CSA Global
Mining Industry Consultants

Mineral Resource Estimate and NI 43-101 Technical Report

Pinargozu Project, Turkey

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Certificates of Qualified Persons

Certificate of Qualified Person – Neal Reynolds

As a Qualified Person of this Technical Report covering the Property named as Pinargozu Zinc Project of Pasinex Resources Limited, Turkey, I, Neal Reynolds do hereby certify that:

1) I am a Director at CSA Global Pty Ltd, and carried out this assignment for CSA Global Pty Ltd, Level 2, 3 Ord Street, West Perth, WA 6005, Australia Telephone +61 8 9355 1677; neal.reynolds@csaglobal.com.
2) The Technical Report to which this certificate applies is titled Mineral Resource Estimate and NI 43-101 Technical Report for the Pinargozu Project and is dated effective 30 June 2017.
3) I hold a PhD in Economic Geology from the University College Dublin, Ireland (1987) and am a Fellow of the Australasian Institute of Mining and Metallurgy. I am familiar with NI 43-101 and, by reason of education, experience in exploration, evaluation and mining of zinc deposits, and professional registration, I fulfil the requirements of a Qualified Person as defined in NI 43-101. My experience includes 30 years' in mineral exploration and project evaluation from exploration to resource and mine stage.
4) I have visited the Pinargozu Project between 28 May 2017 and 31 May 2017.
5) I am responsible for the following sections of this Technical Report; Sections 1 to 12, 19 and 22 and the associated text in the Summary, Conclusions and Recommendations and am responsible for their accuracy and validity.
6) I am independent of the issuer as described in Section 1.5 of NI 43-101.
7) I have not had prior involvement with the property that is the subject of this Technical Report.
8) I have read NI 43-101 and the parts of the Technical Report I am responsible for have been prepared in compliance with N1 43-101.
9) As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of the Technical Report that I am responsible for contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading

Dated this 20th day of December 2017.

Neal Reynolds

Director and Principal Consultant

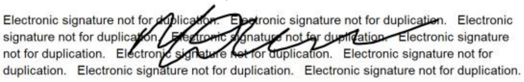
CSA Global (UK) Ltd

Certificate of Qualified Person – Maria O'Connor

As a Qualified Person of this Technical Report covering the Property named as Pinargozu Zinc Project of Pasinex Resources Limited, Turkey, I, Maria O'Connor do hereby certify that:

1) I am a Principal Resource Geologist of CSA Global (UK) Ltd, and carried out this assignment for CSA Global (UK) Ltd, Springfield House, Springfield Road, Horsham, West Sussex, RH12 2RG, UK Telephone +44 1403 255 969, e-mail: maria.oconnor@csaglobal.com.
2) The Technical Report to which this certificate applies is titled Mineral Resource Estimate and NI43 101 Technical Report for the Pinargozu Project and is dated effective 30 June 2017.
3) I hold a BSc (Hons) degree in Environmental Geochemistry from University College Dublin, Ireland (2004) and am a registered Member in good standing of the AIG (MAIG Member Number 5931) and a Member of the Australasian Institute of Mining and Metallurgy (MAusIMM Membership Number 307704). I am familiar with NI 43-101 and, by reason of education, experience in exploration, evaluation and mining of zinc deposits, and professional registration; I fulfil the requirements of a Qualified Person as defined in NI 43-101. My experience includes 12 years in mineral exploration and resource evaluation.
4) I have not visited the Pinargozu Project.
5) I am responsible for the following sections of this Technical Report; Section 14 and the associated text in the Summary, Conclusions and Recommendations and am responsible for their accuracy and validity.
6) I am independent of the issuer as described in Section 1.5 of NI 43-101.
7) I have not had prior involvement with the property that is the subject of this Technical Report.
8) I have read NI 43-101 and the parts of the Technical Report I am responsible for have been prepared in compliance with N1 43-101.
9) As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of the Technical Report that I am responsible for contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading

Dated this 20th day of December 2017.



Maria O'Connor BSc (Hons), MAIG, MAusIMM

Principal Resource Geologist

CSA Global (UK) Ltd

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1 Summary

1.1 Introduction

Pasinex Resources Limited (Pasinex) commissioned CSA Global Pty Ltd (CSA Global) to prepare a Mineral Resource estimate (MRE) for the Pinargozu Property ("Pinargozu" or "the Property") to the standard of the Canadian National Instrument 43-101 (NI 43-101) "Standards of Disclosure for Mineral Projects". Pasinex is an Canadian mining and exploration company with a principal listing on the Canadian Securities Exchange (CSE:PSE) and a secondary listing on the Frankfurt Stock Exchange (FSE:PNX).

Dr Neal Reynolds, Director and Principal Consultant, CSA Global, and Maria O'Connor, Principal Resource Geologist, CSA Global, are independent of the issuer as described in Section 1.5 of NI 43-101 and are the Qualified Persons of this Technical Report. Dr Neal Reynolds is responsible for Sections 1 to 12 and Maria O'Connor is responsible for Section 14, and their associated text in the Summary, Conclusions and Recommendations.

1.2 Property Description and Location

The Pinargozu Property is located in the province of Adana in southern Turkey. The coordinates of the Pinargozu mine are 751800E, 417500N.

Pasinex holds a 50% interest in the Pinargozu Operation Licence through Horzum Arama Isletme AS (Horzum AS), a 50/50 joint venture (JV) company between Pasinex Arama Madencilik AS (Pasinex AS), a wholly owned Turkish subsidiary of Pasinex, and Akmetal AS, the Turkish mining company that owns the nearby past-producing Horzum zinc mine.

This report relates to the Mineral Resource within the Pinargozu Operation Licence and does not include the Akkaya Exploration Licence held by Pasinex AS. Pinargozu is the site of a small-scale, underground mining operation[1] that is currently producing high-grade zinc oxide and sulphide material of direct shipping grade; smaller amounts of lead and silver are also produced. The mine currently produces from three adits with over 4.5 kilometres (km) of underground development.

A royalty is paid annually to the government. For mining operations on state-owned land, the royalty is increased by an additional 30%. The Pinargozu Property is mostly over the state-owned forestry; royalties paid by Horzum AS in 2017 have varied between 2% and 16%.

For mining activities, Turkish laws and regulations require an operating permit in addition to the operating license. Horzum AS JV holds the operating permit and forestry permit for the Pinargozu project and no additional permitting is required. The Property is subject to no known additional environmental liabilities or mitigation measures.

1.3 Accessibility, Climate, Local Resources, Infrastructure and Physiography

The Property is in the eastern part of the Taurus mountain range and 90 km northeast of the city of Adana (population 2.2 million). The Property is situated in the southern part of the ranges characterised by rugged mountainous topography with elevations ranging from 1,000 metres (m) to 600 m above sea level (ASL).

[1] Note that NI 43-101 does not require an issuer to file a technical report to support a production decision based on mineral reserves because under Companion Policy 43-101CP, 4.2(6) – Production Decision, the decision to put a mineral project into production is the responsibility of the issuer, based on information provided by Qualified Persons. Pasinex took this decision, in 2015, to proceed to production not based on a Feasibility Study of Ore Reserves demonstrating their economic viability and technical feasibility. As a result, there is an increased risk of failure (Pasinex Press Release, 9 November 2017).

The Property is adjacent to the main highway from Adana to Kayseri and about one hour and 15 minutes' drive from Adana. Adana is serviced my frequent domestic flights from Istanbul and Ankara.

The Pinargozu mine adit portals are about 2 km northwest of the highway and are accessed by unsurfaced road that provides year-round access to the mine. Access through the ranges around the Property is possible by rough four-wheel drive tracks.

Kozan is the closest town, 28 km from the Property, and district service centre. There is a major airport in Adana and a port in Mersin. The Horzum mine site provides accommodation, administration buildings, and core logging, splitting and storage facilities as well as maintenance services. The district has a long history of mining and an adequate supply of experienced mining personnel.

The project runs off national grid power and a major transmission line runs up the Horzum valley. The absence of an on-site mill and flotation plant means that water requirements are limited and adequately supplied by local ephemeral streams and groundwater.

The mine office is adequately equipped and provides moderate-speed internet connectivity. The Property has good mobile communication connectivity with almost universal 3G coverage.

The climate in the area is transitional between a Mediterranean climate and the continental climate of the Central Anatolia region. Summers are hot and dry and winters are cold and wet. The average annual precipitation is 730 mm, which mostly falls as rain and snow from December to April.

1.4 History

The Horzum district has a long history of mining, primarily of oxide zinc material that was processed to produce zinc metal at the electrolytic zinc smelter in Kayseri which was commissioned in 1974 and supplied by the Horzum, Tufanbeyli and Zamanti mining districts. The smelter closed in 2001. The Horzum mine, owned by Akmetal AS, was one of the larger mines in the region from 1974 to 1996 and is estimated to have produced about 1 million tonnes (Mt) of mostly oxide ore grading 20–30% Zn. Akmetal recommenced mining at Horzum in 2015 and is currently producing mainly sulphide ore.

Small surface and underground artisanal operations at Pinargozu during the 1970s to 1990s produced oxide material with average grades of around 30% Zn. No mine production data is available.

Previous in-house Mineral Resource estimates for the Pinargozu deposit have been completed but have not been publicly released and are not reportable under NI 43-101 guidelines.

1.5 Geological Setting and Mineralisation

The Pinargozu Property is located within the Horzum–Tufanbeyli Zinc Belt in the Eastern Tauride belt on the southern margin of the Anatolian block which represents a Palaeozoic to Mesozoic passive margin affected by Late Cretaceous to Cainozoic collision, deformation and uplift. Marine sedimentation terminated with Late Cretaceous to Palaeogene collision and southward ophiolite obduction with closure of the Vardar ocean to the north. North-verging fold and thrust deformation in the Tauride belt accompanied the Palaeogene-Neogene collision with the Arabian plate to the south and closure of Neotethys along the Bitlis suture. Northward collision of Arabia resulted in the uplift of the Anatolian plateau in the Neogene and westward extrusion along major sinistral strike-slip fault zones. Palaeogene and Neogene calc-alkaline magmatism accompanied collision and post-collisional extension events. The magmatism is associated with formation of epithermal and porphyry deposits, including the Çöpler gold porphyry on the Anatolian plateau.

Zinc mineralisation in the Tauride belt from Bolkarlar in the southwest to Keban in the northeast occurs mainly in passive margin Palaeozoic platform carbonates. The most significant oxide and sulphide district in Turkey, including current and historical production, occurs in the central part of the belt and includes the Zamanti (Yahyali) and Tufanbeyli-Horzum districts. Cominco documented production over 20–25 years of approximately 2.5 Mt zinc metal supplied to the Kayseri smelter. Most production has been oxide which reflects a combination of factors including: deep weathering and oxidation; very little exploration for sulphide; fragmented ground holdings and small-scale operators; and ability to sell oxide ore locally for processing.

The style of zinc mineralisation in these districts, oxide and sulphide, is not well studied or understood. The deposits in the Zamanti and Tufanbeyli–Horzum districts have previously been described as Mississippi Valley-type (MVT) style, however the Horzum and Pinargozu deposits have been reinterpreted as Carbonate-Replacement Deposit (CRD) systems associated distally with magmatism, similar to those in the Keban district

1.5.1 Geology of the Horzum–Tufanbeyli Zinc Belt

The Horzum–Tufanbeyli Zinc Belt is located in the complex bend and offset in the Tauride fold belt on the eastern side of the Central Anatolian Crystalline Complex, where the orogen is rotated to north-northeast trend between the Central Anatolian and East Anatolian Fault zones. Compressional deformation in this zone resulted in the development of thrust-bound nappes with later offset along sinistral structures. The Horzum–Tufanbeyli Belt is located within the Geyikdağı Unit, a thrust-bound Lower Palaeozoic tectonostratigraphic suite of shelf-type carbonate and clastic detrital rocks.

Zinc deposits in the belt occur in a broad northwest trend that extends for about 100 km from Kozan in the south to Tufanbeyli in the north. The host rocks within the Geyikdağı Unit include Lower-Middle Cambrian carbonate sequence (Değirmentaş Formation) at Horzum, and Devonian limestone at Tufanbeyli. The Değirmentaş Formation limestone and dolostone grade upwards into red argillaceous limestone, nodular limestones and calcareous mudstone. The host rocks are unmetamorphosed.

The Horzum valley is controlled by the north-northeast trending Horzum Fault Zone, a series of folded fault slices interpreted as a transcurrent fault and flower structure on a constraining bend.

Considering the tectonic history, structurally-controlled CRD mineralisation is potentially related to Eocene thrusting evolving to transpression, or to Neogene transcurrent faulting and extension and renewed magmatism on the Anatolian plateau.

1.5.2 Pinargozu Deposit Geology

The Pinargozu mine is located within bedded grey limestone of the Değirmentaş Formation that dips moderately to the southeast, with an interpreted basal thrust contact with clastic units. Mineralisation appears stratabound at a favourable level within the Değirmentaş Formation, interpreted as a micritic unit overlain by muddier limestone providing an aquiclude. The footwall is bioclastic limestone with thin interbedded siltstone and mudstone horizons.

The Değirmentaş Formation is locally dolomitised but there is no spatially association with mineralisation. All mineralisation is hosted in bleached recrystallised limestone that locally termed “marble” but that is interpreted to reflect hydrothermal alteration. It is characterised by small-scale brittle and vuggy dissolution veining and micro-brecciation, interpreted as fluid-escape features related to the main mineralised zone. The alteration extends up to 30 m from massive sulphide, and also appears stratabound.

Primary and secondary mineralisation form tabular stratabound bodies of variable thickness with subordinate narrower, often cross-cutting zones. Primary sulphide mineralisation is characterised by coarse massive sphalerite with subordinate pyrite. Massive galena locally cuts and replaces sphalerite with iron-carbonate gangue. Contacts of massive sulphide with bleached limestone are sharp, with minor disseminated and clotty sulphide in the limestone. Based on mining, the mineralisation is crudely stratabound within the central part of the Değirmentaş Formation. Observations underground suggest that massive sulphide contacts are mainly stratabound, although steep cross-cutting galena-rich mineralisation was seen at Horzum.

Mining to date at Pinargozu has mainly been of secondary zinc mineralisation, formed through supergene oxidation of massive sulphide mineralisation. The secondary mineralisation largely formed by supergene direct-replacement of sulphide, but with substantial local remobilisation of zinc into karstic cavity systems. The secondary mineralisation includes high-grade rhythmic banded smithsonite-hemimorphite deposited as open-space fill, karstic sediments impregnated by zinc, and clay-rich karstic fill zones.

1.6 Deposit Types

Pinargozu and Horzum occur within the Tufanbeyli–Horzum Zinc Belt, where mineralisation has generally been interpreted as MVT deposits, formed within the passive-margin platform carbonate sequences with fluid-flow systems related to the Cimmerian or Alpine orogenic compression and uplift. However, a number of characteristics of the Pinargozu and Horzum deposits point to an origin in relatively high-temperature CRD system. These include the presence of minor chalcopyrite, bornite, tetrahedrite-tennantite and native gold/electrum, iron-rich sphalerite, ferroan and managanoan carbonate gangue and peripheral veins, elevated Ag and As values, and the geometry and absence of associated dolomitisation).

The evidence therefore supports a young (Palaeogene or Neogene) intrusive-related CRD system. However, the intrusive source of mineralising fluids is unknown and there are no known intrusions in the district within tens of kilometres, suggesting that the source intrusion may be deeply buried.

The bulk of economic zinc mineralisation at Pinargozu is dominated by secondary minerals formed through supergene processes. These processes have been enhanced by uplift of a carbonate sequence in a relatively arid setting since the Miocene. Mineralisation is mostly direct replacement of sulphide, although wall-rock replacement occurs on a local scale.

1.7 Exploration

Prior to 2012, minimal exploration activity had been undertaken at Pinargozu. Regional exploration by Horzum AS commenced in early 2012 and included geological mapping and grab sampling, soil geochemical surveys and a Ground Penetrating Radar (GPR) survey. The GPR survey was undertaken to detect cavities associated with mineralisation, however, the success rate of drilled targets was low.

In 2017, Pasinex commenced a new exploration initiative in the district. This is currently underway and includes additional mapping, sampling and structural interpretation.

1.8 Drilling

Drilling at Pinargozu has been ongoing since 2014, including surface and underground drilling, for a total of 31,737.95 m from 291 drill holes up to the effective date. Data used in the estimation of resources is approximately 80% diamond core drill data and 20% underground channel samples.

All drilling has been completed by Akmetal AS using its own equipment. All drilling has been diamond core wireline drilling, mostly HQ unless reduced to NQ size due to ground conditions. Surface and underground holes were drilled from irregularly spaced drill positions constrained by access, typically in radiating fan patterns.

Drill collar locations have been surveyed by the company surveyor. Prior to July 2016, none of the surface drill holes were downhole surveyed. No drill-core orientation has been completed. Since July 2016, downhole surveying has revealed significant deviation in drill holes deeper than 100 m. As a result, the precise location of older deep drill traces is uncertain. Underground drill holes are not downhole surveyed.

Drill core is transported securely from Pinargozu to the drill-core handling and sampling facility at the Horzum mine, about 7 km by road. Core recovery and rock quality designation (RQD) are recorded and the core trays are photographed wet and dry prior to sampling. Drill-core logging is recorded on a standard paper logging form. For each logged interval, a Lith code and Sub-unit code are recorded together with an Unrestricted field, an Oxidation scale (0 to 5) and a Cavity scale (0 to 5), and Description. All logging and sampling data are captured and validated on import into Microsoft Excel tables.

Drill core quality is often poor especially in oxidised mineralised zones and results in low average recovery of 65%.

Underground channel samples were collected from 10 different exposed mineralised areas underground in 2017. Sampling was typically at 1 m intervals. Channel were horizontal except for one location sampling a mined raise within a mineralised lode.

1.9 Sample Preparation, Analysis and Security

Samples are designated by the logging geologist and range from 20 cm to 1.5 m, depending on lithological and mineralisation boundaries. Samples are assigned a barcoded sample number ticket from a ticket book. Competent core samples are cut with a diamond saw, broken and soft material is sampled manually.

Sample preparation takes place at the Horzum mine adjoining the logging area. This facility is not accredited or certified, but has been inspected by the Qualified Person. Samples are dried, crushed using a jaw crusher to nominal 90% passing <1 cm, split using a two-tier riffle splitter, and pulverised using a disc mill. The jaw crusher, splitter and mill are cleaned with a brush and compressed air between samples. When sampling high-grade mineralisation, a limestone blank sample is milled between samples. The facility is open to the air and exposed to dust from mine traffic and sample preparation.

Analytical results for blanks show a consistent degree of low level contamination, however, as the blank material is stored in the crushing room, the blank results do not provide a valid assessment of contamination during preparation. Contamination of low-grade samples is considered likely, this is not material considering the high grade of the MRE.

Bulk density data consists of 91 grab samples from underground exposures and 116 samples from drill core. Bulk densities were measured at SGS in Ankara using the standard paraffin wax-coated Archimedes Method. Pasinex also calculated a run-of-mine (ROM) bulk density from a specifically selected underground exposure in 2017.

A desk-mounted portable x-ray fluorescence (XRF) is used to analyse sample pulps at Horzum. Samples with a grade higher than 5% Zn are submitted to the SGS Mineral Services laboratory in Ankara for assay.

The sample preparation and storage facility are on the secure mine site. Sample pulps are transported to the SGS by commercial freight service. Laboratory analysis for 33 elements uses a four-acid digestion with an ICP-OES finish. Over range assays have been assayed by 4A-AAS, fusion or titration. Check samples were sent to ALS İzmir (Turkey) for analysis.

Duplicate samples have been the primary method of quality assurance and quality control (QAQC), but procedures have varied over the life of the project. Duplicate samples have included: quarter core duplicate samples submitted unprepared to SGS to compare with results of samples prepared at the on-site sample preparation facility (every 10th sample); coarse crush duplicate samples; and pulp duplicates. A coarse crush duplicate from every 30th sample is sent to ALS Izmir as an external check sample.

Industrial cement has been used as a blank sample since July 2016, inserted every 40th sample. Blanks are crushed and pulverised on site and submitted to the analytical laboratory as pulp samples.

No Certified Reference Material (CRM) was included with the primary samples. CRMs were recently purchased from African Mineral Standards (AMIS) in Johannesburg, South Africa and came into use after the effective date. In-house oxide and sulphide standards have been prepared from pulp material available on site and came into use after the effective date.

Based on a review of QAQC procedures and results, CSA Global concluded that the procedures had material gaps, some of which have now been remedied including use of CRMs.

Data management requires significant improvement. A centralised database should be implemented which can serve as a single point of truth for the project data.

1.10 Data Verification

CSA Global considers the onsite procedures employed to collect and capture geological observations are of an adequate standard to support the Mineral Resource estimate. However, logging and coding protocols and coding systems could be improved to enhance capture of significant geological data and improve understanding of the deposit, resource extension, and targeting.

Poor core recovery represents a significant resource estimation risk at Pinargozu. Oxidised mineralised zones result in very variable core quality and recoveries, averaging approximately 65%. It is not certain how this loss of core affects grade. Limitations of bulk density data also represents a significant resource estimation risk at Pinargozu due to difficulty in sampling the highly variable and friable oxidised and partially oxidised mineralisation. This risk has been mitigated to a significant extent by the recent bulk stope density measurement which broadly supports the average core values for oxide mineralisation.

The stope bulk density value (2.77 t/m^3) was used in the MRE for Oxide mineralisation and largely agrees with the statistical analysis of bulk density from core (2.76 t/m^3). Sulphur % was used to identify Sulphide, Transitional and Oxide zones and bulk densities were assigned accordingly (3.61 t/m^3, 3.20 t/m^3 and 2.77 t/m^3 respectively).

QAQC results were reviewed and no fatal flaws noted which indicates that the QAQC procedures implemented at Pinargozu are generally sufficient to ensure the quality of drillhole samples and to assess the reliability, accuracy and precision of the assay results obtained. However, a number of material issues were noted, some of which have now been remedied including use of CRMs. There are indications of poor repeatability of high grade samples (>30% Zn), with the samples prepared at the onsite sample preparation laboratory showing a 4% to 6% bias compared with those prepared at SGS. External check samples show acceptable precision with a 2% to 3% bias to SGS. As no CRM or standards were included with any of these samples, it is unclear which subset of samples is more accurate. Over 90% of the blanks indicate contamination, but this is not deemed material relative to the high grade of the samples.

CSA Global loaded Pinargozu data provided in Microsoft Excel into an Structured Query Language (SQL) relational database using the DataShed format which contains standard validation rules. Validation issues were noted and resolved where possible during the above process and a validated database was provided for Mineral Resource estimation.

1.10.1 Site Visit

Dr Neal Reynolds, of CSA Global, visited the Property between 28 May 2017 and 31 May 2017 and reviewed the location and orientation of several drill collars, assessed the core handling and storage facilities and procedures, and reviewed geological interpretation were assessed with the site team.

CSA Global has not undertaken any check sampling or analysis, but has observed visible mineralisation in drill core that corresponds well with reported grades.

CSA Global coordinating author, Thomas Branch, also visited site on two subsequent occasions (28–30 September and 25–29 October 2017)

1.11 Mineral Resource Estimate

Mineralised solids were generated on site using Micromine™, with direct input from Pinargozu geological and production staff and Mineral Resources estimated using Datamine™ within hard boundaries and employing Ordinary Kriging for Zn, Ag and S and Inverse Distance (to the power of two) for Pb. Resources were validated statistically by (a) comparing global means, by estimation domain and (b) using swath plots for Zn, Ag and S. The block model was also validated visually through a comparison of input sample grades alongside estimated blocks. Resources were depleted as at 30 June 2017, using depletion and development wireframes generated and provided by Pinargozu staff. The MRE shown in Table 1 is as at 30 June 2017.

Table 1: Mineral Resource estimate, reported at a 10% Zn cut-off, 30 June 2017

Pinargozu Mineral Resources Mineral Resource Estimate as at 30 June 2017 Reported at a cut-off grade of 10% Zn							
Classification	**Material**	**Tonnes**	**Zn Grade**	**Zn Metal**	**Density**	**Pb Metal**	**Ag Metal**
		Ktonnes	**%**	**Ktonnes**	**(t/m3)**	**Ktonnes**	**Koz**
Inferred	Oxide	150	28.9	43.5	2.8	1.2	520
	Sulphide	50	35.3	18.1	3.4	1.2	160
Total		200	31%	61.6	2.9	2.4	680

Notes:
1. Reporting cut-off is 10% Zn for both Oxide and Sulphide Resources
2. The Mineral Resource Estimate has been depleted for mining up to 30th June 2017. The effective date of the Mineral Resource is June, 30th 2017.
3. Figures have been rounded to the appropriate level of precision for the reporting of Resources.
4. Due to rounding, some columns or rows may not compute exactly as shown.
5. The Mineral Resources are stated as in situ dry tonnes. All figures are in metric tonnes.
6. The Mineral Resource has been classified under the guidelines of the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council, and procedures for classifying the reported Mineral Resources were undertaken within the context of the Canadian Securities Administrators National Instrument 43-101 (NI 43-101).
7. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

The geological model is considered robust due to good drill and channel sample spacing. CSA Global believes Pinargozu staff also have a good understanding of local geological controls. However; the MRE has been classified as Inferred Mineral Resources, under the guidelines of the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council, and procedures for classifying the reported Mineral Resources were undertaken within the context of the Canadian Securities Administrators NI 43-101. Although Pinargozu is an operating and profitable mine, resources were classified as Inferred, in part, due to:

- The extremely variability of bulk densities (currently not constrained by data available for the Mineral Resource)
- Poor core recoveries within the mineralised lodes
- Poor repeatability, at high grades, within indications of bias in duplicates prepared on site
- Some uncertainties about depletion solids; no digital surveying of depletion was undertaken on site until recently.

Pasinex is currently undertaking additional works, to constrain these issues.

1.12 Conclusions

- The Pinargozu Property encompasses a small-scale underground mine that is currently producing high-grade zinc oxide and sulphide material of direct shipping grade; no Preliminary Economic Assessment, Prefeasibility Study or Feasibility Study has been completed on the Pinargozu Property on which to report economic analysis and the Property has no Mineral Reserve to indicate potential economic viability.
- The Property is well serviced by infrastructure and supported by local resources.
- The Property is located in the Horzum–Tufanbeyli Zinc Belt which forms part of the larger Central Anatolian zinc province, which has estimated cumulative production of over 2 Mt contained Zn metal from multiple deposits.
- Although mineralisation had previously been interpreted to be of MVT, the available evidence supports a CRD deposit type formed by limestone replacement distal from a magmatic fluid source.
- Oxide mineralisation formed by direct replacement of sulphide with local short-range karstic replacement of limestone wall rock.
- The oxide and sulphide mineralisation forms irregular plunging tabular bodies and shoots that are broadly stratabound with a preferred unit in the central part of the Değirmentaş Formation limestone suggesting a strong lithological control. Logging and mapping does not currently adequately differentiate the lithostratigraphic sub-units.
- Structural control on mineralisation is not well defined, but may be related to west- to northwest-directed thrusting.
- High-grade mineralisation has a rapid cut off to barren limestone but is surrounded by recrystallised bleached limestone which, together with fluid-escape veins, provide a larger target and potentially vectors to mineralisation. Intense footwall alteration is probably related to mineralisation and merits assessment as a targeting indicator.
- Sulphide mineralisation is strongly dominated by coarse massive sphalerite, galena and pyrite are locally abundant. Mineralisation may have a conductivity contrast with the host limestone that may lead to an electromagnetic (EM) signature and may also be responsive to Induced Polarisation (IP).
- The Horzum–Tufanbeyli Zinc Belt has had limited past exploration and potential is considered to be high if targeted with modern systematic exploration.
- Data used in the estimation of the Pinargozu Mineral Resource is approximately 80% diamond core drill data and 20% underground channel samples; CSA Global considers that the sample density and quality is adequate to support classification of an Inferred Mineral Resource but highlights the issue of poor recovery as a material risk.
- Down-hole survey data is largely absent at Pinargozu. Only 11 out of 302 drill holes have data; three surface holes were surveyed in 2015 and the process was re-started (albeit erratically) in 2017 with 8 of the more recent holes being surveyed.
- Surface drill holes were not downhole surveyed prior to July 2016 and only six out of 291 drill holes have survey data.
- CSA Global considers that the logging and coding scheme is not optimally designed to extract all key information and for easy import into digital modelling and visualisation software.
- CSA Global notes that sample preparation facility is on an active mine site is not adequately protected from dust contamination and that blank sample data indicate significant contamination, however this is not considered material for the high-grade Mineral Resource estimation. Analysis is undertaken at the ISO-accredited SGS laboratory in Ankara.

- No fatal flaws were noted in QAQC procedures or results and provide adequate support for inclusion of the sample data in an Inferred MRE. However, material gaps in the QAQC and data procedures include lack of CRMs, indications of poor repeatability of high grade values, and lack of useable QAQC samples for the channel sample dataset.
- The majority of density data available is based on core samples which is likely to be biased against sampling friable (low density) oxide mineralisation; however, a stope bulk density oxide sample collected to address this uncertainty corroborated the average core value.
- Data management requires significant improvement. A centralised database should be implemented which can serve as a single point of truth for the project data.
- Prior to resource estimation, data were loaded into Datashed with appropriate validation triggers and constraints.
- Mineralised solids were generated onsite using Micromine™ with direct input from Pinargozu geological and production staff; the geological model is considered robust.
- Logging of oxidation was irregular and inconsistent, as a result sulphur % was used to distinguish Sulphide, Transitional and Oxide resources.
- Mineral Resources were estimated within hard boundaries and employing Ordinary Kriging for Zn, Ag and S and Inverse Distance (to the power of 2) for Pb. Resources were validated statistically.
- Resources were depleted as at the 30th June 2017, using depletion and development wireframes generated and provided by Pinargozu staff; CSA Global notes that stopes were not accurately surveyed for a period in 2016-17 and that this introduces additional risk to the Mineral Resource estimate.
- CSA Global has concluded that the MRE is classified as an Inferred Mineral Resource despite the active mining at Pinargozu, reflecting the extremely variability of bulk densities, poor core recoveries, poor repeatability at high grades, and uncertainties about depletion solids. CSA Global notes that Horzum AS is currently undertaking additional work and implementing new procedures to constrain these issues.

1.13 Recommendations

- Complete limited re-logging to provide the basis for logging of lithostratigraphic sub-units in the Değirmentaş Formation to assist with geology modelling and targeting. This should be supported by petrology and lithogeochemical multi-element analysis of the alteration zones.
- Develop a revised logging and coding system that includes separate stratigraphic, lithological, alteration, mineralisation, oxidation, and structural tables.
- Complete petrophysical testwork on a mineralised and unmineralised samples.
- Complete a ground magnetic surveys for structural and lithological information.
- Complete an integrated targeting study of the entire Horzum–Tufanbeyli Belt followed by ground acquisition of key areas. Use Pb isotope analysis to provide important information on the nature and scale of systems.
- All drill holes should be downhole surveyed.
- All drill holes should be oriented.
- Mark-up, core recovery and RQD should be recorded at the drill site prior to transport.
- Five to 10 HQ3 drill holes should twin completed holes with poor core recoveries to provide clarity on the impact of poor recovery and friable samples on grade and from which to measure collect

additional bulk density data. Selective sampling of the karstic mineralisation from core and from underground will help determine the relative grade and possible bias.

- Two to five new stopes that are representative of ROM production should be selected for the calculation of additional stope bulk densities.
- Complete an external audit of the preparation laboratory. Prior to the audit, samples should be prepared off site.
- Appoint a commercial supplier of CRMs (e.g. Geostats, AMIS, OREAS, etc.) to independently certify the in-house standards.
- Compile written QAQC procedures including failure resolution criteria.
- Implement an industry standard database SQL package (e.g. Datashed) for data management.
- Future resource updates should estimate within separate mineralisation domains that account for the uncertain relationship between zinc, silver, lead and sulphur. The different oxidation types should be estimate separately, or indicator kriging employed to more accurately subdivide these material types.
- All underground development and stoping should be accurately surveyed to provide confidence in depletion volumes for Mineral Resource estimation.

2 Introduction

2.1 Issuer

Pasinex commissioned CSA Global to prepare a MRE for the Pinargozu Property to the standard of the Canadian NI 43-101 "Standards of Disclosure for Mineral Projects". Pasinex is an Canadian mining and exploration company with a principal listing on the Canadian Securities Exchange (CSE:PSE) and a secondary listing on the Frankfurt Stock Exchange (FSE:PNX).

Pasinex holds its interest in the Pinargozu Project through a 50:50 corporate JV company, Horzum Arama Isletme AS (Horzum AS), with Turkish mining house Akmetal Madencilik San Tic. AS (Akmetal AS). Akmetal is one of Turkey's largest family-owned conglomerates, and own the nearby past-producing Horzum Zinc mine.

2.2 Terms of Reference

This report details the completion of a maiden MRE for the Pinargozu zinc-lead-silver deposit, also incorporating a geological assessment of the deposit. The purpose of this report is to provide a Qualified Person's (QP) Independent Technical Report for the Pinargozu project in accordance with the Canadian Securities Administrators NI 43-101 Standards of Disclosure for Mineral Projects.

CSA Global notes that the Pinargozu project is currently the site of an active small-scale, underground mining operation producing high-grade zinc oxide and sulphide material of direct shipping grade; smaller amounts of lead and silver are also produced. The mine currently produces about 170 tonnes per day, or about 60,000 tonnes per annum, from three adits with over 4.5 km of underground development.

NI 43-101 does not require an issuer to file a technical report to support a production decision because under Companion Policy 43-101CP, 4.2(6) – Production Decision, the decision to put a mineral project into production is the responsibility of the issuer, based on information provided by QPs. Pasinex took this decision, in 2015, to proceed to production without completing a Feasibility Study to demonstrate economic viability and technical feasibility and without reporting a Mineral Reserve. As a result, there is an increased risk of failure (Pasinex Press Release, 9 November 2017).

CSA Global was advised by Pasinex that the Pinargozu project should not be reported in this Technical Report as an "Advanced Property" as defined by NI 43-101 as it does not have defined Mineral Reserves to indicate potential economic viability supported by either a preliminary economic assessment, pre-feasibility study or feasibility study.

2.3 Sources of Information

This report is based on the following:

- Information and data provided by Pasinex to CSA Global
- Site visit by Dr Neal Reynolds (Principal Geologist to Pinargozu in May 2017 including a geological assessment of the deposit and two subsequent visits by Thomas Branch (Senior Geologist, CSA Global) in September and October 2017 to update the mineralisation model and assess bulk density
- Technical data and information provided by the operator of the property, Akmetal, and discussions held with representatives of Akmetal and Pasinex on site in Turkey
- Reviews of various publications and reports, both technical and commercial
- Results of the MRE.

2.4 Units

Metric units were used in this report for distance and the local coordinate system used is UTM E50 Zone 36N.

All costs discussed are in US dollars ($) or in Turkish Lira (TRY).

2.5 Qualified Person Property Inspection

This report has been overseen by Dr Neal Reynolds of CSA Global who visited the Property from 28 May 2017 through 31 May 2017. The main part of the visit focused on the Pinargozu deposit including underground visit, drill core inspection, and review of data and discussions with the site team, especially senior mine geologist, Faruk Unlu. In addition, the Akkaya concession was visited to examine the location of surface geochemical anomalies and the location of previous drilling in 2015.

The Horzum mine was also visited underground. Horzum mine is operated by Akmetal and is not part of the Pasinex JV, but is a similar style of zinc-lead deposit. The Akmetal processing facility 20 km east of Adana city was visited at the end of the trip. This large facility with extensive hardstands and warehouses is used to stockpile, sort and blend material to acceptable specifications prior to shipping from the port of Mersin.

CSA Global coordinating author, Thomas Branch, also visited the mine site on the 29 September 2017 and 26–27 October 2017. The primary objectives of the visits were: to review drill core and underground mineralised exposures, create the digital mineralisation model and depletion solids and analyse the bulk density core and stope data and sulphide model. Geological works benefited from significant input from Pasinex geological staff.

3 Reliance on Other Experts

CSA Global has not reviewed the status of Akmetal or Pasinex tenure or JV agreements pertaining to the Property and has relied on information provided by Pasinex with regard to the legal title to the mineral concessions. CSA Global's description of permitting and title is based on information provided by Pasinex, and has not been independently verified by CSA Global.

No warranty or guarantee, be it express or implied, is made by CSA Global or the authors with respect to the completeness or accuracy of the legal aspects of the Pinargozu Property. Neither CSA Global nor the author accepts any responsibility or liability in any way whatsoever to any person or entity in respect to these parts of this document, or any errors in or omissions from it, whether arising from negligence or any other basis in law whatsoever.

4 Property Description and Location

4.1 Property Location

The Pinargozu Property is located in the province of Adana in southern Turkey in the eastern part of the Taurus mountain range (Figure 1). The Property is located 90 km northeast of the city of Adana, the sixth biggest city in Turkey with a population of 2.2 million, and 27 km north of the town of Kozan. The coordinates of the Pinargozu mine are 751800E, 417500N.

The mine currently produces from three adits with over 4.5 km of underground development.

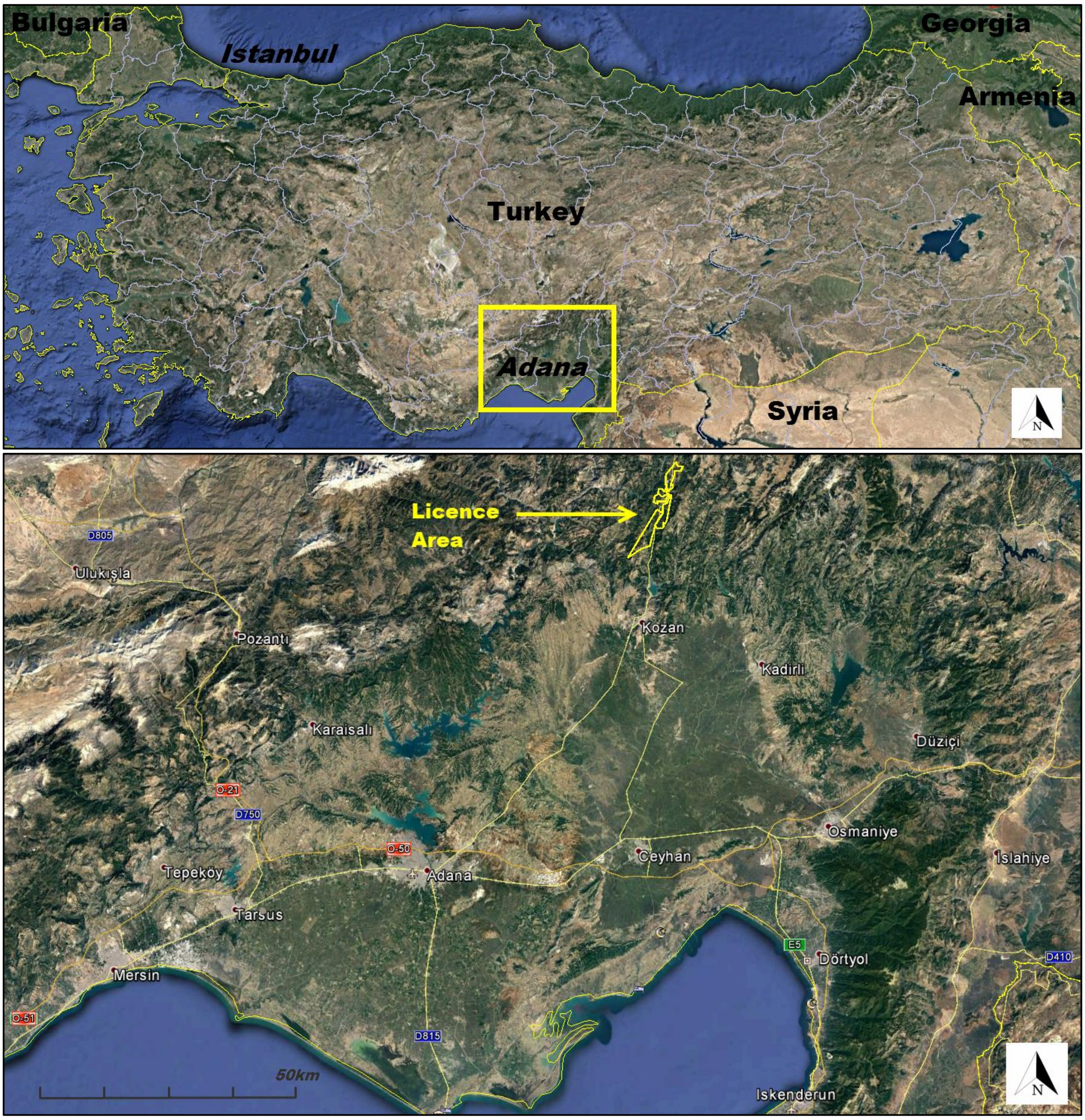


Figure 1: Location map of the Pinargozu Project

UTM ED50,36N (Source: Google Earth, 2017)

4.2 Mineral Tenure and Ownership

Pasinex holds a 50% interest in the Pinargozu Operation Licence (№ 20066101) through JV company, Horzum AS, a 50/50 joint venture company between Pasinex AS, a wholly owned Turkish subsidiary of Pasinex, and Akmetal AS, the Turkish mining company. Pasinex AS also holds 100% of the Akkaya Exploration Licence, while Akmetal AS holds 100% of the Horzum Operation Licence that covers the Horzum zinc mine.

The three licences are presented in Table 2 and Figure 2. This report relates to the Mineral Resources within the Pinargozu mine, located within the Pinargozu Operation Licence.

Table 2: Licences held by JV and partners

Licence name	Licence holder	Date issued	Date expiry	Licence group	Area (ha)
Akkaya	Pasinex Arama Madencilik AS	09/07/2012	09/07/2019	IV	1,061.36
Pinargozu	Horzum Arama Isletme AS	15/04/2013	15/04/2023	IV	1,127.28
Horzum	Akmetal AS	29/11/2008	29/11/2018	IV	1,849.19

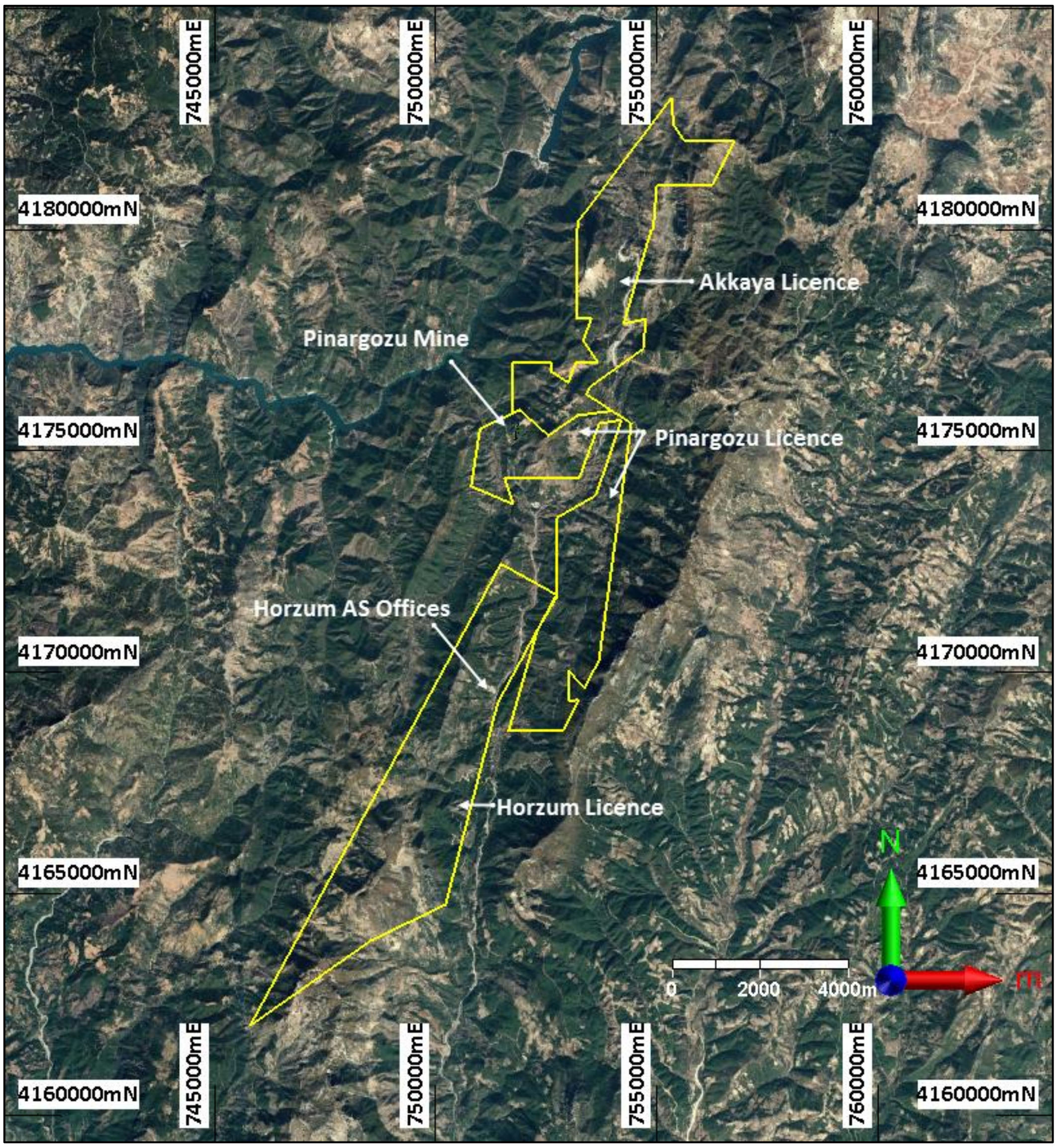


Figure 2: Licences in the Horzum–Pinargozu area

Held by Horzum AS, Pasinex AS and Akmetal AS; modified from Google Earth, 2017

4.2.1 Pinargozu Mining Concession

Horzum AS holds the mining concession for the Pinargozu Property; Table 3 summarises the licence details.

Table 3: Pinargozu Operation Licence details

Licence no.	I.R.20066101 (Operation Licence)
Licence group	IV
Granted date	15.04.2013
Expire date	15.04.2023
Access no.	3108021
Area	1127.34 ha
Concession holder	Horzum Maden Arama ve İşletme A.Ş.
Sheet no. (1/25000)	M35-c1, c2

According to Turkish mining law, the property boundaries are defined by the coordinate descriptions on the original licence application as awarded to the applicant by the government (Özkan *et al.,* 2016). The corner points that define the Pinargozu Project (European Datum 1950 UTM Zone 36N) are listed in Table 4.

A copy of the Tenement Certificates issued by the Maden İşleri Genel Müdürlüğü (MİGEM; General Directorate of Mining Affairs) was provided by Pasinex and reviewed by CSA Global. However, details and ownership of the licenses have not been independently verified by CSA Global.

Table 4: Pinargozu Operation Licence coordinates (ED50 UTM Zone 36N)

Corner no.	Easting	Northing	Corner no.	Easting	Northing
1	751000	4175500	13	751650	4168675
2	751900	4175925	14	752300	4170950
3	752550	4175350	15	752750	4171725
4	753200	4175800	16	752750	4173500
5	753984	4175910	17	753625	4174000
6	754425	4175625	18	754200	4175700
7	753693	4170276	19	753700	4175625
8	753367	4169638	20	753250	4174400
9	753000	4170041	21	751550	4174400
10	753000	4169346	22	751750	4173800
11	753234	4169378	23	750800	4174200
12	752875	4168675			

4.3 Datum and Projection

All resource and exploration data are projected in European Datum 1950, Universal Mercator Project (UTM) Zone 36 North.

4.4 Turkey Mining Law and Regulations

4.4.1 Regulatory Authorities

The Ministry of Energy and Natural Resources (Enerji ve Tabii Kaynaklar Bakanligi) is the main governmental body authorised to issue secondary legislation concerning mining activities such as regulations and communiqués. The General Directorate of Mining Affairs (Maden İşleri Genel Müdürlüğ) is the body authorised to issue mining licences and to implement applicable legislation.

The General Directorate of Mineral Research and Exploration (Maden Tetkik ve Arama Genel Müdürlüğü; "MTA") is a body within the Ministry. It conducts scientific and technological research on mineral exploration and geology.

4.4.2 Ownership

All minerals are owned by the state which has the exclusive right to explore and operate facilities related to minerals. It may transfer those rights to a real person or legal entity for a specific period, subject to compliance with all relevant licensing requirements.

The state may:

- Authorise third party private persons to carry out mining activities
- Provide permits and licences to state institutions and organisations to carry out mining activities within the scope of the Mining Law.

The state can grant mining rights to the following (Article 6, Mining Law):

- Turkish citizens who have the benefit of civil rights
- Companies incorporated under Turkish law whose articles of association allow them to carry out mining activities
- Authorised public entities and institutions and their affiliated subsidiaries.

The licensing procedure, fees and the permits required for mining activities depend on the mineral group involved. The Mining Law outlines five mineral groups, with some categories split into detailed sub-groups. Metals are part of the 4^{th} Group.

There are two main types of licences for prospecting and operating mines:

- Exploration licences
- Operation licences.

4.4.3 Fees

Annual licence fees are variable and increase each year:

- Minimum TRY 1,000 ("TRY" - Turkish Lira) for an exploration licence
- Minimum TRY 10,000 for an operation licence:

4.4.4 Obligations

A licence holder's obligations under the mining law and regulations include:

- Payment of the annual licence fee at the due time
- Payment of royalties depending on the type of the mineral
- Submitting technical and financial reports to the relevant authorities, including the General Directorate of Mining Affairs (GDMA)

- Complying with the technical and employment related obligations stipulated under the Mining Law, such as hiring an engineer to technically supervise the activities
- Making applications for the necessary permits in due time and in a manner acceptable to the relevant state institutions
- Providing accurate statements to authorities under the Mining Law.

Failure to comply with these obligations attracts administrative fines ranging from TRY 20,000 to TRY 50,000. The authorities are also empowered to suspend or revoke the licence depending on the nature of the breach.

4.4.5 Mining Restrictions

Mining is strictly regulated and many restrictions apply, including:

- Mining rights can only be granted to Turkish citizens or legal entities established under Turkish law.
- Mining activities in certain areas must be established by a regulation of the Council of Ministers, by obtaining the opinion of the related ministries. These areas include preservation forests, forestation zones, land hunting areas, private protection zones, national parks, natural parks, natural monuments, nature protection zones, agriculture, field and culturally protected zones, water catchments, coastal areas and coastlines, territorial waters, tourism regions, cultural and tourism preservation and development zones, forbidden military zones and construction planning zones and neighbouring areas. Permits for these areas may also be subject to different requirements and approvals from the authorities.
- The Ministry may restrict specific areas in licence applications, considering factors including the area of activity, type of the mineral and environmental effects.
- The consent of the Ministry is required for mining activities in areas reserved for public service, public interest, or within 60 m distance to those areas. Mining activities within 60 m of buildings and within 20 m of privately owned lands must receive permission from the proprietors. Consent from related persons must be obtained to carry out mining activities in privately owned areas.

4.4.6 Exploration Licence

An exploration licence grants the holder the right to carry out mineral exploration activities. Licences for minerals in Group 4 are evaluated on a first come, first served basis and are not subject to a tender process. For Group 4 minerals, exploration licences grant the holder a one-year preliminary exploration period, a two-year general exploration period, and a four-year detailed exploration period. If approved, the exploration licence holder is entitled to a feasibility period of two years from the end of the detailed exploration period.

4.4.7 Operation Licence

An operation licence grants the holder the right to operate a mine. Having the exploration licence is a prerequisite for applying for an operation licence. To apply for an operation licence, the applicant must present a detailed operation study to the Directorate before the exploration licence period expires. The applicant must also provide documents showing the operation licence fee has been paid in full and the applicant's financial capability to realise the project.

The term of an operation licence depends on the project study with a minimum of 10 years and a maximum of 50 years for Group 4 minerals. The Council of Ministers is authorised to extend the maximum period of the licences.

4.4.8 Operating Permit

An operating permit is required following the grant of an operation licence. A mine must hold an operating permit to operate. To obtain an operating permit, authorisations must be obtained from various administrative institutions within three years of the grant of the operation licence:

- Environmental impact assessment (EIA) (çevresel etki değerlendirmesi) decision. The holder must apply within three months of obtaining the operation licence.
- Workplace opening and operation licence. This licence allows the holder to open and operate mineral production facilities.
- If the mining operations occur on certain types of land, the licence holder must apply for authorisation within three months of obtaining the operation licence:
    - forest, protection forest and afforestation areas
    - wildlife protection and development areas, hunting lands
    - special environmental areas
    - national parks, natural monuments and nature reserve areas
    - agriculture lands and pasture
    - land where there are immovable cultural and natural assets requiring protection
    - drainage basins
    - coastal areas, shorelines, territorial waters
    - tourism regions, areas, centres, tourism protection and development regions
    - military forbidden zones
    - zoning and adjacent areas.

4.4.9 Environment

An EIA is required under the Environmental Impact Assessment Regulation. Mining licence holders must obtain an affirmative EIA report, or a decision that an affirmative EIA report is not required. EIA reports are obtained from organisations authorised by the government. Horzum AS has an affirmative EIA certificate, which was issued by the Ministry of Environment and Urbanisation. Within two years of completing mining operation activities, licence holders must return the land back to the state it was in before mining activities began. Certain terms and conditions stipulate how this should occur.

4.4.10 Payments and Royalties

The licence holder must pay an annual royalty to the government for the extracted minerals. The royalty is based on the producer's annual total sales of raw material and for zinc is variable dependent on the London Metal Exchange $/ton price (as per Table 5). Royalties paid by Horzum AS in 2017 have varied between 2% and 16%.

Table 5: Relationship between 2017 zinc royalties to pit sale prices (as per variable LME price)

Royalty	LME zinc price
0%	<1,000 $/ton
2%	1,001–2,500 $/ton
4%	2,501–3,000 $/ton
6%	3,001–3,500 $/ton
8%	3,501–4,000 $/ton
14%	4,001–4,501 $/ton
16%	>4,501 $/ton

Municipality charges. In addition to the royalty, where a mining operation is carried out within the borders of a municipality or within the adjacent areas, 0.2% of the operation permit holders' annual sales must be paid to the relevant municipality as a municipality charge.

Finders' fee. Where a person or entity other than the finder of such mineral extracts the mineral, the operator/extractor must pay the finder 1% of the extracted ore's value as a finders' fee.

Tax. A licence holder's earnings obtained through mining operations are subject to income and corporate tax. However, certain tax incentives are provided for mining activities:

- Deliveries and services made to individuals or legal entities engaged in gold and silver exploration and extraction activities are exempt from value-added tax (Article 13 (c), Valued Added Tax Law No. 3065, dated 25 October 1984).
- All mine operation activities are accepted as primary investments. As such, the following incentives apply (Council of Ministers Decree No. 2012/3305):
    - VAT exemption for imported machinery and equipment to be used for the mining investment operations
    - a customs duty exemption for imported machinery and equipment to be used for the mining investment operations.

4.5 Tenure Agreements, Encumbrances and Environmental Liabilities

4.5.1 Royalties

As set out in the 2010 Mining Law (Law No. 5995), a royalty is paid annually to the government for the extracted minerals. Mining operations to be conducted on state-owned land are not subject to any payment for usage of such land. In this case, the royalty levied is increased by an additional 30%.

The Pinargozu Property is mostly over the state-owned forestry zone with a small area of privately owned lands. Royalties paid by Horzum AS in 2017 have varied between 2% and 16%. Horzum AS uses the state-owned lands for mining purposes with the required permissions, and there are no known significant issues on the Pinargozu Property (Özkan *et al.,* 2016).

4.5.2 Additional Permits

For mining activities, Turkish laws and regulations require an operating permit in addition to the operating license. An operating permit is issued after all other required permits have been granted, including:

- A positive EIA report (or a certificate stating that an EIA is not required)
- Land ownership permits
- Workplace opening permits
- Other special permits.

Horzum AS holds the operating permit and forestry permit for the Pinargozu project and no additional permitting is required (Özkan *et al.,* 2016).

4.5.3 Environmental Liabilities

The Property is subject to no known additional environmental liabilities or mitigation measures (Özkan *et al.,* 2016).

5 Accessibility, Climate, Local Resources, Infrastructure and Physiography

5.1 Access to Property

The Pınargozu Property is accessed from Adana by sealed highway D815 to Kozan and thence by sealed highway D815 to Horzum where the Akdag mine office and infrastructure is located (Figure 3). The route is the main highway between the cities of Adana and Kayseri.

The Pinargozu Property is about 30 km and 35 minutes' drive north of Kozan, which is a significant district town with a population of about 130,000. Kozan is 77 km northeast of Adana and about one hour and 15 minutes' drive. Adana is serviced my frequent domestic flights from Istanbul and Ankara.

The Pinargozu mine adit portals (Figure 4) are about 2 km northwest of the highway and are accessed by dirt road up a valley and onto the side of a mountain ridge. The access road requires regular maintenance during the winter rains, but provides year-round access to the mine (Figure 5). Access through the ranges around the Property is possible by rough four-wheel drive tracks that facilitate seasonal agriculture and transhumance grazing.

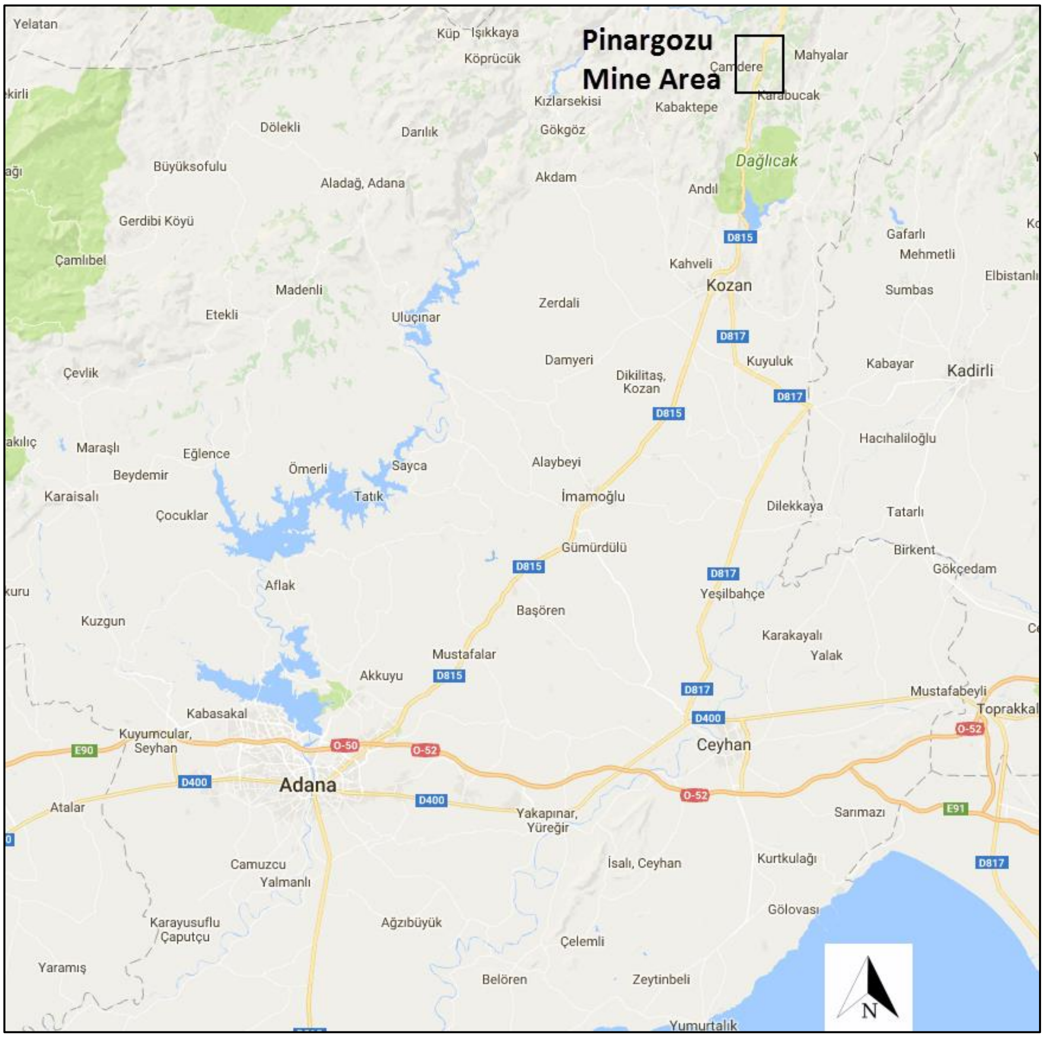


Figure 3: Pinargozu Property location and access

Source: Google Maps, 2017

Figure 4: Pinargozu underground mine adit portal

5.2 Topography, Elevation and Vegetation

The property is located in the eastern Taurus Mountains that separate the high Anatolian plateau to the north from the Mediterranean coastal plain to the south. The property is situated in the southern part of the ranges and is characterised by a rugged mountainous topography (Figure 5) with hills orientated roughly north-northeast and elevations ranging from 1,000 m RL on the ridge to the east of the mine to 600 m RL in the valley to the west. The limestone and dolostone ridges are characterised by extensive outcrop and steep crags. The land is a mixture of rocky terrain covered by pine trees and open areas cleared for crops and grazing. Most agriculture occurs at lower elevations, but transhumance grazing occurs at high elevations in the summer months.

Figure 5: Pinargozu mine portal access road

Showing typical mountainous terrain with extensive tree cover

5.3 Climate

The climatic conditions in the project area display transition characteristics between a Mediterranean climate and the continental climate of the Central Anatolia region. Summers are hot and dry and winters are cold and wet. At Horzum, average daily temperatures range from 25°C in July and August to 5°C in December, January and February. The highest temperature recorded is 44.8°C, while the lowest temperature is -5.0°C. The average annual precipitation is 730 mm, which mostly falls as mixed rain and snow from December to April.

5.4 Local Resources and Infrastructure

5.4.1 Infrastructure

Adana, with a population of about 2.2 million, is the nearest city and Kozan is the closest town (28 km from the Property) where key services including, labour, fuel, hospital, and banking facilities are available. There is a major airport in Adana and a port in Mersin. Local villages are relatively small and can provide only basic provisions. A camp was built by the company at the Horzum Mine which provides accommodation, administration buildings, and core logging, splitting and storage facilities.

The project has both surface and underground infrastructure for mine development and production and all adits can be accessed by existing mine roads. The Akdag mine facilities north of Horzum village provide maintenance services. The mine office is adequately equipped and provides moderate-speed internet connectivity. The Property has good mobile communication connectivity with almost universal 3G coverage.

5.4.2 Sources of Power

The project runs off national grid power and a major transmission line runs up the valley that the highway follows through Horzum.

5.4.3 Water

The ephemeral streams and groundwater are sufficient to meet the needs of the current mining operation (Özkan *et al.,* 2016). The absence of an on-site mill and flotation plant (closed since 2000) for the current operation means that water requirements are limited. A study on a larger operation with a flotation plant would require assessment of water sources and water management.

5.4.4 Mining Personnel

The district has a long history of mining and an adequate supply of experienced mining personnel.

6 History

6.1 Regional Production History

The Horzum district has a long history of mining, primarily of oxide zinc material that was processed to produce zinc metal at the electrolytic zinc smelter in Kayseri which was commissioned in 1974 and was operated by state-owned company, Cinkur. Kayseri was supplied by the Horzum, Tufanbeyli and Zamanti mining districts. The smelter closed in 2001, although a Waelz kiln continued to operate producing zinc oxide but not zinc metal.

The Horzum Mine owned by Akmetal AS was one of the larger mines in the region feeding material to the Kayseri zinc smelter. It operated initially from 1974 to 1996, and is estimated to have produced about 1 Mt of mostly oxide material grading from 20% to 30% Zn; however, records are not adequate to properly quantify the total production. During its latter years of operation, sulphide was also mined contributing approximately one quarter of the total life-of-mine (LOM) production. Akmetal recommenced mining at Horzum in 2015 and is currently producing mainly sulphide ore.

Small surface and underground artisanal operations commenced at Pinargozu (5.8 km north-northeast of Horzum) during the 1970s to 1990s and reportedly produced oxide material with average grades of around 30% Zn. No mine production data from the previous concession holder at Pinargozu, Anatolia Madencilik are available.

In June 2012, Pasinex formed a JV with Akmetal that established the JV company, Horzum AS. Horzum AS was awarded the Pinargozu licence in January 2013. The JV also covers the Akkaya concession north of the Pinargozu mining concession.

6.2 Historical Mineral Resource Estimates

In-house MREs for the Pinargozu deposit have been completed but have not been publicly released and are not reportable under NI 43-101 guidelines.

7 Geological Setting and Mineralisation

7.1 Regional Geology

The Pinargozu Property occurs within the Horzum–Tufanbeyli Zinc Belt which is located within the Eastern Tauride belt of Turkey (MTP, Figure 6), which has a complex history of sedimentation and tectonism from the Palaeozoic to the Cainozoic.

The Tauride–Zagros fold belt occurs on the southern margin of the Anatolian block and represents a Palaeozoic to Mesozoic passive margin affected by Late Cretaceous to Cainozoic collision, deformation and uplift (Figure 7). Cambrian to Devonian sedimentation occurred on the northern Gondwana Paleotethys passive margin, followed by separation from Gondawana in the Carboniferous-Permian with rifting of the Cimmeride terranes and opening of Neotethys. Continuing Mesozoic passive-margin sedimentation occurred on the northern passive margin of Cimmeria, and terminated with Late Cretaceous to Palaeogene collision and southward ophiolite obduction with closure of Palaeotethys successor, the Vardar ocean, to the north.

Continuing convergence resulted in north-verging deformation in the Eocene and initial development of the Tauride fold and thrust belt accompanying the onset of collision with the Arabian plate to the south and closure of Neotethys along the Bitlis suture. Onward northward convergence of Arabia with eastern Anatolia resulted in the uplift of the Anatolian plateau and westward extrusion along major sinistral strike-slip fault zones, the North, Central and East Anatolian sinistral transcurrent fault systems.

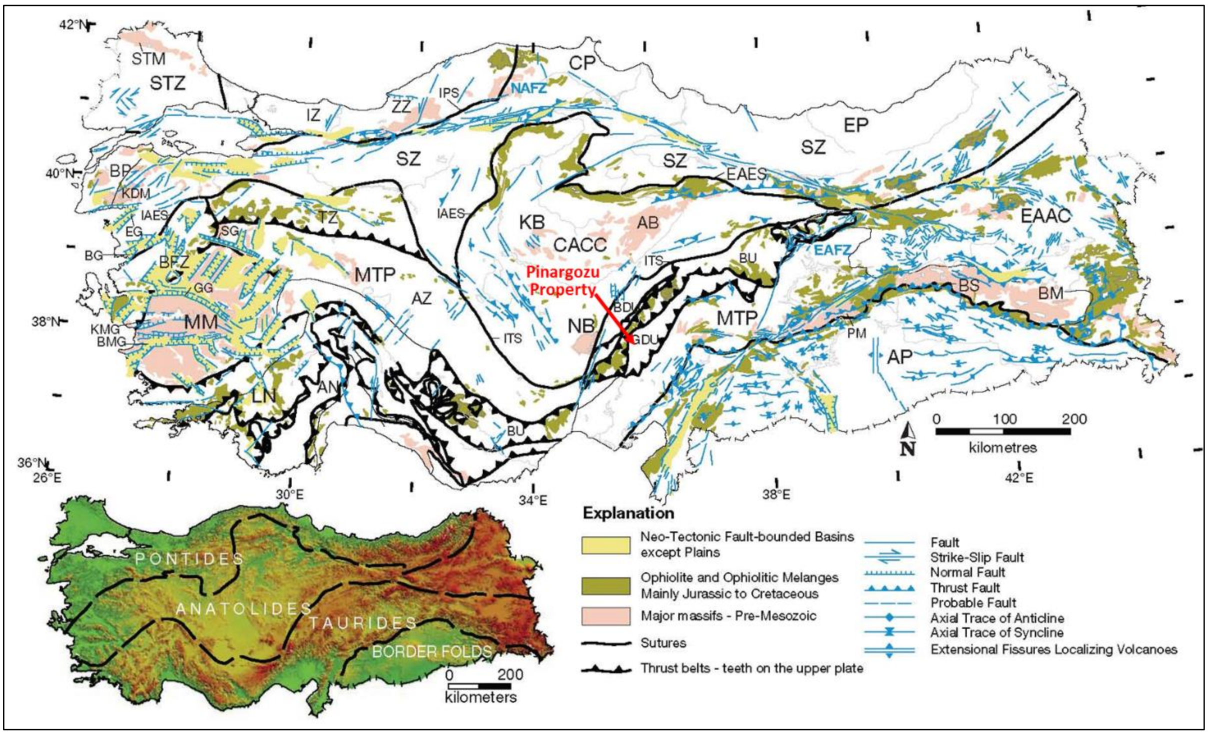


Figure 6: Major tectonic divisions and structures of Turkey

showing location of Pinargozu in the Horzum–Tufanbeyli zinc belt in the Geyikdağı tectonostratigraphic unit (GDU); from Yigit, 2009

The Central Anatolian Crystalline Complex (CACC) is a metamorphic terrain that acted as a buttress to deformation and that was uplifted during late orogenic gravitational collapse and extension. The Horzum belt is located on the eastern side of the CACC where the orogen is rotated to north-northeast trend and where the north-northeast trending Central Anatolian Fault zone is localised. Compressional deformation in this zone resulted in the development of thrust-bound nappes.

Palaeogene calc-alkaline magmatism accompanied collision and post-collisional extension events. The magmatism is associated with formation of epithermal and porphyry deposits, including the Çöpler gold porphyry on the Anatolian plateau.

Accompanying ongoing collision of the Arabian plate with Anatolia, Mediterranean subduction continued in the west along the Cyprus and South Aegean subduction zones. Neogene granitoids were emplaced in western Anatolia with co-magmatic volcanism, in an extensional post-collisional setting. Neogene intrusion and volcanism are not documented in the eastern Taurides.

The Tauride fold belt includes Neoproterozoic basement inliers and unmetamorphosed Palaeozoic to Mesozoic cover sequences of platformal and deep-water sediments deposited on the northern passive margin of Tethys. Northward collision of the Arabian plate during the Alpine Orogeny resulted in double-verging nappes with juxtaposed tectonostratigraphic units with distinctive stratigraphic and structural features characterising different depositional environments of the margin. The initial thrusting of ophiolitic nappes and marginal sequences onto the Tauride platform started during the Early Eocene. By the Mid-Miocene the entire nappe pile had been thrust onto Neogene cover.

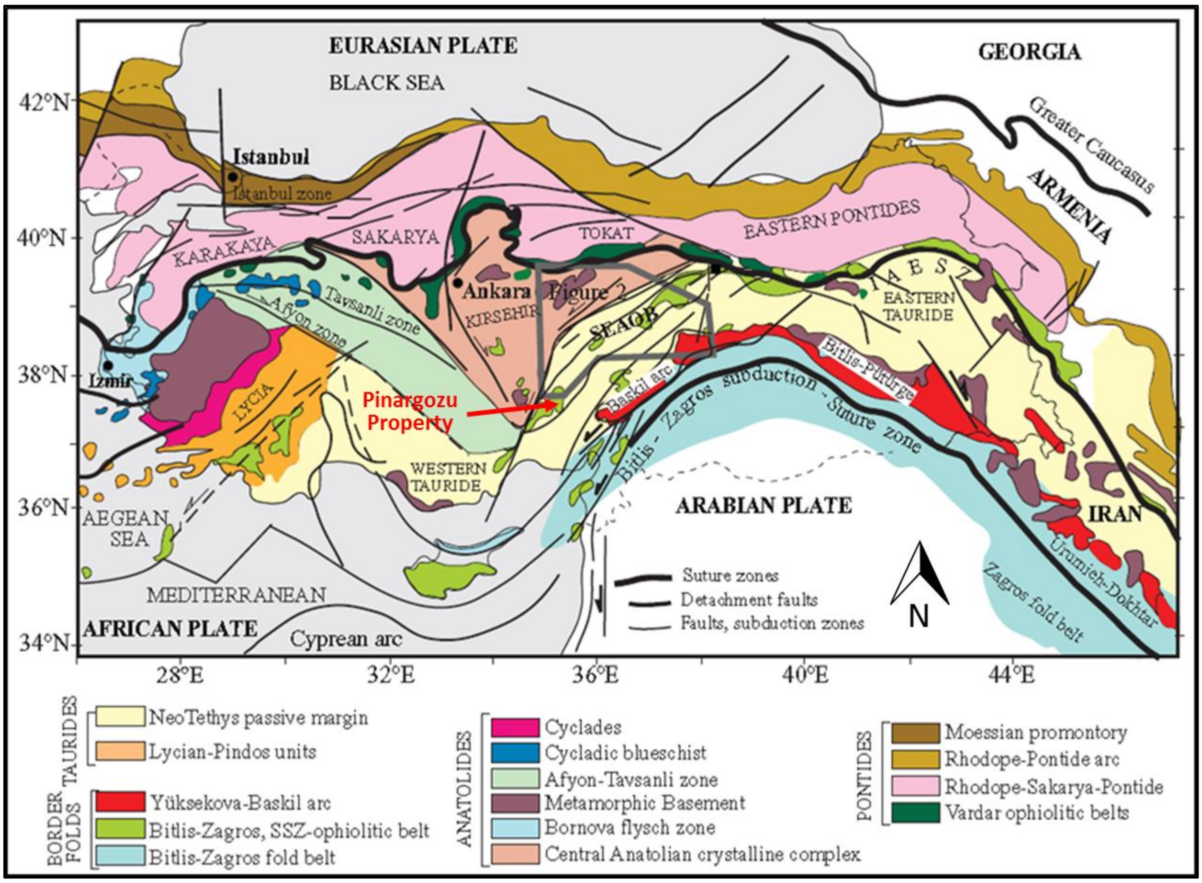


Figure 7: Tectonic map of the Tethyan belt showing the major tectonic units in Turkey

Kuşcu et al. 2013.

The Horzum–Tufanbeyli Zinc Belt occurs in the complex bend and offset in the Tauride fold belt between the northeast-trending Central Anatolian Fault Zone (CAFZ) and East Anatolian Fault Zone (EAFZ; Figure 8). Initial thrust-stacked nappes on the eastern side of the CACC were further offset along sinistral structures associated with the CAFZ, such as the Ecemiş Fault that bounds the CACC (Jaffey, 2001). The Intra-Tauride suture zone is dismembered through this belt with remnant ophiolite slivers caught up in thrust zones.

The bend and associated sinistral fault offsets are related to collision with the Arabian plate, and buttressing against the CACC, but the north-northeast trending faulting may be partly controlled by older transform faults within the older passive margin.

The thrust-stacked nappe units include the Geyikdağı Unit (Figure 4 and Figure 6) that hosts the Horzum–Tufanbeyli deposits. This is a thrust-bound Lower Palaeozoic tectonostratigraphic suite of shelf-type carbonate and detrital rocks of mainly Palaeozoic age.

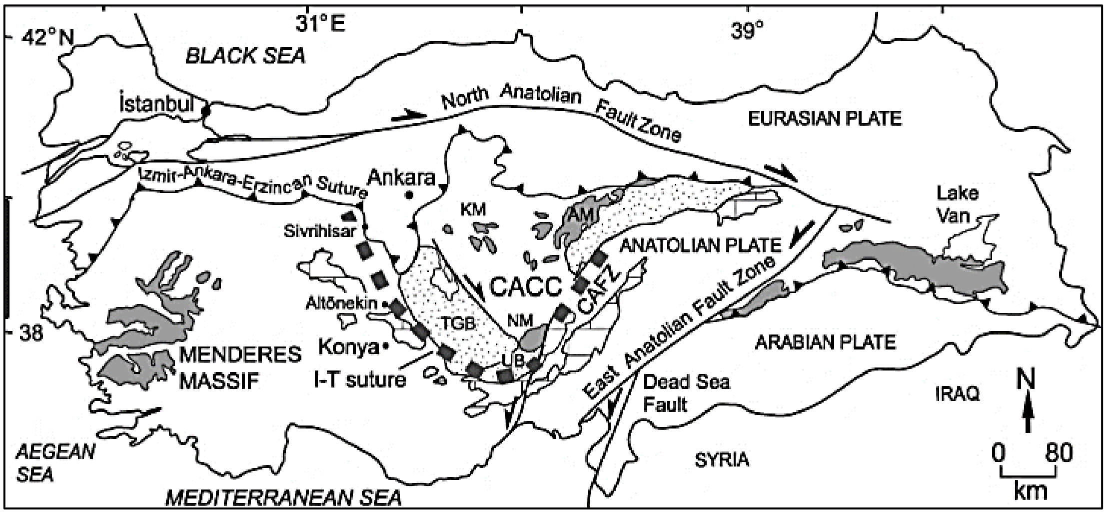


Figure 8: Structural framework of Turkey

Note: framework shows the carbonate-dominated nappe terrain east of the CACC and CAFZ including the Geyikdağı Unit that hosts the Horzum-Tufanbeyle Zinc Belt. I-T Suture = Intra-Tauride Suture. From Whitney and Hamilton, 2005

7.2 Regional Zinc-Lead Metallogeny

Excluding some volcanogenic hosted massive sulphide (VHMS) deposits, zinc mining and production in Turkey has generally been relatively small scale with most production from the zinc districts on the south-central edge of the Anatolian plateau and additional small-scale production from the Hakkari district in the southeast (Yigit, 2009; Figure 9). Mineralisation in the south Anatolian belt from Bolkarlar in the southwest to Keban in the northeast occurs mainly in Palaeozoic platform carbonates deposited on the Tethyan passive margin of the Gondwanan Anatolian-Tauride block. The Hakkari district is geologically distinct, with stratabound Irish-type mineralisation occurring in platform sequences on the Arabian plate foreland, south of the Bitlis Suture.

The most significant oxide and sulphide district in Turkey, including current and historical production, occurs in the central part of the Tauride Belt and includes the Zamanti (Yahyali) and Tufanbeyli-Horzum districts. This district is located in the major sinistral bend and offset of the Tauride fold belt. The deposits are all stratabound carbonate-hosted zinc-lead deposits, all which host carbonate and oxide mineralisation. Horzum and Pinargozu are significant in that they also host sulphide material in economic quantities, however sulphide mineralisation does occur in other districts and deposits.

The absence of significant sulphide production probably reflects a combination of factors including:

- Deep weathering and oxidation associated with uplift of the Anatolian plateau since the Miocene

- Very little exploration for sulphide beneath oxide deposits, which may also have a complex and partly exotic relationship to sulphide mineralisation (transportation during weathering and karst formation)
- Fragmented ground holdings and small-scale operators
- Ability to sell oxide ore locally for processing.

The cumulative production from these districts has been significant. In 1998–2000, Cominco identified some 60–65 former or active producers that had shipped high grade oxide ore to the Cinkur smelter at Kayseri and determined total documented production over 20–25 years of approximately 2.5 Mt of zinc metal (Allen, 2012). Cinkur only accepted hand sorted oxide ores with grades of >25% to 30% Zn.

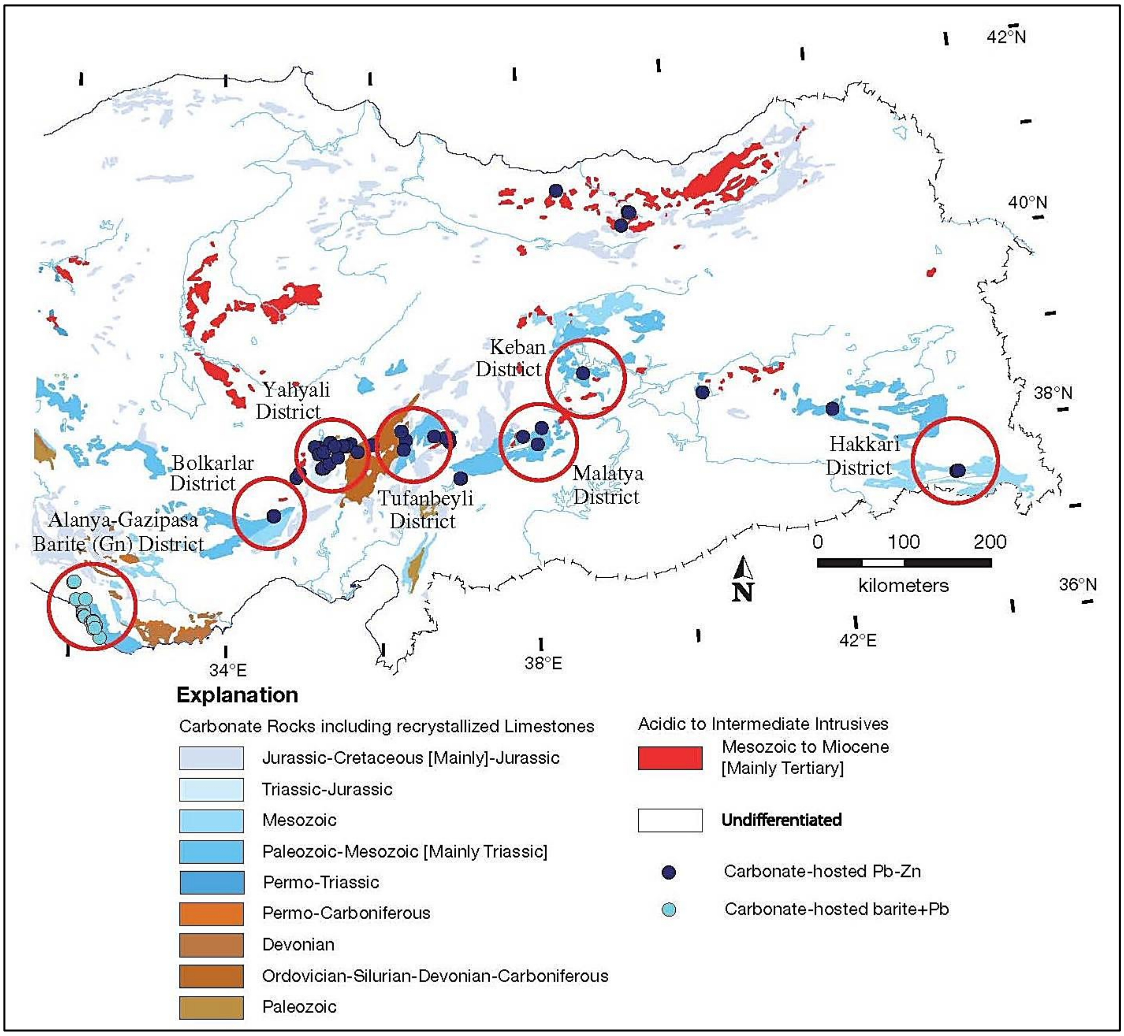


Figure 9: Carbonate hosted zinc and lead districts in central and eastern Turkey

from Yigit 2009

The style of zinc mineralisation in these districts, oxide and sulphide, has generally been poorly described in the literature and the style and origin of the hypogene mineralisation is often disputed. The passive margin setting with inversion and collisional orogeny is favourable for the formation of MVT and Irish-type zinc deposits. The syn- to post-collisional Palaeogene and Neogene magmatism in the Tauride Belt and Anatolian plateau is permissive of skarn/manto (or CRD) type deposits, deposits that are typically associated with platform limestone host rocks in calc-alkaline magmatic arcs, forming distally from porphyritic intrusions. The deposits in the Zamanti (Yahyali) and Tufanbeyli-Horzum districts have previously been described as MVT style, while those in the Keban district are described as intrusive-related.

The Zamanti and Tufanbeyli-Horzum districts occur in separate nappes packages within the Central Anatolian transform zone, with ophiolite remnants (of the Inner Tauride suture) occurring in thrust slices. The metamorphic (core) complexes (Nigde Complex) in the southern part of the CACC lie to the west. The Zamanti deposits are associated with skarns and occur in a range of Palaeozoic and Mesozoic host rocks, whereas the Tufanbeyli-Horzum deposits are hosted in Cambrian and Devonian platform carbonates.

The Horzum and Pinargozu deposits have been re-interpreted as CRD systems associated distally with magmatism. Allen (2012) suggested that Tufanbeyli was also a CRD and noted the absence of dolomitisation and solution breccias.

In addition to zinc and lead, a number of copper, iron and barite occurrences exist in the Tauride belt. Deposits are hosted in the Lower-Middle Cambrian Formations. While there is limited information on copper-gold mineralisation in the Tufanbeyli–Horzum district, copper-gold occurrences in silicified structures have been reported in the area of Oruçlu and Çandırlar, about 24 km north-northwest of Pinargozu within the same Geyikdağı Unit (Yildirim and Cihan, 2009).

7.3 Geology of the Horzum–Tufanbeyli Zinc Belt

7.3.1 Stratigraphy

The zinc deposits of the Horzum–Tufanbeyli Zinc Belt occur in a broad northwest trend that extends for about 100 km from Kozan in the south to Tufanbeyli on the Anatolian plateau in the north (Figure 10). Mineralisation occurs in the thrust-bound Geyikdağı Unit, a tectonostratigraphic unit that extends over a broad north-south area bound by ophiolitic melange to the west and metamorphosed Mesozoic rocks to the east. The Geyikdağı Unit lies east of the Bozakir, Aladag and Bolkardağı tectonostratigraphic units that also host zinc mineralisation (Figure 10).

The Geyikdağı Unit ranges in age from Cambrian to Tertiary (Figure 11), and is dominated by sedimentary sequences deposited in shallow- to marginal-marine settings. The sequence is essentially unmetamorphosed, except for areas of recrystallised limestone. Various stratigraphic nomenclature and description is evident in available reports and the literature.

A thick basal sequence of unknown possibly Precambrian age is assigned to the Emirgazi Formation and includes basic and felsic volcanics and dykes as well as siliciclastics, black shales and stromatolitic limestone. The Emirgazi Group was divided into the Kozan Formation (thick lower succession of siliciclastic rocks cut by felsic dykes) and the Koçyazı Formation (quartzites and quartz-arenites), which is also named the Feke Quartzite (Kozlu and Göncüoğlu, 1997; Göncüoglu *et al.,* 2004) or Çamdere Formation by Temur (1986). The association is suggestive of a syn-rift sequence.

The conformably overlying Lower-Middle Cambrian age carbonate sequence known as the Değirmentaş Formation (Demirtaşlı, 1967; Özgul *et al.,* 1973) or Harapkayası Formation (Temur, 1986) conformably rests on the Feke Quartzite. Göncüoglu *et al.,* 2004; Göncüoglu *et al.,* 2012 correlate this unit with the Çal Tepe Formation in the Central Taurus and report a thickness of 110 m in the Tufanbeyle belt with an age from basal Middle to early Upper Cambrian.

The Değirmentaş Formation limestone and dolostone from the mountain ranges around the Horzum valley and hosts the known zinc-lead deposits. The lower part of the formation is characterised by dark grey stromatolitic dolostone with chert nodules and layers. Bedded grey limestone forms the main part of the formation in the area (Figure 12, Figure 13) and is commonly affected by karst formation. The limestone grades upwards into red argillaceous limestone, nodular limestones and calcareous mudstone. The overlying red argillaceous limestone usually is moderately- to thinly-bedded or laminated and may be reddish or green, or mottled, with thin argillaceous bands. Nodular limestone has a characteristic greenish and reddish colour with nodules in a mudstone matrix.

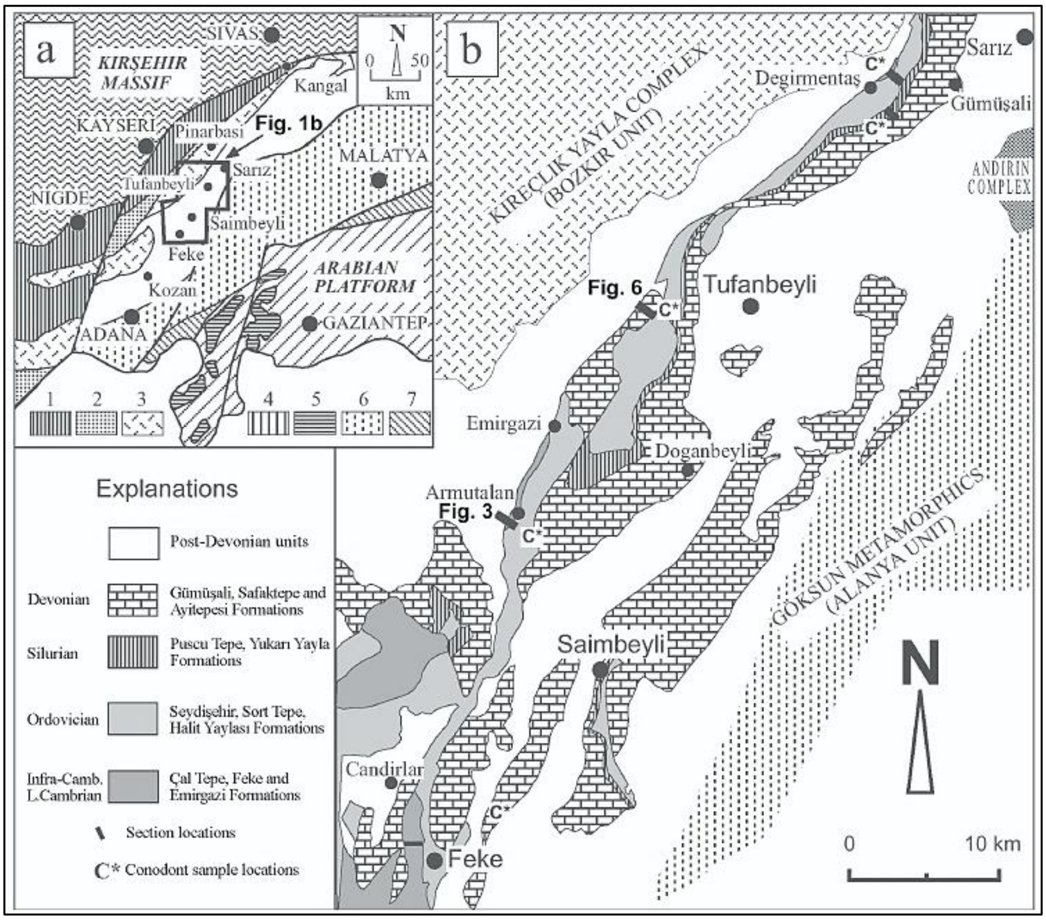


Figure 10: Distribution of tectono-stratigraphic units in the eastern Taurides

Göncüoglu et al., 2004

The nodular limestone grades upward into shale of the overlying Armutlu Dere Formation (or Kabaktepe Formation). The Armutlu Dere Formation consists of immature turbiditic sandstone and shale with a fauna of Upper Cambrian to Lower Ordovician age (Özgül and Gedik, 1973). This is the youngest unit seen in the project area.

The overlying Palaeozoic sequence of the Geyikdağı Unit comprises limestones and dolomitic limestones with sandstone, siltstone and shales of Devonian (Ayıtepesi, Safaktepe and Gumusali Formations), Carboniferous (Ziyarettepe Formation) and Permian (Yığılıtepe Formation) age.

There is a major stratigraphic gap between the Lower Paleozoic and Mesozoic. Unconformably overlying Upper Triassic turbiditic sandstones and Liassic (Lower Jurassic) terrestrial red sandstones and conglomerates are the distinguishing features of the Geyik Dagi Unit (Özgül, 1984), overlain by Jurassic and Cretaceous platform carbonates.

While mineralisation in the Horzum district occurs in the Cambrian stratigraphy, mineralisation in the Tufanbeyli zinc district is hosted within a series of Devonian carbonate rocks. The local succession at Tufanbeyli comprises Lower Palaeozoic clastic and carbonate rocks overlain by the host succession of upper Devonian Limestone, locally crinoidal with minor clastic interbeds, which is extensively dolomitised. The Devonian is overlain by Permian to Cretaceous sediments.

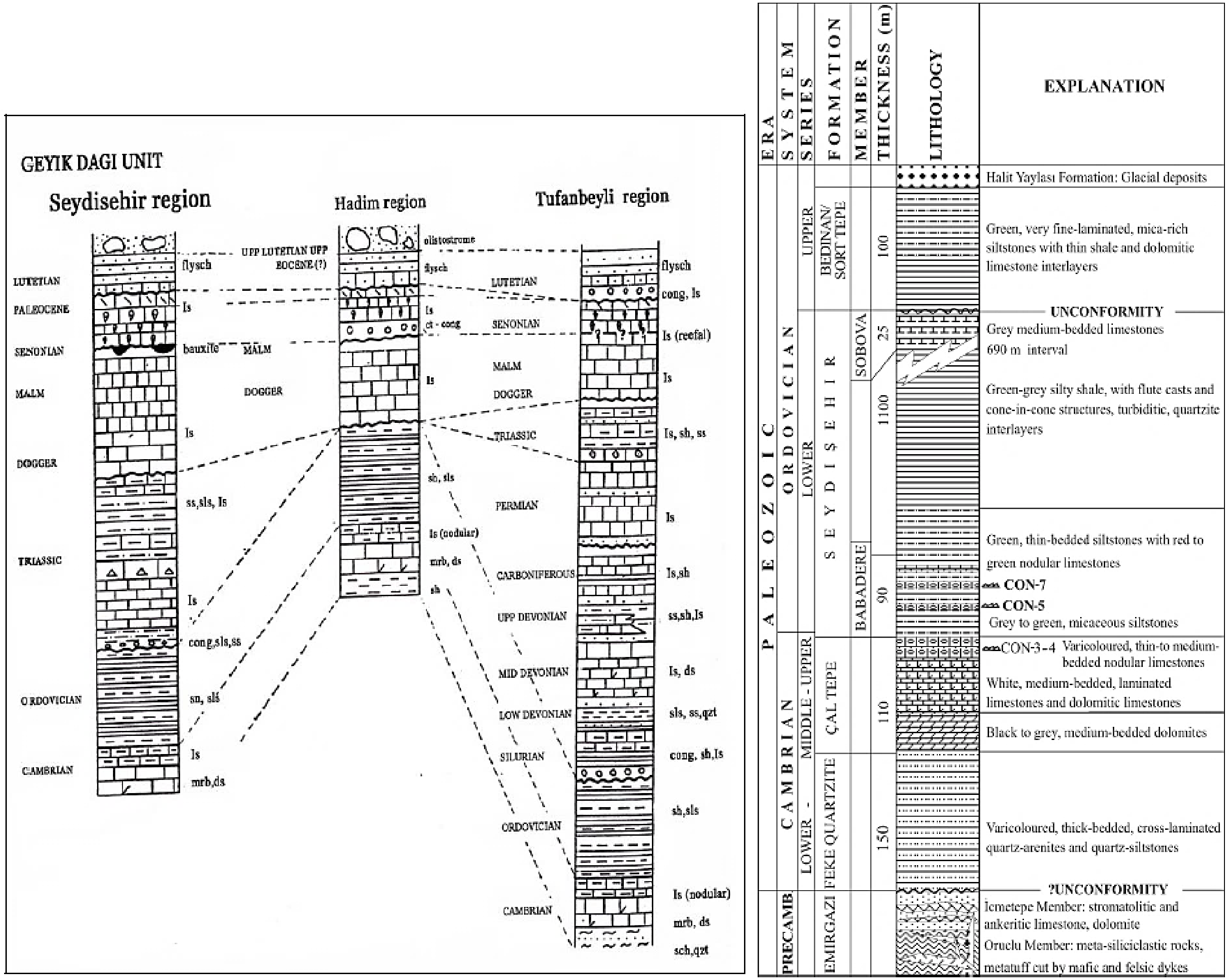


Figure 11: Left: Stratigraphy of the Geyikdağı Unit. Right: Lower Palaeozoic stratigraphy of the Geyikdağı Unit

From Ceyhan, 2003, and Göncüoglu et al., 2004

Figure 12: Nodular banded limestone with small-scale asymmetric folding, Akkaya

Source CSA Global, 2017

Figure 13: Bedded grey bioclastic and intraclastic limestone outcrop at Akkaya

Source: CSA Global, 2017

7.3.2 Metamorphism

The Geyikdağı Unit does not exhibit any metamorphism in the Eastern Taurides. The “marble” described at Pinargozu is considered to represent hydrothermal alteration.

7.3.3 Structure

The Horzum–Tufanbeyli Belt occurs in the complex bend and offset in the Tauride fold belt where the initial thrust-stacked nappes on the eastern side of the CACC, including the Geyikdağı Unit, were further offset along sinistral structures associated with the CAFZ, including the Ecemiş Fault and Horzum Fault (Figure 14).

The main Eocene north- to northwest-directed nappe-forming compressional event produced arcuate thrusts and related folds trending east to east-northeast with large shorting and allocthonous and semi-autochthonous thrust plates. Folds in the Aladağ Mountains are related to thrusting.

Ongoing oblique convergence in the transform zone resulted in strike-slip related folding developed either sub-parallel to the faults in wide fault zones, or oblique in compressional blocks between large strike-slip faults. The large fault zones have network of steep reverse and normal faults bounding fault slices, developed during transpression and trending north-northeast to north-northwest.

Late Oligocene to Mid Miocene northwest-southeast compression was described in Ecemiş Fault Zone by (Jaffey, 2001) and produced folds with northwest-southeast vergence in less competent shale.

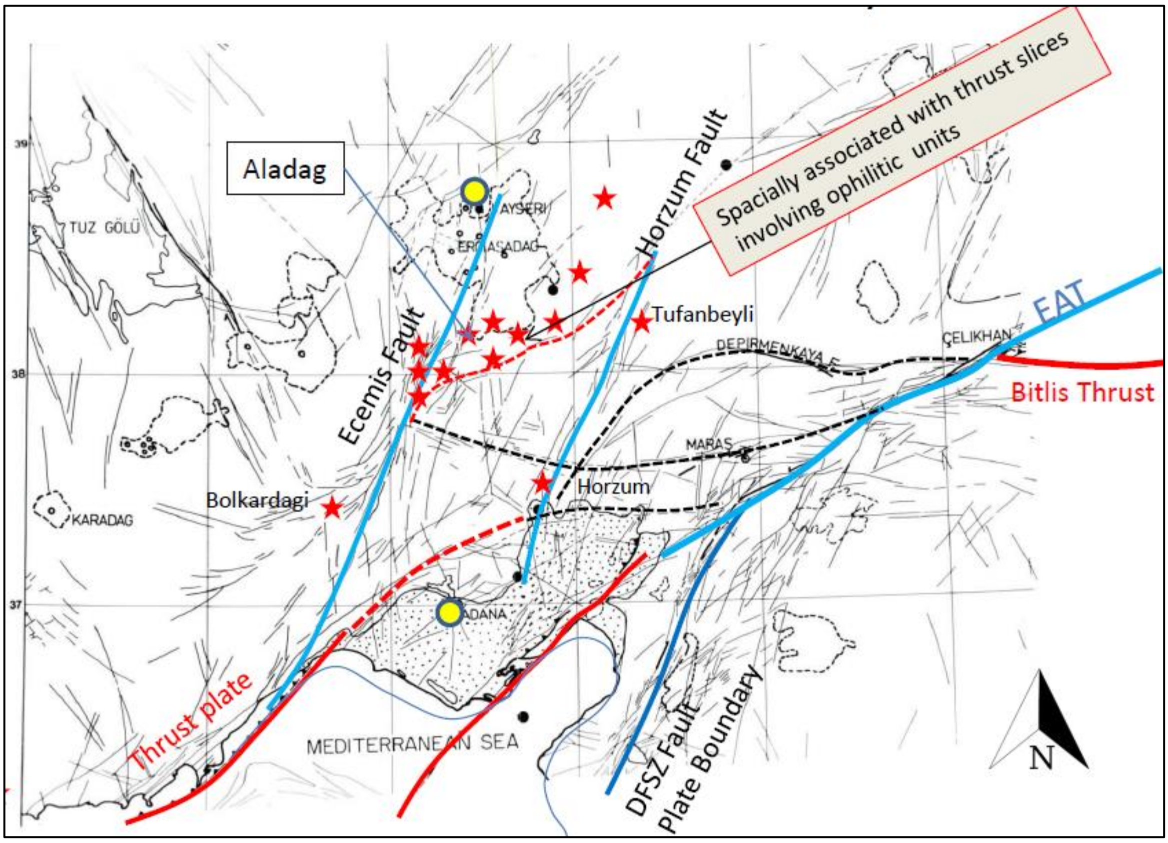


Figure 14: Tectonic framework of the Central Tauride zinc districts

Showing the Horzum fault zone; from Coller, 2012

The Horzum Fault Zone is a series of folded fault slices trending north-northeast, interpreted to have formed during the main Eocene collision by compressional strike-slip movements along a crustal scale fault (Coller, 2012; Figure 15). Allen (2012) assessed alternative interpretations as a shallow southeast-directed thrust zone with steep northwest-directed backthrusts, or a major steep north-northeast trending fault and shear zone, and based on field traverses concluded that the latter was the correct interpretation.

Coller (2012) interprets shallow dipping Late Cretaceous rocks, including ophiolites, Carboniferous and Mesozoic rocks thrust over the steep folds and faults in the Horzum Fault Zone. This would imply an early origin for the fault. However, the Horzum fault zone is also a neotectonic fault zone of similar age to the Ecemiş Fault and controls a Miocene basin to the east, which has subsequently been partially inverted, and the fault is still active parts of length.

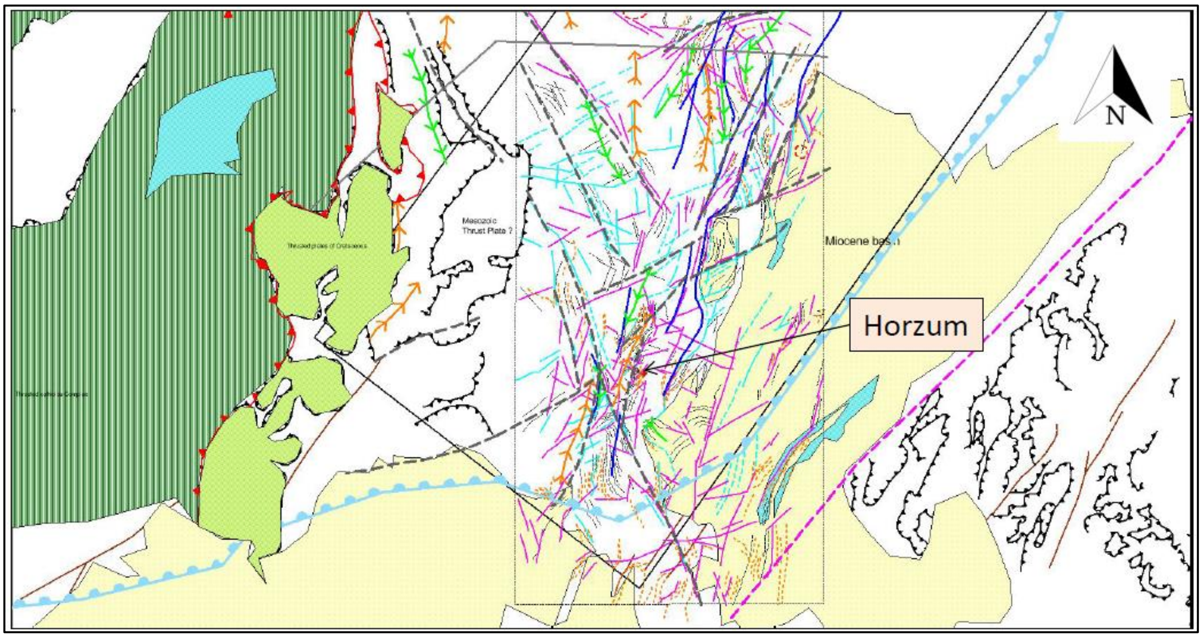


Figure 15: Remote sensing interpretation of structure in the Horzum-Tufanbeyli Belt

Showing the complex Horzum Fault zone and the Miocene basin to the east, from Coller, 2012

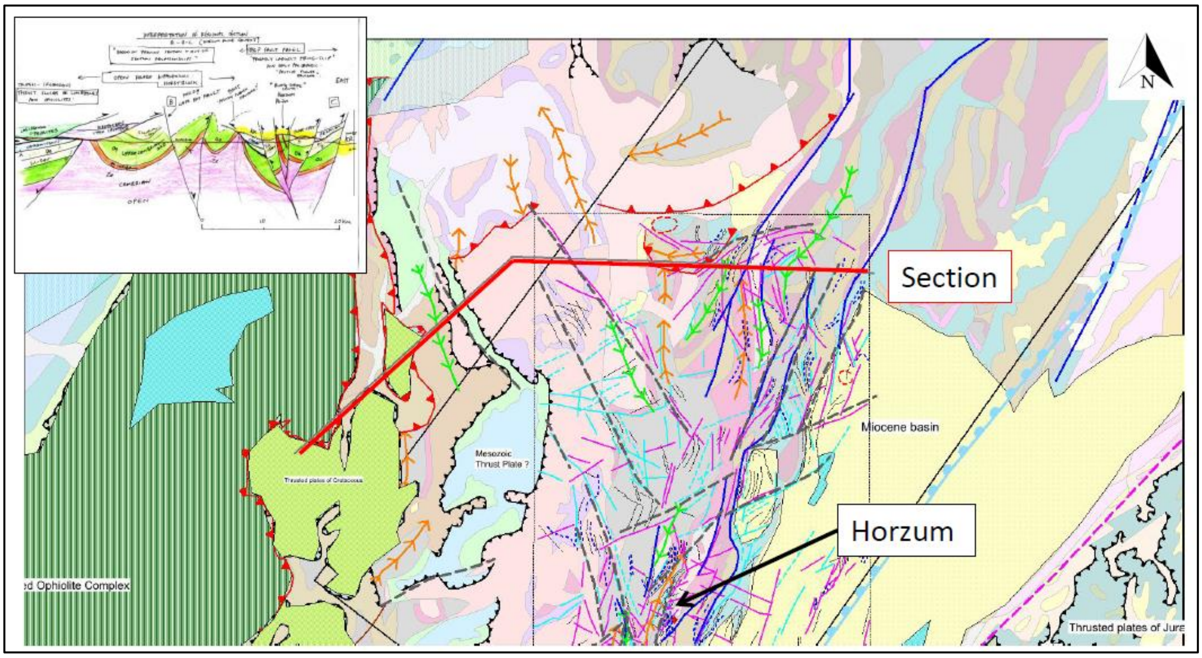


Figure 16: Interpretation of the Horzum fault zone as a flower structure

From Coller, 2012

Coller (2012) interpreted a compressional flower structure at Horzum related to a constraining bend in the Horzum Fault Zone (Figure 16), and suggested that mineralisation was related to these structures. Allen (2012) also suggested a strong structural control on mineralisation. Tripathi (2014) described a thrust plane at the base of Horzum, Pinargozu and Akkaya carbonates unit with a shallow south-southeast to south-southwest dip, and splays off this thrust with steeper 50° shear zones, and also documented structurally controlled mineralisation at the mine scale.

Considering the tectonic history, structurally-controlled CRD mineralisation is potentially related to Eocene thrusting evolving to transpression, or to Neogene transcurrent faulting and extension and renewed magmatism on the Anatolian plateau.

7.4 Pinargozu Deposit Geology

7.4.1 Stratigraphy and Lithology

The Pinargozu mine is located within bedded grey limestone of the Değirmentaş Formation. All mineralisation is hosted in bleached recrystallised limestone that is interpreted to reflect hydrothermal alteration (Figure 17).

The geology map of the Pinargozu–Akkaya area interprets the Değirmentaş Formation to strike north-northeast and dip east-southeast under the overlying clastic Armutlu Dere Formation (Figure 18). The footwall is interpreted as a thrust contact over clastic units. The map pattern suggests stacked thrust slices at a larger scale.

No subdivision has been attempted within the Değirmentaş Formation, except for mapping of "marble", which is irregular and crosscutting within the Değirmentaş Formation. The mineralisation at Pinargozu is interpreted generally near the base of the "marble".

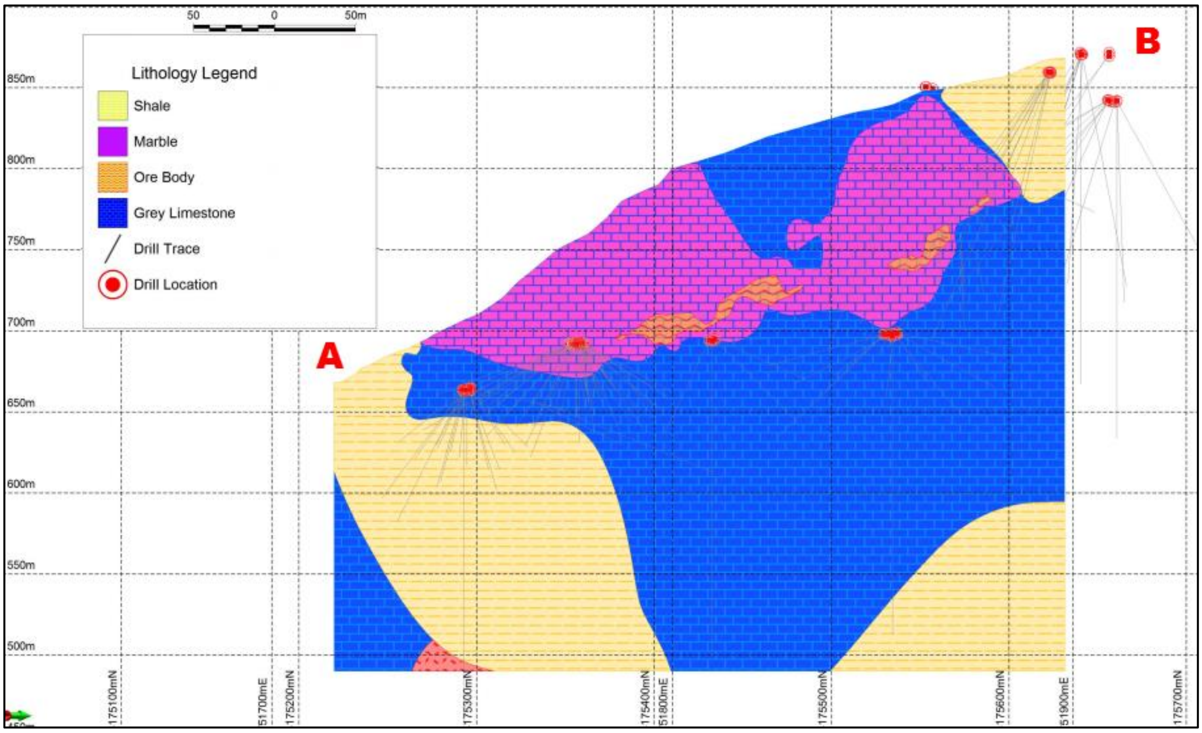


Figure 17: Long section through Pinargozu, looking northwest

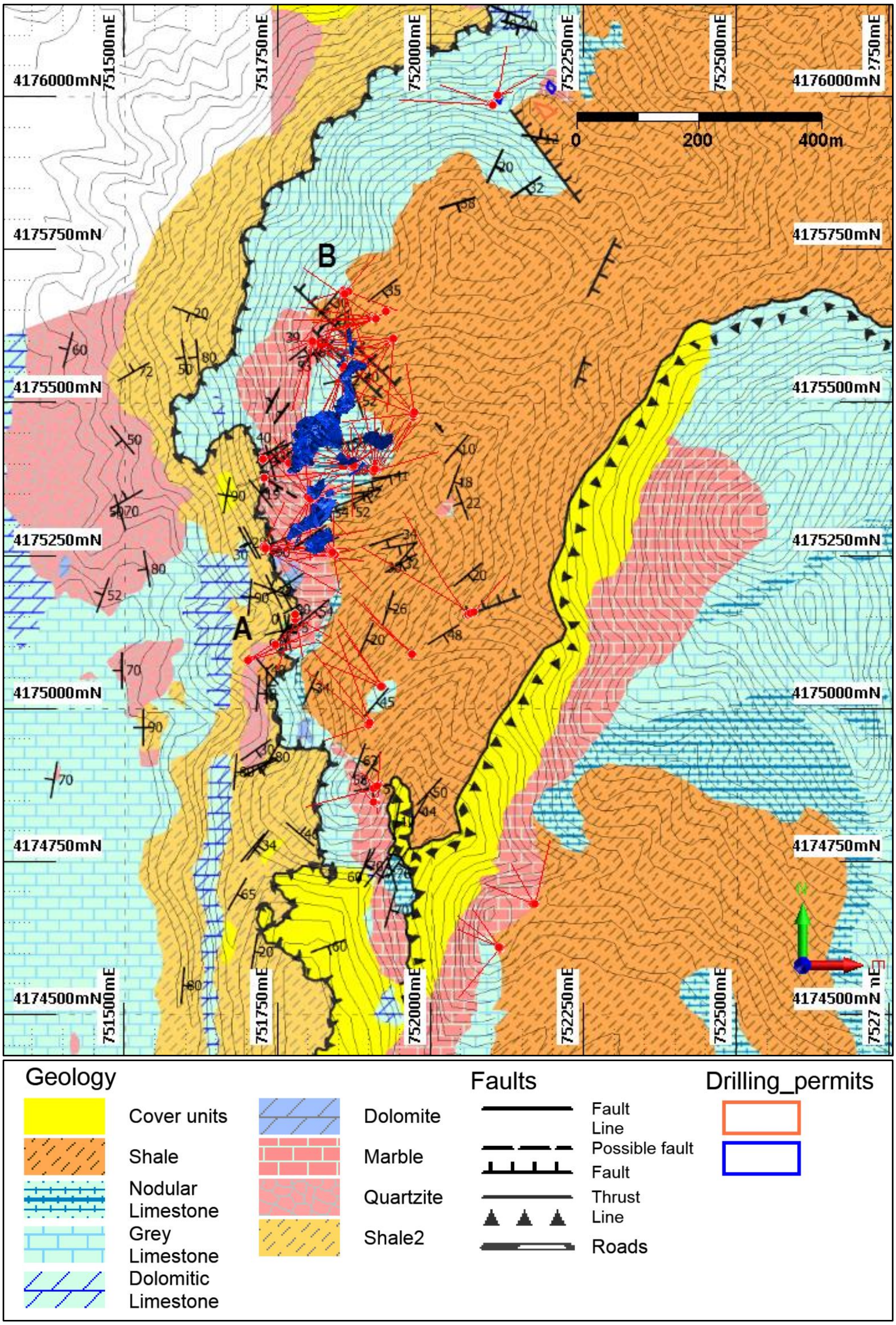


Figure 18: Geological map of the Pinargozu area

Drill traces are shown as red traces with the mineralised lodes at depth as blue polygons. A long section through points A-B is provided in Figure 17; from Özkan et al., 2016.

Observations at Pinargozu suggest that mineralisation is at least partly stratabound at a favourable level within the Değirmentaş Formation. In the drill holes examined, the footwall to mineralisation comprised massive to bedded bioturbated micritic limestone (Figure 19), locally partly dolomitised, and often strongly fractured with small-scale veining and brecciation but without anomalous Zn. This overlies bioclastic limestone with thin interbedded siltstone and mudstone horizons.

Figure 19: Lower Değirmentaş Formation, distinctive lower unit of blotchy bioturbated limestone that occurs in the mineralisation footwall, with partial bleaching

Drillhole PPS17-004 27-33 m, HQ core 63.5 mm (Source: CSA Global, 2017).

The immediate host to the mineralisation is recrystallised but appears to be a massive and was probably originally micritic limestone with stylolites. The hangingwall to mineralisation is well-bedded limestone with lithologies including bioclastic grainstone and wackestone, intraclastic wackestone, and wavy-laminar wackestone with argillaceous laminae. Near its base, this includes minor micritic algal limestone horizons with stromatactis textures that appear similar to the altered mineralised host unit (Figure 20).

Figure 20: Upper Değirmentaş Formation hangingwall bedded to laminated bioclastic limestone and minor massive stromatactis algal limestone

Note steep fold at bottom right. Drillhole PPS17-009 187-191 m, HQ core 63.5 mm (Source: CSA Global, 2017).

Figure 21: Upper Değirmentaş Formation nodular argillaceous limestone and minor siltstone down into nodular and massive limestone

Drillhole PPS17-009 158-166 m, HQ core 63.5 mm (Source: CSA Global, 2017).

The overlying upper Değirmentaş Formation consists of nodular argillaceous limestone with increasing calcareous mudstone up-sequence (Figure 21), overlain by a green siltstone-dominant unit and reddish nodular limestone and calcareous mudstone at the top (Figure 22).

Although these observations are based on limited drill holes, they are supported by the generally stratabound character of the Pinargozu deposit. They also suggest that lithostratigraphic logging and mapping will be an important component of targeting.

Figure 22: Upper Değirmentaş Formation nodular argillaceous limestone, reddish, with horizons of green siltstone

Drillhole PPS17-009 33-44 m, HQ core 63.5mm (Source: CSA Global, 2017)

In drillhole PPS17-004, the carbonate sequence is in sharp contact with a green chloritic clastic unit that appears tuffaceous (Figure 23). This basal contact represents a profound geological boundary and suggests either an unconformity or a structure; the accrual contact was not preserved in the core, but the contact has previously been interpreted as a thrust.

Figure 23: Basal contact of the Değirmentaş Formation altered veined limestone and bleached siltstone horizons

Note sharp contact down into green chloritic micro-brecciated tuffaceous unit. Drillhole PPS17-004 141-147 m, HQ core 63.5 mm (Source: CSA Global, 2017).

7.4.2 Alteration

Dolomitisation of the Değirmentaş Formation limestones is common but localised (Figure 24). The geometry and controls of dolomitisation are not well understood, but there is no clear association with mineralisation. In fact, mineralisation at Pinargozu is entirely developed within limestone.

Figure 24: Contact between grey micritic limestone and brownish dolostone Değirmentaş Formation at Akkaya

Source: CSA Global, 2017.

The Pinargozu deposit is hosted within bedded grey and dolomitic platform limestone that has been recrystallised and bleached (Figure 25, Figure 26). This rock is recrystallised but not coarse-grained and is characterised by small-scale brittle and vuggy dissolution veining and micro-brecciation, interpreted as fluid-escape features related to the main mineralised zone (Figure 27). Disseminated or clotty sulphide occur in the altered zone close to massive sulphide lodes. The alteration in observed drill core extended up to 25 m above the mineralised zone and up to 30 m below it (based on two holes). The boundaries with unaltered rock in drill core are not sharp, passing back and forward into altered rock, suggesting a bedding control.

While this rock is described locally as "marble", this alteration cannot reflect thermal metamorphism considering its observed geometry and relationship to mineralisation, and is interpreted to reflect hydrothermal recrystallisation.

Megaw (2016) describes the veining in the host rocks as "fugitive veins" and reports manganoan carbonate composition based on UV fluorescence, as is typical in CRD systems.

The Horzum deposit is also hosted within grey limestone, though with less bleaching than observed at Pinargozu.

In the footwall of mineralisation in the drill-holes observed on site, recrystallisation associated with small-scale veining and brecciation but without intense bleaching extends for substantial distance in the footwall, notably in PPS17-004 (Figure 28, Figure 29). This includes zones of micro-brecciation with strong iron-stained rock-matrix (Figure 28). These textures indicated hydrothermal over-pressuring but Pasinex report that Zn is not significantly anomalous, and the textures may not be directly related to mineralisation but to fluid overpressuring during deformation and thrust-loading.

Figure 25: Grey limestone becoming bleached irregularly then pervasively

Note partial preservation of primary texture and pre-existing veins. Drillhole PPS17-009 198-203 m, HQ core 63.5 mm (Source: CSA Global, 2017).

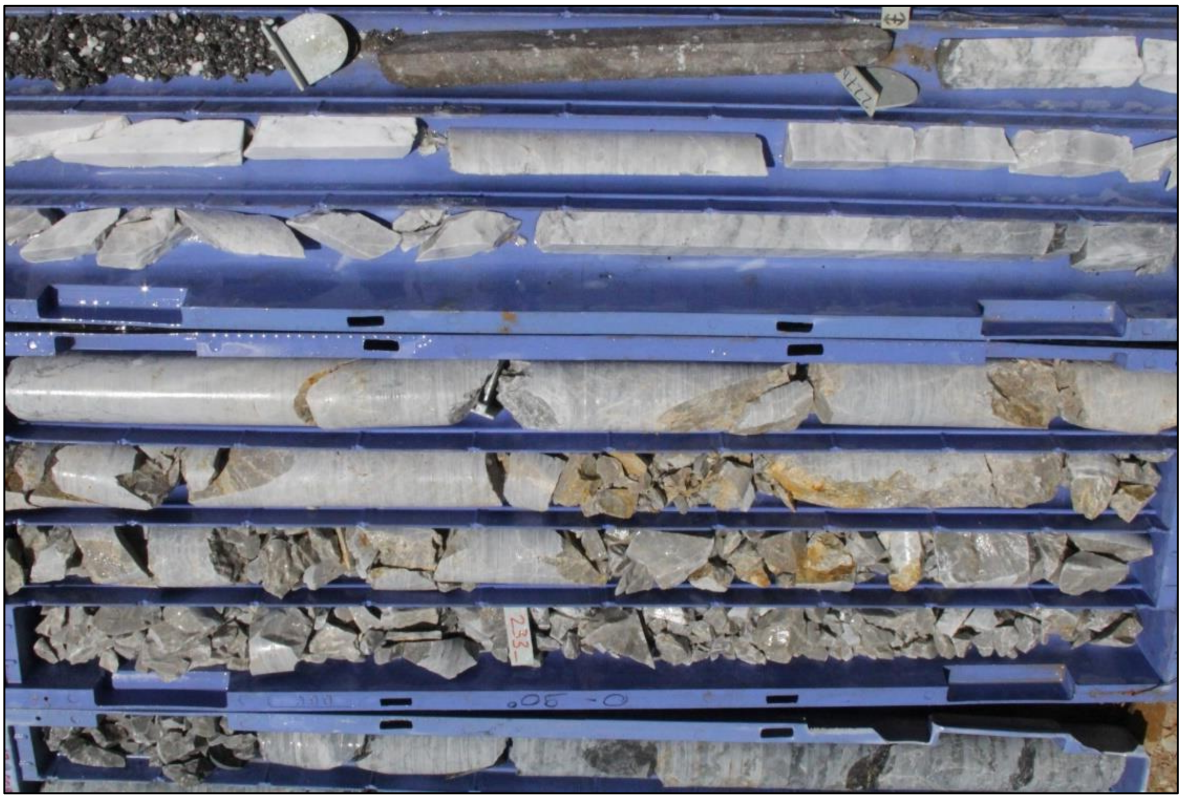


Figure 26: Massive sulphide mineralisation with thin bleached halo in footwall c. 6 m

Drillhole PPS17-009 225-234 m, HQ core 63.5 mm (Source: CSA Global, 2017).

Figure 27: Bleached limestone with small-scale fluid-escape veining note pre-alteration diffuse stylolites and post-alteration open stylolite (top)

Drillhole PPS17-009 212-213.5 m, HQ core 63.5 mm (Source: CSA Global, 2017).

Figure 28: Intense micro-brecciation with iron-rich matrix in altered limestone in footwall alteration zone

Drillhole PPS17-004 59-65 m, HQ core 63.5 mm (Source: CSA Global, 2017).

Figure 29: Intense micro-veining in altered limestone with bleached thin siltstone intervals, footwall alteration zone

Drillhole PPS17-004 128-131 m, HQ core 63.5 mm (Source: CSA Global, 2017).

7.4.3 Mineralisation

Mining to date at Pinargozu has mainly been of secondary zinc mineralisation, formed through supergene oxidation of massive sulphide mineralisation. Primary massive sulphide mineralisation is becoming more dominant as the mine becomes deeper.

Sulphide Mineralisation

The primary mineralisation is characterised by coarse massive sphalerite-rich sulphide with subordinate pyrite (Figure 30, Figure 31, Figure 32). Massive galena also occurs and typically post-dates sphalerite, cutting and replacing sphalerite and associated with more abundant carbonate gangue (Figure 30). The carbonate weathers brown and is interpreted to be iron-rich and potentially manganoan. The absence of a black weathering patina suggests that manganese is subsidiary.

Contacts of massive sulphide with bleached limestone are sharp, with minor disseminated and clotty sulphide in the limestone. Based on mining, the mineralisation is crudely stratabound within the central part of the Değirmentaş Formation. Observations underground suggest that massive sulphide contacts are mainly stratabound (Figure 32, although steep crosscutting galena-rich mineralisation was seen at Horzum (Figure 33).

Figure 30: Massive sphalerite mineralisation veined and replaced by later galena mineralisation with iron-carbonate gangue; stockpile sample

Source: CSA Global, 2017.

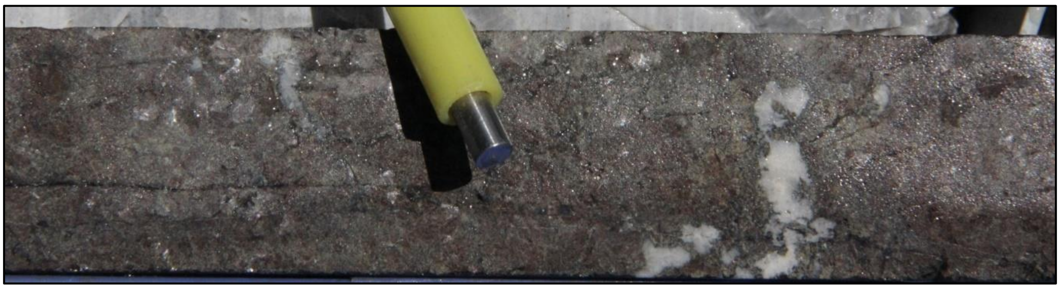


Figure 31: High-grade coarse massive sphalerite and carbonate

Drillhole PPS17-009 226.7 m HQ core 63.5 mm (Source: CSA Global, 2017).

Figure 32: Massive sulphide with stratabound contact with bedded grey limestone, cut by oxide mineralisation that also cuts across the limestone in a karstic feature; Pinargozu mine

Source: CSA Global, 2017

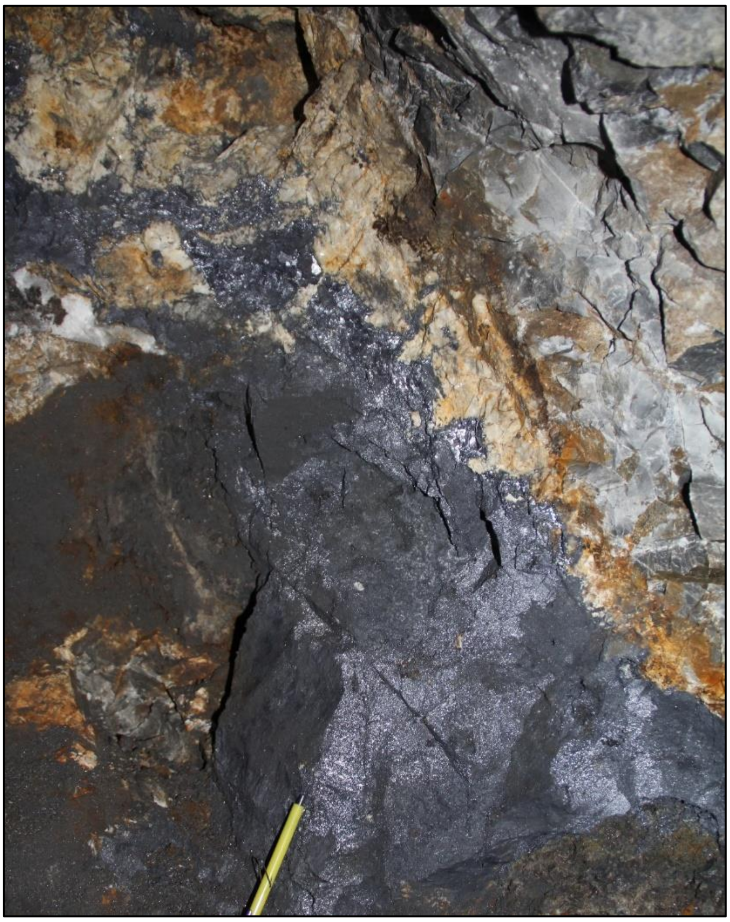


Figure 33: Steep massive galena and iron-carbonate gangue vein cutting pale grey altered limestone; Horzum mine

Source: CSA Global, 2017.

Secondary Zinc Mineralisation

During weathering of massive sulphide deposits in limestone, sulphide oxidation generates acid which readily transports Zn, and to a lesser extent Pb, until neutralised by carbonate wall rocks. Secondary zinc mineralisation can be direct replacement, where neutralisation is almost immediate and secondary minerals directly replace primary, or wall-rock replacement where zinc is transported out of the primary deposit and are precipitated by reaction with the wall rock, often in acid-enhanced karst cavity systems (Hitzman *et al.,* 2003). Acid generation capacity is strongly related to pyrite content, which is low at Pinargozu.

The large-scale geometry of secondary mineralisation at Pinargozu and the mixed oxide-sulphide mineralisation (including more resistive galena within secondary zinc zones, Figure 34) indicates that the deposit is largely of direct-replacement type. However, on the smaller scale (probably metres, but not tens of metres), there has been substantial remobilisation of zinc into karstic cavity systems (Figure 35). The remobilised mineralisation is characterised by high-grades of Zn with little Pb.

The secondary mineralisation includes high-grade rhythmic banded smithsonite deposited as open-space fill, karstic sediments impregnated by Zn, and clay-rich karstic fill zones (Figure 35, Figure 36, Figure 37).

The tabular bodies of variable thickness are responsible for the bulk of the tonnage at Pinargozu and are largely of direct replacement origin including in-situ karst development. Wall-rock replacement zones are typically narrower, often with crosscutting non-sulphide mineralisation locally interconnected with open space fillings formed through remobilised of mineralised supergene fluids along fractures, breccias and joint planes. However primary mineralisation may also be partly controlled by fault and joint geometries and origin of secondary mineralisation cannot be determined by geometry alone.

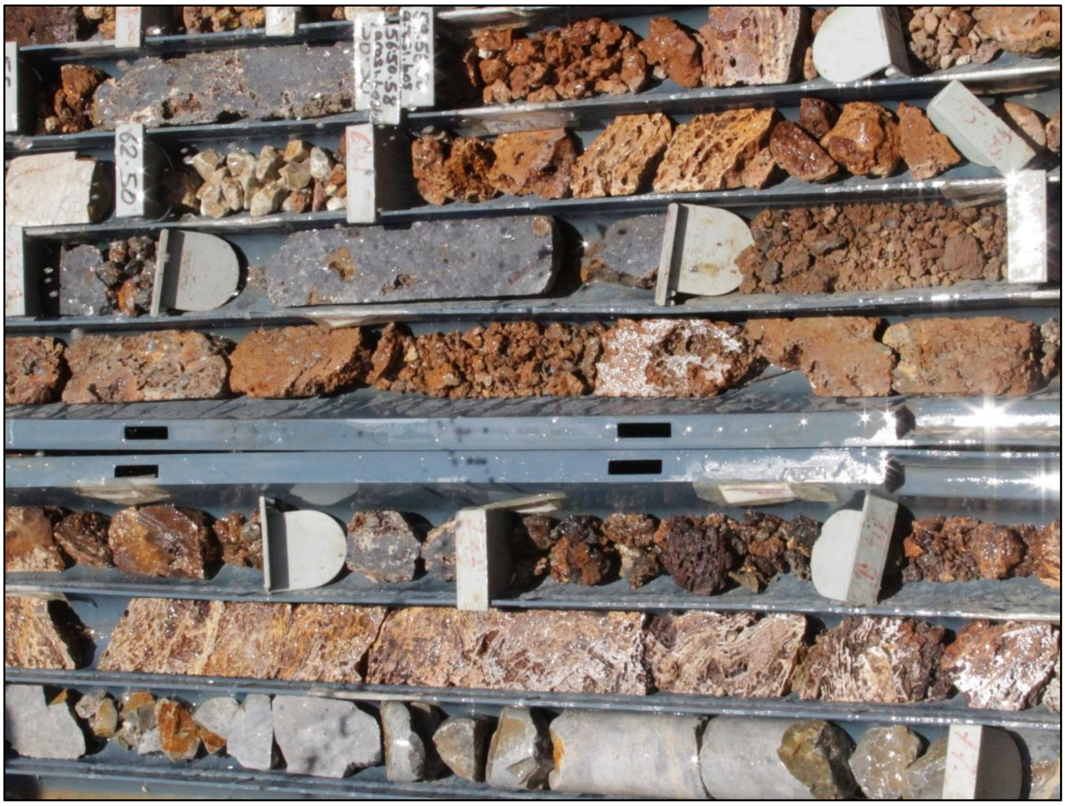


Figure 34: Remnant massive galena mineralisation in high-grade smithsonite oxide zinc ore

Drillhole PPU16-042 52-77 m, HQ core 63.5 mm (Source: CSA Global, 2017).

Figure 35: Sharp contact of secondary karstic zinc mineralisation with bleached bedded limestone

Note that the contact is irregular and dissolution-related and is not a fault; Pinargozu mine (Source: CSA Global, 2017).

Secondary zinc mineralisation at Pinargozu consists mainly of smithsonite, $ZnCO_3$, and hemimorphite, $Zn_4Si_2O_7(OH)_2{\cdot}H_2O$, with minor amount of replacive hydrozincite, $Zn_5(CO_3)_2(OH)_6$. Secondary zinc mineralisation is associated with abundant (often friable, Figure 37) concentrations of Fe-oxides and hydroxides and cerussite, $PbCO_3$, as well as remnant galena, sphalerite, and pyrite. Very high-grade zinc mineralisation (>40% Zn) is associated with banded smithsonite (Figure 36).

Mineralisation is accompanied by a general tenor of >50 g/t silver. Local pockets of high grade silver (>250 g/t) exist, most notably in the southern lodes where sulphide proportions are higher. Elevated lead concentrations (typically galena) are almost entirely restricted to these southern lodes where, as development has extended deeper, sulphide mineralisation has become more prevalent.

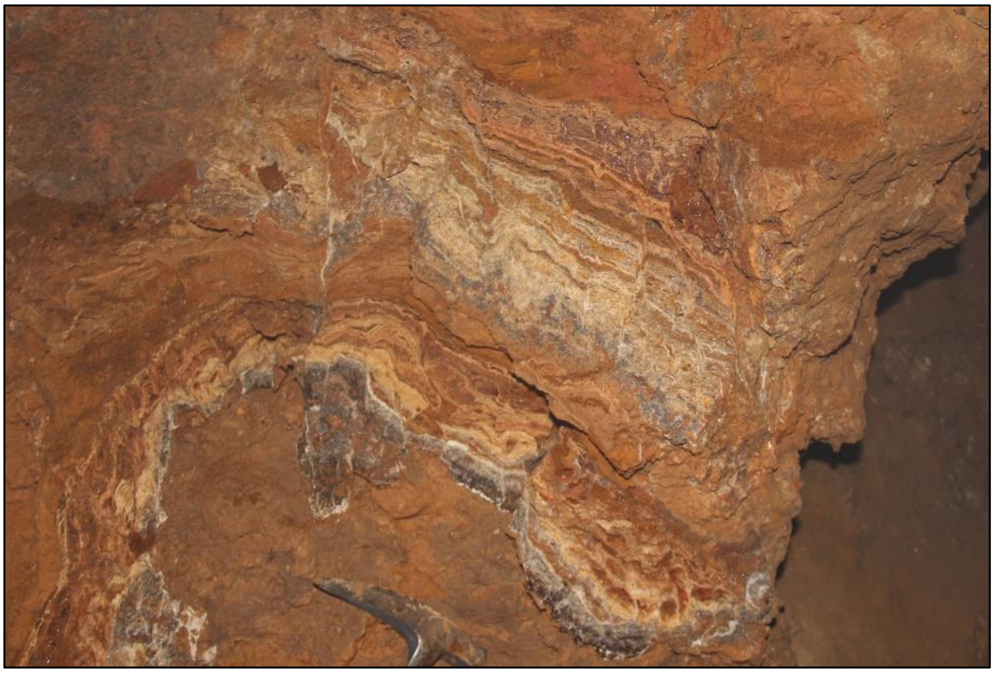


Figure 36: Rhythmic banded smithsonite precipitated in a karstic cavity system

With subsequent clayey Zn-rich sediment fill; Pinargozu mine (Source: CSA Global, 2017).

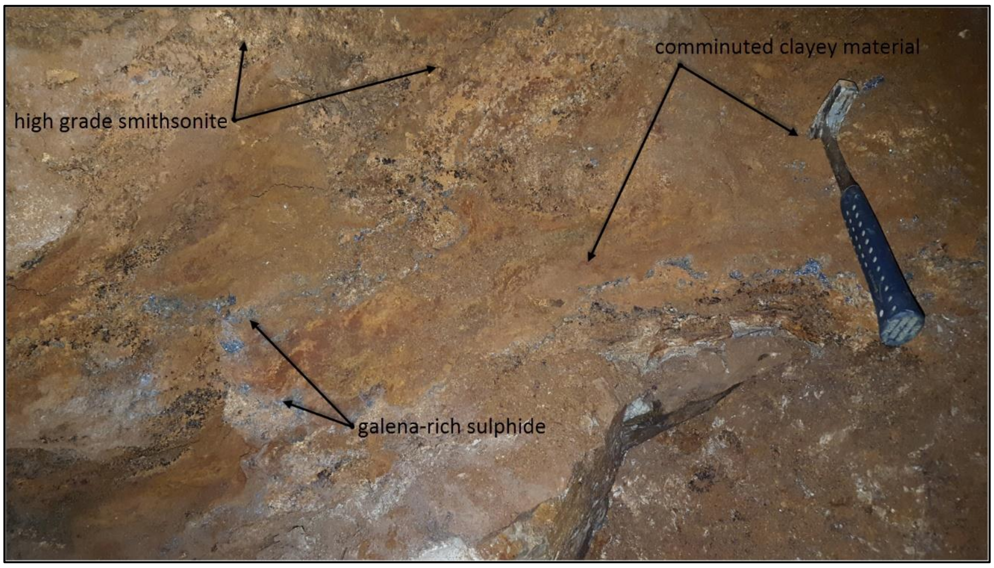


Figure 37: Underground exposure showing friable high-grade material

Associated with abundant Fe-oxides and hydroxides. Note small irregular galena concentrations resistive to oxidation (Source: CSA Global, 2017).

7.4.4 Structure

Structural mapping by Tripathi (2014) at 1/2,000 scale on the surface, and at 1:200 in underground workings, recognised five groups of structures at Pinargozu (Figure 38):

- 45°-69° to N138°dipping structures
- East-west striking and 43°south to 78° north dipping shears
- East-west striking and steep east-northeast dipping shears
- The 43°/N184 dipping shears
- The 78°/N004 dipping shears.

Tripathi (2014) interpreted that mineralisation was controlled by these structures and their intersections. This resulted in a very complex geometry which does not represent the overall geometry of the Pinargozu deposit, although it may explain mineralisation geometry at a small scale (Figure 38).

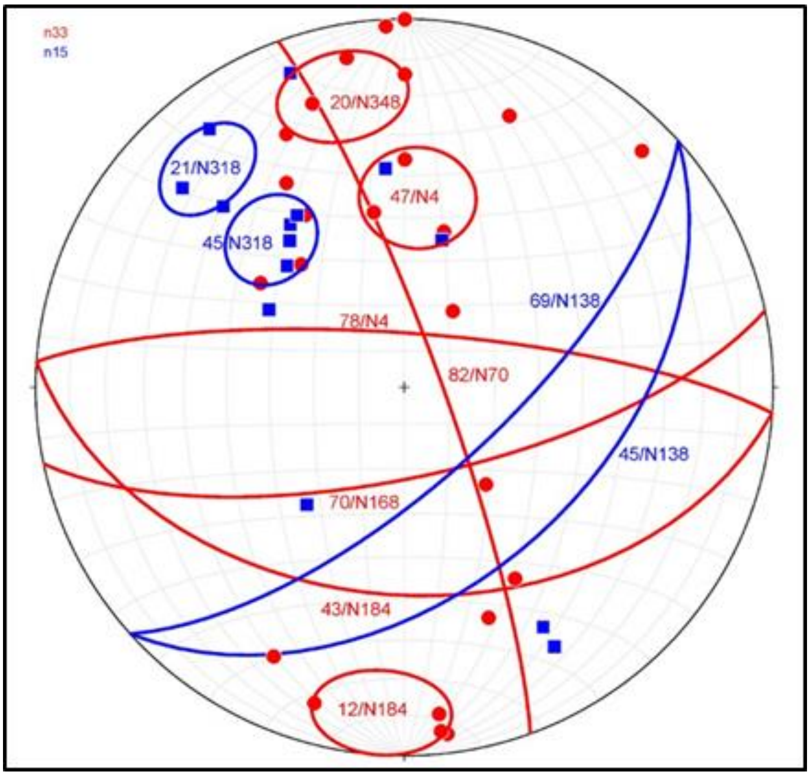


Figure 38: Mineralised shears observed in Pinargozu underground workings

From Tripathi, 2014

8 Deposit Types

8.1 Hypogene Deposit Type

Pinargozu and Horzum's passive margin setting with inversion and collisional orogeny is favourable for the formation of MVT and Irish-type zinc deposits. The post-collisional Neogene magmatism on the Anatolian plateau is permissive of skarn/manto (or CRD) type deposits; CRD deposits typically form distal from porphyritic intrusions in magmatic arc or back-arc settings.

Pinargozu and Horzum occur within the Tufanbeyli–Horzum Zinc Belt, where mineralisation has generally been interpreted as MVT deposits, formed within the passive-margin platform carbonate sequences with fluid-flow systems related to the Cimmerian or Alpine orogenic compression and uplift. However, the deposits in the Nigde, Zamanti, Keban district have been described as intrusive-related.

Temur (1986) pointed out that Horzum deposits have been formed by relatively high-temperature (150–a-200°C) hydrothermal solutions and the presence of minerals such as chalcopyrite, bornite, fahlerz, native gold/electrum in the paragenesis, as well as iron-rich sphalerite. Allen (1996) suggested a relatively recent CRD origin for the Horzum deposits based on geometry, texture, mineralogy (very coarse-grained iron-rich sphalerite + pyrite + dolomite), and chemistry (elevated Ag and As values). Allen (2012) also suggested that Horzum, Pinagozu and Tufanbeyli were CRDs and noted the absence of dolomitisation and solution breccias.

Megaw (2016), who has published extensively on the classic Mexican CRD district, also interpreted Horzum-Pinargozu as a CRD system and noted chemistry (elevated Ag, minor Cu and Au, As, W and Mn) and high-iron sphalerite and discordant geometry, a schematic and preliminary model for the Horzum trend deposit is presented in Figure 39.

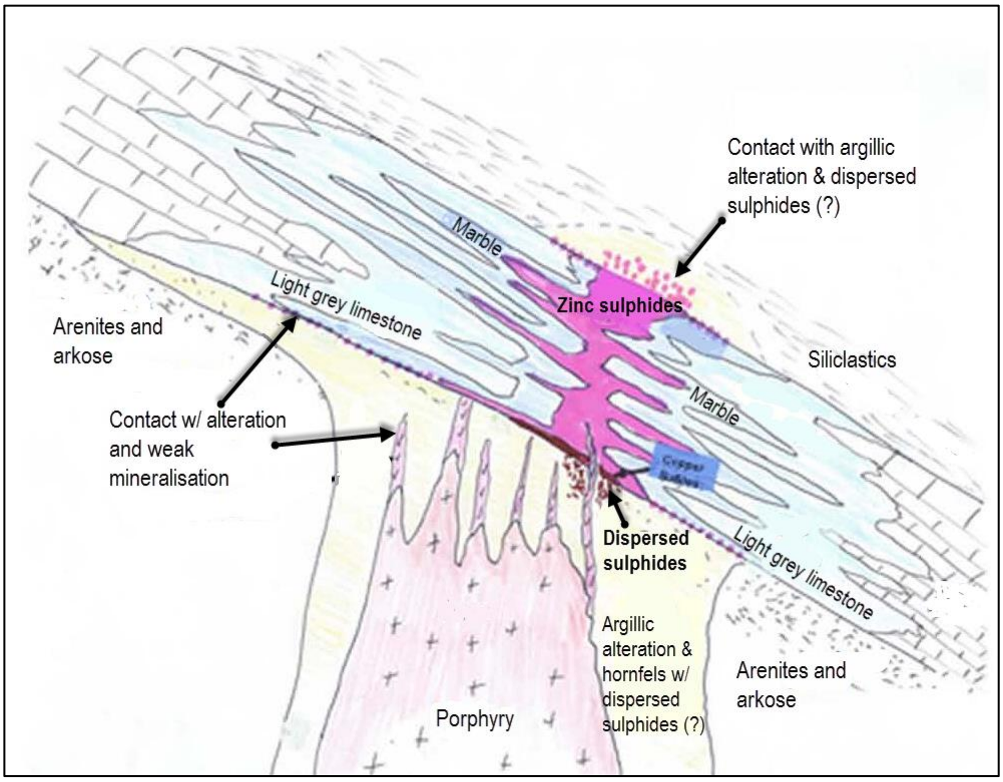


Figure 39: Very schematic preliminary model for the CRD systems in the Horzum Trend deposits

Model presented by Megaw (2016) as a framework for discussion only to show schematically where a source intrusion might lie and possible zonation of alteration and mineralisation).

The deposits are dominantly stratabound but are clearly epigenetic and with textures, mineralogy, chemistry, alteration, and geometry indicative of high-temperature fluids with magmatic input. The bulk of evidence therefore supports a young (Palaeogene or Neogene) intrusive-related CRD system. However, the intrusive source of mineralising fluids is unknown and there are no known intrusions in the district within tens of kilometres, suggesting that the source intrusion may be deeply buried.

Minor copper-gold occurrences are reported about 24 km north-northwest of Pinargozu (Yildirim and Cihan, 2009) and support the existence of a magmatic mineralising system.

8.2 Supergene Deposit Type

The bulk of economic zinc mineralisation at Pinargozu is dominated by secondary minerals formed through supergene processes. These processes have led to both “direct replacement” and the “wall-rock replacement” non-sulphide mineralisation (Hitzman *et al.,* 2003, classification), although wall-rock replacement is on a local scale and the deposit remains largely in situ with respect to the original sulphide body. Supergene mineralisation has been enhanced by uplift in a karstic carbonate unit since the Miocene, with depressed water tables. There is clear evidence for several supergene mineralisation stages. For example, the early deposited massive smithsonite concentrations are partially leached in places, resulting in brittle red-brown ores with a spongy structure, which contain late-precipitated smithsonite and hemimorphite concentrations. Further leaching resulted in a porous network of hematite-goethite dominated ores.

9 Exploration

9.1 Past Exploration

Prior to 2012, minimal modern exploration activity had been undertaken at Pinargozu. Regional exploration by Horzum AS commenced in early 2012 and included:

- Geological mapping and grab sampling of faults and outcrop
- Soil geochemical surveys
- Geophysical GPR survey.

No geochemical sampling data have been provided to CSA Global.

9.2 Reconnaissance Mapping and Grab Sampling

A detailed 1:2,000 scale field mapping campaign which focused on the areas around the old mine commenced in 2014. Its aim was to improve the understanding of the geological environment and identify new structures to drill test at depth.

9.3 Soil Geochemistry

A geochemical soil sampling program was undertaken to target additional mineralisation beneath shallow post-mineralisation cover. A portable XRF instrument was used to assay the soil samples. Anomalous soil samples assisted in delineating areas of interest to the northeast of Pinargozu.

9.4 Geophysical Surveys

A GPR survey was completed in 2014 by International Groundradar Consulting Inc. with the objective of detecting zones of karstification or faulting. As reported by Pasinex in the news releases dated 3 March 2014 and 21 May 2014, penetration depths from surface to 80 m were achieved in the carbonate rocks using an Ultra GPR antenna.

Radar reflection signatures indicative of geological features such as cavities, faults, fissures and stratigraphy relevant to potential mineralisation were used in drill targeting. However, the success rate when drilled has been low.

9.5 Geological Consultant Assessments

In 2012, Dr Cameron Allen completed a site assessment and provided a commentary on prospectivity of the Horzum Zn-Pb district based on a CRD model and a revised structural interpretation.

In 2012, Dr Dave Coller completed a structural Interpretation of the Horzum Pb-Zn belt based on the interpretation of Rapid Eye and DEM data, within a regional tectonic context.

In 2014, Dr Amit Tripathy completed surface and underground structural geology traverses and interpreted that mineralisation was largely structurally controlled.

Dr Peter Megaw, a specialist in CRD systems, assessed the Property in 2016 and concurred with the interpretation of a CRD system.

9.6 Current Status

In 2017, Pasinex commenced a new exploration initiative in the district. This is currently underway and includes additional mapping, sampling and structural interpretation.

10 Drilling

10.1 Pinargozu Drill Programs

Drilling at Pinargozu has been ongoing since 2014, including surface and underground drilling, for a total of 31,737.95 m from 291 drill holes up to the effective date. All drilling has been completed by Akmetal on behalf of Horzum AS using its own equipment. All drilling has been diamond core wireline drilling. Most core drilling has utilised HQ core size, unless reduced to NQ size due to poor ground conditions. Drilling is from both surface and underground and is increasingly underground. Details of drill series and year drilled are provided in Table 6.

Table 6: Drillhole summary table

Year	Surface/Underground	Series	No. of holes	Metres (sum)
2014	S	PPS	11	1,674.50
	U	PPU	7	345.50
	U	SG	2	90.00
2015	S	PAK	12	1,392.20
	S	PPS	52	6,994.20
	U	PPU	53	4,202.20
2016	U	OG	15	1,643.50
	S	PPS	21	3,303.50
	U	PPU	76	5,308.80
	U	SG	7	812.00
2017	S	PPS	22	4,732.15
	U	PPU	13	1,239.40
	U	PPU-CH	10	191.71
Total			**291**	**31,929.66**

Surface holes were drilled from irregularly spaced drill pads (20 m to 600 m) in a north-south direction due to access issues related to terrain and limitations of permitted drill sites. Fan drilling was used to provide coverage from the limited accessible positions.

Underground holes were drilled from several underground drilling stations in radiating fan patterns. Drilling stations are typically spaced 30 m to 110 m apart in an irregular pattern dependent on access. Between one and 10 angled holes was drilled from each drill pad, with an angle of 5–10° between the holes.

Underground channel samples were collected from 10 different exposed mineralised areas underground in 2017. Sampling was typically at 1 m intervals. Channel were horizontal except for one location sampling a mined raise within a mineralised lode.

Figure 40 shows the drill holes relative to the mineralisation model in plan view, and Figure 41 as an oblique view.

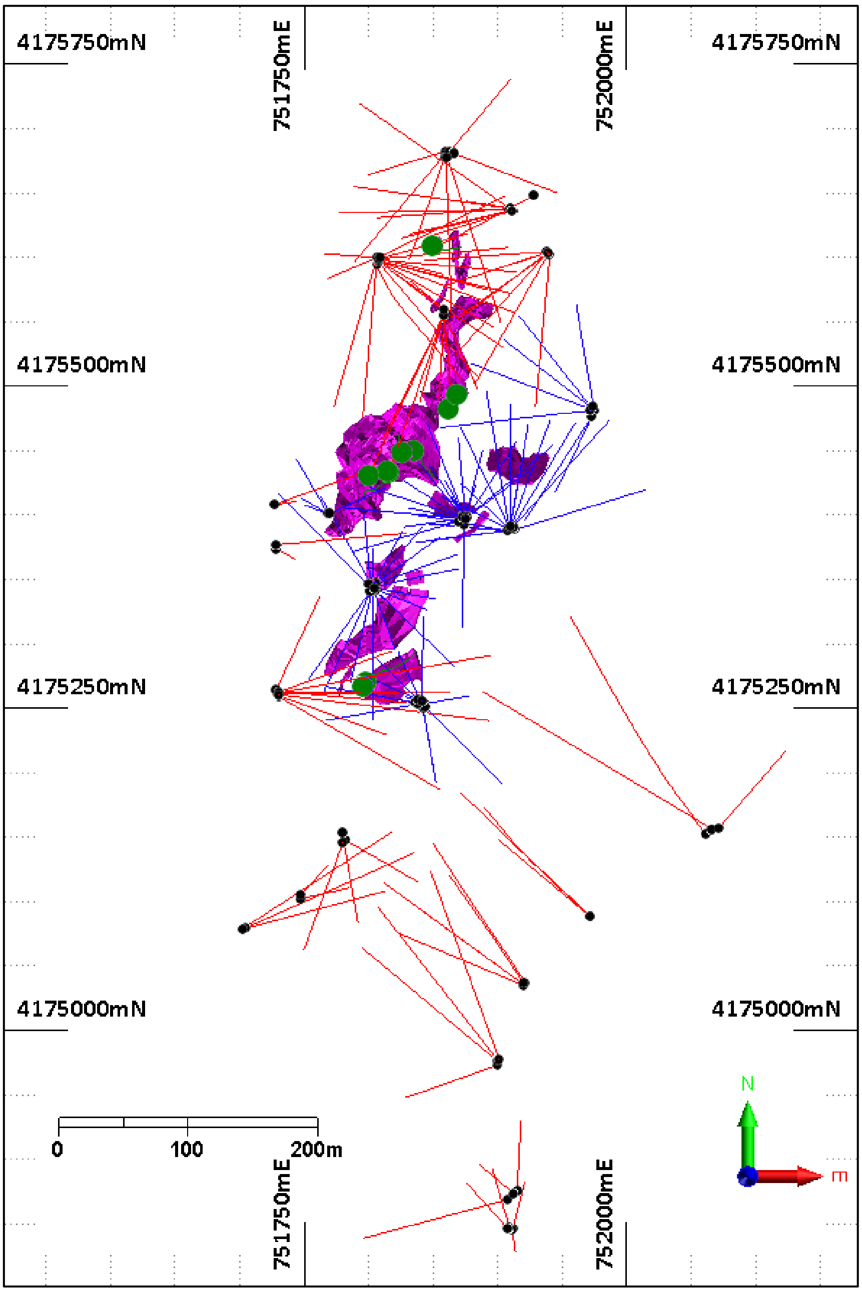


Figure 40: Drilling completed at the Pinargozu project – plan view

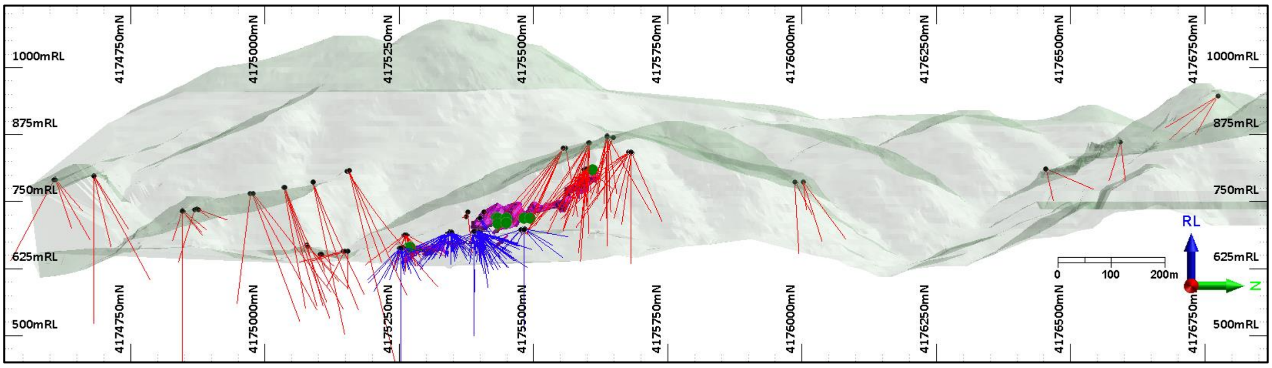


Figure 41: Drilling completed at the Pinargozu project – looking west

Surface holes: red traces, underground holes: blue traces, underground channels: green collars

10.2 Collar Surveying

Surface drillhole sites were prepared at locations selected in the field by the company geologist based partly on access and permitting. After drilling, collar locations were surveyed by the company surveyor using a total station survey instrument. Geologists checked the final collar surveys prior to entry into the database.

Underground drill collars are surveyed by the mine surveyor with a digital system with sub-centimetre accuracy.

10.3 Downhole Surveying

Down-hole survey data is largely absent at Pinargozu. Only 11 out of 302 drill holes have data; three surface holes were surveyed in 2015 and the process was re-started (albeit erratically) in 2017 with 8 of the more recent holes being surveyed.

Three historical holes that clearly contradict current underground mapping were ignored in the estimate. These holes were PPS14_009, PPS14_010 and PPU14_016.

10.4 Core Orientation

No drill-core orientation has been completed on surface or underground drilling. This is strongly recommended to enhance structural understanding.

10.5 Core Recoveries

Procedures at the Pinargozu regularly collect recoveries and RQD data. Data is collected to appropriate sheets and entered digitally into excel spreadsheets.

10.6 Bulk Density

Bulk density data consists of 91 grab samples from underground exposures and 116 samples from drill core. Bulk densities were measured at SGS in Ankara using the standard paraffin wax-coated Archimedes Method.

Due to the highly variable and friable nature of the oxidised and partially oxidised mineralisation, Pasinex also calculated a ROM bulk density from a specifically selected underground exposure in 2017. Detailed surveying of the mineralised faces in the gallery, before blasting and after hauling, was undertaken from which to calculate a volume. Specific staff, bogger and truck were assigned to the task of excavating, hauling and weighing the sample. The bulk sample was dried in the sun for two days after which a tonnage was calculated. A total of 12.8 tonnes from a 4.625 m^3 stope was sampled with a calculated bulk density of 2.767 t/m^3.

10.7 Drill-Core Handling and Logging

The drill-core handling and sampling facility (Figure 42) is located at the Horzum mine which is about seven kilometres by road south of the Pinargozu mine. Drill core is placed in plastic tray at the drill rig. Trays are secured and transported by pick-up to the facility. Upon delivery of drill core to the core shed, the geologist checks all labelling of the core trays, the core recovery and the downhole depths marked on the wooden blocks, to ensure that the core had been placed correctly in the trays. Trays are laid out in order and the core is cleaned to remove any drill grease or additives. A minimal amount of cleaning was performed on poorly consolidated intervals.

Figure 42: Core handling, sampling and preparation facility at Horzum

CSA Global recommends that mark-up, core recovery and RQD should be recorded at the drill site prior to transport.

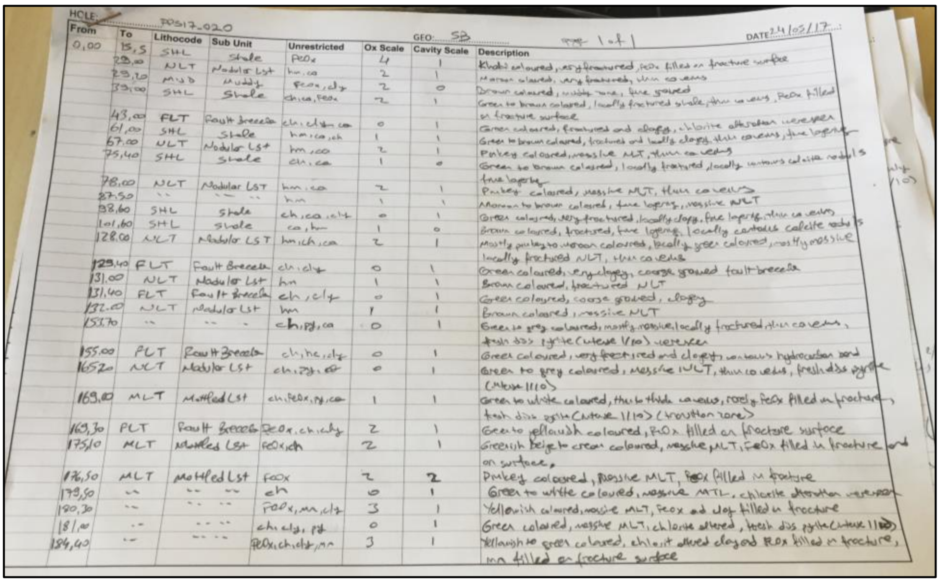
The core trays are photographed wet and dry prior to sampling using indoor special lighting and a fixed camera. All photographs include hole name, tray number, tray start and end depths and a scale bar. Photographs are downloaded onto a computer at the logging facility for review by the geologist before sampling, to ensure that photos are of good quality. Digital core photos are renumbered by hole and tray number and placed into drillhole specific folders

Core recoveries and RQD are measured by the logging geologist at the core shed and recorded on a run-by-run basis in a spreadsheet. RQDs were generally low (almost zero) in the oxidised mineralisation. Standard geological logging and sampling protocols were established prior to the drill program. Collar data recorded includes drillhole ID, collar location (X, Y, Z coordinates), azimuth and inclination, hole length, start and completion dates of drilling.

Drill-core logging is carried out at the core shed by Akmetal geologists with data recorded on a standard paper logging form (Figure 43). For each logged interval, a Lithology code and Sub-unit code are recorded together with an Unrestricted field (mainly for mineral information), an Oxidation scale (0 to 5) and a Cavity scale (0 to 5), and Description.

All logging and sampling data are captured and validated on import into Microsoft Excel tables with each of the logging geologists responsible for entering their data. Core recovery and RQD data are entered into master spreadsheets from which individual drillhole data could be extracted. The spreadsheets are reviewed by the database manager for errors and database coding compatibility.

CSA Global considers that the logging and coding scheme is not optimally designed to extract all key information and for easy import into digital modelling and visualisation software. The Lithology code is a three-letter code whereas the sub-unit is recorded as text. Both incorporate lithological, structural, alteration and mineralisation information, which is not ideal; separate stratigraphic, lithological, alteration, mineralisation, oxidation, and structural fields and tables would be preferred.



HOLE: PDS17_020 GEO: SB DATE: 24/05/17

From	To	Lithocode	Sub Unit	Unrestricted	Ox Scale	Cavity Scale	Description
0,00	15,5	SHL	Shale	FeOx	4	1	Khaki coloured, very fractured, FeOx filled on fracture surface
	29,00	NLT	Nodular Lst	hm, ca	2	1	Maroon coloured, very fractured, thin ca veins
	29,20	MUD	Muddy	FeOx, cly	2	0	Brown coloured, rubble zone, fine grained
	39,00	SHL	Shale	ch, ca, FeOx	2	1	Green to brown coloured, locally fractured shale, thin ca veins, FeOx filled on fracture surface
	43,00	FLT	Fault Breccia	ch, cly, ca	0	1	Green coloured, fractured and clayey, chlorite alteration [illegible]
	61,00	SHL	Shale	hm, ca, ch	1	1	Green to brown coloured, fractured and locally clayey, thin ca veins, fine layering
	67,00	NLT	Nodular Lst	hm, ca	2	1	Pinkey coloured, massive NLT, thin ca veins
	75,40	SHL	Shale	ch, ca	1	0	Green to brown coloured, locally fractured, locally contains calcite nodules, fine layering
	78,00	NLT	Nodular LST	hm, ca	2	1	Pinkey coloured, massive NLT, thin ca veins
	87,50	"	"	hm	1	1	Maroon to brown coloured, fine layering, massive NLT
	98,60	SHL	Shale	ch, ca, cly	0	1	Green coloured, very fractured, locally clayey, fine layering, thin ca veins
	101,60	SHL	Shale	ca, hm	1	0	Brown coloured, fractured, fine layering, locally contains calcite nodules
	128,00	NLT	Nodular LST	hm, ch, ca	2	1	Mostly pinkey to maroon coloured, locally green coloured, mostly massive, locally fractured NLT, thin ca veins
	129,40	FLT	Fault Breccia	ch, cly	0	1	Green coloured, very clayey, coarse grained fault breccia
	131,00	NLT	Nodular Lst	hm	1	1	Brown coloured, fractured NLT
	131,40	FLT	Fault Breccia	ch, cly	0	1	Green coloured, coarse grained, clayey
	132,00	NLT	Nodular Lst	hm	1	1	Brown coloured, massive NLT
	153,70	"	"	ch, py, ca	0	1	Green to grey coloured, mostly massive, locally fractured, thin ca veins, fresh diss pyrite (Utest 1/10) occurrence
	155,00	FLT	Fault Breccia	ch, hc, cly	0	1	Green coloured, very fractured and clayey, contains hydrocarbon [illegible]
	165,20	NLT	Nodular Lst	ch, py, ca	0	1	Green to grey coloured, massive NLT, thin ca veins, fresh diss pyrite (Utest 1/10)
	169,00	MLT	Mottled Lst	ch, FeOx, py, ca	1	1	Green to white coloured, thick thin ca veins, rarely FeOx filled in fracture, fresh diss pyrite (Utest 1/10) (transition zone)
	169,30	FLT	Fault Breccia	FeOx, ch, cly	2	1	Green to yellowish coloured, FeOx filled on fracture surface
	175,10	MLT	Mottled Lst	FeOx, ch	2	1	Greenish beige to cream coloured, massive MLT, FeOx filled in fracture and on surface
	176,50	MLT	Mottled Lst	FeOx	2	2	Pinkey coloured, massive MLT, FeOx filled in fracture
	179,50	"	"	ch	0	1	Green to white coloured, massive MTL, chlorite alteration [illegible]
	180,30	"	"	FeOx, mn, cly	3	1	Yellowish coloured, massive MLT, FeOx and clay filled in fracture
	181,00	"	"	ch, cly, py	0	1	Green coloured, massive MLT, chlorite altered, fresh diss pyrite (Utest 1/10)
	184,40	"	"	FeOx, ch, cly, mn	3	1	Yellowish to green coloured, chlorite altered clay and FeOx filled in fracture, mn filled on fracture surface

Figure 43: Hardcopy drill-log form

10.8 Significant Intervals

Significant drillhole intervals where Zn (%) is greater than 30% and downhole length is greater than 2.5 m (Table 7). *Lengths do not represent true thickness and some of the underground holes were drilled at acute to near-parallel angles to mineralisation. True thicknesses at Pinargozu vary between 1 and 8 meters.*

Table 7: Significant intervals Zn (%) > 30% and downhole length > 2.5 m

BHID	From	To	Length	Zn (%)
OG16_005	56.4	77.3	20.9	45.9
OG16_007	82	85	3	47.7
OG16_009	56	59.7	3.7	32.18
OG16_010	51.5	56.4	4.9	42.63
PPS14_008	150.25	165.8	15.55	31.16
PPS14_011	153	158	5	48.99
PPS15_003	78	83	5	53.06
PPS15_004	115	122	7	42.29
PPS15_004	126.5	140	13.5	45.18
PPS15_004	141	146.5	5.5	43.23
PPS15_010	113.5	116.5	3	30.96
PPS15_012	60.8	63.6	2.8	36.01
PPS15_012	70	73	3	46.9
PPS15_012	73	90	17	38.6
PPS15_013	93.7	100	6.3	30.9
PPS15_013	101	104.2	3.2	40.21
PPS15_014	87.5	91	3.5	48.91
PPS15_015	90.4	114	23.6	35.21
PPS15_022	65.6	69.6	4	35.31
PPS15_025	61	64.2	3.2	38.44
PPS15_027	62	67	5	36.14
PPS15_028	59.2	66.2	7	46.15
PPS15_032	95	98.7	3.7	36.27
PPS15_036	95.5	99.1	3.6	36.67
PPS15_043	125	128.5	3.5	40.74
PPS15_043	134.3	142.8	8.5	46.11
PPS15_046	128	142.2	14.2	39.01
PPS15_046	145	153	8	42.71
PPS17_009	224.4	227.4	3	46.3

BHID	From	To	Length	Zn (%)
PPU14_015	18	38.6	20.6	39.45
PPU15_012	30	32.7	2.7	48.85
PPU15_021	26	29.2	3.2	30.85
PPU15_045	51.5	55	3.5	36.06
PPU16_015	20.8	25.1	4.3	47.7
PPU16_016	21.2	25.5	4.3	51.98
PPU16_018	21.6	31.4	9.8	51.89
PPU16_019	20	27.8	7.8	52.65
PPU16_020	18.5	26.5	8	60.1
PPU16_021	48	53.5	5.5	48.42
PPU16_023	23.5	26.8	3.3	36.07
PPU16_024	22	32.1	10.1	42.57
PPU16_024	45.7	49	3.3	57.88
PPU16_027	45.25	49	3.75	55.21
PPU16_028	27	37	10	56.88
PPU16_030	31	49	18	39.62
PPU16_030	50	56.4	6.4	50.33
PPU16_031	19.1	38.5	19.4	39.12
PPU16_032	41.5	45.2	3.7	49.38
PPU16_032	53	58.7	5.7	42.04
PPU16_033	50.5	56.5	6	45.03
PPU16_038	42.5	48.4	5.9	36.36
PPU16_038	50.5	59	8.5	43.85
PPU16_042	58.5	62.4	3.9	43.93
PPU16_042	68	71	3	32.05
PPU16_048	37.1	42	4.9	45.61
PPU16_050	25.5	40	14.5	41.9
PPU16_058	21.6	24.4	2.8	43
PPU16_060	19.5	22.8	3.3	36.85
PPU16_067	35.5	38.5	3	49.33

11 Sample Preparation, Analysis and Security

11.1 Drill Core Sampling

The logging geologist marks up the drill core for sampling and assigns the sample intervals and sample numbers prior to core cutting. A cut line is marked on the core and is, as far as possible, placed perpendicular to the main orientation of mineralisation contacts or structure. Sample limits are marked on the core as well as the side of the core tray and sample intervals are noted on the cut sheets. Intervals and sample recoveries are entered directly into a spreadsheet, with cut sheets subsequently printed for core cutting. Sample lengths range from 20 cm to 1.5 m, depending on lithological and mineralisation boundaries including oxide/sulphide contacts, and competency of the sample.

Samples are assigned a barcoded sample number ticket from a ticket book and core trays are moved to the sampling facility. Competent core samples are cut in half using an automated electric diamond saw (Figure 44) . Soft oxide material is sometime cut with a knife. Where the core is very broken, material from half of the "core" is collected manually taking care that the fragments are taken uniformly along the core length and mineralised material is represented properly. This is commonly the case in mineralised zones, especially oxide zones. After samples have been cut and bagged, a duplicate sample submission ticket is attached to the core tray at the top of the sample interval in a plastic bag.

Figure 44: Drill-core cutting at Horzum

To minimise cross-contamination, the core saw is cleaned between each sample by cutting a brick or barren rock sample. The cooling water for the saw is not recycled.

Every 10th sample is cut again to generate two quarter core duplicates for analysis. Blank limestone samples are inserted in the preparation stream every 20th sample. Quality control samples are inserted in the sequential sample number sequence. Each sample number has the appropriate sample interval or control sample indicated on the cut sheet.

Samples together with flagging tape marked with the sample number are placed in numbered sample bags with a barcoded ticket. Bagged samples are delivered to the sample preparation facility at the Horzum mine where they are prepared prior to be dispatched to the analytical laboratory.

11.2 Channel Sampling

The logging geologist marks up the underground face for sampling with a cut line and sample intervals and assigns sample numbers prior to sampling. Sample lengths range from 0.8 cm to 1.26 m, depending on lithological and mineralisation boundaries including oxide / sulphide contacts.

Samples are assigned a barcoded sample number ticket from a ticket book.

During sampling, chips are broken along the sample line while technicians hold a half-cylinder below the sample face to catch loose, friable sample (Figure 45). Where the face is competent, a diamond blade rock saw was used to collect sample material.

Figure 45: Channel samples being collected with a rock saw and half-pipe (Source: Pasinex, 2017)

11.3 Sample Preparation

Sample preparation begins at the onsite sample preparation facility at the Horzum mine which adjoins the logging area. This facility is not accredited or certified, but has been inspected by the QP.

Samples are first dried for two to three hours and then crushed using a jaw crusher to nominal 90% passing <1 cm (Figure 46). The crushed sample is split using a two-tier riffle splitter and a quarter of the sample is pulverised using a Bico disc mill which involves grinding of the sample between two plates (Figure 47). Each sample is milled twice and the pulp is consigned to a plastic sample bag marked with the sample number and containing a sample ticket. The jaw crusher, splitter and mill are cleaned with a brush and compressed air between samples. When sampling high-grade mineralisation, a limestone blank sample is milled between samples.

The disc mill produces an uneven and less complete grind than a ring pulveriser, however it is considered to be adequate for the type of coarse high-grade mineralisation that is being sampled.

Coarse rejects from the mill were said to be discarded as of May 2017. Özkan *et al.* (2016) reported that since July 2016, coarse rejects were stored.

Figure 46: Jaw crusher and riffle splitter at Horzum

Figure 47: Pulverising crushed sample with a disc mil, Horzum

The facility is open to the air and an extractor fan is ineffective in keeping a dust free environment, related to mine traffic as well as sample preparation. Although contamination of low-grade samples is likely, this is not considered material to the MRE as samples of high-grade mineralisation above the resource cut-off grade are unlikely to be significantly affected by dust contamination.

Since July 2016, potential contamination during preparation has been monitored by including a blank limestone sample as every 20th sample. Analytical results for blanks show a consistent degree of low level contamination. However, as the blank material is stored in the crushing room and is significantly exposed to sample dust and ambient mine site dust, the blank results do not provide a valid assessment of contamination during preparation.

The core samples submitted to SGS Mineral Services laboratory in Ankara were subjected to full sample preparation procedure at the laboratory, including drying, crushing, splitting and pulverising.

11.4 Sample Handling and Security

Core is recovered using standard wireline drilling. Core is carefully extracted from the wireline core barrel and placed in plastic core trays in the same orientation as it came out of the core barrel. Core is broken if required to completely fill the boxes; drillers breaks are marked on the core. Hole numbers and sequential core box numbers and drilled intervals are written on the core boxes and lids. End-of-run depth is written on blocks placed in core boxes. Core trays are secured for transport to the core yard.

When logging and sampling has been completed, the core boxes containing the sampled core are stored in racks adjacent to the core logging area at Horzum mine. Access to the mine is restricted by company security personnel and lockable gates to the site.

Sample pulps are transported to the SGS Laboratory in Ankara by commercial freight service.

11.5 Analytical Method

11.5.1 XRF Analytical Screening

A desk-mounted portable XRF is used to analyse sample pulps under controlled conditions at the Horzum mine site (Figure 48). Standard samples are used to calibrate the pXRF instrument. Samples with a grade higher than 5% Zn are submitted to the SGS Mineral Services laboratory in Ankara for assay.

CSA Global recommends that selected laboratory-analysed sample pulps should also be used as standards as these will have the same matrix effects as the analysed samples.

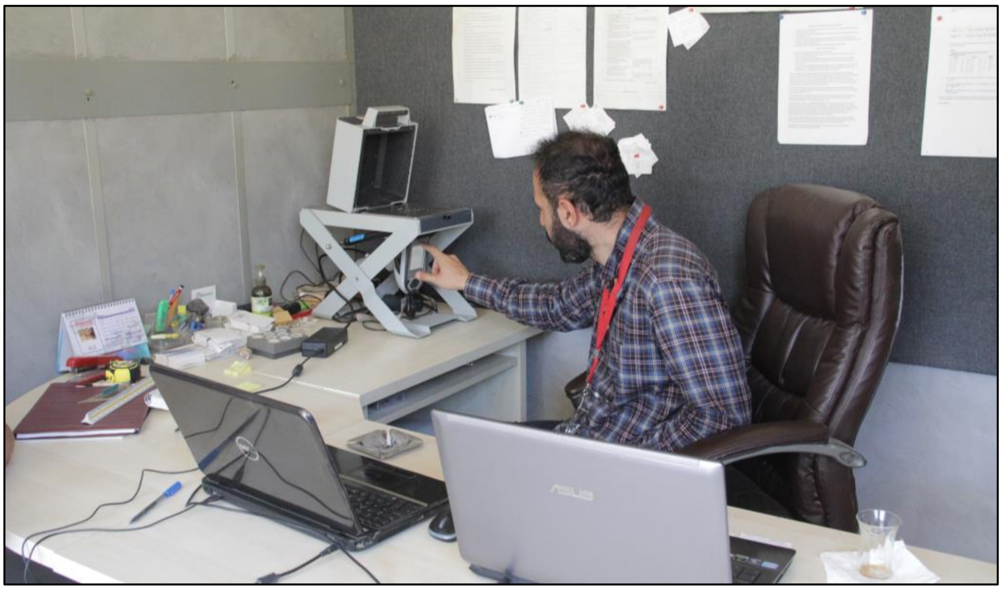


Figure 48: pXRF sample pulp screening at Horzum

11.5.2 Laboratory Assay

Samples that are shipped to the SGS Mineral Services laboratory in Ankara are assayed for 33 elements using a four-acid (HNO_3, HF, $HClO_4$ and HCl) digestion with an ICP-OES finish. Over range assays have been assayed by three different methods (4A-AAS, fusion or titration), depending on when they were assayed. Table 8 below lists the main elements and detection limits.

The SGS Ankara laboratory quality system is certified to International Standards ISO 9001:2008.

Table 8: SGS Ankara assay methods and detection limits

Original method	Generic method	Element	Lower limit	Upper limit	Unit code
AAS42S	4A_AAS	Ag	5	500	PPM
AAS43B	4A_AAS	Ag	10	40,000	PPM
AAS43B	4A_AAS	Pb	0.01		%
AAS43B	4A_AAS	Zn	0.01	100	%
CON11V	TITRATION	Pb	10	70	%
CON12V	TITRATION	Zn	5	65	%
ICP40B	4A_ICPES	Ag	2	10	PPM
ICP40B	4A_ICPES	Pb	2	10,000	PPM
ICP40B	4A_ICPES	S	0.01	5	%
ICP40B	4A_ICPES	Zn	1	10,000	PPM
ICP90Q	FS_ICPES	Pb	0.002	30	%
ICP90Q	FS_ICPES	Zn	0.001	50	%

Check samples were sent to ALS İzmir (Turkey) for analysis. ALS İzmir has ISO 17025:2005 accreditation. Samples were analysed for multi-elements using a four-acid digest and an ICP-OES finish. Over limit assays were done using one of a four-acid digest with an ICP/AAS finish, titration, or an oxidising finish with an ICP-OES finish.

Table 9: ALS Izmir assay methods and detection limits

Original method	Generic method	Element	Lower limit	Upper limit	Unit code
Ag-OG62	4AOG_UN	Ag	1	1,500	ppm
ME-ICP61	4A_ICPES	Ag	0.5	100	ppm
ME-ICP61	4A_ICPES	Pb	2	10,000	ppm
ME-ICP61	4A_ICPES	S	0.01	10	%
ME-ICP61	4A_ICPES	Zn	2	10,000	ppm
ME-ICPORE	OX_ICPAES	Ag	1		ppm
ME-ICPORE	OX_ICPAES	Pb	0.01	30	%
ME-ICPORE	OX_ICPAES	S	0.05		%
ME-ICPORE	OX_ICPAES	Zn	0.01		%
Zn-OG62	4AOG_UN	Zn	0.001	30	%
Zn-VOL50	TITRATION	Zn	0.01	100	%

11.6 Quality Assurance and Quality Control Procedures

11.6.1 Overview

Duplicate samples have been the primary method of QAQC, but procedures have varied over the life of the project. Since July 2016, coarse crushed duplicates, pulp duplicates and external laboratory check analysis have been used, as well as blank samples. Prior to July 2016, no QC samples were included with the samples sent for laboratory assay. To date, no CRM has been included with the primary samples.

11.6.2 Blank Samples

Coarse blanks undergo the same sample preparation process as the primary samples to monitor potential contamination. Blanks should have negligible concentrations of the elements of interest. Industrial cement has been used as a blank sample since July 2016, inserted every 40th sample. Blanks are crushed and pulverised onsite and submitted to the analytical laboratory as pulp samples.

11.6.3 Assay Precision (Duplicates)

Duplicate samples are used to measure precision (i.e. repeatability of results). At Pinargozu, this has included:

- Quarter core duplicate samples submitted unprepared to SGS to compare the results of samples prepared at the onsite sample preparation facility versus those prepared at SGS.
- Since July 2016, the following additional duplicates have been submitted with the primary samples:
  - coarse crush duplicate samples, comprising a second riffle sample split
  - Pulp duplicates.

Every 10th core sample is quartered by cutting one half of the core into two equal parts. One of the quarter-core samples is bagged and submitted to SGS without on-site sample preparation. The second quarter was submitted to the onsite sample preparation facility for crushing and pulverisation. The other half of the core is kept for reference and remains in the core box.

Every 10th crushed sample is riffle spilt and submitted to SGS as a coarse duplicate (prior to pulverisation) for comparison against the sample prepared at the onsite sample preparation facility.

External Check Analysis

A coarse crush duplicate from every 30th sample is sent to ALS Izmir as an external check sample.

11.6.4 Certified Reference Material and Standards

CRM should be included with the primary samples to monitor assay accuracy and bias. CRMs consist of a homogenous pulp material with certified concentrations and expected standard deviations of the elements of interest.

To date, no CRMs have been used at Pinargozu. CRMs were recently purchased from AMIS in Johannesburg, South Africa and came into use after the effective date.

In-house oxide and sulphide standards have been prepared from pulp material available on site and came into use after the effective date.

11.7 Drillhole Quality Assurance and Quality Control Review

11.7.1 Cross Contamination

Thirty-six blank results were reviewed and all except two displayed zinc contamination, with the highest value being 0.51 % Zn (Figure 49). However, although contamination is evident, this should not be material relative to the high-grade nature of the deposit.

Until recently, the blank material was stored in the open in the sampling room and contamination may be partly derived from dust. Procedures have since been updated and blanks are stored off-site.

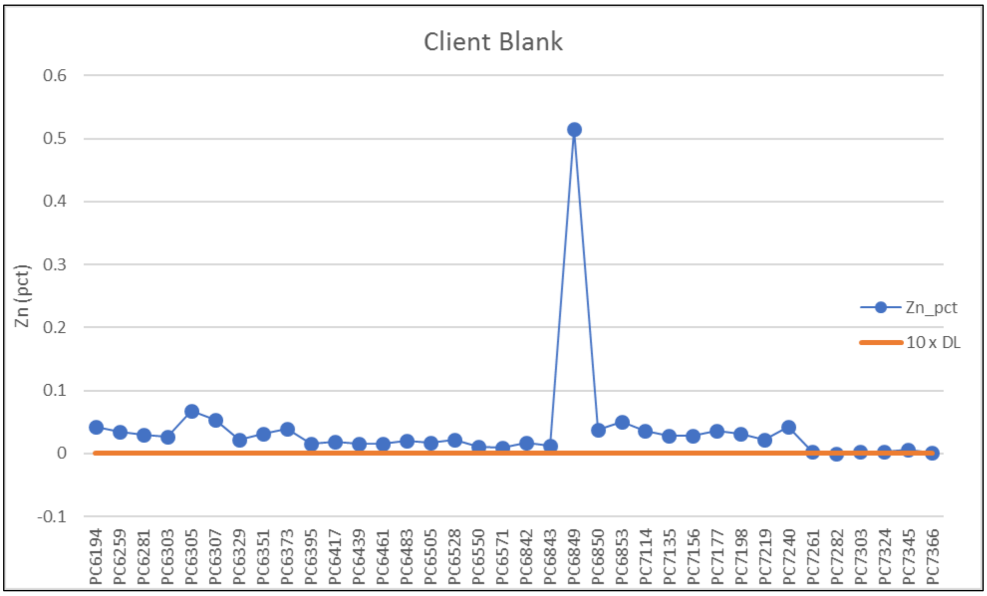


Figure 49: Blank results and the failure limit (10 x DL)

Source: CSA Global, 2017

11.7.2 Duplicates (Precision)

The duplicate data were assessed using coefficients of variation (CV = standard deviation/average – also known as relative standard deviation) calculated from individual duplicate pairs and averaged using the RMS (root mean squared) approach. This approach is recommended by Abzalov (2008) as a way of defining a fundamental measure of data precision using duplicate paired data.

Precision errors (CV_{AVR}(%)) were calculated for duplicates with mean values ≥10 times the analytical detection limit. Scatter plots, relative difference plots and quantile-quantile (QQ) plots were produced. Results are summarised in Table 10 below.

Table 10: Zinc duplicate summary (precision errors, means and bias)

Duplicate type	Pairs (total)	Count of pairs (>10 x DL)	$CV_{(AVR)}$ %	Mean Zn Orig (%)	Mean Zn Dup (%)	Bias
1/4 Core Dup	33	32	16	36.89	38.38	4%
Coarse (1/4 core orig)	32	23	44	3.63	3.64	0%
Coarse (pulp orig)	31	23	54	2.13	2.16	2%
Lab Checks	76	73	7	24.01	23.84	-1%
External Dups	34	34	11	31.62	30.58	-3%
Additional checks recommended by CSA Global						
External Dups (Coarse)	34	34	17	32.48	30.45	-6%
External Dups (Pulp)	26	26	7	29.06	28.42	-2%

Quarter-Core Duplicates

Quarter-core duplicate samples (33 in total) were included to try and ascertain whether there was a bias between the samples prepared at the onsite sample preparation laboratory and those prepared at SGS. The first split (Orig) was submitted to SGS without any preparation, and the second split (Dup) was submitted to the onsite sample preparation laboratory where it was crushed and pulverised.

Repeatability was acceptable, but there was a 4% bias to the duplicate samples (Table 10). Results have been plotted below on a relative difference plot, a scatterplot and a QQ plot.

Note the 4% bias to the duplicate samples at higher grades (apparent in the QQ plot) indicating possible contamination or poor repeatability arising at the onsite sample preparation laboratory. Additional coarse reject samples were assayed to determine whether this bias has been introduced at the onsite sample preparation laboratory (see following section).

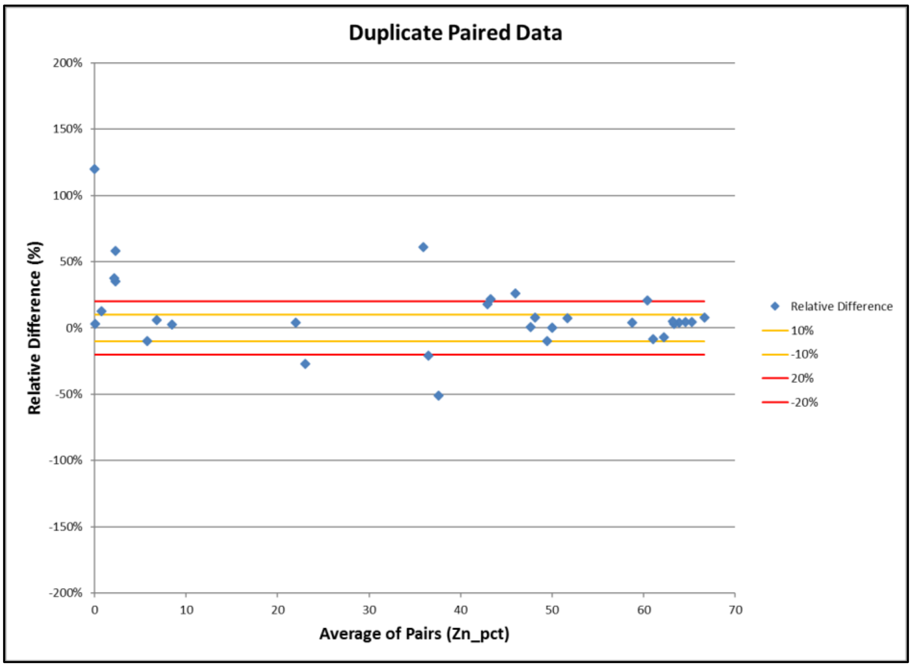


Figure 50: Relative difference chart for zinc quarter-core duplicates

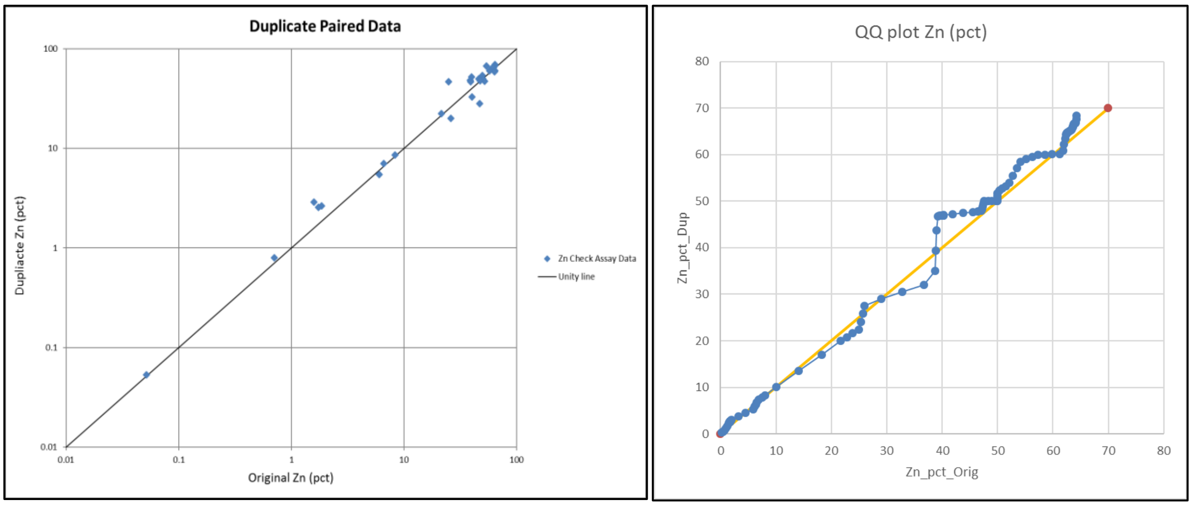


Figure 51: Scatterplot and QQ plot for zinc quarter-core duplicates

Coarse Duplicate Samples

There are two subsets of these QC samples:

- Coarse duplicate with a quarter-core original sample (both samples are pulverised at SGS)
- Coarse duplicate with a pulp original sample (original sample prepared onsite, duplicate at SGS).

The duplicate sample is taken from the coarse riffle split and pulverised at SGS and compared against the quarter-core samples (pulverised at SGS) and against pulp samples (prepared at the on-site laboratory).

Conclusions are as follows:

- Both subsets consisted of predominantly low-grade samples (~3.6 and ~2.1% respectively)
- Repeatability in both subsets was poor (CV_{AVR} of 44% and 54% respectively)
- Coarse duplicate/quarter-core original had no bias
- Coarse duplicate/pulp original had a 2% bias to the duplicate sample
- No definitive conclusions could be made due to the predominantly low grade of these samples and the lack of data.

To investigate whether contamination was being introduced at the on-site sample preparation laboratory, CSA Global recommended that additional higher grade coarse reject samples were submitted to ALS İzmir for preparation and analysis. These results (Dup) were compared against the results in the database (Orig) and are discussed below.

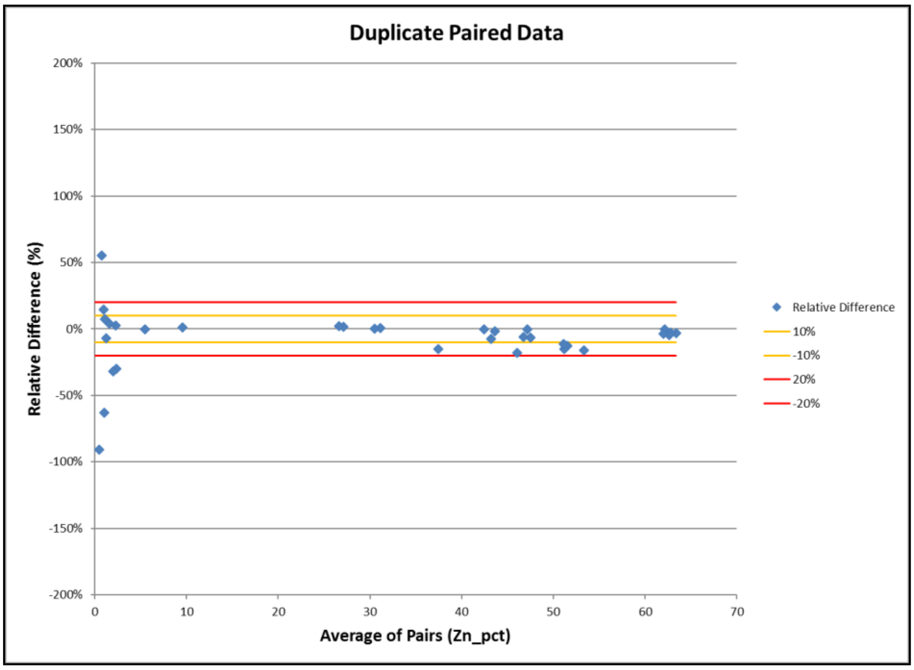


Figure 52: Relative difference chart for additional zinc coarse reject duplicates

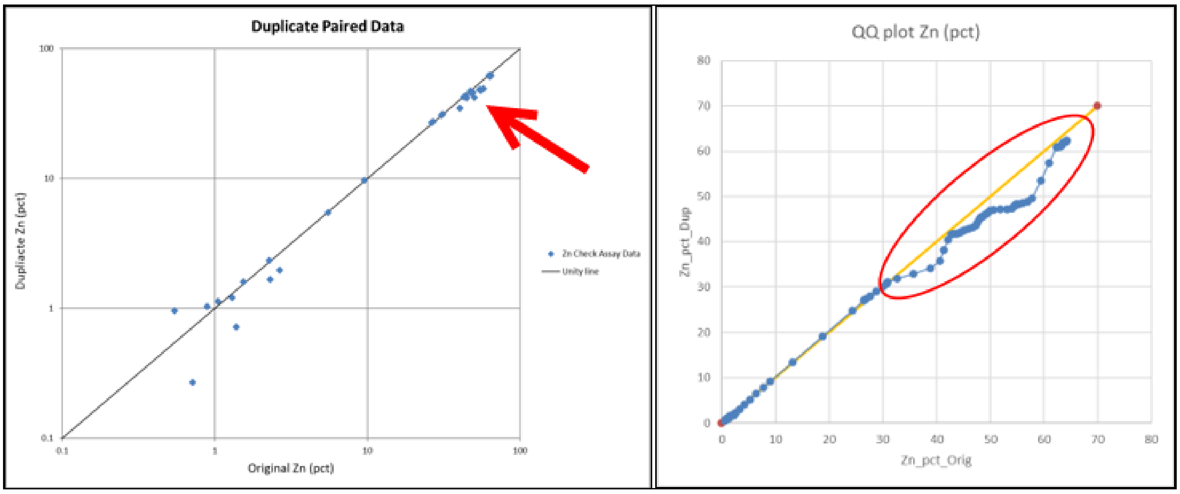


Figure 53: Scatterplot and QQ plot for additional zinc coarse reject duplicates

In this case, the original samples were those prepared at the onsite laboratory and the duplicate samples those prepared at ALS Izmir. The bias to the original samples can clearly be seen on the QQ plot (concentration of points below the one-to-one line):

- Samples analysed prepared at the on-site sample preparation laboratory had a mean grade 6% higher than those prepared at ALS Izmir (Figure 52 and Figure 53)
- The bias is at higher grades (>30% Zn)
- Precision was acceptable (CV_{AVR} of 17%).

The results of this comparison indicate that high grade samples prepared onsite have on average zinc grades 6% higher than those prepared at ALS Izmir whilst there is no significant bias at lower grades (<30% Zn).

External Check Samples

ALS Izmir was used as an external check (umpire) laboratory to compare the precision of the assay results relative to those from SGS Ankara. The mean grade at SGS was 3% higher than at ALS and the CV_{AVR}(%) was 11%, indicating acceptable precision. However, when reviewed spatially it was apparent that there was a significant area without any external check samples and therefore it was recommended that additional samples be sent to ALS to include this area. The mean grade of the additional external check samples (ALS Izmir) was 2% lower than the original samples analysed at SGS Ankara and the CVAVR(%) was 7%, indicating acceptable repeatability.

Overall, the external pulp duplicates indicate acceptable precision with a bias of 2% to 3% to the original samples.

11.7.3 Certified Reference Materials and Standards

No CRMs were included with the primary samples, therefore there has been no control on assay accuracy. Pasinex has subsequently purchased CRMs from AMIS in Johannesburg. In addition, Pasinex has developed two in-house standards (oxide and sulphide) which have been assayed at ALS İzmir and SGS Ankara to determine values, but these are uncertified standards.

CSA Global recommends that Pasinex appoint a commercial supplier of CRMs to certify the in-house standards. In many cases, producing mines use standards from mine material where a commercial supplier of CRMs produces and certifies the values, including the “round-robin” process that commercial CRMs undergo.

11.8 Channel Sample Quality Assurance and Quality Control Review

11.8.1 Cross Contamination

Due to a sample numbering mix-up, all the QC samples were analysed by the laboratory in one batch, instead of with the primary samples. The result of this was that the only batch by batch controls for the underground channel samples were the laboratory-inserted QC samples.

Some low-level zinc contamination was observed in the laboratory blanks, but when compared to the grade of the primary samples was not deemed material.

11.8.2 Certified Reference Materials

There were numerous failures in the low-grade laboratory CRMs which could indicate low-level (relative to sample grades) carry-over contamination (Figure 54 and Figure 55), i.e. the CRMs over-report due to contamination from the high-grade zinc samples analysed.

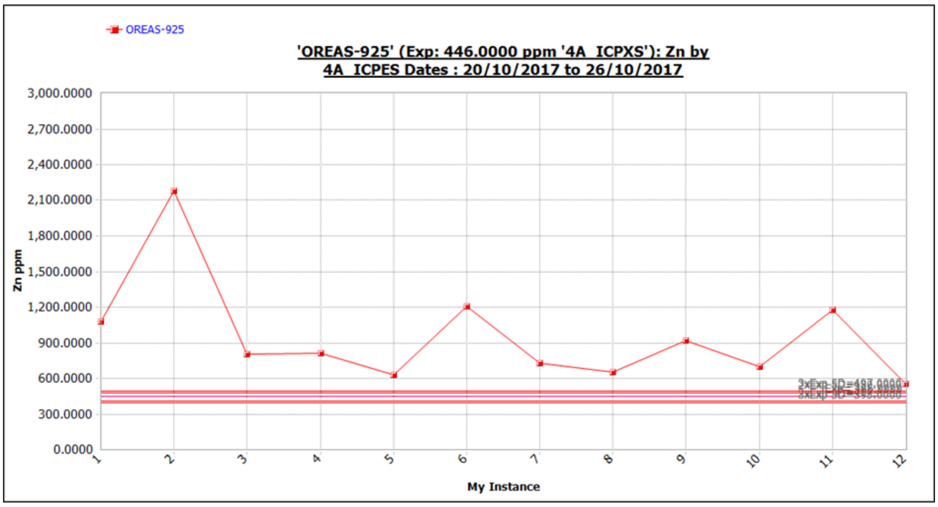


Figure 54: Lab CRM OREAS-925: showing probable low-grade contamination

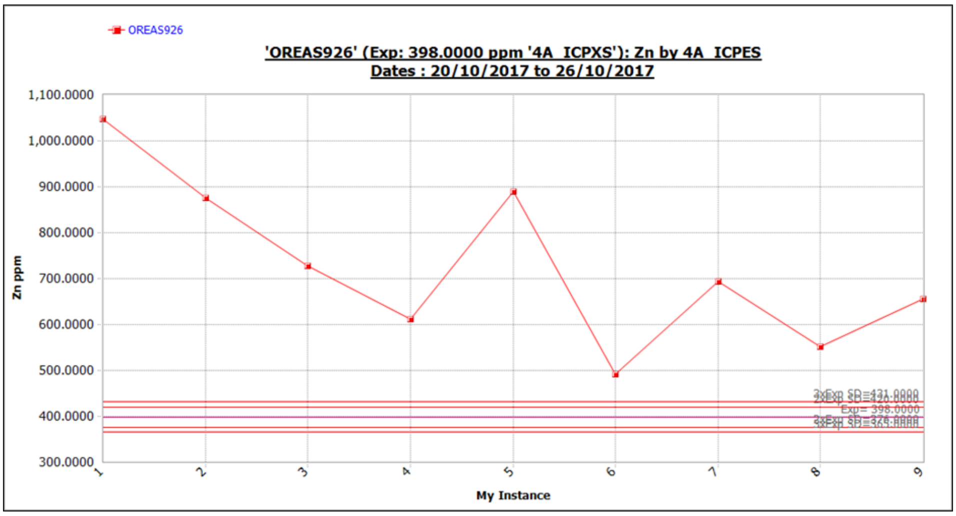


Figure 55: Lab CRM OREAS926: showing probable low-grade contamination

11.8.3 Duplicates (Precision)

A bias of 6% to the duplicate samples was noted in the in-field duplicates (Figure 56).

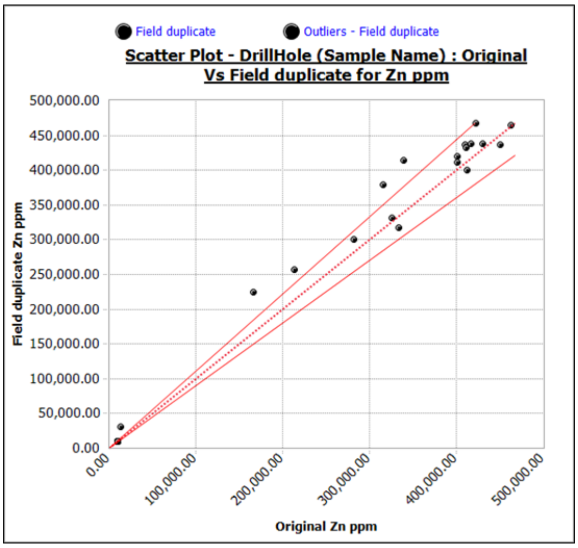


Figure 56: Bias (predominantly from four samples) evident in the field duplicates for Zn

11.9 Opinion on Sample Preparation, Security and Analytical Procedures

11.9.1 Drillhole QAQC Conclusions

CSA Global concludes the following:

- The QAQC procedures have material gaps which require improvement and updating. Some of these are in process of being improved:
  - Blanks and duplicates are being inserted in the sample stream.
  - CRMs have been purchased and Pasinex has created in-house non-certified standards which have been repeat assayed and the results statistically validated. However, it is recommended that these are certified by a commercial supplier of CRMs.
- There are indications that there is poor repeatability of high grade samples (>30% Zn), with the samples prepared at the on-site sample preparation laboratory showing a 4% to 6% bias compared with those prepared at the ISO-accredited SGS laboratory.
- External check samples show acceptable precision with a 2% to 3% bias to SGS. As no CRM or standards were included with any of these samples, it is unclear which subset of samples is more accurate.
- Over 90% of the blanks indicate contamination, but this is not deemed material relative to the high grade of the samples.
- Data management requires significant improvement. A centralised database should be implemented which can serve as a single point of truth for the project data.

11.9.2 Channel Sample QAQC Conclusions

Issues were noted with the channel QC samples, namely:

- Due to a sampling number “mix-up”, the QC samples were analysed in a separate batch from the primary assay samples.

- The laboratory blanks and low-grade CRMs show elevated levels of zinc which could indicate low level (relative to sample grades) carry-over contamination. Comment from the laboratory should be requested.
- Field duplicate precision was acceptable, but a bias of 6% to the zinc field duplicates was noted.

11.9.3 Recommendations

CSA Global recommends the following:

- An industry standard database package is recommended to host the data. Currently, Microsoft Excel sheets are used which are inadequate to securely host the project data. CSA Global can advise if required.
- More investigation of potential overstating of grade in samples prepared at the onsite laboratory is required.
- Written QAQC procedures which include required QC samples as well as failure resolution criteria are required.
- QC samples must be included with the primary samples and numbered sequentially with these samples, not numbered differently or analysed separately. This would prevent the issue that arose with the channel samples. QAQC samples are included to monitor contamination, accuracy and precision and therefore need to be analysed with the primary samples. It is also essential that the laboratory is not informed of expected grades of standards.

12 Data Verification

12.1 Geological Logging

CSA Global considers the on-site procedures employed to collect and capture geological observations are of an adequate standard to support the Mineral Resource estimate. However, logging and coding protocols and coding systems could be improved to enhance capture of significant geological data and improve understanding of the deposit, resource extension, and targeting.

12.2 Core Quality and Recovery

Poor core recovery represents a significant resource estimation risk at Pinargozu. Oxidised mineralised zones result in very variable core quality and recoveries, averaging approximately 65%. Typically, these zones include well-cemented smithsonite, which is vuggy and permeable but quite competent, and intervals of broken and comminuted clayey material that probably represents secondary zinc-mineralised material in karstic cavity systems developed during the supergene mineralisation process. Poor recoveries are likely attributable to these mineralised clayey "trash zones" in supergene karstic cavities where the fine-grained clay-rich material is readily washed away during diamond drilling.

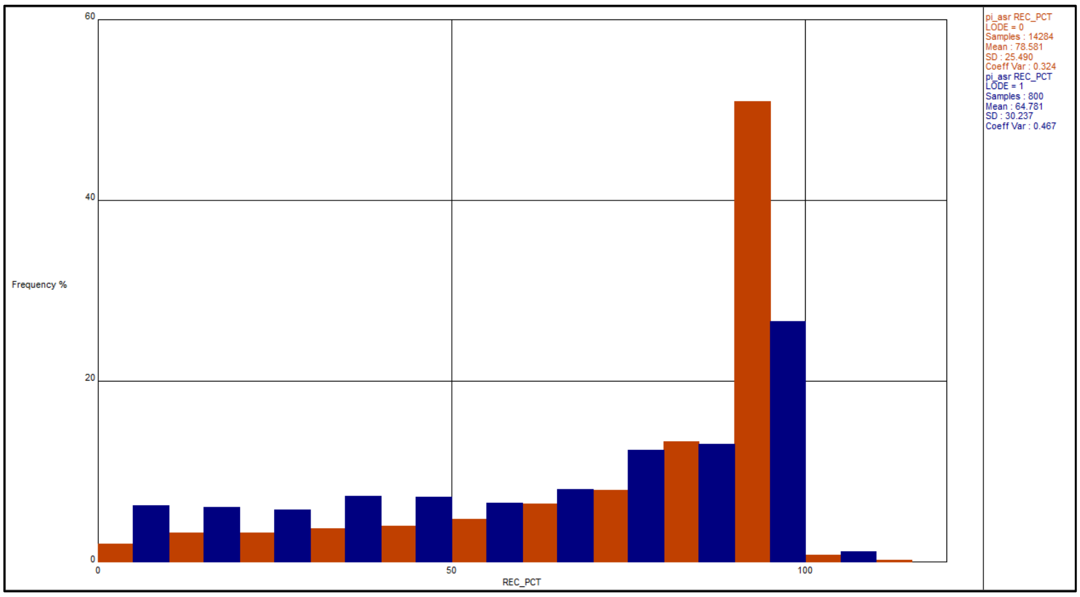


Figure 57: Core recoveries at Pinargozu

Within the mineralisation model (blue) and outside (orange)

It is not certain how this loss of core affects grade. CSA Global recommends selective sampling of the clayey karstic mineralisation from core (ideally triple tube HQ3 or PQ drill holes) and from underground exposure to help determine the relative grade and possible sampling bias from using drill data.

12.3 Bulk Density

Limitations of bulk density data also represents a significant resource estimation risk at Pinargozu. Due to the highly variable and friable nature of the oxidised and partially oxidised mineralisation, measured density values are very variable, and the bulk density measurements taken by means of the wax-coated water displacement method are expected to be biased towards more competent mineralised zones and not to take account of open cavities in the mineralised zones. This risk has been mitigated to a significant extent by the recent bulk stope density measurement which broadly supports the average core values for oxide mineralisation.

Figure 58: Underground exposure, showing friable nature of mineralisation

Source: CSA Global, 2017

Figure 59: A typical ROM stockpile from Pinargozu

Showing highly variable proportion of fines. Top-left of stockpile showing high percentage and bottom-right a low percentage.
Source: CSA Global, 2017

12.4 QAQC Data Verification and Validation

QAQC results were reviewed and no fatal flaws noted which indicates that the QAQC procedures implemented at Pinargozu are generally sufficient to ensure the quality of drillhole samples and to assess the reliability, accuracy and precision of the assay results obtained.

However, a number of material issues are noted including:

- CRMs were not utilised prior to the effective date and therefore there was no control on assay accuracy. Since the effective date, Pasinex has commenced use of CRMs from AMIS and an in-house standard.
- Two batches of additional QC samples have been submitted for assay to:
  - try to confirm whether the on-site preparation laboratory is introducing zinc contamination
  - ensure that the external check samples represent all the mineralisation areas.

12.5 Database Validation

Pasinex provided CSA Global with data in Microsoft Excel spreadsheets. CSA Global loaded the Microsoft Excel exploration and drill data into a SQL relational database, which is an industry standard for exploration project databases. The database schema used was the Maxwell DataShed format, which contains validation constraints and triggers, ensuring that data loaded meets standard validation rules.

An industry standard database package is recommended to host the data. Currently, Microsoft Excel sheets are used which are inadequate to securely host the project data.

Validation issues were noted and resolved where possible during the above process and a validated database was provided for Mineral Resource estimation. Assay results were loaded from Microsoft Excel laboratory certificates provided by Pasinex.

12.6 Site Visit

Dr Neal Reynolds, of CSA Global, visited the Property between 28 May 2017 and 31 May 2017, during which time the following work was undertaken:

- The location and orientation of several drill collars was confirmed
- Core handling and storage facilities were visited, and aspects of the drilling and sampling procedures and geological interpretation were assessed with the site team
- The site visit was undertaken while drilling was underway at Pinargozu and the drilling and sampling process was observed to generally follow appropriate procedures and protocols.

CSA Global has not undertaken any check sampling or analysis, but has observed visible mineralisation in drill core that corresponds well with reported grades. CSA Global has no reason to consider that reported analytical results are not reliable. CSA Global was unable to visit the SGS laboratory in Ankara during the site visit. The SGS laboratory is however internationally accredited.

CSA Global coordinating author, Thomas Branch, also visited site on two subsequent occasions (28–30 September and 25–29 October 2017), during which time the following work was undertaken:

- Mineralisation model was digitised with significant input from production geologists
- Underground locations of channel samples were visited
- A selection of sulphide-rich drill holes was logged to classify the sulphur proportion
- Bulk density samples, photos and data were reviewed.

Because of these verification process, CSA Global is confident the quality of the data is of a standard suitable for use in the estimation of resources.

13 Mineral Processing and Metallurgical Testing

No Preliminary Economic Assessment, Prefeasibility Study or Feasibility Study has been completed on the Pinargozu Property, and Pasinex has advised CSA Global that no relevant metallurgical test-work has been completed. CSA Global notes that the Property has no Mineral Reserve to indicate potential economic viability.

14 Mineral Resource Estimates

14.1 Drill Database Loading and Validation

Data provided by Pasinex consisted of drillhole collar, survey, assay, lithology, pXRF assay, recovery and bulk density datasets in Microsoft Excel format with a data cut-off date of 10 October 2017.

To guide interpretation of mineralisation solids, pXRF data were loaded and combined in a separate assay file however pXRF data were not used in the grade estimation.

Data was loaded into a SQL database which has constraints and triggers, ensuring that only validated data was included in the database. During the validation process issues were highlighted and corrected where possible. Exports of the clean, verified data were provided in .csv format for the MRE.

Following de-surveying, missing intervals were set to half the detection limit except for instances where holes awaiting results from the laboratory and intervals registered as no sample, due to voids and/or cavities.

The appropriateness of data to be used in the MRE was reviewed. A summary of drill data removed prior to estimation is shown in Figure 60 below. All subsequent data analysis, statistics and estimation are limited to the validated and selected datasets as used in the MRE.

Figure 60: Drill and assay data used in the MRE

Type	Hole type	Year	No. of holes	Total length (m)	No. of samples	Length sampled (m)
Surface	DD	2014	13	1,764.50	32	42.30
	DD	2015	64	8,386.40	301	297.10
	DD	2016	28	4,115.50	31	24.15
	DD	2017	22	4,732.15	13	10.60
	Subtotal		**127**	**18,998.55**	**377**	**374.15**
Underground	DD	2014	7	345.50	55	30.50
	DD	2015	53	4,202.20	62	53.65
	DD	2016	91	6,952.30	436	352.5
	DD	2017	13	1,239.40	2	2.00
	CH	2017 CH	10	191.750	188	190.65
	Subtotal		**174**	**12,931.15**	**743**	**629.30**
TOTAL			**301**	**31,929.70**	**1,120**	**1,003.45**

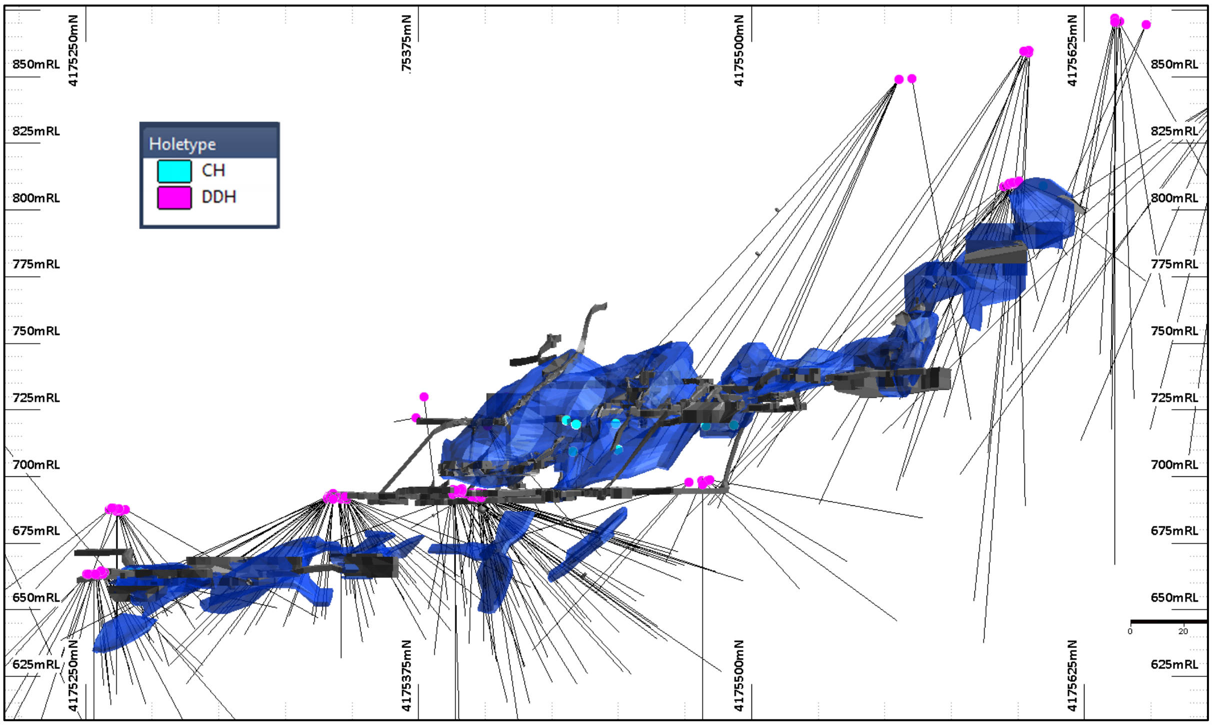


Figure 61: Location of drill data used in the MRE, looking west

Source: CSA Global, 2017

14.2 Geological Interpretation

14.2.1 Natural Cut-off

Mineralisation at Pinargozu varies in style from tabular bodies of variable thickness (0.5 m to 12 m) to crosscutting narrower breccia zones with mineralisation filling pore spaces and fracture planes. Statistical and visual reviews of the grade indicated a low-grade trend at >0.5%, however the main high-grade mineralisation type indicated a natural cut-off of >10%.

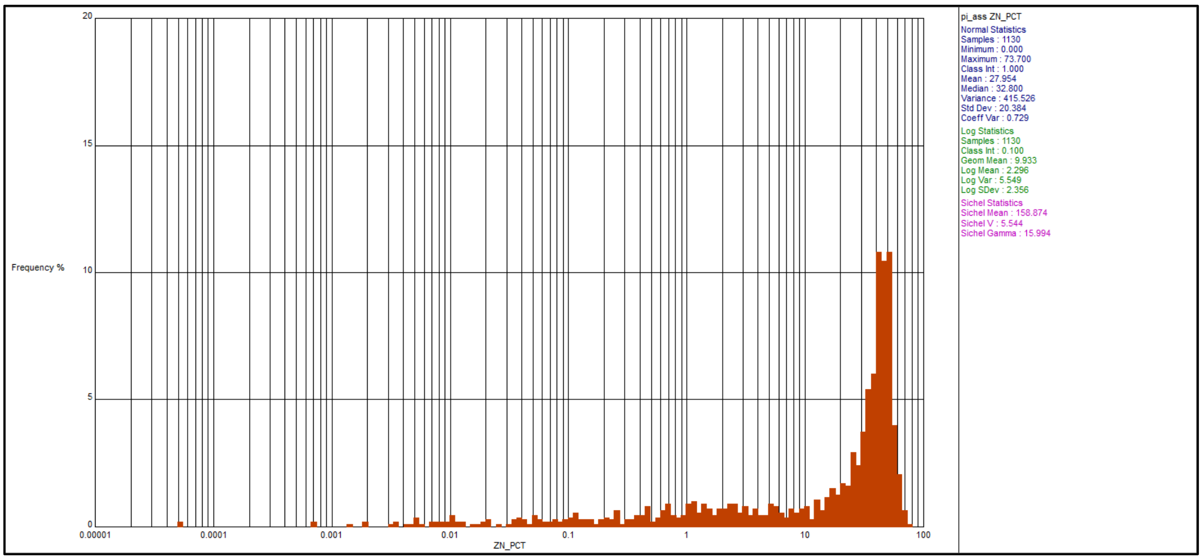


Figure 62: Raw Zn % data indicating a bimodal grade distribution with low-grade mineralisation at >0.5% and high-grade dominant grade at >10%

Tabular replacement zones have variable thickness, width and strike extent, conformable and parallel with respect to bedding in the host grey limestone. There is a sharp contact between high grade mineralisation and barren host limestone. The mineralised bodies delineated to date are almost exclusively high-grade zinc with local pockets of high-grade silver. Lead concentrations in the mineralised zones encountered are generally well below one percent with local high-grade concentrations. No general correlation has been determined between Zn and Pb or Zn and Ag.

14.2.2 Mineralisation Modelling

Selective grade composites were created in Datamine™ using a process called COMPSE which creates intercepts using minimum length and grade criteria. A minimum length of 1.5 m with internal waste threshold of 1 m was used to create intercepts that were of potentially mineable width. Two sets of composites were created using a grade cut-off of 0.5% Zn and 10.0% Zn.

Intercepts were imported into Micromine™ for string digitisation and wireframe modelling. Mineralised envelopes were created using the 10% Zn composites, incorporating the 0.5% Zn composites only where required to maintain continuity.

Modelling was completed on site with significant input from the production geologist.

A total of 11 mineralised solids (MINZONs) were created: MINZON 01 to MINZON 16 (Figure 63).

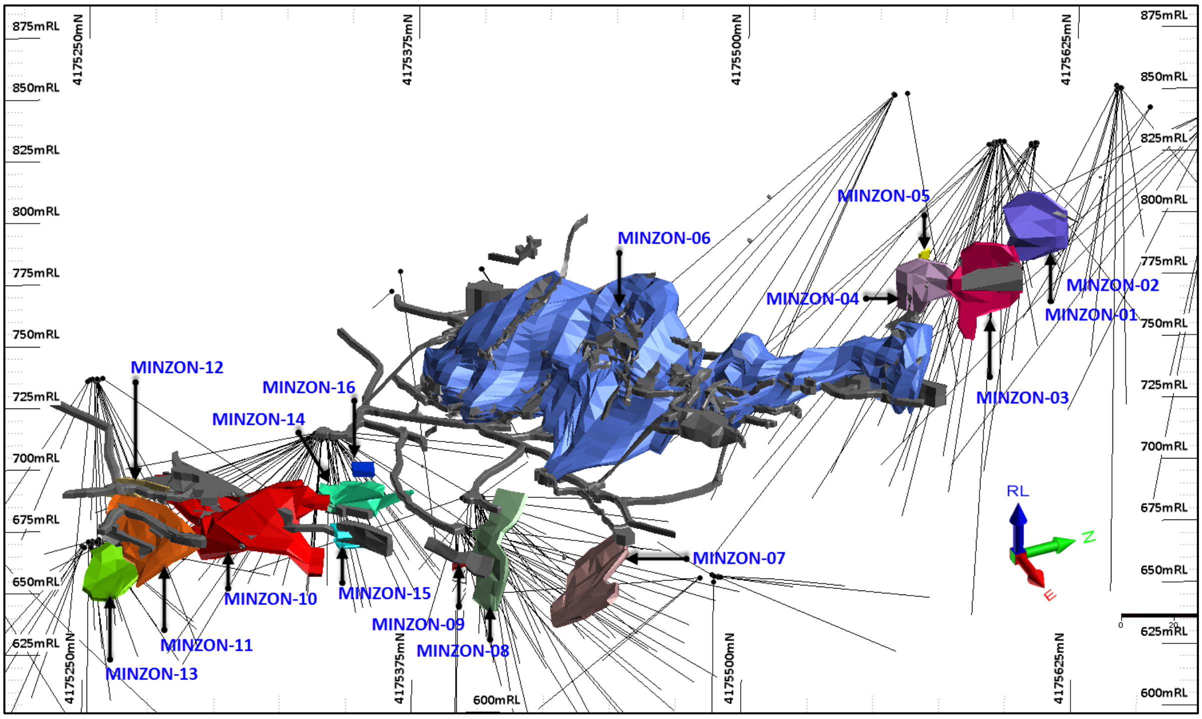


Figure 63: Mineralised solids (MINZONs 01 to 16) created in Micromine™

Source: CSA Global, 2017

14.2.3 Oxide and Sulphide Classification

Most of the mineralisation at Pinargozu is highly oxidised with only minor remnants of galena, sphalerite, and pyrite. However, moving south, two lodes (MINZON 10 and MINZON 14) are dominated by sulphide minerals.

CSA Global reviewed OXZONE logging codes and S% data within the mineralised envelopes with the following observations:

- OXZONE logging was highly irregular and only broadly indicated a higher proportion of sulphide mineralisation within the southern lodes
- S% data had almost complete coverage within the mineralised envelopes, sufficient for estimation and showed significant differentiation within the southern lodes and sufficient intra-lode differentiation.

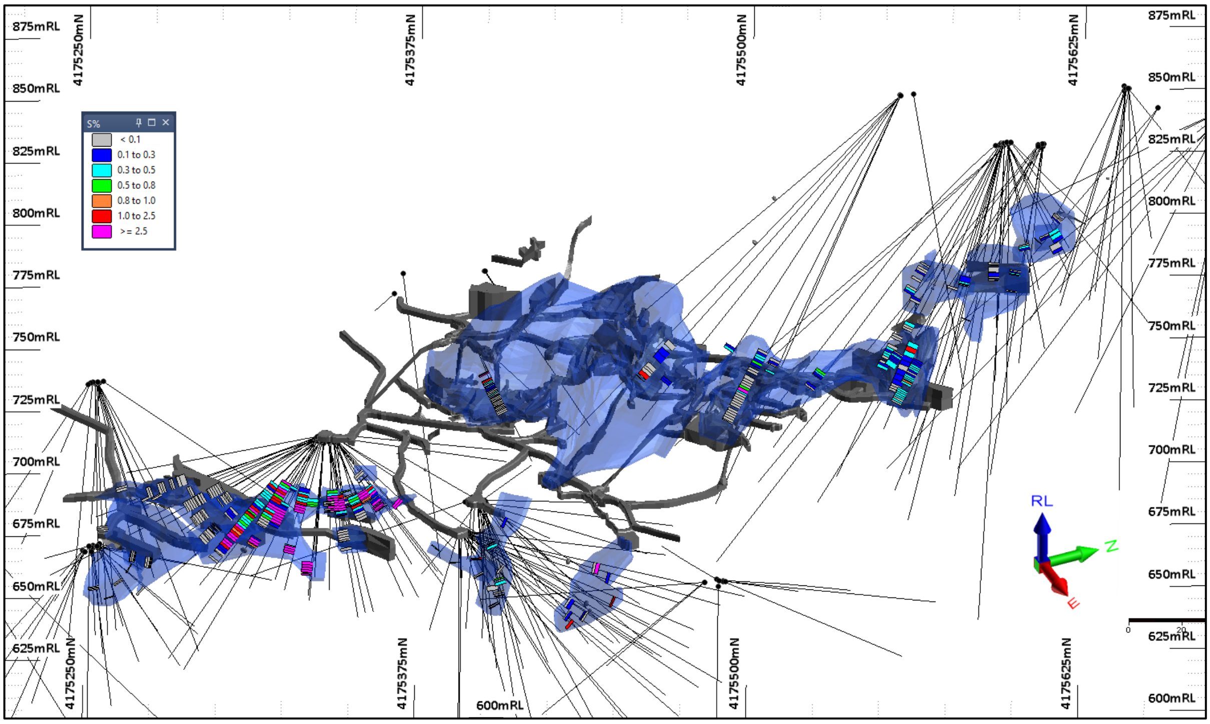


Figure 64: Sulphur values (S%) showing significantly higher S% grades in the southern lodes

Source: CSA Global, 2017

Table 11: Sulphur (S%) naïve statistics by MINZON

MINZON	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Number	16	3	18	14	5	263	14	20	5	179	67	5	12	84	7	3
Mean	0.1	0.1	0.1	0.1	0.1	0.2	0.6	0.5	0.2	1.2	0.0	0.0	0.0	2.2	0.0	0.0
Median	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.8	0.0	0.0

14.3 Statistical Analysis

14.3.1 Boundary Analysis

Boundary analysis was completed to assess the mineralisation/waste boundary. Hard boundaries mean only data from the mineralised domain should be used to estimate block grades in that domain, while soft boundaries allow for the use of data outside of that domain to estimate blocks. Where domain boundaries are sharp, the use of hard boundaries is appropriate. Where boundaries are gradational, and grades are similar across domain boundaries, then soft boundaries are appropriate. Where boundaries are sharp, they generally represent a sharp geological contact such as the edge of a quartz vein on its host rocks and where the boundary marks the margin of metal grade.

Contact analysis for Zn% between the modelled mineralisation and waste was carried out to assess the nature of the domain boundaries by graphing the average grade with increasing distance from the domain boundary. The contact analysis results were as expected; the boundary was interpreted to be hard for all the mineralised bodies (Figure 65), also indicating that there is little impact of a lower grade (0.5% Zn) halo or contact zone.

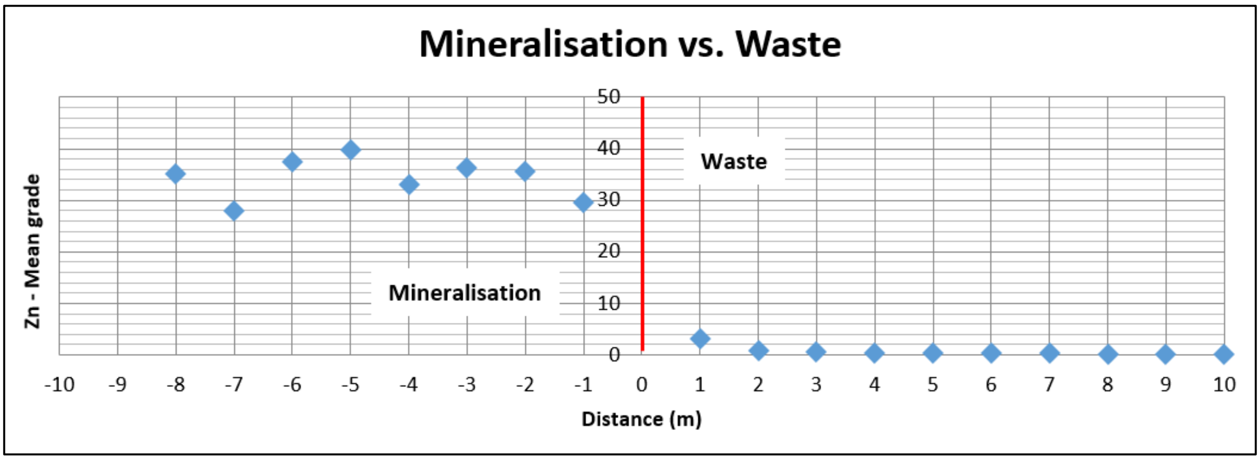


Figure 65: Mineralised boundary test graph Zn%, mineralisation vs. waste

14.3.2 Naïve Statistics

Samples were flagged by the MINZON codes and hard boundaries used in estimation. A high proportion of waste (>15% of samples) was included due to narrow intersects and short ranges of grade discontinuity which resulted in projection of units through some low-grade intercepts.

Modelling took mining scenarios into account and waste was excluded where mining selectivity could reasonably be expected. As a result, the current model represents a resource that has reasonable chances of economic extraction.

Low grade portions of the resource should be monitored during mining to ensure that hand-sorting of grade is optimised in these areas.

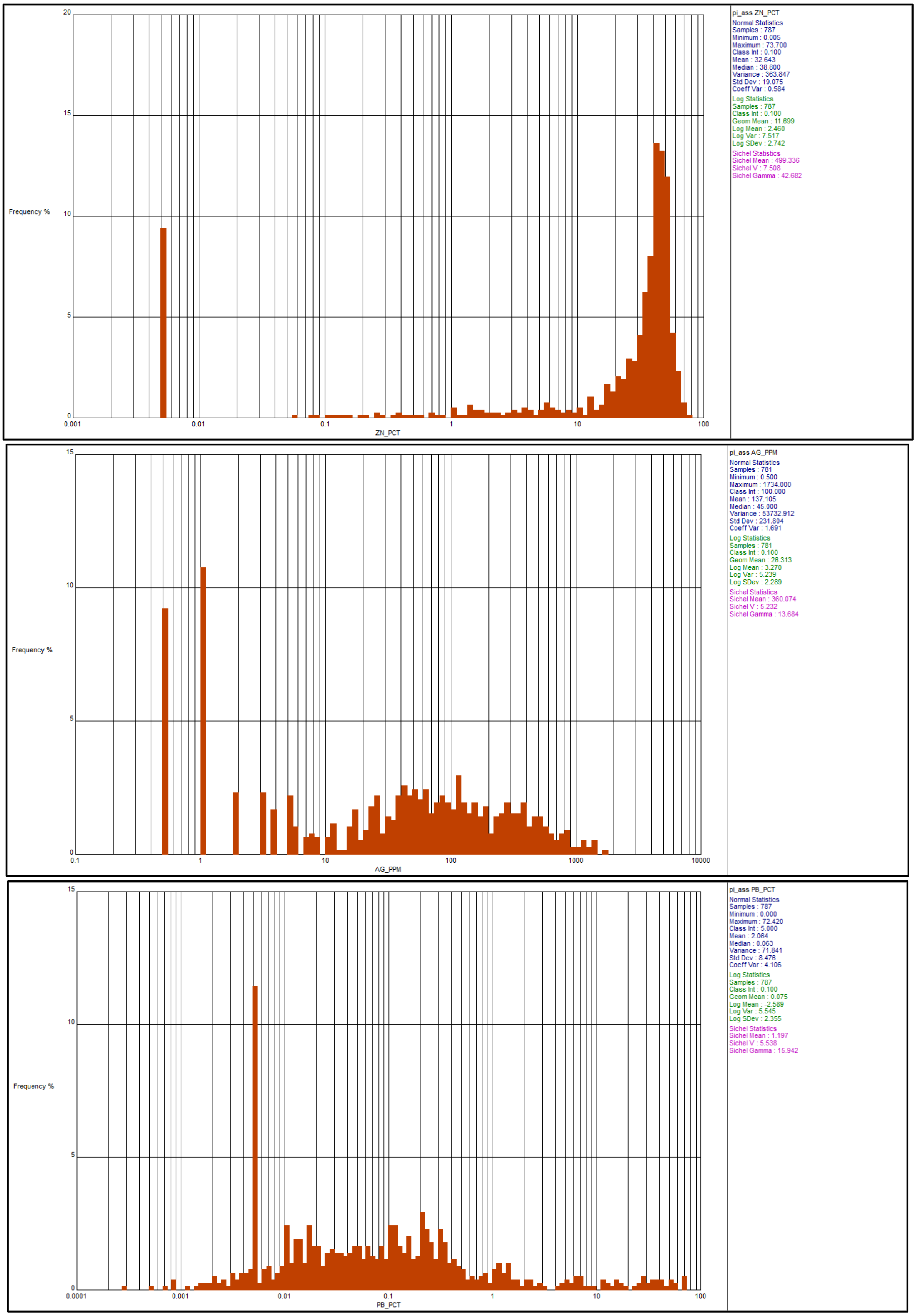


Figure 66: Top to bottom: log histograms for Zn (%), Ag (ppm) and Pb (%)

Data flagged within the mineralised solids.

Table 12: Naïve statistics for data flagged within the mineralised solids, reported by MINZON

Zn%

MINZON	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Number	20	8	23	14	9	280	20	31	7	181	69	5	16	91	8	5
Minimum	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0
Maximum	52.1	50.1	48.6	49.2	50.2	61.7	52.4	56.4	55.9	66.8	59.3	47.7	60.6	73.7	59.5	36.7
Mean	29.3	12.7	20.0	22.2	16.9	32.7	25.4	19.3	35.5	36.0	37.5	27.1	27.3	38.6	39.4	15.6
Median	30.5	0.0	13.3	9.9	3.0	36.6	24.9	4.1	45.5	41.0	40.4	22.6	8.4	44.7	43.3	7.4

Ag ppm

MINZON	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Number	20	8	23	14	9	280	20	31	7	181	69	5	16	91	8	5
Minimum	0.5	0.5	0.5	0.0	0.5	0.5	0.5	0.0	0.0	-2.0	0.5	38.0	0.5	0.0	0.5	0.5
Maximum	908.0	9.0	1734.0	157.0	1240.0	1376.0	147.0	454.0	86.0	1417.0	1208.0	343.0	757.0	473.0	497.0	78.0
Mean	165.2	1.7	160.8	20.1	182.0	128.5	22.0	48.7	23.9	124.1	392.9	186.8	89.1	75.9	138.2	20.6
Median	33.0	0.5	8.0	3.0	11.3	59.0	4.0	1.0	2.3	27.0	323.0	160.5	2.0	51.0	71.0	2.8

Pb %

MINZON	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Number	20	8	23	14	9	280	20	31	7	181	69	5	16	91	8	5
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0
Maximum	0.2	0.2	0.2	0.3	0.3	54.8	0.1	0.1	0.0	72.4	51.9	55.7	1.3	50.5	0.3	6.0
Mean	0.0	0.1	0.0	0.1	0.1	1.1	0.0	0.0	0.0	3.8	3.4	30.7	0.1	2.7	0.1	1.5
Median	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.4	28.7	0.0	0.1	0.0	0.3

14.3.3 Compositing

Approximately 81% of the raw data sample length was between 0.8 m and 1.2 m.

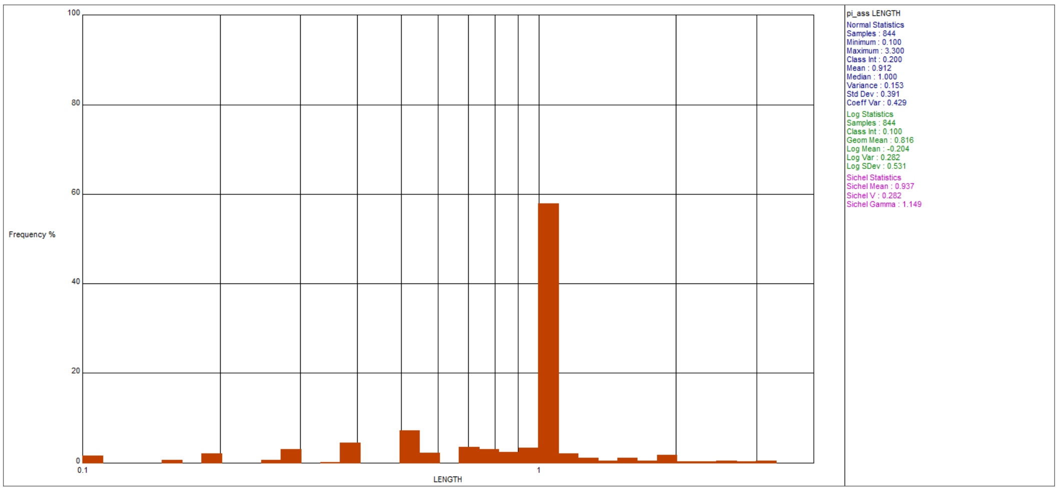


Figure 67: Mean sample length within mineralisation envelopes

Compositing within the mineralisation envelopes was undertaken in Datamine™ using COMPDH. Two scenarios were tested, using a Mode=0 (where compositing honours a sample length of 1 m) and using Mode=1 (where compositing allows for sample lengths to be 1.5 x the selected composite length which creates composites close to the composite length while reducing the impact of residuals).

Grade distributions for Mode=1 and Mode=0 were compared, and impacts of residuals (where length was <0.8 m or >1.2 m) assessed. In summary:

- No grade difference existed between Mode=1 and Mode=0.
- Residuals for Mode=0 showed no grade bias, however there were a number of samples (n=16 and totalling 9% of the data) were <0.8 m in length.
- Residuals for Mode=1 (i.e. less than 0.8 m) were lower grade (23.5% Zn vs. 34% Zn) and represented 1% (n=9) of the data. A visual assessment indicated that the majority of residuals were occurring within narrow, low grade portions of the resource and where the minimum width was 1.5 m resulting in two 0.75 m composites supporting the use of Mode=0 and inclusion of residuals.

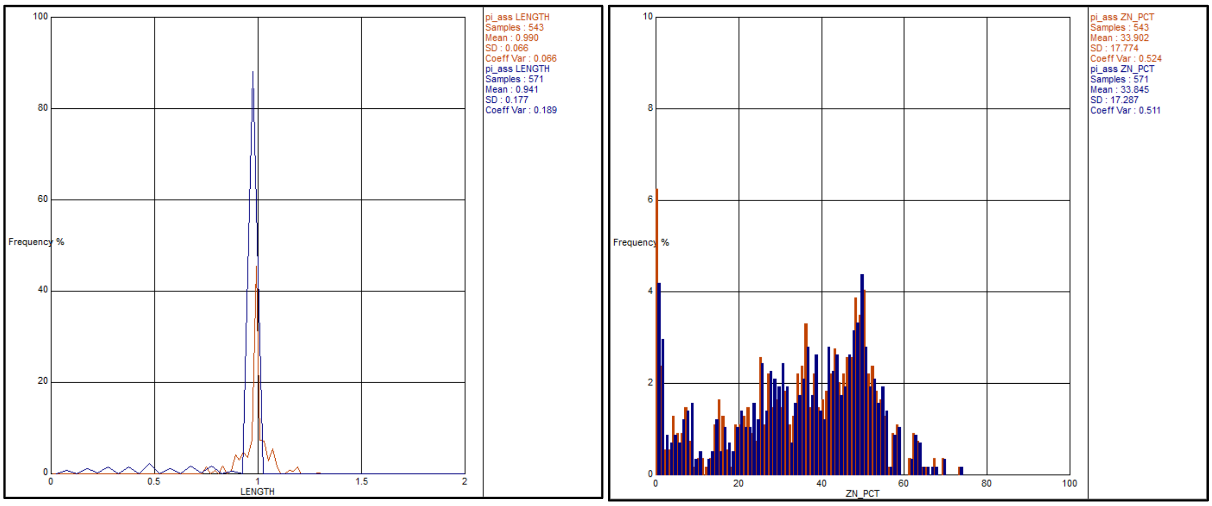


Figure 68: Assessment of compositing to Mode=0 and Mode=1

Left: sample length histogram, Right: grade (Zn%), Red - Mode=1, Blue - Mode=0.

14.3.4 Top-Cut Analysis

Grade cutting (top cutting) is applied to data used for grade estimation to reduce the influence of high-grade outliers which, although real, are not representative of the underlying distribution. In cases where individual samples would unduly influence the values of surrounding model cells, without the support of other high-grade samples, top cuts are applied. These top cuts are quantified according to the statistical distribution of the sample population and visual assessment.

Cutting strategy was applied based on the following:

- Skewness of the data
- Probability plots
- Spatial position of extreme grades.

Histograms and probability plots were reviewed for An, Ag, Pb and S for each MINZON. The uncut and top-cut statistics are shown in Table 13.

Table 13: Top-cut statistics per MINZON

MINZON	Zn % uncut	Ag % uncut	Pb % uncut	Zn # cut	Ag # cut	Pb # cut	Zn % (cut)	Ag % (cut)	Pb % (cut)	Diff (%) Zn	Diff (%) Ag	Diff (%) Pb
1	33.89	202.87	0.03	-	-	1	33.89	196.00	0.03	0%	-3%	0%
2	13.73	1.95	0.06	-	-	-	13.73	1.95	0.06	0%	0%	0%
3	22.58	201.15	0.04	-	-	1	22.58	176.88	0.04	0%	-12%	0%
4	21.97	20.05	0.08	-	-	-	21.97	20.05	0.08	0%	0%	0%
5	19.86	185.40	0.13	1	-	-	19.25	185.40	0.13	-3%	0%	0%
6	33.03	142.81	0.82	-	-	6	33.03	135.77	0.82	0%	-5%	0%
7	27.05	28.32	0.02	-	-	-	27.05	28.32	0.02	0%	0%	0%
8	22.21	46.54	0.01	-	-	-	22.21	46.54	0.01	0%	0%	0%
9	32.61	19.79	0.01	-	-	-	32.61	19.79	0.01	0%	0%	0%
10	36.77	139.07	4.23	-	4	5	36.77	133.11	3.94	0%	-4%	-7%
11	37.99	419.61	3.39	-	1	3	37.99	411.39	3.28	0%	-2%	-3%
12	26.10	192.87	32.03	-	1	-	26.10	192.87	29.89	0%	0%	-7%
13	30.72	110.20	0.14	-	-	1	30.72	97.12	0.14	0%	-12%	0%
14	37.97	74.04	3.06	1	1	1	37.92	72.31	3.00	0%	-2%	-2%
15	41.25	138.19	0.11	0	0	0	41.25	138.19	0.11	0%	0%	0%
16	18.40	11.89	2.13	0	0	0	18.40	11.89	2.13	0%	0%	0%

14.3.5 Variography

Variograms were modelled for Zn, Ag and S for Oxide and Sulphide separately, using the Mode=0 composite data, with top cuts applied.

Variogram parameters are provided in Table 14.

Table 14: Variogram parameters used in the MRE

	Element	Zn		S		Ag	
	Material Type	Sulphide	Oxide	Sulphide	Oxide	Sulphide	Oxide
Rotations Datamine ZXZ	Angle 1	75	175	120	130	10	160
	Angle 2	170	35	90	80	170	40
	Angle 3	105	-10	25	160	90	100
Nugget		0.01	0.03	0.05	0.01	0.01	0.03
Structure 1	Sill	0.44	0.39	0.35	0.43	0.3	0.21
	Range 1	6	7	6	24	24	6
	Range 2	7	1	7	3	7	17
	Range 3	1	3	7	4	7	3
Structure 1	Sill	0.55	0.58	0.6	0.56	0.69	0.76
	Range 1	29	28	40	37	40	17
	Range 2	14	20	14	12	16	18
	Range 3	5	6	11	6	8	6

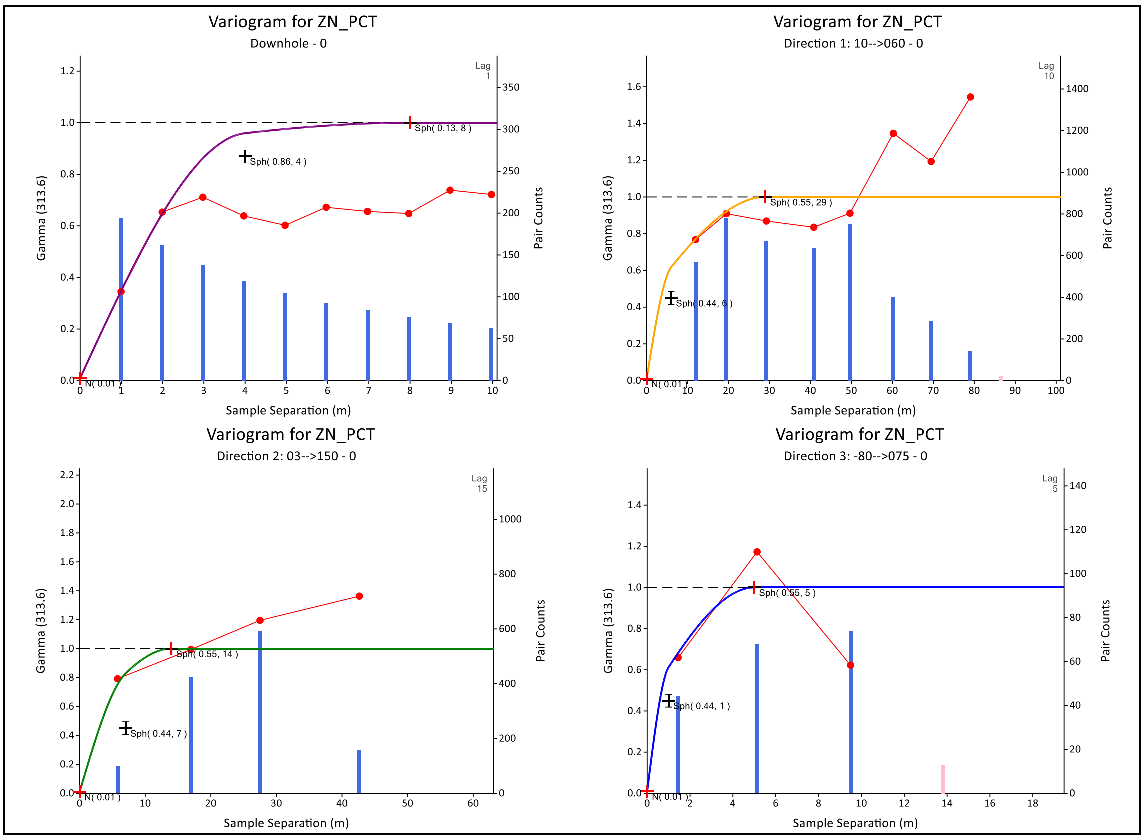


Figure 69: Sulphide – variogram for zinc

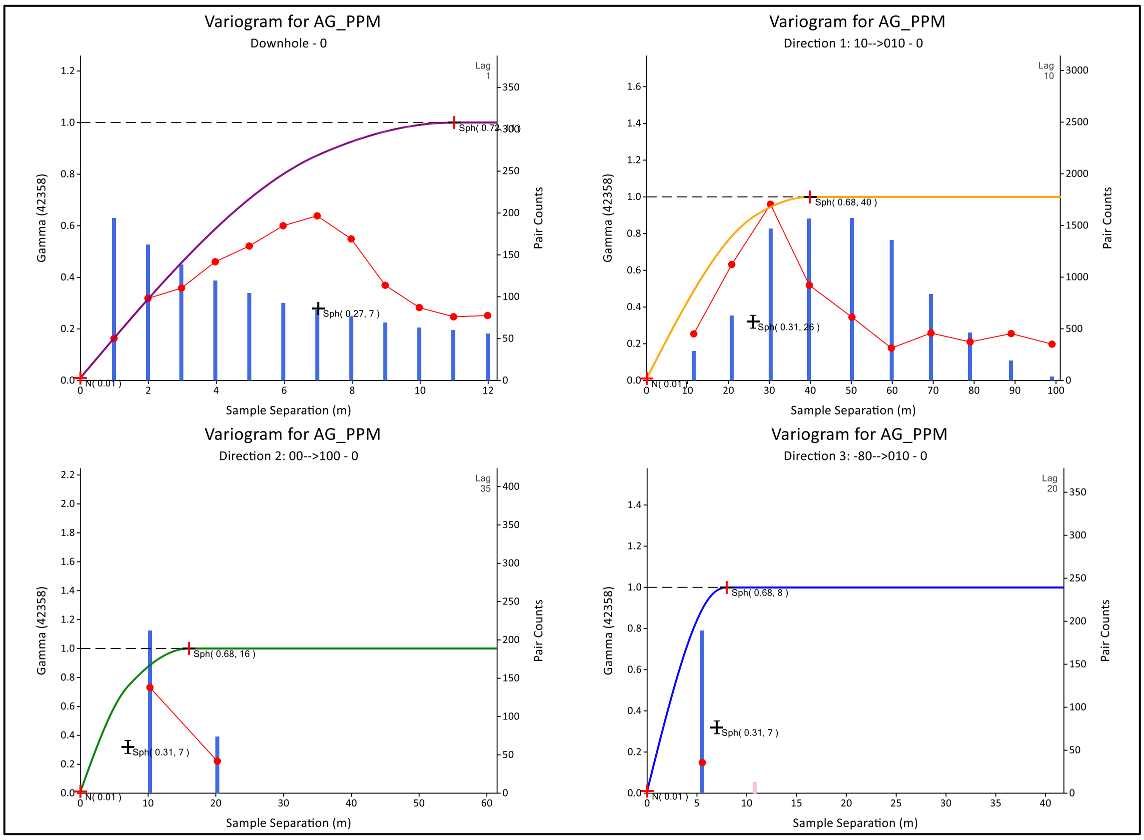


Figure 70: Sulphide – variogram for silver

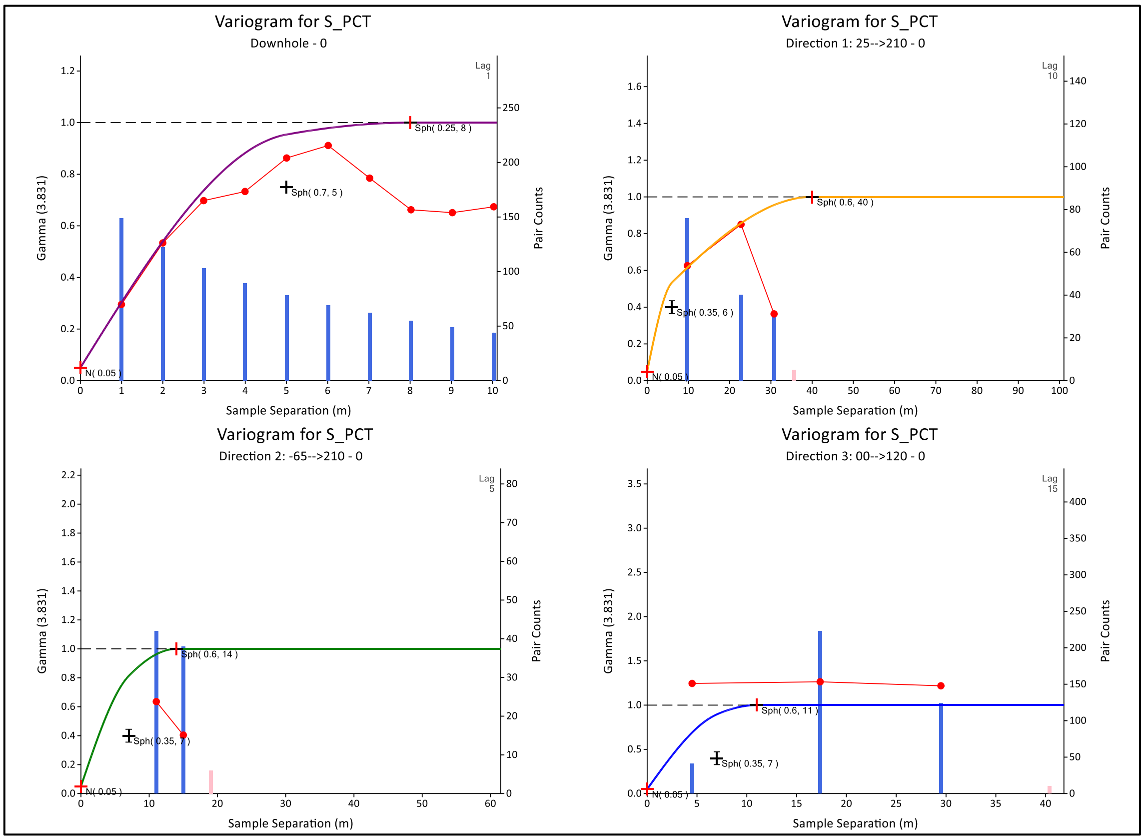


Figure 71: Sulphide – variogram for Sulphur

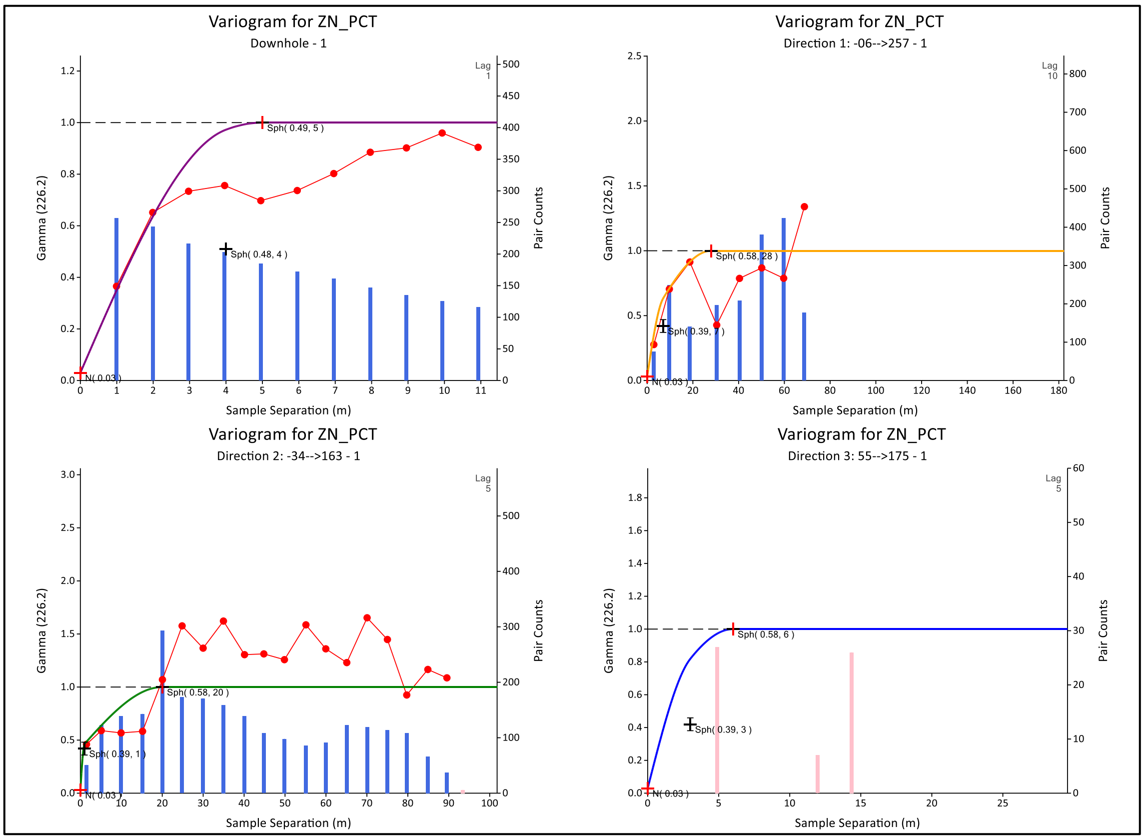


Figure 72: Oxide – variogram for zinc

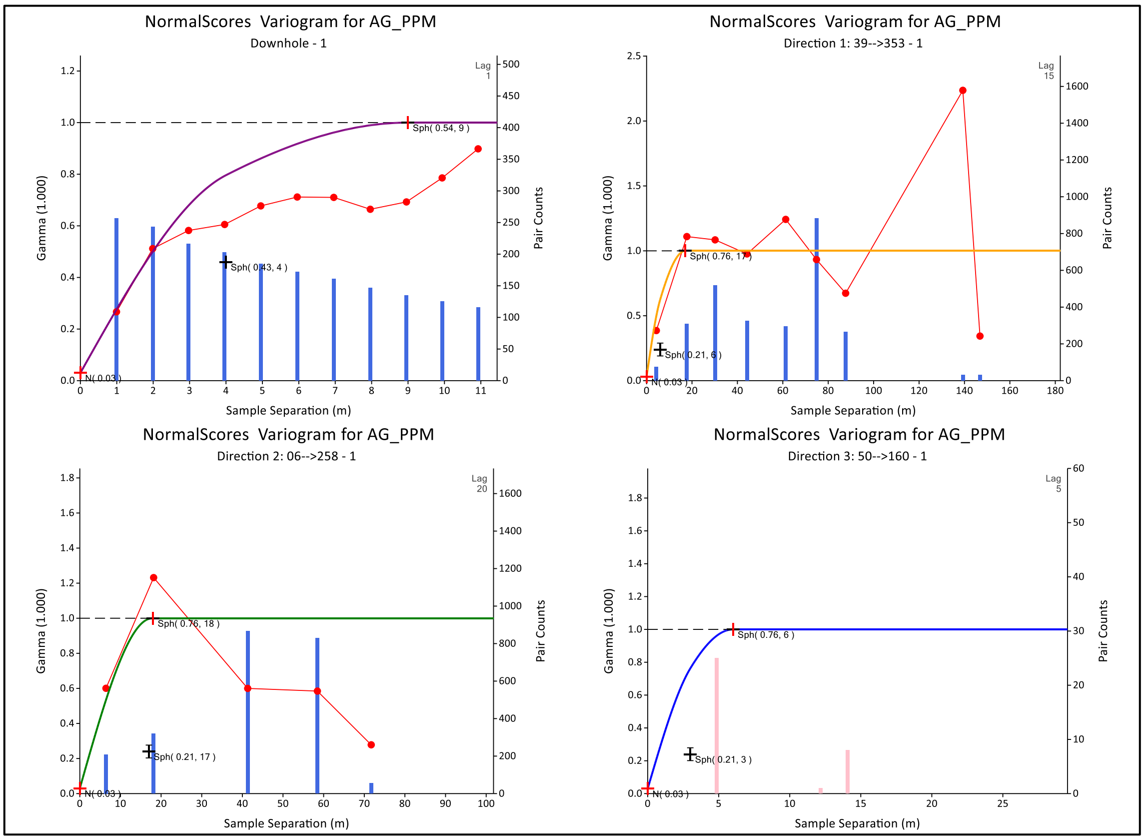


Figure 73: Oxide – variogram for silver

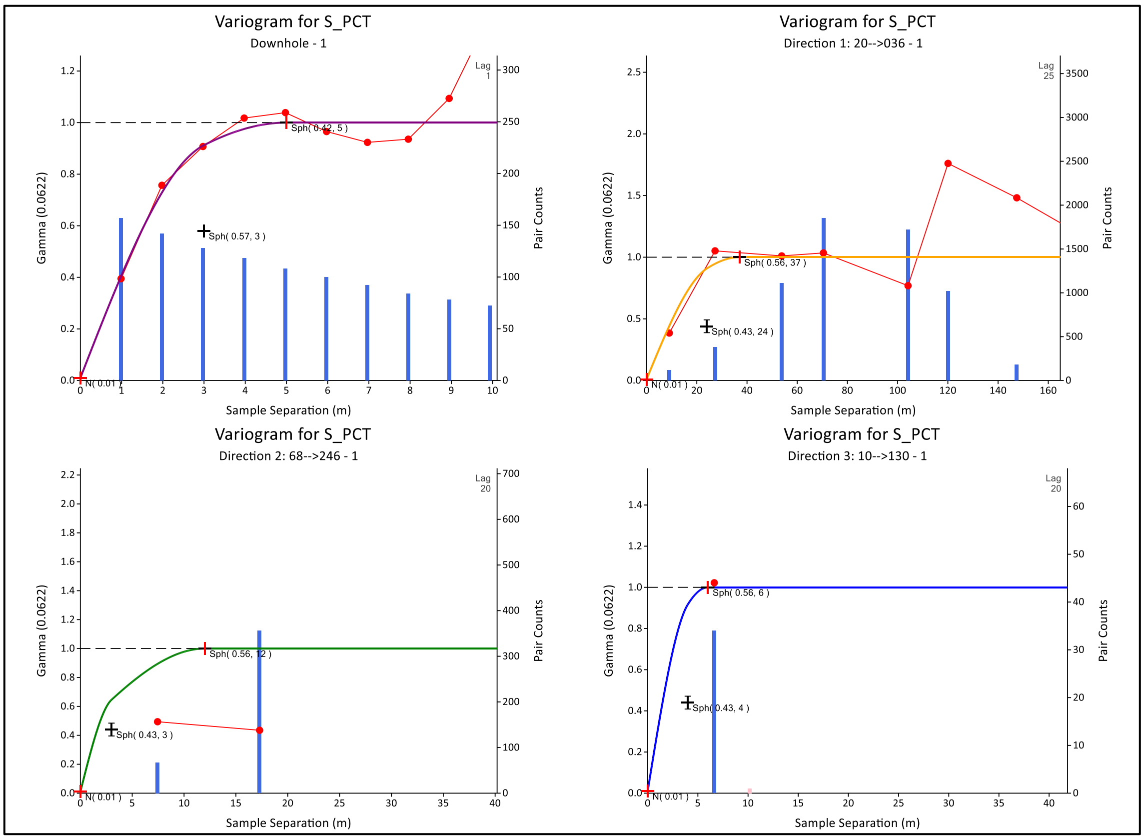


Figure 74: Oxide – variogram for sulphur

14.4 In Situ Dry Bulk Density Determinations

In situ dry bulk density ("bulk density") data consists of a combination of a single bulk sample value (referred to as the "stope bulk density"; see the following Section 14.4.2), grab samples from underground exposures and samples from drill core.

14.4.1 Core and Grab Sample Bulk Density

Core and grab sample bulk density data consists of 91 grab samples from underground exposures and 116 samples from drill core. Bulk densities were measured at SGS in Ankara using the standard paraffin wax-coated Archimedes Method.

From drillhole and grab samples, mean bulk density values were generated for each of the mineralisation types (oxide, sulphide, transitional) as logged by Pasinex during the selection of samples for bulk density analysis:

- 2.76 t/m^3 for Oxide (n=82)
- 3.32 t/m^3 for Transitional (n=1)
- 3.61 t/m^3 for Sulphide (n=39).

There is significant variability in the measured bulk density values due to the close relationship between oxidation and mineralisation in the oxide portions of the Mineral Resource. This variability is clearly shown in the photos of samples below (Figure 76) and is also visible in the normal histogram presented in Figure 75.

There is significant variability in the measured bulk density values due to the close relationship between oxidation and mineralization in the oxide portions of the Mineral Resource. This variability is clearly shown in the photos of samples below (Figure 76) and is also visible in the normal histogram presented in

Figure 75 with sulphide data expressing a distinct bimodal spread. As production of sulphides become proportionally more significant, the relationships between density and sulphur (including sulphide species, where galena is a disproportionate contributor) will require additional data to constrain.

Due to the variability of bulk densities in the oxide, Pasinex weighed and surveyed a designated oxide stope sample from which an oxide bulk density value was obtained. This value corroborated the value obtained from the core and grab sample dataset, and was used in the MRE, with bulk densities for Transitional and Sulphide reliant solely on the core and grab sample dataset. See the following section 14.4.2 for discussion regarding the stope bulk density.

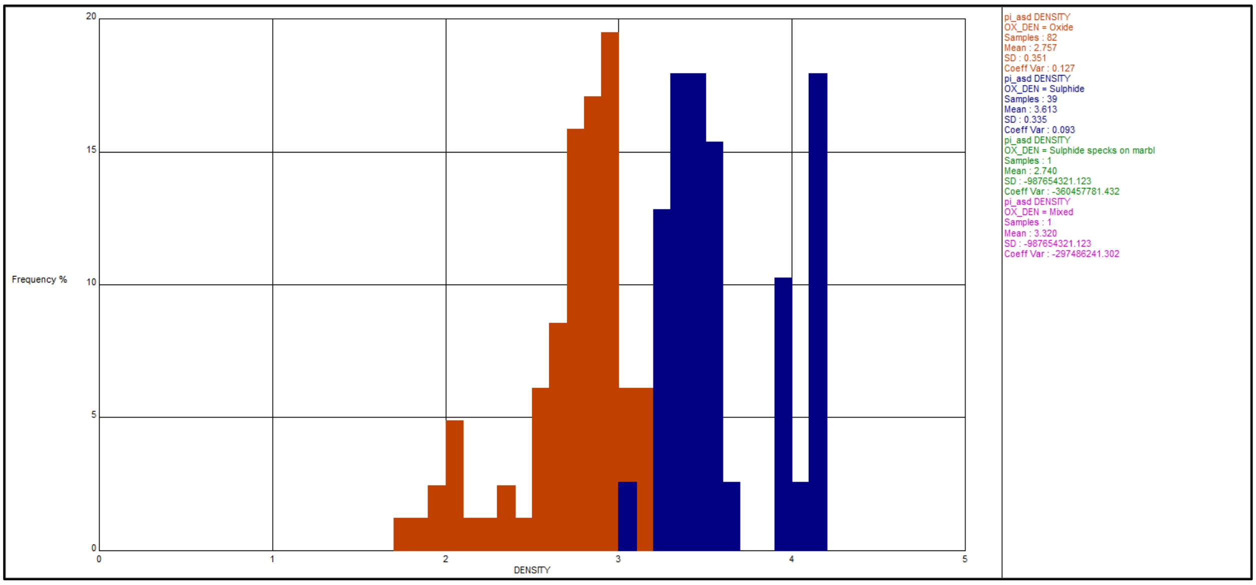


Figure 75: Normal histogram solids for bulk density samples, classified as per Pasinex logging. Blue=sulphide, Orange=oxide. Not significant spread of values.

Photo	Sample	Type	BHID	Bulk Density	Zn %
Top	K-14	Oxide	PPU16_016	2.59	50.8
Middle	K-70	Oxide	PPU16_018	3.14	55.2
Bottom	K-10	Sulphide	PPU16_020	3.29	69.2

Figure 76: Examples of bulk density samples collected from core with details tabulated below

Source: CSA Global, 2017

14.4.2 Stope Bulk Densities

Due to the highly variable and friable nature of the mineralisation, Pasinex estimated a ROM bulk density from a specifically selected underground exposure.

Detailed surveying of the mineralised faces in the gallery (approximately 4 m^3) was completed before blasting and after hauling to calculate a volume. Specific staff, bogger and trucks were assigned to the task of excavating, hauling and weighing the sample. The bulk sample was dried in the sun for two days after which a tonnage was estimated.

A mean density of 2.77 t/m^3 was obtained from the stope bulk density. This bulk sample is considered representative of the ROM production (see Figure 77) and the value of 2.77 t/m^3 obtained from the bulk sample is supported by the drill and grab sample data.

Figure 77: Stope bulk density sample # 1 and ROM production

Source: CSA Global, 2017

Figure 78: Underground face selected for stope bulk density, before blasting

Source: CSA Global, 2017

14.5 Block Model and Grade Estimation

14.5.1 Summary

Estimation of Zn, Ag and S grade was carried out using ordinary kriging (OK) and Pb using Inverse Distance to the second power. Estimation was into parent cell panels. Grade was estimated into all mineralisation blocks, using available data within the mineralisation domain. The MRE was completed by CSA Global using Datamine™ software package.

14.5.2 Kriging Neighbourhood Analysis

Kriging Neighbourhood Analysis (KNA) on the 1 m composites was used to optimise the parent cell sizes and to determine the optimal theoretical estimation and search parameters during kriging.

The following was reviewed for each of the variables per selected domain:

- Slope and kriging efficiency (KE) statistics for a well-informed block for different block sizes.
- On choosing a block size, optimal minimum and maximum samples were chosen. The maximum was set at the lowest number of samples from which consistently good slopes and KE could be derived. The minimum was defined as the lowest minimum from which moderate to good statistics could be derived.
- On choosing the minimum/maximum samples, search ellipse ranges were defined. The quality of the statistics was least sensitive to this parameter. The ranges chosen approximated the ranges of the first structure of the variogram.
- Negative weights were reviewed at each stage to ensure the parameters chosen were not leading to excessive negative weights.
- Discretisation was defined at 2 x 2 x 2 (X x Y x Z).

The KNA results show that the search parameters and block size selected are suitable for use in the MREs and adequately take drill spacing, geology and practicality into account.

Table 15: Search neighbourhood parameters for Zn, Ag, S and Pb

Search Reference	Elements	MINZONS	OXZONE	Ranges			MAXKEY	Search 1		Search 2			Search 3		
				Dir.1	Dir.2	Dir.3		Min. # Samples	Max. # Samples	Vol. Factor	Min. # Samples	Max. # Samples	Vol. Factor	Min. # Samples	Max. # Samples
1	Zn	10,14	Sulphide	15	10	5	3	9	18	1.5	6	18	3	6	24
2	Zn	1,2,3,4,6,7,8,9,11,13	Oxide	15	10	5	3	9	18	3	6	18	6	6	24
3	S	10,14	Sulphide	10	10	5	3	9	15	1.5	6	14	5	6	24
4	S	1,2,3,4,6,7,8,9,11,13	Oxide	10	10	5	3	9	24	2	9	24	6	4	24
5	Ag	14	Sulphide	15	10	5	3	9	18	1.5	9	18	3	6	24
6	Ag	3,4,6,7,9,11,13	Oxide	10	10	5	3	9	24	2	9	24	6	6	24
7	Pb	1 to 16	Oxide	15	15	5	2	6	24	2	6	24	6	4	24
8	Zn, Ag, S	12,15,16	Oxide	15	10	5	3	9	24	2	6	24	6	3	24
9	Pb	6	Oxide	15	15	15	3	6	24	1.5	6	24			
10	Zn, Ag, S	5,15	Oxide	15	15	15	7	7	24	1.5	7	24			
11	Ag	1,8	Oxide	15	15	5	3	9	24	3	9	24	6	9	24
13	Ag	10	Oxide	5	5	5	3	6	18	1.5	6	18	6	9	18
14	Ag	2	Oxide	15	15	15	2	4	24	1.5	4	24	3	4	24

14.5.3 Block Modelling

The model was cut to below the topographic surface. A model prototype with parent cells and sub-celling was used to honour volumes. The model prototypes parameters, including cell dimensions and model extents, are shown in Table 16. Panel sizes for grade estimation were based on the following:

- Results of KNA
- Drill/Sample spacing
- The geometry of the mineralisation
- The mining parameters.

Table 16: Block model dimensions

Easting		Northing		RL		Block X	Block Y	Block Z	Sub-cell X	Sub-cell Y	Sub-cell Z
Min.	Max.	Min.	Max.	Min.	Max.	(m)	(m)	(m)	(m)	(m)	(m)
751730	751955	4175225	4175650	620	825	5	5	5	0.5	0.5	0.5

14.5.4 Grade Estimation

Estimation of Zn, Ag and S grade was carried out using OK and Pb using Inverse Distance to the second power (IDW^2). Grade was estimated into parent cell panels. Zonal control with a hard boundary between mineralisation domains was used during the grade estimation. MINZON was used as the estimation domain. A three-phased search pass, with increasing search ranges, was applied with the orientation of the search ellipsoid being controlled by dynamic anisotropy. This method ensures that blocks which are not estimated and populated with a grade value in the first run, are populated during one of the subsequent runs.

The estimation employed dynamic anisotropy to control the rotation angles for the search ellipsoid for each cell in the models, and so ensure that the search ellipsoid is aligned with the axes of mineralisation. This therefore requires the rotation angles to be estimated into the model cells, which in turn requires a set of angles as the input data file for interpolation. The dip and dip direction of the major axis of anisotropy were defined by digitising strings in section perpendicular to the strike of mineralisation for each MINZON. These strings/triangle files were converted to points that contained the true dip and dip direction of the mineralisation and stratigraphy (fields SANGLE1_F and SANGLE2_F in the search parameter files). The rotations of the modelled variograms aligned with the dominant orientation of the mineralisation for each deposit. Therefore, the variogram also used dynamic anisotropy.

Validation of the block model was completed by comparing input and output means. Several techniques were used for the validation. These included visual validation of block grades, global grade comparisons and swath plots.

14.5.5 Validation

Irregular sampling of a deposit, most commonly through infill drilling or drilling in multiple orientations, causes clustering. Clustering results in a disproportionate distribution grades (usually high grades from the infill drilling) in the dataset used for statistical analysis.

The method used for geostatistical analysis and validation for the current MRE update is cell-weighted de clustering, since all samples are considered when determining the average. This method involves placing a grid of cells over the data. Each cell that contains at least one sample is assigned a weight of one. That weight of one is distributed evenly between the samples within each cell.

The OK grade estimation algorithm naturally de-clusters, therefore de-clustering before grade estimation is not necessary. De-clustering of the input data for statistics was completed using the same cell size and origin as the block model. The global statistics for Zn were reviewed and the results are reported below in Table 17.

Statistical validation of Ag, Pb and S is not ideal, due to the wireframes being created based on Zn only. This has resulted in bimodal grade distributions for these variables. Validation was carefully assessed for these elements using swath plots and visual review (see following sections).

The block model was visually reviewed to ensure that the grade tenor of the input data was reflected in the block model (examples shown in Figure 79 to Figure 82). Generally, the estimates compare well with the input data. The grades in the composites align with the corresponding grades in the block models.

Table 17: De-clustered vs. model mean grades. Left: Zn%, Right: Ag ppm. Top 5 domains are emboldened

MINZON	Zn % samples de-clustered	Zn % model	% Diff.
1	35.66	36.48	2%
2	12.53	13.93	11%
3	22.28	21.53	-3%
4	22.11	19.11	-14%
5	18.8	19.36	3%
6	31.98	28.16	-12%
7	26.86	27.41	2%
8	22.35	24.32	9%
9	32.61	33.62	3%
10	37.02	39.37	6%
11	37.57	38.74	3%
12	28.25	27.82	-2%
13	30.12	33.27	10%
14	34.7	37.46	8%
15	39.42	41.31	5%
16	18.4	19.93	8%

MINZON	Ag ppm samples de-clustered	Ag ppm model	% Diff.
1	177.2	158.5	-11%
2	1.9	2.2	17%
3	164.4	163.3	-1%
4	21.4	19.8	-8%
5	176.5	187.4	6%
6	125.9	109.8	-13%
7	30	30.7	3%
8	48.1	55.4	15%
9	19.8	19	-4%
10	109.8	89.8	-18%
11	371.6	313.7	-16%
12	176.1	170.8	-3%
13	113.2	126.6	12%
14	70.2	72.6	3%
15	107.7	126.8	18%
16	11.9	11.5	-4%

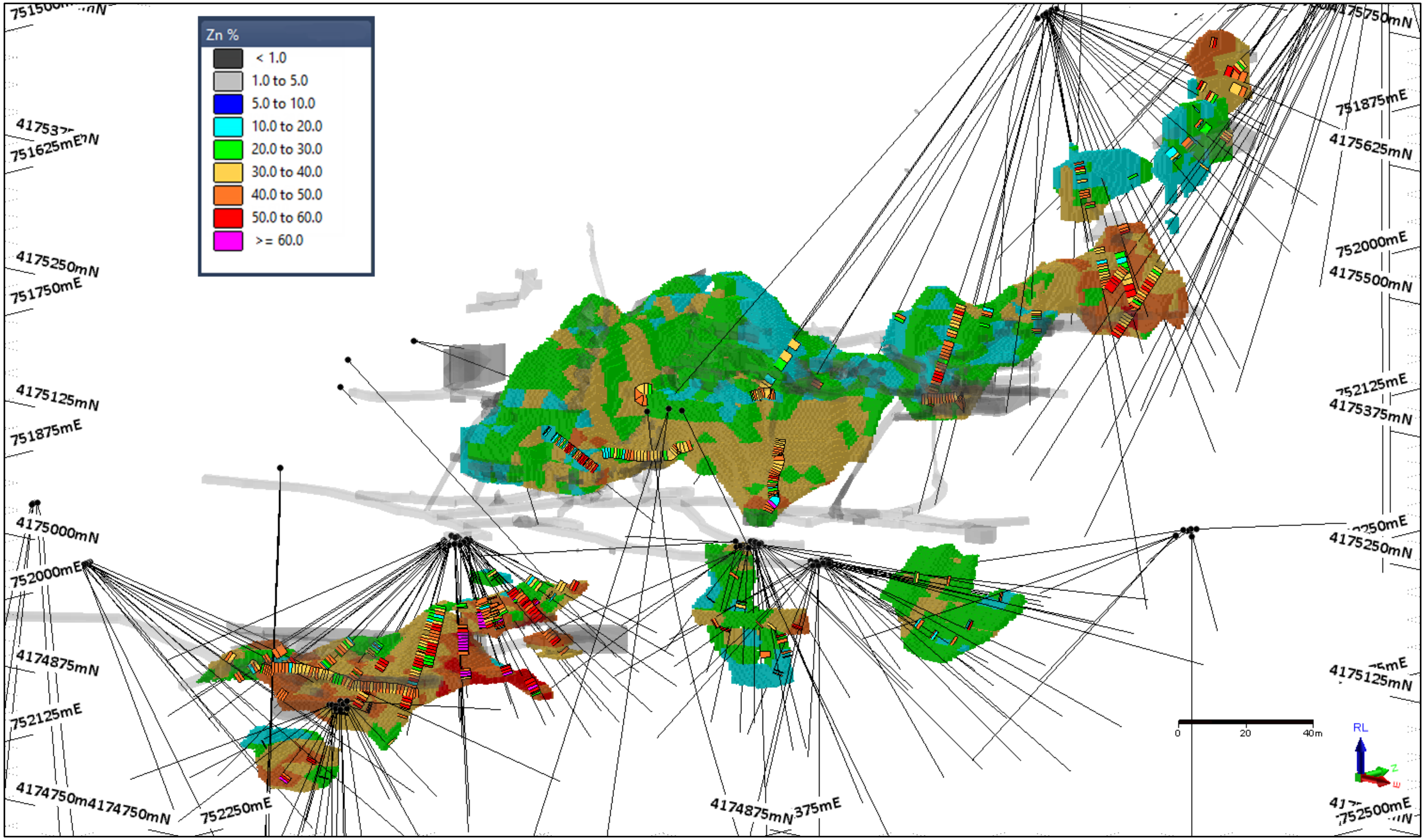


Figure 79: Zn (%) validation: Block model and drill grades (within the model), coloured by grade

Source: CSA Global, 2017

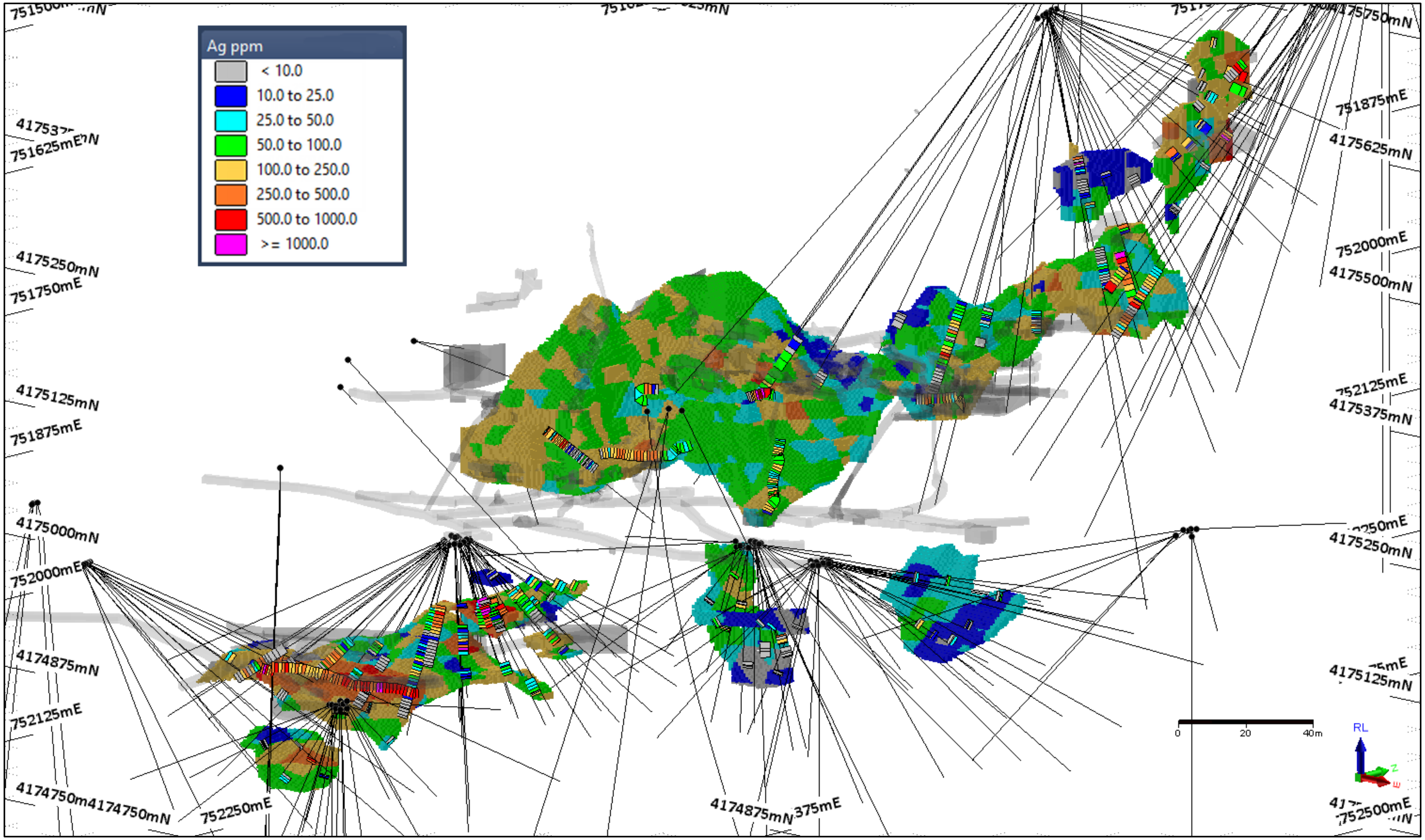


Figure 80: Ag (ppm) validation: Block model and drill grades (within the model), coloured by grade

Source: CSA Global, 2017

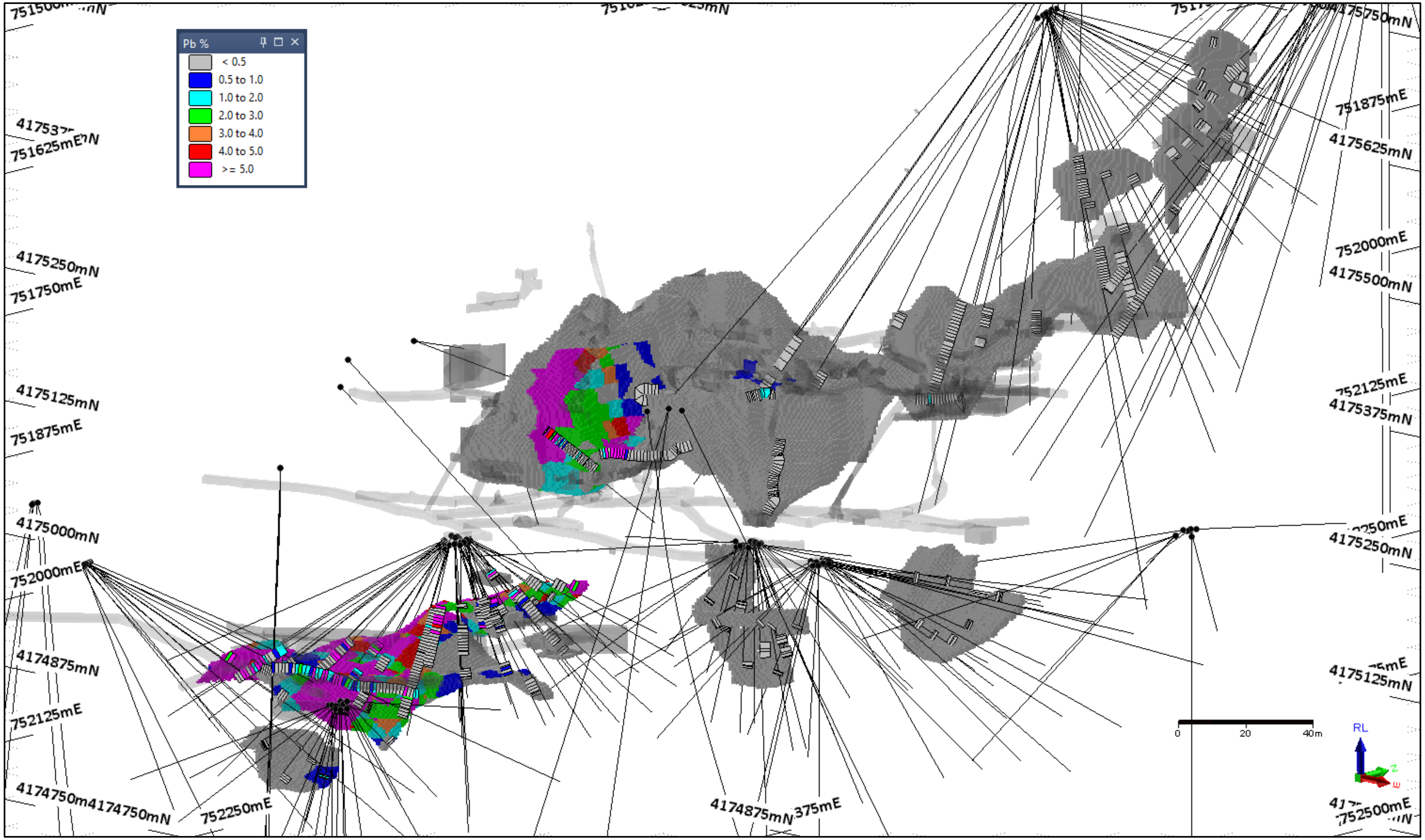


Figure 81: Pb (%) validation: Block model and drill grades (within the model), coloured by grade

Source: CSA Global, 2017

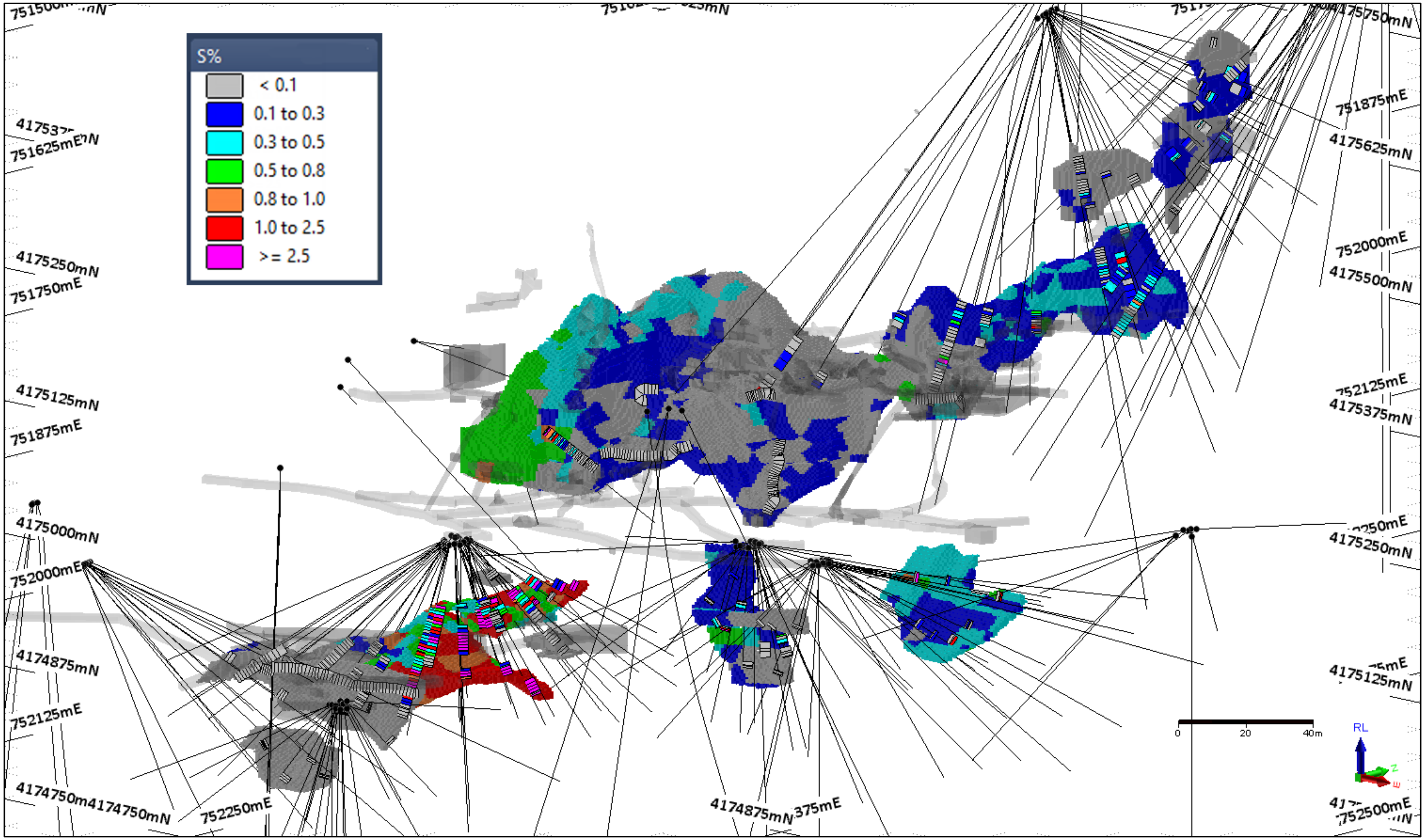


Figure 82: S (%) validation: Block model and drill grades (within the model), coloured by grade

Source: CSA Global, 2017

Swath Plots

Swath plots were created as part of the validation process, by comparing the model parent block grades and input composites (de-clustered and top cut) in spatial increments. These plots display northing, easting and elevation slices throughout the deposit (Figure 83 to Figure 90).

The plots show that the distribution of block grades honours the distribution of input composite grades. Smoothing is evident, a certain degree of which is to be expected from the estimation method used, with block grades showing lower overall variance.

Domain 6 is the largest domain at Pinargozu, and is currently being actively mined. However; the lode suffers from low sample support, resulting in overly smoothed grades and poor reconciliation at deeper levels. Recent channel sampling has improved the sample support for this lode and further drilling and sampling should improve this. The general trend of the composite grades is reflected in the block model.

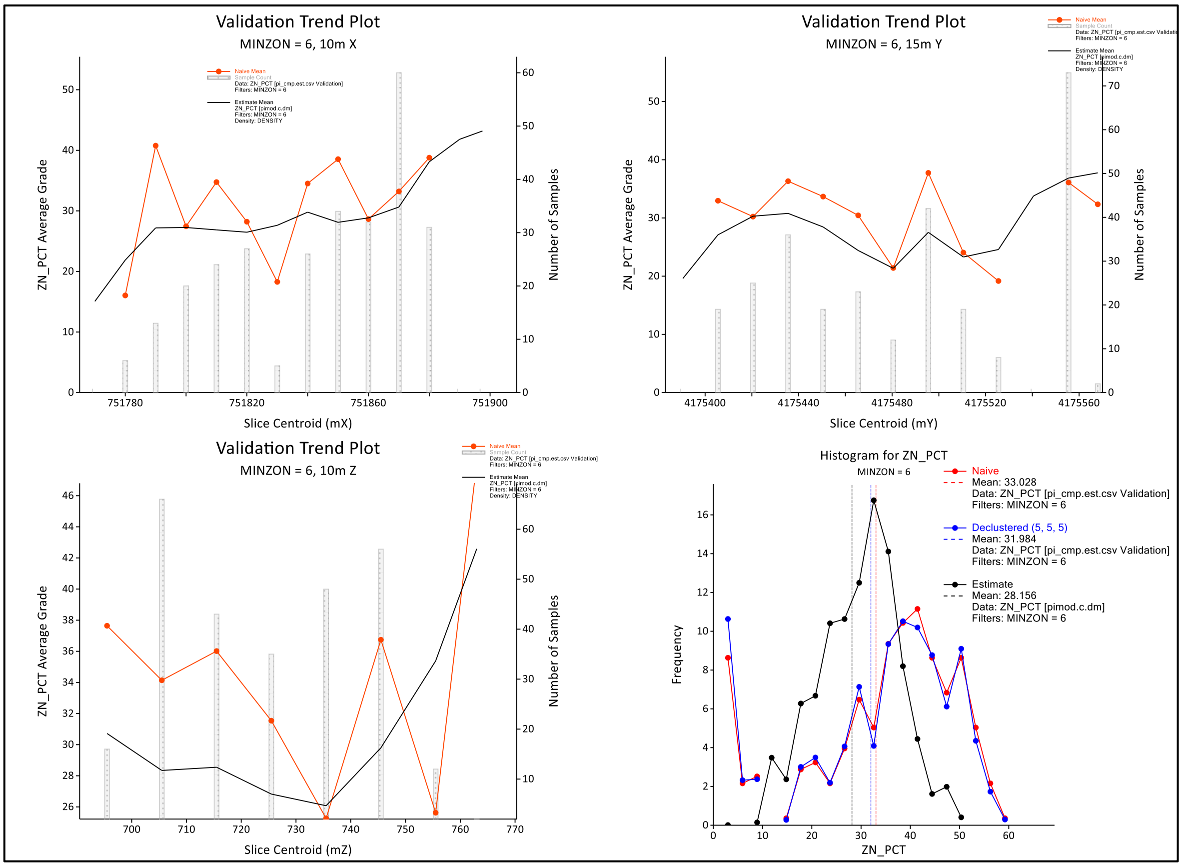


Figure 83: MINZON 6: swath plots for Zn

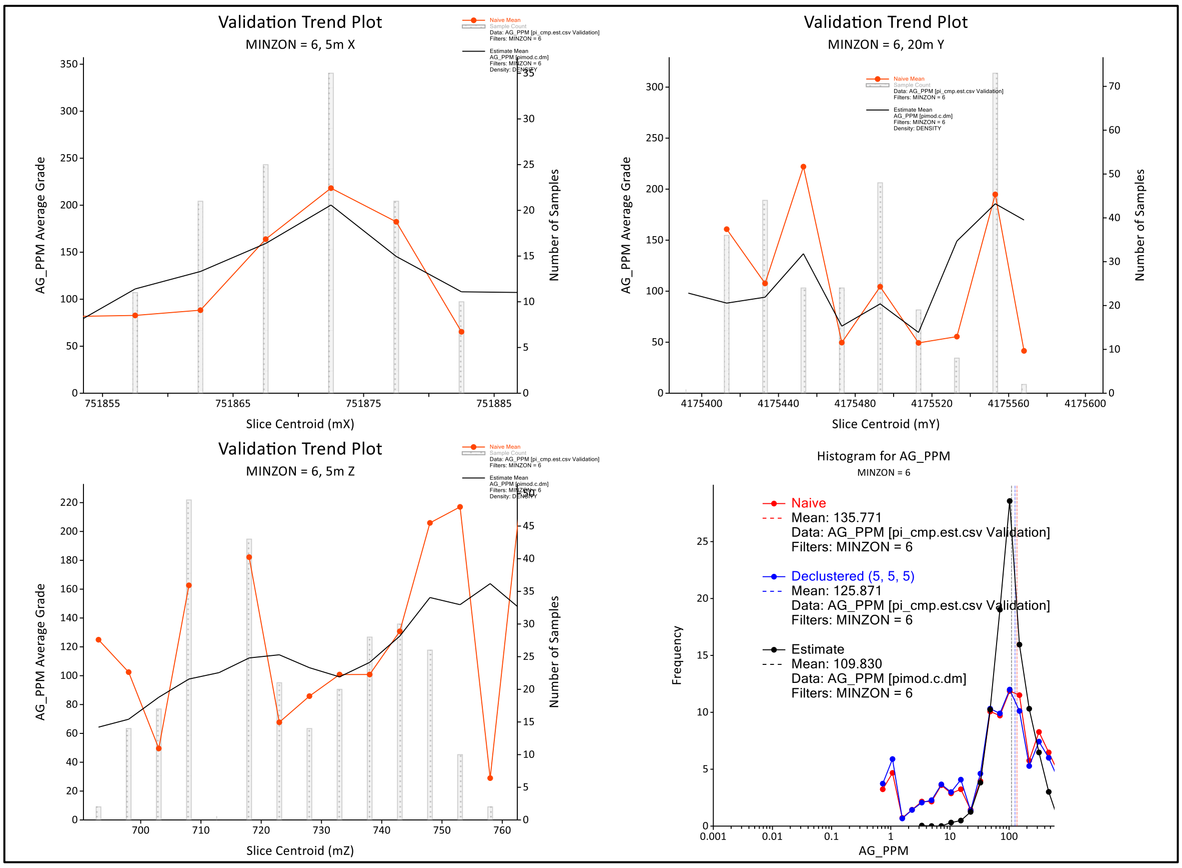


Figure 84: MINZON 6: swath plots for Ag

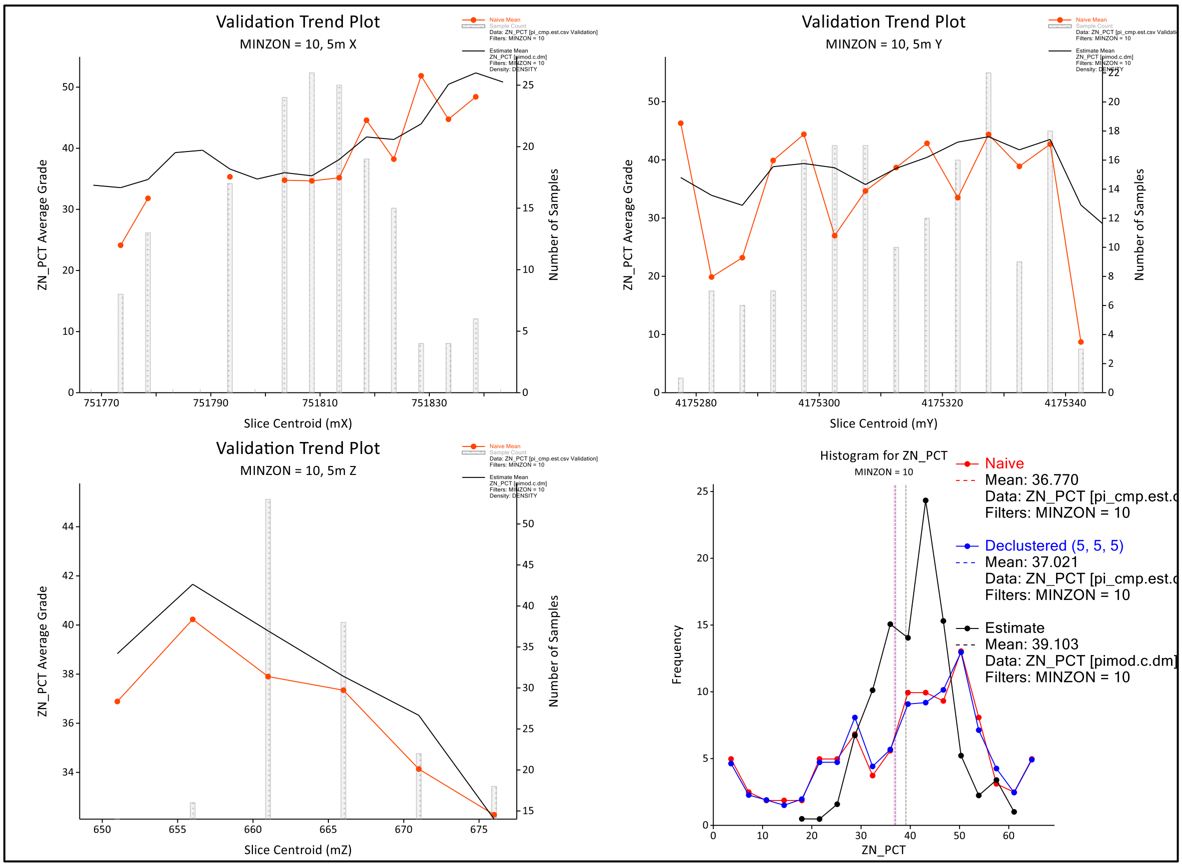


Figure 85: MINZON 10: swath plots for Zn

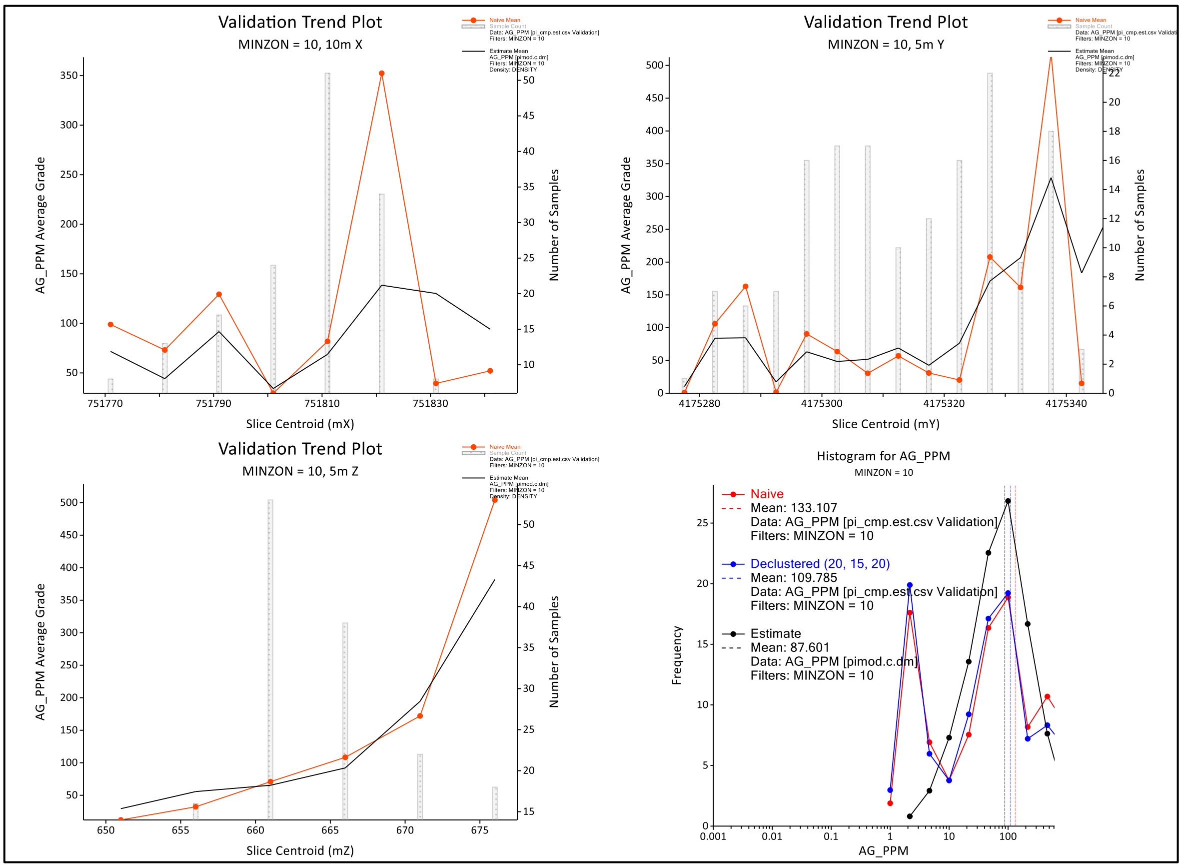


Figure 86: MINZON 10: swath plots for Ag

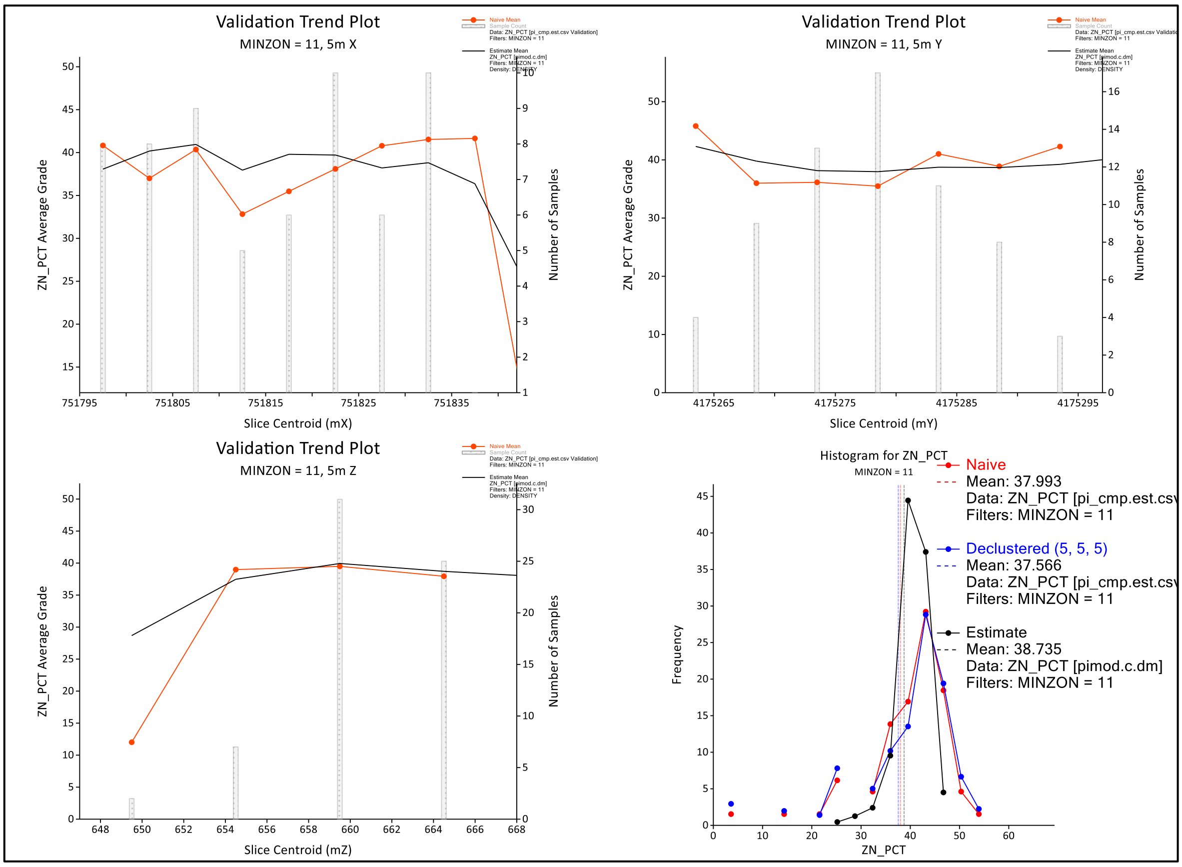


Figure 87: MINZON 11: swath plots for Zn

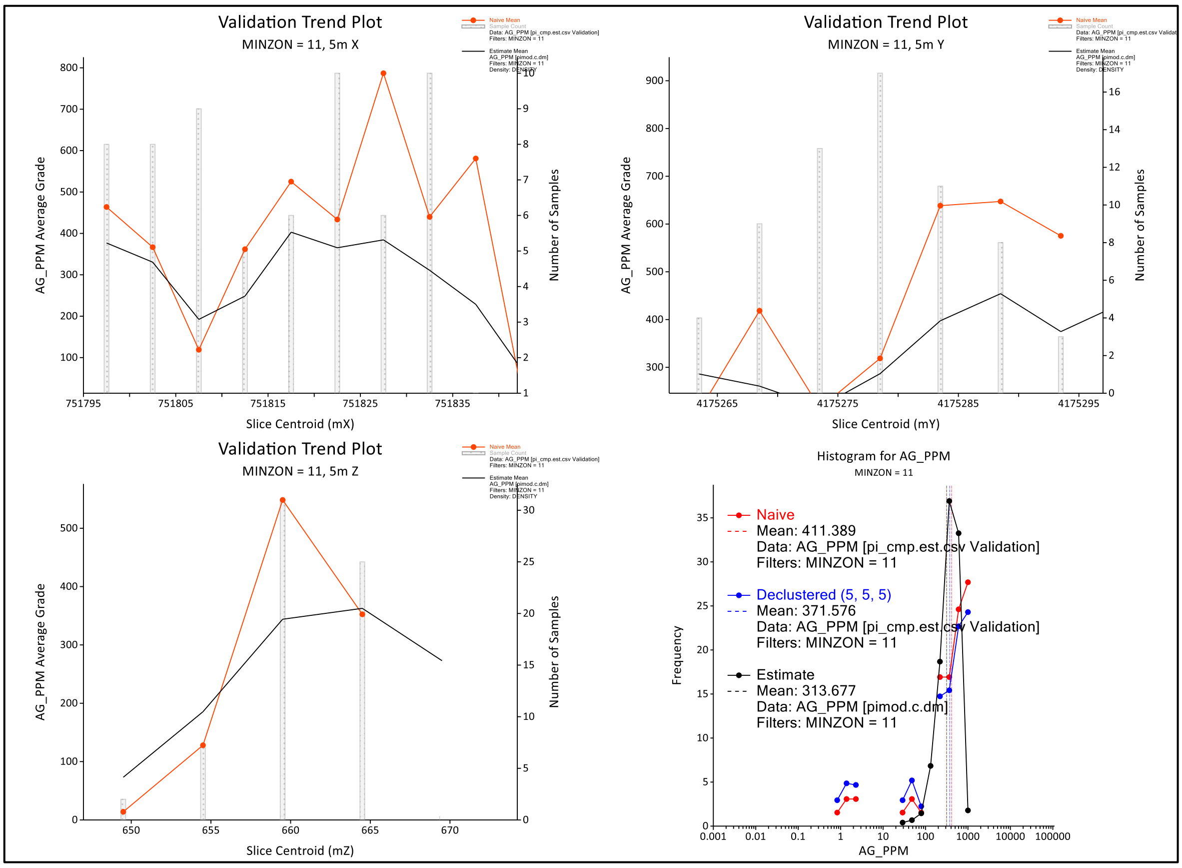


Figure 88: MINZON 11: swath plots for Ag

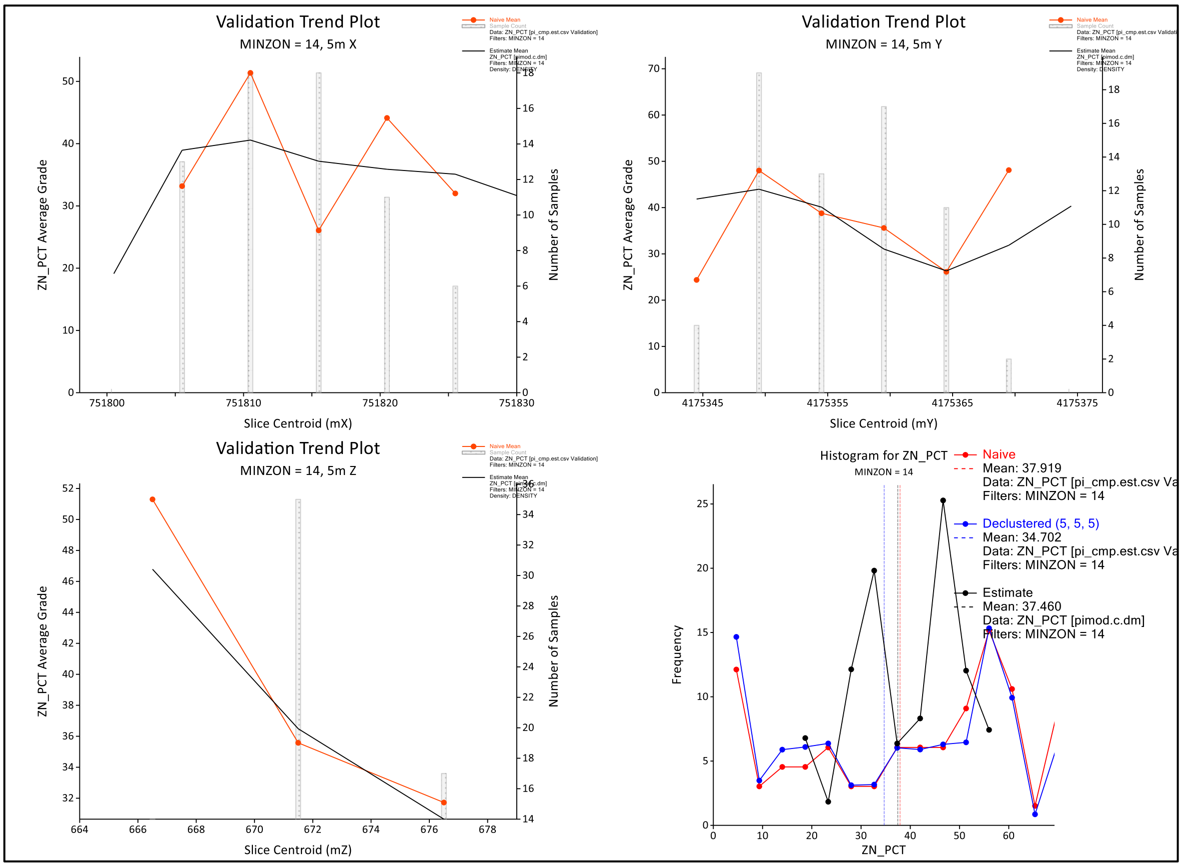


Figure 89: MINZON 14: swath plots for Zn

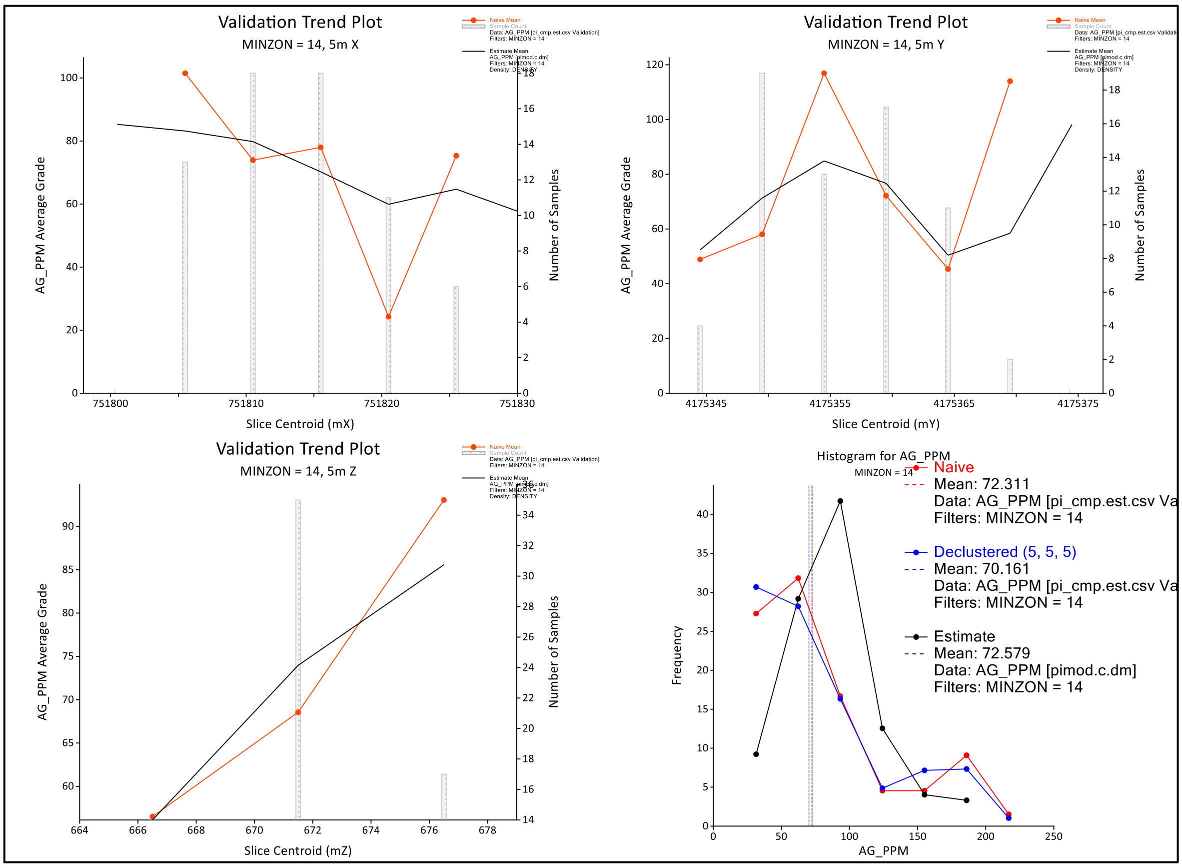


Figure 90: MINZON 14: swath plots for Ag

14.6 Mineral Resource Depletion

Surveying of depletion voids has not been consistently undertaken at Pinargozu. Although a laser survey tool exists onsite, some voids had only their backs or walls surveyed. Initially solids provided to CSA did not reconcile with the survey points provided, with depletion clearly present in the survey point data which lacked depletion solids. Feedback was required from Pasinex after which additional solids were created for these areas.

14.7 Mineral Resource Classification

The Mineral Resource has been classified as Inferred Mineral Resources under the guidelines of the CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council, and procedures for classifying the reported Mineral Resources were undertaken within the context of the Canadian Securities Administrators NI 43-101.

All Mineral Resources meet the test of reasonable prospect of economic extraction due to the reporting cut-off of 10% Zn.

The classification is based upon an assessment of geological understanding of the deposit, geological and mineralisation continuity, drillhole spacing, quality control results, search and estimation parameters and an analysis of available density information. The following were considered when classifying the Mineral Resource as Inferred:

- Review of geological continuity
  - Geological continuity on the whole is considered well defined. CSA Global worked onsite with the production staff during the generation of mineralisation model and is satisfied with the overall volume and geometry of the interpretation.
  - A number of small lodes are supported by a small number of holes and intercepts (e.g. MINZONs 2, 5, 9 and 12–16. Combined, these lodes contribute less than 10% of the zinc metal in the estimate.
- Review of QAQC highlighting a number of issues, including:
  - Poor repeatability at high grades and indications of bias in duplicates prepared on site
  - Poor practices, e.g. lack of CRM data and submitting QAQC samples as single batches
  - Impact on the MRE is likely to be low, however remains a concern and ongoing monitoring of the onsite preparation laboratory is required.
- Review of data quality:
  - Data collection methods are considered good and appropriate for use
  - Bulk densities are highly variable and unconstrained and core recoveries are problematic.
- Depletion solids; uncertainties exist regarding the accuracy of depletion solids provided by Pinargozu staff. No digital surveying of depletion was undertaken onsite until recently.
- Bulk density data consists of a combination of core and grab sampling, submitted for paraffin coating Archimedes methods in a laboratory. This is best practice, however the overall representivity of rock samples is insufficient due to:
  - The extremely variable nature of the bulk densities at Pinargozu (oxide, sulphide, cavities, galena and iron contributions).
  - The lack of representation of friable material in the bulk density dataset.
  - Pasinex have collected an underground bulk/production bulk density value from a selected stope which reconciles with core data. This is best practice and further assists in constraining bulk densities for ROM production.
- Core recoveries are extremely poor, averaging approximately 60% in places. It is clear that friable, high-grade mineralisation as well as low-grade, barren clays are being washed away during drilling. Overall the impact of the poor core recoveries remains undetermined but, based on results, it is not believed to result in significant low- or high-grade bias.

14.8 Mineral Resource Reporting

The MRE is shown in Table 18 as at 30 June 2017. The reporting date is determined by the date of the mineral stope volumes that were used to deplete the Mineral Resource.

The MRE compiled by CSA Global has been classified and is reported as an Inferred Mineral Resource under the guidelines of the CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council, and procedures for classifying the reported Mineral Resources were undertaken within the context of the Canadian Securities Administrators NI 43-101.

The Mineral Resource estimate has been reported at a 10% zinc grade cut-off, based on an assessment of grade distribution in the deposit and Horzum AS current production and marketing criteria.

The grade vs. tonnage curves for Inferred Mineral Resources is provided in Figure 91 and is provided for indicative purposes. The consideration of the grade-tonnage relationship should be treated with caution at the current level of advancement of the project, and given the Mineral Resource is classified as Inferred Mineral Resources.

Table 18: Mineral Resource estimate, reported at a 10% Zn cut-off, 30 June 2017

Pinargozu Mineral Resources Mineral Resource Estimate as at 30 June 2017 Reported at a cut-off grade of 10% Zn							
Classification	**Material**	**Tonnes**	**Zn Grade**	**Zn Metal**	**Density**	**Pb Metal**	**Ag Metal**
		Ktonnes	**%**	**Ktonnes**	**(t/m3)**	**Ktonnes**	**Koz**
Inferred	Oxide	150	28.9	43.5	2.8	1.2	520
	Sulphide	50	35.3	18.1	3.4	1.2	160
Total		200	31%	61.6	2.9	2.4	680

Notes:
1. Reporting cut-off is 10% Zn for both Oxide and Sulphide Resources
2. The Mineral Resource Estimate has been depleted for mining up to 30th June 2017. The effective date of the Mineral Resource is June, 30th 2017.
3. Figures have been rounded to the appropriate level of precision for the reporting of Resources.
4. Due to rounding, some columns or rows may not compute exactly as shown.
5. The Mineral Resources are stated as in situ dry tonnes. All figures are in metric tonnes.
6. The Mineral Resource has been classified under the guidelines of the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council, and procedures for classifying the reported Mineral Resources were undertaken within the context of the Canadian Securities Administrators National Instrument 43-101 (NI 43-101).
7. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

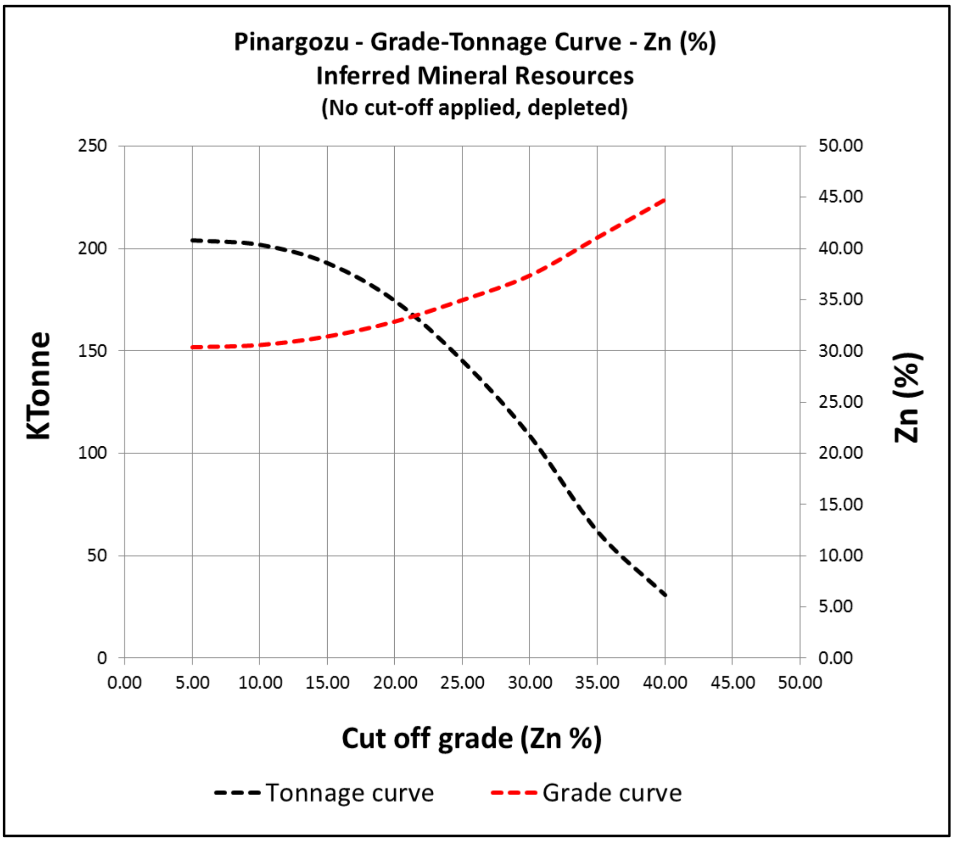


Figure 91: Pinargozu grade-tonnage curve for Inferred Mineral Resources

14.9 Comparison with Previous MRE

There are no previous publicly released MREs.

15 Mineral Reserve Estimates

No Preliminary Economic Assessment, Prefeasibility Study or Feasibility Study has been completed on the Pinargozu Property and the Property has no Mineral Reserve to indicate potential economic viability. The Property is therefore not classified as an "Advanced Property" as defined by NI 43-101.

16 Mining Methods

No Preliminary Economic Assessment, Prefeasibility Study or Feasibility Study has been completed on the Pinargozu Property on which to report mining methods and the Property has no Mineral Reserve to indicate potential economic viability. The Property is therefore not classified as an "Advanced Property" as defined by NI 43-101.

17 Recovery Methods

No Preliminary Economic Assessment, Prefeasibility Study or Feasibility Study has been completed on the Pinargozu Property on which to report recovery methods and the Property has no Mineral Reserve to indicate potential economic viability. The Property is therefore not classified as an "Advanced Property" as defined by NI 43-101.

18 Project Infrastructure

No Preliminary Economic Assessment, Prefeasibility Study or Feasibility Study has been completed on the Pinargozu Property on which to report project infrastructure and the Property has no Mineral Reserve to indicate potential economic viability. The Property is therefore not classified as an “Advanced Property” as defined by NI 43-101.

19 Market Studies and Contracts

No Preliminary Economic Assessment, Prefeasibility Study or Feasibility Study has been completed on the Pinargozu Property to report market and contract studies and the Property has no Mineral Reserve to indicate potential economic viability. The Property is therefore not classified as an “Advanced Property” as defined by NI 43-101.

20 Environmental Studies, Permitting and Social or Community Impact

Details regarding environmental studies and permitting are outlined in Section 4.4 and 4.5.

21 Capital and Operating Costs

No Preliminary Economic Assessment, Prefeasibility Study or Feasibility Study has been completed on the Pinargozu Property on which to report capital and operating cost estimates and the Property has no Mineral Reserve to indicate potential economic viability. The Property is therefore not classified as an "Advanced Property" as defined by NI 43-101.

22 Economic Analysis

No Preliminary Economic Assessment, Prefeasibility Study or Feasibility Study has been completed on the Pinargozu Property on which to report economic analysis and the Property has no Mineral Reserve to indicate potential economic viability. The Property is therefore not classified as an "Advanced Property" as defined by NI 43-101.

23 Adjacent Properties

There are two licences contiguous to the Pinargozu Operation Licence (Figure 2):

- Akkaya Exploration Licence held by Pasinex
- Horzum Operation Licence held by Akmetal AS, Pasinex's JV partner on the Pinargozu Property.

The Akkaya Exploration Licence is an early-stage exploration property that has had limited drilling based on anomalous geochemistry at surface.

The Horzum Operation Licence covers the Horzum mine which historically was one of the larger underground mines in the region feeding oxide zinc ore to the Kayseri zinc smelter. It operated initially from 1974 to 1996, and is estimated to have produced about 1 Mt of mostly oxide material grading from 20–30% Zn, however records are not adequate to properly quantify the total production. During its latter years of operation, sulphide was also mined contributing approximately one quarter of the total life-of-mine production. Akmetal recommenced mining at Horzum in 2015 and is currently producing mainly sulphide ore; no information is available about current production rates.

24 Other Relevant Data and Information

CSA Global is not aware of any other data or information regarding the Pinargozu Property that is relevant to reporting the Mineral Resource estimate for the Pinargozu deposit under NI 43-101 guidelines.

CSA Global notes that mining is active at Pinargozu but that, in the absence of a Feasibility Study, no information or data were available to report under sections 13 or 15 to 22 of this NI 43-101 report.

25 Conclusions

CSA Global makes the following conclusions, following its involvement with the maiden MRE for the Pinargozu mine.

25.1 Project Overview

The Pinargozu Property is held under Operation Licence by a 50/50 JV company between Pasinex AS and Akmetal AS located in southern Turkey and encompasses a small-scale underground mine that is currently producing high-grade zinc oxide and sulphide material of direct shipping grade; smaller amounts of lead and silver are also produced. No Preliminary Economic Assessment, Prefeasibility Study or Feasibility Study has been completed on the Pinargozu Property on which to report economic analysis and the Property has no Mineral Reserve to indicate potential economic viability.

The Property is well serviced by infrastructure and supported by local resources.

25.2 Geology, Mineralisation and Exploration

The Property is located in the Horzum–Tufanbeyli Zinc Belt which forms part of the larger Central Anatolian zinc province, which has estimated cumulative production of over 2 Mt contained Zn metal from multiple deposits which was processed at the Kayseri smelter until 2001. The underground Horzum mine, 5.8 kilometres south of Pinargozu, produced zinc oxide from 1974 to 1996.

Horzum and Pinargozu are located within the mid-Cambrian Değirmentaş Formation, a package of platform limestones >100 m thick within a mixed clastic and carbonate passive margin sequence. Although mineralisation had previously been interpreted to be of MVT, the available evidence supports a CRD deposit type formed by limestone replacement distal from a magmatic fluid source.

Production to date at Pinargozu has predominantly been direct-shipping oxide zinc, but as the mine deepens sulphide production is becoming increasingly important. The evidence suggests that oxide mineralisation formed by direct replacement of sulphide, and by local short-range karstic replacement of limestone wall rock.

The geometry of oxide and sulphide mineralisation is therefore similar, forming irregular plunging shoots that are broadly stratabound within the southeast-dipping Değirmentaş Formation limestone. The mineralisation occupies a preferred position in the central part of the formation suggesting a strong lithological control, probably related to a clean fine-grained micritic limestone unit. Logging and mapping does not currently adequately differentiate the lithostratigraphic sub-units.

Structural control on mineralisation is not well defined, but may be related to west to northwest directed thrusting as a flower structure peripheral to the Horzum Fault Zone. Structural logging of oriented drill core would improve understanding of these controls, that may include jointing and related karst as well as faulting.

High-grade mineralisation has a rapid cut-off to barren limestone. However, the mineralised lodes are surrounded by recrystallised bleached limestone that is interpreted to result from hydrothermal alteration. Peripheral alteration, including fluid-escape veins with manganoan carbonate, provide a larger target and potentially vectors to mineralisation. Logging of vein density and lithogeochemical signature (especially Mn) should assist with targeting and vectoring to mineralisation.

Intense footwall alteration including bleaching and argillic alteration of siltstone is probably related to mineralisation and merits assessment as a targeting indicator.

Sulphide mineralisation is strongly dominated by coarse massive sphalerite resulting in exceptionally high direct-shipping zinc grades. Galena and pyrite are also present and locally abundant.

Although the mineralisation is unlikely to be very conductive, it is expected to have a strong conductivity contrast with the host limestone that may lead to an EM signature. The mineralisation may also be responsive to IP.

The Horzum-Tufanbeyle Zinc Belt has had limited past exploration and potential is considered to be high if targeted with modern systematic exploration guided by an understanding of mineralisation controls and signatures.

25.3 Drilling, Sampling, Quality Assurance and Quality Control and Data Management

Data used in the estimation of the Pinargozu Mineral Resource is approximately 80% diamond core drill data and 20% underground channel samples; CSA Global considers that the sample density and quality is adequate to support classification of an Inferred Mineral Resource but highlights the issue of poor recovery as a material risk. Although there is no indication of bias from available data, the poor recovery impacts confidence and resource classification.

Surface drill holes were not downhole surveyed prior to July 2016 and only six out of 291 drill holes have survey data; two 2015 surface holes that conflict with underground mapping of mineralisation were ignored during the resource estimation.

CSA Global considers that the logging and coding scheme is not optimally designed to extract all key information and for easy import into digital modelling and visualisation software. Both the Lith code and the sub-unit code incorporate lithological, structural, alteration and mineralisation information, which is not ideal; separate stratigraphic, lithological, alteration, mineralisation, oxidation, and structural fields and tables would be preferred.

Samples are prepared on site; CSA Global notes that sample preparation facility on an active mine site is not adequately protected from dust contamination and that blank samples data indicate significant contamination, however this is not considered material for the high-grade Mineral Resource estimation.

Analysis is undertaken at the ISO-accredited SGS laboratory in Ankara.

No fatal flaws were noted in QAQC procedures or results and provide adequate support for inclusion of the sample data in an Inferred Mineral Resource estimate. However, material gaps in the QAQC and data procedures include:

- CRMs were not utilised prior to 2017
- Indications of poor repeatability of high grade values (>30% Zn) from samples prepared at the on-site sample preparation laboratory which show a 4% to 6% bias compared with those prepared at the ISO-accredited SGS laboratory
- QAQC samples for the channel sample dataset were submitted as a single batch, largely negating the ability to assess quality.

Most of the available density data is based on core samples which are likely to be biased against sampling friable (low density) mineralisation and oxide values are highly variable due to variable oxidation. However, a stope bulk density oxide sample collected to address this uncertainty corroborated the average core value of 2.76 t/m^3 obtained for oxide material from the core and grab sample data. Nevertheless, additional core and stope bulk densities should be collected to model the variability of bulk densities at Pinargozu, and the question of bimodality in the sulphide density data should be resolved.

Data management requires significant improvement. A centralised database should be implemented which can serve as a single point of truth for the project data.

25.4 Mineral Resource Estimate

Prior to resource estimation, data were loaded into Datashed with appropriate validation triggers and constraints. An analysis of QAQC data was also undertaken in Datashed using "QAQC-Reporter" package.

Mineralised solids were generated onsite using Micromine™ with direct input from Pinargozu geological and production staff; this ensured that the interpretation was optimised with the available data.

The geological model is considered robust due to good drill and channel sample spacing. CSA Global's opinion is that Pinargozu staff have a good understanding of local geological geometry of mineralisation.

Logging of oxidation was irregular and inconsistent, as a result sulphur % was used to distinguish Sulphide, Transitional and Oxide resources. Bulk densities were assigned accordingly.

Statistical assessment of composite lengths, top cuts, variography and KNA was undertaken in Supervisor.

Mineral Resources were estimated using Datamine™ within hard boundaries and employing OK for Zn, Ag and S and Inverse Distance (to the power of two) for Pb.

Resources were validated statistically by (a) comparing global means by estimation domain and (b) using swath plots for Zn, Ag and S. The block model was also validated visually through a comparison of input sample grades alongside estimated blocks.

Resources were depleted as at 30 June 2017, using depletion and development wireframes generated and provided by Pinargozu staff; CSA Global notes that stopes were not accurately surveyed for a period in 2016-17 and that this introduces additional risk to the MRE.

CSA Global has concluded that the MRE is classified as an Inferred Mineral Resource despite the active mining at Pinargozu. This reflects a number of factors, including:

- The extremely variability of bulk densities (currently not constrained by data available for the Mineral Resource)
- Poor core recoveries within the mineralised lodes
- Poor repeatability, at high grades, within indications of bias in duplicates prepared on site
- Uncertainties about depletion solids.

CSA Global notes that Horzum AS is currently undertaking additional work and implementing new procedures to constrain these issues.

26 Recommendations

26.1 Geology, Mineralisation and Exploration

- A limited program of core re-logging is recommended to provide the basis for logging of lithostratigraphic sub-units in the Değirmentaş Formation to assist with geology modelling and targeting. This should be supported by petrology.
    - This program should include lithogeochemical multi-element analysis of the alteration zones to determine alteration signatures and assess potential vectors.
- On the basis of the core review, a revised logging and coding system should be developed that includes separate stratigraphic, lithological, alteration, mineralisation, oxidation, and structural fields and tables.
- Petrophysical test-work should be completed on a range of mineralised and un-mineralised samples to assess responsiveness of mineralisation to EM and IP methods in particular.
- Ground magnetic surveys will provide additional structural and lithological information and may point to potential intrusive sources and associated alteration.
- Considering the limited past exploration in the district, an integrated targeting study of the entire Horzum–Tufanbeyli Belt is recommended guided by improved understanding of Pinargozu and Horzum, including systematic application of targeting criteria based on an optimised mineral-system targeting model. This should be followed by ground acquisition of key areas.
- Pb-isotope analysis is expected to provide important information on the nature and scale of systems and to help distinguish MVT and CRD systems. This can be effective in oxide as well as sulphide mineralisation.

26.2 Drilling, Sampling, Quality Assurance and Quality Control and Data Management

- All drill holes should be downhole surveyed to ensure that drill targeting is optimised, and that data is fit for use in the estimation of resources. Completed drill holes that lack survey data should be surveyed where possible.
- All drill holes should be oriented to allow collection of structural and geotechnical data.
- A revised logging and coding system should be implemented that includes separate stratigraphic, lithological, alteration, mineralisation, oxidation, and structural fields and tables.
- Due to the friable and broken nature of the mineralisation, mark-up, core recovery and RQD should be recorded at the drill site prior to transport.
- To better assess how core loss affects grade, approximately five to 10 HQ3 (triple-tube) drill holes should twin completed holes that experienced poor core recoveries to provide clarity on the impact of poor recovery and friable samples on grade and from which to measure collect additional bulk density data.
- Selective sampling of the clayey karstic mineralisation from core and from underground exposure will help determine the relative grade and possible sampling bias from using drill data.
- Two to five new stopes that are representative of run of mine production should be selected for the calculation of additional stope bulk densities.
- Due to poor repeatability being introduced in samples prepared at the on-site preparation facility, an audit of the laboratory is recommended. Prior to the audit and resolution of this issue, samples should be sent to an independent laboratory for preparation and analysis.

- Milling using a ring mill rather than the current disc mill is recommended.
- Pasinex has created high-grade in-house oxide and sulphide standards as appropriate high-grade commercial CRMs are not available; it is recommended that Pasinex appoint a commercial supplier of CRMs (e.g. Geostats, AMIS, OREAS, etc.) to independently certify the in-house standards.
- Written QAQC procedures are recommended, which include required QC samples as well as failure resolution criteria.
- An industry standard database SQL package (e.g. Datashed) is recommended to host the data. Currently, Microsoft Excel sheets are used which are inadequate to securely host the project data.

26.3 Mineral Resource Estimation

- The mineral resources were estimated within mineralized solids defined solely by the distribution of zinc. At present, the relationship between zinc, silver, lead and sulphur remains poorly understood and further work is required to constrain it. For example:
  - Future resource updates should estimate within separate mineralization domains that account for these relationships, e.g. a separate domain for Lead.
  - The variability in oxidation (Oxide, Transitional and Sulphide) will become more consequential in future resource updates, with the expectation that additional sulphide rich lodes will be defined at depth. The different oxidation types should be estimate separately, or indicator kriging employed to more accurately sub-divide these material types. To ensure this, logging and the relationship between sulphur and oxidation type requires a process of continual improvement to define.
- All underground development and stoping should be accurately surveyed to provide confidence in depletion volumes for Mineral Resource estimation.

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28 Abbreviations and Units of Measurement

$	dollar
%	percent
°	degree
°C	Celsius degrees
3D	three-dimensional model or data
Ag	silver
AMIS	African Mineral Standards
ASL	above sea level
Azimuth	An angular measurement in a spherical coordinate system, i.e. deviation degree relative to north
CACC	Central Anatolian Crystalline Complex
CAFZ	Central Anatolian Fault Zone
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
cm	centimetre
Coefficient of variation (CV)	In statistics, the normalised variation value in a sample population
COG	cut-off grade
Collar	Geographical coordinates of the collar of a drillhole or a working portal
Compositing	The process of dividing or adding sample intervals together to form a regular length
CompSE	A process in Datamine™ that composites drillhole sample data to honour a defined minimum interval length at a defined minimum grade
CRD	Carbonate Replacement Deposit
CRM	Certified Reference Material
CSA Global	CSA Global Pty Ltd
Cut-off grade	The threshold value in exploration and geological resources estimation above which mineralised material is selectively processed or estimated
DA	Dynamic Anisotropy, Datamine™ application to guide the orientation of the search ellipse
Datamine	A 3D mining software package
DD	Diamond core drilling method
DIP	The angle of drilling (or of a structure) relative to horizontal
DTM	Digital Terrain Model; 3D wireframe surface model (e.g. topography)
Dynamic Anisotropy	A method which uses a 3D plane of varying strike and dip to control the direction of a search ellipse
EAFZ	East Anatolian Fault Zone
Easting	Coordinate axis (X) for metre based Projection, typically UTM. Refers specifically to metres east of a reference point (0,0)

EIA	Environmental Impact Assessment
EM	electromagnetic(s)
g	gram
g/cm^3	grams per centimetre cubed
g/t	grams per tonne
Galena	A natural mineral form of lead(II) sulphide with a chemical composition of PbS
GDMA	General Directorate of Mining Law
GPR	Ground Penetrating Survey
GPS	global positioning system
ha	hectares
histogram	Diagrammatic representation of data distribution by calculating frequency of occurrence
ICP-AES	Inductively Coupled Plasma-Atomic Emission Spectroscopy
ICP-MS	Inductively Coupled Plasma-Mass Spectrometry
ICP-OES	Inductively Coupled Plasma-Optical Emission Spectroscopy
IDW	inverse distance weighting
IP	induced polarisation
JV	joint venture
KE	kriging efficiency
kg	kilogram
km	kilometre
km^2	square kilometres
KNA	Kriging Neighbourhood Analysis
Kriging	Method of interpolating grade using variogram parameters associated with the samples' spatial distribution. Kriging estimates grades in untested areas (blocks) such that the variogram parameters are used for optimum weighting of known grades. Kriging weights known grades such that variation of the estimation is minimised, and the standard deviation is equal to zero (based on the model)
kt	kilo-tonnes
m	metre
Ma	million years
Mean	Arithmetic mean
Median	Sample occupying the middle position in a database
Micromine™	A 3D mining software package
mm	millimetre
MRE	Mineral Resource estimate
Mt	million tonnes
MVT	Mississippi Valley-type
Northing	Coordinate axis (Y) for metre based Projection, typically UTM. Refers specifically to metres north of a reference point (0,0)

NQ	A diamond drill core diameter of 75.7 mm (outside of bit) and 47.6 mm (inside of bit)
Nugget	The typical difference (for an individual domain) in grade between samples taken immediately adjacent to each other
ºC	degrees Celsius
OK	Ordinary Kriging
opex	operating costs
Pasinex	Pasinex Resources Limited
Pasinex SA	Pasinex Arama Madericilik AS
Pb	lead
plunge	Direction of dip
Population	In geostatistics, a population formed from grades having identical or similar geostatistical characteristics. Ideally, one given population is characterized by a linear distribution
ppm	parts per million
pXRF	portable x-ray fluorescence
Pyrite	An iron sulphide with the chemical composition of FeS2
Pyrrhotite	Weakly magnetic, iron sulphide ($Fe_{(1-x)}S$)
QAQC	quality assurance and quality control
QKNA	Quantitative Kriging Neighbourhood Analysis
QP	Qualified Person
Reserves	Mineable geological resources
Resources	Geological resources (both mineable and un-mineable)
RL	Elevation of the collar of a drillhole, a trench or a pit bench above the sea level
RMS	root mean squared
ROM	run of mine
RQD	rock quality designation
Sample	Specimen with analytically determined grade values for the components being studied
SG	specific gravity/density
Sill	Variation value at which a variogram reaches a plateau
SOP	Standard Operating Procedure
Sphalerite	The chief zinc sulphide mineral with a chemical composition of ZnS
SQL	Structured Query Language
stope	An open underground void, generated by mining
strike	Horizontal continuity of grade, perpendicular to dip
swath plot	A method of block model validation using a graph that compares input grades, drill metres, block model tonnes
t	tonnes
t/m^3	tonnes per cubic metre

top cut	A value to which anomalously high grades are restricted to, determined by statistical methods
TRUETHK	TRUETHK is a command/procedure in Datamine™ that allows for the calculation of true thickness of an intercept
UG	underground
US$	United States Dollar ($)
UTM	Universal Transverse Mercator
Variation	In statistics, the measure of dispersion around the mean value of a data set
Variogram	Graph showing variability of an element by increasing spacing between samples
Variography	The process of constructing a variogram
VHMS	volcanogenic hosted massive sulphide
X	The direction aligned with the x-axis of a coordinate system
XRF	x-ray fluorescence
Y	The direction aligned with the y-axis of a coordinate system
Z	The direction aligned with the z-axis of a coordinate system
Zn	zinc

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