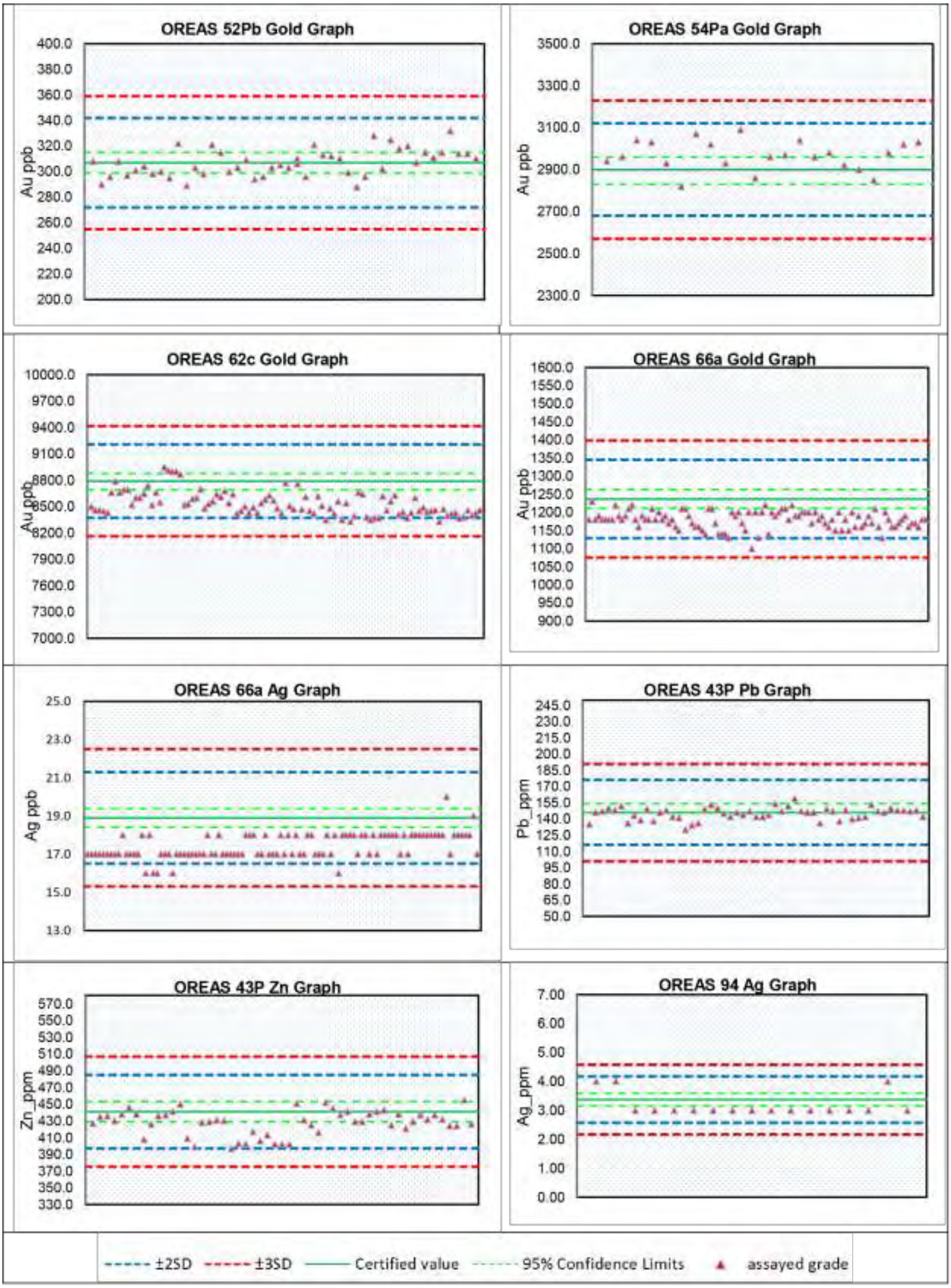
Std_ID	Elements	Count	Std Min	Std Max	Certified value	Actual Ave. Assay	1SD	Outside Expected Range (2SD)
OREAS13P	Au_ppb	41	49	63	47	53.82	3.5	14
	Cu_ppm	41	2530	2680	2504	2598.3	106	-
OREAS42P	Au_ppb	2	94	95	91	94.5	3	-
	Zn_ppm	2	602	633	615	617.5	18	-
	Pb_ppm	2	147	153	150	150	10	-
	Cu_ppm	2	392	398	389	395	13	-
OREAS43P	Au_ppb	53	68	83	73	74.3	5	-
	Zn_ppm	53	397	455	441	427.9	22	2
	Pb_ppm	53	130	159	146	145	15	-
	Cu_ppm	53	396	434	438	413.1	27	-
OREAS44P	Au_ppb	16	65	74	67	68.75	5.8	-
	Cu_ppm	16	387	399	423	392.7	30	-
OREAS4Pa	Au_ppb	8	53	57	52	55.375	4	-
OREAS52Pb	Au_ppb	46	288	332	307	306.8	17	-
	Cu_ppm	46	3380	3560	3338	3449	76	4
OREAS54Pa	Au_ppb	22	2820	3090	2900	2968	110	-
	Cu_ppm	22	15300	16000	15500	15709	233	-
OREAS62c	Au_ppb	97	8330	8950	8790	8534	210	-
	Ag_ppm	97	6	9	8.76	7.9	0.49	13
OREAS66a	Au_ppb	102	1100	1230	1237	1179.6	54	4
	Ag_ppm	102	16	20	18.9	17.4	1.2	5
	Cu_ppm	102	113	129	121	121.8	7	-
OREAS94	Zn_ppm	17	156	169	171	162.64	15	-
	Pb_ppm	17	27	35	30.9	30.35	3.7	-
	Ag_ppm	17	3	4	3.37	3.17	0.4	-
	Cu_ppm	17	11700	11900	11400	11805	433	-
Silica sand	Au_ppb	391	0	306	<2	1.65	-	-
	Cu_ppm	391	0	64	<5	12.7	-	-
OREAS26a	Au_ppb	49	0	22	<1	0.48		1
	Zn_ppm	49	86	155	107	114	4.8	22
	Pb_ppm	49	2	32	2.73	11.3	0.35	-
	Cu_ppm	49	38	65	50	49.44	4.6	12
5Pa	Au_ppb	11	94	106	98	100.9	3.3	1

The 2011 drilling used 8 types of CRM totalling 315 samples (10% of all core samples from 2011 drilling) certified standards inserted at a rate of approximately 1:20. The 2012 drilling used 11 types of CRM totalling 383 samples (10% of all core samples from 2012 drilling) certified standards inserted at a rate of approximately 1:20 while 2014 drilling used 4 types of CRM totalling 157 samples (10% of all core samples from 2014 drilling).

Control charts of the standards are shown in detail in Shewhart plots for ore grade standards are shown on **Figure 11-3**. Analysis of these plots indicates that most results are within the upper and lower warning limits. The results again indicate the acceptable performance of the SGS laboratory.

The blank standards of silica sand have all reported below 0.018g/t Au.

Figure 11-3 External Standard Results from SGS (Pre-2015)

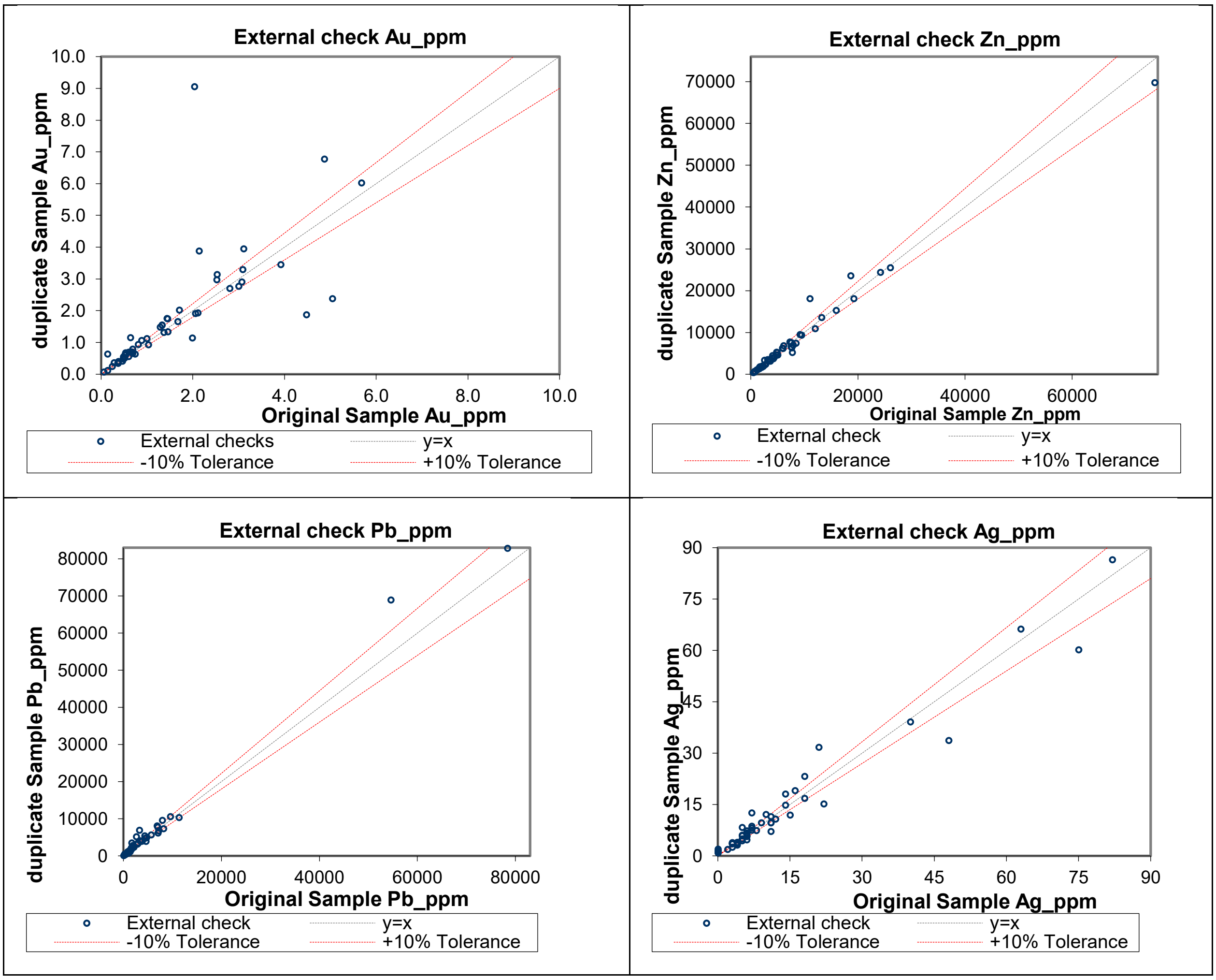


External Checks

External checks haven't been routinely carried out by the Company however RPM selected 53 samples from all phase of drilling, and these are sourced from coarse rejects. Samples were used to determine if any assay bias exists between the two laboratories. Samples were analysed at ALS Lab in Ulaanbaatar, Mongolia.

The results of the external repeats for Au, Zn, Pb and Ag are shown in the scatterplots in **Figure 11-4**. The results indicate that the external check samples have negligible bias relative to the original assays especially for coarse reject samples. Base metal shows less scatter while gold shows more variability as would be expected from coarse reject material.

Figure 11-4 External Repeats for Au, Zn, Pb and Ag



QA/QC Summary

Erdene has carried out a program of QAQC for all phases of the drill program at the Altan Nar deposit. Industry CRMs were inserted at regular intervals and the results have, in the main, accurately reflected the original assays and expected values. Blank standards were sourced from silica sand and have all reported below 0.018g/t Au.

RPM's analysis of the internal repeat results for Au, Zn, Pb and Ag, show an acceptable correlation (most results within the 10 % error limits) with the original sample results. This indicates the sample pulps were reasonably homogenous after sample preparation resulting in high precision and repeatable sample assays.

The results for the internal standards for Au, Zn, Pb and Ag were acceptable, as were the CRM results for Au, Zn, Pb and Ag. A recognised laboratory has been used for analysis of samples.

External checks by the company haven't been carried out routinely however RPM independently selected 53 samples from all phases of drilling and the results show scatter in gold but less scatter for base metals. Given the style of mineralization and type of coarse reject sample taken RPM considers the result to within the acceptable range. As such RPM considers that the QAQC data indicates that primary laboratory and External lab showed no evidence of systematic bias and the samples are representative.

Overall, the QAQC data does not indicate any bias and supports the assay data used in the Mineral Resource estimate.

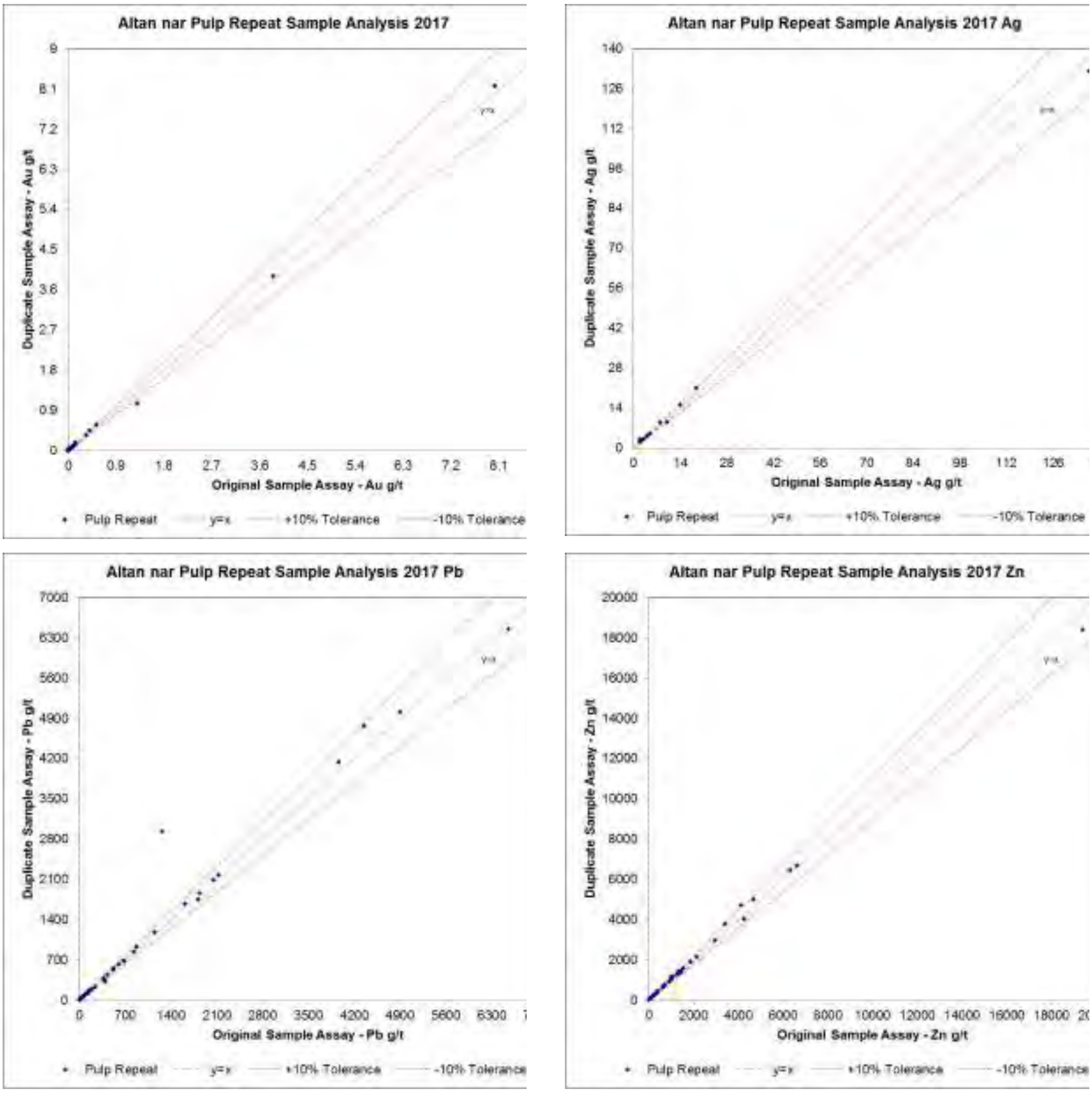
11.6.2 Post 2015 Estimate

Commercial standards were used during 2015-2017 drilling programs and were obtained and certified by OREAS Pty Ltd. 2015-2017 drilling used five certified standards (all Au and Ag standards with trace level Zn and Pb values) and were inserted at a rate of approximately 1:20. Two certified blanks were used, Coarse silica sand and Oreas26a (barren basalt). Blanks were inserted at a rate of 1:20 throughout the 2015-2016 drilling programs and 1:30 in 2017. A total of 69 field duplicates as well 53 pulp repeats were available only for 2017 drilling campaign.

Pulp Repeats

A total 53 pulp repeats were analysed at SGS only in 2017 drilling. Results were shown in **Figure 11-5**.

Figure 11-5 Pulp Repeat Sample Analysis (Post 2014)



The results indicate that the pulp check samples show a small degree of scatter and have negligible bias relative to the original assays. This indicates that the laboratory sample preparation procedures are of a high standard with good assay repeatability.

CRM standards and blanks

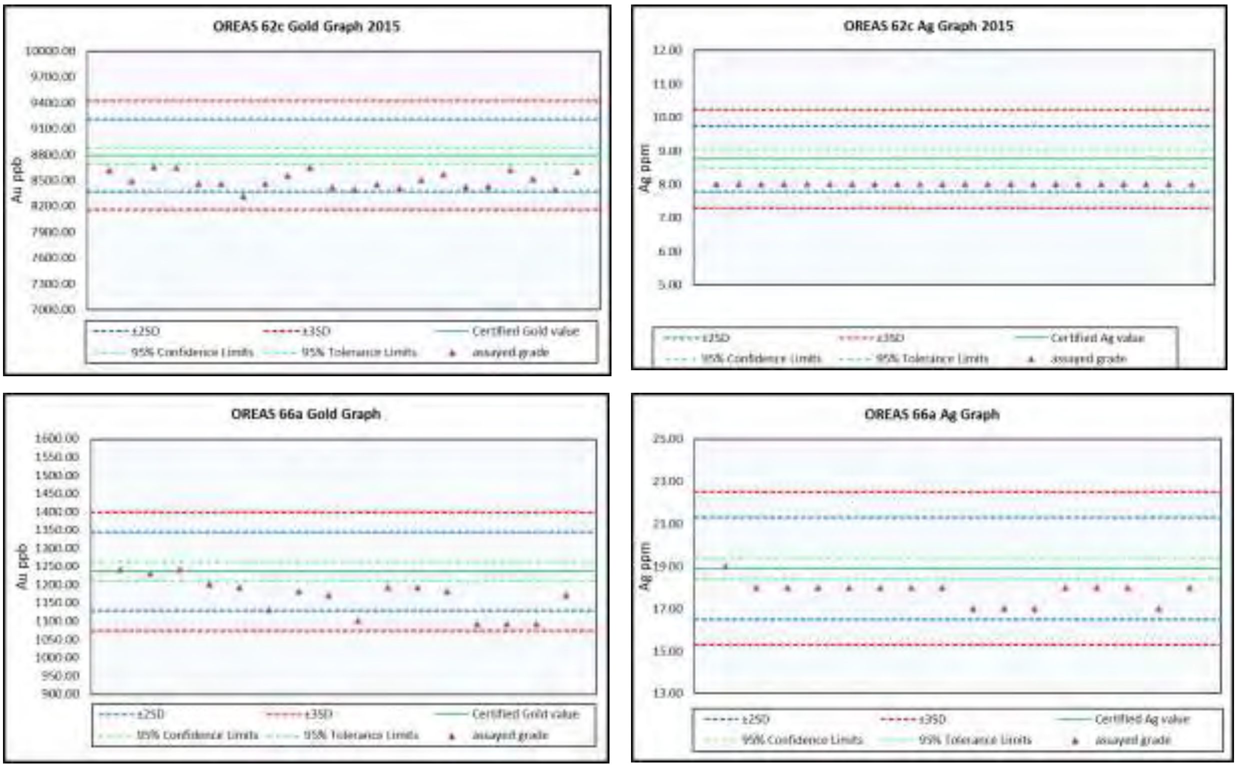
A series of Oreas certified standards were inserted into the sampling program by Erdene throughout 2015-2017 drilling programs and summary table for standards is shown in **Table 11-6** while standard control charts are shown in **Figure 11-6** to **Figure 11-8**.

Table 11-6 Certified Standard Summary for 2014-2017 Drilling

Year	Std_ID	Element ppm	Count	Min Assay	Max Assay	Average Assay	Std Min	Std Max	Std Value
2015	Oreas26a	Au	44	<0.001	<0.001	-	-	-	<0.001
		Ag	44	<0.002	<0.002	-	-	-	<0.002
	Oreas62c	Au	22	8.31	8.65	8.5	8.58	9.00	8.79
		Ag	22	8	8	8	8.27	9.25	8.76
	Oreas66a	Au	16	1.09	1.24	1.17	1.18	1.29	1.24
		Ag	16	17	19	17.81	17.7	20.1	18.9
2016	Oreas62e	Au	27	8.4	8.66	8.57	8.72	9.54	9.13
		Ag	27	9	11	9.78	9.52	10.2	9.86
	Oreas67a	Au	22	2.19	2.28	2.24	2.14	2.33	2.24
		Ag	22	34	36	34.82	31.6	35.6	33.6
2017	Oreas62e	Au	79	8.23	9.19	8.85	8.72	9.54	9.13
		Ag	79	9	10	9.1	9.52	10.2	9.86
	Oreas60c	Au	61	2.35	2.7	2.48	2.39	2.55	2.47
		Ag	61	4	5	4.82	2.87	6.87	4.87

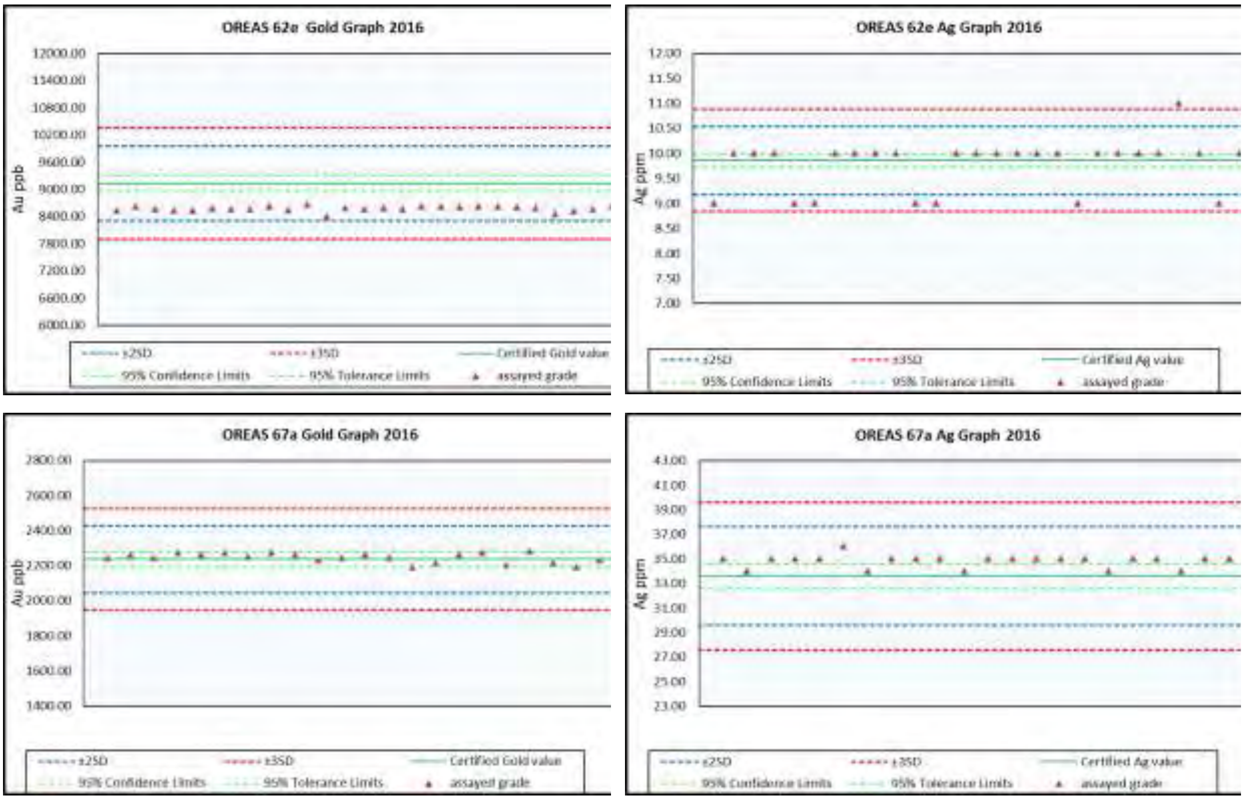
Two types of blanks were inserted at a rate of 1:20. Certified blanks were sourced from silica sand and barren basalt and all blanks returned below 1ppb Au.

Figure 11-6 Control Charts – Standards 2015



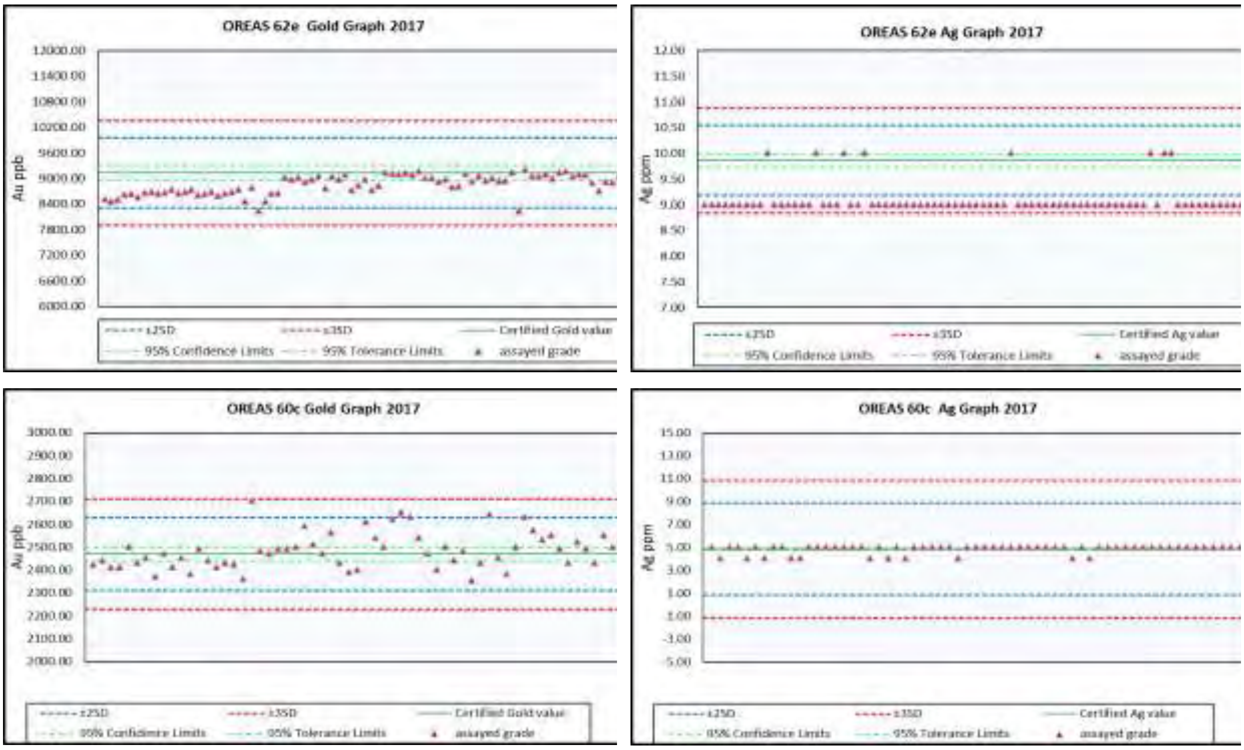
The 2015 standard plots indicate that constant underestimation of Au and Ag can be seen from 2 types of standards while the majority of the results fall within 2SD for both elements. RPM recommends close monitoring of Au and Ag for Oreas 62c and Oreas 66a standards.

Figure 11-7 Control Charts – Standards 2016



For 2016 standards, constant underestimation of Au grade was observed from Oreas 62e while the remaining elements for Oreas62e and Oreas 67a Au and Ag standards performed very well with all results falling within 2SD. Close monitoring of the high-grade Au Oreas 62e standard is recommended by RPM.

Figure 11-8 Control Charts – Standards 2017



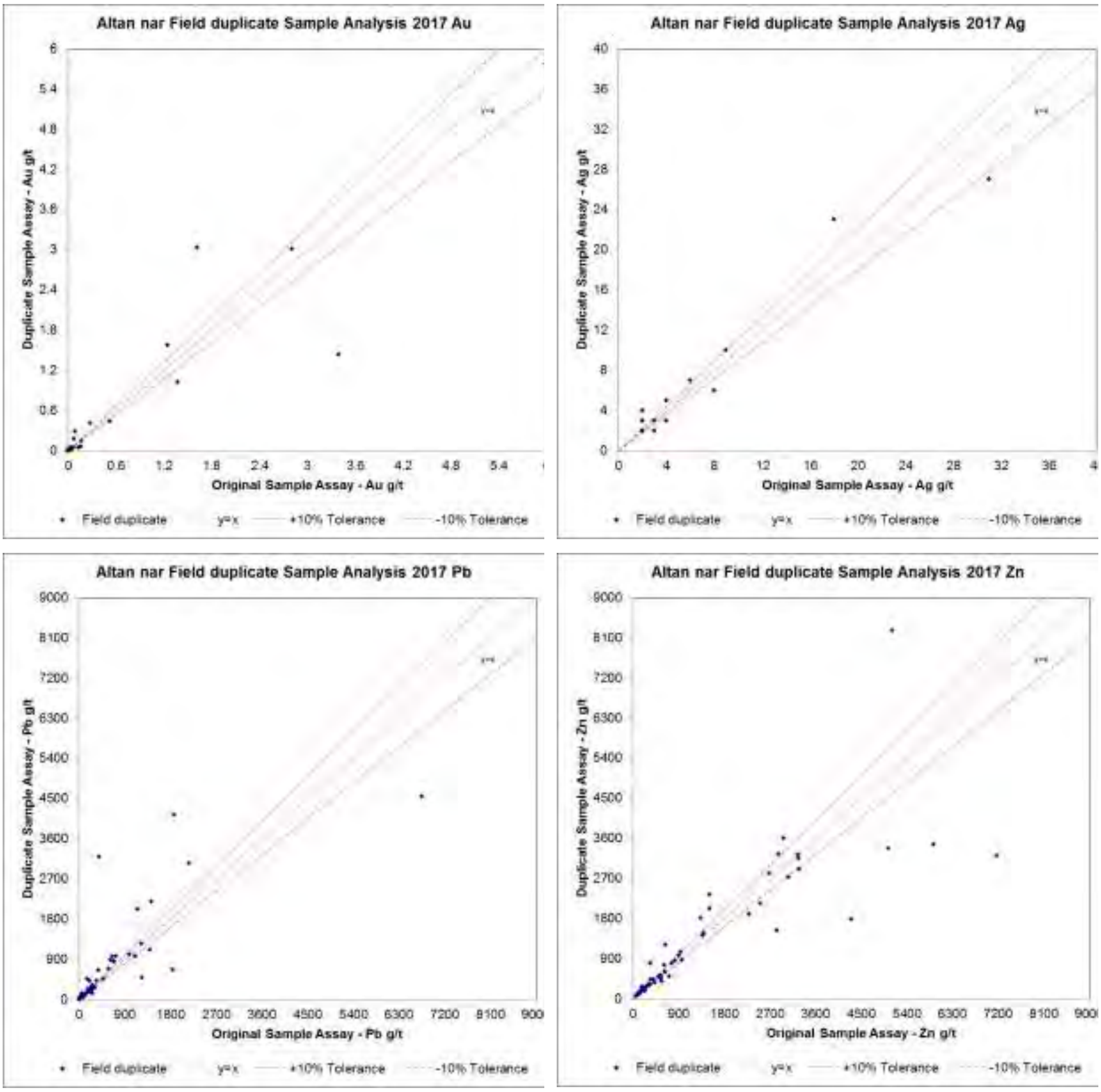
For 2017 the same Oreas 62e standards for Au performed better than those inserted in 2016 with majority of the results falling within in 2SD and near the mean value of the standard material while constant underestimation of Ag grade from Oreas 62e was observed and most of the results fall outside the 2SD. Close monitoring of the Ag value is recommended by RPM for the Oreas 62e standard.

Oreas 60c standard performed quite well with the majority of the results showing scatter but falling within 2SD.

Field Duplicate samples

Field duplicate sample analysis was carried out for 2017 drilling program with only 69 samples being analysed. Results of the field duplicates are shown in **Figure 11-9**.

Figure 11-9 Field Duplicate Sample Analysis



The majority of the field duplicate samples were at low Au values, while the few higher duplicates are widely scattered, suggesting but not proving the possibility of coarse gold. RPM comments that, at some point in the future this will need to be confirmed using screen fire assay analysis.

Zn and Pb field duplicates are also at low but more "in range" values than Au and Ag. They show significant scatter at economically significant grades. Given the spread of duplicate values in general it is suggested that sample splitting protocols be reviewed.

QA/QC Summary

Erdene has carried out a program of QA/QC for drilling since 2011 at the Altan Nar Area. Certified Reference Material standards were inserted at regular intervals and results have accurately reflected the original assays and expected values. Certified blanks have all reported below 0.001g/t Au.

Slight underestimation of Au (8.0g/t) and Ag (10 g/t) grade was observed from the OREAS62c standards inserted in 2015 drilling campaign; however most of the results were within 2SD.

A large degree of scatter was observed in Zn (105ppm) and Pb (3ppm) for the low grade OREAS 26a standard. But these levels are far below plant feed grade as they are primarily Au / Ag standards.

Slight underestimation of Au (9.2g/t) grade was also observed from OREAS 62E for 2016 drilling while Ag performed well. For 2017 the OREAS 62E Au standard performed very well with majority of the results falling within 2SD; however, Ag standards showed poor performance as most of the results fall outside 2SD. It is suggested that a move to a routine ppm level Au analysis be made.

The majority of the field duplicate samples were at low Au values, while the few higher duplicates are widely scattered, suggesting but not proving the possibility of coarse gold. At some point in the future this needs to be confirmed using screen fire assay analysis. Zn and Pb field duplicates are also at low but more "in range" values than Au and Ag. They show significant scatter at economically significant grades. Given the spread of duplicate values in general it is suggested that sample splitting protocols be reviewed.

RPM recommends duplicate pulp testing of plant feed grade base metal samples prior to the next re-estimation of the Resource to confirm laboratory performance. This will require inclusion of sufficient base metal CRM to form a statistically valid population.

Instead of two Au CRM's, RPM recommends the use of separate Au and plant feed grade base metals standards in appropriate ranges to confirm Au and base metals values in future programs.

RPM recommends selection of pulp duplicates from economically significant grade ranges.

Generally, QAQC data suggests slight negative bias for high Au standards potentially as a result of approaching the method over-range limit. The results for Au grades >9ppm are likely to be understated, this is not considered a material issue and supports the assay data used in the Mineral Resource estimate.

11.7 Data Quality Control for Bayan Khundii Area

All samples from Bayan Khundii were submitted to the SGS laboratory in Ulaanbaatar. The sample analytical QA/QC program consisted of internal laboratory repeats, field duplicates, external standards, blanks and external laboratory checks. Every 10 samples have at least one quality control data.

11.7.1 Standards and Blanks

The commercial standards were used during the 2015-2018 drill programs and were obtained and certified by OREAS Pty Ltd. The 2015-2018 drilling used five certified standards (Oreas, 62c, 66a, 62e, 67a and 60c) and were inserted at rate of approximately 1:30. Standard sample results are shown in **Table 11-7** while sample graphs are shown in **Figure 11-10** to **Figure 11-13**.

Three certified blanks were used, Oreas26a, Oreas24p, Silica coarse sand (all <1ppb Au). Blanks were inserted at rate of 1:30. All Blanks returned below 0.01/gt Au.

Table 11-7 Certified Standard Summary for 2014-2017 Drilling

Year	Std ID	Au ppm	Count	Min Assay	Max Assay	Average Assay	Std Min	Std Max	Std Value
2015	Oreas26a	Au	35	<0.001	<0.001	<0.001	-	-	<0.001
	Oreas62c		22	8.41	8.58	8.50	8.58	9.00	8.79
	Oreas66a		17	1.19	1.25	1.23	1.18	1.29	1.24
2016	Oreas62e	Au	162	8.39	8.66	8.53	8.72	9.54	9.13
	Oreas66a		77	1.20	1.26	1.23	1.18	1.29	1.24
	Oreas67a		104	1.98	2.36	2.25	2.14	2.33	2.24
	Oreas62c		68	8.4	8.64	8.47	8.58	9.00	8.79
	Oreas24p		25	<0.001	<0.001	<0.001	-	-	<0.001
	Oreas26a		99	<0.001	<0.001	<0.001	-	-	<0.001
	Silica Sand		241	<0.001	<0.001	<0.001	-	-	<0.001
2017	Oreas60c	Au	230	2.30	2.66	2.48	2.39	2.55	2.47
	Oreas62e		309	8.27	9.26	8.72	8.72	9.54	9.13
	Silica Sand		532	<0.001	<0.001	<0.001	-	-	<0.001
2018	Oreas60c	Au	39	2.38	2.62	2.49	2.39	2.55	2.47
	Oreas62e		50	8.41	9.3	8.98	8.72	9.54	9.13
	Silica Sand		84	<0.001	<0.001	<0.001	-	-	<0.001

Figure 11-10 Standard Graphs for 2015 Drilling Program

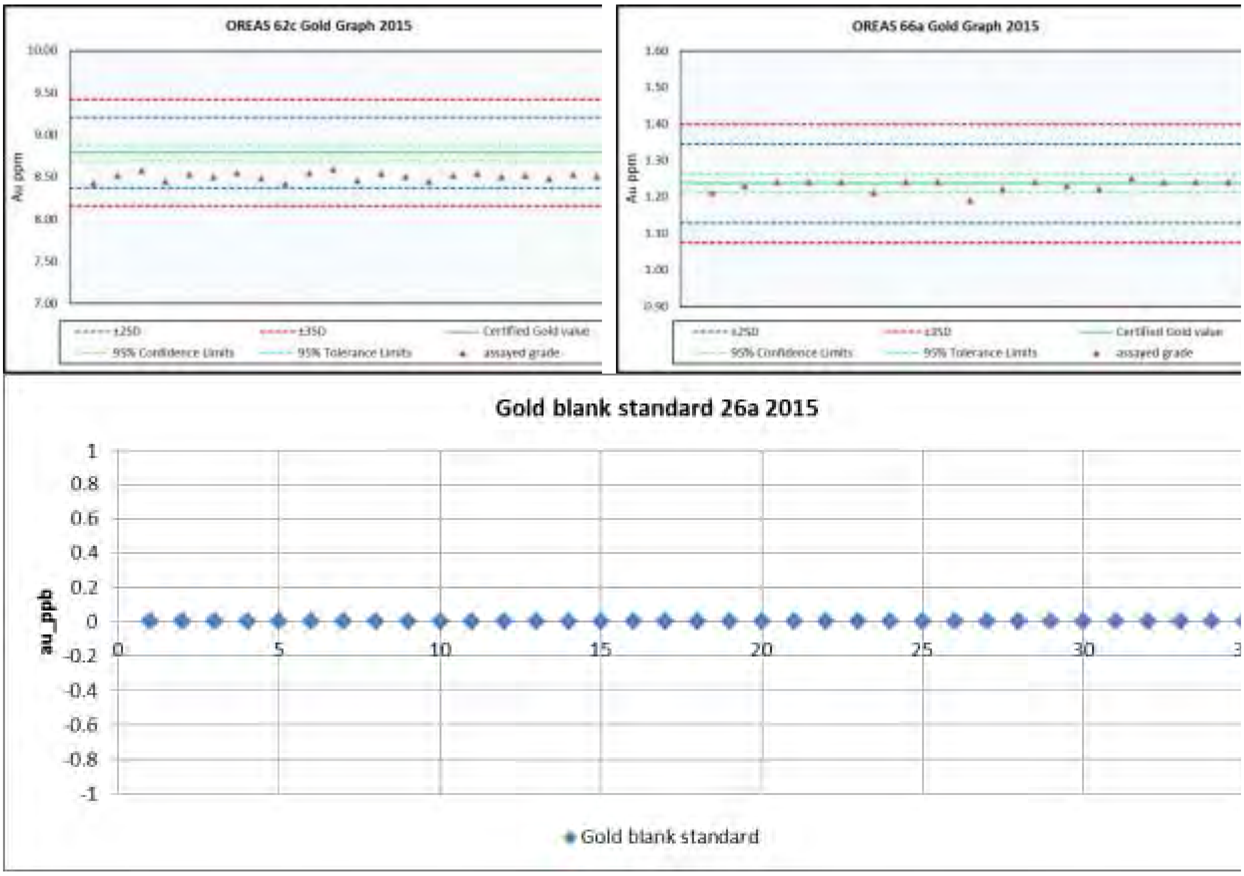


Figure 11-11 Standard Graphs for 2016 Drilling Program

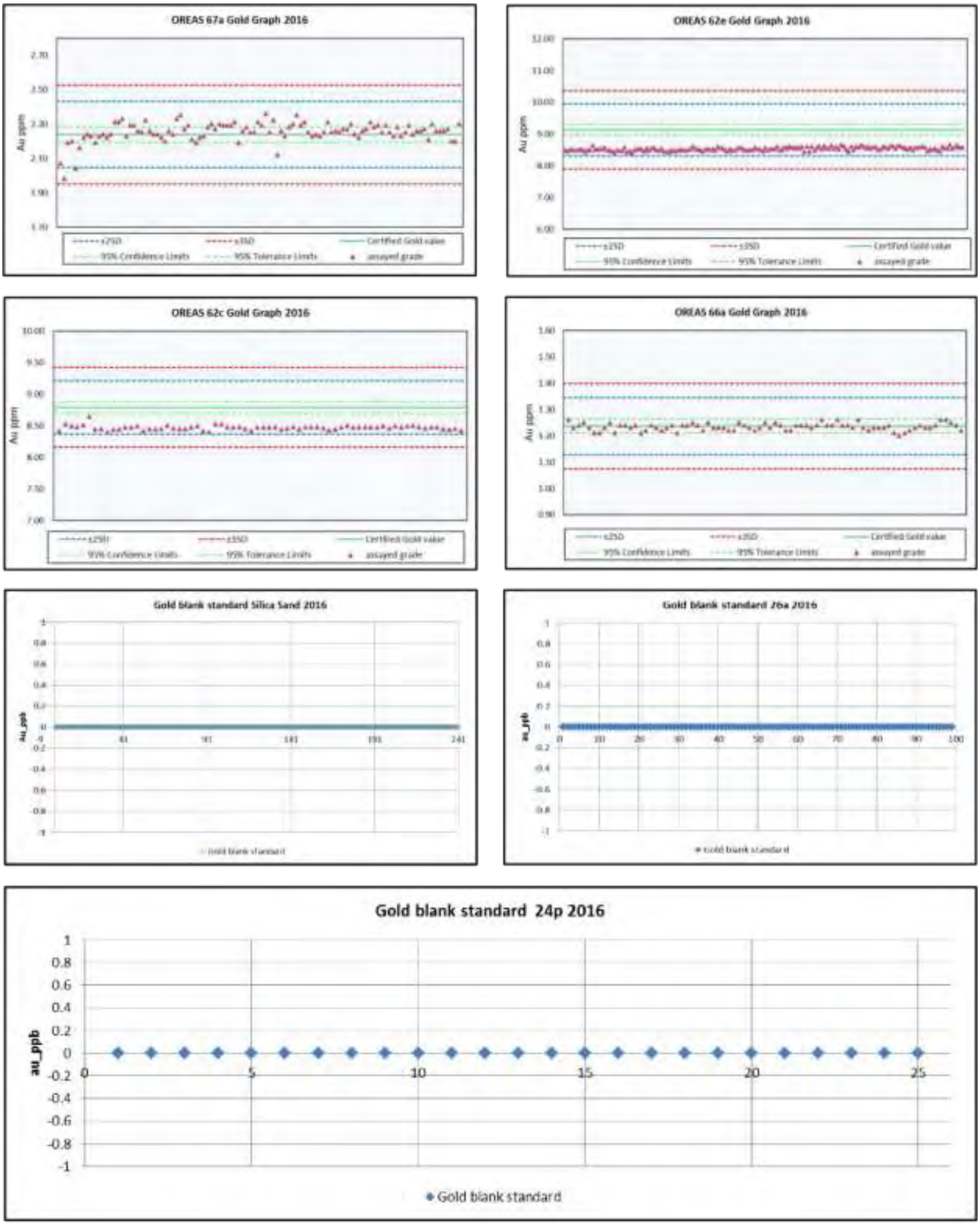


Figure 11-12 Standard Graphs for 2017 Drilling Program

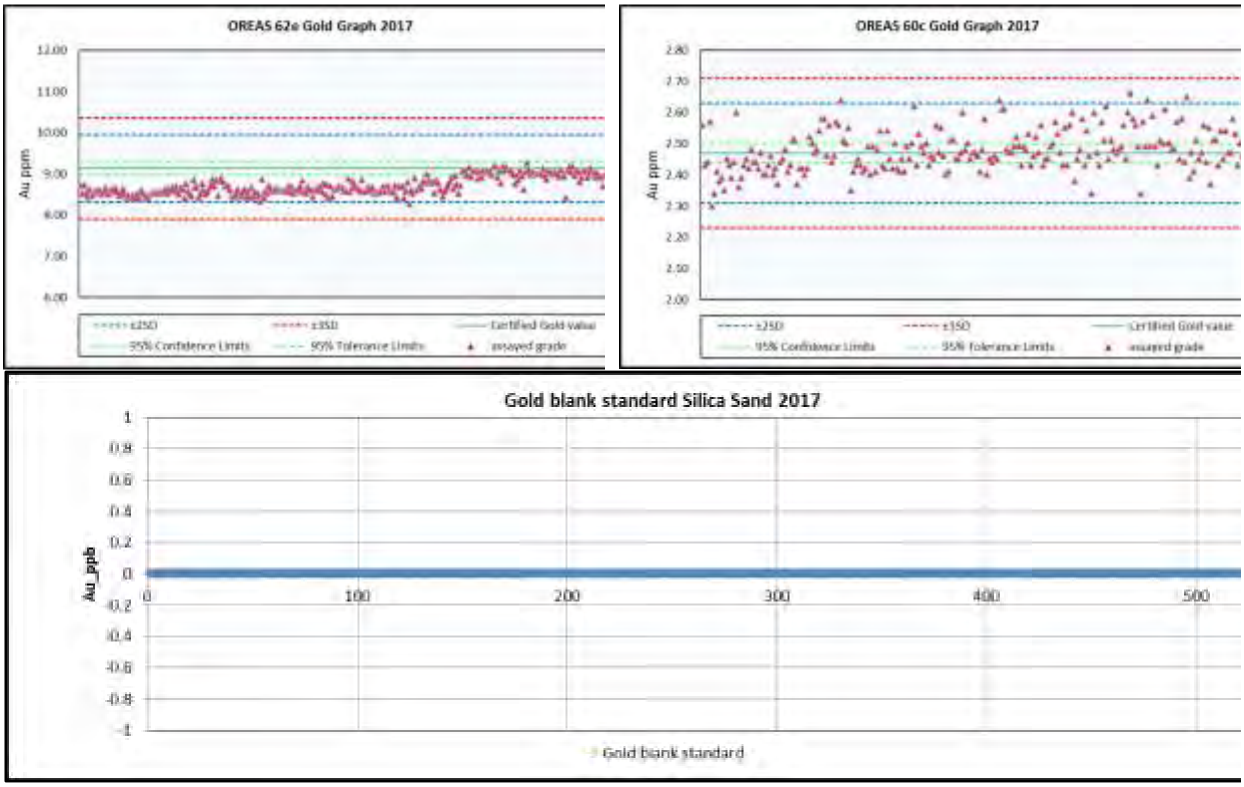
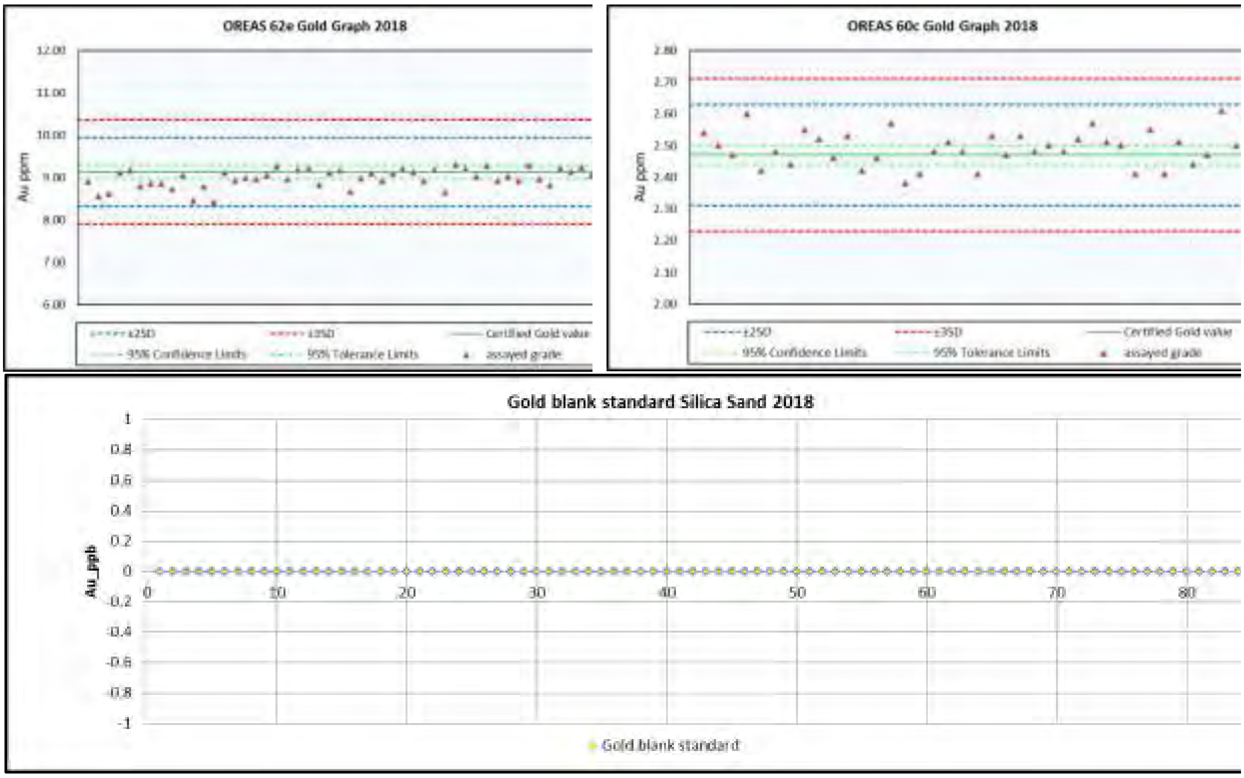


Figure 11-13 Standard Graphs for 2018 Drilling Program



Slight underestimation of higher grades Au (8.0g/t) and Ag (10 g/t) has been observed in the OREAS62c standard for the 2015 and 2016 drilling, as well as slight underestimation of Au (9.2 g/t) grade was also observed in OREAS62e for 2016 and 2017 drilling.

Close monitoring of the Oreas 62e and 62c are recommended by RPM, however the remainder of the standards performed very well with majority of the results fall within 2SD line.

11.7.2 Field Duplicates

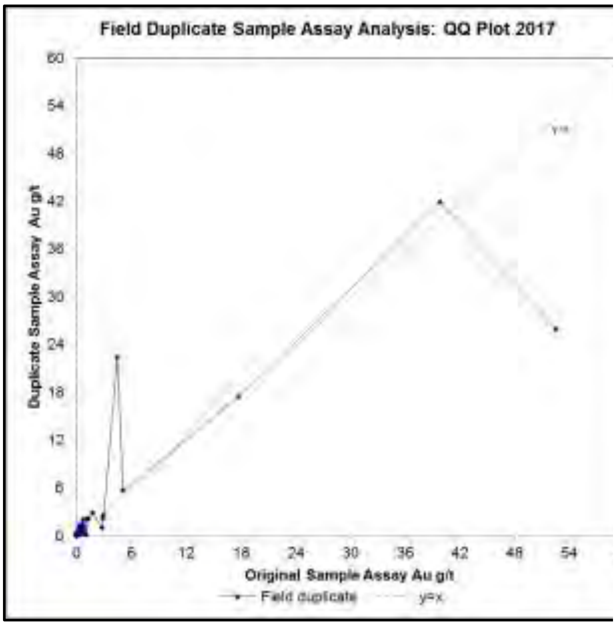
Field duplicates and laboratory repeats were analysed for 2017 and 2018 drilling programs and a total of 304 field duplicates including 258 readings for 2017 drilling and 46 readings for 2018 drilling.

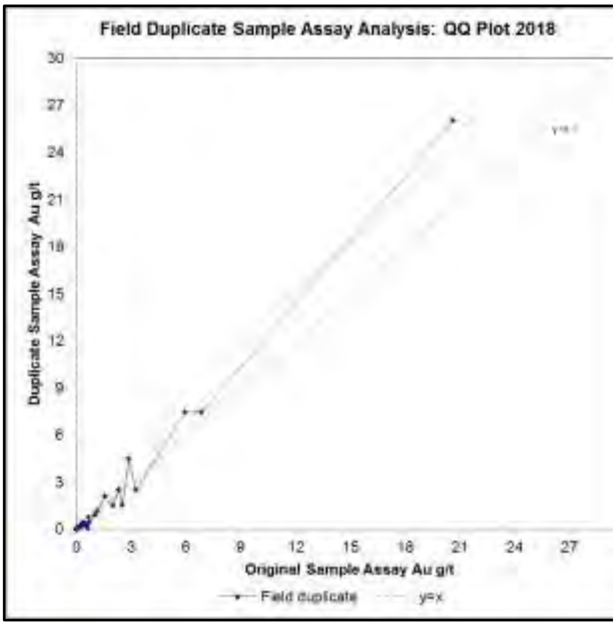
Field duplicates were prepared from ¼ core samples and inserted at rate of 1:60. Summary statistics for field duplicates are shown **Table 11-8**. Results are shown graphically in **Figure 11-14**.

Table 11-8 Summary Statistics for Field Duplicates

Parameter	2017 Field duplicates		2018 Field duplicates	
	Original Assay	Duplicate Assay	Original Assay	Duplicate Assay
Count	258	258	46	46
Minimum	0.00	0.00	0.00	0.00
Average	0.68	0.66	1.23	1.38
Median	0.09	0.09	0.16	0.15
Maximum	52.60	41.90	20.64	26.08
Standard Deviation	4.25	3.53	3.23	4.04
Precision Count				
<1% Precision	27	10.5%	8	17%
1%<Precision<10%	114	44.2%	23	50%
10%<Precision<20%	56	21.7%	8	17%
20%<Precision<50%	46	17.8%	6	13%
>50%Precision	15	5.8%	1	2%

Figure 11-14 Scatterplots (QQ) of Field Duplicate results for 2017 and 2018





The analysis of the plots indicates there is a degree of scatter for Au grade. This indicates a moderate natural variability or "nugget effect" for Au grades. RPM considers this natural variability is an inherent feature of the mineralization can be observed within the deposit on a local scale and is expected in this style of deposit.

11.7.3 Laboratory Duplicates

Laboratory duplicates were analysed for 2017 and 2018 drilling programs and a total of 225 laboratory duplicates including 194 readings for 2017 drilling and 31 readings for 2018 drilling.

Laboratory duplicates were prepared from pulp core samples and inserted at rate of 1:60. Summary statistics for laboratory duplicates are shown **Table 11-9**.

Table 11-9 Summary Statistics for Laboratory Duplicates

Parameter	2017 Lab duplicate		2018 Lab duplicate	
	Original Assay	Repeat Assay	Original Assay	Repeat Assay
Count	194	194	31	31
Minimum	0.00	0.00	0.01	0.01
Average	0.49	0.49	0.26	0.26
Median	0.09	0.09	0.17	0.18
Maximum	20.80	20.90	1.00	1.00
Standard Deviation	1.94	1.94	0.26	0.26
Precision Count				
<1% Precision	39	20%	7	23%
1%<Precision<10%	122	63%	24	77%
10%<Precision<20%	21	11%	0	0%
20%<Precision<50%	11	6%	0	0%
>50%Precision	1	1%	0	0%

Analysis of these plots indicates that the almost all of the results are aligned on x=y line. This indicates good repeatability of primary pulverized samples and that the pulps appear to be homogenous and no assay bias can be observed in the data highlighting the precision of the sample preparation and analysis by SGS laboratory.

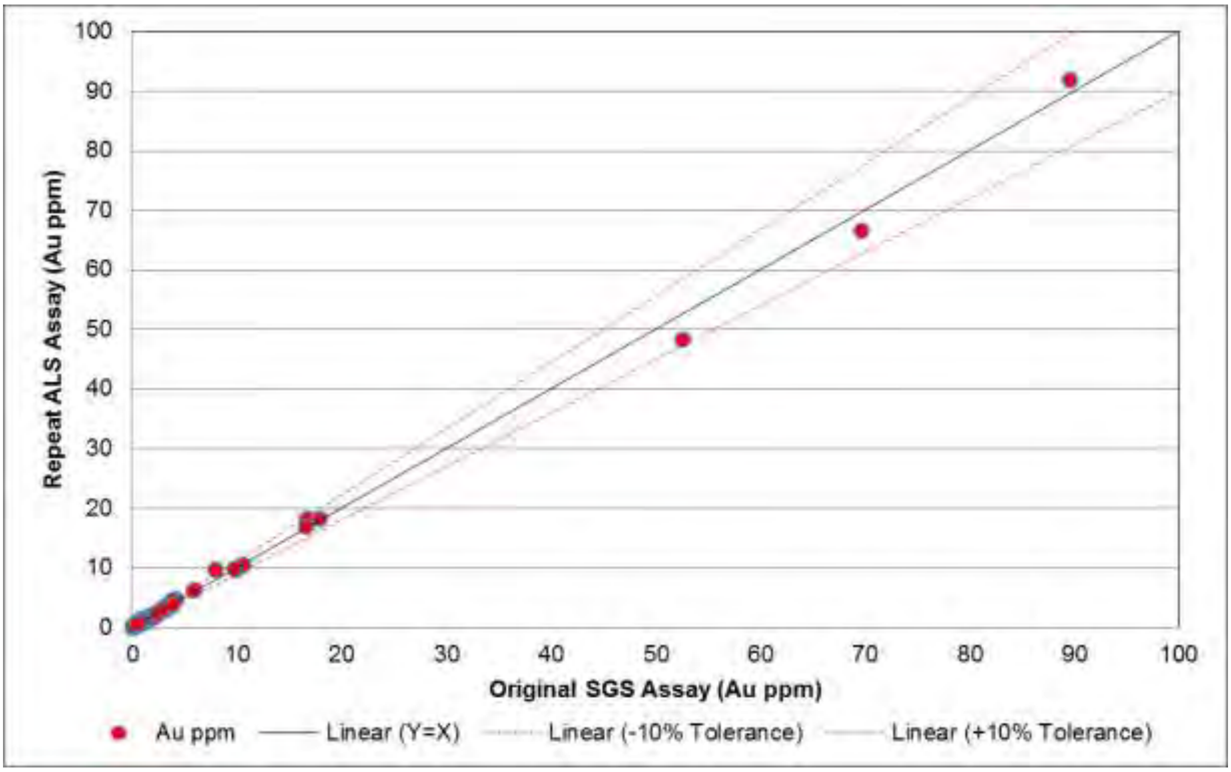
11.7.4 External Check

In late 2017, a series of 500 samples were selected for analysis by ALS Chemex Laboratory ("ALS") in Ulaanbaatar, Mongolia. The samples selected were duplicate pulps prepared by SGS as part of the regular sample preparation process, where SGS has been instructed to prepare duplicate pulps for all samples ending in the number eight (8) and then place them in secure storage for future use, including third party analysis. The ALS facility in Ulaanbaatar is ISO certified. All samples were analyzed for Au from pulp material using the same methodology as the original assays at SGS, i.e. 30 g fire assay with AAS finish. Summary statistics for External checks results are shown **Table 11-10** and graphically shown in **Figure 11-15**.

Table 11-10 Summary Statistics for External Check

Parameter	External Check Results	
	Original Assay	Repeat Assay
Count	500	500
Minimum	0.05	0.00
Average	1.02	1.04
Median	0.23	0.24
Maximum	89.60	91.90
Standard Deviation	5.77	5.71
Precision Count		
<1% Precision	70	14%
1%<Precision<10%	374	75%
10%<Precision<20%	41	8%
20%<Precision<50%	13	3%
>50%Precision	2	0%

Figure 11-15 Scatterplots of External Laboratory Check



The results show a high degree of precision between the two data sets with 88.8% having a precision difference of <10% while 97% has a precision difference of <20%.

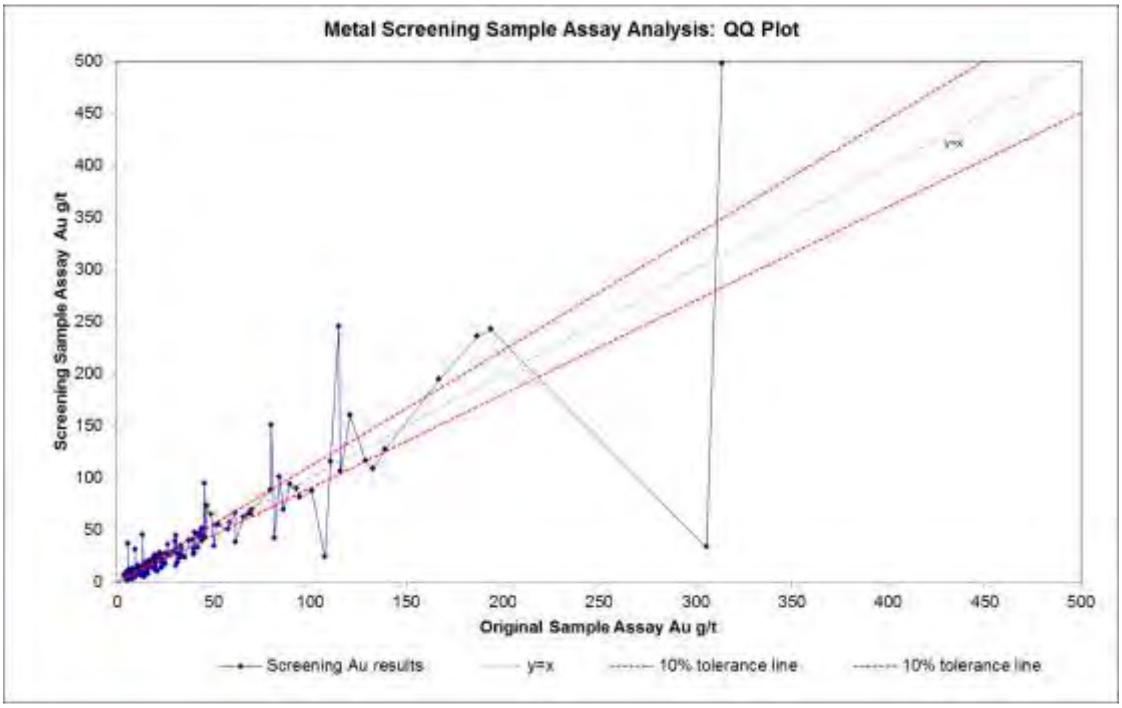
11.7.5 Screen Fire Assay Checks

In the early stages of the exploration program a screen metallic analysis program was undertaken. Due to some very high-grade Au values and abundant visible Au in a number of drill core samples, it was decided that additional analysis should be carried out to determine if the standard fire assay analysis was accurately reflecting the amount of Au in higher grade samples and to determine if there was a 'nugget effect', that is, anomalously high Au grades due to non-uniform distribution of high-grade Au nuggets in the sample material. In order to assess the accuracy of the standard fire assay results, all samples (n=30) which returned an initial assay greater than 2 g/t were selected for screen metallic analysis. In addition, 12 samples that were logged as containing visible Au, however returned assay of less than 2 g/t, were also included in the screen metallic analysis.

Screen metallic (“SM”) analysis used 500 grams of minus 3.35 mm material that was crushed/pulverized to 90% <75um. The total sample was then screened to create a +75um and a -75um fraction, and each fraction was weighed. All of the +75 um fraction, that will contain all of the coarse Au, was then analysed by fire assay (FA). For the -75um fraction, three individual subsamples (30 g) were analysed by FA methods. The total Au content for the sample was calculated by using the weighted average of the +75um fraction results and the mean of the three -75um results.

Results are shown in **Figure 11-16**.

Figure 11-16 Screen Metallic Assaying Results QQ plot



For the 30 high-grade samples, the difference in the overall average grade from the original assays to the screen metallic assays was -2%. So, on average, the screen metallic assays were the same as the original assays. For all 42 samples, the difference in the overall average grade from the original assays to the screen metallic assays was only +8.4%.

These results suggest that there is no significant ‘nugget effect’ for the Bayan Khundii samples. While assay results for individual samples did vary by as much as +/-70%, if the Au at Bayan Khundii was coarse and ‘nuggety’, the variability would be much higher.

In addition, the metallurgical results from 2016 indicate that a large portion of the gravity recoverable Au is present in the finer size fractions (See Section 13). This conclusion is also supported by the SM results which showed that, on average, the -75um fraction contained 81% of the Au while representing 91% of the sample material. While there is still a disproportionate amount of Au in the +75um fraction (19% of the Au in 9% of the sample) this does not represent a nugget effect.

11.7.6 QA/QC Summary

Erdene has carried out a program of QA/QC for drilling since 2015 at the Bayan Khundii Area. Certified Reference Material standards were inserted at regular intervals and results have accurately reflected the original assays and expected values. Certified blanks have all reported below 0.001g/t Au.

Slight underestimation of higher grades Au (8.0g/t) and Ag (10 g/t) has been observed in the OREAS62c standard for the 2015 and 2016 drilling, as well as slight underestimation of Au (9.2 g/t) grade was also observed in OREAS62e for 2016 and 2017 drilling. Close monitoring of the Oreas 62e and 62c are recommended by RPM.

The field duplicate analysis indicates there is a degree of scatter for Au grade however overall grade distributions were identical. This indicates a moderate natural variability or “nugget effect” for Au grades. RPM considers this natural variability is an inherent feature of the mineralization can be observed within the deposit on a local scale and is expected in this style of deposit.

Analysis of repeat plots indicates that almost all of the results are aligned on x=y line. This indicates good repeatability of primary pulverized samples and that the pulps appear to be homogenous and no assay bias can be observed in the data highlighting the precision of the sample preparation and analysis by SGS laboratory.

SM results show that the +75um fraction, on average, contains a disproportionately higher percentage of the Au, caution should be exercised. Results from the duplicate-sample testing program initiated in 2017 does show that there is some variability between duplicate samples, particularly for field duplicate (1/4 core) samples. For pulp duplicate samples greater than 200 ppb Au, the average difference between duplicates is 5.8% (n=61 pairs) while for field duplicated >200 ppb the average difference is 47.5% (n=79 pairs). Additional work is required to better understand the reasons for the observed differences in field duplicates, including possible re-testing using screen metallic assays.

Generally, QAQC data suggests slight negative bias for high Au standards potentially as a result of approaching the method over-range limit. The results for Au grades >9ppm are likely to be understated, this is not considered a material issue and supports the assay data used in the Mineral Resource estimate.

12. Data Verification

RPM conducted a review of the geological digital data supplied by Erdene to ensure no material issues could be found and there was no cause to consider that the data was not accurate.

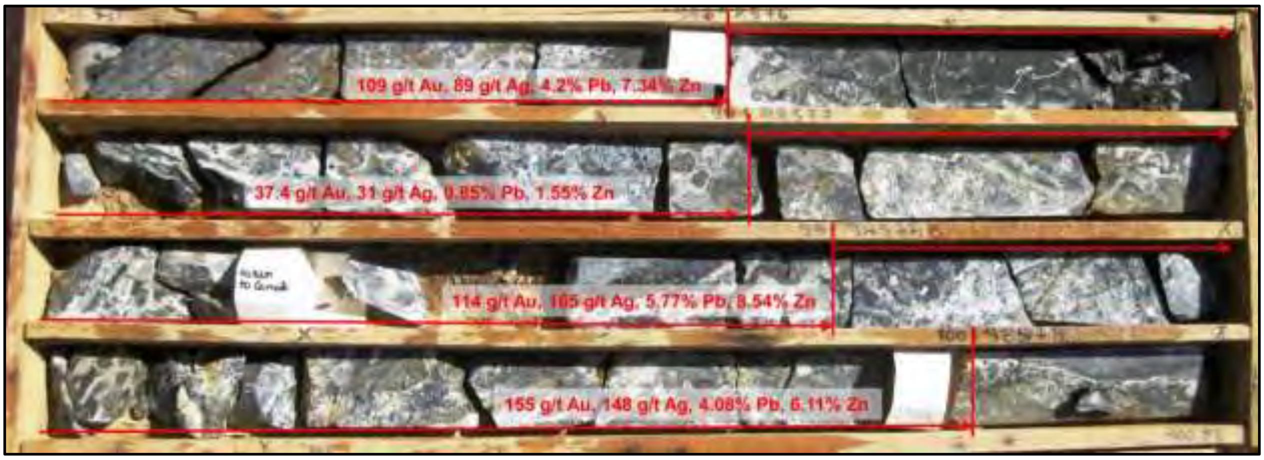
12.1 Altan Nar

An initial review for Altan Nar data included a site visit undertaken from the 18th to 21st November 2014, and a desktop analysis. The most recent site visit is conducted between May 15-19, 2018 by Tony Cameron (QP) and Oyunbat Bat-Ochir whom both employees of RPM to both prospects.

At the time of the site visit, RPM visually checked detailed drill logs and assay results against three drill hole cores stored at the site. These checks were conducted on hole TND-101 from DZ, while holes TND-81 and TND-85 from Union North zones were visually checked against assays results and drill logs.

- It can be noted that high grade gold mineralization mostly occurring in epithermal breccia zones with comb quartz and chalcedonic veins. Adularia, white mica alterations can be well observed within mineralized intervals. Galena and sphalerites also observed within the breccia zones. See **Figure 12-1**.
- High grades are confined within the hydrothermal breccia zones while sulphide dissemination was observed in broader mineralization halo outside the high-grade breccia zones.
- Mineralization at Union North zone tends to be cut by post mineralization barren volcanic and intrusion dykes and those intervals were also checked in drill core which is not assayed by the Company in most case.

Figure 12-1 Strong mineralized (sph-ga-cpy & py) Epithermal comb qtz vein zone cut strong sil-ser-chl-py altered volcanic breccia



RPM verified collar location of post 2014 drilling with handheld GPS and difference between surveyed collar location and handheld located collars listed in **Table 12-1**. The variations are within the accuracy of the handheld GPS.

Table 12-1 Collar comparison between digital database and handheld GPS

hole_id	in Database			Differences from site visit check		
	X	Y	Z	X	Y	Z
TND-101	477,014	4,878,285	1,323.0	-2	-1	-2
TND-102	476,561	4,879,397	1,323.1	3	-2	-1
TND-103	476,999	4,878,411	1,324.7	-2	-2	0
TND-104	476,947	4,878,359	1,323.2	-1	-2	-1
TND-105	477,001	4,878,371	1,324.4	1	-1	-2
TND-106	476,979	4,878,384	1,324.3	0	-1	-1
TND-107	476,975	4,878,429	1,324.3	-2	-1	0
TND-108	477,051	4,878,431	1,325.9	-1	0	1
TND-109	476,969	4,878,347	1,323.5	-1	-2	-1
TND-113	476,938	4,878,456	1,324.1	-1	-2	0
TND-114	477,092	4,878,473	1,327.5	-1	6	0
TND-115	476,879	4,878,798	1,326.7	-1	-3	1
TND-116	477,231	4,878,529	1,330.8	-1	0	1
TND-118	477,144	4,878,548	1,329.2	-1	-3	0
TND-128	476,334	4,879,258	1,320.8	-2	1	0
TND-129	476,916	4,878,376	1,322.7	-2	-1	0
TND-130	477,045	4,877,798	1,323.2	-1	0	-2
TND-81	476,554	4,879,462	1,324.3	-2	1	-1
TND-82	476,550	4,879,508	1,325.4	-3	3	-2
TND-83	476,554	4,879,535	1,326.5	-4	2	-2
TND-84	476,596	4,879,439	1,324.4	-3	11	-2
TND-85	476,632	4,879,533	1,326.7	-4	0	-1
TND-88	476,356	4,878,937	1,318.3	0	-2	1
TND-89	476,648	4,878,801	1,321.6	0	0	2
TND-90	476,980	4,878,340	1,323.3	-1	-3	-2
TND-91	477,038	4,878,333	1,323.9	-2	0	-2
TND-92	476,949	4,878,242	1,321.5	-3	-3	-3
TND-99	476,704	4,879,551	1,327.9	-1	-1	-1

Collars were cased with rods and covered with cement blocks after drilling is finished. Collars were preserved quite well refers to **Figure 12-2**.

Figure 12-2 Collar Preservation

RPM reviewed drilling, logging, sampling, bulk density measurement procedures during the site visit to Project. Erdene supplied RPM with digital Excel files with collar, survey, general lithology, RQD and sampling data. In addition, PDF files of original assay certificates from SGS were supplied along with cross sections of the drilling plotted with assay grades and interpretations. RPM checked all grades and orientation of the drilling against the original assay certificates and cross sections and found no inconsistencies. Hard copy logs were not supplied to RPM.

During this review RPM noted only minor inconsistencies in the provided data which were subsequently corrected in the digital database. The inconsistencies included mislabelled intervals of QA/QC data as well as lithology intervals.

RPM reviewed all QA/QC procedures carried out by Erdene including a review of logging, sampling and sample preparation procedures; reviewed all technical data including geophysical and geochemical data; carried out an analysis of the assay QA/QC results; and compared data sets with observations made in the field. RPM is satisfied that QA/QC procedures carried out by Erdene conform to generally accepted industry standards and that the data used in this report is reliable.

RPM independently imported all original lab reports and cross checked against the Company supplied data 1,134 assay samples (23% of all samples) were checked out of 4,980 samples (post 2014 data) which underpins the updated Mineral Resource Estimate for Altan Nar Area, and no errors noted.

The reviewed drilling database formed the underlying data for the independent NI43-101 Statement of Mineral Resources completed by RPM.

12.2 Bayan Khundii

During the most recent site visit, RPM visually checked detailed drill logs and assay results against five drill hole cores stored at the site. These checks were conducted on hole BKD-236, BKD-237, BKD-238, BKD-239 and BKD-240 were visually checked against assays results and drill logs. During this review it was noted that:

- Visible Au, is associated with comb-textured quartz± specularite veins,
- Multi-stage quartz-adularia± specularite veins (Figure 12-3).
- Quartz-hematite/specularite breccias, hematite veins and fracture fillings, and
- Un-mineralized syenite intrusion base is also checked during site visit and those intervals from drill core are not assayed by the Company in most cases.

Figure 12-3 Hematite altered Intense Sugary Quartz Vein Zone (Assayed 22.0 g/t Au)

RPM verified collar location of drill holes with handheld GPS and difference between surveyed collar location and handheld located collars listed in **Table 12-2**. The variations are within the accuracy of the handheld GPS.

Table 12-2 Collar comparison between digital database and handheld GPS

hole_id	in Database			Differences from site visit check		
	X	Y	Z	X	Y	Z
BKD-102	483,341	4,861,195	1,234.98	-2	2	4
BKD-111	483,375	4,861,409	1,238.08	-3	2	2
BKD-128	483,260	4,860,973	1,243.26	-2	-1	1
BKD-129	483,285	4,860,976	1,241.51	-2	-1	5
BKD-138	483,543	4,861,540	1,238.58	-4	2	0
BKD-140	483,497	4,861,475	1,238.19	-2	2	1
BKD-149	483,290	4,861,184	1,236.70	-4	0	3
BKD-150	483,339	4,861,271	1,237.31	-3	0	3
BKD-155	483,459	4,861,407	1,237.53	-3	2	3
BKD-169	483,414	4,860,921	1,231.71	-1	-1	5
BKD-170	483,482	4,860,881	1,231.52	-2	-1	2
BKD-179	483,479	4,861,443	1,237.94	-2	1	2
BKD-180	483,521	4,861,510	1,238.28	-5	-1	1
BKD-200	483,348	4,861,334	1,239.90	-3	2	2
BKD-22	483,311	4,860,980	1,238.47	-3	-1	4
BKD-228	483,487	4,861,458	1,238.19	-2	1	1
BKD-229	483,345	4,861,241	1,235.69	-2	2	4
BKD-233	483,374	4,861,216	1,235.38	-1	2	4
BKD-25	483,342	4,860,957	1,235.07	-2	-1	4
BKD-251	483,347	4,861,266	1,236.14	-2	-1	3
BKD-254	483,471	4,861,448	1,238.01	-2	1	3
BKD-27	483,269	4,861,071	1,237.98	-3	0	3
BKD-28	483,249	4,861,032	1,245.25	-7	-2	2
BKD-45	483,366	4,861,165	1,234.24	-2	2	3
BKD-58	483,277	4,861,161	1,236.63	-1	0	4
BKD-61	483,259	4,861,055	1,240.40	-2	-2	1
BKD-63	483,299	4,861,125	1,236.50	-4	-3	3
BKD-64	483,287	4,861,062	1,237.88	-2	1	3
BKD-65	483349.3	4861126	1237.672	-2	-1	4
BKD-69	483309.7	4861143	1235.709	-3	0	3
BKD-76	483296.3	4861081	1236.715	-2	0	5
BKD-80	483307	4861097	1236.619	-3	0	4
BKD-81	483289.1	4861106	1237.537	-3	0	5
BKD-83	483340.7	4861113	1238.813	-1	0	4
BKD-86	483331.1	4861135	1237.461	-3	0	3
BKD-90	483328.7	4861252	1235.664	-2	2	4
BKD-92	483291.4	4861271	1236.186	-1	2	3
BKD-94	483366.6	4861320	1242.797	1	1	3
BKD-95	483363.4	4861230	1235.285	-2	1	4
BKD-96	483347.6	4861366	1238.546	1	2	4
BKD-98	483310	4861261	1235.99	-2	0	2
BKD-222	483338.5	4861154	1235.82	-2	0	4
BKD-234	483292.6	4861012	1244.513	-1	-3	4
BKD-252	483329.7	4861159	1236.064	-3	1	4

Collars were cased with rods and covered with cement blocks after drilling is finished. Collars were preserved quite well refers to **Figure 12-4**.

Erdene supplied RPM with Excel spreadsheets with collar, survey, general lithology, RQD and sampling data. Primary data was collected into an Excel spread sheet and then imported into an Access database. In addition, PDF files of original assay certificates from the SGS Laboratory were supplied along with cross sections of the drilling plotted with assay grades and interpretations. RPM checked all grades and orientation of drilling against the original assay certificates and cross sections. During this review RPM noted only minor inconsistencies in the provided data which were subsequently corrected in the digital database. Hard copy logs were not supplied to RPM.

Figure 12-4 Collar Preservation

RPM reviewed all QA/QC procedures carried out by Erdene including a review of logging, sampling and sample preparation procedures; reviewed all technical data including geophysical and geochemical data; carried out an analysis of the analytical QA/QC results; and compared data sets with observations made in the field. RPM is satisfied that QA/QC procedures carried out by Erdene conform to generally accepted industry standards and that the data used in this report has been verified by these procedures and is reliable.

Significant intersections were visually field verified by Company geologists and by Tony Cameron (QP) and Oyunbat Bat-Ochir of RPM during the 2018 site visit. No twin holes were drilled; however, infill drilling by Erdene has confirmed mineralization thickness and tenor.

RPM did not identify any inconsistencies in the data or lack of continuity in infill holes and found no cause to doubt the data. The reviewed drilling database formed the underlying data for the independent NI 43-101 Statement of Mineral Resources completed by RPM.

12.2.1 Database validation

RPM conducted a review of the geological digital data supplied by Erdene for the Project to ensure no material issues could be found and there was no cause to consider that the data was not accurate. RPM completed systematic data validation steps after receiving the database. Checks completed by RPM included:

- Down hole survey depths did not exceed the hole depth as reported in the collar table.
- Hole dips were within the range of 0° and -90°.
- Assay values did not extend beyond the hole depth quoted in the collar table.
- Assay and survey information was checked for duplicate records.

No errors were noted by RPM.

12.2.2 Assessment of Database

The database review conducted by RPM shows that Erdene has supplied a digital database that is largely supported by verified certified assay certificates, original interpreted sections, and sample books.

Based on the data supplied, RPM considers that the analytical data has sufficient accuracy to enable a Mineral Resource estimate for the Project.

13. Mineral Processing and Metallurgical Testing

13.1 Altan Nar

Metallurgical test work results were based on a number of test programs conducted between 2012 and 2018 at ALS Ammetc (Perth, Western Australia), Actlabs Asia LLC. (Mongolia), and Blue Coast Research Ltd. (Parksville, BC). These test work programs were:

- ALS Ammtec conducted a gold deportment study in 2012 on a single sample from hole TND-19 collected from Discovery Zone South. The sample contained high concentrations of gold (17.9 g/t) and arsenic (8.7%) and today is not considered representative on the overall mineralization at Altan Nar;
- Actlabs Asia LLC. conducted a number of cyanidation tests on drill core samples from Discovery Zone North, Discovery Zone South, Union North, Union South and Riverside in 2013;
- Actlabs Asia LLC. conducted additional cyanidation tests on coarse assay rejects on samples from Discovery Zone North, Discovery Zone South and the Union North in 2015;
- Blue Coast Research Ltd. (BCR) conducted heavy liquid separation tests, gravity testwork, cyanidation, flotation and grindability testwork on larger composite samples from Discovery Zone North and Union North in 2015; and
- Blue Coast Research Ltd. conducted cyanidation and flotation testwork on a larger composite sample from Discovery Zone South in 2018.

13.1.1 Gold Deportment Study

A gold deportment study was conducted in 2012 by ALS Ammtec in Perth, Western Australia. A single sample from hole TND-19 was used for this study. The sample contained high concentrations of gold (17.9 g/t) and arsenic (8.7%). Based on the current understanding of the deposit, this sample would not be considered representative of the overall mineralization at Altan Nar. The sample was subjected to five separate leaching and acid treatment procedures designed to characterize the various gold hosts.

Very little free, cyanide soluble gold was noted (3.7%) in this sample. The vast majority of the gold was associated with arsenopyrite (91.7%). Lesser amounts were associated with carbonates (1.7%), pyrite (1.2%) and silicates (1.8%). Gold recovery from this type of mineralization is expected to be low unless some form of oxidative pre-treatment (Pressure Oxidation or Biological Oxidation for example) is first applied to expose the gold associated with arsenopyrite.

13.1.2 Grindability Testing

Grindability testing consisting of a single Bond Rod Mill Work Index Test and a single Bond Ball Mill Work Index Test conducted on a blend of 50% Discovery Zone North (DZN) and 50% Union North (UN) material collected as part of the 2015 BCR test program (refer to **Table 13-1**). This work suggests that the Altan Nar material is hard. No grindability testing has been performed on samples from Discovery Zone South (DZS) to date.

Table 13-1 Altan Nar Comminution Results

Test	Bond Work Index (kWh/tonne)
Bond Rod Mill Work Index Test	18.5
Bond Ball Mill Work Index Test	18.4

13.1.3 Cyanidation Testwork

Programs conducted at Actlabs Asia in 2013 and 2015 tested a number of core samples and coarse assays rejects and subjected them to cyanidation leach tests. Additionally, Blue Coast Research conducted a limited number of bottle roll tests on larger composites during the 2015 and 2018 programs. The composites used in the BCR programs were selected by Erdene personnel and are considered to be more representative of the Discovery Zone North, Discovery Zone South and Union North zones of the deposit.

13.1.4 Actlabs Asia 2013 Testwork

Fourteen cyanidation tests were conducted on various samples that ranged in grade from 0.72 g/t to 11.2 g/t Au. Arsenic content of these composites ranged from a low of 62.5 ppm to a high of 6.5%. Samples were submitted as core and subsequently crushed to minus 2 mm before being ground to 95% passing 74µm. The ground material was leached with cyanide for 48 hours, with kinetic samples being extracted after 24, 36 and 48 hours. Results are presented in **Table 13-2**.

Table 13-2 Actlabs Asia - 2013 Cyanidation Results

Location	Composite/Hold ID	Au Grade (g/t)	As (ppm)	24-hour Au Recovery (%)
Discovery Zone South	Comp-TND09-01	2.79	13,125	28%
Discovery Zone South	Comp-TND09-02	8.90	65,000	10%
Union South	Comp-TND29-03	6.97	135	97%
Discovery Zone South	Comp-TND35-04	2.47	17,000	40%
Discovery Zone North	Comp-TND38-05	11.19	4,370	43%
Discovery Zone North	Comp-TND40-06	8.94	1,360	91%
Discovery Zone North	Comp-TND40-07	1.21	4,363	79%
Discovery Zone South	Comp-TND41-08	2.07	1,163	89%
Riverside	Comp-TND45-09	0.72	133	100%
Union North	Comp-TND46-10	5.43	2,025	86%
Union North	Comp-TND46-11	2.18	715	75%
Discovery Zone North	Comp-TND50-12	2.24	63	100%
Discovery Zone North	Comp-TND50-13	2.95	80	85%
Discovery Zone North	Comp-TND58-14	4.59	185	89%
Average (As<1%)				**85%**
Average (As>1%)				**26%**

The results indicate that leach kinetics were reasonably quick with maximum gold recovery achieved after 24 hours in most cases. Higher gold recoveries were noted from samples with lower arsenic contents, suggesting that some of the gold in the arsenic enriched zones, primarily centred on Discovery Zone South, may be present as solid solution within the arsenopyrite crystal lattice.

13.1.5 Actlabs Asia 2015 Testwork

Twenty-one individual composites were collected from coarse assay rejects and submitted for bottle roll cyanidation tests. During each test approximately 400 grams of solids were added to a bottle at 50% solids. The material was subsequently leached with cyanide. Results are presented in **Table 13-3**.

These results suggest that gold recovery is again broadly influenced by arsenic content, with higher arsenic grades generally resulting in lower overall recoveries.

Table 13-3 Actlabs Asia – 2015 Cyanidation Results

Location	Composite/Hole ID	Au Grade (g/t)	As (ppm)	Au Recovery (%)
Discovery Zone North	DZN Comp 15-01	2.65	201	89
Discovery Zone North	DZN Comp 15-02	2.70	1,792	68
Discovery Zone North	DZN Comp 15-03	1.73	4,480	37
Discovery Zone North	DZN Comp 15-04	2.69	7,505	51
Discovery Zone North	DZN Comp 15-05	3.58	3,445	42
Discovery Zone North	DZN Comp 15-06	3.73	233	81
Discovery Zone North	DZN Comp 15-07	5.72	316	18
Discovery Zone North	DZN Comp 15-08	8.60	2,920	37
Discovery Zone South	DZS Comp 15-09	2.14	598	18
Discovery Zone South	DZS Comp 15-10	2.58	3,251	10
Discovery Zone South	DZS Comp 15-11	2.04	7,875	15
Discovery Zone South	DZS Comp 15-12	2.23	12,323	44
Discovery Zone South	DZS Comp 15-13	1.61	13,020	19
Discovery Zone South	DZS Comp 15-14	3.43	24,850	26
Discovery Zone South	DZS Comp 15-15	4.69	23,730	33
Union North	UN Comp 15-16	4.09	328	75
Union North	UN Comp 15-17	3.50	468	77
Union North	UN Comp 15-18	4.41	1,737	49
Union North	UN Comp 15-19	3.74	2,128	50
Union North	UN Comp 15-20	1.91	4,585	33
Union North	UN Comp 15-21	2.90	11,170	22

13.1.6 Blue Coast Research Testwork (2015 and 2018)

Bottle roll cyanidation tests were conducted on master composites prepared during the BCR testwork in both 2015 and 2018 (refer to **Table 13-4**). The master composites were selected by Erdene personal and are considered representative of the Discovery Zone North, Discovery Zone South and Union North areas of the deposit. The DZN and UN composites were subjected to a single cyanidation test. Each test was conducted as a 48-hour bottle roll. Sodium cyanide concentration was maintained at 1.0 g/L throughout the test and pH was maintained with lime between 10.5 and 11.0. Prior to each test the material was ground to a particle size of 80% passing 74 microns.

Table 13-4 Cyanidation Results (BCR Master Composites; 2015 Test Program)

Location	Composite ID	Au Grade (g/t)	As (ppm)	Au Recovery (%)
Discovery Zone North	DZN Comp	2.88	1,500	88
Union North	UN Comp	3.56	3,000	68

Leach testwork was conducted on a Discovery Zone South composite with a gold grade of 2.25 g/t and an arsenic content of 1.16%. This work evaluated the impact that finer grind sizes and higher cyanide concentrations had on overall gold recovery. Baseline conditions for each test were 40% solids and 48 hours of retention time. Grind size and cyanide concentration are noted in **Table 13-5** below.

As indicated in **Table 13-5**, finer primary grinds had little impact on overall gold recovery, with gold extraction ranging between 38% and 43%. Higher cyanide consumption was observed in the initial fine grind test (p80 <20µm), which raised concerns that leach performance may have been impacted by reduced cyanide availability. The test was repeated with an increased cyanide dosage (7.5 g/L), and increased retention time (72h). This test resulted in slightly higher gold recovery (48%) but significantly higher overall cyanide consumption (23.8kg/t). The excessive cyanide consumption coupled with the fine grind makes this a sub-optimal route to increase gold extraction.

Table 13-5 Whole Plant Feed Leach Cyanidation Results (BCR Master Composites; 2018 Test Program)

Location	Composite ID	Primary Grind (P_{80}, µm)	NaCN Concentration (g/L)	NaCN Consumption (kg/t)	Au Recovery (%)
Discovery Zone South	DZS Comp	74	1.00	2.25	38
Discovery Zone South	DZS Comp	60	1.00	2.63	40
Discovery Zone South	DZS Comp	36	1.00	2.55	40
Discovery Zone South	DZS Comp	<20	1.00	4.43	43
Discovery Zone South	DZS Comp	<20	7.50	23.8	48

The Discovery Zone South testwork indicates that gold recovery from higher arsenic areas in the deposit likely contains a refractory gold component, limiting recovery by conventional cyanidation alone. Additional variability work would be required to further delineate the extent of this refractory component. Flotation and/or oxidative pre-treatment may provide an additional route to optimizing gold recovery from high arsenic areas of the deposit and should this be considered during future testwork.

13.1.7 Gravity Testwork

A single gravity amenability test was conducted at Blue Coast Research on the Discovery Zone North composite. 2.0 kg of the DZN composite was ground in a laboratory rod mill at 60% solids to a nominal p80 of 75 µm prior to being fed to a laboratory scale Knelson concentrator. The resulting Knelson concentrate was then further upgraded over a shaking table (MAT). Results are presented in **Table 13-6**. Gold recovery to Knelson concentrate was moderate at 45% at a gold grade of 36.5 g/t. This was further upgraded over a shaking table to 398.8 g/t Au, albeit at a much lower gold recovery (5.8%). This result is unoptimized, however, it does highlight that a portion of the gold is recoverable through gravity techniques.

Table 13-6 DZN Composite Gravity Test Results

Product	Mass (%)	Au Grade (g/t)	Au Recovery (%)
MAT Concentrate	0.04	398.8	5.79
MAT Tails	3.49	32.2	39.37
Knelson Tails	96.47	1.63	54.85
Total	**100.00**	**2.86**	**100.00**
MAT Concentrate	0.04	398.8	5.79
Knelson Concentrate	3.53	36.5	45.15

13.1.8 Heavy Liquid Separation

A single amenability test was conducted to determine if a pre-concentration process could be employed to reject clean liberated gangue while maintaining metal values in a concentrated mass. A 2.1 kg subsample of minus ½ inch Discovery Zone North material was prepared as feed for the heavy liquid test. The sample was pre-screened at 850 µm to remove fines from the heavy liquid feed. A sample of sodium heteropolytungstate was prepared as the heavy liquid medium with a specific gravity of 2.85. Particles with a density greater than this will report to the sink fraction, while particles with a lighter density will report to the float fraction. Screen oversize (+850 µm) was added to the heavy liquid, mixed and allowed to settle for fifteen (15) minutes. The float and sink fractions were then recovered, filtered and washed and the process was repeated until the entire 2.1 kg was processed.

Floats, sinks and fines were then assayed for lead, zinc, gold and silver and a metallurgical balance was generated. Results are presented in **Table 13-7**. Results of the test were subpar with significant amounts of lead (25.5%), zinc (45.7%), gold (69.1%) and silver (47.5%) reporting to the float fraction. The large amount of base and especially precious metals lost to the floats would suggest that pre-concentration of the DZN material is not an appropriate process.

Table 13-7 Heavy Liquid Separation Test Results; Discovery Zone North Composite

Product	Mass	Grade				Recovery (%)			
	%	Pb (%)	Zn (%)	Au (g/t)	Ag (g/t)	Pb	Zn	Au	Ag
HLS Float	79.1	0.27	0.41	2.44	9	25.5	45.7	69.1	47.5
HLS Sink	8.7	4.59	2.78	7.40	55	48.4	34.5	23.1	33.3
Screen Undersize (Fines)	12.3	1.76	1.14	1.76	22	26.1	19.8	7.8	19.2
Calculated Head	100.0	0.82	0.70	2.79	14	100	100	100	100

13.1.9 Flotation Testwork

Blue Coast Research conducted flotation test programs on both Discovery Zone North and Discovery Zone South material. A limited flotation test program was conducted a composite from Union North, using the flowsheet developed for Discovery Zone North (DZN). Flotation conditions aimed to make separate lead and zinc concentrates. A bulk sulphide concentrate was floated after the zinc rougher to evaluate if the remaining pyrite and arsenopyrite could be recovered into a bulk concentrate of sufficient grade.

Flotation of the DZN composite was successful in that it produced separate lead and zinc concentrates of acceptable grades. A significant portion of the gold and silver reported to the lead concentrate (refer to **Table 13-8**).

Table 13-8 Discovery Zone North Cleaner Flotation Results (BCR Test F-8; 2015 Study)

Product	Weight	Assays, % or g/t					% Distribution				
	%	Pb	Zn	As	Au	Ag	Pb	Zn	As	Au	Ag
Lead Cleaner 3 Concentrate	0.97	61.87	5.53	0.88	229.09	1,028	74.39	7.79	5.58	74.67	64.01
Zinc Cleaner 3 Concentrate	0.84	5.78	50.28	0.13	20.18	242	6.02	61.33	0.69	5.7	13.08
Sulphide Rougher Concentrate	4.01	0.82	0.52	2.61	6.18	14	4.06	3.06	68.94	8.35	3.48

Union North and Discovery Zone South composites did not respond as favourably to a similar flowsheet. Only a single cleaner test was conducted on the Union North composite. Results from this test, presented in **Table 13-9**, show that lead and zinc concentrate grade and recovery were low, and additional optimization is required to improve the performance from this composite. A similar observation was noted from the Discovery Zone South composite (results presented in **Table 13-10**) with low lead and zinc recovery being noted to the final concentrates.

Table 13-9 Union North Cleaner Flotation Results (BCR Test F-12; 2015 Study)

Product	Weight	Assays, % or g/t					% Distribution				
	%	Pb	Zn	As	Au	Ag	Pb	Zn	As	Au	Ag
Lead Cleaner 3 Concentrate	1.64	47.65	3.76	2.1	93.98	335	53.92	5.22	11.86	44.89	40.26
Zinc Cleaner 3 Concentrate	1.35	4.32	48.34	0.37	11.96	155	4.02	55.22	1.7	4.7	15.28
Sulphide Rougher Concentrate	7.26	0.79	0.38	2.17	11.36	22	3.98	2.37	54.43	24.11	11.48

Table 13-10 Discovery Zone South Cleaner Flotation Results (BCR Test F-10; 2018 Study)

Product	Weight	Assays, % or g/t						% Distribution					
	%	Pb	Zn	Fe	As	Au	Ag	Pb	Zn	Fe	As	Au	Ag
Lead Cleaner 3 Concentrate	0.51	43.57	9.15	10.94	4.95	82.04	3,096.8	46.05	4.72	1.06	2.6	18.8	36.74
Zinc Cleaner 3 Concentrate	0.92	5.35	50.65	5.92	1.32	14.39	731	10.15	46.83	1.03	1.24	5.91	15.56
Sulphide Rougher Concentrate	8.08	0.69	2.58	23	7.75	11.94	101.5	11.41	20.87	35.11	63.84	42.96	18.9

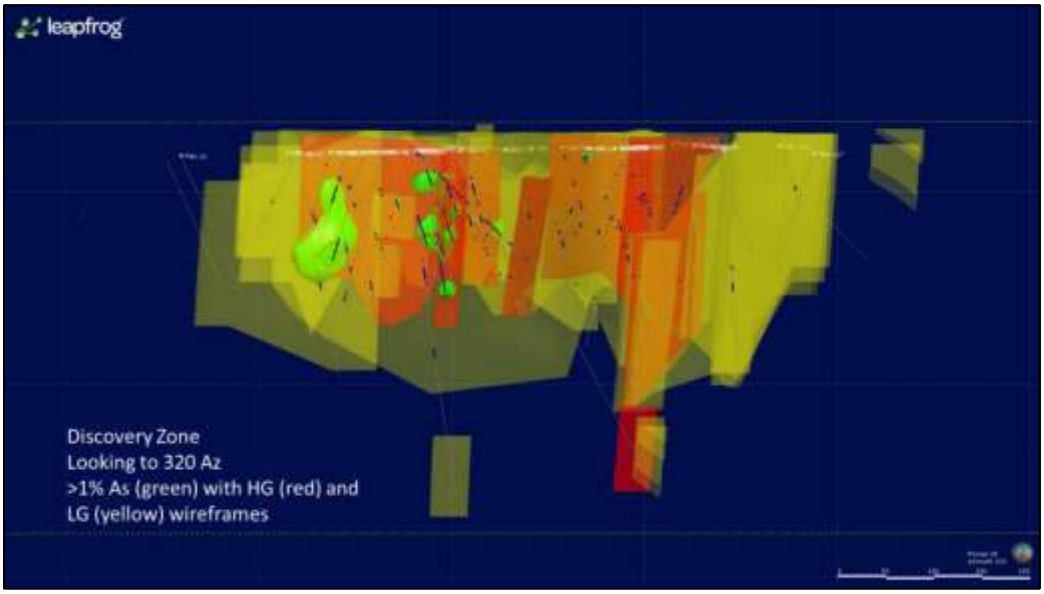
As the flotation response to date from Discovery Zone South and Union North has been suboptimal, flotation has been excluded from the flowsheet for the purposes of the PEA. This PEA will assume that Altan Nar material will be processed through a standard cyanidation circuit to recovery gold and silver only. Future studies should continue to evaluate the flotation options for Altan Nar as a potential method to improve the overall performance from the deposit.

13.1.10 Projected Gold Recovery

Gold recovery projections are made based on a whole ore cyanidation process. Cyanidation recovery data from the Actlabs and BCR test programs has been included in this analysis.

Gold extraction from Altan Nar samples has been variable. A general relationship has been observed between the quantity of arsenic and the overall gold recovery. The lower recovery observed with higher arsenic content suggests that there is a portion of gold locked in solid solution within the arsenopyrite crystal lattice. Erdene has modelled the presence of arsenic within Altan Nar and has shown that the majority of the arsenic is contained in zones with an arsenic content in excess of 1%, centered in the Discovery Zone South area. These zones are highlighted as green areas within the **Figure 13-1**.

Figure 13-1 Altan Nar Discovery Zone Wireframes [>1% As (green); High Grade (red); Low Grade (yellow)]



As the arsenic content increases, there is a general trend of decreasing gold recovery. This relationship is highlighted in **Figure 13-2**. Geological modelling conducted by Erdene has shown that the high arsenic zone (defined as blocks with an arsenic content greater than 1%) is distinct and represents a total of 11% of the tonnage at Altan Nar. Given the low recovery associated with higher arsenic material it is proposed to selectively mine around these areas and exclude them from processing. Excluding this high arsenic material will reduce the average arsenic content of the remaining material to 0.16%.

Figure 13-2 Altan Nar Gold Recovery as a function of Arsenic Content

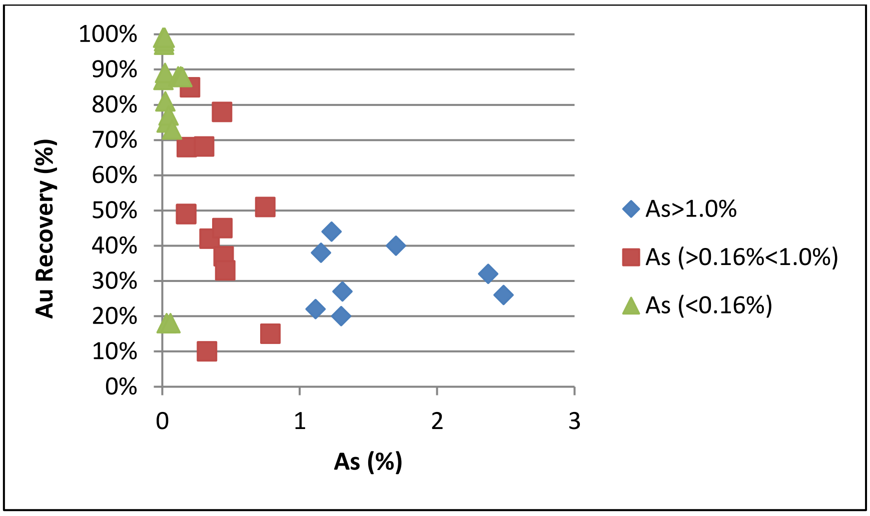


Table 13-11 summarizes the average gold recovery based on the arsenic content of the material from Altan Nar. All the cyanide leach data form the Actlabs and BCR test programs have been included in these calculations with the following exceptions:

- DZN Comp 15-07 (Actlabs 2015 Work)
- DZS Comp 15-09 (Actlabs 2015 Work)

These two composites both had arsenic concentrations of less than 0.16% but low gold recovery. DZN Comp 15-07 had higher copper grade (1,972 ppm) and a low final bottle roll pH of 9.89, suggesting that the test may have been cyanide starved, in turn causing the poor recovery. DZS Comp 15-09 also had higher than average copper grades (1403 ppm) which may have been a factor in the lower recovery.

Table 13-11 Average Altan Nar Gold Recovery based on Arsenic Content

Arsenic Grade (%)	Gold Recovery (%)
<0.16%	88%
>0.16%; <1%	48%
>1%	29%

Gold recovery of Altan Nar material with an arsenic content of less than 0.16% averages 88%, however it should be noted that lower recovery is expected as the arsenic content increases above 0.16%. Additional cyanidation testwork should be conducted during the prefeasibility study to understand and potentially optimize this performance. A substantial variability test program should be included to gain an additional confidence in gold recovery from samples with varying arsenic contents and geographic locations (i.e., Discovery Zone North and Discovery Zone South).

13.1.11 Recommended Future Testwork

The following testwork is recommended to be included as part of a prefeasibility study program:

- Additional grindability testing including the following:
  - JK Drop Weight Test
  - Abrasion Index Tests
  - Variability Bond Ball Work Index Tests
- Optimization of cyanidation conditions for high arsenic zones and lower arsenic zones

- Variability cyanidation tests from samples that include a range of arsenic contents and gold grades
- Further refinement of flotation conditions from high arsenic and low arsenic zones to determine a flotation process could be implemented to add value through improved metal recovery and generation of additional by products.

13.2 Bayan Khundii

Metallurgical testwork for the Bayan Khundii ores was conducted by Blue Coast Research Ltd. (BCR) in 2016 and 2017. The testwork was designed to provide an initial scoping level characterization of gold recovery primarily through cyanidation and gravity techniques. Standard Bond Rod Mill and Bond Ball Mill Work Index tests were conducted to measure the grindability of the material.

13.2.1 Samples and Composite Characterization

Samples for both the 2016 testwork and the 2017 testwork campaigns were collected by Erdene personal. The 2016 composites (having composite ID's BK-MET-15-xx) were designed as initial composites that represent very high-grade mineralogy and lower grade zones of the Bayan Khundii deposit. The 2017 composites (having composite ID's BK-MET-16-xx) should be considered as variability composites and were selected from a wider cross section of grades throughout the Bayan Khundii deposit.

Chemical characterization of the composites was performed at Blue Coast Research. Gold content was measured by fire assay with an atomic adsorption finish. Silver content, where measured, was analyzed by an aqua regia digest followed by an AA finish. A summary of the various composite head assays is presented in **Table 13-12**.

Table 13-12 Bayan Khundii Composite Head Grades

Composite ID	Au (g/t)
BK-MET-15-01	24.9
BK-MET-15-02	0.71
BK-MET-16-01	1.88
BK-MET-16-02	0.66
BK-MET-16-03	4.30
BK-MET-16-04	4.47
BK-MET-16-05	4.23
BK-MET-16-06	1.23
BK-MET-16-07	0.59
BK-MET-16-08	0.38
BK-MET-16-09	0.36
BK-MET-16-10	0.84
BK-MET-16-11	0.34
BK-MET-16-12	0.85
BK-MET-16-13	0.31
BK-MET-16-14	0.99
BK-MET-16-15	0.45
BK-MET-16-16	0.50
BK-MET-16-17	0.34
BK-MET-16-18	0.70
BK-MET-16-19	0.33
BK-MET-16-20	0.60

13.2.2 Grindability Testing

Grindability testing consisted of a Bond Rod Mill Work Index test and a Bond Ball Mill Work Index test. Both tests were conducted on BK-MET- 16-01 which was collected as part of the 2017 testwork program. Standard closing screens of 14 mesh (1,180µm) was used for the Rod Mill Work Index test and 150µm was used for Ball Work Index tests. The results suggest that Bayan Khundii material is moderately hard to hard (refer to **Table 13-13**).

Table 13-13 Bayan Khundii Comminution Results

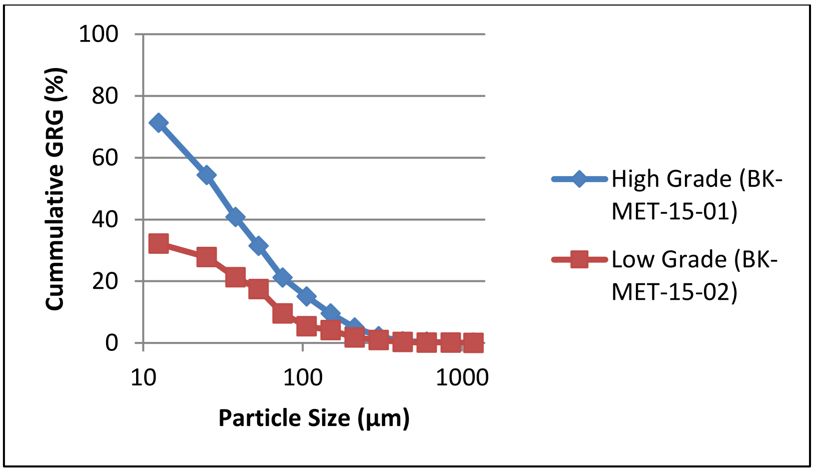
Test	Bond Work Index (kWh/tonne)
Bond Rod Mill Work Index (RWI)	17.8
Bond Ball Mill Work Index (BWI)	16.1

13.2.3 2016 Testwork - Gravity Recovery and Cyanidation

The 2016 testwork program evaluated the response of Bayan Khundii composites to gravity concentration and cyanidation methods. Extended gravity recoverable gold (E-GRG) tests were conducted on each composite. These composites, having grades of 24.9 g/t and 0.71 g/t, produced gravity recoverable gold content of 71% and 32% respectively. The EGRG tests may be considered best case tests as they treat material through successively finer grind sizes culminating with a final grind size of 80% passing 75µm. Actual gravity recovery in the plant may be somewhat lower due to the fact that some gold would bypass the gravity circuit through the cyclone overflow, and, depending on the gravity circuit design, only a fraction of the mill circulating load may be treated.

The cumulative gravity response is highlighted in **Figure 13-3**.

Figure 13-3 Cumulative Uncorrected Gravity Recovery



A sub-sample of gravity tailings from each of the EGRG tests was subjected to a 48 hour cyanidation test. Each test maintained a cyanide concentration of 1.0 g/L and pH was maintained between 10.5 and 11. Gold extraction from the gravity tails was 95% and 86% respectively from BK-MET-15-01 and BK-MET-15-02. Combined with the gravity recoverable portion the overall gold recovery from these two composites was 99% (BK-MET-15-01) and 92% (BK-MET-15-02). The global distribution from these two composites is summarized in **Table 13-14**.

Table 13-14 Overall Metallurgical Recoveries from BK-MET-15-01 and BK-Met-15-02

Composite	BK-MET-15-01		BK-MET-15-02	
Process Unit	Au Distribution (%)	Ag Distribution (%)	Au Distribution (%)	Ag Distribution (%)
Gravity Concentrate	71	27	32	10
Tailings Leach	28	34	60	10
Gravity Concentrate +Tailings Leach	99	61	92	20

13.2.4 2017 Testwork Program (Cyanidation)

A larger cyanidation testwork program was conducted in 2017 to further evaluate the Bayan Khundii metallurgy. Master composite testing was conducted on both BK-MET-16-04 (4.47 g/t Au) and BK-MET-16-01 (1.88 g/t Au). This master composite testwork evaluated the impact that variables such as primary grind size, cyanide concentration and retention time had on gold recovery. A further variability study was conducted to evaluate the impact on gold recoveries from a range of samples collected from across the mineralized zone. A particular focus of this work was conducted on lower grade material that could be used to guide decisions on cut-off grades.

Effect of Primary Grind Size

Grind sensitivity tests were conducted on BK-MET-16-04 (4.47 g/t Au) and BK-MET-16-01 (1.88 g/t Au). Each test was conducted as a standard 48-hour bottle roll. Cyanide concentration was maintained at 1.0 g/L throughout the test and pH was maintained between 10.5 and 11 with the addition of lime. Results are summarized in **Figure 13-4** and **Figure 13-5**.

Tests conducted on BK-MET-16-04 suggested that finer primary grinds of 80% passing 60µm provided slightly better recoveries. Recovery averaged 91% when the primary grind was 59µm, compared to 87% at 161µm. Leach tests conducted on BK-MET-16-01 composite differed in that the gold recovery was insensitive to primary grind sizes between 60µm and 160µm. Given the potential for higher gold recovery when finer primary grinds are applied, a primary grind size of 80% passing 60µm is recommended at this time. However, future studies should continue to evaluate the sensitivity of the primary grind size to determine if it can be effectively coarsened.

Figure 13-4 Gold Recovery-Grind Size Relationship (BK-MET-16-04)

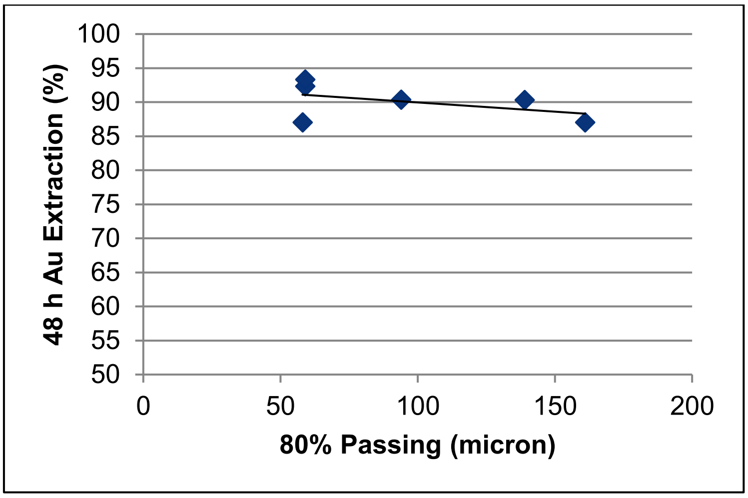
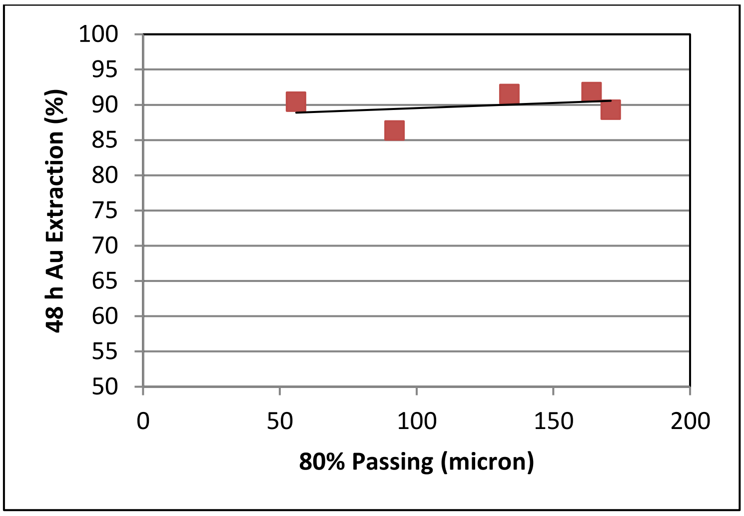


Figure 13-5 Gold Recovery-Grind Size Relationship (BK-MET-16-01)

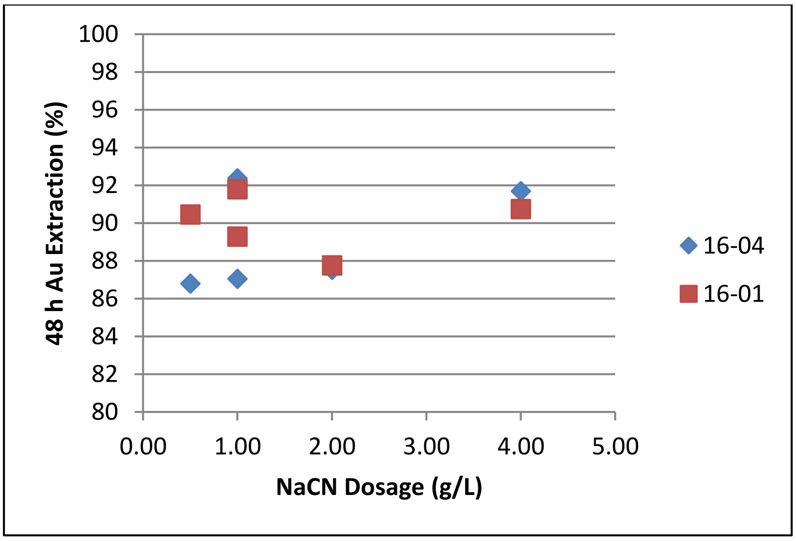


Effect of Cyanide Concentration

A series of tests were conducted at differing cyanide concentrations to determine if higher dosages of cyanide improve gold recovery. Tests conducted on BK-MET-16-04 (4.47 g/t Au) were completed at the 60µm primary grind size, while tests conducted on BK-MET-16-01 were conducted with a grind size of 160µm. Regardless of the grind size, no correlation was observed between cyanide addition and gold recovery (refer to **Figure 13-6**).

Given that there was no obvious benefit of using additional cyanide, a standard dosage was selected at 1.0 g/L NaCN. Accordingly, this cyanide dosage was carried through the remainder of the test program. At a sodium cyanide dosage of 1.0 g/L, the average sodium cyanide consumption was 0.32 kg/tonne.

Figure 13-6 Gold Recovery-Cyanide Concentration Relationship (BK-MET-16-01 & BK-MET-16-4)



Retention Time

Three bottle roll tests were conducted for 96 hours to determine if additional gold recovery could be obtained by applying additional retention time to the leach. Results are summarized in **Table 13-15**. In each of the composites below, the incremental gold recovery obtained from increasing the total leach time to 96 hours ranges between 1.2% and 1.5%. The vast majority of the gold is leached within 48 hours.

Table 13-15 Impact of 96 hour retention time on specific Bayan Khundii Composites

Test ID	Composite	48 hr Gold Recovery (%)	96-hour Gold Recovery (%)	Incremental Gold Recovery (%)
CN-28	BK-MET-16-04	93.4	94.9	1.5
CN-30	BK-MET-16-03	95.9	97.1	1.2
CN-39	BK-MET-16-01	93.6	94.8	1.2

Variability Testwork

A variability cyanidation program was conducted which evaluated the gold extraction of 16 discreet samples under conventional cyanide leach conditions. The composites represented both variations in grade and geography of the Bayan Khundii deposit. The majority of the composites had head grades less than 1.0 g/t Au and were designed to test the limits of recovery from lower grade material. Each test was conducted as a standard 48-hour bottle roll, with a cyanide concentration maintained at 1.0 g/L NaCN. pH was held between 10.5 and 11.0.

The variability composites may be split into three broad categories:

- Tests CN-4 through CN-7 (representing composites BK-MET-16-05 through BK-MET-16-08) were obtained from samples collected across the entire deposit. The samples were unconstrained at depth and represent varying head grades ranging from 0.35 g/t to 2.30 g/t;
- Tests CN-8 through CN-13 (representing composites BK-MET-16-09 through BK-MET-16-14) were obtained from unique BKD drill holes. Samples were targeted to match specific grade profiles of less than 0.5 g/t and between 0.5 and 1.0 g/t. Composites 16-13 and 16-14 contain a blend of Striker with material found just to the west; and
- Tests CN-14 through CN-19 (representing composites BK-MET-16-15 through BK-MET-16-20) were obtained from the Striker/Gold Hill area of the deposit. Samples were collected from specific depths with composites 16-15 and 16-16 collected from the first 40 meters; composites 16-17 and 16-18 being collected between 40 and 80 metres and composites 16-19 and 16-20 being collected from depths greater than 80 metres.

Table 13-16 summarizes the gold recovery from various composites and their location. Composites with head grades greater than 1.0 g/t consistently returned gold recoveries that were greater than 90%. Some evidence was noted amongst lower grade samples (BK-MET-16-15 through BK-MET-16-20) whereby recovery decreased at depth. Further study is required to determine if this holds true at higher grades.

Table 13-16 Summary of Recoveries compared to Sample Locations

Test	Composite	Location	Grind Size (P_{80}, µm)	Head Grade, Au (g/t)	Au Recovery (%)
CN-4	BK-MET-16-05	no specific area	59	2.30	92.5
CN-5	BK-MET-16-06	no specific area	66	1.18	90.8
CN-6	BK-MET-16-07	no specific area	72	0.60	83.8
CN-7	BK-MET-16-08	no specific area	57	0.35	83.0
CN-8	BK-MET-16-09	BKD-32 – no specific depth	94	0.37	75.4
CN-9	BK-MET-16-10	BKD-32 – no specific depth	140	0.96	83.2
CN-10	BK-MET-16-11	Midfield, BKD-60 – no specific depth	86	0.38	83.0
CN-11	BK-MET-16-12	Midfield, BKD-60 – no specific depth	67	0.84	87.5
CN-12	BK-MET-16-13	Striker/West BKD-40/49 – no specific depth	62	0.41	73.9
CN-13	BK-MET-16-14	Striker/West BKD-40/49 – no specific depth	56	1.10	93.5
CN-14	BK-MET-16-15	Striker/Au Hill 0-40m	67	0.45	86.0
CN-15	BK-MET-16-16	Striker/Au Hill 0-40m	53	0.70	91.4
CN-16	BK-MET-16-17	Striker/Au Hill 40-80m	60	0.40	84.2
CN-17	BK-MET-16-18	Striker/Au Hill 40-80m	47	0.79	84.4
CN-18	BK-MET-16-19	Striker/Au Hill >80m	56	0.37	79.8
CN-19	BK-MET-16-20	Striker/Au Hill >80m	55	0.75	82.4

Projected Gold Recovery

A gold recovery relationship was generated based on the data collected during 2016 and 2017 testwork. The recovery projections are based on a conventional gold cyanidation flowsheet consisting of the following:

- Primary grinding to 80% passing 60µm; and
- 48 hours of cyanidation residence time.

The recovery relationship is a series of linear equations separated into specific head grade bands. These grade-recovery equations are summarized in **Table 13-17**.

Table 13-17 Bayan Khundii Feed Grade-Recovery Relationship

Grade Range (g/t)	Recovery Equation
0 – 0.35	Au Rec (%) = 230.61*Au Grade (g/t)
0.35 – 1.18	Au Rec (%) = 13.32* Au Grade (g/t) + 76.052
1.18 – 24.9	Au Rec (%) = 0.318* Au Grade (g/t) + 91.222
>24.9	Au Rec (%) = 99

The equations were fit through the data based on the following criteria:

- A liner regression analysis was conducted using the variability composites with head grades between 0.35 g/t and 1.18 g/t. This formed the middle grade band.
- A separate linear regression analysis was conducted using data points with head grades greater than 1.18 and 24.9 g/t. This formed the high grade band.
- Recovery from head grades greater than 24.9 g/t has been capped at 99%
- A line is drawn between the origin and the 0.35 g/t grade point to describe recoveries below 0.35 g/t Au.

The Bayan Khundii Feed Grade–Recovery relationship is displayed in **Figure 13-7** and **Figure 13-8**.

Figure 13-7 Overall Bayan Khundii Feed Grade-Recovery Relationship

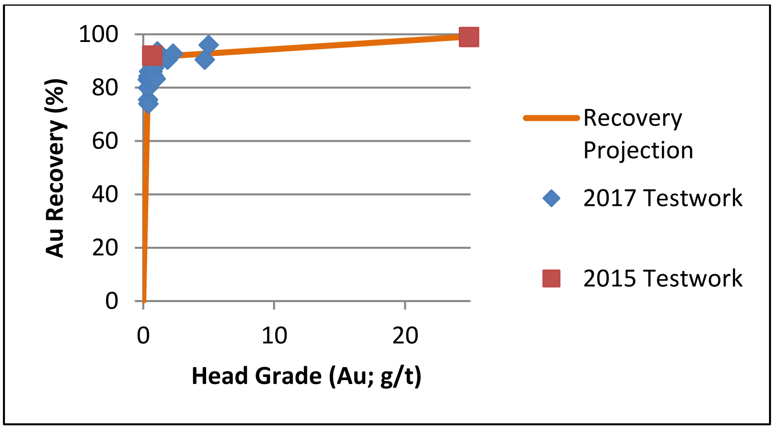
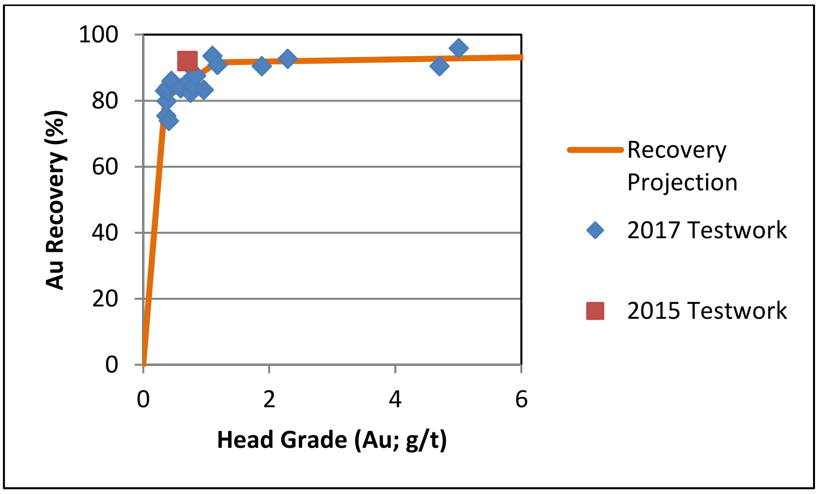


Figure 13-8 Bayan Khundii Feed Grade-Recovery Relationship (0-6 g/t Au)



Recommended Future Testwork

The following testwork is recommended to be included as part of a prefeasibility study program:

- Additional grindability testing including the following:
  - JK Drop Weight Test
  - Crushing Work Index tests
  - Abrasion Index Tests
  - Variability Bond Ball Work Index Tests
- Further evaluation of the sensitivity of gold recovery to primary grind size, with a specific focus on composites representing normal head grades between 1 and 5 g/t Au.
- Additional variability testing on composites collected throughout the deposit, with a specific focus on material representing head grades between 1 and 5 g/t Au.

14. Mineral Resource Estimates

A Mineral Resource estimate has been independently completed by RPM in accordance with the CIM Definition Standards and the CIM Best Practice Guidelines. Information contained in this Report is based on information provided to RPM by Erdene and verified where possible by RPM. All statistical analysis and mineral resource estimations were carried out by RPM. RPM developed three dimensional digital estimates for the concentrations of the Au metal and developed the mineral resource model based on the statistical analysis of the data provided. RPM considers the Mineral Resource estimate meets general guidelines for CIM Definition Standards compliant resources for the Measured, Indicated and Inferred confidence levels.

14.1 Altan Nar

14.1.1 Data

The key files supplied to RPM are outlined in Section 2.3.

Sample Data

The supplied drilling data spreadsheets were compiled by RPM into an Access database 'andhdb_20180201.mdb' and contained drilling data up to hole TND-133 and included tabulated information for collar, assay, survey, bulk density, detailed lithology and summary lithology, vein logging and magnetic susceptibility data. The data was then loaded into Surpac software. All Mineral Resource estimation work conducted by RPM was based on drillhole data received as at 1st of February 2018, up to and including drill hole TND-133.

The Altan Nar database contains the records for 125 diamond drill holes (DD) for 19,490.6 m of drilling and 42 trenches (TR) for 3,151m. A summary of the drill hole database is shown in **Table 14-1**.

Table 14-1 Summary of Data Used in Resource Estimate

In Project					In Mineral Resource			
Company	Period	Drilling Method	Drill holes		Drill holes		Intersection	
			Number	Metres	Number	Metres	LG Metres	HG Metres
Erdene	2011-2018	DD	125	19,490	99	15,677	2,646	305
		TR	42	3,151	26	1,947	569	72
Total			**167**	**22,641**	**125**	**17,624**	**3,215**	**377**

Note: LG-Low grade mineralization wireframe, HG-High grade mineralization wireframe.

No data was excluded from the model; however, a number of intervals were identified as being un-sampled during sample processing. Erdene has indicated that the majority of these intervals occur where barren dykes are encountered, and no assaying is conducted on those samples.

Bulk Density Data

Erdene collected 230 bulk density measurements from 20 drill holes using the water immersion technique. The majority of the determinations are in fresh rock.

The bulk density values range from 1.42t/cu.m to 3.92t/cu.m normally distributed about a mean of 2.71 t/cu.m. RPM considers these procedures would result in determinations which are representative of the underlying geology and, as a result, are representative of the deposit. The density measuring apparatus is shown below in **Figure 14-1**.

Figure 14-1 Altan Nar - Density Apparatus

RPM extracted the density measurements from the database and subdivided the measurements into mineralized (inside wireframes) and non-mineralized (outside wireframes). Results are tabulated in **Table 14-2**.

The vast majority of the Altan Nar Area is fresh rock, with minor overburden at the surface. The bulk density value assigned to fresh waste material is shown in **Table 14-2** and, in the absence of core measurements, the bulk density value of 2.2t/cu.m was assigned to overburden having been derived from known bulk densities of similar geological terrains. These values are considered by RPM to be reasonable.

Table 14-2 Bulk Density Summary

Domain	Discovery Zone			Union North Zone			All		
Type	Min			Min			Waste		
	Oxide	Fresh	Total	Oxide	Fresh	Total	Oxide	Fresh	Total
Number	2	52	54	-	24	24	21	119	140
Minimum	2.57	2.23	2.23	-	2.53	2.53	2.52	2.22	2.22
Maximum	2.66	3.27	3.27	-	3.23	3.23	3.92	3.76	3.92
Mean	2.62	2.74	2.74	2.62	2.83	2.83	2.71	2.71	2.71
Std Dev	0.07	0.16	0.16	-	0.15	0.15	0.28	0.16	0.18
Variance	0.00	0.02	0.02	-	0.02	0.02	0.08	0.03	0.03
Coeff Var	0.03	0.06	0.06	-	0.05	0.05	0.10	0.06	0.07

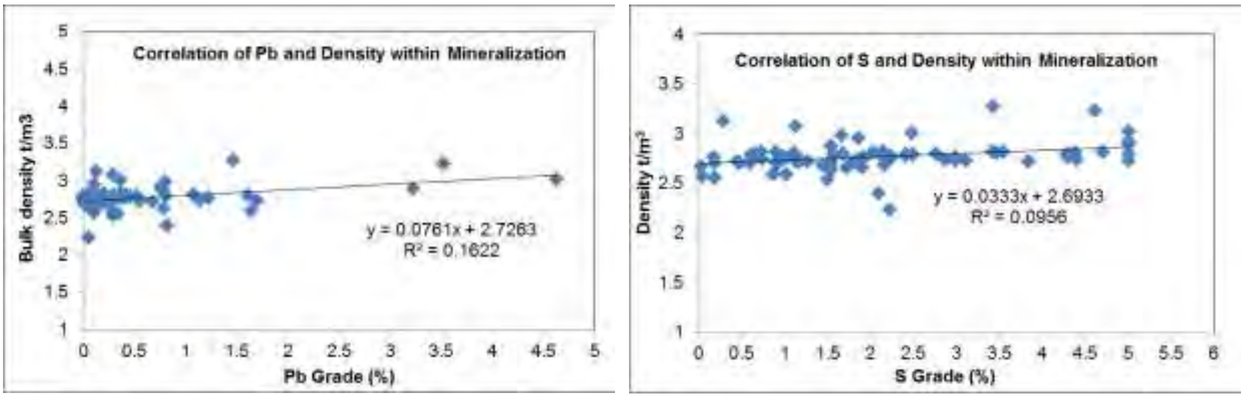
Three bulk density measurements were excluded from the data prior to regression analysis of the mineralized material and those three measurements recorded below 1.8t/cu.m. It is likely that some small errors were omitted during bulk density measurement process.

A linear regression analysis completed was completed between density and Au, Ag, Zn+Pb, and Pb grades for the 78 density measurements within the wireframes. This analysis indicated bulk density and Pb grade showing the highest correlation for the elements. The correlation coefficient between elements and density is shown in **Table 14-3**. The Linear regression for density and Pb grade is shown in **Figure 14-2**. The low correlation of S is likely due to the limited number of samples and the assignment of the density values across the entire 1m sample, as such the S content may not exactly reflect the area of the determination (see recommendation below).

Table 14-3 Correlation Coefficient Table

Correlation	Pb	S	Au	Ag	Zn
Bulk Density	0.40	0.31	0.26	0.11	0.22

Figure 14-2 Linear Regression for Density and Pb Grade for Mineralization



The regression equations from **Figure 14-2** above were applied to all mineralization (pod>0) in the block model. The assigned bulk densities within the block model are tabulated in **Table 14-4**.

Table 14-4 Bulk Densities Assigned in the Block Model

Type	Mineralized or Waste	Bulk Density (t/cu.m)
Overburden	Waste (type = ob)	2.2
Mineralization	Mineralized (pod > 0)	equation: (Pb% grade x 0.0761) + 2.73
Waste	Waste (pod = 0)	2.71

Although the correlation coefficients were low, RPM recognised that the density of the deposit is likely to be variable due to, most likely the sulphide mineral content. As such RPM utilised the Pb regression to estimate the density rather than the average values.

To determine the global suitability of the equations, RPM compared the hard-average density values against the regression formula. The average is a value of 2.75t/cu.m while the regression calculated a global average of 2.76t/cu.m. Therefore, RPM deemed it appropriate to utilise the linear regression between Pb and density to estimate density values within the block model.

While RPM considers this method suitable, given the low correlation coefficient it is considered that there is potential for variation on a local scale when additional data is sourced. While the drill spacing in portions of the deposit (25m by 25m) could be considered suitable for measured classification, the accuracy of the tonnage value is not, as such RPM has limited the classification to Indicated only. To increase the accuracy RPM recommends the following:

- RPM recommends that Erdene undertake a bulk density program using the remaining core. This should include up to 200 samples focusing on a range of grades (low to high) with each sample having a density determination as well as assays for Au, Pb, Zn and S. Approximately costs during the future drilling US$5,000.
- During future drilling the density measurement intervals correspond directly with geological logging and sampling intervals. It is recommended that density measurements are obtained from all 1m intervals through the mineralized zone in order to continue compiling a dataset with sufficient spatial distribution

to validate and confirm the current applied regression formula. No cost would be incurred in addition to planned exploration expenditure.

Absence of density measurements from weathered zones is not significant as the Mineral Resource is predominantly in fresh rock.

14.1.2 Geology and Resource Interpretation

As noted previously, host lithologies are principally intermediate (andesitic) volcanic and volcaniclastic units that have been pervasively altered (propylitic alteration with chlorite, epidote, carbonate). The presence of Cu-Pb-Zn sulphides and Ag-bearing minerals throughout the volcanic rocks at the Project demonstrates widespread alteration of the volcanic pile by metal-rich epithermal fluids. In addition, widespread evidence for magnetite destruction ('martitization') was noted in the host lithologies, with maximum martitization associated with narrow (mostly <50 m wide) structural-controlled mineralized zones where most or all of the magnetite in host lithologies were altered or replaced by other mineral phases. This feature is interpreted to reflect widespread epithermal fluid alteration. There is clear evidence of multi-stage quartz veining, brecciation and gold-silver-base metal mineralization at the Project.

Altan Nar is interpreted to be an intermediate-sulphidation epithermal deposit with similarities to carbonate-base metal deposits of south-eastern Asia. Mineralogical and geological features of Altan Nar that are consistent with intermediate sulphidation deposits, include:

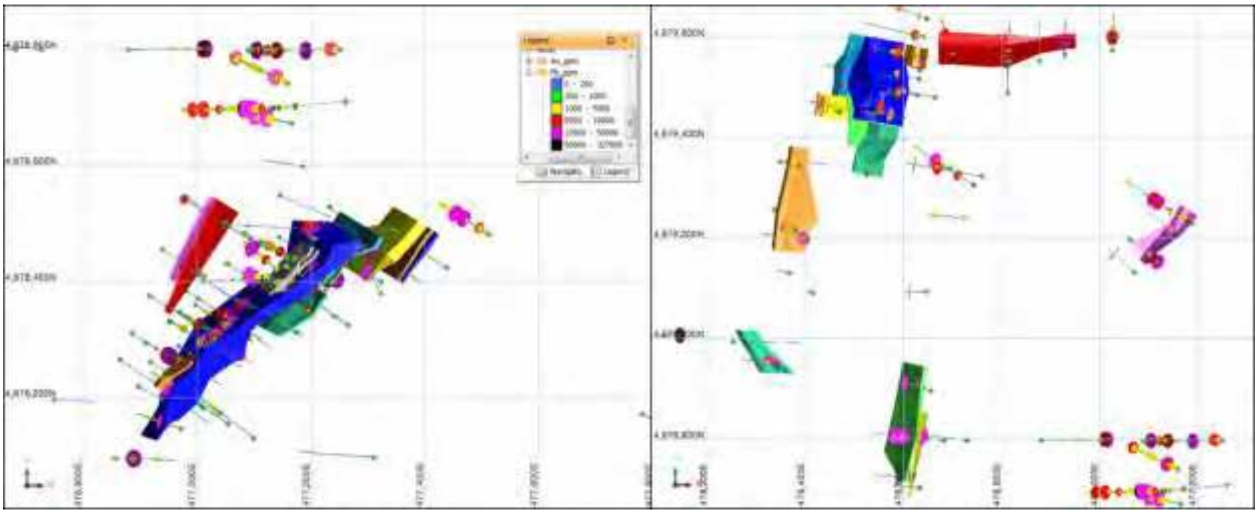
- mineralization occurs mostly in veins and breccias (with evidence of multiple brecciation events);
- veins with quartz and Ca-Fe-Mn-Mg carbonates host the Au mineralization;
- adularia and bladed calcite textures in quartz veins represent boiling features;
- multi-stage quartz veins with late-stage geopetal structures in chalcedony;
- Au is present as native metal with a variety of base metal sulfides and sulfosalts (e.g. Pb- and Sb sulphosalts identified by SGS);
- low-Fe sphalerite, tetrahedrite-tennantite and galena often dominate in base metal assemblages;
- Au-bearing veins can show classical banded crustiform-colloform textures; and
- white-mica alteration associated with mineralized zones, consisting of quartz-sericite (i.e. illite)-pyrite.

Additionally, some features suggest high-sulphidation affinities such as the ubiquitous presence, albeit in low modal concentrations, of Cu-sulphide minerals and high concentrations of Mo in a few samples.

Exploration to date has been targeting gold-silver-zinc-lead mineralization associated with comb quartz and chalcedony veins, quartz breccias and breccia zones with associated white mica alteration zones (quartz-sericite-pyrite) within widespread propylitic (epidote-chlorite-montmorillonite/illite) alteration of host andesite and andesite tuff units. Gold-polymetallic mineralization has been intersected in drilling and trenching within broad zones of zinc-lead mineralization.

Even though moderate correlation was observed between Au vs Base metals, actual distribution of elements doesn't overlap, this can be seen from drill sections. . It was decided that wireframing should be done only where base metals are distributed along with gold mineralization due to likely selective mining method to be implemented. See **Figure 14-3**.

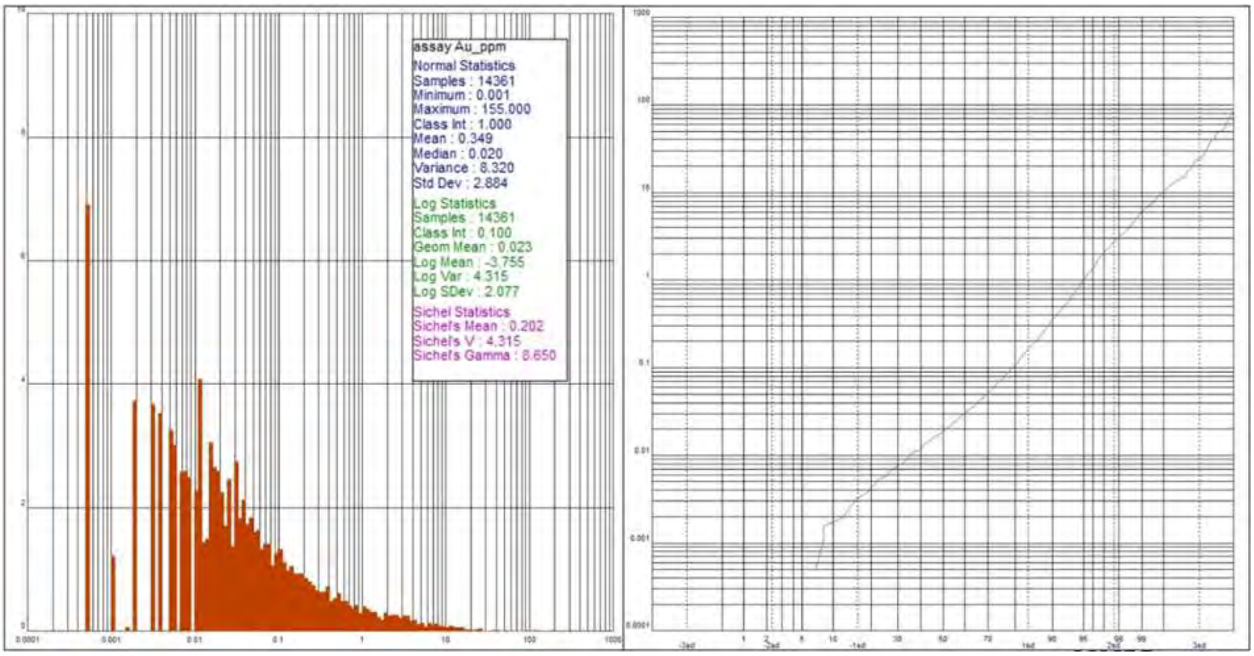
Figure 14-3 Base Metal Grades (Cylindrical shapes colour coded with Pb grades) outside the modelled mineralization



Mineralization interpretations were prepared by RPM using a nominal 0.1g/t Au cut-off grade value representing lower grade material and 2g/t Au for high grade material. All mineralization intersections were defined with a minimum downhole width of 2m. These cut offs were based on statistical analysis which indicated a natural cut-off at approximately 0.1g/t Au, and a high-grade cut-off around 2-3g/t Au (refer **Figure 14-4**).

RPM highlights that while low- and high-grade domains were interpreted, there appears to be a gradational grade distribution between the domains. The use of high-grade domains was considered suitable due to the continuity of the high grades and clear statistical variation between the domains. Due to this apparent gradation of grade the estimation method varied between hard and soft boundaries as outlined below.

Figure 14-4 Log Histogram and Log Probability Plot for Au Assays at Altan Nar



14.1.3 Preparation of Wireframes

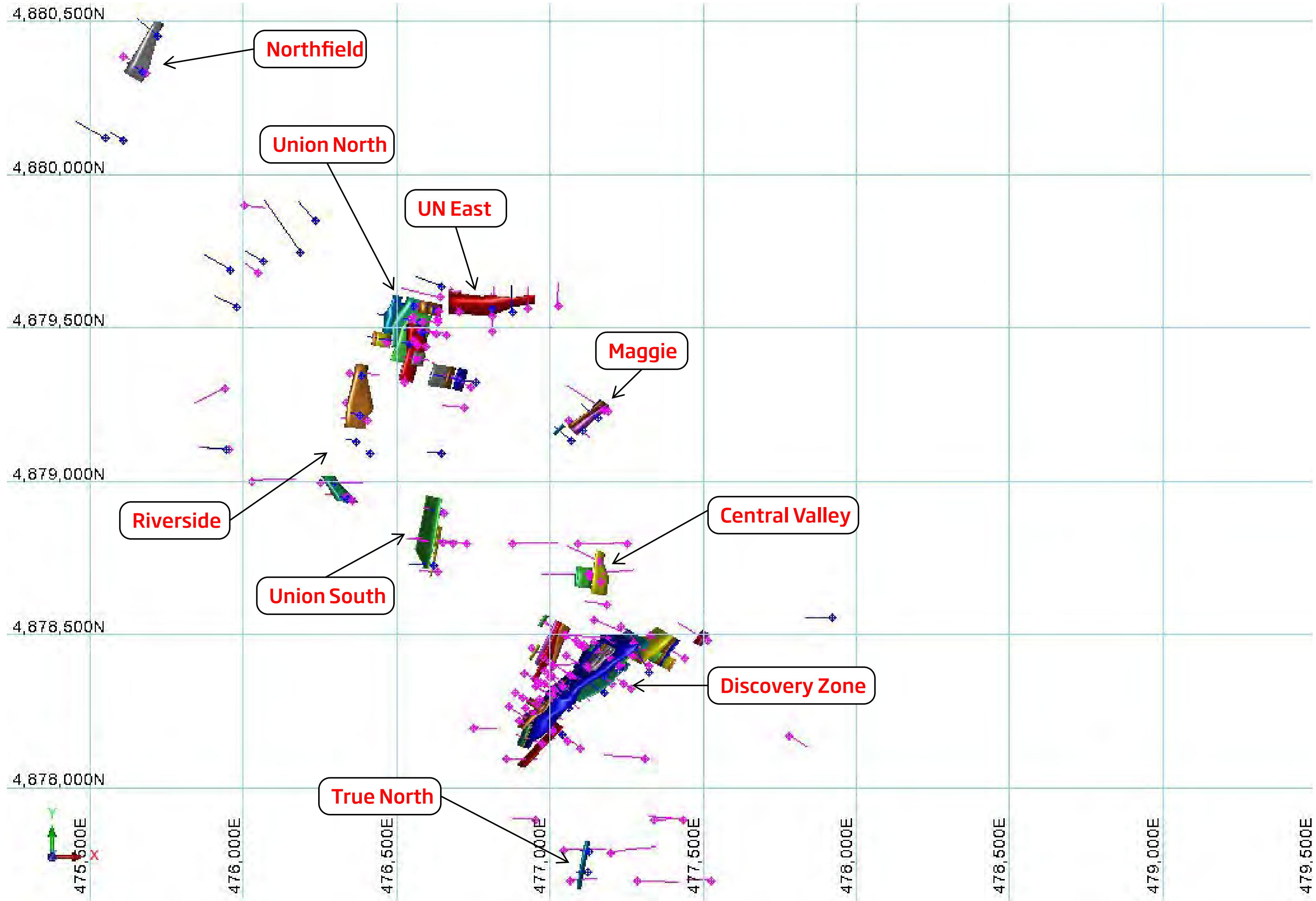
Resource Wireframes

The interpreted sectional outlines were manually triangulated to form wireframes. The end section strings were copied to a position midway to the next section or to 20-25 m distance and adjusted to match the dip, strike and plunge of the zone. The wireframed objects were validated using Surpac software and set as solids.

A total of 90 resource wireframes (‘an_res_20180327.dtm’) including 19 resource wireframes (object 1 to 19) for high grade zones and 71 resource wireframes (object101 to 171) for low grade zones were created and used to select the sample data to be used for grade estimation, and to constrain the block model for estimation purposes.

The mineralization wireframes were treated as hard boundaries for high grade zones, that is, only assays from within each high-grade wireframe were used to estimate blocks within that high grade wireframe. The outside of the Low-grade wireframes was also treated as hard boundaries, however due to the interpreted gradational mineralization (as discussed above) between the high and low grades those high grade zones falling within each low grade shell were used as soft boundaries during the estimate i.e. low grade domains were estimated including the high grade population. To avoid inappropriate smearing of grade the high-grade samples had additional high grade cuts applied as outlined in Section 14.4.2

The extent of the interpreted domains, and drilling at Altan Nar are shown in **Figure 14-5** to **Figure 14-8**. The mineralized lodes have been depicted in different colours to distinguish individual lodes. The colouring has no other significance and is a reflection of the software utilised (Surpac). Representative sections at each of the areas are shown in **Figure 14-9** and **Figure 14-10**.



LEGEND

Diamond holes

Trench

N

0 250 500 m

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CLIENT

ERDENE RESOURCE DEVELOPMENT

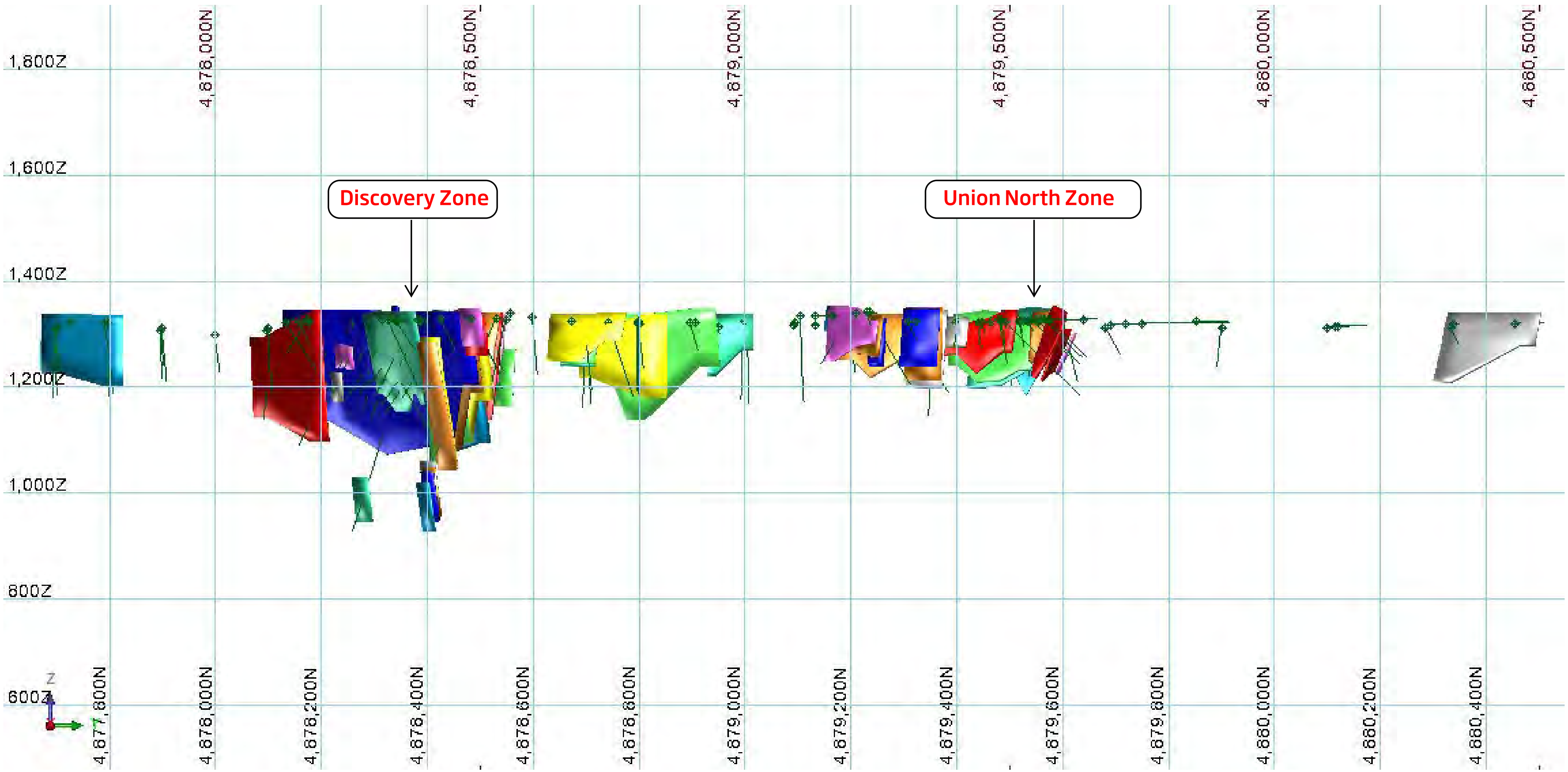
PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING Altan Nar Mineralised Lodes, Prospects and Drilling - Plan View

FIGURE No.	PROJECT No.	Date
14-5	ADV-MN-00161	January 2019

RPMGLOBAL



LEGEND

Drill holes

N

0 200 400 m

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ERDENE RESOURCE DEVELOPMENT

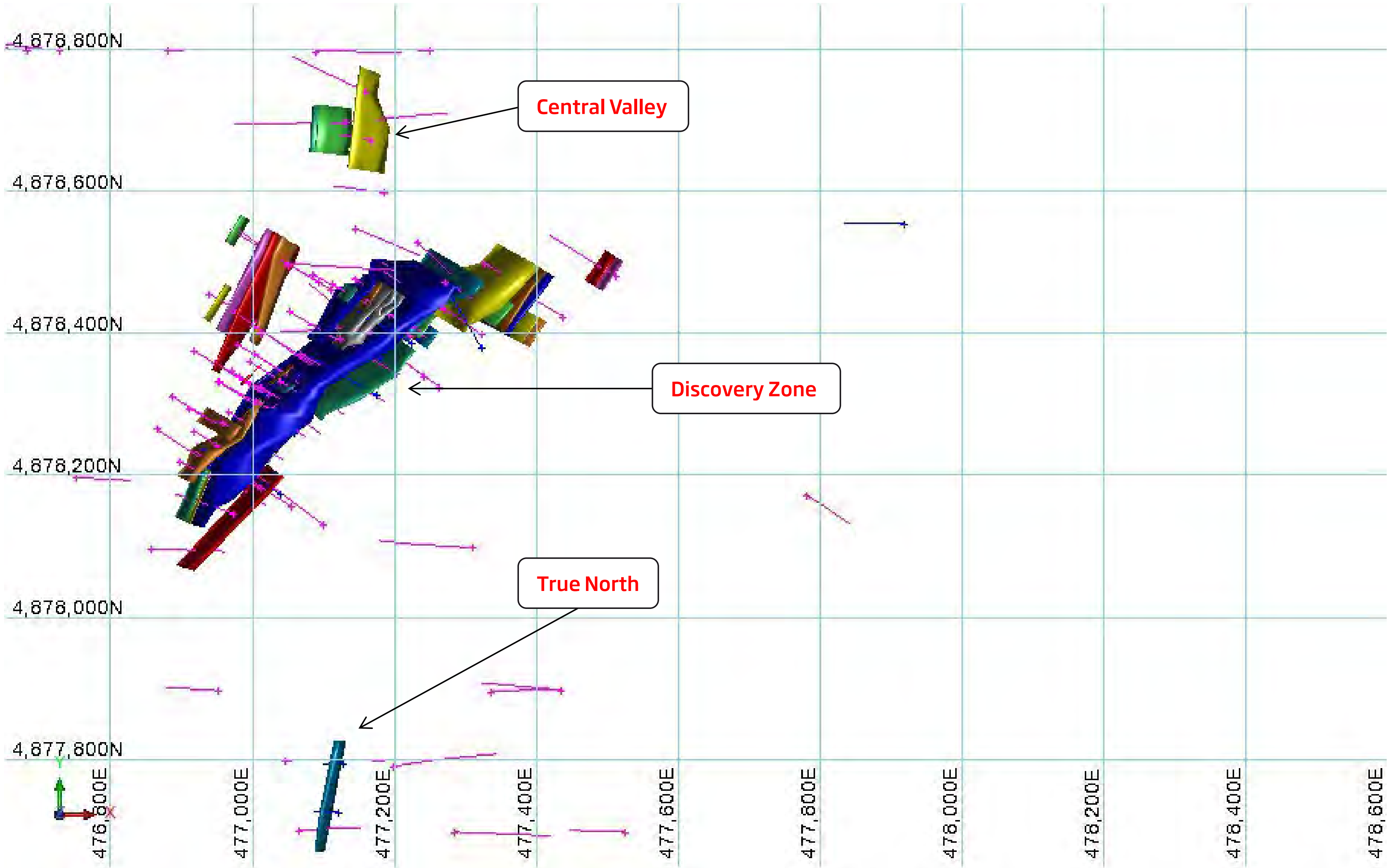
PROJECT

NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING: Altan Nar Mineralised Lodes, Prospects and Drilling - Long Section

FIGURE No.	PROJECT No.	Date
14-6	ADV-MN-00161	January 2019

RPMGLOBAL



LEGEND

Diamond holes

Trench

N

0 100 200 m

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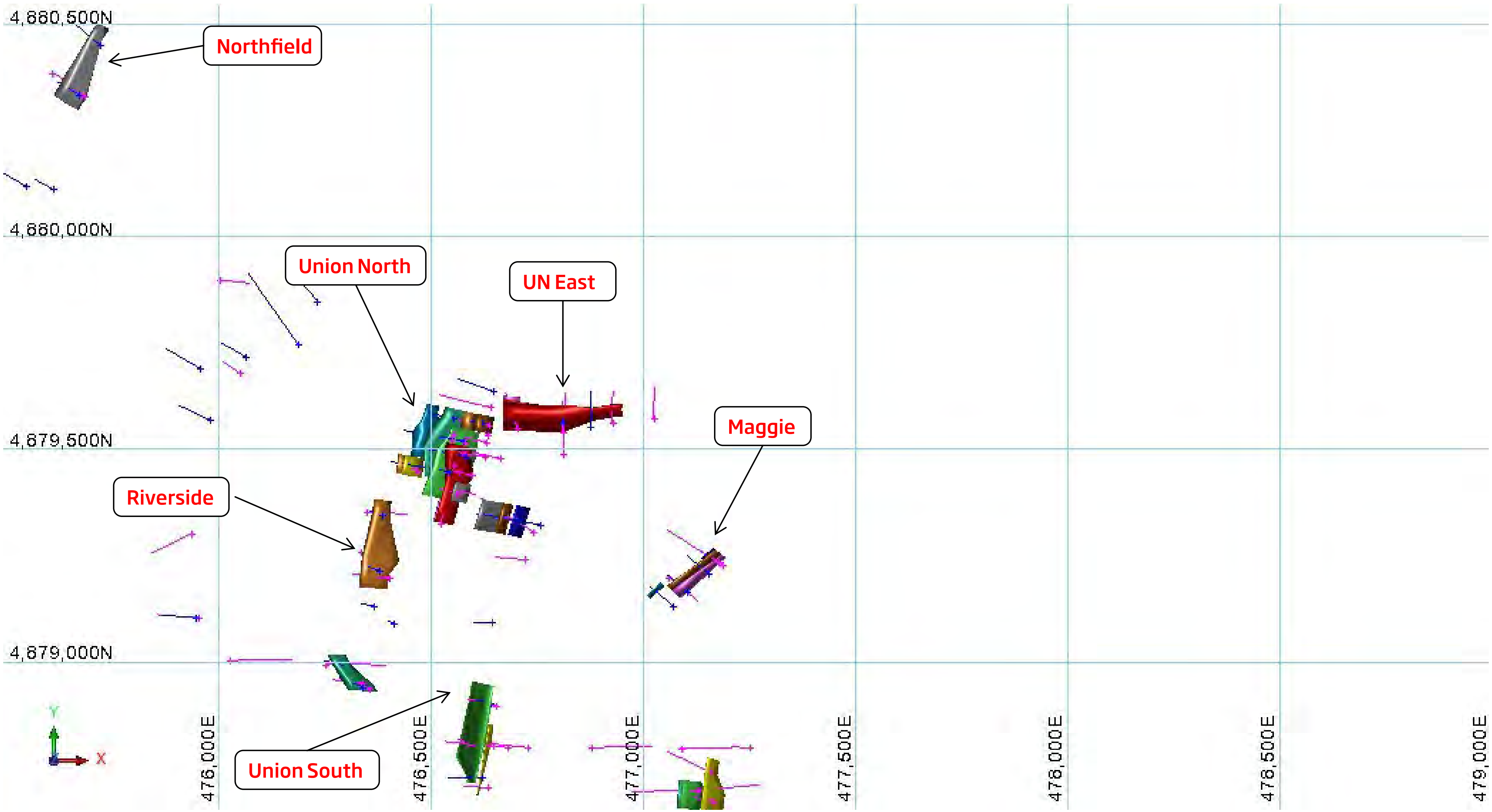
PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING Altan Nar Mineralised Lodes at Southern Area – Plan View

FIGURE No.	PROJECT No.	Date
14-7	ADV-MN-00161	January 2019

RPMGLOBAL



LEGEND

Diamond holes

Trench

N

0 250 500 m

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ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME

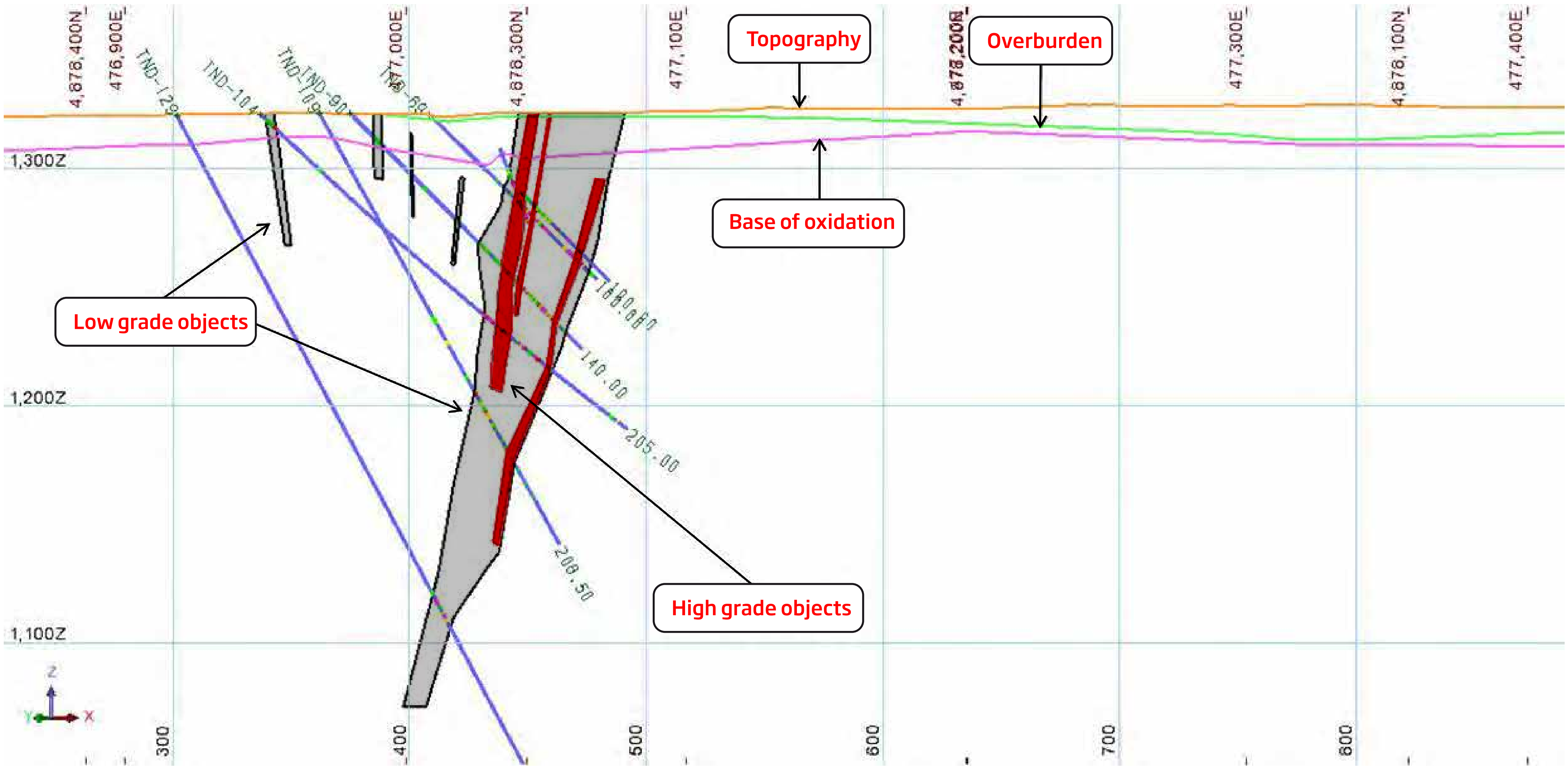
NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING

Altan Nar Mineralised Lodes Northern Area- Plan View

FIGURE No.	PROJECT No.	Date
14-8	ADV-MN-00161	January 2019

RPMGLOBAL



LEGEND

Au_ppm

-1-0.1	0.3-0.6	1-4	10-156
0.1-0.3	0.6-1	4-10	

N

0 50 100 m

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ERDENE RESOURCE DEVELOPMENT

PROJECT

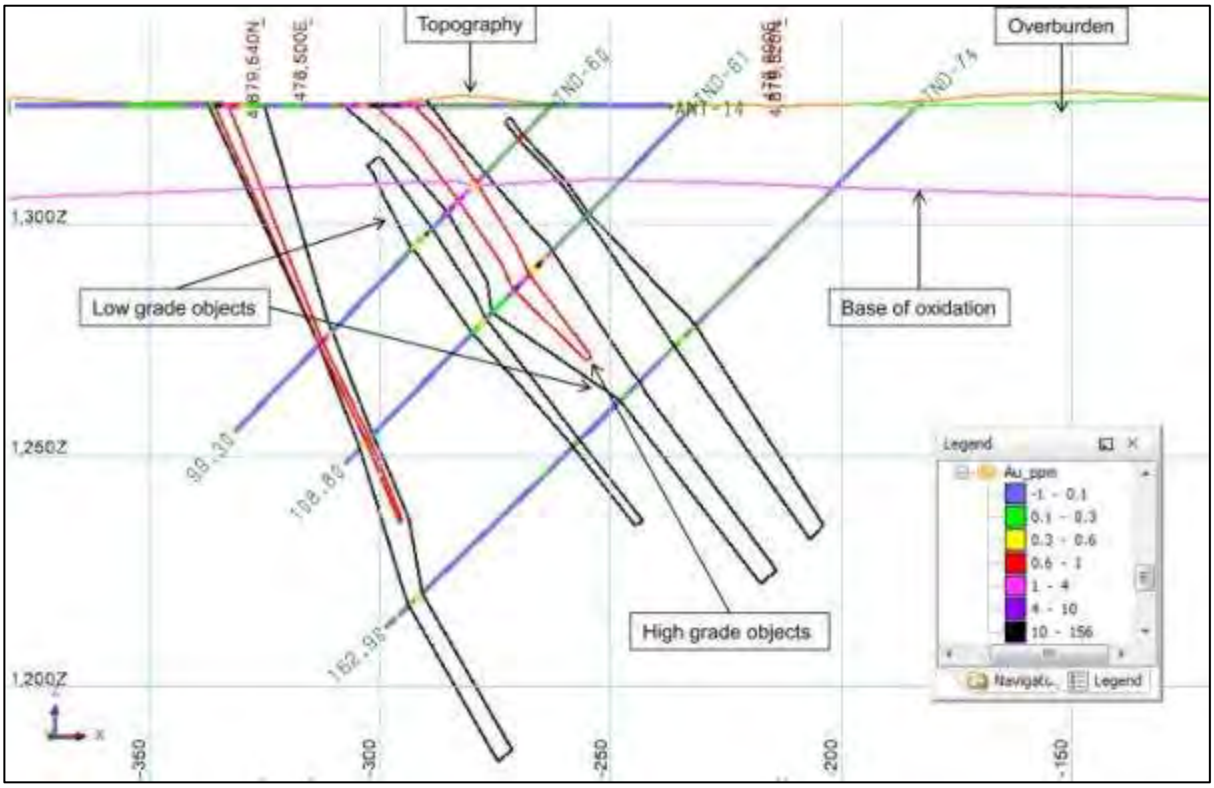
NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING: Cross Section of Wireframe and Drilling at Discovery Zone

FIGURE No. 14-9 | PROJECT No. ADV-MN-00161 | Date January 2019

RPMGLOBAL

Figure 14-10 Typical Section at Union North Zone



Overburden Wireframes

Drill logs recorded soils and sands in first 0-2m of some of the holes as such a surface for the overburden was prepared by RPM using the geological logging (‘overburden_20180409.dtm’). The surface was extended beyond the block model extents and is shown in on the sections in **Figure 14-9** and **Figure 14-10**.

Weathering Wireframes

Erdene geological logs of the drill cores indicates that weathering at Altan Nar is minimal and is constrained to 0-10m below the surface visually, however sulphur assay data suggests that weathering surfaces can reach depth of up to 20m in some places. Two distinct populations were observed in sulphur assay data.

RPM created weathering surfaces ‘weathering.dtm’ based on assay (<0.1% S) data and is shown in on the sections in **Figure 14-9** and **Figure 14-10**. RPM notes that not all drill holes have sulphur assays however holes with sulphur assays are spread reasonably throughout the deposit to allow interpretation.

Topographic Surface

Erdene supplied two separate files for topographic surface SRTM 30m data and 10m spaced DGPS surveyed points creating 0.2m contour data. The two datasets have elevation differences of 0.3-5m and as a consequence the DGPS surveyed point data was used to create topographic surface (‘topo_20171201.dtm’).

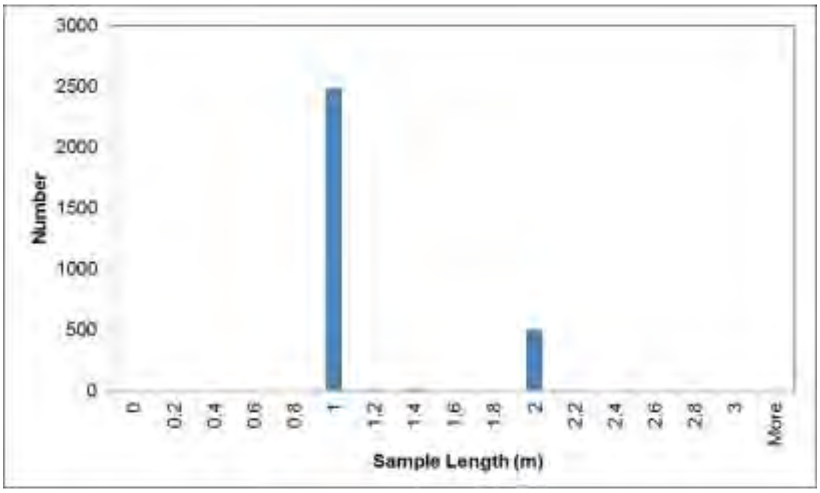
RPM notes that some extents of current modelled mineralization fall outside the 0.2m contour data and RPM merged 0.2m contour data with SRTM data to fully encompass the extent of the mineralization wireframes.

Compositing and Statistics

The wireframes of the mineralized zones were used to define the Mineral Resource intersections. These were coded into the 'res_zone' table within the database.

Separate intersection files were generated for each resource domain. A review of sample length within these files was carried out to determine the optimal composite length. This review determined that a variety of sample lengths were used during the original sampling, these lengths ranged from less than 0.5 m to 3 m. The majority of sample lengths within the mineralization were 1 m lengths (refer to **Figure 14-11**) as such 1m was utilised.

Figure 14-11 Sample Lengths Inside Wireframes



Surpac software was then used to extract 'best fit' 1m down-hole composites within the intervals coded as 'domain' intersections. This method adjusts the composite length within intersections to eliminate "rejected" samples that can occur when fixed length compositing is used. A minimum length of 50% was used due to the numerous very narrow intersections. This allowed a composite to be generated for intersections as narrow as 0.5m.

The composites were checked for spatial correlation with the wireframe objects, the location of the rejected composites and zero composite values. Individual composite files were created for each of the domains in the wireframe models and contained Au, Ag, As, Cu, Zn and Pb assay data. The composite data was imported into Supervisor software for analysis. The 90 individual wireframe lenses were grouped into two main geologically similar resource zones (refer **Figure 14-12**). These were termed the DZ and Union North zone where most of the mineralization and assay data located. There are a few mineralization wireframes fall outside the grouped domains (refer to red wireframes in **Figure 14-12**) as those individual shells look to have different orientation from two main grouped domains. Grouped data was also separated by high grade and low-grade domains. High grade domains only contain samples falling within high-grade shell while low grade shell is combined with high grade shell. Summary statistics for each zone are shown in **Table 14-5** to **Table 14-8**.

Figure 14-12 Domain Groupings (Blue - Union North, Brown – Discovery Zone)

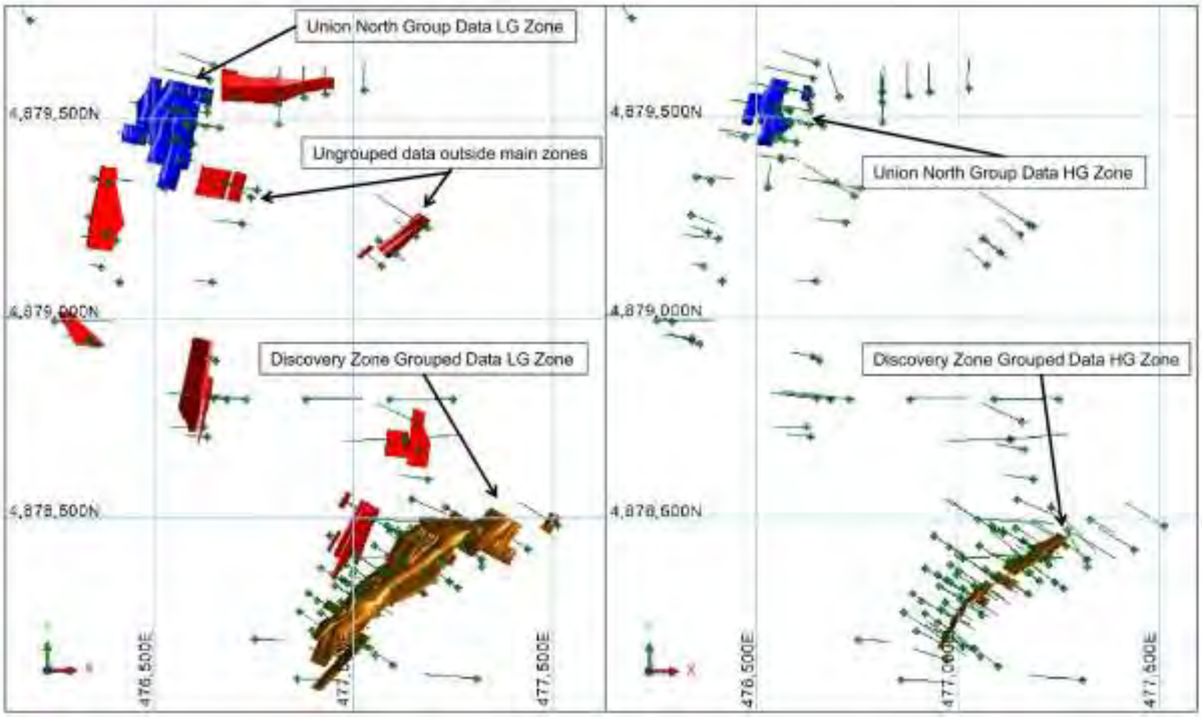


Table 14-5 Summary Statistics for 1m Composites in Discovery Zone - High Grade Domain

	Discovery Zone					
Domain	**High Grade**					
Element	Au_ppm	Ag_ppm	As_ppm	Cu_ppm	Zn_ppm	Pb_ppm
Number	248	248	248	248	248	248
Minimum	0.0	1	2	26	371	126
Maximum	155.0	358	119000	24300	170000	126000
Mean	9.1	43	11082	1108	9886	8432
Variance	339.0	3406	310398235	7413865	248318602	186115912
Std Dev	18.4	58	17618	2723	15758	13642
Coeff Var	2.015	1.353	1.590	2.458	1.594	1.618
Percentiles						
10	1.1	5	239	64	1600	822
20	2.0	8	651	101	2477	1415
30	2.4	12	1720	139	3457	1900
40	2.9	16	3025	203	4735	2536
50	3.4	21	4935	270	5494	3340
60	4.6	26	7331	365	6820	4946
70	6.6	41	12600	589	8384	7060
80	10.6	70	16550	1030	11900	11450
90	15.4	101	25100	2340	20950	20600
95	38.7	152	41450	5486	32200	37550
97.5	74.8	213	68400	9799	50800	45100

Table 14-6 Summary Statistics for 1m Composites in Discovery Zone - Low Grade Domain

Discovery Zone						
Domain	**Low Grade**					
Element	Au_ppm	Ag_ppm	As_ppm	Cu_ppm	Zn_ppm	Pb_ppm
Number	2407	2407	2407	2407	2407	2407
Minimum	0.0	1	2	0	69	1
Maximum	155.0	358	119000	24300	170000	143204
Mean	1.4	10	2912	292	4189	3087
Variance	43.0	629	54557017	970044	66320148	61553142
Std Dev	6.6	25	7386	985	8144	7846
Coeff Var	4.70	2.46	2.54	3.37	1.94	2.54
Percentiles						
10	0.1	1	70	40	458	115
20	0.1	1	100	57	943	266
30	0.1	2	150	74	1310	466
40	0.2	3	227	87	1725	708
50	0.3	4	381	104	2220	1001
60	0.4	5	710	129	2800	1340
70	0.6	7	1640	165	3590	1946
80	1.0	11	3697	243	4965	3163
90	2.4	21	8367	491	7662	6640
95	4.6	41	14050	951	13850	12750
97.5	8.3	73	19250	1735	23600	22650

Table 14-7 Summary Statistics for 1m Composites in Union North Zone - High Grade Domain

Union North Zone						
Domain	**High Grade**					
Element	Au_ppm	Ag_ppm	As_ppm	Cu_ppm	Zn_ppm	Pb_ppm
Number	95	95	95	95	95	95
Minimum	0.2	1	53	6	550	595
Maximum	45.4	338	33143	1674	226272	311112
Mean	6.5	23	2914	304	16227	30678
Variance	45.1	2480	18959001	116788	948700325	3190309473
Std Dev	6.7	50	4354	342	30801	56483
Coeff Var	1.03	2.14	1.49	1.12	1.90	1.84
Percentiles						
10	1.9	1	127	19	1610	1370
20	2.5	3	349	64	2142	2954
30	3.1	4	557	90	3365	5110
40	3.5	7	1045	148	4774	8211
50	4.0	10	1660	176	5470	12281
60	5.0	13	2371	230	7320	16131
70	7.8	17	2920	293	10111	20800
80	9.6	23	4362	528	16832	32045
90	12.4	45	6226	747	35755	59972
95	19.4	78	9923	1146	83809	154474
97.5	27.4	232	14915	1289	101435	262035

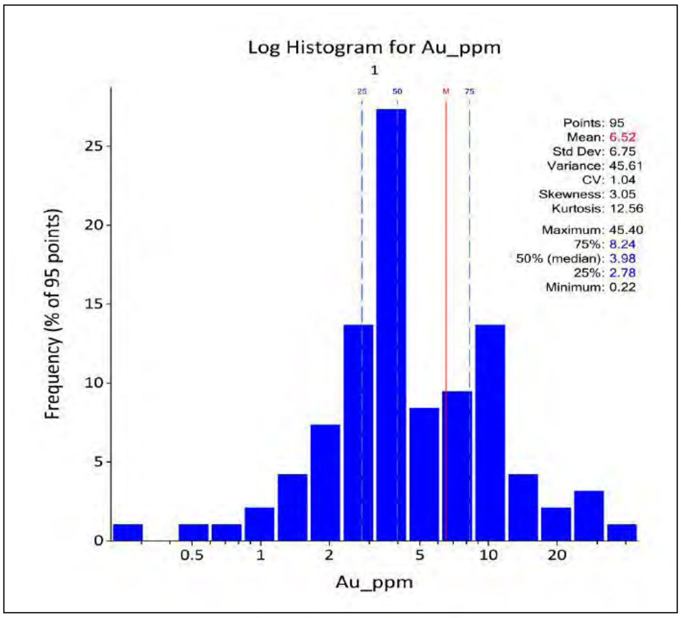
Table 14-8 Summary Statistics for 1m Composites in Union North Zone - Low Grade Domain

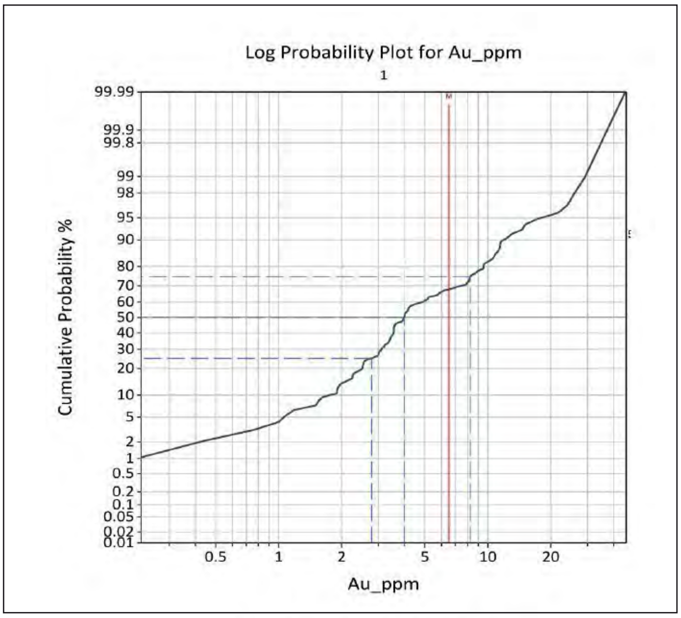
Union North Zone						
Domain	**Low Grade**					
Element	Au_ppm	Ag_ppm	As_ppm	Cu_ppm	Zn_ppm	Pb_ppm
Number	549	549	549	549	549	549
Minimum	0.0	1	2	2	106	32
Maximum	45.1	334	32635	1676	166966	308128
Mean	1.6	7	946	151	6130	8428
Variance	13.8	543	5270316	41036	184081847	698016561
Std Dev	3.7	23	2296	203	13568	26420
Coeff Var	2.30	3.35	2.43	1.34	2.21	3.13
Percentiles						
10	0.1	1	73	21	875	446
20	0.1	1	125	41	1299	706
30	0.2	1	172	56	1815	1097
40	0.2	2	223	75	2338	1543
50	0.3	3	281	94	2878	2070
60	0.5	3	363	116	3460	3092
70	0.9	4	530	144	4576	4710
80	2.0	6	912	189	6011	7088
90	4.0	12	2344	299	9669	16454
95	8.2	23	4359	514	22844	31351
97.5	11.2	38	6253	746	34161	59091

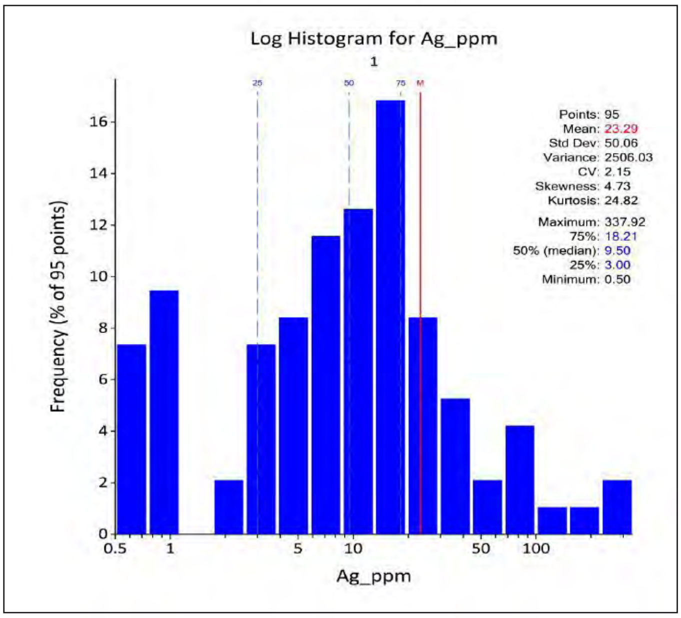
Table 14-9 Combined Mineralization wireframe samples outside of DZ and Union North

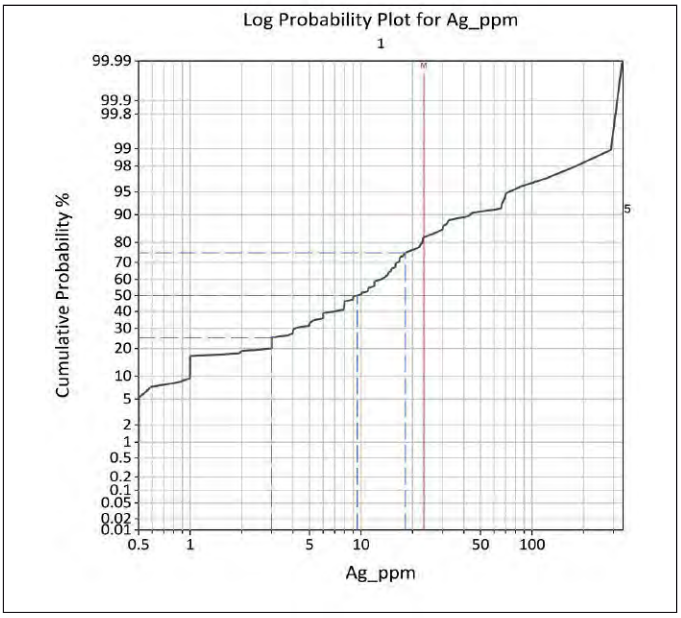
Combined mineralization wireframe outside the 2 main domains						
Domain	**LG and HG combined**					
Element	Au_ppm	Ag_ppm	As_ppm	Cu_ppm	Zn_ppm	Pb_ppm
Number	677	677	677	677	677	677
Minimum	0.0	1	2	0	76	11
Maximum	22.3	77	9813	3886	71100	77300
Mean	1.1	4	374	187	4196	4517
Variance	2	8	685	308	7165	8183
Std Dev	6	64	469514	94811	51339342	66965798
Coeff Var	2.19	1.78	1.83	1.65	1.71	1.81
Percentiles						
10	0.1	1	41	29	580	198
20	0.1	1	68	46	1021	463
30	0.1	1	85	61	1430	707
40	0.2	1	112	75	1825	989
50	0.3	2	142	92	2257	1346
60	0.4	3	178	115	2841	2255
70	0.6	4	262	165	3682	3515
80	1.2	6	434	217	5280	5944
90	2.8	9	1000	399	7620	13041
95	5.4	15	1623	635	13300	20400
97.5	7.8	19	2440	1165	30200	27068

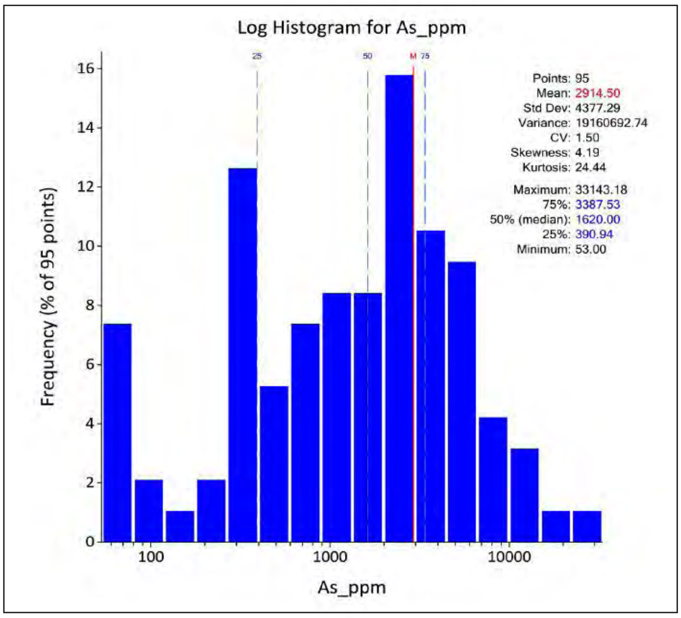
Analysis of the descriptive statistics indicates that the elements within each domain appear to have a log normal distribution with moderate to high variability, a large range, coefficient of variation and variance is seen in the Au base metal elements (**Table 14-5** to **Table 14-8**) This interpretation is further supported when the log probability plots and histograms are analysed (**Figure 14-13**Error! Reference source not found. to **Figure 14-20**), resulting in the interpretation that all elements have a relatively lognormal distribution and a highly positively skewed distribution as would be expected with the style of mineralization observed within the deposit. The distribution for the Zn and Pb elements appears to have a long upper tail which varies slightly from the Au dataset. Histogram and probability plots for other elements were shown in **Figure 14-13**Error! Reference source not found. to **Figure 14-20**. RPM highlights that the low-grade plots clearly show the bimodal distribution of the population further supporting the use of separate domains.

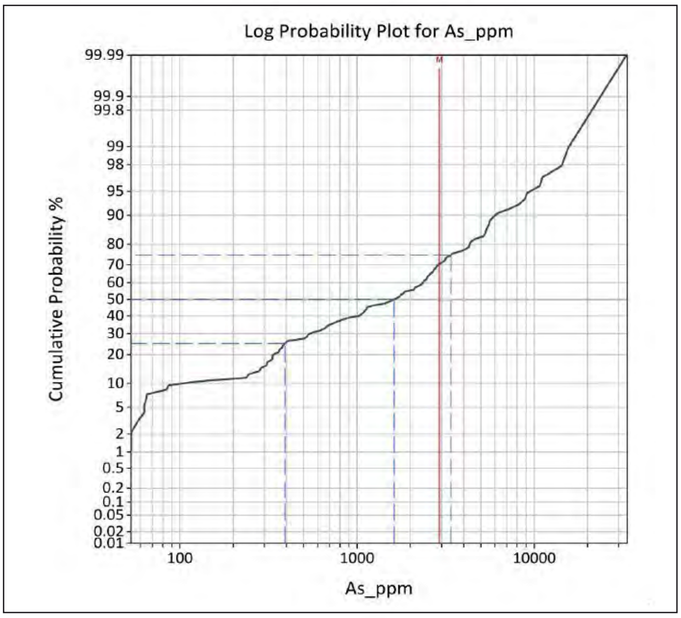












RPMGLOBAL

LEGEND

CLIENT

ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING Histogram and Probability Plots (Union North Zone - HG Domain Au, Ag and As)

FIGURE No.	PROJECT No.	Date
14-13	ADV-MN-00161	January 2019

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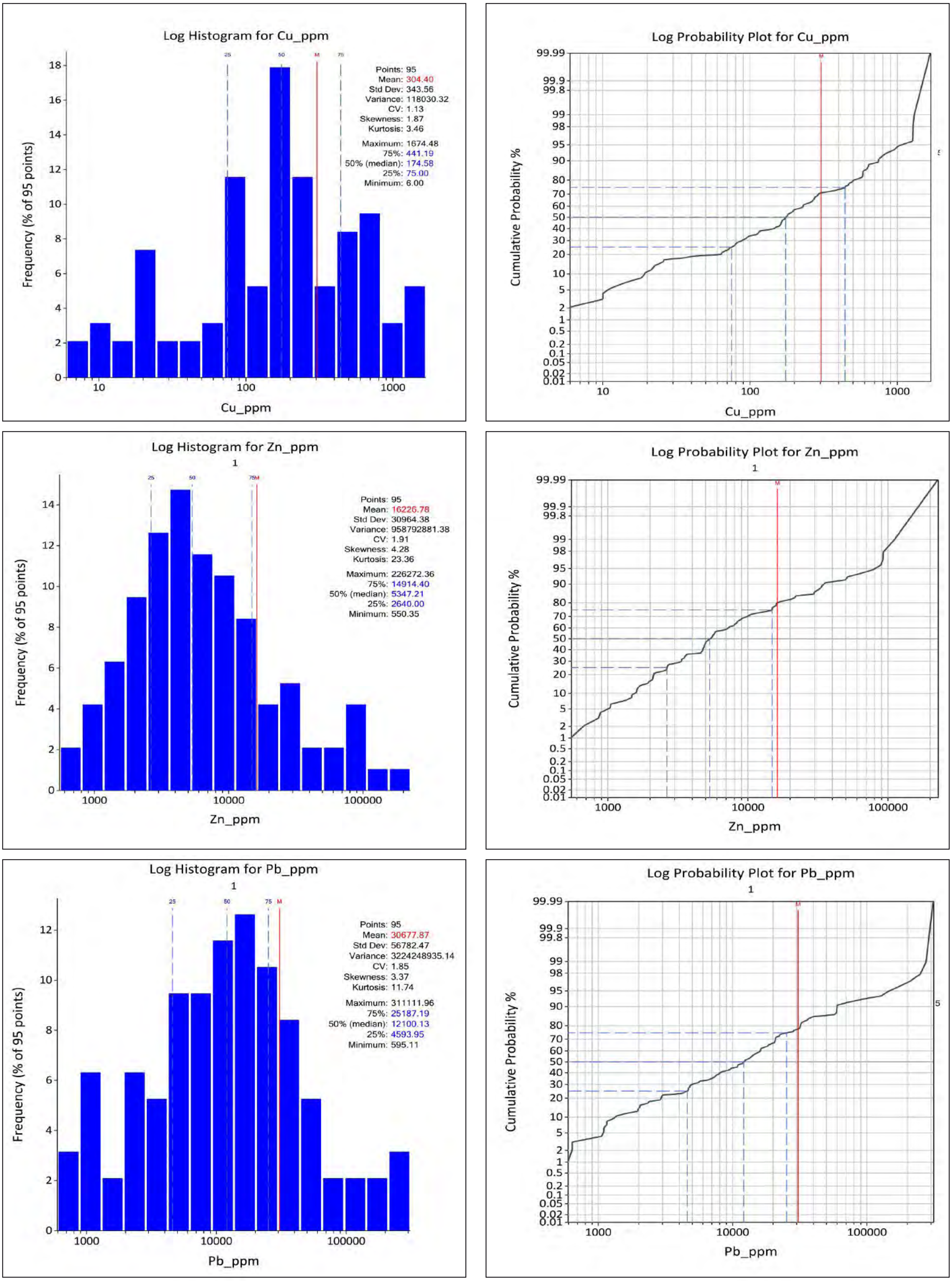

RPMGLOBAL

LEGEND

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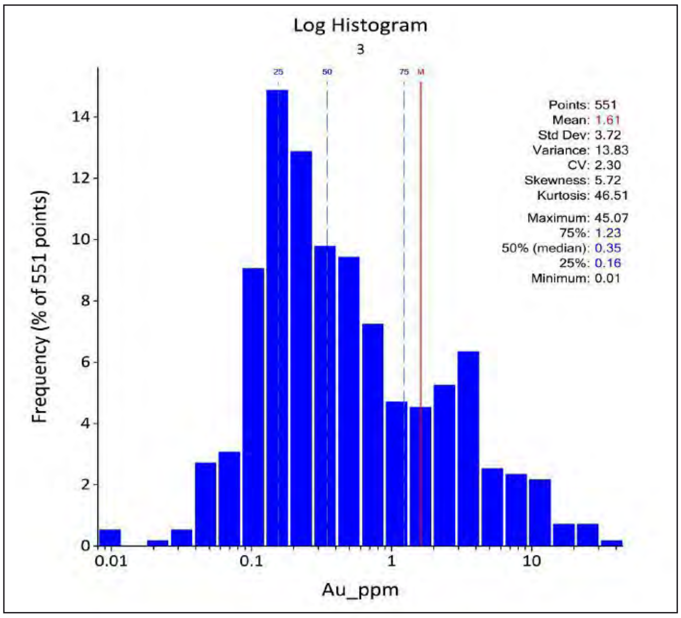
ERDENE RESOURCE DEVELOPMENT

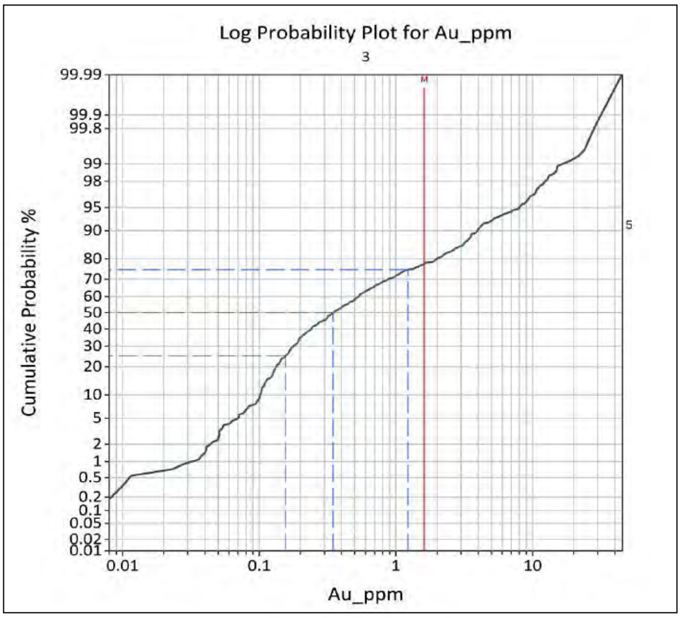
PROJECT

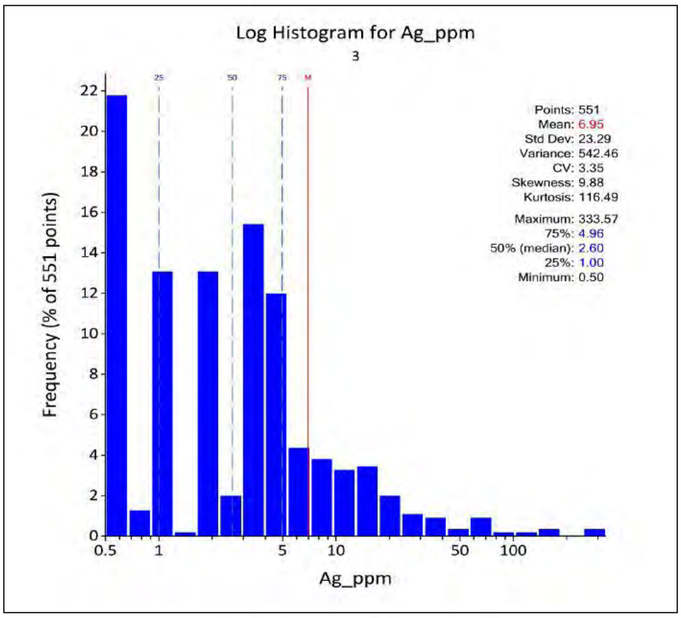
NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

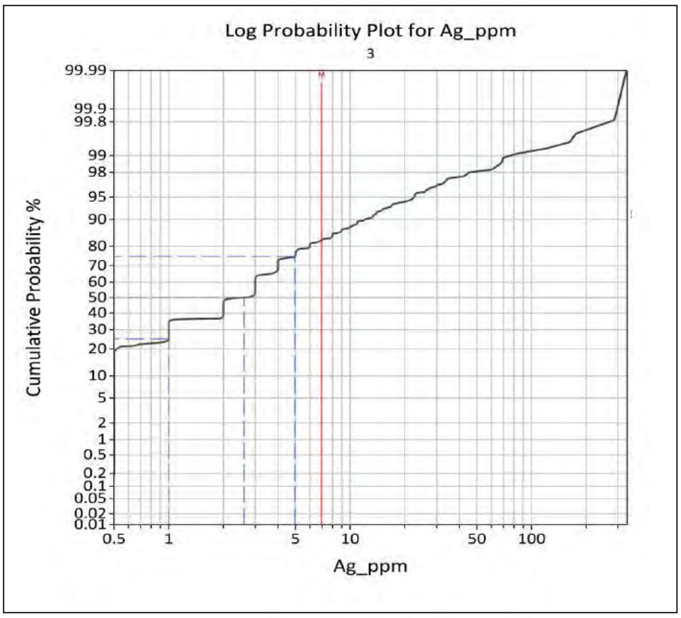
DRAWING: Histogram and Probability Plots (Union North Zone - HG Domain Cu, Zn and Pb)

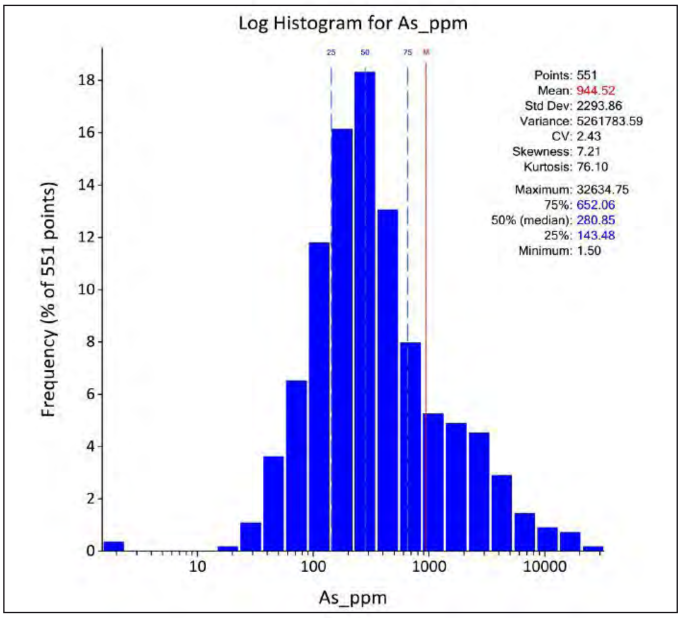
FIGURE No.	PROJECT No.	Date
14-14	ADV-MN-00156	January 2019

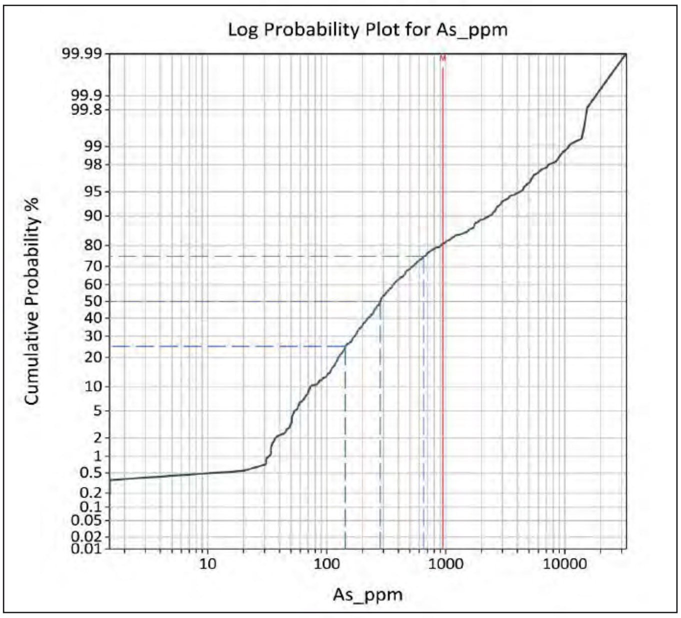












RPMGLOBAL

LEGEND

CLIENT

ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING Histogram and Probability Plots (Union North Zone - LG Domain Au, Ag and As)

FIGURE No.	PROJECT No.	Date
14-15	ADV-MN-00161	January 2019

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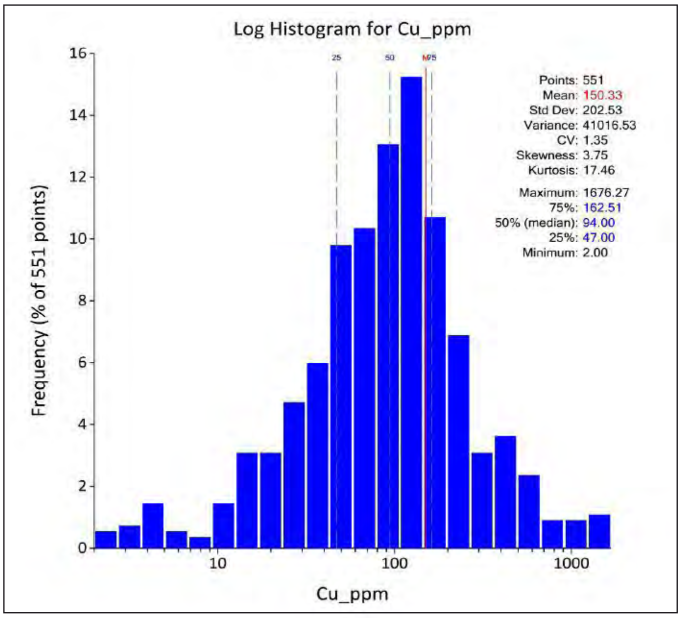

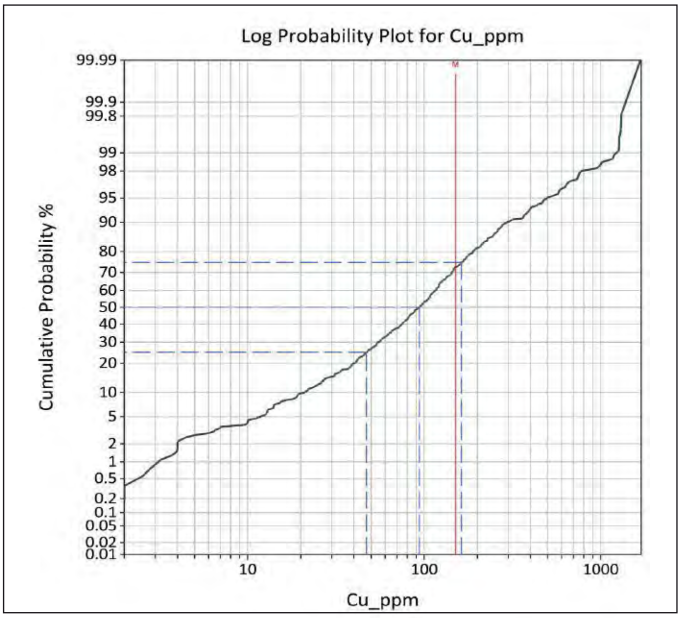

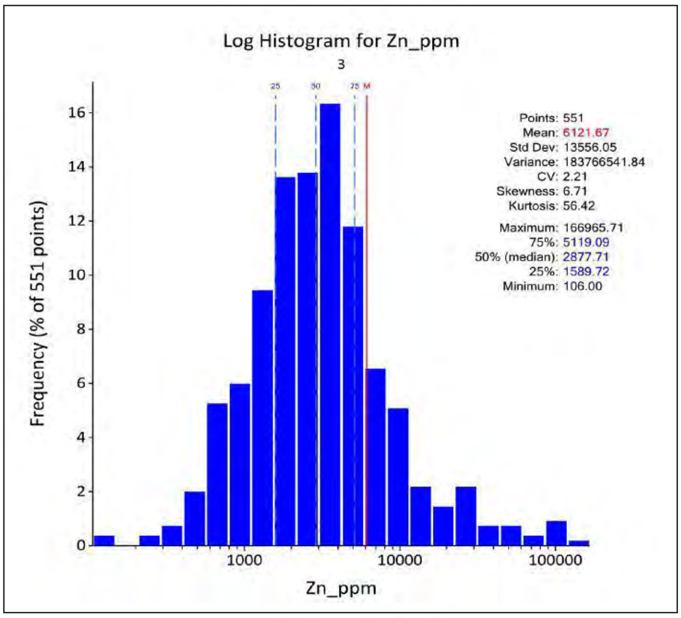

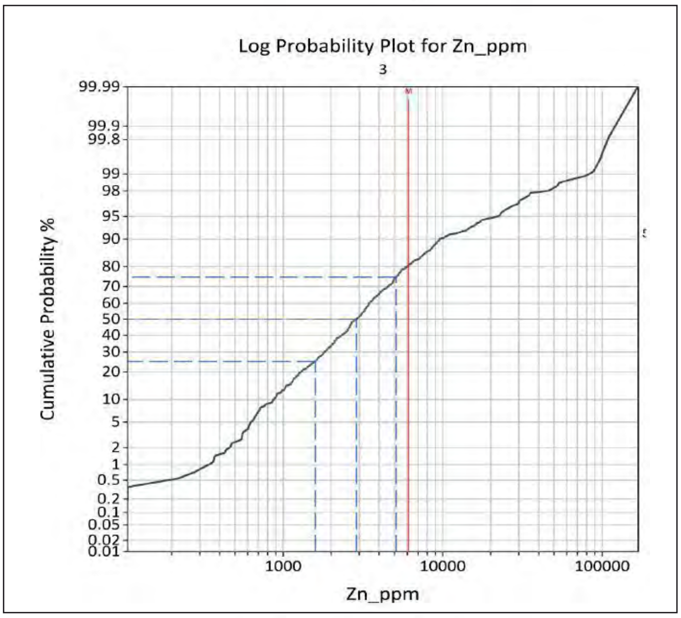

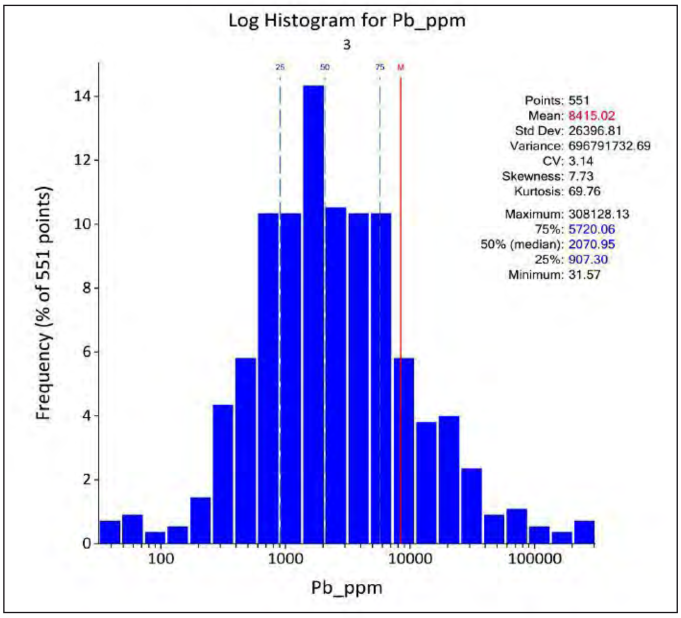

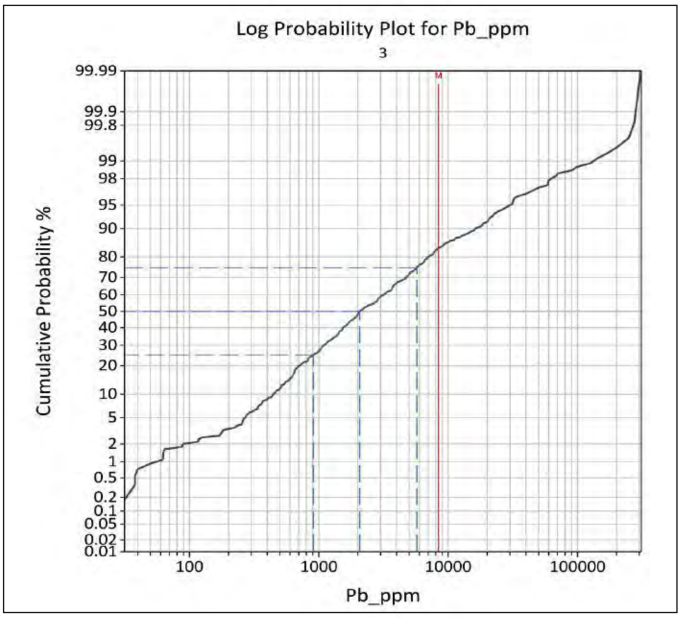

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ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING Histogram and Probability Plots (Union North Zone - LG Domain Cu, Zn and Pb)

FIGURE No.	PROJECT No.	Date
14-16	ADV-MN-00161	January 2019

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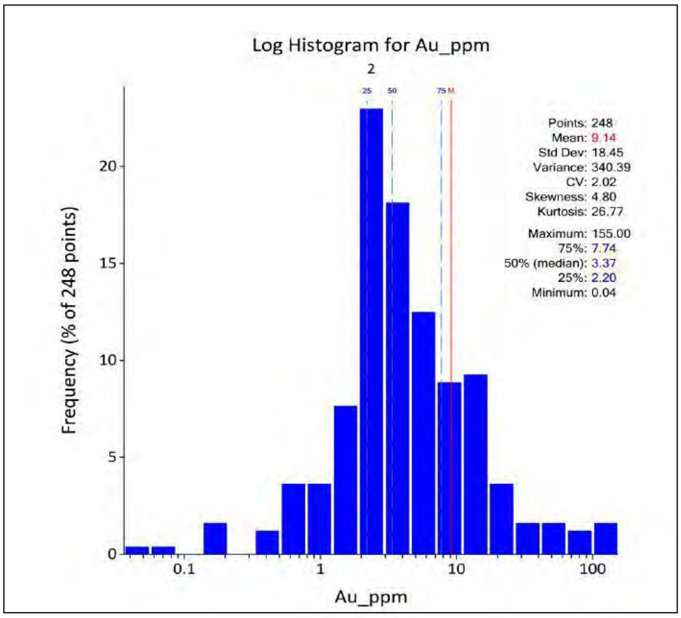

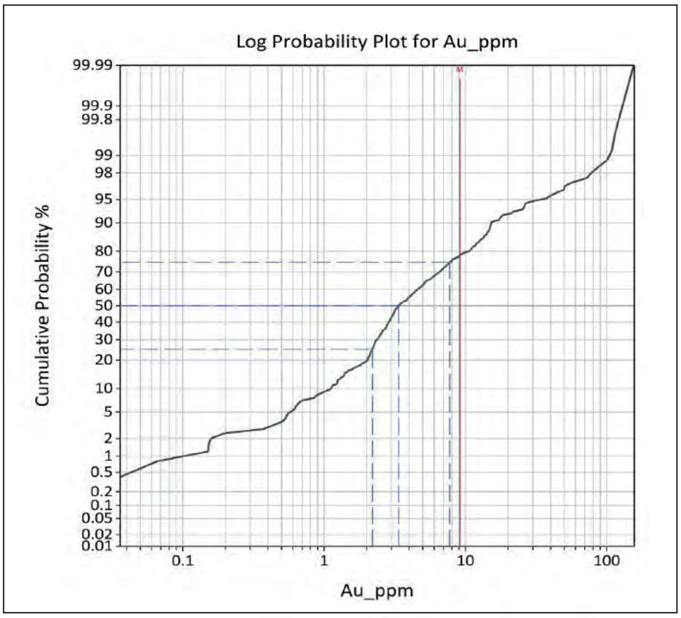

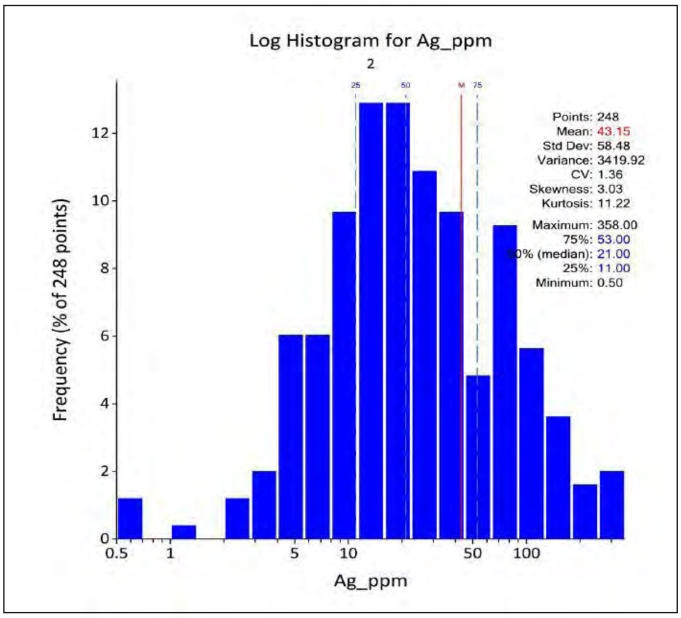

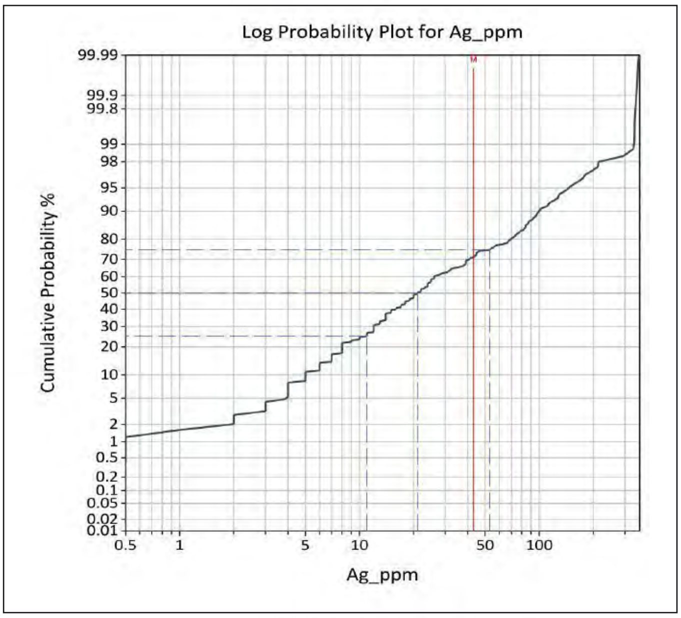

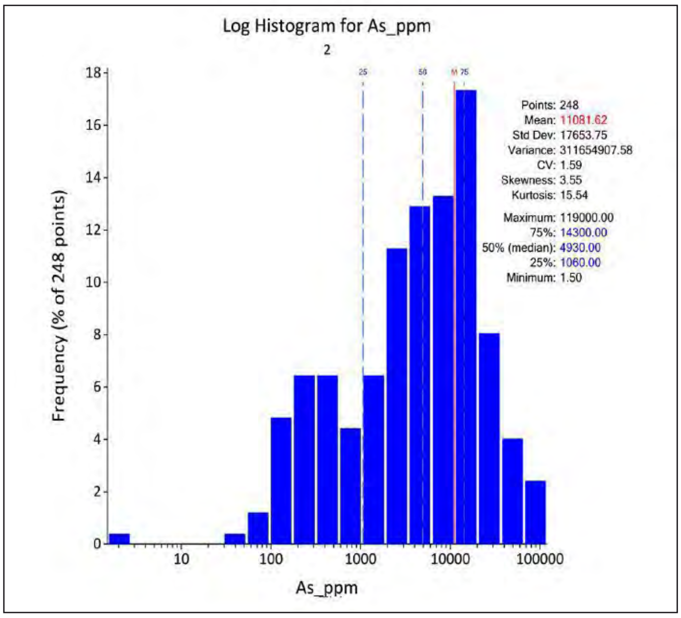

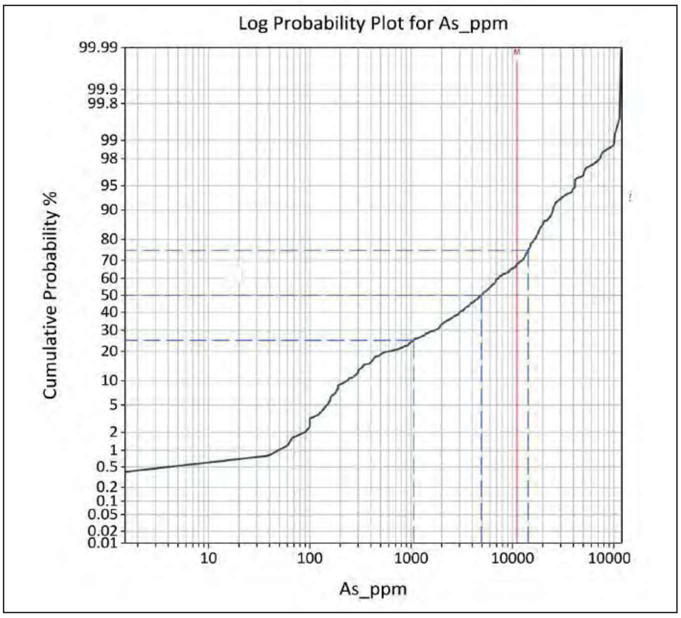

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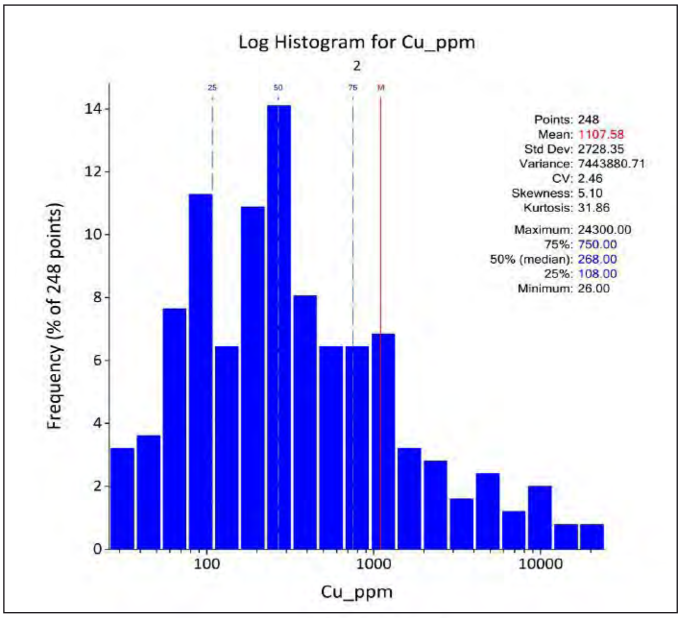
ERDENE RESOURCE DEVELOPMENT

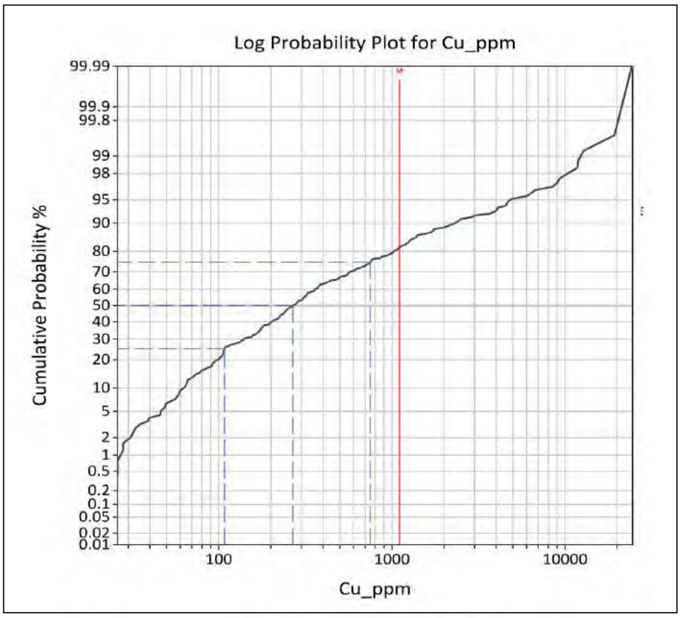
PROJECT

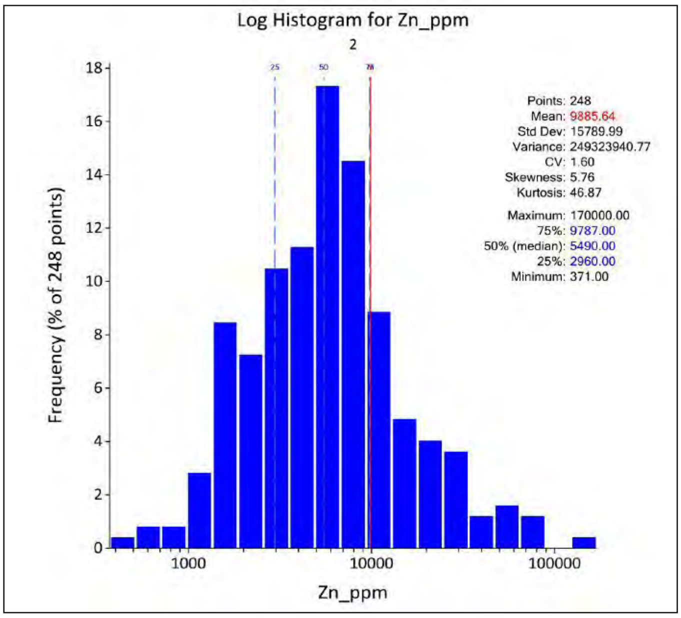
NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

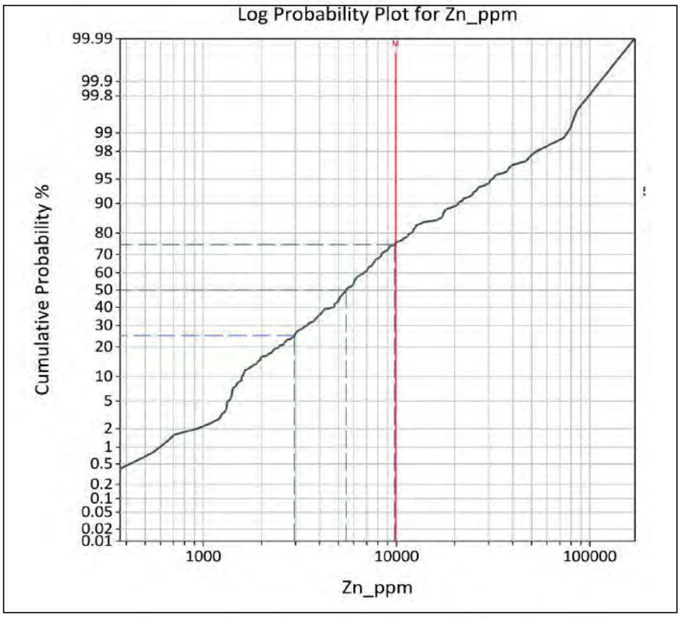
DRAWING: Histogram and Probability Plots (Discovery Zone - HG Domain Au, Ag and As)

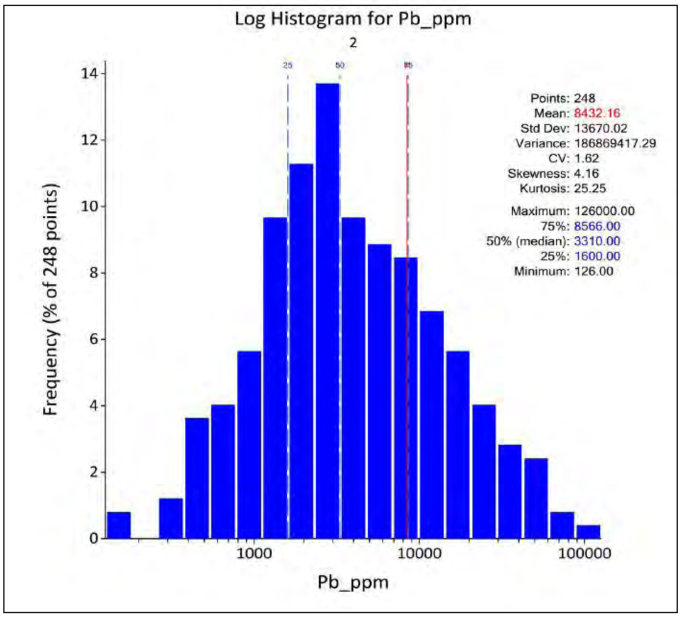
FIGURE No.	PROJECT No.	Date
14-17	ADV-MN-00161	January 2019

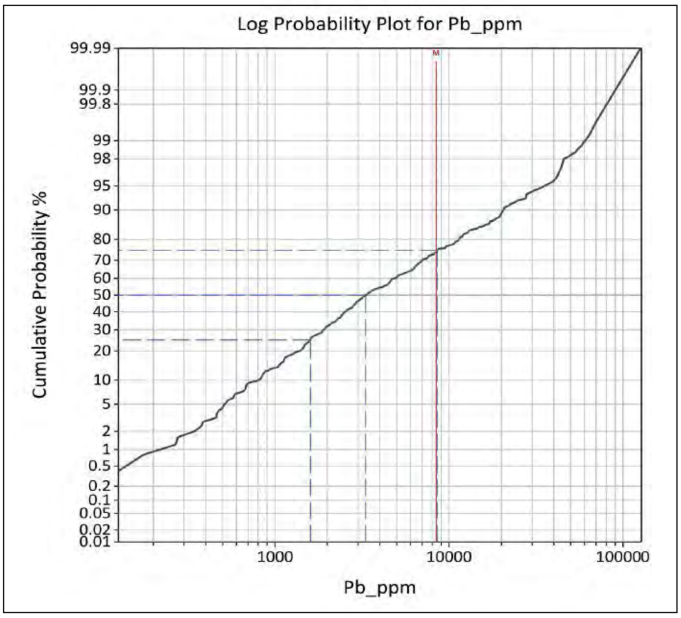












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CLIENT

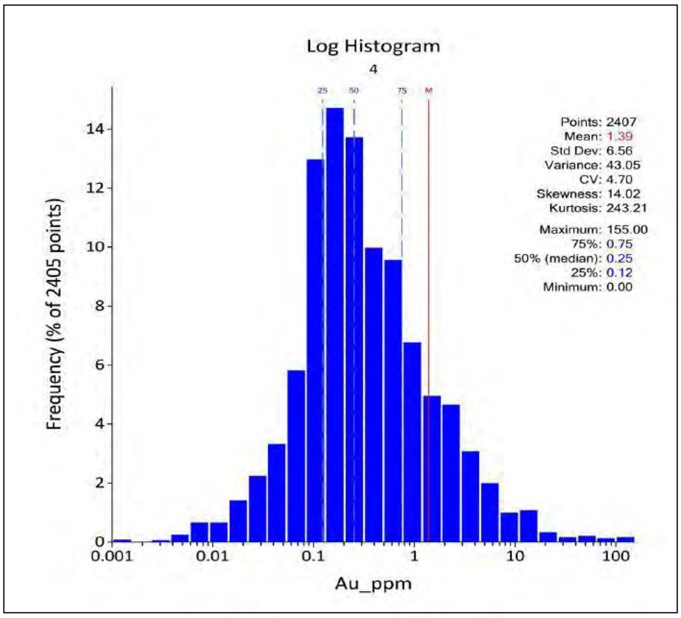
ERDENE RESOURCE DEVELOPMENT

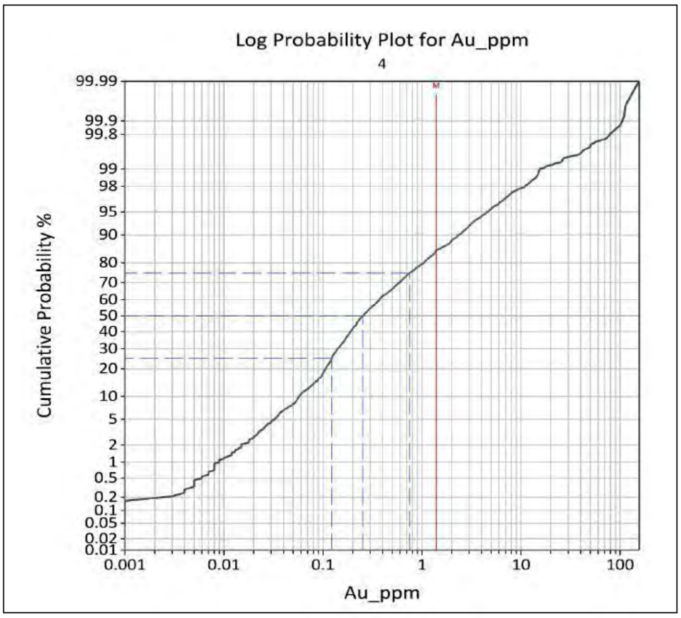
PROJECT

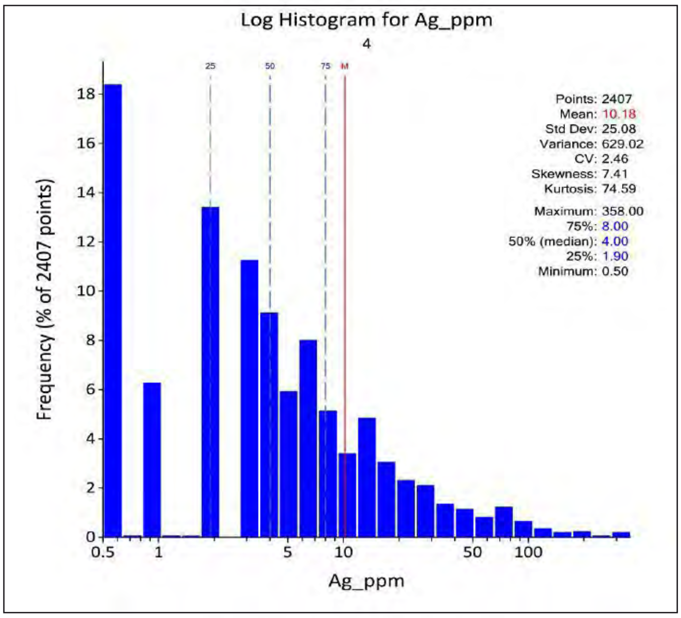
NAME **ALTAN NAR DEPOSIT**

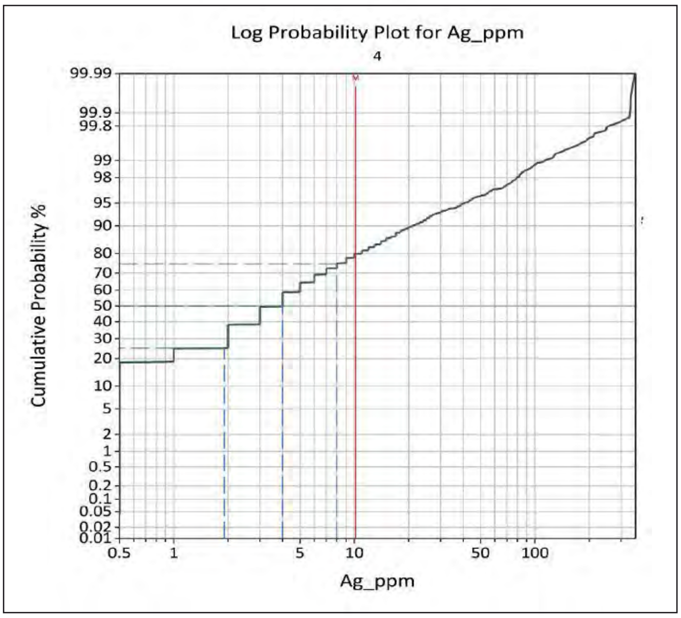
DRAWING Histogram and Probability Plots (Discovery Zone - HG Domain Cu, Zn and Pb)

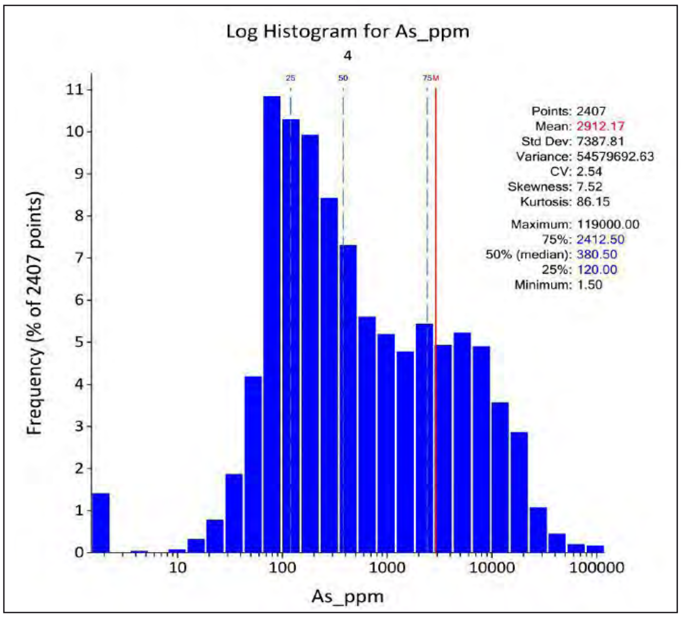
FIGURE No.	PROJECT No.	Date
14-18	ADV-MN-00161	January 2019

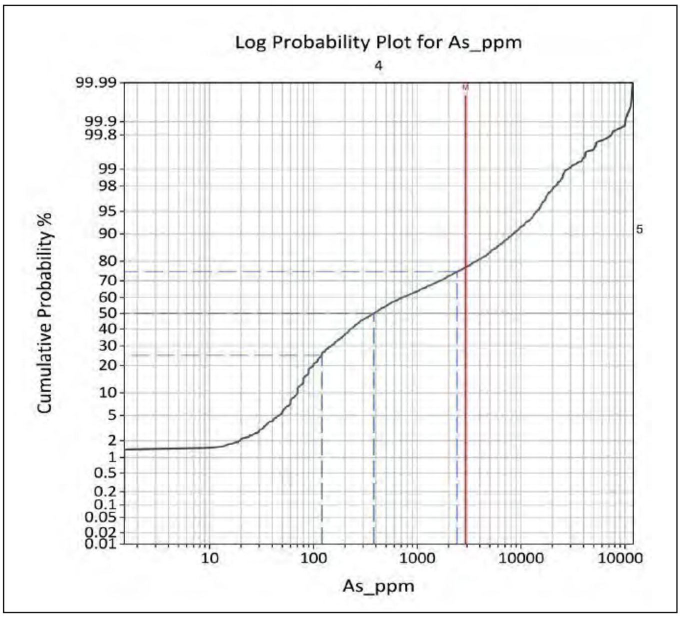












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LEGEND	CLIENT	PROJECT
	ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project
		DRAWING: Histogram and Probability Plots (Discovery Zone – LG Domain Au, Ag and As)
		FIGURE No. 14-19 — PROJECT No. ADV-MN-00156 — Date January 2019

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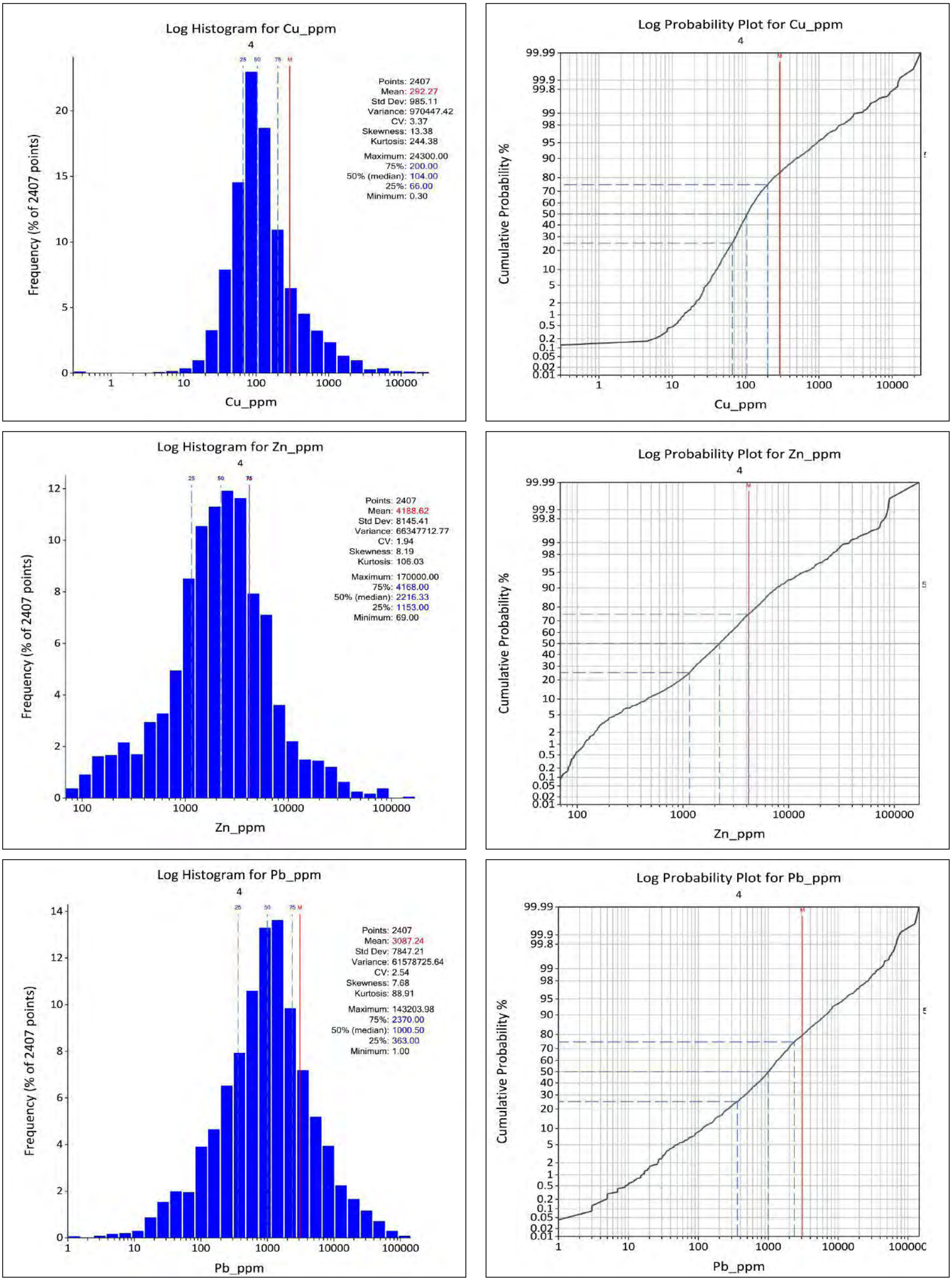

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LEGEND	CLIENT	PROJECT
	ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project
		DRAWING: Histogram and Probability Plots (Discovery Zone - LG Domain Cu, Zn and Pb)

FIGURE No.	PROJECT No.	Date
14-20	ADV-MN-00161	January 2019

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RPM interprets these statistics to be representative of the style and tenure of mineralization observed at the Project. Gold mineralization occurs as distinct zones within the broader base metal mineralization. This interpretation is further supported by the metal's correlation analysis.

Correlation Analysis

The correlations of the metals within the deposit are typical of epithermal style systems, with a reasonable correlation between Au and Ag, Au and Cu, Ag and Pb while moderate correlation was observed for Au and Zn and Pb. Further supporting the association of the mineralization within the deposit with sulphide minerals is the good correlation of Pb and Zn. The correlation of Zn and Pb is commonly found in sulphide hosted base metals deposits. Although the correlation coefficients are moderate, given the style of mineralization, the likely occurrence of native gold, and high levels of non-gold bearing sulphide minerals within the veins, RPM considers this correlation to be reasonable although there is evidence for additional domaining requirements which is utilised in the methods applied.

The remaining elements are un-correlated. Correlation matrices for all combined mineralization are shown in **Table 14-10** while correlation matrices for separate domain and zones were summarised in **Table 14-11** to **Table 14-14**.

Table 14-10 Metals Correlation Matrix All Mineralization

	Au	Ag	As	Cu	Zn	Pb
Au	1					
Ag	0.49	1				
As	0.17	0.33	1			
Cu	0.53	0.50	0.04	1		
Zn	0.37	0.35	0.10	0.25	1	
Pb	0.32	0.55	0.07	0.18	0.44	1

Table 14-11 Metals Correlation Matrix Union North HG Domain

	Au	Ag	As	Cu	Zn	Pb
Au	1					
Ag	0.41	1				
As	0.62	0.42	1			
Cu	0.31	0.10	0.10	1		
Zn	0.20	0.25	0.27	0.21	1	
Pb	0.56	0.90	0.58	0.10	0.3	1

Table 14-12 Metals Correlation Matrix Union North LG Domain

	Au	Ag	As	Cu	Zn	Pb
Au	1					
Ag	0.50	1				
As	0.63	0.46	1			
Cu	0.39	0.22	0.18	1		
Zn	0.37	0.37	0.32	0.27	1	
Pb	0.64	0.90	0.57	0.24	0.42	1

Table 14-13 Metals Correlation Matrix Discovery Zone HG

	Au	Ag	As	Cu	Zn	Pb
Au	1					
Ag	0.43	1				
As	-0.04	0.07	1			
Cu	0.52	0.51	-0.14	1		
Zn	0.54	0.36	-0.02	0.30	1	
Pb	0.45	0.63	-0.11	0.38	0.42	1

Table 14-14 Metals Correlation Matrix Discovery Zone LG

	Au	Ag	As	Cu	Zn	Pb
Au	1					
Ag	0.50	1				
As	0.15	0.32	1			
Cu	0.54	0.54	0.02	1		
Zn	0.43	0.38	0.10	0.31	1	
Pb	0.36	0.53	0.04	0.31	0.51	1

An interesting correlation is observed for Union North Zone for both HG and LG domains. There is a strong correlation observed for Au and As, Au and Pb while Au and As are un-correlated in the DZ. Au, Ag, Pb and Zn correlations remain relatively consistent for each domain.

Top-Cuts

Visual analysis of the grade distributions within drill holes indicates that the high-grade gold mineralization occurs as narrow, near vertical semi-parallel lodes within a broader low-grade shell.

Analysis of the statistics indicates that the composite data for all elements are positively skewed with moderate to high coefficients of variation. The application of top cuts is considered necessary prior to using the data for linear grade interpolation.

Statistical data, histogram and probability plots indicate that mineralization has two populations (High grade and low grade) however the high-grade populations have a long upper tail which suggests that smooth transition from high to low grade estimation would be necessary for the estimate. This necessitated the use of high-grade zones using a hard boundary with only samples falling within high-grade zone while samples from high grades zone were combined with samples falling within low grade shell but utilising severe top cut to more appropriately model the transition from high grade domains to low grade domains.

To assist in the selection of appropriate top cuts, the composite data was imported into Supervisor software, where population histograms, log probability plots and the coefficient of variation statistics were generated for all high- and low-grade domains. The log histogram and log probability plots are shown in **Figure 14-13** to **Figure 14-20**.

Top cuts were determined for all high- and low-grade zones using the shape of distribution on the log probability plots and population histograms and determining the spatial location of the samples subject to high grade cuts. The high grades cuts applied to the low-grade zones were based on the distribution of grades within the low-grade domains exclusive of the higher-grade data contained within the wholly surrounded high grade domains. These high-grade top cuts were then applied to the combined high- and low-grade datasets for use in estimating the low-grade domains, this ensured appropriate treatment of the grade distribution within both the high and low grade domains.

Following a review of the plots, a top cut of 110g/t Au was applied within the high-grade domain for DZ, a top cut of 30 g/t Au was applied to the high grade domain for Union North zone resulting in a total of 3 Au samples being cut. Top cuts applied to other elements are summarized in **Table 14-15**.

Table 14-15 Altan Nar – Top-Cuts Applied to Domains

Grouped Composite data	Domain	Assign	Au	Ag	As	Cu	Pb	Zn
Union North Zone	HG	Cut Value (g/t)	30	300	20,000	1,300	250,000	100,000
		Number Cut	1	1	1	6	2	2
	LG	Cut Value (g/t)	7	300	10,000	1,300	250,000	90,000
		Number Cut	45	1	7	8	2	5
Discovery Zone	HG	Cut Value (g/t)	110	300	100,000	12,000	60,000	80,000
		Number Cut	2	4	3	3	3	2
	LG	Cut Value (g/t)	9	300	100,000	12,000	60,000	75,000
		Number Cut	58	4	3	3	9	7

14.1.4 Geospatial Analysis

Variography

Mineralization continuity was confirmed via variography. Variography examines the spatial relationship between composites and seeks to identify the directions of mineralization continuity and to quantify the ranges of grade continuity. Variography was also used to determine the random variability or ‘nugget effect’ of the deposit. The results provide the basis for determining appropriate kriging parameters for resource estimation.

RPM has interpreted experimental variograms of Au, Ag As, Cu, Zn and Pb for HG and LG domains for both Discovery and Union North Zones (refer to **Figure 14-12**). All variography was completed using Supervisor software.

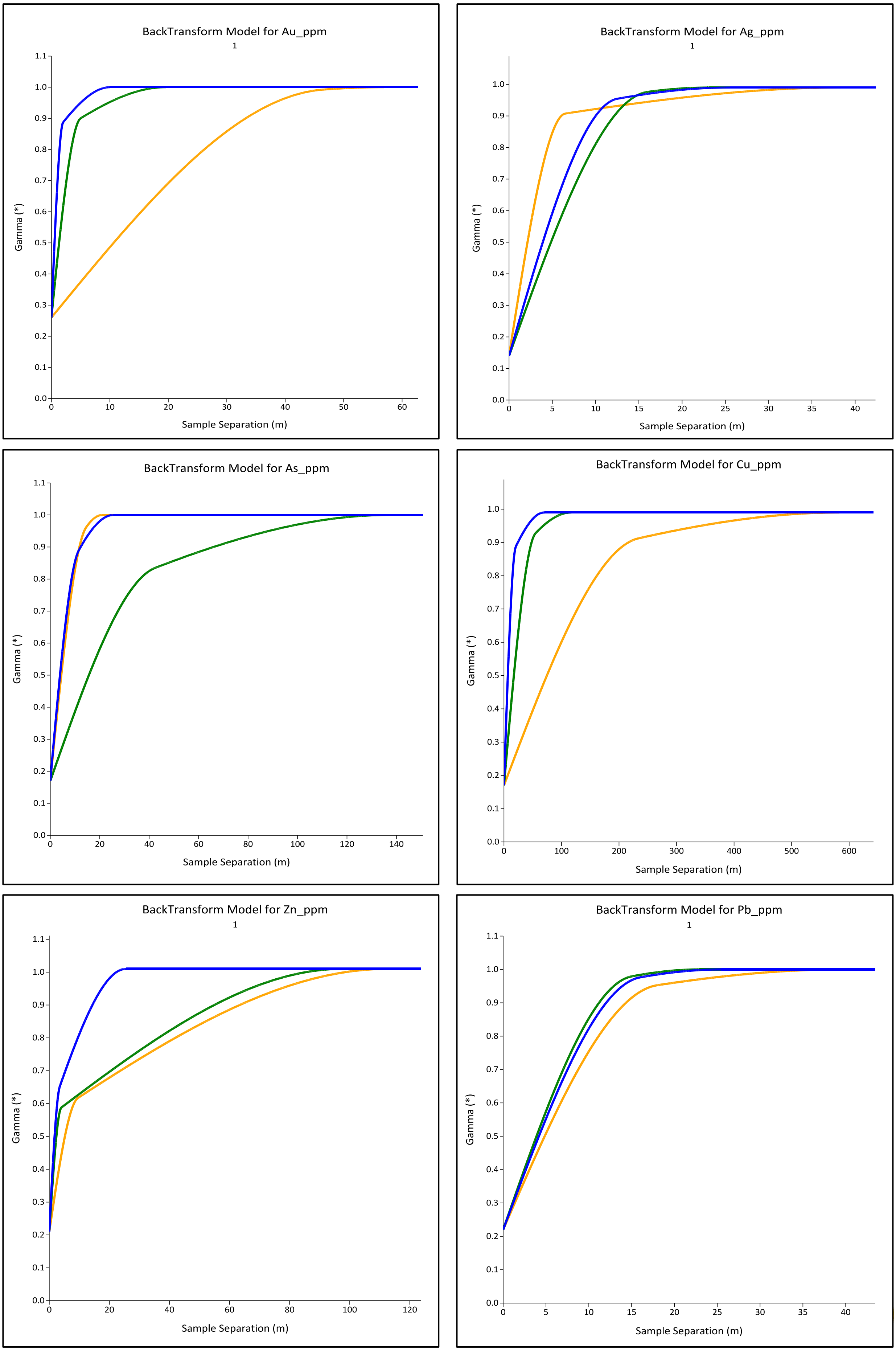
The 1m composite sample data was transformed into a normal distribution using a normal scores transformation to help identify the main directions of mineralization continuity from the skewed original data. The experimental variograms are normalised against the sample variance so that the sill value is 1 and the structures are viewed as ratios or proportions of the sill.

A two structured nested spherical model was found to model the experimental variogram reasonably well. The down-hole variogram provides the best estimate of the true nugget values which was 0.33 (Au), 0.31 (Ag), 0.15 (As), 0.2 (Cu), 0.38 (Zn) and 0.33 (Pb) for the HG domain for the DZ while nugget values for the HG domain for Union North Zone was 0.26 (Au), 0.14 (Ag), 0.17 (As), 0.17 (Cu), 0.21 (Zn) and 0.22 (Pb). The orientation of the plane of mineralization was aligned with the interpreted wireframe for the main objects. The experimental variograms were calculated with the first direction aligned along the main mineralization continuity while the second direction was aligned in the plane of mineralization at 90° to the first orientation. The third direction was orientated perpendicular to the mineralization plane, across the width of the mineralization.

RPM modelled the down-hole and three orthogonal variograms of Au, Ag, As, Cu, Zn and Pb for the HG and LG domain. Interpreted variogram parameters are shown in **Table 14-16**. Full details of the directional continuity analysis can be found in to **Figure 14-21** to **Figure 14-24**.

Table 14-16 Altan Nar – Interpreted Variogram Analysis

Zone	Domain	Element	Nugget	Structure 1				Structure 2			
			Co	C1	A1	Semi1	Minor1	C2	A2	Semi2	Minor2
Union North	High Grade	Au	0.26	0.58	47	9.30	23.25	0.16	57	2.92	5.70
		Ag	0.14	0.74	16	1.28	2.46	0.11	39	1.51	1.67
		As	0.17	0.53	43	2.93	3.70	0.30	137	5.37	6.52
		Cu	0.17	0.64	234	4.26	11.41	0.18	584	5.01	8.40
		Zn	0.21	0.35	10	2.38	2.71	0.45	113	1.15	4.41
		Pb	0.22	0.65	18	1.13	1.20	0.13	40	1.55	1.72
	Low Grade	Au	0.15	0.71	6	1.33	1.33	0.14	60	1.76	3.00
		Ag	0.24	0.51	19	2.85	6.17	0.25	187	1.09	14.96
		As	0.15	0.48	17	1.74	2.06	0.38	161	2.63	7.64
		Cu	0.15	0.37	14	3.38	5.40	0.47	207	1.25	1.61
		Zn	0.20	0.70	28	1.20	13.75	0.11	118	1.41	1.74
		Pb	0.14	0.73	7	1.44	1.63	0.13	66	1.22	1.59
Discovery Zone	High Grade	Au	0.33	0.55	11	3.00	7.00	0.11	26	1.11	3.40
		Ag	0.31	0.47	15	1.88	2.50	0.21	163	1.21	5.82
		As	0.15	0.36	20	1.86	3.90	0.49	326	1.42	11.63
		Cu	0.20	0.54	10	1.46	2.11	0.26	219	1.34	7.82
		Zn	0.38	0.39	9	1.50	2.25	0.23	104	1.93	3.70
		Pb	0.33	0.27	6	1.33	1.33	0.40	165	1.02	5.88
	Low Grade	Au	0.26	0.66	6	1.10	1.10	0.08	35	1.35	1.49
		Ag	0.26	0.67	15	1.21	1.81	0.07	189	2.10	7.27
		As	0.12	0.44	29	1.41	5.27	0.45	167	1.11	2.78
		Cu	0.37	0.56	21	3.15	3.42	0.07	120	1.06	1.89
		Zn	0.23	0.68	26	1.79	3.47	0.09	153	1.27	3.91
		Pb	0.19	0.70	12	1.64	2.30	0.12	229	2.91	3.29



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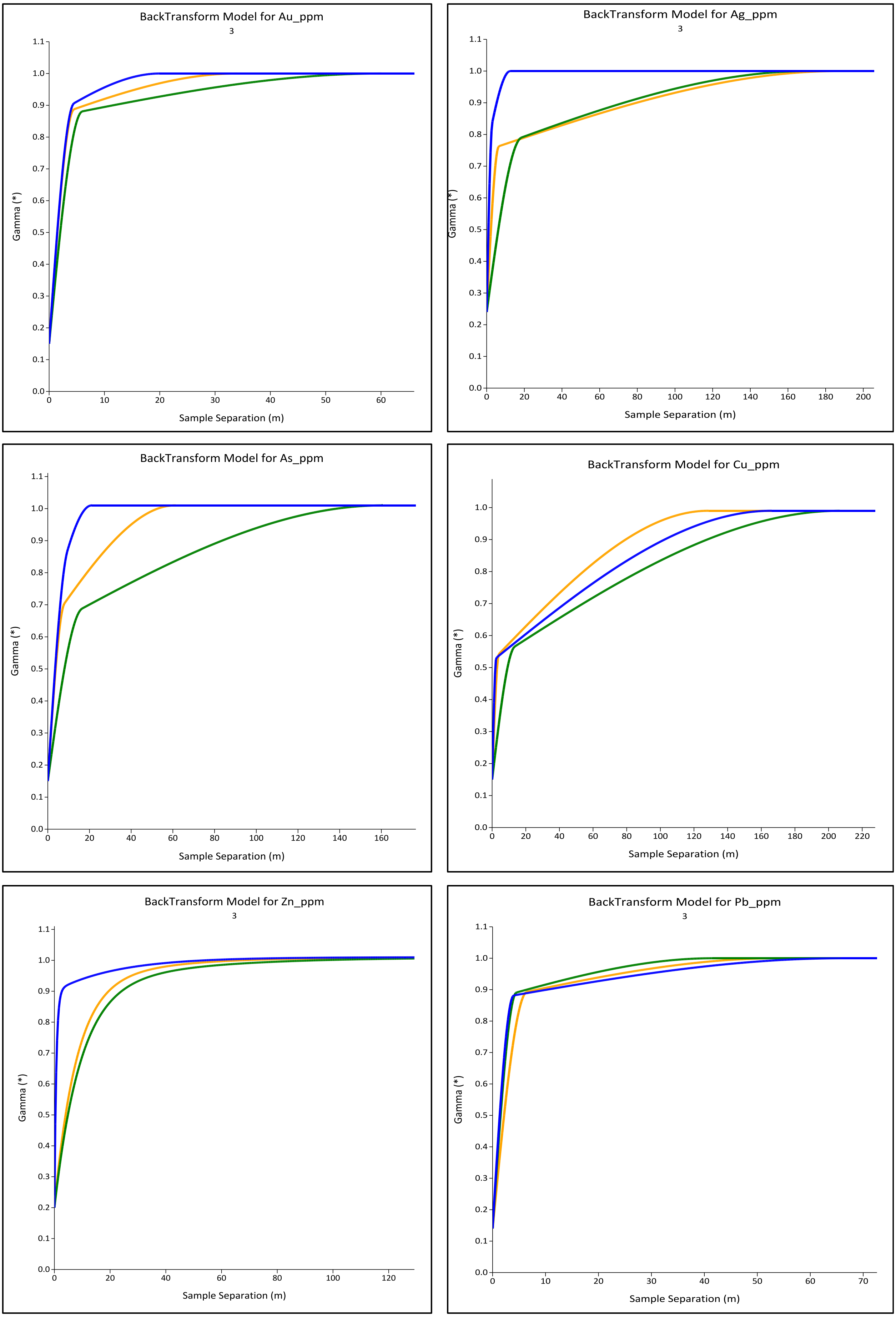
PROJECT

NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING: Back Transformed Variogram Model HG Domain - Union North Zone

FIGURE No.	PROJECT No.	Date
14-21	ADV-MN-00161	January 2019



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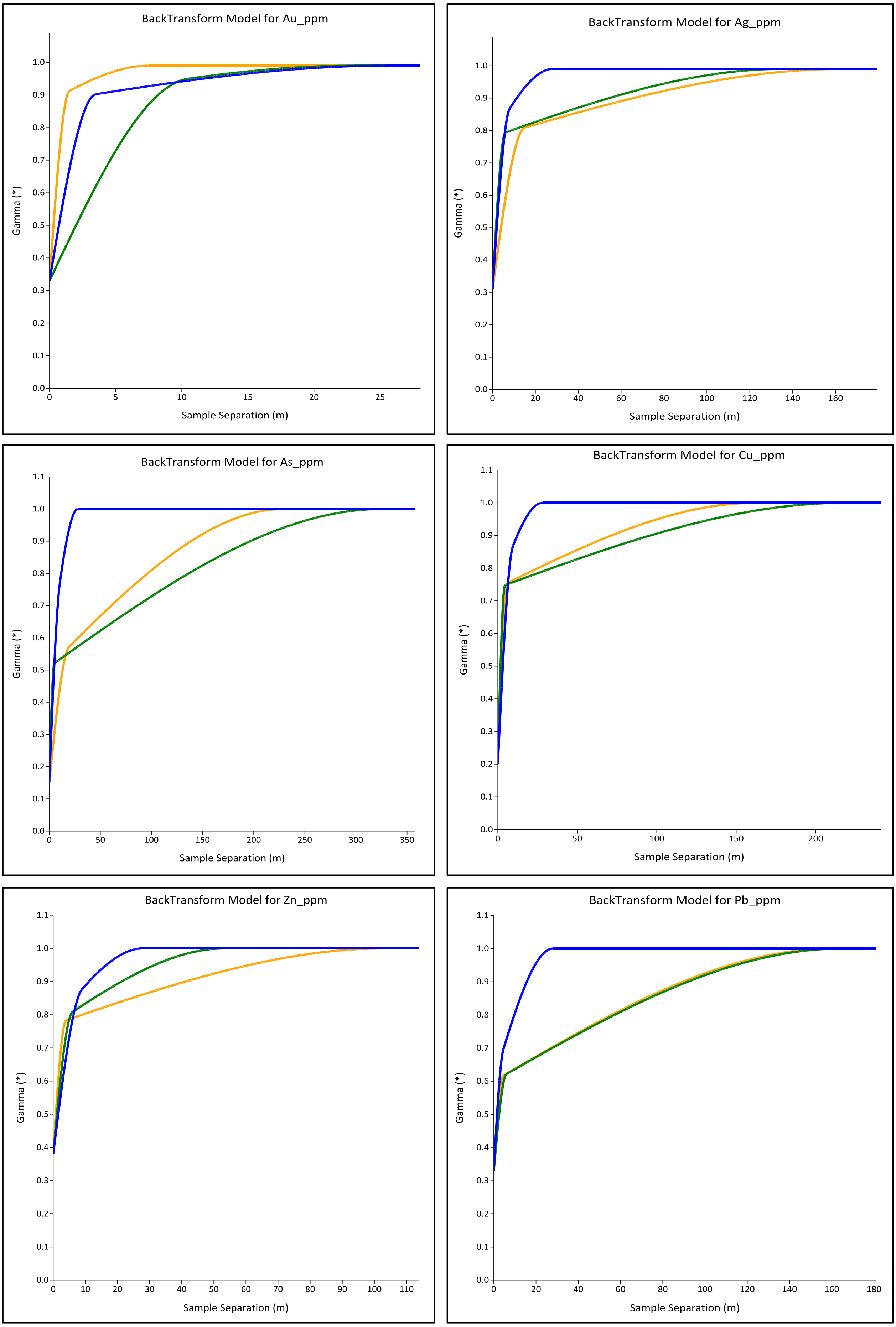
PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING Back Transformed Variogram Model LG Domain - Union North Zone

FIGURE No.	PROJECT No.	Date
14-22	ADV-MN-00161	January 2019



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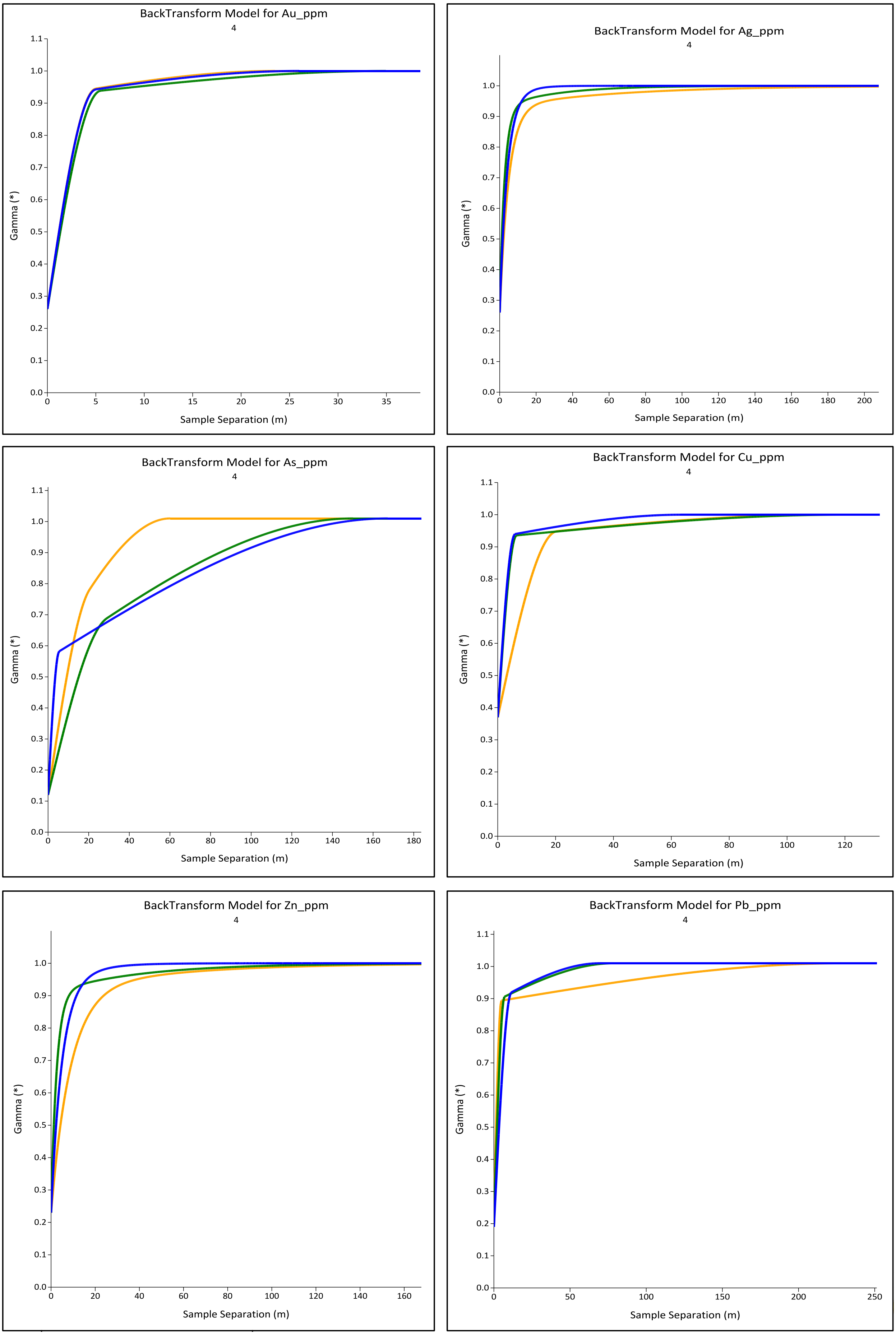
LEGEND	CLIENT	PROJECT
	ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project
		DRAWING Back Transformed Variogram Model HG Domain – Discovery Zone
DO NOT SCALE THIS DRAWING - USE FIGURED DIMENSIONS ONLY. VERIFY ALL DIMENSIONS ON SITE		FIGURE No. 14-23 · PROJECT No. ADV-MN-00161 · Date January 2016



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LEGEND	CLIENT	PROJECT
	ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project
		DRAWING: Back Transformed Variogram Model LG Domain - Discovery Zone
		FIGURE No. 14-24 / PROJECT No. ADV-MN-00161 / Date January 2019

14.1.5 Mineral Resource estimation

Block Model

A single Surpac block model was created to encompass the full extent of the deposit. Block model parameters are listed in **Table 14-17**. The block dimensions used the model were 12.5 m NS by 5 m EW by 5 m vertical with sub-cells of 1.5625 m by 0.625 m by 0.625 m.

The parent block size was selected on the basis of kriging neighbourhood analysis (Section 14.6.3), while sub-cell was selected to provide sufficient resolution to the block model relative to the mineralization wireframes in use.

Table 14-17 Altan Nar - Block Model Parameters

Model Name	**altannar_ok_20180412.mdl**		
	Y	X	Z
Minimum Coordinates	4,877,450	475,400	800
Maximum Coordinates	4,880,700	477,700	1450
Block Size (Sub-blocks)	12.5 (1.5625)	5 (0.625)	5 (0.625)
Rotation	0		
Attributes:			
au_cut	OK gold estimated using cut grades - Reportable		
au_uncut	OK uncut gold grade - Reportable		
au_eq	Au Equivalence = au_cut+(ag_cut*0.0134) +(pb_cut*0.0000461) +(zn_cut*0.0000483) - Reportable		
ag_cut	OK silver estimated using cut grades - Reportable		
ag_uncut	OK uncut silver grade - Reportable		
pb_cut	OK lead estimated using cut grades - Reportable		
pb_uncut	OK uncut lead grade - Reportable		
zn_cut	OK zinc estimated using cut grades - Reportable		
zn_uncut	OK uncut zinc grade - Reportable		
cu_cut	OK copper estimated using cut grades		
cu_uncut	OK uncut copper grade		
as_cut	OK arsenic estimated using cut grades		
as_uncut	OK uncut arsenic grade		
bd	bulk density		
class	ind-Indicated, inf-Inferred		
class_code	2=ind, 3=inf		
domain	Propsect names		
mined	y=yes, n=no		
num_sam	number of informing au_cut samples		
pass_ elements	OK estimation pass number per element		
pod	Pod number of wireframe (object 1-19 HG) (obj101-171 LG)		
type	air-above topo, ob-overburden, fr_min-fresh mineralization, ox_min-oxide mineralization, fr_was-fresh waste, ox_was-oxide waste		

Block Model Coding

The block model was coded with weathering type in the “type” attribute and domain codes in the “domain” attribute. **Table 14-18** below shows block model coding for the weathering type in the order they were coded, and **Table 14-19** shows block model coding for the mineralization domains.

Table 14-18 Block Model Coding - Type

Type	Orde r	Assignment Methodology
fr_was	1	Fresh waste ("fr_was") - blocks below overburden (overburden_20180409.dtm) and base of oxidation surface (weathering.dtm) and outside the mineralization (pod=0)
ox_was	2	Oxide waste (ox_was) – block below overburden (overburden_20180409.dtm) and topography (topo_20171201.dtm) and above base of oxidation surface (weathering.dtm) and outside the mineralization (pod=0)
fr_min	3	Fresh mineralization - blocks below overburden (overburden_20180409.dtm) and base of oxidation surface (weathering.dtm) and inside mineralization (pod>0)
ox_min	4	Oxide mineralization– block below overburden (overburden_20180409.dtm) and topography (topo_20171201.dtm) and above base of oxidation surface (weathering.dtm) and inside mineralization (pod=0)
ob	5	Overburden/alluvial ("ob") – blocks above overburden (overburden_20180409.dtm) and below topography (topo_20171201.dtm)
air	6	Air ("air") - blocks above the topography surface (topo_20171201.dtm)

Table 14-19 Block Model Coding - Domain

Zone	Pod	Assignment Methodology
LG	101-171	Low grade object/wireframe – blocks within mineralized wireframe object number (101-171)
HG	1-19	High grade objects/wireframe – blocks within mineralized wireframe object number (1-19)

Kriging Neighbourhood Analysis

Kriging neighbourhood analysis (KNA) is conducted to minimise the conditional bias that occurs during grade estimation as a function of estimating block grades from point data. Conditional bias typically presents as overestimation of low-grade blocks and underestimation of high grade blocks due to use of non-optimal estimation parameters and can be minimised by optimising parameters such as:

- block size
- size of sample search neighbourhood
- number of informing samples

The degree of conditional bias present in a model can be quantified by computing the theoretical regression slope and kriging efficiency of estimation at multiple test locations within the region of estimation. These locations are selected to represent portions of the deposit with excellent, moderate and poor drill (sample) coverage.

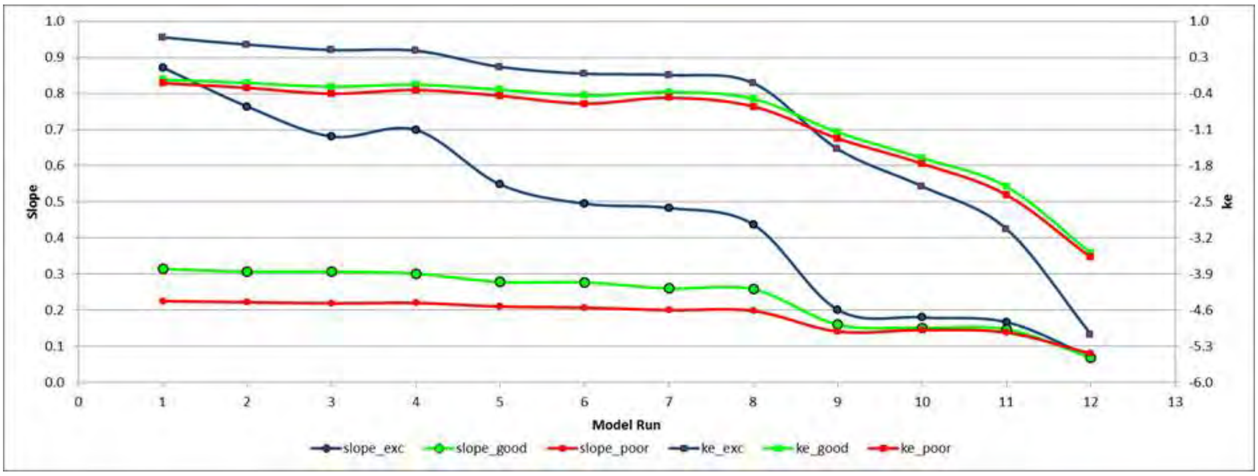
Block Size

To test the optimal block size for existing drilling at Altan Nar, single blocks within the low grade object at Discovery Zone (Object 101) were assessed at excellent, good and poor sample coverage locations. A range of block sizes were assessed for regression slope and kriging efficiency and summarised in **Table 14-20** and **Figure 14-25** below.

Table 14-20 Block Sizes Assessment

Iteration	1	2	3	4	5	6	7	8	9	10	11	12
y	5	10	10	12.5	20	20	25	25	50	50	50	100
x	5	5	5	5	5	5	5	5	10	10	20	20
z	5	5	10	5	5	10	5	10	10	20	20	20

Figure 14-25 Block Size Analysis Chart



Results from the chart above indicate that slope of regression and kriging efficiency 'sill' out around model runs four and six. These iterations represent block sizes of 12.5 m by 5 m in the Y and X planes and are deemed appropriate for the Altan Nar drill spacing of approximately 20-25 m by 20-25 m. RPM chose iteration four as the optimal block size for the Altan Nar block model as there is a higher likelihood of using a 5 m bench height in the case of any future open pit mining occurring at the Project.

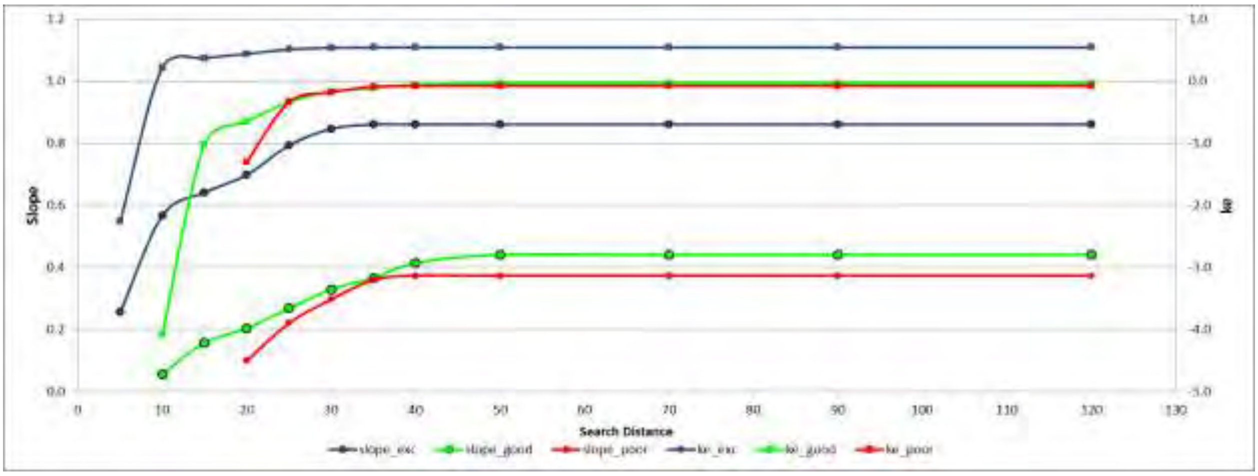
Search Distance

To test the optimal search distance, single blocks within the Low grade lode (Object 101) were assessed at excellent, good and poor sample coverage locations. A range of search radii were assessed for regression slope and kriging efficiency and summarised in **Table 14-21** and **Figure 14-26** below.

Table 14-21 Search Radii Assessed

Iteration	1	2	3	4	5	6	7	8	9	10	11	12
Search Distance (m)	5	10	15	20	25	30	35	40	50	70	90	120

Figure 14-26 Search Radii Analysis Chart



The results above were used as a guide in determining optimal search distance radii for each interpolation pass. The first interpolation pass adopted a search radius of 40 m. Further details are discussed in Section 14.

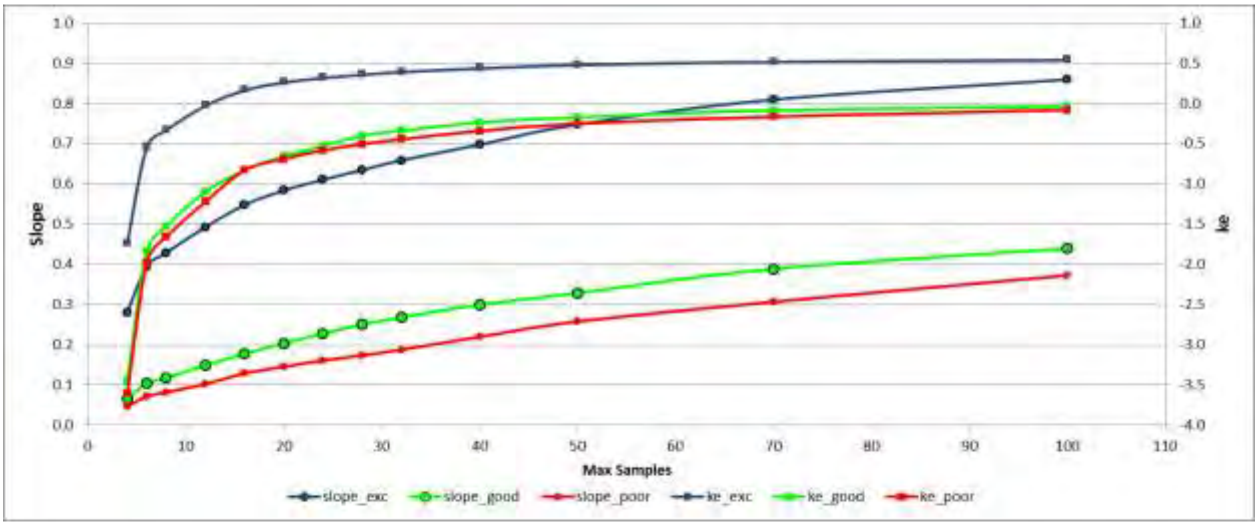
Number of Informing Samples

To test the optimal 'maximum number of samples' to be used in the kriging estimations, single blocks within the low-grade lode (Object 101) were assessed at excellent, good and poor sample coverage locations. A range of maximum samples were assessed for regression slope and kriging efficiency and summarised in **Table 14-22** and **Figure 14-27** below.

Table 14-22 Maximum Number of Samples Assessed

Iteration	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
Max Sample	100	70	50	40	32	28	24	20	16	12	8	6	4

Figure 14-27 Maximum Number of Samples Analysis Chart



Based on the results above, a maximum number of 24 samples was adopted for the estimate.

Grade Interpolation

General

The ordinary kriging ("OK") algorithm was used for the grade interpolation and the wireframes were used as a hard boundary for the grade estimation of each object. OK was selected as it results in a degree of smoothing which is appropriate for the clustered nature of the sample density.

Search Parameters

An orientated search ellipse with an 'ellipsoid' search was used to select data for interpolation. Each ellipse was oriented based on kriging parameters and were consistent with the interpreted geology. Variogram parameters of the main lodes were applied to the associated adjacent lodes. Differences between the kriging parameters and the search ellipse may occur in order to honour both the continuity analysis and the mineralization geometry. Search neighbourhood parameters were derived from the KNA analysis discussed in Section 14.6.3

Three passes were used to estimate 6 elements (Au, Ag, As, Cu, Zn and Pb) into the BM.

For the interpolation, a first pass radius of 40m and a second pass of 80m were used with a minimum number of samples of 6. A third pass search radius of 200m was used with a minimum of two samples to ensure all blocks within the mineralization lodes were estimated. In all estimations, the maximum number of samples used in first two passes was set to 24 while 3rd pass used a maximum number of samples value of 4. The search parameters are shown in **Table 14-23**.

Table 14-23 Altan Nar – OK Estimation Parameters

Parameter	Pass 1	Pass 2	Pass 3
Search Type	Ellipsoid	Ellipsoid	Ellipsoid
Bearing	4° to 332°		
Dip	-85° to 89°		
Plunge	0°		
Major-Semi Major Ratio	1		
Major-Minor Ratio	6		
Search Radius	40m	80m	200
Max Vertical Search	999	999	999
Minimum Samples	6	6	2
Maximum Samples	24	24	4
Block Discretisation	2X by 4Y by 2Z	2X by 4Y by 2Z	2X by 4Y by 2Z
Percentage Blocks Filled	57%	35%	8%

14.1.6 Model Validation

A three-step process was used to validate the estimates. Firstly, a qualitative assessment was completed by slicing sections through the block model in positions coincident with drilling. Overall the assessment indicated that the trend of the modelled grade was consistent with the drill hole grades. A typical Au section is shown in **Figure 14-28**.

Secondly a quantitative assessment of the estimate was completed by comparing the average grades of the top-cut composite file input against the block model output for all the lodes. The comparative results are tabulated in **Table 14-24** and **Table 14-25**.

Local variations between the average grade of the estimates within some domains, when compared to the mean of the underlying sample composites, is due to a combination of the spatial distribution of the composites (particularly those at the ends of the grade range) and the number of underlying composites used in the estimation. Due to the limited number of sample composites within some of the domains, like domains were combined together to provide a coherent dataset in order to reasonably model the variography and this has potentially locally affected the estimation of grades within some of the smaller domains.

Table 14-24 Average Composite Input v Block Model Output the – LG Zone

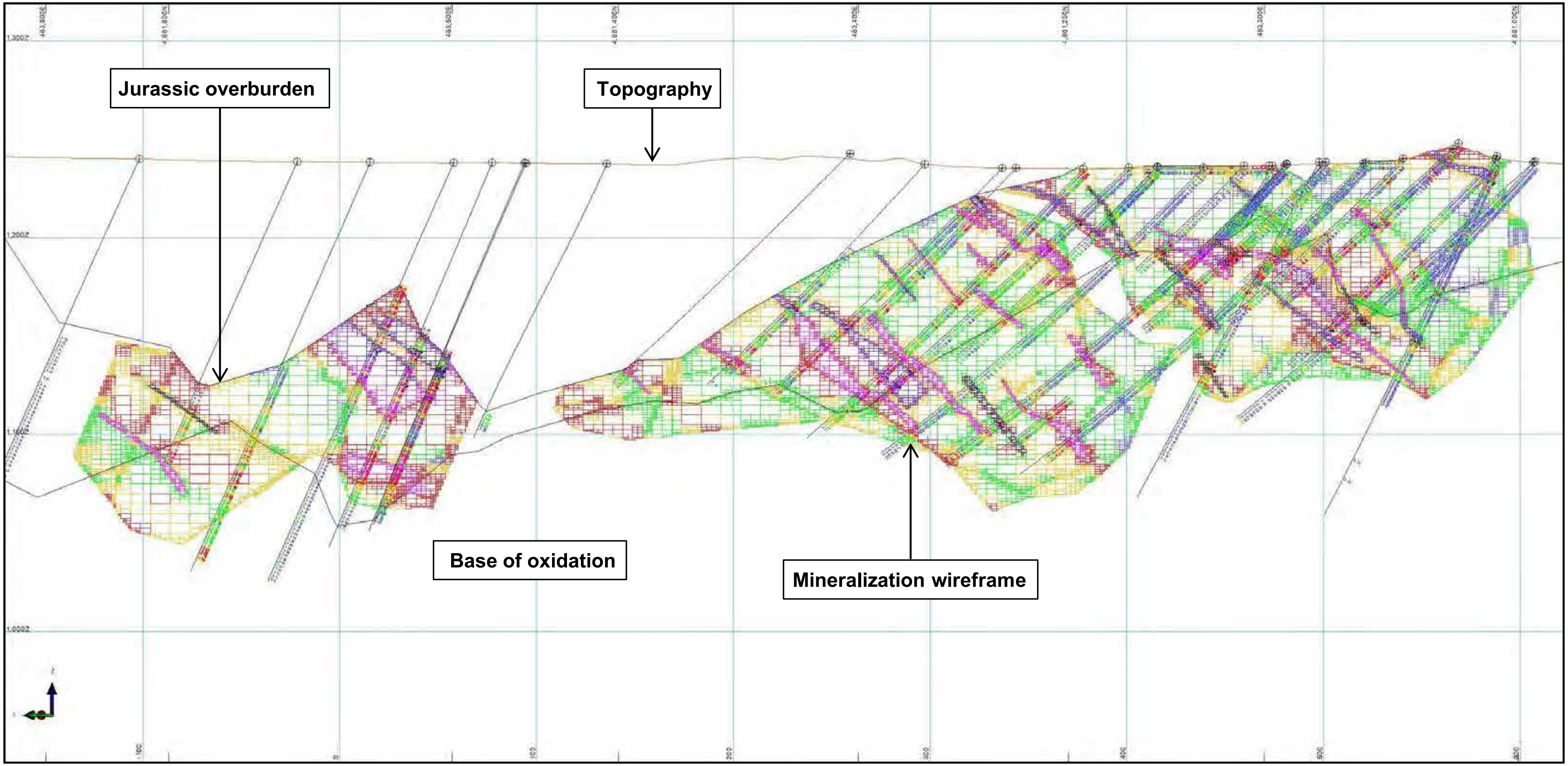
Domain	Object	Block Model							Composites						
		Resource Volume	Au_Cut g/t	Ag_Cut g/t	As_Cut g/t	Cu_Cut g/t	Zn_Cut g/t	Pb_Cut g/t	Number of Comps	Au_Cut g/t	Ag_Cut g/t	As_Cut g/t	Cu_Cut g/t	Zn_Cut g/t	Pb_Cut g/t
DZ	101	2,309,593	0.9	10	2,762	281	4,605	3,042	1,709	1.1	12	3,563	330	4,683	3,462
DZ	102	327,653	1.2	6	418	219	3,765	3,021	72	1	5	451	195	2,519	1,891
DZ	103	132,769	0.8	6	3,023	426	2,033	936	83	0.8	7	3,474	361	2,218	896
DZ	104	31,315	1.1	4	286	134	1,064	555	18	0.8	4	216	149	844	475
DZ	105	429,672	0.5	3	1,077	119	3,478	2,236	74	0.5	4	1,365	144	3,491	2,264
DZ	106	88,935	0.2	1	576	132	2,401	1,141	67	0.2	2	618	138	2,620	1,387
DZ	107	234,832	0.6	2	391	79	1,435	1,093	67	0.6	2	469	80	1,309	890
DZ	108	65,155	0.7	2	310	129	1,036	629	15	0.7	2	288	122	915	504
DZ	109	160,948	0.7	7	2,451	112	3,634	1,702	116	0.8	8	2,607	109	3,446	1,669
DZ	110	112,321	0.2	3	46	191	982	735	29	0.3	3	50	246	967	641
DZ	111	103,295	0.2	8	64	260	2,345	2,517	21	0.2	10	68	291	2,719	2,871
DZ	112	83,336	0.5	3	127	105	10,598	8,546	22	0.6	3	120	117	11,248	8,751
UN	113	104,642	0.4	1	156	86	3,755	2,507	70	0.4	2	157	90	3,557	2,821
UN	114	106,881	1.7	4	659	332	5,745	7,460	36	1.8	5	726	367	6,229	8,604
UN	115	89,965	0.7	4	298	230	10,281	5,824	28	0.7	3	331	223	8,331	4,631
UN	116	178,574	0.7	4	226	97	3,849	1,927	68	0.5	3	239	90	3,697	1,912
UN	117	489,634	0.8	5	290	135	4,190	3,818	104	1	6	350	156	4,433	4,596
UN	118	45,925	1.9	7	82	188	2,328	6,233	28	2	7	106	207	2,487	7,359
UN	119	210,394	0.3	6	1,015	246	2,356	3,707	56	0.3	5	1,030	210	2,474	3,547
UN	120	63,964	1.3	2	171	25	2,448	2,865	76	1.2	2	164	24	2,515	2,637
UN	121	32,539	0.4	2	684	91	3,069	2,056	29	0.5	3	722	78	3,516	3,163
UN	122	98,566	1.4	8	799	280	4,842	11,205	66	1.2	9	794	276	4,635	12,054
UN	123	164,157	1.3	9	867	145	8,195	10,589	149	1.8	13	1,290	169	11,020	14,901
UN	124	105,587	1.2	6	1,274	116	6,876	7,116	78	1.9	7	1,625	126	6,618	9,088
UN	125	11,248	0.2	2	354	54	5,167	4,520	6	0.2	2	352	52	5,362	4,452

Domain	Object	Block Model							Composites						
		Resource Volume	Au_Cut g/t	Ag_Cut g/t	As_Cut g/t	Cu_Cut g/t	Zn_Cut g/t	Pb_Cut g/t	Number of Comps	Au_Cut g/t	Ag_Cut g/t	As_Cut g/t	Cu_Cut g/t	Zn_Cut g/t	Pb_Cut g/t
UN	126	11,696	1.9	3	851	568	7,395	6,348	9	2.1	3	845	611	7,360	7,469
UN	127	100,284	0.7	4	541	149	3,639	3,274	90	0.7	4	556	150	3,165	3,208
UN	128	13,812	0.3	1	795	68	2,603	2,049	8	0.3	1	800	68	2,578	1,966
UN	129	17,067	0.2	3	249	172	1,418	1,522	23	0.2	3	239	166	1,260	1,408
UN	130	32,589	1.6	9	56	349	3,645	10,201	23	1.7	11	55	388	3,640	9,939
UN	131	19,914	0.4	4	37	79	1,194	1,799	17	0.3	4	31	77	1,217	1,542
UN	132	7,408	0.6	10	94	164	3,562	7,879	4	0.7	11	103	157	3,505	9,643
DZ	133	23,488	0.2	1	56	89	1,670	569	6	0.2	1	51	91	1,502	464
DZ	134	14,198	0.4	1	274	66	8,122	845	5	0.4	1	272	66	8,066	860
DZ	135	11,398	0.4	1	2,318	58	1,319	761	5	0.4	1	2,284	59	1,377	788
DZ	136	22,129	0.6	3	414	116	4,427	7,788	22	0.5	3	419	115	3,905	5,600
DZ	137	149,066	0.2	1	99	109	925	243	25	0.2	1	101	92	1,141	267
DZ	138	5,361	0.3	8	2,254	215	2,456	977	7	0.4	9	4,064	209	2,837	1,137
DZ	139	8,907	0.2	1	58	290	379	91	8	0.2	1	58	290	388	93
DZ	140	7,546	0.2	2	94	54	3,068	839	4	0.2	2	92	49	2,486	652
DZ	141	11,285	0.5	10	80	201	4,844	10,384	6	0.6	10	75	220	5,722	10,700
DZ	142	8,155	0.3	10	33	479	4,803	12,986	4	0.3	9	32	420	4,218	9,870
DZ	143	4,249	1.5	31	203	174	15,669	36,455	2	1.5	31	203	174	15,669	36,450
DZ	144	34,861	0.5	7	149	89	2,160	2,558	7	0.5	6	159	90	2,046	2,261
DZ	145	32,136	0.2	1	67	50	1,961	1,045	7	0.2	2	57	59	2,260	1,302
DZ	146	34,442	0.4	2	76	65	635	270	7	0.6	2	60	56	529	212
DZ	147	14,318	0.2	7	201	83	1,995	2,235	7	0.2	7	281	76	2,058	2,303
DZ	148	7,183	1.5	5	102	170	3,166	1,526	3	1.7	5	99	176	3,192	1,642
DZ	149	43,188	0.2	2	197	96	1,258	1,077	26	0.2	2	216	94	1,328	1,108
DZ	150	11,816	0.3	1	76	102	508	71	8	0.3	1	69	105	432	63
DZ	151	48,224	0.3	1	78	99	810	213	21	0.3	1	77	100	836	236

Domain	Object	Block Model							Composites						
		Resource Volume	Au_Cut g/t	Ag_Cut g/t	As_Cut g/t	Cu_Cut g/t	Zn_Cut g/t	Pb_Cut g/t	Number of Comps	Au_Cut g/t	Ag_Cut g/t	As_Cut g/t	Cu_Cut g/t	Zn_Cut g/t	Pb_Cut g/t
DZ	152	3,246	0.4	2	2	119	241	54	4	0.4	2	2	119	241	54
DZ	153	4,581	0.5	2	29	117	4,963	1,685	4	0.4	2	28	112	3,929	1,233
DZ	154	12,459	0.6	5	71	592	6,482	2,141	6	0.6	3	66	388	3,424	1,211
DZ	155	9,528	0.3	1	242	73	247	39	4	0.3	1	242	73	247	39
DZ	156	76,552	0.1	1	116	77	1,632	790	21	0.1	1	108	74	1,533	725
DZ	157	4,005	0.2	1	482	166	1,780	902	7	0.2	1	544	147	1,936	913
DZ	158	1,694	4.1	4	67	413	5,547	3,573	3	3.4	3	72	356	4,403	2,835
DZ	159	1,135	1.7	12	16,758	252	38,408	14,627	2	1.7	12	16,700	252	38,510	14,629
DZ	160	3,422	0.1	4	293	57	9,624	14,911	5	0.1	4	306	57	8,828	12,743
DZ	161	7,726	0.2	2	150	125	12,021	3,641	6	0.2	2	159	116	8,419	2,596
DZ	162	6,188	0.2	3	906	92	2,738	2,665	7	0.2	3	941	92	2,657	2,547
DZ	163	24,939	0.6	2	133	92	2,310	1,519	8	0.5	2	150	91	2,293	1,409
DZ	164	23,348	0.2	2	97	100	3,154	2,703	8	0.2	2	94	99	3,015	2,829
DZ	165	32,408	0.3	2	65	94	1,041	463	13	0.3	3	71	99	1,112	612
UN	166	24,993	0.2	3	102	93	3,919	6,243	18	0.2	3	99	89	3,737	5,963
UN	167	55,169	0.3	3	104	151	3,039	1,200	11	0.4	3	106	159	2,903	1,161
UN	168	10,065	0.5	6	1,449	41	8,919	2,881	3	0.5	6	1,644	43	9,601	3,364
UN	169	43,934	0.4	6	802	174	12,635	8,383	9	0.4	6	779	174	11,570	8,028
UN	170	43,547	0.4	5	862	195	8,807	3,247	15	0.4	5	831	200	8,713	3,560
UN	171	20,811	4	3	190	228	3,594	3,247	6	4.6	2	194	229	3,385	2,814
Total		**6,886,371**	**0.8**	**6**	**1,337**	**199**	**4,038**	**3,269**	**3,601**	**0.8**	**7**	**1,664**	**218**	**4,050**	**3,554**

Table 14-25 Average Composite Input v Block Model Output – HG Zone

Domain	Object	Block Model							Composites						
		Resource Volume	Au_Cut g/t	Ag_Cut g/t	As_Cut g/t	Cu_Cut g/t	Zn_Cut g/t	Pb_Cut g/t	Number of Comps	Au_Cut g/t	Ag_Cut g/t	As_Cut g/t	Cu_Cut g/t	Zn_Cut g/t	Pb_Cut g/t
DZ	1	10,582	3.6	33	2,411	339	3,348	14,250	9	3.9	33	2,401	313	3,170	14,951
DZ	2	84,696	5.3	40	20,041	558	8,800	6,344	95	5.0	46	20,562	551	8,623	6,679
DZ	3	18,992	23.4	53	6,356	2,532	15,428	9,385	43	26.2	68	6,499	3,083	17,767	12,629
DZ	4	42,761	7.7	39	2,518	890	8,850	10,142	45	7.8	41	2,629	968	9,415	10,721
DZ	5	9,125	3.0	15	4,262	414	3,882	2,624	9	3.5	14	4,279	369	3,760	2,921
DZ	6	15,112	2.6	15	573	413	7,093	4,771	13	2.8	16	589	474	7,869	5,403
DZ	7	23,611	3.8	12	139	299	7,898	5,893	12	4.1	11	140	293	7,500	6,401
DZ	8	10,516	4.9	44	21,347	485	4,615	1,923	12	4.8	38	19,932	415	4,770	1,929
DZ	9	8,171	4.5	14	5,819	639	4,284	1,506	8	4.8	14	6,642	612	4,344	1,626
UN	10	32,785	7.6	30	4,094	373	26,298	36,849	40	7.9	36	4,278	364	27,070	41,670
UN	11	18,253	6.2	35	2,972	647	6,653	58,747	12	6.1	30	2,881	672	6,375	53,503
UN	12	18,546	6.7	15	2,479	236	6,376	19,207	20	6.8	14	2,522	207	6,288	19,623
UN	13	11,038	3.0	2	151	17	2,521	2,802	16	3.1	2	168	17	2,394	2,770
UN	14	25,812	4.7	11	210	284	11,448	15,543	8	4.8	13	214	291	12,236	16,201
UN	15	15,958	5.6	27	65	510	5,767	18,980	7	5.5	24	63	495	6,286	19,371
UN	16	37,557	7.0	22	1,703	1,082	14,906	36,207	9	7.4	14	1,753	1,061	16,363	28,722
UN	17	5,944	4.1	12	700	236	12,168	11,413	7	4.1	11	698	218	11,650	11,803
UN	18	27,238	5.1	8	121	261	2,831	8,580	11	4.9	8	137	288	2,776	9,237
DZ	19	4,942	9.6	7	129	76	1,372	3,047	2	9.6	7	129	76	1,372	3,047
Total		**421,638**	**6.4**	**27**	**6,140**	**612**	**9,719**	**15,690**	**378**	**6.6**	**29**	**6,262**	**640**	**10,078**	**15,642**



LEGEND - Au (ppm)

0 - 0.1	0.5 - 1
0.1 - 0.3	1 - 3
0.3 - 0.5	3 - 10
10 - 2300	

RPMGLOBAL

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ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

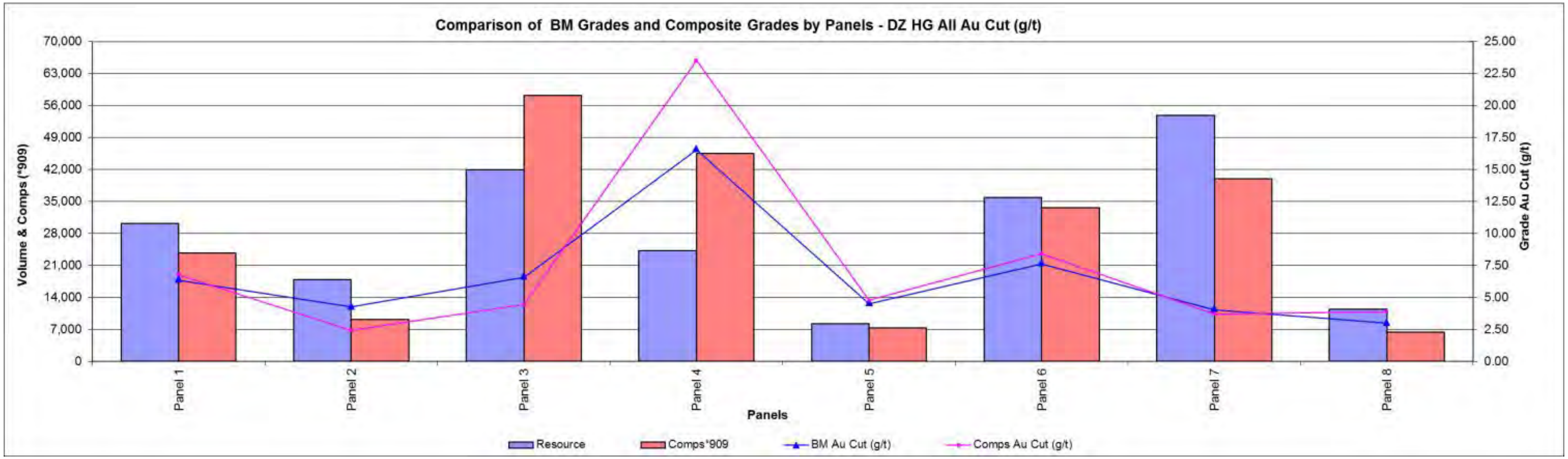
DRAWING Au BLOCK GRADES - SECTIONAL VALIDATION

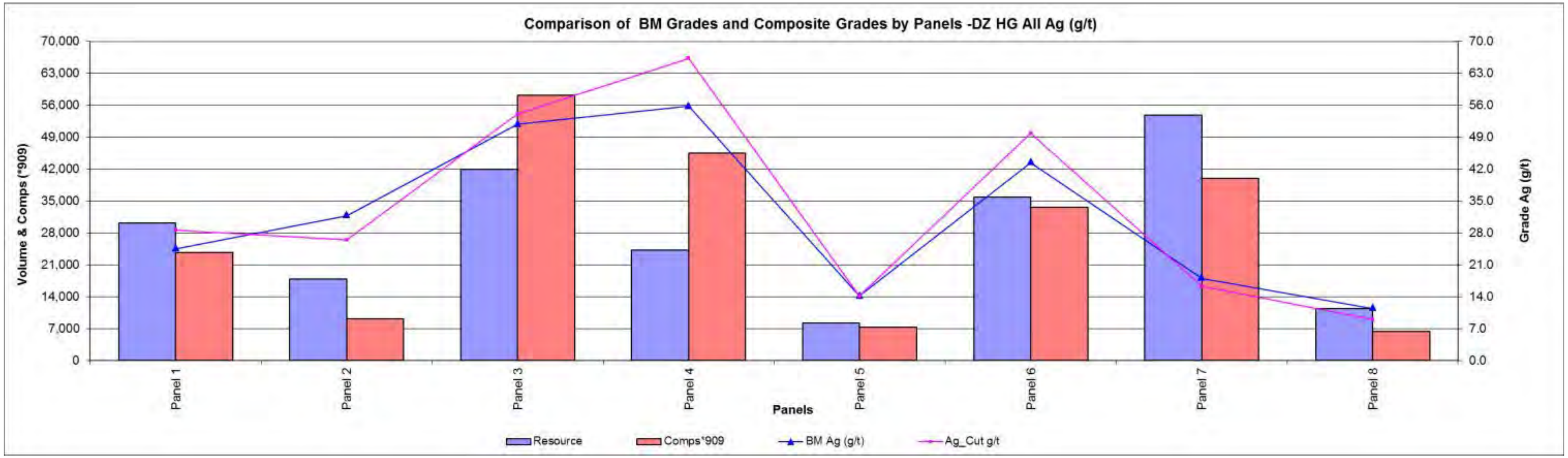
FIGURE No.	PROJECT No.	Date
14-28	ADV-MN-00161	January 2019

Thirdly, to check that the interpolation of the block model correctly honoured the drilling data, validation was carried out by comparing the interpolated blocks to the sample composite data for the combined high- and low-grade lodes at each prospect. The trend analysis was completed by comparing interpolated blocks to the sample composite data for elevation in 20m bench heights. The strike orientation of the lodes at all zones, and the use of a rotated block model required the use of 20-30m wide panels to conduct the swath analysis across deposit. The trend analysis results for Au, Ag, Zn and Pb are shown in **Figure 14-29** and **Figure 14-30**.

The validation plots show good correlation between the composite grades and the block model grades when compared by panel and elevation. The trends shown by the composite data are honoured by the block model. The direct observation of sections on screen show that the model estimate has honoured the drill hole data at the local scale.

The comparisons show the effect of the interpolation, which results in smoothing of the block grades compared to the composite grades. RPM considers the estimate is representative of the composites and is indicative of the known controls of mineralization and the underlying data.





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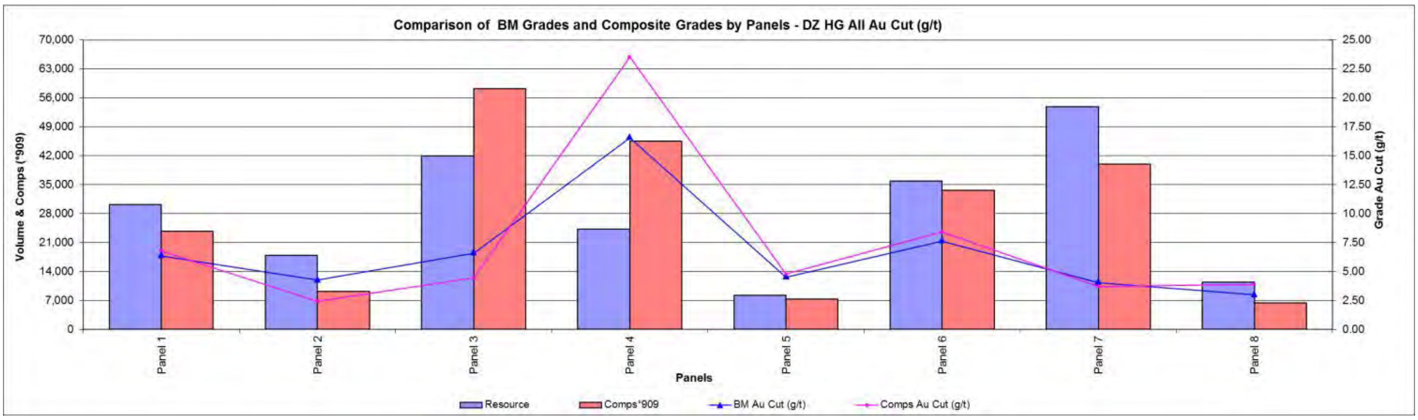
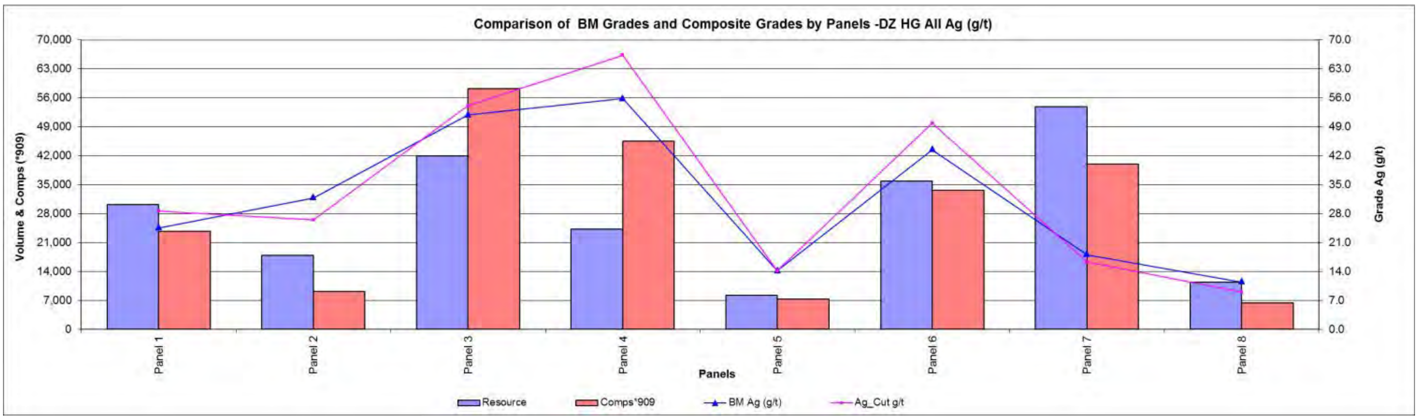
PROJECT

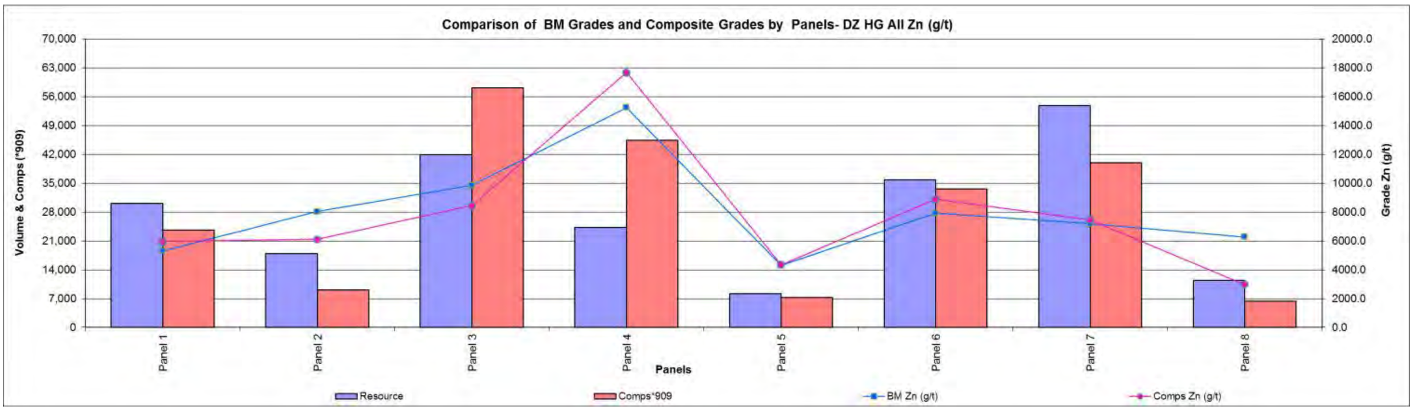
NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

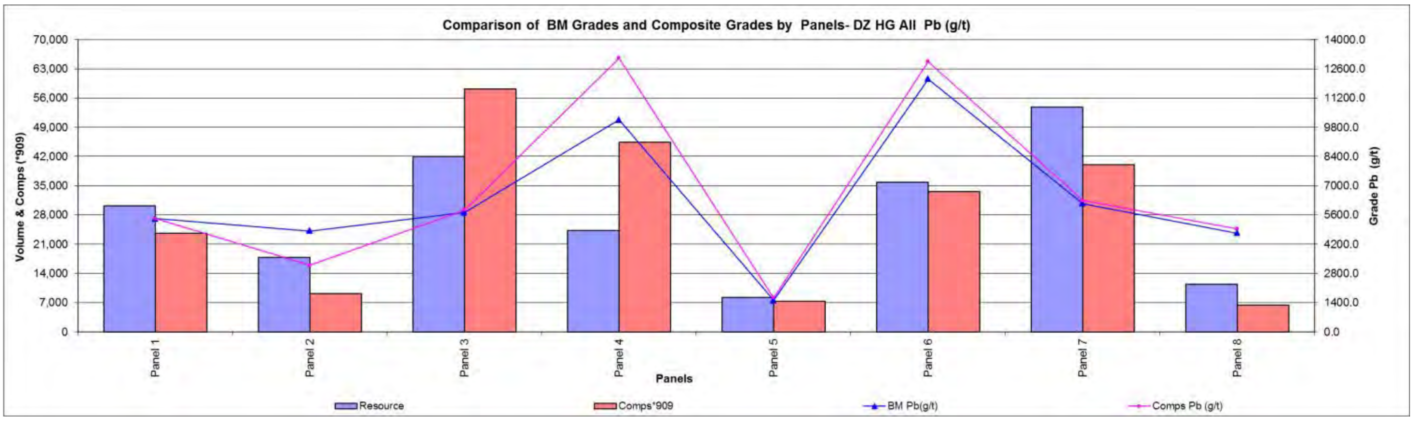
DRAWING Block Model Validation by Panels DZ Zone All HG objects Combined

FIGURE No.	PROJECT No.	Date
14-29	ADV-MN-00161	January 2019









RPMGLOBAL

LEGEND

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CLIENT

ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING: Block Model Validation by Elevation Union North Zone All HG objects Combined

FIGURE No.	PROJECT No.	Date
14-30	ADV-MN-00161	January 2019

14.1.7 Mineral Resource Classification

The Altan Nar deposit shows good continuity within the main mineralized lodes which allowed the drill hole intersections to be modelled into coherent, geologically robust wireframes. Consistency is evident in the thickness of the structure, and the distribution of grade appears to be reasonable along strike and down dip.

The Mineral Resource was classified as Indicated and Inferred Mineral Resource based on data quality, sample spacing, and lode continuity.

The Indicated Mineral Resource was confined to the Main deposit within areas of close spaced diamond drilling of 50m by 50m or less, and where the continuity and predictability of the lode positions was good. This spacing was deemed appropriate for the application of Indicated Mineral Resource after considering the reasonable mineralization and grade continuity, the relatively low to moderate nugget effect, low coefficient of variance statistics and variogram ranges of between 40 and 100m depending on the element and domain.

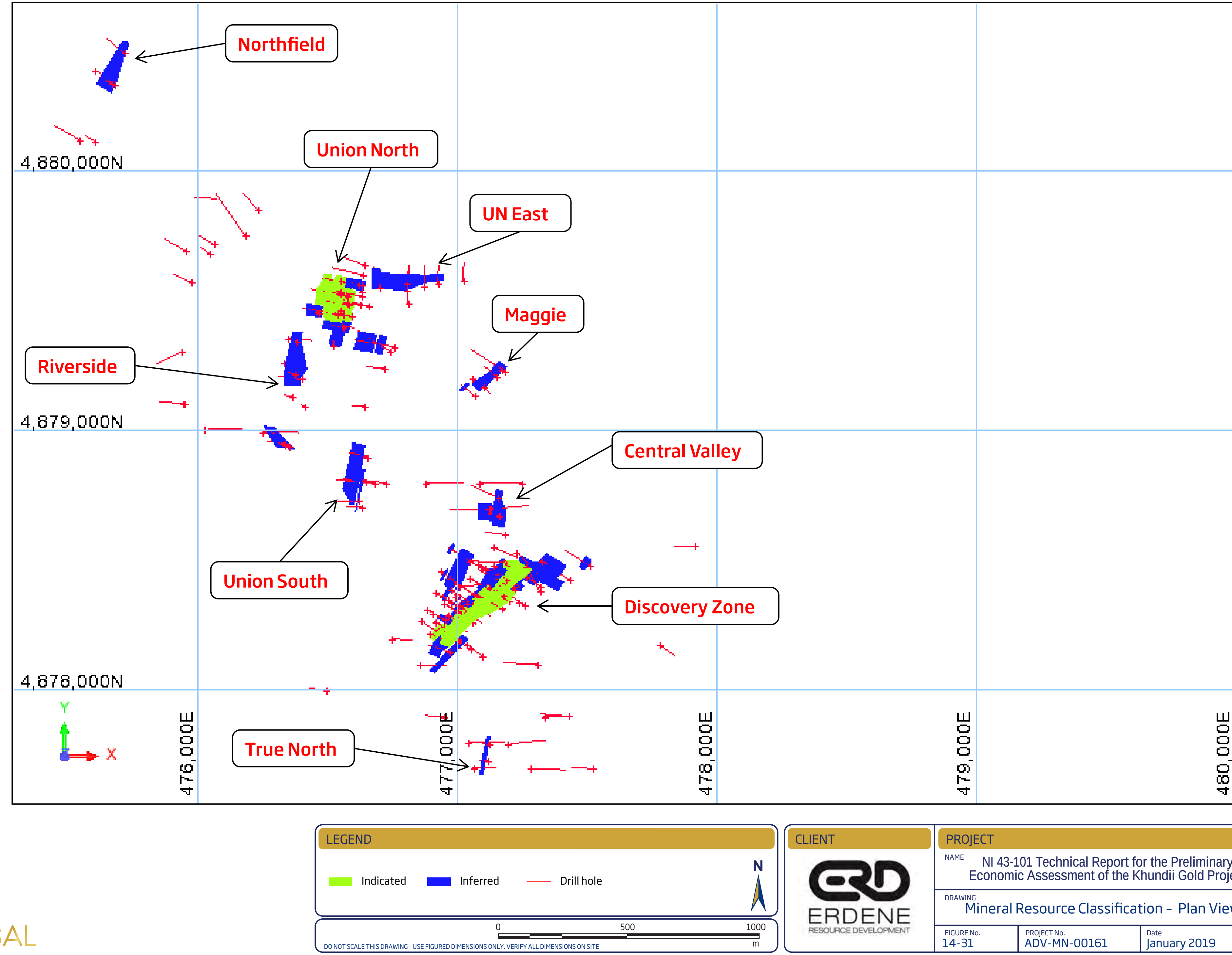
The Inferred Mineral Resource was assigned to areas of the deposit where drill hole spacing was greater than 50m by 50m, where small isolated pods of mineralization occur outside the main mineralized zones, and to geologically complex zones. RPM notes that the likely drilling spacing for measured would be 25m, of which there is a portion in the resource. No measured resources were classified due to the low correlation of the bulk density regression. Upon further testwork this will be reviewed.

The resource block model has an attribute “class” for all blocks within the resource wireframes coded as either “ind” for Indicated or “inf” for Inferred. The Plan view of Mineral Resource classification is shown in **Figure 14-31** and detailed classification illustration shown in **Figure 14-32** and **Figure 14-33**.

The extrapolation of the lodes along strike has been limited to a distance equal to the previous section drill spacing or to 20-25 m. Extrapolation of lodes down-dip has been limited to a distance equal to the previous down-dip drill spacing or to 50m. Areas of extrapolation have been classified as Inferred Mineral Resource.

Internal audits have been completed by RPM which verified the technical inputs, methodology, parameters and results of the estimate. The lode geometry and continuity has been adequately interpreted to reflect the applied level of Indicated and Inferred Mineral Resource. The data quality is good, and the drill holes have detailed logs produced by qualified geologists. A recognised laboratory has been used for all analyses. The Mineral Resource statement relates to global estimates of tonnes and grade.

This Report has been prepared in accordance with NI 43-101 and discloses a Mineral Resource Estimate (“MRE”).



CLIENT

ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

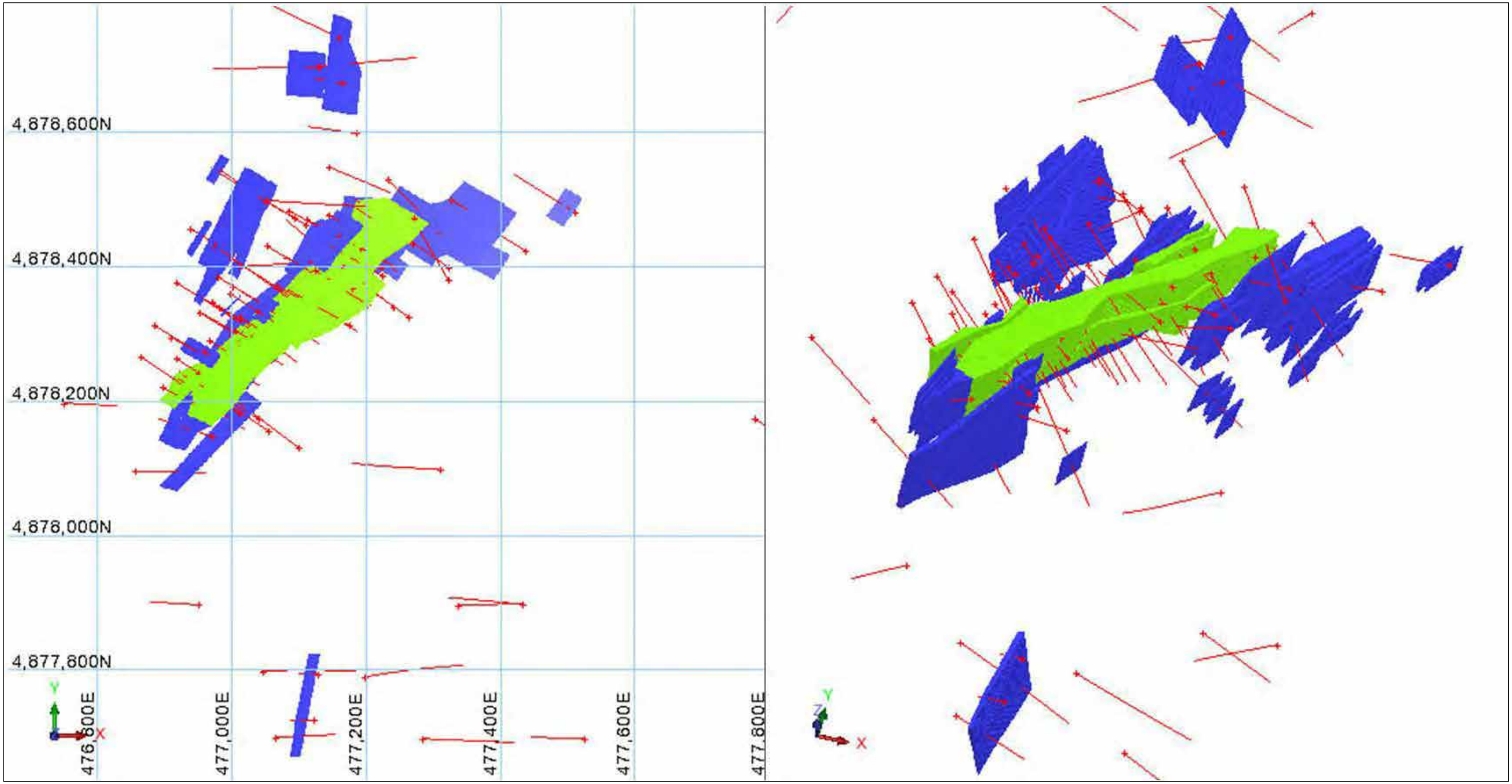
DRAWING Mineral Resource Classification – Plan View

FIGURE No. 14-31

PROJECT No. ADV-MN-00161

Date January 2019

RPMGLOBAL



LEGEND

Indicated | Inferred | Drill hole

N

0 | 200 | 400
m

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ERDENE
RESOURCE DEVELOPMENT

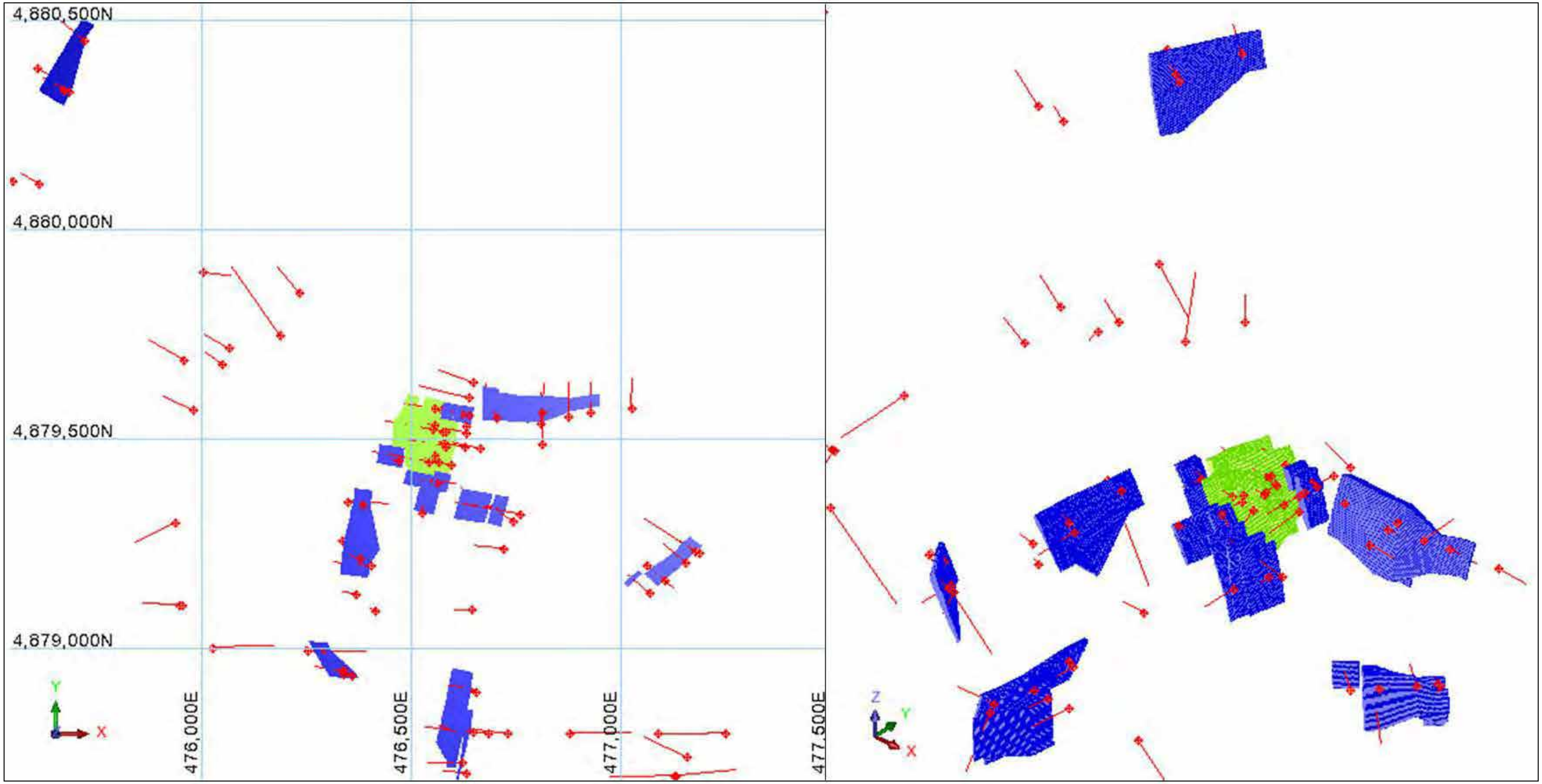
PROJECT

NAME
NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING
Mineral Resource Classification - Southern Area

FIGURE No.	PROJECT No.	Date
14-32	ADV-MN-00161	January 2019

RPMGLOBAL



LEGEND

Indicated | Inferred | Drill hole

N

0 250 500 m

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CLIENT

ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING Mineral Resource Classification – Northern Area

FIGURE No.	PROJECT No.	Date
14-33	ADV-MN-00161	January 2019

RPMGLOBAL

14.1.8 Mineral Resource Statement

RPM has independently estimated the Mineral Resources contained within the Project, based on the data collected by Erdene as at 1st February 2018. The Mineral Resource estimate and underlying data complies with the guidelines provided in the CIM Definition Standards under NI 43-101 and the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines. Therefore, RPM considers it is suitable for public reporting. The Mineral Resources were completed by Mr. David Princep of RPM and under the supervision of Mr. Jeremy Clark of RPM. The Mineral Resources are reported at a number of Au Equivalent cut-off values.

The Statement of Mineral Resources has been constrained by the topography, and a cut off 0.7 g/t AuEq above a nominal pit shell and 1.4 g/t AuEq below the same pit shell.

The results of the Mineral Resource estimate for the Altan Nar deposit are presented in **Table 14-26** and RPM has reported the resource at different AuEq cut-off grades in **Table 14-27**. RPM suggests using a 0.7 g/t AuEq above pit and 1.4g/t AuEq below the pit shell as a reporting cut-off based on a mining / process and cost parameters for the Project.

Table 14-26 Altan Nar Deposit May 2018

Type	**Indicated Mineral Resource**										
	Quantity	Au	Ag	Zn	Pb	AuEq	Au	Ag	Zn	Pb	AuEq
	Mt	g/t	g/t	%	%	g/t	Koz	Koz	Kt	Kt	Koz
Oxide	0.6	2.0	12.7	0.6	1.0	3.1	39.3	244.3	3.8	6.3	59.6
Fresh	4.4	2.0	15.0	0.6	0.5	2.8	278.4	2,105.4	27.8	22.7	393.4
Total	**5.0**	**2.0**	**14.8**	**0.6**	**0.6**	**2.8**	**317.7**	**2,349.7**	**31.6**	**29.0**	**453.0**
Type	**Inferred Mineral Resource**										
	Quantity	**Au**	**Ag**	**Zn**	**Pb**	**AuEq**	**Au**	**Ag**	**Zn**	**Pb**	**AuEq**
	Mt	g/t	g/t	%	%	g/t	Koz	Koz	Kt	Kt	Koz
Oxide	0.8	1.8	7.5	0.6	0.9	2.6	43.3	183.7	4.3	6.5	64.2
Fresh	2.7	1.7	8.0	0.7	0.6	2.5	142.4	682.1	19.4	15.8	212.8
Total	**3.4**	**1.7**	**7.9**	**0.7**	**0.7**	**2.5**	**185.7**	**865.8**	**23.7**	**22.3**	**277.1**

Note:

1. *The Statement of Estimates of Mineral Resources has been compiled under the supervision of Mr. Jeremy Clark who is a full-time employee of RPM and a Member of the Australian Institute of Geoscientists. Mr. Clark has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity that he has undertaken to qualify as a Qualified Person as defined in the CIM Standards of Disclosure.*
2. *All Mineral Resources figures reported in the table above represent estimates based on drilling completed up to 7th May 2018. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate. Rounding may cause some computational discrepancies.*
3. **Au Equivalent (AuEq) calculated using long term 2023 - 2027 "Energy & Metals Concensus Forecasts" March 19, 2018 average of US$1310/oz for Au, US$17.91/oz for Ag, US$1.07/pound for Pb and US$1.42/pound for Zn. Adjustment has been made for metallurgical recovery and is based company's preliminary testwork results which used flotation to separate concentrates including a pyrite concentrate with credits only for Au and Ag. Based on grades and contained metal for Au, Ag, Pb and Zn, it is assumed that all commodities have reasonable potential to be economically extractable.*
    a. *The formula used for Au equivalent grade is: AuEq g/t = Au g/t + Ag g/t*0.0124+Pb%*0.509+Zn%*0.578 with metallurgical recovery of 88.8% Au, 80.6% Ag, 80.4% Pb and 69.1% Zn.*
    b. *Au equivalent ounces are calculated by mulitplying Mineral Resource tonnage by Au equivalent grade and converting for ounces. The formula used for Au equivalent ounces is: AuEq Oz = [Tonnage x AuEq grade (g/t)]/31.1035.*
4. *Mineral Resources are reported on a dry in-situ basis.*

5. *Reported at a 0.7 g/t AuEq cut-off above pit shelland 1.4g/t AuEq below the pit shell. Cut-off parameters were selected based on an RPM internal cut-off calculator, which indicated that a break-even cut-off grade of 0.7g/t Au Equivalent above pit and 1.4g/t AuEq below pit, assuming a gold price of US$1310 per ounce, an open mining cost of US$6 per tonne and a processing cost of US$20 per tonne milled and processing recovery of 88.8% Au, 80.6% Ag, 80.4% Pb and 69.1% Zn.*
6. *Mineral Resources referred to above, have not been subject to detailed economic analysis and therefore, have not been demonstrated to have actual economic viability*

Table 14-27 Mineral Resource Estimate At various AuEq Cut-offs

AuEq g/t	Classification	Tonnes	Au	Ag	Zn	Pb	AuEq	Au	Ag	Zn	Pb	AuEq
Cutoff		Mt	g/t	g/t	%	%	g/t	Koz	Koz	Kt	Kt	Koz
0	Indicated	5.8	1.7	12.9	0.6	0.5	2.5	324.6	2,430.7	33.7	30.1	466.6
0	Inferred	4.1	1.5	7.0	0.6	0.6	2.2	190.8	919.2	24.9	23.0	286.2
0.4	Indicated	5.6	1.8	13.5	0.6	0.5	2.6	323.2	2,412.4	33.2	29.9	463.9
0.4	Inferred	3.7	1.6	7.5	0.7	0.6	2.3	188.9	901.4	24.5	22.8	282.9
0.7	Indicated	5.0	2.0	14.8	0.6	0.6	2.8	317.7	2,349.7	31.6	29.0	453.0
0.7	Inferred	3.4	1.7	7.9	0.7	0.7	2.5	185.7	865.9	23.7	22.3	277.1
1	Indicated	4.2	2.3	16.6	0.7	0.7	3.2	305.6	2,212.5	28.6	27.4	431.2
1	Inferred	3.2	1.8	8.2	0.7	0.7	2.7	182.2	837.5	22.8	21.5	270.2
1.4	Indicated	3.3	2.7	18.9	0.8	0.8	3.8	285.4	2,002.0	24.9	25.2	397.9
1.4	Inferred	2.9	1.9	8.6	0.8	0.7	2.8	175.6	795.3	21.5	20.4	258.8
1.7	Indicated	2.8	3.0	20.3	0.8	0.8	4.1	271.7	1,850.3	22.7	23.6	375.5
1.7	Inferred	2.7	2.0	8.9	0.8	0.7	2.9	170.1	769.5	20.6	19.6	250.1
2	Indicated	2.5	3.2	21.4	0.8	0.9	4.4	258.2	1,716.4	20.9	22.3	354.9
2	Inferred	2.6	2.0	9.1	0.8	0.7	2.9	165.0	749.2	20.0	19.0	242.6

Note: Figures in above table reported the resource at various AuEq cutoff above pit and added material below pit using 1.4g/t AuEq Cut-offs.

Selection of Reportable Cut-off Grade

A pit shell was utilised to determine the maximum depth of potential open pit mining, within which the above cut off grades were utilised to report the Mineral Resource using a US$1,570 per ounce price (with the below costs and recoveries) (20% above the US$1,310 per ounce optimisation price).

The pit sell selected was the 1.2 Revenue Factor pit shell generated using the following parameters which are based on RPM internal cost pricing within the Mongolia and the preliminary metallurgical study completed:

- Metal Prices, RPM notes this is based on the eventual extraction sometime in the future and not the long term consensus forecast:
  - Gold: US$1,310 per ounce.
  - Silver: US$18 per ounce.
  - Lead: US$2,400 per tonne.
  - Zinc: US$3,100 per tonne
- Mining Cost of US$6.0 /tonnes rock;
- A re-blocked model to 10m N, 5m E and 5 m Z, which is considered the SMU, with 5% dilution included, and 10% plant feed loss was applied;
- Processing costs of US$20 per tonne milled, and
- Processing recoveries of:
  - Gold: 88%.
  - Silver: 81%.

- Lead: 81%.
- Zinc: 60%

RPM highlights that the pit optimisations were used to define the depth of the various cut off grades to report the Mineral Resource, however the cut off grades applied were estimated based on a gold price of US$1,570/oz. Furthermore, it is noted that given the long strike length and variation in mineralization tenure the potential open pitiable depth varies, as such the application of a consistent depth is considered not appropriate and the use of a pit optimisation to define variable depths is suitable.

US$1,570/oz. was selected to determine the maximum depth of potential open pit mining based on historical prices (last 5 years). RPM notes that this price is above the current long-term forecast, however, notes that the gold price has been significantly higher in the past 5 years, as such has utilised a higher price to determine the maximum depth of potential open cut mining.

To determine the potential Underground mining cut-off, grade an open stopping method was assumed resulting in a total mining cost of US$35 per tonne.

While a detailed schedule and option analysis has not been completed to confirm the optimal mining method, given the sub vertical continuous style of mineralization within sheet like shears occurring near surface within the currently defined resource areas, open pit mining is likely to be appropriate, pending the option analysis. Additional mining design and more detailed and accurate cost estimate mining studies and testwork are required to confirm viability of extraction.

RPM notes that these pit shells were completed to report the resource contained within to demonstrate reasonable prospects for eventual economic extraction and highlights that these pits do not constitute a scoping study or a detailed mining study which along with additional drilling and testwork, is required to be completed to confirm economic viability. It is further noted that in the development of any mine it is likely that given the location of the Project that CAPEX is require and is not included in the mining costs assumed. RPM has utilised operating costs based on in-house databases of similar operations in the region and processing recoveries based on preliminary testwork as outlined in Section 13, along with the price noted above in determining the appropriate cut-off grade. Given the above analysis RPM considers both the open pit and material below the pit demonstrates reasonable prospects for eventual economic extraction, however, highlights that additional studies and drilling is required to confirm economic viability.

14.1.9 Risk and Opportunities

The key risks to the Project include:

- Structural Complexity: The Project exhibits a moderate to high degree of structural complexity. The mineral resource block model is defined by drilling on a 50m by 50m drill spacing with some areas with 25m by 25m, therefore there is potential for tonnage and overall geometry variations between modelled and actual mineralization. RPM does not envisage any material variations in the closer spaced drilling areas, however this could potentially occur in the areas of greater than 50m spacing, as a result these areas are classified as Inferred.
- QAQC: Sampling and assaying methodology and procedures were satisfactory for the Erdene drilling. QAQC protocols were adequate and review of the data did not show any consistent bias or reasons to doubt the assay data. Slight underestimation of higher grades Au(8.0g/t) and Ag (10 g/t) has been observed in the OREAS62c standard for the 2015 drilling, as well as slight underestimation of Au(9.2 g/t) grade was also observed in OREAS62e for 2016 drilling. For 2017 the OREAS 62E Au standard performed very well with majority of the results falling within two standard deviations (SD); however, Ag standards showed poor performance as most of the results fall outside 2SD. There was no potential run of mine grade base metals standards inserted in the QAQC protocols and there is a low to moderate risk to the accuracy of base metal assays. RPM does however note that any variation will not be material to the resources quoted with the classification applied.
- High Grade Variability: Geostatistical analysis generated models of spatial grade continuity that reflected the geological understanding of the deposit. The modelled nugget effect is relatively low, and a significant proportion of the variance occurs within the scale of the block dimensions resulting in a moderate degree of smoothing which is evident in the block model.

- Barren Dykes: Number of significant barren dykes have been mapped and logged at the Union North, Maggie and Union East Zones. These dykes have been modelled by RPM and no grades have been estimated within these units. The interpretation of these dykes is, at present, based on wide spaced 25-100m sections. A better understanding of the dyke geometry will be gained through closer spaced infill and extensional drilling. There is a moderate risk that the dykes could actually be similar to those currently modelled as infill holes recorded the same barren dykes mapped at the surface.
- Bulk Density: The bulk density regression utilised in the estimate has a relatively low correlation. RPM however considers that this regression is a better reflection of the tonnage variations than an average of the densities, or an estimate due to the limited numbers of determinations. With further density samples it is likely a better correlation will be interpreted which will be reflected in the local tonnage variation. RPM envisages no material variations occur, however some changes are likely, as such no measured resources ae classified.
- High Grade Continuity: Structural control on high grade zones not well understood with mineralization tending to discontinue in some places at Discovery Zone as a result of (likely) post-mineralization faulting.

The key opportunities for the Project include:

- Resource Expansion:
  - RPM considers there is good potential to expand the currently defined resource with further drilling. Mineralization is open north and south of the currently defined Mineral Resource, where several medium to high grade intersections occur. RPM recommends targeting near surface medium to high grade mineralization, which if successfully delineated will potentially have a positive impact on any mining study undertaken on the Project.
  - Mineralization is open along strike and down-dip at all prospects and extensional drilling of the main zones may delineate continuations of the known mineralization, some of which may be high grade. Significant amount of high-grade base metal anomalism observed in Central valley, Maggie, and the north-eastern extension of the DZ area where no significant gold mineralization was observed. However, RPM notes that scout holes drilled at some of the prospects didn't intersect any potential gold mineralization where surface trenching program intersected high grade gold mineralization.
- Multiple Generations:
  - The narrow high-grade Au, Ag mineralization intersected at Main mineralization zones has been observed to share closer affinities with narrow polymetallic quartz veins. These may form part of a separate mineralization event or represent a marginal feature to the main zone. Regardless of genetic relationships, these narrow vein targets do represent an additional exploration opportunity and further works are required to confirm the interpretation.
  - There is a significant amount of vein like, sometimes broader, high grade base metal zones with lower gold grades intersected in holes outside current modelled mineralization areas and these areas present an additional exploration opportunity for high grade base metal and possible gold mineralization.

Dilution and Ore Losses

The block model is undiluted with no ore loss factors applied; as a result, appropriate dilution and ore loss factors must be applied for any economic reserve calculation.

Other Information

RPM is not aware of any other factors, including environmental, permitting, legal, title, taxation, socio-economic, marketing and political or other relevant factors, which could materially affect the Mineral Resource.

14.2 Bayan Khundii

14.2.1 Data

The key files supplied to RPM are outlined in Section 2.3.

Sample Data

The supplied drilling data spreadsheets were compiled by RPM into an Access database 'bk_dhdb_20180629.mdb' and contained drilling data up to hole BKD-255 and included tabulated information for collar, assay, survey, bulk density, lithology and vein logging. The data was then loaded into Surpac software. All Mineral Resource estimation work conducted by RPM was based on drillhole data received as at 29 June 2018, up to and including drill hole BKD-255.

The database contains the records for 255 drill holes (243 unique holes, twelve partial re-drills or extended holes) for 42,670.17m of drilling and 22 trenches for 1059.6m. The Mineral Resource estimate included 185 diamond holes (DD) for a total of 31,723.52m and 16 trenches (TR) for total of 803.6m within the wireframes. No data was excluded from the model.

A summary of the drill hole database is shown in **Table 14-28**.

Table 14-28 Summary of Data Used in Resource Estimate

In Project					In Mineral Resource				
					Drill holes		Intersection		
Company	Period	Drilling Method	Number	Metres	Number	Metres	HG Metres	MG Metres	LG Metres
Erdene	2015	DD	15	696	14	664.52	59.00	163.60	227.67
		TR	22	1,060	16	803.60	74.00	164.85	349.71
	2016	DD	81	11,809	71	10,434.30	781.83	3,985.65	2746.77
	2017	DD	138	25,638	79	16,097.40	813.85	3,063.31	4806.14
	2018	DD	21	4,527	21	4,527.30	339.78	1258.52	939.49
Drilling Total			255	42,670	185	31,723.52	1,994.46	8,471.08	8,720.07
Trenching Total			22	1,060	16	803.60	74.00	164.85	349.71
Total			**277**	**43,730**	**201**	**32,527.12**	**2,068.46**	**8,635.93**	**9,069.78**

Note: LG-Low grade (>0.2 g/t Au) mineralization wireframe, MG- Medium grade (>0.5g/t Au), HG-High grade (>1.5g/t Au) mineralization wireframe.

No data was excluded from the model; however, a number of intervals were identified as being un-sampled during sample processing. Those intervals generally related to un-mineralized Jurassic volcanic-sedimentary units that overlie mineralization particularly at Midfield and North Midfield zones. As such these were not included in the estimate

14.2.2 Bulk Density Data

Erdene collected 1,043 bulk density measurements from 135 drill holes using the water immersion technique. 573 bulk density measurements were from fresh rock, while remaining 506 determinations were from weathered rock.

RPM considers these procedures would result in determinations which are representative of the underlying geology and, as a result, are representative of the deposit. The density measuring apparatus is shown below in **Figure 14-34**.

Figure 14-34 Bayan Khundii - Density Apparatus

RPM extracted the density measurements from the database and subdivided the measurements into mineralized (inside wireframes) and non-mineralized (outside wireframes). Results are tabulated in **Table 14-29**. The bulk density values range from 1.78 to 5.47 t/cu.m and normally distributed about a mean of 2.65 t/cu.m. High density values were mostly attributed iron content as specular and hematite alterations overprinting the mineralization.

Table 14-29 Bulk Density Summary

Domain	**Mineralization**			**All**			
Type	**Min**			**Waste**			
	Oxide	Fresh	Total	Overburden	Volcanic	Syenite	Total
Number	275	240	515	46	329	106	481
Minimum	1.80	1.96	1.80	2.32	2.34	1.78	1.78
Maximum	3.96	3.74	3.96	2.79	3.12	2.77	3.12
Mean	2.62	2.66	2.64	2.57	2.68	2.60	2.65

Erdene interpreted six main rock units within the deposit based on rock structure, style of mineralization. RPM grouped these into 3 main rock units which refer as overburden-Jurassic volcanic-sedimentary rocks, Volcanic-Devonian altered Pyroclastic rocks (Mineralization host rock) and Syenite-post mineralization intrusion. The bulk density value assigned to waste material was derived from **Table 14-29**.

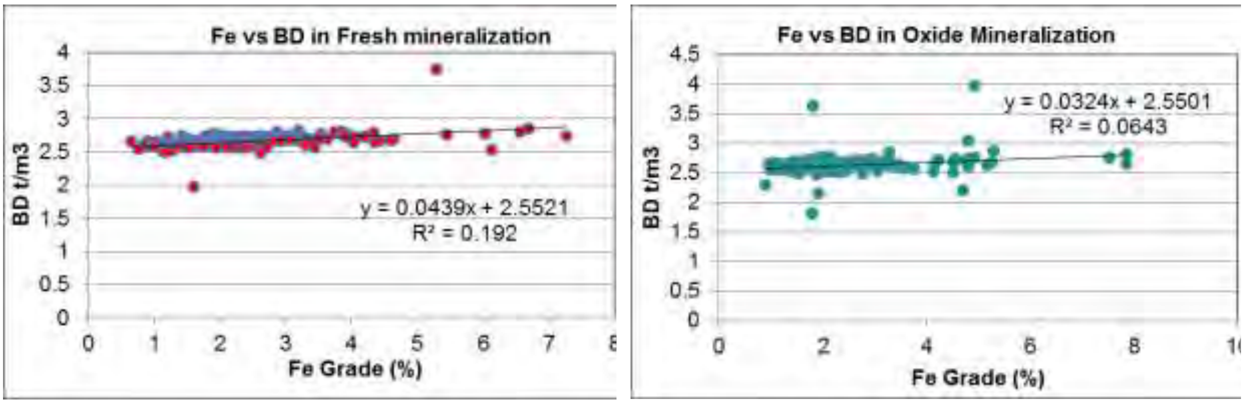
A linear regression analysis completed between density and Au, Fe and S grades for the 275 density measurements within the wireframes for oxide material and for the 240 density measurements within the wireframes for fresh material within the host rock. The correlation coefficient between elements and density is shown in **Table 14-30**. This analysis indicated bulk density and Fe grade showed the highest correlation for the elements with coefficient of 0.44 for fresh mineralization and 0.25 for oxide mineralization. Poor correlation is observed between fresh Sulphur and bulk density as well as oxide Au and bulk.

The Linear regression for density and Fe for oxide and fresh is shown in **Figure 14-35**.

Table 14-30 Correlation Coefficient Table

Correlation	Au	Fe	S
Oxide BD	0.15	0.25	0.05
Fresh BD	-0.05	0.44	0.28

Figure 14-35 Linear Regression for Density and Fe Grade for Mineralization



Although the correlation coefficients were low, RPM recognized that the density of the deposit is likely to be variable due to, most likely the iron mineral content. Many specular or other hematite types were logged in the drill holes which is consistent with the observed trends in the data. As a result, RPM utilized the Fe regression to estimate the density rather than the average values in mineralized areas.

The regression equations from **Figure 14-36** above were applied to all mineralization separated by weathering type (pod>0) in the block model. The assigned bulk densities within the block model are tabulated in **Table 14-31**.

Table 14-31 Bulk Densities Assigned in the Block Model

Type	Weathering	Mineralized or Waste	Bulk Density (t/cu.m)
Mineralization	Oxide	Mineralized (pod > 0, type=oxide)	equation: (Fe% grade x 0.0324) + 2.55
	Fresh	Mineralized (pod > 0, type=fresh)	equation: (Fe% grade x 0.0439) + 2.55
Waste	Overburden -Jurassic	Waste (pod = 0, rock=1)	2.57
	Volcanic	Waste (pod = 0, rock=2)	2.68
	Syenite	Waste (pod = 0, rock=3)	2.60

To determine the global suitability of the equations, RPM compared the average density values against the regression formula. The average is a value of 2.64 t/cu.m while the regression calculated a global average of 2.64 t/cu.m. Globally there is not any material difference for each methodology while most variation will occur locally. Therefore, RPM considered it appropriate to utilize the linear regression between Fe and density to estimate density values within the block model.

While RPM notes that the R2 coefficient is low this is likely due to the limited number of close spaced samples and close mineralogical association. RPM considers that the data spacing to be sufficient to ensure no material issues would result with additional data on a local scale, as such considers the classification applied suitable. RPM however recommends that Erdene continue recording density measurements, ensuring that measurements should cover a variety of both Au and Fe grades to further refine the regression equation.

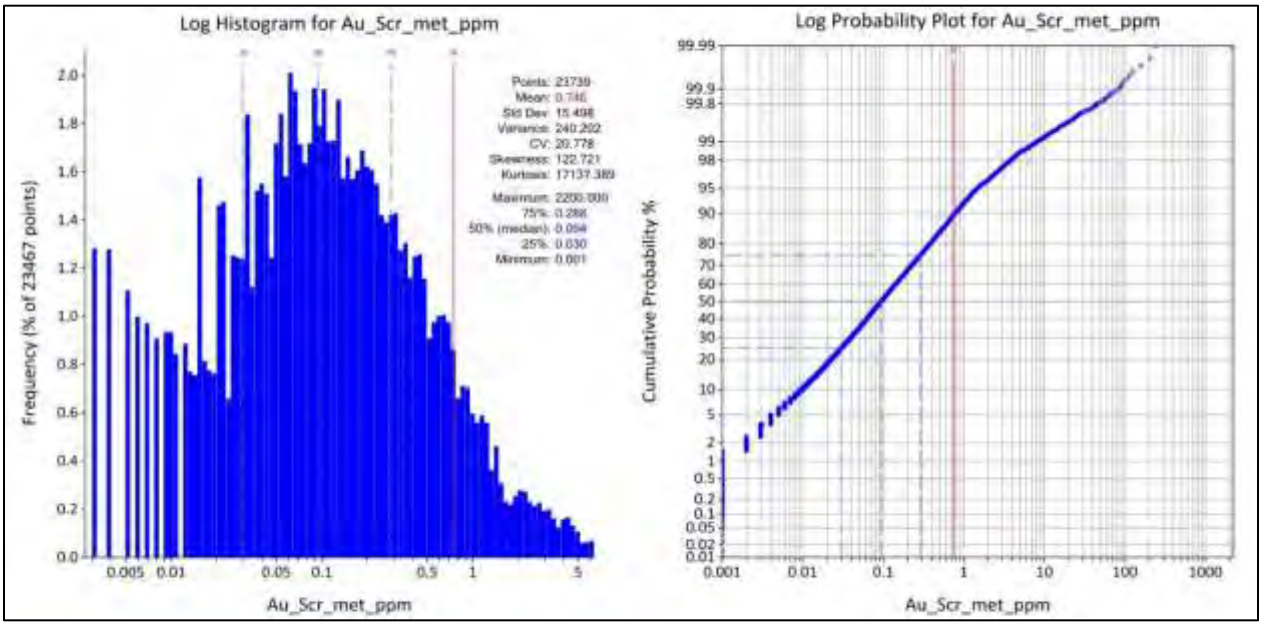
14.2.3 Geology and Resource Interpretation

Gold mineralization is hosted by an intensely quartz-illite altered sequence of Devonian age pyroclastic rocks (lapilli tuffs, massive and layered ash tuffs, welded tuffs). Mineralization has been identified to date in separate zones over a 1.7 km strike length, termed the Gold Hill, Striker, Midfield, North Midfield, Striker West and Northeast zones. Most of the exploration work completed to date has focused on and near the first four of these zones with limited drilling to these zones and in the Northeast Zone.

Mineralization interpretations were prepared by RPM using an approximately 0.2 g/t Au cut-off grade for lower grade (LG) material, 0.5 g/t Au for medium grade material (MG) and nominal 1.5 g/t Au for high grade material (HG) (refer **Figure 14-36**). Some variations were observed in the LG and MG domains to maintain continuity of LG and MG domains resulting in the inclusions of internal lower grade waste material The grade cut-offs were based on interrogation of log histograms and probability plots of the raw assay data. Typically, with log normal distributions, statistical grades cut-offs are reasonable well-defined grade cut-offs however visual inspection of mineralization on section was utilised to confirm that the cut-offs chosen were appropriate. RPM notes the following in relation to the domains selected:

- The medium grade wireframes were interpreted to encompass mineralization outside the high-grade wireframes however within a nominal 0.5 g/t cut-off.
- The low-grade wireframe cut off was based on the statistical analysis however it was noted that medium and high grade values which did not fall into the existing higher grade wireframes where included in this domain. The wireframe cut-off value of 0.2 g/t is based on a subtle inflection point in the total data distribution and also approximately represents the median value of the total dataset.

Figure 14-36 Log Histogram and Log Probability Plot for All Assays



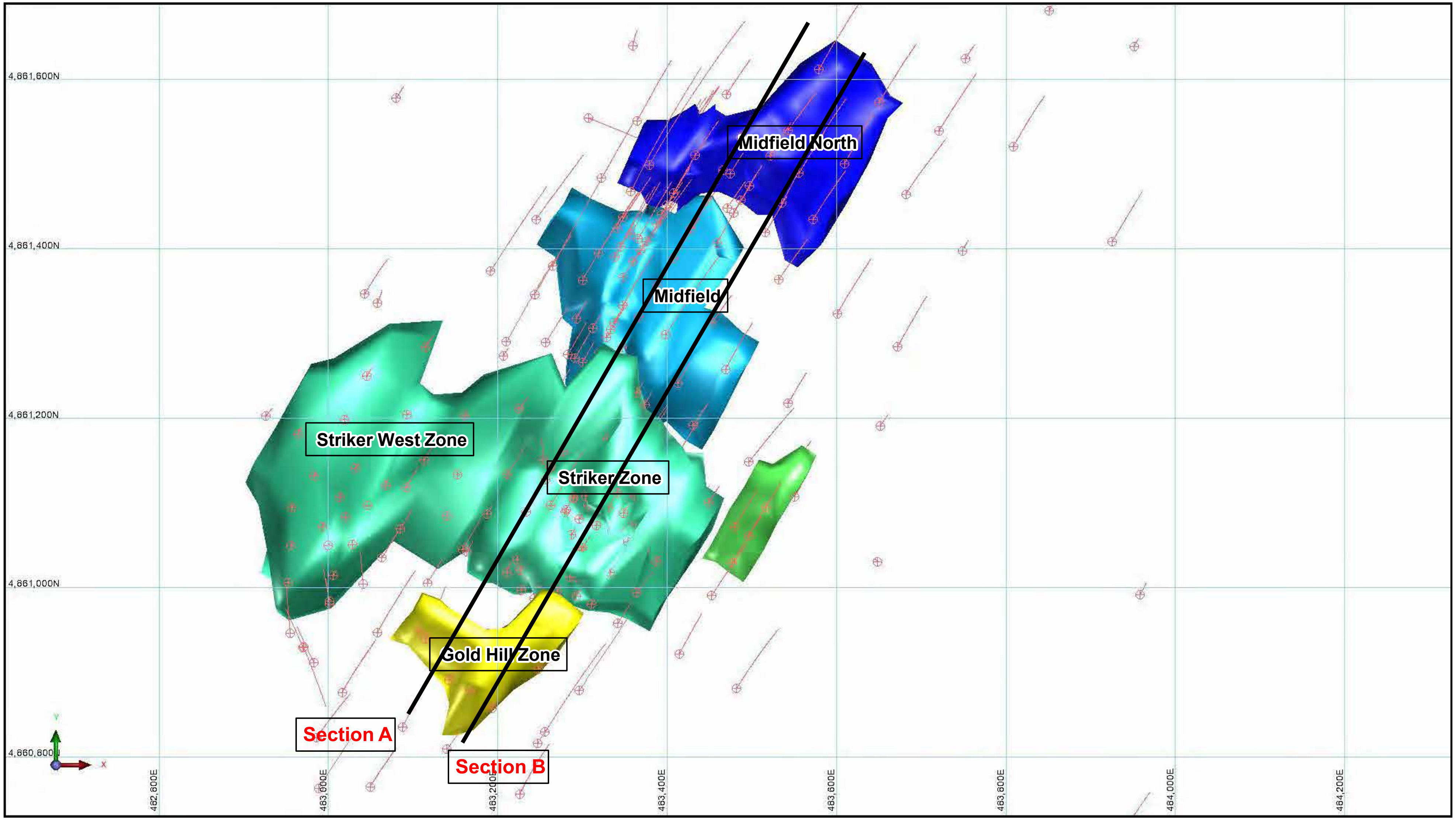
14.2.4 Preparation of Wireframes

Resource Wireframes

The interpreted sectional outlines were manually triangulated to form wireframes. The end section strings were copied to a position midway to the next section or to 20-30 m from the nearest hole on the edges of the mineralization or where no un-mineralized drill holes were available to constrain the interpretation. Wireframes adjusted to match the dip, strike and plunge of the zone. The wireframed objects were validated using Surpac software and set as solids.

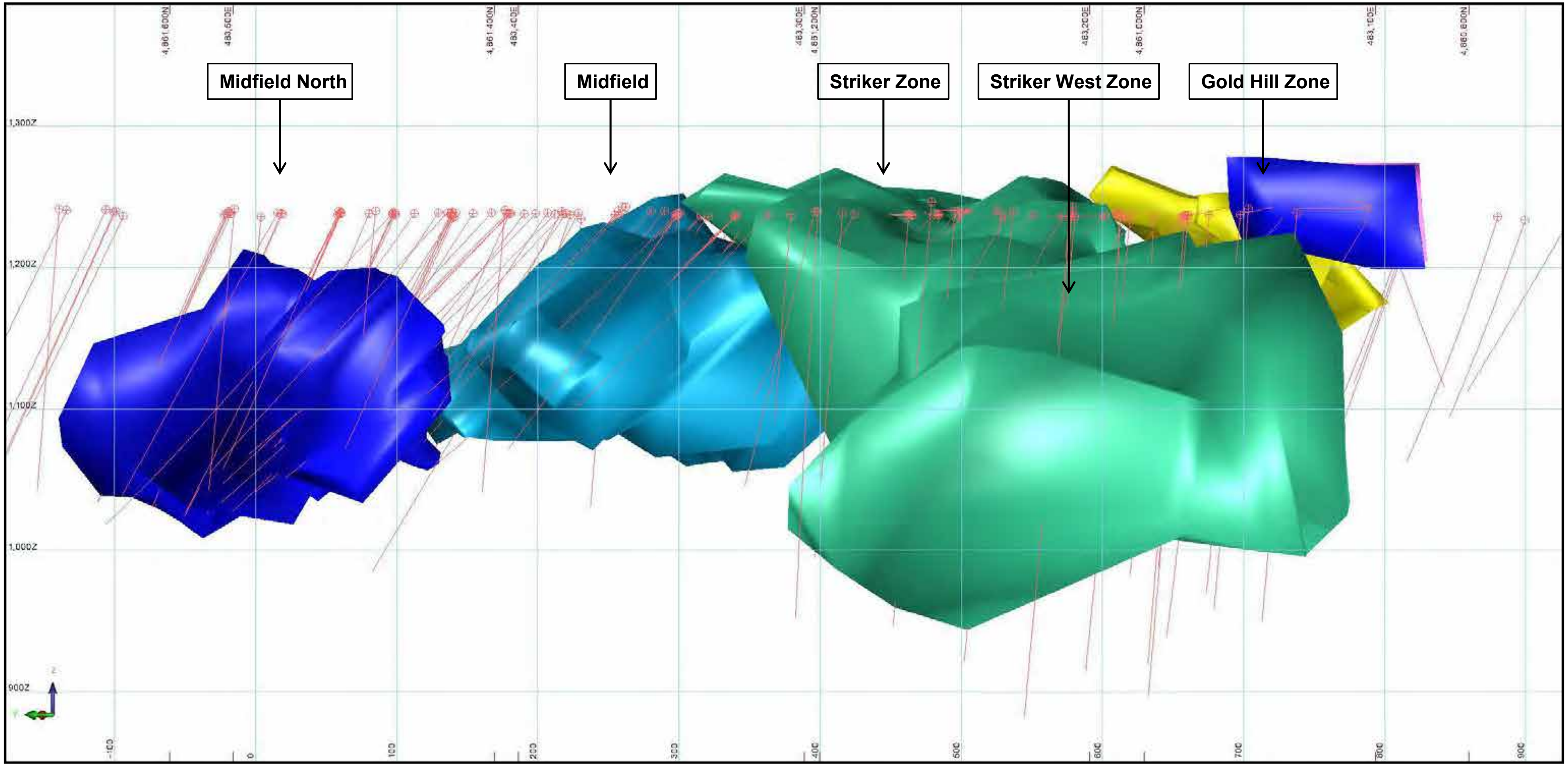
A total of 79 resource wireframes including 71 resource wireframes (‘wf_bk_au_hg_20180901_15.dtm’) within the high grade zones (object 1 to 71), 3 resource wireframes (‘wf_bk_au_lg_20180906_05_shell.dtm’) within the medium grade zones (object 201 to 203) and 5 resource wireframes (‘wf_bk_au_lg_20180907_02_shell.dtm’) within the low grade zones (object 101 to 105) were created and used to select the sample data to be used for grade estimation, and to constrain the block model for estimation purposes.

The extent of the interpreted domains, and drilling are shown in **Figure 14-37** to **Figure 14-42**. The mineralized lodes have been depicted in different colours to distinguish individual lodes. The colouring has no other significance and is a reflection of the software utilised (Surpac). Representative sections of deposits are shown in **Figure 14-43** and **Figure 14-44**.



CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING: MINERALIZED LOW GRADE DOMAINS AND DRILLING - PLAN VIEW		
	FIGURE No. 14-37	PROJECT No. ADV-MN-00161	Date January 2019

RPMGLOBAL



RPMGLOBAL

CLIENT

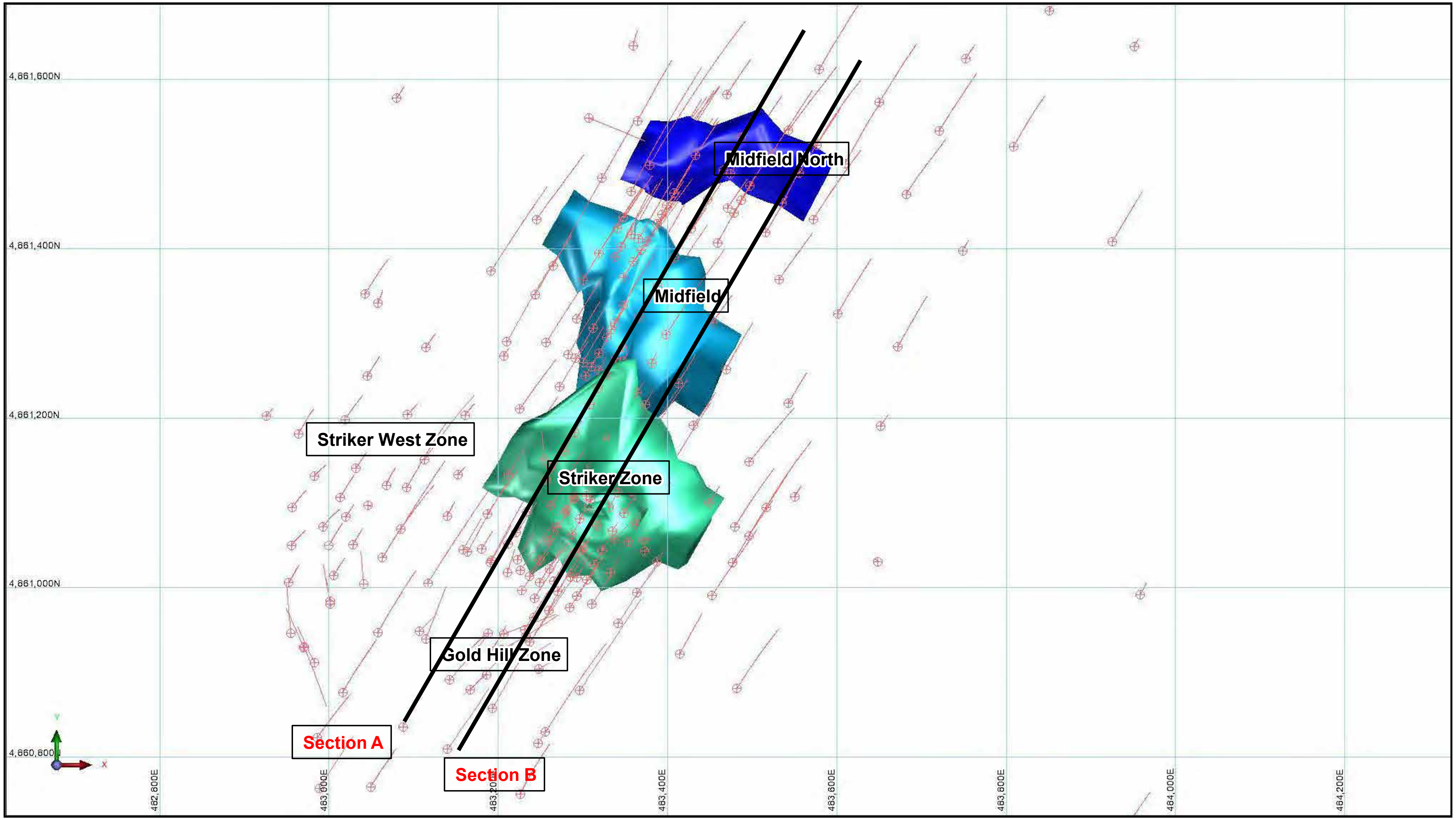
ERDENE
RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

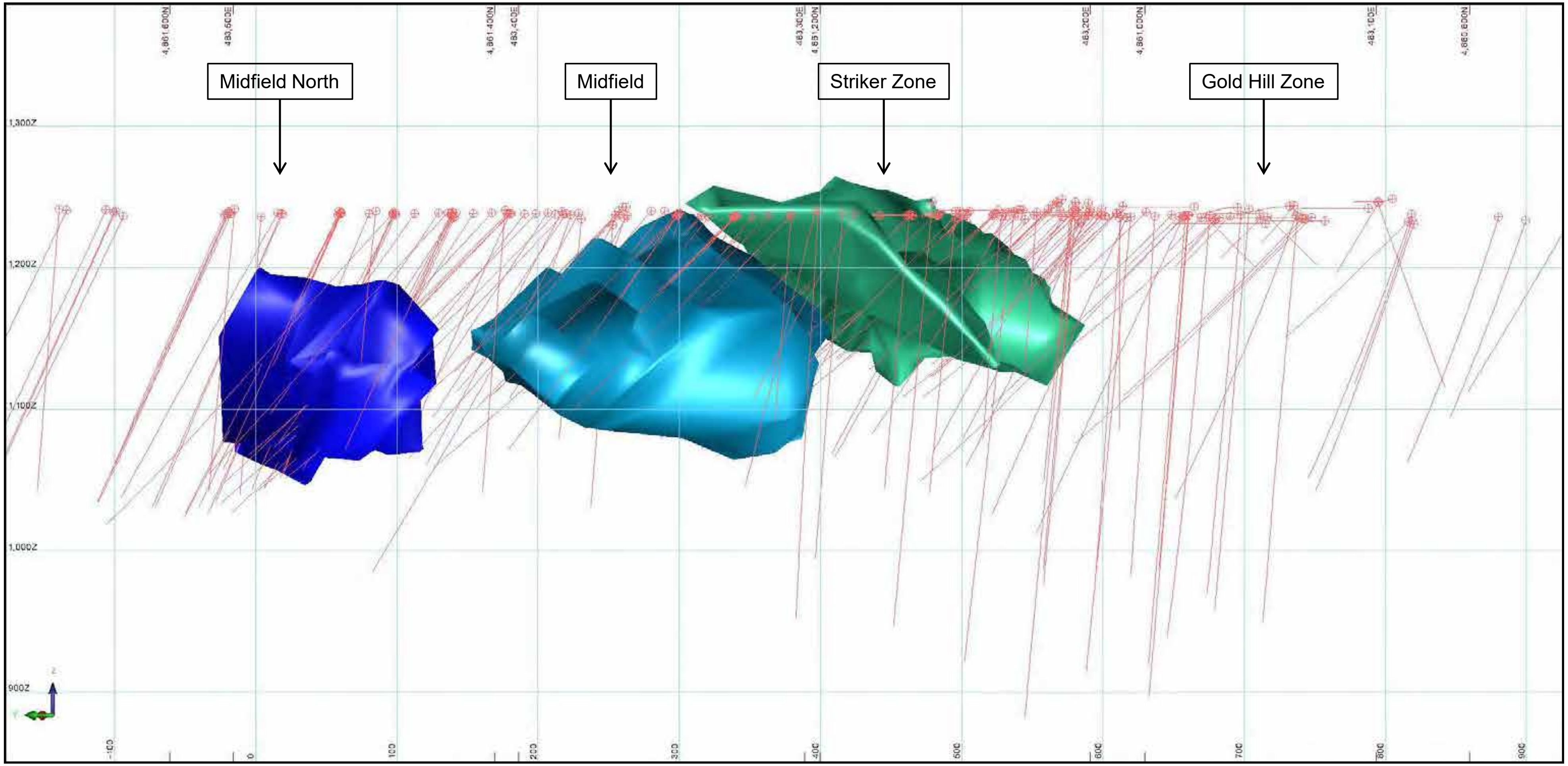
DRAWING MINERALIZED LOW GRADE DOMAINS AND DRILLING - LONG SECTION VIEW

FIGURE No.	PROJECT No.	Date
14-38	ADV-MN-00161	January 2019



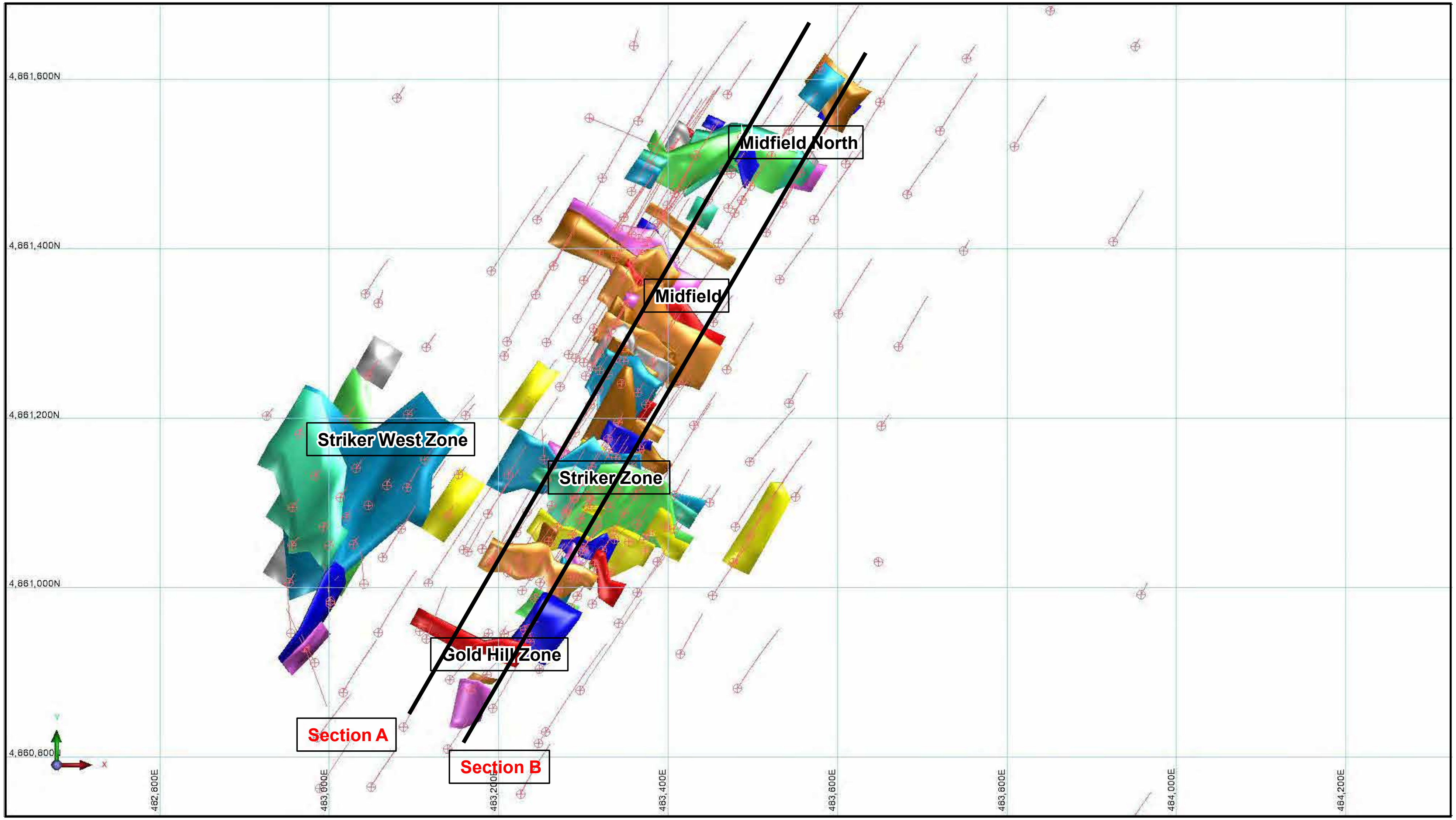
CLIENT	PROJECT
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project
	DRAWING MINERALIZED MEDIUM GRADE DOMAINS AND DRILLING - PLAN VIEW
	FIGURE No. 14-39 · PROJECT No. ADV-MN-00161 · Date January 2019

RPMGLOBAL



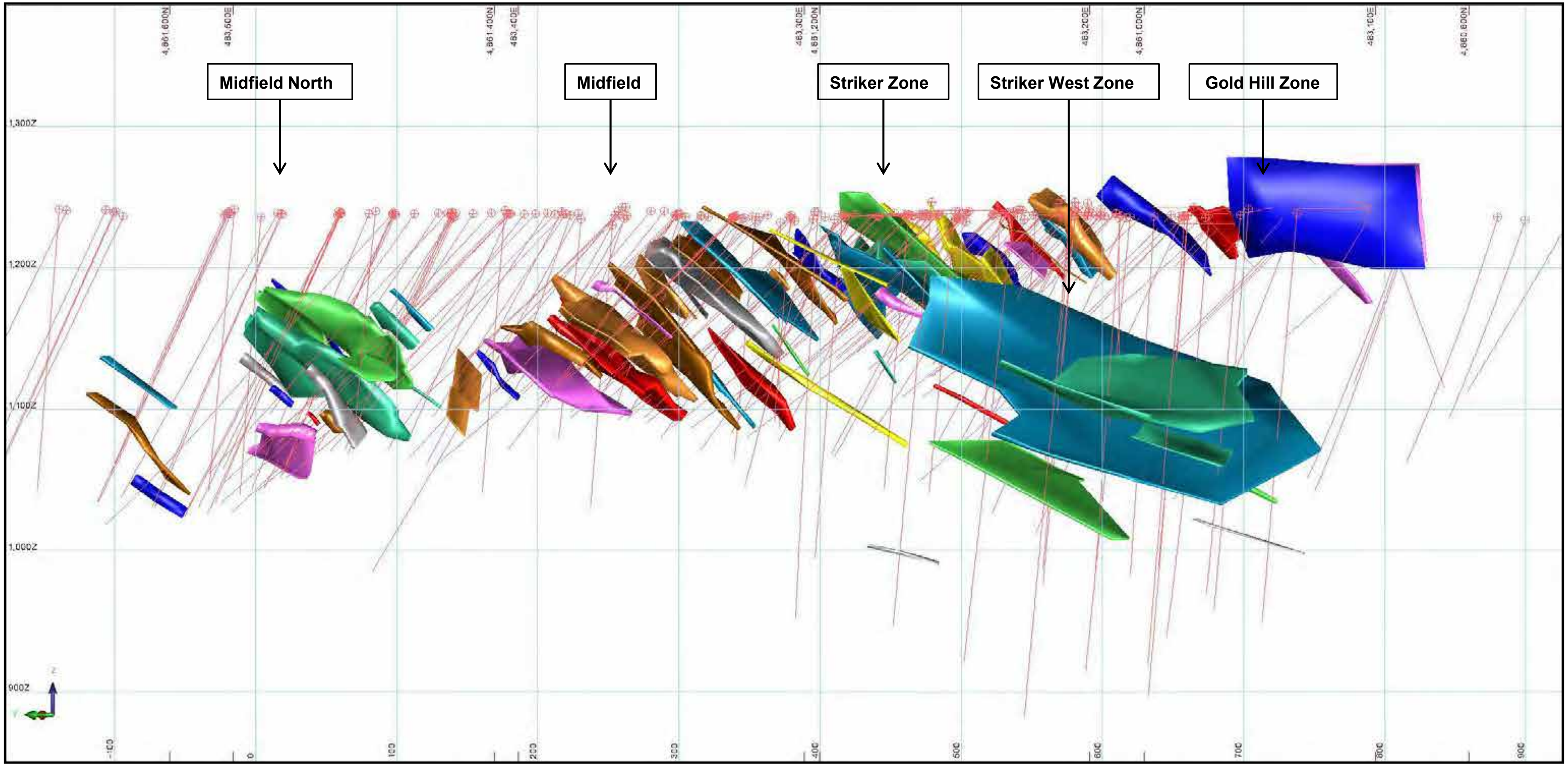
RPMGLOBAL

CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING MINERALIZED MEDIUM GRADE DOMAINS AND DRILLING - LONG SECTION VIEW		
	FIGURE No. 14-40	PROJECT No. ADV-MN-00161	Date January 2019



RPMGLOBAL

CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING: MINERALIZED HIGH GRADE DOMAINS AND DRILLING - PLAN VIEW		
	FIGURE No. 14-41	PROJECT No. ADV-MN-00161	Date January 2019



CLIENT

ERDENE
RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING MINERALIZED HIGH GRADE DOMAINS AND DRILLING - LONG SECTION VIEW

FIGURE No.	PROJECT No.	Date
14-42	ADV-MN-00161	January 2019

RPMGLOBAL

LEGEND - Au (ppm)

0 - 0.1	0.5 - 1
0.1 - 0.3	1 - 3
0.3 - 0.5	3 - 10
10 - 2300	

CLIENT

ERDENE
RESOURCE DEVELOPMENT

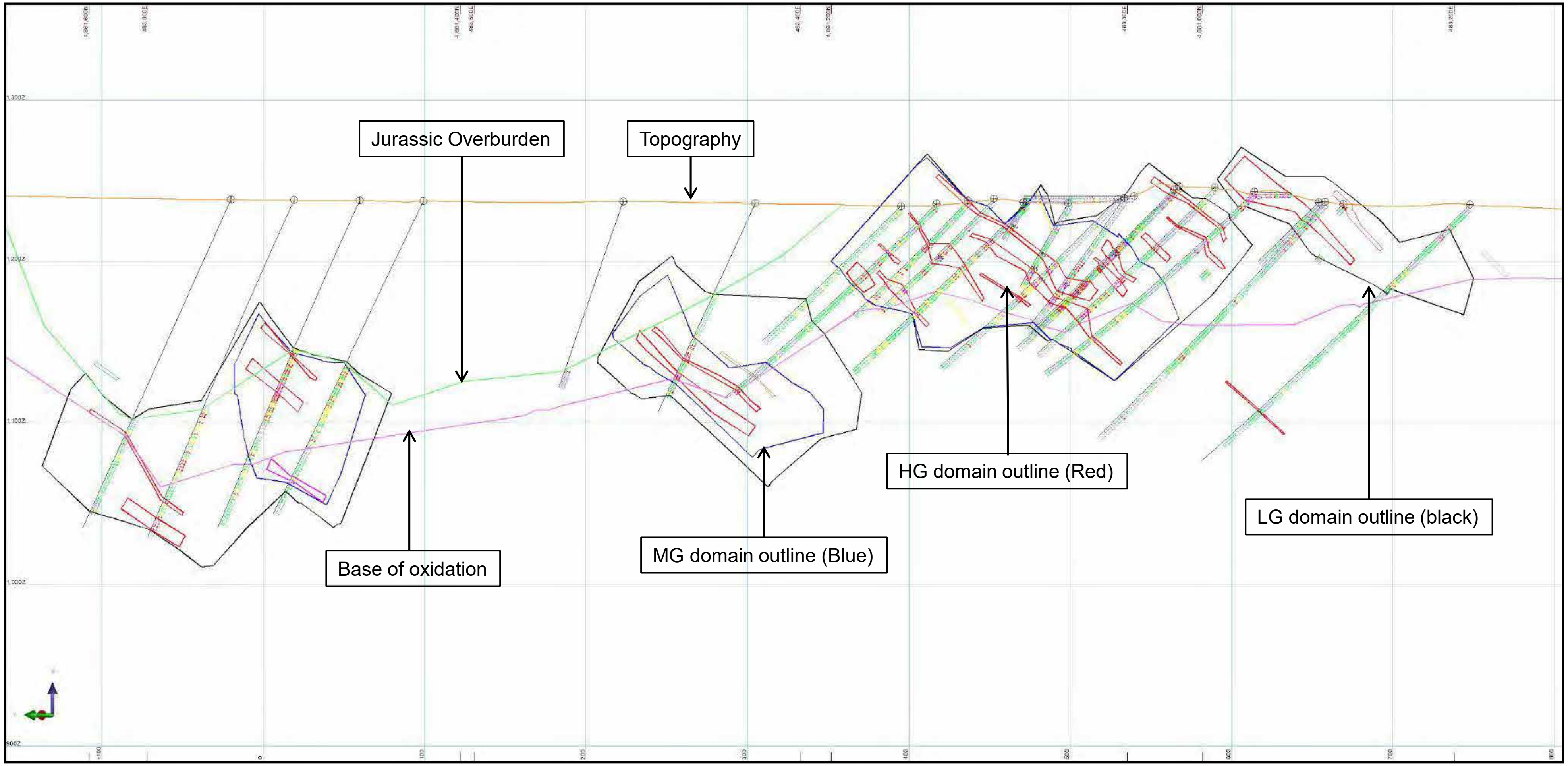
PROJECT

NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING: MINERALIZED HIGH GRADE DOMAINS AND DRILLING - CROSS SECTION A

FIGURE No.	PROJECT No.	Date
14-43	ADV-MN-00161	January 2019

RPMGLOBAL



LEGEND - Au (ppm)

	0 - 0.1		0.5 - 1		10 - 2300
	0.1 - 0.3		1 - 3		
	0.3 - 0.5		3 - 10		

CLIENT

ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING MINERALIZED HIGH GRADE DOMAINS AND DRILLING - CROSS SECTION B

FIGURE No.	PROJECT No.	Date
14-44	ADV-MN-00161	January 2019

RPMGLOBAL

Geology Wireframes

Drill logs were used to define the base of Jurassic overburden surface ('jurassic_20180726.dtm'). The surface was extended beyond the block model extents as shown in on the sections in **Figure 14-45** and **Figure 14-46**.

Most drillholes intersected the fine and medium-coarse-grained syenite beneath the mineralized zones. This body is interpreted to be a widespread post-mineralization intrusion which potentially truncated the mineralization. Accordingly, drill hole intersections were utilised to create a surface representing the top of the intrusion. Zones of magnetite alteration were observed to straddle the syenite-tuff contact in several holes, with alteration extending for several metres either within the syenite or host tuffs. This alteration is not associated with an increase in Au grades and is interpreted as a post-mineral contact metamorphism.

Oxidation State Wireframes

Much of the hematite and specularite is interpreted as hypogene in origin, although supergene hematite was observed in numerous holes, extending up to approximately 100 m depth. RPM interprets this is a result of typical oxidation profile in the region. It is noted that minimal further oxidation of the rocks has occurred as such RPM created the weathering surface ('weathering_20180726.dtm') based on the Company's visual observation of drill cores accompanied with sulphur assay data. This surface separates that is determined to the oxidized.

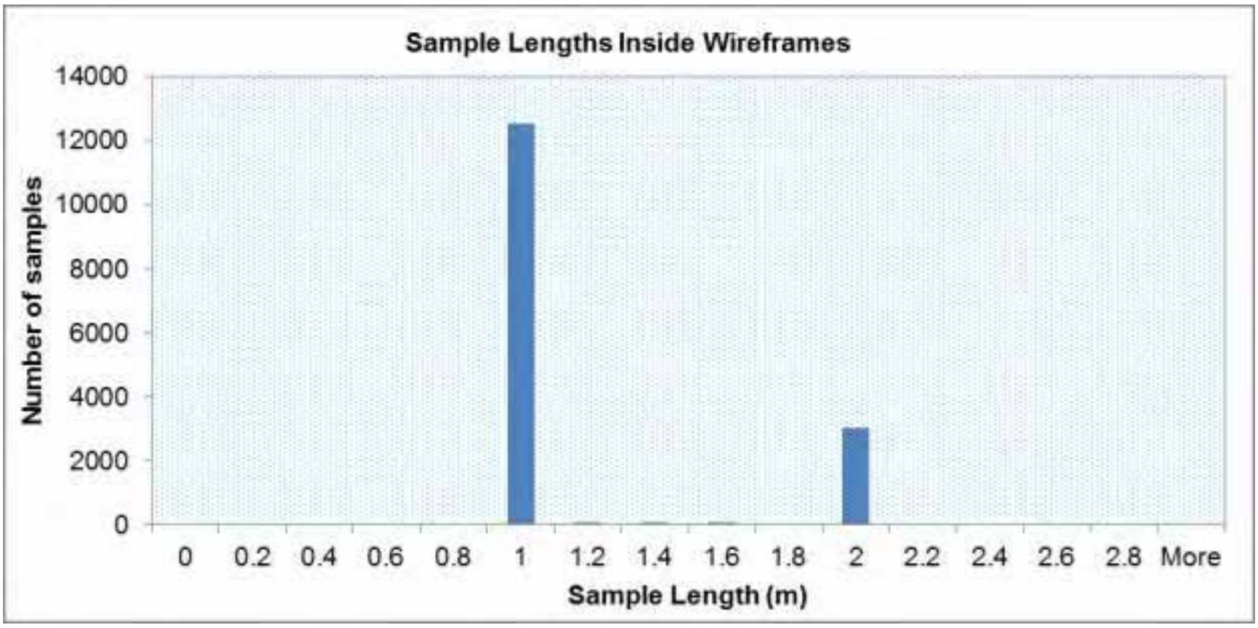
Topographic Surface

DGPS surveyed one-meter contour data supplied to RPM by Erdene ('topo_bk2017.dtm'). RPM merged DGPS surveyed drill hole points into topographic contour data. RPM also added some additional points to contour data to fully encompass the extent of the mineralization wireframes.

14.2.5 Compositing and Statistics

The wireframes of the mineralized zones were used to define the Mineral Resource intersections. These were coded into the 'res_zone_all' table within the database. Separate intersection files were generated for each resource envelope. A review of sample length within these files was carried out to determine the optimal composite length. This review determined that a variety of sample lengths were used during the original sampling, these lengths ranged from less than 0.4 to 2.9 m. The majority of sample lengths within the mineralization were one-meter lengths (refer to **Figure 14-45**) as such one meter was utilized.

Figure 14-45 Sample Lengths Inside Wireframes



Surpac software was then used to extract 'best fit' one meter down-hole composites within the intervals coded as 'domain' intersections. This method adjusts the composite length within intersections to eliminate "rejected" samples that can occur when fixed length compositing is used. A minimum length of 50% was used due to the numerous very narrow intersections. This allowed a composite to be generated for intersections as narrow as 0.5 m.

The composites were checked for spatial correlation with the wireframe objects, the location of the rejected composites and zero composite values. Individual composite files were created for each of the domains in the wireframe models and contained Au, Fe and S assay data.

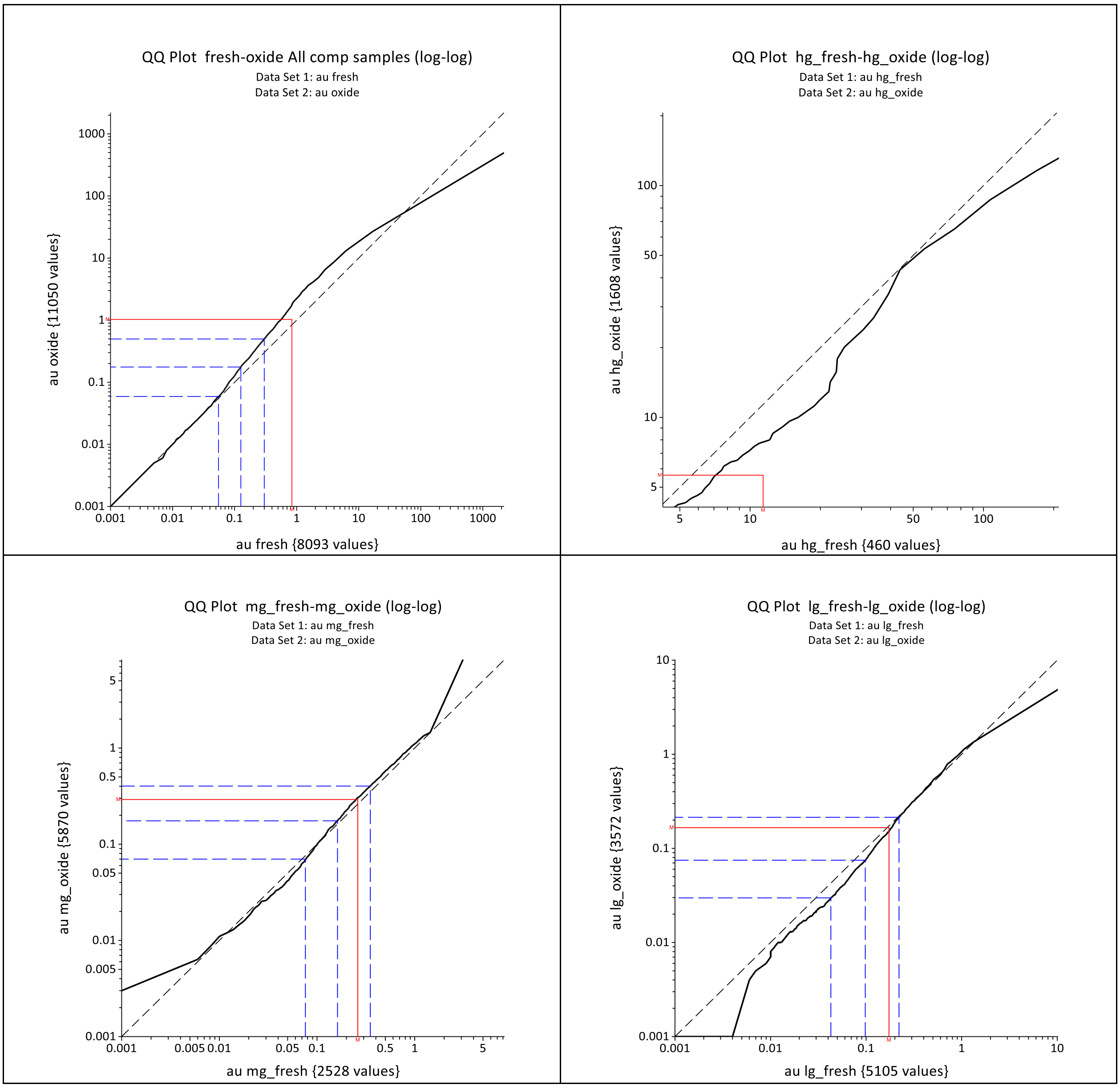
While Au is the only element what is currently defined as of economic interest, as noted in Section 14.1.2 RPM observed that Fe and S show a reasonable correlation with bulk density resulting is the Fe grades forming a regression analysis to estimate the density. Furthermore, S is likely forming a key indicator for metallurgy, as such both Fe and S were estimated along with Au.

Oxidation State Analysis

The composite data was subsequently separated by the weathering surface for each grade domain and analysed if separate compositing was required to be utilised for fresh and oxide mineralization. QQ plots were created to analyse the distribution of the two datasets and results are shown in **Figure 14-46**.

Results of the QQ plots within the HG, MG and LG Au grade domains indicates that the datasets show a large difference in terms of average grade, however, appear to be of the same statistical population. As a result, the populations above and below the oxide/fresh surfaces can be combined for the Au grade estimate with the stationarity maintained.

Figure 14-46 Oxide versus Fresh Au Grade Analysis QQ plot for Au



Note: HG-High grade, MG-Medium grade, LG-Low grade domains

Composite Statistics

The composite data was imported into Supervisor software for statistical analysis for each domain. Combined domain statistics are provided in **Table 14-32** while domain stats for Fe and S are provided in **Table 14-33** and **Table 14-34** respectively.

Table 14-32 Summary Statistics Composites –Au Grade Domains

Domain	All HG Zones	MG Domain inclusive of HG			LG Domain inclusive of MG and HG				
Object	1 to 71	201	202	203	101	102	103	104	105
Element	Au g/t								
Samples	2,068	1,713	3,887	4,520	2,698	4,804	10,876	136	620
Minimum	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	2,200.00	2,200.00	496.67	235.00	2,200.00	496.67	235.00	159.61	22.31
Mean	6.91	3.03	1.36	1.02	2.03	1.14	0.60	1.45	0.67
Std Dev	52.26	54.02	10.45	7.37	43.06	9.41	4.97	13.68	1.96
Coeff Var	7.56	17.82	7.70	7.20	21.20	8.27	8.29	9.41	2.91
Variance	2730.66	2,917.67	109.14	54.34	1854.12	88.53	24.72	187.17	3.84
Percentiles									
10.0%	0.45	0.05	0.06	0.03	0.04	0.04	0.02	0.01	0.02
20.0%	0.70	0.11	0.10	0.05	0.08	0.08	0.03	0.02	0.03
30.0%	1.01	0.18	0.15	0.07	0.12	0.12	0.05	0.03	0.05
40.0%	1.33	0.25	0.22	0.11	0.19	0.18	0.08	0.05	0.07
50.0%	1.74	0.36	0.31	0.15	0.25	0.26	0.11	0.07	0.11
60.0%	2.25	0.50	0.43	0.21	0.34	0.36	0.15	0.10	0.18
70.0%	2.98	0.67	0.60	0.32	0.49	0.50	0.22	0.17	0.25
80.0%	4.43	1.02	0.86	0.56	0.70	0.73	0.35	0.26	0.49
90.0%	9.83	2.20	1.54	1.11	1.42	1.28	0.69	0.55	1.37
95.0%	21.12	4.64	2.97	2.41	2.88	2.58	1.32	1.51	3.36
97.5%	43.95	11.05	6.47	4.48	6.55	4.67	2.92	2.89	6.63
99.0%	89.77	25.42	18.60	15.01	19.53	14.16	6.86	4.77	10.05

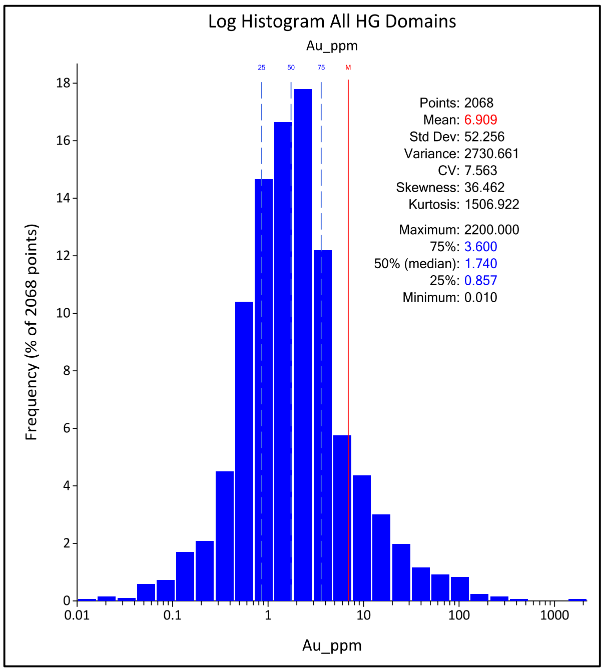
Table 14-33 Summary Statistics Composites – Fe Grade Domains (All)

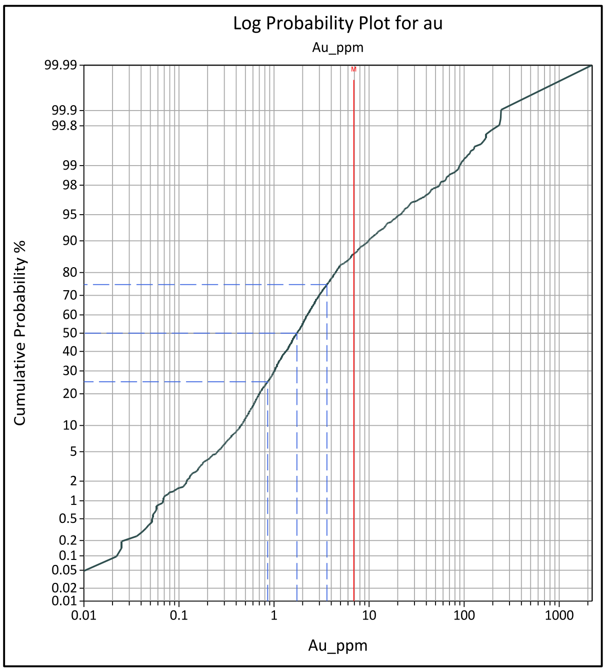
Domain	All Domains Combined				
Object	101	102	103	104	105
Element	Fe%				
Samples	2698	4804	10876	136	620
Minimum	0.72	0.69	0.05	1.88	0.89
Maximum	6.93	7.91	18.04	4.66	4.87
Mean	2.18	2.20	2.38	2.82	2.45
Std Dev	0.86	0.74	0.90	0.52	0.67
Coeff Var	0.39	0.34	0.38	0.19	0.28
Variance	0.74	0.55	0.81	0.27	0.45
Percentiles					
10.0%	1.31	1.35	1.45	2.10	1.63
20.0%	1.53	1.58	1.71	2.39	1.86
30.0%	1.73	1.76	1.92	2.51	2.07
40.0%	1.90	1.93	2.09	2.65	2.23
50.0%	2.03	2.09	2.26	2.78	2.39
60.0%	2.18	2.27	2.46	2.93	2.54
70.0%	2.35	2.48	2.65	3.10	2.73
80.0%	2.56	2.73	2.93	3.21	3.00
90.0%	3.08	3.14	3.38	3.36	3.32
95.0%	4.19	3.55	3.86	3.57	3.64
97.5%	4.67	3.96	4.44	3.92	3.92
99.0%	5.04	4.41	5.24	4.41	4.33

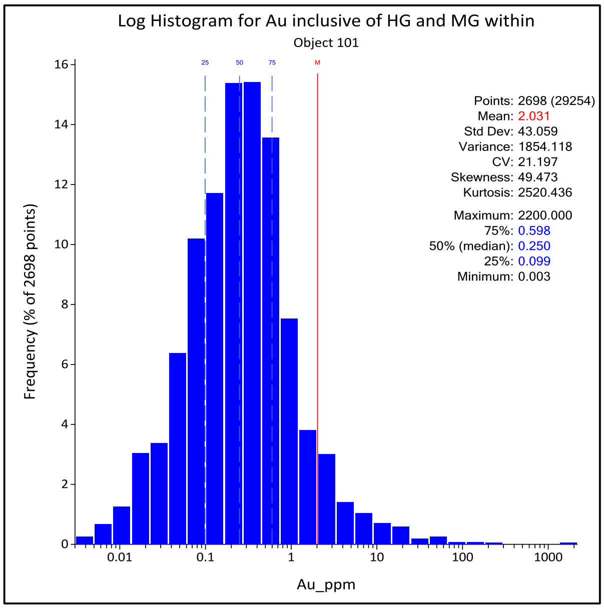
Table 14-34 Summary Statistics Composites – S Grade Domains (All)

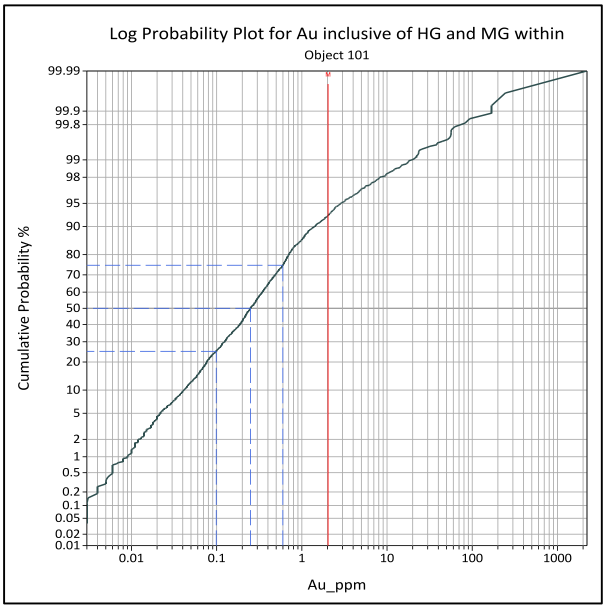
Domain	Individual Objects								
Object	**All HG**	**101**	**102**	**103**	**104**	**105**	**201**	**202**	**203**
Element	**S%**								
Samples	2068	965	903	6161	123	525	1,280	3,166	3,952
Minimum	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Maximum	3.82	1.39	1.62	3.59	0.86	1.42	1.64	2.19	2.44
Mean	0.05	0.11	0.08	0.20	0.05	0.09	0.09	0.04	0.09
Std Dev	0.14	0.19	0.18	0.36	0.15	0.16	0.14	0.10	0.23
Coeff Var	2.99	1.75	2.18	1.79	2.76	1.66	1.62	2.48	2.58
Variance	0.02	0.04	0.03	0.13	0.02	0.02	0.02	0.01	0.05
Percentiles									
10.0%	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
20.0%	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
30.0%	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
40.0%	0.01	0.02	0.01	0.02	0.01	0.01	0.02	0.01	0.01
50.0%	0.01	0.03	0.01	0.04	0.01	0.02	0.03	0.01	0.01
60.0%	0.01	0.05	0.02	0.08	0.01	0.03	0.05	0.02	0.01
70.0%	0.02	0.08	0.04	0.16	0.02	0.09	0.08	0.02	0.02
80.0%	0.04	0.15	0.10	0.32	0.04	0.17	0.14	0.03	0.08
90.0%	0.11	0.32	0.25	0.62	0.09	0.30	0.24	0.09	0.25
95.0%	0.22	0.50	0.45	0.93	0.24	0.41	0.34	0.18	0.50
97.5%	0.34	0.67	0.61	1.32	0.65	0.48	0.48	0.29	0.88
99.0%	0.49	0.93	0.78	1.67	0.79	0.69	0.62	0.45	1.23

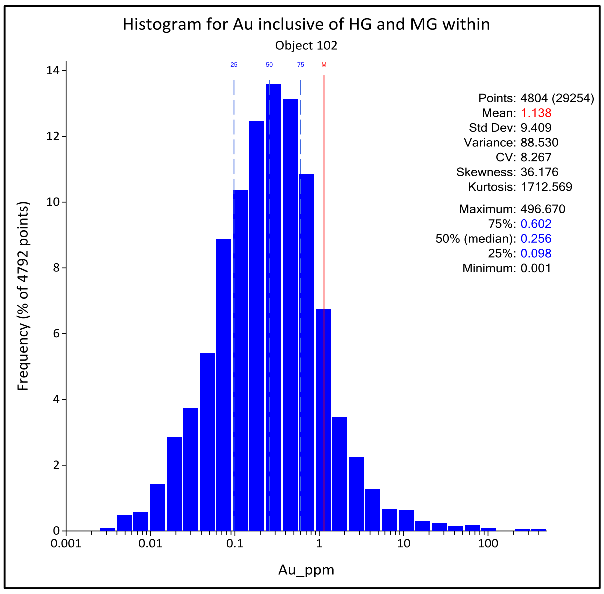
Analysis of the descriptive statistics indicates that the Au appears to have a log normal distribution with moderate to high variability, a large range, coefficient of variation and variance. This interpretation is further supported when the log probability plots and histograms (**Figure 14-47** through **Figure 14-54**) are analysed resulting in the interpretation that Au has a relatively lognormal distribution and a highly positively skewed distribution as would be expected with the style of mineralization observed within the deposit.

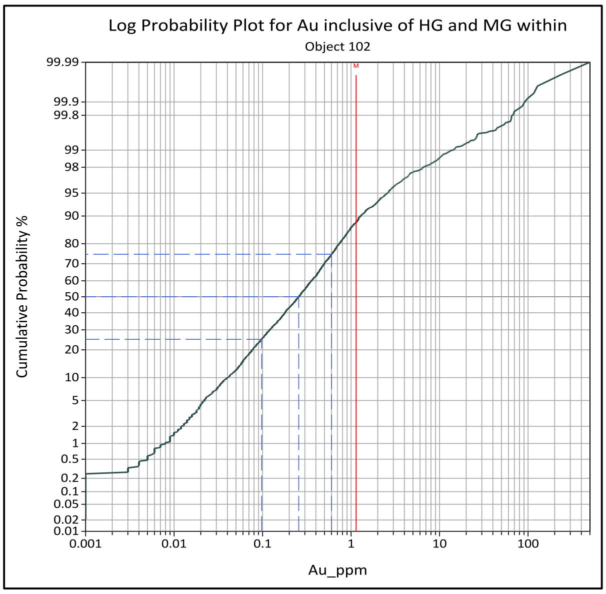






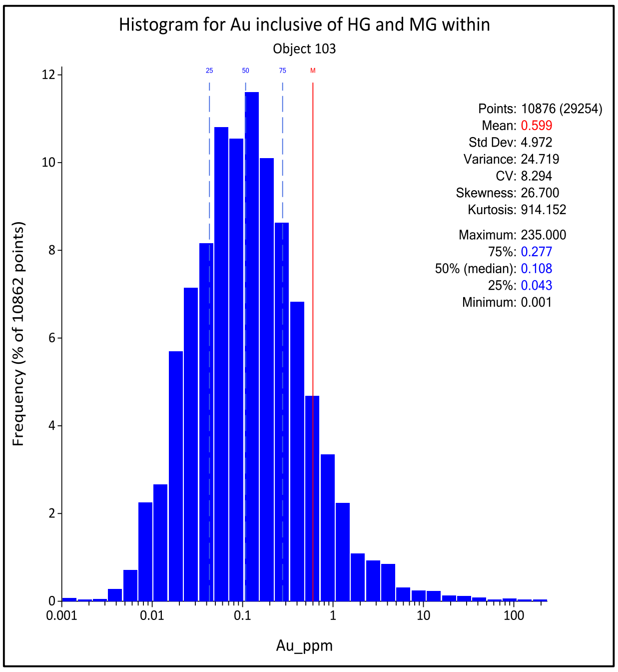


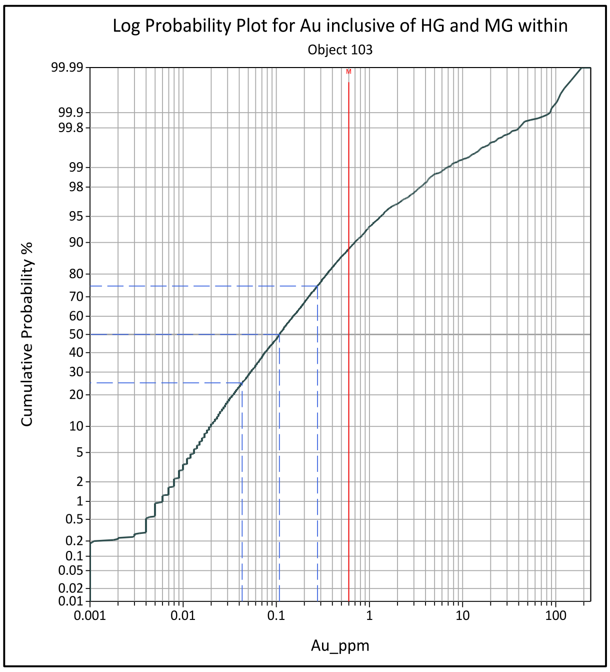


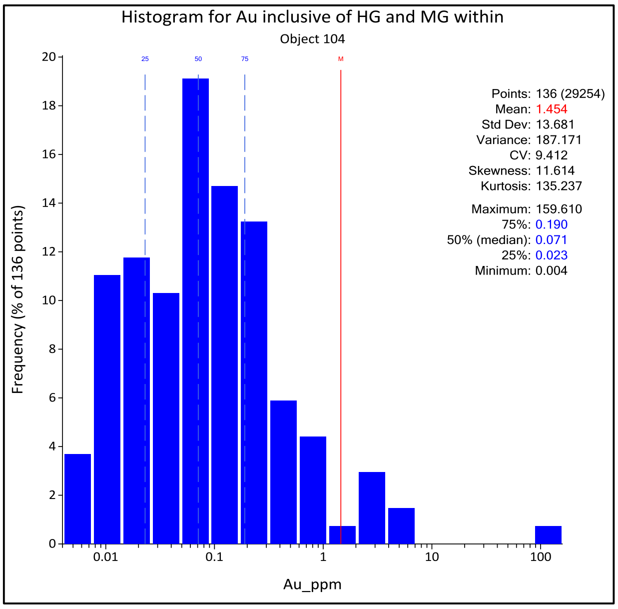


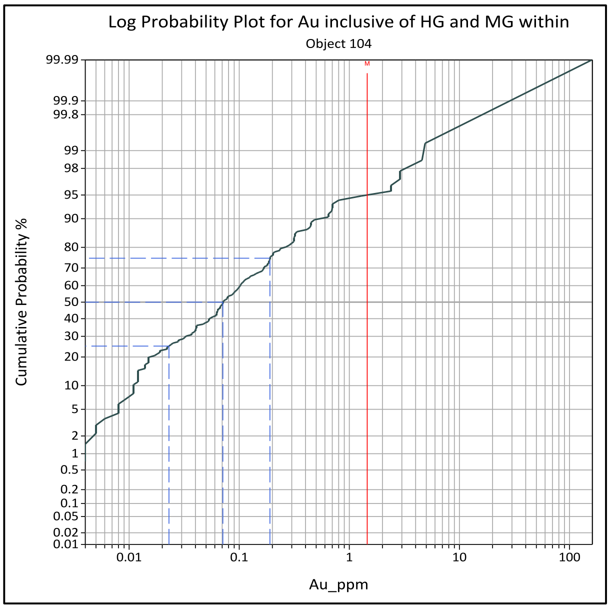
RPMGLOBAL

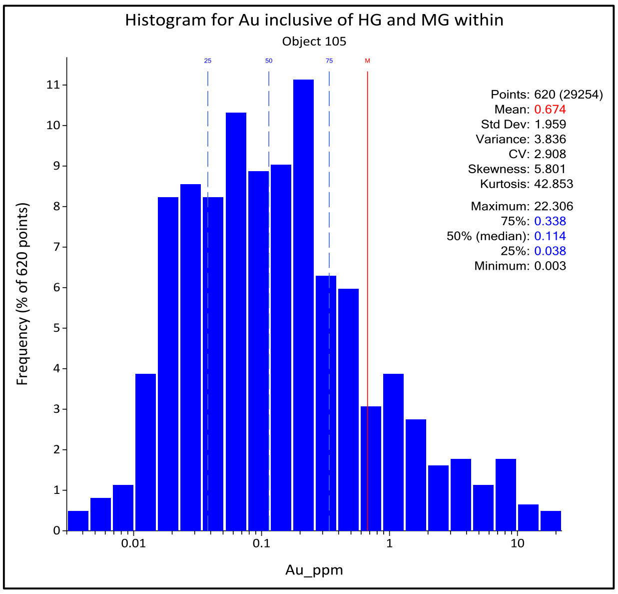
CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING: STATISTICAL PLOTS - LOG HISTOGRAMS AND LOG PROBABILITY PLOTS Au (ALL HG OBJECT 1 TO 71, LG OBJECT 101 AND 102)		
	FIGURE No. 14-47	PROJECT No. ADV-MN-00161	Date January 2019

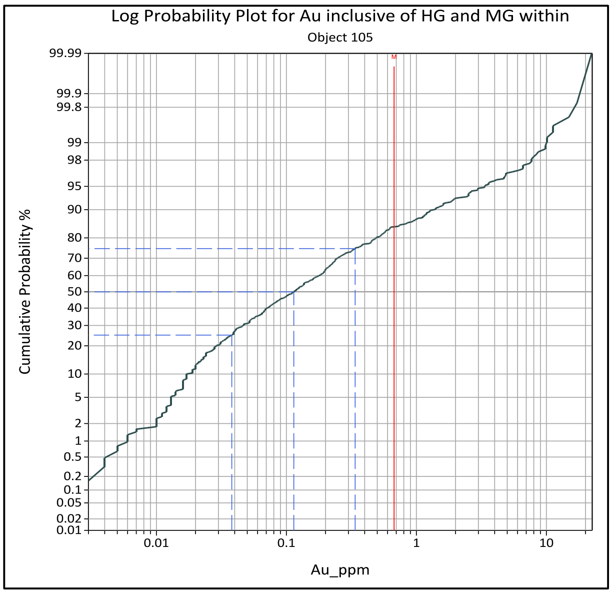






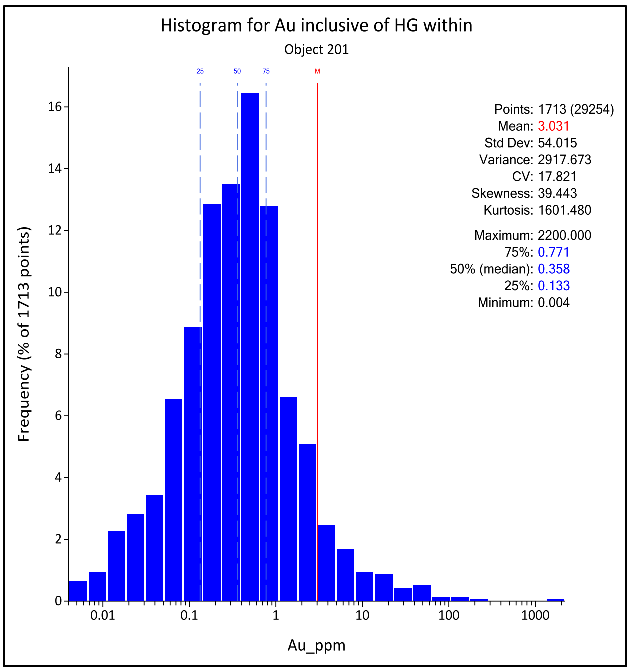


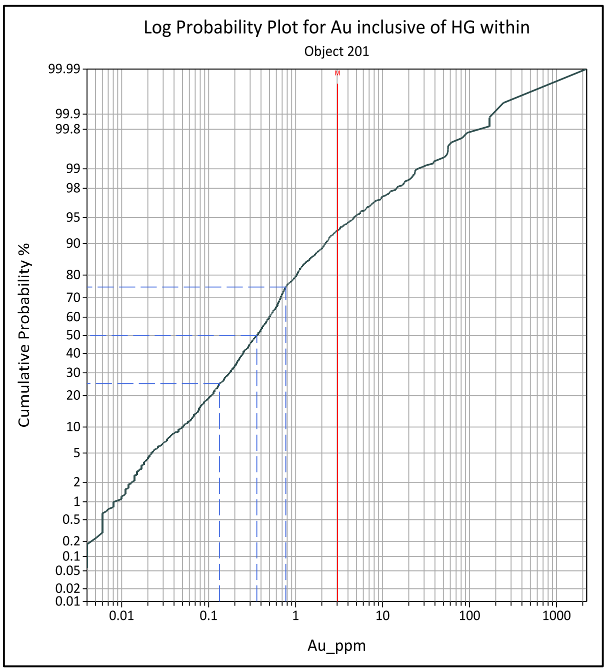


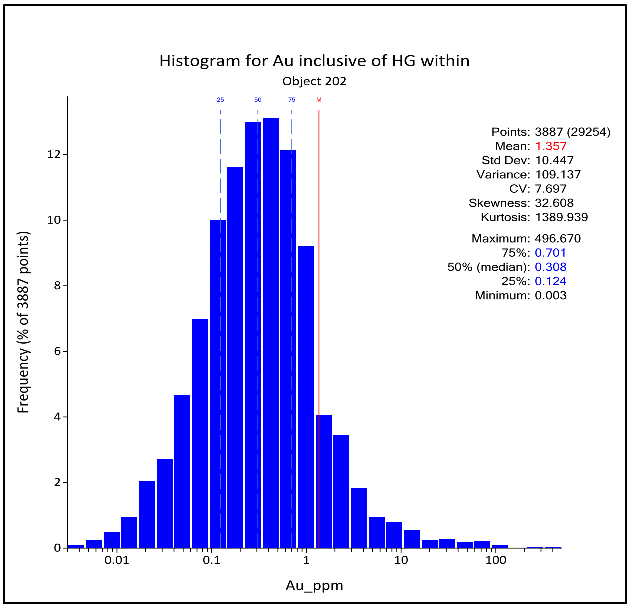


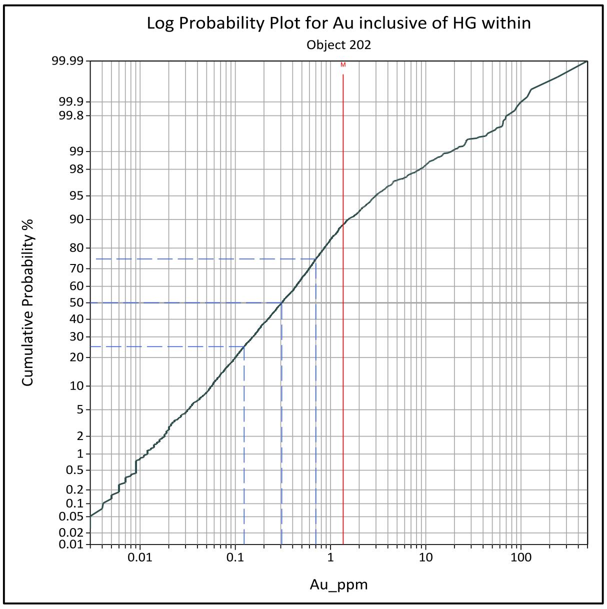
CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING STATISTICAL PLOTS - LOG HISTOGRAMS AND LOG PROBABILITY PLOTS Au (LG OBJECT 103, 104 AND 105)		
	FIGURE No. 14-48	PROJECT No. ADV-MN-00161	Date January 2019

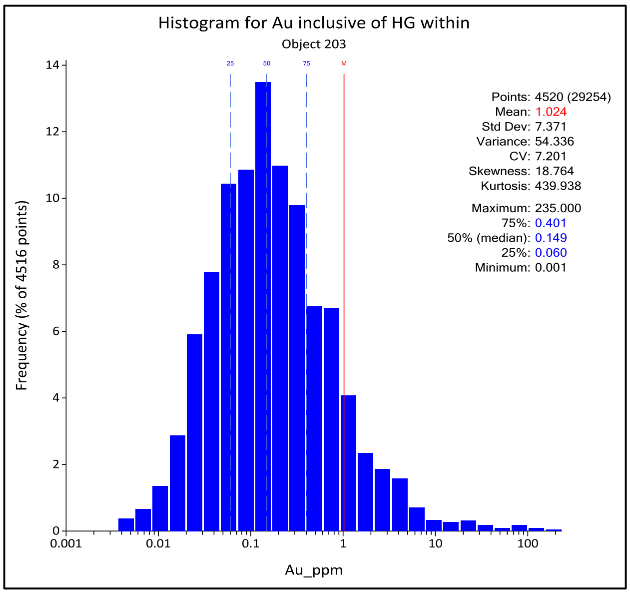
RPMGLOBAL

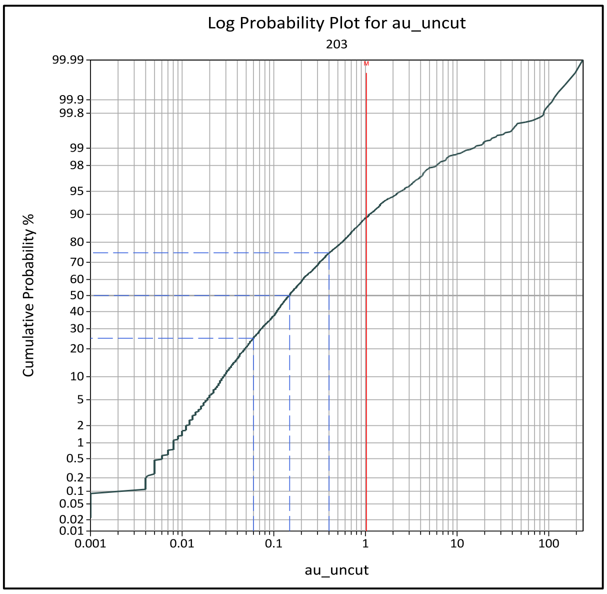












CLIENT	PROJECT
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project
	DRAWING STATISTICAL PLOTS - LOG HISTOGRAMS AND LOG PROBABILITY PLOTS Au (MG OBJECT 201, 202 AND 203)
	FIGURE No. 14-49 · PROJECT No. ADV-MN-00161 · Date January 2019

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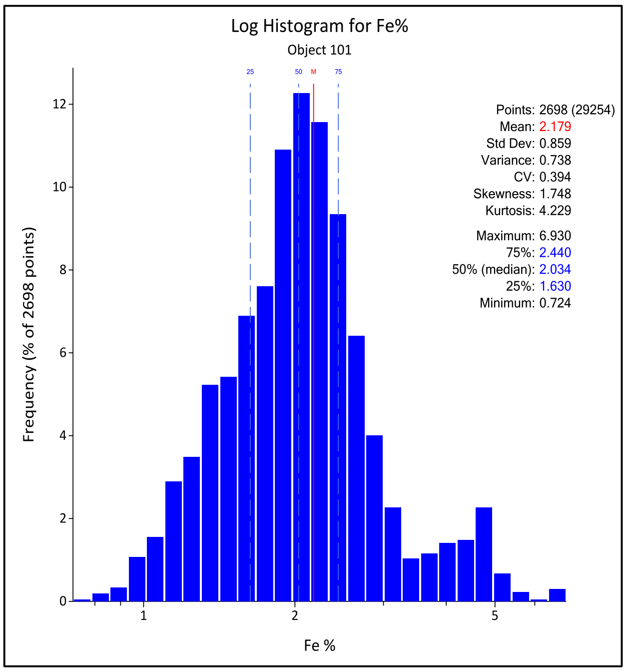

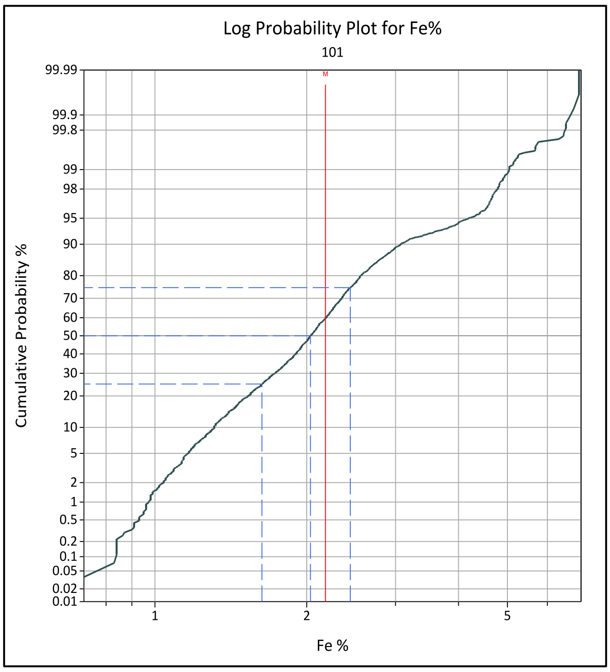

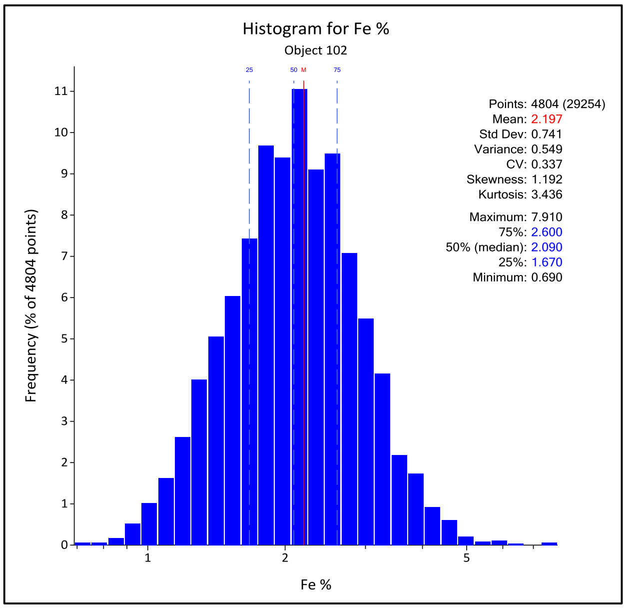

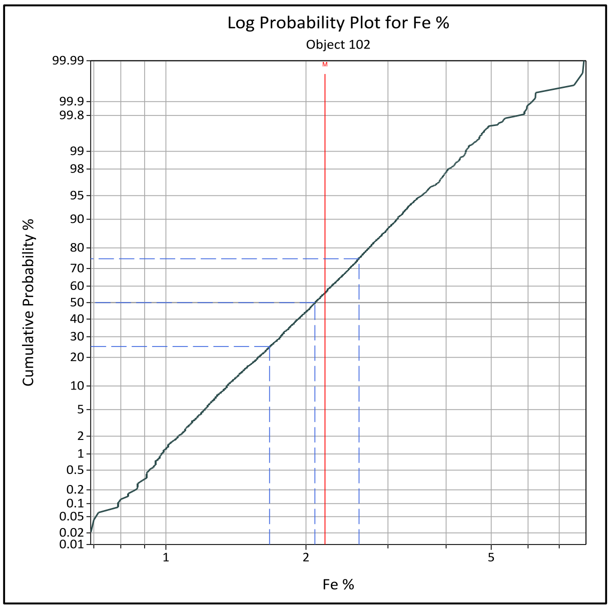

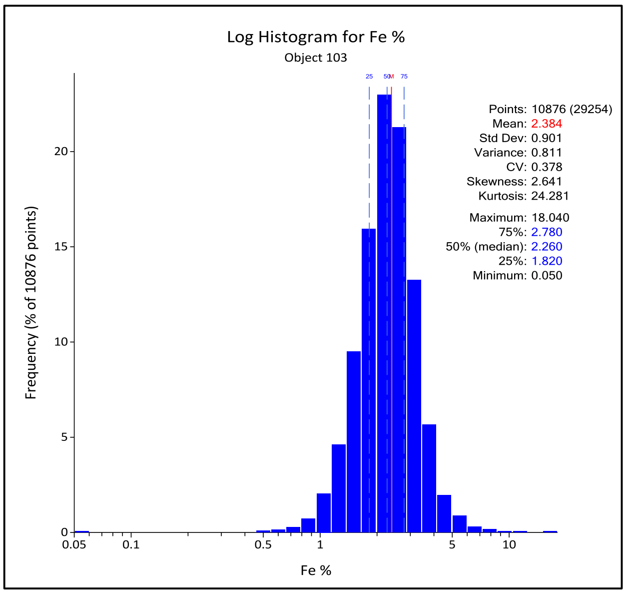

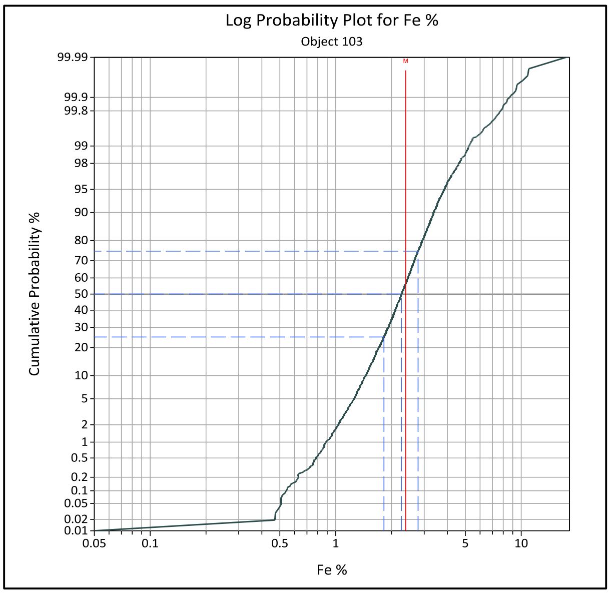

CLIENT	PROJECT
ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project
	DRAWING: STATISTICAL PLOTS - LOG HISTOGRAMS AND LOG PROBABILITY PLOTS Fe (LG OBJECT 101, 102 AND 103)
	FIGURE No. 14-50 · PROJECT No. ADV-MN-00161 · Date January 2019

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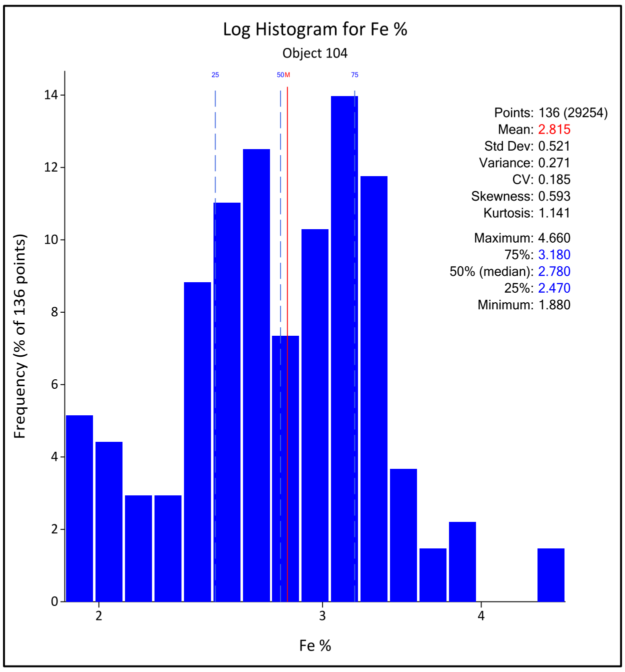

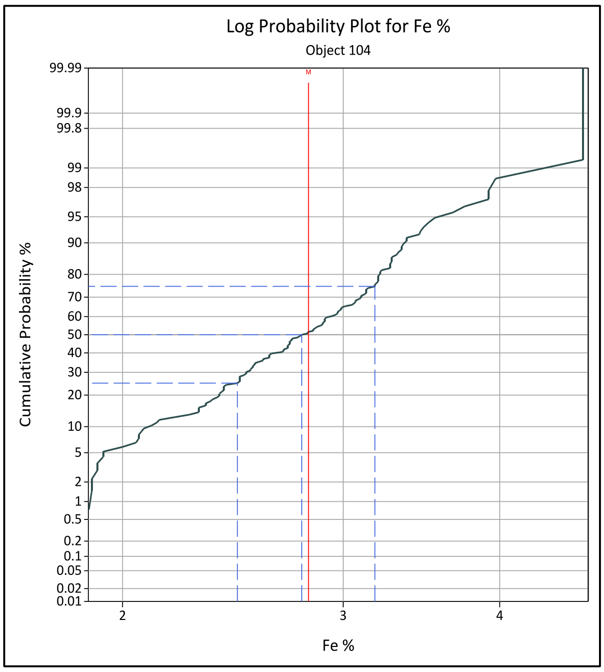

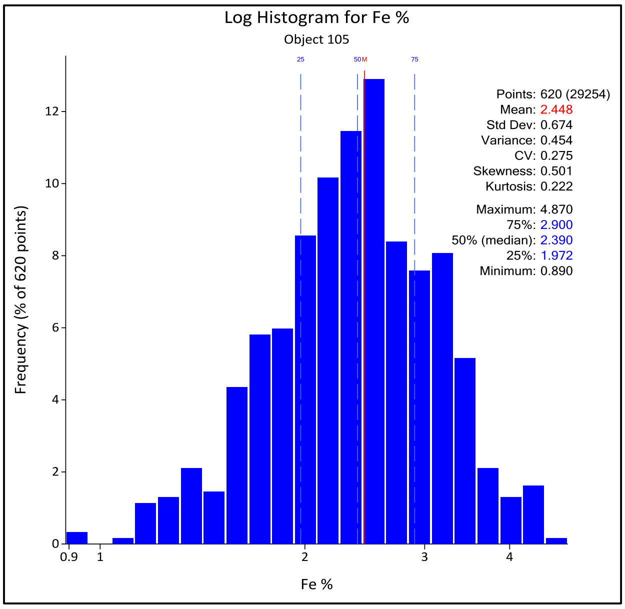

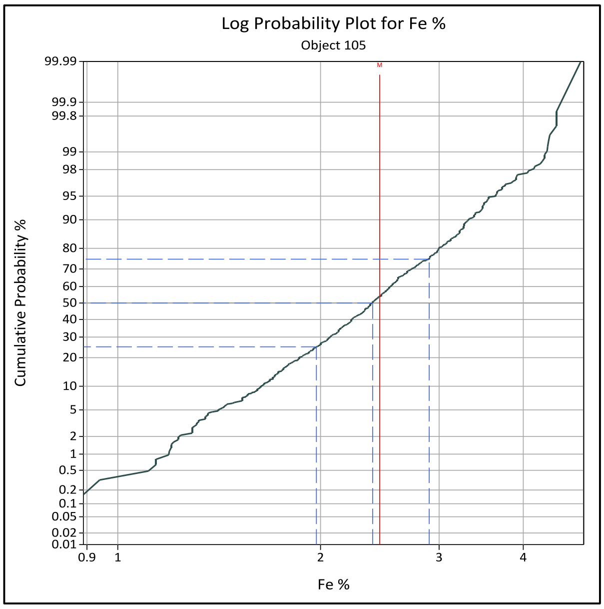

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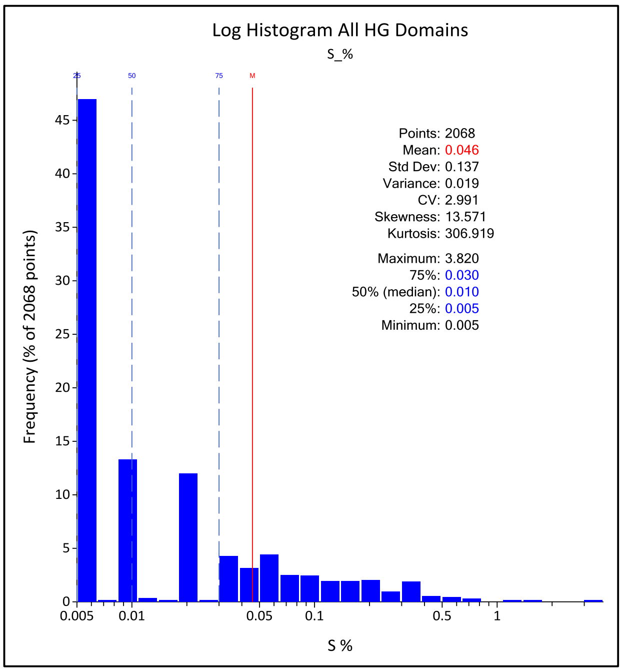
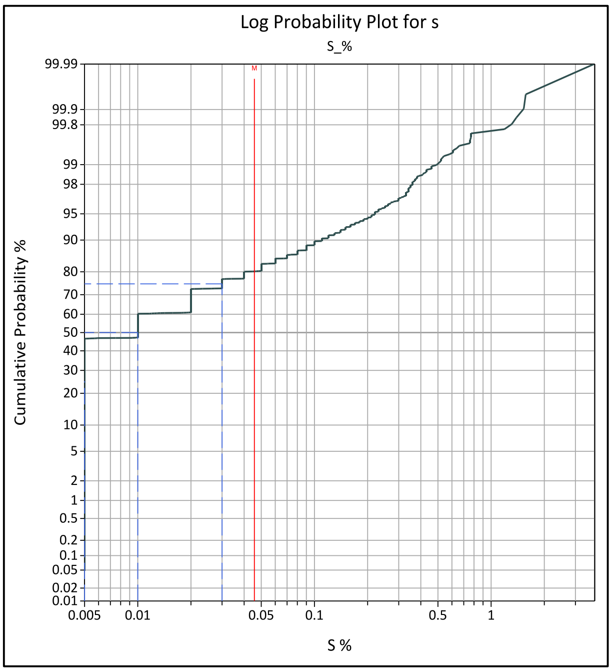
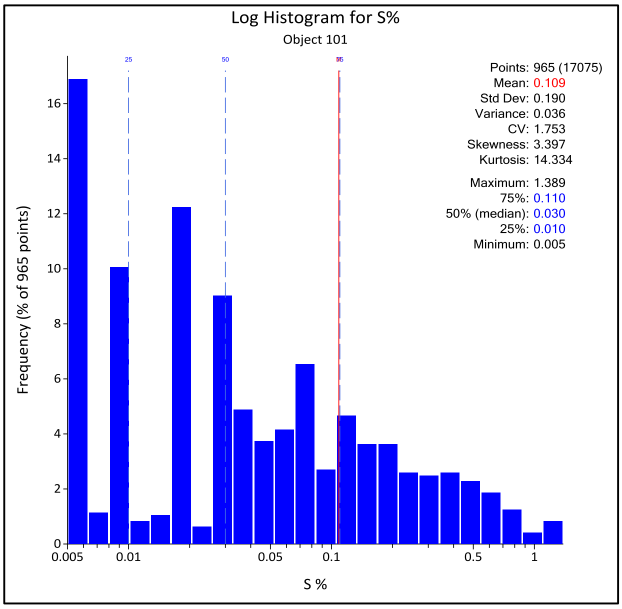
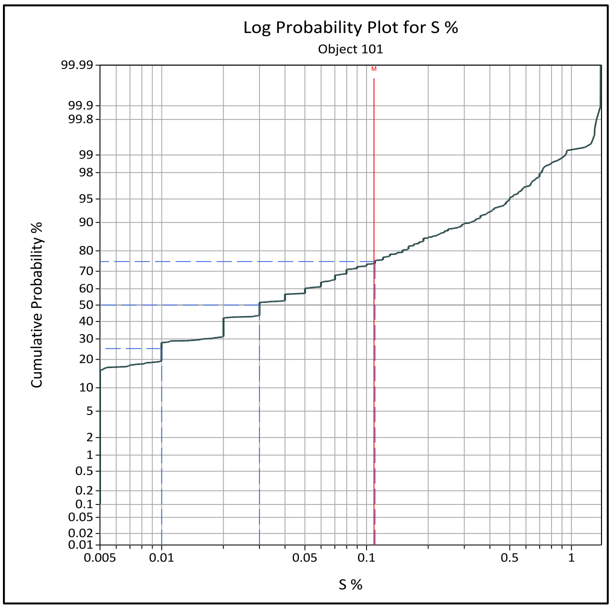
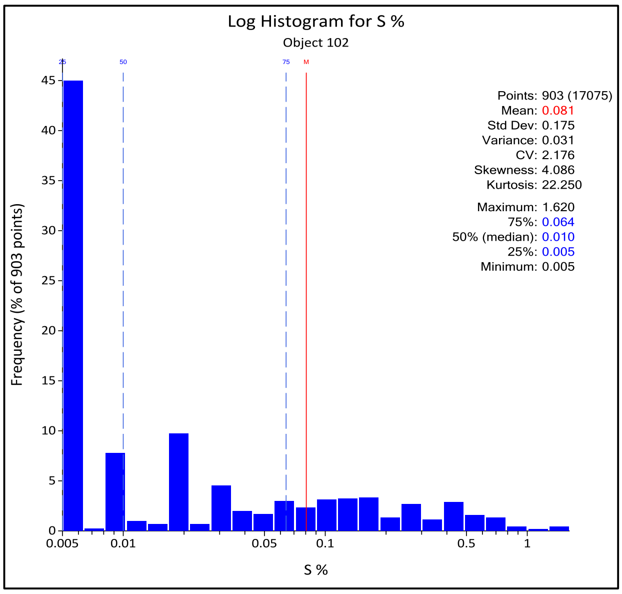
CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING STATISTICAL PLOTS - LOG HISTOGRAMS AND LOG PROBABILITY PLOTS Fe (LG OBJECT 104 AND 105)		
	FIGURE No. 14-51	PROJECT No. ADV-MN-00161	Date January 2019

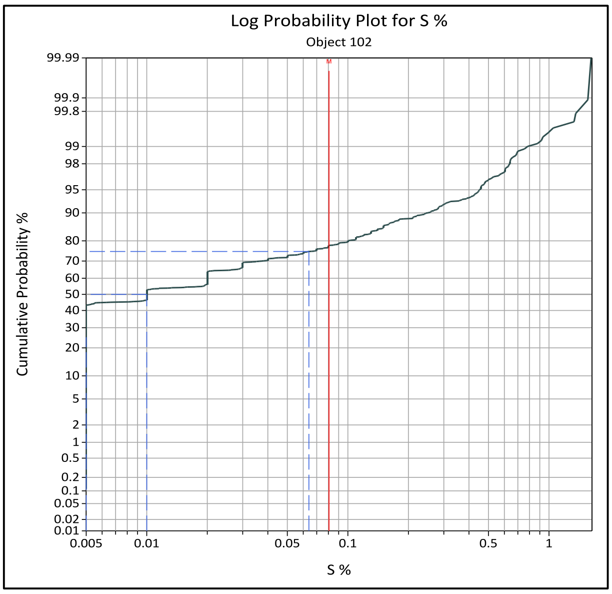






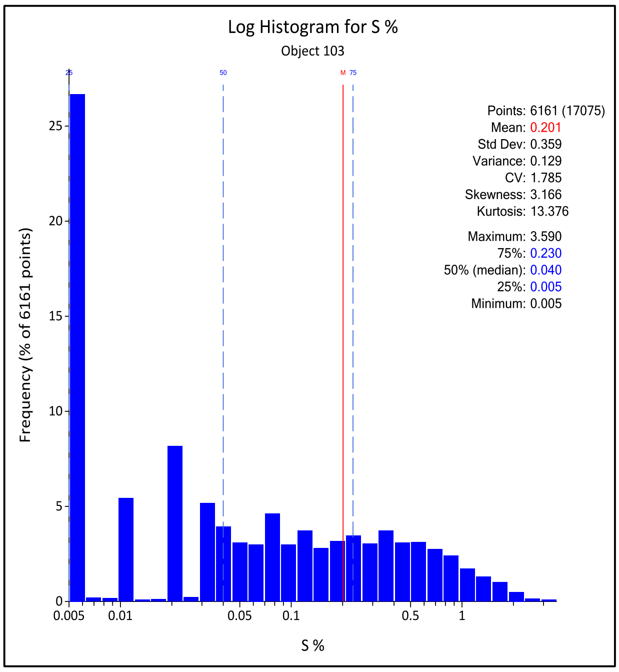


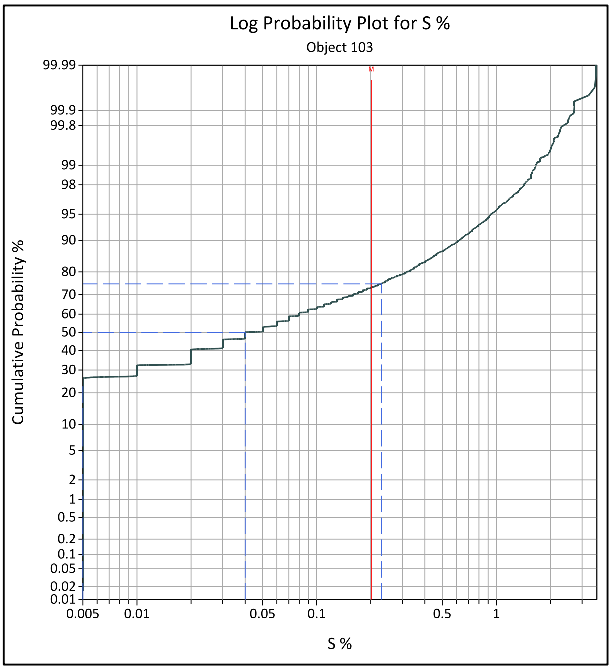


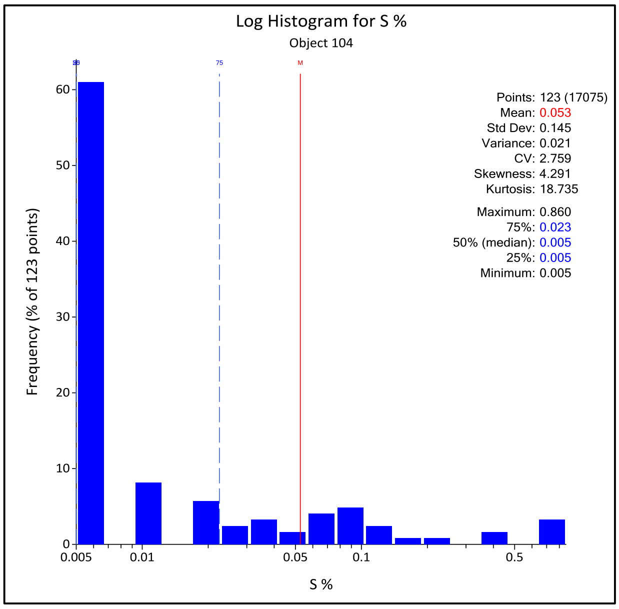


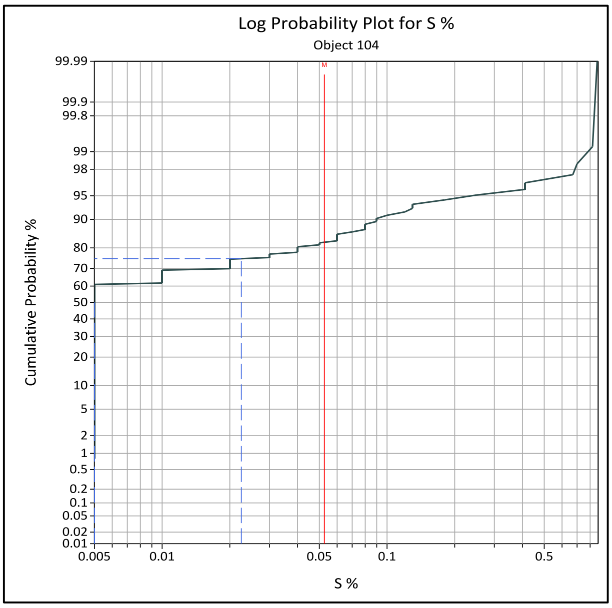
CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING: STATISTICAL PLOTS - LOG HISTOGRAMS AND LOG PROBABILITY PLOTS S (ALL HG OBJECTS 1 TO 71, LG OBJECT 101 AND 102)		
	FIGURE No. 14-52	PROJECT No. ADV-MN-00161	Date January 2019

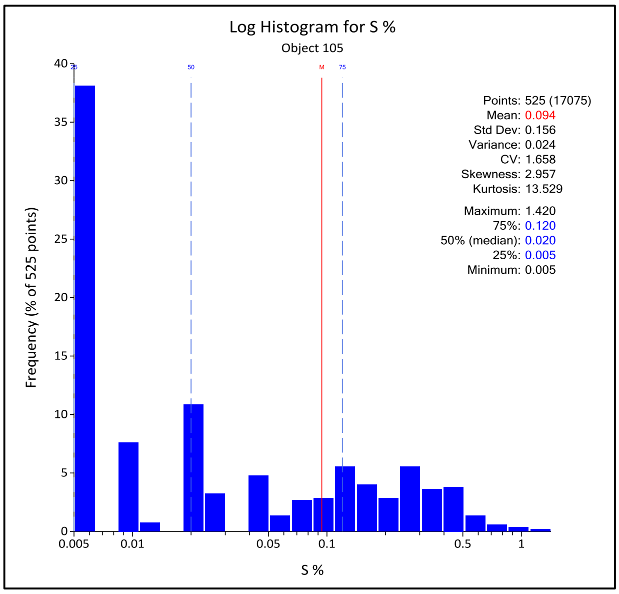
RPMGLOBAL

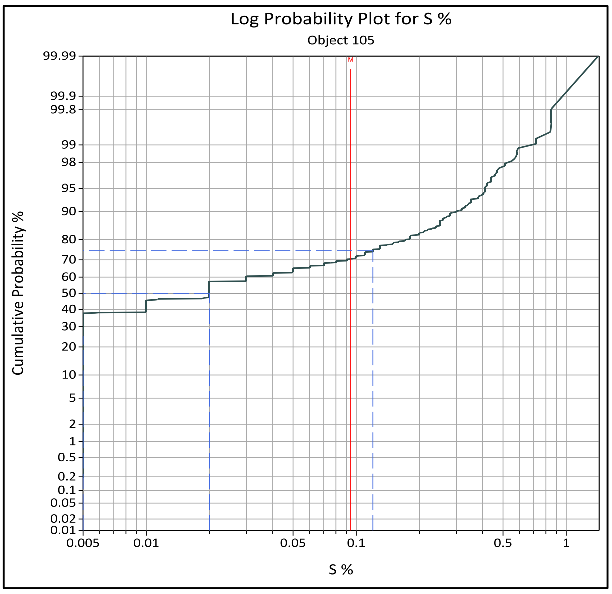












CLIENT

ERDENE
RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING STATISTICAL PLOTS - LOG HISTOGRAMS AND LOG PROBABILITY PLOTS S (LG OBJECT 103, 104 AND 105)

FIGURE No.	PROJECT No.	Date
14-53	ADV-MN-00161	January 2019

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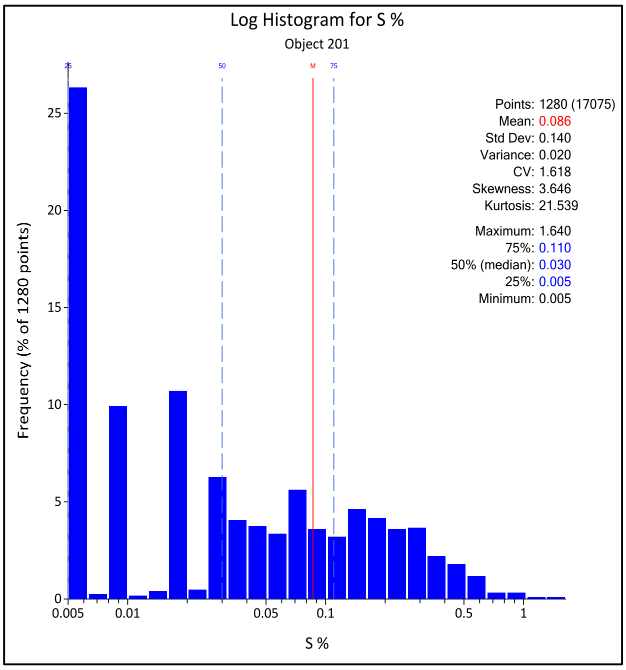

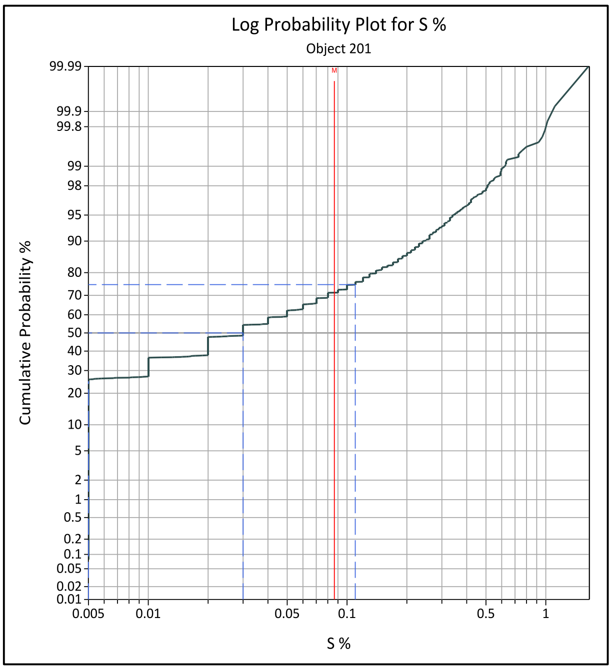

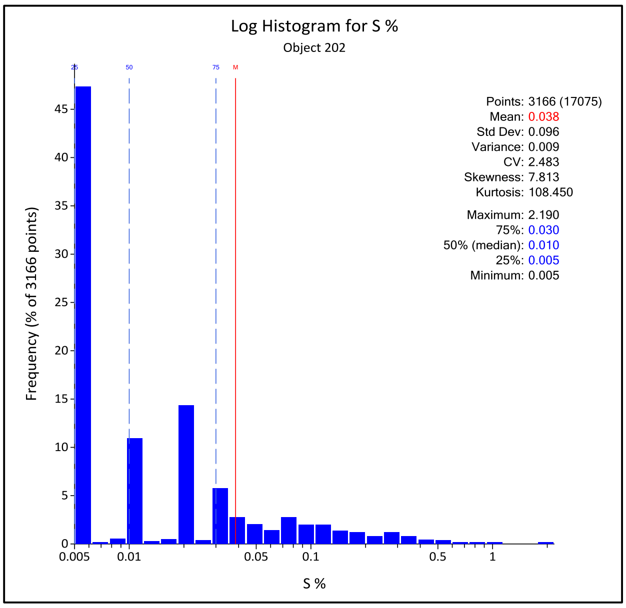

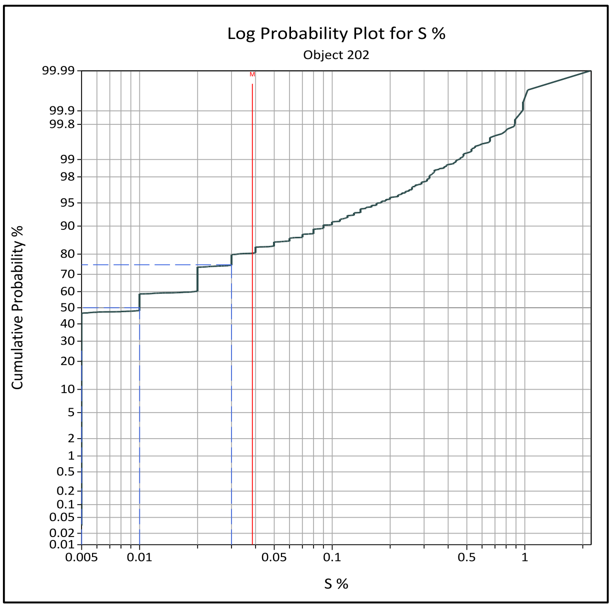

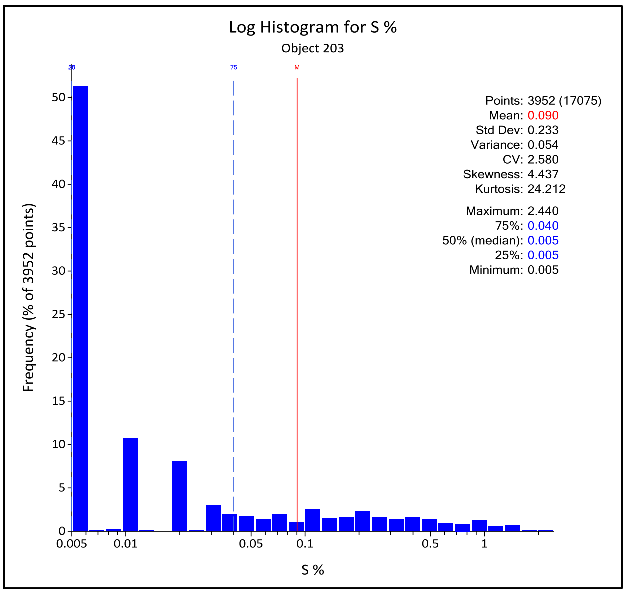

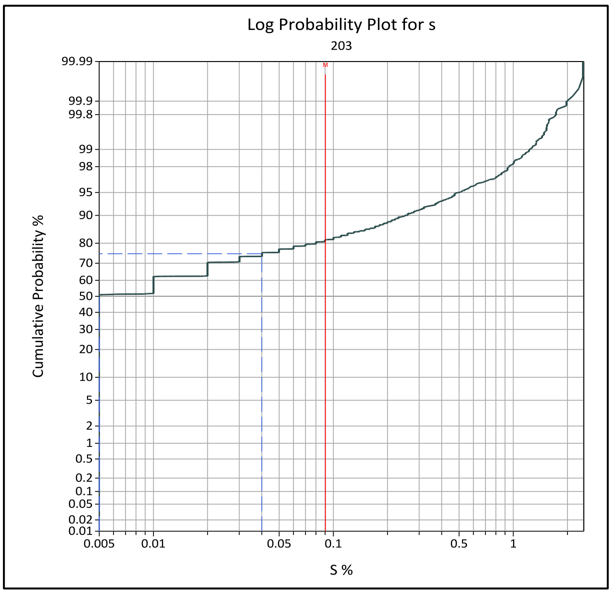

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CLIENT	PROJECT
ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project
	DRAWING: STATISTICAL PLOTS - LOG HISTOGRAMS AND LOG PROBABILITY PLOTS S (MG OBJECT 201, 202 AND 203)
	FIGURE No. 14-54 · PROJECT No. ADV-MN-00161 · Date January 2019

Correlation Analysis

Gold is the only element of economic interest currently defined and Fe and S are un-correlated with Au. Correlation matrices for all combined mineralization are shown in **Table 14-35**.

Table 14-35 Metals Correlation Matrix All Mineralization

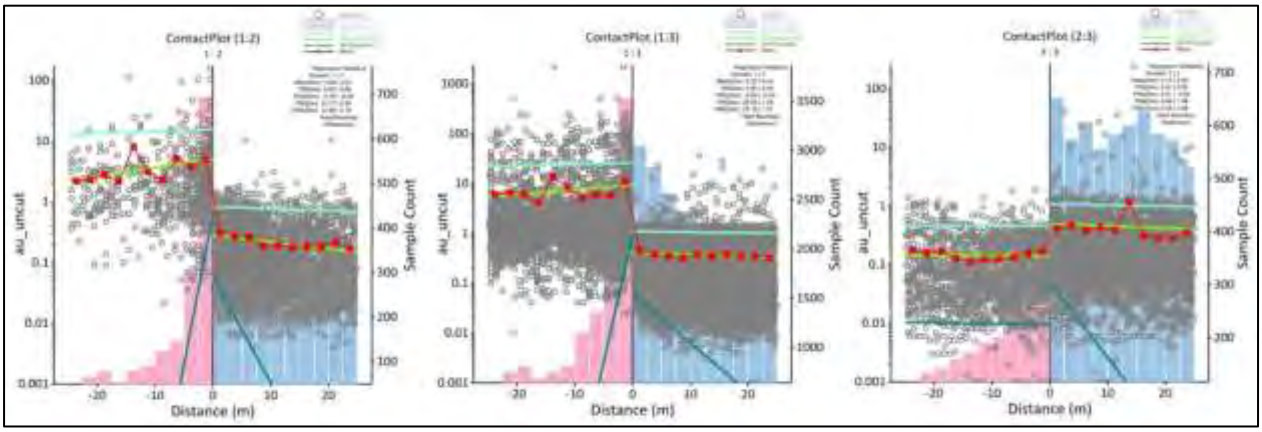
	Au g/t	Fe %	S %
Au g/t	1.00		
Fe %	0.02	1.00	
S %	-0.01	0.27	1.00

Contact Analysis

A contact analysis was performed utilising Supervisor software in order to determine whether the internal boundaries with the wireframes should be considered hard or soft. The results of this analysis are shown in **Figure 14-55**.

RPM notes that Supervisor analyses the transition across domain boundaries within both drill holes and spatially adjacent samples and compares samples at various distances across any rock type and domain to a distance of 25 m from the boundary.

Figure 14-55 Contact Analysis of High, Medium and Low-grade domains



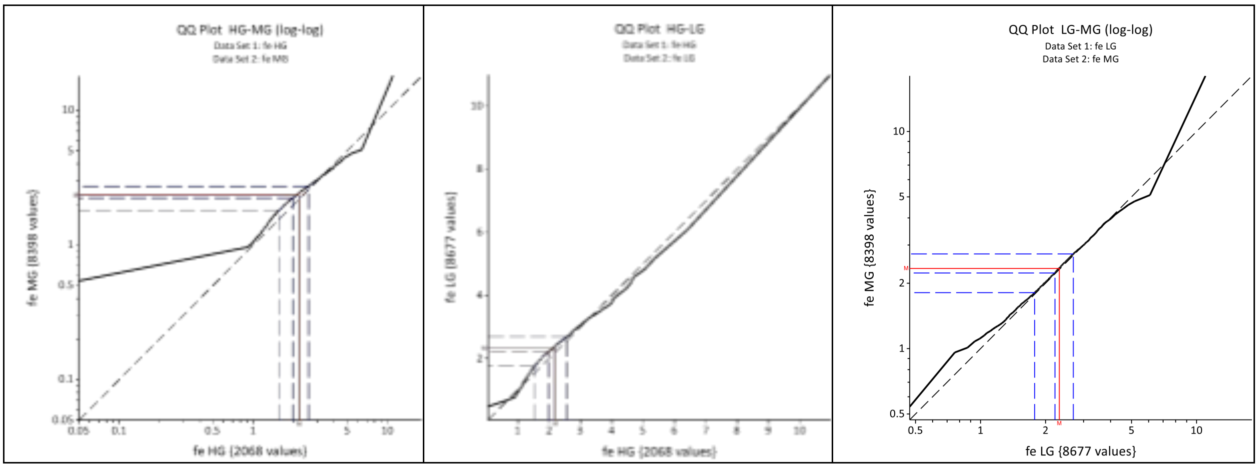
Note: domain 1 represents the HG wireframes, domain 2 the MG wireframes and domain 3 the LG wireframes.

As can be seen in **Figure 14-56** a distinct variation in grade (red line) occurs at the boundary, as such all the boundary transitions for Au (HG - MG, HG – LG and MG – LG) were considered to be hard and Insitu with the exception of the medium and low grade domains which show a somewhat gradation boundary. This analysis is consistent with the reasoning behind the wireframing strategy.

RPM also completed a QQ analysis for Fe and S grades for the different grade domains to determine whether estimation of Fe and S grades was required to be constrained on grade domain basis. Fe plots are shown in **Figure 14-56** while QQ plots for S are shown **Figure 14-57**.

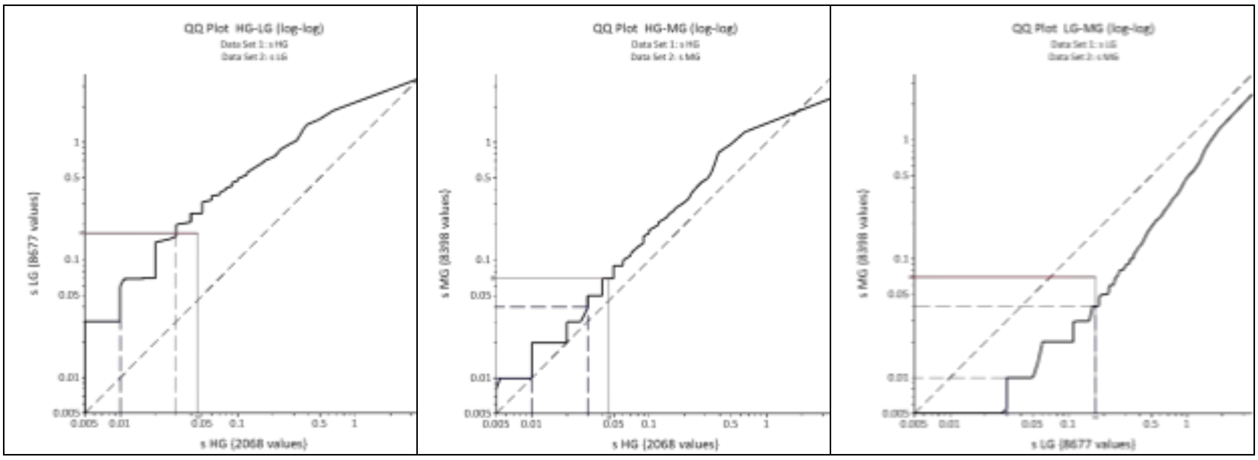
Analysis of the QQ plots indicates that Fe grades for different grade domains don't have any significant differences dependent on the grade domains. As such the compositing only carried low grade objects inclusive of high grade and medium grade domain contained within each low-grade domains data to maintain soft boundary estimation technique. However as would be expected, two quite distinct populations are observed in the S content. As such, compositing carried out for each individual object for each grade domain to maintain hard boundary status.

Figure 14-56 Fe Grade Analysis for Grade domains QQ plot



Note: HG-High grade, MG-Medium grade, LG-Low grade domains.

Figure 14-57 S Grade Analysis for Grade domains QQ plot



Note: HG-High grade, MG-Medium grade, LG-Low grade domains

While hard boundaries were observed RPM considers it suitable to utilise the data for all domains. The mineralization wireframes were treated as hard boundaries for high grade zones, that is, only assays from within each high-grade wireframe were used to estimate blocks within that high grade wireframe. The outside of the high-grade wireframes was also treated as hard boundaries, however due to the interpreted gradational mineralization between the high, medium and low grades those high grade zones falling within each medium and low grade shell were used as soft boundaries during the estimate i.e. medium and low grade domains were estimated including the high grade population as discussed in contact analysis. To avoid inappropriate smearing of grade the high-grade samples had additional high grade cuts applied as outlined in Section 14.4.5.

High Grade Cuts

Analysis of the grade distributions within drill holes indicates that the high-grade Au mineralization occurs as semi-parallel, moderately dipping vein within a small broader disseminated low grade mineralization lodes. Contact analysis discussed in Section 14.2 concluded that all the boundary transitions for Au (HG - MG, HG – LG and MG – LG) are considered to be hard however all data was utilised with differing cuts in each domain based to ensure limited smoothing a more consistent gradational model as observed in the drill holes.

Analysis of the statistics indicates that the composite data is positively skewed with a high coefficient of variation. The application of top cuts considered necessary prior to using the data for linear grade interpolation.

To assist in the selection of appropriate high-grade cuts, the composite data was imported into Supervisor software, where population histograms, log probability plots and the coefficient of variation statistics were generated per objects within each grade domains. The log histogram and log probability plots are shown in **Figure 14-58** to **Figure 14-60**.

High grade cuts were determined for all high, medium and low-grade domains using the shape of distribution on the log probability plots and population and determining the spatial location of the samples subject to high grade cuts.

The values used for the LG and MG cuts are based on identification of outliers within the population distributions in the below histograms and probability plots. These changes would normally be expected to reduce the nominal cuts as the higher-grade material contained within the lower grade domains has been removed and remaining outliers are likely to be more defined. All domains except LG domain object105 are cut at values above the 99th percentile value, object105 is cut at slightly below this value as the population distribution breaks up substantially at about 1.4 g/t.

The high grades cuts applied to the medium grade domains were based on the distribution of grades within the medium grade domains exclusive of the high grade data contained within the wholly surrounded high grade domains while the high grade cuts applied to the low grade domains were based on the distribution of grades within the low grade domains exclusive of high and medium grade domain data. These high-grade top cuts were then applied to the combined high and medium grade domain dataset for use in estimating the medium grade domains while top cuts selected from low grade domains were applied to the combined high and medium grade domain dataset for use in estimating low grade domains, this ensured appropriate treatment of the grade distribution within each grade domains.

High grade cuts were applied to Au and S while not considered required for Fe were not required; no Au cuts were applied to the remaining lodes.

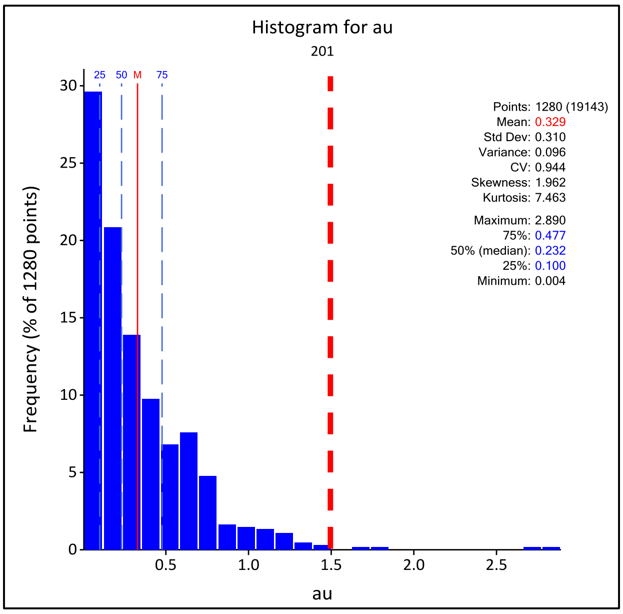
High grade cuts for Au grade applied to each grade domains were summarized in **Table 14-36** and Table **Table 14-37** for S.

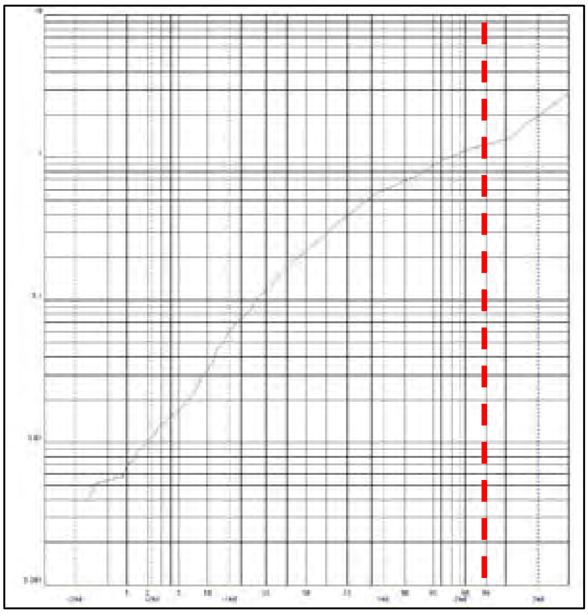
Table 14-36 High Grade Cuts Applied to Domains (Au g/t)

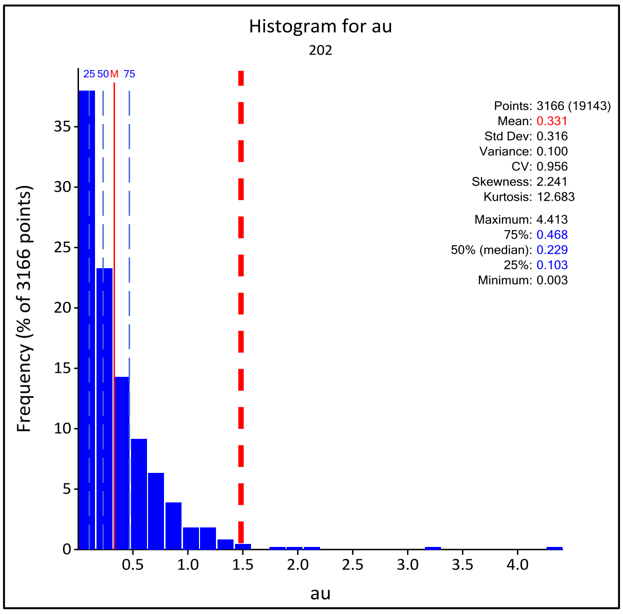
Lode	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**10**	**11**	**12**
Samples	25	24	66	122	155	80	173	87	56	59	29
Minimum	0.36	0.20	0.14	0.12	0.03	0.01	0.17	0.15	0.08	0.07	0.27
Maximum	27.08	127.17	93.85	108.52	235.00	32.74	496.67	25.91	24.87	22.31	54.27
Mean	3.18	10.80	4.92	5.86	7.41	2.65	15.54	2.43	3.32	3.49	4.15
Coeff Var	1.63	2.75	2.48	2.56	3.13	1.85	3.00	1.59	1.24	1.25	2.36
Top Cut	**8**	**90**	**28**	**100**	**90**	**25**	**250**	**20**	**16**	**18**	**11**
Number Cut	1	1	1	1	1	1	1	1	1	1	1
Cut Mean	2.41	9.25	3.92	5.79	6.47	2.56	14.11	2.36	3.16	3.42	2.66
Cut CV	0.76	2.56	1.50	2.51	2.41	1.71	2.39	1.48	1.06	1.19	0.88
Lode	**13**	**14**	**15**	**16**	**17**	**19**	**25**	**32**	**33**	**35**	**41**
Samples	194	131	15	66	30	90	17	35	41	13	23
Minimum	0.05	0.06	0.05	0.02	0.04	0.05	0.38	0.40	0.42	0.31	0.12
Maximum	169.17	93.60	194.00	47.28	14.90	35.98	72.84	33.97	105.90	159.61	150.22
Mean	5.63	5.70	15.51	3.71	2.98	3.07	9.60	5.31	5.32	13.75	17.51
Coeff Var	3.33	2.28	3.19	2.06	1.21	1.73	1.97	1.29	3.11	3.19	2.25
Top Cut	**75**	**80**	**30**	**30**	**11**	**23**	**45**	**23**	**25**	**20**	**120**
Number Cut	2	2	1	2	1	1	1	1	1	1	1
Cut Mean	4.66	5.57	4.58	3.44	2.85	2.93	7.96	4.99	3.35	3.01	16.19
Cut CV	2.38	2.19	1.61	1.83	1.13	1.55	1.70	1.13	1.54	1.75	2.16
Lode	**48**	**49**	**64**	**101**	**102**	**103**	**104**	**105**	**201**	**202**	**203**
Samples	10	35	8	2698	4804	10876	136	620	1713	3887	4520
Minimum	0.43	0.42	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	23.64	2200.00	244.62	2200.00	496.67	235.00	159.61	22.31	2200.00	496.67	235.00
Mean	4.03	72.67	32.22	2.03	1.14	0.60	1.45	0.67	3.03	1.36	1.02
Coeff Var	1.76	5.10	2.66	21.20	8.27	8.29	9.41	2.91	17.82	7.70	7.20
Top Cut	**9**	**100**	**35**	**1.5**	**1.22**	**1.5**	**1**	**1.4**	**1.5**	**1.5**	**1.5**
Number Cut	1	1	1	252	505	466	8	62	239	394	327
Cut Mean	2.57	12.67	6.02	0.43	0.41	0.25	0.18	0.32	0.54	0.49	0.34
Cut CV	1.08	1.64	1.97	1.05	0.96	1.43	1.43	1.39	0.92	0.96	1.27

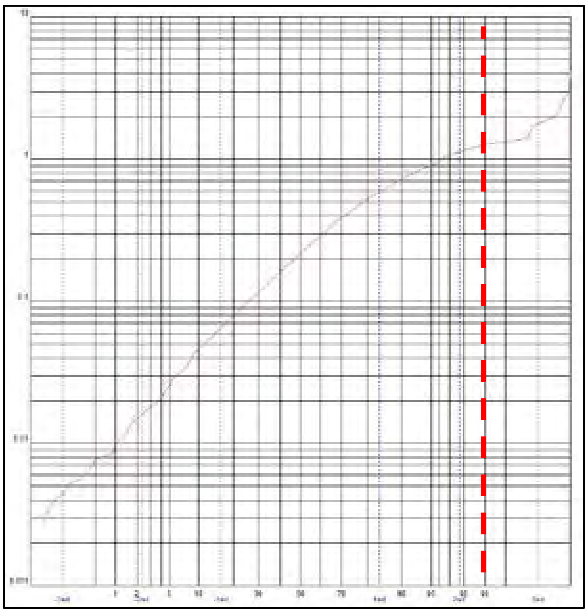
Table 14-37 High Grade Cuts Applied to Domains (S %)

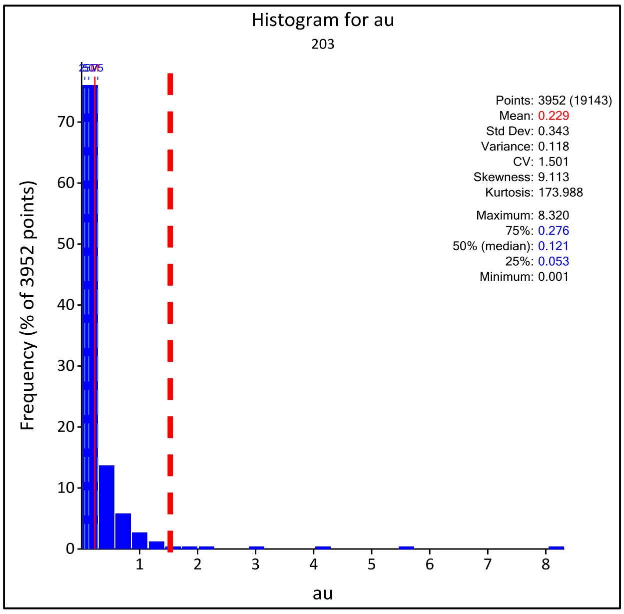
Lode	**2**	**3**	**4**	**5**	**8**	**12**	**14**	**16**	**19**	**102**	**104**	**202**
Samples	24	66	122	155	87	29	131	66	90	903	123	3166
Minimum	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Maximum	0.46	1.53	3.82	1.19	0.42	0.46	1.31	0.61	0.52	1.62	0.86	2.19
Mean	0.03	0.09	0.09	0.03	0.02	0.05	0.03	0.05	0.04	0.08	0.05	0.04
Coeff Var	3.36	2.79	3.89	3.62	2.40	2.42	3.71	2.19	2.23	2.18	2.76	2.48
Top Cut	**0.1**	**0.8**	**1**	**0.4**	**0.1**	**0.3**	**0.5**	**0.3**	**0.3**	**1**	**0.6**	**1**
Number Cut	1	1	1	1	1	2	1	3	4	5	4	2
Cut Mean	0.01	0.08	0.07	0.02	0.02	0.04	0.03	0.04	0.04	0.08	0.05	0.04
Cut CV	1.57	2.46	2.18	2.30	1.03	2.21	2.33	1.65	2.04	2.05	2.51	2.34

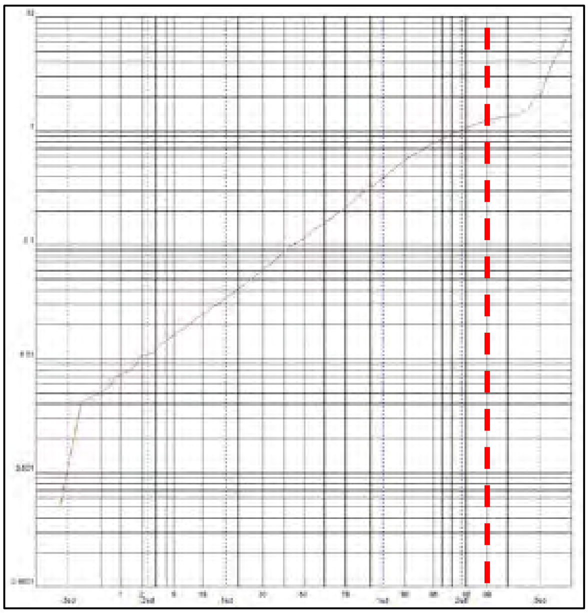












CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING HISTOGRAM AND LOG PROBABILITY PLOT FOR MEDIUM GRADE DOMAINS - Au		
	FIGURE No. 14-58	PROJECT No. ADV-MN-00161	Date January 2019

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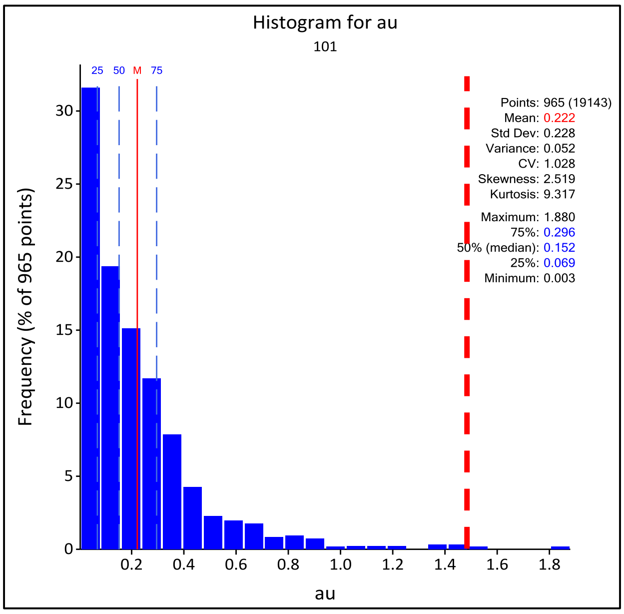
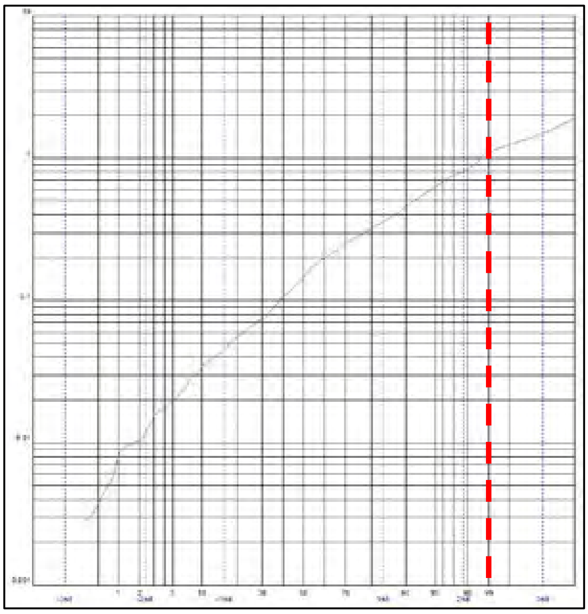
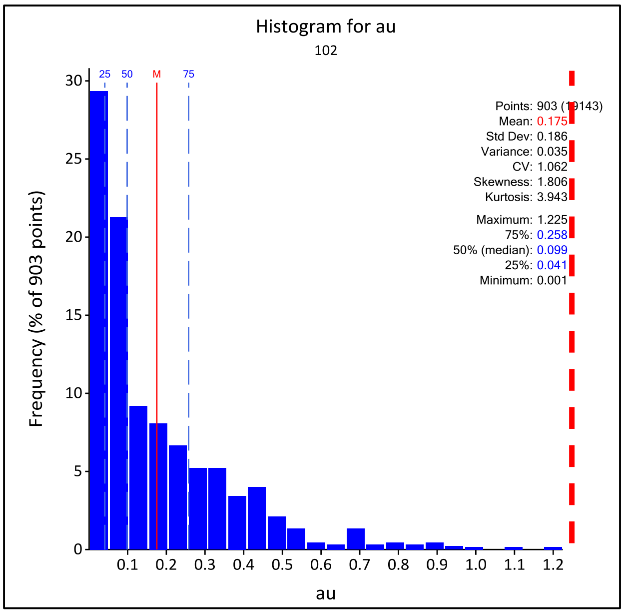
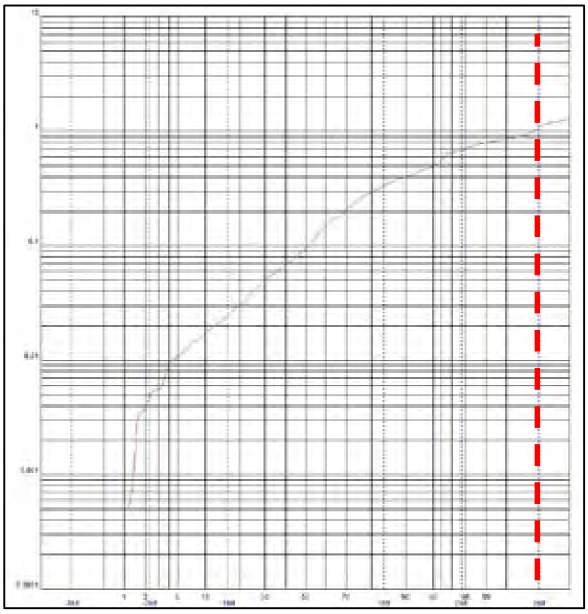
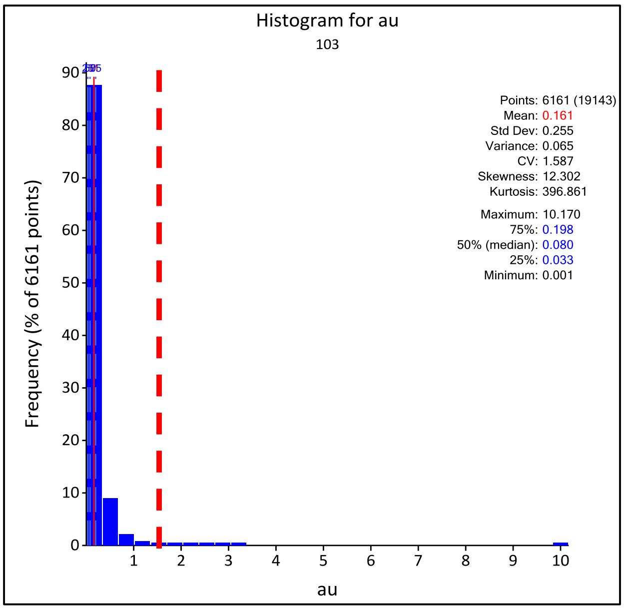
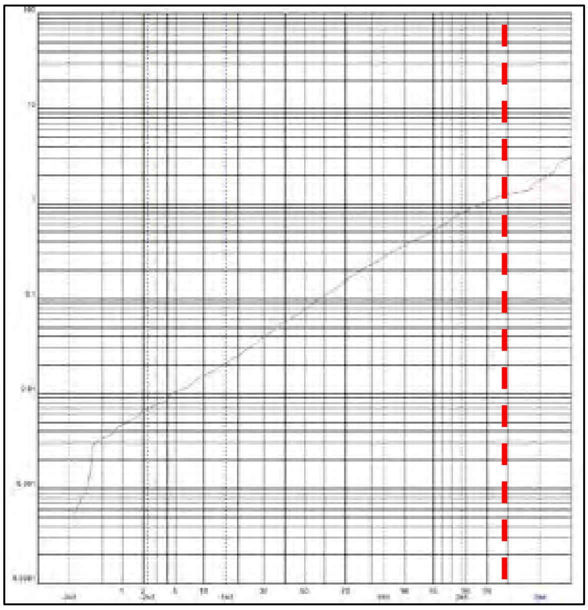






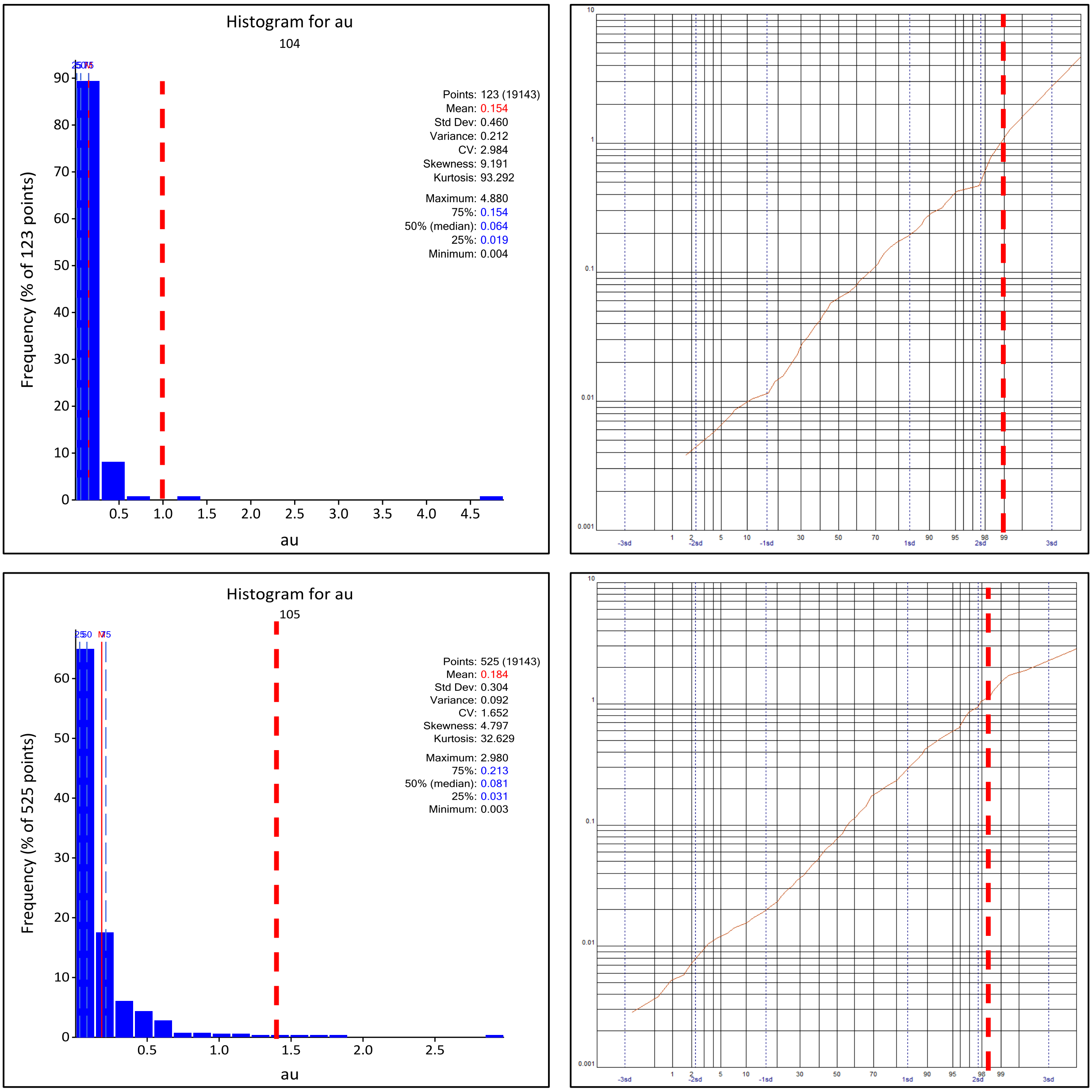






RPMGLOBAL

CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING: HISTOGRAM AND LOG PROBABILITY PLOT FOR LOW GRADE DOMAINS (OBJECT 101 TO 103) - Au		
	FIGURE No. 14-59	PROJECT No. ADV-MN-00161	Date January 2019



RPMGLOBAL

CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING HISTOGRAM AND LOG PROBABILITY PLOT FOR LOW GRADE DOMAINS (OBJECT 104 AND 105) - Au		
	FIGURE No. 14-60	PROJECT No. ADV-MN-00161	Date January 2019

14.2.6 Geospatial Analysis

Variography

Mineralization continuity was examined via variography. Variography examines the spatial relationship between composites and seeks to identify the directions of mineralization continuity and to quantify the ranges of grade continuity. Variography was also used to determine the random variability or 'nugget effect' of the deposit. The results provide the basis for determining appropriate kriging parameters for resource estimation.

RPM has interpreted experimental variograms of Au and S for High (Object7), Medium (Object202) and Low (Object103) grade domains while experimental variograms for Fe interpreted for Low grade domain (Object103). All variography was completed using Supervisor software.

The one-meter composite sample data was transformed into a normal distribution using a normal scores transformation to help identify the main directions of mineralization continuity from the skewed original data. The experimental variograms are normalised against the sample variance so that the sill value is one and the structures are viewed as ratios or proportions of the sill.

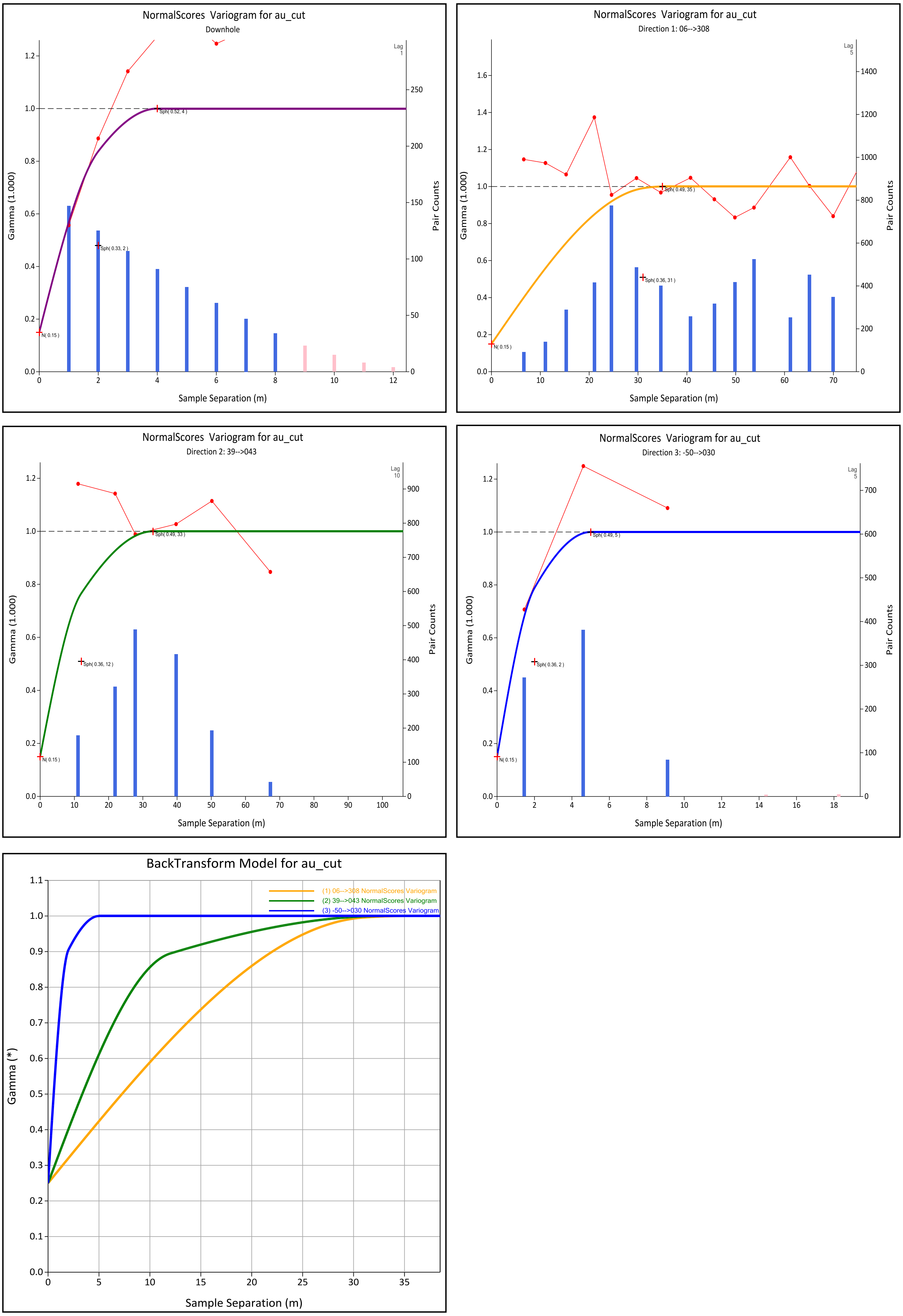
A two structured nested spherical model was found to model the experimental variogram reasonably well. The down-hole variogram provides the best estimate of the true nugget values which were 0.25 (Au), 0.22 (S) for the High-Grade domain (object 7), 0.12 (Au), 0.11 (S) for Medium Grade domain (Object 202) while nugget values for Low Grade Domain (Object103) were 0.16 (Au), 0.06 (S) and 0.06 (S) 0.26 (Fe). While the mineralization is considered highly variable, the suitability of using three domains within the interpretation is clearly evident with the relatively low nugget observed within each domain.

The orientation of the plane of mineralization was aligned with the interpreted wireframe for the main objects. The experimental variograms were calculated with the first direction aligned along the main mineralization continuity while the second direction was aligned in the plane of mineralization at 90° to the first orientation. The third direction was orientated perpendicular to the mineralization plane, across the width of the mineralization.

RPM modelled the down-hole and three orthogonal variograms of Au, Fe and S for the HG, MG and LG domains. Interpreted variogram parameters are shown in **Table 14-38**. Full details of the directional continuity analysis can be found in **Figure 14-61** to **Figure 14-67**.

Table 14-38 Bayan Khundii– Interpreted Variogram Analysis

Domain	Object	Element	Major Direction	Co	Structure 1				Structure 2			
					C1	A1	Maj/semi	Maj/Minor	C1	A1	Maj/semi	Maj/Minor
HG	7	Au	6-->308	0.25	0.53	31	2.58	15.5	0.22	35	1.06	7.00
MG	202		0-->300	0.12	0.32	17	1.89	3.40	0.56	51	1.02	1.82
LG	103		0-->290	0.16	0.46	32	1.88	4.57	0.38	66	2.13	2.64
LG	103	Fe	0-->290	0.26	0.41	55	2.04	6.11	0.33	207	2.69	3.04
HG	7	S	6-->308	0.22	0.56	28	1.40	9.33	0.22	43	1.39	6.14
MG	202		0-->300	0.11	0.64	29	1.07	2.42	0.25	112	1.06	1.87
LG	103		0-->290	0.06	0.35	35	1.00	3.89	0.59	146	1.24	5.21



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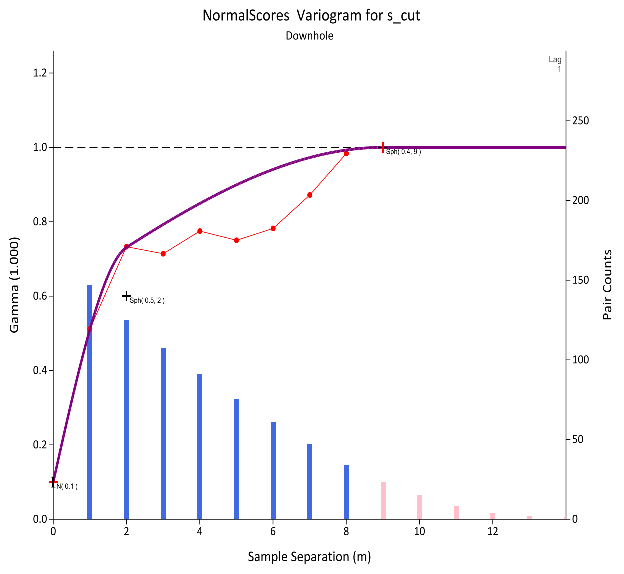
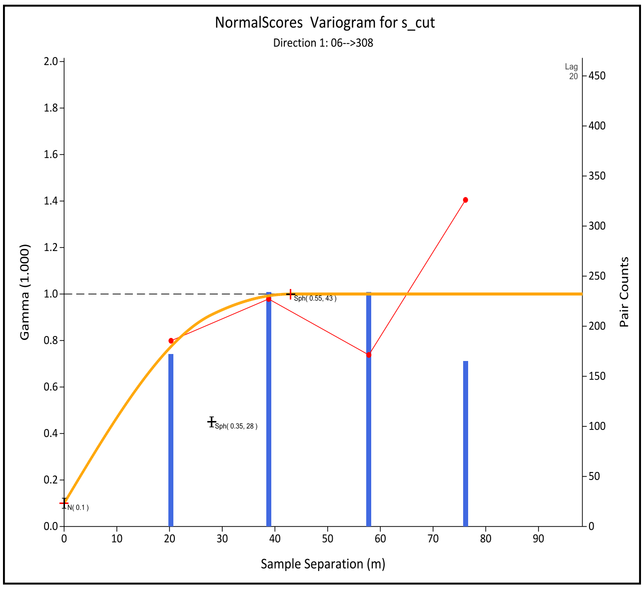
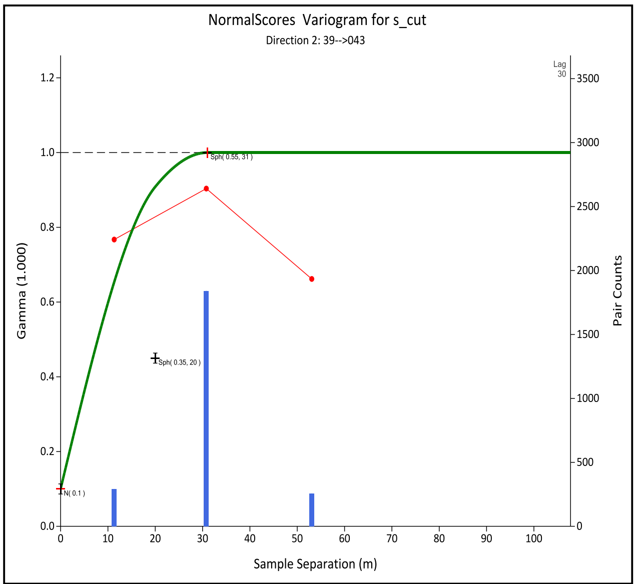
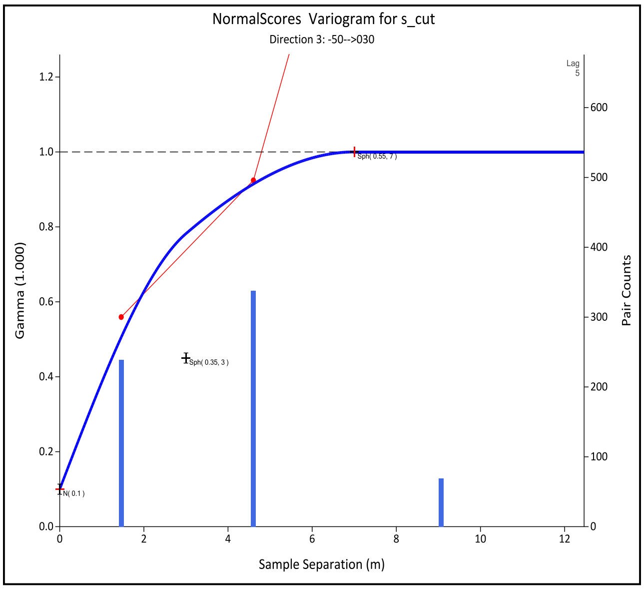
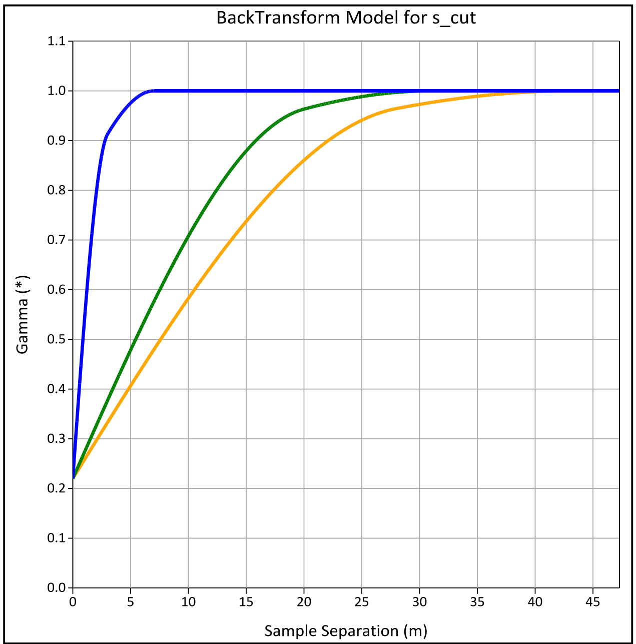
CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING VARIOGRAMS - HIGH GRADE DOMAIN, OBJECT 7 (Au)		
	FIGURE No. 14-61	PROJECT No. ADV-MN-00161	Date January 2019











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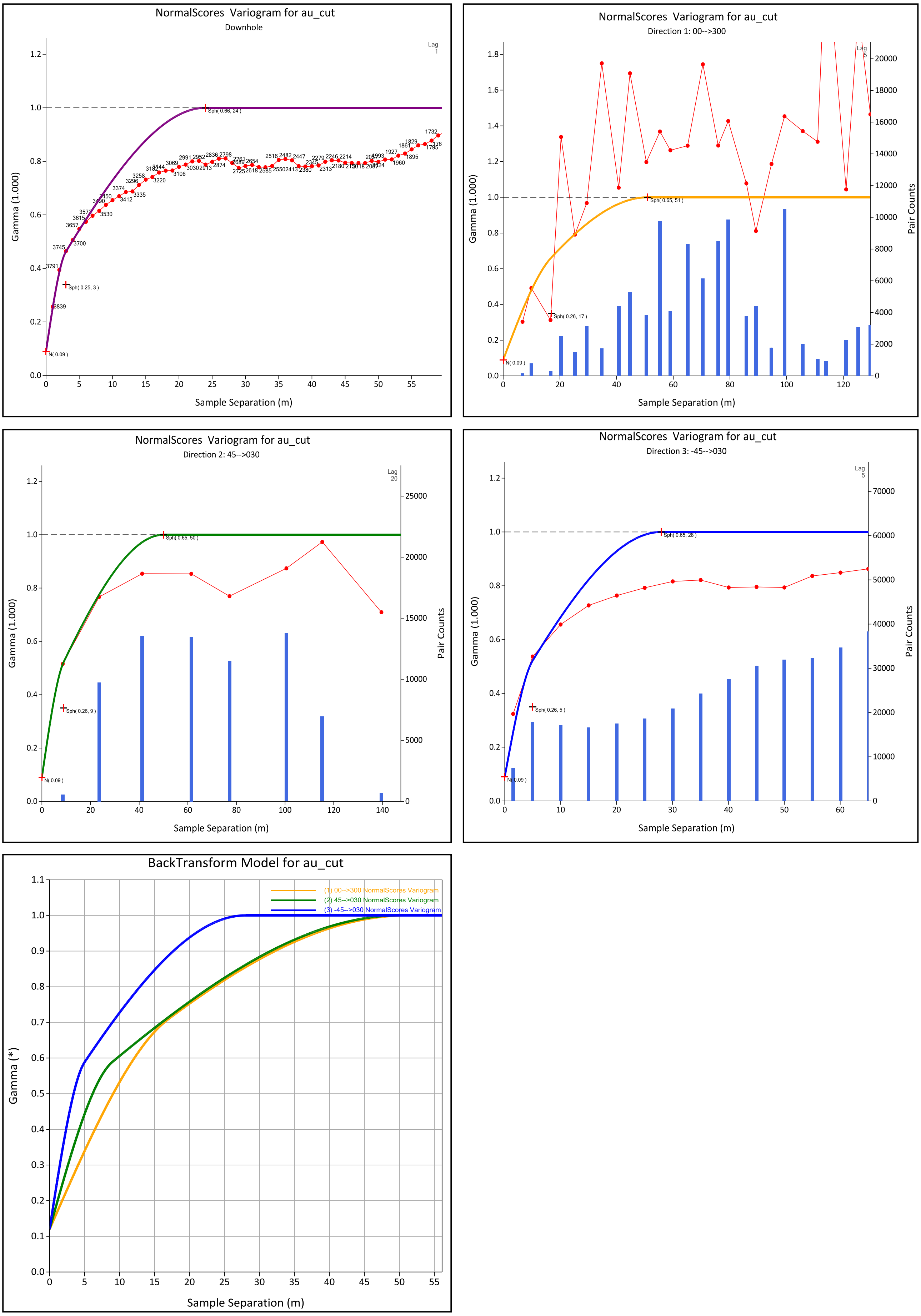
CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING: VARIOGRAMS - HIGH GRADE DOMAIN, OBJECT 7 (S)		
	FIGURE No. 14-62	PROJECT No. ADV-MN-00161	Date January 2019



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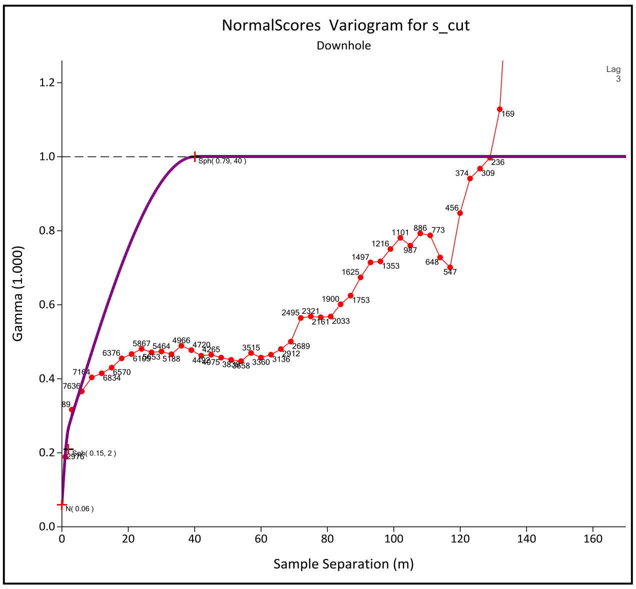
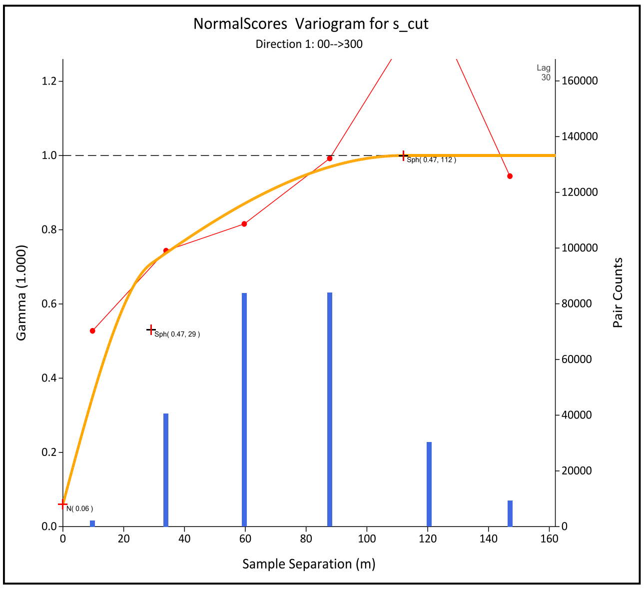
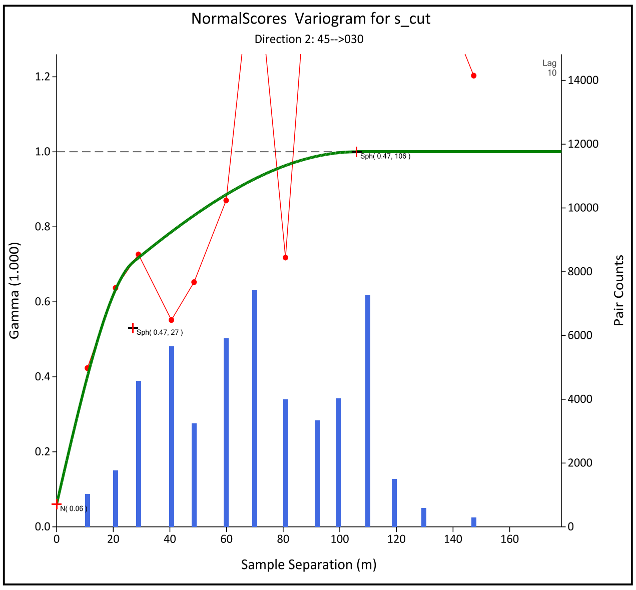
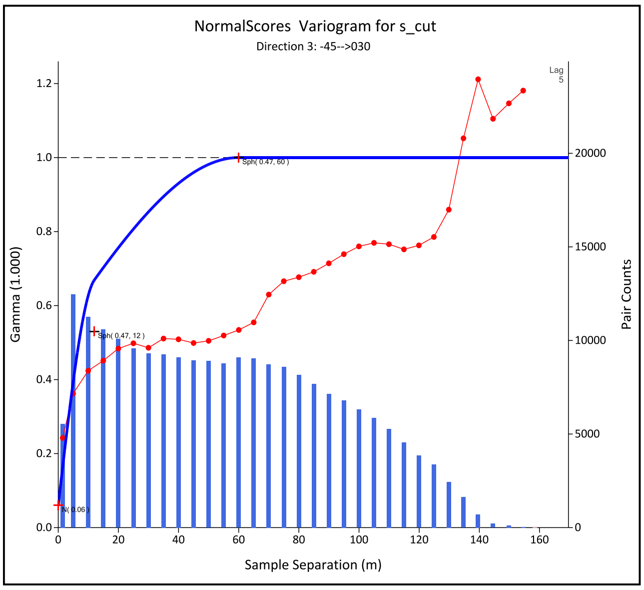
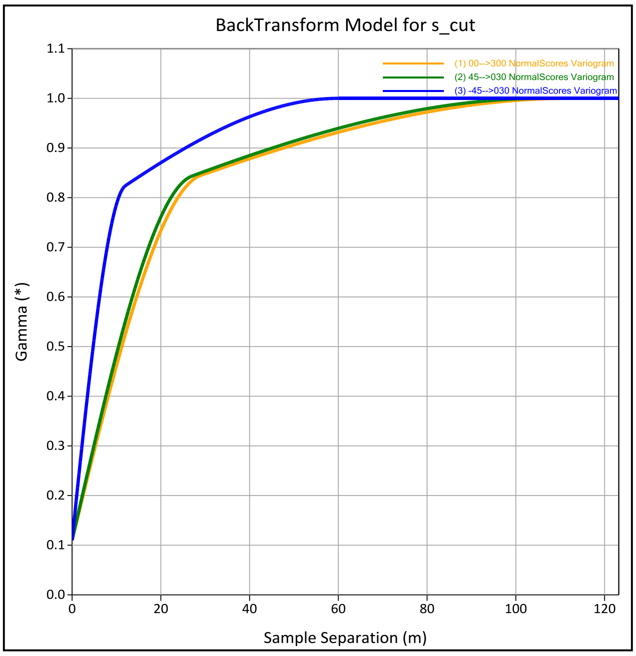
CLIENT	PROJECT
ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project
	DRAWING: VARIOGRAMS - MEDIUM GRADE DOMAIN, OBJECT 202 (Au)
	FIGURE No. 14-63 / PROJECT No. ADV-MN-00161 / Date January 2019











CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING VARIOGRAMS - MEDIUM GRADE DOMAIN, OBJECT 202 (S)		
	FIGURE No. 14-64	PROJECT No. ADV-MN-00161	Date January 2019

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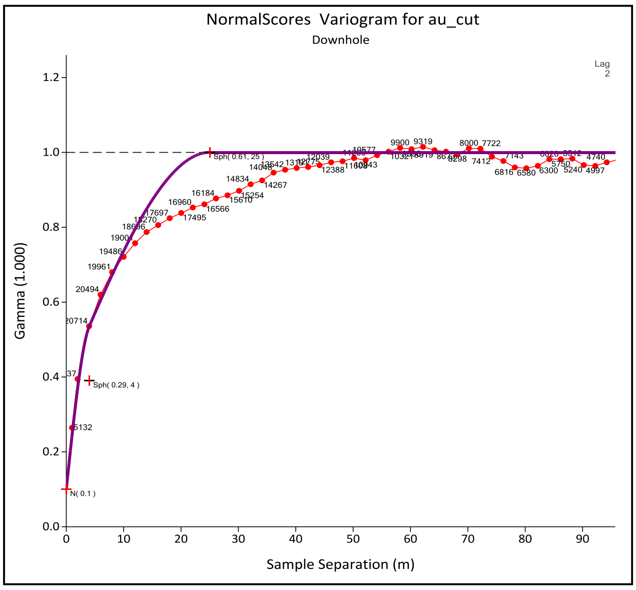

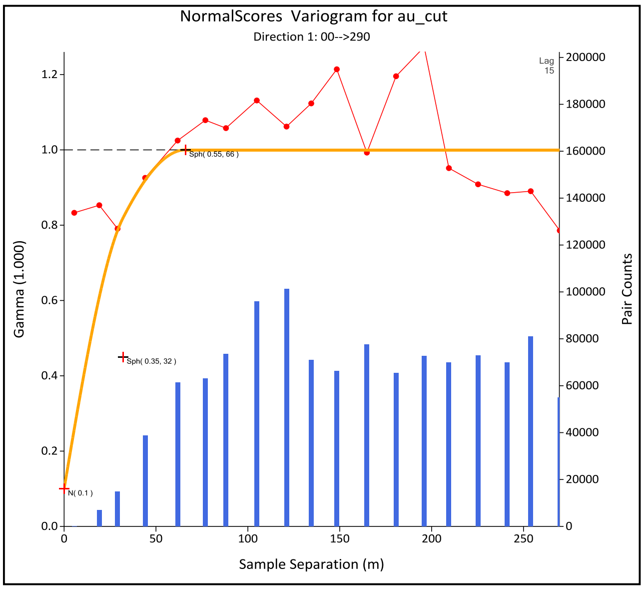

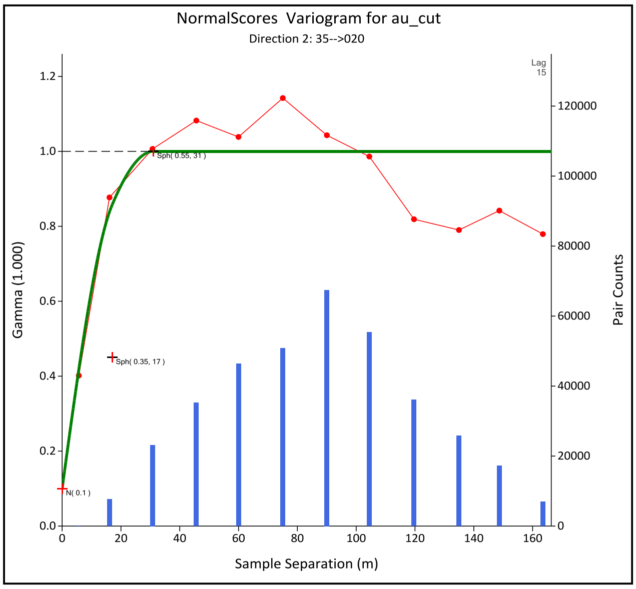

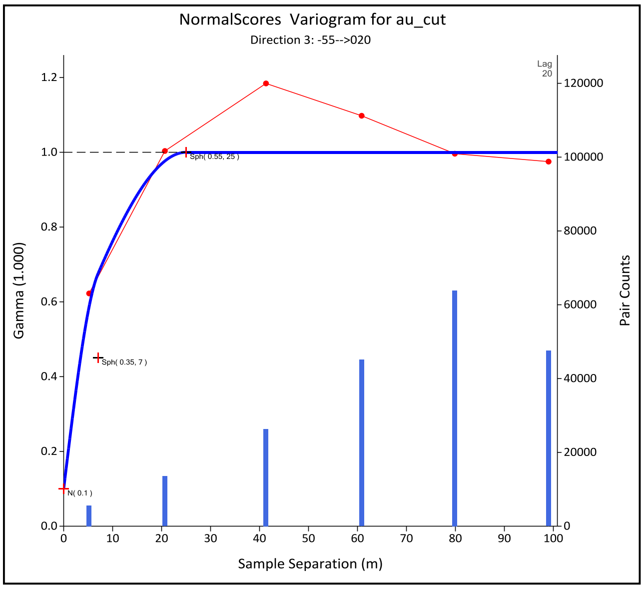

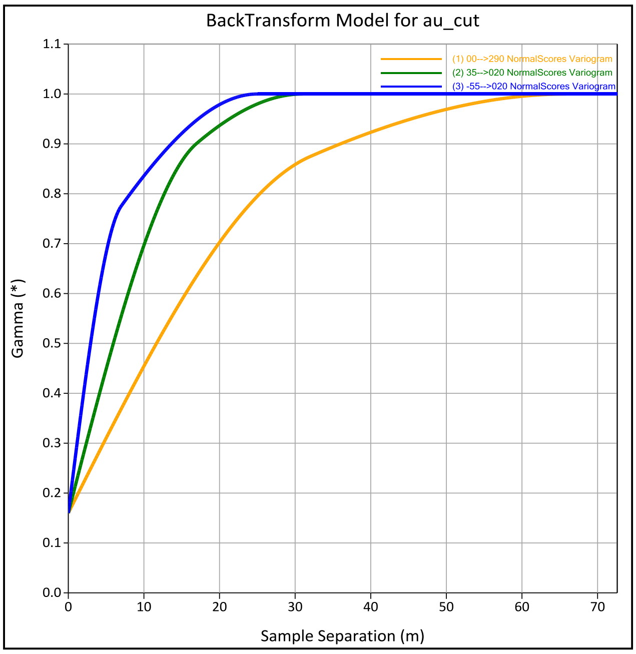

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CLIENT

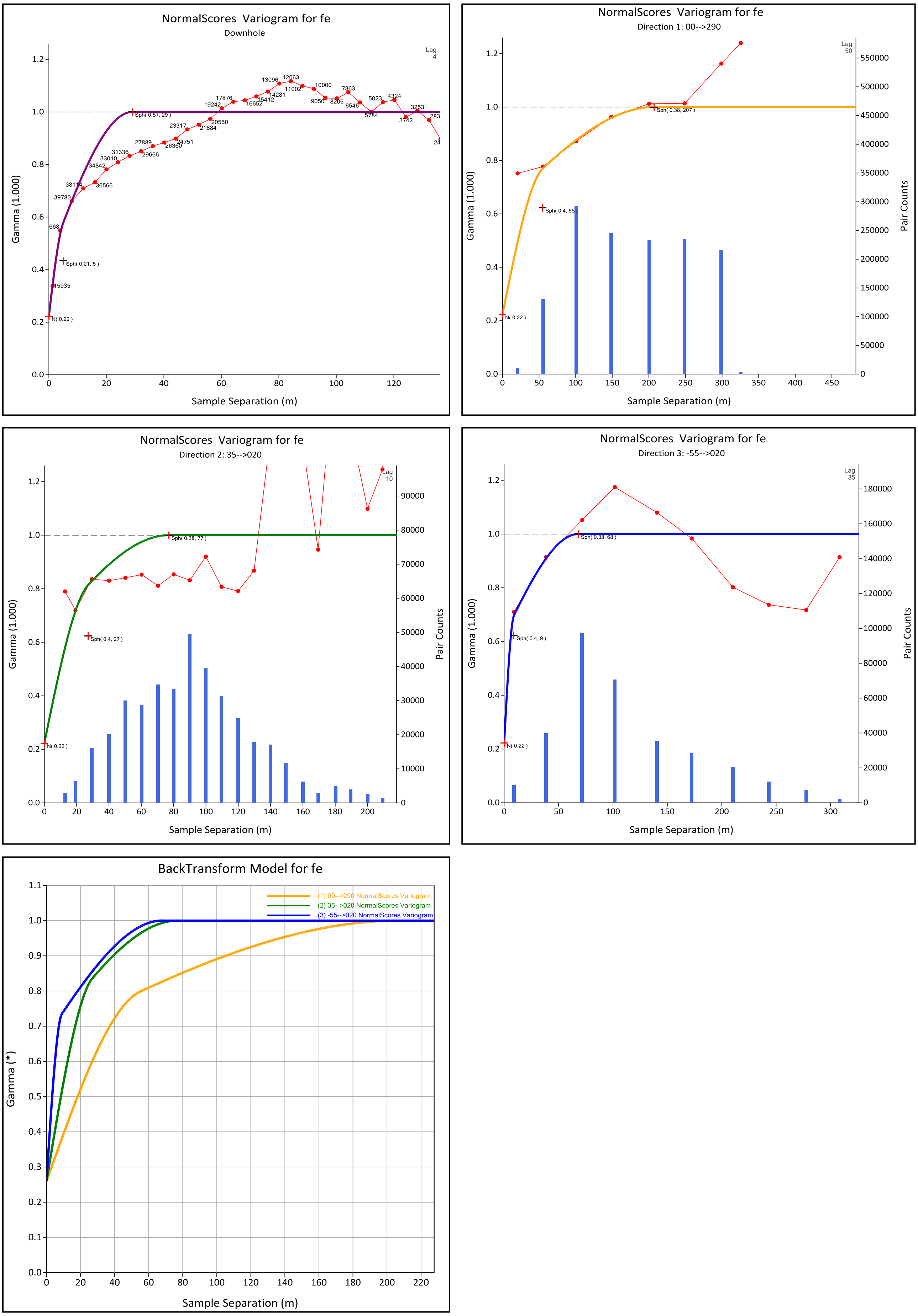
ERDENE
RESOURCE DEVELOPMENT

PROJECT

NAME
NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING
VARIOGRAMS - LOW GRADE DOMAIN, OBJECT 103 (Au)

FIGURE No.	PROJECT No.	Date
14-65	ADV-MN-00161	January 2019



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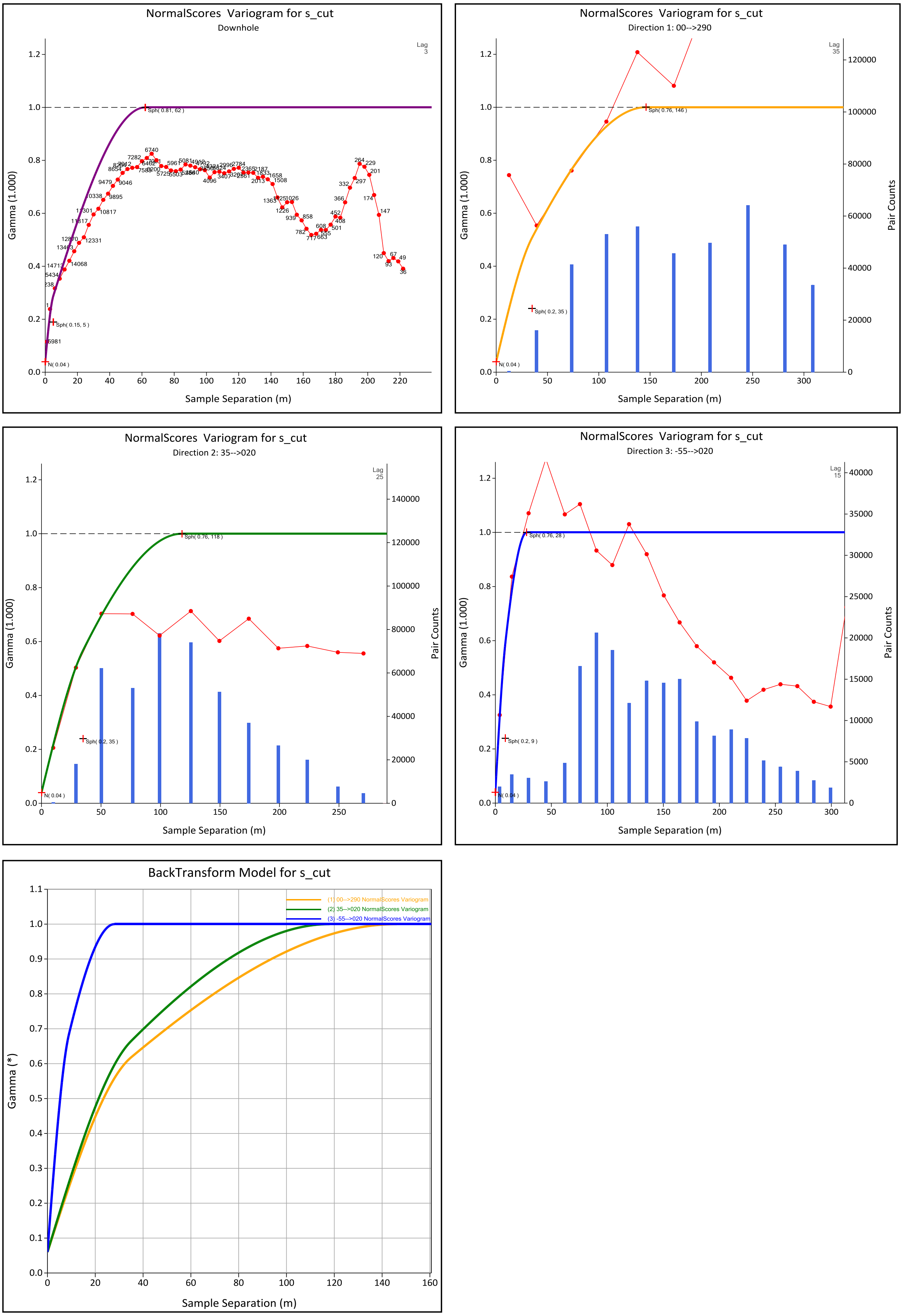
CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING: VARIOGRAMS - LOW GRADE DOMAIN, OBJECT 103 (FE)		
	FIGURE No. 14-66	PROJECT No. ADV-MN-00161	Date January 2019



CLIENT	PROJECT
ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project
	DRAWING: VARIOGRAMS - LOW GRADE DOMAIN, OBJECT 103 (S)
	FIGURE No. 14-67 / PROJECT No. ADV-MN-00161 / Date January 2019

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14.2.7 Mineral Resource estimation

Block Model

A Surpac block model was created to encompass the full extent of the mineralization known to date. Block model parameters are listed in **Table 14-39**. The block dimensions used the model were 10 m NS by 10 m EW by 5 m vertical with sub-cells of 1.25 m by 1.25 m by 0.625 m.

The parent block size was selected on the basis of kriging neighbourhood analysis (Section 14.6.3), while sub-cell was selected to provide sufficient resolution to the block model in the across-strike and down-dip directions. Block model is rotated 3000 NW to match modelled strike mineralization at Bayan Khundii.

Table 14-39 Block Model Parameters

Model Name	Bayankhundii_ok_20180910		
	Y	**X**	**Z**
Block Model Origin	4,860,300	483,500	800
Block Extents	4,861,600	485,200	1,400
Block Size (sub-blocks)	10 (1.25)	10 (1.25)	5 (0.625)
Rotation	**Bearing 300 (Rotation around Z)**		
Attributes			
au_cut_idw	Block Au grade with high grade cut using IDW		
au_cut_ok	Block Au grade with high grade cut using OK		
au_uncut_idw	Block Au grade without high grade cut using IDW		
au_uncut_ok	Block Au grade without high grade cut using OK		
fe_idw	Block fe grade without high grade cut using IDW		
fe_ok	Block fe grade without high grade cut using OK		
s_cut_idw	Block S grade with high grade cut using IDW		
s_cut_ok	Block S grade with high grade cut using OK		
s_uncut_idw	Block S grade without high grade cut using IDW		
s_uncut_ok	Block S grade without high grade cut using OK		
bd	bulk density		
class	resource classification		
est_zone_fe	resource zone for estimating fe		
license	License in or out		
mined	y or no		
pass_elements	Estimation pass number per elements		
pod	object number HG (1 to 71), MG (201 to 203) and LG (101 to 105)		
rock	rock types: 3=syenite, 2=Volcanic sequence, 1=Jurassic overburden,		
type	above topo, oxide, fresh, cretaceous		

Block Model Coding

The block model was coded with weathering type in the "type" attribute and domain codes in the "pod" attribute. **Table 14-40** below shows block model coding for the weathering type in the order they were coded, and **Table 14-41** shows block model coding for the mineralization domains.

Table 14-40 Block Model Coding – Type

Type	Order	Assignment Methodology
fr_was	1	Fresh waste ("fr_was") - blocks below overburden (jurassic_20180726.dtm) and base of oxidation surface (weathering_20180726.dtm) and outside the mineralization (pod=0)
ox_was	2	Oxide waste (ox_was) – block below overburden (jurassic_20180726.dtm) and topography (topo_bk2017.dtm) and above base of oxidation surface (weathering_20180726.dtm) and outside the mineralization (pod=0)
fr_min	3	Fresh mineralization - blocks below overburden (jurassic_20180726.dtm) and base of oxidation surface (weathering_20180726.dtm) and inside mineralization (pod>0)
ox_min	4	Oxide mineralization– block below overburden (jurassic_20180726.dtm) and topography (topo_bk2017.dtm) and above base of oxidation surface (weathering_20180726.dtm) and inside mineralization (pod>0)
air	5	Air ("air") - blocks above the topography surface (topo_bk2017.dtm)

Table 14-41 Block Model Coding – Domain

Domain	Pod	Assignment Methodology
LG	101 to 105	Low grade object– blocks within mineralized wireframe (wf_bk_au_lg_20180907_02_shell.dtm) object number (101 to 105)
MG	201 to 203	Medium grade object– blocks within mineralized wireframe (wf_bk_au_lg_20180906_05_shell.dtm) object number (201 to 203)
HG	1-71	High grade objects – blocks within mineralized wireframe (wf_bk_au_hg_20180901_15.dtm) object number (1 to 71)

Kriging Neighbourhood Analysis

Kriging neighbourhood analysis (KNA) is conducted to minimise the conditional bias that occurs during grade estimation as a function of estimating block grades from point data. Conditional bias typically presents as overestimation of low-grade blocks and underestimation of high grade blocks due to use of non-optimal estimation parameters and can be minimised by optimising parameters such as:

- block size
- size of sample search neighbourhood
- number of informing samples

The degree of conditional bias present in a model can be quantified by computing the theoretical regression slope and kriging efficiency of estimation at multiple test locations within the region of estimation. These locations are selected to represent portions of the deposit with excellent, moderate and poor drill (sample) coverage.

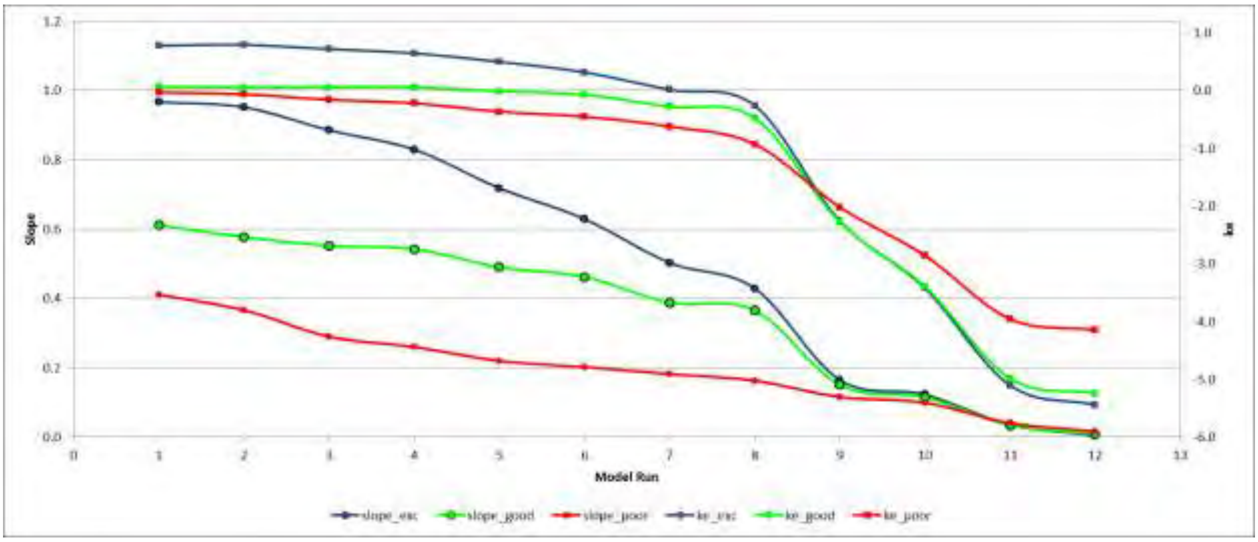
Block Size

To test the optimal block size for existing drilling at Bayan Khundii, single blocks within the high-grade object 7 were assessed at excellent, good and poor sample coverage locations. A range of block sizes were assessed for regression slope and kriging efficiency and summarised in **Table 14-42** and **Figure 14-68** below.

Table 14-42 Block Sizes Assessment

Iteration	1	2	3	4	5	6	7	8	9	10	11	12
y	5	5	10	12.5	12.5	20	25	25	50	50	100	200
x	5	5	10	12.5	12.5	20	25	25	50	50	100	200
z	2	5	5	5	10	5	5	10	10	20	20	20

Figure 14-68 Block Size Analysis Chart



Results from the chart above indicate that slope of regression and kriging efficiency 'sill' out around model runs two and four. These iterations represent block sizes of 10 m by 10 m in the Y and X planes and are deemed appropriate for the Bayan Khundii drill spacing of approximately 10-20 m by 10-20 m. RPM chose iteration three as the optimal block size for the Bayan Khundii block model as there is a higher likelihood of using a 5 m bench height in the case of any future open pit mining occurring at the Project.

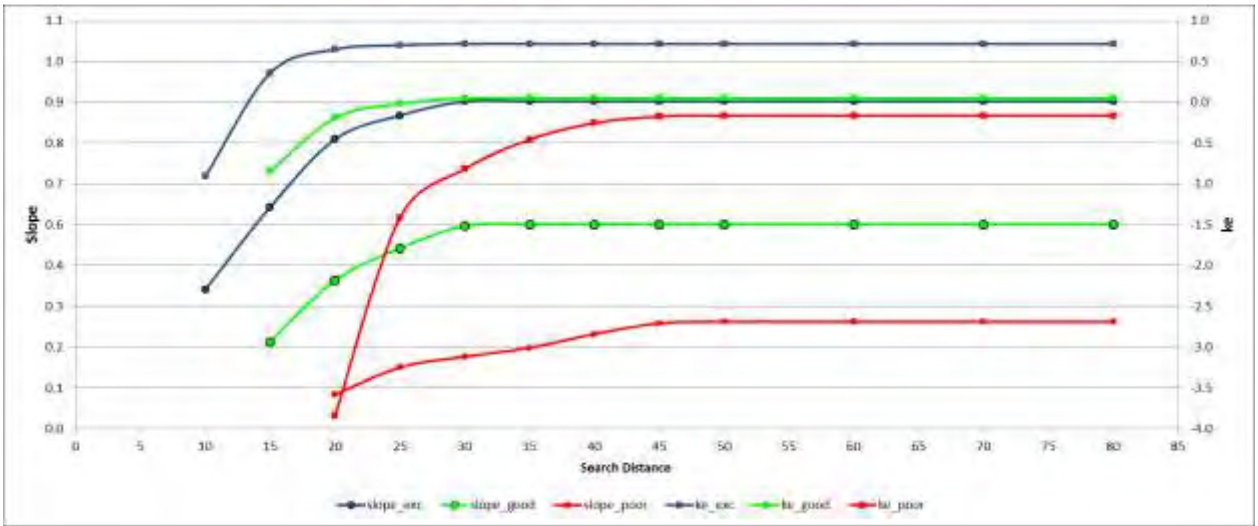
Search Distance

To test the optimal search distance, single blocks within the High-grade lode (Object 7) were assessed at excellent, good and poor sample coverage locations. A range of search radii were assessed for regression slope and kriging efficiency and summarised in **Table 14-43** and **Figure 14-69** below.

Table 14-43 Search Radii Assessed

Iteration	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Search Distance	10	15	20	25	30	35	40	45	50	60	70	80

Figure 14-69 Search Radii Analysis Chart



The results above were used as a guide in determining optimal search distance radii for each interpolation pass. The first interpolation pass adopted a search radius of 30 m. Further details are discussed in Section 14.

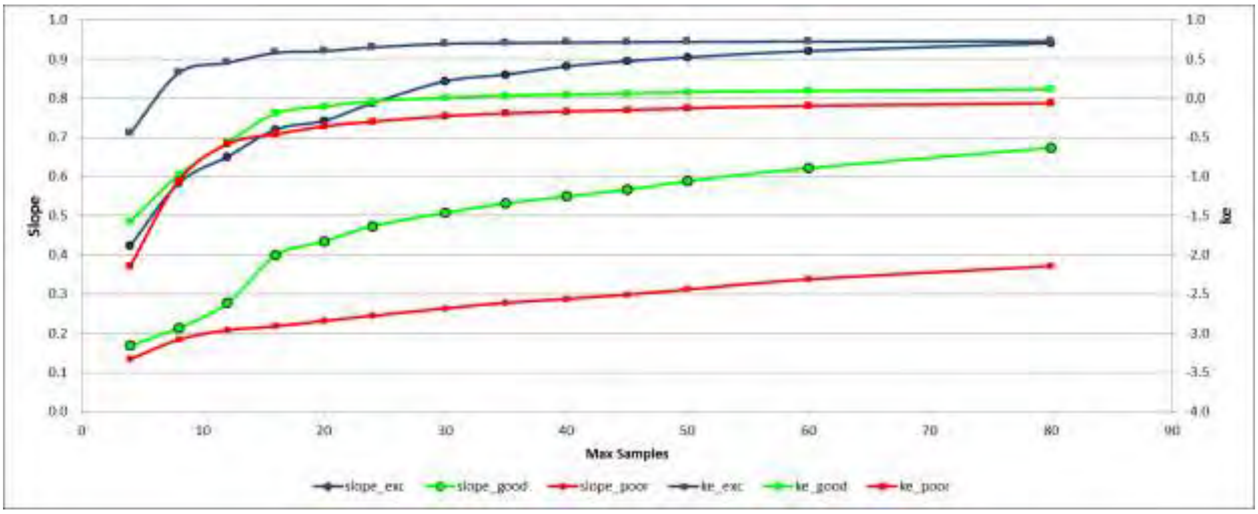
Number of Informing Samples

To test the optimal 'maximum number of samples' to be used in the kriging estimations, single blocks within the High-grade lode (Object 7) were assessed at excellent, good and poor sample coverage locations. A range of maximum samples were assessed for regression slope and kriging efficiency and summarised in **Table 14-44** and **Figure 14-70** below.

Table 14-44 Maximum Number of Samples Assessed

Iteration	1	2	3	4	5	6	7	8	9	10	11	12	13
Max Sample	80	60	50	45	40	35	30	24	20	16	12	8	4

Figure 14-70 Maximum Number of Samples Analysis Chart



Based on the results above, a maximum number of 24 samples was adopted for the estimate.

Grade Interpolation

General

The ordinary kriging ("OK") algorithm was used for the grade interpolation and the wireframes were used as a hard boundary for the grade estimation of each object. OK was selected as it results in a degree of smoothing which is appropriate for the broad disseminated nature of the mineralization and sample density.

Search Parameters

An orientated search ellipse with an 'ellipsoid' search was used to select data for interpolation. Each ellipse was oriented based on kriging parameters and were consistent with the interpreted geology. Variogram parameters of the main lodes were applied to the associated adjacent lodes. Differences between the kriging parameters and the search ellipse may occur in order to honour both the continuity analysis and the mineralization geometry. Search neighbourhood parameters were derived from the KNA analysis discussed in Section 14.6.3

Three interpolation passes were used to estimate three elements (Au, Fe and S) into the model. The search parameters are listed in **Table 14-45**.

Table 14-45 OK Estimation Parameters

Parameter	Pass 1	Pass 2	Pass 3
Search Type	Ellipsoid		
Bearing Plunge Dip	32° to 349° -30° to 45° -75° to 68°		
Major-Semi ratio Major-Minor ratio	1.0 4.0 to 6.0		
Search Radius HG	30	40	300
Search Radius MG	30	50	300
Search Radius LG	30	60	300
Minimum samples	8	4	2
Maximum samples	24	16	6
Max Sample per hole	4	4	4
Block Discretisation	3 X by 4 Y by 3 Z		
Percentage Blocks filled HG	36%	41%	23%
Percentage Blocks filled MG	72%	24%	4%
Percentage Blocks filled LG	26%	62%	12%

14.2.8 Model Validation

A five-step process was used to validate the estimation for the Project as outlined below:

- Mathematical Comparison by Domain;
- Vary Estimation methods
- Swath Plots
- Visual Inspection of the Blocks;
- Overall Validation.

In addition, given the style of deposit, and undulating nature, to verify the volume and thickness, RPM undertook an estimation of the thickness based on the intercepts from each hole using the inverse distance method.

The outcomes of the validation are presented below.

Mathematical Comparison by Domain

Mean grades of blocks compared to mean grades of input data (composites) are displayed in **Table 14-46** to **Table 14-48**. As can be observed there is generally a low relative difference observed for Medium and Low-Grade Domains however some variations are observed for High Grade domain objects. In cases where the relative difference is high, such as Au, further inspection was undertaken to determine the cause and, in all cases, it was interpreted that the variances were the result of data clustering. The result of data clustering as well as the impact of domaining and low maximum composites appears to influence the global averages, as such further analysis is required via to other validation methods.

Table 14-46 Average Composite Input v Block Model Output – HG Domain

Object	Block Model											Composites					
	Resource	Au_OK Uncut	Au_OK Cut	Fe_OK	S_OK Uncut	S_OK Cut	Au_IDW Uncut	Au_IDW Cut	Fe_IDW	S_IDW Uncut	S_IDW Cut	Num of	Au Uncut	Au Cut	Fe	S Uncut	S Cut
	Volume	g/t	g/t	%	%	%	g/t	g/t	%	%	%	Comps	g/t	g/t	%	%	%
1	14,377	5.1	2.9	2.5	0.04	0.04	4.8	3.0	2.54	0.04	0.04	25	3.2	2.4	2.6	0.04	0.04
2	7,079	13.6	11.2	2.2	0.02	0.01	13.3	11.3	2.22	0.02	0.01	24	10.8	9.2	2.2	0.03	0.01
3	38,069	4.2	3.7	2.7	0.10	0.10	4.5	4.0	2.70	0.11	0.11	66	4.9	3.9	3.1	0.09	0.08
4	47,988	5.3	5.2	2.8	0.07	0.06	5.0	5.0	2.79	0.07	0.06	122	5.9	5.8	2.9	0.09	0.07
5	58,645	6.9	6.2	2.5	0.03	0.03	6.5	5.9	2.49	0.03	0.03	155	7.4	6.5	2.5	0.03	0.02
6	28,942	3.1	3.0	2.3	0.02	0.02	3.2	3.1	2.34	0.02	0.02	80	2.7	2.6	2.5	0.02	0.02
7	68,446	13.3	12.4	2.0	0.02	0.02	13.6	12.6	2.03	0.02	0.02	173	15.5	14.1	2.1	0.02	0.02
8	61,091	2.2	2.2	2.2	0.02	0.01	2.2	2.2	2.17	0.02	0.01	87	2.4	2.4	2.0	0.02	0.02
9	68,966	1.9	1.9	1.7	0.02	0.02	1.9	1.9	1.66	0.02	0.02	149	2.1	2.1	1.6	0.02	0.02
10	33,747	2.8	2.7	2.0	0.03	0.03	2.8	2.7	2.07	0.03	0.03	56	3.3	3.2	2.2	0.02	0.02
11	50,249	3.9	3.8	2.3	0.06	0.06	3.9	3.8	2.30	0.07	0.07	59	3.5	3.4	2.2	0.07	0.07
12	16,018	3.9	2.7	2.8	0.06	0.04	3.9	2.7	2.80	0.06	0.05	29	4.2	2.7	3.0	0.05	0.04
13	135,451	4.7	4.2	1.8	0.03	0.03	4.4	4.0	1.83	0.03	0.03	194	5.6	4.7	1.7	0.03	0.03
14	74,092	5.7	5.6	1.7	0.03	0.03	5.8	5.7	1.72	0.03	0.02	131	5.7	5.6	1.6	0.03	0.03
15	7,001	10.3	3.8	2.7	0.04	0.04	11.8	4.0	2.70	0.03	0.03	15	15.5	4.6	2.7	0.03	0.03
16	29,431	3.6	3.3	1.8	0.03	0.03	3.8	3.5	1.84	0.04	0.03	66	3.7	3.4	1.6	0.05	0.04
17	15,458	3.3	3.2	2.3	0.10	0.10	3.1	3.0	2.31	0.09	0.09	30	3.0	2.9	2.2	0.08	0.08
18	4,719	3.1	3.1	2.2	0.11	0.11	3.1	3.1	2.19	0.11	0.11	4	3.1	3.1	2.3	0.12	0.12
19	41,554	2.5	2.4	2.5	0.07	0.06	2.5	2.4	2.54	0.07	0.06	90	3.1	2.9	2.6	0.04	0.04
20	34,878	1.8	1.8	1.9	0.22	0.22	1.7	1.7	1.87	0.23	0.23	30	1.9	1.9	1.7	0.11	0.11
21	4,061	2.9	2.9	1.4	0.01	0.01	2.7	2.7	1.36	0.01	0.01	8	2.9	2.9	1.4	0.01	0.01
22	5,969	12.1	12.1	1.9	0.02	0.02	12.3	12.3	1.90	0.02	0.02	4	12.5	12.5	1.7	0.02	0.02
23	1,220	22.2	22.2	3.3	0.11	0.11	22.2	22.2	3.29	0.11	0.11	2	22.2	22.2	3.3	0.11	0.11
24	2,156	2.8	2.8	2.6	0.09	0.09	3.1	3.1	2.62	0.11	0.11	3	2.9	2.9	3.1	0.10	0.10
25	6,762	9.5	8.4	2.7	0.19	0.19	9.0	7.9	2.74	0.19	0.19	17	9.6	8.0	2.8	0.24	0.24
26	7,401	5.1	5.1	2.8	0.10	0.10	5.0	5.0	2.81	0.10	0.10	13	5.8	5.8	4.3	0.11	0.11
27	5,257	3.8	3.8	2.2	0.01	0.01	3.9	3.9	2.13	0.01	0.01	8	3.6	3.6	2.6	0.01	0.01
28	1,920	2.5	2.5	2.2	0.02	0.02	2.4	2.4	2.15	0.02	0.02	12	2.2	2.2	2.3	0.02	0.02
29	1,973	1.3	1.3	2.5	0.02	0.02	1.3	1.3	2.46	0.01	0.01	4	1.3	1.3	2.3	0.02	0.02

Object	Block Model											Composites					
	Resource	Au_OK Uncut	Au_OK Cut	Fe_OK	S_OK Uncut	S_OK Cut	Au_IDW Uncut	Au_IDW Cut	Fe_IDW	S_IDW Uncut	S_IDW Cut	Num of	Au Uncut	Au Cut	Fe	S Uncut	S Cut
	Volume	g/t	g/t	%	%	%	g/t	g/t	%	%	%	Comps	g/t	g/t	%	%	%
30	706	26.1	26.1	3.9	0.02	0.02	26.1	26.1	3.90	0.02	0.02	1	26.1	26.1	3.9	0.02	0.02
31	9,052	3.2	3.2	1.6	0.04	0.04	3.2	3.2	1.56	0.05	0.05	4	3.2	3.2	1.6	0.04	0.04
32	76,162	5.1	4.9	2.0	0.10	0.10	4.8	4.5	1.99	0.10	0.10	35	5.3	5.0	2.1	0.10	0.10
33	79,997	4.5	2.9	1.6	0.09	0.09	4.4	2.9	1.56	0.09	0.09	41	5.3	3.3	1.6	0.07	0.07
34	11,270	12.0	12.0	2.0	0.07	0.07	11.6	11.6	2.04	0.07	0.07	4	11.1	11.1	2.1	0.07	0.07
35	15,182	10.7	2.5	2.8	0.07	0.07	10.5	2.4	2.69	0.07	0.07	13	13.7	3.0	2.8	0.05	0.05
36	3,050	1.9	1.9	2.1	0.05	0.05	1.9	1.9	2.08	0.04	0.04	4	1.9	1.9	2.2	0.06	0.06
37	10,080	1.4	1.4	2.1	0.09	0.09	1.4	1.4	2.15	0.08	0.08	13	1.4	1.4	2.4	0.09	0.09
38	4,680	2.0	2.0	2.3	0.03	0.03	2.0	2.0	2.28	0.03	0.03	4	2.0	2.0	2.3	0.03	0.03
39	3,535	7.4	7.4	2.9	0.10	0.10	7.4	7.4	2.95	0.10	0.10	2	7.4	7.4	2.9	0.10	0.10
40	3,710	1.9	1.9	2.7	0.01	0.01	2.0	2.0	2.65	0.01	0.01	9	2.3	2.3	2.5	0.01	0.01
41	6,264	18.0	16.8	2.2	0.01	0.01	18.4	17.0	2.16	0.01	0.01	23	17.5	16.2	2.1	0.01	0.01
42	3,051	2.1	2.1	2.0	0.01	0.01	2.1	2.1	1.97	0.01	0.01	9	1.9	1.9	2.2	0.01	0.01
43	3,049	13.9	13.9	5.2	0.27	0.27	13.9	13.9	5.22	0.27	0.27	1	13.9	13.9	5.2	0.27	0.27
44	2,701	35.9	35.9	2.4	0.05	0.05	35.9	35.9	2.43	0.05	0.05	1	35.9	35.9	2.4	0.05	0.05
45	10,382	5.7	5.7	2.7	0.09	0.09	5.5	5.5	2.71	0.08	0.08	3	5.4	5.4	4.5	0.08	0.08
46	314	6.6	6.6	3.7	0.01	0.01	6.6	6.6	3.72	0.01	0.01	2	6.6	6.6	3.7	0.01	0.01
47	4,419	7.7	7.7	2.6	0.01	0.01	7.5	7.5	2.58	0.01	0.01	3	7.4	7.4	2.7	0.01	0.01
48	9,631	4.3	2.6	2.5	0.01	0.01	4.8	2.7	2.54	0.01	0.01	10	4.0	2.6	2.1	0.01	0.01
49	7,348	84.9	11.8	2.3	0.18	0.18	77.0	11.8	2.33	0.18	0.18	35	72.7	12.7	2.4	0.18	0.18
50	1,168	1.4	1.4	2.5	0.32	0.32	1.4	1.4	2.55	0.31	0.31	7	1.4	1.4	3.1	0.32	0.32
51	1,944	3.7	3.7	2.2	0.08	0.08	3.8	3.8	2.27	0.08	0.08	5	4.3	4.3	2.1	0.09	0.09
52	3,651	1.3	1.3	3.2	0.05	0.05	1.3	1.3	3.09	0.04	0.04	5	1.3	1.3	3.0	0.04	0.04
53	9,091	2.8	2.8	1.8	0.02	0.02	2.9	2.9	1.84	0.02	0.02	17	2.8	2.8	1.7	0.02	0.02
54	12,759	4.2	4.2	2.3	0.05	0.05	4.1	4.1	2.13	0.05	0.05	10	3.8	3.8	2.0	0.06	0.06
55	4,458	0.9	0.9	1.8	0.01	0.01	0.9	0.9	1.81	0.01	0.01	2	0.9	0.9	1.8	0.01	0.01
56	4,350	1.4	1.4	2.6	0.01	0.01	1.3	1.3	2.59	0.01	0.01	13	1.4	1.4	2.8	0.01	0.01
57	298	2.3	2.3	2.2	0.32	0.32	2.3	2.3	2.24	0.32	0.32	2	2.3	2.3	2.2	0.32	0.32
58	16,095	1.9	1.9	1.5	0.03	0.03	2.2	2.2	1.52	0.03	0.03	25	1.7	1.7	1.3	0.03	0.03
59	7,118	1.7	1.7	2.2	0.01	0.01	1.7	1.7	2.17	0.01	0.01	6	1.9	1.9	2.5	0.01	0.01

Object	Block Model											Composites					
	Resource	Au_OK Uncut	Au_OK Cut	Fe_OK	S_OK Uncut	S_OK Cut	Au_IDW Uncut	Au_IDW Cut	Fe_IDW	S_IDW Uncut	S_IDW Cut	Num of	Au Uncut	Au Cut	Fe	S Uncut	S Cut
	Volume	g/t	g/t	%	%	%	g/t	g/t	%	%	%	Comps	g/t	g/t	%	%	%
60	10,685	2.4	2.4	2.2	0.05	0.05	2.5	2.5	2.19	0.06	0.06	6	2.6	2.6	2.3	0.06	0.06
61	11,139	1.7	1.7	2.0	0.14	0.14	1.7	1.7	2.02	0.14	0.14	8	1.8	1.8	2.1	0.14	0.14
62	2,648	22.9	22.9	3.5	0.07	0.07	22.9	22.9	3.53	0.07	0.07	1	22.9	22.9	3.5	0.07	0.07
63	1,969	1.5	1.5	1.5	0.01	0.01	1.5	1.5	1.52	0.01	0.01	2	1.5	1.5	1.5	0.01	0.01
64	1,683	38.5	6.9	2.3	0.11	0.11	27.9	5.5	2.27	0.09	0.09	8	32.2	6.0	2.0	0.09	0.09
65	802	2.5	2.5	2.0	0.07	0.07	2.5	2.5	2.00	0.06	0.06	3	2.6	2.6	1.6	0.06	0.06
66	12,038	3.5	3.5	2.6	0.02	0.02	3.6	3.6	2.60	0.01	0.01	59	3.5	3.5	2.6	0.01	0.01
67	509	1.9	1.9	2.1	0.01	0.01	1.9	1.9	2.07	0.01	0.01	2	1.9	1.9	2.1	0.01	0.01
68	1,813	4.5	4.5	1.9	0.01	0.01	5.4	5.4	1.84	0.01	0.01	6	5.1	5.1	1.9	0.01	0.01
69	4,647	2.9	2.9	2.3	0.07	0.07	2.9	2.9	2.30	0.07	0.07	2	2.9	2.9	2.3	0.07	0.07
70	1,391	6.8	6.8	1.9	0.01	0.01	7.6	7.6	1.93	0.01	0.01	3	6.8	6.8	2.1	0.01	0.01
71	1,980	3.1	3.1	1.5	0.01	0.01	3.2	3.2	1.48	0.01	0.01	3	3.1	3.1	1.2	0.01	0.01
Total	**1,249,734**	**5.5**	**4.5**	**2.1**	**0.06**	**0.05**	**5.4**	**4.5**	**2.12**	**0.06**	**0.05**	**2,068**	**5.8**	**4.8**	**2.1**	**0.05**	**0.05**

Table 14-47 Average Composite Input v Block Model Output – Medium Grade Domain

Object	Block Model											Composites					
	Resource	Au_OK Uncut	Au_OK Cut	Fe_OK	S_OK Uncut	S_OK Cut	Au_IDW Uncut	Au_IDW Cut	Fe_IDW	S_IDW Uncut	S_IDW Cut	Num of	Au Uncut	Au Cut	Fe	S Uncut	S Cut
	Volume	g/t	g/t	%	%	%	g/t	g/t	%	%	%	Comps	g/t	g/t	%	%	%
201	1,064,991	1.9	0.5	2.1	0.05	0.05	2.1	0.5	2.1	0.05	0.05	1,713	3.0	0.5	2.2	0.09	0.09
202	2,379,069	0.8	0.4	2.2	0.05	0.05	0.9	0.4	2.2	0.05	0.05	3,887	1.4	0.5	2.1	0.04	0.04
203	2,202,098	0.8	0.3	2.6	0.10	0.10	0.8	0.3	2.6	0.10	0.10	4,520	1.0	0.3	2.5	0.09	0.09
Total	**5,646,158**	**1.0**	**0.4**	**2.3**	**0.07**	**0.07**	**1.1**	**0.4**	**2.3**	**0.07**	**0.07**	**10,120**	**1.5**	**0.4**	**2.3**	**0.07**	**0.07**

Table 14-48 Average Composite Input v Block Model Output – Low Grade Domain

Object	Block Model											Composites					
	Resource Volume	Au_OK Uncut g/t	Au_OK Cut g/t	Fe_OK %	S_OK Uncut %	S_OK Cut %	Au_IDW Uncut g/t	Au_IDW Cut g/t	Fe_IDW %	S_IDW Uncut %	S_IDW Cut %	Num of Comps	Au Uncut g/t	Au Cut g/t	Fe %	S Uncut %	S Cut %
101	1,935,271	0.7	0.4	2.2	0.08	0.08	0.7	0.4	2.2	0.08	0.08	2698	2.0	0.4	2.3	0.11	0.11
102	1,712,151	0.5	0.3	2.3	0.05	0.05	0.5	0.3	2.3	0.05	0.05	4804	1.1	0.4	2.5	0.08	0.08
103	10,752,032	0.3	0.2	2.3	0.22	0.22	0.3	0.2	2.3	0.22	0.22	10876	0.6	0.3	2.3	0.20	0.20
104	209,283	2.4	0.3	2.8	0.08	0.07	2.1	0.2	2.7	0.08	0.07	136	1.5	0.2	2.8	0.05	0.05
105	567,979	0.6	0.3	2.6	0.10	0.10	0.5	0.3	2.6	0.10	0.10	620	0.7	0.3	2.5	0.09	0.09
Total	**15,176,717**	**0.4**	**0.2**	**2.3**	**0.18**	**0.18**	**0.4**	**0.2**	**2.3**	**0.18**	**0.18**	**19,134**	**0.9**	**0.3**	**2.3**	**0.17**	**0.17**

Swath Plots

Swath plots were used to check that the interpolation of the block model correctly honoured the drilling data, validation was carried out by comparing the interpolated blocks to the sample composite data for each grade domain. The trend analysis was completed by comparing interpolated blocks to the sample composite data for elevation in 20m bench heights. The strike orientation of the lodes at all zones, and the use of a rotated block model required the use of 20-80 m wide panels to conduct the swath analysis across the deposit. The trend analysis results for Au are shown in **Figure 14-71** through **Figure 14-73**.

The validation plots show good correlation between the composite grades and the block model grades when compared by panel and elevation. The trends show the composite data are honoured by the block model.

The comparisons show the effect of the interpolation, which results in smoothing of the block grades compared to the composite grades. RPM considers the estimate is representative of the composites and is indicative of the known controls of mineralization and the underlying data.

Varying Estimation Methods

As part of the validation process RPM undertook and Inverse distance squared estimate along with a Multi Indicator Kriging (MIK), below is a summary of the outcomes of these separate estimates.

Inverse Distance Squared

Using the same search parameters and sample selection criteria an IDW was undertaken for each domain and objects. The results of the estimate compared very well with little variation being observed on an object by object basis, as shown in the tables above. In addition to the object by object analysis the swath plots also show the consistency between the methods. These show some variation which is expected based on the local variability of the grade weighting.

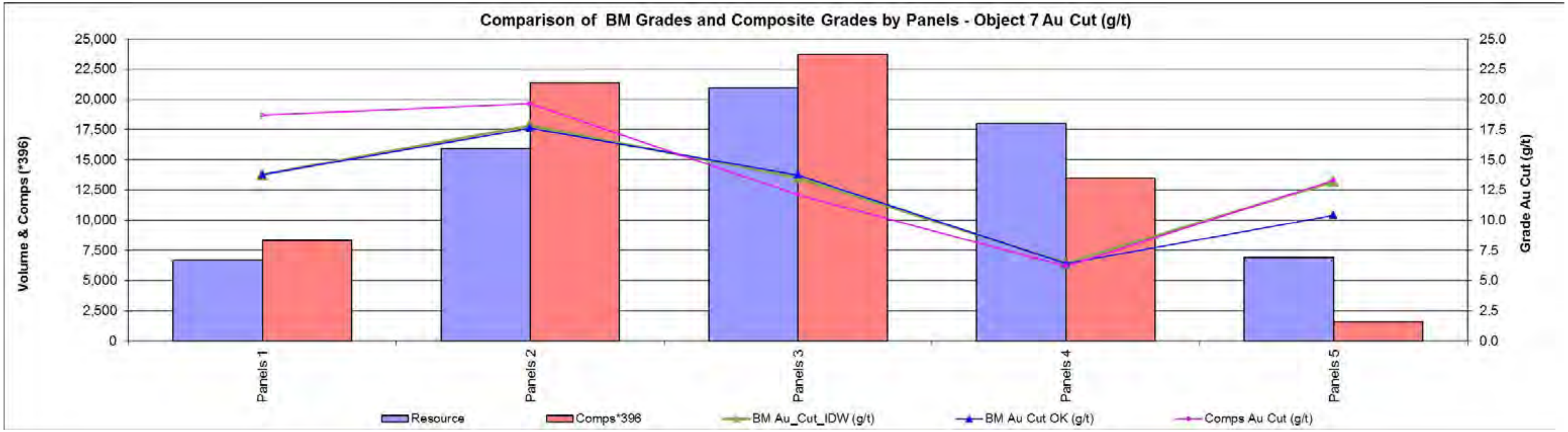
Multiple Indicator Kriging

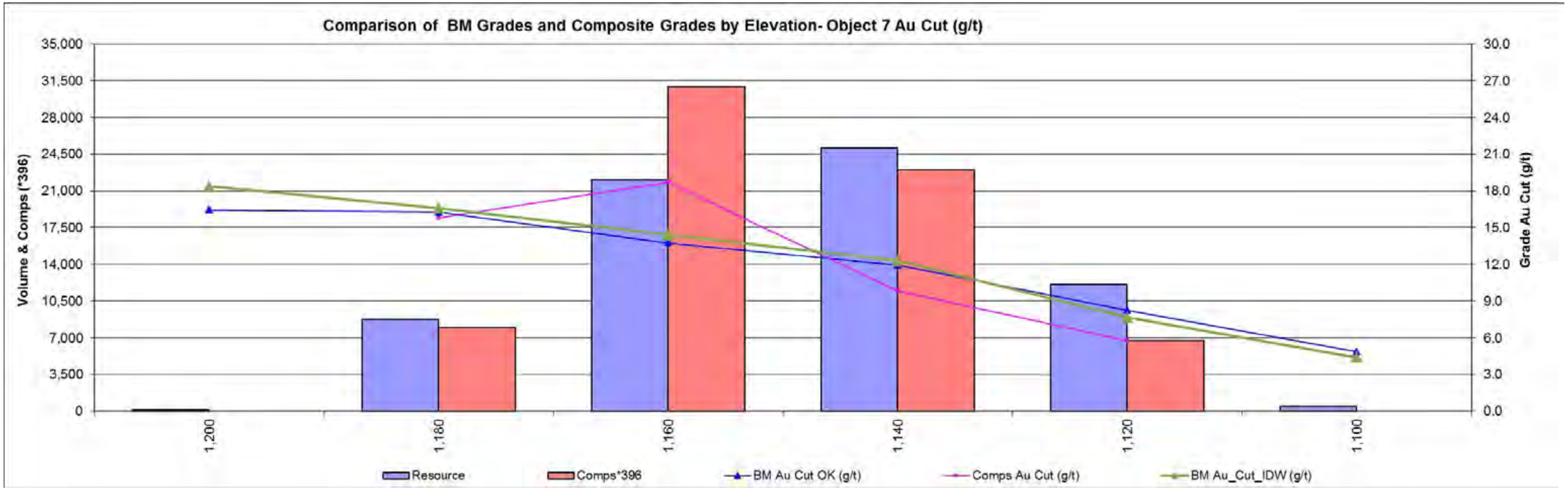
Multi Indicator Kriging (MIK) is a non-linear method of Mineral Resource Estimation which relies on breaking up the original population distribution of sample values into discrete intervals and using these intervals for the estimate. MIK is often recommended when;

- The sample population contains extreme grades and there is a need to avoid excessive capping of the underlying data; or
- There is a desire to produce a more 'mineable' resource in which the effects of mining are to a large extent incorporated into the final resource.

Outcomes of MIK estimate as follows:

- The MIK estimate confirms the OK estimate
- The MIK estimate is very sensitive to two extremely high values
- With these cuts are the estimate generally gives a lower grade estimates at greater tonnage at various options from dealing with outliers and choice of grades (mean or median) applied to the upper parts of the distribution.





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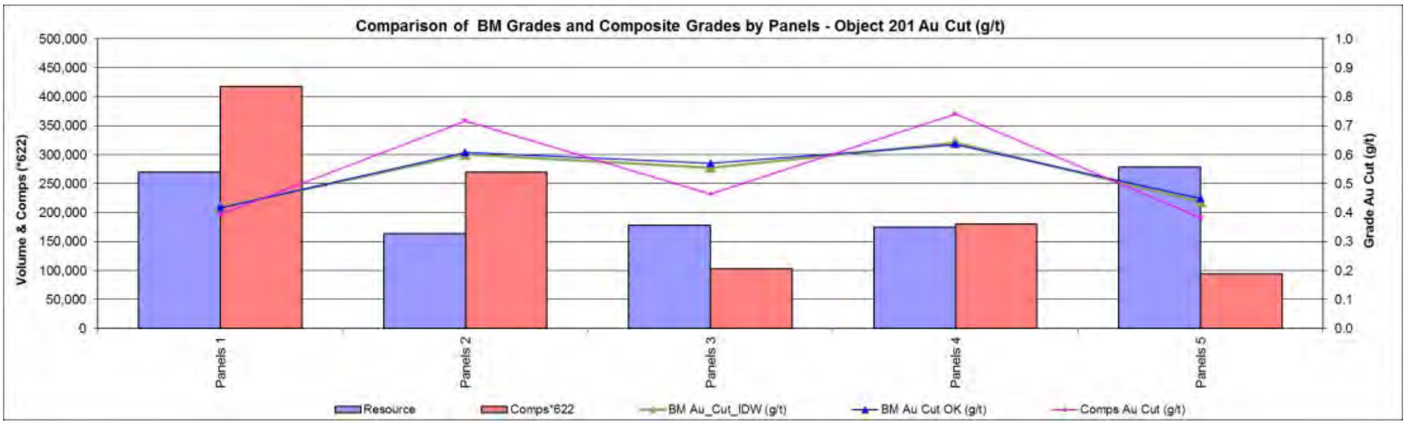
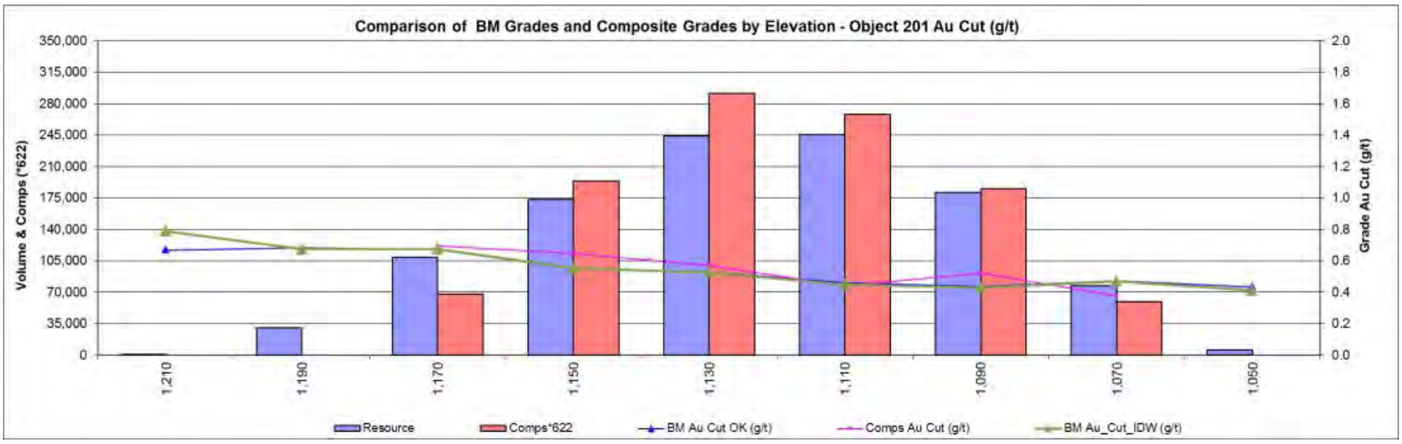
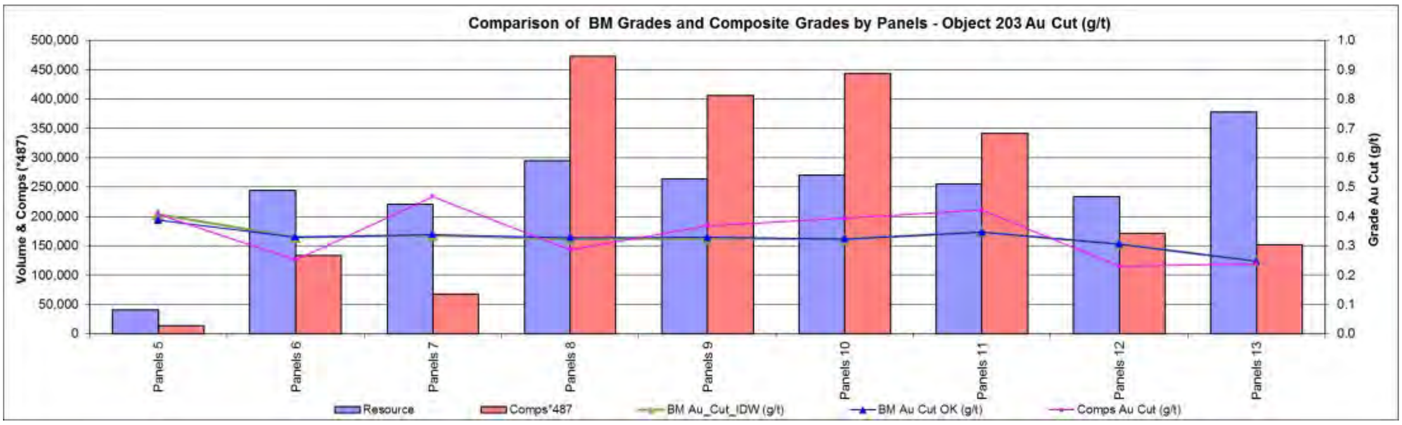
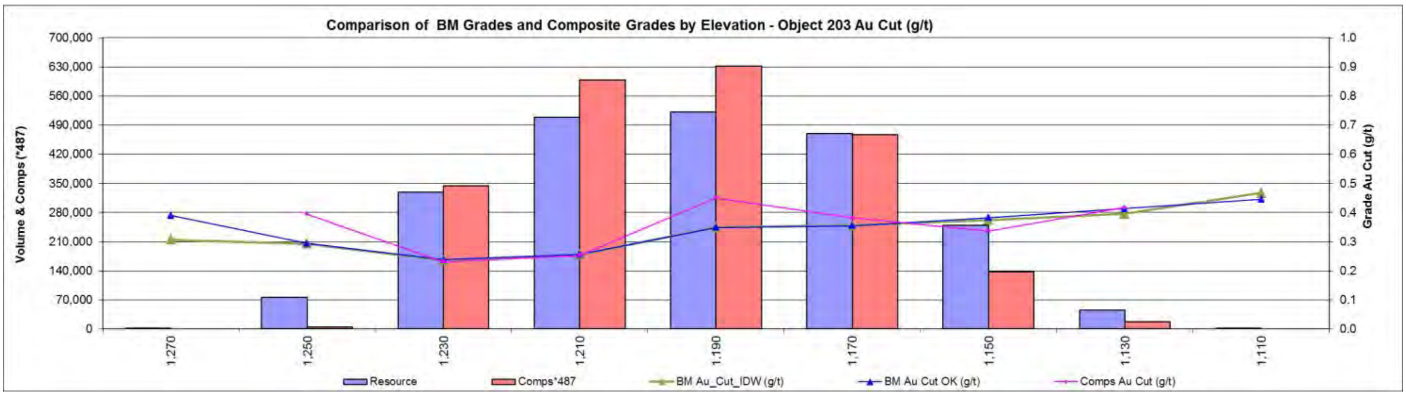
CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING Block Model Validation by Panels and Elevation High Grade Domain (Object7)		
	FIGURE No. 14-71	PROJECT No. ADV-MN-00161	Date January 2019









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ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING Block Model Validation by Panels and Elevation Medium Grade Domain (Object 201 & 203)

FIGURE No.	PROJECT No.	Date
14-72	ADV-MN-00161	January 2019

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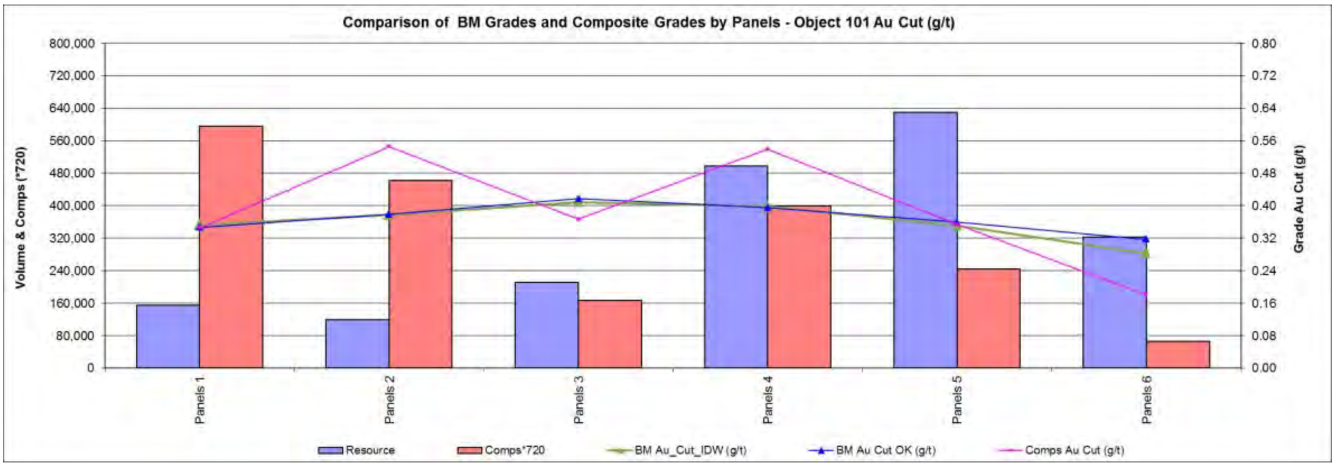

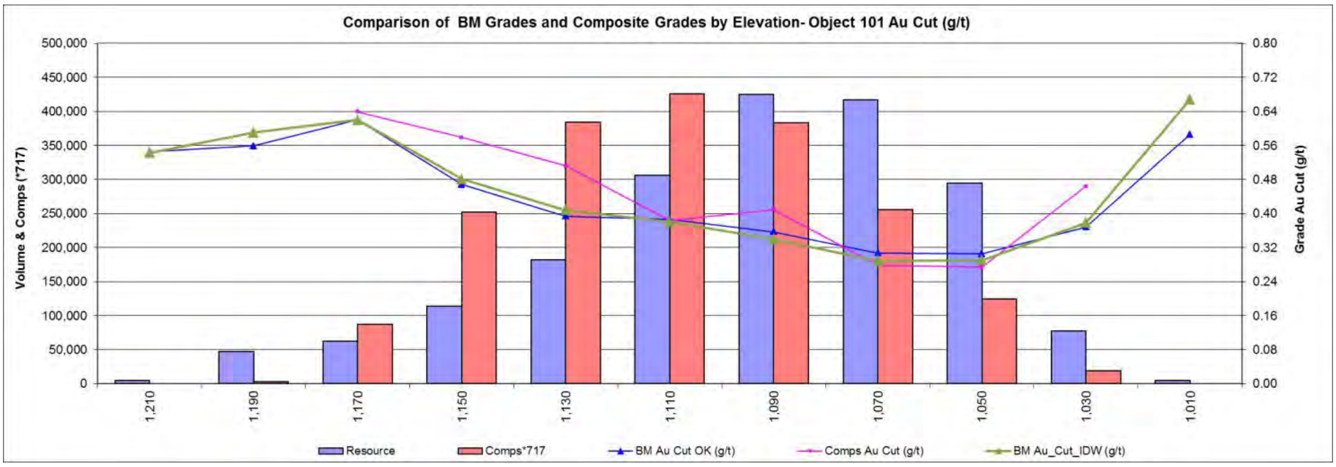

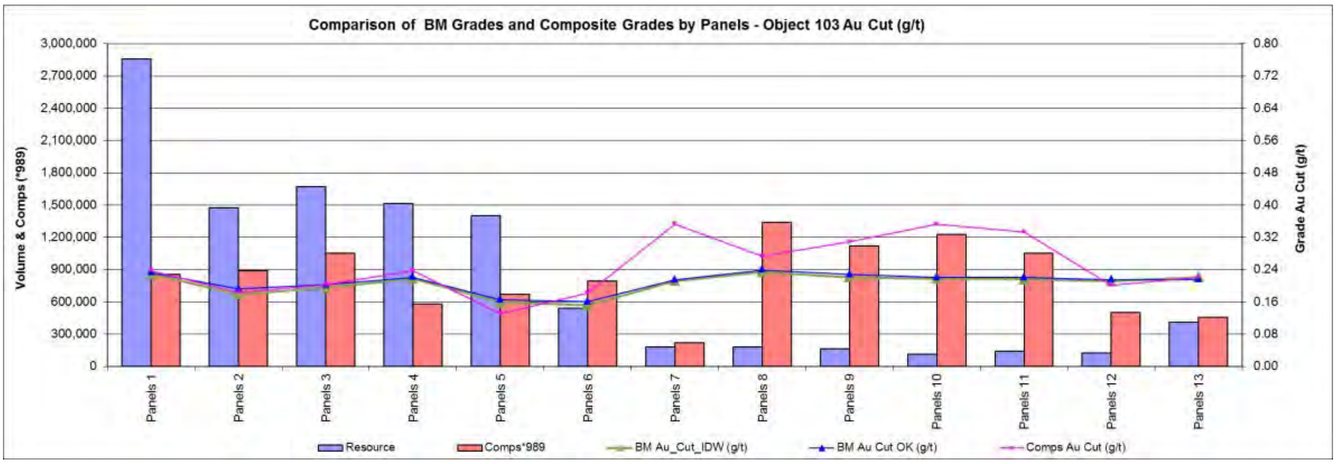

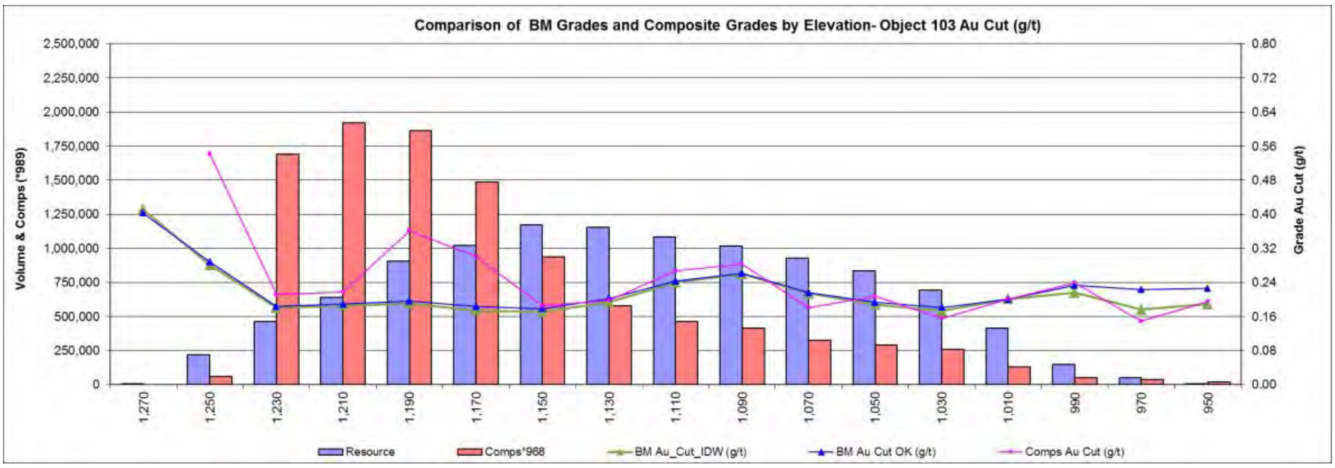

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ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING Block Model Validation by Panels and Elevation Low Grade Domain (Object 101 & 103)

FIGURE No.	PROJECT No.	Date
14-73	ADV-MN-00161	January 2019

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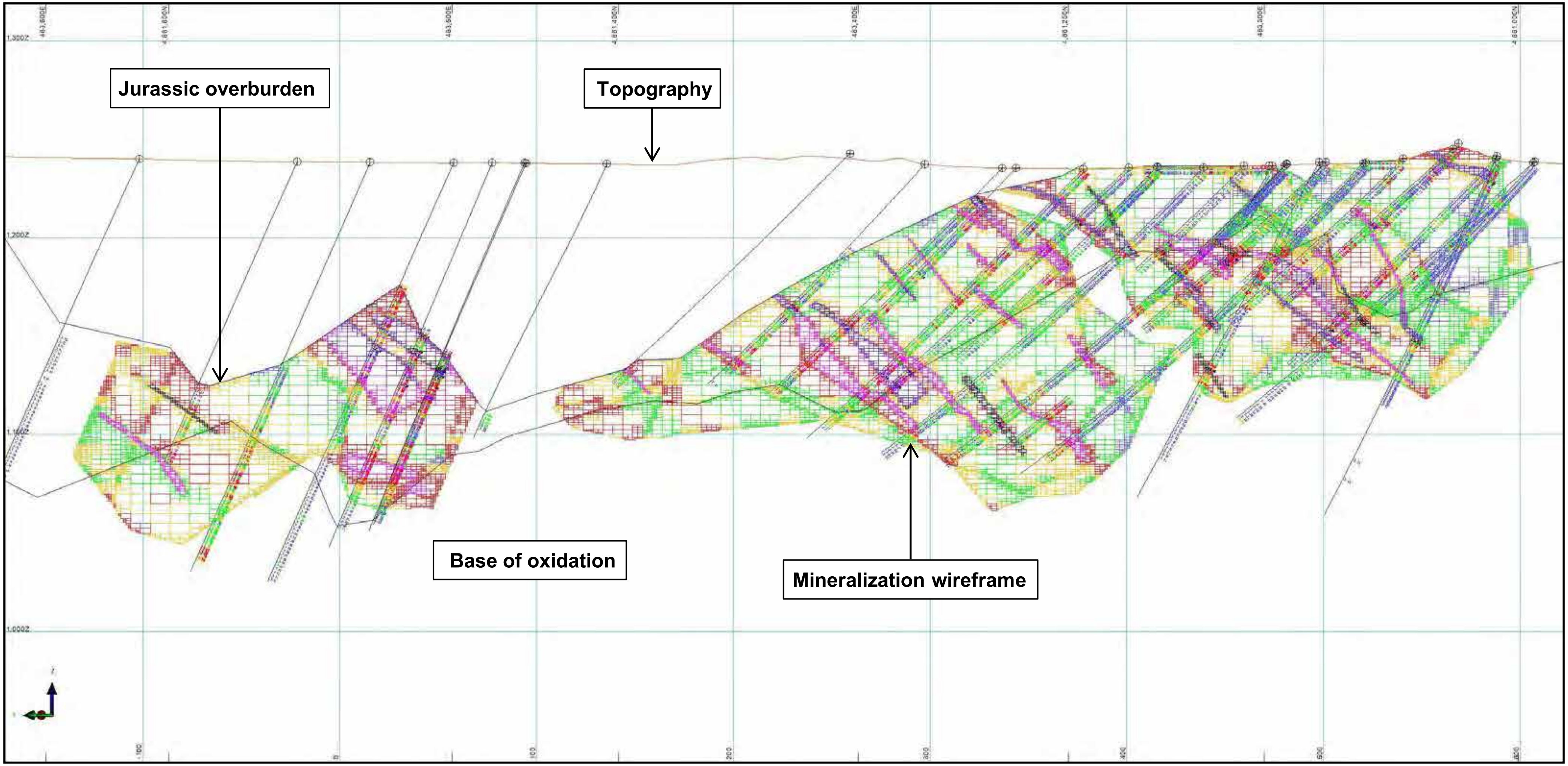
Visual Inspection of the Blocks

Following the mathematical comparison, a visual qualitative comparison of the block estimates to the composites was completed. The visual inspection indicates a good correlation exists at a local scale particularly in areas of closer spaced drilling. As to be expected there is a degree of smoothing due to a combination of the block dimensions and the OK algorithm, however RPM considers this level of smoothing suitable for the style of mineralization. Estimated block grades were checked against the drill hole grades visually and results are shown in **Figure 14-74**.

Overall Grade Validation

The review of the mathematical comparison indicates that while variation globally can be seen the swath plots highlight that a good overall correlation exists between the block estimates and the composite grades within each mineralized and estimated domain. This good correlation of the drill holes and interpolated block model is further supported when a visual inspection completed by RPM. As a result of the validation completed, RPM considers the estimate is representative of the composites and is indicative of the known controls of mineralization and the underlying data.



LEGEND - Au (ppm)

0 - 0.1	0.5 - 1
0.1 - 0.3	1 - 3
0.3 - 0.5	3 - 10
10 - 2300	

CLIENT

ERDENE RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING Au BLOCK GRADES - SECTIONAL VALIDATION

FIGURE No.	PROJECT No.	Date
14-74	ADV-MN-00161	January 2019

RPMGLOBAL

14.2.9 Mineral Resource Classification

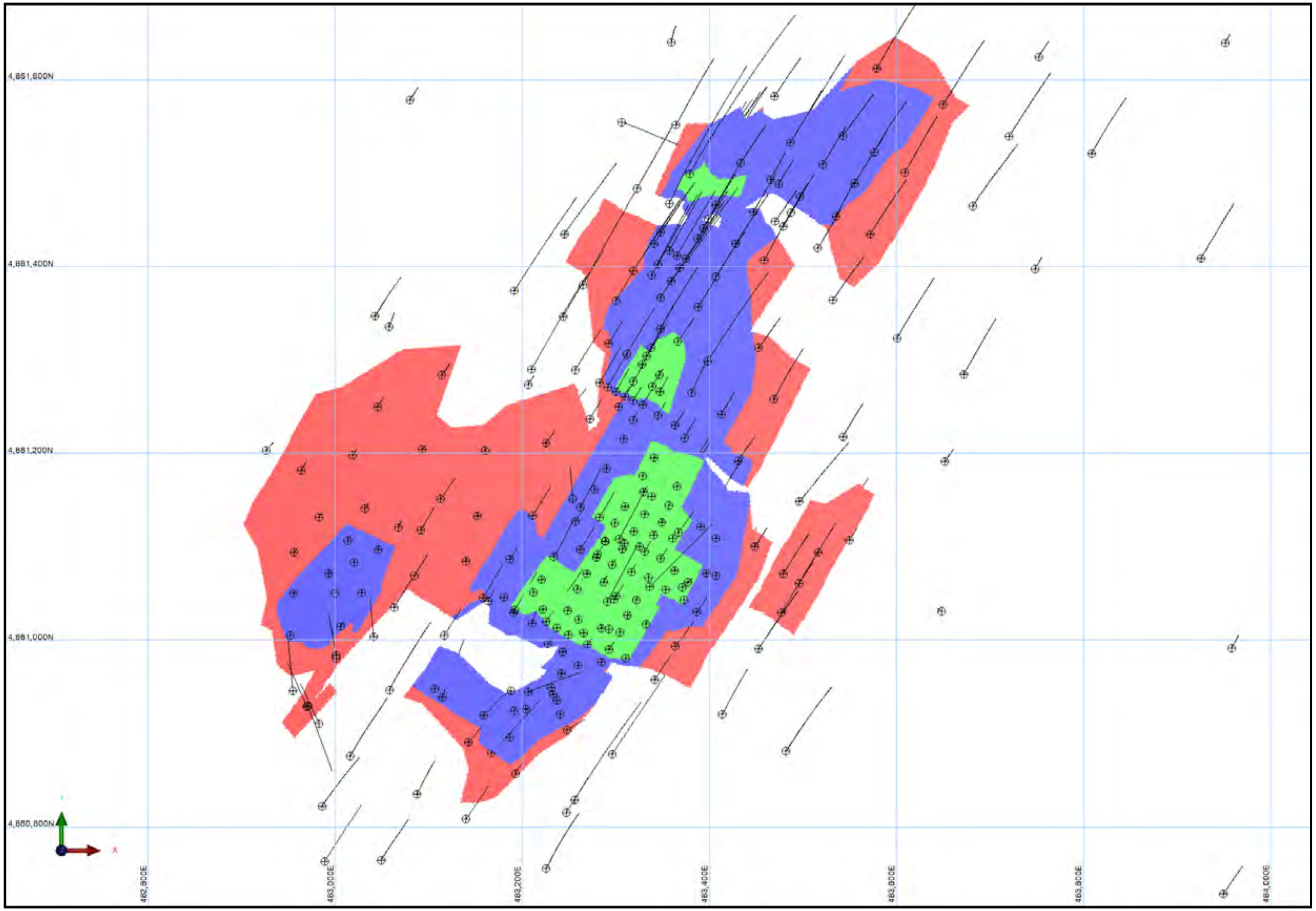
Mineral Resources were classified in accordance with the CIM Standards. The Mineral Resource was classified on the basis of data quality and quantity, sample spacing, and mineralization continuity

The Bayan Khundii mineralization shows good continuity within the main mineralized lodes which allowed the drill hole intersections to be modelled into coherent, geologically robust wireframes. Consistency is evident in the thickness of the structure, and the distribution of grade appears to be reasonable along strike and down dip. The resource block model has an attribute “class” for all blocks within the resource wireframes coded as either “mea” for Measured or “ind” for Indicated or “inf” for Inferred. The Plan view of Mineral Resource classification is shown in **Figure 14-75**. The classification was based on the following criteria:

- The Measured Mineral Resource was within areas of sample spacing less than 20 m by 20 m, and where the geological structure and continuity of the mineralized lodes were able to be modelled with high confidence. This spacing was deemed appropriate for the application of Measured Mineral Resource after considering the reasonable mineralization and grade continuity, the relatively low to moderate nugget effect within each domain, low coefficient of variance statistics and variogram ranges of between 50 and 60 m depending on the domain.
- The Indicated Mineral Resource was confined within areas of close spaced diamond drilling of 40 m by 40 m or less, and where the continuity and predictability of the lode positions was good. This spacing was deemed appropriate for the application of Indicated Mineral Resource after considering the reasonable mineralization and grade continuity, the relatively low to moderate nugget effect, low coefficient of variance statistics and variogram ranges in the order of more than 50-60 m.
- The Inferred Mineral Resource was assigned to areas of the deposit where drill hole spacing was greater than 40 m by 40 m, where small isolated pods of mineralization occur outside the main mineralized zones, and to geologically complex zones.

The extrapolation of the lodes along strike has been limited to a distance equal to the previous section drill spacing or to 20-30 m. Extrapolation of lodes down-dip has been limited to a distance equal to the previous down-dip drill spacing or to 20-30 m. Areas of extrapolation have been classified as Inferred Mineral Resource.

Internal audits have been completed by RPM which verified the technical inputs, methodology, parameters and results of the estimate. The lode geometry and continuity has been adequately interpreted to reflect the applied level of Measured, Indicated and Inferred Mineral Resource. The data quality is good, and the drill holes have detailed logs produced by qualified geologists. A recognised laboratory has been used for all analyses. The Mineral Resource statement relates to global estimates of tonnes and grade.



LEGEND

- Measured
- Indicated
- Inferred

CLIENT

ERDENE
RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING MINERAL RESOURCE CLASSIFICATION - PLAN VIEW

FIGURE No.	PROJECT No.	Date
14-75	ADV-MN-00161	January 2019

RPMGLOBAL

Mineral Resource Statement

RPM has independently estimated the Mineral Resources contained within the Project, based on the data collected by Erdene as at 29th May 2018. The Mineral Resource estimate and underlying data complies with the guidelines provided in the CIM Definition Standards under NI 43-101. Therefore, RPM considers it is suitable for public reporting. The Mineral Resources were completed by Mr. David Princep under the supervision of Mr. Jeremy Clark (Qualified Person).

The Statement of Mineral Resources has been constrained by the topography, Jurassic overburden surface, exploration license boundary XV-015569, and reported at a cut-off grade of 0.6 g/t Au.

The results of the Mineral Resource estimate for the Bayan Khundii deposit are presented in **Table 14-49**. RPM recommends using a 0.6 g/t as a reporting cut-off based on a mining / process cost parameter for the Project.

Table 14-49 Bayan Khundii Deposit as of September 12, 2018 Mineral Resource Estimate

Cut-off	Resource	Oxide		Fresh		Total		Gold
Grade (1)	Classification	Quantity (Mt)	Grade Au g/t	Quantity (Mt)	Grade Au g/t	Quantity (Mt)	Grade Au g/t	Koz
0.2	Measured	2.9	1.6	1.3	1.0	4.3	1.4	195
	Indicated	6.7	1.0	6.9	0.8	13.5	0.9	384
	Measured & Indicated	9.6	1.2	8.2	0.8	17.8	1	579
	Inferred	2.8	0.5	9.9	0.6	12.7	0.6	225
0.4	Measured	1.8	2.4	0.6	1.9	2.4	2.3	177
	Indicated	4.0	1.5	3.1	1.3	7.1	1.4	324
	Measured & Indicated	5.8	1.8	3.7	1.4	9.5	1.6	501
	Inferred	1.1	0.8	3.7	1.0	4.9	1	153
0.6	Measured	1.1	3.6	0.3	3.5	1.4	3.6	161
	Indicated	2.3	2.2	1.4	2.4	3.7	2.3	272
	Measured & Indicated	3.4	2.7	1.7	2.6	5.1	2.6	433
	Inferred	0.4	1.5	1.4	2.0	1.8	1.9	105
1	Measured	0.7	5.4	0.1	6.3	0.8	5.6	148
	Indicated	1.1	3.8	0.6	4.3	1.8	4	224
	Measured & Indicated	1.8	4.4	0.8	4.7	2.6	4.5	372
	Inferred	0.1	3.7	0.6	3.8	0.7	3.8	79
1.4	Measured	0.6	5.7	0.2	6.7	0.8	5.9	145
	Indicated	0.9	4.5	0.5	5.2	1.4	4.7	212
	Measured & Indicated	1.5	5.0	0.7	5.6	2.2	5.2	357
	Inferred	0.1	4.1	0.4	4.4	0.5	4.4	74

Note:

1. *The Statement of Estimates of Mineral Resources has been compiled under the supervision of Mr. Jeremy Clark who is a full-time employee of RPM and a Member of the Australian Institute of Geoscientists. Mr. Clark has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity that he has undertaken to qualify as a Qualified Person as defined in the CIM Standards of Disclosure.*
2. *All Mineral Resources figures reported in the table above represent estimates based on drilling completed up to 29th June 2018. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate. Rounding may cause some computational discrepancies.*
3. *Mineral Resources are reported on a dry in-situ basis.*
4. *The Mineral Resources is reported at a 0.6 g/t Au cut-off. Cut-off parameters were selected based on an RPM internal cut-off calculator, which indicated that a break-even cut-off grade of 0.6 g/t Au, assuming an open cut mining method, an Au price of US $1500 per ounce, an open mining cost of US $6 per tonne and a processing cost of US $20 per tonne milled and processing recovery of 95% Au.*
5. *Mineral Resources referred to above, have not been subject to detailed economic analysis and therefore, have not been demonstrated to have actual economic viability*

Selection of Reportable Cut-off Grade

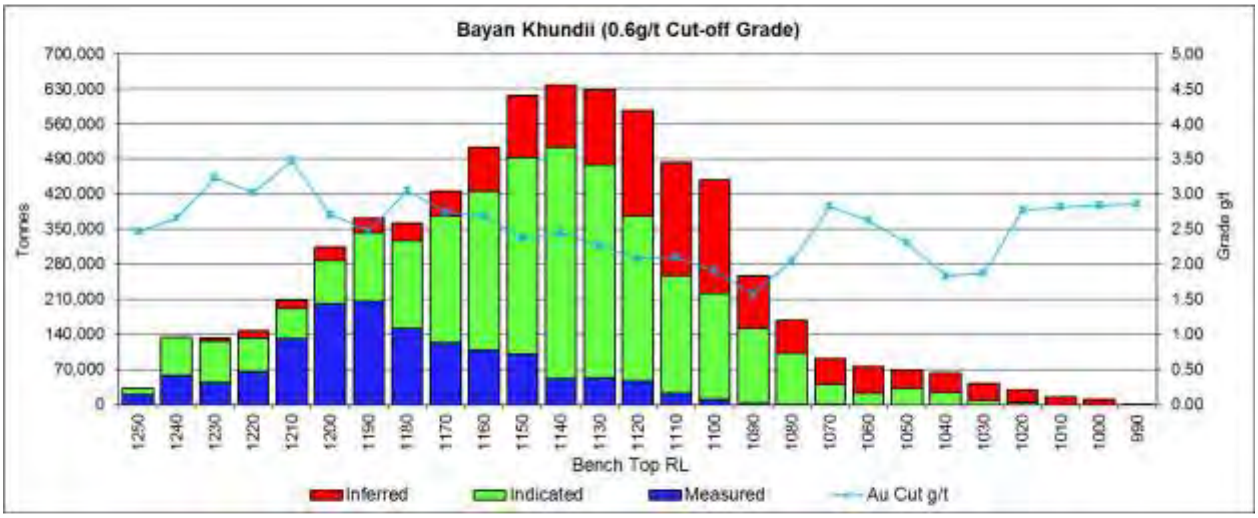
The Mineral Resources is reported at a 0.6 g/t Au cut-off. Cut-off parameters were selected based on an RPM internal cut-off calculator, which indicated that a break-even cut-off grade of 0.6 g/t Au, assuming an open cut mining method, an Au price of US $1500 per ounce, an open mining cost of US $6 per tonne, a processing cost of US $20 per tonne milled and processing recovery of 95% Au.

While a detailed schedule and option analysis has not been completed to confirm the optimal mining method, given the moderately dipping continuous style of mineralization within disseminated broader mineralization halo, open pit mining is likely to be appropriate, pending the option analysis. Additional mining design and more detailed and accurate cost estimate mining studies and testwork are required to confirm viability of extraction.

RPM notes that these pit shells were completed to report the resource contained within to demonstrate reasonable prospects for eventual economic extraction and highlights that these pits do not constitute a scoping study or a detailed mining study which along with additional drilling and testwork, is required to be completed to confirm economic viability. It is further noted that in the development of any mine it is likely that given the location of the Project that CAPEX is require and is not included in the mining costs assumed. RPM has utilised operating costs based on in-house databases of similar operations in the region and processing recoveries based on preliminary testwork as outlined in Section 13, along with the price noted above in determining the appropriate cut-off grade. Given the above analysis RPM considers open pit material demonstrates reasonable prospects for eventual economic extraction, however, highlights that additional studies and drilling is required to confirm economic viability.

To show the tonnages and grade distribution throughout the entire deposit, a bench breakdown has been prepared using 10m bench height which is shown graphically in **Figure 14-76**.

Figure 14-76 Bench Tonnage Graph



Dilution and Ore Losses

The block model is undiluted with no ore loss factors applied; as a result, appropriate dilution and ore loss factors must be applied for any economic reserve estimation.

Other Information

RPM is not aware of any other factors, including environmental, permitting, legal, title, taxation, socio-economic, marketing and political or other relevant factors, which could materially affect the Mineral Resource.

14.2.10 Risk and Opportunities

The key opportunities for the Project include:

- Resource Expansion:
  - RPM considers there is good potential to expand the currently defined resource with further drilling. Mineralization is open north-east, north-west and east of the currently defined Mineral Resource, where several medium to high grade intersections occurring which require follow up exploration works. RPM recommends targeting near surface medium to high grade mineralization, which if successfully delineated will potentially have a positive impact on any mining study undertaken on the Project.
  - There are large areas of low grade (0.1~0.2 g/t Au) mineralization halos recorded outside of currently defined mineralization wireframes, changing modelling cut-off grade should substantially increase global mineralization volume. This material is currently excluded from the reported resource due to the low grade, however, could impact the dilution grade applied during the mining studies.

The key risks to the Project include:

- Interpretation Complexity: The Project exhibits a moderate to high degree of structural complexity. The mineralized envelopes were defined by drilling on a 20 m by 20 m drill spacing in some areas the majority was based on 40 m by 40 m and 80 m by 80 m in extensional areas, therefore there is potential for tonnage and overall geometry variations between modelled and actual mineralization. RPM does not envisage any material variations in the closer spaced drilling areas, however this could potentially occur in the areas of greater than 40 m spacing, as a result these areas are classified as Inferred.
- QAQC: Sampling and assaying methodology and procedures were satisfactory for the Erdene drilling. QAQC protocols were adequate and review of the data did not show any consistent bias or reasons to doubt the assay data. Slight underestimation of higher grades Au (8.0g/t) has been observed in the OREAS62c standard for the 2015 and 2016 drilling, as well as slight underestimation of Au (9.2 g/t) grade was also observed in OREAS62e for 2016 and 2017 drilling. RPM does however note that any variation will not be material to the resources quoted and highlights these did not vary beyond acceptable limits.
- High Grade Variability: Geostatistical analysis generated models of spatial grade continuity that reflected the geological understanding of the deposit. The modelled nugget effect is moderate to high and a significant proportion of the variance occurs within the scale of the block dimensions resulting in a moderate degree of smoothing. RPM notes that there are some high-grade zones with a low number of samples which potentially results in an overestimate of the metal content relative to those zones with higher sample counts. As such there is a moderate degree of uncertainty in the grades associated with objects with lower sample counts, as such these areas are classified as inferred.
- Lithological Surfaces: RPM interpreted weathering, Jurassic overburden and upper syenite surfaces. The overburden layers are un-mineralized while all indicated are the syenite truncated mineralization at depth. While suitable drilling and logging is available to define the overburden surface, due to the depth the upper surface of the syenite body is not well defined. This is reflected in the classification applied in these areas. RPM further notes that some mineralization is observed below his surface, the extent of this is not known nor the relationship to the reported resource.

14.3 Khundii Gold Project

The Combined Khundii Gold Project Mineral Resources for the PEA study are presented in **Table 14-50** below as of September 12, 2018 and there has been no material change to the Altan Nar Mineral Resource since it was reported on May 7, 2018.

Table 14-50 Khundii Gold Project Mineral Resource Estimate, as at September 12, 2018 (Gold and Gold-Equivalent Mineral Resources, at Various Cut-Off Grades)

Cut-Off Grade(1)	Resource Classification	Quantity (Mt)	Grade Au g/t	Gold Koz	Grade AuEg g/t	AuEg Koz
0.2	Measured	4.3	1.4	194	1.4	194
	Indicated	19.3	1.1	710	1.4	852
	M+I	**23.6**	**1.2**	**904**	**1.4**	**1,046**
	Inferred	16.8	0.8	416	1.0	511
0.4	Measured	2.4	2.3	177	2.3	177
	Indicated	12.7	1.6	647	2.0	788
	M+I	**15.1**	**1.7**	**824**	**2.0**	**965**
	Inferred	8.6	1.2	342	1.6	436
Recommended(2)	**Measured**	**1.4**	**3.6**	**161**	**3.6**	**161**
	Indicated	**8.7**	**2.1**	**590**	**2.6**	**725**
	M+I	**10.1**	**2.3**	**751**	**2.7**	**886**
	Inferred	**5.2**	**1.8**	**291**	**2.3**	**382**
1.0	Measured	0.8	5.6	148	5.6	149
	Indicated	6.0	2.8	530	3.4	655
	M+I	**6.8**	**3.1**	**678**	**3.7**	**803**
	Inferred	3.9	2.1	261	2.9	349
1.4	Measured	0.8	5.9	145	5.9	145
	Indicated	4.7	3.3	497	4.1	610
	M+I	**5.5**	**3.7**	**642**	**4.3**	**755**
	Inferred	3.4	2.3	250	3.0	333

(1) Cut-off grades for Altan Nar are AuEq and for Bayan Khundii are gold only.
(2) RPMGlobal recommended cut-off grade for Bayan Khundii is 0.6 g/t gold and Altan Nar is 0.7 g/t AuEq above a pit and 1.4 g/t AuEq below the same pit shell.
** see Table 14-27 and Table 14-49 for notes on individual deposit mineral resource estimates.*

15. Mineral Reserve Estimates

As the level of service is only to a PEA standard there are no mineral reserves categorized for the Project. Erdene proposes to complete a PFS in 2019 that may enable a Mineral Reserve to be estimated.

16. Mining Methods

The preliminary economic assessment is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the preliminary economic assessment will be realized.

Parameters used in this assessment are considered to have a ±35% Range of Accuracy.

16.1 Mine Characteristics

The structure, depth and grades of the deposit influence the selection of mining method. A review of the mine characteristics is presented below.

16.1.1 Structure

As discussed in Section 7, the mineralization for Bayan Khundii and Altan Nar is composed of many near vertical mineralized veins of varying thickness.

Using the Bayan Khundii and Altan Nar geological model, the horizontal thickness of the veins was estimated, and the resulting block dimensions tabulated. The resulting vein thickness distributions presented in **Figure 16-1** show that the bulk of the structures are less than 5 m thick. This is examined further in **Figure 16-2** where the cumulative thickness distributions are shown. This second graph shows the average thickness for Bayan Khundii high grade is approximately 4 m while for Altan Nar it is about 2 m. The Altan Nar lower grade zone have an average thickness of 5 m.

The number of vein structures and their orientation is display in three dimensions in **Figure 16-3** for Bayan Khundii and in **Figure 16-4** for Altan Nar. These figures demonstrate that the mineralized veins are mostly thin, closely grouped near vertical structures. There are also several more isolated veins away from the central portion mineralization.

Based on the deposit structure, with mineralized veins generally < 5 m thick, a selective mining method is required to recover mineralized material with minimal loss and dilution. Additionally, strict grade control practices will be necessary to delineate the ore. In areas where the mineralized veins cluster there may be a potential for less selective mining to be applied. Though any operational benefit must be balanced against the costs of added dilution.

The structure, location and grades of the deposit influence the mining method that is selected. Based on these criteria a review of the mine characteristics was completed, with the results presented below.

Figure 16-1 Vein Thickness Distribution

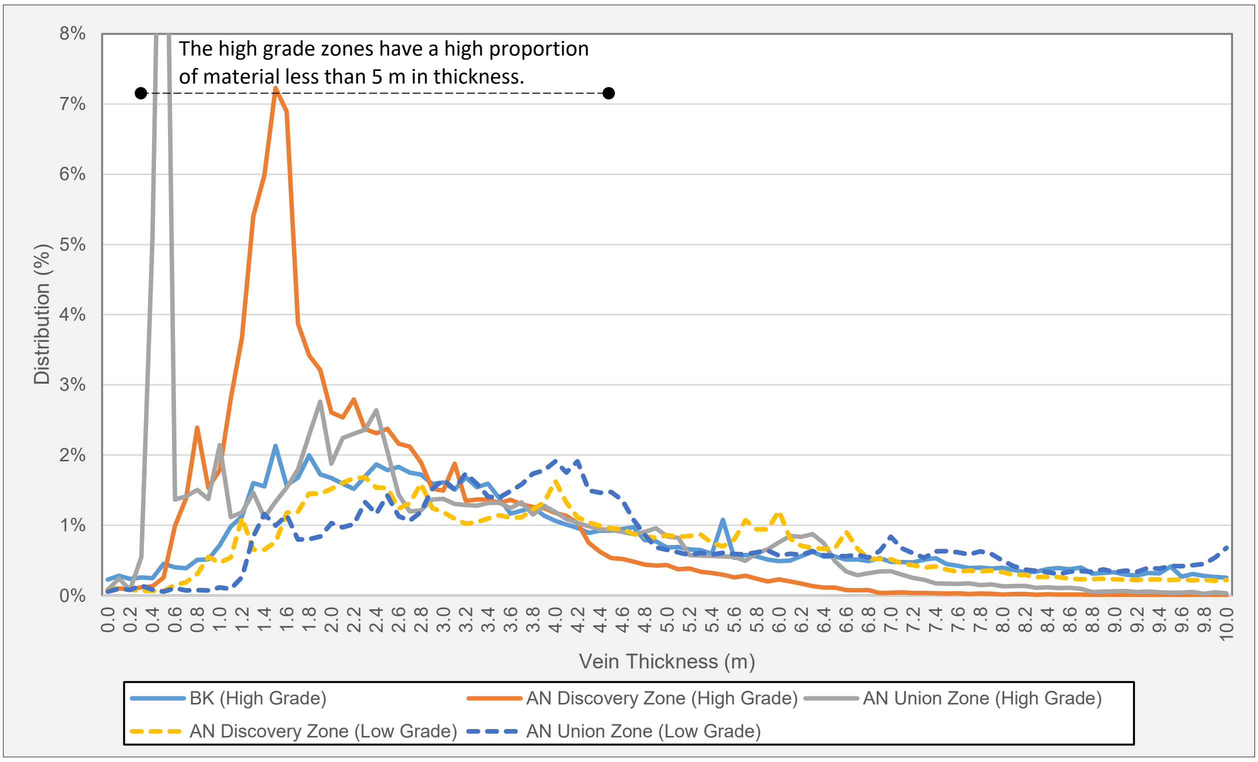
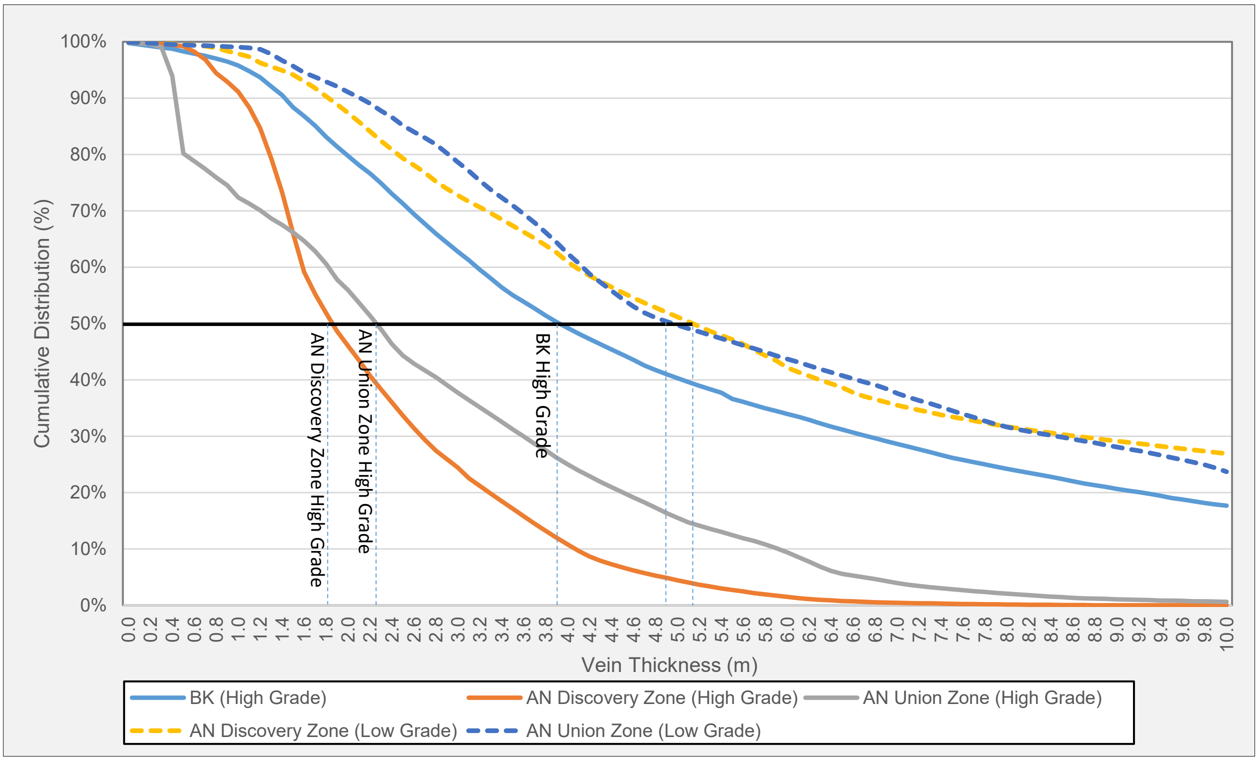
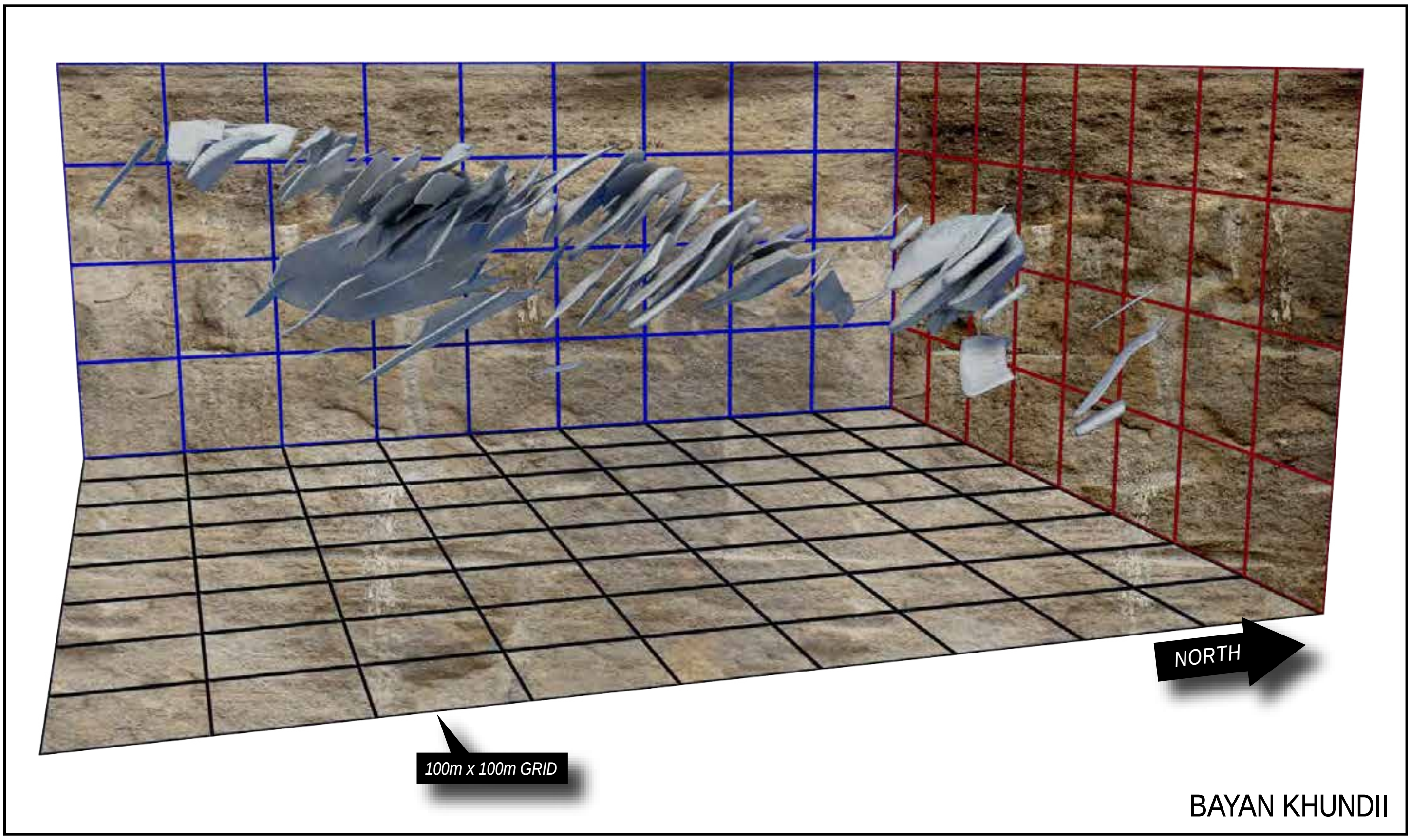
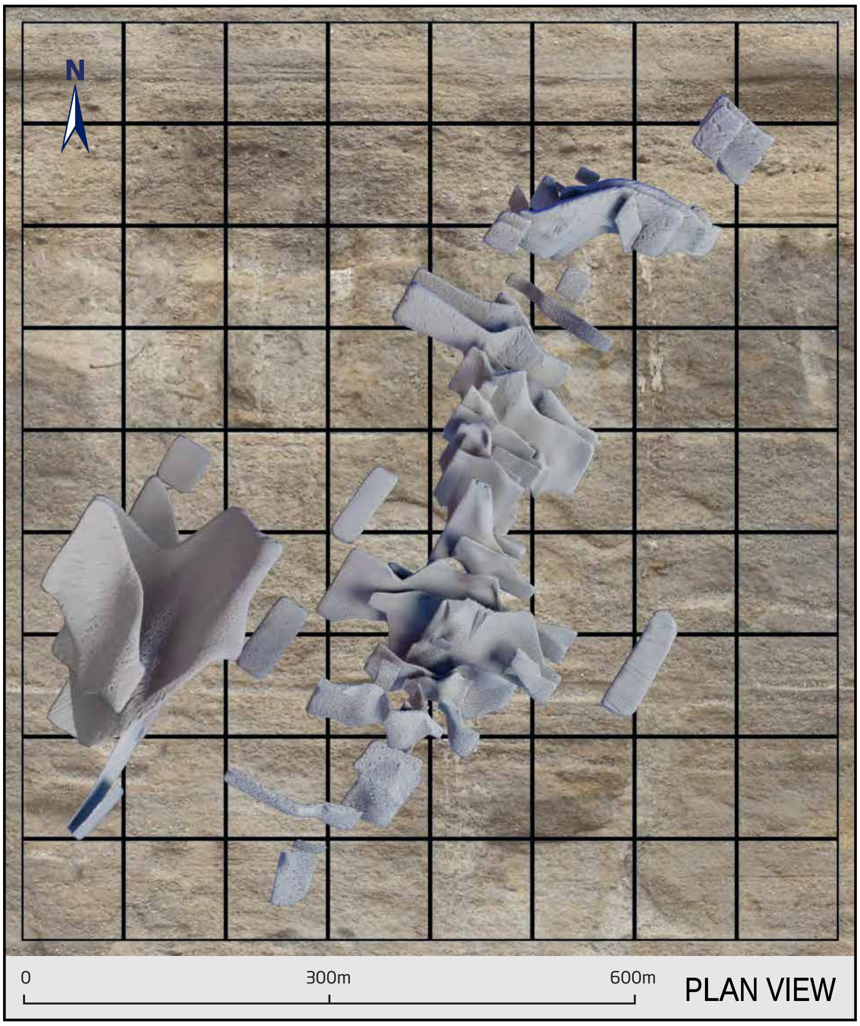


Figure 16-2 Vein Thickness Cumulative Distribution

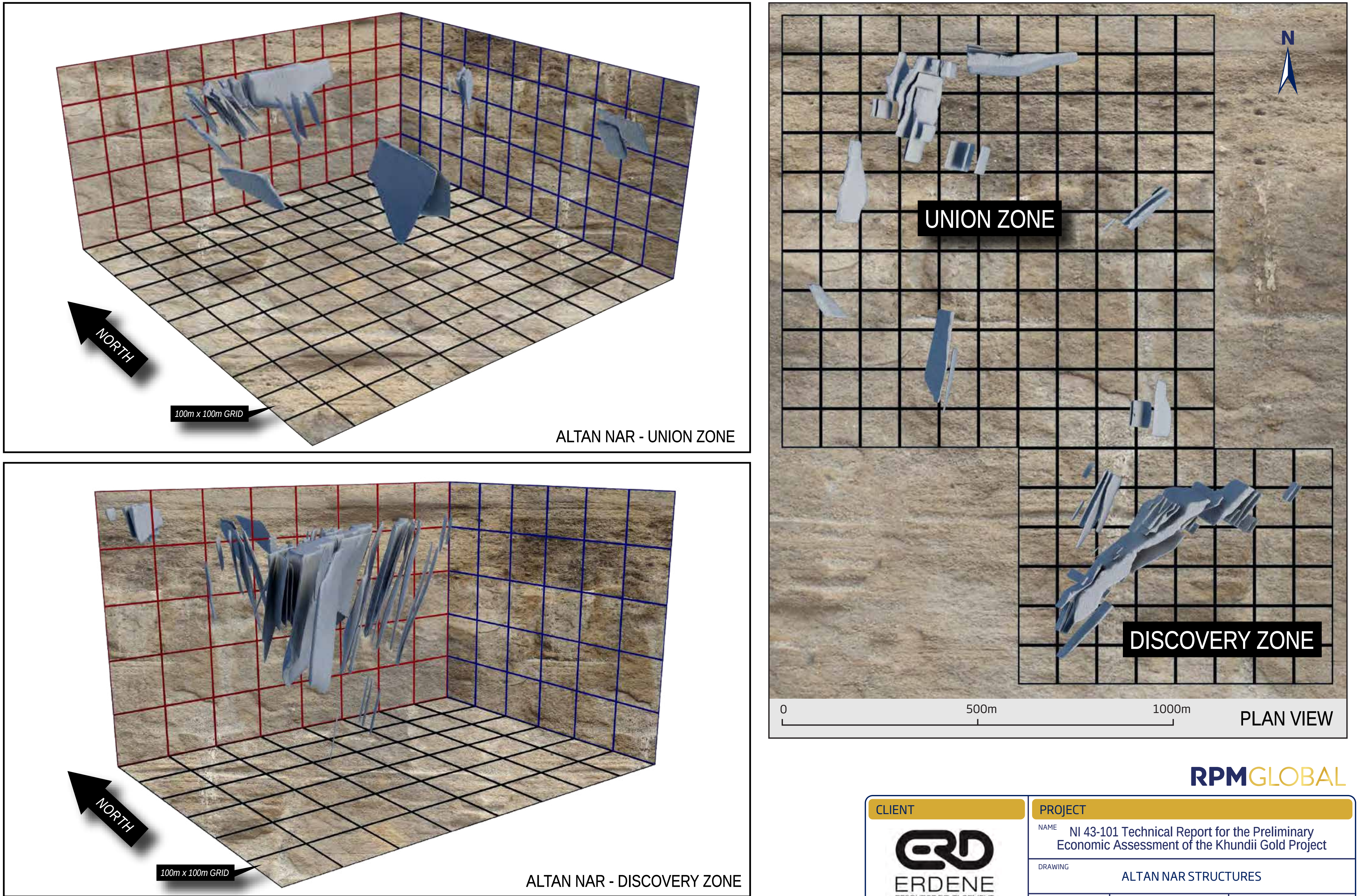






CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING BAYAN KHUNDII 3D STRUCTURES		
	FIGURE No. 16-3	PROJECT No. ADV-MN-00161	Date January 2019

RPMGLOBAL



RPMGLOBAL

CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING: ALTAN NAR STRUCTURES		
	FIGURE No. 16-4	PROJECT No. ADV-MN-00161	Date January 2019

16.1.2 Tonnage and Grade by Depth

By applying a nominal 0.9 g/t Au cut-off to the resource models the potential plant feed tonnage and grade by depth has been reported and is shown graphically for Bayan Khundii in **Figure 16-5** and Altan Nar in **Figure 16-6**.

Within Bayan Khundii the majority of the potential plant feed lies within 130 m of the surface with the peak tonnage located at a 100 m depth. The spread of the distribution indicates a potential 250 kt plant feed located less than 20 m in depth. The average gold grade by depth increment fluctuates, ranging between 2.5 g/t Au and 3.5 g/t Au. Below 100 m depth the grades show a slight decline before increasing again at a depth of 150 m. There is a significant increase in grade below 200 m depth though this represents only a small tonnage.

At Altan Nar the mineralization is generally closer to the surface with 65% of potential plant feed lying less than 75 m below the surface. A large quantity of potential plant feed (900 kt) is within 20 m of the surface. The gold grade remains reasonably constant with depth however then decreases at a depth of 125 m. As in Bayan Khundii, the gold grade increases sharply below 225 m but again the tonnage is small.

Based on the analysis of potential plant feed by depth both the Bayan Khundii and Altan Nar deposits are well suited to a surface / open cut mining method. Altan Nar has a greater quantity of shallow potential plant feed, though the average gold grade (~2.5 g/t Au) is lower than Bayan Khundii (~3.5 g/t Au) at the same depths. Currently defined mineralization at Bayan Khundii extends below 200 m depth suggesting a potential for underground mining with further exploration.

Figure 16-5 Bayan Khundii - Tonnes and Grade by Depth

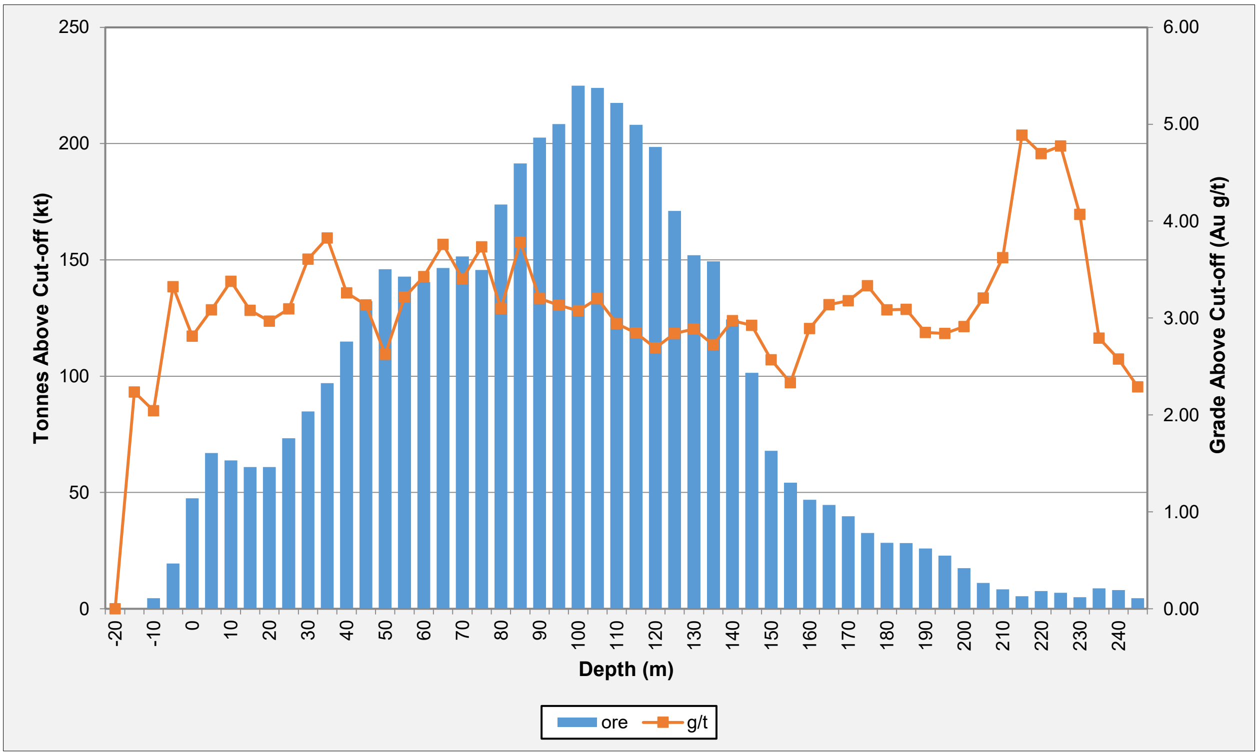
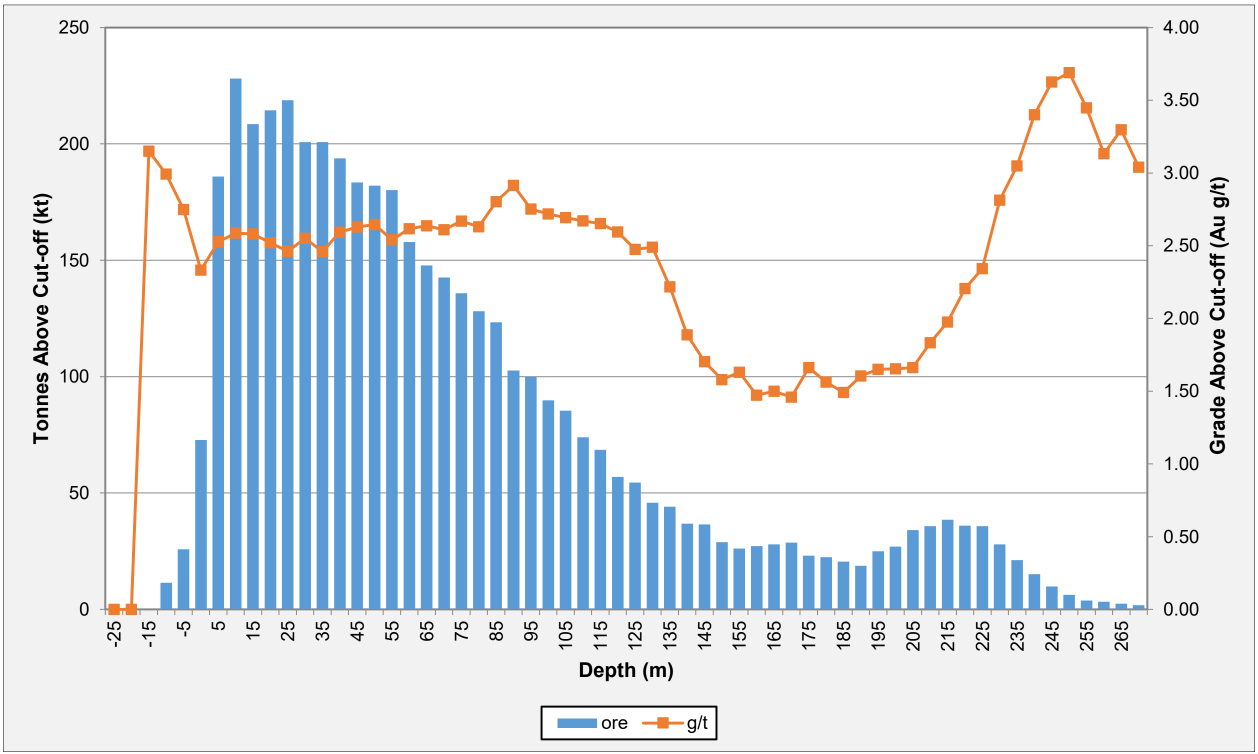


Figure 16-6 Altan Nar - Tonnes and Grades by Depth



16.2 Selection of Mining Method

Mining methods can be grouped into two main categories;

- Open pit, and
- Underground.

Open pit mining is generally better suited to deposits located near to the surface. Features include:

- Higher ore recovery.
- Greater mining flexibility and potential to be more selective.
- Lower initial capital costs.

Underground mining is potentially able to extract mineralization that extends below or outside the economic limits of open pit mining. Features generally include:

- Less surface disturbance.
- Requires systematic extraction.
- Higher cost than open pit mining and hence a higher cut-off grade is required.

Analysis of the deposit characteristics (refer Section 16.1.1 and Section 16.1.2) indicated that:

- Mineralization generally extends near surface;
- Mineralization is formed in multiple and thin (generally < 5 m), sub-vertical veins;
- Gold grades are generally medium to high at > 2 g/t, and
- Large proportion of the tonnage is within 150 m of surface.

Based on the deposit structure, grades and currently defined depth of mineralization, the preferred mining method for Bayan Khundii and Altan Nar is open pit mining using selective techniques to minimise ore loss and maximise ore recovery, however this varies between the projects as outlined below.

Following preparation of an area for mining, the activity will commence with drilling and blasting of the rock to fragment and loosen for excavation. Drilling will be completed with down the hole hammer (DTH) drills and explosives, given the dry climate and negligible groundwater, will likely be ANFO (Ammonium Nitrate Fule Oil explosive) given the dry climate and negligible groundwater. The broken rock will be removed using hydraulic excavators in backhoe configuration, with smaller machines of 40 t class operating in the plant feed zone for greater selectivity and large 180 t class in waste rock zones. Material will be loaded into haul trucks, with waste rock deposited in engineered dumps adjacent to the pits, and plant feed hauled to a ROM pad or direct tipped into the crusher at the processing plant. Pits will be mined in progressive stages to balance the waste stripping requirements.

At Altan Nar, the estimated 19 km haulage distance to the processing plant requires that plant feed extracted from the pit will need to be stockpiled nearby and transferred into road-trains for haulage to Bayan Khundii.

16.3 Mining Ore Loss and Dilution

In any mining operation a degree of ore loss and dilution can be expected. This has the general effect of altering the ore tonnages and grades predicted in the in-situ Resource geological model. Factors influencing the loss and dilution include:

- The structure of the deposit;
- The mining method;
- The size and type of the mining equipment; and
- Grade control practices.

The selective mining unit ("SMU") defines the smallest size of material that can be selectively mined using a style and size of digging unit. The SMU is based on the proposed mining method, excavator size and structure of the mineralization.

To model the loss and dilution the in situ geological model was re-blocked with sub-blocks combined to a constant SMU block size. Note that dilution added to ore comes from the adjacent waste model blocks which also have an estimated gold grade.

16.3.1 Bayan Khundii

From the mine characteristics analysis, the average vein thickness for Bayan Khundii high grade plant feed is in the order of 4 m. A target mining accuracy of 0.6 m width was estimated based on RPM industry experience. As the objective is to minimise plant feed loss, it was assumed the mining accuracy would target a 100 mm plant feed loss and a 500 mm waste rock dilution at the edge of the plant feed zone. At the deposit average of a 4 m thick vein, this suggests that the plant feed loss and dilution approach should aim to model a global plant feed loss of approximately 5% and dilution of 25%.

Selection of the SMU size was done using a proprietary RPM application that rapidly re-blocked the resource model for a large range of defined SMU block sizes and reports the resulting loss and dilution. Based on this outcome an SMU size of 2.5 m (X) x 2.5 m (Y) x 1.25 m (Z) was selected at an average global 3% loss and 23% dilution as it best matched the target mining accuracy.

16.3.2 Altan Nar

From the characteristics graph the average vein thickness for Altan Nar ranged from 2 m in high grade to 5 m in low grade. As the proportion of low-grade material is greater, an overall average vein thickness of 4 m is assumed. As the grades are generally lower than Bayan Khundii, the plant feed cannot support as much dilution. Consequently, for a 0.6 m mining accuracy was assumed to target a 300 mm plant feed loss and 300 mm dilution. This suggests that the plant feed loss and dilution approach should aim to model a global plant feed loss of approximately 15% and dilution of 15%.

As with Bayan Khundii, the resource model was reblocked for a larger range of SMU sizes and the resulting loss and dilutions reported. Based on these results an SMU size of 2.5 m (X) x 6.25 m (Y) x 2.5 m (Z) were chosen to define the ROM model which results in an average global 17% loss and 13% dilution.

16.4 Geotechnical

A geotechnical analysis focused on Bayan Khundii and the Discovery Zone of Altan Nar was prepared by Sardonyx Geological, Geotechnical Consulting Services (Sardonyx). The preliminary results, dated 25 Sept 2018, are presented below in **Table 16-1**. After review, RPM chose to consolidate the various sectors into a simplified value that applied to all pit walls. The consolidated values as set out in **Table 16-2** are not considered materially different than the recommended detailed results for each sector and were used in pit limit optimisation and detailed pit design.

Table 16-1 Recommended Pit Slope Parameters

Domain	Description	Batter Angle deg	Inter Ramp Slope Angle deg	Bench Height m	Berm Width m
	Bayan Khundii				
1	West & South Wall	60	46	10	4
2	North West 1 Wall	60	46	10	4
3	North West 2 Wall	70	52	10	4
4	North Wall	60	46	10	4
5	East Wall	65	49	10	4
6	South and South East Wall	60	46	10	4
	Altan Nar				
1	North West Wall	60	46	10	4
2	North and North East Wall	70	52	10	4
3	East Wall	70	52	10	4
4	South and South East Wall	70	52	10	4

Table 16-2 Slope Parameters Used for Design

Description	Batter Angle deg	Inter Ramp Slope Angle deg	Bench Height m	Berm Width m
Bayan Khundii - Oxide	60	46	15	6
Bayan Khundii - Fresh	60	46	15	6
Altan Nar - Oxide	61	48	15	5
Altan Nar - Fresh	67	53	15	5

Subsequent to completion of the pit limit determination and detailed design, the final geotechnical reports for both deposits were provided to RPM. In these documents, dated Nov 2018, the recommended slope angles for Bayan Khundii and Altan Nar remained the same but there were modifications to slope domain descriptions for Altan Nar. In summary, there was no material difference from the previous slope angles used by RPM.

Based on the final pit designs, Sardonyx concluded that for Altan Nar the probability of rock movement failure is expected to be low. For Bayan Khundii, Sardonyx concluded that the proposed open pit requires further geotechnical assessment as it has elevated risk, especially in the SE and NE wall regions. As a result, they stated that a 40 degree overall slope angle is considered more appropriate in these areas.

Due to the material issues being noted, no modifications were made to the pit design. RPM notes that any updated pit slope parameters are to be considered when the mine planning progresses to the more detailed pre-feasibility stage.

16.5 Hydrological

Between August and October 2018, the Okhi-Us Company carried out hydrogeological survey work at Bayan Khundii and Altan Nar. The subsequent reports provided to RPM in Nov 2018 estimate groundwater flow into the Altan Nar pits to be 25 m3 per day and for the Bayan Khundii pit at 106 m3 per day.

These results do not highlight any impediment to the mining process. Hydrological considerations will be reviewed further when the Project progresses to a more detailed study stage.

16.6 Pit Limit Determination

16.6.1 Approach

The open pit limits were determined by considering the physical and economic constraints to mining using Whittle 4X pit limit optimisation software. The Whittle 4X software uses the industry-standard Lerchs-Grossman algorithm to define a three-dimensional (“3D”) shape for the open pit which is considered the “optimal” economic shell for mining.

The terminology “pit limit optimisation” refers to a process which aims to identify the highest value mining pit shape for a given series of inputs and constraints. It does not imply that mining has been “optimised” in other ways, such as equipment optimisation, or labour optimisation, or grade optimisation for example.

The key inputs are a mineral resource block model which contains the tonnage and grade at each point within the deposit, estimates of the ramp-inclusive pit slope angles, metallurgical recoveries and unit costs and revenues.

A key outcome of the economic pit limit optimisation generation is a series of 3D surfaces or “nested pit shells” based on a range of metal selling prices. Each of these shells represents a surface that defines the break-even economic limit for specific revenue assumptions described below. The metal price sensitivity analysis is conducted by applying a “Revenue Factor” (“RF”) to the base case metal price. That is, a 100% revenue factor pit shell results from multiplying the metal sales prices by 100%. A 70% RF pit shell indicates the shape of the pit and mineable quantities at 70% of the base metal price. The outcomes are important in showing the sensitivity of the deposit to varying economic factors, including product price, and is a key consideration in the selection of the optimal pit shell for mine planning.

The nested shells also indicate which areas have the highest margin and are therefore used as a key input to the development strategy for the deposit. The ideal pit development strategy in order to maximise cashflow involves mining successive pit shells from lowest revenue factor (say, 50% RF) to the highest (say, 100%). That is, a pit shell based on a Revenue Factor of 50% would have a higher margin than one at a Revenue Factor of 80% and hence would be sequenced to be mined first.

Selection of the optimal pit is typically based on assessing the prospective mineable quantity and discounted value from each pit shell. The discounted value is best suited for ranking purposes as it is a high-level estimate that does not necessarily allow for all practicalities of mining.

16.6.2 Input Data & Parameters

The pit limit optimisation inputs were sourced from RPM, Erdene and other consultants.

Geological Model

Two resource block models were prepared by RPM and used as the basis for the mining analysis. As discussed previously, these models were regularised to create ROM grades that represented the expected mining loss and dilution.

Resource Categories

This PEA used Measured, Indicated and Inferred category materials in the models.

Model blocks imported in Whittle 4X were coded by confidence category allowing the impact of the Inferred material to be determined.

Topography

Digital terrain models ("DTM") were provided for both Bayan Khundii and Altan Nar. A larger terrain surface covering the area between the two deposits was sourced from publicly available SRTM data.

RPM has been advised that no mining has occurred at either site.

Physical Constraints

Physical constraints are typically surface features which limit the allowable extent of mining. Examples include critical infrastructure, mining titles, property ownership and environmentally sensitive areas.

The current Development Permit covers sufficient surface extent and does not constrain the mining or dumping limits.

The current Licence boundaries were applied as a constraint during pit optimisation. RPM is not aware of any other surface constraints to the Project such as waterways, existing structures or major roadways.

Mining Parameters

Mining costs were sourced from RPM internal databases and based on work previously completed on similar size and style deposits in Mongolia. These costs were reviewed and discussed with Erdene and determined to be reasonable and appropriate.

Mining costs and related parameters used for the assessment are shown in **Table 16-3**.

Table 16-3 Assessment Parameters – Mining

Description	Units	Bayan Khundii	Altan Nar
Waste Rock Mining Cost			
Drill and Blast	US$/t	0.6	0.6
Load & Haul	US$/t	1.4	1.4
Haulage Cost Per Vertical Metre	US$/t per m vert	0.0031	0.0031
Moisture Adjustment of costs to dry basis	factor	1.02	1.02
Contingency	factor	10%	10%
Plant Feed Mining and Handling Costs			
Drill and Blast	US$/t plant feed	0.6	0.6
Load & Haul	US$/t plant feed	1.4	1.4
Haulage Cost Per Vertical Metre	US$/t per m vert	0.0031	0.0031
Grade Control	US$/t plant feed	0.35	0.35
Other Plant Feed Mining Overhead	US$/t plant feed	0.05	0.05
Plant Feed Haulage to BK ROM	US$/t plant feed	-	1.6
Moisture Adjustment	factor	1.02	1.02
Contingency	factor	10%	10%
Other Mine Costs			
De-watering Cost	US$/t plant feed	0.1	0.1
Environmental Management /Rehab	US$/t plant feed	0.1	0.1
Other Parameters			
Maximum Estimated Plant feed Production Rate	Plant feed ktpa	500	400

Processing Parameters

The processing costs and recoveries were prepared by RPM based on the processing methodology, rock properties and proposed plant capacity. These parameters relied on metallurgical testwork provided by work completed by Blue Coast Research and reviewed by RPM.

Processing costs and related parameters used for the assessment are shown in **Table 16-4**.

Table 16-4 Assessment Parameters - Processing

Description	Units	Bayan Khundii	Altan Nar (1)
<u>Processing</u>			
Reagent & processing Cost	US$/t plant feed	16.47	16.47
Processing Overhead	US$/t plant feed	6	6
Other Site Related Cost	US$/t plant feed	5	5
Contingency	factor	10%	10%
<u>Processing Recovery</u>			
Gold		*<u>Au ≥ 0.00 < 0.35 g/t</u>*	*<u>As ≥ 0 <1,600 ppm</u>*
	%	230.6117*Au Grade (g/t) + 0.00	88
		<u>Au ≥ 0.35 < 1.20 g/t</u>	*<u>As ≥ 1,600< 10,000 ppm</u>*
	%	13.320*Au Grade (g/t) + 76.052	48
		<u>Au ≥1.20 g/t</u>	*<u>As ≥ 10,000 ppm</u>*
	%	0.318 * 1.20 (g/t) + 91.222	29
Silver	%	N/A	62

1. *Altan Nar pit optimisation used a processing cost of 12.31 US$/t for oxide plant feed. The Altan Nar gold recovery varies dependant on arsenic grade.*

Selling and Analysis Parameters

Selling price, selling costs, royalty and economic analysis parameters were prepared by RPM in consultation with Erdene. These parameters are shown in **Table 16-5**.

Table 16-5 Assessment Parameters - Selling Costs and Cashflow Analysis

Description	Units	Gold	Silver
<u>Selling Costs</u>			
Metal Price	US$/tr. oz	1,200	18
Royalty	%	2.5*	5.0
Payable Metal	%	99.95%	99.95
Refining Charge	US$/tr. oz	4.0	0.5
<u>Cashflow Analysis</u>			
Base Case Processing Rate	Plant feed ktpa	600	
Discount Rate	%	10	

16.6.3 Pit Limit Optimisation Results

Pit limit optimisation was completed on a range of Revenue Factors (RF) generating a single optimum pit shell for each gold and silver price factor, the resulting pit shells are referred to as a series of nested pits. These nested pits were used to:

- Complete a high-level review of the sensitivity of the deposit to changes in gold price (or operating costs);
- Gain a high-level insight into the potential mining strategy; and
- Perform an analysis determining the incremental mineable material and economics for each successive shell.

Metal Price Sensitivity Analysis

A high-level economic sensitivity was undertaken using Whittle 4X software to ascertain how the open pit limits and mineable quantities vary with metal price. The sensitivity analysis was completed on metal prices ranging from 10% to 150% of the base case mine gate gold and silver prices.

Bayan Khundii

The results for Bayan Khundii are presented graphically in **Figure 16-7** and **Figure 16-8** with the highest undiscounted cash value (optimum) pit shell highlighted. The graph shows that the relationship between pit size and metal price as being most sensitive between 45% RF and 75% RF. Several stepped changes occur in pit size, most notably at 50% RF and to a smaller degree at 70% RF and 100% RF. These occur as a result of overcoming stripping hurdles resulting in a rapid expansion of the pit, which in turn is related to the structure of the deposit. The deposit is sensitive to metal price with a 20% price decline reducing the plant feed tonnage by 19%. Below 75% of the Base Case prices the metal price sensitivity becomes even more pronounced.

At the Base Case parameters (RF=100%) the Bayan Khundii pit has 2.8 Mt plant feed and 35.5 Mt waste at a 12.5 t/t strip ratio. The plant feed grade is 3.6 g/t Au with 333 koz of contained gold.

In summary, any changes in metal price will have a material impact on the Bayan Khundii economic pit limit. This impact will be greatest at prices drop below 80% of the Base Case.

Figure 16-7 Bayan Khundii Price Sensitivity - Plant Feed, Waste and Strip Ratio

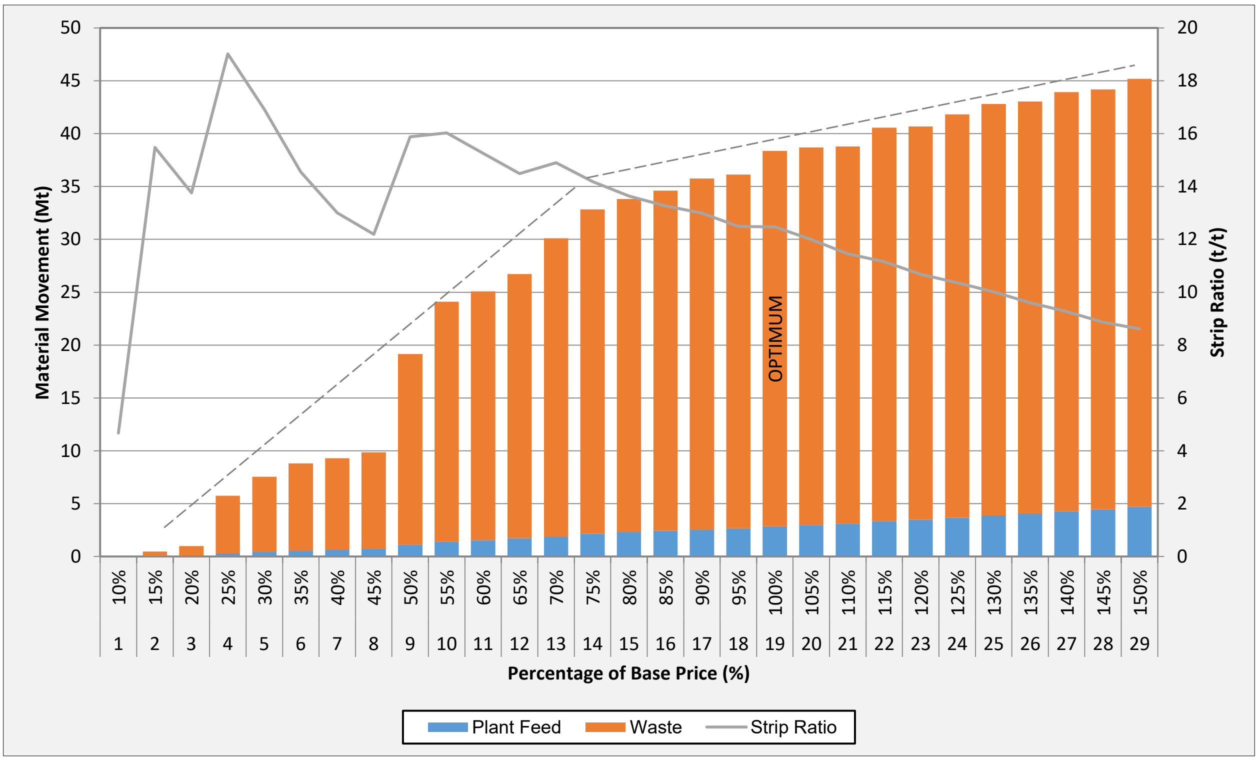
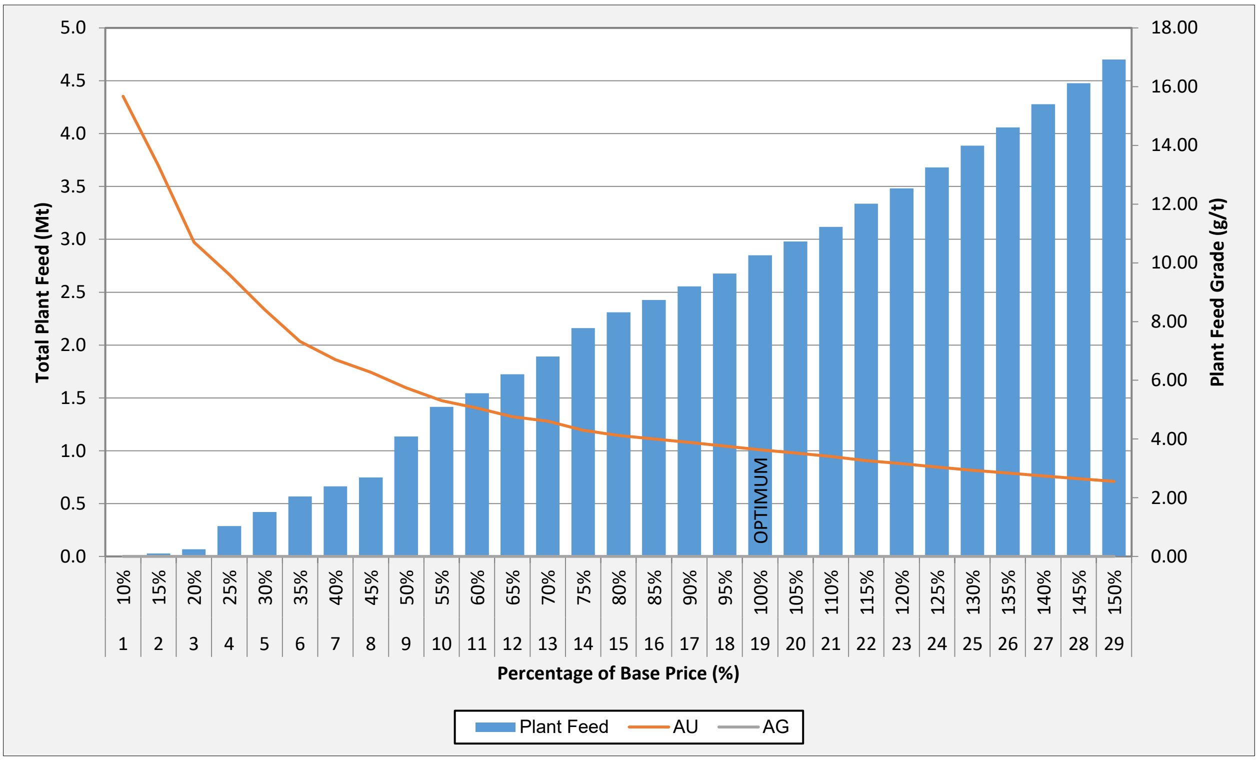


Figure 16-8 Bayan Khundii Price Sensitivity – Plant Feed and Average Grade



Altan Nar

The corresponding metal price sensitivity graph for Altan Nar is shown in **Figure 16-9** and **Figure 16-10**. Unlike Bayan Khundii, the Altan Nar deposit does not highlight any stripping hurdles and the pit expands linearly as the price increases. In comparison to Bayan Khundii this deposit is also more sensitive to metal price, with a 20% decline in prices resulting in a decrease of 24% in plant feed tonnage as compared the 100% pit shell.

At the Base Case parameters, the100% Altan Nar pit shell has 2.2 Mt plant feed and 12.4 Mt waste at a 5.6 t/t strip ratio. The average plant feed grade is 3.1 g/t Au with 220 koz of contained gold.

In summary, any changes in metal price will have a reasonable impact on the Altan Nar economic pit limit. This deposit has a greater sensitivity than Bayan Khundii to changes in the Base Case metal prices.

Figure 16-9 Altan Nar Price Sensitivity – Plant Feed, Waste and Strip Ratio

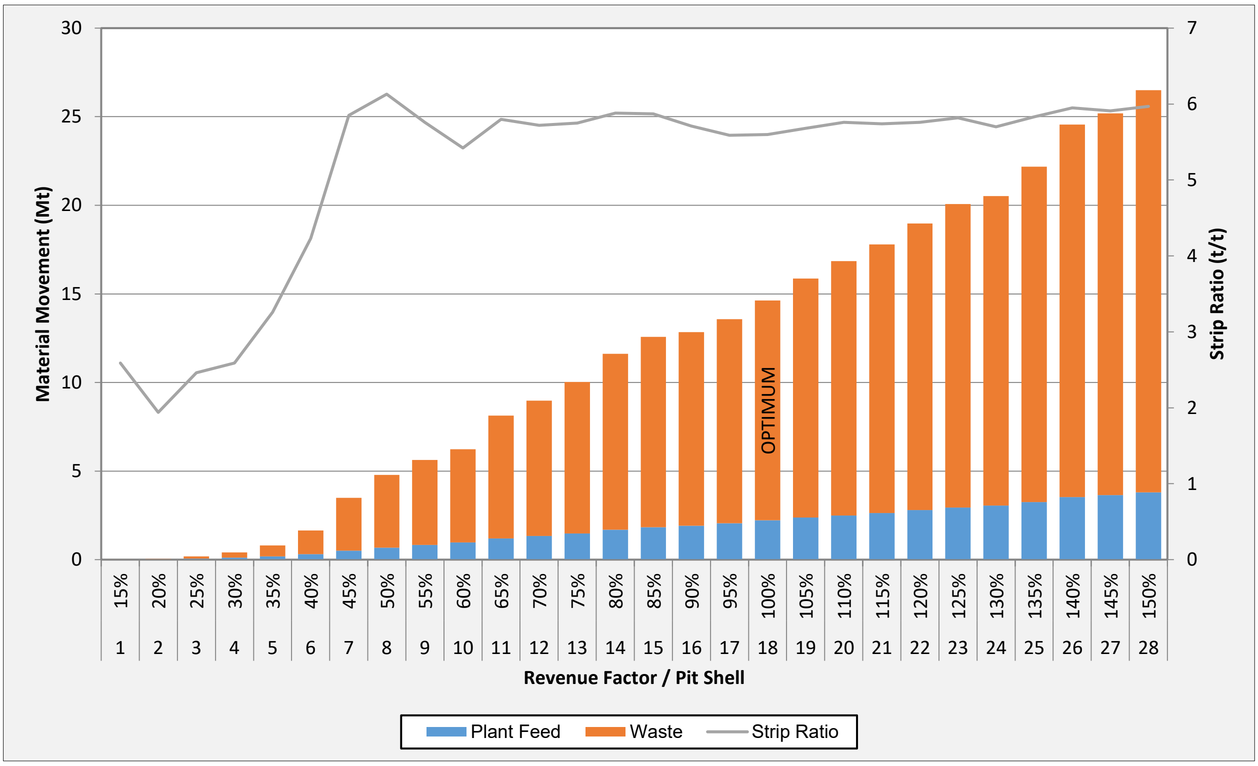
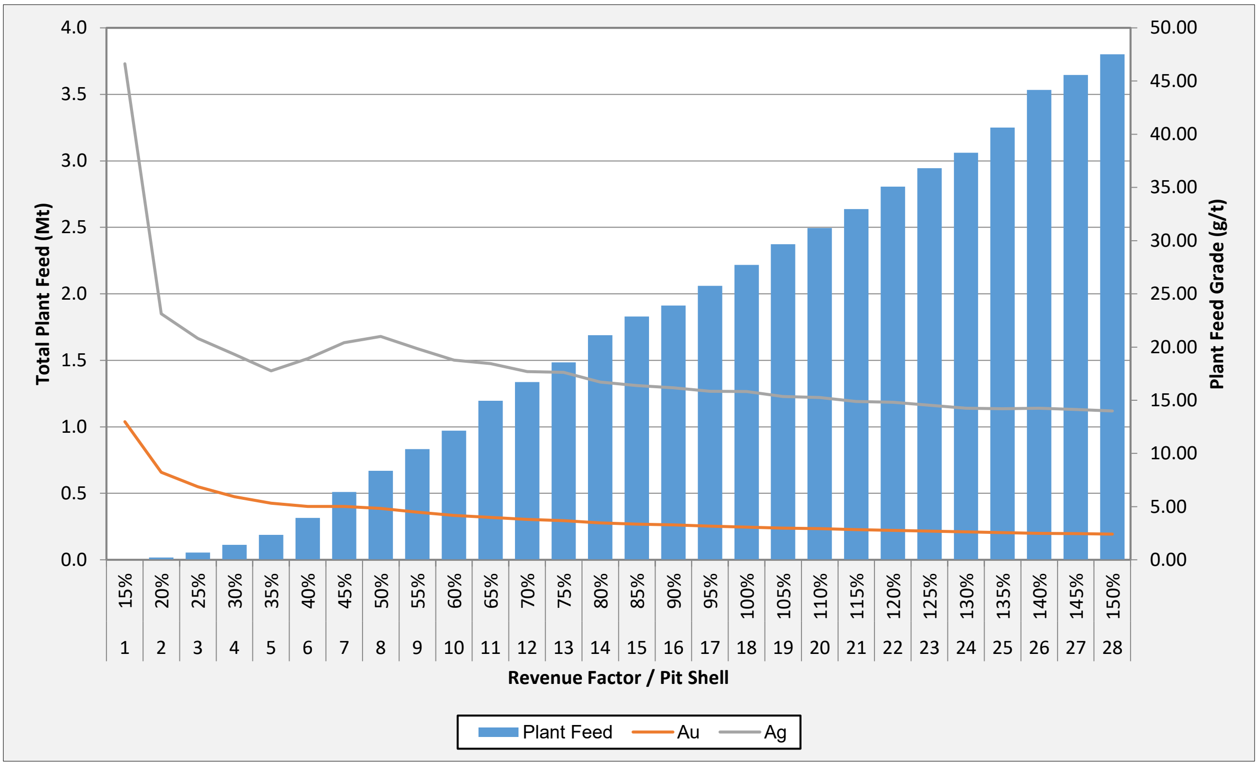


Figure 16-10 Altan Nar Price Sensitivity – Plant Feed and Average Grade



Pit Shell Cashflow Analysis

For the pit shell cashflow analysis the metal price remains constant at US$1,200/oz. for gold and $18/oz. for sliver while each of the nested pit shells is evaluated to determine the mineable quantities and indicative discounted value. The purpose of the analysis is to select a pit shell that provides both a suitable cashflow and robustness to economic variability.

Bayan Khundii

In **Figure 16-11** and **Figure 16-12**, the quantities and grades for each pit shell are shown relative to the optimum (that is, highest cash value) pit shell. Note that the Revenue Factor has been included on the horizontal scale for pit shell reference only and it has no bearing on the analysis. The supporting data is presented in **Table 16-6**.

These graphs display a reasonably linear drop in plant feed from Pit 19 (RF=100%) down to Pit 14. Below this the decrease in plant feed occurs at a more stepped and dramatic rate. The larger stepped changes in pit tonnage, resulting from pockets of plant feed becoming economic, highlights potential cutbacks that can be used for the staged mining of the deposit.

The incremental strip ratio in **Figure 16-13** shows that while the strip ratio generally increases linearly, some shells such as 13 and 19 exhibit larger strip ratios. The plant feed in these shells, while still profitable will require a larger quantity of waste to be removed which will impact on cashflow.

Figure 16-12 shows how the incremental margin per recovered ounce of gold decreases as the pit size approaches the theoretical optimum pit. The lower margin indicates that the last few incremental shells below 100% particularly 95% are at a higher risk to changes in economic factors. This suggests a shell smaller than the 100% RF pit shell should be considered so that the profit margin at the edge of the pit is more resilient to reductions in price or higher costs.

Figure 16-11 Bayan Khundii Shell Analysis – Plant Feed, Waste & Strip Ratio

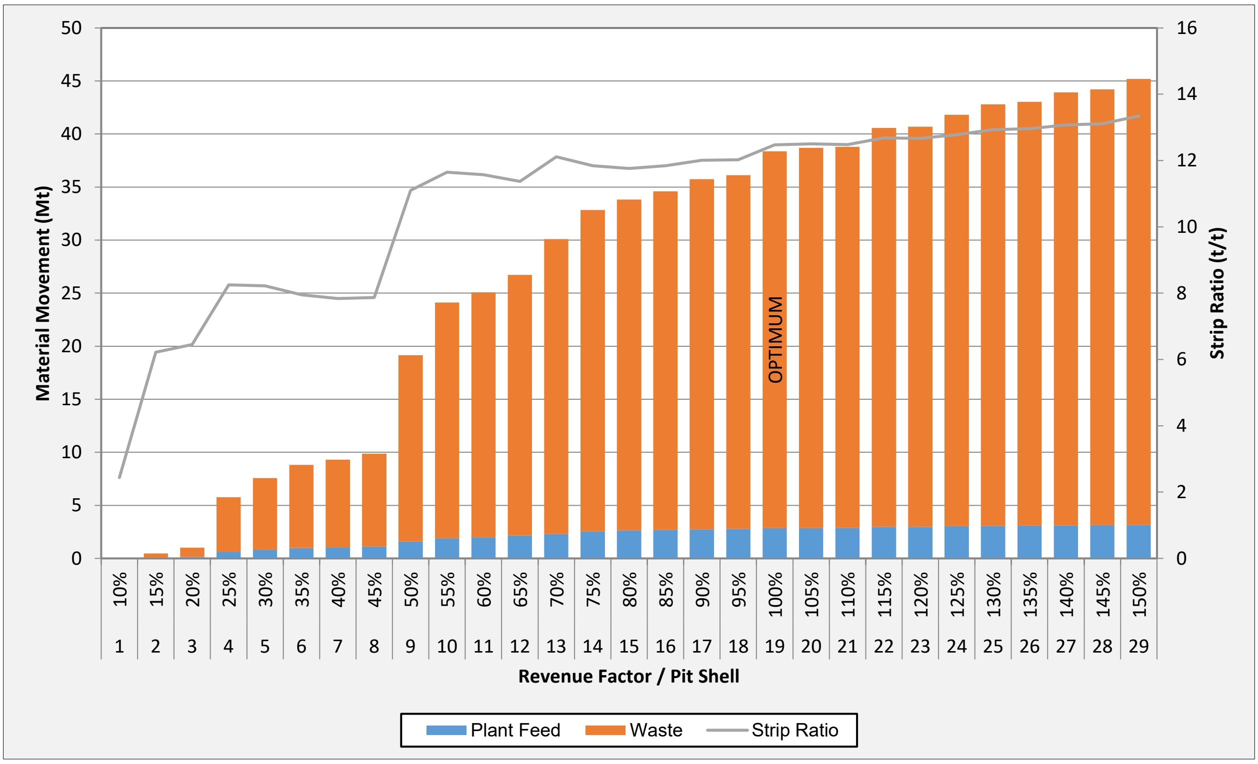


Figure 16-12 Bayan Khundii Shell Analysis – Plant Feed & Grade

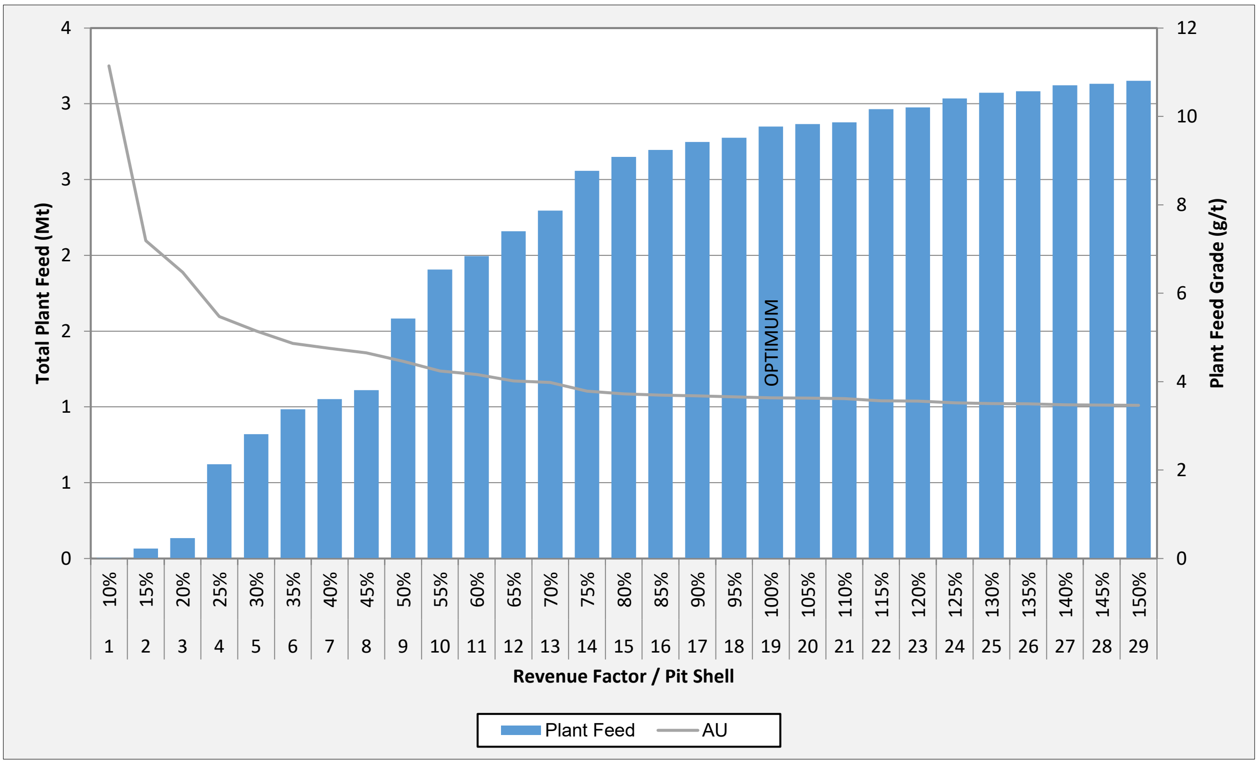


Figure 16-13 Bayan Khundii Shell Analysis - Incremental Strip Ratio

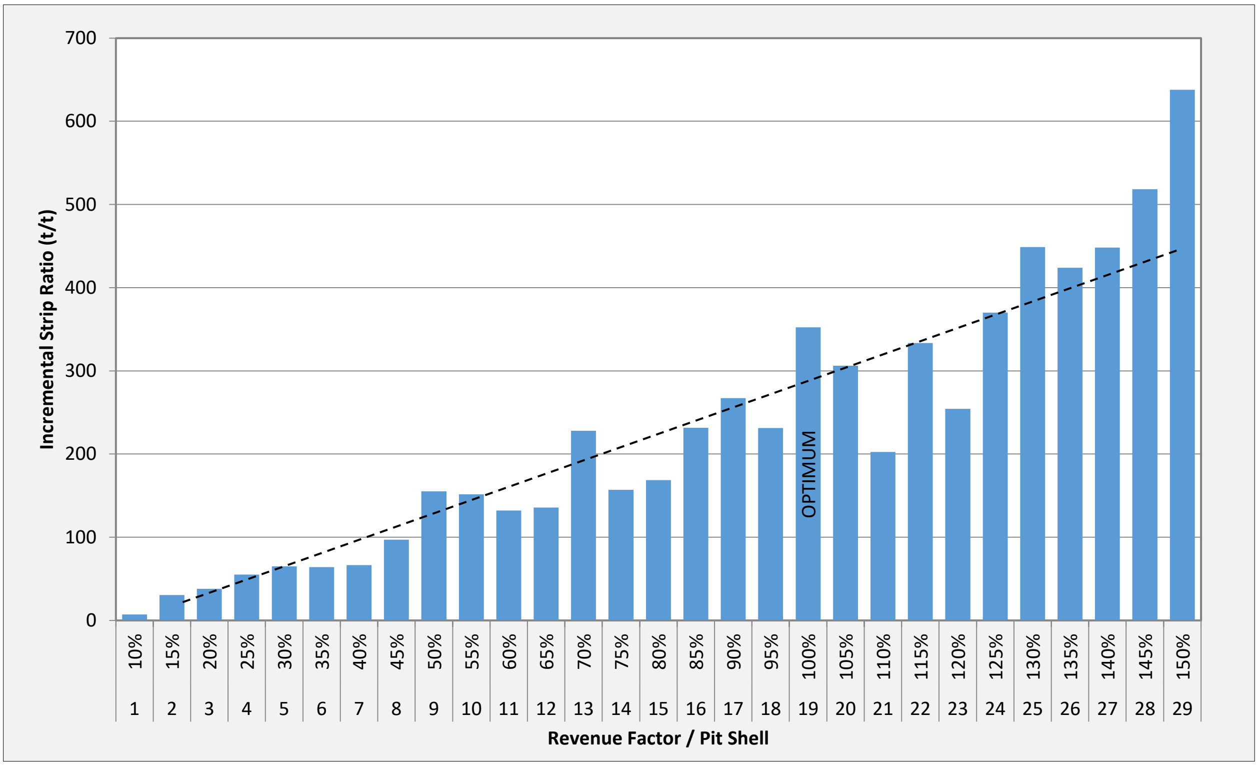
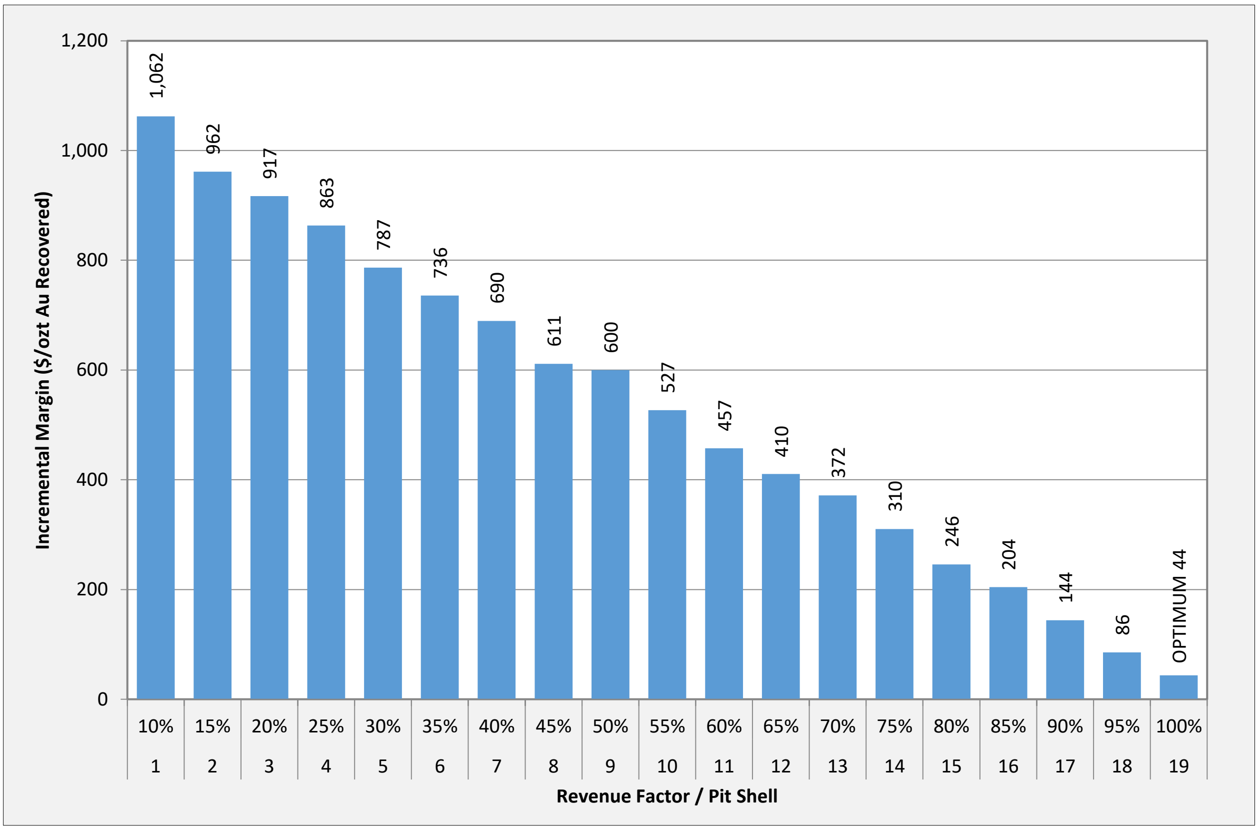


Figure 16-14 Bayan Khundii Shell Analysis - Incremental Margin



Altan Nar

In **Figure 16-13** and **Figure 16-14** the quantities and grades for each pit shell are shown relative to the optimum pit shell. Again, the Revenue Factor has been included on the horizontal scale for pit shell reference only and it has no bearing on the analysis. The supporting data is presented in **Table 16-7**.

Unlike Bayan Khundii these graphs display a more linear drop in tonnage below Pit 18 (RF=100% pit). Below Pit 14 the decrease in plant feed becomes slightly more pronounced. There are no significant stepped tonnage changes between the pit shells, and thus no indicative mine staging.

The incremental strip ratio in **Figure 16-17** shows that while the strip ratio generally increases linearly, some shells such as Pit 11 and 18 exhibit larger strip ratios. The plant feed in these shells, while still profitable will require a larger quantity of waste to be removed which will impact on cashflow.

Figure 16-18 shows how the incremental margin per recovered ounce of gold decreases as the pit size approaches the theoretical optimum pit. The lower margin indicates that the last few incremental shells are at a higher risk to changes in economic factors. This suggests a shell smaller than the 100% RF pit shell should be considered so that the profit margin at the edge of the pit is more resilient to reductions in price or higher costs.

Figure 16-15 Altan Nar Shell Analysis – Plant Feed, Waste & Strip Ratio

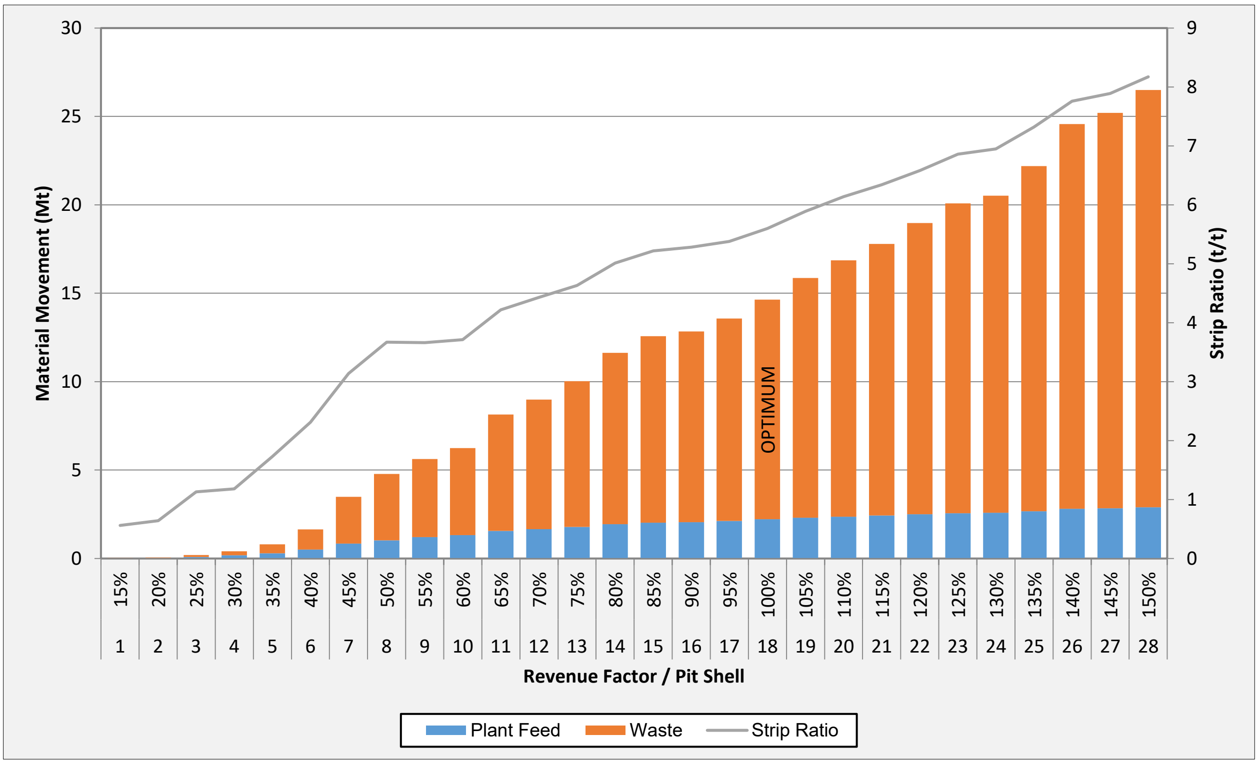


Figure 16-16 Altan Nar Shell Analysis – Plant Feed & Grade

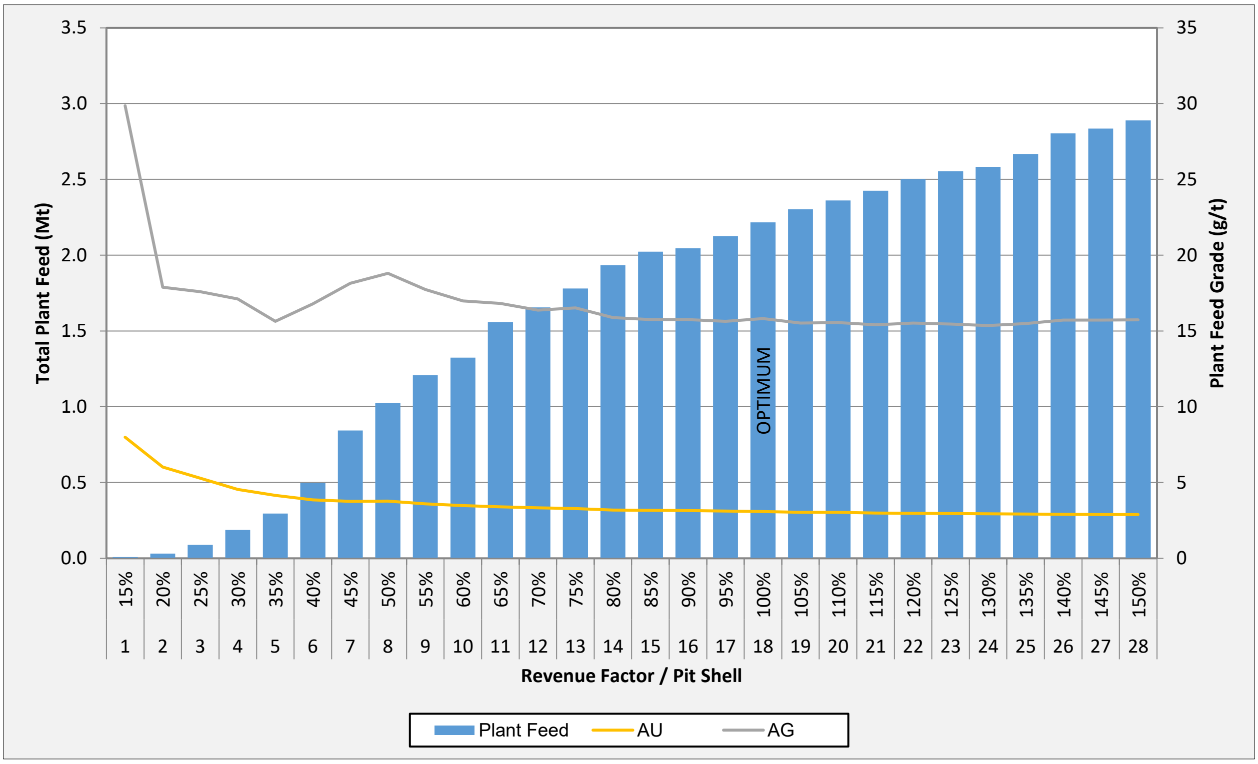


Figure 16-17 Altan Nar Shell Analysis - Incremental Strip Ratio

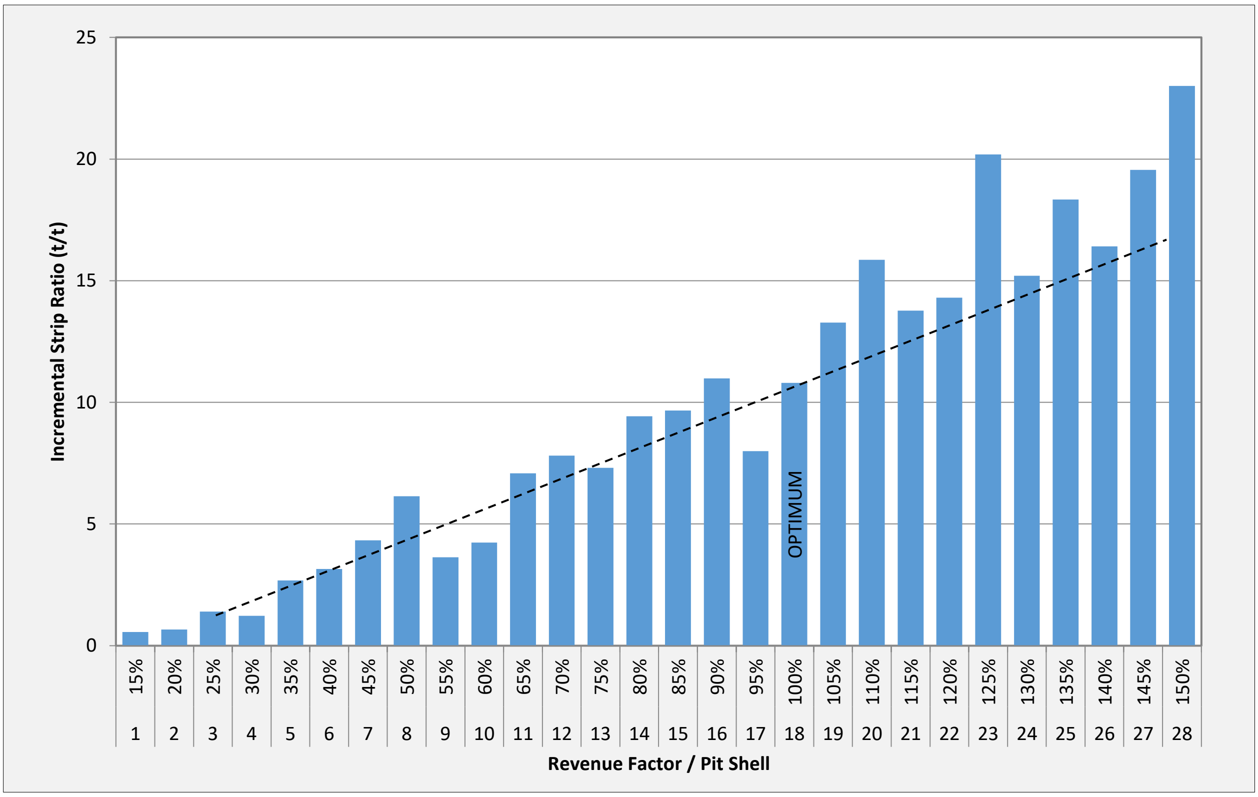
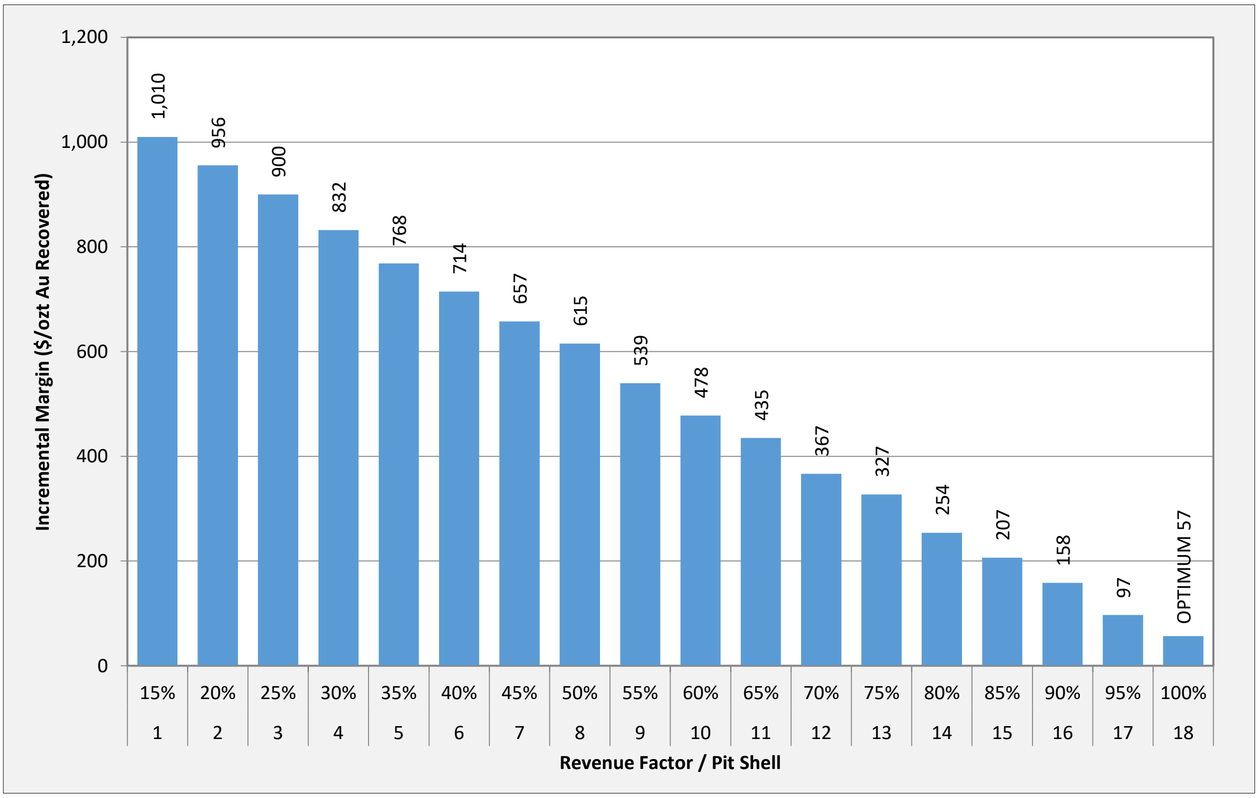


Figure 16-18 Altan Nar Shell Analysis - Incremental Margin



Cashflow Analysis

The basic Whittle 4X pit limit optimiser result defines the “optimal” pit shell for fixed mining, economic and physical constraints. This outcome, however, is not necessarily the “optimal” result as it does not account for the time value of money. To overcome this issue, Whittle 4X software undertakes a life-of-mine (“LOM”) cashflow analysis to assess which pit(s) provide the highest economic return taking into account the time value of money. This is one of the key parameters used to select an ultimate pit shell.

For the total cashflow of a pit to be calculated, there needs to be a LOM production schedule to allow mining costs and revenues to be determined over time. Therefore, a plant feed mining target rate and potentially a waste mining constraint is applied for each period in order to create the schedule. Whittle 4X develops two types of schedules which it refers to as “best case” and “worst case” schedules.

The “best case” schedule assumes mining commences at the inner-most nested pit shell and then expands to successively larger shells until the selected pit limit is reached. As this sequence also reflects mining from the highest to lowest margin per tonne pit shell, it theoretically produces the “highest” project cashflow. The result should be considered optimistic as the pit shells often are not of a practical mining width and hence the staged development represented in the schedule is not achievable in practice.

The “worst case” schedule assumes mining occurs in horizontal benches, starting from the highest elevation and then proceeding down to the base of the selected pit. There are no interim pit shells mined. As the upper benches typically have the highest strip ratio, this often results in the cashflow approaching the lower bound for the selected pit.

RPM then estimates a third schedule, being the “specified schedule”, which is a combination of the “best case” and “worst case” outcomes. This resulting cashflow is between the best case and worst-case scenarios and aims to maximise the deposit value within practical bounds.

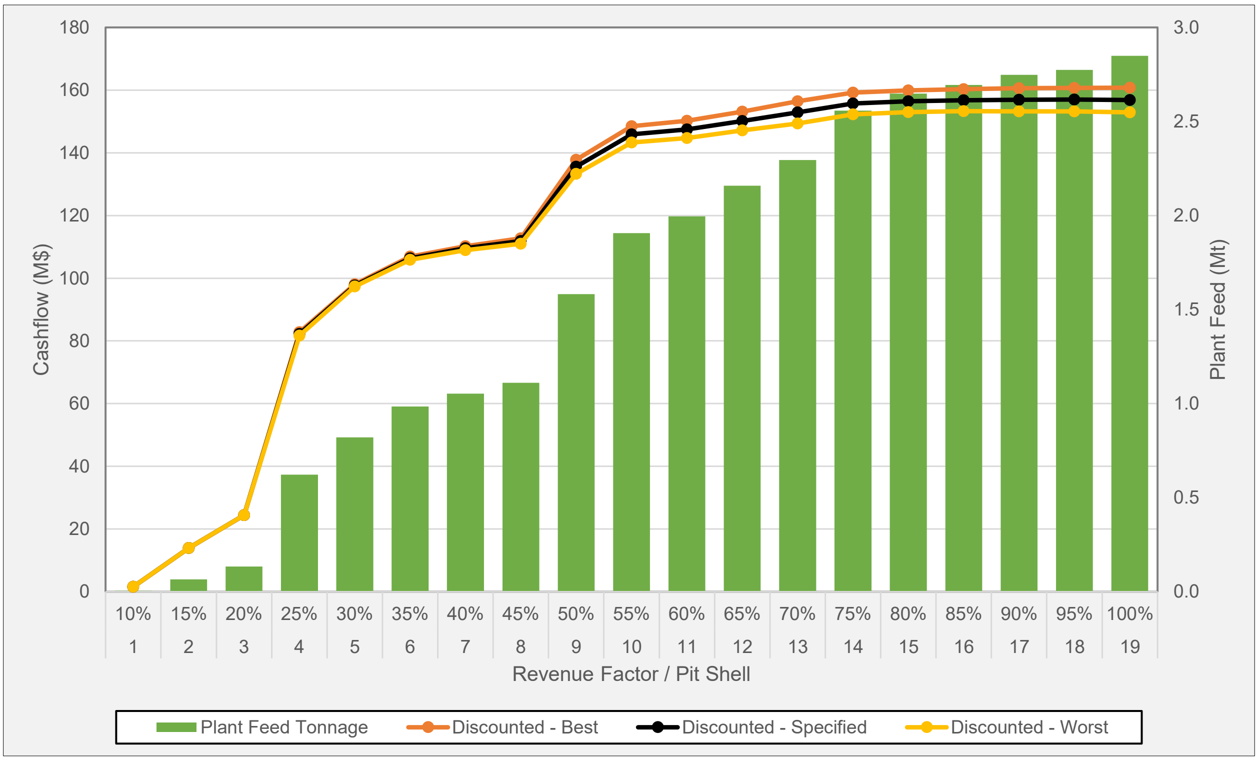
Note that Whittle 4X does not attempt to optimise a scheduling sequence to best meet all constraints and maximise cashflow, but simply follows the rules dictated by the “best” and “worst” case scenario schedules. It is therefore useful mainly as a ranking tool to select a pit shell and high-level strategic analysis, it is not to estimate a project value.

For the cashflow analysis RPM assumed a 500 ktpa ROM plant feed production (strategic analysis undertaken following this task modified the production target to 600 ktpa), a 10% discount rate and a constant gold price of US$1,200/oz and silver price of US$18/oz. All other parameters were as per the pit limit optimisation inputs. Capital was excluded from this analysis as it is considered constant and only the relative pit shell results are of interest.

Bayan Khundii

The graph in **Figure 16-17** shows that for Bayan Khundii the discounted cashflow, represented by the ‘specified’ line is constant for Pit 14 and above. Thus, any shell in this range can be chosen to define the pit limit and the economic outcome will be similar. Below Pit 10 the discounted cashflow drops considerably and so a pit in this range is not recommended.

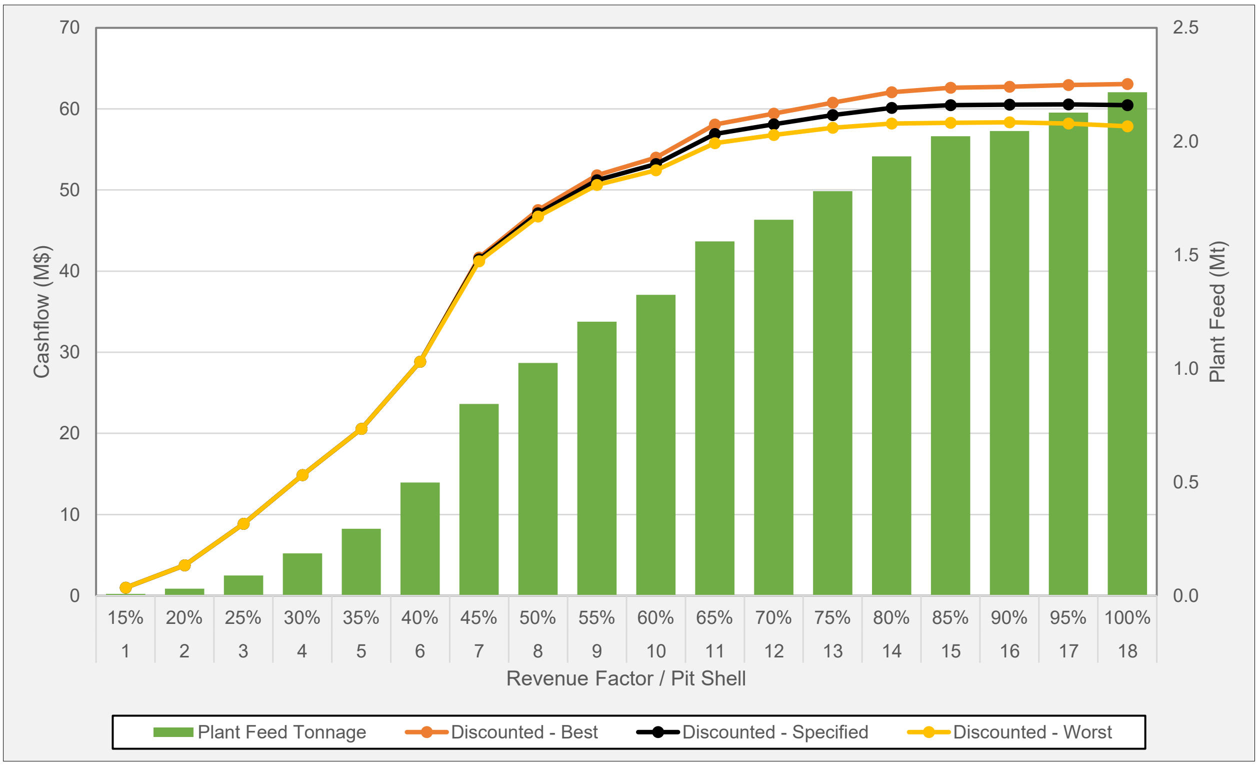
Figure 16-19 Bayan Khundii Whittle Cash-flow Analysis



Altan Nar

The graph for Altan Nar, shown in **Figure 16-18**, also displays a comparable discounted cashflow from Pits 14 to 18 (the optimum). Again, any shell in this range can be chosen to define the pit limit and the economic outcome will be similar. Below Pit 11 the discounted cashflow drops considerably and so a pit in this range is not recommended.

Figure 16-20 Altan Nar Whittle Cash-flow Analysis



Results Tables

The data underlying the pit optimisation analysis is presented in **Table 16-6** for Bayan Khundii and in **Table 16-7** for Altan Nar.

These tables also show the amounts of Measured, Indicated and Inferred plant feed within the pit shells. For Bayan Khundii the amount of Inferred plant feed is small at ~3%, with Measured and Indicated plant feed driving the bulk of the pit value. At Altan Nar there is no Measured category material and the pit economics are driven mainly by Indicated and Inferred material. It is still a reasonable result with 70% of the plant feed being of Indicated category. As Bayan Khundii results have less Inferred, these for can be considered more robust than those for Altan Nar.

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Table 16-6 Bayan Khundii Whittle Analysis Results Table

Pit Shell	Revenue Factor	Total Mt	Waste Mt	Plant Feed Mt	Strip Ratio t/t	Plant Feed Au g/t	Measured Plant Feed Mt	Indicated Plant Feed Mt	Inferred Plant Feed Mt	Ave. Cost US$/oz rec	Incr. SR t/t	Incr. Margin US$/ozt Au	DCF Specified US$ M
1	10%	0.00	0.00	0.00	2.4	11.1	0.0	-	-	138	2.4	1,062	2
2	15%	0.50	0.40	0.10	6.2	7.2	0.1	-	-	228	6.5	962	14
3	20%	1.00	0.90	0.10	6.5	6.5	0.1	-	-	253	6.7	917	24
4	25%	5.80	5.10	0.60	8.3	5.5	0.5	0.1	-	315	8.7	863	82
5	30%	7.60	6.70	0.80	8.2	5.2	0.6	0.2	-	334	8.1	787	98
6	35%	8.80	7.80	1.00	8.0	4.9	0.7	0.3	-	349	6.6	736	106
7	40%	9.30	8.30	1.10	7.8	4.8	0.8	0.3	-	356	6.2	690	110
8	45%	9.90	8.70	1.10	7.9	4.7	0.8	0.3	-	364	8.5	611	112
9	50%	19.20	17.60	1.60	11.1	4.5	0.9	0.7	-	426	18.7	600	136
10	55%	24.10	22.20	1.90	11.7	4.2	0.9	1.0	-	457	14.3	527	146
11	60%	25.10	23.10	2.00	11.6	4.2	0.9	1.0	-	465	9.8	457	147
12	65%	26.70	24.60	2.20	11.4	4.0	1.0	1.1	-	478	9	410	150
13	70%	30.10	27.80	2.30	12.1	4.0	1.0	1.2	-	496	23.7	372	153
14	75%	32.80	30.30	2.60	11.8	3.8	1.1	1.4	0.1	518	9.4	310	156
15	80%	33.80	31.20	2.60	11.8	3.7	1.1	1.5	0.1	525	9.7	246	156
16	85%	34.60	31.90	2.70	11.8	3.7	1.1	1.6	0.1	530	16.2	204	157
17	90%	35.80	33.00	2.70	12.0	3.7	1.1	1.6	0.1	537	20.5	144	157
18	95%	36.10	33.30	2.80	12.0	3.7	1.1	1.6	0.1	540	12.7	86	157
19	100%	38.40	35.50	2.80	12.5	3.6	1.1	1.7	0.1	552	29.5	44	157

Table 16-7 Altan Nar Whittle Analysis Results Table

Pit Shell	Revenue Factor	Total Mt	Waste Mt	Plant Feed Mt	Strip Ratio t/t	Plant Feed Au g/t	Plant feed Ag g/t	Measured Plant feed Mt	Indicated Plant feed Mt	Inferred Plant Feed Mt	Ave. Cost US$/oz rec	Incr. SR t/t	Incr. Margin US$/t plant feed	Incr. Margin US$/ozt Au	DCF Specified US$ M
1	15%	0.0	0.0	0.0	0.6	8.0	29.9	-	0.0	-	271	0.6	134	1,010	1.0
2	20%	0.1	0.0	0.0	0.6	6.0	17.9	-	0.0	0.0	281	0.7	119	956	3.8
3	25%	0.2	0.1	0.1	1.1	5.3	17.6	-	0.0	0.0	330	1.4	90	900	8.8
4	30%	0.4	0.2	0.2	1.2	4.5	17.1	-	0.1	0.1	380	1.2	66	832	14.9
5	35%	0.8	0.5	0.3	1.7	4.2	15.6	-	0.1	0.1	417	2.7	59	768	20.6
6	40%	1.6	1.2	0.5	2.3	3.9	16.8	-	0.3	0.2	475	3.2	49	714	28.8
7	45%	3.5	2.6	0.8	3.1	3.8	18.1	-	0.6	0.3	540	4.3	44	657	41.5
8	50%	4.8	3.8	1.0	3.7	3.8	18.8	-	0.7	0.3	566	6.1	42	615	47.1
9	55%	5.6	4.4	1.2	3.7	3.6	17.7	-	0.8	0.4	586	3.6	30	539	51.2
10	60%	6.2	4.9	1.3	3.7	3.5	17.0	-	0.9	0.4	600	4.2	25	478	53.2
11	65%	8.1	6.6	1.6	4.2	3.4	16.8	-	1.1	0.5	634	7.1	25	435	56.9
12	70%	9.0	7.3	1.7	4.4	3.3	16.4	-	1.1	0.5	646	7.8	20	367	58.1
13	75%	10.0	8.2	1.8	4.6	3.3	16.5	-	1.2	0.6	666	7.3	16	327	59.2
14	80%	11.6	9.7	1.9	5.0	3.2	15.9	-	1.3	0.6	688	9.4	14	254	60.1
15	85%	12.6	10.6	2.0	5.2	3.2	15.8	-	1.3	0.7	702	9.7	10	207	60.5
16	90%	12.8	10.8	2.0	5.3	3.2	15.8	-	1.4	0.7	706	11.0	8	158	60.5
17	95%	13.6	11.4	2.1	5.4	3.1	15.6	-	1.4	0.7	719	8.0	4	97	60.6
18	100%	14.6	12.4	2.2	5.6	3.1	15.8	-	1.5	0.7	736	10.8	3	57	60.5

16.6.4 Pit Shell Selection

In selecting the preferred Bayan Khundii and Altan Nar pit shells the following pit optimisation results were reviewed;

- Total plant feed & waste tonnages,
- Average plant feed grades,
- Average and incremental strip ratios,
- Incremental margins, and
- High level discounted cashflow analysis.

As expected in pit optimisation, the maximum plant feed tonnages are achieved for the 100% Revenue Factor pit shells. However, for both deposits the additional plant feed gained in the final shells is small while the incremental margin of that plant feed is low due to the increased cost of the waste stripping. This lower margin means that as the pit shells approach the 100% Revenue Factor, they become more sensitive to fluctuations in metal prices and production costs. It is therefore prudent to select a final pit shell that provides a lower level of risk to these economic fluctuations.

While the 100% Revenue Factor pit shell by definition provides the highest undiscounted cashflow, it is not necessarily the case when the time value of money is considered. The discounted cashflow analysis for Bayan Khundii and Altan Nar both show that the value of the deposits is similar for the 80% to 100% Revenue Factor shells. Thus, any pit shell in this range can be selected and will produce the same economic outcome.

Based on the pit optimisation results, Erdene selected the 90% Revenue Factor pit shells for each deposit to guide the detailed ultimate pit designs. This selection results in a high potential project value while providing a pit limit with higher final margins thereby reducing risk to economic impacts.

16.7 Cut-off Grades

Within a pit limit the delineation between mineralization directed to the process plant and waste rock is based on the material grades and revenue. A marginal cut-off grade defines that grade at which the revenue generated equals the incremental cost of mining and processing the material. Any material treated with a grade above the marginal cut-off will result in a net positive cashflow. For operations that market a single metal or product this marginal cut-off grade can be calculated from the expected processing recovery, incremental plant feed mining cost, product selling costs, processing cost and payable metal price.

For polymetallic deposits with two or more payable products, or where there is a complex variable grade recovery, a better approach is to estimate the net processing return (profit margin at the process plant). This approach was applied to the Altan Nar and Bayan Khundii deposits.

To determine the split between plant feed and waste in AN and BK a Net Smelter Return (NSR) was calculated for the blocks in the ROM model using the metal prices, variable grade recoveries and operating costs up to the plant. The NSR was then compared to the relevant plant feed processing costs to determine a Net Process Return (NPR) or profit margin for each block. Blocks with a positive margin are considered profitable and considered “plant feed”. The remaining blocks are flagged as waste or allocated to a subgrade stockpile. The NPR was estimated based on the parameters set out in **Table 16-3**.

16.8 Pit and Dump Design

Based on the geotechnical analysis by SARDONYX Geological, Geotechnical Consulting Services, RPM has chosen the following design parameters for all rock domains in both Bayan Khundii and Altan Nar:

- Bench Face Angle = 60 degrees
- Final Bench Height = 15 m

- Berm Widths = 6 m, and
- Ramp Width = 15 m.

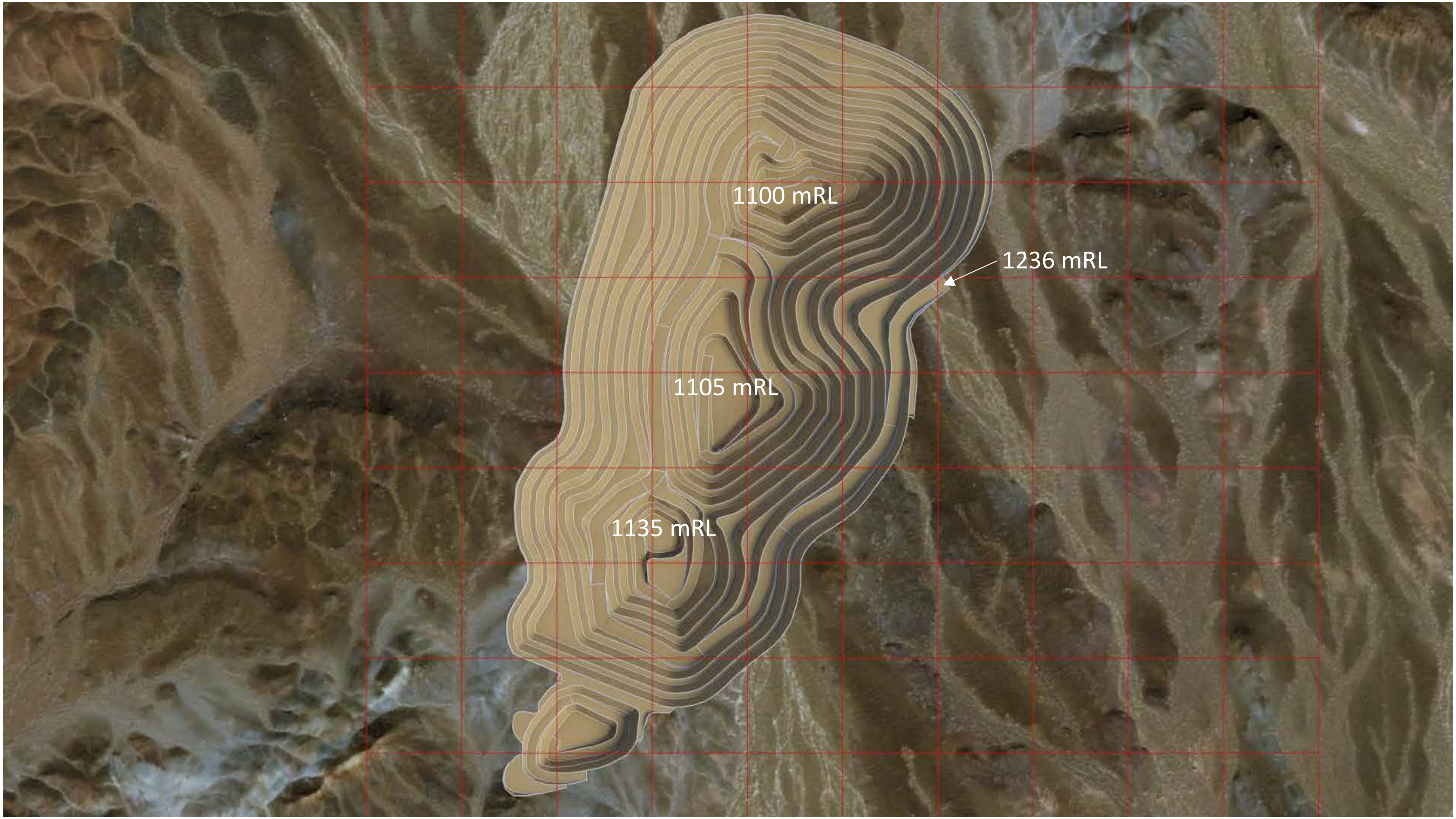
Ramps accessing the final pit floor are reduced to a 10 m width to allow greater material recovery and reduce strip ratio.

All pit designs were constrained by the corresponding pit shells obtained from the pit limit optimisation. The completed designs were compared against the Whittle results and any tonnage differences found to be within expected ranges. The initial three development stages in Bayan Khundii are indicative pit shells exported from Whittle while the Altan Nar North Pit and South Pit stages are designs based on Whittle shells.

The final pit design for Bayan Khundii is shown in **Figure 16-21** and for Altan Nar North Pits in **Figure 16-22**, Altan Nar Central Pits in **Figure 16-23** and Altan Nar South Pit in **Figure 16-24**. **Figure 16-25** shows a 3D view of the final Bayan Khundii pit with the mineralized veins superimposed. A similar image for Altan Nar South Pit is shown in **Figure 16-26**.

Dumps were designed using a 34-degree batter face, 10 m berms at 15 m lifts. This results in an overall slope of 25 degrees which is considered suitable for rehabilitation.

The locations of waste dumps are presented in **Figure 16-27** for Bayan Khundii and in **Figure 16-28** for Altan Nar. Both figures also include the location of pits and adjacent infrastructure.



N

0 300 600 metres

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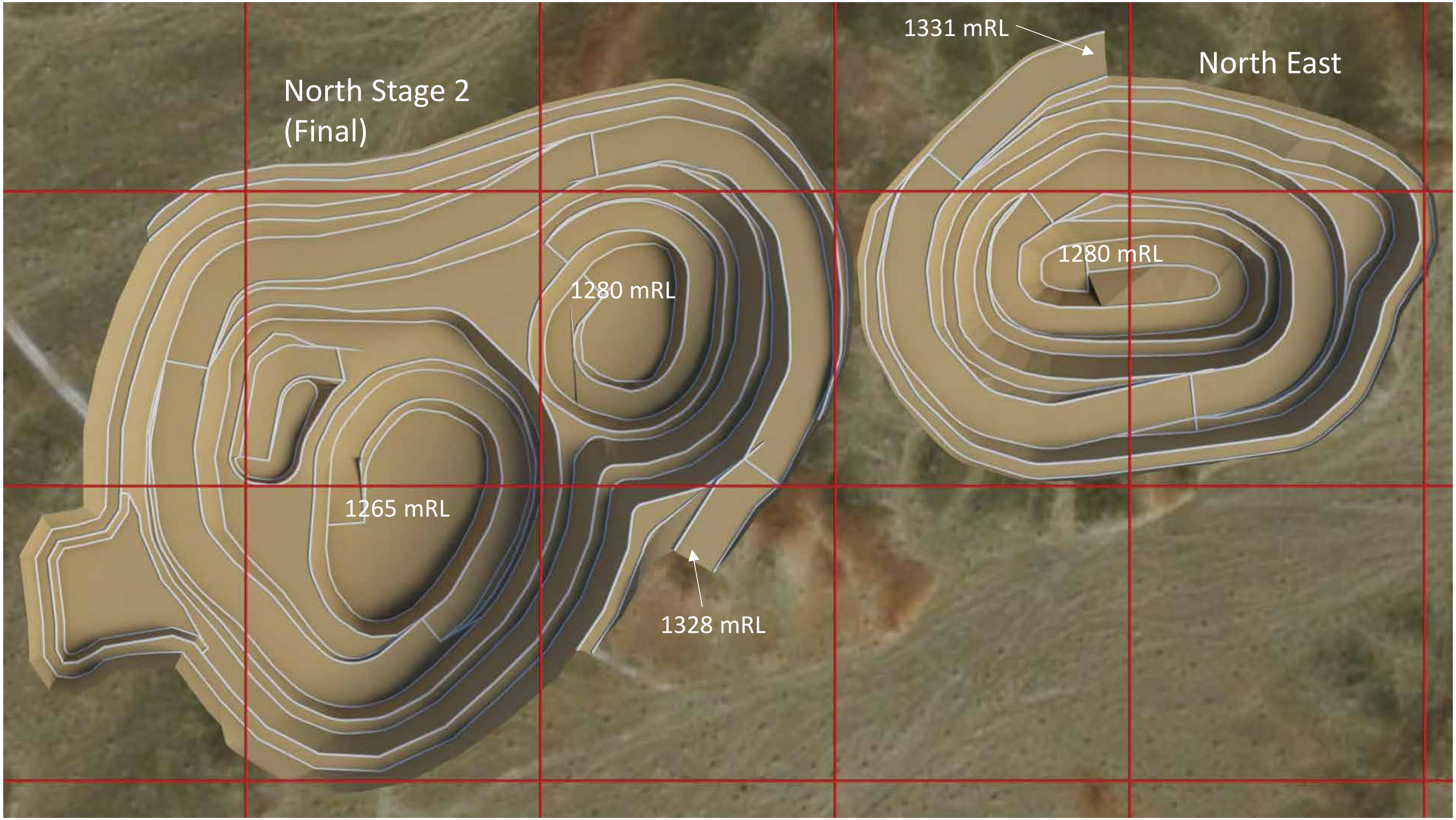
CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING BAYAN KHUNDII - STAGE 4 (FINAL PIT)		
	FIGURE No. 16-21	PROJECT No. ADV-MN-00161	Date January 2019



N

0 100 200 metres

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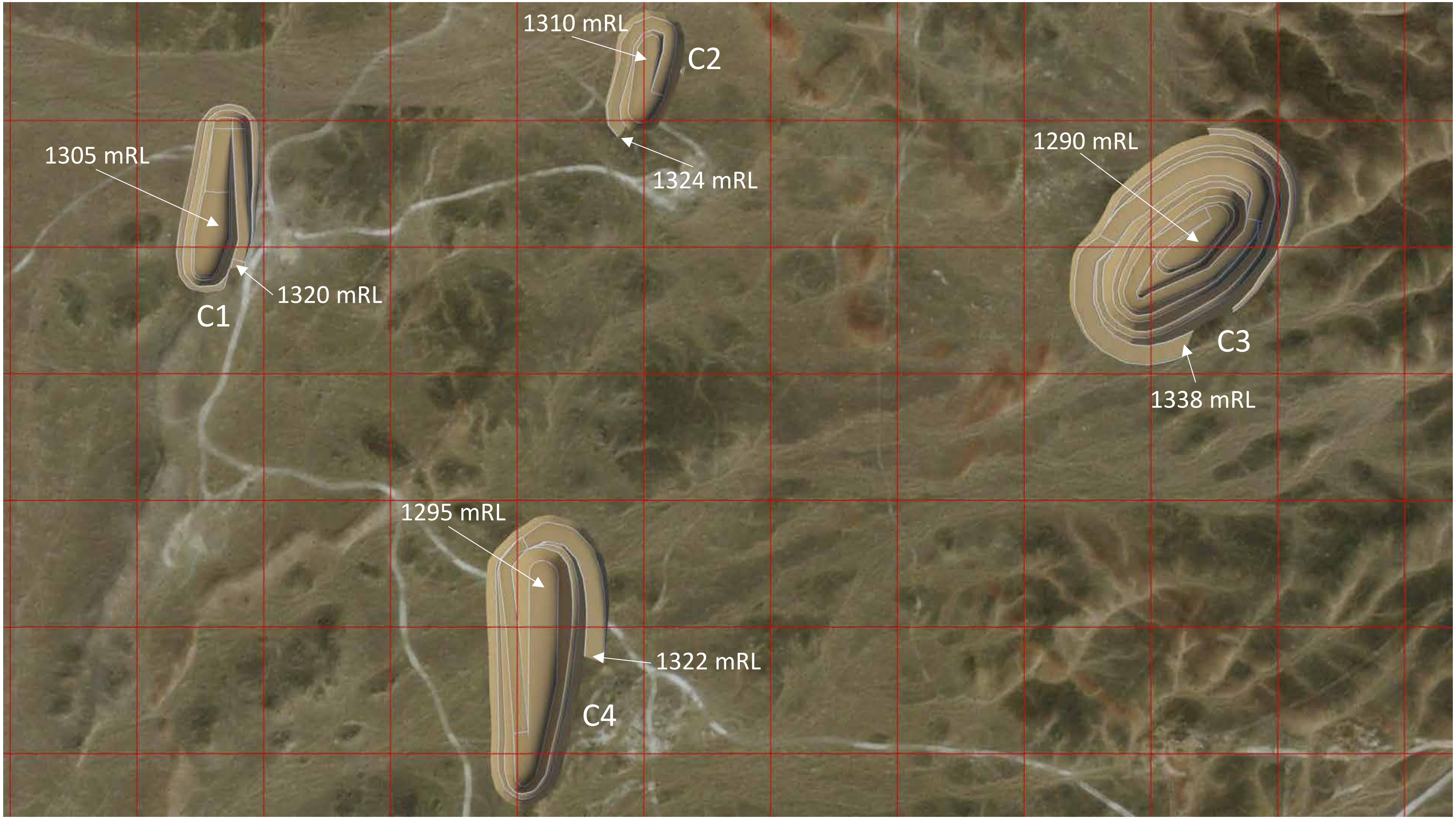
CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING: ALTAN NAR - NORTH PITS		
	FIGURE No. 16-22	PROJECT No. ADV-MN-00161	Date January 2019



N

0 200 400 metres

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ERDENE RESOURCE DEVELOPMENT

PROJECT

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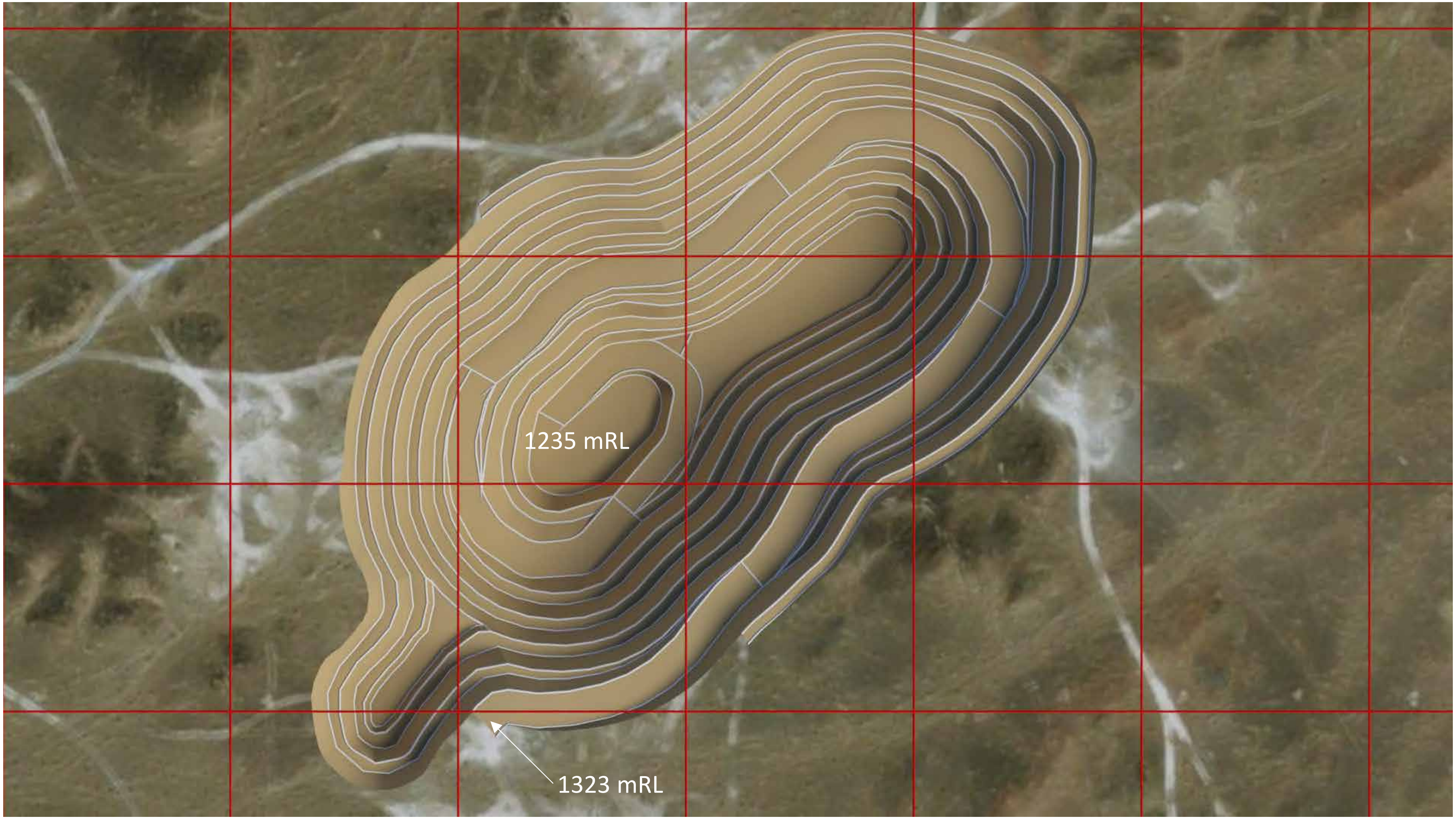
DRAWING ALTAN NAR - CENTRAL PITS

FIGURE No.	PROJECT No.	Date
16-23	ADV-MN-00161	January 2019



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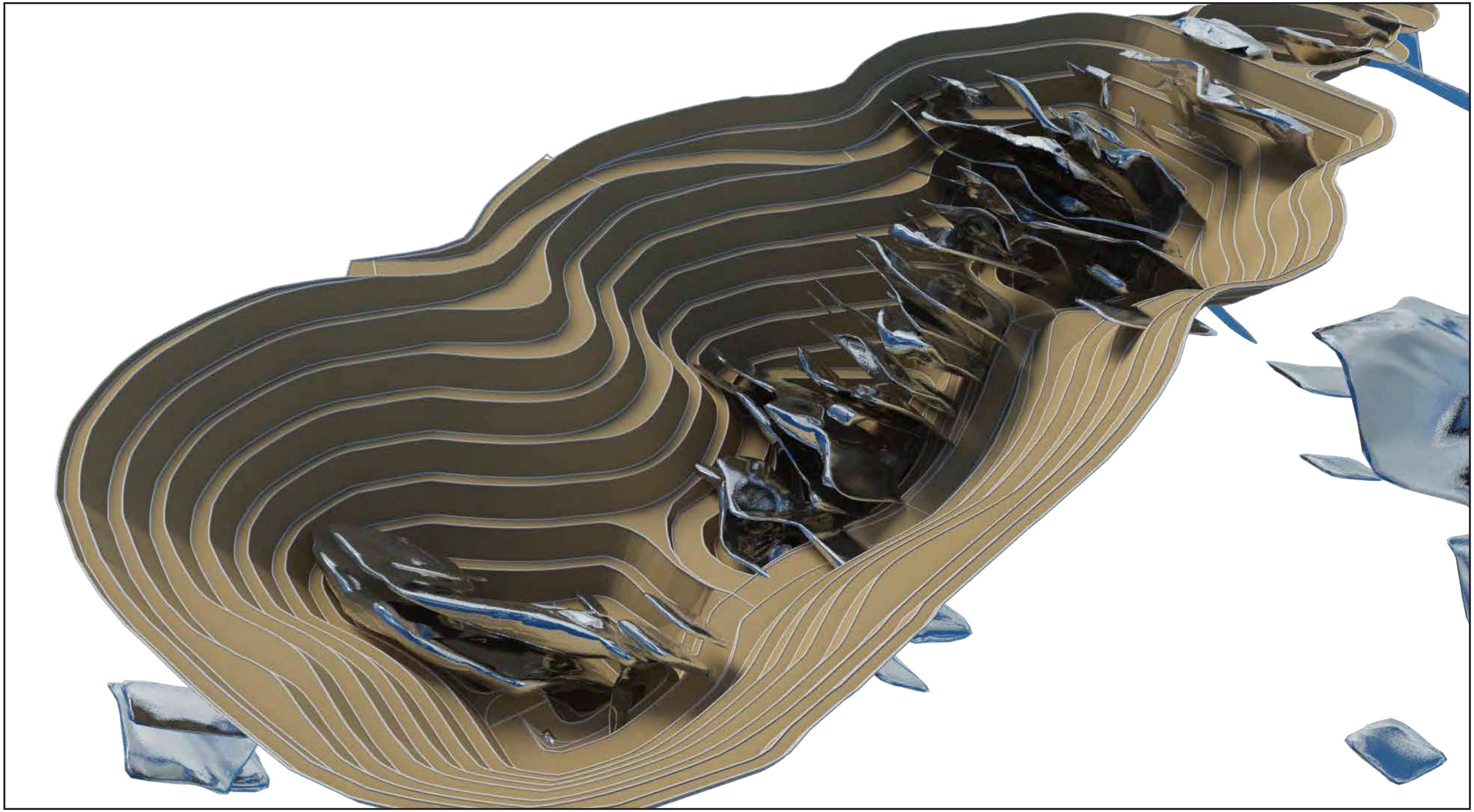
CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING ALTAN NAR - SOUTH PIT STAGE 2 (FINAL PIT)		
	FIGURE No. 16-24	PROJECT No. ADV-MN-00161	Date January 2019



CLIENT

ERDENE
RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING BAYAN KHUNDII - STAGE 4 (FINAL PIT) AND HIGH GRADE LODES

FIGURE No.	PROJECT No.	Date
16-25	ADV-MN-00161	January 2019

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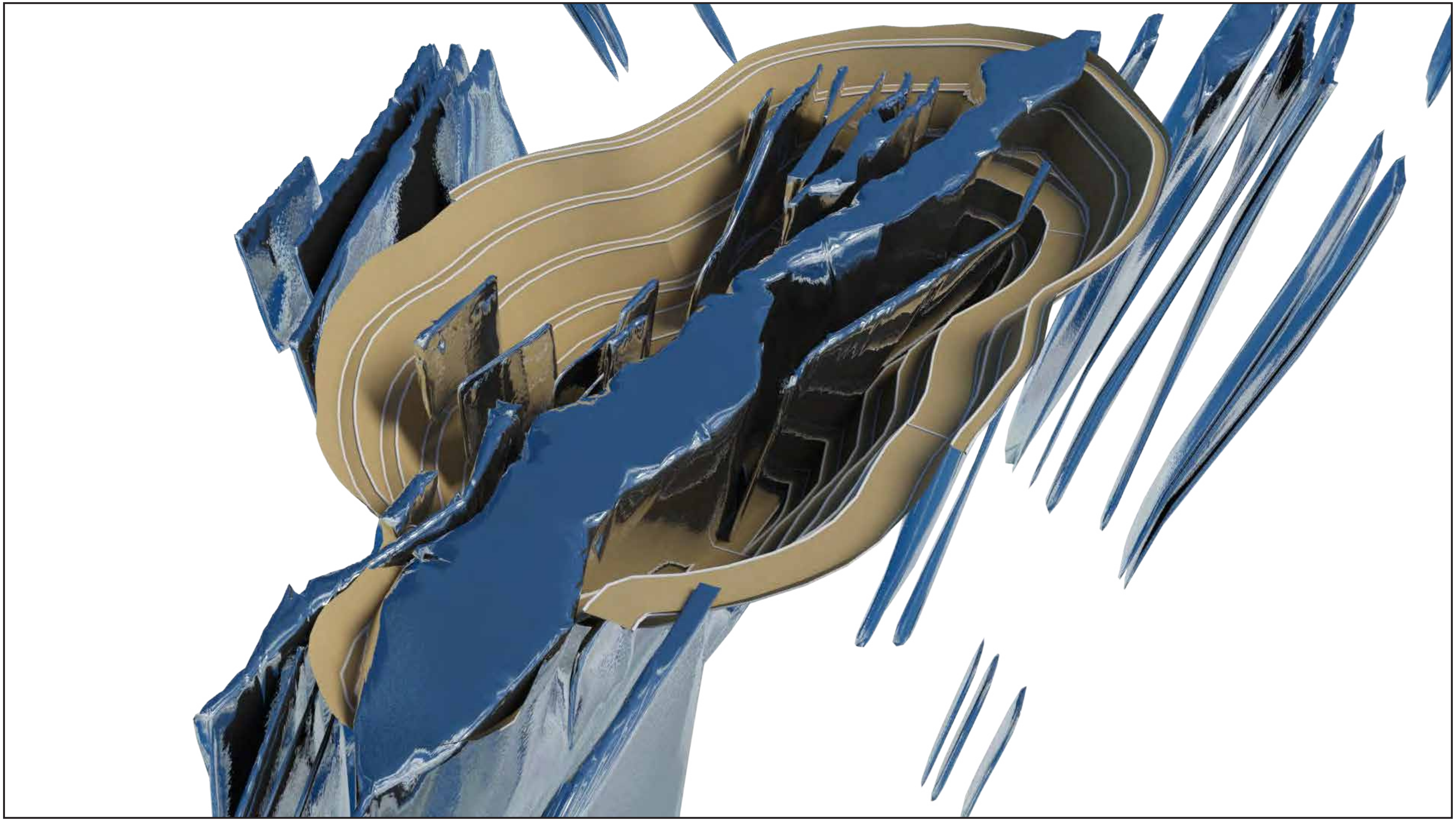


CLIENT

ERDENE
RESOURCE DEVELOPMENT

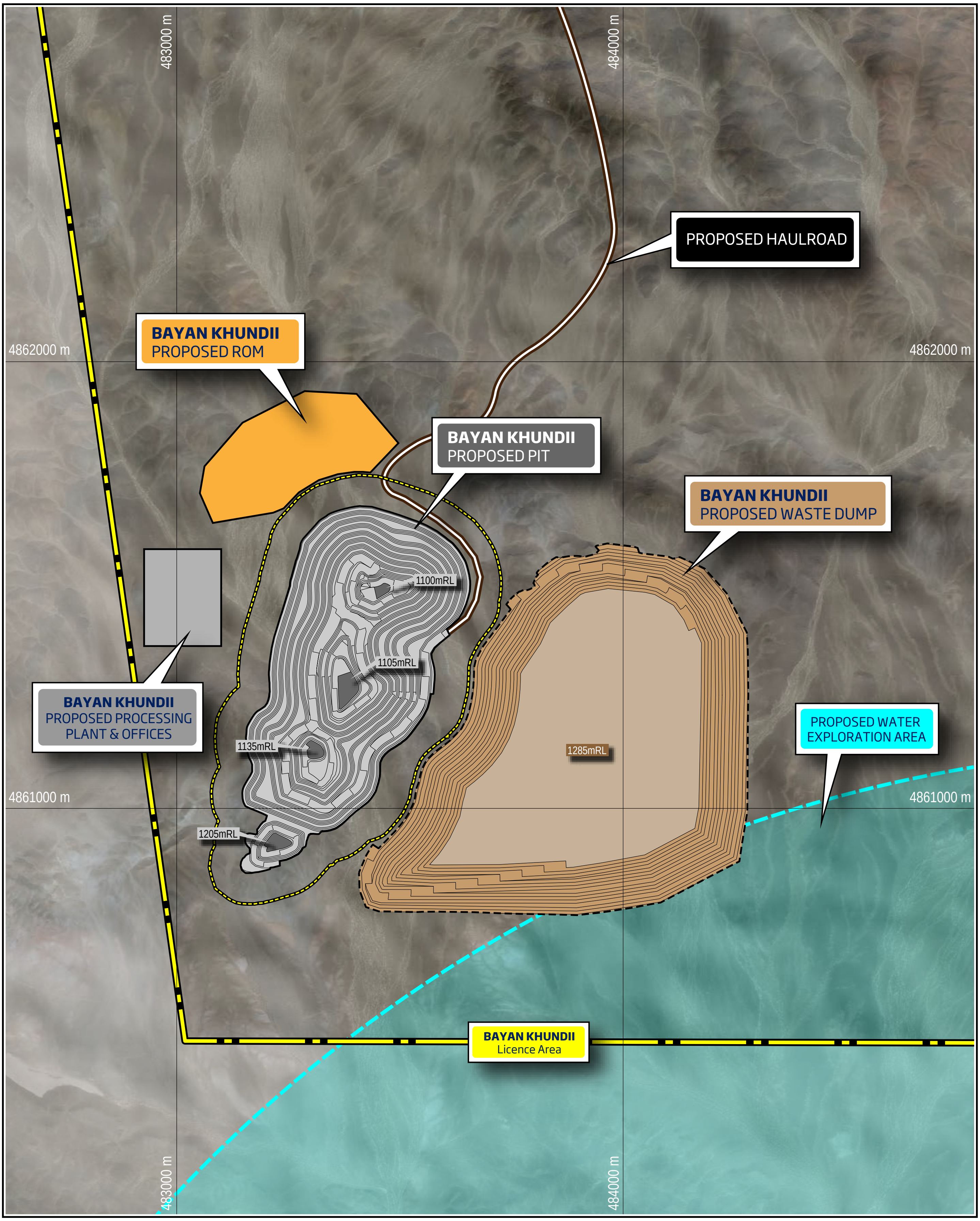
PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING ALTAN NAR - SOUTH PIT AND LOW GRADE LODES

FIGURE No.	PROJECT No.	Date
16-26	ADV-MN-00161	January 2019

RPMGLOBAL



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LEGEND

Dump Exclusion Zone

N

0 500m 1000m

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CLIENT

ERDENE
RESOURCE DEVELOPMENT

PROJECT

NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project

DRAWING BAYAN KHUNDII PROPOSED PIT, DUMP, ROM and MIA LOCATIONS

FIGURE No.	PROJECT No.	Date
16-27	ADV-MN-00161	January 2019

RPMGLOBAL

LEGEND	CLIENT	PROJECT		
Dump Exclusion Zone	ERDENE RESOURCE DEVELOPMENT	NAME: NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
N		DRAWING: ALTAN NAR PROPOSED PIT and DUMP LOCATIONS		
0 500m 1000m		FIGURE No. 16-28	PROJECT No. ADV-MN-00161	Date January 2019

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16.9 Mineable Quantities

The pit design mineable quantities were estimated from the ROM models using a positive Net Processing Return as the marginal cut-off. The tonnages and grades for the pits and mining stages are shown in **Table 16-8** and **Table 16-9**. The location of each stage is illustrated in **Figure 16-29**.

Table 16-8 Bayan Khundii Mineable Quantities as of Setpember 12, 2018

Pit/Stage	Waste kt	Plant Feed kt	Strip Ratio t/t	Feed Grade Au g/t
BK_01	845	115	7.3	5.4
BK_02	7,346	875	8.4	4.4
BK_03	15,866	977	16.2	2.9
BK_04	11,359	682	16.7	3.5
Total	**35,417**	**2,649**	**13.4**	**3.6**

All the estimates are on dry tonne basis.

Table 16-9 Altan Nar Mineable Quantities as of September 12, 2018

Pit/Stage	Waste kt	Plant Feed kt	Strip Ratio t/t	Feed Grade Au g/t	Feed Grade Ag g/t	Feed Grade As g/t
AN_C1	136	27	4.9	1.7	10.5	311
AN_C2	99	9	11.3	3.3	1.8	149
AN_C3	1,207	176	6.8	2.7	8.4	69
AN_C4	589	83	7.1	4.1	11.9	1,172
AN_N1	362	139	2.6	3.9	19.0	2,331
AN_N2	2,666	398	6.7	2.6	9.4	1,327
AN_NE	957	198	4.8	1.8	5.2	395
AN_S1	662	133	5	3.7	21.9	2,772
AN_S2	6,070	765	7.9	3.5	23.7	4,696
Total	**12,747**	**1,928**	**6.6**	**3.1**	**16.2**	**2,599**

All the estimates are on dry tonne basis.

In addition to mineable quantities, an estimate has also been made of the amount of sub-grade material that has a potential for future processing using alternate methods such as heap leaching. Using an indicative gold cut-off of 0.35 g/t the pit designs produce the following potential stockpile quantities:

- Bayan Khundii 1.0 Mt at 0.7 g/t Au.
- Altan Nar 1.8 Mt at 0.5 g/t Au.

The sub-grade material is considered as waste rock for the purposes of the PEA. However, represents an upside for the Project if further metallurgical testwork confirms its viability for treatment.

16.10 Development Strategy

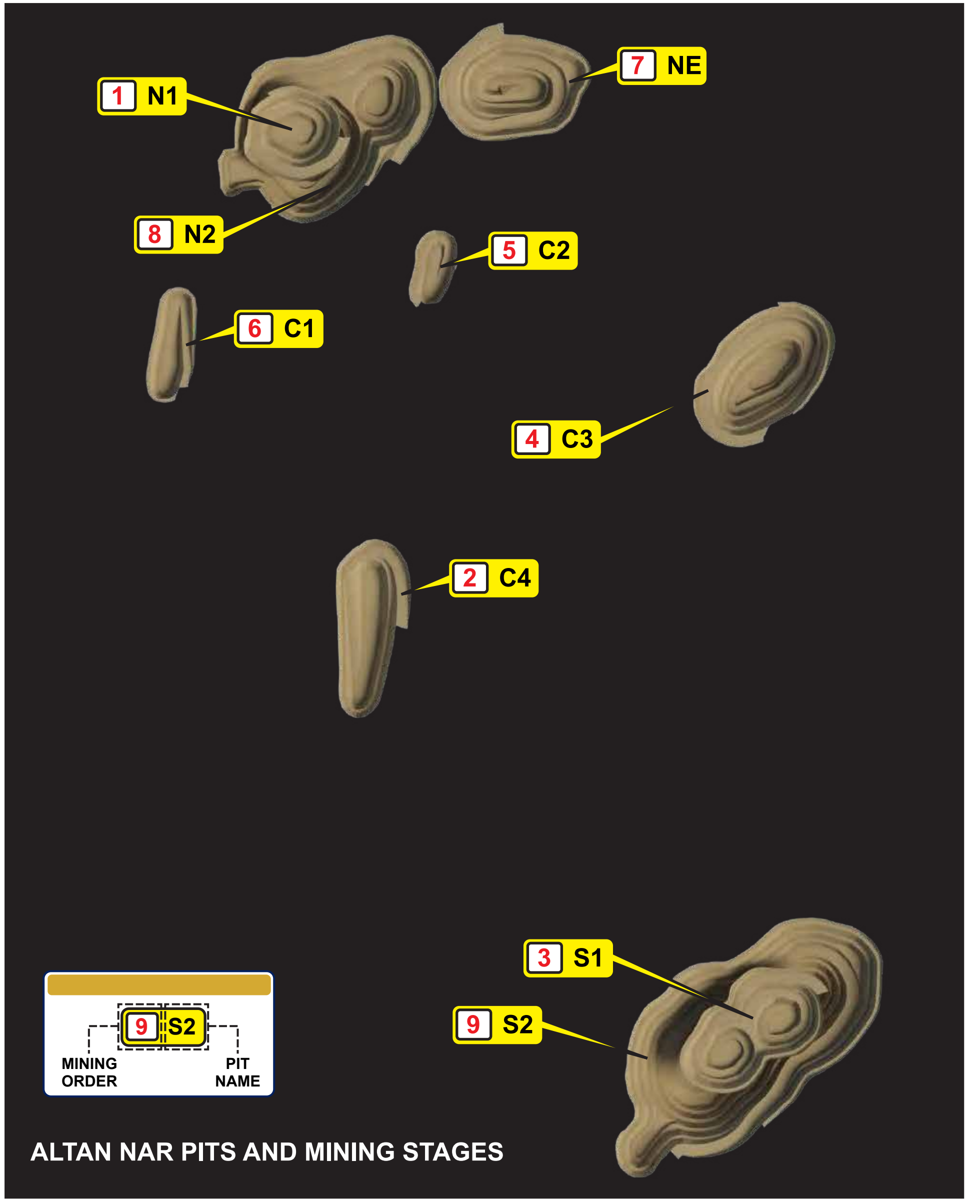
To determine the preferred mining strategy for Altan Nar and Bayan Khundii a number of potential mining scenarios were defined and the resulting NPV for each compared.

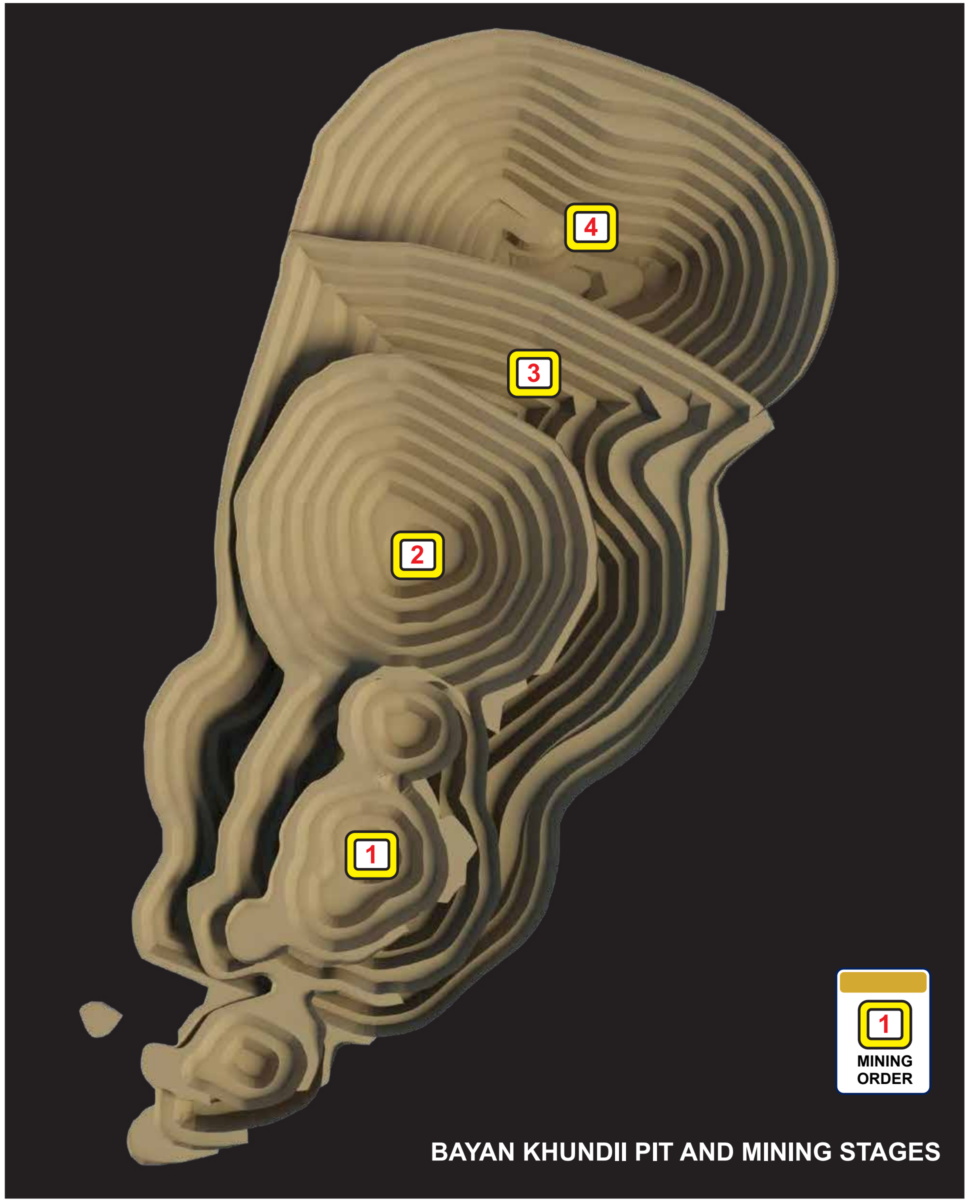
16.10.1 Altan Nar Mining Sequence

Initially, Altan Nar was reviewed to determine the preferred mining sequence for the seven pits and two cut-backs. This was done by calculating the revenue based on the metal prices, recoveries and production costs outlined earlier. The resulting cashflow was then expressed as a unit revenue per total tonne of material mined per pit, effectively ranking the pits by margin. The results, sorted by preferred mining sequence, are listed in **Table 16-10** and shown graphically in **Figure 16-29**.

Table 16-10 Altan Nar Pits and Stage Margin Ranking

Item	Net Cashflow (US$M)	Total Mined (Mt)	Unit Margin (US$/t mined)
North Stage1 (N1)	7.28	0.50	14.53
Central 4 (C4)	5.60	0.67	8.33
South Stage 1 (S1)	6.12	0.79	7.70
Central 3 (C3)	8.33	1.38	6.02
Central 2 (C2)	0.54	0.11	5.03
Central 1 (C1)	0.62	0.16	3.77
North East (NE)	4.26	1.15	3.69
North Stage 2 (N2)	9.39	3.06	3.06
South Stage 2 (S2)	20.01	6.84	2.93





CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING PIT DESIGNS AND MINING STAGES		
	FIGURE No. 16-29	PROJECT No. ADV-MN-00161	Date January 2019

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The following scenarios were evaluated using strategic scheduling and high-level capital cost estimates derived from an earlier Bayan Khundii evaluation completed by RPM. The schedules, production costs, processing recoveries, revenues and capital estimates where input to an economic model and the resulting economic outcomes determined.

- The following strategic questions were examined:
- Which deposit provides the better economic outcome and at what processing rate?
- Should each deposit have its own processing plant or share a single facility?
- Should deposit mining be concurrent or sequential?
- Should Altan Nar plant feed be mined early and stockpiled so it can be supplied at a higher processing rate?

NPV and Production Rate by Deposit

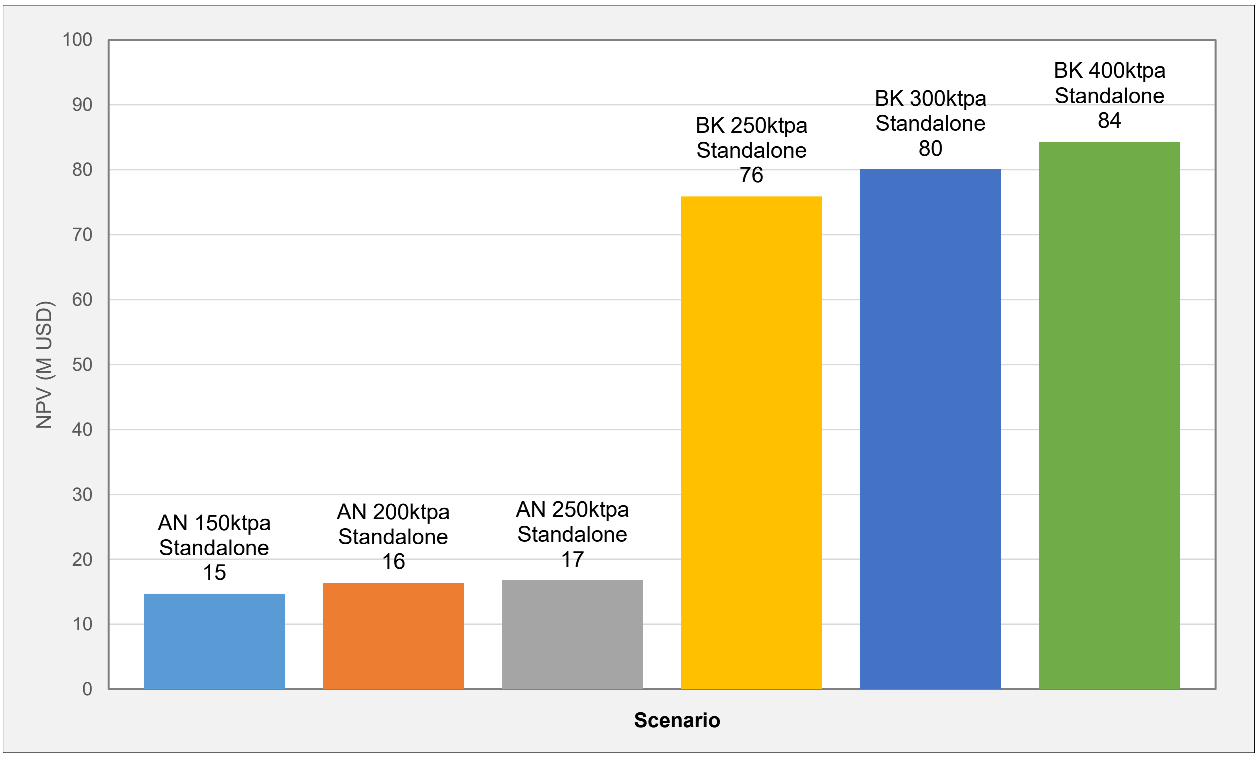
To determine the combined Bayan Khundii and Altan Nar mining strategy, the following initial scenarios were evaluated:

- Altan Nar 150 ktpa processing - stand-alone
- Altan Nar 200 ktpa processing - stand-alone
- Altan Nar 250 ktpa processing - stand-alone
- Bayan Khundii 250 ktpa processing – stand-alone
- Bayan Khundii 300 ktpa processing – stand-alone
- Bayan Khundii 400 ktpa processing – stand-alone

A comparison of resulting NPV's showed that Bayan Khundii provided a significantly higher value than Altan Nar. Additionally, as the mining and processing rate increased so did the NPV. The results, shown graphically in **Figure 16-30** and tabulated in **Table 16-11**, show that for the best economic outcome, Bayan Khundii should be mined before Altan Nar. Additionally, the processing rate should reflect the highest practical plant feed production rate.

The NPV was estimated with a discount rate of 10% and are pre-tax and are at an accuracy of +/-50% commensurate with a high-level trade-off study. Though the NPV results are only indicative, they are suitable for ranking options to select a preferred development strategy.

Figure 16-30 Bayan Khundii and Altan Nar NPV Comparison

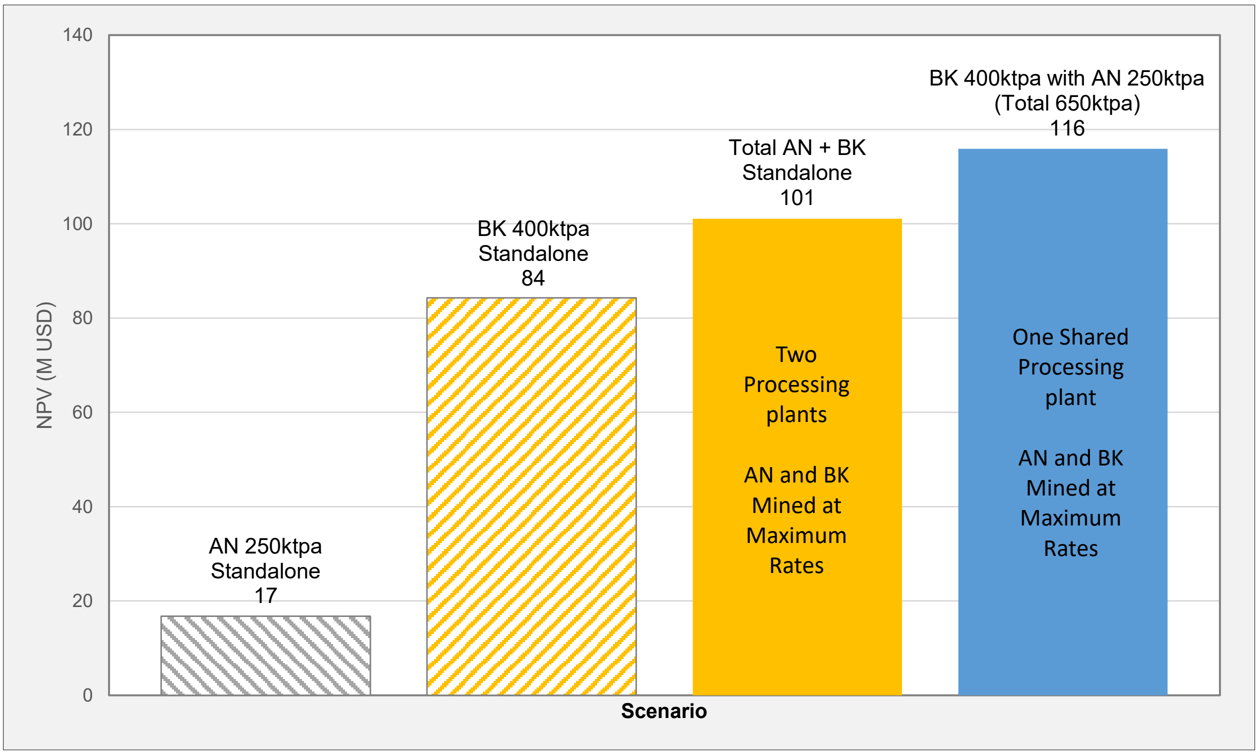


16.10.2 Two Processing Plants vs One Shared Plant

In this scenario both Bayan Khundii and Altan Nar are mined concurrently. The total processing rate is 650 ktpa with 400 ktpa coming from Bayan Khundii and the remaining 250 ktpa from Altan Nar. Due to the higher plant feed quantities, Bayan Khundii is selected as the location for the single plant option. Altan Nar therefore has an increased plant feed production cost due to the cost of hauling plant feed an estimated 19 km to the Bayan Khundii plant.

The results, shown in **Figure 16-31** and in **Table 16-11**, show that the reduction in capital costs through the use of a single shared processing plant increases the Project NPV by US$14M. It is therefore recommended that Altan Nar plant feed be treated at a process plant located at Bayan Khundii site.

Figure 16-31 NPV for Two Processing Plants vs Shared Processing Plant



16.10.3 Concurrent or Sequential Deposit Mining

If Bayan Khundii and Altan Nar are mined sequentially the processing rate for the purposes of strategic analysis was limited a maximum of 400ktpa. From the previous scenario, the concurrent mining of Bayan Khundii and Altan Nar resulted in a pre-tax Project NPV of US$116M. If Altan Nar was mined to completion followed by Bayan Khundii the resulting NPV decreases to US$66M. As shown earlier, this reflects the lower inherent value of the Altan Nar deposit. Mining Bayan Khundii to completion first followed by Altan Nar increases the NPV to US$107 M, though this is still marginally lower than the concurrent mining option due to the lower plant feed production rate. The results are shown graphically in **Figure 16-32** and again tabulated in **Table 16-11**.

16.10.4 Key Outcomes of Strategic Analysis

The key outcomes of the strategic analysis are:

- Mining rate should be highest practical rate to maximise project value;
- Bayan Khundii has substantially higher value than Altan Nar and hence should be preferentially mined;
- Greater project value is gained by mining the deposits sequentially, with Bayan Khundii extracted first, than concurrently;
- Process plant should hence be located at Bayan Khundii; and
- Altan Nar material should be treated at a process plant located at Bayan Khundii.

Figure 16-32 Concurrent Mining vs Sequential Mining

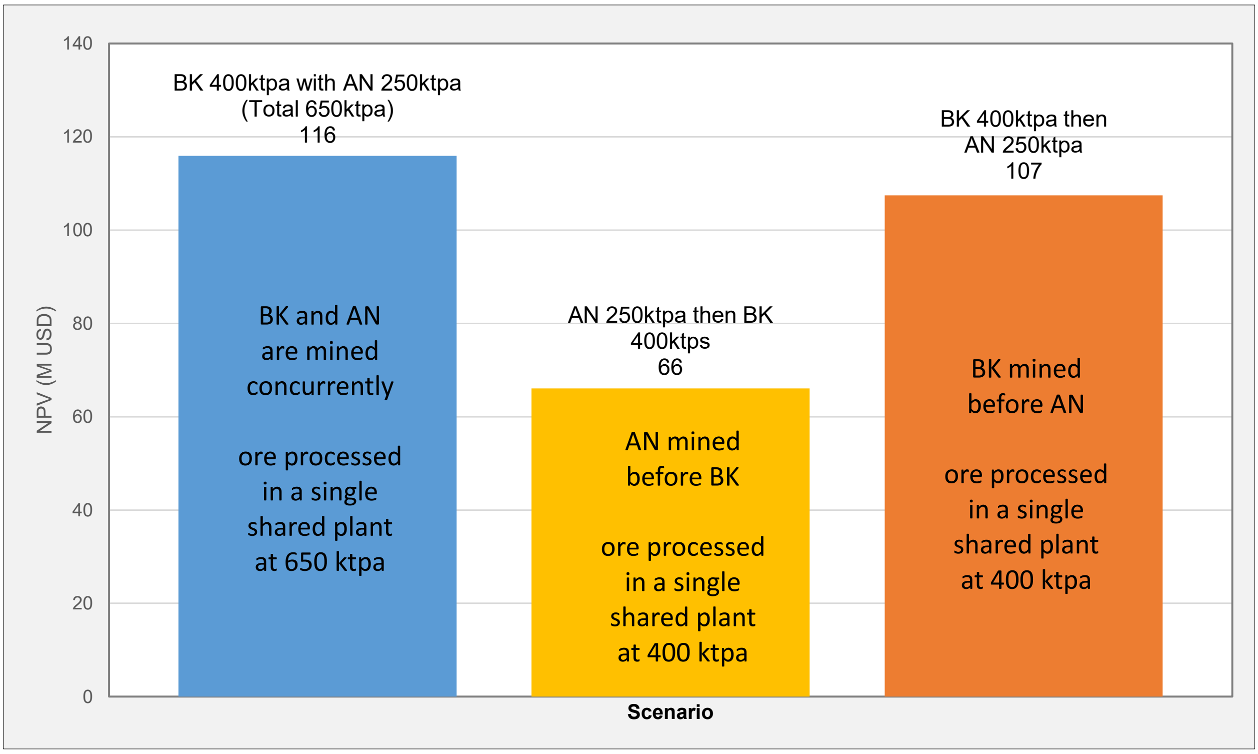


Table 16-11 Production Scenario Summary Table

Production Scenario	Processing ktpa	CAPEX US$ M	OPEX US$ M	NPV (10%) US$ M	Revenue US$ M	IRR %	Payback Years	Mine Life Years
AN 150 ktpa plant feed + AN processing plant	100	25	95	15	158	23%	3.4	13
AN 200 ktpa plant feed + AN processing plant	200	27	95	16	158	27%	4.0	10
AN 250 ktpa plant feed + AN processing plant	250	29	95	17	158	29%	4.0	8
BK 250 ktpa plant feed + BK processing plant	250	29	176	76	345	64%	1.3	11
BK 300 ktpa plant feed + BK processing plant	300	32	176	80	345	67%	1.5	9
BK 400 ktpa plant feed + BK processing plant	400	37	176	84	345	73%	1.7	7
AN Mined first followed by BK: single shared plant	250	29	275	65	503	36%	3.9	19
BK Mined first followed by AN: single shared plant	250	29	275	92	503	64%	1.3	19
BK (300 ktpa) mined concurrently with AN (250 ktpa) & AN plant feed stockpiled	300	32	276	66	503	33%	2.5	16
BK (350 ktpa) mined concurrently with AN (250 ktpa) & AN plant feed stockpiled	350	34	276	77	503	40%	2.8	14
BK (400 ktpa) mined concurrently with AN (250 ktpa) & AN plant feed stockpiled	400	37	276	85	503	45%	1.1	12
BK (400 ktpa) mined first followed by AN (250ktpa)	400	37	275	107	503	74%	1.7	15
AN (250 ktpa) mined first followed by BK (400 ktpa)	400	37	275	66	503	31%	3.3	15
BK (150 ktpa) mined concurrently with AN (100 ktpa)	250	29	275	84	503	54%	1.1	19
BK (400 ktpa) mined concurrently with AN (250 ktpa)	650	49	275	116	503	78%	1.8	8

16.11 Production Schedule

Several processing rates were examined to identify the highest production rate that is practically achievable. Upon review the 600 ktpa plant feed option was selected as the Base Case to be used in the economic evaluation.

Ramp-up to the full processing production rate occurs over twelve months with an average 60% of design capacity. Scheduling blocks were designed based on the pit and stage surfaces, selected bench height and development strategy requirements. The scheduling blocks and scheduling task were undertaken using RPM's Open Pit Metals Solution (OPMS) scheduling software. The steps involved in production scheduling were as follows:

- import pit scheduling blocks and waste rock dump scheduling blocks;
- digitise plant feed and waste haulage network;
- confirm scheduling criteria such as plant feed production targets and development strategy;
- confirm scheduling constraints, if any;
- define start date and plant feed production build-up;
- define preferred sequence based on development strategy outcomes;
- generate production schedule according to mill feed requirements;
- generate waste rock dumping schedule; and
- smooth and refine schedule for practicality.

The pit designs, waste dump designs, and block model information was imported into OPMS. The generated schedule includes estimates haulage distance and travel times.

Results for the 600 ktpa plant feed production schedule are graphed in **Figure 16-33**, **Figure 16-34** and **Figure 16-35**.

In **Figure 16-33** the total annual material movement is shown split by plant feed, waste and deposit. As outlined in the development strategy mining begins initially at Bayan Khundii. To smooth out production, plant feed is either fed direct to the crusher or stockpiled for later use. The high waste stripping associated with Bayan Khundii Stages 3 and 4 requires that Altan Nar mining to start in Year 4 to ensure plant feed supply targets are met. As Stages 3 and 4 are mined in Bayan Khundii. Mining in Bayan Khundii finishes in year four at which time Altan Nar is in full production. Altan Nar plant feed mined early is placed is stockpiled and used to maintain the 600 ktpa processing rate.

As the schedule also shows, the mined grades for Bayan Khundii are generally higher than Altan Nar. While there is an increase in gold grade at the end of Altan Nar that plant feed is high is arsenic and consequently has a significantly lower processing recovery.

A detailed mining breakdown by pit and stage is presented in **Figure 16-34**.

The processing schedule is displayed graphically in **Figure 16-35** and shows the material fed directly from the pits and from stockpiles. The use of stockpiles has smoothed the annual crusher feed grades. RPM notes that the scheduling indicates that a total stockpile capacity of approximately 500 kt is required.

The detailed annual schedule quantities are shown in **Table 16-12**.

Figure 16-33 Production Schedule: Plant Feed and Waste Rock

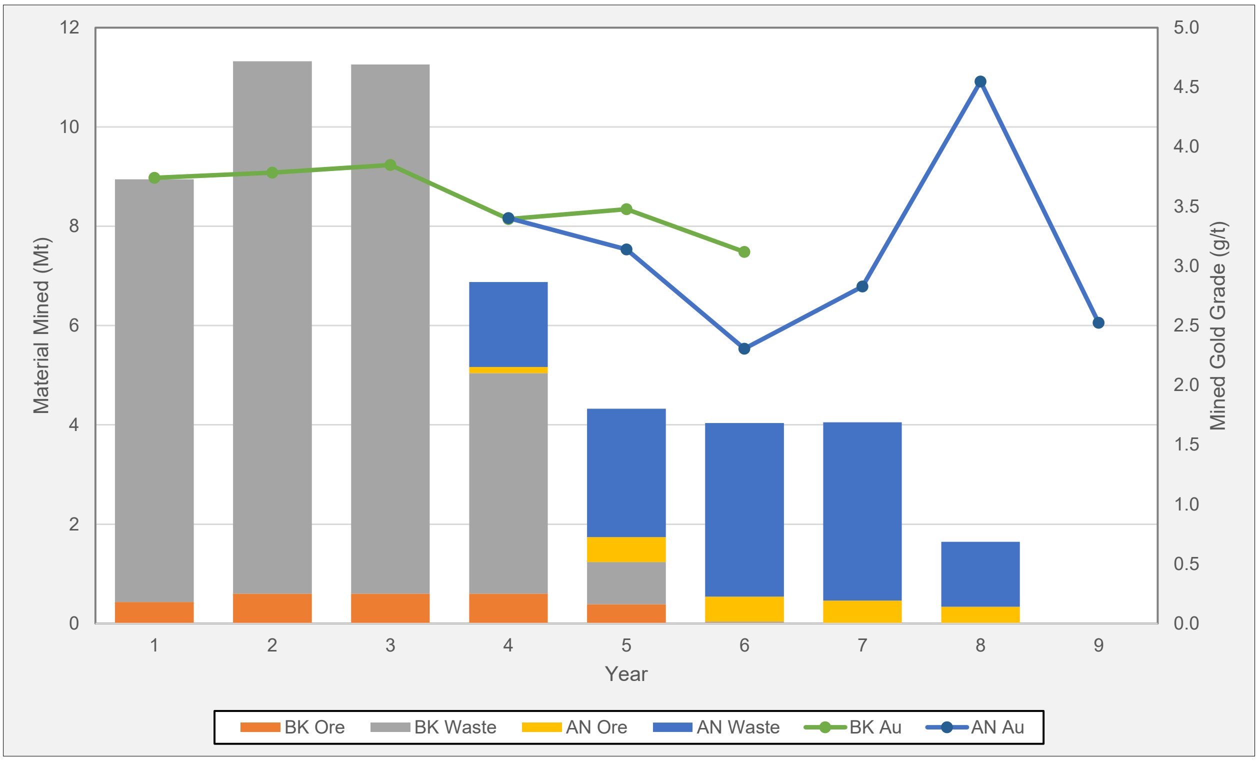


Figure 16-34 Material Scheduled by Pit and Stage

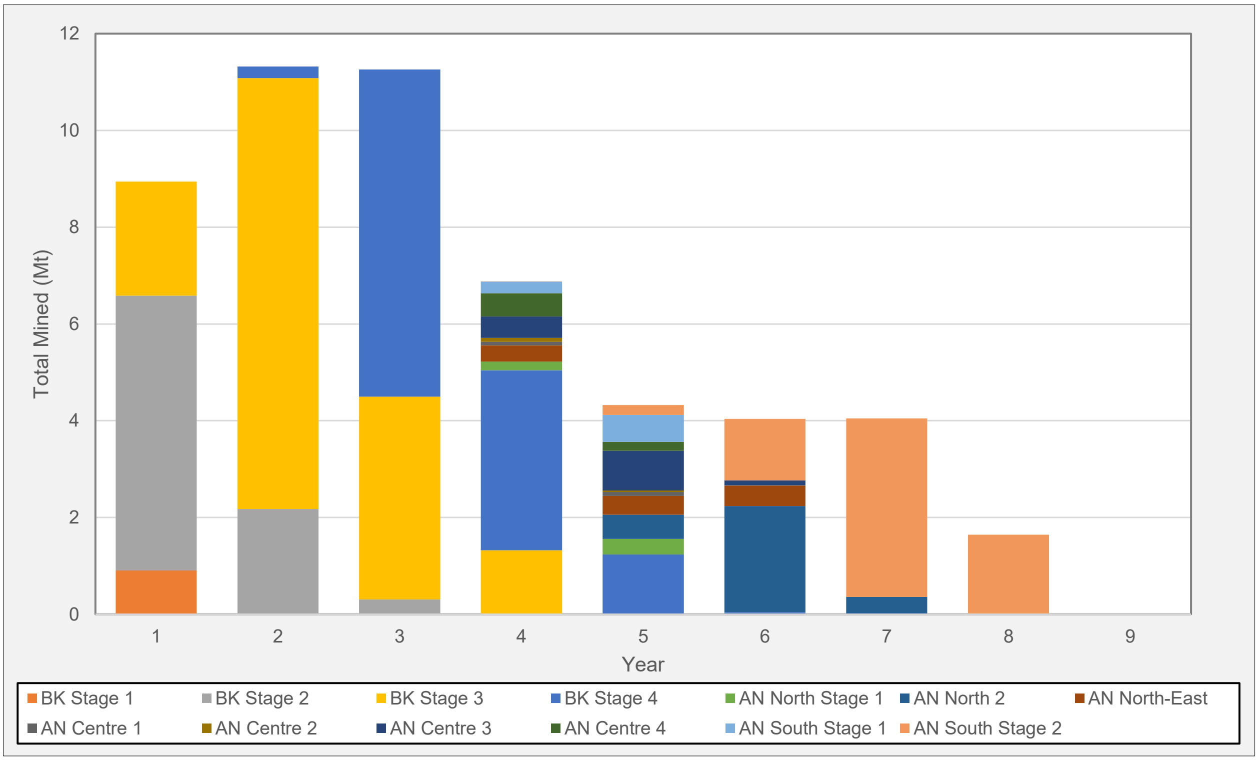


Figure 16-35 Plant Feed and Grade into Crusher

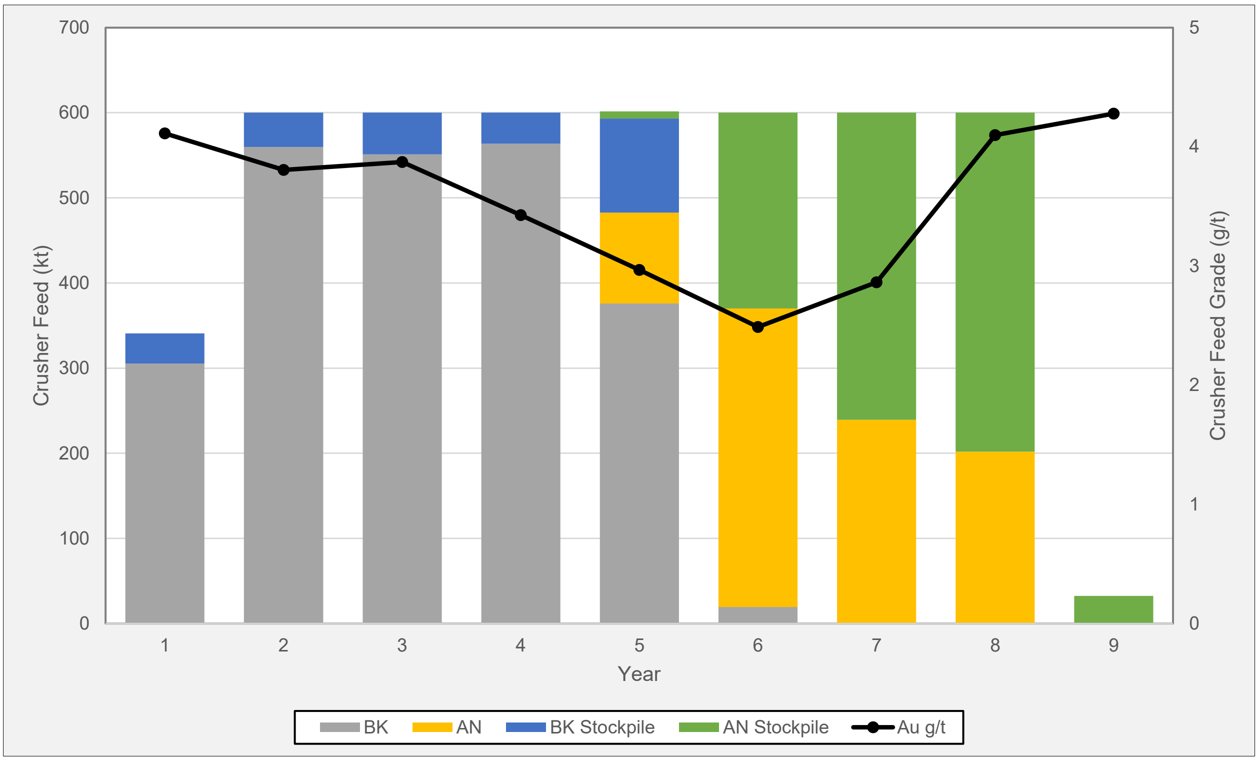


Table 16-12 Production Schedule Summary

Item	Units	Pre - Strip	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	TOTAL
Total Tonnes Mined	kt	37	8,943	11,324	11,259	6,876	4,326	4,037	4,050	1,647	-	52,498
Waste Tonnes Mined	kt	26	8,555	10,778	10,712	6,181	3,454	3,536	3,607	1,314	-	48,164
Plant Feed Tonnes Mined	kt	11	430	600	600	725	888	519	462	339	-	4,575
Gold Grade Feed Tonnes Mined	g/t	2.6	3.7	3.8	3.8	3.4	3.3	2.3	2.8	4.5	-	3.4
Silver Grade Feed Tonnes Mined	g/t	-	-	-	-	2.6	9.1	9.8	20.3	30.3	-	15.3
Strip Ratio	t:t	-	19.8	17.9	17.8	8.5	3.9	6.8	7.8	3.9	-	10.5
BK Feed Movement	kt	11	430	600	600	599	387	19	-	-	-	2,647
BK Waste	kt	26	8,557	10,780	10,714	4,465	855	20	-	-	-	35,417
AN Feed Movement	kt	-	-	-	-	126	501	500	462	339	-	1,928
AN Waste Movement	kt	-	-	-	-	1,716	2,598	3,514	3,605	1,313	-	12,747
BK Au Grade	g/t	2.6	3.7	3.8	3.8	3.4	3.5	3.1	-	-	-	3.6
AN Au Grade	g/t	-	-	-	-	3.4	3.1	2.3	2.8	4.5	-	3.1
Total Tonnes into Crusher	kt	-	341	600	600	600	602	600	600	600	32	4,575
Gold Grade into Crusher	g/t	-	4.1	3.8	3.9	3.4	3.0	2.5	2.9	4.1	4.3	3.4
Silver Grade into Crusher	g/t	-	-	-	-	-	1.6	9.1	15.2	26.2	27.2	16.2

16.12 Mining Equipment

Conventional truck and loader mining equipment of hydraulic excavators and rear-dump haul trucks was selected as it offers the following advantages:

- Cost effective;
- Proven technology;
- Operational flexibility;
- Relatively easy to manage and maintain;
- Good access to spare parts;
- Potential to reduce capital outlay through leasing of equipment, and
- Better suited for contractor mining, if required.

RPM used its in-house, proprietary MiMaSo Fleet Calculator to determine equipment requirements for the Project. This required estimating the operating times and productivities for major equipment. The key assumptions made for this process were as follows:

- 3 panel rosters;
- 2 x 12 hour shifts per day;
- 7 days per week operation for 365 days per year;
- 6 days lost per year due extreme weather conditions;
- Mechanical availability 87%;
- Truck presentation 90%, and
- Utilisation of available time 81%.

Resulting hours and productivities for major excavating equipment were as set out in **Table 16-13**.

Table 16-13 Mine Excavator Productivity

Excavator	Units	44t	180t
Scheduled hours	hrs/yr	8,760	8,760
Available hours	hrs/yr	7,590	7,590
Operating hours	hrs/yr	6,159	6,159
Effective hours	hrs/yr	4,934	4,934
Bucket size	cubic m	2.1	8.5
Material density	t/cm	2.65	2.65
Swell factor in bucket	%	40%	40%
Bucket fill factor	%	95%	95%
Bucket load per pass	t	3.8	15.5
Truck capacity	t	40	93
No passes per truck	number	10	6
Actual truck payload	t	38	93
Excavator hourly productivity	t/op hr	402	1,320
Excavator annual productivity	Mt/year	2.5	8.1

A list of the equipment classes and fleet numbers determined from RPM's Fleet Estimation software is included in **Table 16-14**. Although specific equipment models are included these are only indicative of the class and size required.

Table 16-14 Mining Fleet Summary

Deposit	Type	Class	Example	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Max
Bayan Khundii	Hydraulic Excavator	182 t	Caterpillar 5130B ME	0.1	1	1	1	1	1	1	-	-	-	-	1
	Rear Dump Truck	90 t	Caterpillar 777D	-	4	5	5	6	6	-	-	-	-	-	6
	Hydraulic Excavator	44 t	Caterpillar 345BLII	0.1	1	1	1	1	1	1	-	-	-	-	1
	Rear Dump Truck	38 t	Caterpillar 770	3	4	4	4	4	4	4	-	-	-	-	4
	Track-Type Dozer	302 kW	Caterpillar D9R	1	1	1	1	1	1	1	-	-	-	-	1
	Wheel-Type Dozer	235 kW	Caterpillar 824G	1	1	1	1	1	1	1	-	-	-	-	1
	Motor Grader	138 kW	Caterpillar 140H	1	1	1	1	1	1	1	-	-	-	-	1
	Water Truck	30 kl	Caterpillar 769D	1	1	1	1	1	1	1	-	-	-	-	1
	Light Plant	30-ft tower	Light Plant Onan, other	1	5	5	5	5	5	5	-	-	-	-	5
	Lube/Fuel	-	Lube/Fuel	1	1	1	1	1	1	1	-	-	-	-	1
	Integrated Tool Carrier	4.8 t	Caterpillar IT38H	1	1	1	1	1	1	1	-	-	-	-	1
	Backhoe	Backhoe	Caterpillar 430E	1	1	1	1	1	1	1	-	-	-	-	1
	Backhoe	Bobcat	Caterpillar 246C	1	1	1	1	1	1	1	-	-	-	-	1
	Light Vehicle	-	LV 4WD	2	4	5	5	5	5	2	-	-	-	-	5
Altan Nar	Hydraulic Excavator	44 t	Caterpillar 345BLII	-	-	-	-	1	1	1	1	1	-	-	1
	Rear Dump Truck	38 t	Caterpillar 770	-	-	-	-	4	4	4	4	4	-	-	4
	Hydraulic Excavator	44 t	Caterpillar 345BLII	-	-	-	-	-	1	1	1	1	0	-	1
	Rear Dump Truck	38 t	Caterpillar 770	-	-	-	-	-	4	4	4	4	4	-	4
	Track-Type Dozer	228 kW	Caterpillar D8R	-	-	-	-	1	1	1	1	1	1	-	1
	Wheel-Type Dozer	235 kW	Caterpillar 824G	-	-	-	-	-	1	1	1	1	1	-	1
	Motor Grader	138 kW	Caterpillar 140H	-	-	-	-	-	1	1	1	1	1	-	1
	Water Truck	30 kl	Caterpillar 769D	-	-	-	-	-	1	1	1	1	1	-	1
	Light Plant	30-ft tower	Light Plant Onan, other	-	-	-	-	3	5	5	5	5	1	-	5
	Lube/Fuel	-	Lube/Fuel	-	-	-	-	-	1	1	1	1	1	-	1
	Integrated Tool Carrier	4.8 t	Caterpillar IT38H	-	-	-	-	1	1	1	1	1	1	-	1
	Backhoe	Backhoe	Caterpillar 430E	-	-	-	-	1	1	1	1	1	1	-	1
	Backhoe	Bobcat	Caterpillar 246C	-	-	-	-	1	1	1	1	1	1	-	1
	Light Vehicle	-	LV 4WD	-	-	-	-	2	4	4	4	4	2	-	4
Total	**Hydraulic Excavator**	**182 t**	**Caterpillar 5130B ME**	**0.1**	**1**	**1**	**1**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**1**
	Hydraulic Excavator	**44 t**	**Caterpillar 345BLII**	**0.1**	**1**	**1**	**1**	**2**	**3**	**3**	**2**	**2**	**0**	**-**	**3**
	Rear Dump Truck	**38 t**	**Caterpillar 770**	**3**	**4**	**4**	**4**	**8**	**12**	**12**	**8**	**8**	**4**	**-**	**12**
	Rear Dump Truck	**90 t**	**Caterpillar 777D**	**-**	**4**	**5**	**5**	**6**	**6**	**-**	**-**	**-**	**-**	**-**	**6**
	Motor Grader	**138 kW**	**Caterpillar 140H**	**1**	**1**	**1**	**1**	**1**	**2**	**2**	**1**	**1**	**1**	**-**	**2**
	Track-Type Dozer	**228 kW**	**Caterpillar D8R**	**-**	**-**	**-**	**-**	**1**	**1**	**1**	**1**	**1**	**1**	**-**	**1**
	Track-Type Dozer	**302 kW**	**Caterpillar D9R**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**1**
	Light Plant	**30-ft tower**	**Light Plant Onan, other**	**1**	**5**	**5**	**5**	**8**	**10**	**10**	**5**	**5**	**1**	**-**	**10**
	Lube/Fuel	**-**	**Lube/Fuel**	**1**	**1**	**1**	**1**	**1**	**2**	**2**	**1**	**1**	**1**	**-**	**2**
	Integrated Tool Carrier	**4.8 t**	**Caterpillar IT38H**	**1**	**1**	**1**	**1**	**2**	**2**	**2**	**1**	**1**	**1**	**-**	**2**
	Backhoe	**Backhoe**	**Caterpillar 430E**	**1**	**1**	**1**	**1**	**2**	**2**	**2**	**1**	**1**	**1**	**-**	**2**
	Backhoe	**Bobcat**	**Caterpillar 246C**	**1**	**1**	**1**	**1**	**2**	**2**	**2**	**1**	**1**	**1**	**-**	**2**
	Light Vehicle	**-**	**LV 4WD**	**2**	**4**	**5**	**5**	**7**	**9**	**6**	**4**	**4**	**2**	**-**	**9**
	Wheel-Type Dozer	**235 kW**	**Caterpillar 824G**	**1**	**1**	**1**	**1**	**1**	**2**	**2**	**1**	**1**	**1**	**-**	**2**
	Water Truck	**30 kl**	**Caterpillar 769D**	**1**	**1**	**1**	**1**	**1**	**2**	**2**	**1**	**1**	**1**	**-**	**2**

17. Recovery Methods

17.1 Summary

The ore processing plant for the Khundii Gold Project will be a simple, conventional, gold cyanide leach plant. Plant throughput will be 600,000 tonnes per year, nominally 1,800 tonnes per day. Plant feed grade will average approximately 3.4 grams of gold per tonne. Gold recovery will vary, depending on the source of the plant feed processed; however, projected average gold recovery from both deposits is 82%. Average annual gold production is expected to be approximately 51,200 ounces per year.

The processing plant will be located adjacent to the Bayan Khundii open pit and plant feed from the Altan Nar deposit will be trucked to the plant. The plant will incorporate the following sequence of processes:

- Two-stage crushing;
- Two-stage grinding;
- Gravity recovery;
- In-line-reactor (ILR) processing of the gravity concentrate;
- Cyanide leaching;
- Carbon-in-pulp (CIP) extraction of gold and silver;
- Loaded carbon acid-washing and elution of the gold and silver;
- Reactivation of the carbon;
- Electro-winning of gold and silver from the eluate;
- Smelting of the electro-won gold and silver to produce doré bars;
- Detoxification of the leached tailings;
- Filtering of the detoxified leached tailings; and
- Co-placement of the detoxified tailings filter cake with the mine waste rock.

17.2 General

The plant will, with the exception of the crushing plant and tailings placement, operate 24 hours per day, 7 days per week with an availability of 91.3% (8,000 operating per annum). The crushing plant and tailings placement will operate 12 hours per day, 7 days per week.

The principal process parameters are set out in **Table 17-1** and the principal process equipment are set out in **Table 17-2**.

17.3 Crushing

The essential components of the crushing plant will comprise a jaw crusher, a cone crusher, and a vibrating screen. The jaw crusher will operate in open circuit and the cone crusher in closed circuit. Run-of-mine plant feed will be dumped by mine truck or by front-end loader into a hopper over a reciprocating feeder that will discharge to the jaw crusher. Jaw crusher product will be combined with the cone crusher product and conveyed to the vibrating screen. Screen oversize will pass to the cone crusher; screen undersize will be conveyed to a partially-covered conical stockpile. Product sizes will be as follows:

- Jaw crusher: 80% passing 150 mm
- Cone crusher: 80% passing 50 mm
- Screen undersize: 80% passing 15 mm

17.4 Grinding

The essential components of the grinding plant will comprise a rod mill, a ball mill, and a cyclone. The rod mill will operate in open circuit and the ball mill in closed circuit. Plant feed will be reclaimed from the crushed-plant feed stockpile through feeders and conveyed to the rod mill. Rod mill product will be combined with the ball mill product and pumped to the cyclone. The cyclone underflow will be split in two streams with about 25% passing to the gravity recovery circuit and the remainder feeding the ball mill. Cyclone overflow will pass to a trash screen. Trash screen oversize will join the cyclone underflow as feed to the ball mill, trash screen undersize will discharge to the first leach tank.

Cement will be stored in a silo alongside the rod mill feed conveyor and will be fed onto the conveyor to maintain a pH of about 10.5 in the leach circuit. Cement will be used in place of lime to bind the filtered tailings so as to minimize dust generation from the tailings-waste material storage area. Cement requirement will be twice that of lime, but the lime requirement is so low, averaging about 1 kg/tonne of plant feed, that the projected cement requirement of 2 kg/tonne will not be a significant operating cost. Cyanide will be fed as a solution to the rod mill feed. Cyanide addition rate will be 1 kg/tonne of solution to the start of the leach circuit and fall to about 0.5 kg/tonne of solution by the end of the leach circuit. Process water will be fed to the rod mill feed and to the cyclone-feed-pump box.

17.5 Gravity Recovery and ILR

That part of the cyclone underflow passing to the gravity recovery circuit will flow to a vibrating screen to screen out oversize material from the feed to a centrifugal concentrator. Screen oversize, in combination with the tailings from the centrifugal concentrator, will gravitate to the cyclone-feed-pump box. The centrifugal concentrator will generate a gravity concentrate that will pass to an In-Leach Reactor (ILR).

The ILR will be a proprietary Gekko or Acacia plant where the gravity concentrate will be leached with an oxidant and an elevated cyanide concentration, with the solution reporting to the Carbon in Pulp (CIP) circuit.

17.6 Cyanide Leaching and CIP

The cyanide leaching circuit will consist of 8 air-sparged, mechanically-stirred leach tanks in series to provide a retention time of 48 hours. Leaching will be followed by 8 CIP pump cells in series to provide a retention time of 2 hours. Since the plant feed has no pregnant-solution robbing characteristics there is no need to use carbon-in-leach ("CIL"). Having separate leaching and CIP systems will result in the following advantages compared to CIL:

- Minimize carbon inventory;
- Minimize carbon consumption;
- Maximize carbon loading;
- Minimize carbon acid-washing and stripping requirements; and
- Minimize carbon reactivation requirements.

Use of CIP pump cells will allow the carbon to load with 3.11 kg (100 ounces)/tonne gold and up to 9.33 kg (300 ounces)/tonne of silver. Thus, the use of CIP pump cells will avoid having to build a more complex and expensive Merrill-Crowe plant to recover the silver.

17.7 Loaded Carbon Acid-Washing and Stripping

Loaded carbon will be processed in a conventional Zadra circuit. Loaded carbon will be pumped from the CIP circuit, screened and washed, and pass to an acid-wash tank. Dilute hydrochloric acid will be used to wash the carbon to remove lime scale, following which the carbon will be water washed and then pass to the stripping tank. The carbon will be stripped with hot, strong, caustic cyanide solution and the eluate will pass to an electro-winning cell. Outgoing eluate will heat the incoming strip solution via a heat exchanger and the temperature of the strip solution will be further raised via a second heat exchanger heated with thermal oil.

Stripped carbon will be screened to remove any undersize carbon, fresh carbon added to make for carbon losses, and recycled to the CIP circuit.

17.8 Carbon Reactivation

Stripped carbon will be periodically reactivated when its adsorption capacity has diminished beyond the acceptable threshold. The carbon will be reactivated by passing it through an externally-heated, rotating, horizontal tube kiln. Reactivated carbon will be quenched and recycled to the CIP circuit.

17.9 Electrowinning

Eluate from the stripping circuit will pass to an electro-winning cell where the gold and silver in the solution will be electrowon using stainless-steel-wool cathodes. Spent electrolyte will be recycled to the stripping circuit. The cathodes will be periodically removed from the electro-winning cell, washed to remove the gold and silver and returned to the cell. For Altan Nar ores, the high silver content will result in cathode sludge forming, which will be filtered and dried.

17.10 Smelting

Dried cathode sludge from electrowinning will be mixed with fluxes and an oxidant and smelted in a crucible furnace to generate gold-silver doré bars. The doré bars will be shipped offsite to a precious metal refinery.

17.11 Tailings Detoxification

The discharge of the CIP circuit will pass over a safety screen. Screen undersize will be pumped to the detoxification circuit which will consist of two air-sparged, mechanically-stirred tanks in series. Sodium metabisulfite and copper sulphate will be fed to the first tank to destroy cyanide. Ferric sulphate will be fed to the second tank to precipitate any soluble arsenic.

17.12 Tailings Filtration

The discharge of the detoxification circuit will flow to a mechanically-stirred surge tank ahead of a tailings filter. The tailings filter will be a pressure filter generating a filter cake of about 15-20% moisture. Filtrate will be recycled to the process water storage. The filter cake will be conveyed to a stacker that will generate a radial stockpile.

17.13 Tailings Storage

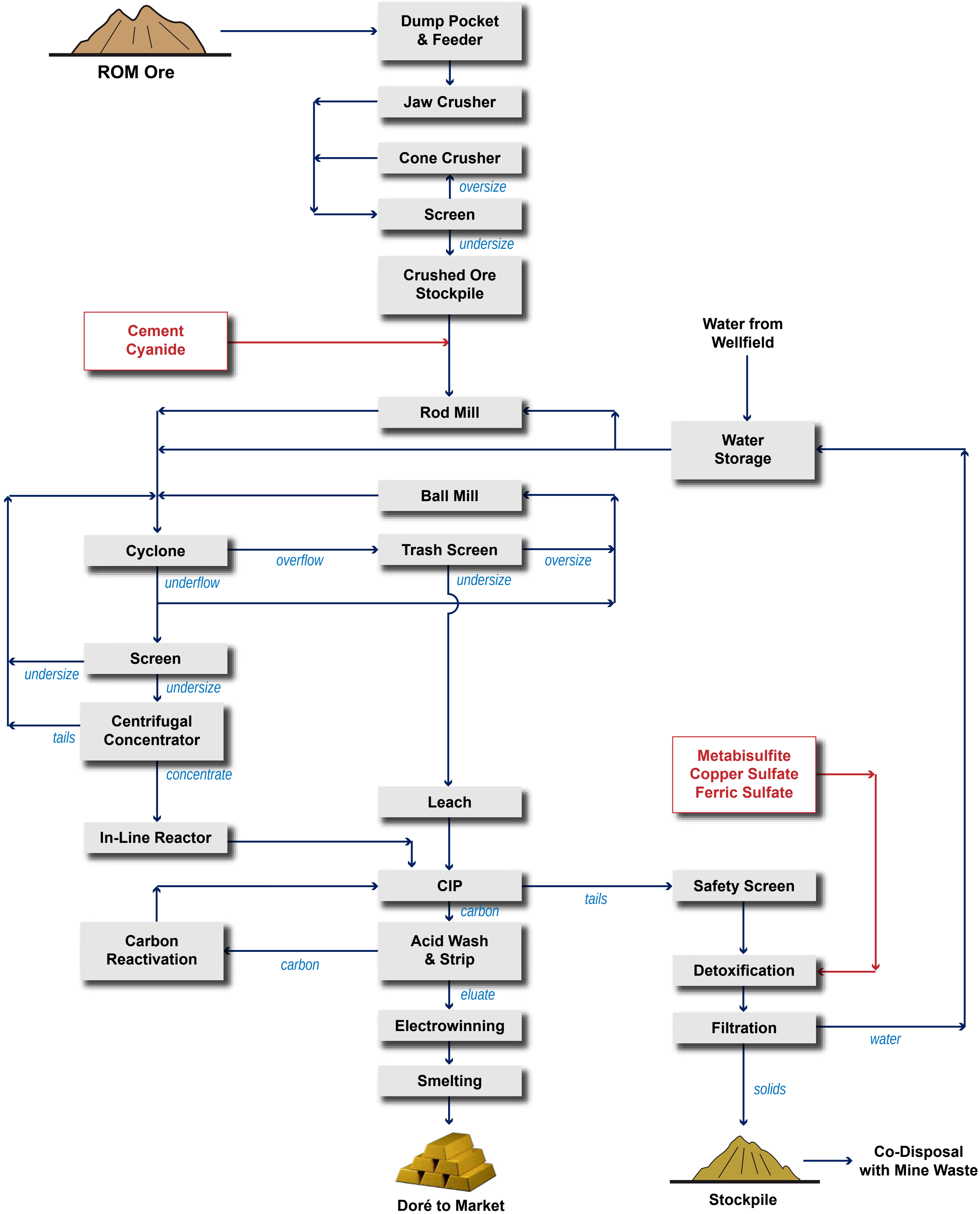
Tailings will be reclaimed from the tailings stockpile by a front-end loader, placed in trucks and transported to the combined plant-tailings/mine-waste rock storage facility. A description of the co-disposal approach is provided in Section 18.13.

Table 17-1 Principal Process Parameters

Parameter	Unit	Value
Operating Hours		
Crushing plant	hours/year	4,000 (12/7)
Leaching plant	hours/year	8,000 (24/7)
Throughput		
Annually	tonnes/year	600,000
Daily (nominal)	tonnes/day	1,800
Plant Feed Grade		
Gold	grams/tonne	3.42
Recovery		
Gold	percent	82
Production		
Gold	ounces/year	51,200
Plant Feed Physical Characteristics		
Rod mill work index	kWh/tonne	18.5
Ball mill work index	kWh/tonne	18.5
Grind Size	80% passing, µm	60
Tailings filtration rate	tonnes/day/ft^2	0.5
Retention Times		
Leaching	hours	48
Adsorption (CIP)	hours	2
Detoxification	hours	2
Carbon Parameters		
Carbon loading	ounces Au/tonne	100
Carbon processing rate	tonnes/day	1.5
Utilities Consumption		
Power	kWh/tonne	45
Fresh water (make-up)	m^3/tonne	0.25
Reagent Consumption		
Sodium cyanide	kg/tonne	1.5
Cement	kg/tonne	2.0
Carbon	kg/tonne	0.04
Sodium metabisulfite	kg/tonne	0.75
Copper sulfate	kg/tonne	0.05
Ferric sulfate	kg/tonne	0.25

Table 17-2 Principal Process Equipment

Item	Size	Installed Power (kW)	No.
Crushing Circuit			
Reciprocating-plate feeder	4- x 16-ft	50	1
Jaw crusher	single-toggle, 48- x 42-inch	150	1
Cone crusher	HP 200	150	1
Screen	6- x 16-ft, 1-in opening deck	7.5	1
Stockpile	conical, 1,500-tonnes live		1
Grinding Circuit			
Cement silo	10-tonne capacity		1
Rod mill	10- x 15-ft	500	1
Ball mill	12- x 15-ft	1,000	1
Cyclone feed pump	10- x 8-inch	75	1
Cyclone	gMAX 20		1
Trash screen	4- x 8-ft, 600-µm opening deck	5	1
Gravity Circuit			
Screen	4- x 8-ft, 2-mm opening deck	5	1
Centrifugal concentrator	30-in dia.	7.5	1
In-line-reactor	Gekko or Acacia	50	1
Leaching Circuit			
Leach tanks	7-m dia. x 10-m high	50	8
Carbon-in-pulp tanks	2-m dia. x 6-m high, pump cells	4	8
Safety screen	4- x 8-ft, 600-µm opening deck	5	1
Detoxification tanks	4-m dia. x 6-m high	25	2
Air blower	roots-type	150	1
Tailings Circuit			
Feed surge tank	7-m dia. x 10-m high	50	1
Filter	plate and frame, 3,000-ft^2	75	1
Filtered tailings stockpile	radial, 1,500-tonnes		1
Tailings co-disposal	with mine waste material		1
Elution Circuit			
Acid-wash column	1 tonne capacity, FRP		1
Stripping column	1 tonne capacity, 316 stainless		1
Solution heater	thermal oil, electrically heated	50	1
Electrowinning cells	stainless-steel wool cathodes		1
Reactivation kiln	1 tonne/day, diesel fired		1
Refinery			
Cathode-sludge dryer	electrically heated	10	1
Smelting furnace	crucible, diesel fired		1



CLIENT	PROJECT		
ERDENE RESOURCE DEVELOPMENT	NAME NI 43-101 Technical Report for the Preliminary Economic Assessment of the Khundii Gold Project		
	DRAWING ORE PROCESSING FLOW DIAGRAM		
	FIGURE No. 17-1	PROJECT No. ADV-MN-00161	Date January 2019

RPMGLOBAL

18. Project Infrastructure

18.1 Key infrastructure Assumptions

In developing the infrastructure plan and cost estimates for the Khundii Gold Project a number of high-level assumptions have been made about the project's operating philosophy. These include:

- Minimizing capital expenditure for site development;
- Developing a self-sufficient remote site;
- Transferring personnel via Fly In Fly Out (FIFO) with onsite accommodation; and
- Connecting to regional electrical power infrastructure.

It is planned for the Bayan Khundii site to be developed first with all infrastructure located there, and later, the Altan Nar site will be developed as a satellite operation with minimal facilities, as the advantages of hauling and utilizing Bayan Khundii site infrastructure outweigh developing redundant facilities at Altan Nar.

A summary of the capital and operating costs for the site infrastructure can be found in Chapter 21.

18.2 MIA Earthworks

All earthworks for the Mine Industrial Area (MIA) have been assumed to be undertaken by the mining contractor using mining equipment at the start of the project. Geological surveys of the site indicate that there is very little to no soil profile developed, with fresh rock generally occurring from or very near to surface. Vegetation is sparse and restricted to grasses, bushes and shrubs. Preparation of the site for construction is limited to clearing this vegetation and any loose surface material. As the volume of material to be moved is a small portion of the total material movement, this cost has not been separately listed from the mining costs.

18.3 ROM Pad

The Run-of-Mine plant feed dump station will be constructed from waste material mined during the early stages of establishing the pit. It is expected that the contractor's personnel and equipment will be used for this activity and that the dumping location will be redirected to a suitable site for a portion of the material to establish the ROM pad. As this material is scheduled to be moved as a part of the mining operation, it has not been separately costed.

18.4 Dams

Three dams and associated piping / water channels will be established at each of the Altan Nar and Bayan Khundii pits. The dams will be built from local material removed from the pits as waste material. The initial establishment will be carried out by a civil contractor at the start of the mine life. Ongoing expansion of the dams will be carried out by the mining contractor's personnel and equipment will be used for this activity and that the dumping location will be redirected to a suitable site for a portion of the material. An allowance of $150k has been included for the establishment works and the balance over the life of the mine has not been separately costed as this material is scheduled to be moved as a part of the mining operation.

18.4.1 Pit Interception Dams

Natural drainage paths that cross the active mining area will be intercepted to catch any fresh water that enters the site. This water will be stored in a dam, with the overflow directed away from the pit. Due to the arid nature of the surrounding area, surface water flows are expected to be minimal and highly seasonal, and the required dam size relatively small.

Mine Water dams

Dirty water pumped from the active mining areas will be collected in a pit top mine water dam. This water will be reused on site for dust suppression and other miscellaneous duties.

18.4.2 Sediment Control Dams

Any precipitation runoff from the waste dumps will carry some sediment that needs to be collected before it enters the local environment. Each waste dump will be constructed with a dirty water drain along the dump toe allowing run off water with sediment to be collected in local sediment control dams. Water in these dams will be held allowing any sediment to settle. Overflow from the dams will occur only in the event of high-water flows which result in low sediment concentrations.

18.4.3 Water Transfer Piping – Allowance

An allowance has been made to provide 300m of open channels to redirect water from the pit interception dams around the active mining area. A further allowance of 1,000 m of piping has been made to redirect water from the various dams about the active mining area for reuse as dust suppression water.

18.5 Mining Buildings

A number of buildings are required to support the mining operation. These include:

18.5.1 Mobile Equip Workshop

A workshop is required for the servicing and maintenance of the mobile mining fleet. This facility will be located at the Bayan Khundii site. This will be a small facility of 4 bays sized for the mining equipment on site. Given the short initial mine life, construction of the facility will be to a standard that suits with minimal internal fittings. Fire suppression inside the workshop will be provided by a dedicated fire water system.

While the building will be constructed as a part of the initial mine establishment, operation of the workshop will be the responsibility of the mining contractor. As such all internal fittings and tools required to support the mining fleet will be supplied by the contractor.

18.5.2 Field Equip Workshop

The small size of the mine requires a 180 t and 44 t excavator for the Bayan Khundii pit and two 44 t excavators for Altan Nar. Given the limited mobility of these machines, and the relatively short mine life, onsite maintenance will be carried out in the active mining area with major overhauls undertaken off site. As a result, a workshop capable of housing this equipment is not required.

18.5.3 Ancillary Equip Workshop

A small single bay ancillary equipment workshop will be attached to the main workshop for the maintenance of light vehicles, pumps, lighting plants and other minor pieces of equipment.

18.5.4 Tyre Changing Area

Planned tyre changes will occur in the vicinity of the workshop on a cleared area. Given the small size of the fleet, a dedicated tyre changing facility is not required.

18.5.5 Heavy Vehicle Washdown Bay

A concrete slab and water supply will be provided for the cleaning of heavy vehicles in the vicinity of the mobile equipment workshop. Washdown water from this facility will be captured and treated through sediment traps and oily water separators prior to release.

18.5.6 Light Vehicle Washdown Bay

Light vehicles will be washed when necessary using the heavy vehicle wash down bay. Given the small size of the fleet, a dedicated light vehicle washdown bay is not required.

18.5.7 Offices

The mine offices at Bayan Khundii will be co-located with the mill offices into a single administrative building. A small remote office will be established at the Altan Nar site for mine supervision and operational support.

18.5.8 Crib Rooms

Mining personnel at Bayan Khundii will use the meal facilities already established for the process plant at site. When operations commence at Altan Nar a small crib room will be established in the active mining area connected with the mining supervision office.

18.5.9 Ablutions

Mining personnel at Bayan Khundii will use the toilet facilities established in the process plant office. When operations move to Altan Nar toilet facilities will be established on site. End of shift showering facilities are included in the accommodation camp construction.

18.5.10 Security / First Aid

Site security will be provided by a closed-circuit television system (CCTV) that is monitored within the process plant control room. Given the remote location of the site, a separate site access control point is not required.

First aid facilities are included as a part of the process plant, and accommodation camp construction. An ambulance vehicle is provided for dispatch of first aid personnel, and transport of any injured worker. The site airstrip is available for emergency evacuation using aircraft in visual flight conditions (VFR) and a helicopter in instrument flight conditions (IFR).

18.5.11 Mine Control Centre

The mine control centre is co-located with the process control centre. Importantly, the process plant is responsible for the co-ordination of plant feed deliveries to the ROM.

18.5.12 Fuel and Oil Storage

An allowance has been made for a site fuel and oil storage area. This will be fitted with diesel and oil tanks to the relevant Mongolian standards, and bunded to contain any spills. Fuel and oil storage will be monitored through the process plant SCADA system, and issued via a fluid monitoring system.

18.5.13 Warehouse

A lightweight structure warehouse measuring 30m x 20m has been allowed for the site. This, including the warehouse yard, will be used for parts and consumables storage. The mining contractor will have use of this facility as necessary. Product storage and dispatch will be handled within the process plant and not through the warehouse.

18.5.14 Magazine

A secure magazine will be located on site, close to the active mining area, for the storage of detonators and packaged explosives.

18.5.15 ANFO Storage

Ammonium nitrate for bulk explosives manufacture will be stored in a dedicated facility on site close to the magazine. Managed by a dedicated contractor, bulk explosives will be mixed as required. No bulk explosives will be stored on site.

18.5.16 Training / Meeting Rooms

The mining personnel will use the process plant office meeting and training rooms.

18.6 Site Services

18.6.1 Site Water Supply

The site water supply will be from a borefield located by Erdene within the boundaries of the lease and the area directly adjacent. An allowance of $255k has been made within the process plant capital for the borefield, pipe connection, tank, pumps and interconnections.

18.6.2 Fire water

Fire water for the process plant will be supplied from the process plant dams. The capital cost of the process plant fire system is included within the process plant cost estimates. The workshop, warehouse, accommodation camp and remote mining facilities at Altan Nar will be protected with hand held fire extinguishers.

18.6.3 Raw water treatment

Raw water for the process plant and washdown applications will be provided from the borefield.

18.6.4 Potable water

Potable water for the accommodation camp, toilets and washing, gland seals and reagents mixing will be provided from a reverse osmosis ("RO") water treatment plant. Erdene has secured a quotation for this plant of $25k.

18.6.5 Site Power Supply

Erdene undertook power supply options studies for the site in 2015 and 2017, with a fixed connection to the national electricity supply grid being the most economically attractive. A 15kV line of approximately 110 km would allow for a connection to be established at Shinejinst. At current prices this is estimated to cost $1.56M.

A 15kV supply over a line length of 110 km will incur relatively high line losses, however given the low overall load and the short project life, this solution may be the most economically acceptable solution. The stability of the network has not been evaluated at this stage of the project and needs to be considered in more detail at the PFS / FS stage.

Erdene has undertaken renewable energy integration studies to examine scenarios for grid and off-grid power supply to Bayan Khundii. The site's solar irradiance is among the best in the country, with over 260 days sunshine per year on average, and wind loads, while requiring further study, appear of similarly high potential. Due to the continuous load requirements of the mine plant, any intermittent power supply (for example, grid, wind, or solar) would need to be combined with a reliable back-up supply, typically diesel gensets in Mongolia.

For grid connection, due to the risk of potential supply constraints by day, solar power (coupled with batteries for demand smoothening) has the potential to reduce the cost of electricity by avoiding the cost of diesel for power generation, particularly over a tenor of 7 years plus and the continued reduction of both solar PV and battery technologies. A renewable power installation may require additional capital expenditure given that a grid connection or diesel power station would still likely be required. Such CAPEX may be justified where total life of mine costs of power can be reduced. Additionally, at least two vendors have separately approached Erdene offering to supply renewable power through a Power Purchase Agreement, transferring the capital cost requirement to the supplier.

Post-closure, solar and wind power assets may well have additional usable life, potentially supporting agricultural production, tourism, or reducing / stabilizing cost of electricity for the nearby soum settlements. Opportunities for integrating renewable energy will be studied further and confirmed during the PFS and DFS stages.

Electrical power for the limited facilities at Altan Nar will be provided by small diesel generators for the offices and crib rooms.

Backup power for the site is provided by local diesel generators sufficient for maintaining full site production. Approximately 3 MW capacity is required. Such an installation would require the installation of two 2MW packaged generator units. Based on supply of units from China installed to Mongolian standards, an allowance of $1m has been included in the capital estimate for the backup power supply.

The full details of the electrical supply system economics and reliability need to be further investigated in the PFS / DFS stage.

18.6.6 On Site Electrical distribution

Electrical equipment for the process plant is covered within the process plant estimate. Other electrical costs are estimated at $179k for distribution at the Bayan Khundii site substation to the workshop, entry point and camp.

18.6.7 Communications

On site communications consist of 2-way radio, mobile phone, and local Wi-Fi systems. Satellite uplinks provide external interconnection. The cost is estimated at $49k for the Bayan Khundii site and a further $19k to develop the Altan Nar site.

On site networking is included within the plant estimates for the process control / SCADA system.

18.6.8 Lighting

Area lighting will be provided external to the site buildings where personnel and traffic are expected. The cost estimates for lighting at the plant and accommodation camp are included in the estimates for these facilities. Lighting for the workshop, warehouse and site entry point has been estimated at $19k.

18.6.9 Sewerage

A packaged sewerage plant will service all of the site needs at Bayan Khundii. Erdene have secured a quotation from a local supplier for a system at a cost of $91k.

The limited remote facilities at Altan Nar will be serviced by chemical toilets.

18.6.10 Heating

Offices and accommodation facilities will be heated by a combination of reverse cycle air conditioning and electric room heaters. The costs for these systems are included in the costs of the buildings. Heating for the workshop and warehouse will be provided by local electric heaters. Heating for the process plant is included in the plant capital estimate.

18.6.11 Lease Perimeter Fencing

Due to the remote nature of the site, low cost fencing of the active mining and processing areas has been included at a cost of $96k. This will provide for a stock proof fence, and appropriate entry gates.

18.6.12 Operational Support Facilities

The remote mining operation at Altan Nar is 19 km from the processing facilities at Bayan Khundii. It will be necessary to establish some limited facilities at Altan Nar for operational effectiveness of the mining personnel. These will consist of an office for the supervisor, crib rooms and a toilet facility. Details of these are included in the relevant sections above. A water fill point will be established using pit and runoff water for dust control. Vehicle refuelling will be undertaken either when the vehicles are at Bayan Khundii for maintenance or plant feed delivery, or by the use of a fuel tanker supplied by the contractor.

18.7 Accommodation Village

To support the FIFO arrangements a fully self-contained accommodation village is required for the site. This village will have sleeping, washing and meal facilities for employees and contractors in site. Three levels of room standard will be provided to meet the needs of different sections of the workforce. The accommodation camp includes recreational and laundry facilities.

Erdene has secured a quote from a local supplier for a camp capable of accommodating up to 300 people at a cost of $1.76M. This includes all earthworks, concrete and construction. The mine is required to supply the site, water, power and road access only.

18.8 Airstrip

To support the FIFO operation, the airstrip has been based on a typical 50-seater commuter turbo prop aircraft that allows for a full crew change. A Bombardier Dash 8 300 has been used as the reference aircraft. and is typical of aircraft used in remote mining around the world. Such an aircraft allows for an unrefuelled round trip from Ulaanbaatar to site and back, a round trip distance of approximately 1,500km. One-way travel time to site is approximately 1 hour 40 minutes. Similar aircraft are available for charter in country from a range of US, European and CIS manufacturers. These aircraft require a field length of approximately 1,000 m depending on local meteorological conditions

The airstrip is planned to be built to Mongolian / Russian standards. The airstrip will be graded and unsealed with reinforced (concrete or bitumen) touchdown / turnaround zones. A compacted and sealed aircraft parking area also doubles as an emergency helicopter landing pad. Minimal airfield furniture has been provided suitable for VFR operations only. This is consistent with airfields in other areas of Mongolia.

IFR operations are planned only to occur as emergency evacuations. In this case, helicopter transport will be used with the helipad co-located with the aircraft parking area.

Initial site investigations indicate that no significant earthworks are required. The construction cost is estimated at US$1.55M.

18.9 Roads

18.9.1 Permanent Haulroads

All general on-site roads will be constructed using the mining contractor's labour and equipment as a part of the establishment of the pit. Costs for these roads is included in the mining operational costs.

18.9.2 Site Access Road

No improved roads exist from Shinejinst or Bayan-Undur to the Altan Nar and Bayan Khundii site. The track travel time by 4x4 vehicle from Shinejinst to Bayan Khundii in summer was 2 hours for the RPM site visit. This is consistent with a road distance of approximately 110 km, the same as the proposed power line. Track conditions are fair to poor. RPM has agreed with Erdene that local spot upgrading of the track costing $1M would make this suitable for the current limited logistics plan (inbound diesel and mill consumables only).

18.9.3 Altan Nar to Bayan Khundii Link Road

Upon the development of the Altan Nar mining area, a link road will need to be established back to Bayan Khundii for the transport of plant feed, personnel and materials, and for equipment travelling to and from the workshop. To ensure efficient operations, this road will need to be engineered and built to haul road standards. An allowance of $50k per kilometre has been made for the 19 km distance resulting in a road construction estimate of $541k.

18.10 EPCM

Given the small scale of the development and Erdene's strategy to use an integrated project team approach, Engineering Procurement and Construction Management ("EPCM") costs have been estimated at 9% of the direct construction costs. This is consistent with projects of this size in Mongolia.

18.11 Owner's Costs

Owner’s costs, including commissioning, are expected to be low due to the small size of the project, the limited equipment to be commissioned on site and the use of an integrated project team approach. Owner’s costs are estimated to be 1% of the direct construction costs. This is consistent with projects of this size in Mongolia.

18.12 Contingency

For this Preliminary Economic Assessment, much of the detailed engineering required to support the project is yet to be completed. The estimate is consistent with an AACE Class 5 estimate. A contingency factor of 20% has been applied to the direct construction costs

18.13 Tailings Disposal

Tailings from the process plant will be dewatered at mill to a state where they are suitable for truck transport back to the mining area. Haul trucks delivering plant feed to the mill will be used to carry dry tailings back to the mine.

Within the mine waste dumps, cells will be developed using the overburden material. Trucks returning from the mill will dump the tailings into a cell. When each cell is filled it is covered by overburden material to encapsulate the tailings. This tailings disposal method isolates the tailings from wind and water erosion.

Investigations will need to take place on site during the PFS / FS stage to determine the most suitable overburden material for the construct of the tailings cell. The ideal material will be of neutral pH and be able to form a water barrier around the tailings cell.

Final shaping of the waste dumps during mine rehabilitation should create a landform that sheds precipitation off the surface of the waste dumps without pooling. This will ensure that water does not percolate down into the waste dumps and mobilise the tailings sediments or chemicals.

While such a tailings disposal system requires a higher degree of mine planning and operational control, it provides a low cost of tailings disposal and avoids the need to construct and manage a tailings dam. Other benefits include a reduced need to circulate water to and from the process plant during operations and the creation of a stable landform post the mining operation.

19. Market Studies and Contracts

19.1 Marketing Studies

Gold is a commodity that is freely traded on the world market and for which there is a steady demand from numerous buyers. It is also possible to sell gold for delivery at a fixed price at a future date (forward sale). There are a number of refiners in the world whose bars are accepted as "good delivery", for example, through the following associations:

- London Bullion Market Association (LBMA)
- Istanbul Gold Exchange (IGE)
- Shanghai Gold Exchange (SGE)
- The Chinese Gold & Silver Exchange Society, Hong Kong (CG &SES)

As a freely-traded commodity, no marketing studies were considered necessary for the PEA.

19.2 Metal Selling Price

The selling prices used in the PEA were US$1,200/oz for gold and US$18/oz. for silver.

The gold and silver price selected was based on the long-term metal price as published in the Energy and Metals Consensus Forecasts ("Consensus"), November 2018 edition. The Consensus forecast is understood to be derived from reviewing forward forecast data from over 20 institutions. Given the variability and uncertainty surrounding future gold price, a range of gold price value between $1,150 and $1,300 were considered in sensitivity analysis. RPM considers this approach reasonable for the purposes of the PEA.

19.2.1 Sales Contract

A contract for refining the Project doré will be entered into closer to the first production, after a tendering process. It is usual that the refiner will arrange transport for the doré bars to its refinery, where it will refine the gold to the purity accepted in international markets (generally 99.8 to 99.95%). The refined gold is credited to the Company's gold account with its bank, to enable it to be sold on international markets or delivered into forward sales contracts. The refiner will deduct transportation costs, insurance, refining and other charges.

The value of the silver contained within gold doré would be provided as a metal credit.

For the purposes of the PEA, it was assumed that the refiner will charge a refining cost of 0.05% of the metal value, that is, 99.95% of the value contained in the bullion would be returned to Erdene.

20. Environmental Studies, Permitting and Social or Community Impact

20.1 Environmental assessment process

Mongolia's environmental assessment process for mining involves a three-step process:

1. Environmental and Social Baseline Survey;
2. General Environmental Impact Assessment ("GEIA"), and
3. Detailed Environmental Impact Assessment ("DEIA") and Environmental Management Plan ("EMP").

20.1.1 Environmental and Social Baseline survey

The Environmental and Social ("E&S") Baseline survey examines the existing context within which the Project is planned. The resulting description draws upon secondary data from government sources as well as firsthand information collected by a certified contractor. The E&S Baseline makes up a key part of the registration of mineral deposits in Mongolia and is documented in full technical detail in the Detailed Environmental Impact Assessment.

20.1.2 General Environmental Impact Assessment

The General Environmental Impact Assessment (GEIA) of a Project is a preliminary screening based on the nature, scale, and location of the Project. The GEIA is carried out by the Ministry of Environment and Tourism of Mongolia as part of the mining license application process. Ordinarily, the GEIA is conducted to determine whether a Detailed Environmental Impact Assessment is required for the Project.

20.1.3 Detailed Environmental Impact Assessment and Environmental Management Plan

The Detailed Environmental Impact Assessment (DEIA) acts as the official assessment of potential environmental and social impacts of a given Project, including the Project's initial Environmental Management Plan (EMP). The DEIA and EMP also cover community or social impacts. A DEIA is obligatory for all mining projects in Mongolia and must be carried out by a Mongolian entity with professional certification for DEIA services granted from the government. The DEIA of a given project must be filed within 12 months of issuance of the mining license. The DEIA methodology is prescribed by the government to investigate the potential direct and indirect impacts of a given project. During the DEIA, consultation with the local government at the soum (sub-province) level is required, covering potential impacts and proposed management plans.

20.2 Environmental Permits

Detailed Environmental Impact Assessment

The DEIA approved by the Ministry of Environment and Tourism acts as the Project's primary environmental permission and the basis for issuing construction and operating permissions.

20.2.1 Local Cooperation Agreement

Pursuant to Article 42 of the Law on Minerals of Mongolia, minerals license holders are required to enter into a Local Cooperation Agreement with the local government of the jurisdiction within which a given minerals license is located. In 2016, the Government of Mongolia approved model Local Cooperation Agreements for minerals license holders that commit companies to undertake environmental management in the course of operations and encourage public information sharing about the license holder's activities locally.

20.2.2 Land and Water Use

Land use permissions are required for the mine and its facilities and associated infrastructure and are issued by the soum government authorities. Water use permission is based on the availability of surface and sub-surface resources and is issued by local, regional, or national authorities, depending on the required annual consumption.

20.2.3 Annual Environmental Management Plan and Report

License holders are required to earn approval of Environmental Management Plans for operations planned in a given year. Performance is reported annually to the government.

20.2.4 Other

Additional permitting may be required for chemicals and/or explosives handling and storage, depending on the nature of the mining operations and mineral processing of a given project.

20.3 Baseline Studies

From 2016 to 2018, Erdene engaged Eco Trade LLC, a Mongolian certified EIA consultant, to complete the Environmental and Social Baseline surveys for the Altan Nar and Bayan Khundii deposits, in accordance with Mongolian rules and regulations.

20.3.1 Environment

Characteristics of the landscape in and around the Khundii Gold Project are dominated by Gobi low hills with porous, rough surfaces, gullies that were intensely affected by backward and side erosion between hills, small dry channels, and flat steppe between low hills. Black, black brown hills with relative elevation of 50 m, affected by intense erosion forming loose rocks, are dominant in the area. The area has a land surface elevation that is slowly decreasing from northeast to south, and ephemeral watercourses originated from small hills in the north merge with riverbeds that pass through southwest of the area. The knolls on the license area have elevation of ASL 1,250 to 1,300 m. Heavy metal contents in water are relatively high in this region, as seen in the results of heavy metal analysis for samples taken from dry channels and herder water wells.

The Project area is subject to the extreme climate of the continental Gobi Desert region, with four seasons much like the other territories of Mongolia. Orographic conditions and local micro wind affect the air current formation and creates a dry and drier micro region where precipitation and humidity are relatively low, with hot summers and cold winters. Cloudiness, precipitation and snow cover are generally low. Absolute low temperature reaches -37.4°C and absolute high temperature reaches 44.9°C. Annual mean temperature is around 0.7°C. The region has mean annual precipitation of 105 mm. Although relatively little precipitation falls in this region, there is a one in 50-year chance that the maximum amount of 50 to 60 mm precipitation may fall within a single day. In summer, rain falls an average of 15 to 20 days.

Frequency of the dominant wind direction is 28.7% from the northeast, 25.1% from the west and 16.9% from the northwest. The prevailing wind direction varies seasonally. Depending on the wind force, 10 to 15 days of blizzard may occur, and 28 to 30 days of dust storm may be observed per year of which most occur in the spring months of March to May. When wind reaches the speed of 6 m/s, dust and soil becomes mobile. At 10 m/s wind speeds, dust storms intensify. In this region, winds with a speed of more than 10 m/s blow for an average of 35-40 days per annum.

In 2016, large and small particle dust levels (PM10, PM2.5) were measured for 24 hours in five locations with the license area to determine the existing air quality. According to field and research survey result, air quality performance is within the allowable amount stated in Mongolian National Standard and International Finance Corporation Performance Standard. However, the regional wind direction is mostly from the southwest and west, and average wind speed is the highest in April. High winds cause coarse particulate matter in the air to increase drastically and the dust to disperse faster throughout a larger area.

In 2016, noise measurement was conducted in the exploration area to determine background noise levels and to monitor whether noise levels exceeded the maximum permissible amounts stated in the Mongolian standard on noise. Noise was measured in six points in the area. Noise levels in the exploration area were lower than maximum acceptable amounts stated in MNS 4585:2007 and IFC guidelines.

In terms of hydrology, the survey area belongs to the Trans-Altai Gobi basin of Mongolia in the Central Asian Internal Drainage Basin of world watershed. No perennial streams or rivers exist in this region due to its natural landscape and climate conditions. Only ephemeral river beds cross the project area. Dry intermittent river beds cross though the mineral deposit areas. The surrounding territory of the project area is located in hydrogeological massive with anticlinal flexure formed of metamorphic, terrigenous and volcanogenic rocks according to the hydrogeological division of Mongolia.

Studies of water samples conducted in 2016 recorded 10 water wells, four of which were sampled and analysed. In 2017, seven wells located within the exploration area, ranging from 2 to 11.6 km from the Bayan Khundii and Altan Nar deposits, were sampled and analysed. Samples obtained from ground water analysis in 2016 and 2017 revealed levels of elements exceeding both the national drinking water standards (MNS 0900:2005) and permissible levels of ground water pollutants (MNS 6148:2010). The results of the studies on water wells have been based on the last two field studies and therefore should be regularly monitored within the framework of the project and any natural or human related factors should also be studied. Untreated water of the studied water wells should not be used for drinking water purposes.

A vegetation survey of the Khundii exploration area and its vicinity was completed in July 2017. The botanical geography of the Project area lies within the Altay mountain inner Gobi Desert circle. The vegetation survey recorded a total of 29 vascular plant species belonging to 12 families and 24 genera. These plant species are xerophyte, petrophyte, psamophyte and halophyte shrubs and semi-shrubs which are dominantly distributed in the area. Additionally, two plant species, Asterothamnus centrali-asiaticus and Iljinia Regelii were found within the survey area that are included in the Law on Natural Plants (1995) appendix as "very rare" species. These plant species were found at the mining site and could be impacted by the operations of the exploration and mining phases. It is not anticipated that the existence of these plants will have material impact on the mining operation and that mitigation efforts and proper environmental management will ensure the protection on these plants.

Reptiles, birds and mammals that are distributed within the Project area, and its surrounding region, are part of the Gobi Altai Mountain (13) range subdivision in accordance with geographical subdivision of wildlife of Mongolia. The baseline study observed 12 species of birds, 3 species of reptiles, 2 species of insects and 7 species of mammals. Selected migratory birds and ungulates are considered rare or vulnerable at the regional level in Mongolia.

The license area is located within the buffer zone of part “A” of the Great Gobi Special Protected Area. Organizations and economic entities who conduct exploration and mining of minerals shall, pursuant to law, be subject to a Detailed Environmental Impact Assessment. Further, the conclusion of the Detailed Evaluation shall include comments and conclusions from the Protected Area Administration, as required under the Law on Buffer Zones (articles 9.1 and 9.2).

Researchers from The Department of Anthropology and Archaeology, School of Sciences of the National University of Mongolia conducted an archaeological survey of the Project area from during May 19 to 29, 2016. This exploration survey was carried out in places with landscape conditions consistent with patterns where ancient tombs and ritual establishments may be found, for example in between mountains or deep into the mountains, and in valleys between mountains. In the course of the survey no artefacts related to ancient tombs or other human activities were found in suspected places.

Researchers of the Institute of Palaeontology and Geology at the Mongolian Academy of Sciences conducted a palaeontological survey of the Project area from May 19 to 29, 2016. The survey did not identify any evidence of animal and plant fossils within the sediments distributed within the Project area.

20.3.2 Social

The Khundii Gold Project is located within the territories of Shinejinst and Bayan-Undur soums of Bayankhongor aimag. The direct Project area does not contain any permanent structures and is temporarily populated by mobile herders during the spring and autumn seasons from time to time, depending on local weather conditions. The primary economic activity of the two soums is animal husbandry, with the majority of household income derived from the sale of raw cashmere wool. The two closest settlements are located approximately 90 to 100 km north of the Project, each hosting approximately 200 households. Basic goods and services are available in the town centres, including fuel, household goods, and grid electricity. Water is distributed by truck from water wells in the settlements. Neither settlement has significant centralized water distribution or waste water treatment and disposal, water is distributed by truck from water wells in the settlements. Permanent jobs in the soums, outside of animal husbandry, are relatively scarce, mostly based on government and public services.

20.4 Consultation

Erdene consults with stakeholders through a variety of platforms, including both legally required and voluntary.

20.4.1 Statutory Consultations

Mongolian law requires consultation with local stakeholders during the DEIA process. The Project proponent must provide information about the Project's potential impacts and management plans to the public in a manner which is accessible for the local residents. Certification of local consultation is supplied by the local government. The Local Cooperation Agreement provides an additional mechanism for consultation with local stakeholders over the course of the Project life cycle.

20.4.2 Company Stakeholder Engagement Policy

In addition to the DEIA process, Erdene engages with stakeholders on an ongoing basis. All material information regarding the company's performance is translated into Mongolian within 48 hours of disclosure and made available on the websites of the company and the Mongolian stock exchange. The company maintains a grievance handling mechanism for both internal and external stakeholders at its field sites and office and provides training for company personnel on how to implement the mechanism. Additionally, Erdene provides for participation and results sharing of its local environmental monitoring programs during fieldwork periods.

20.5 Factors for Consideration

Consultation with Local Stakeholders and Negotiation of Local Cooperation Agreement

In the course of the DEIA process for the Project, Erdene should take steps to ensure that stakeholder consultations are timely and satisfactorily accessible to those living in the settlements closest to the Project areas. Local language and cultural sensibilities should be considered in the selection of the platforms for sharing and collecting information about the Project's potential impacts. Negotiation of a fair Local Cooperation Agreement that delivers benefits for all stakeholders will help build support for the Project construction and operations.

20.5.1 Dust Management

With the introduction of motor vehicle traffic and mining operations, ambient dust levels may potentially increase locally around the mine site. Although there are no permanent residents at the Project site, seasonal residents will be concerned about the potential effects of elevated dust levels on human and animal health and well-being. Appropriate dust suppression measures, like those in place at other industrial mines elsewhere in Mongolia's Gobi region, should be investigated and applied appropriately during the Project.

20.5.2 Waste Rock Management

Waste rock will be placed in geotechnically engineered emplacements to ensure they remain safe and stable. The Company intends progressively rehabilitate the emplacements to minimise dust generation, reduce erosion and increase stability. Further, test work is required to confirm if the waste rock has any potential for generating hazardous leachates. This is proposed for the pre-feasibility study phase. If some of the waste rock is found to contain either acid-generating or hazardous leachate potential, this material will be contained within impermeable cells formed using suitable, benign waste rock.

20.5.3 Water Management

Surface water is scarce in the Project area. The Project will become a significant water user in an environment within which water use has been historically limited to livestock herders, small-scale vegetable farming, and low-density municipalities (soum settlements). Given the limited availability and public perceptions about heightened water scarcity in the region, the Project should examine possible ways to maximize water use efficiency.

20.5.4 Infrastructure Requirements

Key Project infrastructure has the potential to impact existing community livelihoods and practices. Design and engineering should take into account local community context, particularly with regard to seasonal livestock grazing ranges, in order to avoid potential conflict over land use changes.

20.5.5 Social and Community Impacts and Benefits

The Project has the potential to become the local community's single largest private business enterprise. Maximizing local community participation in the Project should be considered over the course of feasibility studies. For example, a growing number of recent university graduates from the local community could be trained and supported to work in the Project.

20.5.6 Mine Closure Plans

Ensuring the long-term safety of the mine site post closure is critical to Project success. Progressive reclamation is proposed and can help reduce the cost and improve the quality of eventual closure. A draft regulation on mine closure in Mongolia is expected to be approved in 2019, which would require additional consultation and planning for mine closure as well as stricter post-closure monitoring. Consequently, the Company should investigate closure options early and re-visit such plans at least annually to best account for the long-term needs of the Project and its host community.

21. Capital and Operating Costs

21.1 Project Capital Costs

Capital costs were estimated by RPM with support from Erdene. The approach and underlying assumptions to estimate processing and infrastructure costs is provided in Sections 17 and 18. The capital costs for the mining cost centre are minor as the Project assumed contractor mining.

A summary of total project capital expenditure is given in **Table 21-1**. The capital expenditure for Project establishment is estimated at US$32.2M, incurred at the Bayan Khundii site. The remaining US$7.8M comprises US$1.2M to commence Altan Nar, sustaining costs of US$2.6M and US$4M for mine closure.

Table 21-1 Project Capital Costs (US$M)

Item	Bayan Khundii (US$ M)	Altan Nar (US$ M)	Total (US$ M)
Process Plant	16.1	0.0	16.1
Site Establishment. + Buildings	2.8	0.4	3.2
Accommodation Village	1.8	0.0	1.8
Airstrip	1.6	0.0	1.6
Roads	1.0	0.5	1.5
Engineering + Support	3.6	0.1	3.7
Contingency 20%	5.4	0.2	5.6
Subtotal Plant and Infrastructure	**32.2**	**1.2**	**33.5**
Mine Closure	2.8	1.2	4.0
Sustaining Capital	1.5	1.1	2.6
Total	**36.5**	**3.5**	**40.0**

The engineering accuracy of the capital cost estimate is +/-35% commensurate with a PEA. The above estimates are inclusive of a 20% contingency (refer to Section 18.12). Sustaining costs are assumed to be ~2% on key capital items for replacement.

21.2 Process Plant Capital Costs

A summary of the initial process plant capital expenditure is given in **Table 21-2**. The capital estimate assumes Chinese equipment for key items. The process plant design and assumptions are set out in Section 17.

Table 21-2 Process Plant (US$ k)

Cost Centre	Capital Cost Estimate (US$ k)
Crushing Circuit	1,850
Milling Circuit / Gravity Circuit	3,850
Leaching Circuit/ILR	2,050
Elution / Electrowinning / Activation Kiln	1,050
Dewatering / Detoxification / Dry Stacking	945
Reagents / Storage / Mixing / Distribution	455
Instrumentation	225
Samplers	38
Air compressors	65
Buildings/offices	500
Power (connection to the grid)	1,550
Backup power	1,000
Heating and distribution	850
Borefield	364
Water (storage, distribution)	255
Laboratory/assay facility	90
'Dry Stacking' area preparation	55
Equipment Hire	210
Temporary Accommodation	740
Directs sub-total	**16,142**
IPMT & Owner's Costs (10%)	1,614
Freight	530
First Fill	190
Spares	250
Indirect sub-total	**2,584**
Contingency 20%	3,745
Total	**22,471**

21.3 Infrastructure Capital Costs

The following are included in the infrastructure capital cost estimates:

- Mine Administration – mine area buildings; including workshops, offices stores and mine infrastructure services including power, water, communications and sustaining capital;
- Transportation – access road from highway to transnational highways;
- Power Generation – assumed that energy is supplied via grid power and that the energy supplier will provide power to site at a unit rate for consumption;
- Water Supply – bore field, pumping, piping and tankage to source water from an aquifer and deliver it to site and sustaining capital; and
- General Site Infrastructure – Site buildings and services including power and water reticulation, roads, etc, and sustaining capital.

A summary of the initial process plant capital expenditure is given in **Table 21-3**.

Table 21-3 Project Infrastructure (US$ k)

Area	Bayan Khundii (US$ k)	Altan Nar (US$ k)	Total (US$ k)
Dams	149	0	150
Mining Buildings	2,306	0	2,306
Services	384	243	627
Operational Support Facilities	0	129	129
Accommodation Village	1,755	0	1,755
Airstrip	1,553	0	1,553
Roads	1,000	542	1,541
Sub-total Construction	**7,147**	**914**	**8,061**
IPMT & Owner's Costs (10%)	715	91	806
Site vehicles (Ambulance, FEL, forklift, crane, vehicle)	295	0	295
Sub-total Indirect	**1,010**	**91**	**1,101**
Contingency 20%	1,631	201	1,832
TOTAL	**9,788**	**1,206**	**10,994**

Details of the infrastructure assumptions are provided in Chapter 18.

21.4 Operating Costs

A summary of operating costs is set out in **Table 21-4**. Key operating cost assumptions include:

- Equipment maintenance by the mine owner's workforce;
- Diesel fuel price = US$0.90 per litre;
- Power price = US$0.10/kWh;
- Local labour costs generally ranging from US$10,000 / annum to US$15,000 / annum; and
- Government royalty at 5% of revenue less selling and refining costs;
- 10% contingency on operating costs (excluding royalty and refining); and
- No Value Added Tax (VAT).

Table 21-4 Project Operating Costs

Cost Centre	Life of Mine (US$ M)	Unit Cost (US$/oz Au)	Unit Cost (US$/t Feed)
Mining Contractor	131.5	319	28.75
Transport AN to BK	2.7	7	0.59
Processing and Infrastructure	75.3	183	16.47
Product Transport	0.5	1	0.10
Smelting & Refining Charges	2.0	5	0.43
Overheads	30.1	73	6.58
Royalty and Govt Charges	25.5	62	5.57
Contingency	24.0	58	5.25
Total	**291.6**	**708**	**63.73**

The mining contractor costs were developed from first principles based on the selected equipment fleet and the mining activity requirements. Equipment costs were based on RPM's internal database and a 10% contractor margin was assumed.

The processing and infrastructure costs were estimated from the RPM database and extrapolated based on the Project characteristics. A more detailed breakdown of the processing costs is set out in **Table 21-5**.

Table 21-5 Processing Plant Operating Costs

Cost Centre	Operating Cost (US$/t Feed)
Power	4.49
Staff	1.42
Reagents	2.79
Maintenance	1.13
Consumables	2.84
Other (dry stacking, process water, assaying, training, etc.)	3.80
Total	**16.47**

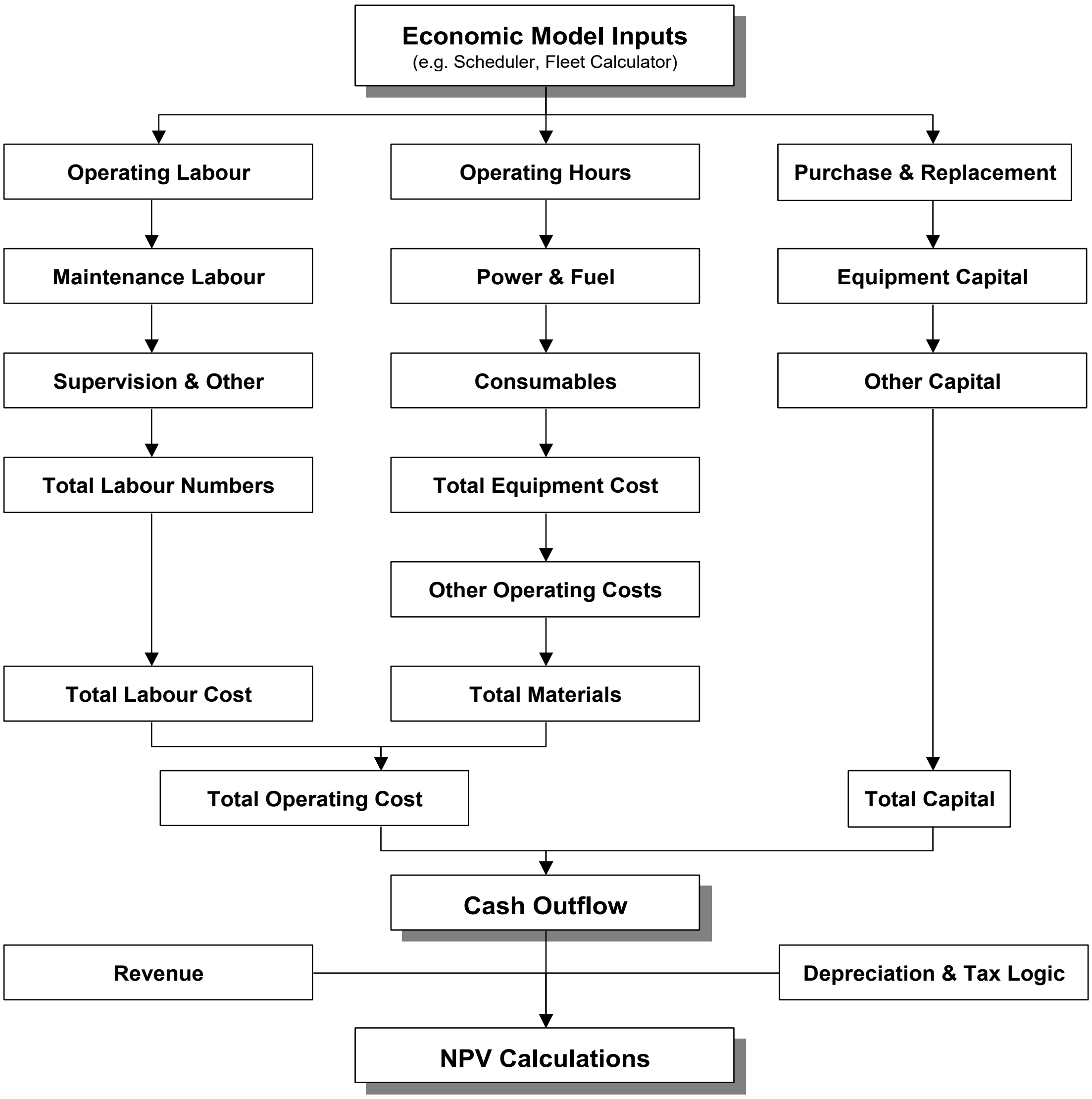
22. Economic Analysis

22.1 Approach

RPM has prepared an economic model for the Project using its in-house economic modelling software. All results are based on a constant dollar analysis, that is, no inflation was considered. The sources of economic model input data were primarily from our in-house industry database.

Figure 22-1 illustrates the approach to the economic modelling. The economic model develops mining costs from first principles with key physicals from the production schedule and fleet calculator software as shown in the below flow sheet. Non-mining costs are determined and combined with the mining costs to determine the annual operating cost expenditure. In parallel a capital expenditure schedule is developed to create a total cash outflow schedule.

Figure 22-1 Economic Model Flow Chart



The total mine revenue is determined based on the metal products sold and the metal sales price estimate. No other revenue has been assumed.

The economic model results are summarised in a constant-dollar (REAL) cash flow analysis, from which was calculated both a net present value (NPV) and a discounted cash flow internal rate-of-return (IRR). Both measures were based on after-tax net cash flows.

The economic model provides only a high-level estimate of economic value commensurate with the accuracy associated with a PEA.

22.2 Economic Assumptions

The Economic Model commences from 1 January 2020. Although the decision to proceed with the project and some detailed engineering work is assumed to have been complete in 2019, the model considers only expenditure from 1 January 2020 with all previous expenses considered sunk costs. The Net Present Value ("NPV") is determined from the Year 2020 assuming cash flows occur at the end of this period. Other key modelling assumptions were:

- USD currency;
- NPV estimated for three discount rates of 5%, 7.5% and 10%;
- Income tax at 10% of taxable income for first US$1.5M, and 25% thereafter;
- Depreciation of initial capital items over 10 years assuming straight-line value method;
- Local labour costs based on Erdene salary information, and
- Project timing as set out in Section 22.3.

Gold and silver selling price was estimated from the published Consensus forecast and is based on long term pricing (refer Section 19). Erdene provided guidance on application of tax and royalties.

22.3 Development Schedule

The recommended development schedule as set out by O2 Mining on behalf of Erdene is as follows:

- Mongolian mining license and feasibility studies – 2019 through to Q4 2019;
- Detailed Process Plant Engineering and construction permitting completed by Q4 2019;
- Commencement of site works, civil and foundations - Q3, Q4, 2019;
- Construction and commissioning by Q4 2020; and
- Operational start-up 2021.

22.4 Economic Assessment

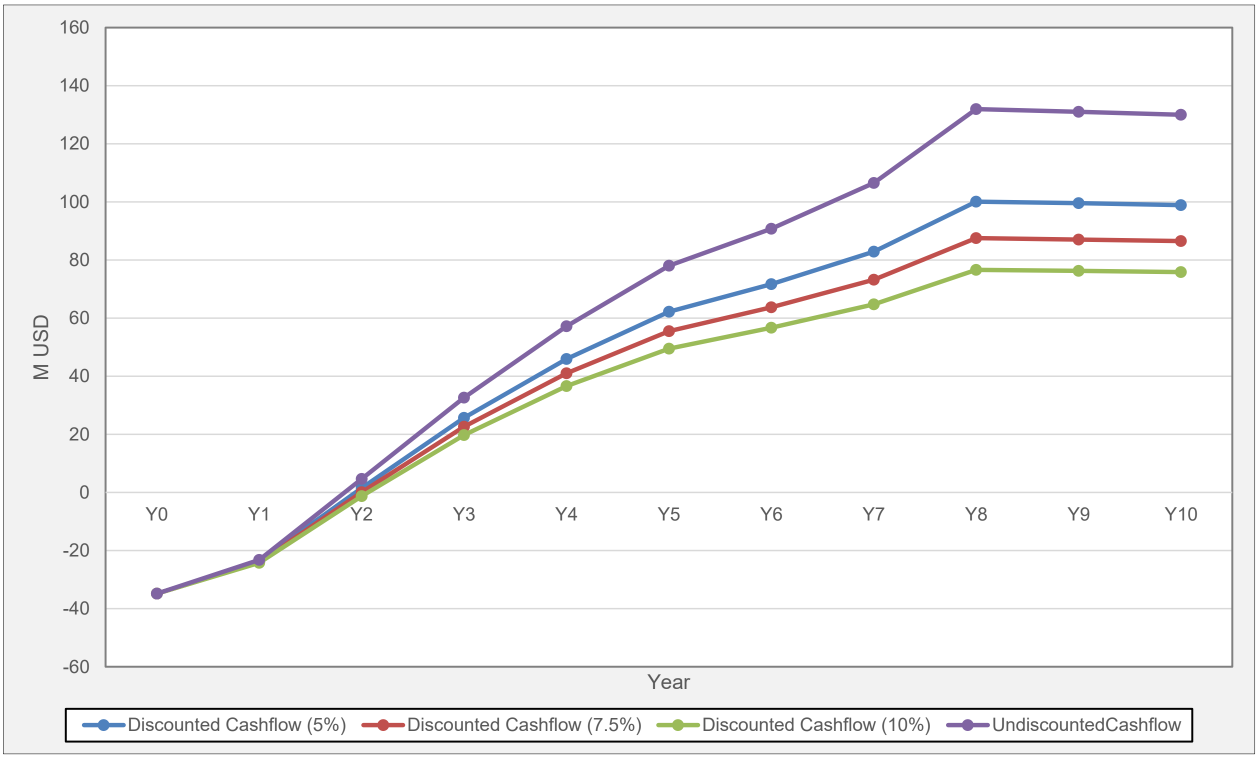
All capital costs, operating costs and revenues were input into the RPM Economic Model. Key outcomes from the cash flow analysis are set out in **Table 22-1**. The IRR or Break-Even Discount Rate is 56%.

Table 22-1 Key Economic Indicators

Item	Units	Value
Mill Feed	Mt	4.6
Gold Sold	k oz.	412
Silver Sold	k oz.	604
Mine Operating Life	Years	8
Total Revenue	**US$ M**	**505**
Capital Requirements		
Pre-production Capital Cost	US$ M	32.3
Remaining Capital Cost	US$ M	7.7
Total Capital Cost	US$ M	**40.0**
Total Operating Costs	**US$ M**	**292**
DCF @ 5%	US$ M	99
DCF @ 7.5%	US$ M	86
DCF @ 10%	US$ M	76
CAPEX	US$ M	40
Total Operating Cost	US$/oz. Gold Sold	708
Sustaining Cost	US$/oz. Gold Sold	6
AISC Operating Cost	**US$/oz. Gold Sold**	**714**
Pre-Tax Internal Rate of Return	%	70%
After-Tax Internal Rate of Return	%	56%
Payback Period	years	2

The cashflow graph in **Figure 22-2** indicates a payback period of less than two years. The final two years have reduced profitability due to the inclusion of mine closure costs.

Figure 22-2 Project Cashflow



22.5 Sensitivity Analysis

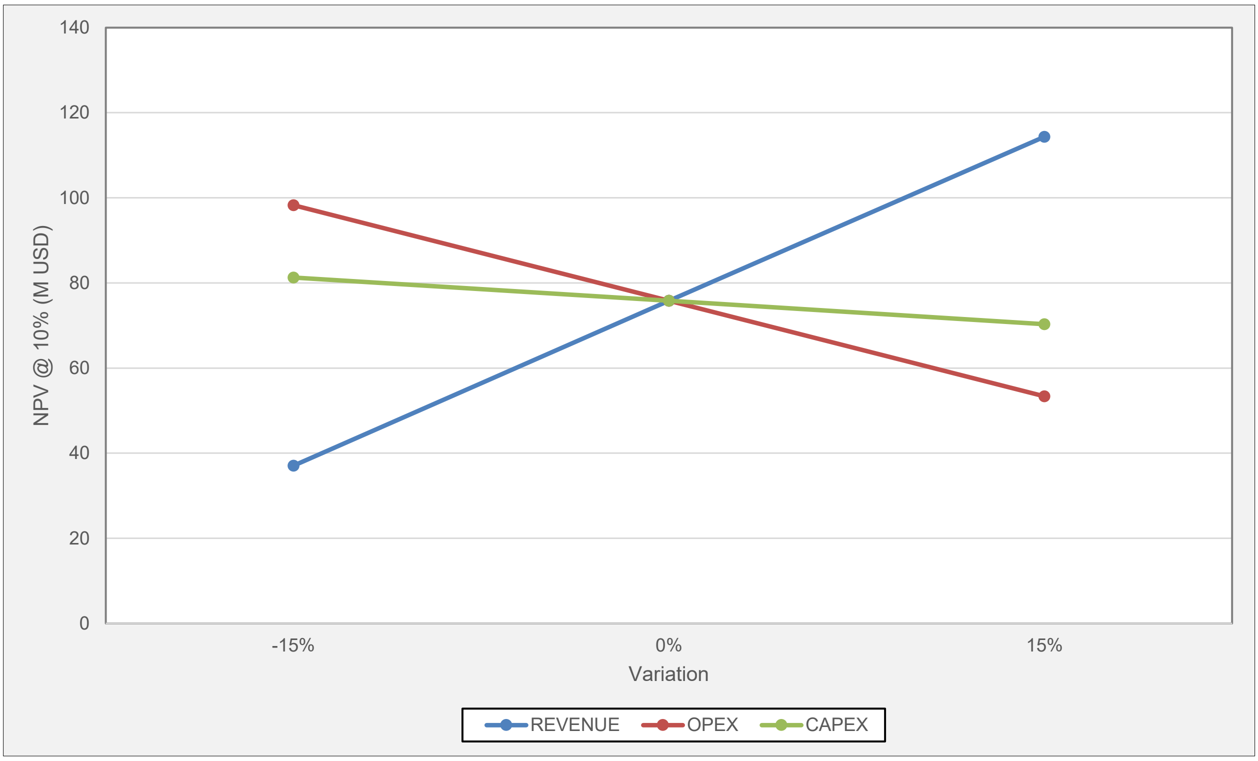
The base case long term gold price selected for the PEA was US$1,200/oz. However, in reviewing various pricing publications, long-term gold price forecasts ranged between US$1,150/oz to US$1,300/oz. A sensitivity analysis was hence undertaken across this range to understand the influence of gold price on Project value, as set out in Table 22 2.

Table 22-2 Gold Price Sensitivity Analysis

Sensitivity Analysis on Gold Price	Units	1,150	1,200	1,250	1,300
NPV (5% discount rate)	US$ M	86	99	111	124
NPV (7.5% discount rate)	US$ M	75	86	98	110
NPV (10% discount rate)	US$ M	65	76	86	97
IRR	%	50%	56%	62%	68%

A sensitivity analysis was also undertaken assuming a range of +/-15% for capital costs, operating costs and revenue. The results are illustrated in **Figure 22-3**. The analysis indicates that the Project is most sensitive to revenue, that is, a change in metal price followed by operating costs. A 15% change in metal price alters the Project value (NPV@10%) by 50%. A 15% change in operating cost alters the Project value by 30%.

Figure 22-3 Sensitivity Analysis



23. Adjacent Properties

The Khundii Gold Project includes both the Bayan Khundii gold deposit and the Altan Nar gold-polymetallic deposit which are located 16 km apart and both are fully owned by Erdene. The Bayan Khundii project was described in the NI 43-101 Technical Report titled "Bayan Khundii Gold Project Mineral Resource Technical Report", dated Nov 1, 2018 and the Altan Nar project was described in the NI 43-101 Report titled "Altan Nar Gold Project Mineral Resource Technical Report", dated June 21, 2018. Both reports were authored by RPMGlobal Asia Limited.

The Project is situated in a well mineralized belt with the Erdene-owned Zuun Mod porphyry molybdenum / copper deposit situated 40 km to the east. The Zuun Mod project was described in the NI 43-101 Report titled "Erdene Resource Development Corp., Zuun Mod Porphyry Molybdenum Copper project", by Minarco Mine Consult, June 2011.

There are no adjacent properties with similar publicly well-known mineralization to provide comparative mineralization characteristics. Erdene has commenced exploration on a recently acquired exploration property contiguous to the Khundii license where a significant white mica altered porphyry target has been identified. The heat and fluid involved in the formation of the mineralization at Bayan Khundii may be derived from similar intrusion-related hydrothermal systems at depth under the wider Bayan Khundii area, however, further analysis is required to confirm this interpretation.

Erdene suggests there is potential for a number of other deposits to be found in this apparently well mineralized belt which has previously not been well explored.

24. Other Relevant Data and Information

No other relevant / material data is known to have been excluded from the Report.

25. Interpretation and Conclusions

The key outcomes reported in the PEA include:

- Bayan Khundii Mineral Resource has been estimated with Measured Resource of 1.4 Mt at 3.6 g/t Au, Indicated Resource of 3.7 Mt at 2.3 g/t Au and Inferred Resource of 1.8 Mt at 1.9 g/t Au. The Bayan Khundii project Mineral Resources were reported in the NI 43-101 Technical Report titled "Bayan Khundii Gold Project Mineral Resource Technical Report", dated Nov 1, 2018.
- Altan Nar Mineral Resource has been estimated with Indicated Resource of 5.0 Mt at 2.0 g/t Au and Inferred Resource of 3.4 Mt at 1.7 g/t Au. The Altan Nar project Mineral Resources were reported in the NI 43-101 Report titled "Altan Nar Gold Project Mineral Resource Technical Report", dated June 21, 2018.
- Both Bayan Khundii and Altan Nar are near-surface high-grade deposits that are well suited to open pit mining methods.
- Bayan Khundii pit will be mined in 4 stages to balance the waste stripping. The larger North and South pits in Altan Nar will be mined in one or two stages with smaller adjacent pits not requiring staged mining.
- Mineable quantities for Bayan Khundii are 2.7 Mt plant feed at 3.65 g/t Au at a strip ratio of 13.4:1 with 98% of total quantities classified as Measured and Indicated Resources.
- The Altan Nar mineable quantities are 1.9 Mt at 3.11 g/t Au at a strip ratio of 6.6:1 with 70% of total quantities classified as Indicated Resources.
- Target processing rate of 600 ktpa grading approximately 3.4 grams/tonne gold.
- Mine life of 8 years plus one-year pre-production and two-year mine closure periods
- A single processing plant to be located adjacent to the Bayan Khundii deposit and feed from Altan Nar to be hauled 19 km to the Bayan Khundii processing plant.
- The processing plant will be a simple, conventional, cyanide leach, CIP plant. The plant will incorporate crushing, grinding, gravity separation, cyanide leaching, CIP, carbon stripping, electro-winning, smelting, tailings detoxification, tailings filtration, and tailings co-disposal with mine waste.
- Projected gold recovery is 90% for Bayan Khundii plant feed and 75% for Altan Nar plant feed and over the Life of the Project, an average of 82%.
- After-tax Net Present Value for a US$1,200/oz gold price:
  - US$99 million at 5% discount rate.
  - US$86 million at 7.5% discount rate.
  - US$76 million at 10% discount rate.
- Internal Rate of Return ("IRR") of 56%.
- Initial capital expenditure of US$32 million, using a contract mining fleet.
- All-in sustaining cash cost ("AISC") of US$714/oz of gold recovered.
- Average annual gold production of 51,200 oz and total LOM production of 412,000 oz.
- A payback of 2 years.

25.1 Opportunities and Risks

25.1.1 Opportunities

The key opportunities are listed below.

- Resource Expansion:

- At Altan Nar, mineralization is open north and south of the currently defined Mineral Resource where several medium to high grade intersections occur. Mineralization is open along strike and down-dip at all prospects and extensional drilling of the main zones may delineate continuations of the known mineralization, some of which may be high grade.
- Mineralization at Bayan Khundii is open north-east, north-west and east of the currently defined Mineral Resource, with several medium to high grade intersections occurring which require follow up exploration works.
- RPM recommends targeting near surface medium to high grade mineralization at both Projects, which if successfully delineate additional mineralization will potentially have a positive impact on future mining studies undertaken on the Project.
- There are large areas of low grade (0.1~0.2 g/t Au) mineralization halos outside of currently defined Bayan Khundii mineralization wireframes, changing modelling cut-off grade should substantially increase global mineralization volume. This material is currently excluded from the reported resource due to its low grade, however, could impact the dilution grade applied during the mining studies.

- Optimisation of Mining Strategy
  - Future technical studies should investigate stockpile strategies to elevate feed grade in the short term and improve extraction sequence using additional cutbacks. Further work should be undertaken to confirm the production rate is optimal.
- Underground Mining at Bayan Khundii
  - The high grades at Bayan Khundii would highly likely support an underground mining method. An underground mining study could consider the optimal transition between open cut and underground methods.
- Heap Leach of Low-Grade Mineralization
  - RPM estimated the amount of sub-grade material that has a potential for future processing using alternate methods such as leaching. Using an indicative gold cut-off of 0.35 g/t and within the existing pit designs, Bayan Khundii was estimated to have 1.0 Mt at 0.7 g/t Au and Altan Nar 1.8 Mt at 0.5 g/t Au. The sub-grade material is currently being considered as waste rock for the purposes of the PEA. Metallurgical Test work is required to confirm if heap leach is viable as well as technical studies to confirm economics.
- Metallurgical Plant Performance and Recovery
  - There are a number of opportunities to improve plant performance such as whether a three stage crushing circuit feeding a ball mill or a single stage crushing circuit feeding a SAG (semi-autogenous) mill is preferable to two stage crushing circuit feeding a rod mill/ball mill circuit currently selected; is it better to have the ILR produce cathode sludge or have the ILR leach slurry pass to the leach circuit; or is it worth having a thickener prior to leaching? These should be considered as part of the PFS.

25.1.2 Risks

The key risks are:

- Geology Structural Complexity:
  - Altan Nar exhibits a moderate degree of structural complexity. The mineral resource block model is defined by drilling on a 50m by 50m drill spacing with some areas with 25m by 25m, therefore there is potential for tonnage and overall geometry variations between modelled and actual mineralization. RPM does not envisage any material variations in the closer spaced drilling areas, however this could potentially occur in the areas of greater than 50m spacing, as a result these areas are classified as Inferred.
  - Bayan Khundii exhibits a moderate degree of structural complexity. The mineralized envelopes were defined by drilling on a 20 m by 20 m drill spacing in some areas, with the majority based on 40 m by 40 m, and 80m by 80 m in extensional areas, therefore there is potential for tonnage and overall geometry variations between modelled and actual mineralization. RPM does not envisage

any material variations in the closer spaced drilling areas, however this could potentially occur in the areas of greater than 40 m spacing, as a result these areas are classified as Inferred.

- Altan Nar has a number of barren dykes have been mapped and logged at the Union North, Maggie and Union East Zones. These dykes have been modelled by RPM and no grades have been estimated within these units. The interpretation of these dykes is, at present, based on wide spaced 25-100m sections. A better understanding of the dyke geometry will be gained through closer spaced infill and extensional drilling.

- Altan Nar Assay Data Bias and Density
  - Further monitoring of the slight bias and underestimation observed in high grade assays at the SGS Laboratory is recommended.
  - Bulk density data needs further checking to confirm application. No cost would be incurred.
- Consistently Achieve Feed Rate to Plant
  - The target 600 ktpa feed rate is towards the upper practical limits of what can be extracted from the pits. Further assessment is required in future technical studies to confirm and optimise the production rate.
- Metallurgical Recovery
  - Further test work is required to understand the implications of some elements such as arsenic on recovery at Altan Nar.

26. Recommendations

26.1 Geology

- Additional Drilling:
  - Approximately 30% of the Altan Nar Project has been classified as Inferred Mineral Resource. RPM recommends drilling to increase confidence in the existing Inferred Mineral Resource, focussing on the highest-grade portions as well as additional extensional exploration drilling in the Discovery Zone and Union North areas of the deposit.
  - Infill drilling to confirm the continuity of the high-grade zones at local scale including the Striker West Zone and Northeast Zone of the current Bayan Khundii.
  - Additional scout exploration drilling in un-drilled and partly drilled parts of the Project.
- QAQC: Further monitoring of the slight bias and underestimation observed in high grade assays at the SGS Laboratory is recommended. RPM suggests more frequent use of ore grade base metal standards to closely monitor the base metal assays.
- Bulk Density: RPM recommends that Erdene continue recording density measurements, ensuring that measurements cover a variety of Fe grades to further refine the regression equation. Erdene should undertake a bulk density program using the remaining Altan Nar core. This should include up to 200 samples focusing on a range of grades (low to high) with each sample having a density determination as well as assays for Au, Pb, Zn and S.

26.2 Mining

RPM recommends that the technical studies proceed to a pre-feasibility study stage. The PEA results suggest that there is sufficient confidence in the underlying data and the robustness of the Project economics to warrant advancement of the Project. This should include:

- Geotechnical - Prepare a more comprehensive analysis of pit slope angles based on additional drilling focussing on the locations defined by the current designs. Recommendations should also present updated pit and dump design parameters.
- Mining - Refine drill, blast, load, haul and support costs by seeking contractor mining quotations based on a preferred mining plan and equipment classes. Costs should also reflect any expected changes by material types such as oxide, transition, fresh and topsoil.
- Repeat the development strategy assessment using detailed scheduling and economic modelling to better refine the preferred mining and processing rates, the Bayan Khundii and Altan Nar mining sequence, the mining pre-strip, stockpile sizes and plant feed blending strategy.
- Consider an underground / open cut trade-off study for the Bayan Khundii deposit. Update the pit limit optimisation, design and mineable quantities using the following refined input parameters;

26.3 Recovery Methods

Undertake trade-off studies to determine the following:

- Whether it is better to have use a stockpile or a bin for the crushed plant feed;
- Whether a three-stage crushing circuit feeding a ball mill or a single stage crushing circuit feeding a SAG (semi-autogenous) mill is preferable to two stage crushing circuit feeding a rod mill/ball mill circuit currently selected;
- Whether it is better to have the ILR produce cathode sludge or have the ILR leach slurry pass to the leach circuit;
- Whether it is worth having a thickener prior to leaching;
- Whether it is worth having a thickener prior to tailings filtration;

- Whether it is better to use vacuum filtration rather than pressure filtration for the tailings; and
- Geochemical and geotechnical investigation to determine the parameters of the tailing's co-disposal method.

26.4 Infrastructure

Engineering details of the various components of the infrastructure have been developed to a limited scale consistent with the level of accuracy of this PEA. In progressing this project to PFS / DFS levels, a number of items will require further work to confirm the selection of the proposed solution and more accurately define the associated costs.

Key infrastructure areas for further investigation include;

- Geotechnical investigation of the Mine Infrastructure Area ("MIA") site to determine exact locations of structures and the volume of earthworks required;
- Surface hydrological studies to determine the size and placement of the site dams;
- Detailed engineering of the structures for the site;
- Determine borefield water quality and the engineering requirements for a Reverse Osmosis plant;
- Detailed engineering for the borefield water supply;
- Electrical power supply. An assessment of the economic and technical integrity of the proposed coection to the grid is required, along with an investigation into the use of renewable energy and appropriate back up power supplies;
- Detailed engineering for the location and construction of the airstrip; and
- Survey and investigation of the site access track to develop the necessary upgrade plan.

26.5 Environmental

- Assessment of waste rock and tailings material to understand leachate composition.
- Mine closure study including costing.
- Further environmental impact studies.

26.6 Geotechnical and Hydrological Studies

- Hydrological studies to increase confidence in water supply to the Project.
- Additional geotechnical assessment, particularly at Altan Nar where much of the work was only on the southern zone.

27. References

27.1 Geology

The primary source documents supporting the Altan Nar Project Mineral Resource estimate were:

- "Altan Nar Gold Project", (Tsenkher Nomin Exploration License), Bayankhongor Aimag, Southwest Mongolia, NI 43-101 Technical Report, J. C. Cowan, Erdene Resource Development Corporation, February 2014.

- The key files supplied to RPM included:
  - Drilling database – supplied in multiple spreadsheets:
- TND_Drill_Collars to TND133_vV_DGPS.xlsx
- TND_Flexit_Survey TND09-133_vV.xlsx
- TND-09_to_133_Drill_Log_Combined_vWorking.xlsx
- TND-09-133_Combined_Magsus.xlsx
- TND-Vein Log_31-133_Combined.xlsx
- AN_LithoCodes_2017.xlsx
- AN_Lith_TND09-133_vV.xlsx
- AN_Assay_TND09-133_wAuEq_vFinal.xlsx
- SGS original assay reports.
- TND2017_SpecivicGravity_Summary.xlsx
- TND_66-TND_108 Assay_DB_v03Apr16_Comlpete_wQA-QC_Analysis.xlsx
- TND_109-TND_133 Assay_DB_v30Jan18_Complete_wQA-QC_Analysis.xlsx

Topography:

- Detailed topographic survey points and smoothed contour lines (Mapinfo created) were provided by Erdene and surveyed by DGPS total station in UTM WGS84 Datum, Zone N47 in end of 2017. Topographic elevation differences were 0.3m-5m from surveyed one against the SRTM created topo surface which used in 2015 resource estimate. RPM created topographic surface from point data.

The primary source documents supporting the Bayan Khundii Project Mineral Resource estimate were:

- Bayan Khundii Gold Project (Khundii Exploration License), Bayankhongor Aimag, Southwest Mongolia, NI43-101 Technical Report prepared by Erdene Resource Development Corp, MacDonald, M.A., March 2018.
- Applied Petrologic Services & Research (APSAR), 2017.Petrologic Studies of Drill Core from the Bayan Khundii Gold project, Bayankhongor Aimag, Southwest Mongolia. Independent report prepared for Erdene Resource Development Corp., 40 p.
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- Mineral Resource Authority of Mongolia 1:200,000 scale geology maps of Mongolia; include L-47-XXXII, L-47-XXXIII, L-47-XXXIV, K-47-II, K-47-III, and K-47-IV.
- RungePincockMinarco, 2015. Altan Nar and Bayan Khundii Site Visit. Independent report prepared for Erdene resource Development Corp. 21 pp.
- Windley, B.F., Alexeiev, D., Xiao, W., Kr ner, A. and Badarch, G. (2007). Tectonic models for accretion of the Central Asian Orogenic Belt. Journal of the Geological Society. No. 164 (1), pp. 31-47.
- Yakubchuk, A. 2002. Geodynamic reconstructions of Mongolia and Central Asia. Internal report for Gallant Minerals.

The key files supplied to RPM included:

- Drilling database – supplied in multiple spreadsheets:
- BKD_AssayDB_to_255_vFinal.xlsx
- BKD_Collar_to_255_DGPSv2.xls
- BKD_Flexit_Survey_Combined_to_255_v3.xls
- BKD_Spacific_Gravity_v2018-July_Check.xlsx
- BKD_Struc Log_Combined_To255.xlsx
- BKD-01 to BKD-255_MagSus.xls
- BKD01-255_Lithology_v2.xls
- BKD-VienLog_BKD-255_all.xlsx
- ScrMet Assay List_BKD01-234_Final.xlsx
- The Project_base_of_oxidation.xlsx

Topography

- Detailed topographic data were provided by Erdene and surveyed by DGPS total station in UTM WGS84 Datum, Zone N47 in end of 2017.

27.2 Mining

- Sardonyx Geological, Geotechnical Consulting Services, September 2018. Recommendations for Open Pit Rock Slope Design Altan Nar and Bayan Khundii Project.
- Sardonyx Geological, Geotechnical Consulting Services, 25 October 2018. Report On Open Pit Geotechnical Study Work Conducted At Discovery Zone Ore Body Of The Altan Nar Epithermal Gold And Polymetallic Deposit.
- Sardonyx Geological, Geotechnical Consulting Services, 25 October 2018. Report On Open Pit Geotechnical Survey Work Undertaken At the Bayan Khundii Epithermal Gold Deposit.
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- Okhi-Us LLC, November 2018. Draft – Bayan Khundii Hydrology Report on Work Completed September-October 2018.

27.3 Processing

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- Andrew Kelly, Blue Coast Research, November 9, 2015. Altan Nar Preliminary Metallurgical Testwork Report – Phase 2
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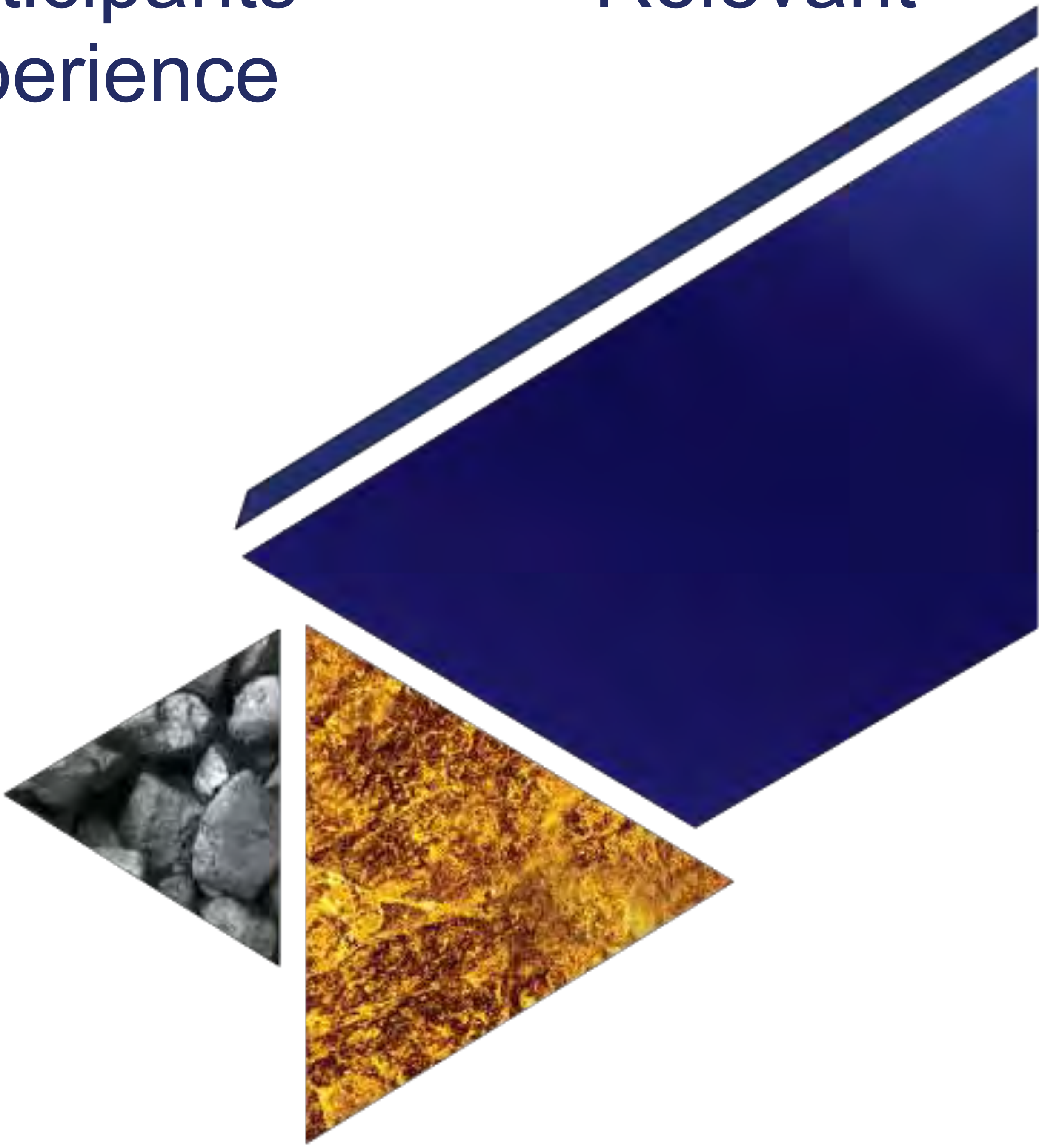
- Andrew Kelly, Blue Coast Research, March 2, 2016. Bayan Khundii Preliminary Metallurgical Testwork Report
- Andrew Kelly, Blue Coast Research, August 16, 2017. PJ5213 Bayan Khundii Metallurgical Testwork Report

Appendix A. Participants Relevant Experience



Igor Bojanic – Head of Metals – Australaisa, Russian and CIS, RPMGlobal, B.Eng. Mining (Hons), FAusIMM

Igor has over 30 years' experience in the mining industry, and has a broad range of experience, including being involved with a large number of mining studies on metalliferous and coal mining projects throughout the world.

Igor's key strengths include strategic analysis of new and existing mining projects to optimise value and developing mine plans that deliver practical and achievable outcomes. He is familiar with both the Australian JORC Code and the Canadian NI 43-101 reporting requirements having been involved with a number of relevant studies.

Igor has supporting qualifications in business and environmental management and also has a good working knowledge of a range of mine planning software including Gemcom, Minex, Surpac and Whittle 4X

Jeremy Clark – Project Director – RPMGlobal Hong Kong, Bsc. with Honours in Applied Geology, Grad Cert Geostatistics, MAIG, MAUSIMM

Jeremy has over 15 years of experience working in the mining industry. During this time, he has been responsible for the planning, implementation and supervision of various exploration programs, open pit and underground production duties, detailed structural and geological mapping and logging and a wide range of experience in resource estimation techniques. Jeremy's wide range of experience within various mining operations in Australia and recent experience working in South and North America gives him an excellent practical and theoretical basis for resource estimation of various metalliferous deposits including iron ore and extensive experience in reporting resource under the recommendations of the NI-43-101 reporting code.

With relevant experience in a wide range of commodity and deposit types, Jeremy meets the requirements for Qualified Person for 43-101 reporting, and Competent Person ("CP") for JORC reporting for most metalliferous Mineral Resources. Jeremy is a member of the Australian Institute of Geoscientists.

Bob Dennis, Executive Mining Consultant – RPMGlobal Brisbane, Bsc. With Honours, First class in Applied Geology, FAUSIMM

Mr. Dennis has 30 years involvement in the mining industries of Australia and in Italy. He has worked in operations management, including mining, processing, planning and support services; planned and executed exploration programs from grass roots to feasibility study levels; recruited and developed teams; estimated resources using geostatistical methods and evaluated prospect and mining opportunities.

Specific Au experience includes ongoing due diligence on numerous epithermal and hydrothermal Au and cu projects in Indonesia, Malaysia and Mongolia. Bob has reviewed and made specific recommendations with respect to the geology, geostatistics, hydrology, environmental studies and the interaction between these aspects and the mining and metallurgy and has assisted Clients in successfully identifying and developing a number of projects within Asia.

David John Princep – Principal Geologist – Resource Estimation – RPMGlobal Perth, Bsc. MAIG, FAUSIMM

David is a highly experienced geologist with more than 25 years' experience in the mining industry. David's experience includes, however is not limited to, Due Diligence, Mineral Deposit/Resource Evaluation and Audit, Strategic Pit Optimisation, Conditional simulation grade control implementation, development and training, and Geostatistical training. David is also a Licensed Professional Geoscientist.

David is a Competent Person under JORC and a Qualified Person under NI 43-101.

Oyunbat Bat-Ochir – Resource Geologist, RPMGlobal, Mongolia, Bsc. Geology

Oyunbat is geologist with 8 years of experience in Mongolian mining industry. He has technical background in fields of exploration and mapping projects for base metals and Au including detailed mapping and logging, supervision of designing various holes, data analysis and implementation of QA/QC. He involved technical and Mongolian standard resource reports for main Au, VMS, Iron skarn, Au-Co-Mo porphyry projects. He also has good background on GIS softwares for processing data analyses.

Since joined RPMGlobal in 2012, Oyunbat has been working on Due Diligence, GRL, ITR and Exploration advisory projects for Iron, Copper-Au, Molybdenum, Tungsten minerals commodities. Oyunbat has gained an expert level of proficiency in Surpac 3D modelling software.

Richard Addison – Principal Process Engineer – RPMGlobal – M.S Metallurgical Engineering, A.C.S.M (Honors)

Mr. Addison is a Principal Process Engineer and brings to the RPM team over 44 years of diversified experience in the mineral processing and extractive metallurgy field. He is a well-known authority in the field of mineral processing with particular emphasis on complex ores and base and precious metals, having worked on numerous projects throughout his career. He has evaluated the processing facilities and operations of many domestic and foreign metals operations involving both oxide and complex refractory type ores. He has broad experience in ore processing and mine infrastructure and administration requirements.

Tony Cameron – Executive Mining Consultant MAIG, FAUSIMM

Tony is a mining engineer with over 30 years of experience in the mining industry. With a strong background in mine geology, Tony gained post graduate qualifications in Business, Law, and Arbitration leading to a specialisation in contracts, along with reserve estimation and project evaluation. Tony worked in operational roles in the first half of his career. He obtained his first-class mine manager's certificate and advanced to the positions of Mine Superintendent and Mine Manager for mining companies. He also worked as Project Manager and Area Manager for a Mining Contractor. Over the last 16 years Tony has worked as a mining consultant focused on the Asian and African regions and has been based in Beijing for the past 8 years. During his time as a consultant, Tony has worked with leading consulting groups and financial institutions across Asia, Europe, and Africa on transactions ranging from Due Diligences to IPO's and has gained detailed understanding of the requirements of both investors and banks in regard to public technical report requirements and listing processes on various financial exchanges. Tony has an in-depth knowledge of the Asian reserve reporting systems and has gained significant experience in both reviewing projects based on these systems and in converting projects from this region to international standards of reporting such as JORC and NI 43-101. Tony meets the requirements for Qualified Person for 43-101 reporting, and Competent Person for JORC reporting for most metalliferous and non-metalliferous Ore Reserves and is a Fellow of the Australian Institute of Mining and Metallurgy (Membership No: 108264)

– END OF REPORT –

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