RUPERT
RESOURCES

NI 43-101 Technical Report: Osikonmäki Gold Project, Finland

Rupert Resources Ltd

Effective Date: 9th November 2018

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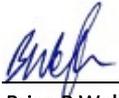| Qualified Persons	Brian Wolfe	International Resource Solutions Pty Ltd

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Document Review and Sign Off

Brian R Wolfe

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1. EXECUTIVE SUMMARY

1.1 Introduction

This mineral resource estimation report has been prepared by International Resource Solutions Pty Limited and was commissioned by Rupert Resources Ltd. The report comprises an independent estimation of the mineral resources of the Osikonmäki Gold Project ("Osikonmäki" or "the Project"). Osikonmäki is wholly owned by BR Gold Mining Oy (hereinafter referred to as "BR Gold") a wholly owned subsidiary of Northern Aspect Resources Ltd, which is in turn a 100% owned subsidiary of Rupert Resources Ltd (hereinafter referred to as "Rupert").

1.2 Location

The Osikonmäki Gold Project is located in the southeast of Finland in Southern Savonia (Figure 1.2_1). It is located 4km SW of the municipality of Rantasalmi which is about 40km west of Savonlinna, the closest major town. The city of Kuopio is 120km to the north and is the closest major city with an airline connection. For project coordinates see Table 4.1_1.

Figure 1.2_1
Location of the Osikonmäki Gold Project, Finland
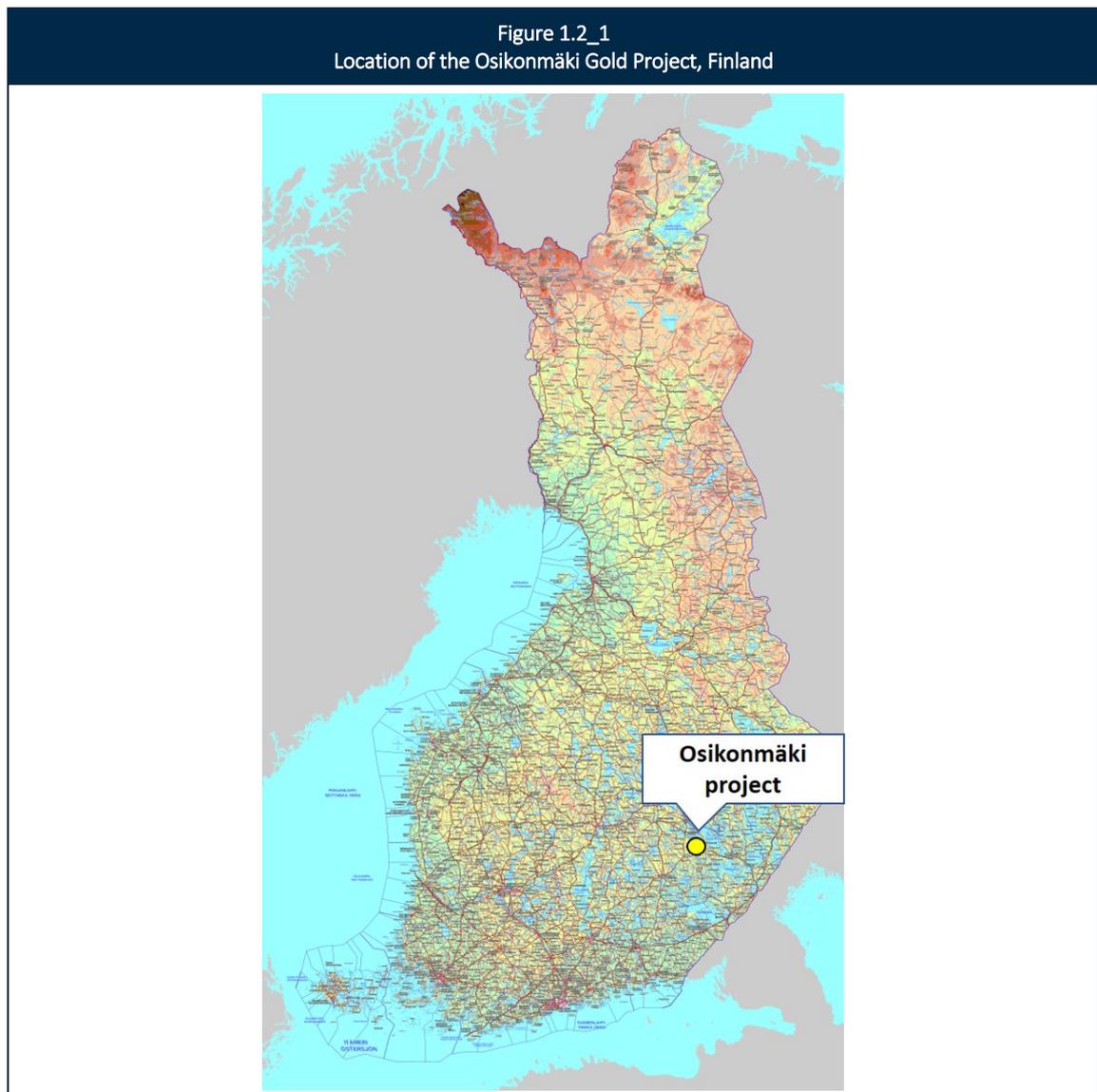
1.3　Ownership

The Osikonmäki Gold Project is wholly owned by BR Gold which is in turn a wholly owned subsidiary of Northern Aspect Resources Ltd (hereinafter referred to as "NARL"). NARL is in turn owned by Rupert Resources Ltd, a company incorporated in British Columbia, whose office is at 82 Richmond Street East, Suite 203, Toronto, Ontario, Canada, M5C 1P1. NARL was acquired by Rupert in May 2018. See Figure 4.2_1 for the Corporate ownership structure.

1.4　Geology

The Osikonmäki gold deposit is situated within the Ladoga-Bothnian Bay Zone, which is interpreted as a Paleoproterozoic collisional suture, expressed principally by NW-trending faults and dextral shear zones. This zone contains most of the major sulphide deposits exploited in Finland to date, but discoveries such as the Osikonmäki deposit, indicate that there exists considerable potential for gold mineralisation as well, particularly in association with shear zone systems in granitoids (Kontoniemi and Nurmi, 1998).

The bedrock of the area consists predominantly of metaturbidites intruded by variety of granitoids. The oldest supracrustal rocks are metasediments, overlain by a succession of volcanic lithologies commencing with felsic pyroclastics and followed by intermediate, mafic and ultramafic units. Intrusive rocks within the area adjacent to Osikonmäki include the synkinematic Osikonmäki pluton, the Hiltula granitoid, which belongs to the late kinematic Putkilahti complex, and the post-tectonic Pirilä-type granites (Kontoniemi and Nurmi, 1998).

1.5　Mineralisation

The primary mineralisation at Osikonmäki is controlled by a shear zone oriented east-west dipping approximately 40° - 50° to the south and plunging slightly to the east. Mineralisation occurs at the eastern and western parts of the footwall to the shear zone. Gold mineralisation is strongly associated with, but not confined to, zones of moderate to intense shearing (Pym, 2011). The gold is found within a tonalite intrusive; gold-enriched zones occur as either tightly folded or en-echelon lenses that typically plunge to the east at about 20°, although there is limited outcrop data to confirm structural findings. Geological control on gold grade is still relatively poorly understood.

1.6　Project Status

Gold mineralisation was discovered in the Rantasalmi district by the Finnish Geological Survey (GTK) during the 1970s. During GTK's investigations, several gold-bearing glacial erratics and quartz veins were discovered in the area west of Lake Kolkonjärvi.

Exploration was expanded into adjacent areas to the south and east and the first glacial erratics from the Osikonmäki deposit were found in late 1984. Investigation of the twenty-kilometre-long boulder train led to the discovery of a gold-bearing shear zone in outcrop in the Osikonmäki Tonalite in 1986.

GTK completed a number of drilling campaigns between 1986 and 1991 when the project was put out to tender. A number of ownership changes ensued and drilling recommenced in 2005 by Belvedere Resources Finland Oy (hereinafter referred to as "Belvedere") and continued in 2012 by BR Gold, a joint venture company owned by Belvedere and RBG Finland Oy. Northern Aspect Resources Ltd acquired BR Gold in November 2016 and RBG Finland Oy retain a one percent net smelter royalty. Northern Aspect Resources was subsequently acquired by Rupert Resources Ltd in May 2018.

1.7   Resources

The Mineral Resource estimate for the Osikonmäki Gold Deposit is reported in accordance with National Instrument 43-101 and has been estimated using the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") "Estimation of Mineral Resources and Mineral Reserves best Practice Guidelines". This mineral resource estimate is classified as Inferred as defined by the CIM. Numbers displayed in Table 1.7_1 are affected by rounding. A cutoff of 1.5g/t Au was selected for the reported estimate based on historical breakeven operating costs for other underground gold mines in Finland. Other assumptions are based on the potential for combined open pit and underground extraction, recoveries of 85-90% and a gold price of EUR1200/oz. Further exploration to increase the confidence level of the resources is required for more detailed economic evaluation.

<table>
<tr><td colspan="5">Table 1.7._1
Osikonmäki Gold Deposit
Inferred Mineral Resource</td></tr>
<tr><td>Cutoff
(g/t Au)</td><td>Grade
(g/t Au)</td><td>Tonnage</td><td>Au oz</td><td>Au kg</td></tr>
<tr><td>1.5</td><td>2.7</td><td>3,230,000</td><td>276,000</td><td>8,580</td></tr>
</table>

1.8   Conclusions

The new Inferred Resource of 3.23Mt grading 2.7g/t Au (276koz) is reported using a 1.5g/t cutoff and is based on a geological interpretation of the deposit following a review of all available data that has been collected since project initiation. Compared to the previous Indicated and Inferred Mineral Resource Estimate by Golders Associates in 2011, the current reported Inferred Mineral Resource has an overall lower category of geological confidence, lower tonnes and a higher grade (related to the higher cutoff used). The previous resource was predicated on open pit mining only and therefore a lower reporting cutoff grade was considered appropriate. By the nature of the primary estimation method of MIK and mineralisation interpretation, some dilution has also been incorporated in the current grade estimates. The lower level of geological confidence is related to the potential mining methods being envisioned; the combination of open pit and underground mining requiring a greater degree of confidence in the geological continuity than open pit alone.

1.9   Recommendations

The mineralisation remains open in several directions at the Osikonmäki deposit. A key area of focus is considered to be the down-plunge extent of the high-grade shoots within the main zone of mineralisation, and extension of the western section of mineralisation. Potential also remains to the east of the deposit where there is evidence of high grade material and multiple zones; as well as for regional exploration of the permit where a program of geophysical targeting coupled with geochemical investigation is warranted.

It is also recommended that a Corporate Social Responsibility plan be initiated and implemented in order to provide a robust framework for community interaction going forward. This would be complemented by environmental baseline studies.

2. INTRODUCTION

2.1 Terms of Reference

In September 2018, Rupert Resources Ltd commissioned International Resource Solutions Pty Ltd of Perth, Australia to prepare an independent technical report in compliance with the Canadian Securities National Instrument 43-101 Standards of Disclosure for Mineral Properties and Form 43-101F1. The work was undertaken by the Principal and Director of the company, Brian Wolfe, BSc(Hons), MAIG.

The purpose of the Report is to update the existing NI43-101 report and to update the NI43-101 compliant resource estimate for the Osikonmäki Gold Project. This report has an effective date of 9th November 2018.

This report was prepared at the request of Mr James Withall, CEO of Rupert, a TSXV-listed company with symbol RUP.V and incorporated in the Province of Ontario. The Company's offices are located at: 82 Richmond Street East, Suite 203, Toronto, Ontario, M5C 1P1.

2.2 Site Visit

The Independent Qualified Person (Resource Geologist) Brian Wolfe, Principal Consultant at International Resource Solutions Pty Ltd, visited the Osikonmäki Gold Project Site on the 4th and 5th October 2018. This visit included:

- Visits to the exploration sites, outcrop exposures, and observation of surface drilling, review of drill core from several diamond holes that form part of the Project resource estimate;
- Review of the exploration procedures used at the Osikonmäki Project;
- Review of the exploration database; and
- Review of geological setting of the deposit and surrounding area.

2.3 Sources of Information

Sources of information include internal technical reports, documents and maps provided by Rupert to the author in addition to the publicly available information. A list of reports is provided in Section 27.

2.4 Abbreviations

A full listing of abbreviations used in this report is provided in Table 2.4_1 below.

	Table 2.4_1 Osikonmäki Gold Project List of Abbreviations		
Description		**Description**	
$	United States of America dollars	l/hr/m²	litres per hour per square metre
µ	Microns	M	million
2D	two dimensional	m	metres
3D	three dimensional	Ma	Million years
AAS	atomic absorption spectrometer	MIK	Multiple Indicator Kriging
Au	Gold	ml	millilitre
bcm	bank cubic metres	mm	millimetres
CC	correlation coefficient	MMI	mobile metal ion
CLGB	Central Lapland Greenstone Belt	Moz	million ounces
cfm	cubic feet per minute	Mtpa	million tonnes per annum
CIC	carbon in column	Mt	Million tonnes
CIL	carbon-in-leach	N (Y)	northing
cm	Centimetre	NaCN	sodium cyanide
cusum	cumulative sum of the deviations	NATA	National Association of Testing Authorities
CV	coefficient of variation	NPV	net present value
DDH	diamond drillhole	NQ2	size of diamond drill rod/bit/core
DTM	digital terrain model	ºC	degrees centigrade
E (X)	Easting	OK	Ordinary Kriging
EDM	electronic distance measuring	oz	troy ounce
EV	expected value	P_{80} -75µ	80% passing 75 microns
g	Gram	PAL	pulverise and leach
g/m³	grams per cubic metre	ppb	parts per billion
g/t	grams per tonne	ppm	parts per million
HARD	half the absolute relative difference	psi	pounds per square inch
HDPE	high density poly ethylene	PVC	poly vinyl chloride
HQ2	size of diamond drill rod/bit/core	QC	quality control
hr	Hours	Q-Q	quantile-quantile
HRD	half relative difference	RAB	rotary air blast
ICP-MS	inductivity coupled plasma mass spectroscopy	RC	reverse circulation
ID	Inverse Distance weighting	RL (Z)	reduced level
ID²	Inverse Distance Squared	ROM	run of mine
IPS	integrated pressure stripping	RQD	rock quality designation
IRR	internal rate of return	SD	standard deviation
ISO	International Standards Organisation	SGS	Société Générale de Surveillance
ITS	Inchcape Testing Services	SMU	selective mining unit
kg	Kilogram	t	tonnes
kg/t	kilogram per tonne	t/m³	tonnes per cubic metre
km	Kilometres	Y	year
km²	square kilometres		

3. RELIANCE ON OTHER EXPERTS

While information provided by Rupert relating to the project history, metallurgy, project infrastructure, environmental studies and permitting, mineral rights, and surface rights has been reviewed, no opinion is offered in these areas. The Qualified Person is not expert in these aspects of the project and therefore has relied upon and is satisfied that there is a reasonable basis for this reliance on the information provided by the company management regarding the relevant sections of this Technical Report.

4. PROPERTY DESCRIPTION AND LOCATION

4.1 Location of Osikonmäki Project

The Osikonmäki Gold Project is located in the southeast of Finland in Southern Savonia (Figure 1.2_1 and Figure 4.1_1, Table 4.1_2). It is located 4km SW of the municipality of Rantasalmi which is about 40km west of Savonlinna, the closest major town. The city of Kuopio is 120km to the north and is the closest major city with airline connection.

Figure 4.1_1
Osikonmäki Gold Deposit Location Map
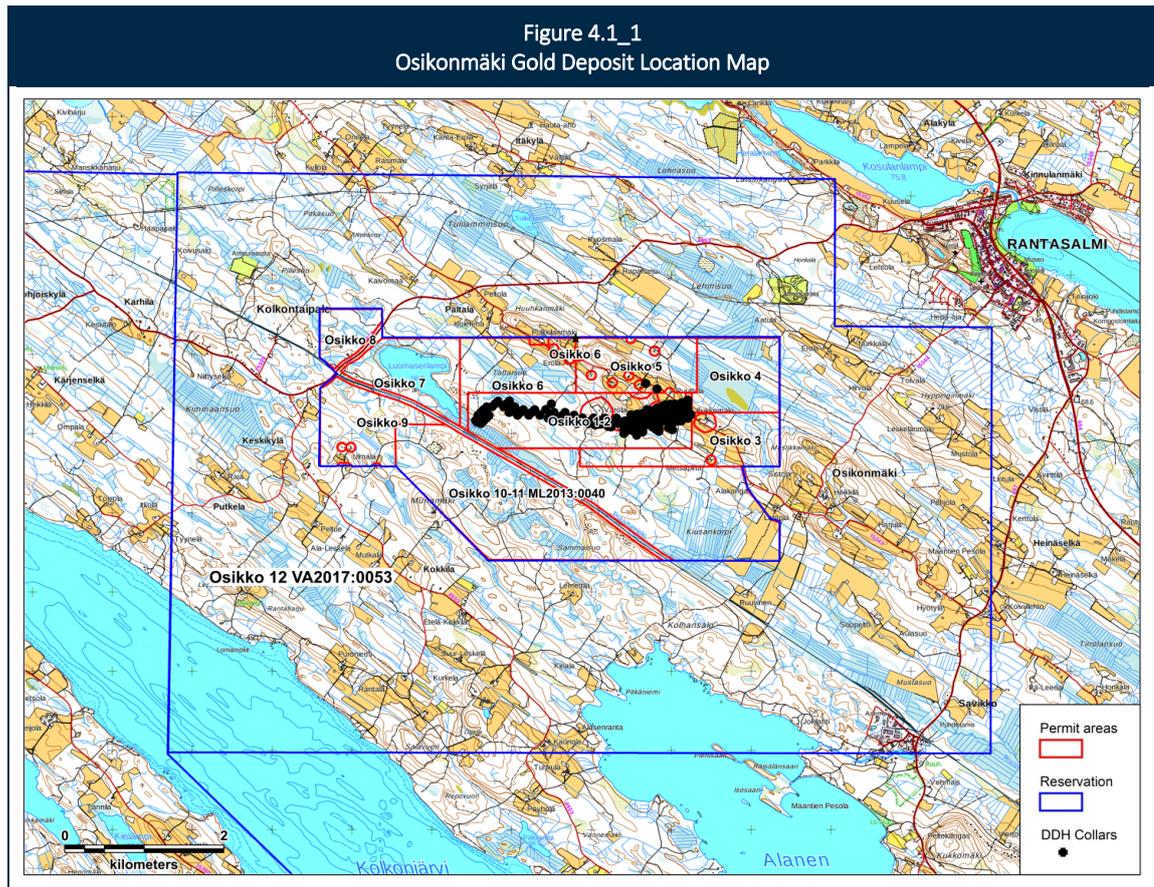
Table 4.1_1
Osikonmäki Project Coordinates

Reference Grid	Easting	Northing
EUREF	563,096.36	6,880,292.09
KKJ3	3,563,291.038	6,883,176.989

4.2 Right of Tenure

The Osikonmäki Gold Project claim application is under BR Gold Mining Oy which is wholly owned by Northern Aspect Resources Limited (hereinafter referred to as "NARL"). NARL is in turn a wholly owned subsidiary of Rupert. NARL was acquired by Rupert in May 2018 and the overall corporate ownership structure is presented in Figure 4.2_1. Application boundary areas are depicted in Figure 4.1_1.

Figure 4.2_1
Ownership Structure
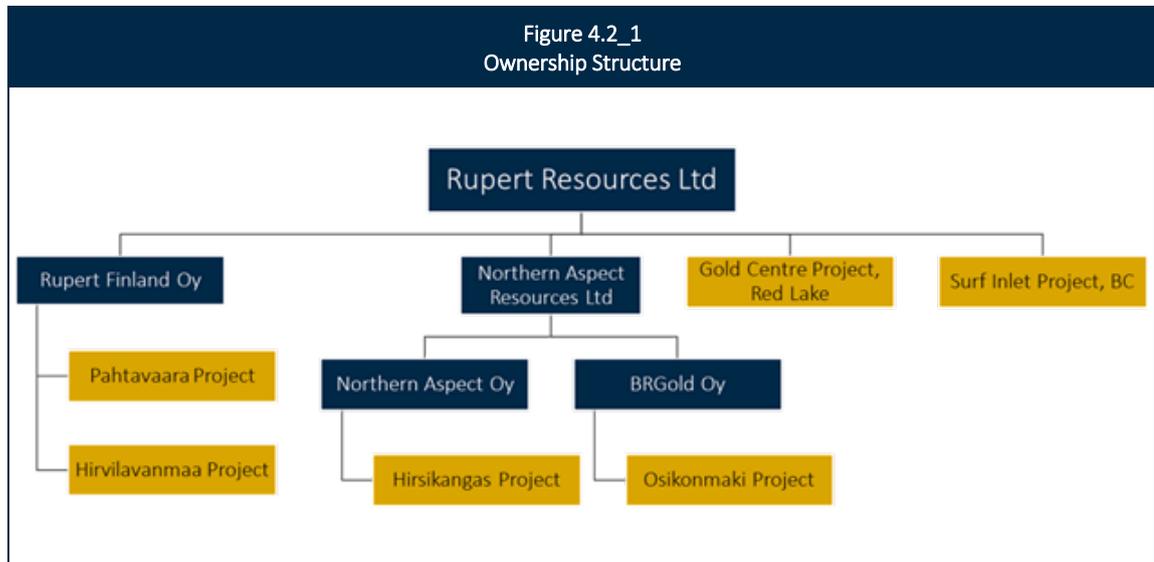
Osikonmäki is comprised of a package of exploration licences, claims and a reservation for exploration totalling an area of 6989.72ha (see Table 4.2_1 for component parts, expiry and annual fees). The rights conveyed to the landholder are defined in the Mining Act of Finland (621/2011) and summarised as follows:

4.2.1 Exploration Permit

The holder of an exploration permit has the right to explore the structures and composition of geological formations on the permit holder's own land and on land owned by another landowner within the area referred to in the permit (exploration area). The permit holder also has the right to conduct other prospecting in order to prepare for mining activity and other exploration in order to locate a deposit and to investigate its quality, extent and degree of exploitation in accordance with the exploration permit.

The permit holder may build or transfer to the exploration area temporary constructions and equipment necessary for exploration activity in accordance with the exploration permit. An exploration permit does not authorise the exploitation of the deposit. It does, however, provide the holder with a privilege for the mining permit, which in turn provides the right to exploit the deposit. The prerequisites for the granting of the mining permit are to do with the size, ore content and technical characteristics of the deposit concerning its exploitability.

Exploration permits are valid for up to 15 years.

Table 4.2_1										
Hirsikangas Gold Deposit										
Land Components										
Mining Register ID	Name	Company	Type	Status	App. Date	Granted	Expires	Area (ha)	Fee/ha
---	---	---	---	---	---	---	---	---	---
ML2012:0197	Osikko 1-2	BR Gold Mining Oy	Exploration Permit	Under Application	2018/10/01	-	-	160.48	-
9028/1	Osikko 3	BR Gold Mining Oy	Claim	Valid	2010/08/22	2014/08/25	2019/08/25	100	€40
9028/2	Osikko 4	BR Gold Mining Oy	Claim	Valid	2010/08/22	2014/08/25	2019/08/25	98.16	€40
9028/3	Osikko 5	BR Gold Mining Oy	Claim	Valid	2010/08/22	2014/08/25	2019/08/25	96.75	€40
9028/4	Osikko 6	BR Gold Mining Oy	Claim	Valid	2010/08/22	2014/08/25	2019/08/25	99.88	€40
9028/5	Osikko 7	BR Gold Mining Oy	Claim	Valid	2010/08/22	2014/08/25	2019/08/25	100	€40
9028/6	Osikko 8	BR Gold Mining Oy	Claim	Valid	2010/08/22	2014/08/25	2019/08/25	41.47	€40
9028/7	Osikko 9	BR Gold Mining Oy	Claim	Valid	2010/08/22	2014/08/25	2019/08/25	99.88	€40
ML2013:0040	Osikko 10-11	BR Gold Mining Oy	Exploration Permit	Under Application	2013/07/03	-	-	556.1	-
VA2017:0053	Osikko 12	Northern Aspect Resources Oy	Reservation	Valid	2017/06/19	2017/09/12	2019/06/18	5637.0	-

4.2.2   Reservation

For the purpose of preparing an application for an ore prospecting permit, an applicant may reserve an area for themselves by submitting a notification to the mining authority about the matter (reservation notification). A privilege based on a reservation notification becomes valid once the reservation notification has been submitted in compliance with the provisions laid down in section 44 of the Mining Act (621/2011) and there is no reason, as specified in the Mining Act, for the rejection of the reservation. The validity of the privilege expires when the decision made by the mining authority on the basis of the reservation notification (reservation decision) expires or is cancelled. The reservation does not entitle the applicant to perform exploration. Instead, the reservation grants a privilege as regards the submission of an ore prospecting application.

4.3   Annual Fees and Royalties

Legislation requires holders of exploration and mining permits to make annual payments to landowners on EUR/ha basis (see Table 4.3_1). A statutory mining royalty of 0.15% of the value of the exploited mineral / metal is also payable to the landowner. RBG Finland retain a one percent net smelter royalty as described in Section 1.6.

Table 4.3_1 Osikonmäki Gold Deposit Annual Royalty Payments According to Finland Mining Act 2011	
Permit Type	EUR/ha
Exploration (years 1 - 4)	20
Exploration (years 5 - 7)	30
Exploration (years 8 - 10)	40
Exploration (years 11 - 15)	50
Mining	50

4.4   Environmental Bonds

As the recently applied exploration permit for Osikko 1-2 has not yet been granted, the mining authority will define a collateral that will be deposited for the purpose of offsetting potential damage and inconvenience and performing after-care measures if necessary.

5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Property Access

The Osikonmäki Gold Project is located in the southeast of Finland in Southern Savonia (Figure 1.2_1). It is located 4km SW of the municipality of Rantasalmi which is about 40km west of Savonlinna, the closest major town. The city of Kuopio is 120km to the north and is the closest major city with an airline connection.

Access to the project site is by a four kilometre stretch of secondary roads from the village; road 15344 to the south and then road 15343 to the west. The project site is located on a low hill surrounded by farmland and birch and spruce forests.

Alternative all-weather access is provided by a four kilometre stretch of gravel road leading from the sealed road (Highway No 14) which connects Rantasalmi with the municipalities of Juva and Savonlinna.

5.2 Physiography

The Project is located in an area of Finland known as the "Finnish Lakeland" or "Finnish Lake District". The deposit is in a gently undulating forest-covered terrain dominated by glacial features such as drumlins and eskers, with a mean elevation about 100m above sea level. There are few outcrops and the overburden thickness in the claims area varies from 0m to 8m.

The elevation in the Osikonmäki area varies from approximately 100m to 130m above mean sea level (amsl). The vegetation in the area is characterised by birch, spruce and aspen trees, many of which are on tree plantations. The main sources of water are from the surrounding large lakes:

- Lake Alanen (elevation 98.2m amsl);
- Lake Kolkonjärvi (elevation 97.7m amsl); and
- Lake Luomasenlampi (elevation 98.9m amsl).

The Finnish Lakeland is bounded to the south by glacial terminal moraines called the Salpausselka Ridges and the Finnish Uplands to the North.

5.3 Climate

The claims are located in a temperate/sub-arctic area, generally being covered by snow between November and April. Climate data is reported for Kuopio, located 120km north of the site. The region's climate is characterised by cold weather during November - March, with average low temperatures in January dropping to -13.2°C. Precipitation is highest in August, at 80.2mm, and lowest from February to April. Highest temperatures are reached in July, which has an average daily maximum of 21.4°C.

5.4 Local Resources and Regional Infrastructure

The nearest significant population centre is the small town of Rantasalmi, four kilometres by road to the northeast from the Osikonmäki property (Figure 5.4_1). Rantasalmi provides basic services including accommodation, grocery stores and few restaurants. An energy distribution company (Savo Power Supply) is located in the town of Rantasalmi.

The service infrastructure is excellent, power and water are available to the site and a railway line passes on the southern side of the existing claims area. The railway is used for cargo and timber transport. Railway sidings currently exist approximately five kilometres to the west and southeast of the Osikonmäki East mineralisation. To the northwest, the railway connects to Pieksämäki and Varkaus, while to southeast it connects to the town of Savonlinna. Highway 14, a sealed road connecting the cities of Savonlinna and Mikkeli, runs ten kilometres to the south of the prospects.

The mid-Finland regional office of Geological Survey of Finland is located in Kuopio, 120km north of Rantasalmi. The nearest international airport is in Helsinki. The site has good mobile phone coverage.

There is no mining activity in the close vicinity, and professional mining personnel would need to be sourced from elsewhere. Within the limits of the claims, there is potentially sufficient area for plant construction, tailings storage areas and waste disposal areas.

Figure 5.4_1
Regional Infrastructure

Note: road infrastructure denoted by red lines, rail infrastructure by dashed black/white lines.

6.   HISTORY

Gold mineralisation was discovered in the Rantasalmi district by the Finnish Geological Survey (GTK) during the 1970s. During GTK's investigations, several gold-bearing glacial erratics and quartz veins were discovered in the area west of Lake Kolkonjärvi (Figure 6_1).
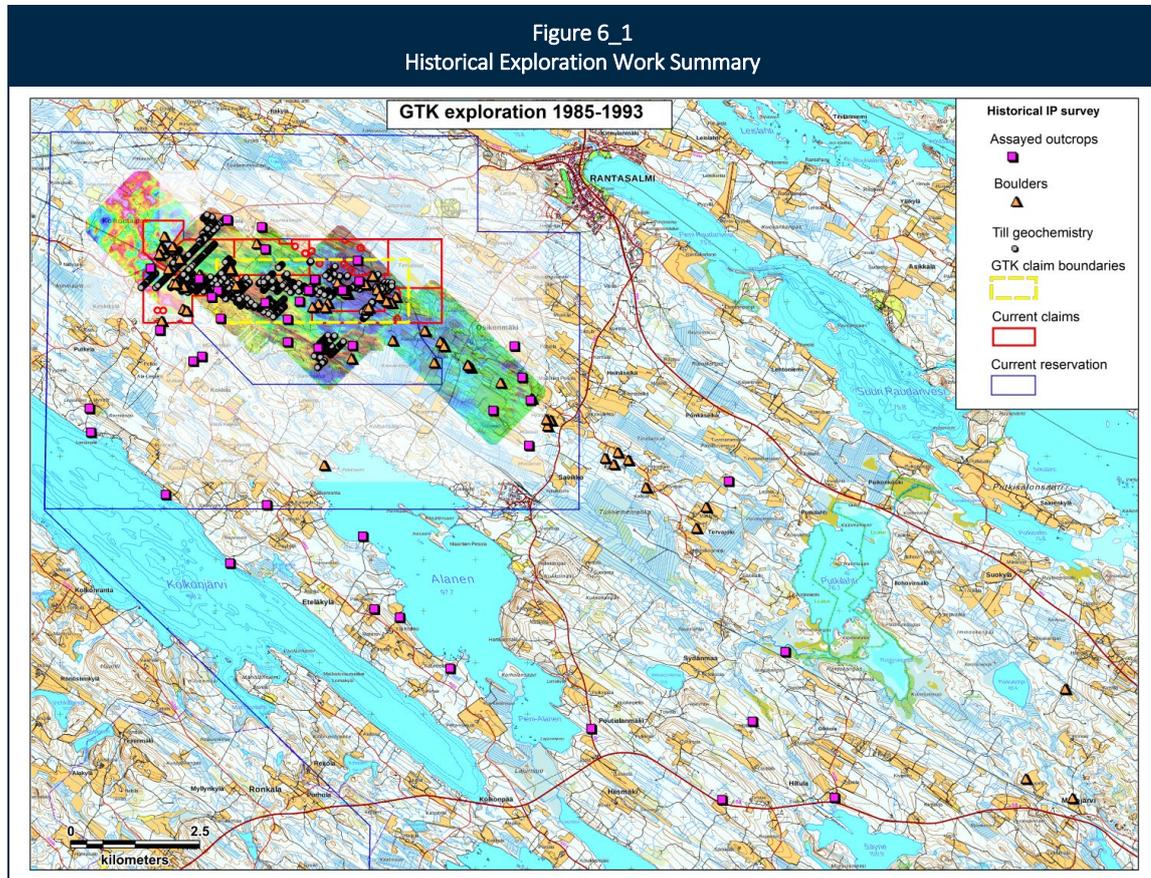
Figure 6_1
Historical Exploration Work Summary

Exploration was expanded into adjacent areas to the south and east and the first glacial erratics from the Osikonmäki deposit were found in late 1984. Investigation of the twenty-kilometre-long boulder train led to the discovery of a gold-bearing shear zone in outcrop in the Osikonmäki Tonalite in 1986. Additional gold occurrences within the tonalite were discovered between 1986 and 1991. Extensive exploration work including boulder tracing, magnetic, electromagnetic and IP ground geophysical surveys and detailed till/bedrock interface geochemistry was carried out by GTK.

In 1991, GTK passed the project to the Ministry of Trade and Industry (MTI) for public tender. GTK kept doing regional and targeted studies in adjacent areas until 1993. In 1993 ownership was transferred to Outokumpu Finnmines Oy, which undertook metallurgical studies with the aim of producing concentrate suitable for processing through the Outokumpu or Vammala concentrate plants. The area was relinquished when it was determined that a suitable concentrate could not be produced. Ashton Mining Limited and Endomines Oy briefly held the prospects but little exploration activity is recorded. Endomines Oy estimated resources for the prospects. The area was acquired by Belvedere Resources Finland Oy (Belvedere) in 2004 after the Endomines Oy claims expired. Drilling recommenced in 2005 by Belvedere and continued in 2012 by BR Gold, a joint venture company owned by Belvedere and RBG Finland Oy. Northern Aspect Resources Ltd acquired BR Gold in November 2016 and RBG Finland Oy retain a one percent net smelter royalty. Northern Aspect Resources Ltd was subsequently acquired by Rupert Resources Ltd in May 2018. An ownership summary is presented in Table 6_1.

Table 6_1	
Osikonmäki Ownership History	
Company	**Dates Held**
GTK	1985-1991
Outokumpu Finnmines Oy	1993-1996
Ashton Mining Ltd	Unknown
Endomines Oy	1999-2005
Belvedere Resources Finland Oy	2005-2011
BR Gold Mining Oy	2011-present

6.1   Previous Mapping and Surface Sampling

The geological mapping and boulder searching in the area was primarily carried out by GTK. Mapping was conducted during the summers of 1986, 1987 and 1988 over some 120km² are covering GTK's claims and their vicinity. Detailed maps were produced during a trenching project over the main mineralisation (Figure 6.1_1). A total of 345 outcrop observations were made during the mapping operation.

GTK completed 14 trenches over the main area of interest in the autumn of 1986 and in summer of 1987 a larger test trench was completed.

Numerous boulder observations were made by GTK between 1985 and 1988 and a total of 314 boulder samples were assayed. 70 of the analysed samples ran over 1ppm Au (Kontoniemi, 1990 and 1992). Eventually, the discovered boulder train led the explorers to the outcropping mineralisation.

Belvedere did a short 4-day field study in September 2010 during which they collected 11 outcrop samples and eight samples from mineralised boulders. In October 2010 they collected 15 channel samples on two locations on northern side of the main mineralisation on targets potentially parts of a parallel shear structure and a source for high-grade boulders found north of the main mineralised shear. The samples returned anomalous grades (max. 0.03ppm Au) and the work was not followed up at the time (Wik, H. 2010).

6.2   Previous Geochemical Surveys

GTK targeted base of till sampling at Osikonmäki area during years 1986-1988 and 1991 (Figure 6.2_1). A total of 1,737 samples from 1,650 sampling points were collected. A till geochemical survey was also conducted over the Osikonmäki area covering some 100km² with sample density of 16 samples/km².

Belvedere commissioned a Mobile Metal Ions (MMI) surface till sampling programme in October 2006 (Figure 6.2_2). A total of 436 surface-till samples were collected from just below the vegetation layer. The results of the survey showed several anomalies, based on which Belvedere applied for additional claims in the Osikonmäki area. Both copper and gold values are anomalous in the Osikonmäki area.

Figure 6.1_1
GTK Trenching Work
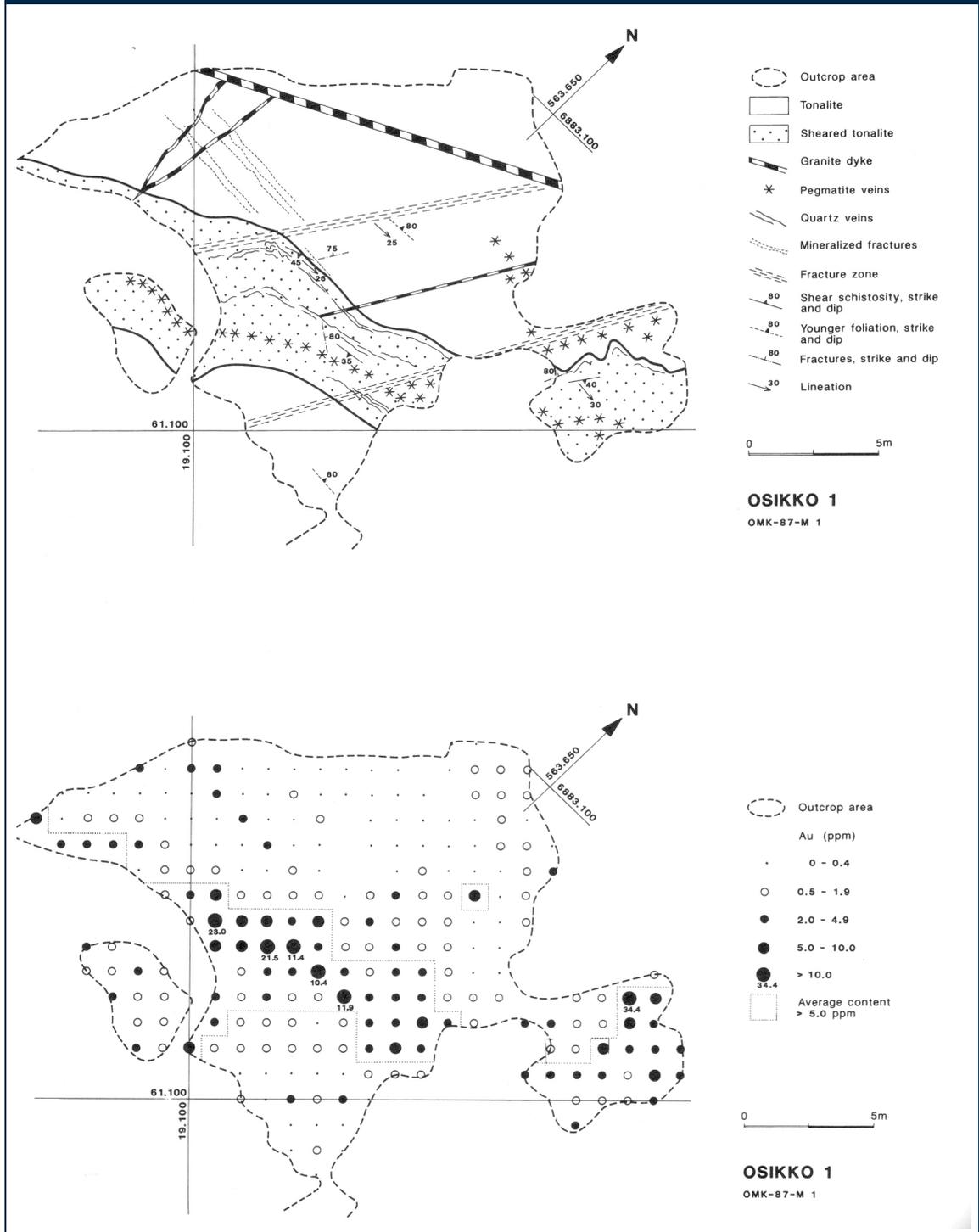
Figure 6.2_1
Base of Till Sampling
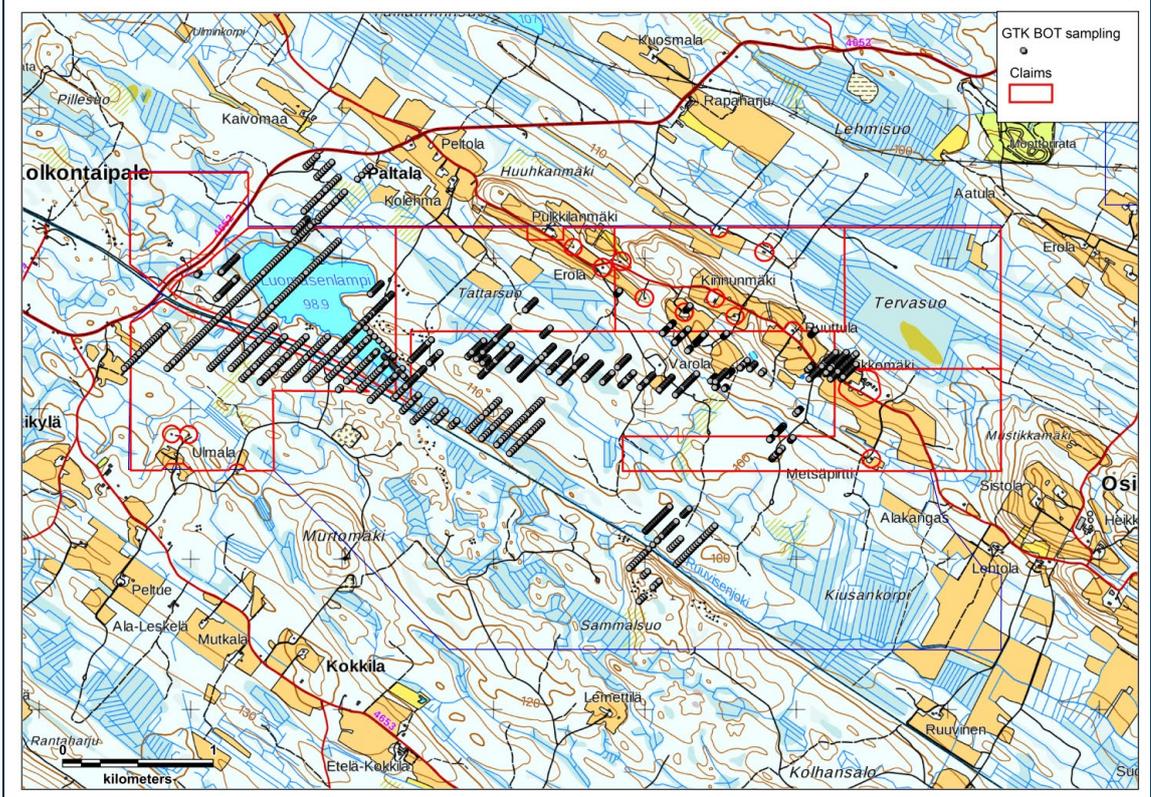
Figure 6.2_2
MMI Sampling
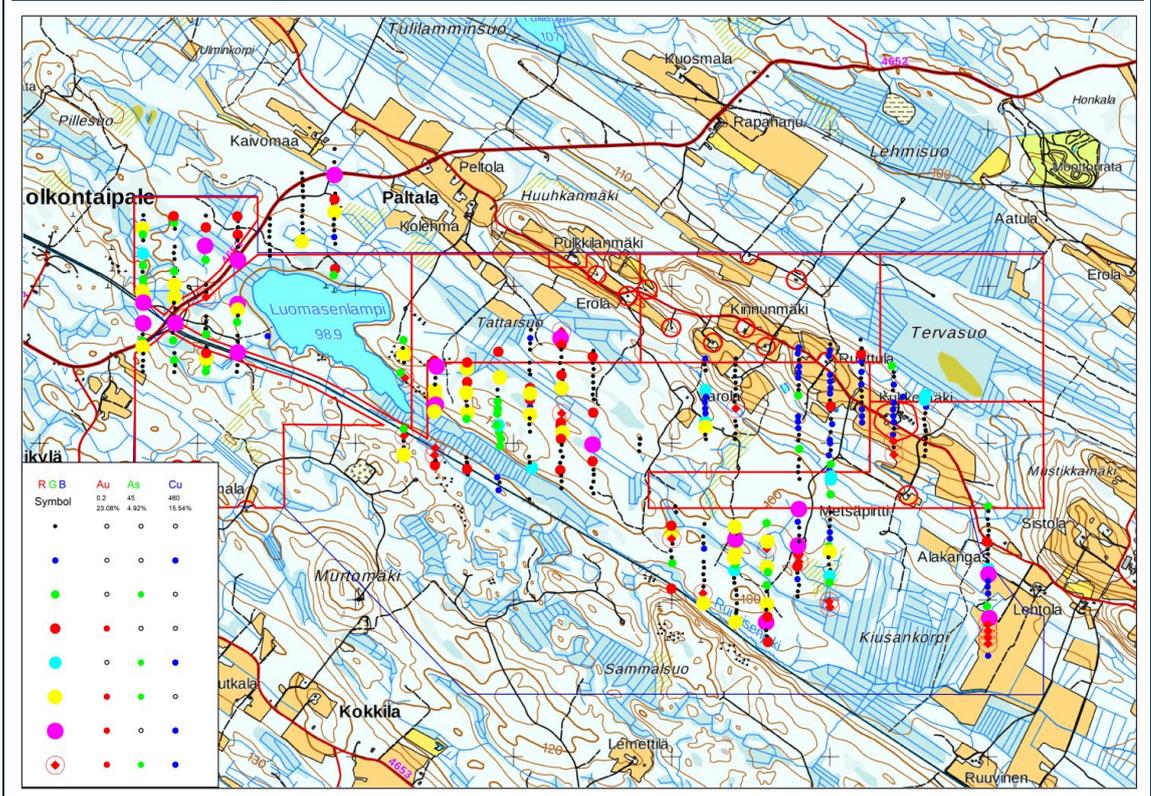
The total number of anomalous Au samples with RR (Response Ratio) of 1.9 - 19 comprised 48% (208 samples) of the total samples collected; this included 3.3% (14 samples) of the samples highly anomalous with RR between 9.5 and 19. The situation is similar with copper. Anomalous samples with RR 2.3 - 23 comprised 45% (197 samples) of the total samples, while the proportion of highly anomalous samples with RR 11.5 - 23 was comparatively low at 2.8% (12 samples).

6.3   Previous Geophysical Surveys

GTK carried out geophysical measurements on boulder and drill core samples for the purpose of planning ground and downhole surveys. Susceptibility, remanence, specific resistivity and polarisation were measured from the samples. Specific gravity measurements were made from the ore intersections in drillholes 388, 390 and 421. The mean average density of mineralised rock was 2.73t/m³.

Magnetic and electromagnetic ground surveys covering a total of 18.5km² were carried out between 1986 and 1988. 13km² was also measured as IP-survey. Generally, the line spacing has been 100m and point spacing 20m, but over the main mineralization a denser line spacing of 50m was used (Kontoniemi 1992).

In addition, GTK tested different types of downhole geophysical surveys for examining low-sulphide gold deposits (Kontoniemi, 1990).

GeoVista Ab conducted a geophysical IP and resistivity survey in July 2012 at Belvedere's request. The survey covered the easternmost part of the known Osikonmäki Au mineralisation and continued around 400m further to the east. A total of 8.2 line-km of gradient array IP/resistivity were measured with 25m station spacing. 3.2 line-km of pole-dipole and borehole-surface measurements were carried out with 25m receiver dipoles. Two different boreholes, BELOSI073A and BELOSI004, were utilised for transmitting current. The high resistivity and elevated chargeability clearly correlate with the known Osikonmäki mineralisation. A structure with higher resistivity compared to the background continues in the direction of the known mineralisation. This structure also shows elevated chargeability and is a target for further drilling in the area (Thunehed 2012).

Because of the poor quality of oriented drill core samples, Belvedere requested Ageos Oy to perform a hyperdata scan on drillhole BELOSI081. From the report and processed data, it is quite unambiguous that the shear zone intercepted by Osikonmäki drillhole BELOSI081 is dipping steeply to NNE representing the angled hanging wall shears locally discovered from Osikonmäki mineralisation.

6.4   Drilling by Previous Explorers

GTK completed 120 drillholes totalling 16,462m. Drillholes are generally in 50m spaced fences and intersected gold in anomalous concentrations over the 2.7km strike length of the deposit. Most of the drilling was at the eastern and western limits of the prospect. Drilling performed by GTK comprised mainly short vertical drillholes, or angled drillholes oriented 225° and dipping 45°. A few drillholes to the northeast were more steeply angled (Akyurek, 2011, Kontoniemi 1992).

Belvedere independently and as operator of the BR Gold join venture company completed five phases of drilling between 2005 and 2013 comprising a total of 101 drillholes (10,036.26m). The majority of the drilling was focused on the east end of the known mineralisation.

A summary of available drillhole information is presented in Table 6.4_1 and a drillhole plan in Figure 6.4_1. Drilling in Osikonmäki will be discussed in more detail in Chapter 10.

Table 6.4_1 Osikonmäki Gold Deposit Summary of Available Drill Data for Osikonmäki					
Company	Year	DH Type/Diameter mm	Holes	Metres	% of Total
GTK	1986	32	8	1,021.91	4%
	1987	32	8	2,125.3	8%
	1988	32	60	8,182.8	31%
	1989	32	25	3,061.1	12%
	1990	32	6	830.3	3%
	1991	32	13	1,242.5	5%
Belvedere	2005	57.5	7	775.3	3%
	2006	57.5	18	912.55	3%
	2011	42	54	6,121.88	2%
	2012	42	22	2,226.53	8%
Total			221	26,500.17	100%

Figure 6.4_1
Drillhole Plan
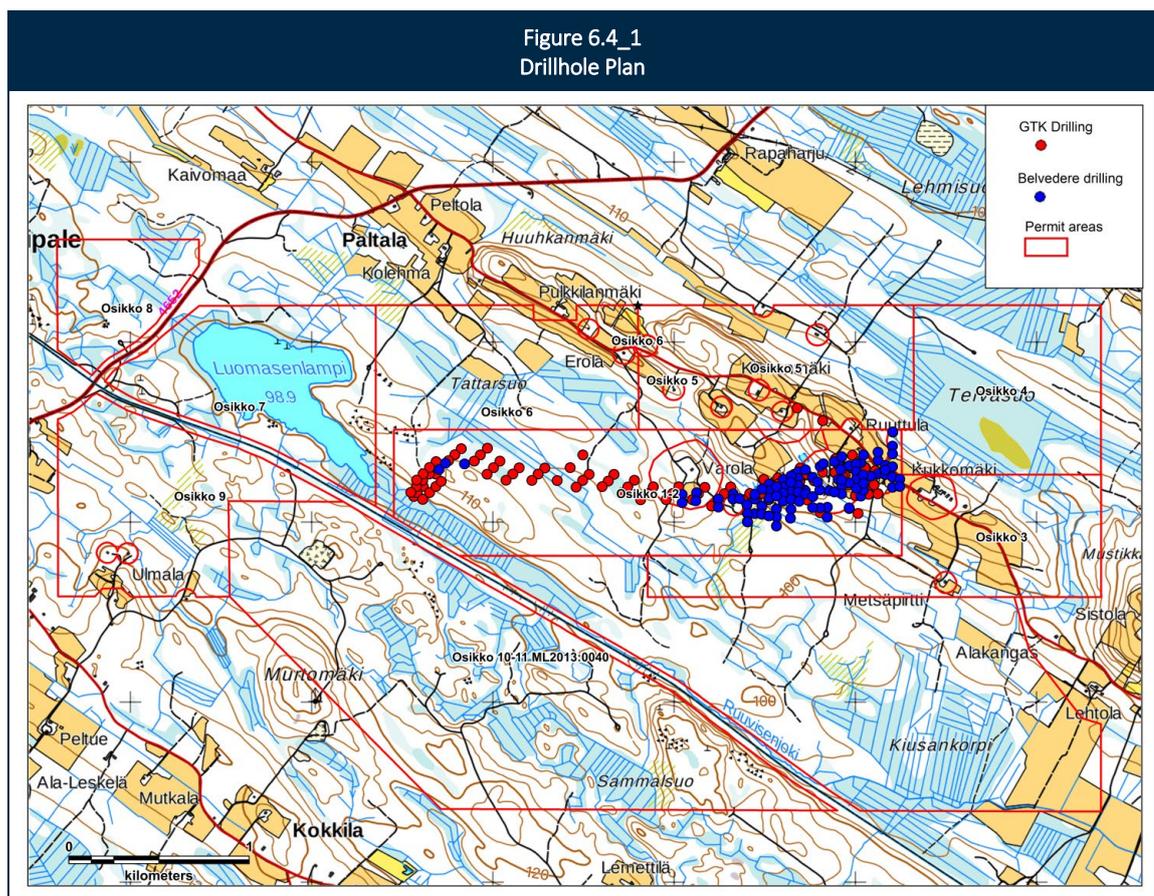
6.5   Historical Resource and Reserve Estimates

Various operators estimated mineral resources for the Osikonmäki deposit. These estimates were not classified under the CIM standards. The approximate classification under CIM is indicated in the table below. A qualified person has not done sufficient work to classify these historical estimates as current mineral resources and these historical estimates are not being treated as a current mineral resource and may not be relied upon. The historical resource estimates are summarised in Table 6.5_1. No detail is available for the resources calculated by GTK and Endomines. The tabulation is sourced from a later report (Golders, 2009).

Year	Source	Cutoff Au (g/t)	Classification Reported	Revised Classification (CIM)	Tonnes (kt))	Au (g/t)
1990	Kontoniemi (GTK)	0.5	Probable	Indicated	4,470	2.03
		1.0	Probable	Indicated	2,250	3.1
1990	Parkkinen (GTK)	1.0	Probable	Indicated	1,395	3.05
		1.0	Possible	Inferred	400	3.75
		2.0	Probable	Indicated	443	5.0
1992	Parkkinen (GTK)	0.3	Total resource	-	8,300	1.0
		2.0	Probable	Indicated	312	5.5
1999	Endomines Oy	2.0	Proven	Indicated	235	5.5
		0.5	Indicated	Inferred	3,825	2.0
2000	Endomines Oy	2.0	Indicated	Indicated	300	5.5
		2.0	Inferred	Inferred	100	5.0

Table 6.5_1 — Osikonmäki Gold Deposit — Historical Resource Estimates

AMC (2005) prepared a Mineral Resource Estimate and Technical Report under National Instrument 43-101 Standards of Disclosure for Mineral Project (NI 43-101), Companion Policy 43-101CP and Form 43-101F1 for the Osikonmäki East deposit. The estimate was based on all available drilling information to April 2005, and it interpreted the mineralised structures on oblique sections, wire-framing them into a three-dimensional volume. AMC developed a block model and estimated gold grade using ordinary kriging. Details of the AMC Mineral Resource Estimate are shown in Table 6.5_2.

Year	Source	Cutoff Au (g/t)	Classification Reported	Tonnes (kt)	Au (g/t)
2005	AMC	1.0	Inferred	2,300	1.89

Table 6.5_2 — Osikonmäki Gold Deposit — AMC Resource Estimate 2005

Belvedere commissioned Golder Associates (UK) Ltd to undertake a Mineral Resource Estimate for the Osikonmäki East deposit in October of 2011. Data collected up to this date was used and a sectional mineralisation interpretation was developed. The resultant mineralisation wireframe was input to the grade estimation as a hard mineralisation boundary and used to develop a 3-D block model. Drillhole grade data was then captured within the hard domain boundaries and used to estimate the gold grade via ordinary kriging. Golder Associate's resource estimate is summarised in Table 6.5_3.

Table 6.5_3 Osikonmäki Gold Deposit Golders Resource Estimate 2011					
Year	Source	Cutoff Au (g/t)	Classification Reported	Tonnes (kt)	Au (g/t)
2011	Golders	0.5	Indicated	1,296	1.707
		0.5	Inferred	3,542	2.091

6.6   Production History

There has been no known historical production from the property.

7. GEOLOGICAL SETTING AND MINERALISATION

7.1 Geological Setting

The Osikonmäki gold deposit is situated within the Ladoga-Bothnian Bay Zone, which is interpreted as a Paleoproterozoic collisional suture, expressed principally by NW-trending faults and dextral shear zones (Figure 7.1_1). This zone contains most of the major sulphide deposits exploited in Finland to date, but discoveries such as the Osikonmäki deposit, indicate that there exists considerable potential for gold mineralisation as well, particularly in association with shear zone systems in granitoids (Kontoniemi and Nurmi, 1998).

Figure 7.1_1
Geological Setting

Note: Kontoniemi 2006, simplified after Korsman et al (1997)
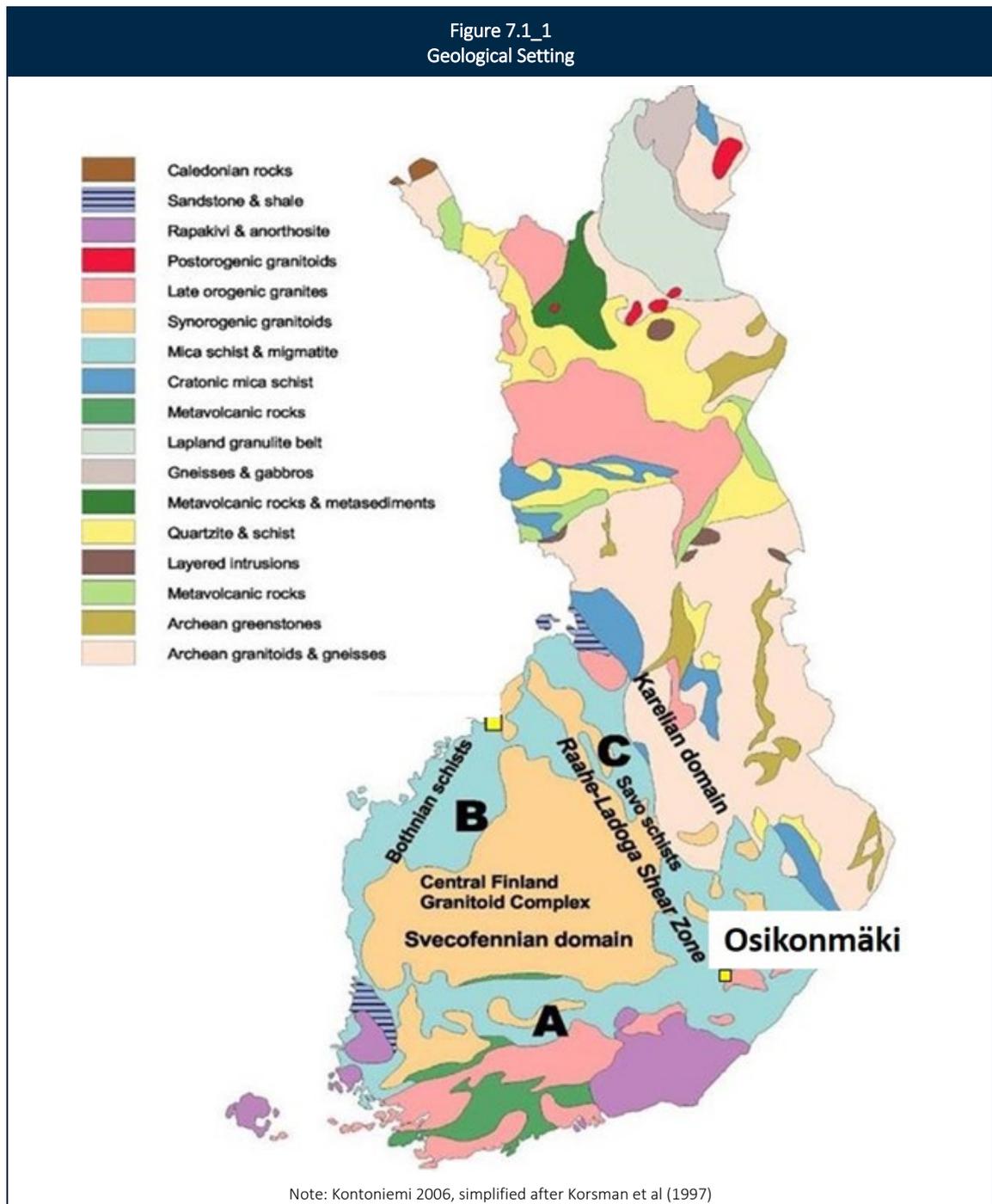
The study area records a complex polyphase deformational and progressive metamorphic history and contains bimodal volcanic rocks characteristic of collisional settings. Metamorphic grade increases southwards towards the Sulkava thermal dome, and the gold mineralisation is located within sillimanite-K-feldspar zone (Korsman, 1977).

The bedrock of the area consists predominantly of metaturbidites intruded by variety of granitoids. The oldest supracrustal rocks are metasediments, overlain by a succession of volcanic lithologies commencing with felsic pyroclastics and followed by intermediate, mafic and ultramafic units. Intrusive rocks within the area adjacent to Osikonmäki include the synkinematic Osikonmäki pluton, the Hiltula granitoid, which belongs to the late kinematic Putkilahti complex, and the post-tectonic Pirilä-type granites (Kontoniemi and Nurmi, 1998).

7.2   Mineralisation

The primary mineralisation at Osikonmäki is controlled by a shear zone oriented east-west, dipping approximately 40° - 50° to the south and plunging slightly to the east. Mineralisation occurs at the eastern and western parts of the footwall to the shear zone. Gold mineralisation is strongly associated with, but not confined to, zones of moderate to intense shearing (Pym, 2011). The gold is found within a tonalite intrusive; gold-enriched zones occur as either tightly folded or en-echelon lenses that typically plunge to the east at about 20°, although there is limited outcrop data to confirm structural findings. Geological control on gold grade is still relatively poorly understood. A historic stacked sectional block diagram of a mineralisation interpretation is presented in Figure 7.2_1.

The most common sulphide minerals associated with gold mineralisation are pyrrhotite, arsenopyrite, löllingite, bismuth and chalcopyrite, typically occurring as irregular to banded disseminations (Pym 2011). Gold and electrum, together with a number of Bi-Te-Se minerals, occur both as inclusions and at grain boundaries within and between arsenopyrite and silicate grains. Hydrothermal alteration appears to be limited although it may be obscured by metamorphism to above the sillimanite-potassic feldspar isograd, followed by extensive retrograde recrystallisation (AMC, 2005).

Although gold is the only commodity present of economic interest, the mineralising process caused marked enrichment in As, Bi, Te and Se, and moderate enrichment in Ag, Sb and Cu. At the deposit scale the distribution of Au correlates well with Cu and Ag, while reasonably good correlation also exists with As and S. Where gold is most concentrated, the Au-As correlation appears to weaken, and the Au-Ag correlation strengthen at higher gold grades. A geochemical aureole defined by Se, Bi, As, S and Cu is particularly prominent in the hanging wall country rock above the mineralisation. Studies indicate that gold mineralisation took place under amphibolite facies metamorphism following the intrusion of syn-orogenic granitoids, but prior to the peak of regional metamorphism. Fluid inclusion studies indicate that the main stage of mineralisation was followed by influx of aqueous fluids of variable salinity, at least locally in the eastern part of the deposit, which transported gold and associated elements to higher structural levels during continued deformation within the shear zone (Kontoniemi, 1998).

Figure 7.2_1
Sectional Block Diagram

Block diagram of the claim Osikko 1. Sections across mineralisation and the shear zone (Kontoniemi 1998).
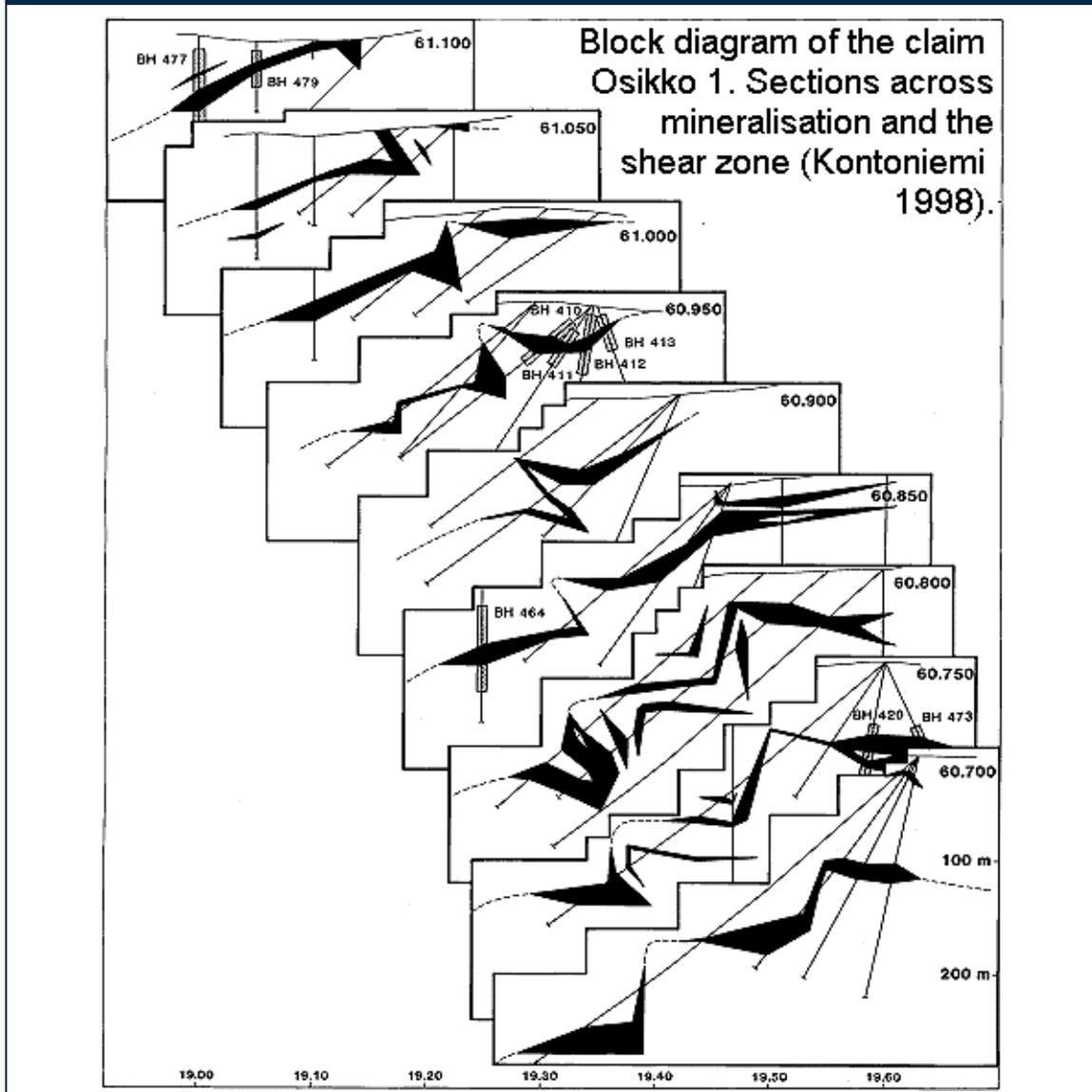
7.3   Project Geology

A generalised project area geology map is presented in Figure 7.3_1. The marginal areas of the granitoid intrusion are composed of quartz diorite that grades to tonalite (in places granodiorite) toward the centre of the intrusion. An E-W-trending mineralised shear zone cuts the granitoid, and the Osikonmäki Au mineralisation occurs along more than 3km of the shear structure. Gold is most concentrated at the eastern and western extents of the footwall to the shear zone, which dips southwards at 40°-50° angle. In this zone, slightly altered hypidiomorphic tonalite has been sheared and the associated metamorphism gives the rock a granoblastic and gneissose appearance. In the shear zone, alteration is stronger than in the tonalite and the amount of K-feldspar, quartz and micas, particularly, has increased at the expense of plagioclase and hornblende. Throughout the intrusion, there are mafic microgranular enclaves (MME), which indicate mechanical mixing (mingling) of felsic and mafic magmas (Kontoniemi 1998).

Figure 7.3_1
Project Area Geology

Geology of the Osikonmäki-Pirilä area.
White areas are lakes. After Kontoniemi (1998).
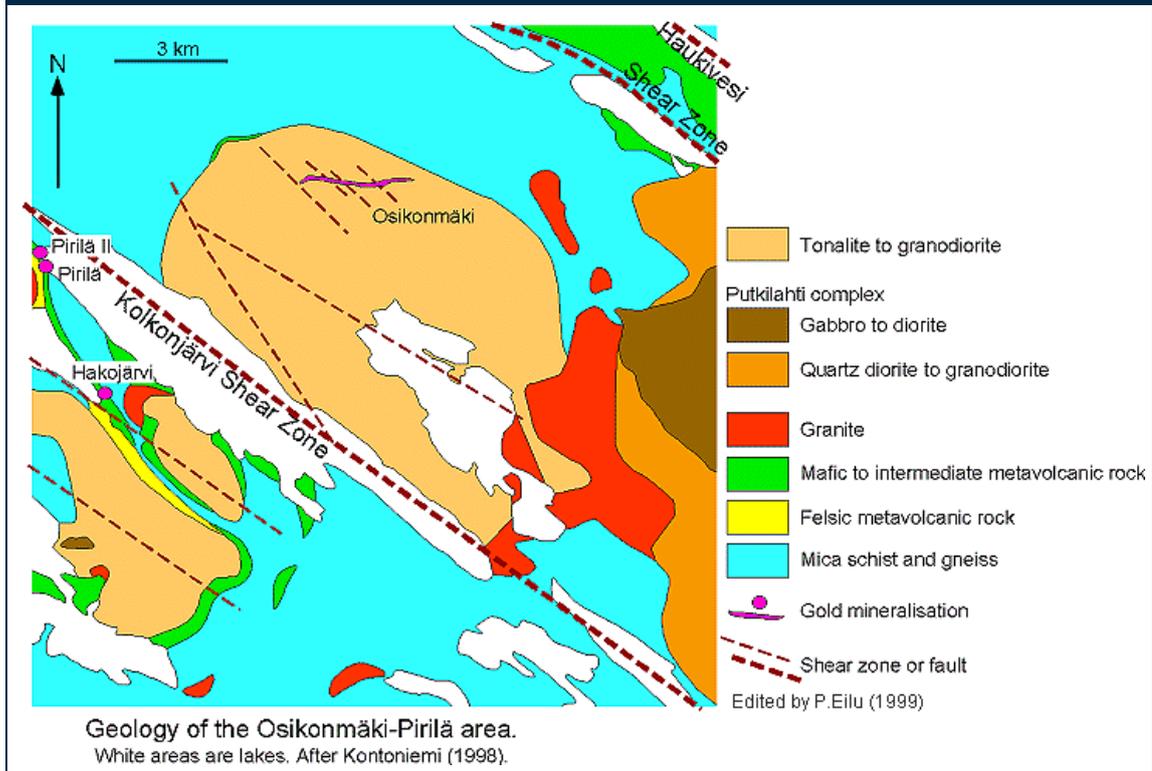
The Osikonmäki gold deposit has been the subject of detailed textural, geochemical, fluid inclusion and beneficiation studies by several authors.

7.4   Structure

At Osikonmäki the main shear system is represented by a brittle/ductile mylonitic fabric at least 3km long in an EW-trending direction and dipping predominantly 40°-50° to the south. It has a curvi-linear nature in plan and the best mineralisation appears to be at either end of the zone where there is a significant change in the strike of the shear possibly allowing more dilational zones to form. It is interpreted to splay into a major NW-trending shear some 300m to the east of current drilling, which has been interpreted from geophysics and has recently been verified in outcrop as a thick NW-trending sulphidic mylonite. On its western end the shear is open and is of uncertain continuity. The shear zone has been re-crystallised and shows features of a prolonged and active history. The main shear is represented by a mylonitic shear fabric which at its most intense completely destroys original texture and when weaker, is represented by millimetre-scale, widely spaced shear foliation in largely unaltered tonalite. Intense shearing can be more than 30m in true thickness and including areas of minor shearing more than 100m in true thickness. Gold mineralisation, while broadly coeval with areas of moderate to intense shearing, does not necessarily correlate to higher grade, particularly in the eastern part of the shear (Pym, 2011).

A detailed structural interpretation based on limited data from both outcrops and oriented drill core was created by D. Pym in 2011.

8. DEPOSIT TYPES

The Osikonmäki deposit lies in a major geotectonic province that crosscuts Central Finland from Raahe in the northwest to Lake Ladoga in the southeast and is variably known as the Main Sulphide Ore Belt, Raahe-Ladoga Zone or Ladoga-Bothnian Bay Zone. It contains most of the major sulphide deposits exploited in Finland to date. Four distinct types of deposits are recognised:

- Outokumpu-type Cu, Co, Ni, Au;

- Pyhäsalmi-type Zn, Cu ± Au volcanogenic massive sulphide;

- Hitura-type magmatic Ni, Cu; and

- Shear-hosted Au ± Cu deposits, represented by Kopsa, Pirilä and Osikonmäki.

The first three have been important contributors to Finland's economy but no gold production in the region is recorded, except as a by-product, mainly from the Outokumpu deposits. A map of Finland's main metallic ore mines (2015) is presented in Figure 8_1.

The Osikonmäki deposit is a shear-controlled, epigenetic gold deposit hosted by synorogenic I-type tonalite pluton located in between the Kolkonjarvi and Haukivesi shear zones. Clearly defined structural control, high Au/base metal ratios, ore mineralogy and alteration in Osikonmäki deposit are all typical of epigenetic shear zone related ore formation.

Epigenetic mineralisation processes inevitably require extensive hydrothermal activity and fluid flow, typically within major structural features. Fluid activity is closely linked with mobilization, transport and precipitation of ore metals, which is also greatly influenced by fluid compositions and ambient P-T conditions. The Ladoga-Bothnian Bay Zone has experienced a range of metamorphic (subducting oceanic plate during convergence and/or thickening of the crust during collision, late thermal event) and magmatic (three phases of granitoid intrusion) processes that can have contributed to generation and migration of fluids. These fluids were focussed by major shear systems, particularly into obliquely oriented dilational sites, and the role of relatively competent rock units, such as the Osikonmäki intrusion, was important in channelling fluids to higher crustal levels (Kontoniemi 1998).

Figure 8_1
Finland Metallic Ore Mines 2015

METALLIC ORE MINES 2015

Phanerozoic rocks

Mesoproterozoic rocks
- Diabase
- Sandstone and mudstone
- Rapakivi granite

Palaeoproterozoic rocks
- Intrusive rocks
- Supracrustal rocks
- Granulitic rocks

Archaean rocks
- Intrusive rocks and gneisses
- Supracrustal rocks

Kittilä (Suurikuusikko) Au

Kevitsa Cu, Ni, Co, Pt, Pd, Au

Kemi Cr

Talvivaara Ni, Zn, Cu, Co

Pyhäsalmi Cu, Zn, S

Pampalo Au

Kylylahti Cu, Co, Ni, Zn

Räme-puro Au

Orivesi Au

Jokisivu Au

Ore mined 2015 (kt)

10 000
7 500
5 000
2 500
1 000
750
500
250
100
30

0   50   100 km

Source: Finnish safety and chemicals agency (Tukes)
Contains data from the National Land Survey of Finland Topographic Database 03/2013 © NLS and HALTIK

GTK
gtk.fi

9. EXPLORATION

9.1 Previous Exploration

During the various exploration phases since the discovery of the first Osikonmäki boulder in 1984, GTK undertook geological mapping, boulder hunting, regional and targeted base of till ("BOT") sampling, trenching, petrophysical studies, geophysical ground and downhole measurements and diamond drilling.

The first work phase included intensive boulder searching, which led the explorers to the source of the mineralisation. First direct evidence of the mineralised horizon was discovered with targeted BOT drilling in May 1986. In June 1986 GTK started geophysical ground magnetic, slingram and IP surveys over a 2km² area, proceeded to trenching operation with 14 test trenches in autumn, and by November of 1986, the project had advanced to diamond drilling phase. From drill core and boulder samples, mineralogical thin section and microanalysis were made. Eventually, a resource estimate and feasibility study were made in cooperation with the Technical University.

GTK passed Osikonmäki on to other operators, and no significant exploration was completed before Belvedere acquired the project in 2004.

Belvedere subsequently compiled data from previous exploration and other studies, most of which had been carried out by GTK. A digital database was purchased from GTK and as far as possible verified against original assay records.

Exploration work carried out by Belvedere independently and as operator of the BR Gold joint venture company includes diamond drilling (five phases, Table 6.4_1)), MMI sampling in 2006, an IP-survey at the eastern end of the mineralisation as well as a borehole hyperscan in 2012.

9.2 Geophysical Surveys by Previous Operators

A low altitude aeromagnetic survey was flown in Rantasalmi map sheet (3233) in 1981.

GTK conducted ground IP, magnetic and electromagnetic surveys during 1986 to 1988 (Figure 9.2_1).

The downhole geophysics included testing several methods, such as resistivity, chargeability and susceptibility measurements; radiation values were tested from three drillholes. Electromagnetic SAMPO-method was tested unsuccessfully, as the conductivity of the mineralisation is rather poor (Kontoniemi 1990).

Belvedere's geophysical surveys have been discussed in Section 6.3.

9.3 Exploration Undertaken by BR Gold Mining Oy since 2016

Apart from a technical summary study of the Osikonmäki Gold Project in 2017 and field visits, no other exploration activities have been carried out by BR Gold Mining Oy since the company was acquired by Northern Aspect Resources Ltd.

Figure 9.2_1
GTK Ground Magnetic Map
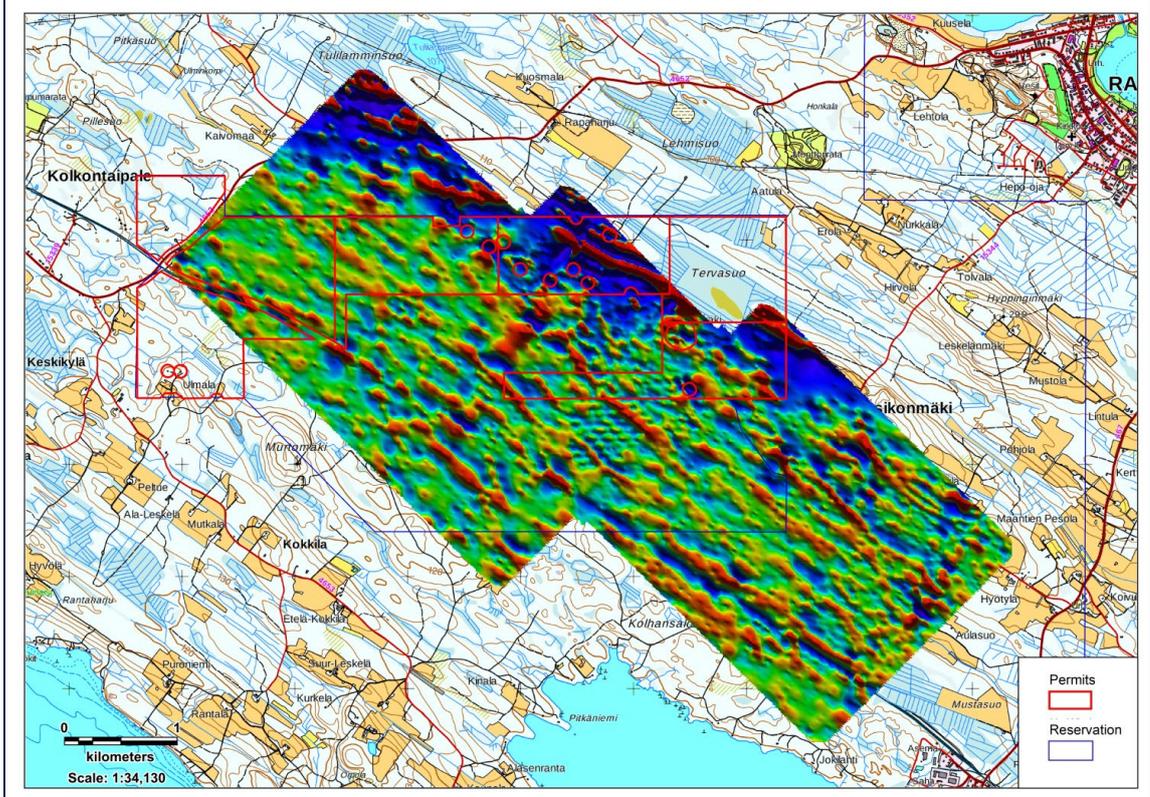
10. DRILLING

Diamond drilling on the property has all been undertaken by previous operators. None has been undertaken by the current holder, BR Gold Mining Oy.

10.1 Drilling by Previous Operators

Between 1986 and 1991, GTK drilled 120 diamond drillholes totalling 16,462m (Table 6.4_1). In the main part of the mineralisation, the section spacing is generally 50m, 25m at the W end and 100m elsewhere. GTK drilling consisted mostly of T46 diameter (32mm) diamond drilling. Drillhole collar locations were surveyed, and dip angles were measured. No downhole azimuth survey information was collected.

Belvedere re-surveyed historical drillhole collars using a differential GPS (DGPS) where they could be located. Several drillhole collars, particularly those located in agricultural areas, could not be located.

Belvedere, independently and as operator of the BR Gold joint venture company completed five diamond drilling phases in between 2005 and 2013. A total of 101 drillholes (10,036.26m) were drilled during the time period. Collar locations were surveyed with a DGPS prior to drilling and again after completion of the campaign. Location information was recorded using the Finnish Coordinate Reference System KKJ3. Afterwards, the coordinates have been transferred to ETRS TM35 system by BR Gold. Drillhole locations were staked out with sighting poles to assist with the positioning of the drill rig. After drilling was complete, a length of PVC casing was capped and left in the hole as a marker.

During the first three phases, Suomen Malmi Oy (SMOY) performed the drilling using an Onram 1000 drill rig with a wireline (WL) 56 core barrel. The inner diameter of the core barrel was 42mm. The drill was run 24 hours a day, in two 12 hour shifts, six days per week. Downhole surveying was performed using EMS equipment. Except for phase three of drilling, Belvedere used oriented core during drilling to gain structural information on the deposit. For phases four and five, the procedure remained the same, but the rig used was SMOY Diamec 262 producing core with inner diameter of 39mm.

Belvedere personnel transported core from first three drilling phases at Osikonmäki to the core logging and storage facility at the Belvedere base camp at Pyhäsalmi, approximately 250km to the northwest. During the 2012 drilling operations, Belvedere acquired a core handling facility in the Osikonmäki village.

10.2 Dry Bulk Density Collection

A dry bulk density database has been supplied containing a total of 3,395 data. The database relates to Belvedere drilling only and descriptive statistics are presented in Table 10.2_1. Density readings relate to the bedrock only.

<table>
<tr><td colspan="8">Table 10.2_1
Osikonmäki Gold Deposit
Density Statistics</td></tr>
<tr><th>Company</th><th>Count</th><th>Minimum</th><th>Maximum</th><th>Mean</th><th>Std. Dev.</th><th>Variance</th><th>CV</th></tr>
<tr><td>Belvedere</td><td>3,373</td><td>2.32</td><td>3.04</td><td>2.69</td><td>0.05</td><td>0.002</td><td>0.02</td></tr>
</table>

Dry bulk densities have been calculated on the basis of the weight in water method. Density readings have been taken on whole drill core and are distributed across all areas of the deposit.

10.3 Survey Coordinate System

The coordinate system used for all data collection and surveying on the Osikonmäki property is the Finnish national grid coordinate system, KKJ Zone 27. This system has been in use in Finland since 1970 and uses a Universal Transverse Mercator (UTM) projection with the KKJ 1966 geodetic datum.

10.4 Drill Database

The Osikonmäki drillhole and other geological data has not yet been imported to acQuire database used by BR Gold. The data has been collated in MS Excel workbooks. The process to catalogue and import the data is under way and once complete will include the contents of the data package purchased from GTK and Belvedere's MMI data.

Gold (13,215 samples) and multi element (8,268 samples) assays are available from 221 diamond drillholes. Base metals have been assayed from another 4,664 samples. Magnetic susceptibility values are available from 45,930 samples, specific gravity values from 3,373 samples and RQD from 3,641 intervals which essentially cover all Belvedere's drilled meters. In the database there are records of 4,363 EMS survey datapoints.

11. SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 Sample Method and Approach

11.1.1 Historical sampling methods

Historical sampling methods for the drilling undertaken by GTK are not generally available with only general observations possible. GTK's assay intervals were generally 1m, especially in sheared and/or sulphide bearing parts. When the rock didn't contain sulphides, 2m and 3m intervals were sampled. Core was halved using a mechanical method and analysed in GTK's own laboratory in Espoo. No further information is available on GTK sampling methods.

More detailed procedures are available in the case of Belvedere. The core logging and storage facility was located in Pyhäsalmi during the first three drilling phases. In 2012 the company rented a local core facility in Osikonmäki. A team of geologist and geo-technicians performed the following data collection procedures on the core:

- Production of a "Quick" log to include lithology, shear intensity and percentage of sulphide minerals;

- Metre marking;

- Recording of Core Recovery (total and solid);

- Calculation of RQD;

- Production of a lithological log (entered directly into the laptop);

- Magnetic susceptibility readings using hand held instrument to take readings on each metre length of core;

- Collection of samples for specific gravity measurement using water displacement method. Measurements are taken at 2m intervals in the sampled intervals and every 5m elsewhere;

- Sample mark up; and

- Core photography.

Drilling campaigns 1 and 2 included structural logging from oriented core, recording alpha and beta angles and type of structure. Phase 3 included structural information only from major structures and angle to core axis and is included in the lithology log. During previous campaigns, BRL used written descriptive logs, and a coded form of digital logs was implemented during Phase 3.

Sample intervals were approximately 1m lengths and respect lithological, alteration and/or textural contacts and where there was a natural break in the drill core. Sample intervals and numbers were recorded in a handwritten sample log book, and then typed into the sample/assay file.

Core lengths were marked with a line perpendicular to foliation for core cutting. Core was split using a core saw. Half core was bagged and despatched to the laboratory.

11.1.2 Historical Chain of Custody, Sample Preparation and Analyses

All GTK drill core samples were analysed in GTK laboratory in Espoo. Remaining pulps and rejects were stored in the national drill core depository in Loppi. From all samples, base metals, Ag and Bi were analysed with AAS, S with Leco and Au with fire assay from 30g sample size.

Prior to 2012, Belvedere personnel transported core from first three drilling phases at Osikonmäki to the core logging and storage facility at the Belvedere base camp at Pyhäsalmi, approximately 250km to the northwest. During the 2012 drilling operations, the core was transported to Belvedere's Osikonmäki facility by drilling crew or Belvedere's personnel.

After the core processing and cutting was completed, each sample was put into a 0.30m x 0.40m heavy duty polythene sample bag and tied closed.

The sample number was written on the bag twice in permanent marker. About five sample bags were then put into a larger heavy-duty polythene bag. Two of the larger bags (about ten samples) were then put into another large polythene bag, and then this was put into a net bag.

Belvedere inserted a blank at the beginning of each sample batch and a standard every twenty samples before dispatch to laboratory. The net bags were divided into batches; batch size ranged from approximately 120 to 200 samples. The net bags (each roughly ten samples) were then delivered to the courier company, and labelled with the destination address. Belvedere then emailed a list of the samples and the assay order to the lab using a standardised laboratory submission form which listed the sample numbers, type of material, analysis required and batch number. Several duplicate samples exist for Phase 3 of the drilling program, however, a program of duplicate samples or umpire laboratories was not carried out.

Once ready for dispatch, the samples were driven by a Belvedere employee to Pyhäsalmi, or later to Rantasalmi where they were sent by courier to the preparation laboratory.

The drill core and samples were stored in locked core sheds at Belvederes field office in Multala near Pyhäsalmi. Belvedere employees (geologists and technicians) were the only people with access to the core storage facility, which were locked when employees were not present.

In 2017 Osikonmäki drill core drilled prior to 2012 and stored in the Multala facility was transported to the recently established core facility in Nivala. Remaining reject samples were stored in a cold storage rented from the Hitura mine estate. The core from 2012 drilling campaign is stored in the Osikonmäki facility.

Following receipt of samples from Belvedere, the samples were received by ALS Finland Oy and checked against the submission form and all samples were logged into their Laboratory Information Management System (LIMS). The lab sent a confirmation of receipt of the samples and notified Belvedere of any discrepancies when compared to the emailed list.

The whole sample was weighed, dried, crushed, pulverised and homogenised to greater than 85% passing 75 microns. Pulverisers were cleaned with barren material following each sample. The preparatory laboratory stored the pulps and coarse rejects for three months before returning them to Belvedere.

ALS Finland Oy sent the prepared samples to the ALS Chemex laboratory in Romania for analysis by fire assay (FA) with AAS finish on a 30g sample, and to the ALS Chemex in Vancouver for ICP-AES analysis for 23 elements on a 0.25g sample. Belvedere received the assay results from the laboratory via email as Microsoft Excel spreadsheets. Assay certificates were received by email alongside the spreadsheets in .pdf format. Belvedere merged the assay results with the drillhole intervals by sample number.

The ALS Finland Oy laboratory has ISO/IEC 17025 (2005) accreditation from the Finish Accreditation Service (FINAS). The Romanian ALS Chemex laboratory has received a Certificate of Proficiency for participation in the CANMET program for Mineral Analysis Laboratories (PTP-MAL). On 10th August 2011, the lab was audited by the Standard Council of Canada (SCC) for the purpose of ISO 17025 international accreditation. The certificate was released 90 days after.

The ALS Chemex laboratory in Vancouver is accredited to ISO 9001 (2008) and ISO/IEC 17025 (2005) standards for certain methods (not including ICP), from the Standards Council of Canada (SCC).

11.2   Assay Quality Control

Analysis of internationally accredited assay standards or certified reference material ("CRM") has been carried out by Belvedere. As the drillhole database has not yet been transferred to Acquire Database, the available QAQC data has been provided as MS Excel spreadsheets and workbooks. The data is fragmentary and not in a standardised format making its interpretation somewhat uncertain. The available data can be categorised as operator inserted blanks and standards and that inserted into the sample stream by the laboratories. Additionally, the available data contains what appears to be pulp duplicate samples.

Available data relates to the periods 2005 to 2012 (Belvedere) only. No QAQC data has been provided as relates to the GTK drilling programs. The original assay reports from the relevant GTK laboratories have not been located in the larger exploration and drillhole database that was provided.

For drilling carried out since 2005 the following sets of data have been reviewed and statistically assessed:

- CRM ("standards") submitted by the operator to the independent assay laboratories.
- Sample pairs, including, drill core duplicates, crushed core duplicates, pulp duplicates and pulp replicates.
- Barren samples ("blanks") submitted by the operator.

11.3   Certified Reference Material and Blanks

Belvedere routinely submitted CRM to the laboratories as described in Section 11.1. Results are presented in Table 11.3_1 and obvious transcription errors where the analysed CRM is clearly not correctly labelled have been eliminated. Blanks were submitted at the rate of ~1% of total and standards at the rate of ~4%. With some marginal exceptions with a bias around +4% to -6%, the results are within an acceptable level of tolerance. In each case, only a low number of available analysis exist and are therefore potentially not representative.

A total of 556 internal lab CRM analysis exist that relate to the Belvedere programs consisting of 1 blank and 15 standards. This data appears not evenly spread across the different drilling campaigns (later only) and has not been assessed as part of the current QAQC review.

Appendix 1 contains the control graphs for the CRM and blanks.

Table 11.3_1 Osikonmäki Gold Deposit Standards and Blanks								
Standard	Assay Method	Laboratory	Number	Expected Value	Mean	% Bias	% RSD	% in Tolerance
Standards & Blanks Submitted by Belvedere 2005 - 2012								
BLK	Au-AA25-ppm	ALS PI	57	0.01	0.01	-	-	-
CDN-GS-10	Au-AA25-ppm	ALS PI	23	0.82	0.80	-2.9	7.1	82.6
CDN-GS-10C	Au-AA25-ppm	ALS PI	54	9.71	9095	2.4	3.1	100
CDN-GS-10D	Au-AA25-ppm	ALS PI	9	9.50	9.89	4.1	2.3	100
CDN-GS-P7B	Au-AA25-ppm	ALS PI	5	0.71	0.70	-1.1	2.3	96.4
CDN-GS-11	Au-AA25-ppm	ALS PI	14	3.4	3.24	-4.7	4.8	85.7
CDN-GS-3F	Au-AA25-ppm	ALS OT	23	3.10	3.16	1.8	4.1	100
CDN-GS-12	Au-AA25-ppm	ALS OT	18	9.98	9.66	-3.2	5.2	83
CDN-GS-3H	Au-AA25-ppm	ALS OT	33	3.04	3.05	0.2	2.8	100
CDN-GS-P7B	Au-AA25-ppm	ALS OT	20	0.71	0.67	-6.0	4.4	80
CDN-GS-P8	Au-AA25-ppm	ALS OT	118	0.78	0.79	1.4	3.4	100
CDN-GS-10D	Au-AA25-ppm	ALS OT	4	9.50	9.69	2.0	0.8	100

11.4   Data Pairs

11.4.1   Introduction

Available data pairs have been reviewed and comprises of pulp duplicates (duplicates samples taken from within one pulp sachet) and a pulp reassay program.

The paired assay data has been assessed using the following techniques and plots:

- Thompson and Howarth Plot (T & H).

- Ranked percentage Half Absolute Relative Difference plot (Rank % HARD).

- Mean versus % HARD plot.

- Mean versus percentage Half Real Difference plot (% HRD).

- Correlation Plot.

- Quantile-Quantile Plot.

11.4.2   Pulp Duplicates

In order to remove the potential distorting effect of sample pairs returning very low gold grades, the statistical analysis has been undertaken on sample pairs returning great or equal to 0.1g/t as well as routine review of all available samples.

When filtered to 0.1g/t Au this reduces to 5 and 20 sample pairs respectively. It is difficult to draw conclusions from such small datasets as the available data may not be statistically representative.

Table 11.4_1 summarises the results of the statistical analysis of the data pairs.

<table>
<tr><td colspan="12">Table 11.4_1
Osikonmäki Gold Deposit
Duplicate Sample Review: Samples Submitted by Belvedere</td></tr>
<tr><td rowspan="2">Lab/filter</td><td rowspan="2">Duplicate Type</td><td rowspan="2">Assay Method</td><td rowspan="2">Min.</td><td rowspan="2">Number</td><td rowspan="2">Au1 Mean (g/t)</td><td rowspan="2">Au2 Mean (g/t)</td><td colspan="2">Correlation</td><td rowspan="2">HARD (%)</td><td rowspan="2">HRD (%)</td></tr>
<tr><td>Pearson</td><td>Spearman</td></tr>
<tr><td>ALS/all</td><td>Pulp Dup</td><td>Au-AA25-ppm</td><td>0.001</td><td>501</td><td>0.52</td><td>0.54</td><td>0.97</td><td>0.92</td><td>5.2</td><td>-1.3</td></tr>
<tr><td>ALS/0.1g/t</td><td>Pulp Dup</td><td>Au-AA25-ppm</td><td>0.11</td><td>102</td><td>2.49</td><td>2.55</td><td>0.97</td><td>0.92</td><td>9.8</td><td>0.1</td></tr>
</table>

There is no pattern of reduced correlation between the very low-grade sample pairs compared with the entire dataset. Low levels of bias between the pairs is demonstrated.

The full set of graphs for sample pairs submitted to ALS are contained in Appendix 2.

11.4.3   Pulp Re-assay

In 2012 a total of 322 sample pulps originating from the GTK data were sent for reassay to ALS Finland OY for preparation and on to ALS Chemex in Romania for analysis by fire assay (FA) with AAS finish on a 30g sample. Results show an approximately 10% bias towards the duplicate analysis performed by BR Gold .

<table>
<tr><td colspan="12">Table 11.4_2
Osikonmäki Gold Deposit
Duplicate Sample Review: Samples Submitted by Belvedere</td></tr>
<tr><td rowspan="2">Filter</td><td rowspan="2">Duplicate Type</td><td rowspan="2">Assay Method</td><td rowspan="2">Min.</td><td rowspan="2">Number</td><td rowspan="2">Au1 Mean (g/t)</td><td rowspan="2">Au2 Mean (g/t)</td><td colspan="2">Correlation</td><td rowspan="2">HARD (%)</td><td rowspan="2">HRD (%)</td></tr>
<tr><td>Pearson</td><td>Spearman</td></tr>
<tr><td>All data</td><td>Pulp reassay</td><td>Au-AA25-ppm</td><td>0.001</td><td>322</td><td>1.004</td><td>1.097</td><td>0.98</td><td>0.97</td><td>16.4</td><td>1.9</td></tr>
<tr><td>0.1g/t</td><td>Pulp reassay</td><td>Au-AA25-ppm</td><td>0.1</td><td>276</td><td>1.154</td><td>1.272</td><td>0.98</td><td>0.95</td><td>12.0</td><td>-4.9</td></tr>
</table>

Assay quality control was undertaken on the pulp reassay program. CRM were inserted into the sample stream by BR Gold and also by the ALS internal QAQC protocol. Results are tabulated below and low levels of bias may be observed throughout. This is tempered by low numbers of analysis for most of the CRM analysed. Control graphs are presented in Appendix 3.

<table>
<tr><td colspan="9">Table 11.4_3
Osikonmäki Gold Deposit
Standards and Blanks</td></tr>
<tr><td>Standard</td><td>Assay Method</td><td>Source</td><td>Number</td><td>Expected Value</td><td>Mean</td><td>% Bias</td><td>% RSD</td><td>% in Tolerance</td></tr>
<tr><td colspan="9">Standards & Blanks Submitted by Belvedere 2005 - 2012</td></tr>
<tr><td>BLK</td><td>Au-AA25-ppm</td><td>BRGold</td><td>1</td><td>0.01</td><td>0.01</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>CDN-GS-P7B</td><td>Au-AA25-ppm</td><td>BRGold</td><td>12</td><td>0.71</td><td>0.71</td><td>-0.35</td><td>2.77</td><td>100</td></tr>
<tr><td>CDN-GS-P8</td><td>Au-AA25-ppm</td><td>BRGold</td><td>1</td><td>0.78</td><td>0.87</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>CDN-GS-3H</td><td>Au-AA25-ppm</td><td>BRGold</td><td>2</td><td>3.04</td><td>3.17</td><td>4.28</td><td>0.32</td><td>100</td></tr>
<tr><td>CDN-GS-10D</td><td>Au-AA25-ppm</td><td>BRGold</td><td>2</td><td>9.50</td><td>9.67</td><td>1.79</td><td>1.14</td><td>100</td></tr>
<tr><td>OXD87</td><td>Au-AA25-ppm</td><td>ALS</td><td>6</td><td>0.42</td><td>0.41</td><td>-2.78</td><td>2.61</td><td>100</td></tr>
<tr><td>OXF85</td><td>Au-AA25-ppm</td><td>ALS</td><td>2</td><td>0.81</td><td>0.80</td><td>-1.24</td><td>0.63</td><td>100</td></tr>
<tr><td>OXK95</td><td>Au-AA25-ppm</td><td>ALS</td><td>6</td><td>3.54</td><td>3.62</td><td>2.31</td><td>2.09</td><td>100</td></tr>
<tr><td>SL51</td><td>Au-AA25-ppm</td><td>ALS</td><td>2</td><td>5.91</td><td>5.93</td><td>0.34</td><td>0.08</td><td>100</td></tr>
</table>

11.5 Discussion

The review of the CRM submitted have shown that the use of CRM which have an expected value based on fire assay analyses demonstrates an acceptable level of accuracy by the various laboratories that have been utilised. Neither is there any evidence of systemic bias in the datasets.

When the sample pair data are reviewed for the pulp duplicates the assays values demonstrate equivalency between the value pairs. The levels of variability for much of the datasets are typical for gold deposits.

The GTK pulp reassay program demonstrates a low bias towards the GTK assay values. CRM analysis undertaken as part of this reassay program demonstrates low levels of bias relating to the fire assay undertaken by ALS.

11.6 Conclusions

These methods of data verification are considered at or above industry standard. The results of the QAQC data analyses discussed in the preceding sections demonstrate that the quality of the data is acceptable for use in mineral resource estimation.

Where known, all sample preparation and analyses were carried out at independent laboratories in Finland and Romania. No aspect of laboratory sample preparation or analysis was conducted by an employee, officer, director or associate of either BR Gold or its predecessors.

Belvedere and BR Gold have largely used a combination of duplicates, checks, blanks and standards to ensure suitable quality control of sampling methods and assay testing. The procedures and QA/QC management are consistent with good industry practice and are deemed fit for purpose. Results of recent sampling have not identified any issues which materially affect the accuracy, reliability or representativeness of the results.

With respect to the assaying undertaken by GTK, a pulp resampling program has indicated a low bias in the order of 10% to the GTK assays. This is demonstrated by the assay quality control (CRM) submitted to ALS as part of the resampling program.

12. DATA VERIFICATION

12.1 Independent Qualified Person Review and Verification

Mr Brian Wolfe visited the Osikonmäki Gold Project in October 2018. Steps undertaken to verify the integrity of data used in this report include:

- Field visits to the areas outlined in this report.
- Inspection of diamond drill core.
- Review of data collection, database management and data validation procedures.
- Review of the previous technical documentation for the Osikonmäki Gold Project.

The Qualified Person has reviewed and cross-checked sections of this Report prepared by Rupert geologists.

The Qualified Person completed the updated resource estimate for the Osikonmäki Gold Deposit. Additional data verification steps undertaken during this estimate process included the following:

- Validation of drilling, geology and assay database (including checks overlapping intervals, samples beyond hole depth and other data irregularities.
- Review of Rupert QAQC data and charts for standards, blanks and duplicates.
- Visual and statistical analysis of resource estimate model outputs versus primary data.
- Random cross checks of assay reports against the database.

Based on this review work, the Qualified Person is of the opinion that the dataset provided by WAF is of an appropriate standard to use for resource estimation work.

12.2 QAQC Data Analysis

The quality control data has been statistically evaluated, and summary plots have been produced for interpretation as described in the previous sections.

12.3 Conclusions

These methods of data verification are considered at or above industry standard. The results of the QAQC data analyses discussed in the preceding sections demonstrate that the quality of the data is acceptable for use in mineral resource estimation.

13. MINERAL PROCESSING AND METALLURGICAL TESTING

The metallurgical test work previously carried out can be considered to be historic in nature. The test work described herein is summarised from the AMC Technical report (AMC, 2005). No further metallurgical testing has been completed by BR Gold and validation of the work described hereafter has not been undertaken.

Metallurgical tests of the Osikonmäki mineralisation were carried out by Outokumpu and publicly reported in Leppinen et al. (Leppinen, J., Hintikka 1995). Bulk samples of approximately 1,000kg were blasted from outcrop and sorted into representative ore types for processing.

The tests examined recoveries of metals using alternative methods based on cyanide leaching of gold with sulphide treatment by flotation, pressure oxidation, roasting and atmospheric oxidation, and were conducted through the Laboratory of mineral technology (VTT).

At Osikonmäki, the mineralisation was sorted into three types: arsenic-poor, arsenic-rich and pegmatite and blended in the proportions observed in the Osikonmäki deposit.

Bulk sample characteristics for the Osikonmäki mineralization are shown in Table 13_1.

Table 13_1 Osikonmäki Gold Deposit Metallurgical Samples							
Type	Mass, %	Au, g/t	Ag, g/t	As, %	Fe, %	Cu, %	S, %
OKM 1	47.50	4.20	0.80	0.57	3.50	0.02	1.14
OKM 2	47.50	7.10	1.40	2.80	4.96	0.02	1.97
OKM 3	5.00	3.60	0.70	0.10	2.91	0.01	0.99
OKM (blend)	100.00	5.70	1.10	1.44	3.56	0.02	1.23

Flotation tests from the Osikonmäki mineralisation was typically 65 to 70% with a concentrate gold grade of 45 to 70g/t Au and arsenic grade of 28%. The low flotation recovery of Osikonmäki material is due to 65% of gold being in silicate phases.

The gold recovery with direct cyanide leaching of milled Osikonmäki blend material was 70 to 80%. Osikonmäki gold recoveries were independent of grind time. Gold recovery by leaching of concentrates was 70% from Osikonmäki concentrate.

Pressure oxidation of the concentrates as well as pre-concentrate mineralisation gave complete breakdown of all sulphides excluding chalcopyrite in 1 to 2 hours. Gold recovery from leaching the oxidised concentrates was 96%. Pre-concentrate mineralisation had a 93% gold recovery.

14.   MINERAL RESOURCE ESTIMATES

14.1   Introduction

This Mineral Resource for the Osikonmäki Gold Deposit has been estimated as at the effective date of the 9th November 2018. Gold grade estimation was completed using Multiple Indicator Kriging (MIK) for the main mineralised domains with the secondary minor domains estimated by ordinary kriging (OK). MIK grade estimates have been localised to an SMU dimension using an analogous methodology to Localised Uniform Conditioning. This estimation approach was considered appropriate based on review of a number of factors, including the quantity and spacing of available data, the interpreted controls on mineralisation, and the style, geometry and tenor of mineralisation. The estimation was constrained with geological and mineralisation interpretations.

14.2   Database Validation

The resource estimation was based on the available exploration drillhole database which was compiled in-house by Rupert. The database has been reviewed and validated prior to commencing the resource estimation study.

The database consists of surface diamond drilling. Database statistics from the different operators are provided in Table 6.4_1 and it can be seen the bulk of the data originates from GTK. A plan view of all drilling is presented in Figure 14.2_1.

Figure 14.2_1
Osikonmäki Gold Deposit
Plan View of All Drilling
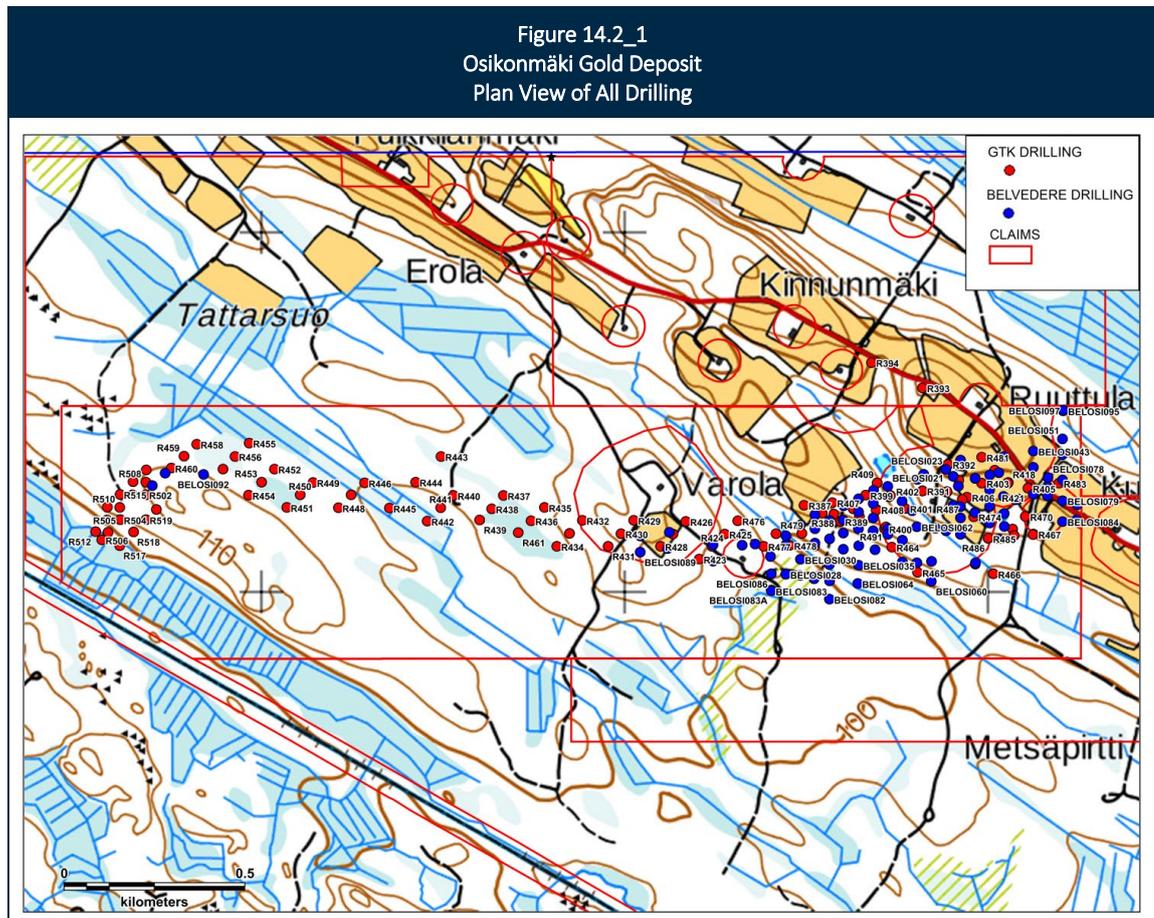
Upon examination of the drillhole assay tables it is evident that part of the drilling has been selectively sampled. For the purposes of the current resource estimate it has been assumed that the unsampled portions of the drill core are essentially unmineralised. Those absent intervals in the database have been set to -999. To allow for appropriate investigation and substitution during compositing and statistical analysis. Therefore, all following data analysis is on the basis of the described data substitution.

The resultant database was validated, and the checks made to the database prior to use included:

- Check for overlapping intervals.

- Downhole surveys at 0m depth.

- Consistency of depths between different data tables.

- Check gaps in the data.

- Replacing less than detection samples with half detection.

- Replacing absent values with -999.

14.3   Interpretation and Modelling

14.3.1   Mineralisation Interpretation

Gold mineralisation at the Osikonmäki Project is hosted by sheared and weakly altered granitic rocks and is also associated with sulphide mineralisation as described in Section 7.2. The principal structural control in the area is considered to be a shear zone oriented east-west dipping approximately 40° - 50° to the south and plunging slightly to the east. Gold mineralisation is strongly associated with, but not confined to, zones of moderate to intense shearing within the overall shear envelope. Typically, the gold-enriched zones occur as either tightly folded or en-echelon lenses that typically plunge to the east at about 20°.

Mineralisation has been encountered over 3km of strike length and has been interpreted to extend to more than 250m below the surface. The main occurrence of mineralisation occupies the eastern 1km strike extent of the known shear zone. Less significant mineralisation occurs at the western end with sporadic gold grades encountered between the two. Mineralisation remains open down plunge to the east of the main zone. Gold and electrum, together with a number of Bi-Te-Se minerals, occur both as inclusions and at grain boundaries within and between arsenopyrite and silicate grains.

To establish appropriate grade continuity, the mineralisation models were based upon a nominal 0.3ppm Au cutoff using a sectional interpretation as a basis for a wireframes interpretation. This interpretation is designed to capture the broad mineralisation halo that encompasses the geological shear - vein system and is not intended to constrain individual veins or shears. As the main grade estimation technique is MIK with change of support technique, this type of mineralisation constraint is deemed appropriate.

Wireframed grade shells were reviewed in multiple orientations and in plan and section views prior to being accepted for grade estimation and block modelling purposes.

In addition to the supplied LIDAR topography, a base of overburden layer has been interpreted on a sectional basis. The mineralisation models have all been terminated by this surface (Figure 14.3_1).

Figure 14.3_1
Osikonmäki Gold Deposit
Section 3,563,800mE
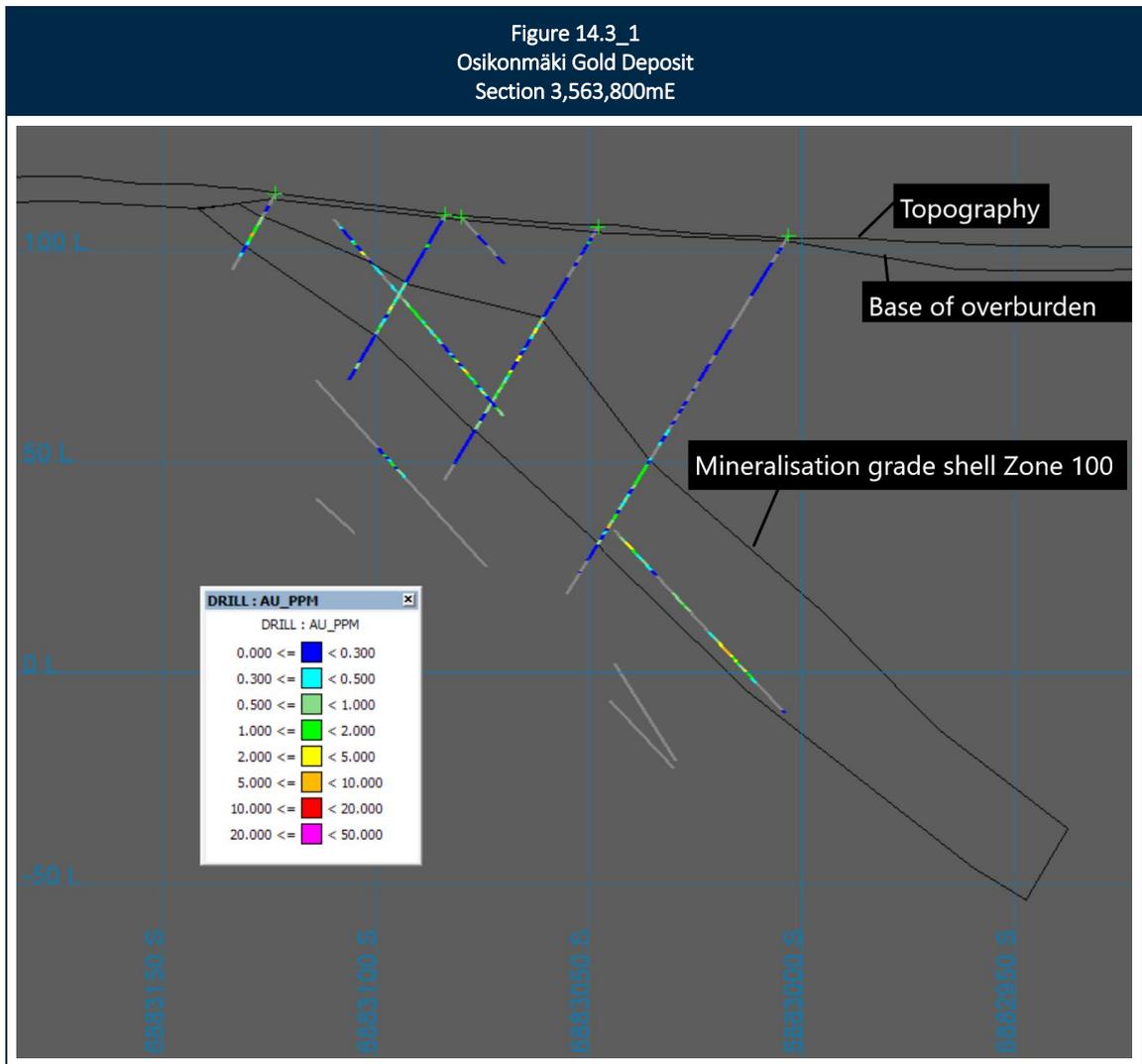
Mineralisation estimation domains were thus defined with further sub-division being differentiated on the basis structural position within the shear envelope and interpreted trend of grade continuity. A total of one main and three subordinate estimation domains have been defined (Table 14.3_1 and Figures 14.3_2 and 14.3_3).

Table 14.3_1
Osikonmäki Gold Deposit
Estimation Domain Description

Domain	Description	Volume m³	Area
100	Main domain, east part	3,480350	3,563,460mE to 3,564,420mE
200	Subordinate Domain, east part	115,335	3,564,285mE to 3,564,420mE
300	Subordinate Domain, east part	80,036	3,564,300mE to 3,564,450mE
400	Subordinate Domain, west part	286,623	3,561,760mE to 3,561,975mE

Figure 14.3_2
Osikonmäki Gold Deposit
Estimation Domains Plan View
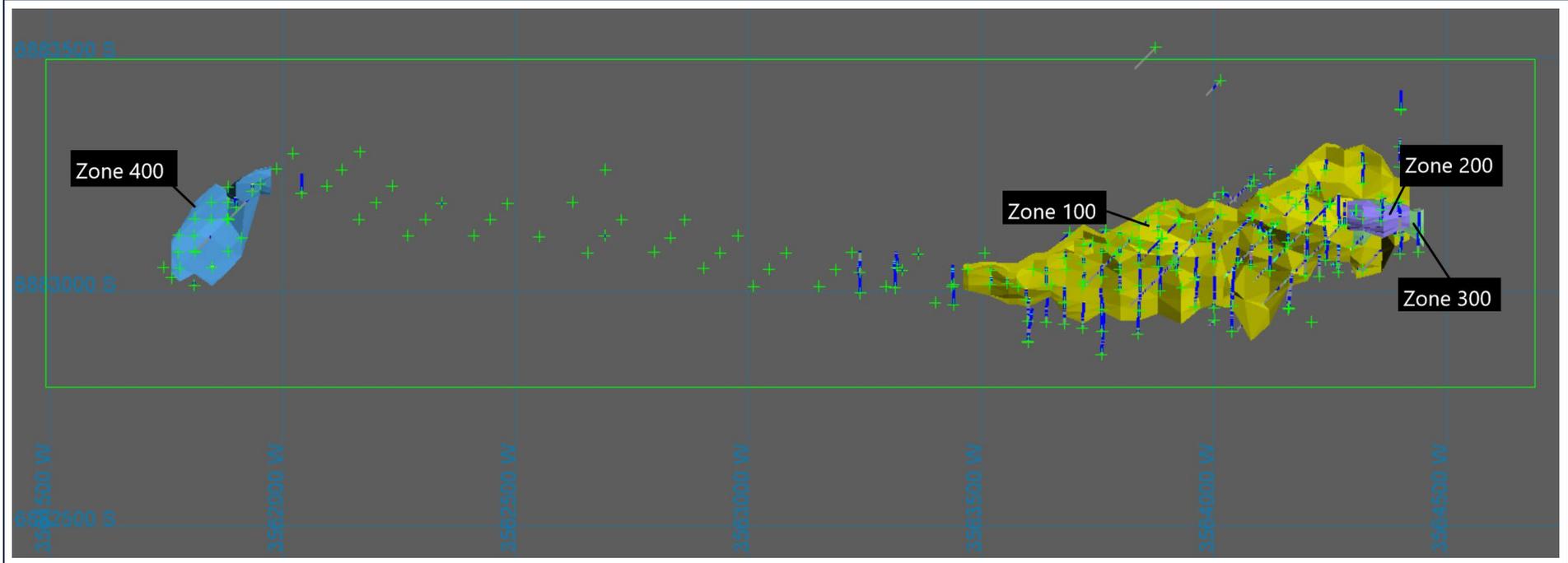
Figure 14.3_3
Osikonmäki Gold Deposit
Estimation Domains Isometric SE View
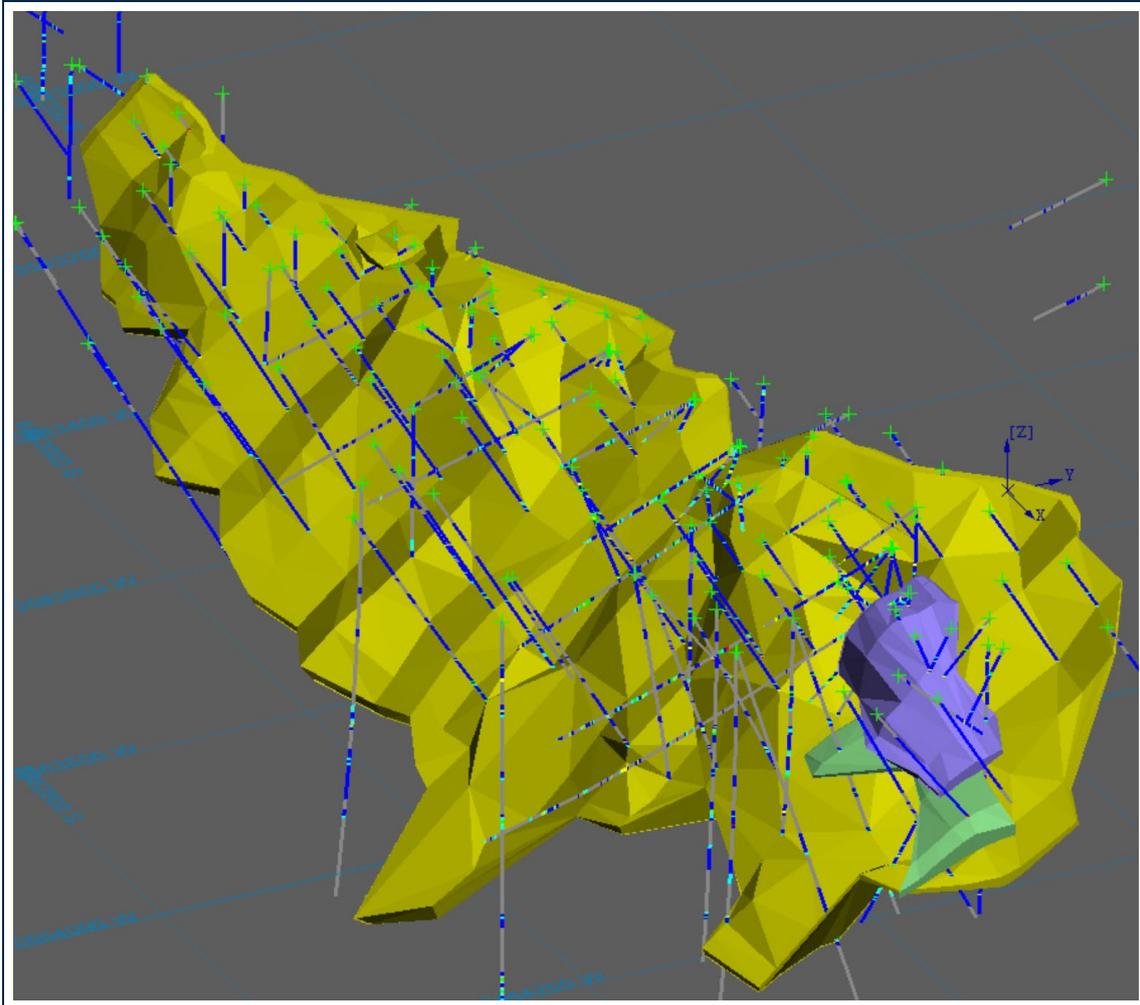
14.4 Data Flagging and Compositing

Drillhole samples were flagged with the relevant mineralisation wireframe and topographical surfaces. Coding was undertaken on the basis that if the individual sample centroid fell within the grade shell boundary it was coded as within the grade shell. Each domain has been assigned a unique numerical code to allow the application of hard boundary domaining if required during grade estimation.

The drillhole database coded within each mineralisation wireframe was then composited as a means of achieving a uniform sample support. It should be noted, however, that equalising sample length is not the only criteria for standardising sample support. Factors such as angle of intersection of the sampling to mineralisation, sample type and diameters, drilling conditions, recovery, sampling/sub-sampling practices and laboratory practices all affect the 'support' of a sample. Exploration/mining databases which contain multiple sample types and/or sources of data provide challenges in generating composite data with equalised sample support, and uniform support is frequently difficult to achieve.

With respect to previous comments regarding unsampled intervals (Section 14.2) and as the unsampled intervals have been deemed un-mineralised any unsampled interval encountered during the compositing process have been assigned a value 0f 0.001ppm Au. This may be seen as a spike in the lower tail of the histograms.

After consideration of relevant factors relating to geological setting and mining, including likely mining selectivity and bench/flitch height, a regular 2m run length (downhole) composite was selected as the most appropriate composite interval to equalise the sample support at Osikonmäki Gold deposit. Compositing was broken when the routine encountered a change in flagging (grade shell boundary) and composites with residual intervals of less than 2m were retained in the composite file.

14.5   Statistical Analysis

14.5.1   Summary Statistics

The composites flagged as described in the previous section were used for subsequent statistical, geostatistical and grade estimation investigations.

Summary descriptive statistics were generated for all domains (Table 14.5_1). The grade distributions are typical for gold deposits of this style and show a positive skew or near lognormal behaviour (Figure 14.5_1). The coefficient of variation (CV - calculated by dividing the standard deviation by the mean grade) is moderately high, consistent with the presence of high outlier grades that potentially require cutting (capping) for grade estimation.

Table 14.5_1 Osikonmäki Gold Deposit Summary Statistics for 2m Composites of Uncut Gold Grade (g/t)							
Domain	Count	Minimum	Maximum	Mean	Std. Dev.	Variance	CV
100	1619	0.001	34.950	1.235	2.130	4.536	1.725
200	133	0.001	32.486	2.623	5.037	25.368	1.920
300	30	0.065	8.132	1.936	2.250	5.063	1.162
400	100	0.001	14.650	1.395	2.355	5.545	1.687

14.5.2   High-Grade Outlier Analysis

MIK has been selected as the main method to estimate the gold grades for the Osikonmäki Gold deposit. The grade datasets for the various estimation domains are characterised by moderate CV values, indicating potential for high-grade values to contribute significantly to the mean grades reported for the various datasets.

The effects of the highest-grade composites on the mean grade and standard deviation of the gold dataset for each of the estimation domains have been investigated by compiling and reviewing statistical plots (histograms and probability plots). The resultant plots were reviewed together with probability plots of the sample populations and an upper cut for each dataset was chosen coinciding with a pronounced inflection or increase in the variance of the data. Composite data was also viewed in 3D to determine the clustering or otherwise of the highest grades observed in each domain to assess the appropriateness of the high-grade cut. Clustering of the highest grades in one or more areas may indicate that the grades do not require cutting.

Figure 14.5_1
Log Histograms of Uncut Gold Grade by Domain
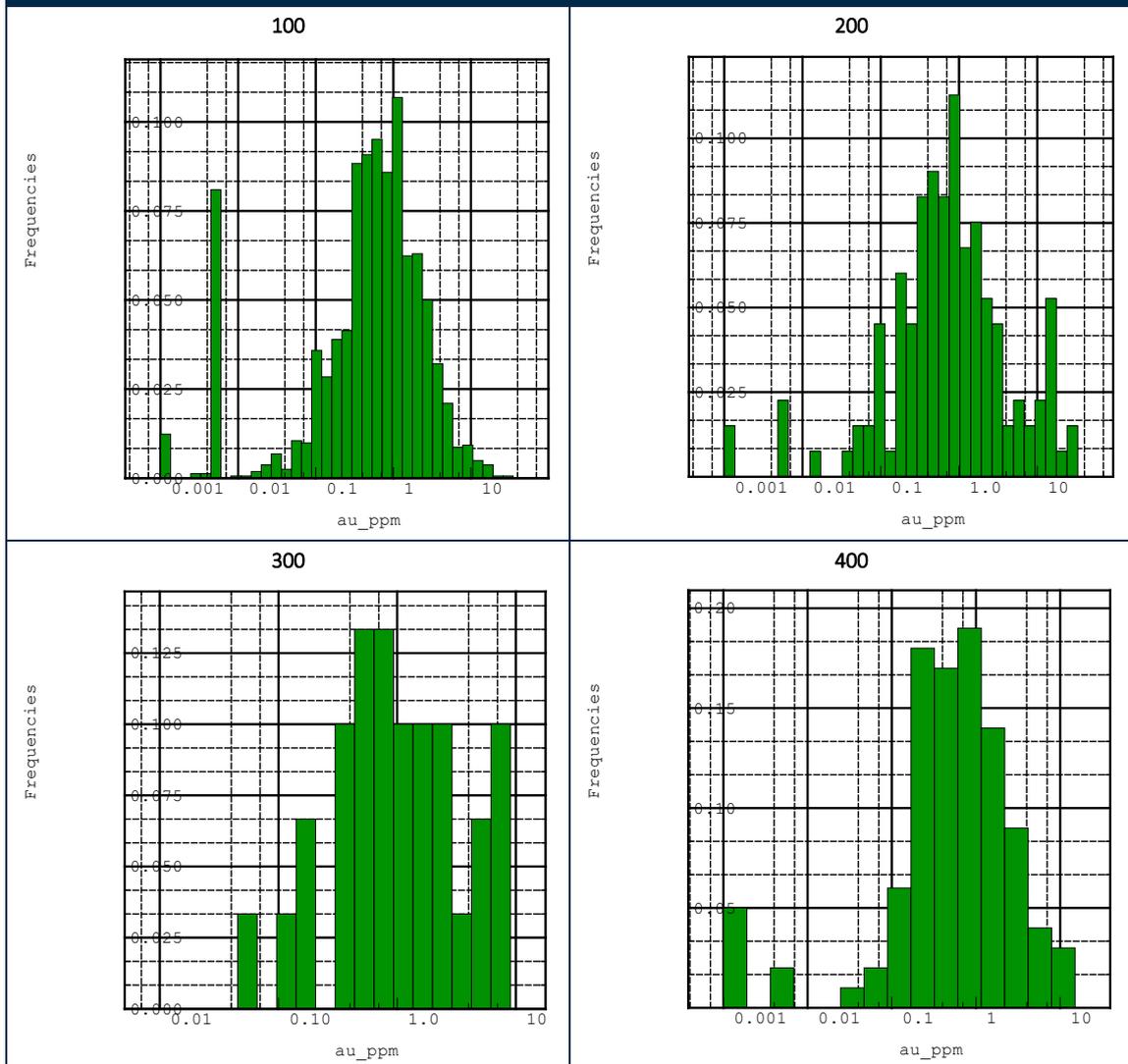
Upon review of the above statistical data it was determined that high grade cutting of the composite data was not required

It should be noted that while gold grades are not cut or capped for the purposes of MIK estimation the use of cut grades is often employed for variography and the change of support process. As MIK estimates are essentially a series of OK estimates applied to the binary transformation of a series of indicator cutoffs, high grade cutting will have no effect on the resultant MIK estimate unless the high-grade cut is lower than the chosen upper indicator cutoff and this scenario should normally not arise in the context of MIK estimation. A full description of the MIK estimation method with change of support is provided in Section 14.9.

14.5.3 Multiple Indicator Kriging Cutoffs and Indicator Class Statistics

Indicator Kriging cutoffs or indicator bins were selected for the Domain (Zone 100) to be estimated by MIK. Cutoffs were based upon population distributions and metal proportions above and below the mean composite value of the proposed cutoff bins. Conditional statistics for data in Domain 100 are listed in Table 14.5_2. A total of 17 cutoffs were applied. Top cuts have not been applied for the purposes of conditional statistics calculation.

<table>
<tr><td colspan="3">Table 14.5_2
Osikonmäki Gold Deposit
Indicator Class Statistics</td></tr>
<tr><td colspan="3">Domain Group</td></tr>
<tr><td colspan="3">High Grade Group</td></tr>
<tr><td>Grade Threshold
(Au g/t)</td><td>Probability
Threshold</td><td>Class Mean
(Au g/t)</td></tr>
<tr><td>0.25</td><td>0.247</td><td>0.082</td></tr>
<tr><td>0.4</td><td>0.366</td><td>0.313</td></tr>
<tr><td>0.55</td><td>0.458</td><td>0.458</td></tr>
<tr><td>0.7</td><td>0.537</td><td>0.616</td></tr>
<tr><td>0.85</td><td>0.596</td><td>0.766</td></tr>
<tr><td>1.00</td><td>0.644</td><td>0.903</td></tr>
<tr><td>1.10</td><td>0.684</td><td>1.034</td></tr>
<tr><td>1.25</td><td>0.723</td><td>1.159</td></tr>
<tr><td>1.45</td><td>0.764</td><td>1.323</td></tr>
<tr><td>1.75</td><td>0.803</td><td>1.585</td></tr>
<tr><td>2.00</td><td>0.838</td><td>1.869</td></tr>
<tr><td>2.35</td><td>0.868</td><td>2.156</td></tr>
<tr><td>2.75</td><td>0.895</td><td>2.549</td></tr>
<tr><td>3.25</td><td>0.921</td><td>3.007</td></tr>
<tr><td>3.90</td><td>0.943</td><td>3.559</td></tr>
<tr><td>5.0</td><td>0.963</td><td>4.448</td></tr>
<tr><td>9.0</td><td>0.985</td><td>6.338</td></tr>
<tr><td>Max</td><td>Max</td><td>13.860</td></tr>
</table>

14.6 Variography

14.6.1 Introduction

Variography is used to describe the spatial variability or correlation of an attribute (gold, silver etc.). The spatial variability is traditionally measured by means of a variogram, which is generated by determining the averaged squared difference of data points at a nominated distance (h), or lag (Srivastava and Isaacs, 1989). The averaged squared difference (variogram or γ(h)) for each lag distance is plotted on a bivariate plot, where the X-axis is the lag distance and the Y-axis represents the average squared differences (γ(h)) for the nominated lag distance.

Several types of variogram calculations are employed to determine the directions of the continuity of the mineralisation.

Traditional variograms are calculated from the raw assay values:

▪ Log-transformed variography involves a logarithmic transformation of the assay data.

▪ Gaussian variograms are based on the results after declustering and a transformation to a Normal distribution.

▪ Pairwise-relative variograms attempt to 'normalise' the variogram by dividing the variogram value for each pair by their squared mean value.

▪ Correlograms are 'standardised' by the variance calculated from the sample values that contribute to each lag.

Fan variography involves the graphical representation of spatial trends by calculating a range of variograms in a selected plane and contouring the variogram values. The result is a contour map of the grade continuity within the domain.

14.6.2 Osikonmäki Variography

The variography was calculated and modelled in the geostatistical software, Isatis. The rotations are tabulated as dip and dip direction of major, semi-major and minor axes of continuity. In the case of Domains 200 to 400, the calculated experimental variograms were of poor quality therefore the modelled variography for Domain 100 was adopted for the station of these domains. Modelled variograms were generally shown to have moderate structure and were used throughout the MIK estimation and the change of support process.

Grade and indicator variography was generated to enable grade estimation via MIK and change of support analysis to be completed. In addition, Gaussian variograms were also examined as part of the change of support process. Indicator thresholds for Domain 100 had variograms modelled with every third variogram typically modelled. Variograms not modelled have had their parameters interpolated based on the bounding modelled variograms.

Interpreted anisotropy directions correspond well with the modelled geology and overall geometry of the interpreted domains. Grade variography has been based on the back-transformed Gaussian variograms. A common feature of the grade variography is the moderately short ranges, especially for the first modelled structure, and the dominance of the overall variance by the nugget and the first sill. An ESE plunge to the data has also been modelled and this feature can also be seen in the data and structurally inferred.

Grade variography and indicator variography as modelled for MIK and OK grade estimation and change of support analysis is presented in Table 14.6_1 and Figure 14.6_1.

| Table 14.6_1 |
| Osikonmäki Gold Deposit |
| Domain 100 Grade Variogram and Indicator Variogram Models Au g/t |

Grade Variable or Indicator Threshold	Nugget (C0)	Rotation (dip→dip dir)			Structure 1				Structure 2			
		Major	Semi Major	Minor	Relative Sill 1 (C1)	Range (m)			Relative Sill 2 (C2)	Range (m)		
						Major	Semi Major	Minor		Major	Semi Major	Minor
Au g/t	1.75	24→103	-29→28	-50→160	1.75	18	13	2	1.00	85	54	18
0.25[1]	0.0670	24→103	-29→28	-50→160	0.0753	40	30	6	0.0437	120	80	12
0.40[1]	0.0858	24→103	-29→28	-50→160	0.0928	40	30	6	0.0534	120	80	12
0.55	0.1000	24→103	-29→28	-50→160	0.0950	40	30	6	0.0530	120	80	10
0.70[2]	0.1013	24→103	-29→28	-50→160	0.0944	40	30	6	0.0523	120	80	10
0.85[2]	0.0997	24→103	-29→28	-50→160	0.0911	40	30	6	0.0501	115	80	10
1.00	0.0960	24→103	-29→28	-50→160	0.0860	40	30	6	0.0470	110	80	10
1.10[3]	0.0916	24→103	-29→28	-50→160	0.0809	40	30	6	0.0436	110	80	10
1.25[3]	0.0857	24→103	-29→28	-50→160	0.0747	40	30	5	0.0396	105	80	9
1.45	0.0780	24→103	-29→28	-50→160	0.0670	40	30	5	0.0350	100	70	9
1.75[4]	0.0687	24→103	-29→28	-50→160	0.0586	40	30	5	0.0306	100	70	9
2.00[4]	0.0594	24→103	-29→28	-50→160	0.0503	40	30	4	0.0263	100	70	8
2.35	0.0500	24→103	-29→28	-50→160	0.0420	40	30	4	0.0220	100	70	7
2.75[5]	0.0421	24→103	-29→28	-50→160	0.0345	40	30	4	0.0174	100	70	6
3.25[5]	0.0334	24→103	-29→28	-50→160	0.0267	35	30	4	0.0129	85	60	6
3.90	0.0250	24→103	-29→28	-50→160	0.0195	30	25	4	0.0090	70	50	6
5.00[6]	0.0187	24→103	-29→28	-50→160	0.0122	30	25	4	0.0050	70	50	5
9.00[6]	0.0081	24→103	-29→28	-50→160	0.0050	30	25	3	0.0020	70	50	5

Note:
1) Assumed model based on 0.55 Au g/t variogram model
2) Assumed model based on 0.55 Au g/t and 1.0 Au g/t variogram models
3) Assumed model based on 1.0 Au g/t and 1.45 Au g/t variogram models
4) Assumed model based on 1.45 Au g/t and 2.35 Au g/t variogram model
5) Assumed model based on 2.35 Au g/t and 3.9 Au g/t variogram model
6) Assumed model based on 3.9 Au g/t variogram model

Figure 14.6_1
Osikonmäki Gold Deposit
Domain 100 - Grade Variogram Gaussian Back-Transformed
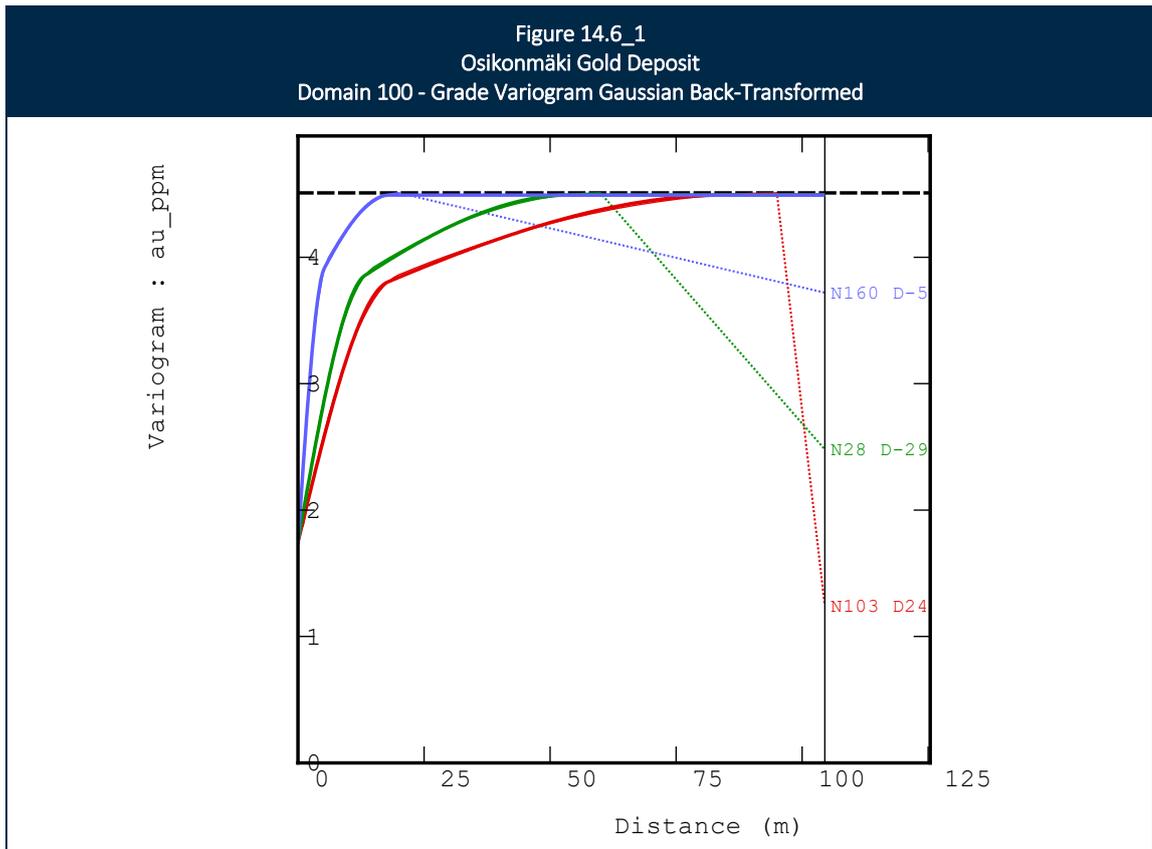
14.7 Block Modelling

A 3-D block model was created in the Finnish Grid coordinate system (KKJ) using Vulcan mining software. The parent block size was selected on the basis of the average drill spacing together with consideration of potential mining parameters. A parent cell size of 20mE by 10mN by 10mRL which was sub-blocked down to 10mE by 5mN by 5mRL (to ensure adequate volume representation). The models covered all the interpreted mineralisation zones and included suitable additional waste material to allow later mining engineering studies. Block coding was completed on the basis of the block centroid, wherein a centroid falling within any wireframe was coded with the wireframe solid attribute. The block model is unrotated.

The main block model parameters are summarised below in Tables 14.7_1. Variables were coded into the block models to enable multiple indicator kriging and ordinary kriging estimation and subsequent MIK change of support and grade tonnage reporting. A visual review of the wireframe solids and the block model indicated correct flagging of the block model. Additionally, a check was made of coded volume versus wireframe volume which confirmed the above.

| Table 14.7_1 |
| Osikonmäki Gold Deposit |
| Block Model Parameters |

	Northing (Y)	Easting (X)	RL (Z)
Min. Coordinates	6,882,795	3,561,490	-340
Extent	700	3,200	510
Block size (m)	10.0	20.0	10.0
Sub Block size (m)	5	10	5
Rotation (° around axis)	0°	0°	0°

14.8   Bulk Density Data

A dry bulk density database has been supplied containing a total of 3,395 data. The database relates to Belvedere drilling only and descriptive statistics are presented in Table 14.8_1. Density readings relate to the bedrock only.

| Table 14.8_1 |
| Osikonmäki Gold Deposit |
| Density Statistics |

Company	Count	Minimum	Maximum	Mean	Std. Dev.	Variance	CV
Belvedere	3,373	2.32	3.04	2.69	0.05	0.002	0.02

Dry bulk densities have been calculated using the weight in water method. Density readings have been taken on whole drill core and are distributed across all areas of the deposit. Bulk densities in the mineralised rock does not appreciably differ from un-mineralised rock. A bulk density of 2.7t/m³ has therefore been applied as a tonnage factor to allow for appropriate grade tonnage reporting. In the case of the overburden, a bulk density of 2.0t/m³ has been assumed although there are no direct measurements.

14.9   Grade Estimation

14.9.1   Introduction

Multiple Indicator Kriging (MIK) was applied to grade estimation at the Osikonmäki Gold Deposit within Domain 100. The minor domains, Domains 200 to 400, were estimated via ordinary kriging (OK). MIK grade estimation and geostatistical change of support parameters were developed in Isatis geostatistical software while OK grade estimation was completed in Vulcan mining software. MIK is considered a robust estimation methodology for grade estimates for gold deposits such as Osikonmäki where high levels of short scale variability are present. MIK grade estimation with change of support has been applied to produce 'recoverable' gold estimates targeting a selective mining unit (SMU) of 10mE x 5mN x 5mRL.

14.9.2   The Multiple Indicator Kriging Method

The MIK technique is implemented by completing a series of Ordinary Kriging ("OK") estimates of binary transformed data. A composite sample, which is equal to or above a nominated cutoff or threshold, is assigned a value of 1, with those below the nominated indicator threshold being assigned a value of 0. The indicator estimates, with a range between 0 and 1, represent the probability the point will exceed the indicator cutoff grade. The probability of the points exceeding a cutoff can also be considered broadly equivalent to the proportion of a nominated block that will exceed the nominated cutoff grade.

The estimation of a complete series of indicator cutoffs allows the reconstitution of the local histogram or conditional cumulative distribution function ("ccdf") for the estimated point. Based on the ccdf, local or block properties, such as the block mean and proportion (tonnes) above or below a nominated cutoff grade can be investigated.

Post MIK Processing - E-Type Estimates

The E-type estimate provides an estimate for the grade of the total block or bulk-mining scenario. This is achieved by discretising the calculated ccdf for each block into a nominated number of intervals and interpolating between the given points with a selected function (e.g. the linear, power or hyperbolic model) or by applying intra-class mean grades. The sum of all these weighted interpolated points or mean grades enables an average whole block grade to be determined.

The following example shows the determination of an E-type estimate for a block containing three indicator cutoffs.

The indicator cutoffs and associated probabilities calculated are shown in Table 14.9_1.

Table 14.9_1 Osikonmäki Gold Deposit Indicator Cutoff and Probability		
Indicator	**Cutoff Grade Au g/t**	**Indicator Probability (cumulative)**
minimum grade *	0	0.00 **
indicator 1	1	0.40
indicator 2	2	0.65
indicator 3	3	0.85
maximum grade *	4	1.00 **

Note: *   Cutoff grades determined by the user.
          **   Indicator probability is assumed at the minimum and maximum cutoff.

The whole block grade can now be determined in this block with the following parameters used for the purposes of the interpolation:

- Number of discretisation intervals: 4.

- Linear extrapolation between all points (median grade between nominated cutoffs).

The worked example is then calculated with the following steps:

- Interval 1 (0-1g/t Au)   median grade x probability/proportion attributed to the interval (0.5g/t Au x 0.40 = 0.200).

- Interval 2 (1 - 2g/t Au)   median grade x proportion (1.5g/t Au x 0.25 = 0.375).

- Interval 3 (2 - 3g/t Au)   median grade x proportion (2.5g/t Au x 0.20 = 0.500).

- Interval 4 (3 - 4g/t Au)   median grade x proportion (3.5g/t Au x 0.15 = 0.525).

- Calculate total grade   average all calculated intervals ((0.2+0.375+0.500+0.525)/1) = 1.60g/t Au.

It is also possible from this example to calculate the proportion and grade above a nominated cutoff (e.g. 2g/t - at sample support or complete selectivity). The following steps would be undertaken to calculate the tonnes and grade at sample selectivity using a 2g/t cutoff:

- Interval 3 (2 - 3g/t Au)   median grade x proportion (2.5g/t Au x 0.20 = 0.500).

- Interval 4 (3 - 4g/t Au)   median grade x proportion (3.5g/t Au x 0.15 = 0.525).

- Calculate total grade   average all calculated intervals ((0.500+0.525)/0.35) = 2.93g/t Au with 0.35% of the block above the cutoff.

The effect of using a non-linear model to interpolate between cutoffs is to shift the grade weighting associated with that cutoff away from the median. The intra-class means based on the cut composite data have been used to reconstitute the ccdf and produce block statistics.

It is noted, however, that the calculation of the E-type estimate and complete selectivity often does not allow mine planning to the level of selectivity which is proposed for production. To achieve an estimate which reflects the levels of mining selectivity envisaged, a selective mining unit ("SMU") correction is often applied to the calculated ccdf.

Support Correction (Selective Mining Unit Estimation)

A range of techniques are known to produce a support correction and therefore allow for selective mining unit emulation. The common features of the support correction are:

- Maintenance of the mean grade of the histogram (E-type mean).

- Adjustment of the histogram variance by a variance adjustment factor (the 'f' factor).

The variance adjustment factor, used to reduce the histogram or ccdf variance, can be calculated using the variogram model. The variance adjustment factor is often modified to account for the likely grade control approach or 'information effect'.

In simplest terms, the variance adjustment factor takes into account the known relationship derived from the dispersion variance.

Total variance = variance of samples within blocks + variance between blocks.

The variance adjustment factor is calculated as the ratio of the variance between the blocks and the variance of the samples within the blocks, with a small ratio (e.g. 0.10) indicating a large adjustment of the ccdf variance and large ratio (e.g. 0.80) representing a small shift in the ccdf.

Two simple support corrections that are available include the Affine and Indirect Lognormal correction, which are both based on the permanence of distribution. The discrete Gaussian model is often applied to global change of support studies and has been generated on the composite dataset as a comparison. The indirect lognormal correction was applied to the MIK grade estimates.

Indirect Lognormal Correction

The indirect lognormal correction can be implemented by adjusting the quantiles (indicator cutoffs) of the ccdf with the variance adjustment factor so that the adjusted ccdf represents the statistical characteristics of the block volume of interest.

This is implemented with the following formula:

$$q' = a \times q^b$$

q = quantile of distribution.

q' = quantile of the variance-reduced distribution.

where the coefficients a and b, are given by the following formula:

$$a = \sqrt{\frac{m}{f \cdot CV^2 + 1}} \left[\sqrt{\frac{CV^2 + 1}{M}} \right]$$

$$b = \sqrt{\frac{\ln(f \cdot CV^2 + 1)}{\ln(CV^2 + 1)}}$$

m = mean of distribution.
f = variance adjustment factor .
CV = coefficient of variation.

At the completion of the quantile adjustments, grades and tonnages (probabilities are then considered a pseudo-tonnage proportion of the blocks) at a nominated cutoff grade can be calculated using the methodology described above (E-type). The indirect lognormal correction, as applied to Osikonmäki, is the best suited of the common adjustments applied to MIK to produce selective mining estimates for positively skewed distributions.

14.9.3 Multiple Indicator Kriging Parameters

MIK estimates were completed using the indicator variogram models (Section 14.6), and a set of ancillary parameters controlling the source and selection of composite data. The sample search parameters were defined based on the variography and the data spacing, and a series of sample search tests performed in Isatis geostatistical software. A total of 17 indicator thresholds were estimated for Domain 100 (see Table 14.5_1).

OK estimates were completed on the minor estimation domains using the grade variogram models (Section 14.6), and a set of ancillary parameters controlling the source and selection of composite data. The sample search parameters were defined based on the variography and the data spacing, and a series of sample search tests performed in Isatis geostatistical software.

The sample search parameters for the MIK estimations are provided in Table 14.9_2. Hard domain boundaries was used for the estimation throughout. A two-pass estimation strategy was applied, implementing a progressively expanded and less restrictive sample search to the successive estimation pass, and only considering blocks not previously assigned an estimate. Parent cell estimations (20mE by 10mN by 10mRL) were applied throughout and discretisation was applied on the basis of 3X by 3Y by 3RL for 27 discretisation points per block.

Table 14.9_2 Osikonmäki Gold Deposit MIK Sample Search Criteria										
Domain	Pass	Sample Search Orientation (dip/dip direction°)			Sample Search Distance (m)			Numbers of 2m Composites			% Blocks Estimated
		Major	Semi Major	Minor	Major	Semi Major	Minor	Min.	Max.	Max Per Drillhole	
100	Pass 1	24→103	-29→28	-50→160	100	70	20	24	32	6	90
	Pass 2	24→103	-29→28	-50→160	200	140	40	24	32	-	10

14.9.4 Ordinary Kriging Parameters

The sample search parameters for the OK estimations are provided in Table 14.9_3. Hard domain boundaries was used for the estimation throughout. Only one estimation pass was considered with a search neighbourhood of sufficient parameters to enable estimation of all required blocks. Estimations were on the basis of SMU block dimensions (10mE by 5mN by 5mRL) and discretisation was applied on the basis of 2X by 2Y by 2RL for 8 discretisation points per block.

Table 14.9_3 Osikonmäki Gold Deposit OK Sample Search Criteria									
Domain	Sample Search Orientation (dip/dip direction°)			Sample Search Distance (m)			Numbers of 2m Composites		
	Major	Semi Major	Minor	Major	Semi Major	Minor	Min.	Max.	Max per DH
200	30→90	26→196	-49→319	100	50	25	6	6	3
300	7→90	25→183	-64→345	150	75	40	6	6	3
400	0→40	45→130	45→310	150	75	40	6	6	3

14.9.5 Change of Support

Applying the modelled variography, variance adjustment factors were calculated for to emulate a 10mE x 5mN x 5mRL selective mining unit ("SMU") via the indirect lognormal change of support. The intra-class composite mean grades (Table 14.5_1) were used in calculating the whole block and SMU grades. The change of support study also included the calculation of the theoretical global change of support via the discrete Gaussian change of support model.

An 'information effect' factor is commonly applied to the originally derived panel-to-block variance ratios to determine the final variance adjustment ratio. The goal of incorporating information effect is to calculate results taking into account that mining takes place based on grade control information. There will still be a quantifiable error associated with this data and it is this error we want to incorporate. This is achieved in practice by running a test kriging estimation of an SMU using grade control data (the results required to incorporate this option in the change of support do not depend on the assay data, so the grade control data can be hypothetical).

The incorporation of the information effect is commonly found to be negligible, however can have a significant effect in some cases. In this case, the information effect factor was found to have a minor effect and has been incorporated in the calculation.

The variance adjustment ratios as applied to Domain 100 was 0.2.

14.9.6 Grade Localisation

MIK grade estimates are generated in large blocks or panels (in the case of Osikonmäki, 20mE x 10mN x 10mRL) and are inherently not intuitive to review. Post processing of these MIK estimates aims to simplify the presentation by producing a single SMU dimension block grade where the distribution of the grades in the panel matches that of the distribution in the SMU's. The MIK panel grades have been localised to SMU dimension blocks in Isatis software. The SMU dimension was 10mE x 5mN x 5mRL. Validation of the results indicates a near identical distribution and the resultant model has been accepted. A typical section is presented below (Figure 14.9_1).

Figure 14.9_1
Sectional View 3,563,840mE Displaying Localised Au Grades
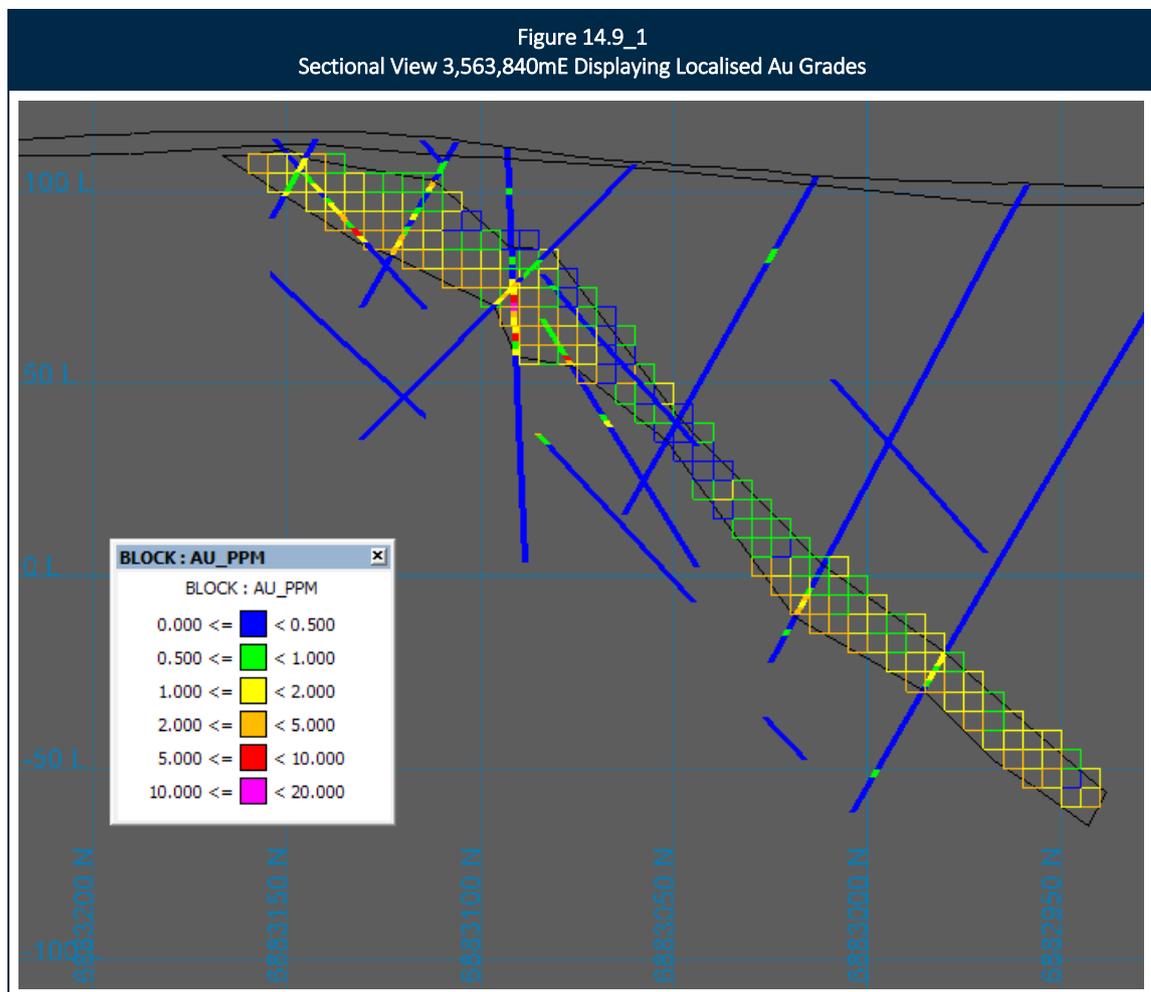
14.9.7 Estimate Validation

All relevant statistical information was recorded to enable validation and review of the MIK estimates. The recorded information included:

- Number of samples used per block estimate.

- Number of drillholes from which samples selected.

- Average distance to samples per block estimate and distance to nearest sample.

- Estimation flag to determine in which estimation pass a block was estimated.

- Number of drillholes from which composite data were used to complete the block estimate.

The estimates were reviewed visually and statistically prior to being accepted. The review included the following activities:

- Comparison of the E-type estimate versus the mean of the composite dataset, including weighting where appropriate to account for data clustering.

- Comparison of the reconstituted cumulative conditional distribution functions of the estimated blocks (indicator kriging) versus the input composite data (Figure 14.9_2).

- Visual checks of cross sections, long sections, and plans.

**Figure 14.9_2
CCDF Validation Domain 100**
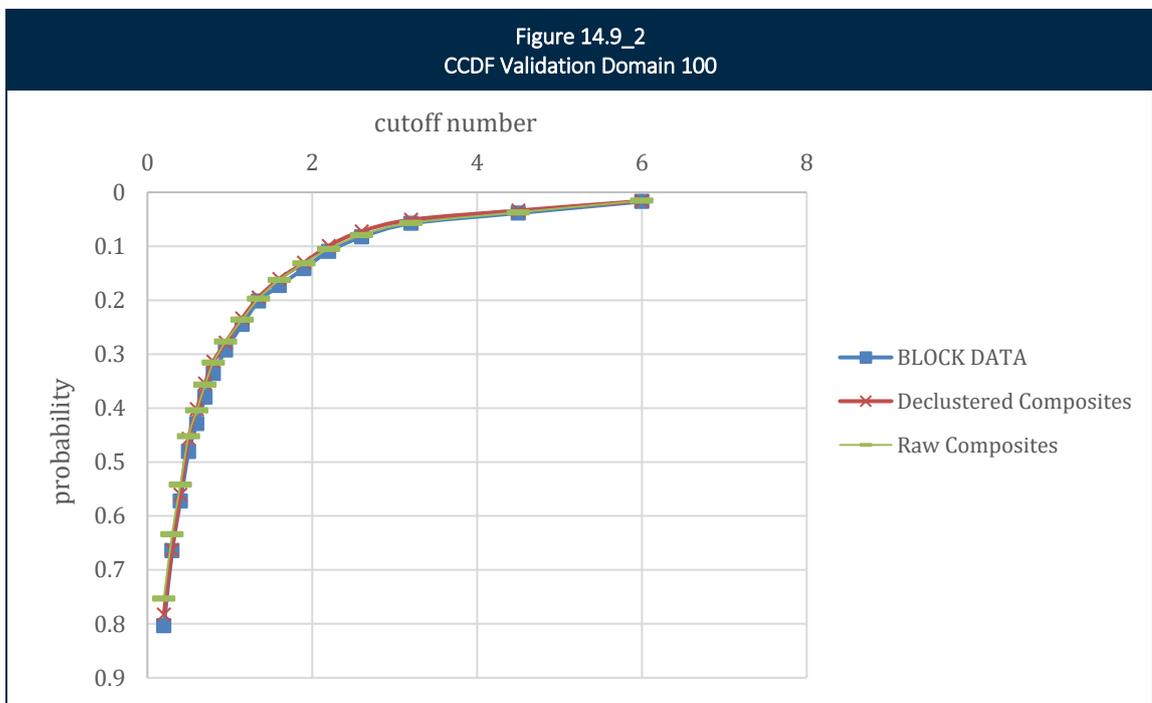
Alternative estimates were also completed to test the sensitivity of the reported model to the selected MIK interpolation parameters. An insignificant amount of variation in overall grade was noted in the alternate estimations.

Validation of localised block Au grades has been undertaken on a per domain basis by comparing the block mean grades with the relevant composite mean grades (Table 14.9_4).

For the all grade domains, a reasonable correlation can be drawn with all domains falling within the range of approximately ±7%. Differences in grade of this order can be considered normal and are explained by the data clustering effect which arises when high- or low-grade areas have a higher density of drillholes.

Table 14.9_4				
Osikonmäki Gold Deposit				
Comparison of Block Grades with Composite Mean Grades – All Data Used				
	Zone	All Composites	Block Model Grades	% Diff Block Model versus Composites
MIK Domain	100	1.235	1.289	+4%
OK Domain	200	2.623	2.745	+5%
	300	1.936	1.807	-7%
	400	1.395	1.297	-7%

14.9.8   Resource Classification

The resource categorisation was based on the robustness of the various data sources available, including:

- Geological knowledge and interpretation.

- Variogram models and the ranges of the first structure in multi-structure models.

- Drilling density and orientation.

- Estimation quality statistics.

The resource estimates for the Osikonmäki Gold Deposit have been classified as Inferred Mineral Resources based on the confidence levels of the key criteria as presented in Table 14.9_5.

Table 14.9_5		
Osikonmäki Gold Deposit		
Confidence Levels by Key Criteria		
Items	Discussion	Confidence
Drilling Techniques	Diamond drilling Industry Standard approach.	High
Logging	Standard nomenclature has been adopted but not used in entire database. Historical database dating back to 1990's and before.	Moderate
Drill Sample Recovery	Recoveries are not recorded in entire database but diamond core recoveries acceptable.	Moderate
Sub-sampling Techniques and Sample Preparation	Diamond sampling conducted by industry standard techniques.	Moderate/High
Quality of Assay Data	Appropriate quality control procedures only available for work completed by Belvedere. They were reviewed on site and considered to be of industry standard.	Moderate/High
Verification of Sampling and Assaying	Sampling and assaying procedures have been assessed and are considered of appropriate industry standards.	Moderate
Location of Sampling Points	Survey of all collars conducted with accurate survey equipment. Investigation of downhole survey indicates appropriate behaviours.	Moderate/High
Data Density and Distribution	Majority of regions defined on a notional 40mE x 25mN drill spacing.	Moderate/high
Audits or Reviews	Data collection assessed during site review.	N/A
Database Integrity	Data base is largely legacy with numerous campaigns.	Moderate
Geological Interpretation	Mineralisation controls are moderately well understood. The mineralisation constraints are robust but relatively broad and therefore of moderate confidence.	Moderate
Estimation and Modelling Techniques	Multiple Indicator Kriging is considered to be appropriate given the geological setting and grade distribution. Minor domains are estimated by OK.	High
Cutoff Grades	MIK is independent of cutoff grade although the mineralisation constraints were based on a notional 0.3g/t Au lower cutoff grade. A 1.5g/t lower cutoff grade is considered appropriate for reporting.	Moderate/High
Mining Factors or Assumptions	A 10mE x 5mN x 5mRL SMU emulated for gold. A combination of open pit mining assumed. Change of support for Inferred component has higher degree of uncertainty.	Moderate
Metallurgical Factors or Assumptions	Not applied or available.	N/A
Tonnage Factors (In-situ Bulk Densities)	Sufficient data exists to enable high confidence in the applied density values.	High

14.10 Resource Reporting

The summary total resource for the Osikonmäki Gold Project is provided in Table 14.10_1 below. The preferred lower cutoff grade for reporting is 1.5g/t Au. In view of the nature and style of the mineralisation and potential mining approach and method, this is considered an appropriate cutoff grade. It should be noted that mineral resources that are not mineral reserves do not have demonstrated economic viability.

Table 14.10_1 Osikonmäki Gold Deposit Mineral Resource Report - Summary Grade Tonnage Report				
Cutoff (g/t Au)	Grade (g/t Au)	Tonnage	Au oz	Au kg
1.5	2.7	3,230,000	276,000	8,580

Note: Appropriate rounding has been applied.

A cutoff of 1.5g/t Au was selected for the reported estimate based on historical breakeven operating costs for other underground gold mines in Finland. Other assumptions are based on the potential for combined open pit and underground extraction, recoveries of 85-90% and a gold price of EUR1200/oz. Further exploration to increase the confidence level of the resources is required for more detailed economic evaluation.

The effective date of this Mineral Resource is 9th November 2018. It is not anticipated that this Mineral Resource estimate will be materially affected, to any extent, by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors.

14.11 Comparison to Previous Resource

Belvedere commissioned Golder Associates (UK) Ltd to undertake a Mineral Resource Estimate for the Osikonmäki East deposit in October of 2011 as described in Section 6.5. Golder Associate's resource estimate is summarised in Table 14.11_1.

Table 14.11_1 Osikonmäki Gold Deposit Golders Resource Estimate 2011					
Year	Source	Cutoff Au (g/t)	Classification Reported	Tonnes (kt))	Au (g/t)
2011	Golders	0.5	Indicated	1,296	1.70
		0.5	Inferred	3,542	2.09

The current reported Inferred Mineral Resource (Table 14.1_1) has an overall lower category of geological confidence, lower tonnes and a higher grade (related to cutoff). The previous resource was predicated on open pit mining only and therefore a lower reporting cutoff grade was considered appropriate. By the nature of the primary estimation method of MIK and mineralisation interpretation, some dilution has also been incorporated in the current grade estimates. The lower level of geological confidence is related to the potential mining methods being envisioned; the combination of open pit and underground mining requiring a greater degree of confidence in the geological continuity than open pit alone.

15. MINERAL RESERVE ESTIMATES

This section is not applicable to this Report.

16. MINING METHODS

This section is not applicable to this Report.

17. RECOVERY METHODS

This section is not applicable to this Report.

18.   PROJECT INFRASTRUCTURE

This section is not applicable to this Report.

19.   MARKET STUDIES AND CONTRACTS

This section is not applicable to this Report.

20. ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

BR Gold is not aware of any environmental liabilities apart from standard requirements for damage compensation to landholders resulting from any exploration work. No permits in addition to the exploration permit are required to perform exploration activities.

There are no conservation areas within the claim areas and no known protected habitats or species present within the claim areas. There are surface water courses within the claim and claim application areas. The rivulet Ruuvilanjoki flows into the lake Putkilahti, which is part of Natura 2000 area of Putkilahti – Ruskeanperä.

There is insufficient baseline data about the natural environment and the surface water courses available to consider potential implications for further project stages such as the acquiring of the mining concession.

20.1 Applicable Codes

20.1.1 Mining Code

Mining and exploration projects in Finland are subject to the Finland Mining Act (621/2011). The General Provisions of this act are described as follows

The objective of this Act is to promote mining and organise the use of areas required for it, and exploration, in a socially, economically, and ecologically sustainable manner. In order to fulfil the purpose of the Act, the securing of public and private interests is required, with particular attention to:

1) *the preconditions for engaging in mining activity;*

2) *the legal status of landowners and private parties sustaining damage; and*

3) *the impacts of activities on the environment and land use, and the economic use of natural resources.*

A further objective of the Act is to ensure the municipalities' opportunities to influence decision-making, and the opportunities of individuals to influence decision-making involving them and their living environment. Furthermore, an objective of the Act is to promote the safety of mines and to prevent, decrease, and avert any inconvenience and damage incurred in the activities referred to in this Act, and to ensure liability for damages for the party causing the inconvenience or damage.

20.1.2 Environmental Code

The Mining Act (621/2011) also refers to other legislation for "*decisions on permit issues or other matters hereunder and other activities in accordance with this Act shall comply with, inter alia, the provisions of the Nature Conservation Act (1096/1996), the Environmental Protection Act (86/2000), the Act on the Protection of Wilderness Reserves (62/1991), the Land Use and Building Act (132/1999), the Water Act (264/1961), the Reindeer Husbandry Act (848/1990), the Radiation Act (592/1991), the Nuclear Energy Act (990/1987), the Antiquities Act (295/1963), the Off-Road Traffic Act (1710/1995) and the Dam Safety Act (494/2009)*".

20.1.3 Regulations

Regulations are specified for exploration (Section 51) and mining (Section 52) permits in the Mining Act (621/2011).

Section 51 - Regulations to be included in an exploration permit.

The exploration permit shall specify provisions for the location and borders of the exploration area. The exploration permit shall include the necessary provisions for securing public and private interests concerning the following:

1) *the times and methods of exploration surveys and the equipment and constructions related to exploration;*

2) *measures to diminish harm caused to reindeer herding in a special reindeer herding area;*

3) *wording to ensure that activity under the permit will not endanger the status of the Sami as an indigenous people in the Sami Homeland, or the rights of the Skolts in accordance with the Skolt Act in the Skolt area;*

4) *obligation to report about exploration activities and results;*

5) *post-mining measures and the final deadline for submission of notification concerning these measures;*

6) *the waste management plan for extractive waste and compliance therewith;*

7) *the obligation to report on the exploration work to the appropriate authority overseeing public interests within its line of duty;*

8) *the schedule for decreasing the size of the exploration area;*

9) *collateral in accordance with Chapter 10;*

10) *other terms concerning exploration and use of the exploration area in order to ensure that the activity does not result in any consequence prohibited by this Act 16; and*

11) *other specifications that are necessary in view of public and private interests and pertaining to the implementation of the conditions of the permit.*

Section 52 - Regulations to be included in a mining permit.

A mining permit shall give provisions for the location and borders of the mining area to be formed and the auxiliary area to the mine, taking the provisions laid down in sections 19 and 47, and the content of the rights of use and other special rights pertaining to the auxiliary area to the mine, into consideration. However, the permit authority may implement such changes in the location and borders of the mining area or auxiliary area to a mine presented in the application as are necessary in consideration of the provisions laid down in this Act. The mining permit shall specify a term within which the mining permit holder shall engage in mining activity or other such preparatory activity that indicates that the permit holder is seriously aiming to initiate actual mining operations. The time limit may be, at maximum, 10 years after the permit becomes legally valid. The mining permit shall include the necessary provisions for securing public and private interests concerning the following:

1) *avoidance or limiting of detrimental impacts of mining activity and addressing of elements necessary to ensure people's health and public safety;*

2) *measures for ensuring that mining activities do not entail obvious wasting of mining minerals or endanger or hamper potential future use of the mine and excavation work there;*

3) *the obligation to report on the extent of exploitation of the deposit and results;*

4) *measures to diminish harm caused to reindeer herding in a special reindeer herding area;*

5) *ensuring that activity under the permit will not endanger the status of the Sami as an indigenous people in the Sami Homeland, or the rights of the Skolts in accordance with the Skolt Act in the Skolt area;*

6) *collateral, in accordance with Chapter 10, associated with mine-closure alongside other obligations related to termination of mining activities and those after termination;*

7) *the deadline to be set for submission of any further specifications related to verifying the permit regulations;*

8) *material on other aspects of activity under the mining permit in order to ensure that the activity does not result in any consequence prohibited by this Act; and*

9) *other specifications that are necessary in view of public and private interests and pertaining to the implementation of the conditions of the permit.*

20.1.4 Environmental Protection Policies and Strategies

Rupert has a corporate social policy, environmental policy, community policy and health and safety policy that have been designed provide a risk management framework for the Project. These documents are available on the Company website. The same policies apply to NARL and BR Gold Mining.

20.1.5 Rural and Land Development Policies and Strategies

A significant proportion of the Osikonmäki claim area is situated within a designated landscape area listed as a landscape of national importance and designated as a landscape/cultural environment area in the regional plan. The landscape area designation does not in itself set restrictions to development but sets obligation to authorities to consider landscape impact particularly carefully. Developments with especially severe landscape impact include open pits, waste rock heaps, leach ponds and tailings ponds. Considering the total area of the Osikonmäki claim and the fact that much of it lies outside the landscape area designation, it would be reasonable to expect that a suitable site layout can be designed in which mine infrastructure, pits, tailings and leach ponds etc. are situated outside the landscape designation.

20.1.6 International Agreements, Protocols and Conventions

Rupert's, as well as NARL's and BR Gold Mining's activities are currently confined to Finland where local legislation is considered to meet or exceed international best practice. Rupert also holds two project in Canada that are currently dormant.

20.2 Social and Community Related Requirements

The Osikonmäki area is environmentally sensitive and objection to exploration and potential mining is strong. The company has engaged a media group to help with planning a Corporate Social Responsibility (CSR) program to introduce the new company and plans to explore the asset in a responsible low impact manner to determine the economic viability for further work.

21. CAPITAL AND OPERATING COSTS

This section is not applicable to this Report.

22.   ECONOMIC ANALYSIS

This section is not applicable to this Report.

23. ADJACENT PROPERTIES

The Rantasalmi project is located in a traditional nickel mining area that became prospective for gold only in early 1980's when auriferous glacial erratics led to the discovery of the Pirilä deposit (Kontoniemi, 1998).

Surrounding the Pirilä and Osikonmäki deposits are multiple nickel and copper prospects at varying stages of development.

The closest gold mine, Pampalo, is located 185km to the northeast. Pampalo has been operated by Endomines since 2011. Some 220km to the west is the Orivesi Mine (Kutemajärvi), and 320km to the west is Jokisivu gold mine both currently operated by Dragon Mining. No other significant gold prospects are located in the area.

The Virtasalmi (Hällinmäki) mine (1966 – 1984) extracted copper with secondary gold from amphibolite and garnet rock and is located approximately 35km west of Rantasalmi. Nickel mines Laukunkangas (Ni, Cu, past producer), Särkiniemi (Ni, Cu, Co, past producer), and Hälvälä mine (Ni, Cu, Co, past producer) are all within 50km of the site. The world famous Outokumpu mining district is located 80km to the northwest.

24. OTHER RELEVANT DATA AND INFORMATION

This section is not applicable to this Report.

25.   INTERPRETATION AND CONCLUSIONS

The new Inferred Resource of 3.23Mt grading 2.7g/t Au (276koz) is reported using a 1.5g/t cutoff and is based on a geological and mineralisation interpretation of the deposit. The model has incorporated one major mineralised domain and three subordinate domains including the mineralisation at Osikonmäki West which has not been previously estimated.   The main body of mineralisation incorporates several SE plunging higher grade shoots which remain open down dip and along plunge (Figure 25_1). The two subordinate domains in the western portion of the deposit may represent offsets to or repeats of the main mineralisation and these too remain open down plunge. Potential down-plunge extensions of mineralisation remain targets to increase the available resources.

Figure 14.9_2
Block Model Demonstrating SE Plunge
Blocks > 1.5g/t Au

Compared to the previous Indicated and Inferred Mineral Resource Estimate by Golders Associates in 2011, the current reported Inferred Mineral Resource has an overall lower category of geological confidence, lower tonnes and a higher grade (related to cutoff). The previous resource was predicated on open pit mining only and therefore a lower reporting cutoff grade was considered appropriate. By the nature of the primary estimation method of MIK and mineralisation interpretation, some dilution has also been incorporated in the current grade estimates. The lower level of geological confidence is related to the potential mining methods being envisioned; the combination of open pit and underground mining requiring a greater degree of confidence in the geological continuity than open pit alone.

26. RECOMMENDATIONS

The identification of high-grade zones within the Osikonmäki deposit, that plunge to the south east, provide a target for follow up drilling down-plunge to potentially extend the mineralisation. The high-grade shoots have not been fully closed out at depth and remain open, especially towards the eastern most extents of the current resource. Further drill definition of the plunging shoots is recommended. Further exploration drilling to the western section of the resource is also warranted where mineralisation has also not been closed out and the ore mineralogy is potentially simpler for beneficiation. The western section is also further away from populated areas.

The existing drilling data, soil data, boulders and geophysics imply that further potential exists across the licence and claim areas as demonstrated in the base-of-till drilling in Figure 26_1.

Figure 26_1
Geochemistry and Geophysics
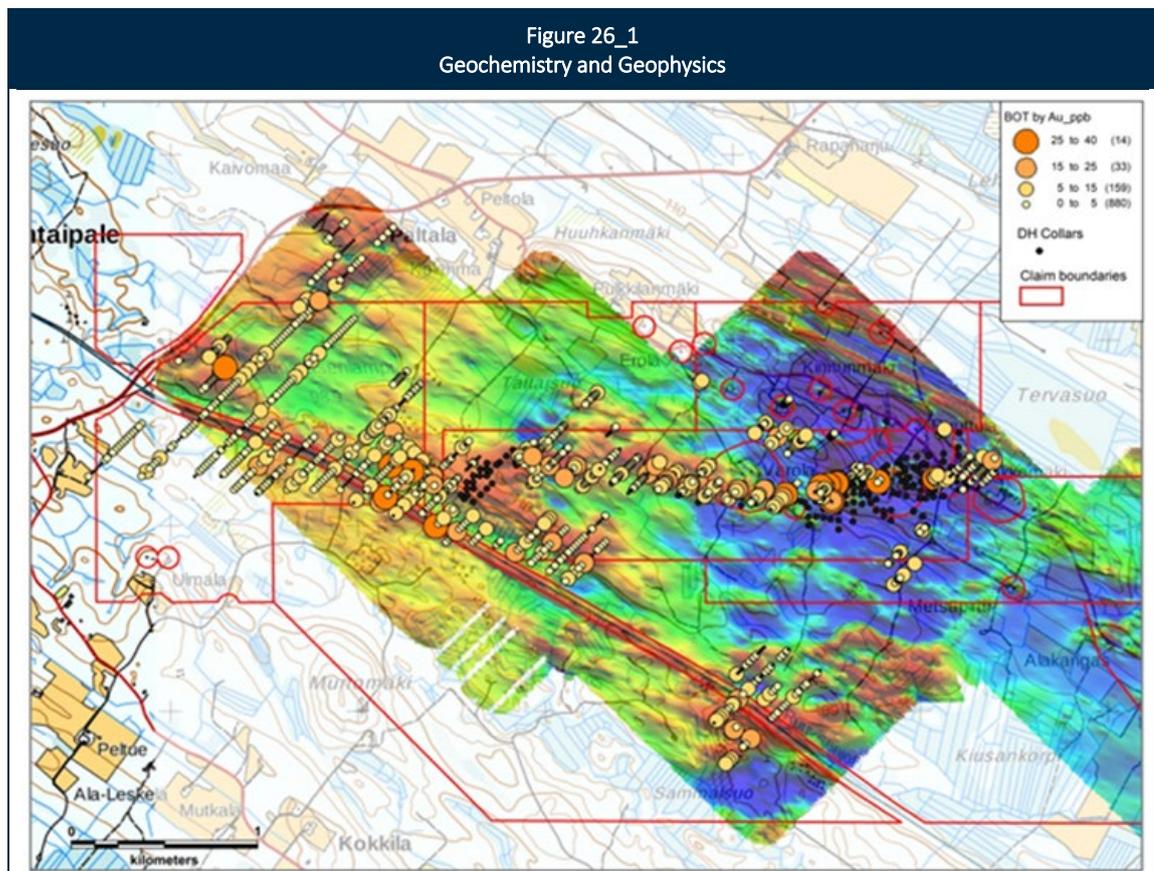
Further investigation of the rest of the exploration permit is also warranted and a regional geochemical program, to be undertaken alongside a geophysical targeting exercise, is recommended to attempt to identify further resources in the region.

In addition, comprehensive metallurgical and beneficiation testing is proposed, along with an environmental base line study focused on flora, fauna and water resources. It is also considered critical that a Corporate Social Responsibility plan be initiated and implemented to provide a robust framework for community interaction going forward.

Table 26_1
Osikonmäki Gold Deposit
Proposed Exploration Program

Item	Cost (€)
Drill testing down-plunge of high-grade shoots	500,000
Close-out drill testing to east of resource	350,000
Extension drilling in western section	300,000
Reconnaissance exploration geochemistry	200,000
Drill targeting of geochem targets	200,000
Metallurgical and beneficiation study	50,000
Environmental base line study	50,000
CSR plan and implement	100,000
Total	1,750,000

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Appendix 1

CRM Control Graphs for CRM submitted by Belvedere to ALS

Summary
(Standard: BLANK)

Standard:	BLANK	No of Analyses:	57
Element:	Au ppm	Minimum:	0.01
Units:		Maximum:	0.01
Detection Limit:	-	Mean:	0.01
Expected Value (EV):	0.01	Std Deviation:	0.00
E.V. Range:	0.01 to 0.01	% in Tolerance	12.28 %
		% Bias	-43.86 %
		% RSD	29.23 %
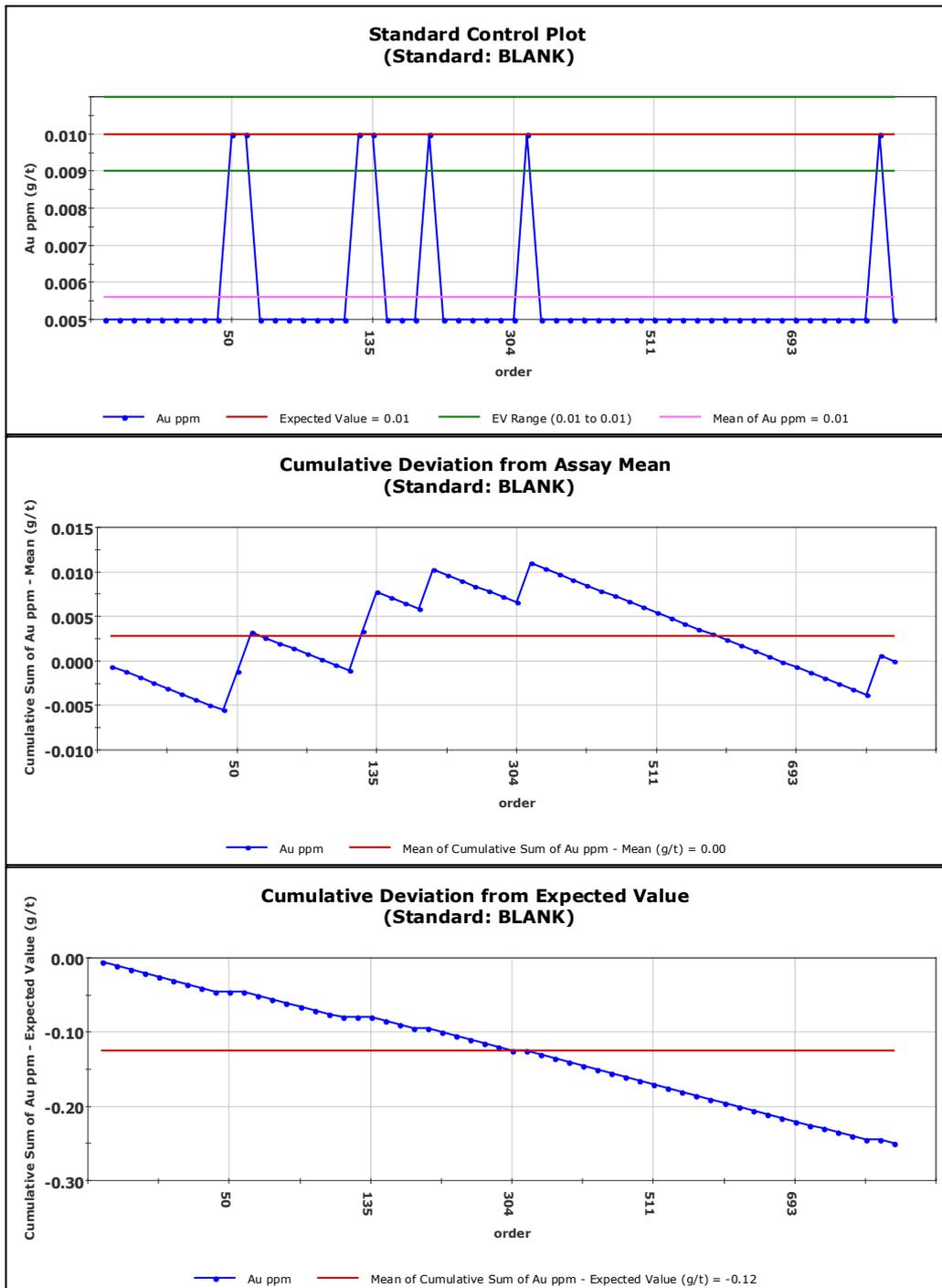
Summary
(Standard: CDN-GS-3F)

Standard:	CDN-GS-3F	No of Analyses:	23
Element:	Au ppm	Minimum:	2.96
Units:		Maximum:	3.39
Detection Limit:	-	Mean:	3.16
Expected Value (EV):	3.10	Std Deviation:	0.13
E.V. Range:	2.79 to 3.41	% in Tolerance	100.00 %
		% Bias	1.84 %
		% RSD	4.11 %

Standard Control Plot
(Standard: CDN-GS-3F)

Legend: Au ppm — Expected Value = 3.10 — EV Range (2.79 to 3.41) — Mean of Au ppm = 3.16

Cumulative Deviation from Assay Mean
(Standard: CDN-GS-3F)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Mean (g/t) = -0.31

Cumulative Deviation from Expected Value
(Standard: CDN-GS-3F)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = 0.37
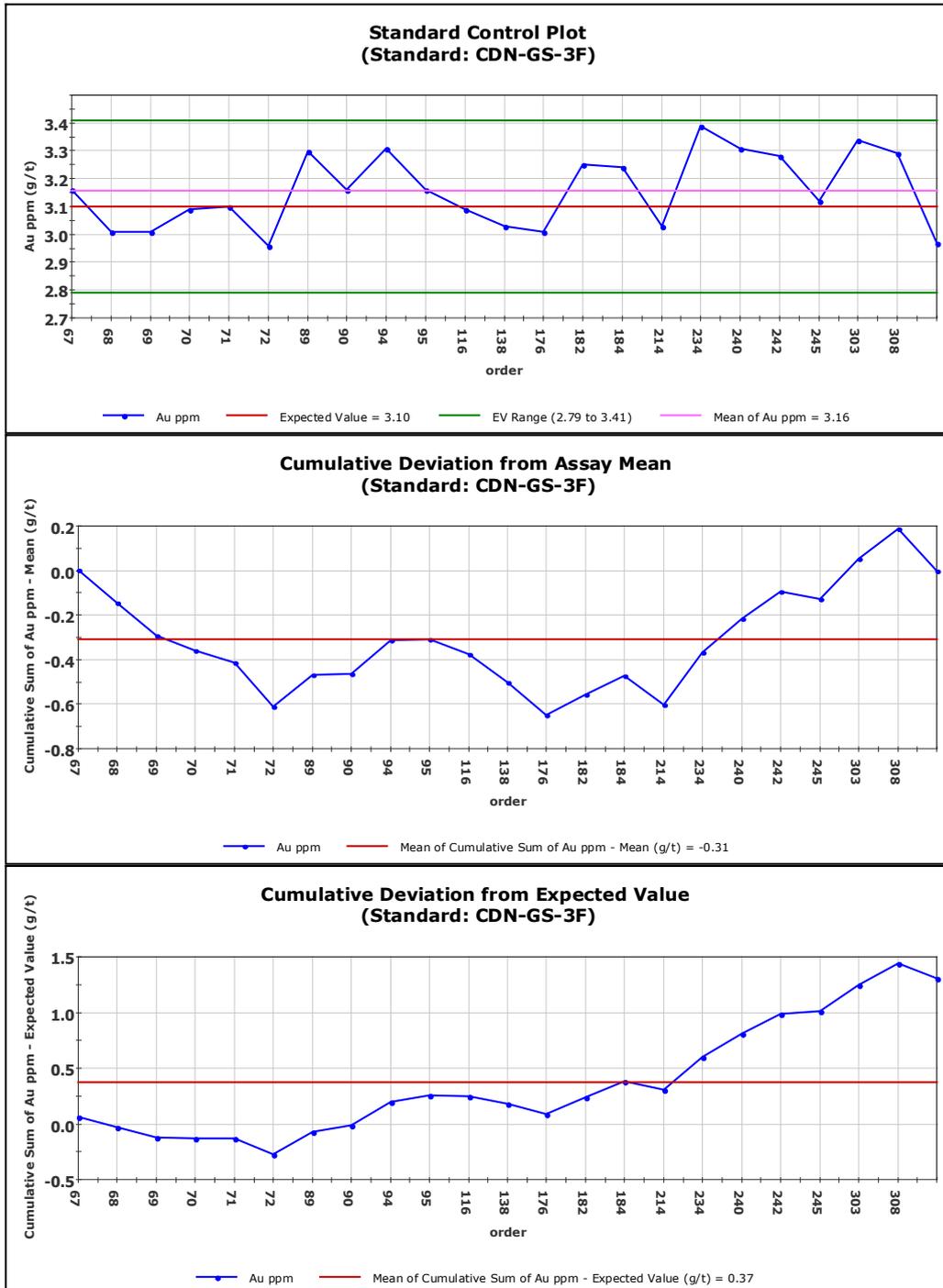
Summary
(Standard: CDN-GS-3H)

Standard:	CDN-GS-3H	No of Analyses:	33
Element:	Au ppm	Minimum:	2.88
Units:		Maximum:	3.25
Detection Limit:	-	Mean:	3.05
Expected Value (EV):	3.04	Std Deviation:	0.08
E.V. Range:	2.74 to 3.34	% in Tolerance	100.00 %
		% Bias	0.18 %
		% RSD	2.78 %

Standard Control Plot
(Standard: CDN-GS-3H)

Legend: Au ppm · Expected Value = 3.04 · EV Range (2.74 to 3.34) · Mean of Au ppm = 3.05

Cumulative Deviation from Assay Mean
(Standard: CDN-GS-3H)

Legend: Au ppm · Mean of Cumulative Sum of Au ppm - Mean (g/t) = 0.25

Cumulative Deviation from Expected Value
(Standard: CDN-GS-3H)

Legend: Au ppm · Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = 0.34
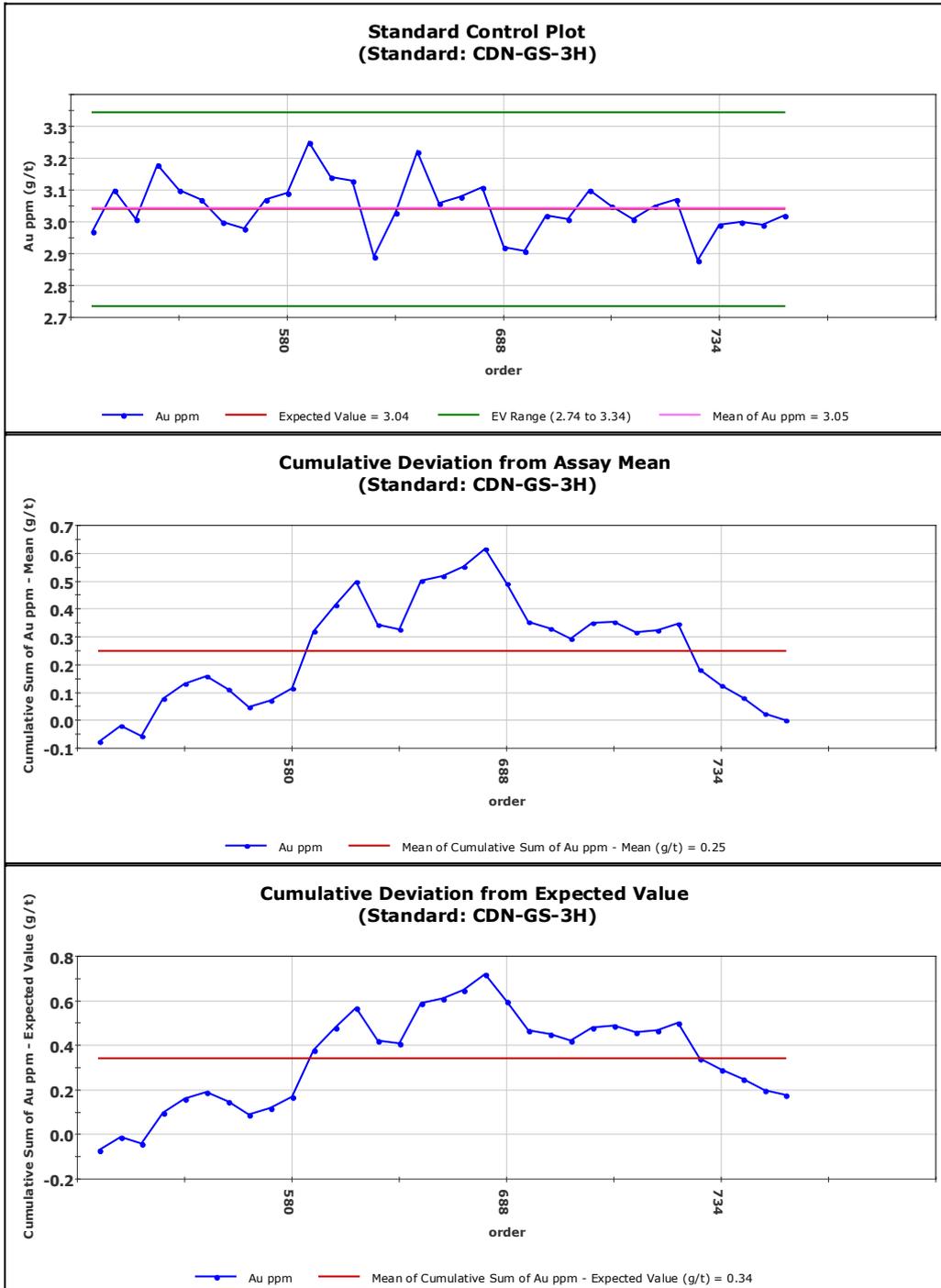
Summary
(Standard: CDN-GS-P7B)

Standard:	CDN-GS-P7B	No of Analyses:	5
Element:	Au ppm	Minimum:	0.69
Units:		Maximum:	0.73
Detection Limit:	-	Mean:	0.70
Expected Value (EV):	0.71	Std Deviation:	0.02
E.V. Range:	0.64 to 0.78	% in Tolerance	100.00 %
		% Bias	-1.13 %
		% RSD	2.28 %

Standard Control Plot
(Standard: CDN-GS-P7B)

Au ppm —●— Expected Value = 0.71 —— EV Range (0.64 to 0.78) —— Mean of Au ppm = 0.70 ——

Cumulative Deviation from Assay Mean
(Standard: CDN-GS-P7B)

Au ppm —●— Mean of Cumulative Sum of Au ppm - Mean (g/t) = 0.00 ——

Cumulative Deviation from Expected Value
(Standard: CDN-GS-P7B)

Au ppm —●— Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = -0.02 ——
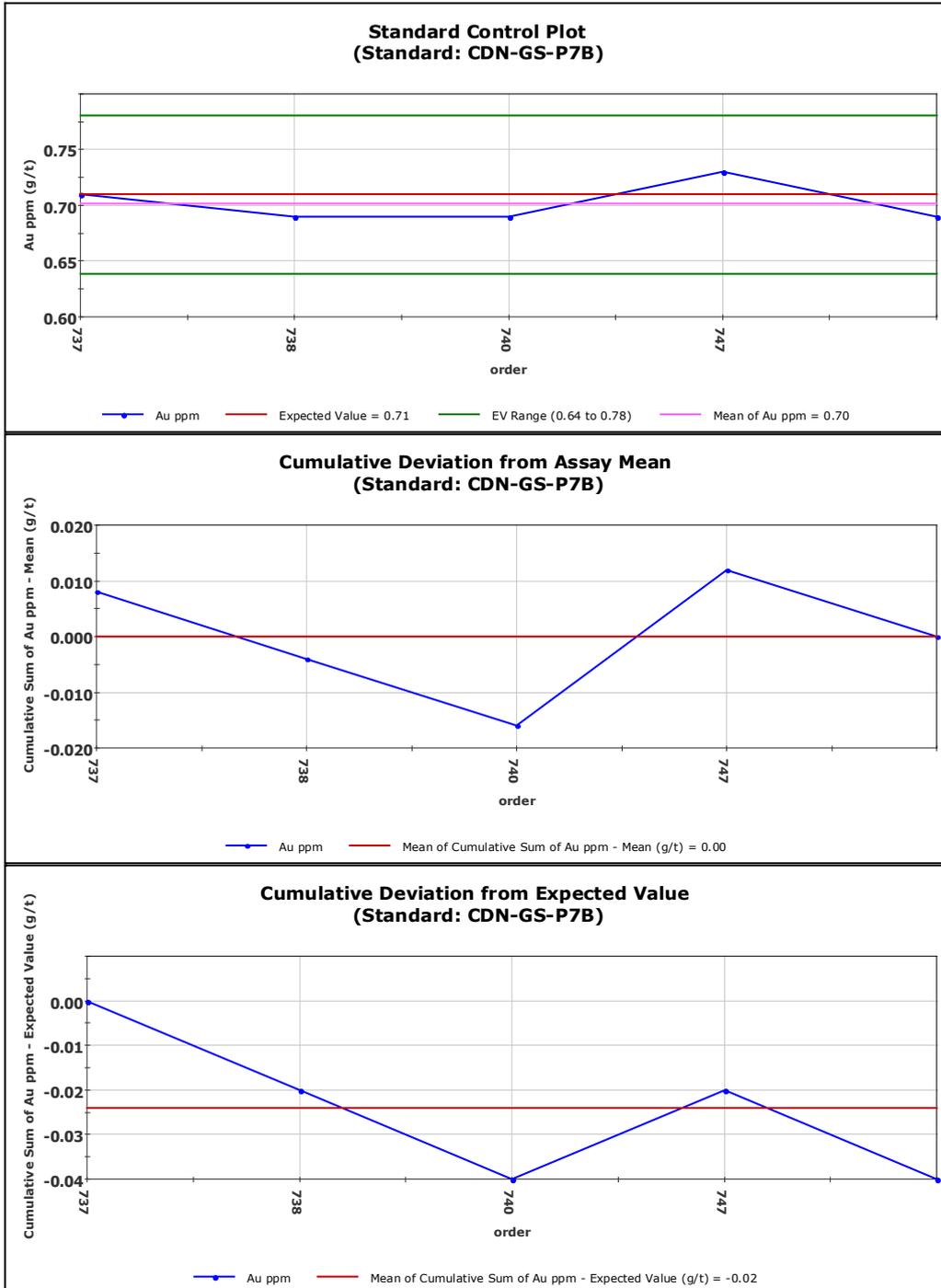
Summary
(Standard: CDN-GS-P8)

Standard:	CDN-GS-P8	No of Analyses:	118
Element:	Au ppm	Minimum:	0.74
Units:		Maximum:	0.85
Detection Limit:	-	Mean:	0.79
Expected Value (EV):	0.78	Std Deviation:	0.03
E.V. Range:	0.70 to 0.86	% in Tolerance	100.00 %
		% Bias	1.39 %
		% RSD	3.42 %

Standard Control Plot (Standard: CDN-GS-P8)

Legend: Au ppm — Expected Value = 0.78 — EV Range (0.70 to 0.86) — Mean of Au ppm = 0.79

Cumulative Deviation from Assay Mean (Standard: CDN-GS-P8)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Mean (g/t) = -0.13

Cumulative Deviation from Expected Value (Standard: CDN-GS-P8)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = 0.52

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Summary
(Standard: CDN-GS-10)

Standard:	CDN-GS-10	No of Analyses:	23
Element:	Au ppm	Minimum:	0.70
Units:		Maximum:	0.94
Detection Limit:	-	Mean:	0.80
Expected Value (EV):	0.82	Std Deviation:	0.06
E.V. Range:	0.74 to 0.90	% in Tolerance	82.61 %
		% Bias	-2.92 %
		% RSD	7.05 %

Standard Control Plot
(Standard: CDN-GS-10)

Legend: Au ppm · Expected Value = 0.82 · EV Range (0.74 to 0.90) · Mean of Au ppm = 0.80

Cumulative Deviation from Assay Mean
(Standard: CDN-GS-10)

Legend: Au ppm · Mean of Cumulative Sum of Au ppm - Mean (g/t) = 0.07

Cumulative Deviation from Expected Value
(Standard: CDN-GS-10)

Legend: Au ppm · Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = -0.21

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Summary
(Standard: CDN-GS-10C)

Standard:	CDN-GS-10C	No of Analyses:	54
Element:	Au ppm	Minimum:	9.42
Units:		Maximum:	10.60
Detection Limit:	-	Mean:	9.95
Expected Value (EV):	9.71	Std Deviation:	0.31
E.V. Range:	8.74 to 10.68	% in Tolerance	100.00 %
		% Bias	2.43 %
		% RSD	3.11 %
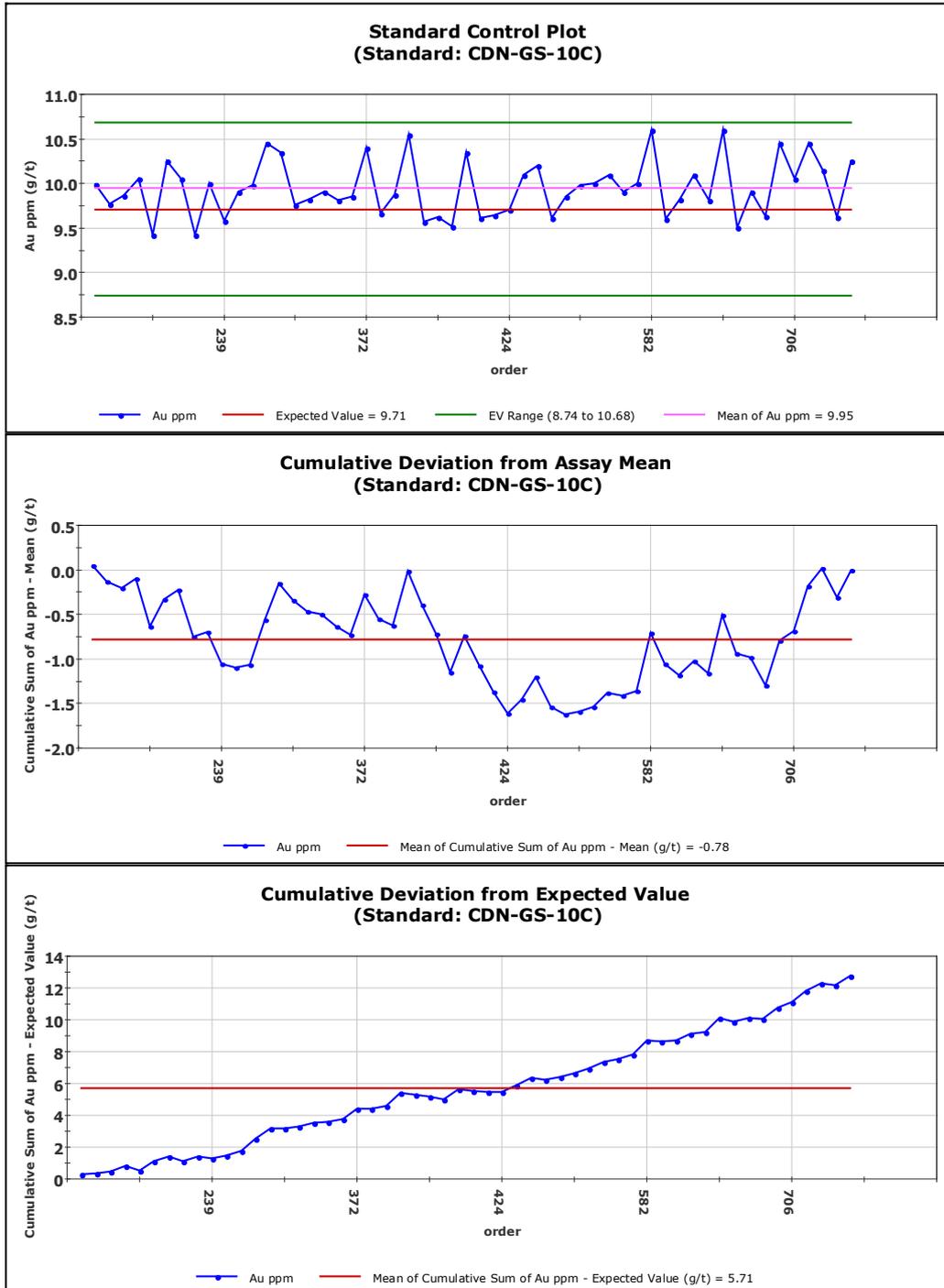
Summary
(Standard: CDN-GS-10D)

Standard:	CDN-GS-10D	No of Analyses:	9
Element:	Au ppm	Minimum:	9.56
Units:		Maximum:	10.15
Detection Limit:	-	Mean:	9.89
Expected Value (EV):	9.50	Std Deviation:	0.23
E.V. Range:	8.55 to 10.45	% in Tolerance	100.00 %
		% Bias	4.06 %
		% RSD	2.30 %

Standard Control Plot
(Standard: CDN-GS-10D)

Legend: Au ppm — Expected Value = 9.50 — EV Range (8.55 to 10.45) — Mean of Au ppm = 9.89

Cumulative Deviation from Assay Mean
(Standard: CDN-GS-10D)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Mean (g/t) = 0.14

Cumulative Deviation from Expected Value
(Standard: CDN-GS-10D)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = 2.07
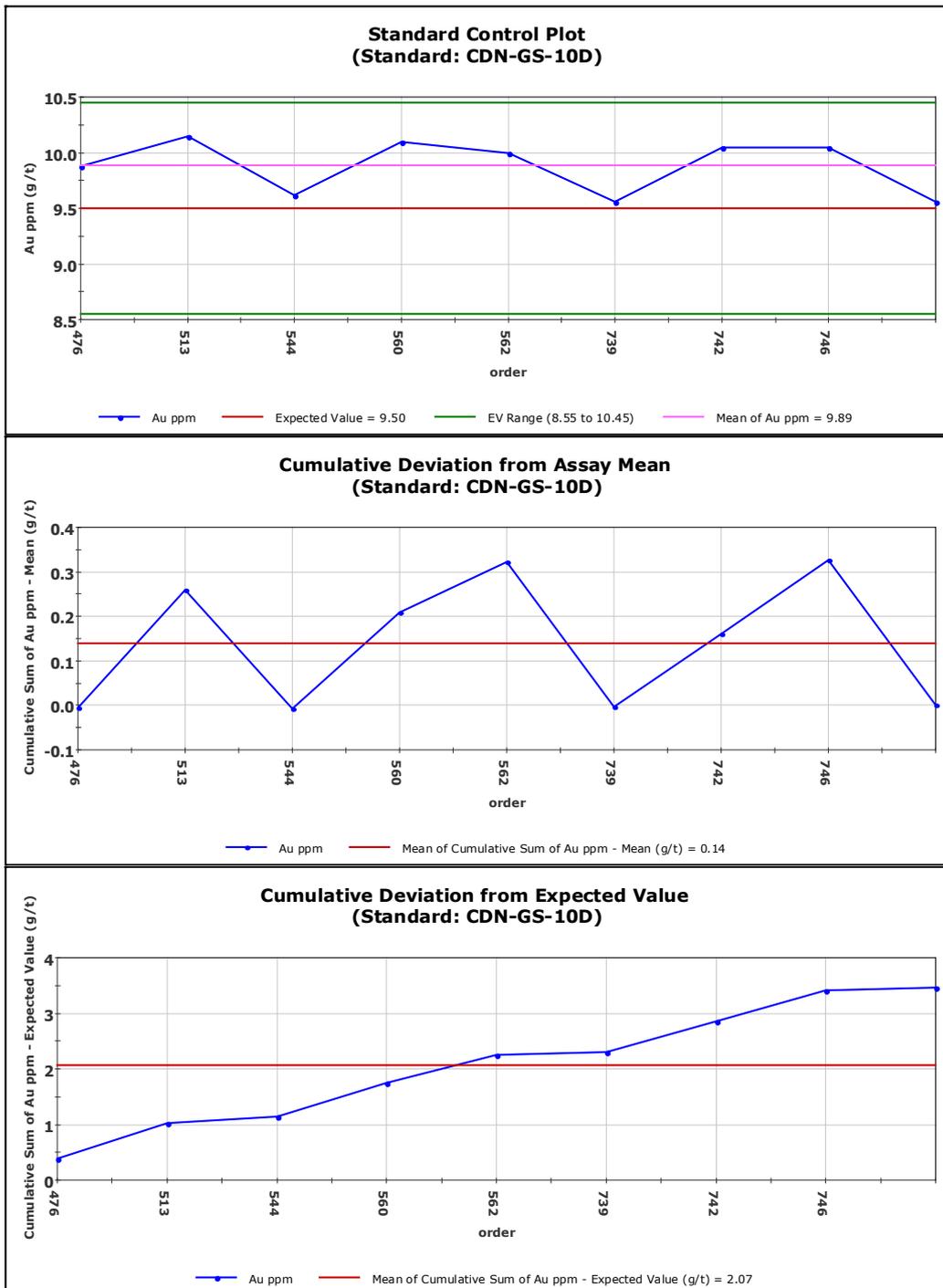
Summary
(Standard: CDN-GS-11)

Standard:	CDN-GS-11	No of Analyses:	14
Element:	Au ppm	Minimum:	3.00
Units:		Maximum:	3.61
Detection Limit:	-	Mean:	3.24
Expected Value (EV):	3.40	Std Deviation:	0.16
E.V. Range:	3.06 to 3.74	% in Tolerance	85.71 %
		% Bias	-4.71 %
		% RSD	4.83 %

Standard Control Plot
(Standard: CDN-GS-11)

Legend: ● Au ppm — Expected Value = 3.40 — EV Range (3.06 to 3.74) — Mean of Au ppm = 3.24

Cumulative Deviation from Assay Mean
(Standard: CDN-GS-11)

Legend: ● Au ppm — Mean of Cumulative Sum of Au ppm - Mean (g/t) = -0.49

Cumulative Deviation from Expected Value
(Standard: CDN-GS-11)

Legend: ● Au ppm — Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = -1.69
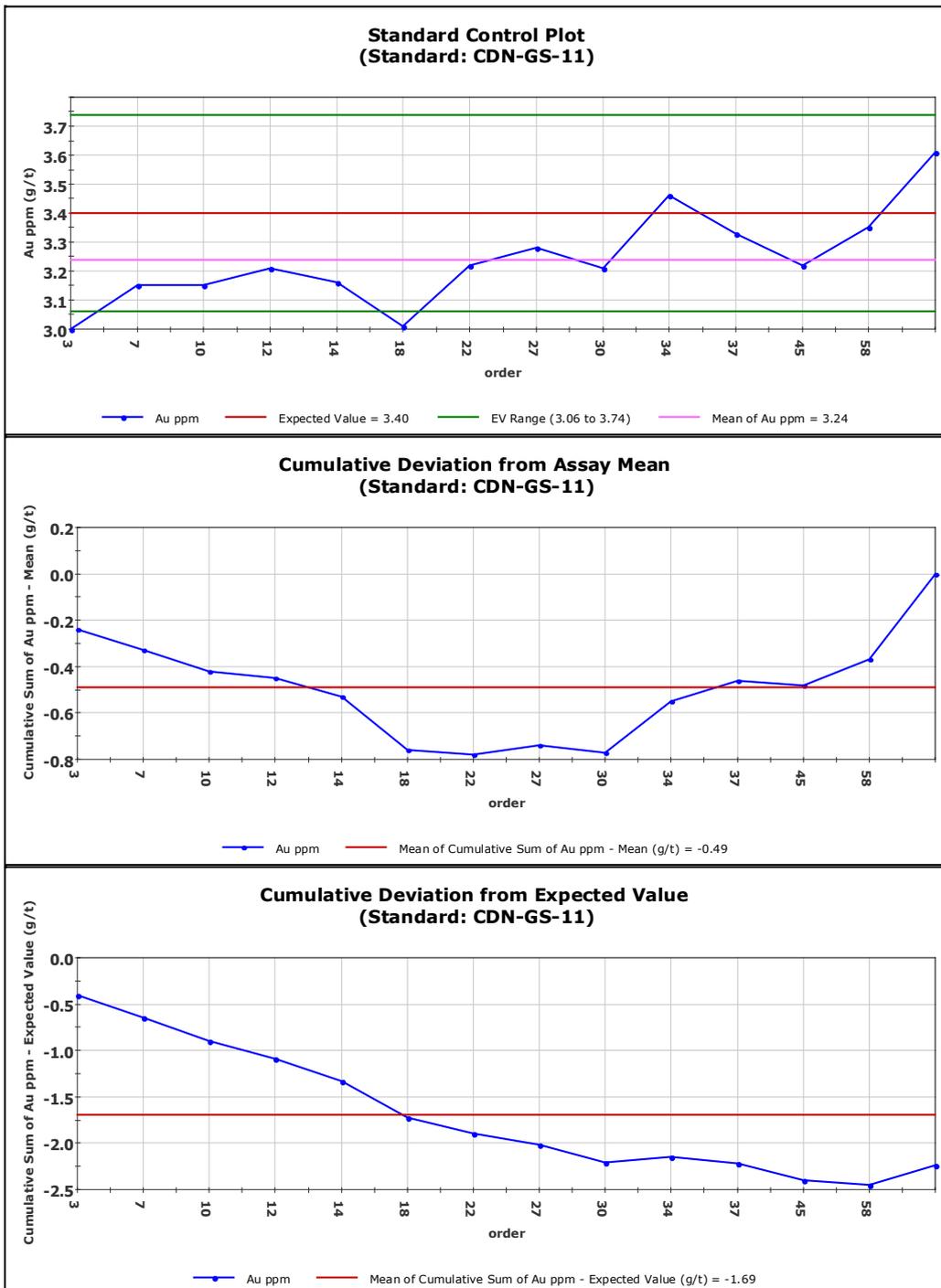
Summary
(Standard: CDN-GS-12)

Standard:	CDN-GS-12	No of Analyses:	18
Element:	Au ppm	Minimum:	8.70
Units:		Maximum:	10.35
Detection Limit:	-	Mean:	9.66
Expected Value (EV):	9.98	Std Deviation:	0.50
E.V. Range:	8.98 to 10.98	% in Tolerance	83.33 %
		% Bias	-3.23 %
		% RSD	5.18 %

Standard Control Plot (Standard: CDN-GS-12)
Legend: Au ppm — Expected Value = 9.98 — EV Range (8.98 to 10.98) — Mean of Au ppm = 9.66

Cumulative Deviation from Assay Mean (Standard: CDN-GS-12)
Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Mean (g/t) = -1.41

Cumulative Deviation from Expected Value (Standard: CDN-GS-12)
Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = -4.47
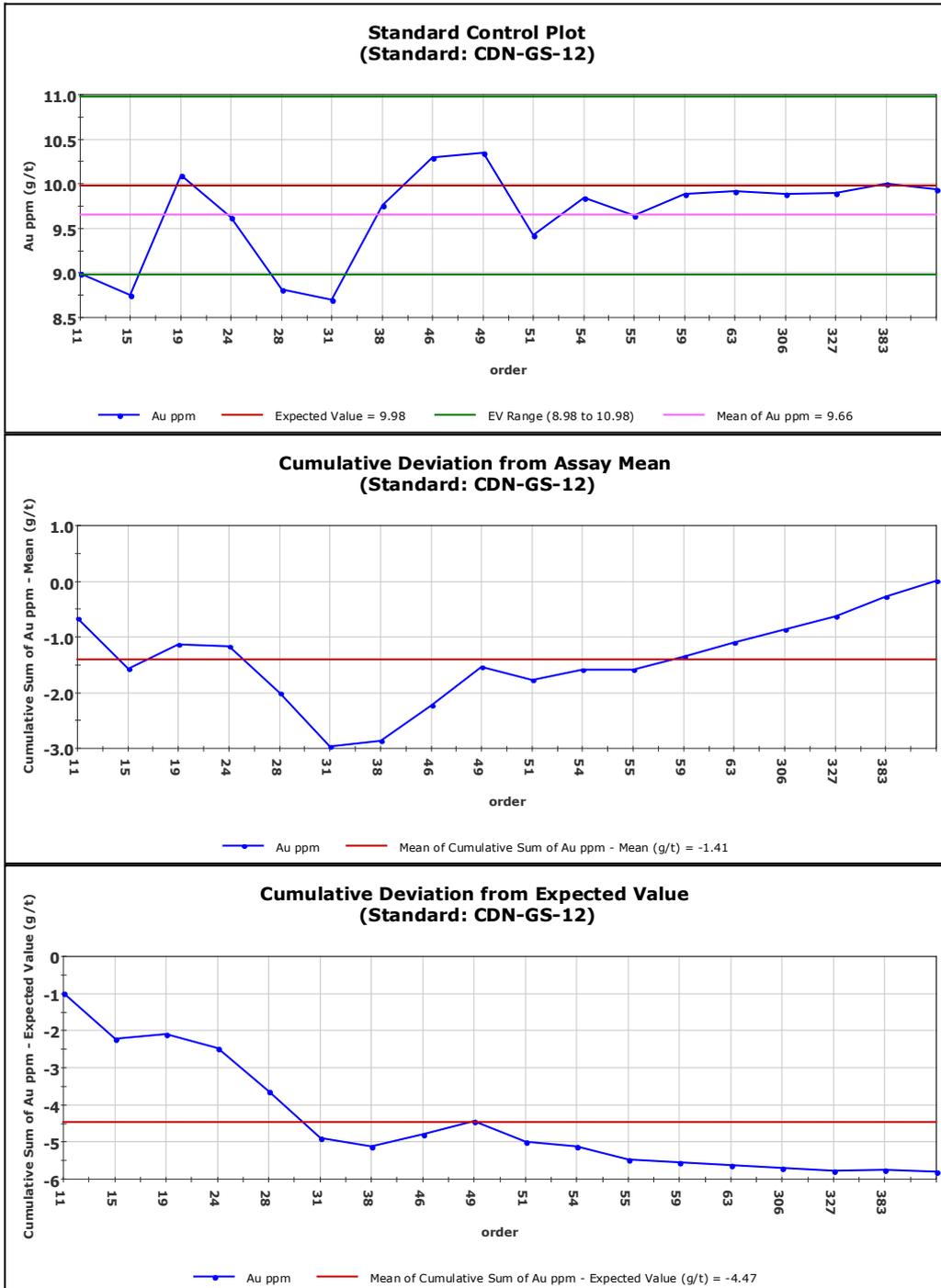
Appendix 2
Sample Pairs submitted to ALS

Summary
(> 0.1)

	Au-AA25	Au-AA26 (chk)	Units		Result
No. Pairs:	102	102		Pearson CC:	0.97
Minimum:	0.11	0.03	g/t	Spearman CC:	0.92
Maximum:	16.60	14.95	g/t	Mean HARD:	9.77
Mean:	2.49	2.55	g/t	Median HARD:	3.18
Median	0.77	0.72	g/t		
Std. Deviation:	3.82	3.88	g/t	Mean HRD:	0.07
Coefficient of Variation:	1.54	1.52		Median HRD	-0.82

Mean vs. HARD Plot (> 0.1)

Mean HARD: 9.77   Median HARD: 3.18
Precision: 10%

Rank HARD Plot (> 0.1)

83.33% of data are within Precision limits

Precision: 10%

HRD Histogram (> 0.1)

Mean HRD: 0.07   Median HRD: -0.82
Precision: +/-10%

Mean vs. HRD Plot (> 0.1)

Mean HRD: 0.07   Median HRD: -0.82
Precision: +/-10%

T & H Precision Plot (Assay Pairs) (> 0.1)

10%   20%   30%   50%

T & H Precision Plot (Grouped Pairs) (> 0.1)

10%   20%   30%   50%

Correlation Plot (> 0.1)

P.CC= 0.97 S.CC= 0.92   Ref. Line
y = 0.98x + 0.10

QQ Plot (> 0.1)

Ref. Line   y = 1.01x + 0.03

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Pulp Reassay

Summary
(All Data)

	AuGTK	AuBEL	Units		Result
No. Pairs:	322	322		Pearson CC:	0.98
Minimum:	0.10	0.01	g/t	Spearman CC:	0.97
Maximum:	9.50	11.10	g/t	Mean HARD:	16.45
Mean:	1.00	1.10	g/t	Median HARD:	8.11
Median	0.50	0.51	g/t		
Std. Deviation:	1.33	1.48	g/t	Mean HRD:	1.94
Coefficient of Variation:	1.33	1.35		Median HRD	-1.13

Mean vs. HARD Plot (All Data)

Mean HARD: 16.45   Median HARD: 8.11
Precision: 10%

Rank HARD Plot (All Data)

57.45% of data are within Precision limits

Precision: 10%

HRD Histogram (All Data)

Mean HRD: 1.94   Median HRD: -1.13
Precision: +/-10%

Mean vs. HRD Plot (All Data)

Mean HRD: 1.94   Median HRD: -1.13
Precision: +/-10%

T & H Precision Plot (Assay Pairs) (All Data)

10%   20%   30%   50%

T & H Precision Plot (Grouped Pairs) (All Data)

10%   20%   30%   50%

Correlation Plot (All Data)

P.CC= 0.98 S.CC= 0.97   Ref. Line
y = 1.09x -0.00

QQ Plot (All Data)

Ref. Line   y = 1.11x -0.02

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Summary
(Au > 0.1)

	AuGTK	AuBEL	Units		Result
No. Pairs:	276	276		Pearson CC:	0.980
Minimum:	0.100	0.110	g/t	Spearman CC:	0.950
Maximum:	9.500	11.100	g/t	Mean HARD:	11.991
Mean:	1.154	1.272	g/t	Median HARD:	7.060
Median	0.600	0.680	g/t		
Std. Deviation:	1.384	1.534	g/t	Mean HRD:	-4.935
Coefficient of Variation:	1.199	1.206		Median HRD	-2.716

Mean vs. HARD Plot (Au > 0.1)
- Mean HARD: 11.991
- Median HARD: 7.060
- Precision: 20%

Rank HARD Plot (Au > 0.1)
- 82.609% of data are within Precision limits
- Precision: 20%

HRD Histogram (Au > 0.1)
- Mean HRD: -4.935
- Median HRD: -2.716
- Precision: +/-20.000%

Mean vs. HRD Plot (Au > 0.1)
- Mean HRD: -4.935
- Median HRD: -2.716
- Precision: +/-20%

T & H Precision Plot (Assay Pairs) (Au > 0.1)
- 10% 20% 30% 50%

T & H Precision Plot (Grouped Pairs) (Au > 0.1)
- 10% 20% 30% 50%

Correlation Plot (Au > 0.1)
- P.CC= 0.980 S.CC= 0.950
- Ref. Line
- y = 1.087x + 0.018

QQ Plot (Au > 0.1)
- Ref. Line
- y = 1.107x -0.005

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Appendix 3
Pulp Reassay CRM

Summary
(Standard: CDN-GS-10D)

Standard:	CDN-GS-10D	No of Analyses:	2
Element:	Au ppm	Minimum:	9.56
Units:		Maximum:	9.78
Detection Limit:		Mean:	9.67
Expected Value (EV):	9.50	Std Deviation:	0.11
E.V. Range:	8.55 to 10.45	% in Tolerance	100.00 %
		% Bias	1.79 %
		% RSD	1.14 %

Standard Control Plot (Standard: CDN-GS-10D)

Legend: Au ppm · Expected Value = 9.50 · EV Range (8.55 to 10.45) · Mean of Au ppm = 9.67

Cumulative Deviation from Assay Mean (Standard: CDN-GS-10D)

Legend: Au ppm · Mean of Cumulative Sum of Au ppm - Mean (g/t) = -0.05

Cumulative Deviation from Expected Value (Standard: CDN-GS-10D)

Legend: Au ppm · Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = 0.20
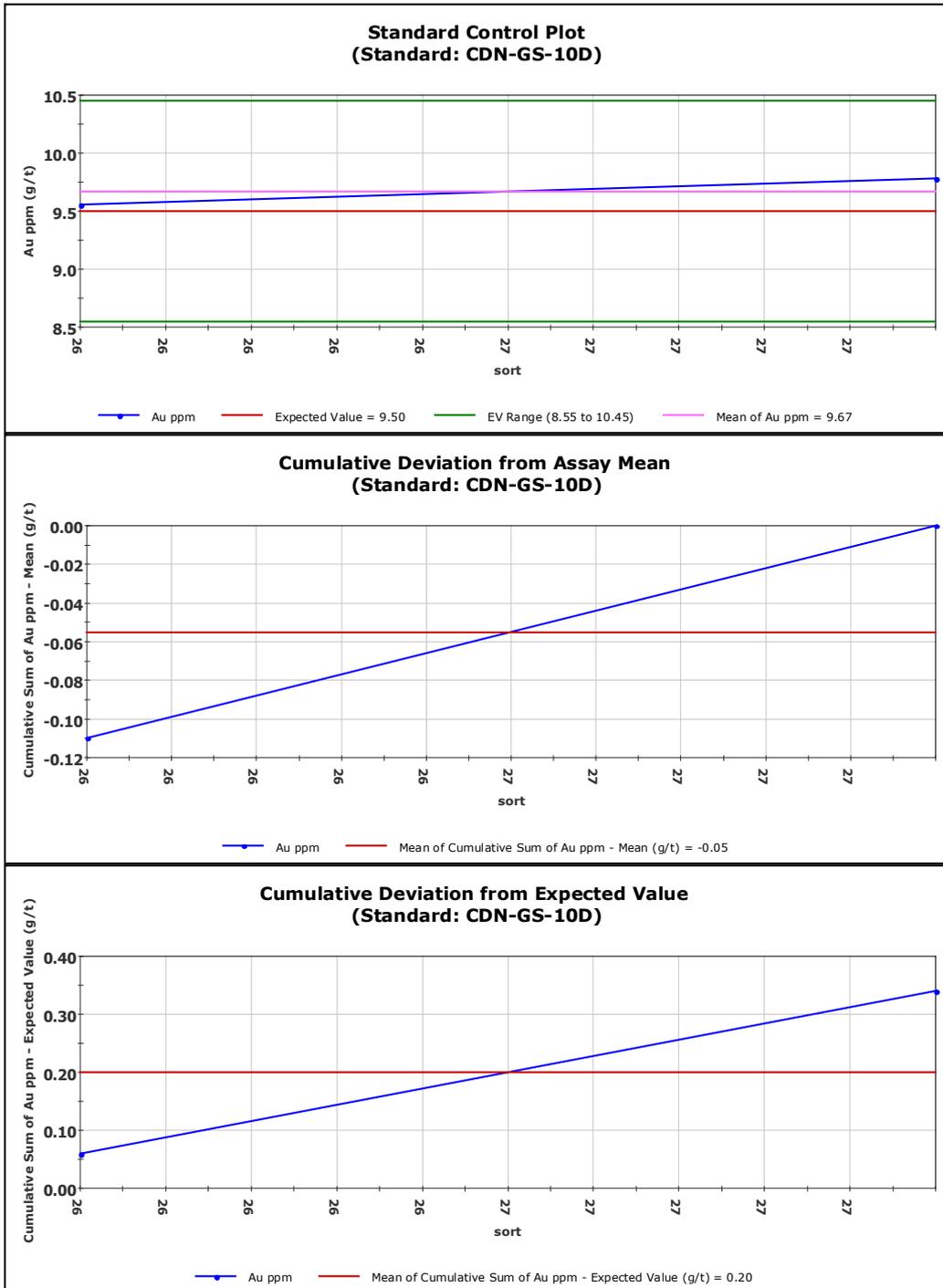
Summary
(Standard: CDN-GS-3H)

Standard:	CDN-GS-3H	No of Analyses:	2
Element:	Au ppm	Minimum:	3.16
Units:		Maximum:	3.18
Detection Limit:		Mean:	3.17
Expected Value (EV):	3.04	Std Deviation:	0.01
E.V. Range:	2.74 to 3.34	% in Tolerance	100.00 %
		% Bias	4.28 %
		% RSD	0.32 %

Standard Control Plot
(Standard: CDN-GS-3H)

Legend: Au ppm — Expected Value = 3.04 — EV Range (2.74 to 3.34) — Mean of Au ppm = 3.17

Cumulative Deviation from Assay Mean
(Standard: CDN-GS-3H)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Mean (g/t) = 0.01

Cumulative Deviation from Expected Value
(Standard: CDN-GS-3H)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = 0.20
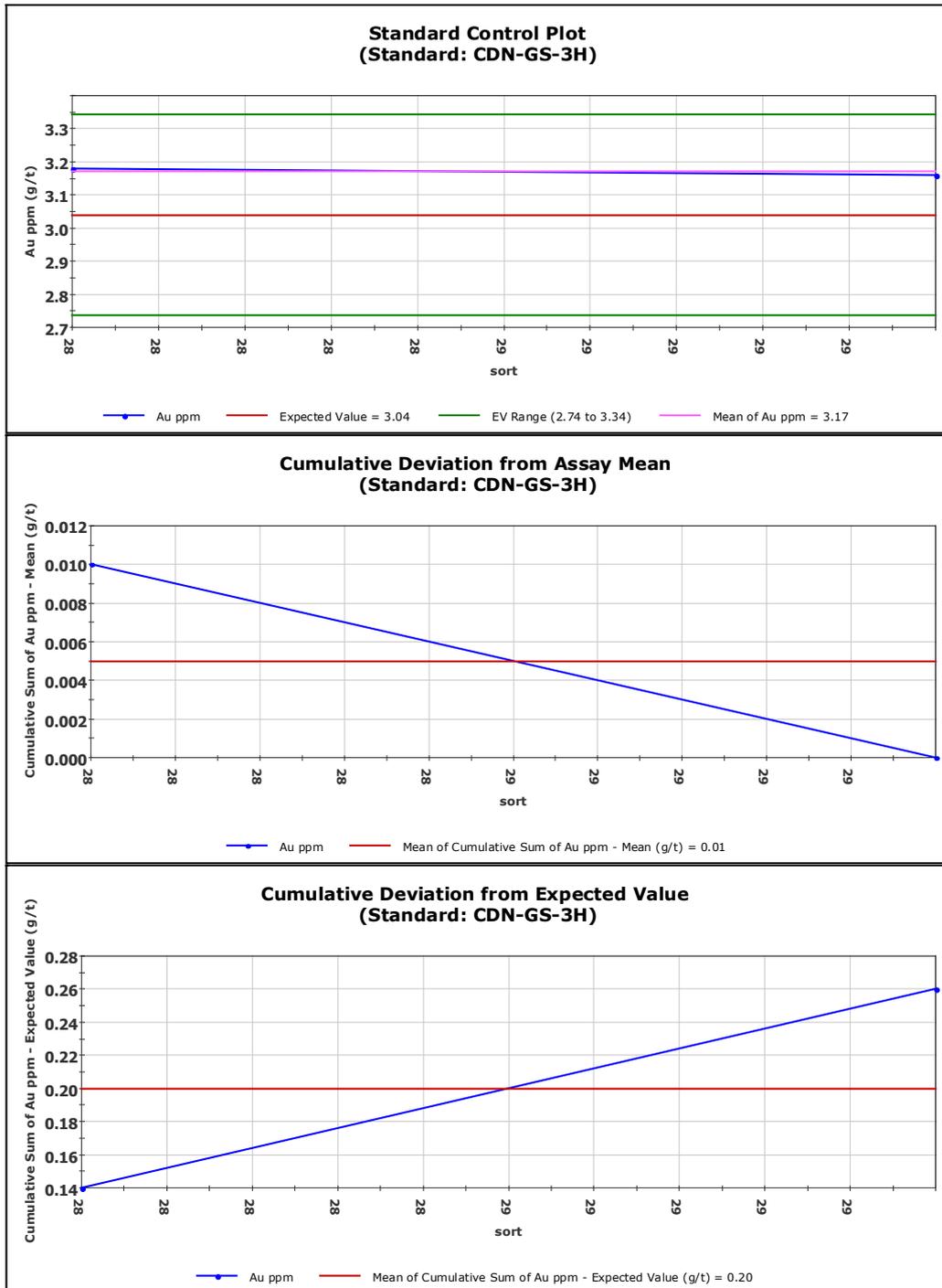
Summary
(Standard: CDN-GS-P7B)

Standard:	CDN-GS-P7B	No of Analyses:	12
Element:	Au ppm	Minimum:	0.68
Units:		Maximum:	0.74
Detection Limit:		Mean:	0.71
Expected Value (EV):	0.71	Std Deviation:	0.02
E.V. Range:	0.64 to 0.78	% in Tolerance	100.00 %
		% Bias	-0.35 %
		% RSD	2.77 %

Standard Control Plot
(Standard: CDN-GS-P7B)

Legend: Au ppm — Expected Value = 0.71 — EV Range (0.64 to 0.78) — Mean of Au ppm = 0.71

Cumulative Deviation from Assay Mean
(Standard: CDN-GS-P7B)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Mean (g/t) = -0.03

Cumulative Deviation from Expected Value
(Standard: CDN-GS-P7B)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = -0.05
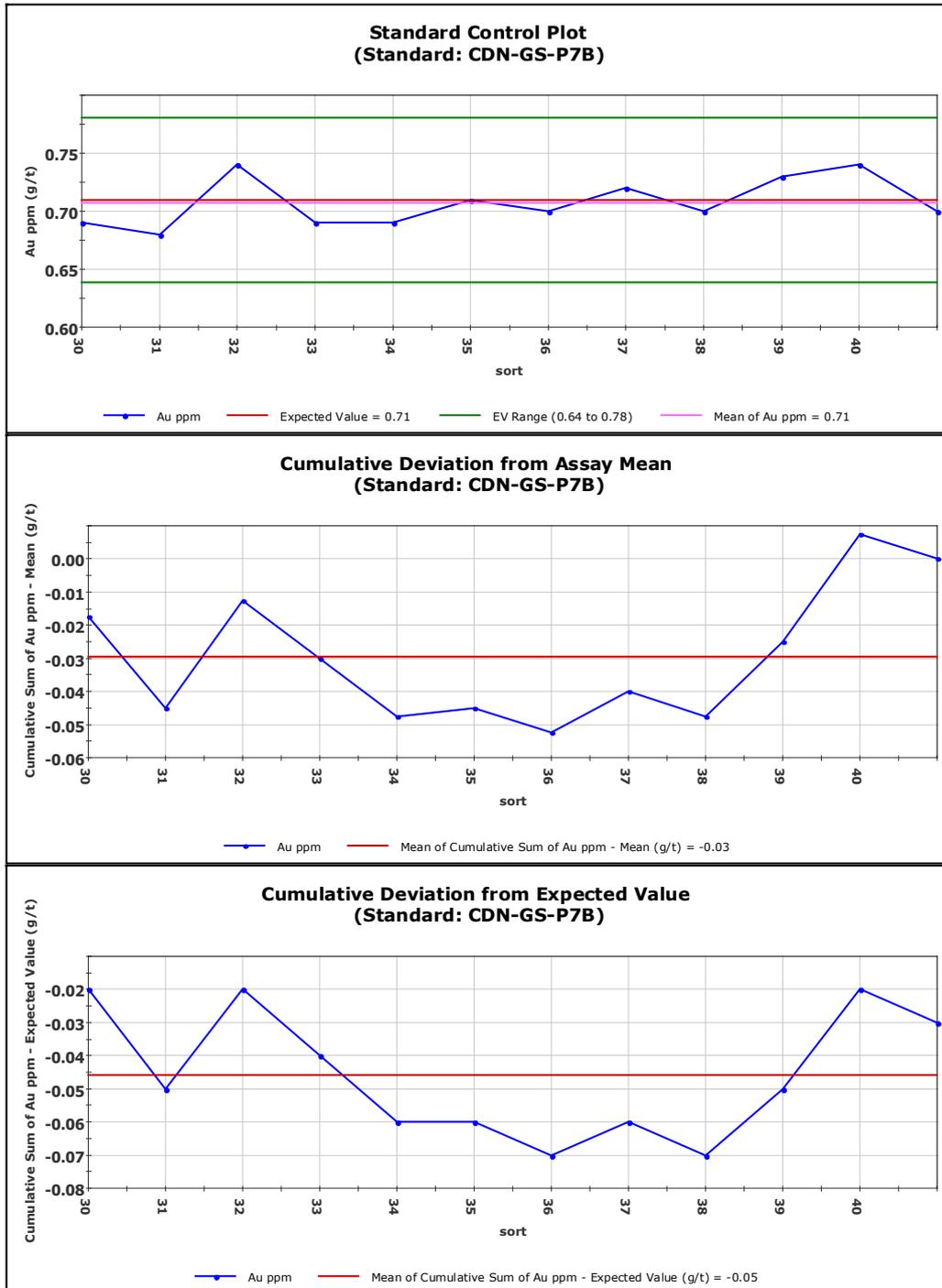
Summary
(Standard: SL51)

Standard:	SL51	No of Analyses:	2
Element:	Au ppm	Minimum:	5.92
Units:		Maximum:	5.93
Detection Limit:	-	Mean:	5.93
Expected Value (EV):	5.91	Std Deviation:	0.00
E.V. Range:	5.31 to 6.50	% in Tolerance	100.00 %
		% Bias	0.34 %
		% RSD	0.08 %

Standard Control Plot
(Standard: SL51)

Legend: Au ppm — Expected Value = 5.91 — EV Range (5.31 to 6.50) — Mean of Au ppm = 5.93

Cumulative Deviation from Assay Mean
(Standard: SL51)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Mean (g/t) = 0.00

Cumulative Deviation from Expected Value
(Standard: SL51)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = 0.03
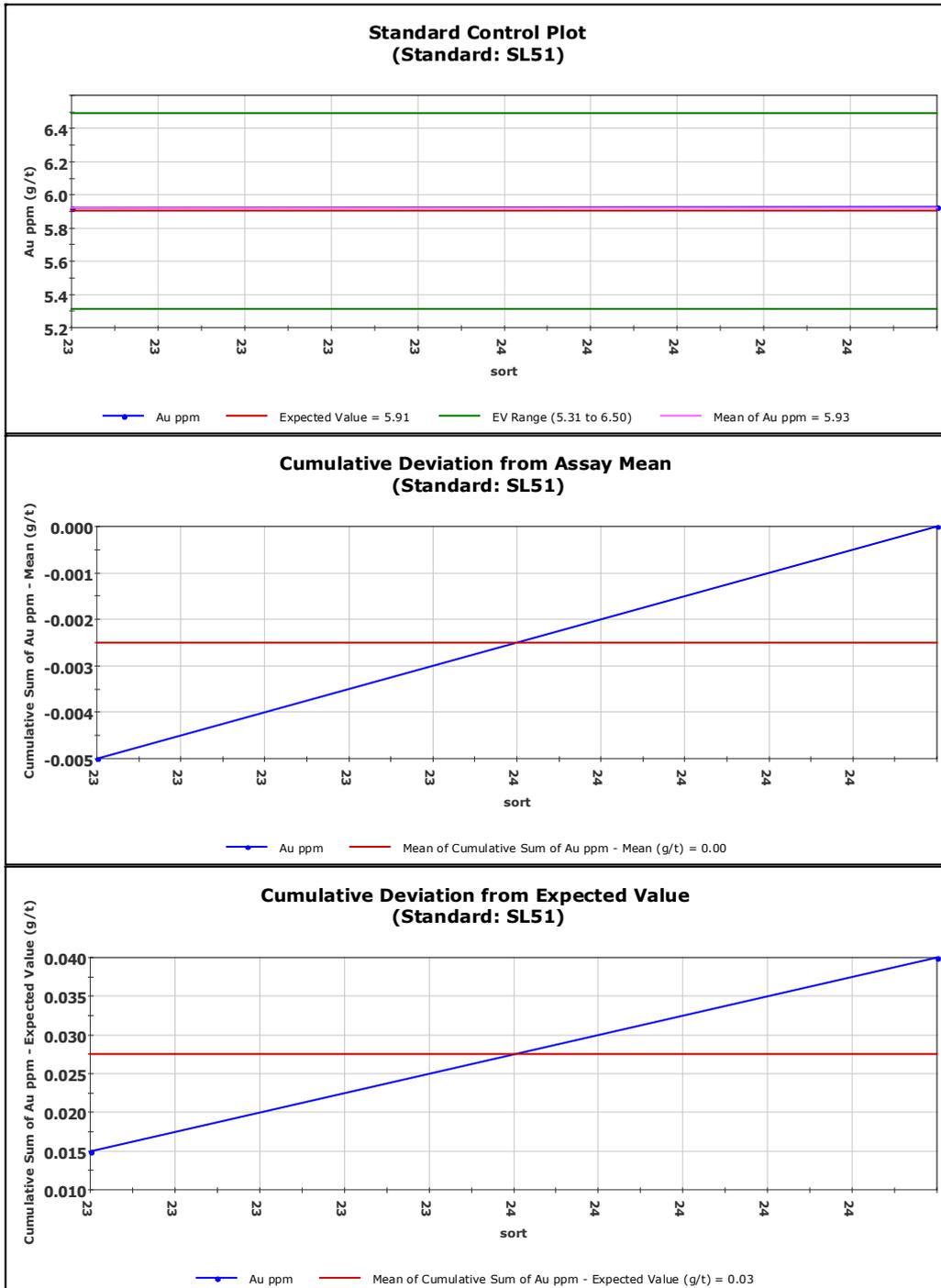
Summary
(Standard: OXF85)

Standard:	OXF85	No of Analyses:	2
Element:	Au ppm	Minimum:	0.79
Units:		Maximum:	0.80
Detection Limit:	-	Mean:	0.80
Expected Value (EV):	0.81	Std Deviation:	0.01
E.V. Range:	0.72 to 0.89	% in Tolerance	100.00 %
		% Bias	-1.24 %
		% RSD	0.63 %

Standard Control Plot
(Standard: OXF85)

Legend: Au ppm — Expected Value = 0.81 — EV Range (0.72 to 0.89) — Mean of Au ppm = 0.80

Cumulative Deviation from Assay Mean
(Standard: OXF85)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Mean (g/t) = 0.00

Cumulative Deviation from Expected Value
(Standard: OXF85)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = -0.02

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Summary
(Standard: OXK95)

Standard:	OXK95	No of Analyses:	6
Element:	Au ppm	Minimum:	3.50
Units:		Maximum:	3.71
Detection Limit:	-	Mean:	3.62
Expected Value (EV):	3.54	Std Deviation:	0.08
E.V. Range:	3.18 to 3.89	% in Tolerance	100.00 %
		% Bias	2.31 %
		% RSD	2.09 %

Standard Control Plot
(Standard: OXK95)

Legend: Au ppm — Expected Value = 3.54 — EV Range (3.18 to 3.89) — Mean of Au ppm = 3.62

Cumulative Deviation from Assay Mean
(Standard: OXK95)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Mean (g/t) = -0.05

Cumulative Deviation from Expected Value
(Standard: OXK95)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = 0.24
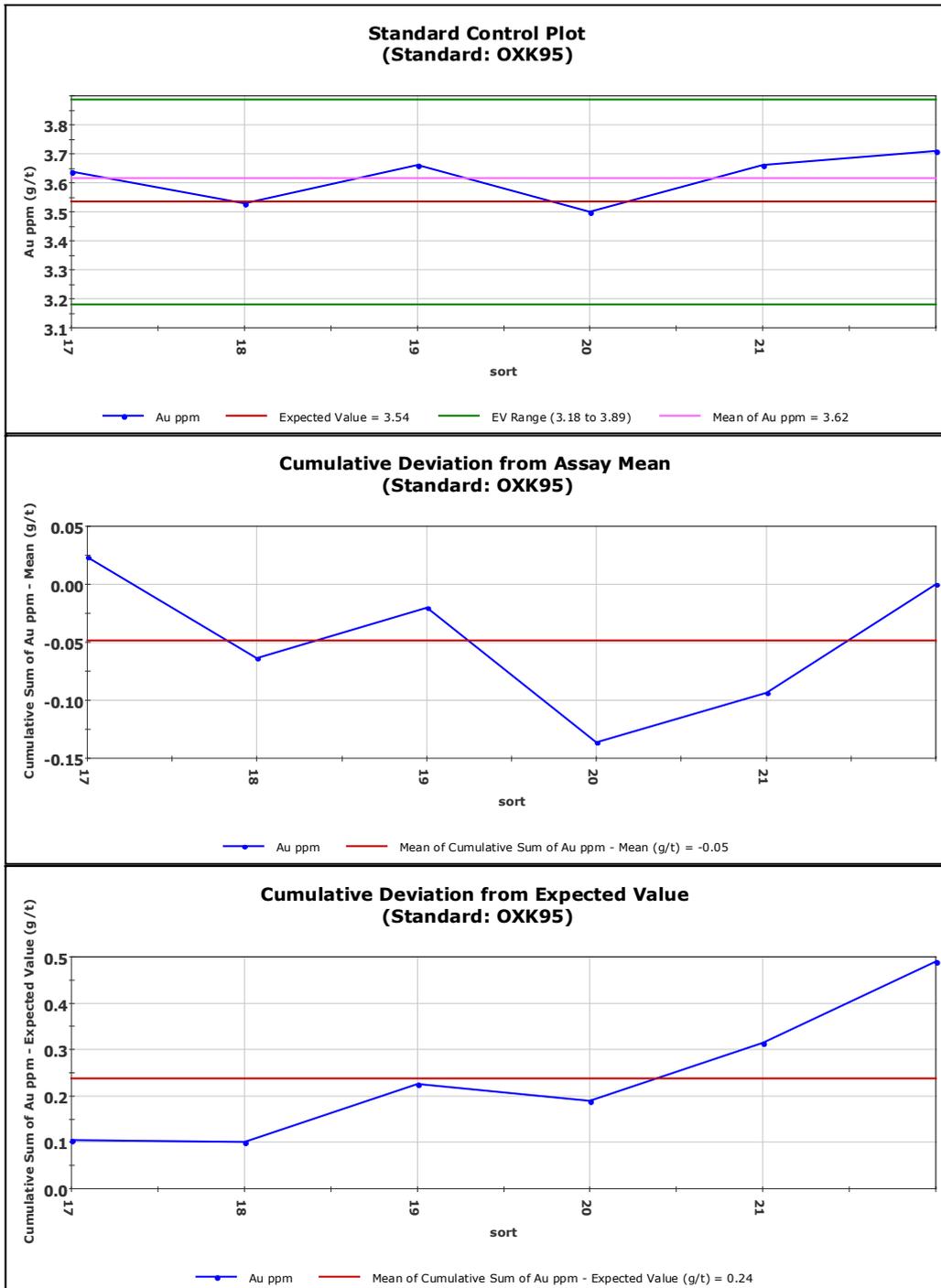
Summary
(Standard: OXD87)

Standard:	OXD87	No of Analyses:	6
Element:	Au ppm	Minimum:	0.39
Units:		Maximum:	0.42
Detection Limit:	-	Mean:	0.41
Expected Value (EV):	0.42	Std Deviation:	0.01
E.V. Range:	0.38 to 0.46	% in Tolerance	100.00 %
		% Bias	-2.78 %
		% RSD	2.61 %

Standard Control Plot (Standard: OXD87)

Legend: Au ppm — Expected Value = 0.42 — EV Range (0.38 to 0.46) — Mean of Au ppm = 0.41

Cumulative Deviation from Assay Mean (Standard: OXD87)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Mean (g/t) = 0.00

Cumulative Deviation from Expected Value (Standard: OXD87)

Legend: Au ppm — Mean of Cumulative Sum of Au ppm - Expected Value (g/t) = -0.04