NI 43-101 Technical Report

Kounrad In Situ Dump Leach Operation, Kazakhstan

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NI 43-101 TECHNICAL REPORT ON THE KOUNRAD IN SITU DUMP LEACH OPERATION, KAZAKHSTAN

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1.0 Summary

Central Asia Metals plc (CAML) is a metal mining company that produces copper, lead and zinc with projects and operations in Kazakhstan (Kounrad in situ dump leach operation) and North Macedonia (the Sasa Mine). CAML also owns an 80% interest in CAML Exploration, a subsidiary formed to progress early-stage exploration opportunities in Kazakhstan, and a 32.6% interest in Aberdeen Minerals Ltd, a privately-owned United Kingdom (UK) company focused on the exploration and development of base metals opportunities in northeast Scotland. CAML is a UK public company, and its common shares are listed on the Alternative Investment Market (AIM) of the London Stock Exchange (LSE).

CAML commissioned SLR Consulting (UK) Ltd (SLR) to prepare this Technical Report in accordance with the disclosure requirements of National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (NI 43-101) to disclose information about CAML's wholly owned Kounrad operation in Kazakhstan (Kounrad or the Property). This Technical Report includes Mineral Resource and Mineral Reserve estimates with an effective date of December 31, 2025.

CAML acquired an interest in Kounrad in 2007 through a 60/40 joint venture and in May 2014 completed the acquisition of the remaining 40% to become the sole owner. Kounrad has been in continuous operation since 2012.

CAML owns a 100% interest in the mineral rights for the Kounrad in situ dump leach operation through Sary Kazna LLP (SK), a wholly owned subsidiary. In addition, CAML owns a 100% interest in Kounrad Copper Company LLP (KCC).

The Kounrad waste dumps are the result of historic open pit mining of the Kounrad copper porphyry deposit carried out between 1936 and 2005 and consist of copper oxide and low-grade sulphide material. Two main areas are present: the smaller eastern dumps with higher-grade oxide material, and the larger western dumps containing a higher proportion of mixed and sulphide material.

The operation involves irrigating the surface of the dumps with acidic raffinate solution which percolates through the dumps and is diverted into channels around the base of the dumps before being pumped to a solvent extraction-electrowinning (SX-EW) copper plant. SK operates the leaching of the dumps while KCC undertakes the processing operation.

Construction of the plant was completed in 2012, and copper production began in late April 2012. From 2012 to 2016 production was focussed on the eastern dumps, while leaching of the western dumps began in 2017 following completion of an expansion project.

The processing plant has a total capacity to produce 15,000 tpa of copper cathode (99.99% purity). This includes the original 10,000 tpa plant commissioned in 2012 and the 5,000 tpa expansion project. There are two independent electrowinning facilities, EW1 and EW2, which provide 66% and 33% of production respectively.

The operation runs for 365 days per year and a total of 178,961 t of copper cathode has been produced since commencing operation in 2012. Following completion of the western dumps expansion project, production has been in steady state with a maximum annual production of 14,254 t reached in 2022.

In 2025, a total of 13,311 t of copper cathode were produced.

The current life of mine (LOM) runs until 2034 and a total of 74,459 t of copper cathode is planned to be produced.

The copper cathode is 99.99% purity meeting London Metal Exchange (LME) Grade A equivalent standards and is sold under an annual rolling offtake contract. Small volumes are also sold domestically.

This Technical Report was prepared under the supervision of Qualified Persons (QPs) named herein. The conclusions, recommendations, and forward-looking statements made by the QPs are based on reasonable assumptions and results interpretations. Forward-looking statements cannot be relied upon to guarantee the Property's performance or outcomes and naturally include inherent risks and risks relating to the mining industry.

1.1 Property Description and Location

Kounrad is located approximately 15 km north of the city of Balkhash, in central Kazakhstan and is centred on the geographic coordinates of latitude 46°59'13" North and longitude 75°1'38" East.

SK holds a concession area of approximately 14.8 km^2 that relates to the exploration and extraction of copper from the Kounrad waste dumps and has an expiry of August 20, 2034.

1.2 Accessibility, Climate, Local Resources, Infrastructure and Physiography

Kounrad is well connected with paved roads lying approximately 15 km north of the city of Balkhash with the main cities of Karaganda and Almaty located approximately 380 km north and 650 km southeast, respectively. These can be accessed by the M-36 highway that runs adjacent to Lake Balkhash. The capital city of Astana is located 640 km northwest and can be accessed by the M-36 beyond Karaganda.

There is an extensive network of highways, rail links, telecommunications facilities, national grid electricity and a supply of water. International airports are located at Astana and Almaty. The Kounrad site has a dedicated 1.7 km rail spur that connects to the national rail network and is used for transportation of bulk reagents, coal, equipment and materials.

The Balkhash area has a long history of mining and copper smelting and there is an established in-country network of mining and processing suppliers and contractors. There is sufficient and experienced work force available due to the proximity of the city of Balkhash. A total of 328 permanent personnel is employed at the Kounrad operation.

The topography is characterised by flat steppe and the waste dumps protrude from 15 to 60 m above the topographical surface. The climate is sharply continental with warm summers (29 to 31°C) and cold winters (-20°C) though extreme low temperatures of -40°C can occur during severe winters.

1.3 History

Production from the Kounrad mine commenced in 1936 under the ownership of Balkhash Mining and Metallurgical Combine (Balhashtcvetmet). Copper ores were exploited from conventional open pit extraction until 2005, with sulphide ores treated by conventional flotation, whilst oxide and low-grade sulphide material were stockpiled around the site.

CAML acquired an interest in Kounrad in 2007 through a 60/40 joint venture and in May 2014, completed the acquisition of the remaining 40% to become the sole owner. The Kounrad in situ dump leach has been in continuous operation since 2012 and is operated by SK and KCC.

A summary of the production history is shown in Table 1-1. The copper cathode produced is 99.99% Cu.

Table 1-1: Kounrad In-Situ Dump Leach Operation Production History

	2012	2013	2014	2015	2016	2017	2018
Copper Cathode (t)	6,586	10,509	11,136	12,071	14,020	14,103	14,049
	2019	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Copper Cathode (t)	13,771	13,855	14,041	14,254	13,816	13,439	13,311

1.4 Geological Setting and Mineralization

Kounrad is located in the Balkhash metallogenic belt, within the Balkhash-Junggar orogenic belt of the Central Asian Metallogenic Domain (CAMD) and comprises porphyry copper mineralisation associated with tectono-magmatic activity during the Devonian and Carboniferous-Permian volcano-magmatic arcs.

The Kounrad waste dumps are located on bedrock consisting of granite and granodiorite, the upper 10 to 40 m of which are highly weathered creating a low permeability clay layer and cemented sediments at the surface.

The waste dumps consist of blasted rock with no crushing stage undertaken prior to dump construction, thus the particle size distribution of the dumps ranges from 1 – 2 m boulders to fine particles. Approximately 20% of the material exceeds 200 mm, while 60% is between 10 - 200 mm, and 20% is less than 10 mm.

The eastern dumps consist of oxide material while the larger western dumps consist of sulphide and mixed material. A limited amount of mixed material is also present in the northern dumps.

Material within the dumps consists of massive, iron-hydroxide-altered granodiorites often silicified and intensely fractured with hematite-limonite-pyrite veinlets. Typically for the sulphide dumps, the material is characterised by vein and veinlet-disseminated sulphide mineralisation with covellite, chalcopyrite, bornite and pyrite. Malachite, azurite, chrysocolla, and chalcopyrite (partly replaced by hematite and pyrite) are typical ore minerals of the oxide dumps.

Long term exposure of the dumps has triggered natural bacterial oxidation, converting a significant portion of the refractory sulphide material into acid-soluble forms which are more amenable to leaching. In addition, some of the copper sulphide minerals are also naturally acid soluble.

1.5 Deposit Types

The Kounrad primary deposit is classified as a porphyry copper deposit and was mined from 1936 to 2005. Waste and low-grade material from the historical operation were dumped adjacent to the open pit and classified as follows:

- Oxide Waste – greater than 20% acid soluble copper.
- Mixed Waste – greater than 10% but less than 20% acid soluble copper.
- Sulphide Waste – below cut-off grade and with less than 10% acid soluble copper.
- Waste – less than 0.15% total copper grade.

As such, the Kounrad waste dumps are man-made deposits that were generated as sites for the storage and containment of waste rock produced during the mining of the adjacent Kounrad open pit.

1.6 Exploration

Exploration of the waste dumps was undertaken mainly between 2007 and 2012 (by CAML) and included drilling, trench sampling, trial pits, metallurgical sampling and pilot plant testwork as summarised below:

- Historical (pre-2007) – a total of 2,409 channel samples of 0.5 m length were taken from eastern dumps 6, 7 and 9 - 10.
- 2007 - 21 drillholes to depths of 2.5 m were completed within the same dumps.
- 2008-2009 – 85 drillholes ranging in depths from 8 – 30 m were completed on the eastern and western dumps. In addition, 10 trenches were completed and metallurgical testwork (bottle roll tests) was undertaken. A pilot scale SX-EW plant was constructed at eastern dump 6 and operated until 2011 producing 196 tonnes of copper cathode with a copper recovery of 50.2%.
- 2010 – 9 trenches of up to 100 m in length were completed in western dump 21a. 137 trial pits to depths of 3 m were completed on the eastern and western dumps. 13 trial pits of depths of 8 – 11 m were completed on the eastern and western dumps to provide samples for metallurgical testwork.
- 2011 – 98 RC drillholes for 3,213 m were completed of which 2,761 m were sampled for Cu_{total} and Cu_{acid}. The pilot plant was relocated to the western dump 1a.
- 2012 – 131 RC drillholes for 4,107 m were completed of which 4,089 m were sampled for Cu_{total} and Cu_{acid}. Site trials involving bench column leach tests were performed on sulphide and mixed dump material from pits dug on western dumps 21, 22, 16 and 1.

1.7 Drilling

Drilling at the Kounrad waste dumps consisted of Reverse Circulation (RC) drilling during the period 2007 to 2012 to obtain confirmatory samples for grade, mineralogy, and metallurgy tests. In general, the drilling utilised a hammer bit with a diameter of 125.5 mm using 3.0 m or 6.0 m dual-walled rods of 102 mm diameter. Drilling was shallow (less than 56.0 m) and vertical, as such no downhole surveying has been conducted. A total of 335 drillholes were completed during this period and form the basis for the Mineral Resource.

1.8 Sample Preparation, Analyses, and Security

Drillhole samples were collected at 3.0 m intervals (into a nylon sample bag) and placed on a nylon sheet to be blended by hand shovel to form a square (8.0 cm high and 70 x 70 cm) and divided into 16 equal areas so that each one formed a subsample and an equal amount was removed from each of the 16 areas to form a sample of approximately 5 kg. Two (5 kg) samples were obtained for each 3.0 m drillhole interval; one was dispatched to the laboratory and the other retained as reference material.

Analysis was conducted to determine Cu_{total} and Cu_{acid} with analysis carried out by the VNIITSvetmet laboratory (primary laboratory) and Alex Stewart as the umpire laboratory.

SK personnel supervised the sample preparation and ensured the security of the samples (on site) prior to dispatch to the laboratory.

1.9 Data Verification

Data entry, validation, storage and database maintenance was carried out by the SK geological department. The sampling data used for the Mineral Resource estimate is stored

in Microsoft® Excel format at the Kounrad offices. No additional exploration has been undertaken at Kounrad since 2012.

The databases were reviewed by SLR and no significant issues in terms of data collection, data entry or data storage were identified. A statistical comparison of the copper assays from the different sampling programmes also identified no significant issues.

1.10 Mineral Processing and Metallurgical Testing

The feasibility of recovering copper from the Kounrad dumps has been tested extensively though programmes of laboratory and on-site pilot scale testing. Initial testing on material from the western dumps was performed by VNIITSvetmet using relatively small diameter columns. In later studies, undertaken by CAML, column tests were undertaken in larger diameter columns at the Kounrad site.

Pilot trials undertaken by CAML at the eastern dumps yielded a recovery of 50.2% and this has been confirmed in practice as a leach recovery of 51% has been achieved for dumps 6, 7 and 9 - 10. In addition, pilot scale trials were also performed on the western dumps and although hampered by some operational conditions, the results demonstrated that the copper is recoverable via acid leaching with a recovery of approximately 42% being obtained.

The western dumps, being more refractory to acid leaching (due to the presence of sulphide material), respond less favourably to leaching with recoveries ranging from 35% (sulphide material) and 42% (mixed material) being adopted.

The large diameter column tests undertaken at site were used to develop a kinetic model for leaching of the western dumps. This exercise was undertaken as a method of estimating copper recovery as it is not possible to physically determine individual recoveries for each dump due to the mixing of the site Pregnant Leach Solution (PLS) flows. It is known that this can only be a best approximation based upon the data available. This is the current method of estimating leach recovery by dump.

1.11 Mineral Resource Estimate

The Mineral Resource estimate for the Kounrad in situ dump leach operation is classified in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves (2014).

A summary of the Mineral Resource estimate as of December 31, 2025, is shown in Table 1-2. The reported Mineral Resources are within the concession boundary.

The stated Mineral Resources are not materially affected by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant issues, to the best knowledge of the authors. There are no known mining, metallurgical, infrastructure, or other factors that materially affect this Mineral Resource estimate, at this time.

Table 1-2: Audited Mineral Resource Statement for the Kounrad In Situ Dump Leach Operation (Effective Date of December 31, 2025)

Classification	Tonnes (Mt)	Cu (%)	Contained Cu Metal (kt)
Measured	-	-	-
Indicated	595.1	0.07	407.9
Inferred	-	-	-

Notes:

1. CIM (2014) definitions were followed for Mineral Resources.
2. Cu grade is total copper.
3. Mineral Resources are estimated at a cut-off grade of 0% Cu.
4. Mineral Resources are estimated using a copper price of US$11,080 per tonne.
5. Mineral Resources are estimated using a calculated leach recovery of 18.5%.
6. Mineral Resources are estimated using average dry densities ranging from 1.875 to 2.07 t/m^3.
7. Kounrad is an in situ dump leach operation, and therefore no minimum mining width has been applied.
8. Contained metal refers to estimated contained metal in the ground not adjusted for metallurgical recovery.
9. Mineral Resources are inclusive of Mineral Reserves.
10. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
11. Totals may not represent the sum of the parts due to rounding.

1.12 Mineral Reserve Estimate

The Mineral Reserve estimate for the Kounrad in situ dump leach operation is classified in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves (2014). Mineral Reserves are derived from Indicated Mineral Resources after applying modifying factors. Mineral Reserves for Kounrad were classified using the following criteria:

- No Proven Mineral Reserves were classified because no Measured Mineral Resources were estimated.
- Probable Mineral Reserves are those Indicated Mineral Resources where information on processing/metallurgy and other relevant factors demonstrate that economic extraction is achievable.

The term “Mineral Reserve” need not necessarily signify that extraction facilities are in place or operative, or that all governmental approvals have been received. It does signify that there are reasonable expectations of such approvals.

The audited Mineral Reserve statement is shown in Table 1-3. The reported Mineral Reserves are within the concession boundary.

The stated Mineral Reserves are not materially affected by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant issues, to the best knowledge of the authors. There are no known mining, metallurgical, infrastructure, or other factors that materially affect this Mineral Reserve estimate, at this time.

Table 1-3: Audited Mineral Reserve Statement for the Kounrad In Situ Dump Leach Operation (Effective Date of December 31, 2025)

Classification	Tonnes (Mt)	Cu (%)	Contained Cu Metal (kt)
Proven	-	-	-
Probable	595.1	0.07	407.9

Notes:

1. CIM (2014) definitions were followed for Mineral Reserves.
2. Cu grade is total copper.
3. Mineral Reserves are estimated at a cut-off grade of 0% Cu.
4. Mineral Reserves are estimated using a copper price of US$11,080 per tonne.
5. Mineral Reserves are estimated using a calculated leach recovery of 18.5%.
6. Contained metal refers to estimated contained metal in the ground not adjusted for metallurgical recovery.
7. Kounrad is an in-situ dump leach operation, and therefore no dilution or mining recovery factors have been applied.
8. Totals may not represent the sum of the parts due to rounding.

1.13 Mining Methods

The operation is an in situ dump leach and no mining is undertaken.

1.14 Recovery Methods

The Kounrad processing operation has successfully operated since 2012 producing a high-quality copper cathode product using in situ heap leaching of the eastern and western dumps with acidic raffinate solution to dissolve the copper mineralisation. The PLS is collected at the base of the dumps by an HDPE lined interceptor trench and pumped to a series of holding ponds before being treated in the SX-EW plant located at the eastern dumps. A critical operational advantage is the presence of a layer of low permeability clay underneath the dumps which acts as a highly effective barrier that captures percolating leach solutions allowing for efficient in situ collection without engineered pads. Routine groundwater monitoring of 30 boreholes located around 200 – 700 m from the dumps confirms the low hydraulic conductivity beneath the dumps.

The operation works year-round with leaching during the winter period being achieved by heating the leach solutions before irrigating the dumps under a HDPE cover. The Kounrad operation is well managed, and the SX-EW plant has high utilisation with minimal unscheduled downtime.

The eastern dumps were targeted first for production due to their higher grades and faster leaching rates due to their oxidised nature. Leaching of the western dumps commenced in 2017 with the PLS being collected and pumped some 12.5 km to the SX-EW plant.

Annual copper production ramped up between 2012 and 2015, increasing from 6,586 t to 12,071 t, before reaching a plateau between 2016 and 2022 of approximately 14,000 tpa. Since 2022, there has been a small decline in production, reaching 13,311 t in 2025. In future years production is planned to decline as fewer dumps remain to be leached and those that remain are lower grade and comprise mainly sulphide or mixed material. A summary of the production schedule is shown in Table 1-4.

Table 1-4: Summary of Kounrad Production Schedule

	2026	2027	2028	2029	2030	2031	2032	2033
Copper Cathode (t)	12,000	11,000	10,500	10,000	10,000	9,000	6,000	5,959

A total of 178,961 tonnes of copper cathode has been produced since the start of the operation in April 2012 and December 31, 2025. The production schedule contains a total of 74,459 t of copper cathode that will be produced from 2026 - 2034. Based on the Mineral Reserve estimate and the estimated metallurgical recoveries there is sufficient leachable metal to support the production plan.

The cathode quality conforms to LME Grade A (>99.99% Cu) and levels of impurities are historically generally very low.

1.15 Project Infrastructure

Infrastructure associated with the Kounrad in situ dump leach operation includes:

- Waste dumps and network of leaching pipework.
- Channels (lined) for directing pregnant leach solution.
- East plant including the solvent extraction plant and electrowinning units (EW1 and EW2) and associated facilities.
- West plant and associated facilities (pregnant solutions collected at the west plant are pumped to the east plant for processing and copper refining).
- Pregnant Leach Solution (PLS) ponds, raffinate ponds, emergency ponds and pump stations.
- HDPE pipeline (12.5 km) connecting west and east plants for transporting solutions.
- Boiler houses (east and west) and coal storage.
- Site offices, laboratory, stores, maintenance workshops.
- Rail spur and load out.
- Water pipelines.

Electrical power is supplied to the operation by the national grid from a 35 kV overhead line from a substation 7 km away, with a single 10 MVA main transformer and a 6.8 MVA spare available on site. A 4.7 MVA solar farm provides approximately 16% of the sites electrical power during daylight hours and was commissioned at the end of 2023. Coal powered boilers are used in the winter for heating solutions before leaching due to extreme winter temperatures.

Process water is sourced during the summer months from Lake Balkhash (semi-saline) via a dedicated 25 km pipeline. In the winter months (when the lake freezes) water is sourced from a flooded underground mine located 6 km from Kounrad, thus maintaining continuity of supply. A new pumping station is planned to be installed at Lake Balkhash to enable water extraction throughout the year. Potable water is sourced from the local supply network and an on-site reverse osmosis plant.

No tailings storage facility (TSF) is required by the operation. No reworking of the waste dumps other than by in situ leaching is undertaken and no new waste dumps need to be constructed.

All major infrastructure required by the operation is currently in place and no significant additional infrastructure is planned.

1.16 Market Studies and Contracts

Copper cathode produced by the Kounrad Operation is 99.99% purity meeting London Metal Exchange (LME) Grade A equivalent standards. The copper cathode is sold under an annual rolling offtake contract with Traxys Europe S.A. (Traxys), which is entitled for a minimum of 90% of Kounrad's cathode production. Small volumes of cathodes are also sold to the domestic market. Cathode ownership transfers to the offtaker at the Kounrad factory gate.

The commercial terms of the offtake contract with Traxys are negotiated on an annual basis based on the prevailing market conditions.

1.17 Environmental Studies, Permitting and Social or Community Impact

The Kounrad operation complies with Kazakhstan's environmental protection legislation, which requires an impact assessment process for projects of this type.

Environmental management is supported by a combination of internal controls and external monitoring by licensed contractors, alongside a range of technical studies to better characterise site conditions and legacy risks. Groundwater monitoring has been expanded and supported by hydrogeological assessments and conceptual modelling. Mitigation measures limit off-site risk pathways in the wider regional context.

Social performance is supported by community engagement and structured social investment. Community support includes practical, community-request–driven initiatives. In addition, the Kounrad Corporate Foundation provides a formal mechanism for longer-term community investment in infrastructure and community services.

Closure planning is integrated with operational planning, and a closure plan and Asset Retirement Obligation (ARO) has been prepared by WSP Golder (2022) and includes post-closure monitoring (notably groundwater).

1.18 Capital and Operating Costs

A summary of the capital costs for the Kounrad in situ dump leach operation is presented in Table 1-5. An additional cost of US$16.1 million has been estimated for closure.

Table 1-5: Summary of Kounrad Capital Costs

Item	Unit	2026	2027	2028	2029	2030	2031	2032	2033
Sustaining SK	US$M	0.59	0.59	0.59	0.50	0.41	0.33	0.20	0.12
Sustaining KCC	US$M	1.31	1.31	1.31	1.11	0.91	0.74	0.45	0.28
Total Capital Costs	**US$M**	**1.90**	**1.90**	**1.90**	**1.61**	**1.32**	**1.10**	**0.66**	**0.40**

A summary of the operating costs for the Kounrad in situ dump leach operation is provided in Table 1-6.

Table 1-6: Summary of Kounrad Operating Costs

Item	Unit	2026	2027	2028	2029	2030	2031	2032	2033
SK Eastern Production	US$M	2.42	2.20	2.15	2.09	2.06	2.10	1.90	1.65
SK Western Production	US$M	3.90	3.77	3.67	3.57	3.47	3.20	2.76	2.76
KCC Production	US$M	11.85	10.85	10.53	10.23	10.04	9.85	8.40	7.04
KCC Water Pipeline	US$M	0.25	0.24	0.23	0.22	0.22	0.20	0.17	0.17
Solar Farm	US$M	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07
G&A	US$M	4.27	4.17	4.09	4.00	3.93	3.80	3.49	3.49
Total Operating Costs	**US$M**	**22.75**	**21.32**	**20.73**	**20.18**	**19.79**	**19.22**	**16.79**	**15.18**

1.19 Economic Analysis

Producing issuers may exclude the information required under Item 22 of Form 43-101F1 for Technical Reports on properties currently in production unless the Technical Report includes a material expansion of current production.

The financial model for the LOM was reviewed by the authors and showed the Mineral Reserves to be economic based on the assumptions used and a copper price of US$11,080 per tonne.

1.20 Interpretation and Conclusions

The QPs have reviewed the licensing, geology, exploration, Mineral Resources and Mineral Reserve estimation methods, mining, mineral processing, infrastructure requirements, environmental, permitting, social considerations and financial information.

The QPs consider the Mineral Resources and Mineral Reserves for the Kounrad in situ dump leach operation have been prepared to industry best practice and are reported in accordance with CIM Definition Standards for Mineral Resource and Mineral Reserves (2014), as referenced in NI 43-101.

1.21 Recommendations

The QPs make the following recommendations for the respective study areas.

1.21.1 Geology, Exploration and Mineral Resource Estimates

- Progress the alignment of the surface rights with the concession boundary.
- Progress with an application to expand the concession to include other areas of the dumps (including further areas of the northern dumps) to provide additional Mineral Resources.

1.21.2 Mineral Processing and Mineral Reserve Estimates

- Continue testwork to improve the estimated leach recoveries of 25% for Dump 2 resulting from lower solution percolation rates due to a higher clay content.
- Continue testwork to improve the estimated leach recoveries of the northern dumps (mixed material) from the current 35% recovery.

1.21.3 Infrastructure

- No significant additional infrastructure for the operation is recommended by the authors.

1.21.4 Environmental Studies, Permitting and Social or Community Impact

- Maintain and periodically optimise the groundwater monitoring network to ensure it remains fit-for-purpose. Monitoring should continue to focus on key indicator parameters (e.g., pH, Cu, SO_4, Cl) and incorporate trend analysis and early-warning triggers tied to operational responses.
- Strengthen benchmarking and interpretation of water quality results by clearly defining baseline/background conditions (including legacy-impacted baselines) and documenting how compliance results are assessed against regulatory thresholds versus operational performance indicators. Where exceedances are attributed to

legacy contamination, maintain supporting technical justification and regulator-facing documentation.

- Continue periodic review of seepage capture efficiency and containment integrity for lined trenches/ponds and process solution management, including verification inspections and targeted studies where monitoring indicates potential changes in plume behaviour, preferential pathways, or localised pH/copper level changes.
- Update and consolidate the technical evidence base supporting the conceptual hydrogeological model and any risk conclusions regarding regional receptors when new data becomes available, particularly where monitoring indicates divergence from expected trends or where new receptors or water users are identified.
- Maintain a forward-looking permitting register covering all environmental approvals (air emissions, waste, water abstraction/special water use, discharge limits, monitoring obligations), including renewal timelines, responsible persons, and required supporting studies.
- Ensure environmental monitoring contractors and laboratories remain appropriately certified and QA/QC procedures are documented (chain of custody, calibration, data validation), with results consistently integrated into periodic compliance reporting.
- Formalise an internal compliance assurance process (e.g., quarterly compliance reviews) to identify emerging risks early, including changes in regulatory requirements and any gaps between operational controls and permitted limits.
- Update and implement the Stakeholder Engagement Plan on a defined cycle and align it with the most recent needs assessment findings, ensuring a location-specific approach.
- Strengthen grievance mechanism effectiveness by: (i) clarifying intake channels and response timelines; (ii) improving categorisation and close-out documentation; and (iii) implementing an approach for handling social media complaints, while retaining records for auditability.
- Enhance impact measurement of social investment by expanding beneficiary feedback mechanisms into a light-touch monitoring framework with measurable outputs/outcomes for key programmes such as healthcare, education, infrastructure, supporting transparency and continuous improvement.
- Periodically reconcile closure-related studies, closure cost estimates, and closure funding provisions to ensure they remain aligned with current infrastructure, monitoring outcomes, and evolving regulatory expectations. Prioritise where closure assumptions such as monitoring duration, trench rehabilitation timing and pond closure approach interact with ongoing compliance and stakeholder expectations.
- Integrate closure planning with operations planning (including progressive measures where practicable) to reduce future closure risk and improve long-term environmental performance including proactive management of legacy-impacted areas, refinement of solution management strategies, and targeted rehabilitation trials where appropriate.

2.0 Introduction

Central Asia Metals plc (CAML) is a metal mining company that produces copper, lead and zinc with projects and operations in Kazakhstan (Kounrad) and North Macedonia (the Sasa Mine). CAML also owns an 80% interest in CAML Exploration, a subsidiary formed to progress early-stage exploration opportunities in Kazakhstan, and a 32.6% interest in Aberdeen Minerals Ltd, a privately-owned United Kingdom (UK) company focused on the exploration and development of base metals opportunities in northeast Scotland. CAML is a UK public company, and its common shares are listed on the Alternative Investment Market (AIM) of the London Stock Exchange (LSE). CAML owns a 100% interest in the mineral rights for the Kounrad in situ dump leach operation through Sary Kazna LLP (SK), a wholly owned subsidiary. In addition, CAML owns a 100% interest in Kounrad Copper Company LLP (KCC).

The operation involves irrigating the surface of the dumps with acidic raffinate solution which percolates through the dumps and is diverted into channels around the base of the dumps before being pumped to a solvent extraction-electrowinning (SX-EW) copper plant. SK operates the leaching of the dumps while KCC undertakes the processing operation.

Construction of the plant was completed in 2012, and copper production began in late April 2012. From 2012 to 2016 production was focussed on the eastern dumps, while leaching of the western dumps began in 2017 following completion of an expansion project.

2.1 Terms of Reference

The scope of work included a review of the technical information used to derive the Mineral Resources and Mineral Reserves estimates for the Kounrad in situ dump leach operation with an effective date of December 31, 2025. The scope included a site visit to the Property.

The objective of the review was to provide an independent opinion on the Mineral Resources and Mineral Reserves of the Kounrad in situ dump leach operation and prepare a Technical Report in accordance with the requirements of NI 43-101 to support the public disclosure of the Mineral Resources and Mineral Reserves estimates.

2.2 Qualified Persons and Site Visits

The following Qualified Persons (QPs) from SLR have reviewed the Mineral Resource and Mineral Reserve estimates and supervised the production of this report:

- Ruslan Erzhanov, MSc, FGS, CGeol, PONEN RoK, Principal Resource Geologist (Geology and Mineral Resources).
- Philip King, BSc, ARSM, CEng, FIMMM, Independent Consultant (Mineral Processing).
- Alessandra (Alex) Pheiffer, BSc, MSc, PrSciNat, MIMMM, Technical Director (Environmental and Social).

These consultants by virtue of their education, experience, and professional association, are considered to be independent QPs according to the definitions given in NI 43-101 and are members in good standing of appropriate professional institutions. The responsibilities of the QPs in the preparation of this Technical Report are shown in Table 2-1.

A site visit to the Kounrad in situ dump leach operation was undertaken by Philip King and Ruslan Erzhanov from May 13 to 14, 2026.

Table 2-1: Qualified Persons Responsibilities

No.	Report Section	Report Sub-Sections	Qualified Person
1	Summary	1.0, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.11, 1.20 (Mineral Resources), 1.21.1,	Ruslan Erzhanov
		1.10, 1.12, 1.13, 1.14, 1.15, 1.16, 1.18 (Processing Capital and Operating Costs), 1.19, 1.20 (Mineral Reserves), 1.21.2, 1.21.3	Philip King
		1.17, 1.18 (Closure Costs), 1.21.4	Alex Pheiffer
2	Introduction		Ruslan Erzhanov
3	Reliance on other Experts		Ruslan Erzhanov
4	Property Description and Location		Ruslan Erzhanov
5	Accessibility, Climate, Local Resources, Infrastructure and Physiography		Ruslan Erzhanov
6	History		Ruslan Erzhanov
7	Geological Setting and Mineralization		Ruslan Erzhanov
8	Deposit Types		Ruslan Erzhanov
9	Exploration		Ruslan Erzhanov
10	Drilling		Ruslan Erzhanov
11	Sample Preparation, Analysis, and Security		Ruslan Erzhanov
12	Data Verification		Ruslan Erzhanov
13	Mineral Processing and Metallurgical Testing		Philip King
14	Mineral Resource Estimates		Ruslan Erzhanov
15	Mineral Reserve Estimates		Philip King
16	Mining Methods		Philip King
17	Recovery Methods		Philip King
18	Project Infrastructure		Philip King
19	Market Studies and Contracts		Philip King
20	Environmental Studies, Permitting, and Social or Community Impact		Alex Pheiffer
21	Capital and Operating Costs	21.1 (Processing Capital Costs), 21.2	Philip King
		21.1 (Closure Costs)	Alex Pheiffer
22	Economic Analysis		Philip King
23	Adjacent Properties		Ruslan Erzhanov
24	Other Relevant Data and Information		Ruslan Erzhanov
25	Interpretation and Conclusions	25.1, 25.9 (Mineral Resources)	Ruslan Erzhanov
		25.2, 25.3, 25.4, 25.5, 25.7 (Processing Capital and Operating Costs), 25.8, 25.9 (Mineral Reserves and Projected Production)	Philip King
		25.6, 25.7 (Closure Costs)	Alex Pheiffer
26	Recommendations	26.1	Ruslan Erzhanov
		26.2, 26.3	Philip King
		26.4	Alex Pheiffer

2.3 Declaration

SLR has provided the mineral industry with specialised geological, mining engineering, mineral processing, infrastructure, environmental and social, and project economics expertise since 1994. SLR's experience is worldwide and has been developed in the industrial minerals and metalliferous mining sectors.

SLR is not an insider, associate or affiliate of CAML. SLR neither has nor holds:

- Any rights to subscribe for shares in CAML either now or in the future;
- Any vested interests in any mining or exploration concessions (licences) held by CAML;
- Any rights to subscribe to any interests in any of the licences held by CAML either now or in the future;
- Any vested interests in either any licences held by CAML or any adjacent licences; or
- Any right to subscribe to any interests or licences adjacent to those held by CAML, either now or in the future.

The results of the technical review by SLR are not dependent on any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understanding concerning any future business dealings.

2.4 Basis of Technical Report

The information, conclusions, opinions, and estimates contained in this Technical Report are based on:

- Data, reports, and other information provided by CAML.
- A site visit conducted on May 13 to 14, 2026.
- Discussions with CAML personnel.

The Qualified Persons have reviewed the information and used all means necessary in their professional judgement to verify it and have no reasons to doubt its reliability and have determined it adequate for the purposes of this Technical Report. The authors do not disclaim any responsibility for the information contained herein.

2.5 Previous Technical Reports

This is the first Technical Report prepared for the Property.

2.6 Forward Looking Information

This Technical Report contains "forward-looking information" and "forward-looking statements" within the meaning of applicable Canadian and the United States securities legislation which involve a number of risks and uncertainties. Forward-looking information and forward-looking statements include, but are not limited to, statements with respect to the future prices of copper, the estimation of mineral resources and reserves, the realization of mineral estimates, the timing and amount of estimated future production, costs of production, capital expenditures, costs (including capital costs, operating costs and other costs) and timing of the LOM, rates of production, annual revenues, requirements for additional capital, government regulation of mining operations, environmental risks, unanticipated reclamation expenses, title disputes or claims and limitations on insurance coverage.

Often, but not always, forward-looking statements can be identified by the use of words such as "plans", "expects", or "does not expect", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates", or "does not anticipate", or "believes", or variations of such

words and phrases or state that certain actions, events or results “may”, “could”, “would”, “might” or “will” be taken, occur or be achieved.

Forward-looking statements are based on the opinions, estimates and assumptions of contributors to this Technical Report. Certain key assumptions are discussed in more detail. Forward looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of CAML to be materially different from any other future results, performance or achievements expressed or implied by the forward-looking statements.

Such factors include, among others: the actual results of current development activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; future prices of copper; possible variations in ore grade or recovery rates; failure of plant, equipment or processes to operate as anticipated; accidents, labour disputes and other risks of the mining industry delays in obtaining governmental approvals or financing or in the completion of development or construction activities; shortages of labour and materials, the impact on the supply chain and other complications associated with pandemics, as well as those risk factors discussed or referred to in this report and in CAML’s documents filed from time to time with the securities regulatory authorities in Canada.

There may be other factors than those identified that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be anticipated, estimated or intended. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers are cautioned not to place undue reliance on forward-looking statements. Unless required by securities laws, the authors undertake no obligation to update the forward-looking statements if circumstances or opinions should change.

2.7 Units and Abbreviations

All units of measurement are reported in the Système Internationale d’Unités (SI), as utilised by international mining industries, including: metric tonnes (tonnes, t), million metric tonnes (Mt), kilograms (kg) and grams (g) for weight; kilometres (km), metres (m), centimetres (cm) or millimetres (mm) for distance; cubic metres (m^3), litres (l), millilitres (ml) or cubic centimetres (cm^3) for volume, square metres (m^2), acres, square kilometres (km^2) or hectares (ha) for area, and tonnes per cubic metre (t/m^3) for density. Elevations are given in metres above sea level (masl).

Unless stated otherwise, all currency amounts are stated in United States dollars (US$). The units of measure presented in this report are metric units. Grades of the main element (Cu) are reported in percentage (%). Tonnage is reported as metric tonnes (t), unless otherwise specified.

Abbreviations used in this report are summarised in Table 2-2.

Table 2-2: Acronyms and Abbreviations

Acronym / Abbreviation	Definition	Acronym / Abbreviation	Definition
°C	Degrees Celsius	kWh	Kilowatt hour
2D	Two-dimensional	LOM	Life of Mine
3D	Three-dimensional	M	Million(s)
AA	Atomic Absorption	Ma	Million years ago

Acronym / Abbreviation	Definition	Acronym / Abbreviation	Definition
AAS	Atomic Absorption Spectrometry	MACs	Maximum Allowable Concentrations
ACM	Automated Control/Management (System)	MAEs	Maximum Allowable Emissions
ARO	Asset Retirement Obligation	Mtpa	Million tonnes per annum
BGRIMM	Beijing General Research Institute of Mining and Metallurgy	MW	Megawatt
CIM	Canadian Institute of Mining, Metallurgy and Petroleum	MWh	Megawatt hour
CO_2	Carbon dioxide	OVOS	*Otsenka Vozdeystviya na Okruzhayushchuyu Sredu* "Environmental Impact Assessment"
COG	Cut-off Grade	Pa	Pascal (measurement of vacuum gas pressure)
CPR	Competent Persons Report	PEA	Preliminary Economic Assessment
CRM	Certified Reference Material	PLS	Pregnant Leach Solution
Datamine	3D geological modelling, mine design and planning software	PFS	Prefeasibility Study
EA	Environmental Assessment	PPE	Personal Protective Equipment
EHS&S	Environment, Health, Safety and Sustainability	ppm	parts per million
EIA	Environmental Impact Assessment	PR	Public Relations
EIS	Environmental Impact Statement	PVC	Polyvinyl Chloride
EMP	Environmental Management Plan	QA/QC	Quality Assurance and Quality Control
EMS	Environmental Management System	QP	Qualified Person
EPR	Environmental Permitting Regulations	RO	Reverse Osmosis
ESG	Environmental and Social, Governance	ROM	Run of Mine
ESIA	Environmental and Social Impact Assessment	SK	Sary Kazna LLP
FS	Feasibility Study	SLR	SLR Consulting Limited
GHG	Greenhouse Gas	SRK	SRK Consulting (UK) Ltd
H&S	Health and Safety	SX-EW	Solvent Extraction (SX) and Electrowinning (EW)
Ha	Hectare (10,000m^2)	t	Tonne metric unit of mass (1,000kg or 2,204.6 lb)
HDPE	High-Density Polyethylene	t/a or tpa	Tonnes per annum
IBCs	Intermediate Bulk Containers	t/d or tpd	Tonnes per day
Hr	Hour/s	t/h or tph	Tonnes per hour
ID	Identification (number or reference)	UTM	Universal Transverse Mercator
KCC	Kounrad Copper Company LLP	WAI	Wardell Armstrong International
kV	Kilovolt	XRD	X-ray powder Diffraction
kW	Kilowatt	XRF	X-ray powder Fluorescence

3.0 Reliance on Other Experts

The authors have relied on information provided by CAML as of May 13, 2026, regarding the legal status of the rights pertaining to the Kounrad in situ dump leach operation and have not independently verified the legality of surface land ownership, mineral tenure, legal status or ownership of the properties or any agreements that pertain to the licence areas. The extent of this reliance applies solely to the legal status of the rights detailed in Section 4.

The authors did not verify the legality of any underlying agreement(s) that may exist concerning the permits or other agreement(s) between third parties but have relied on information provided by CAML as of May 13, 2026, for land title issues.

4.0 Property Description and Location

The Property is located approximately 15 km north of the city of Balkhash, in the Karaganda region of central Kazakhstan as shown in Figure 4-1. The village of Kounrad and the open pit are located adjacent to the operation. The Property is currently operating as an in-situ dump leach operation.

The Property is centred on the geographic coordinates of latitude 46°59'13" North and longitude 75°1'38" East.

Figure 4-1: Location of Kounrad

Source: United Nations (March 2026)

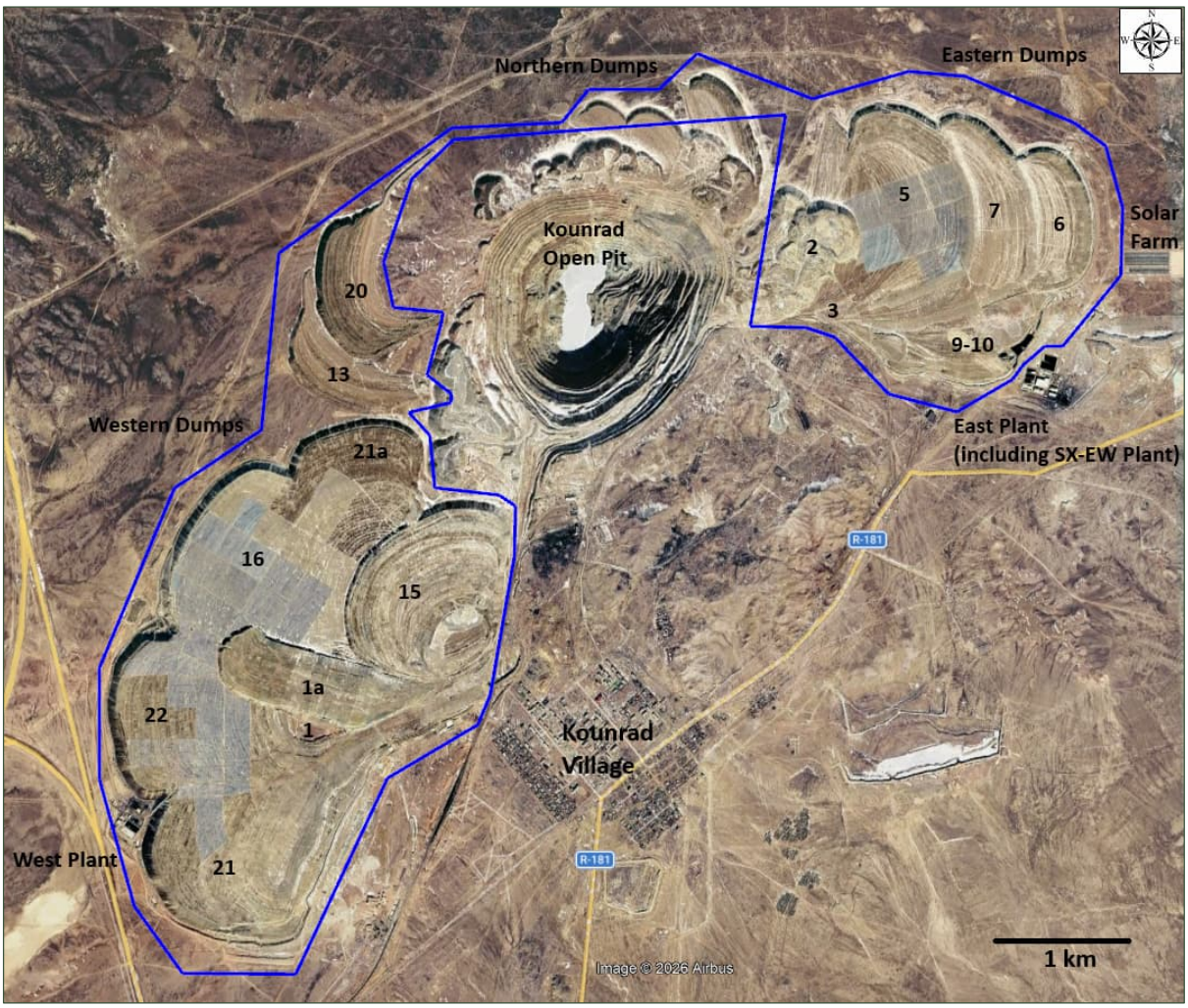
4.1 Mineral Tenure

Sary Kazna LLP holds a concession area of approximately 14.8 km^2 and is shown in Figure 4-2. The concession relates to the exploration and extraction of copper from the waste dumps and has an expiry of August 20, 2034.

The Kounrad open pit is under the ownership of Kazakhmys Corporation LLP (Kazakhmys), along with some areas adjacent to the dumps and parts of the dumps.

The east plant and solar farm are outside of the concession and operate under lease arrangements as detailed in Section 4.2. Dumps located outside of the concession are not included in the Mineral Resource or Mineral Reserve estimates.

Figure 4-2: Concession Extents



Source: SLR (June 2026)

4.2 Surface Ownership and Access Rights

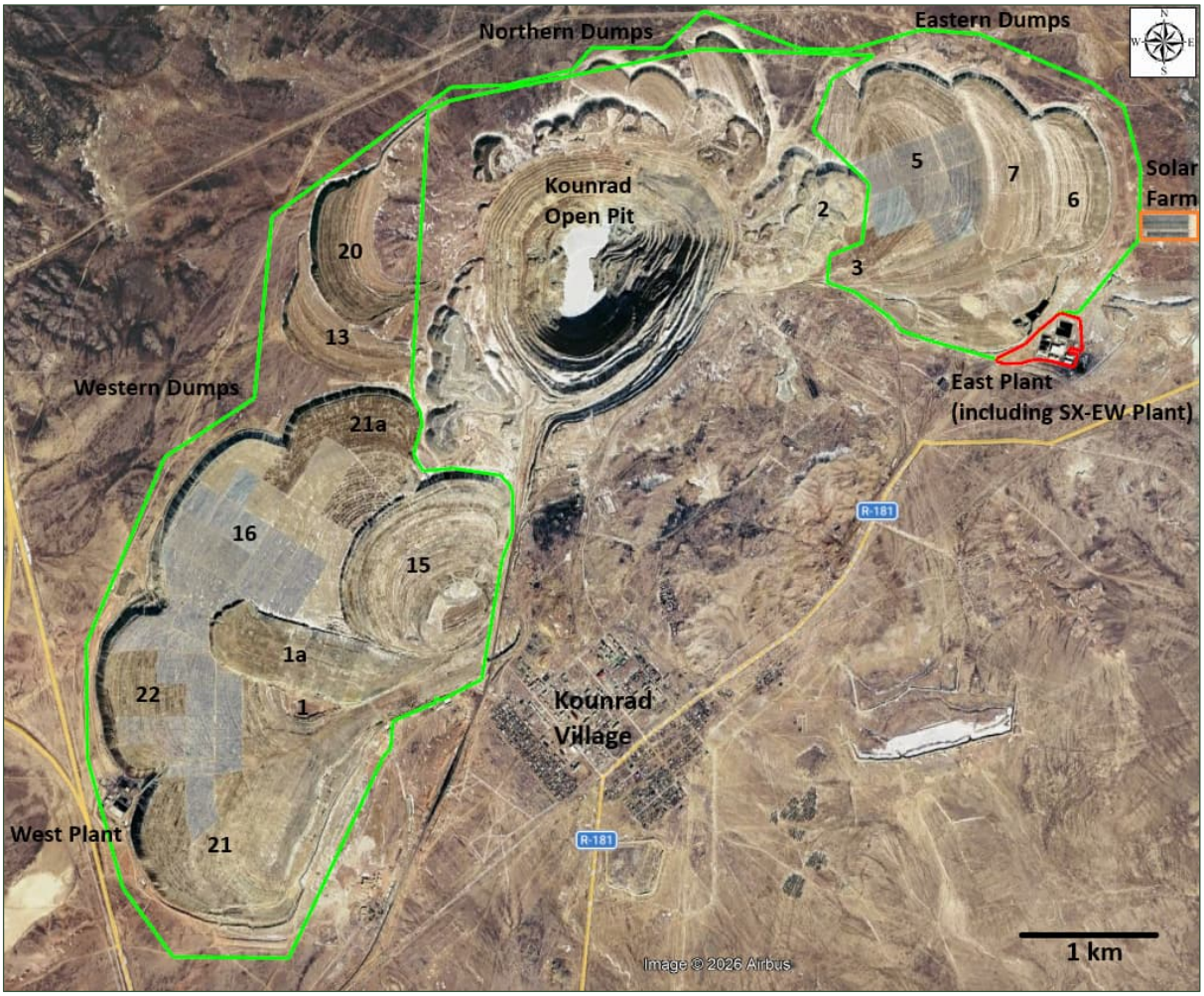
Land tenure for the Kounrad operation is held under a state long-term lease arrangement (temporary, paid, long-term land use) in accordance with the Land Code of the Republic of Kazakhstan. No land-related non-compliances have been identified to date.

The registered designated land use (Figure 4-3) includes:

- Exploration and extraction of copper from technogenic mineral formations (waste dumps) of the Kounrad mine, covering a total area of 13.5 km².
- Construction and operation of processing facilities, covering an area of 118,720 m².
- Operation and maintenance of a solar power plant, covering an area of 102,596 m².

An alignment between the concession and the land tenure is required to ensure full consistency between these boundaries. This is a planned transfer, and the QP does not consider it affects the right or ability to perform the proposed work on the Property.

Figure 4-3: Land Tenure (Green - Sary Kazna, Red - Kounrad Copper Company, Orange – Solar Farm)



Source: SLR (June 2026)

4.3 Royalties and Other Payments

Royalties and statutory payments are payable in accordance with the Tax Code of the Republic of Kazakhstan No. 214-V111 and dated July 18, 2025.

4.3.1 Mineral Extraction Tax

For solid minerals recovered from technogenic mineral formations (TMFs), the taxation base is the volume of solid minerals sold that have been recovered from TMFs.

The Mineral Extraction Tax (MET) rate established by the Tax Code of the Republic of Kazakhstan is 8.55%.

A reduction coefficient of 0.1 is applied in calculating the MET for solid minerals recovered from technogenic mineral formations.

4.3.2 Other Payments

Land tax is payable annually and is estimated at US$255.4 thousand per year.

The property tax base is the average annual carrying value of taxable assets as recorded in the accounting records. Property tax is payable annually at a rate of 1.5% of the tax base.

Vehicle tax is estimated based on the projected fleet and amounts to approximately US$3.5 thousand per year.

Contributions to the Mine Closure Fund and the training of Kazakhstani specialists are made at a rate of 1.0% of operating expenditures.

4.4 Environmental Liabilities and Permitting Requirements

In agreement with the Ministry of Natural Resources, it is considered that the Kounrad site had previously been disturbed and contaminated as a result of historical operations, natural leaching, and other local industrial activities. Accordingly, CAML are not responsible for the historical contamination and are required to ensure that existing environmental conditions are not worsened.

The Authors are not aware of any environmental liabilities on the Property. Environmental Permits obtained by SK and KCC are detailed in Section 20 (Environmental Studies, Permitting, and Social or Community Impact).

SK and KCC has all the required permits to conduct the proposed work on the Property and to continue production as planned. SLR is not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform the proposed work on the Property.

5.0 Accessibility, Climate, Local Resources, Infrastructure and Physiography

5.1 Accessibility

Kounrad is located approximately 15 km north of the city of Balkhash and can be accessed by the R-181 paved minor road through Kounrad village. The cities of Karaganda and Almaty are located approximately 380 km north and 650 km southeast, respectively and can be accessed by the M-36 highway that runs adjacent to Lake Balkhash before turning northwest at Balkhash city. The capital city of Astana is located 640 km northwest and can be accessed by the M-36 beyond Karaganda,

The region has an extensive road network and is also served by national rail links to the rest of Kazakhstan. International airports are located at Astana and Almaty. Balkhash has a small airstrip which is serviced by small local airlines. The Kounrad site has a dedicated 1.7 km rail spur that connects to the national rail network and is used for transportation of bulk reagents, coal, equipment and materials.

5.2 Climate

The climate is sharply continental with warm summers (average highs of 29 to 31°C) and cold winters (average lows of -16 to -20°C). Extreme low temperatures of -40°C can occur during winter necessitating robust winterisation of the operation including heating of leaching solutions and to prevent pipelines from freezing. The frost zone penetrates the ground to a depth of 1.5 to 2 m.

Precipitation is low and varies between 60 to 200 mm per annum and averages 120 mm, with relative humidity of 30-80%. Winter precipitation plays the most significant role in the formation of surface and groundwater, whilst evaporation is high in summer (1,200 – 1,500 mm/yr).

5.3 Local Resources

The Balkhash area has a long history of mining and smelting of copper and there is an established in-country network of mining and processing suppliers and contractors. There is sufficient and experienced work force available due to the proximity of the city of Balkhash with a population of around 78,000. There is an extensive network of highways, rail links, telecommunications facilities, national grid electricity and a supply of water. Approximately 328 permanent personnel are employed by the Kounrad operation.

5.4 Infrastructure

A summary of the infrastructure associated with the Kounrad in situ dump leach operation is provided below:

- Waste dumps and network of leaching pipework.
- Channels (lined) for directing pregnant leach solution.
- East plant including the solvent extraction plant and electrowinning units (EW1 and EW2) and associated facilities.
- West plant and associated facilities (pregnant solutions collected at the west plant are pumped to the east plant for processing and copper refining).
- PLS ponds, raffinate ponds, emergency ponds and pump stations.
- HDPE pipeline (12.5 km) connecting west to east plants for transporting solutions.
- Boiler houses (east and west) and coal storage.

- Site offices, laboratory, stores, maintenance workshops
- Rail spur and load out.
- Water pipelines.

Electrical power is supplied to the operation by the national grid from a 35 kV overhead line from a substation 7 km away, with a single 10 MVA main transformer and a 6.8 MVA spare available on site. A 4.7 MVA solar farm provides approximately 16% of the sites electrical power during daylight hours and was commissioned at the end of 2023. Coal powered boilers are used in the winter for heating solutions before leaching due to extreme winter temperatures.

Process water is sourced during the summer months from Lake Balkhash (semi-saline) via a dedicated 25 km pipeline. In the winter months (when the lake freezes) water is sourced from a flooded underground mine located 6 km from Kounrad, thus maintaining continuity of supply. A new pumping station is planned to be installed at Lake Balkhash to enable water extraction throughout the year. Potable water is sourced from the local supply network and an on-site reverse osmosis plant.

No tailings storage facility (TSF) is required by the operation. No reworking of the waste dumps other than by in situ leaching is undertaken and no new waste dumps need to be constructed.

All main infrastructure required by the operation is currently in place. The authors are of the opinion that there is sufficient land, water, and power for the planned processing operations.

5.5 Physiography

Balkhash is located on the north side of Lake Balkhash at an elevation of approximately 440 masl while the processing plant at Kounrad is at an elevation of approximately 420 masl. The base of Kounrad open pit is approximately 330 m below the topographical surface while the height of the dumps range from 15 to 60 m above the topographical surface (Figure 5-1). The topography surrounding Kounrad is characterised by flat steppe. Vegetation is sparse, consisting of drought resistant steppe grasses and shrubs.

Figure 5-1: General Physiography of the Kounrad Operation

6.0 History

6.1 Ownership, Exploration and Development History

Following the discovery of the Kounrad copper deposit in 1930, production from an open pit commenced in 1936 under the ownership of Balkhash Mining and Metallurgical Combine (Balhashtcvetmet). Copper ores were exploited from the open pit until 2005, with sulphide ores treated by conventional flotation, whilst oxide and low-grade sulphide material were stockpiled around the site.

Copper sulphide ore was selectively mined and transported by rail for processing using froth flotation at the Balhashtcvetmet concentration plant located 15 km south at Balkhash. Waste and uneconomically treatable material were dumped at designated areas adjacent to the open pit. From 1936 to 1961, the open pit was mined using a cut-off grade of 0.5% Cu; from 1961 to 2005, it was mined using a cut-off grade of 0.2% Cu.

The waste materials were classified into four groups, three of which were based on the amount of acid-soluble copper present, and the fourth relating to the sulphide grade:

- Oxide Waste – greater than 20% acid soluble copper.
- Mixed Waste – greater than 10% but less than 20% acid soluble copper.
- Sulphide Waste – below cut-off grade and with less than 10% acid soluble copper.
- Waste – less than 0.15% total copper grade.

The excavated ore was hauled to the dumps by rail from deep levels of the pit and from auxiliary benches by 40 tonne dump trucks with reloading into 105 tonne rail dump cars at the pit head.

The main ore-haulage ramp out of the pit exited to the south. The ramp access for waste and low-grade material haulage to the western dumps was at the western edge of the pit, and access to the eastern dumps for low-grade oxidised material was on the east side of the pit and led to the existing layout of the dumps. The principal method of dumping the various waste materials was to use a 3 m spreader plough along the perimeter of the dump, followed by bulldozers to level and angle the material in accordance with design regulations.

In 1969 to 1970, the potential for in situ leaching of the dumps was first studied by the Engineering Institute Unipromed (Yekaterinburg). Unipromed's pilot plant scale testwork on oxidised ores was used to design a pilot plant for dump leaching, which was built in 1975 and treated a dump containing 1 Mt of oxidised ore that was treated with a weak solution of sulphuric acid. This test facility produced 1,147 t of copper from 1975 to 1979 and 1,569 t of copper from 1980 to 1986, with an estimated recovery of 61%.

In 1987, based on the results of these studies, a commercial plant was constructed and produced 7,517t of a copper until its closure in 1992.

In 1992, following the collapse of the Soviet Union, the Kazakhstan government formed OJSC Zhezkazgansvetmet into which Balhashtcvetmet was absorbed and then privatised.

In 1993, the Kenzhetay Joint Venture was created by JSC Balkashmed (Kazakhstan) and Resource Development (USA) to continue hydrometallurgical operations and engaged Bateman Engineering to complete an engineering design for a SX-EW plant; Montana Resources to verify and update Mineral Resources, and Terramatrix Inc. and Hydrogeo Consulting Inc. to undertake environmental studies.

In 1995, design and construction of the plant began, however, was not completed due to a lack of finance, and soon thereafter the Kenzhetay Joint Venture was liquidated. The Kounrad dumps then passed into State ownership.

In 2000, the Kazakhstan government invited tenders for copper production from the oxidised east dumps. The tender and the right to produce copper was won by a new mining company, Zhalyn, specifically created for the project by a group of investors.

Zhalyn invited the Turkish construction and engineering company, PakPas, to design and construct a plant, and they in turn signed an agreement with KD Engineering, Inc (Arizona), to design a SX-EW plant. In parallel PakPas also engaged the Metallurgical Equipment Corporation of China (Beijing), and both companies developed basic designs for the construction of a plant.

In 2005, Zhalyn stopped financing the work, resulting in non-performance of its licence obligations to the State, and the Contract for Exploitation of Subsoil Assets made with the Ministry of Natural Resources of Kazakhstan was annulled.

Also in 2005, under the ownership of Kazakhmys plc the Kounrad open pit operation closed. Following a restructuring in 2014, the Kounrad open pit then came under the ownership of Kazakhmys Corporation LLP (Kazakhmys), the current owners of the Kounrad open pit, and areas adjacent to the Kounrad dumps, and parts of the northern dumps.

In 2006, the Kazakhstan government initiated a new tendering process for the Kounrad dumps, and CAML, through its Kazakhstan wholly owned subsidiary SK, acquired 60% ownership of the sub-soil use contract for the dumps from the State Entrepreneurial Corporation Saryarka (SEC Saryarka). The remaining 40% remained under private ownership.

In 2007, 21 drillholes to depths of 2.5 m were completed by SK in the eastern dumps.

In 2008, 85 drillholes were completed by SK in the eastern and western dumps. Trenching and metallurgical testwork was undertaken and a pilot scale SX-EW plant was constructed at the eastern dumps and operated until 2011 producing 196 tonnes of copper cathode with a copper recovery of 50.2%.

In 2010, 9 trenches of up to 100 m in length were completed by SK in the western dumps, 137 trial pits to depths of 3 m were completed on the eastern and western dumps along with 13 trial pits to depths of 8 – 11 m to provide samples for metallurgical testwork.

In September 2010, CAML raised US$60 million at IPO for construction of the Kounrad SX-EW plant.

In 2011, 98 RC drillholes for 3,213 m were completed by SK and the pilot plant was relocated to the western dumps.

In 2012, 131 RC drillholes for 4,107 m were completed by SK and site trials involving bench column leach tests were performed on sulphide and mixed dump material. Construction of the SX-EW plant was completed, and the plant began producing copper in late April 2012.

In 2014, CAML completed the acquisition of the remaining 40% of the Project and became the sole owner.

In May 2015, CAML completed the first stage of an expansion project, that involved increasing the PLS handling facilities, boiler capacity and copper plating capacity.

In 2017, the second stage involving an expansion into the western dumps was completed.

6.2 Production History

The Kounrad in situ dump leach has been in continuous operation since 2012 and is operated by SK and KCC, wholly owned subsidiaries of CAML. A summary of the production is shown in Table 6-1. The copper cathode produced is 99.99% Cu.

Table 6-1: Kounrad In-Situ Dump Leach Operation Production History

Year	2012	2013	2014	2015	2016	2017	2018
Copper Cathode (t)	6,586	10,509	11,136	12,071	14,020	14,103	14,049
Year	2019	2020	2021	2022	2023	2024	2025
Copper Cathode (t)	13,771	13,855	14,041	14,254	13,816	13,439	13,311

7.0 Geological Setting and Mineralization

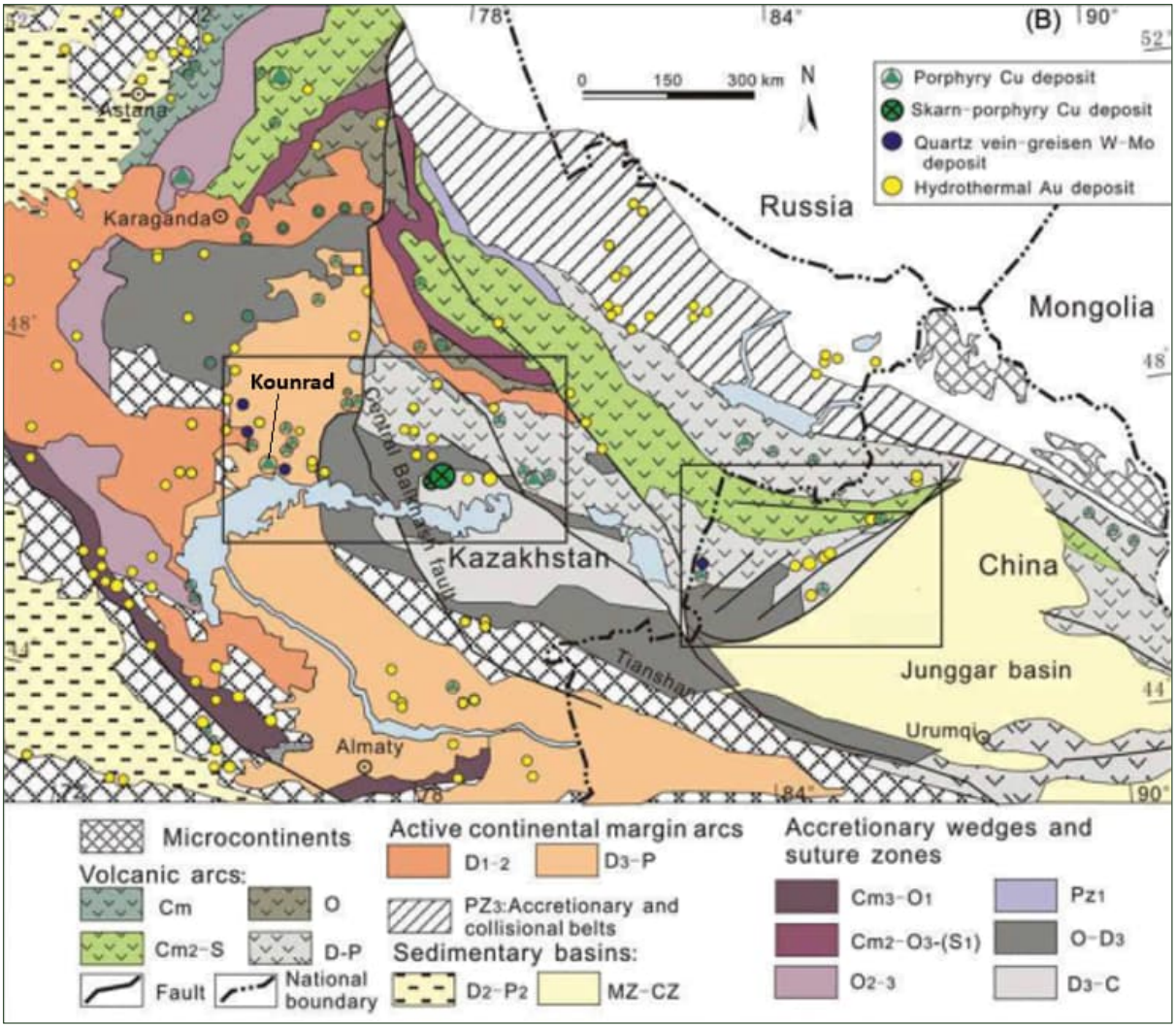
7.1 Regional Geology

Kounrad is located in the Balkhash metallogenic belt within the Balkhash-Junggar orogenic belt of the Central Asian Metallogenic Domain (CAMD).

Tectonically, the region represents a long-lived active continental margin, where subduction-related magmatism transitioned to post-collisional and intracontinental regimes during the Late Carboniferous to Early Permian. This evolution strongly controlled magmatism, deformation, and metallogeny.

The regional geology of eastern Kazakhstan is shown in Figure 7-1.

Figure 7-1: Regional Geology of Eastern Kazakhstan



Source: Shen et al., (2013)

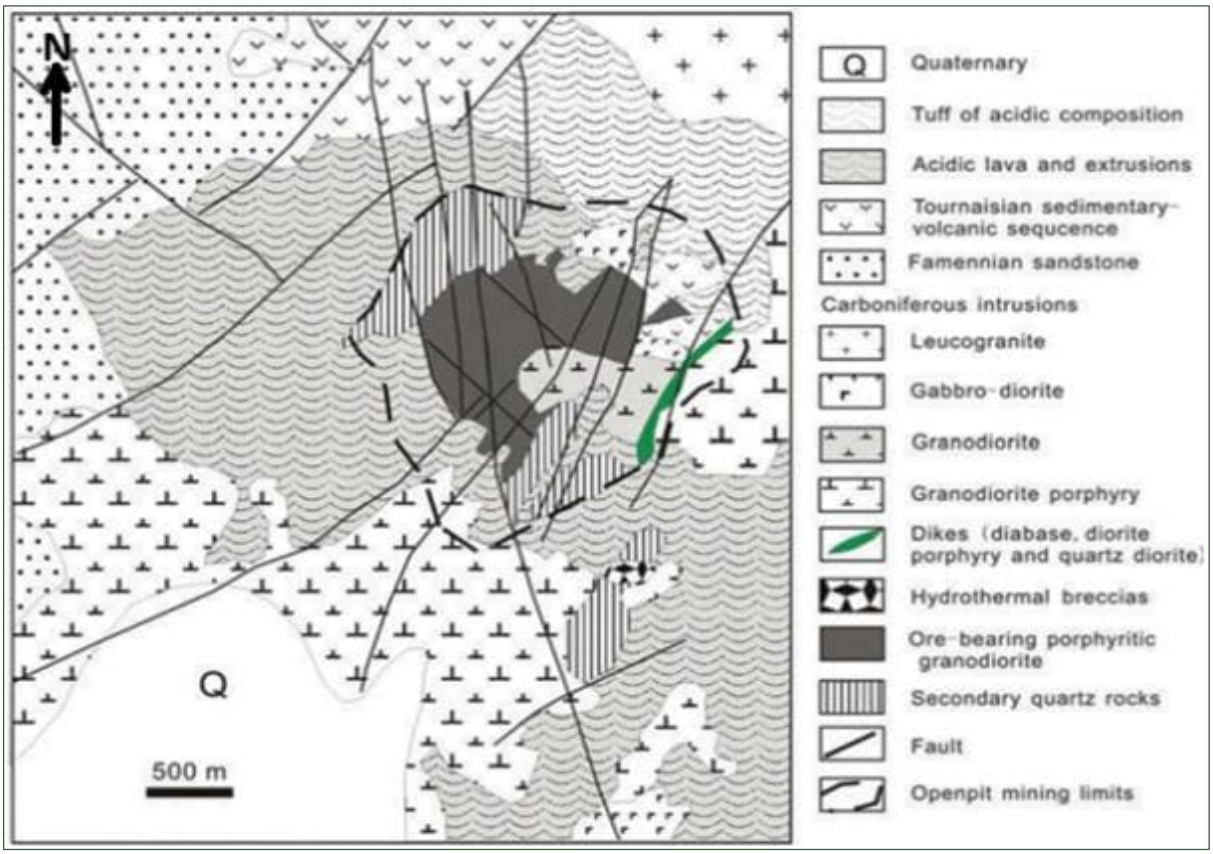
7.2 Local and Property Geology

The Kounrad deposit comprises porphyry copper mineralisation associated with tectono-magmatic activity during the Devonian and Carboniferous-Permian volcano-magmatic arcs.

These units were subsequently intruded by the Carboniferous Toktay intrusive complex, which comprises three principal intrusive phases. The earliest phase consists of a small gabbro diorite porphyry stock, followed by a volumetrically dominant, ore-bearing phase composed of biotite–amphibole granodiorite, porphyritic granodiorite, and granodiorite porphyry. The final intrusive phase comprises late fine-grained granite and granite-porphyry dykes, which are interpreted as post-mineralisation. The main ore-bearing intrusive phase defines a mineralised footprint of approximately 1,100 by 800 m. Highly weathered at the surface, the bedrock grades to competent rock within 10 - 40 m from the surface.

The geology of the Kounrad area is shown in Figure 7-2.

Figure 7-2: Geology of the Kounrad Area



Source: Zhukov et al., (1997)

7.2.1 Stratigraphy

The principal mineralising event is associated with Late Carboniferous (327–312 Ma) calc-alkaline magmatism. The magmas display calc-alkaline to adakitic affinities and are interpreted to have been derived from partial melting of subducted oceanic crust with mantle interaction (Heinhorst et al., 2000; Shen et al., 2013).

At Kounrad, this event is represented by the Toktay intrusive complex, comprising an early gabbro-diorite porphyry stock, a dominant ore-bearing phase of granodioritic intrusions, and late granite and granite porphyry dykes (Kudryavtsev, 1996; Zhukov et al., 1997). The main intrusive phase is spatially associated with hydrothermal alteration and the development of disseminated and stockwork mineralisation (Popov, 1996; Shen et al., 2013).

A subsequent Early Permian (≈300–289 Ma) phase of collision-related alkaline magmatism is recognised regionally following closure of the Palaeo-Asian Ocean. This event resulted in

emplacement of granitic intrusions and W–Mo mineralised systems but is interpreted to post-date the mineralisation of the Kounrad porphyry system (Shen et al., 2013).

7.2.2 Structural Geology

Structurally, the Kounrad deposit is situated within an irregular, elliptical caldera-related ring fracture system, which provides the primary structural framework for the deposit. This ring structure is interpreted to reflect collapse and magmatic activity associated with the volcanic complex and is cross-cut and locally modified by a series of northeast and northwest trending fault zones.

These structures exert a fundamental control on the emplacement of ore-bearing intrusions and the distribution of copper mineralisation. The principal orebodies are spatially associated with the caldera ring fractures and linked fracture networks, which acted as conduits for magmatic and hydrothermal fluids. Localised structural intersections between ring fractures and regional fault systems are interpreted to have enhanced fluid flow and focused mineralisation.

7.2.3 Alteration

Hydrothermal alteration is pervasive and affects nearly all lithologies within the deposit area. Alteration assemblages can be broadly subdivided into three stages:

- Early quartz–sericite and quartz–sericite–diaspore alteration related to post-volcanic hydrothermal activity.
- A dominant assemblage of quartz–sericite, propylitic, and late quartz–kaolinite argillic alteration closely associated with emplacement of the ore-bearing porphyritic granodiorite and the main Cu–Mo mineralisation event.
- Spatially restricted potassic and mica–quartz–tourmaline alteration related to late intrusive dykes.

7.2.4 Mineralization

Weathering and supergene enrichment have produced a general zonation of mineralisation within the Kounrad deposit as described below:

- Oxidised cap - characterised by hematite, limonite, manganese oxyhydroxide, malachite, azurite, cuprite, native copper, and chrysocolla mineralisation;
- Leached zone - characterised by moderate oxidation in the upper part and by destabilisation of sulphide minerals under acidic conditions in the lower part;
- Supergene blanket - characterised by chalcocite and covellite mineralisation; and
- Primary sulphide zone - characterised by disseminated and stockwork ore containing pyrite, chalcopyrite, enargite and chalcocite mineralisation.

All of these mineralised phases, to varying degrees, are reflected in the composition of the waste dumps. The main mineralogy of the various dumps can be divided into oxide, secondary and primary mineralization and is summarised in Table 7-1.

Table 7-1: Mineralogy of Kounrad Waste Dumps

Type	Oxide Mineralization	Secondary Mineralization	Primary Mineralization
Oxide Dumps	Chrysocolla, Malachite, Azurite	Chalcocite, Bornite	Chalcopyrite
Mixed and Sulphide Dumps	-	Chalcocite, Covellite, Chalcanthite, Chrysocolla, Malachite, Azurite	Chalcopyrite

7.2.5 Waste Dump Characteristics

The Kounrad Waste Dumps are man-made deposits that were generated as sites for the storage and containment of waste rock produced during the mining of the adjacent Kounrad open pit.

The Kounrad waste dumps are located on bedrock consisting of granite and granodiorite, the upper 10 to 40 m of which are highly weathered creating a low permeability clay layer and cemented sediments at the surface. The low permeability nature of the interface directly below the waste dumps is a critical factor in capturing the leach solutions after percolating through the dumps.

The waste dumps consist of blasted rock with no crushing stage undertaken prior to dump construction. The particle size distribution of the dumps ranges from 1 – 2 m boulders to fine particles. Approximately 20% of the material exceeds 200 mm, while 60% is between 10 - 200 mm, and 20% is less than 10 mm.

The eastern dumps consist of oxide material while the larger western dumps consist of sulphide and mixed material. A limited amount of mixed material is also present in the northern dumps.

From 1936 to 1961, the open pit was mined to a cut-off grade of 0.5% Cu; from 1961 to its closure in 2005, it was mined at a reduced cut-off grade of 0.2% Cu. During the historical construction of the dumps, material was classified in four groups, three of which were based on the amount of acid-soluble copper present, and the fourth was related to the sulphide grade:

- Oxide Waste – greater than 20% acid soluble copper.
- Mixed Waste – greater than 10% but less than 20% acid soluble copper.
- Sulphide Waste – below cut-off grade and with less than 10% acid soluble copper.
- Waste – less than 0.15% total copper grade.

Material within the dumps consists of massive, iron-hydroxide-altered granodiorites often silicified and intensely fractured with hematite-limonite-pyrite veinlets. Typically for the sulphide dumps, the material is characterised by vein and veinlet-disseminated sulphide mineralisation with covellite, chalcopyrite, bornite and pyrite. Malachite, azurite, chrysocolla, and chalcopyrite (partly replaced by hematite and pyrite) are typical ore minerals of the oxide dumps.

Long term exposure of the dumps has triggered natural bacterial oxidation, converting a significant portion of the refractory sulphide material into acid-soluble forms which are more amenable to leaching. In addition, some of the copper sulphide minerals are also naturally acid soluble.

8.0 Deposit Types

The Kounrad deposit is classified as a porphyry copper deposit and was mined from 1936 to 2005. A description of the porphyry copper deposit type that hosts the mineralisation at Kounrad is provided in the following sections. Waste and low-grade material from the historical operation was dumped adjacent to the open pit and formed the dumps that are the subject of this Technical Report.

8.1 Geological Setting

Porphyry copper systems commonly define linear belts, some many hundreds of kilometres long, and some occurring less commonly in apparent isolation. The systems are closely related to underlying composite plutons, at paleo-depths of 5 km to 15 km, which represent the supply chambers for the magmas and fluids that formed the vertically elongate (>3 km) stocks or dyke swarms and associated mineralisation. Commonly, several discrete stocks are emplaced in and above the pluton roof zones, resulting in either clusters or structurally controlled alignments of porphyry-copper systems.

The rheology and composition of the host rocks may strongly influence the size, grade, and type of mineralisation generated in porphyry-copper systems. Individual systems have life spans of circa 100,000 years to several million years, whereas deposit clusters or alignments, as well as entire belts, may remain active for 10 million years or longer.

Deposits are typically semicircular to elliptical in plan view. In cross-section, ore-grade material in a deposit typically has the shape of an inverted cone with the altered, but low-grade, interior of the cone referred to as the “barren” core. In some systems, the barren core may be a late-stage intrusion.

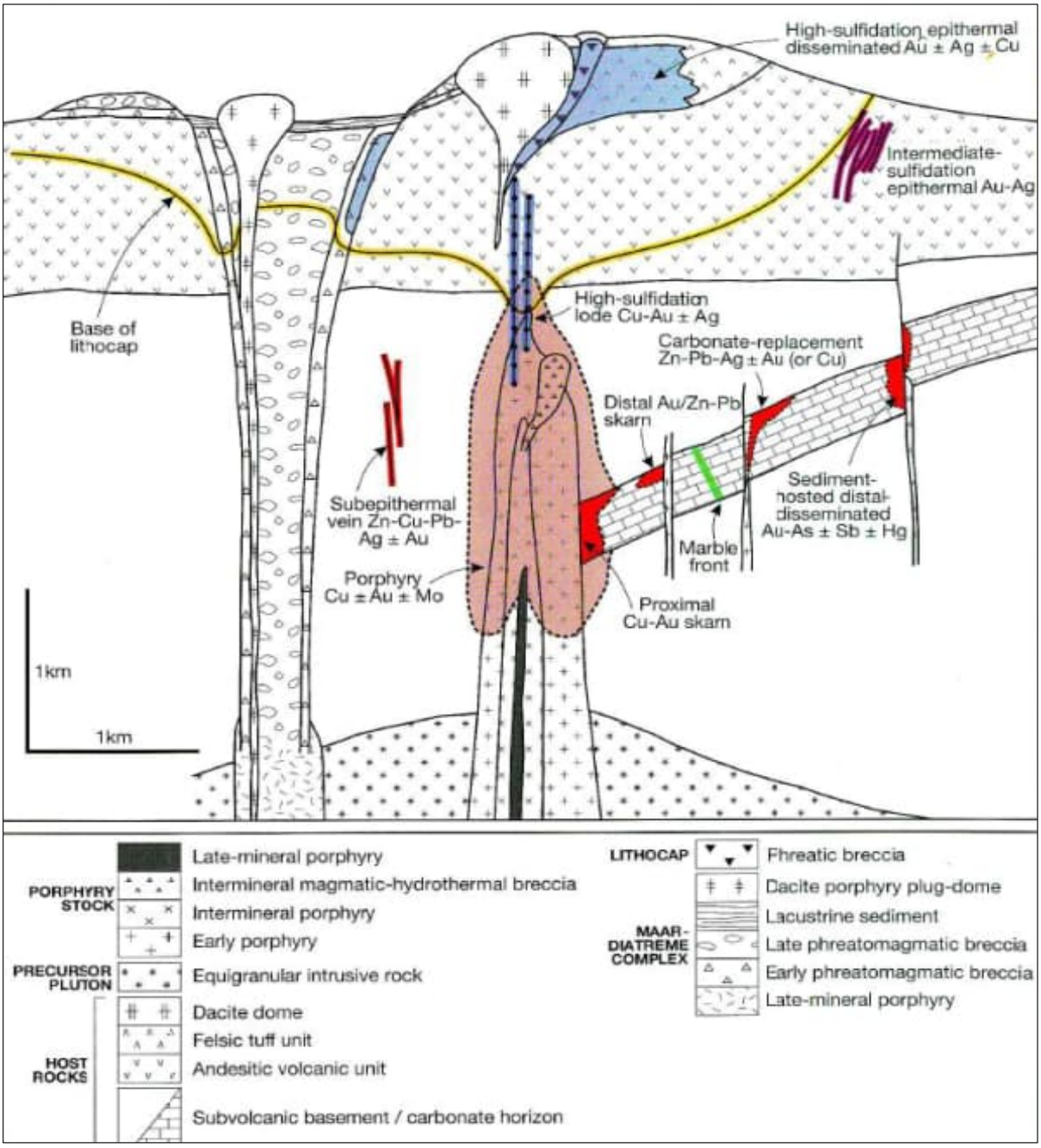
The alteration and mineralisation in porphyry copper systems are zoned outward from the stocks or dyke swarms, which typically comprise several generations of intermediate to felsic porphyry intrusions. Porphyry copper–gold–molybdenum deposits are centred on the intrusions, whereas carbonate wall rocks commonly host proximal copper–gold skarns and less commonly, distal base metal and gold skarn deposits.

Beyond the skarn front, carbonate-replacement copper and/or base metal–gold deposits, and/or sediment-hosted (distal-disseminated) gold deposits can form. Peripheral mineralisation is less conspicuous in non-carbonate wall rocks but may include base metal- or gold-bearing veins and mantos. The median size of the longest axis of alteration surrounding a porphyry copper deposit is 4 to 5 km, while the median size area of alteration is 7 to 8 km^2.

High-sulphidation epithermal deposits may occur in lithocaps above porphyry-copper deposits, where massive sulphide lodes tend to develop in their deeper feeder structures, and precious metal-rich, disseminated deposits form within the uppermost 500 m.

Figure 8-1 shows a schematic section of a porphyry copper deposit, illustrating the relationships of the lithocap to the porphyry body and associated mineralisation styles.

Figure 8-1: Schematic Section Showing Generalised Alteration Zonation of Porphyry Copper Deposits



Source: Sillitoe (2010)

8.2 Mineralisation

Porphyry copper mineralisation occurs in a distinctive sequence of quartz-bearing veinlets as well as in disseminated forms in the altered rock between them. Magmatic-hydrothermal breccias may form during porphyry intrusion, with some breccias containing high-grade mineralisation because of their intrinsic permeability. In contrast, most phreatomagmatic breccias, constituting maar–diatreme systems, are poorly mineralized at both the porphyry copper and lithocap levels, mainly because many such phreatomagmatic breccias formed late in the evolution of systems, and the explosive nature of their emplacement fails to trap mineralizing solutions.

Copper ore mineral assemblages are a function of the chemical composition of the fluid phase and the pressure and temperature conditions affecting the fluid. In primary, unoxidized or non-supergene-enriched ores, the most common ore–sulphide assemblage is chalcopyrite ± bornite, with pyrite and minor amounts of molybdenite. In supergene-enriched ores, a typical assemblage can comprise chalcocite + covellite ± bornite, whereas in oxide ores a typical assemblage could include malachite + azurite + cuprite + chrysocolla, with minor amounts of minerals such as carbonates, sulphates, phosphates, and silicates. Typically, the principal copper sulphides consist of millimetre-scale grains but may be as large as 1 to 2 cm in diameter and, rarely, pegmatitic (larger than 2 cm).

8.3 Alteration

Alteration zones in porphyry copper deposits are typically classified on the basis of mineral assemblages. In silicate-rich rocks, the most common alteration minerals are K-feldspar, biotite, muscovite (sericite), albite, anhydrite, chlorite, calcite, epidote, and kaolinite. In silicate-rich rocks that have been altered to advanced argillic assemblages, the most common minerals are quartz, alunite, pyrophyllite, dickite, diaspore, and zunyite.

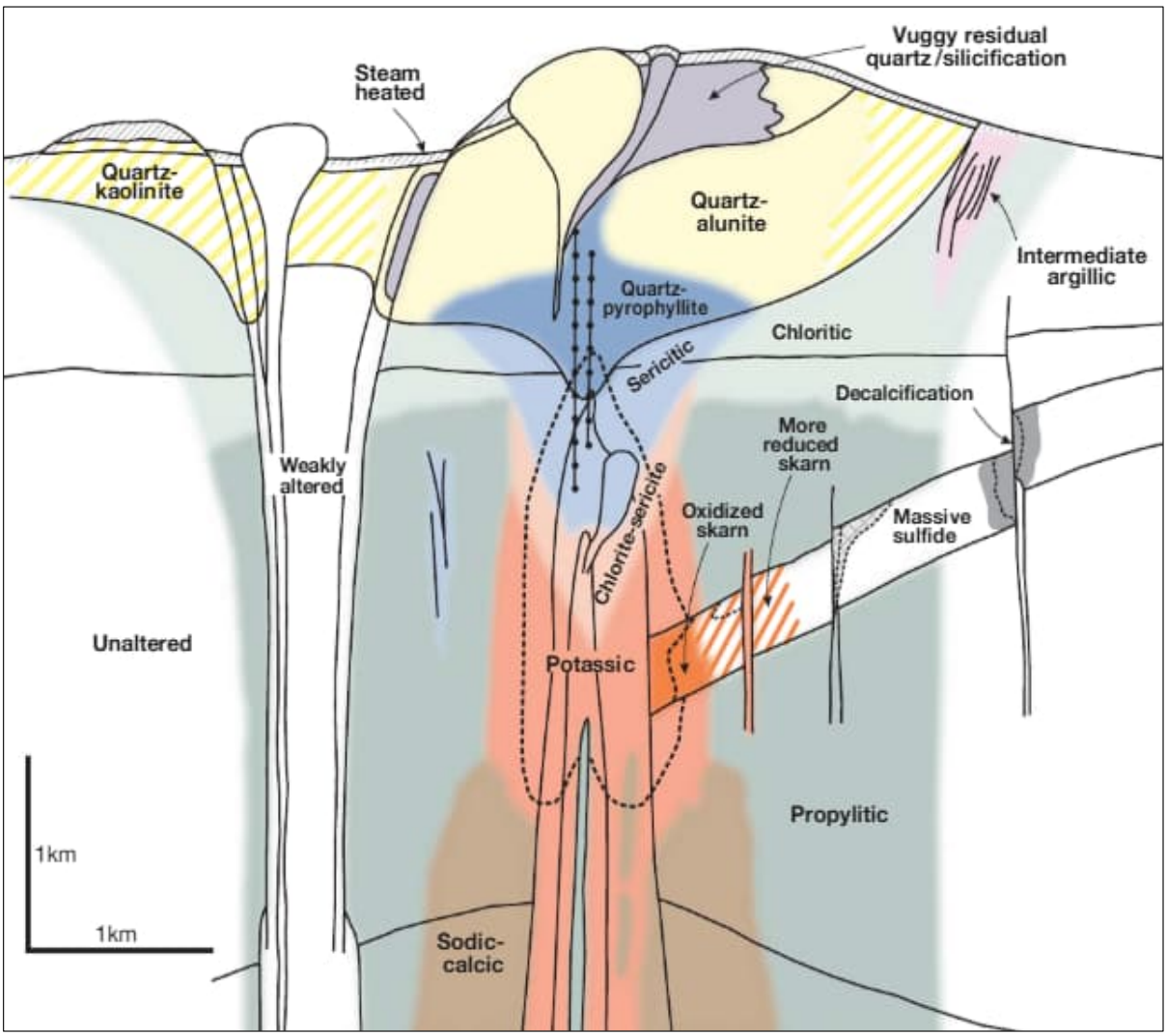
In carbonate rocks, the most common minerals are garnet, pyroxene, epidote, quartz, actinolite, chlorite, biotite, calcite, dolomite, K-feldspar, and wollastonite. Other alteration minerals commonly found in porphyry-copper deposits are tourmaline, andalusite, and actinolite. Figure 8-2 shows the typical alteration assemblage of a porphyry-copper system.

Porphyry copper systems are initiated by injection of oxidized magma saturated with sulphur- and metal-rich, aqueous fluids from cupolas on the tops of the subjacent parental plutons. The sequence of alteration–mineralisation events is principally a consequence of progressive rock and fluid cooling, from >700° to <250°C, caused by solidification of the underlying parental plutons and downward propagation of the lithostatic–hydrostatic transition.

Once the plutonic magmas stagnate, the high-temperature, generally two-phase hyper-saline liquid and vapour responsible for the potassic alteration and contained mineralisation at depth and early overlying advanced argillic alteration, respectively, gives way, at <350°C, to a single-phase, low-to-moderate-salinity liquid that causes the sericite–chlorite and sericitic alteration and associated mineralisation. This same liquid also is a source for mineralisation of the peripheral parts of systems, including the overlying lithocaps.

The progressive thermal decline of the systems combined with syn-mineral paleo-surface degradation results in the characteristic overprinting (telescoping) and partial to total reconstitution of older by younger alteration–mineralisation types. Meteoric water is not required for formation of this alteration–mineralisation sequence, although its late ingress is commonplace.

Figure 8-2: Schematic Section Showing Typical Alteration Assemblages



Source: Sillitoe (2010)

8.4 Kounrad Waste Dumps

The Kounrad waste dumps are man-made deposits that were generated as sites for the storage and containment of waste rock produced during the mining of the adjacent Kounrad porphyry copper deposit.

9.0 Exploration

Prior to commencing the current in situ leaching operation at Kounrad, several sampling programmes were conducted. The purpose of this work was to determine the copper content of the dumps and the potential for leaching of this material.

9.1 Pre-2007

A historical programme of channel sampling on the eastern dumps was completed and included the collection of 2,409 samples of 0.5 m lengths taken from the surface of the dumps.

9.2 Exploration by CAML (2007-2010)

9.2.1 2007 Sampling Programme

Sampling in 2007 was based on a drilling programme of 21 drillholes completed by SK in the eastern dumps and is further discussed in Section 10.1.

9.2.2 2008-2009 Sampling Programme

In 2008, SK contracted a Karaganda-based consulting firm, CenterKazNedra, to develop a sampling programme for the mixed and sulphide material of the western dumps, utilising a mix of drilling and trenching techniques.

The programme of works commenced in 2009 with an original plan to drill 172 holes from surface to the dump base. However, only 85 holes were completed. The drilling is discussed further in Section 10.1. In addition, 10 channel-trenches were excavated from which samples were taken. A combined total of 775 samples were collected for copper analysis, determining total copper, acid-soluble copper and cyanide-soluble copper to characterise the material.

Assay results from this period indicated variable copper grade distributions within the dumps, both vertically and horizontally and a general increase in copper grade with depth. It was also observed that the percentage of acid-soluble mineralisation exceeded expectations, suggesting that a degree of natural oxidation has occurred over time, together with vertical migration of copper to lower levels of the dumps.

VNIItsvetmet also conducted a series of bottle-roll acid-leaching tests on samples crushed to -2mm. Whilst not fully representative of the in-situ particle size, the results demonstrated a higher than anticipated level of acid-soluble recovery, again indicating significant levels of oxide and secondary sulphide mineralisation. The results are shown in Table 9-1.

Table 9-1: Results of Bottle Roll Tests on Dump Material (VNIItsvetmet, 2009)

Dump	Ore Type	Cu Recovery (%)
1-W	Sulphide	47-72
1a-W	Sulphide	66
21-W	Sulphide	41-66
22-W	Mixed	48-65
16-W	Mixed	37-68
15-W	Mixed	51
5-E	Mixed	48-65

9.2.3 2010 Sampling Programme

In 2010, a programme of sampling of 137 trial pits to depths of 3 m from surface, on a 200 x 200 m grid, was undertaken by SK. Additionally, samples were taken from the base of the

dumps to obtain material that was inaccessible during the 2009 drilling programme. For Dump 21, which contains the bulk of the sulphide material, a further 9 surface channel trenches of up to 100 m in length to a depth of 1.0 m were excavated and sampled. Total exploration of the sulphide dumps comprised 1,500 m^3 of extraction from the pits and trenches.

The work commenced in May 2010, with all samples collected and prepared for analysis by mid-June 2010. The sampling grid was laid out by a surveyor, and utilising a back-hoe excavator, trial pits of approximately 2.5 m^2 were dug to depths of 2.5 – 3.0 m, from which a sample of approximately 150 kg was removed by the field technicians.

This sample material was then levelled to a depth of 15 cm, over which a 20 cm square sampling grid was then placed. Sub-samples were then collected from each grid to produce a composite sample of approximately 10 kg. A total of 137 samples were collected for analysis.

At Dump 21, nine trenches were excavated to a depth of 1 m, and samples were taken every 5 m along their length. From this, a total of 180 samples were collected for analysis.

9.2.4 2010 Metallurgical Sampling

In addition to the resource sampling programme, a metallurgical programme was initiated by SK using the VNIItsvetmet laboratory to test the amenability of the sulphide and mixed waste materials at laboratory scale to column leaching.

Samples for these tests were taken from a depth of approximately 10 m below the surface. A bulldozer was utilised to prepare a sample area, accessed by a 30 m ramp, down to a depth of 6 m by pushing surplus material away. An excavator was then positioned and, using its boom to its full extent, collected a sample from an additional 4 m depth.

By this method, approximately 2 tonnes of sample was recovered from each sample pit, from which a representative sample of 150 kg was derived and dispatched to the laboratory.

Samples were taken from Dumps 1a, 15, 16, 21 and 22 and included sulphide and mixed waste material. Additionally, three samples were taken from the toe of Dumps 1a, 16, 21 at depths of 8 – 9 m, to reflect the material encountered at the lower part of these dumps. In addition, two samples were also collected from oxide Dump 7.

A total of 13 samples, each weighing approximately 150 kg, were collected for dispatch to the VNIItsvetmet laboratory in June 2010. A summary of the samples is shown in Table 9-2.

Table 9-2: Summary of 2010 Metallurgical Samples

Dump No	Sample Location	Number of Samples	Depth (m)
16	Pit 66	1	10
15	Pit 72	1	9.5
16	Pit 43	1	10
1a	Pit 2-6	1	10.5
1a	Pit 12	1	11
21	Dump Base	1	9
16	Dump Base	1	8
22	Pit 25	1	11
7	Pit 8	1	10.5
7	Pit 10	1	11
1a	Dump Base	1	8
22	Pit 14	1	11
21	Pit 36	1	10

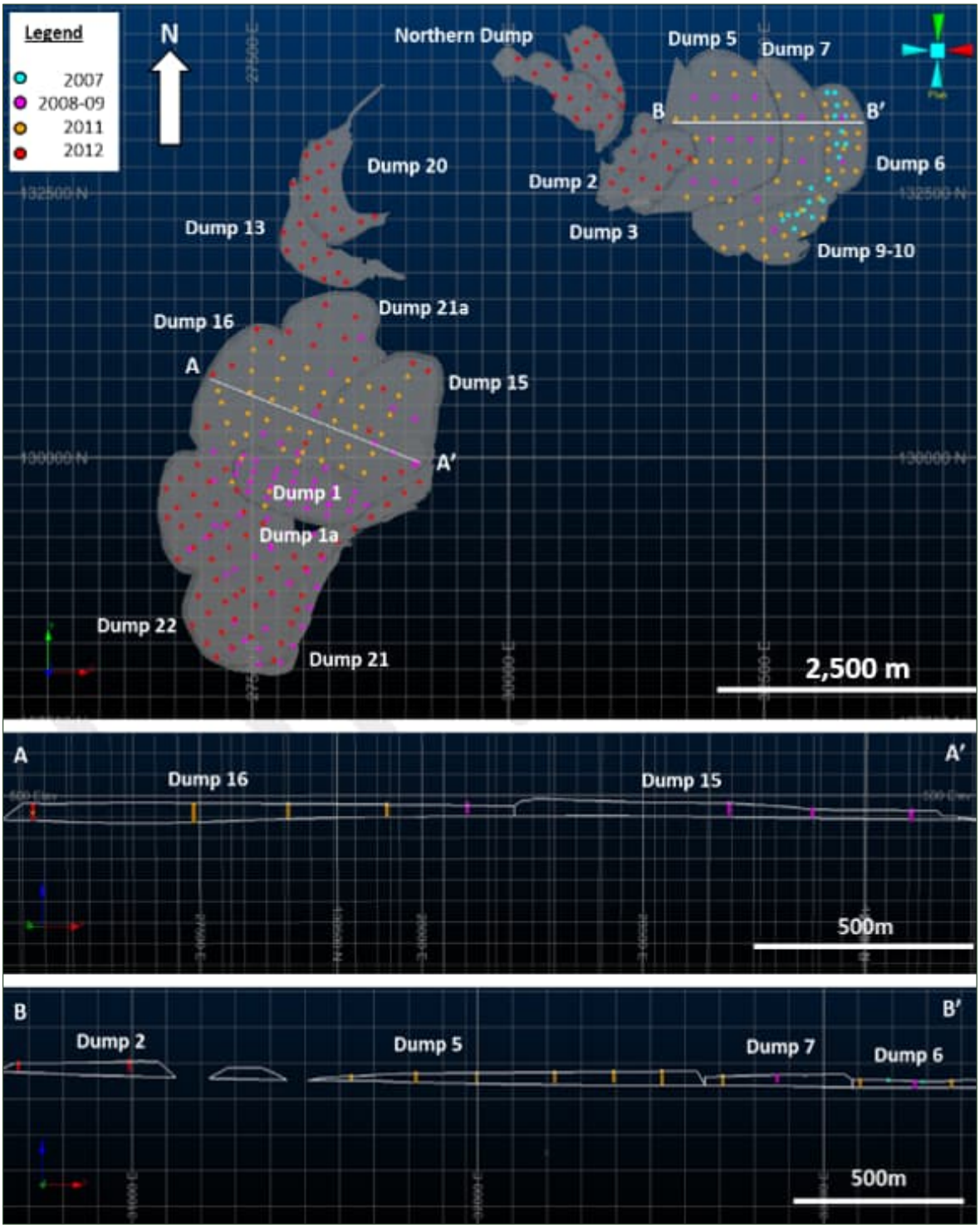
9.2.5 2011-2012

All samples collected during the 2011-2012 campaign were from drilling and are discussed in Section 10.2.

10.0 Drilling

Drilling completed at the Kounrad dumps has comprised of Reverse Circulation (RC) drilling and is discussed in the following sections. The majority of the resource drilling was completed by SK in 2011 and 2012. The location of the drilling programmes is shown in Figure 10-1.

Figure 10-1: Plan View and Representative Cross Sections of the Dumps and Drilling Programmes from 2007-2012



Source: SLR (June 2026)

10.1 2007-2009

In December 2007, 21 drillholes were completed on eastern dumps 6-7 and 9-10 to depths of around 2.5 m. In total, 19 samples were collected.

A drill programme of 172 drillholes was planned to commence in 2008 - 2009. However, due to difficulties with the drilling and poor recoveries in some holes, only 85 holes were completed. The drill programme totalled 1,971m, and included 1,300 m of samples. The holes were drilled on a grid of 100 x 200 m, with samples (averaging between 3 - 5 kg), being collected every 2 - 4 m. Due to poor recovery and hole collapse, no hole made its target depth, and the maximum depth achieved was 30 m.

10.2 2011-2012

The 2011-2012 drill programme was designed by Wardell Armstrong International (WAI) following recommendations for further sampling to better understand grade distributions across the dumps.

A total of 229 drillholes were planned during this period, and all drilling work was completed by the drilling contractor AK Niyet Burga using Nemek 814 BE drill rigs (Figure 10-2) and later the HYDCO–300 trailer drill rigs (Figure 10-3). Air flushing to return samples was achieved using an Atlas Copco XRVS 455 compressor. The drill hammer bit had a diameter of 125.5 mm with 3.0 m or 6.0 m dual-walled rods of 102 mm diameter. Drilling was supervised daily by a contract geologist, Mr Zsolt Peregi.

Drilling depths from this period ranged from 6.0 – 56.0 m, with an average depth of 28.7 m. Orientation of mineralisation within the dumps is interpreted as sub-horizontal, and so all drilling was vertical. No downhole surveys were conducted because all drilling was to relatively shallow depths.

Figure 10-2: Nemek 814 BE Trailer Mounted Rig

Source: Peregi (2011)

Figure 10-3: Hydco-300 Trailer Mounted Rig

Source: Peregi (2011)

10.2.1 Sampling

Drillhole samples were collected at 3 m intervals corresponding to the length of the drilling rods. The samples were collected in nylon-lined bags, which were fixed at the lower open side of the cyclone. The procedure for the on-site preparation of sub-samples comprised the following:

- Sampled material being placed onto a nylon sheet.
- Mixing of the sample three times by hand shovel.
- Placing material in the shape of a 70 x 70 cm quadrangle, approximately 8 cm in depth.
- Division of the sample into 16 equal sections using a 4 by 4 sampling grid.
- Obtaining approximately 5 kg sub-sample by taking a specific amount of material from each of the 16 sections.

Two sub-samples were obtained for each 3.0 m drillhole interval; one to be sent to the laboratory and one to be retained as reference material.

10.2.2 Sample Recovery

Due to the challenges of drilling poorly consolidated dump material, AK Niyet Burga implemented 3.0 m drilling runs, with drill bits raised and lowered several times per run before air flushing to ensure a representative sample was recovered. Sample recoveries were reported to average 76%. This calculation was based on the recovered sample weight compared to the theoretical weight of a full 3.0 m sample at the drilling diameter and at a density of 2.04 t/m^3 and 1.87 t/m^3 for sulphide/mixed and oxide dumps, respectively.

Sample recovery was often lower in the first 6.0 m of the drillhole, particularly due to hole flushing, blowing fine material and drill cuttings out of the hole rather than through the riser pipe, resulting in some sample loss. Recovery generally improved as drilling depth increased.

10.3 QP Opinion

The authors were not directly involved in the drilling or sampling programmes undertaken at Kounrad and have relied on available information describing these programmes.

Overall, the authors consider the drilling and sample collection were undertaken using appropriate procedures. A statistical analysis comparing the results of the drilling programmes is provided in Section 12.2.2 and identified no significant bias in the copper grades to be present that would materially affect the Mineral Resource estimate.

The authors therefore conclude that the samples are representative of the mineralisation and there is no evidence that the drilling or sample collection process has resulted in a bias that could materially impact the accuracy and reliability of the results.

11.0 Sample Preparation, Analyses, and Security

11.1 Pre-2007

Limited information exists regarding the sample preparation and analyses procedures used for the historical channel sampling programme on the eastern dumps.

11.2 2007-2009

In December 2007, 21 drillholes to depths of 2.5 m were completed on eastern dumps 6-7 and 9-10, with the samples sent to VNIItsvetmet laboratory (Ust-Kamenogorsk) for copper analysis and acid leaching tests. In total, 19 samples were collected and submitted.

A drill programme of 172 drillholes was planned to commence in 2008 - 2009. However, due to difficulties with the drilling and poor recoveries in some holes, only 85 holes to depths of 8 – 30 m were completed. The drill programme totalled 1,971m, and included 1,300 m of samples submitted to the VNIITSvetmet laboratory.

11.3 2010-2012

The 2010 exploration programme included trial pit sampling, metallurgical trial pit sampling and trench sampling. The 2011 - 2012 programme comprised of RC drilling. The sample preparation and analyses used for these programmes is discussed in the following sections.

11.3.1 Geological Logging

Once sampled, drillhole material was put aside from each interval near the drill rig for geological logging. The material was wetted prior to logging. The geological information included:

- Type of material (Oxide, Sulphide, Mixed or Basement).
- Lithology.
- Colour.
- Description of rock fragments, including a % estimation of various rock types.
- Primary sulphides and percentage estimation.
- Secondary minerals and alteration.
- Sample structure (percentage of the material comprising the samples e.g. dust or rock fragments).
- Estimated basement depth.

Drill cuttings were placed into boxes for reference as shown in Figure 11-1.

Figure 11-1: Drill Cuttings for Logging. Red Fragments indicate oxidation, Grey Fragments indicate Sulphide Material

Source: Peregi (2011)

11.3.2 Laboratories

From 2010-2012, the following laboratories were used for sample preparation and analysis, as primary and umpire laboratories.

- VNIITSvetmet laboratory (Ust-Kamenogorsk).
- CentreGeoAnalyt (Karaganda).
- Alex Stewart laboratory (Moscow).

At the time of analysis, the VNIITSvetmet laboratory held several accreditations, including ISO/IEEC 17025-2007 (accreditation certificate number KZ.И. 07.0480 dated August 27, 2009) and ISO 9001:2008. The accreditation of the CentreGeoAnalyt and Alex Stewart laboratories at the time of the analysis is not known.

11.3.3 2010 Sampling Programme

A total of approximately 2 tonnes of material was extracted from each metallurgical pit during this programme, and was subsequently sub-sampled to a weight of 150 kg using the following methodology:

- Sampled material being placed on a level area.
- Particles greater than 150 mm were broken down by hammer or using the excavator bucket.
- Mixing of the sample three times by hand shovel.
- Placing material in the shape of a disc approximately 20 - 30 cm in depth.
- Division of the sample into four equal quarters.
- Hand mixing of the two remaining quarters.
- Repetition of the process until a sub-sample of approximately 150 kg was obtained.

A total of 13 metallurgical samples (11 from sulphide dumps and 2 from oxide Dump 7) were tested at the VNIITSvetmet laboratory. Analysis included column leaching tests, chemical assaying, and bottle roll tests to assess the chemical and mineral compositions, and the structural/textural properties of the samples.

A total of 137 samples were also collected from pits up to 3.0 m in depth, and 189 composite samples were collected from 100 m trenches, the latter located solely in Dump 21a. Samples were dispatched to the CenterGeoAnalyt laboratory. Following crushing and pulverising, 10% of the sample pulps were sent to the VNIItsvetmet laboratory for duplicate analysis. Chemical analysis of 40 samples and 11 group samples was carried out to assess the oxide and sulphide content as well as the total copper content.

Assays during the period were carried out for Cu_{total}, CuO, S, Fe, Zn, Mo, As, Sb, Pb, Au and Ag. Element to compound ratios were studied for compounds of copper, sulphur, iron, calcium carbonates and magnesium.

11.3.4 2011-2012 Drill Programme

11.3.4.1 Sample Preparation

The 3.0 m samples were initially sub-sampled at the drill site, as described in Section 10.2.1. Sub-samples were transported to the VNIITSvetmet laboratory for further preparation. At the VNIITSvetmet laboratory, samples were crushed to initially pass <2 mm in a jaw crusher, followed by a second round of crushing to <1 mm. The remaining sample was reduced to <0.5 kg and pulverised to 74 µm before a 250 g sub-sample was taken for analysis. For oxide samples, the final 250 g sub-sample was further split to produce a 30 g sample for assay. The remaining sample was sent for spectral analysis.

11.3.4.2 Sample Analysis

Of the 98 holes (3,213 m) drilled in 2011, a total of 2,761 m was sampled for Cu_{total} and Cu_{acid}. Of the 131 holes (4,107 m) drilled in 2012, a total of 4,089 m was sampled for Cu_{total} and Cu_{acid}. Analysis of the samples was carried out by the VNIITSvetmet laboratory (primary laboratory) and Alex Stewart as the umpire laboratory.

Total copper analyses were carried out using aqua regia acid digestion with ICP-MS finish. Analysis of acid-soluble copper was carried out on 50 g samples. Samples were treated with a 5 % solution of sulphuric acid and heated for 30 minutes. The leach residue was washed with water, and the sample was analysed by ICP. The difference in the total copper and copper in the leach residue was calculated as the acid-soluble copper content.

11.4 Density Measurements

Density measurements were undertaken in 2012 using trial pits. The pits were excavated in the surface of the dumps using a backhoe and the excavated material was weighed. The pit volumes were calculated from surveys undertaken using total station surveying equipment. A moisture content of 2.5% was assumed in calculating the dry densities. A summary of the results of the 2012 density measurements is provided in Table 11-1.

Table 11-1: 2012 Density Measurements

Dump	Pit	Volume (m^2)	Sample Weight (t)	Wet Density (t/m^3)	Moisture Content (%)	Dry Density (t/m^3)	Average Dry Density (t/m^3)
21a	1	8.31	16.28	1.96	2.5	1.91	1.91
16	1	8.54	18.33	2.15	2.5	2.09	2.14
	2	7.65	15.77	2.06	2.5	2.01	
	3	7.44	16.46	2.21	2.5	2.16	
	4	7.96	16.29	2.05	2.5	2.00	
	5	6.71	17.00	2.53	2.5	2.46	
22	1	8.54	16.24	1.90	2.5	1.85	1.96
	2	8.00	17.06	2.14	2.5	2.08	
	3	8.39	16.22	1.93	2.5	1.88	
	4	8.06	16.71	2.07	2.5	2.02	
21	1	7.80	16.36	2.10	2.5	2.05	2.06
	2	8.09	17.21	2.13	2.5	2.07	
1	1	8.47	15.78	1.86	2.5	1.82	1.92
	2	8.00	16.51	2.06	2.5	2.01	
1a	1	8.61	16.78	1.95	2.5	1.90	1.96
	2	8.26	17.03	2.06	2.5	2.01	
15	1	8.56	17.72	2.07	2.5	2.02	2.01
	2	8.60	17.03	1.98	2.5	1.93	
	3	8.54	17.57	2.06	2.5	2.01	
	4	7.70	16.30	2.12	2.5	2.06	
13	1	7.56	15.71	2.08	2.5	2.03	2.05
	2	8.06	17.07	2.12	2.5	2.06	
20	1	7.75	15.69	2.02	2.5	1.97	1.95
	2	8.00	15.72	1.97	2.5	1.92	
2	1	N/A	N/A	N/A	2.5	N/A	1.89
	2	8.45	15.73	1.86	2.5	1.82	
	3	8.45	17.17	2.03	2.5	1.98	
	4	8.20	16.52	2.01	2.5	1.96	
	5	8.32	15.41	1.85	2.5	1.81	
5	1	7.61	15.19	1.99	2.5	1.95	1.90
	2	8.59	16.07	1.87	2.5	1.82	
	3	7.72	14.53	1.88	2.5	1.84	
	4	7.89	15.98	2.03	2.5	1.97	

11.5 Sample Security and Chain of Custody

No specific details regarding sample security from the 2007-2010 exploration works are available. Prior to dispatch to the laboratory, the 5 kg samples from the 2011-2012 exploration were placed into 50 litre bags for transportation and storage, each holding approximately 8 - 10 samples. Sample bags were transported to the pilot plant of SK, where they were placed into two large iron containers, arranged in numerical sequence for transportation to the VNIITSvetmet laboratory.

11.6 Quality Assurance and Quality Control

The implementation of a quality assurance and quality control (QA/QC) programme is industry best practice and involves establishing appropriate procedures and the routine insertion of reference material, blanks and duplicates to monitor the sampling, sample preparation and analytical process. Analysis of QC data is undertaken to assess the reliability of sample assay data and the confidence in the data.

Limited information exists relating to the QA/QC procedures for the 2007-2009 programmes.

The 2010 sampling programme included internal and external duplicates, while the 2011-2012 drilling programmes included internal and external duplicates, as well as blank samples.

The QA/QC results of these programmes were reviewed by SLR. The results are considered separately for review purposes to assess any variance over time.

11.6.1 QA/QC Information

A summary of the available QA/QC information for the sampling programmes is outlined in Table 11-2.

Table 11-2: Summary of Quality Control Samples by Sampling Programme (2010-2012)

Programme	Number of Primary Samples	Type of Quality Control Data Available	% of QC Samples Submitted
2010	324	30 external duplicates and 59 Internal control samples	22%
2011	918	16 blanks, 75 external duplicates, 30 internal control samples	13%
2012	1,364	20 blanks, 137 external duplicates, 114 internal control samples	20%

11.6.2 2010 Sampling Programme

SLR has reviewed the QA/QC results for the internal and umpire checks of the pulp samples for the 2010 programme. A summary of the results from this period is tabulated in Table 11-3.

The primary laboratory during this period was CenterGeoAnalyt, while VNIITSvetmet served as the umpire laboratory.

Table 11-3: Summary of Duplicate Analysis from 2010

Duplicate	Number of Pairs	Mean Primary Samples (%)	Mean Duplicate Samples (%)	CV Primary Samples	CV Duplicate Samples	Correlation Coefficient	% of Pairs <10% HARD
Cu_{Total} Internal	59	0.13	0.13	0.73	0.74	1.00	100.0%
Cu_{Total} External	30	0.06	0.06	0.90	1.53	0.57	53.3%

Internal laboratory QA/QC analysis shows an excellent correlation, with 100% of duplicate pairs meeting the 90% of samples being <10% Half Absolute Relative Difference (HARD) criteria. Umpire check assays, however, show a lower level of correlation, with only 53% of the duplicate pairs meeting the 90% of samples being <10% HARD criteria. This highlights potential precision-related issues either with the primary laboratory and/or the umpire laboratory during this period.

11.6.3 2011 Drilling Programme

11.6.3.1 Duplicates

SLR has reviewed the QA/QC results for the internal and umpire checks of the pulp samples from the 2011 programme. A summary of the results from this period is provided in Table 11-4.

From 918 samples assayed at the VNIITSvetmet laboratory, 30 (3%) were selected as internal laboratory duplicates and 75 (8%) were selected as umpire duplicates for analysis at Alex Stewart.

Table 11-4: Summary of Duplicate Analysis for 2011

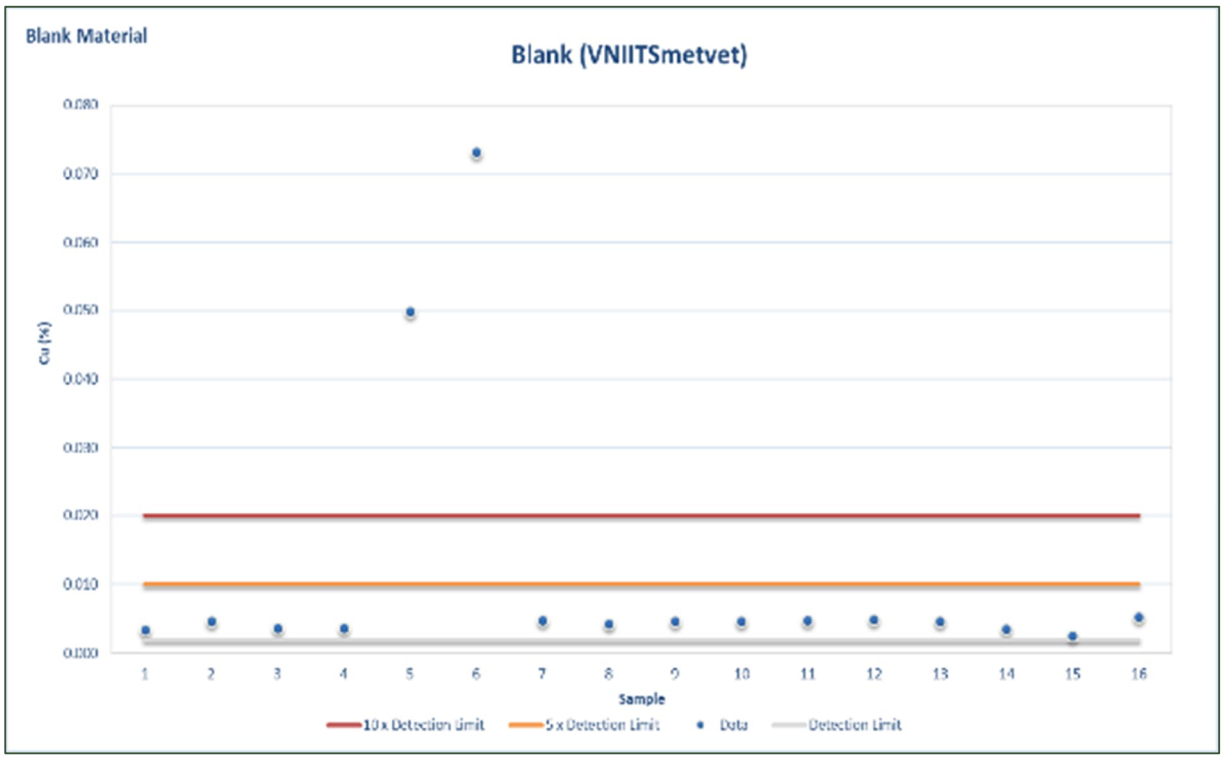
Duplicate	Number of Pairs	Mean Primary Samples (%)	Mean Duplicate Samples (%)	CV Primary Samples	CV Duplicate Samples	Correlation Coefficient	% of Pairs <10% HARD
Cu_{Total} Internal	30	0.10	0.10	0.76	0.80	0.97	80.0%
Cu_{Acid} Internal	30	0.05	0.05	1.09	1.08	0.99	83.3%
Cu_{Total} External	75	0.09	0.09	0.87	0.83	0.98	86.7%
Cu_{Acid} External	75	0.04	0.04	1.06	1.10	0.97	57.3%

Overall, the level of repeatability of internal and external duplicates is considered good. Whilst all datasets fall short of the 90% of samples being <10% HARD criteria, the correlation coefficient is above 0.97 and mean grades between duplicate pairs are consistent. The variance reflected in the HARD values of the Cu_{acid} check assays is predominantly confined to lower grades and may reflect differences in assay techniques or artefacts in laboratory detection limits.

11.6.3.2 Blanks

Each batch of 60 samples included 1 barren (blank) sample, which consisted of blank granite material. A total of 16 blank samples were assayed. With the exception of two samples, all blank samples were within ±5 times the assay detection limit (Figure 11-2). Those samples that did fail are still relatively low-grade and could reflect trace levels of Cu in the uncertified blank material. Overall, there is no indication of systematic sample contamination during this period.

Figure 11-2: Blank Sample Analysis for 2011



Source: SLR (June 2026)

11.6.4 2012 Drilling Programme

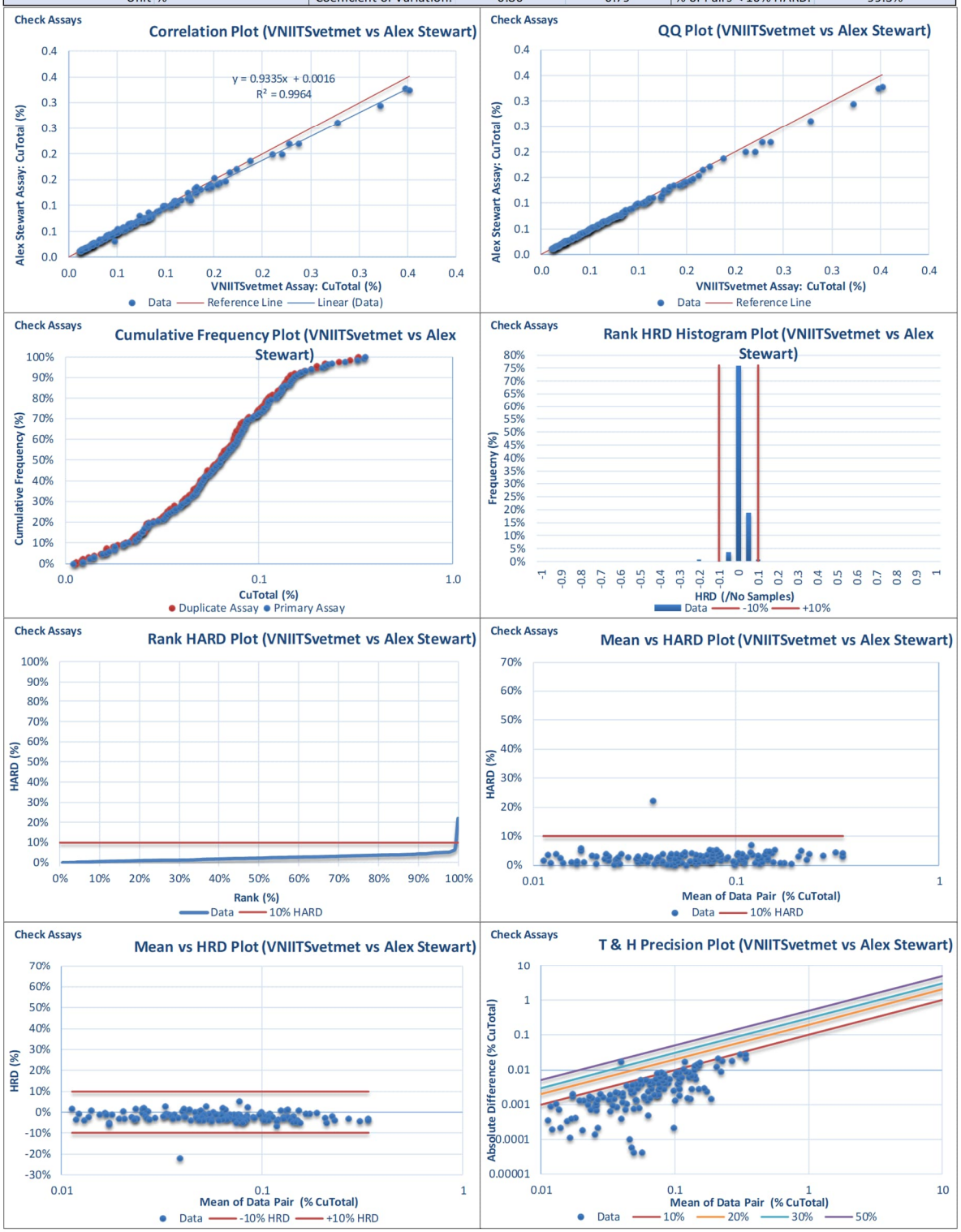
11.6.4.1 Duplicates

SLR has reviewed the QA/QC results for the internal and umpire checks of the pulp samples for the 2012 programme. An example of the SLR review of the duplicate samples is provided in Figure 11-3 and a summary of the results from this period is provided in Table 11-5.

From 1,364 samples assayed at the VNIITSvetmet laboratory, 114 (8%) were selected as laboratory duplicates and 137 (10%) as umpire duplicates for analysis at Alex Stewart.

Figure 11-3: SLR Review of Duplicate Sample Analysis for 2012

Kounrad Project | 2012 Campaign | VNIITSvetmet vs Alex Stewart | Check Assays | Cu						
Primary Laboratory:	VNIITSvetmet		Primary	Duplicate		Primary vs Duplicate
Assay Method 1:	ICP-MS	Minimum:	0.0111	0.011428275	Correlation Coefficient:	1.00
Duplicate Laboratory:	Alex Stewart	Maximum:	0.3516	0.327437476	Mean HARD:	2.56%
Assay Method 2:	ICP-MS	Mean:	0.08	0.08	Median HARD:	2.29%
Number of Pairs:	137	Median:	0.06	0.063429705	Mean HRD:	-2.06%
Element:	CuTotal	Standard Deviation:	0.07	0.06	Median HRD:	-2.21%
Unit	%	Coefficient of Variation:	0.80	0.79	% of Pairs < 10% HARD:	99.3%



Source: SLR (June 2026)

Table 11-5: Summary of Duplicate Results for 2012

Duplicate	Number of Pairs	Mean Primary Samples (%)	Mean Duplicate Samples (%)	CV Primary Samples	CV Duplicate Samples	Correlation Coefficient	% of Pairs <10% HARD
Cu_{Total} Internal	114	0.07	0.07	0.86	0.90	0.96	79.8%
Cu_{Acid} Internal	114	0.03	0.04	1.27	1.31	0.89	55.3%
Cu_{Total} External	137	0.08	0.08	0.80	0.79	1.00	99.3%
Cu_{Acid} External	137	0.04	0.04	1.18	1.19	0.98	65.0%

Overall, the level of repeatability of the Cu_{Total} external duplicates is excellent, whilst the precision of Cu_{Total} internal duplicates is considered good. Whilst the latter falls short of the 90% of samples being <10% HARD criteria, the correlation coefficient is above 0.96 and mean grades between duplicate pairs are consistent.

The internal and external duplicates for Cu_{acid} show lower levels of precision, however, the correlation coefficients are considered generally acceptable. Highest-variance duplicate pairs are observed to relate mainly to the lowest copper grades.

11.6.4.2 Blanks

Each batch of 60 samples included 1 barren (blank) sample, which comprised blank granite material. A total of 20 blank samples were assayed. All blank samples were within ±5 times the assay detection limit and suggests no systematic cross-contamination was present during this period.

11.6.5 QP Opinion

The authors were not directly involved in sample preparation or analyses for the exploration programmes undertaken at Kounrad and have relied on available information describing these programmes.

Limited information exists regarding the procedures used for the pre-2007 sampling and 2007 drilling programmes, however, it is noted that these were undertaken in the eastern dumps which have now been extensively leached. As such, the QP does not consider these programmes a material risk to the Mineral Resource estimate.

Limited information exists regarding the procedures used for the 2008-2009 drilling programme. A statistical analysis comparing the results of this programme with the 2011-2012 drilling is provided in Section 12.2.2 and identified no significant bias in the copper grades to be present that would materially affect the Mineral Resource estimate.

The authors consider the 2010 – 2012 programmes were undertaken using appropriate sample preparation and analyses procedures.

The authors conclude that the samples are representative of the mineralisation and there is no evidence that the drilling or sample preparation or analyses process has resulted in a bias that could materially impact the accuracy and reliability of the results.

12.0 Data Verification

12.1 Verifications by Sary Kazna

Data entry, validation, storage and database maintenance was carried out by SK geological department. The sampling data used for the Mineral Resource estimates is stored in Microsoft® Excel format at the Kounrad offices. No additional exploration has been undertaken at Kounrad since 2012 and no updates to the databases have been made by SK since this time.

12.2 Verifications by SLR

12.2.1 Review of Drillhole Database

The databases were received by the authors in Microsoft® Excel format. A review of the databases was carried out by the authors and included the following:

- Review of the geological and geographical setting of the Kounrad deposit and dumps.
- Review of extent of the exploration work completed to date.
- Review of drilling, logging, sampling and analysis procedures.
- An evaluation of minimum and maximum grade values and sample lengths.
- Assessing for inconsistencies in spelling or coding (typographic or case sensitive errors).
- Ensuring full data entry for each drillhole or sample and that a specific data type (collar, survey, lithology and assay) is not missing.
- Assessing for sample gaps and overlaps.
- A review of assay detection limits.
- Identification of any problematic assay records.
- A spatial on-screen review of the grade and lithology distributions of the drillholes and samples was undertaken to identify any additional data reliability issues.
- A review of collar locations for surface drilling and sampling relative to the topographical surface.
- A review of the lithological logging of basement material compared to the interpreted base of the dumps.

Overall, no significant issues in terms of data collection, data entry or data storage were identified by the authors in a review of the electronic databases.

12.2.2 Statistical Comparison by Sampling Programme

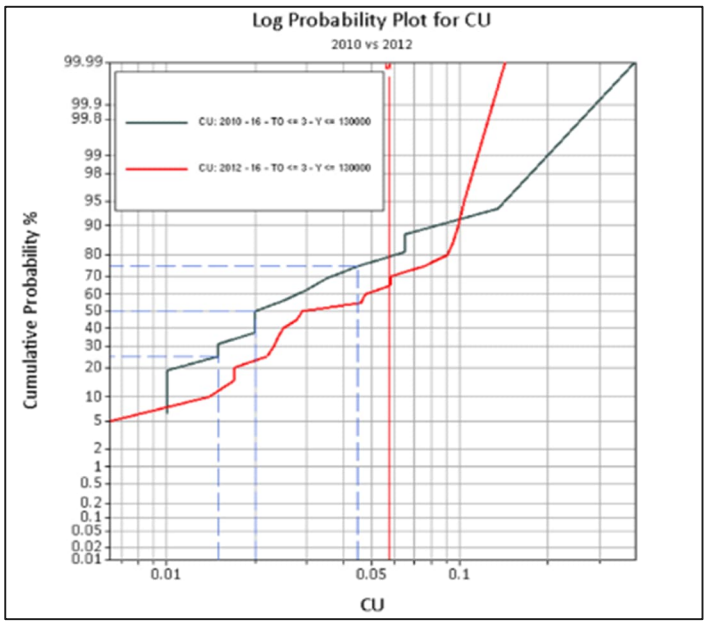
As part of data verification, SLR compared sample statistics for areas of the dumps that contained sampling programmes from different years. The aim of the exercise was to identify if any significant bias existed in the assays derived from the different campaigns.

12.2.2.1 Dump 16 - 2010 vs 2012 Sampling Programmes

Grade distributions for the 2010 and 2012 sampling programmes were compared for Dump 16. The 2010 samples consisted of trial pit samples while the 2012 samples were collected from RC drilling. The samples were filtered to a maximum depth of 3.0 m (the maximum depth of the 2010 samples), resulting in 16 (2010) samples and 20 (2012) samples, for comparison.

Log probability plots of the total copper grades are shown in Figure 12-1. The grade distribution for 2010 shows a slight tendency towards lower grades when compared to 2012.

Figure 12-1: Log Probability Plot of Cu (%) for 2010 vs 2012 for Dump 16



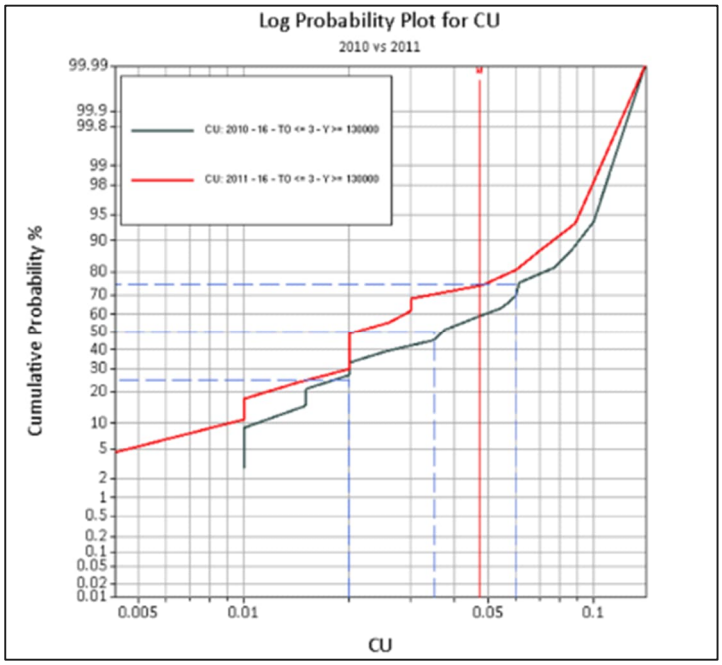
Source: SLR (June 2026)

12.2.2.2 Dump 16 - 2010 vs 2011 Sampling Programmes

Grade distributions for the 2010 and 2011 sampling programmes were compared for Dump 16. The 2010 samples consisted of trial pit samples while the 2011 samples were collected from RC drilling. The samples were filtered to a maximum depth of 3.0 m, resulting in 36 (2010) samples and 22 (2011) samples.

Log probability plots of the total copper grades are shown in Figure 12-2. The grade distribution for 2011 shows a slight tendency to lower grades when compared to 2010.

Figure 12-2: Log Probability of Cu (%) for 2010 vs 2011 for Dump 16



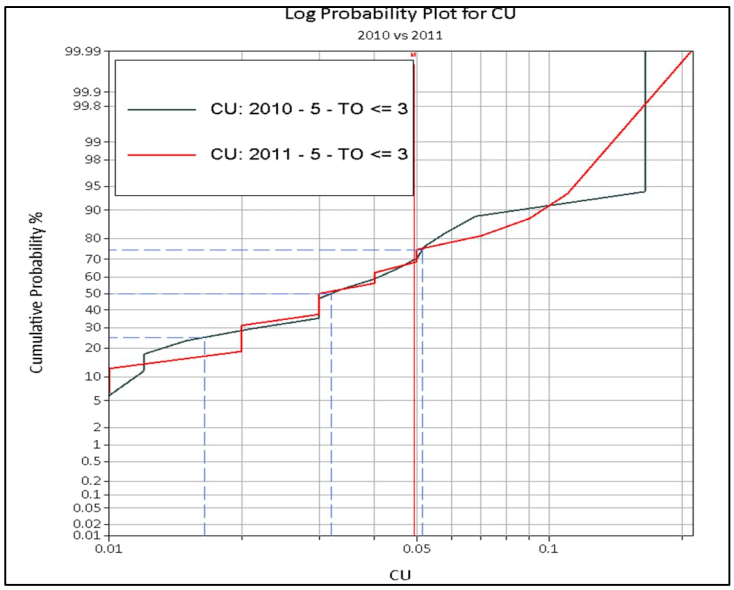
Source: SLR (June 2026)

12.2.2.3 Dump 5 - 2010 vs 2011 and 2008-09 vs 2011 Sampling Programmes

Grade distributions for the 2008-09, 2010 and 2011 sampling programmes were compared for Dump 5. The 2008-09 and the 2011 samples were collected from RC drilling while the 2010 samples were taken from trial pits. For the 2010 vs 2011 comparison, samples were filtered to a maximum depth of 3.0 m. For the 2008-09 vs 2011 comparison, samples were filtered to a maximum depth of 15 m to ensure the drillholes were being compared at consistent depths. A total of 36 (2010) samples and 22 (2011) samples were compared, while 33 (2008-09) samples and 83 (2011) samples were compared.

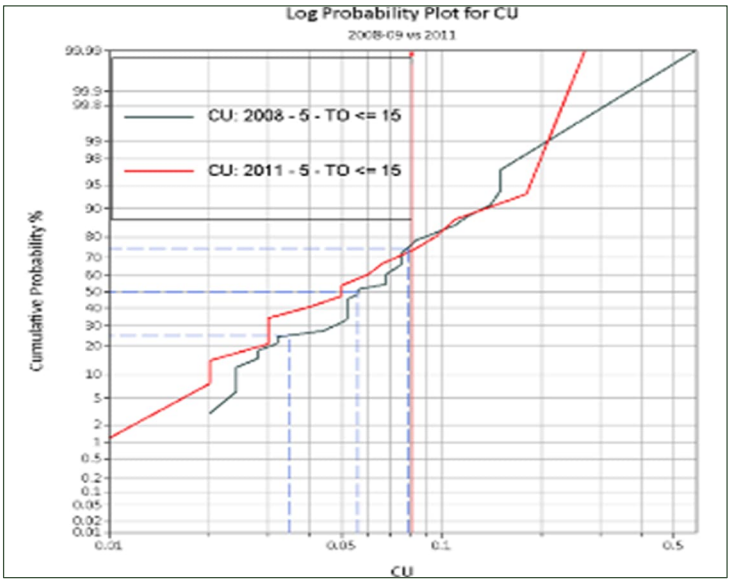
Log probability plots of the total copper grades are shown in Figure 12-3 and Figure 12-4. The grade distributions for both comparisons shows a good correlation, suggesting no significant grade bias is present for the different sampling programmes.

Figure 12-3: Log Probability Plot of Cu (%) for 2010 vs 2012 for Dump 5



Source: SLR (June 2026)

Figure 12-4: Log Probability Plot of Cu (%) for 2008-09 vs 2011 for Dump 5



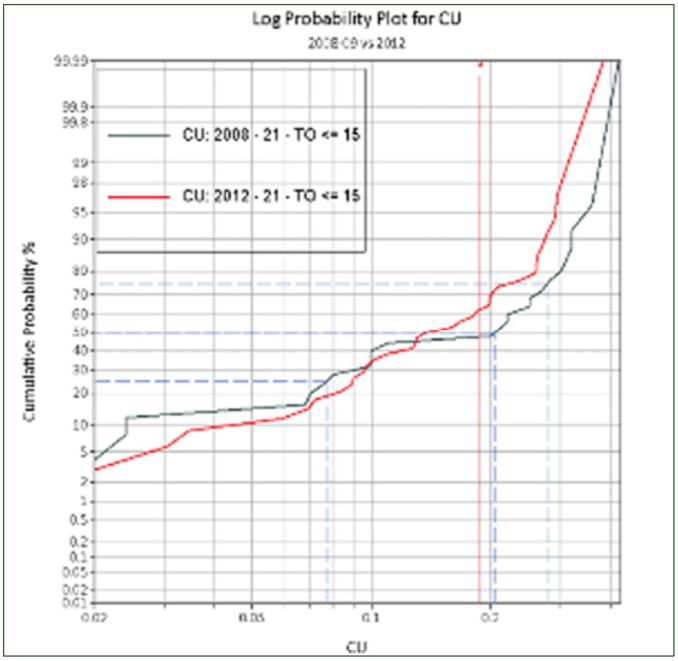
Source: SLR (June 2026)

12.2.2.4 Dump 21 - 2008-09 vs 2012 Sampling Programmes

Grade distributions for the 2008-09 and 2012 sampling programmes were compared for Dump 21. Both sets of samples were collected from RC drilling. Samples were filtered to a maximum depth of 15.0 m to ensure the drillholes were being compared at consistent depths. A total of 25 (2008-09) samples and 34 (2012) samples were compared.

Log probability plots of the total copper grades are shown in Figure 12-5. A reasonable comparison between the two grade distributions is observed.

Figure 12-5: Log Probability Plot of Cu (%) for 2008-09 vs 2012 for Dump 21



Source: SLR (June 2026)

12.2.3 Limitations

The authors have not undertaken any independent check analysis of samples nor conducted any twin hole drilling to confirm the assays contained in the electronic database. The authors do not consider referee samples necessary given:

- The procedures used by SK for sampling, logging, sample preparation, and analysis during the exploration programmes were considered to be reasonable.
- A review of the available QA/QC data demonstrated an acceptable level of accuracy and precision. No significant issues were identified in a statistical comparison of the different sampling programmes or sampling types.
- Kounrad is a mature operation and has been in continuous production since 2012. A comparison of annual planned production and actual production is contained in Section 14.11 and demonstrates there is sufficient confidence in predicting production from the operation.

12.2.4 QP Opinion

Overall, no significant issues were identified during the data verification review. The data verification procedures confirmed the integrity of the data contained in the drillhole database and the QP is of the opinion that the database is suitable for use in Mineral Resource estimation.

13.0 Mineral Processing and Metallurgical Testing

Metallurgical testing of the waste dumps has been a subject of investigation since the early 1960's when the property was entirely State owned. Following laboratory testwork, field trials were conducted from 1970 to 1992, involving the acid leaching of the dumps followed by the precipitation of copper from solution using the iron cementation process.

In early 2002, further metallurgical testing was commenced and CAML resumed testing with the installation of a pilot plant facility at the eastern dumps in 2008. The pilot plant was later moved to the western dumps in 2011 as part of on-going investigative studies where it operated for a total time period of 15 months.

13.1 Laboratory Testwork

13.1.1 Eastern Dumps

Studies for the application of acid leaching at the eastern dumps started in the 1960's, with the most recent testwork being undertaken by VNIItsvetmet in 2007. Their results indicated that a significant degree of natural oxidation of the copper minerals had occurred since the previous programme of testing. The results indicated a decrease in copper grades in the upper levels, probably owing to dissolution and migration of copper downwards through the heap, and lower associated values of sulphur and iron.

In November 2007, VNIItsvetmet undertook a comparative analysis of samples collected using similar methods as used by Unipromed in 1984.

13.1.2 Unipromed Column Testwork (1970 – 1987)

A programme of column leach testwork was undertaken by Unipromed and included a total of 2,296 samples collected from Dumps 6-7, 9-10, and 21 for the purpose of mineralogical and chemical analysis, with a total of 140 t of samples taken.

The test columns used were 1.0 m in diameter, and the samples that were tested graded approximately 18% coarser than 200 mm. The results of the tests undertaken by Unipromed are shown in Table 13-1.

Table 13-1: Unipromed Test Results (Western Dumps)

Parameter	Dump		
	21	9-10*	6-7*
Leach period (days)	440	570	300
Acid consumption kg per kg of Cu	4.42	4.55	3.70
Acid content of leach solution g/l	5.0	3.6	n.d.
Leach rate at end of test % per day	0.06	0.057	0.076
Recovery at end of leach %	48.1	68.4	35.5

*Data from Eastern Dump No. 9-10 and No. 6-7 included for comparison

13.1.3 VNIItsvetmet (2009)

During early 2008, an exploration programme was approved by CenterKaznedra Regional Authority and was conducted with the drilling of boreholes to a maximum depth of 30 m to obtain samples for further laboratory testing.

The samples collected were sent to VNIItsvetmet for metallurgical examination by bottle rolls tests on samples crushed to -2 mm. Whilst not being fully representative of the in-situ particle size, the results demonstrated a higher than anticipated level of acid soluble recovery, again

indicating significant levels of oxide and secondary sulphide mineralisation. The results are shown in Table 13-2.

Table 13-2: Results of Bottle Roll Tests on Dump Material (VNIItsvetmet, 2009)

Dump No.	Ore Type	Expected Recovery %	Actual Cu Recovery, %
1	Sulphide	30	47-72
1a	Sulphide	30	66
21	Sulphide	30	41-66
22	Mixed	30	48-65
16	Mixed	30	57-68
15	Mixed	30	51
5	Mixed	30	48-65
6	Oxide	50	47
7	Oxide	50	51

*Bottle Roll Tests undertaken on material crushed to -2 mm

The tests undertaken on the sulphide material are of limited use in determining potential heap leach recoveries, as a 2 mm crush size was used. However, the copper leach recoveries are relatively high for a sulphide material, ranging from 50.8% to 66.5%, which indicates that a significant proportion of the copper minerals are either in the oxide form, or present as chalcocite or as other acid soluble copper sulphide minerals.

13.1.4 VNIItsvetmet (2010)

In July 2010, a metallurgical programme was undertaken by VNIItsvetmet to test the amenability of the sulphide and mixed waste materials at laboratory scale by column leaching.

Samples for these tests were taken from a depth of approximately 10.0 m below surface in order to try and generate as representative sample as possible. A bulldozer was utilised to prepare a sample area, accessed by a 30.0 m ramp, down to a depth of 6.0 m by pushing surplus material away. The excavator was then positioned and using its boom to maximum extent collected a sample from about 4.0 m further down. By this method approximately 2.0 t of sample was recovered from each sample pit, after which they were reduced in size to a final sample size of approximately 150 kg, which was dispatched to the laboratory.

Samples were taken from Dumps 1a, 15, 16, 21 and 22 reflecting sulphide and mixed waste materials. Additionally, 3 samples were taken from the perimeter (base) of Dumps 1a, 16 and 21 at a depth of 8.0 – 9.0 m to reflect the material encountered at the lower part of these dumps. Samples were also taken from two pits from Dump 7 (eastern dumps).

A summary of the metallurgical samples is shown in Table 13-3.

Table 13-3: Summary of Metallurgical Samples taken in 2010

Dump No.	Sample Location	Number of Samples	Depth of Dump (m)
16	Pit 66	1	10
15	Pit 72	1	9.5
16	Pit 43	1	10
1a	Pit 2-6	1	10.5
1a	Pit 12	1	11
21	Dump Base	1	9
16	Dump Base	1	8
22	Pit 25	1	11
1a	Dump Base	1	8
7	Pit 8	1	10.5
7	Pit 10	1	11
22	Pit 14	1	11
21	Pit 36	1	10

VNIItsvetmet used the 13 samples to make three composites, detailed as follows:

- Composite 1 – Sulphide dumps (western dump);
- Composite 2 – Oxide dumps (eastern dump); and
- Composite 3 – Perimeter dump material (Dumps 1a, 16 and 21).

The composites contained 0.22, 0.066 and 0.1% Cu for composites 1, 2 and 3 respectively. Chemical analysis indicated that 54 to 59% of the copper was acid soluble.

Column tests were undertaken on the three composites using 100 kg of material crushed to -40 mm. The columns used were 1.8 m high with a diameter of 20 cm.

All the samples responded favourably to column leaching with composite 1 (sulphide material) yielding a final recovery of between 50 to 58% after 60 days of leaching. Leach recoveries >60% were also obtained for composites 2 and 3.

13.1.5 CAML Site Column Tests (2012)

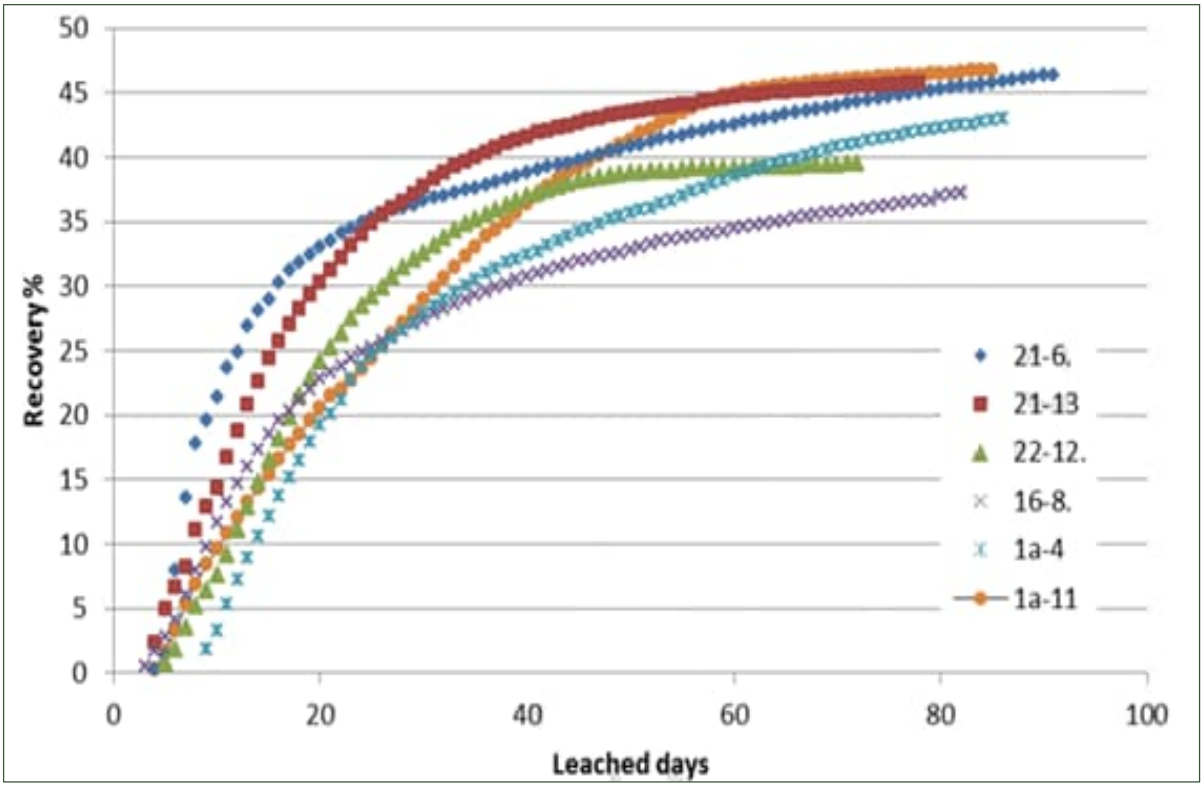
In early 2012, column leach tests were performed by CAML technical personnel on four western dump samples of sulphide dump material and two on mixed dump material. The material was obtained from pits dug on Dumps 21, 22, 16 and 1. The aim of the testwork was to ascertain the metallurgical performance of the sulphide and mixed dumps and the likely operating parameters.

Samples were obtained from the western dumps by excavating pits 5.0 m deep and 10.0 m wide. Samples were taken from around the pit and put into plastic bags until approximately 2.0 t of sample had been obtained. Each sample was prepared separately, where they were individually homogenised through cone and quartering before a 5 kg sub sample was sent to the CenterGeoAnalyt (Karaganda) laboratory for head grade analysis. The remaining samples were used for testing using 4.0 m high, 380 mm diameter columns.

Once irrigation had started a 100 ml sample of solution was taken daily and submitted to the KCC laboratory. Residue remaining at the end of the column leach test period was removed from the column, mixed through cone and quartering and a 5 kg sub sample taken and submitted for analysis.

The recovery time curves obtained from the 2012 column leach tests are presented in Figure 13-1.

Figure 13-1: Western Dumps Column Test Results



Source: SK (2012)

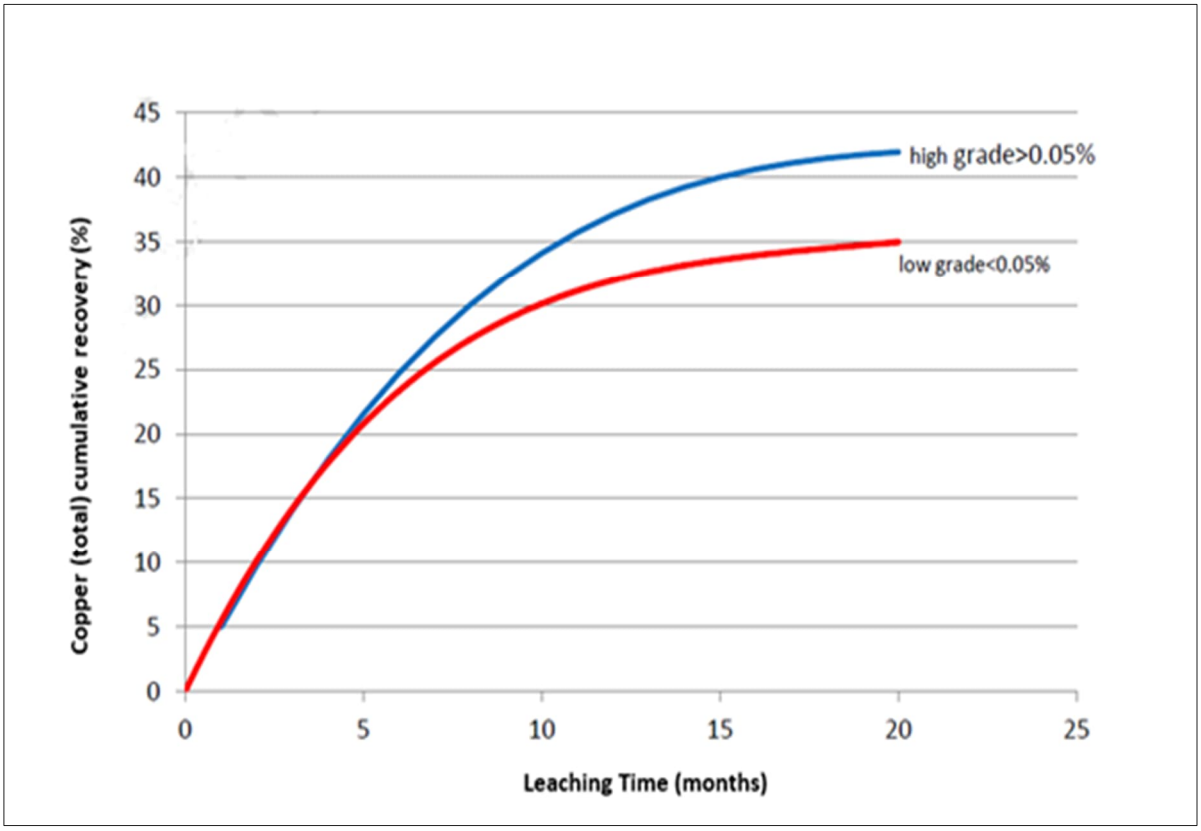
The maximum column leach recovery from Dumps 16 and 22 varied between 35% and 42%, with the lower grade materials yielding a lower recovery.

Based on the column test results and leach flux data taken from historical test and site production data, an estimated leach recovery curve was determined for Dumps 16 and 22. In developing the design leach curve the following factors were considered:

- The copper grade of Dumps 16 and 22 is about half of the grade of Dump 9/10. This has a corresponding, adverse, effect upon the copper pick-up grade and recovery across the leach.
- The height of Dumps 16 and 22 is approximately twice that of Dump 9/10. This prolonged the leach cycle, adversely affecting leach recovery, whilst having a positive impact on early leach solution grades.
- The acid soluble Cu concentration of Dumps 16 and 22 is about 44%, compared to approximately 60% for Dump 9/10. This will adversely affect the copper recovery, leach rate and copper pick-up across the western dumps leach.
- The column tests conducted at VNIITSvetmet and site used prepared material where coarse fractions were removed. In the former case, the ore size was -40 mm; and in the latter -75mm. This contrasts with the actual size distribution on the dump with some fractions up to approximately 1.0 m diameter. Whilst most of the oxidised Cu mineralisation is thought to be along fractures, the disparity in particle size will reduce the industrial scale leach recovery compared to laboratory column test results.

The leach design curves are shown in Figure 13-2.

Figure 13-2: Western Dumps Leach Design Recovery Curves



Source: SK (2012)

The model leaching curves represent the leaching rate of the western dumps area; however, there is grade variation within the dumps, ranging from a minimum of 0.028% to a maximum of 0.178% Cu. Leach recovery, kinetics and PLS grade are known to vary with grade, therefore the leach curves have been constructed to cater for the varying grades, with a recovery of 35% from material grading less than 0.05% Cu and a recovery of 42% from material grading above 0.05% Cu. Based on these factors a leach recovery of about 30% could be expected within 10 months from the low-grade material and about 34% from the high grade. A further 10 months of leaching would be required in order to obtain the final recovery of 35% for low grade and 42% for high grade material, however, given the final 10 months leach cycle would utilise the common rest-rinse leach practice, the actual time required to obtain the target leach recovery would be several months longer.

13.2 Pilot Plant Trials (CAML)

In 2008, CAML commissioned a pilot scale SX-EW pilot plant that had an initial design output of 200 kg per day of copper. In 2009, this was expanded to 600 kg per day. The facility was initially located at Dump 6 to test the eastern dump material before being moved to test the western dumps in 2011 to evaluate the response of Dump 1a to leaching.

During the western dump trial, two cells were tested. In the first cell, the flux rate was found to be too high as observed by ponding on top of the cell. While testing the second cell, it was found that the solutions emanating at the base of the dumps were not being recovered at the expected locations. Following investigations, it was found that the underlying topography, which was not representative of the entire dumps, was the cause for this effect. Despite these challenges, a copper recovery of approximately 42% was still achieved.

13.2.1 Eastern Dump Pilot Plant Tests Results

CAML selected four trial areas or "cells" within oxide Dump 6 for the pilot trial. Each cell had a surface area of about 1,000 m^2. Barring minor stoppages, the plant operated continuously through two winters (where temperatures fell as low as -35°C).

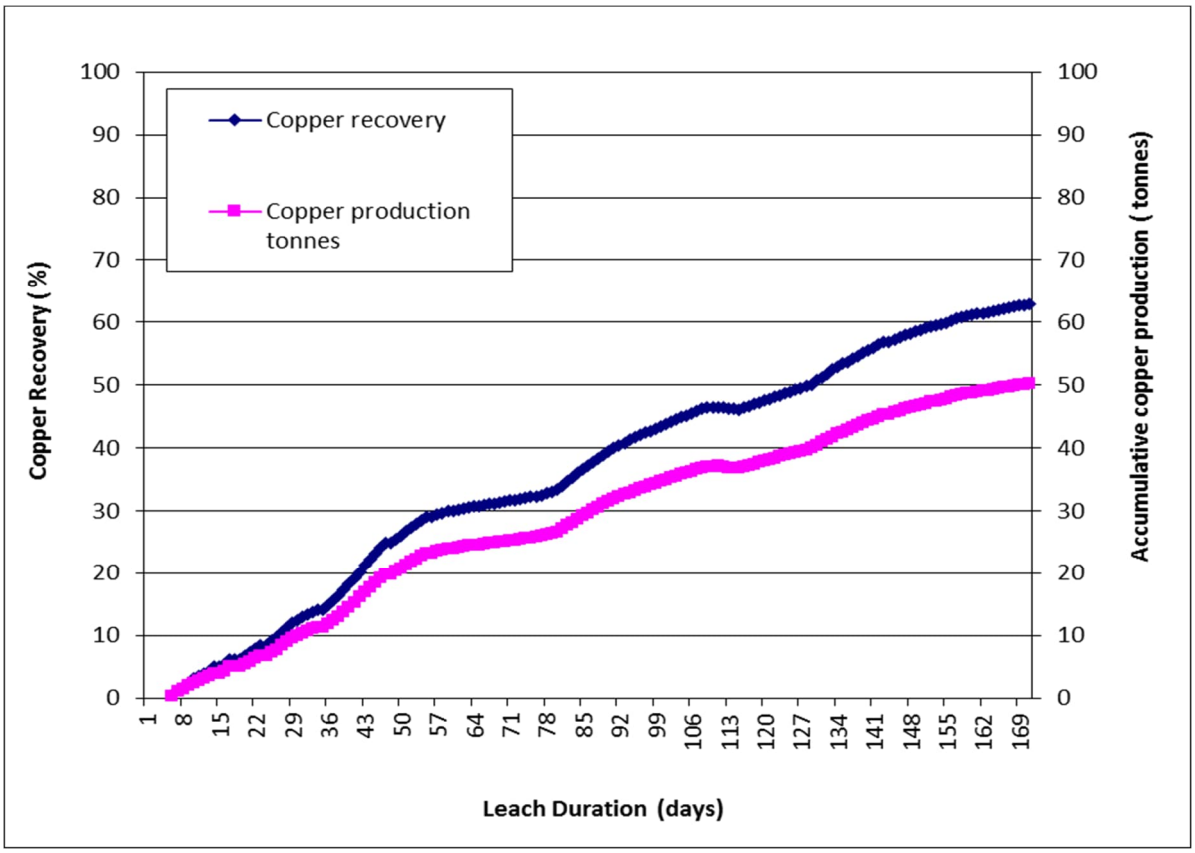
Leaching of the dump began in August 2008. The amount of copper within Cells 1 to 4 was estimated to be 390.4 t while the amount copper extracted (based on copper cathode produced and pond and trench inventories) was 196 t. The calculated copper recovery was therefore 50.2% over the period from October 2008 to July 2010.

13.2.2 Western Pilot Plant Tests Results

The pilot plant facility was relocated to the western dumps in 2011 and positioned on Dump 1 (at the foot of Dump 1a). Two trials were undertaken where Dump 1a was irrigated with an acidic solution.

In the initial trial, an area of 1,000 m^2 was tested, containing some 57,37 7t of material (at a dump height of 33.7 m). The material contained 0.14% Cu and equated to some 80 t of copper. The rate of irrigation was relatively high and resulted in ponding on top of the cell. After reviewing the data and with further operational experience, it was found that the optimum irrigation rate was 3l/hr/m^2. Regardless of ponding, the material responded favourably to leaching with a leach recovery of 62.9% obtained after 169 days, as shown in Figure 13-3.

Figure 13-3: Western Dumps Pilot Trial on Dump 1a (at a Head Grade of 0.139% Cu)



Source: SK (2012)

In 2012, an attempt was made to re-trial Dump 1a, in doing so, a new leach cell was selected (positioned in the near vicinity to the initial cell). While testing the second cell, it was found that the solutions emanating at the base of the dumps were not being recovered at the expected

locations. Following investigations, it was found that the underlying topography, which was not representative of the entire dumps, was the cause of this effect. The trial on the second cell was therefore abandoned in September 2012. Further tests were curtailed as commercial operation of the east dumps commenced.

13.3 Recent Testwork

Testwork undertaken since 2017 has been undertaken on site, generally to test certain aspects of the leaching process or to test specific material sources. A summary of the testwork is shown in Table 13-4.

Table 13-4: On Site Metallurgical Testwork Since 2017

№	Name	Size	Date	Purpose
1	Dump 3 ore column test	500 mm diam, 2.5m ht, 450-550kgs	April 2017	Dump 3 ore leaching kinetic
2	Dump 2 ore column test	500 mm diam, 2.5m ht, 450-550kgs	December 2020	Dump 2 ore leaching kinetic with original raffinate
3	Dump 2 ore column test	500 mm diam, 2.5m ht, 450-550kgs	January 2021	Dump 2 ore leaching kinetic with BASF leaching aid LIXTRA
4	Dump 1A ore column test	500 mm diam, 2.5m ht, 450-550kgs	May 2021	Dump 1A ore leaching kinetic with BASF leaching aid LIXTRA
5	Dump 1A ore column test	500 mm diam, 2.5m ht, 450-550kgs	November 2021	Dump 1A ore leaching kinetic with BASF leaching aid LIXTRA
6	Block 18-1&22-12 ore column test	500 mm diam, 2.5m ht, 450-550kgs	March 2023	Intermediate Leach Solution (ILS) leaching test
7	Block 18-1&22-12 ore column test repeat	500 mm diam, 2.5m ht, 450-550kgs	June 2023	ILS leaching test
8	NDC ore column test	500 mm diam, 2.5m ht, 450-550kgs	September 2023	Observe NDC ore leaching kinetic
9	Dump 16/22 ore column test	500 mm diam, 2.5m ht, 450-550kgs	January 2024	ILS leaching test
10	Dump 15 ore column clay part test	500 mm diam, 2.5m ht, 450-550kgs	April 2024	ILS leaching test
11	Dump Ore size distribution	Two tonnes over vibrating screen	June 2024	ILS leaching test
12	Dump 2 size distribution column test	500mm 2.5m height	July 2025	Permeability test
13	Dump 13 and 20 column tests	450 mm diam, 2.5m ht, 450-550kgs	August 2025	Observe size distribution of dump 2 ore

The test results are summarised as follows:

- Test 1 was undertaken on Dump 3 material. A low recovery of 12.4% was achieved which was attributed to channeling.
- Tests 2 and 3 were undertaken on Dump 2 material and investigated the use of a new leach aid reagent by the German manufacturing supplier, BASF. The tests were stopped after 15 days due to low percolation rates.
- Tests 4 and 5 were undertaken on Dump 1a material, testing the BASF leach aid. It was again concluded that the leach aid was not beneficial.

- Tests 6 and 7 were intermediate leach solution (ILS) tests undertaken on samples from Dumps 16 and 22 where a comparison was made between a single and two-stage leach method. It was found that the two-stage leach system did not offer any advantage. High recoveries of 31.4% and 36.2% were achieved after 29 days.
- Test 8 was undertaken on samples from the northern dumps. Head grades ranged from 0.045 to 0.059% Cu and satisfactory recoveries of 17.1 to 44.1% were achieved after only 29 days.
- Test 9 was a series of tests undertaken on samples from Dumps 16 and 22. The head grades ranged from 0.05 to 0.08% Cu and recoveries ranged from 24 to 53% after leach periods of 28-39 days. The tests demonstrated good initial leaching rates and a single stage leaching approach again gave the best results.
- Test 10 was a permeability test undertaken on Dump 15 clay-rich material which gave percolation rates similar to other tests.
- Test 11 was a size analysis on Dump 2 and indicated that 47.7% was finer than 5 mm.
- Test 12 was undertaken on Dump 2 >5mm and <5mm size fractions. After 45 days the <5 mm column was blocked and the >5 mm column recovery was low.
- Test 13 was undertaken on samples from Dumps 13 and 20. Recoveries of 8% and 23% were achieved after 68 days.

In addition, four column tests were undertaken on samples from Dump 2, and the results are summarised in Table 13-5.

Table 13-5: Dump 2 Testwork Results

Sample	Head Grade (Cu %)	Recovery (%)	Acid Consumed (kg/kg Cu)
1	0.078	68	3.68
2	0.048	38	8.67
3	0.055	39	6.35
4	0.072	57	6.85

The recoveries ranged from 38 - 68% and averaged 51% after 60 days of leaching. The head grades ranged from 0.048 - 0.078% Cu. Acid consumptions were variable and ranged from 3.68 - 8.67 kg/kg of Cu. Leach kinetics showed that recoveries from Samples 1 and 2 were still increasing when the tests were terminated.

Four column tests were also undertaken on samples from the northern dumps. Head grades ranged from 0.018 - 0.056% Cu and average recoveries ranged from 34 to 41%.

13.4 QP Opinion

The feasibility of recovering copper by in-situ heap leaching has been investigated through extensive programmes of laboratory testwork and on-site pilot testing.

Pilot trials undertaken by CAML at the eastern dumps yielded a recovery of 50.2%, confirmed in practice as a leach recovery of 51% has been achieved for Dumps 6,7,9-10. The western dumps, being more refractory, respond less favourably to leaching with recoveries ranging from 35% (sulphide material) to 42% (mixed material) being achieved.

The authors conclude that the material tested is representative of future ore sources and that the testwork is appropriate for the in situ leaching method used to extract the copper mineralisation.

14.0 Mineral Resource Estimates

The Mineral Resource estimates for the Kounrad in situ dump leach operation were produced by SK using a polygonal based approach and were audited by SLR.

An initial Mineral Resource estimate for Dumps 6, 7 and 9-10 had an effective date of December 1, 2011, and included the 2011 drilling (no drilling was undertaken on these dumps in 2012). This was before leaching operations commenced on these dumps in April 2012. An initial Mineral Resource estimate for the remaining dumps had an effective date of May 17, 2013, and included the 2012 drilling. No further exploration has been undertaken since this time. The initial Mineral Resource estimates are updated annually by SK to account for depletion due to on-going leaching operations.

To audit the SK Mineral Resource estimates, SLR undertook a check estimate using a 3D block modelling approach. The following sections detail the procedures used by SLR.

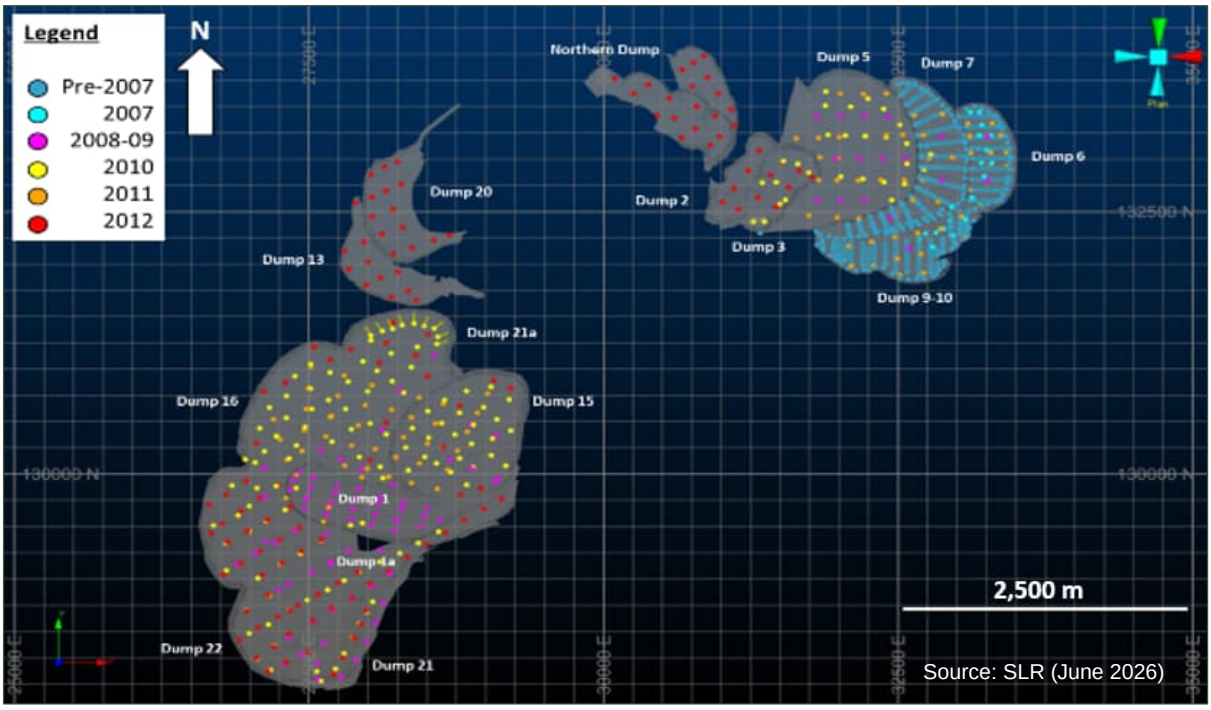
14.1 Resource Database

The sample database was provided by CAML and included a combination of RC drilling, trenching, pit sampling and metallurgical sampling undertaken in the following campaigns:

- Pre-2007 channel sampling.
- 2007 drilling.
- 2008-2009 drilling.
- 2010 trial pit sampling, metallurgical trial pit sampling and trenching.
- 2011 drilling.
- 2012 drilling.

The sample database is shown in Figure 14-1. Sample intervals without recorded assay values were treated as absent in the database.

Figure 14-1: Plan View Showing Location of Samples (Coloured by Year)



Source: SLR (June 2026)

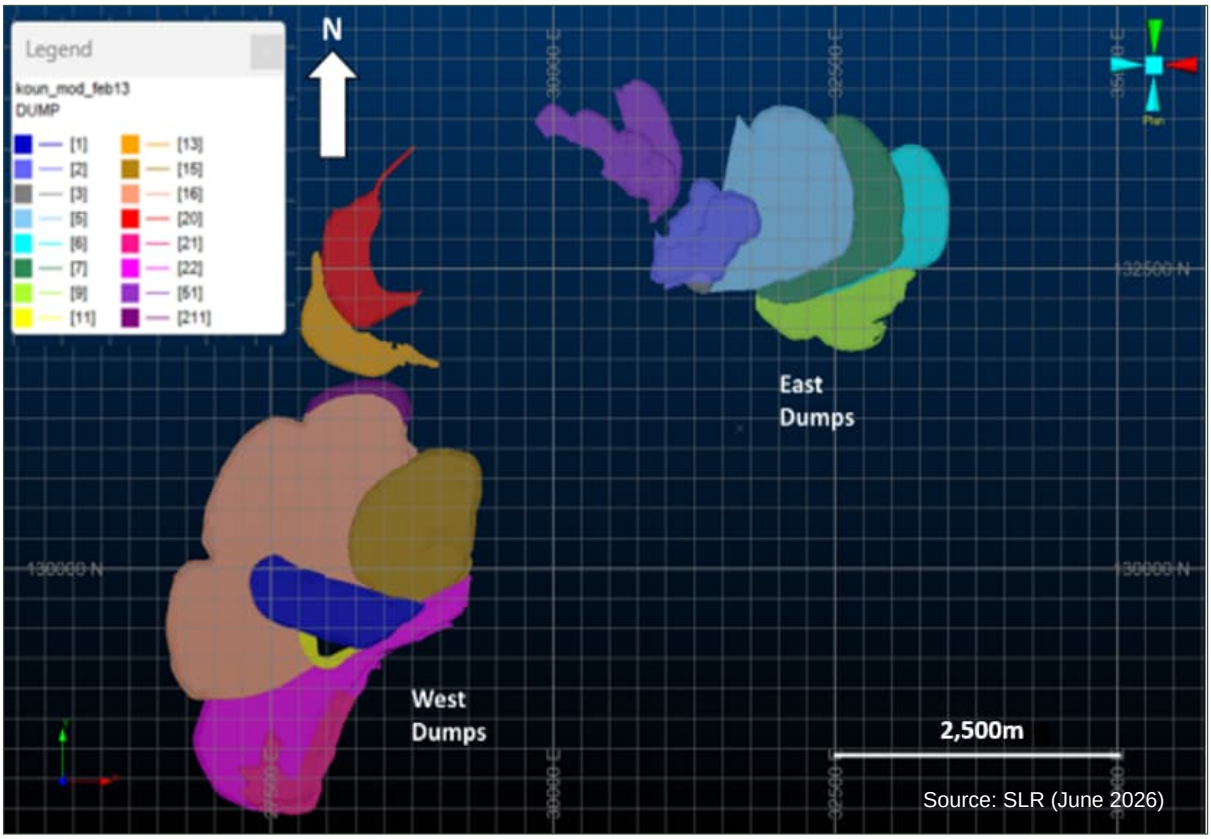
14.2 Dump Interpretation

Dump domain codes are tabulated in Table 14-1 and shown in Figure 14-2.

Table 14-1: Dump Domain Coding

Code	Dump	Code	Dump	Code	Dump	Code	Dump
1	Dump 1	5	Dump 5	9	Dump 9-10	211	Dump 21a
11	Dump 1a	51	Northern (NDC 1 & 2)	15	Dump 15	22	Dump 22
2	Dump 2	6	Dump 6	16	Dump 16		
3	Dump 3	7	Dump 7	21	Dump 21		

Figure 14-2: Plan View of Dump Domains



Wireframes of the topographic surface of the dumps were constructed based on surveys carried out by SK surveyors using total station equipment. A surface defining the base of the dumps was constructed by SLR using the drillhole logging of basement material identified in the 2011 and 2012 campaigns. The drilling used 3 m sample intervals, and therefore basement could be intersected at any depth within the final 3 m run. Where samples were logged as containing basement, the top of the sample was used by SLR to define the basement surface, which was then used to construct the volumetric model. The QP considers this to be a conservative estimate of the depth of the base of the dumps.

Statistics of samples in each dump domain are tabulated in Table 14-2 and Table 14-3. Cumulative distribution plots of the grades are shown in Figure 14-3.

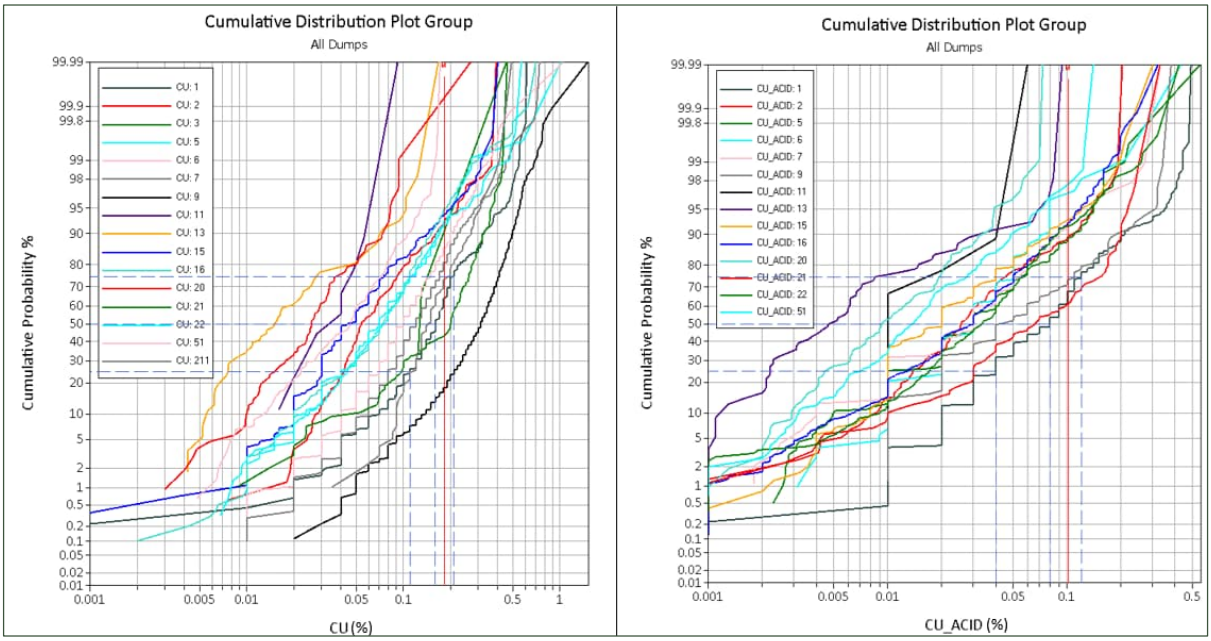
Table 14-2: Statistics of Total Cu (%) by Domain

Dump	No. of Samples	Min (%)	Max (%)	Mean (%)	Variance	Std Dv
1	9	0.016	0.092	0.040	0.000	0.022
1a	447	0.000	0.612	0.182	0.012	0.111
2	163	0.008	0.390	0.080	0.004	0.067
3	3	0.124	0.455	0.236	0.024	0.155
5	216	0.010	1.010	0.090	0.008	0.091
6	769	0.010	1.050	0.116	0.006	0.076
7	1,031	0.010	0.740	0.137	0.007	0.086
9	882	0.020	1.500	0.316	0.021	0.145
13	56	0.004	0.167	0.029	0.001	0.034
15	275	0.000	0.400	0.067	0.004	0.064
16	980	0.002	0.700	0.084	0.004	0.064
20	106	0.003	0.268	0.034	0.001	0.032
21	96	0.009	0.460	0.190	0.011	0.107
22	306	0.007	0.565	0.093	0.006	0.080
NDC1 & 2	150	0.005	0.171	0.052	0.001	0.038
21a	98	0.035	0.490	0.163	0.006	0.076

Table 14-3: Statistics of Acid Soluble Cu (%) by Domain

Dump	No. of Samples	Min (%)	Max (%)	Mean (%)	Variance	Std Dv
1	9	0.010	0.060	0.020	0.000	0.017
1a	447	0.000	0.490	0.101	0.009	0.095
2	156	0.000	0.203	0.041	0.002	0.043
3	0	-	-	-	-	-
5	199	0.002	0.550	0.046	0.003	0.055
6	107	0.003	0.430	0.039	0.002	0.048
7	95	0.002	0.330	0.044	0.003	0.054
9	83	0.010	0.380	0.082	0.008	0.087
13	56	0.001	0.094	0.013	0.000	0.022
15	247	0.000	0.300	0.034	0.002	0.042
16	833	0.000	0.321	0.039	0.001	0.038
20	106	0.001	0.073	0.015	0.000	0.014
21	89	0.000	0.330	0.091	0.005	0.074
22	285	0.000	0.421	0.046	0.002	0.049
NDC1 & 2	150	0.000	0.140	0.022	0.001	0.025
21a	0	-	-	-	-	-

Figure 14-3: Cumulative Distribution Plots Showing Grade Distribution in Dumps for Cu Total Assays (Left) and Acid-Soluble Cu Assays (Right)



Source: SLR (June 2026)

14.3 Treatment of High-Grade Assays

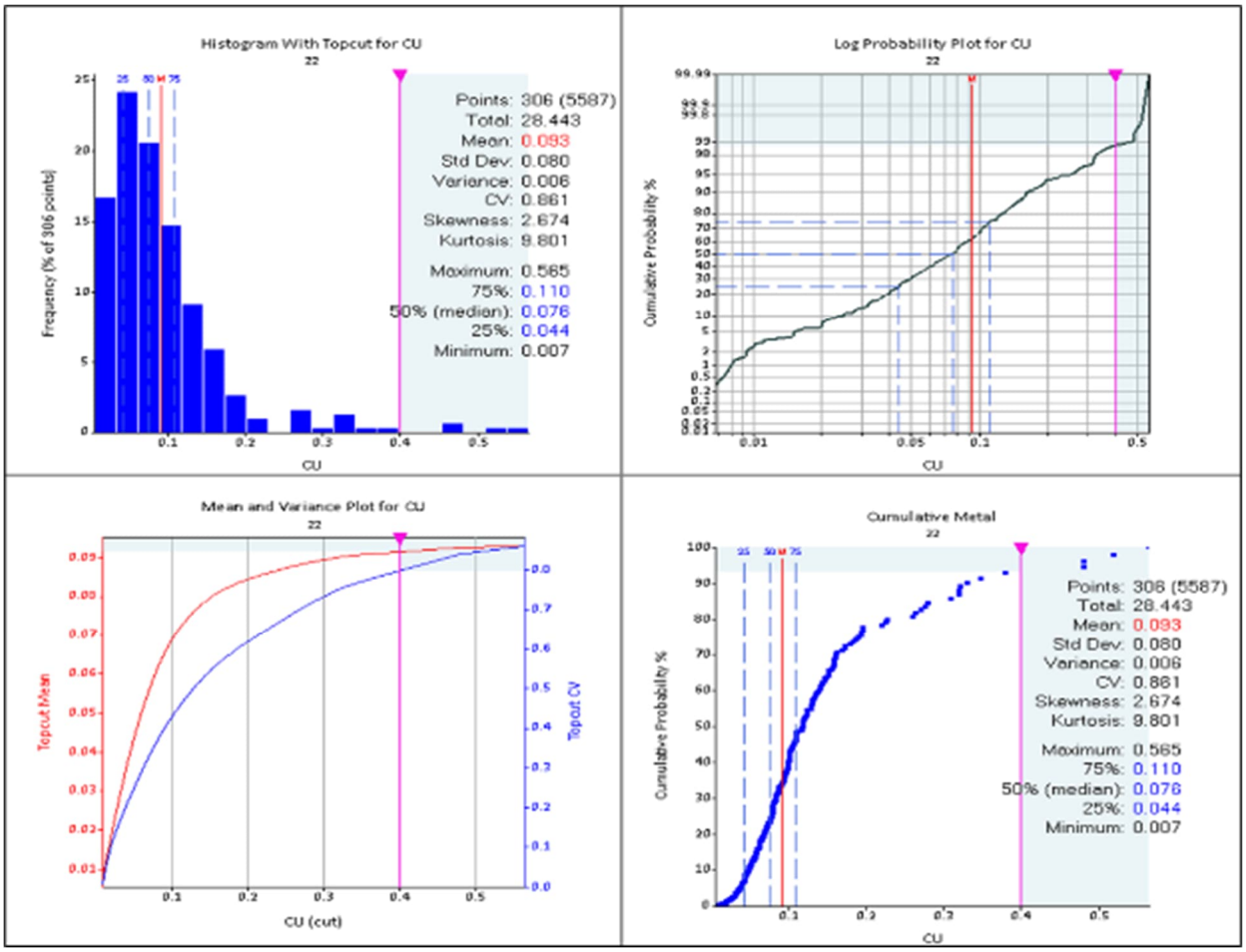
The presence of outlier grades in the sample database was assessed on a domain-by-domain basis using histograms, disintegration analysis and statistical analysis of the samples.

An example of the top cut analysis is shown in Figure 14-4 and a summary of the sample statistics by domain is shown in Table 14-4. Top cuts were applied to total Cu values only. No top cuts were applied to the acid soluble Cu values.

Table 14-4: Summary Statistics of Dumps with Top Cutting Applied

Dump	No. of samples	No. Capped	% Capped	Raw stats (Cu %)			Capped Stats (Cu %)		
				Max	Mean	CV	Max	Mean	CV
2	163	5	3.1	0.39	0.08	0.84	0.25	0.08	0.74
13	56	2	3.6	0.17	0.03	1.17	0.12	0.03	1.1
15	275	5	1.8	0.4	0.07	0.96	0.3	0.07	0.92
20	106	1	0.9	0.27	0.03	0.94	0.1	0.03	0.72
22	306	4	1.3	0.57	0.09	0.86	0.4	0.09	0.8

Figure 14-4: Example of Top Cut Analysis for Dump 22



Source: SLR (June 2026)

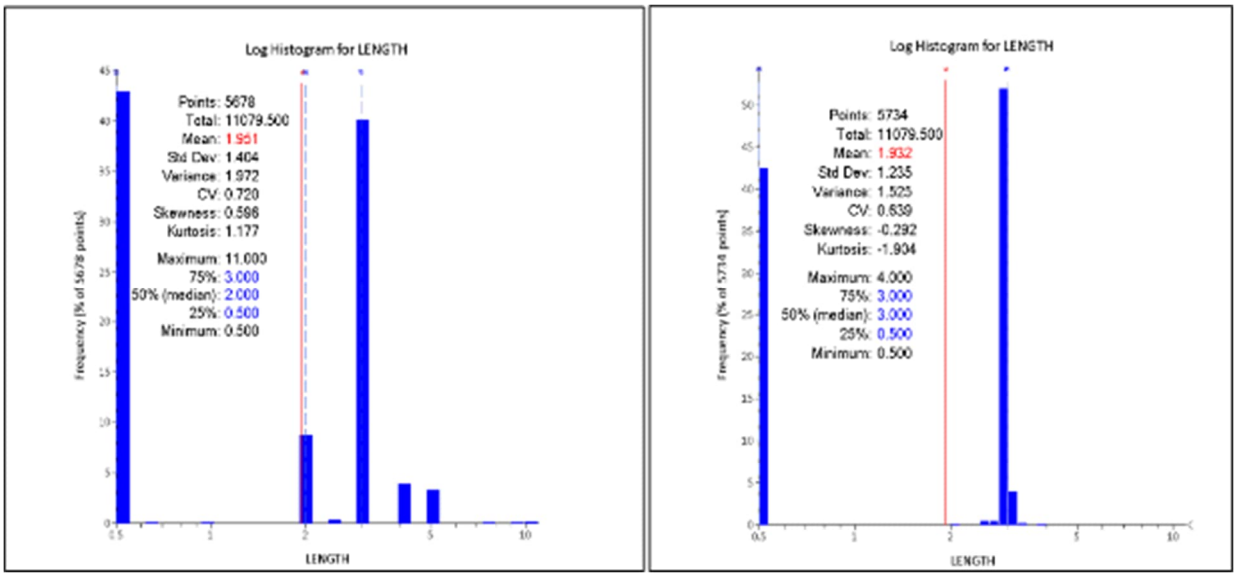
14.4 Compositing

A 3.0 m composite length was selected. Samples were not composited across dump boundaries. Residual lengths were distributed evenly throughout a given drillhole. Historical trench samples (eastern dumps) have individual sample lengths of 0.5 m and therefore could not be composited. A histogram of sample length and composite length is shown in Figure 14-5. Statistical analysis of the samples and the resultant composites is summarised in Table 14-5.

Table 14-5: Sample and Composite Statistics

Statistics	Raw Samples	Composite	% Difference
Number of Samples	5,587	5,647	1%
Cu Total Minimum (%)	0.000	0.000	0%
Cu Total Maximum (%)	1.500	1.500	0%
Cu Total Mean (%)	0.143	0.142	-1%
Cu Total CV	0.866	0.859	-1%

Figure 14-5: Log Histograms for Sample Length (Left) and Composite Length (Right)



Source: SLR (June 2026)

14.5 Variography

Variography was undertaken on the composites to define suitable estimation and search parameters for grade estimation. Variogram searches were conducted at 20° increments in azimuth to assess anisotropy. Variogram maps were produced for each dump to identify possible principal directions of continuity that may have formed during dump development. However, robust variograms could not be produced to support a kriged estimate.

14.6 Block Model

A block model defining the dumps was constructed using the dump wireframes to categorise the block model domains. A parent block size of 50 x 50 x 3 m was used. To effectively represent domain volumes, sub-block splitting was enabled at the domain boundaries. A summary of the block model parameters is shown in Table 14-6. The block model was not rotated.

Table 14-6: Block Model Parameters

Parameter	X (m)	Y (m)	Z (m)
Parent Block Size	50	50	3
Minimum Sub-Block Size	6.25	6.25	3
Base Point	26,560	127,937	397
Parent Block Count	140	123	38

14.7 Density

A summary of the densities used in the Mineral Resource estimate is shown in Table 14-7. The densities were based on average dry densities derived from the testwork undertaken in 2012 as discussed in Section 11.4. The mean densities were assigned to the relevant dump domains in the block model.

For Dump 16 a density of 2.07 t/m^3 was used instead of the average of 2.14 t/m^3 to account for an anomalous result of 2.46 t/m^3. For the oxide Dumps 6, 7, and 9-10 an average density of 1.875 t/m^3 was used, and for the northern dumps an average density of 1.88 t/m^3 was used.

The QP considers the densities used are reasonable for these types of dump material.

Table 14-7: Summary of Density Assignment by Dump

Area	Dump No.	Domain Code	Density (t/m^3)
Eastern	6	6	1.875
	7	7	1.875
	9-10	9	1.875
	5	5	1.90
	2	2	1.89
Western	1	1	1.92
	1a	11	1.96
	13	13	2.05
	15	15	2.01
	16	16	2.07
	20	20	1.95
	21	21	2.06
	21a	211	1.91
	22	22	1.96
Northern	NDC1 and NDC2	51	1.88

14.8 Grade Estimation

Grade estimation for total copper and acid soluble copper was undertaken for the blocks defined within each domain. The domains were treated as hard boundaries, and, as such, composites from an adjacent domain could not be used to estimate the grade of another domain. As robust variograms could not be established, inverse distance weighting (IDW^2) was used for all domains. Nearest Neighbour (NN) was also used for comparative purposes.

Grade estimation was run on parent blocks in a three-pass plan, with the second and third passes using progressively larger search radii to estimate blocks that were not estimated on the previous pass. The first pass search radius was determined from the general data spacing. Variable search orientations were applied during estimation based on dump configuration profiles. Directional control strings were defined to outline local variation resulting from the dump profile.

First-pass block estimates were required to be informed by a minimum of 4 composites and a maximum of 12 composites, with a maximum of 2 composites per drillhole. Sample requirements were relaxed in higher estimation passes to ensure that all blocks received estimated grades. The channel sample data were restricted to estimate only those blocks located near the surface to prevent over extrapolation of these data at depth.

A summary of the estimation parameters is shown in Table 14-8.

Table 14-8: Kounrad Estimation Parameters

Search Axis (m)			Min No. Composites	Max No. Composites	Max No. Composites per Hole*
Strike	Down Dip	Across Strike			
200	100	4	4	12	2

Notes:
1. *Maximum of one channel sample.
2. Second search x2 expansion.
3. Third search x3 expansion.

14.9 Block Model Validation

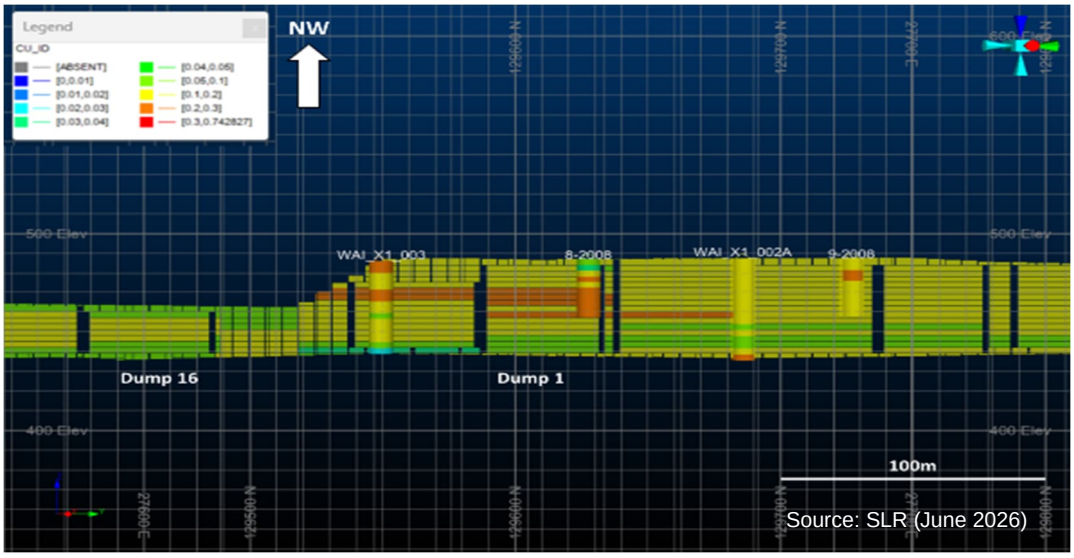
Model validation was carried out for all dump domains. Validation included visual comparisons, domain-based statistical comparisons, and comparisons of composite and estimated block model grades in swath plots.

14.9.1 Visual Comparison

Visual validation was performed by comparing the input sample composites and estimated block grades in long section, cross section and level plan. The checks showed an acceptable correlation between the composites and the block model. Hard boundaries were observed to have constrained the grades to their respective estimation domains.

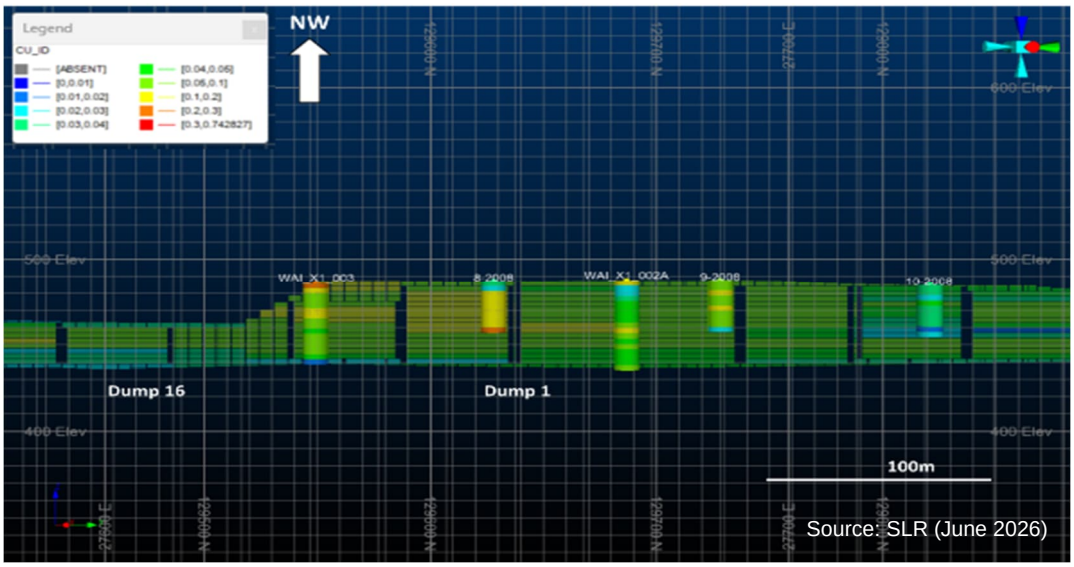
Example cross sections and plan views comparing the composite and block model grades are shown in Figure 14-6 to Figure 14-9.

Figure 14-6: Cross Section of Dumps 1 and 16 Showing Composites and Block Model Grades for Total Cu (%)



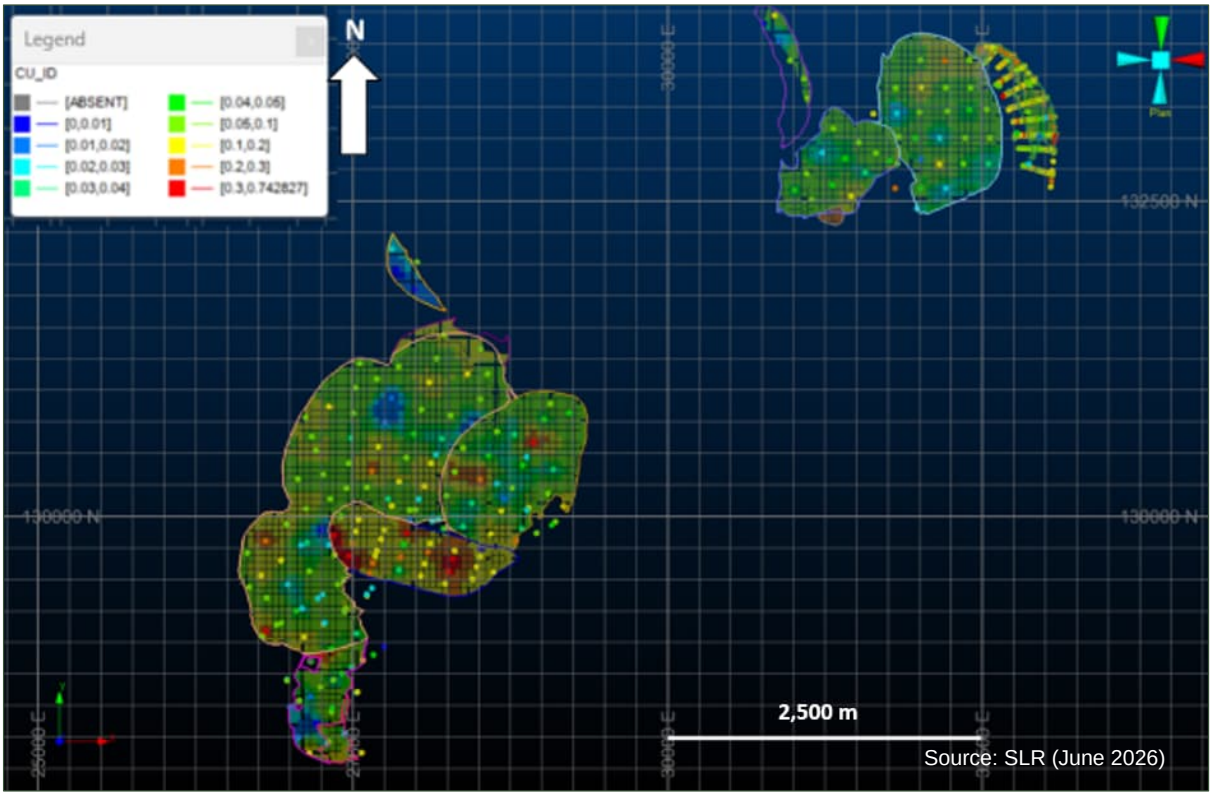
Source: SLR (June 2026)

Figure 14-7: Cross Section of Dumps 1 and 16 Showing Composites and Block Model Grades for Acid Soluble Cu (%)



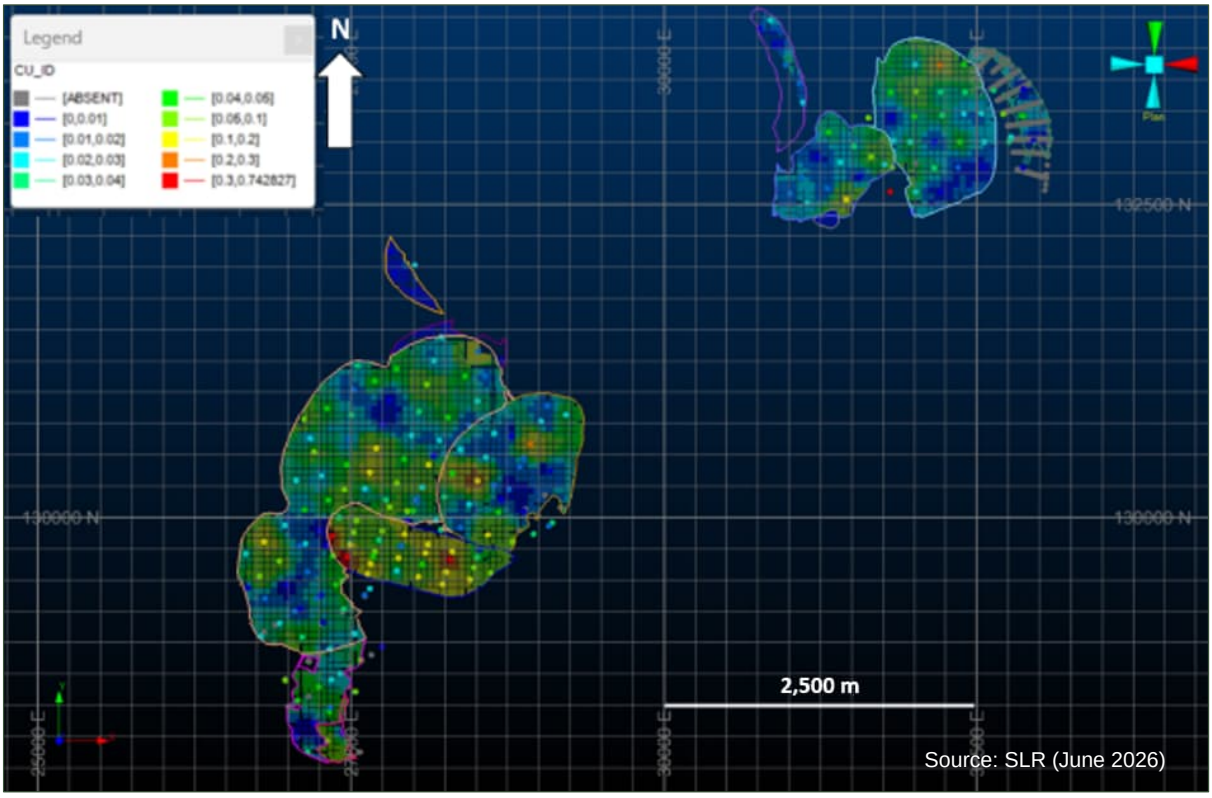
Source: SLR (June 2026)

Figure 14-8: Plan View at 465 masl Showing Composites and Block Model Grades for Total Cu (%)



Source: SLR (June 2026)

Figure 14-9: Plan View at 465 masl Showing Composites and Block Model Grades for Acid Soluble Cu (%)



Source: SLR (June 2026)

14.9.2 Statistical Comparison

A statistical analysis of the block model was carried out to compare the mean composite grade with the mean weighted model grade. This analysis provides a check on the reproduction of the grades in the block model globally. Typically, the mean grade of the block model should not be significantly different to that of the samples from which it has been derived.

The mean block model grade for each domain and its corresponding mean sample and composite grade is shown in Table 14-9. In addition to the principal estimation using IDW^2, the table also contains a comparative estimate based on the NN method. Where differences in the mean grades were observed, as at Dump 9-10, these were checked and found to be the result of the spatial distribution of the composites. Overall, the comparison between the composites and the estimated mean grades are considered acceptable.

Table 14-9: Total Cu (%) and Acid Soluble Cu (%) Mean Grade Comparison by Dump

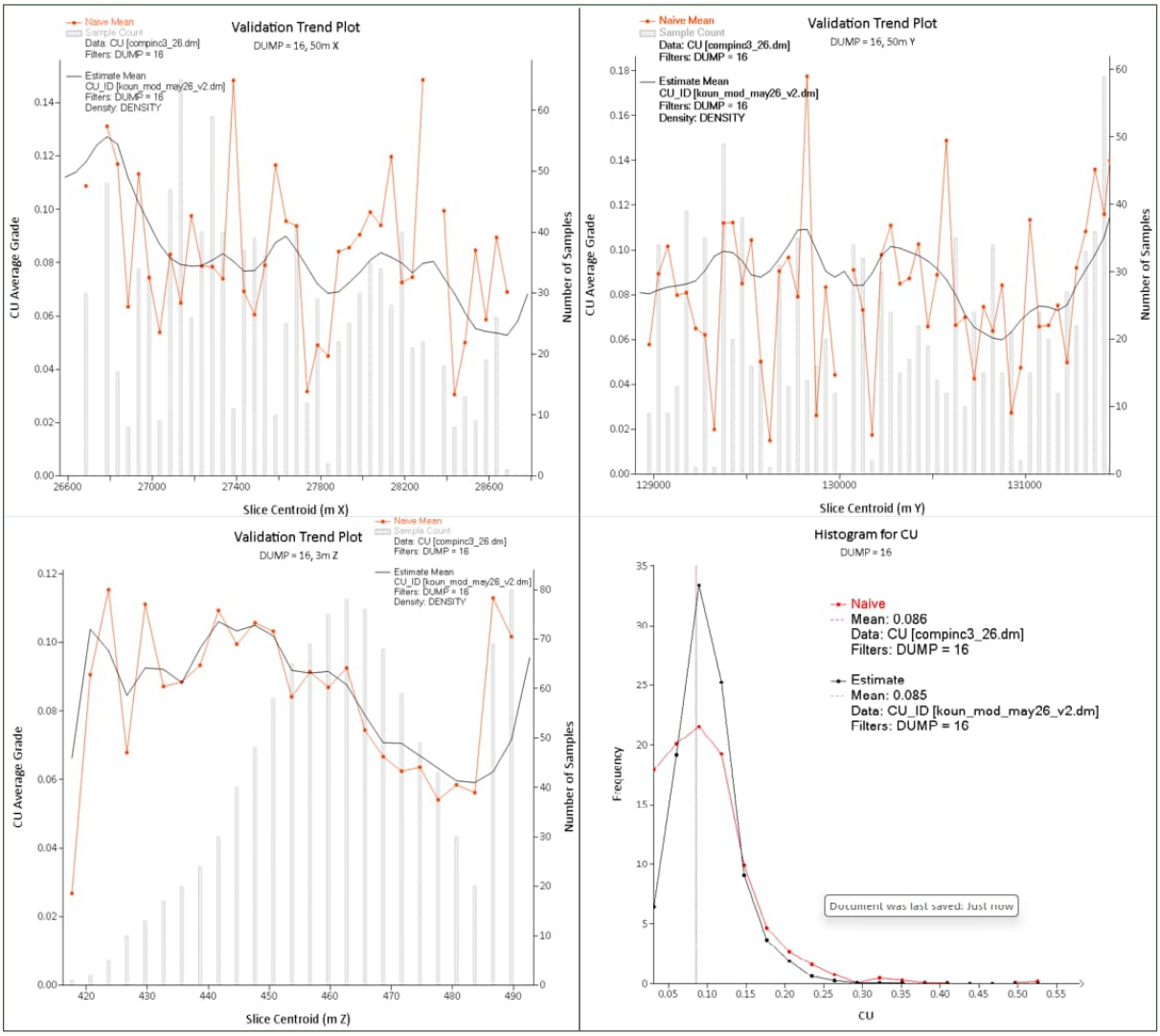
Dump	Cu Total (%)				Cu Acid Soluble (%)			
	No. of Comps	Composites	IDW	NN	No. of Comps	Composites	IDW	NN
1a	335	0.18	0.17	0.16	335	0.10	0.09	0.09
2	163	0.08	0.07	0.06	156	0.04	0.04	0.03
3	3	0.24	0.22	0.26	-	-	-	-
5	229	0.08	0.09	0.10	212	0.05	0.06	0.07
6	773	0.12	0.09	0.11	111	0.04	0.04	0.04
7	1,043	0.14	0.11	0.13	107	0.04	0.05	0.04
9-10	883	0.32	0.20	0.24	84	0.08	0.13	0.13
1	6	0.04	0.05	0.04	6	0.02	0.02	0.02
13	56	0.03	0.03	0.03	56	0.01	0.02	0.02
15	287	0.06	0.07	0.07	259	0.03	0.03	0.03
16	1,049	0.09	0.09	0.08	855	0.04	0.03	0.03
20	106	0.03	0.03	0.03	106	0.01	0.02	0.02
21	99	0.20	0.20	0.19	92	0.10	0.09	0.08
22	301	0.09	0.09	0.10	278	0.05	0.04	0.05
Northern (NDC 1&2)	150	0.05	0.05	0.05	150	0.02	0.02	0.02
21a	164	0.16	0.17	0.16	-	-	-	-

14.9.3 Swath Plots

Swath plots were generated from the model by averaging the composites and blocks along northings and eastings. The dimensions of each panel were determined by the block size. Estimated grades should closely reflect the composite data on which the estimation was based.

Example swath plots for Dump 16 are shown in Figure 14-10 for total Cu (%). Overall, the observed grade profiles behave as expected and show no significant bias.

Figure 14-10: Swath Plots for Total Cu (%) in Dump 16 for X (Top Left), Y (Top Right), and Z (Bottom Left) Directions, and Histogram Grade Profile (Bottom Right)



Source: SLR (June 2026)

14.10 Comparison with SK Mineral Resource Estimate

A comparison of the SK Mineral Resource estimates and the SLR check estimates was undertaken by SLR. The comparison used the SK Mineral Resource estimates prepared before the start of leaching operations. The small Dump 3 (approximately 500 thousand m^3) was not included in the SK Mineral Resource estimate and was also excluded by SLR.

A summary of the comparison of the SK Mineral Resource estimate and the SLR check estimate is shown in Table 14-10. All estimates are reported within the concession boundary.

Overall, the two estimates compare well and report similar grades. Differences in the volumes and tonnes on a dump-by-dump basis are attributed to differences in interpretation of the position of the dump interfaces where the dumps overlap. Globally, the total reported tonnes are within 1%, and the total contained metal is within 2.5%.

The authors consider the SK and SLR estimates are sufficiently comparable with no material differences. The authors accept the SK Mineral Resource estimates and the reported Mineral Resources contained in this Technical Report are based on the SK estimates.

Table 14-10: Comparison of SK Mineral Resource Estimate and SLR Check Estimate

Dump	SK Mineral Resource Estimate					SLR Check Estimate				
	Volume (000 m³)	Density (t/m³)	Tonnes (kt)	Cu (%)	Contained Metal (kt)	Volume (000 m³)	Density (t/m³)	Tonnes (kt)	Cu (%)	Contained Metal (kt)
Eastern Dumps										
6	6,061	1.875	11,364	0.13	14.6	7,372	1.88	13,860	0.09	12.5
7	14,723	1.875	27,606	0.16	43.1	18,824	1.88	35,389	0.11	38.9
9-10	6,514	1.875	12,214	0.19	23.5	7,408	1.88	13,927	0.20	27.9
2	16,634	1.89	32,435	0.08	25.0	15,602	1.89	29,488	0.07	20.6
5	36,874	1.90	70,061	0.09	66.6	35,530	1.90	67,507	0.09	60.8
Total Oxide	**80,806**	**1.90**	**153,680**	**0.11**	**172.7**	**84,736**	**1.89**	**160,171**	**0.10**	**160.7**
Western and Northern (NDC) Dumps										
1	592	1.92	1,136	0.04	0.4	697	1.92	1,338	0.05	0.7
1a	25,502	1.96	49,984	0.18	89.0	25,384	1.96	49,752	0.17	84.6
13	5,434	2.05	11,139	0.03	3.1	5,479	2.05	11,232	0.03	3.4
15	34,949	2.01	70,247	0.06	44.3	34,725	2.01	69,798	0.07	48.9
16	99,811	2.07	206,608	0.08	173.5	97,523	2.07	201,874	0.09	181.7
20	10,712	1.95	20,888	0.04	7.5	10,597	1.95	20,664	0.03	6.2
21	8,196	2.06	16,883	0.18	29.7	7,589	2.06	15,632	0.20	31.3
21a	2,630	1.91	5,023	0.14	7.1	2,550	1.91	4,870	0.17	8.3
22	27,544	1.96	53,986	0.11	57.2	25,614	1.96	50,203	0.09	45.2
NDC 1 & 2	2,957	1.88	5,544	0.05	2.7	2,580	1.88	4,850	0.05	2.4
Total Sulphide & Mixed	**218,327**	**2.02**	**441,436**	**0.09**	**414.6**	**212,738**	**2.02**	**430,213**	**0.10**	**412.7**
Total										
Grand Total	**299,129**	**1.99**	**595,116**	**0.10**	**587.3**	**297,474**	**1.98**	**590,384**	**0.10**	**573.4**

Notes:

1. Tonnes are Indicated Mineral Resources as presented in Section 14.16 of this report.
2. Grades and contained metal are reported as in situ total copper before commencing leaching operations.
3. The effective date of the SK Mineral Resource estimate for Dumps 6, 7 and 9-10 is December 1, 2011.
4. The effective date of the SK Mineral Resource estimate for Dumps 2, 5, 1, 1a, 13, 15, 16, 20, 21, 21a, 22 and NDC 1&2 is May 17, 2013.
5. Totals may not represent the sum of the parts due to rounding.

14.11 Comparison of Production Guidance and Actual Production

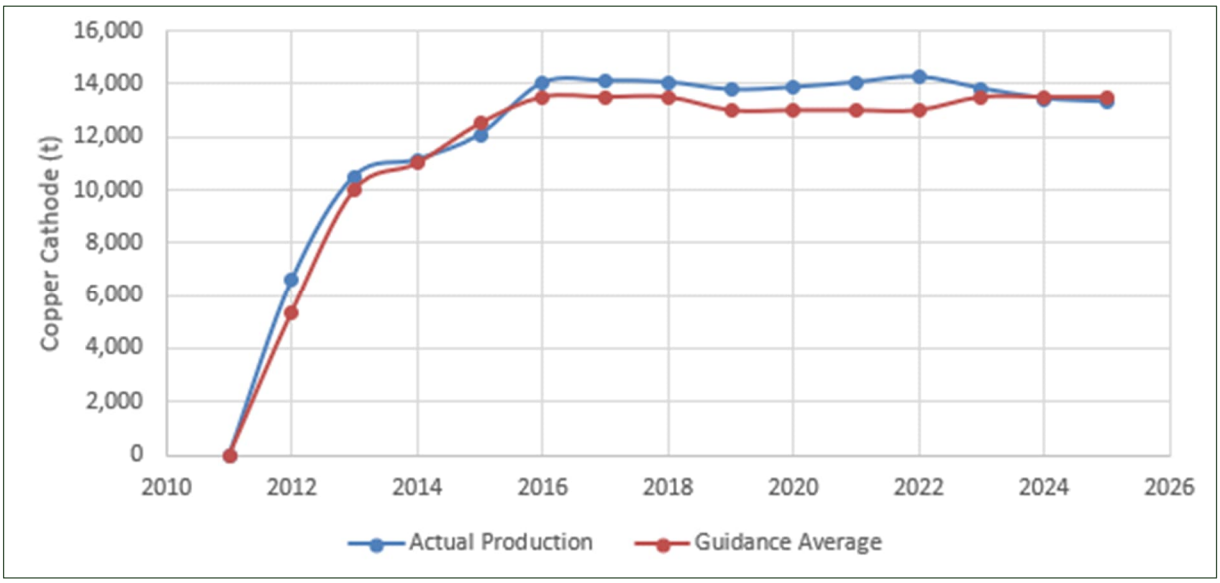
Reconciliation of the Mineral Resource model with actual production on a dump-by-dump basis is not possible due to the overlapping nature of the dumps and an inability to collect and measure the leach solutions from each dump separately. To assess confidence in predicting production, the authors have compared the annual initial production guidance by CAML and the end of year actual production. The results are shown in Table 14-11 and Figure 14-11.

Over the period, production is generally in line with guidance and shows an acceptable level of confidence in predicting annual production from the operation.

Table 14-11: Kounrad Copper Cathode Production Guidance and Actual Production

Year		2012	2013	2014	2015	2016	2017	2018
Guidance	Minimum (t)	5,000	-	-	12,000	13,000	13,000	13,000
	Maximum (t)	5,750	10,000	11,000	13,000	14,000	14,000	14,000
Actual (t)		6,586	10,509	11,136	12,071	14,020	14,103	14,049
Year		**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Guidance	Minimum (t)	12,500	12,500	12,500	12,500	13,000	13,000	13,000
	Maximum (t)	13,500	13,500	13,500	13,500	14,000	14,000	14,000
Actual (t)		13,771	13,855	14,041	14,254	13,816	13,439	13,311

Figure 14-11: Comparison of Actual Production and Average Production Guidance



Source: SLR (June 2026)

14.12 Resource Classification

Definitions for resource categories used in this Technical Report are consistent with those defined by CIM (2014) and adopted by NI 43-101.

The Mineral Resource classification was reviewed by the QP considering the confidence in the drillhole data, the geological interpretation, geological continuity, data spacing and orientation, spatial grade continuity, confidence in the Mineral Resource estimation and confidence in predicting production.

The Kounrad waste dumps are laterally extensive man-made landforms. Drilling of the dumps has been undertaken on a maximum spacing of 200 – 100 m. The composition of the dump

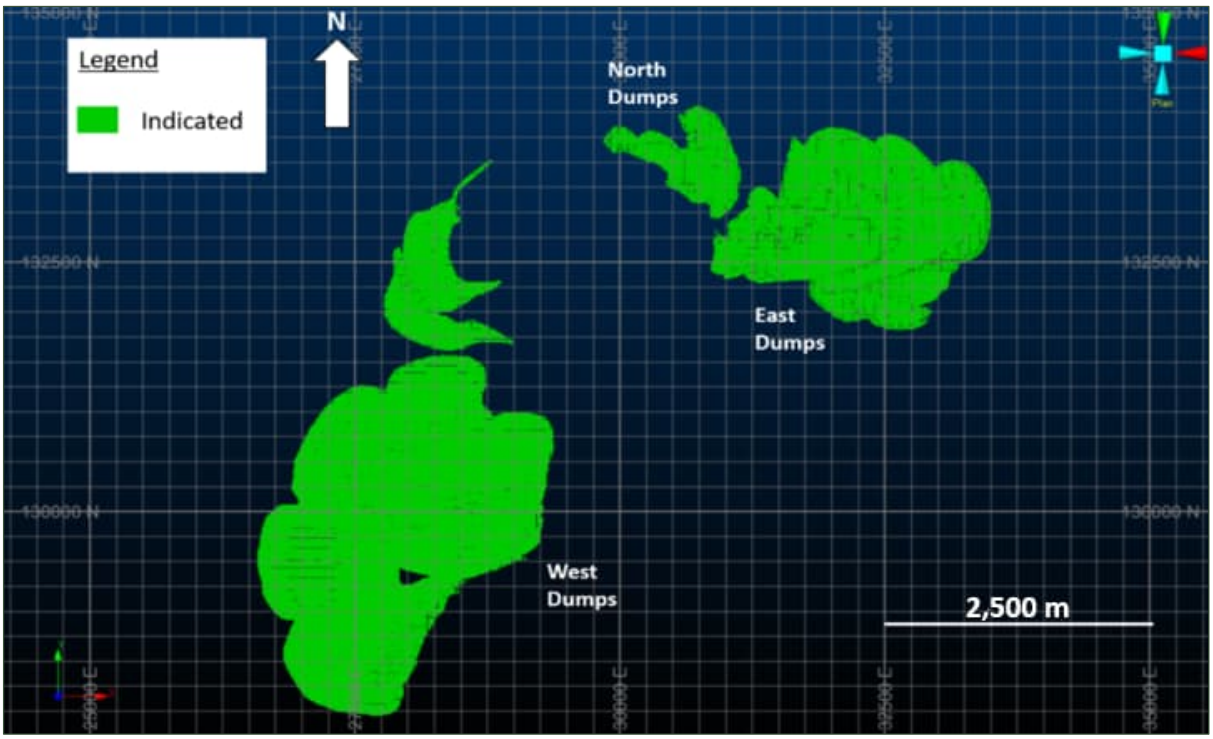
material, the copper grades and amenability to leaching is well understood through exploration, testwork and production.

Based on the above factors, the QP considers that the quality and spatial distribution of the available data, together with the integrity of the Mineral Resource estimates and the demonstrated confidence in predicting annual production from the operation, are sufficient to support the classification of the Kounrad dumps as Indicated Mineral Resources.

The QP considers there is a sufficient level of confidence in the Mineral Resource estimate to allow appropriate application of technical and economic parameters to support production planning and to allow evaluation of the economic viability of the dumps.

The Mineral Resource classification for the Kounrad in situ dump leach operation is shown in Figure 14-12.

Figure 14-12: Resource Classification for the Kounrad In Situ Dump Leach Operation



Source: SLR (June 2026)

14.13 Cut-Off Grade for Reporting Mineral Resources

Kounrad is an in-situ dump leach operation and is not selectively mined.

A cut-off grade of 0% Cu is therefore used to report the Mineral Resources.

14.14 Depletion Due to Leaching Operations

The copper recovered from the dumps is estimated by SK metallurgical staff based on the results of laboratory and pilot plant testing, assumptions of leach and solution migration rates and cathode production information.

A summary of the estimated recovered and remaining contained metal by leaching since the start of operations in April 2012 is shown in Table 14-12. The location of dumps that have undergone leaching in this time is shown in Figure 14-13.

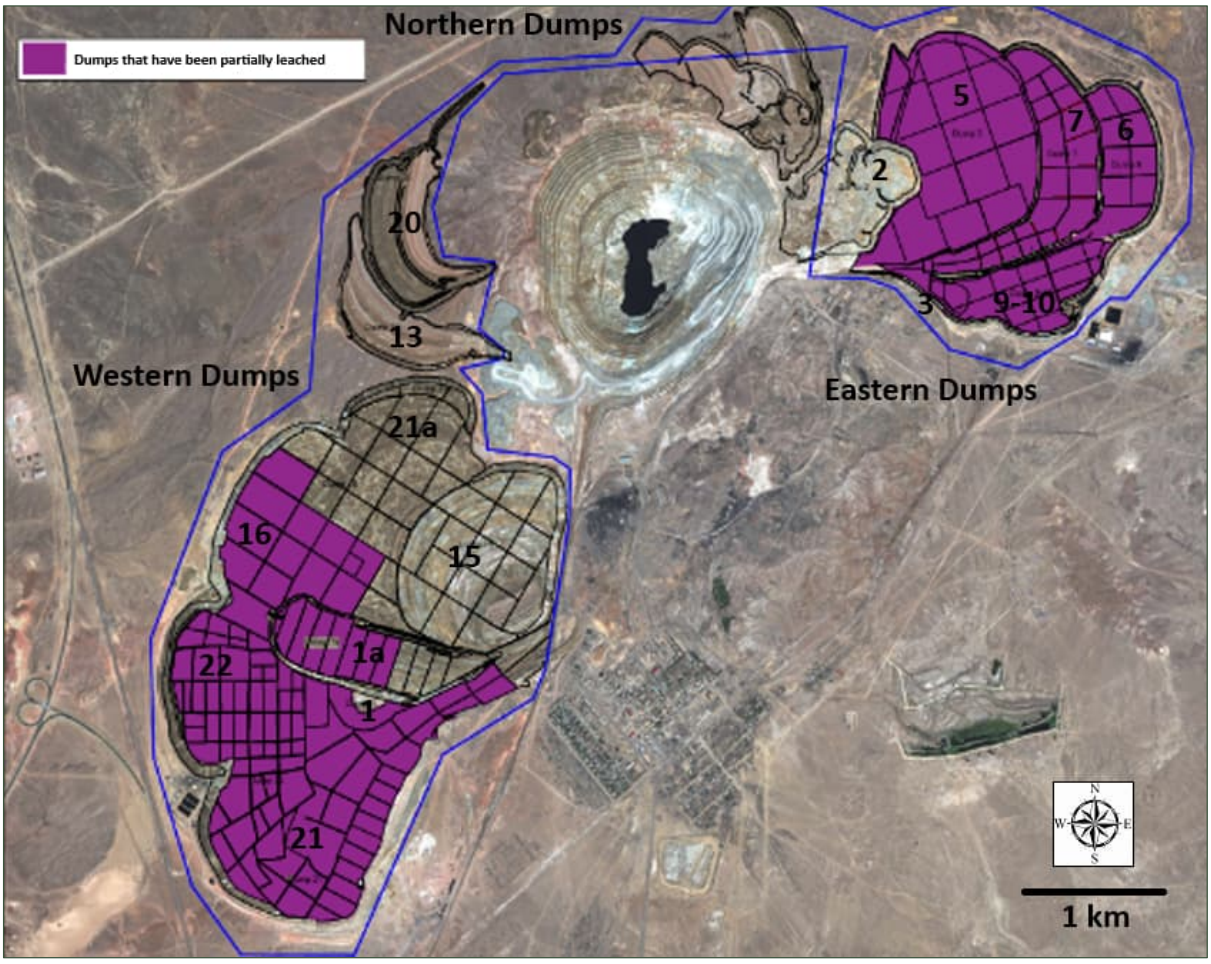
From the oxide dumps a total of 69.0 kt of copper has been recovered and a total of 12.5 kt of copper remains to be recovered.

For the mixed and sulphide dumps a total of 110.3 kt of copper has been recovered and a total of 62.9 kt of copper remains to be recovered.

Overall, a total of 179.3 kt of copper has been recovered and 75.4 kt of copper remains to be recovered.

A leach recovery of 18.5% is calculated based on recovering the remaining 75.4 kt from 407.9 kt of remaining in situ copper metal (total contained metal (587.3 kt) minus total recovered metal (179.3 kt).

Figure 14-13: Dumps that have Undergone Leaching



Source: SK (June 2026)

Table 14-12: Estimated Recovered and Remaining Contained Metal by Leaching

Dump	Mineral Resources Before Start of Leaching Operations			Average Leach Recovery (%)	Contained Cu Metal (kt)			
	Tonnes (kt)	Cu (%)	Contained Cu Metal (kt)		Unrecoverable	Recoverable	Recovered	Remaining Recoverable
Eastern Dumps								
6	11,364	0.13	14.6	51%	7.2	7.5	7.4	0.02
7	27,606	0.16	43.1	51%	21.1	22.0	21.8	0.22
9-10	12,214	0.19	23.5	51%	11.5	12.0	11.9	0.02
2	32,435	0.08	25.0	25%	18.7	6.2	-	6.2
5	70,061	0.09	66.6	51%	32.6	33.9	27.9	6.0
Total Oxide	**153,680**	**0.11**	**172.7**	**47%**	**91.1**	**81.6**	**69.0**	**12.5**
Western and Northern (NDC) Dumps								
1	1,136	0.04	0.4	35%	0.3	0.2	0.04	0.12
1a	49,984	0.18	89.0	42%	51.6	37.4	13.3	24.1
13	11,139	0.03	3.1	35%	2.0	1.1	-	1.1
15	70,247	0.06	44.3	42%	25.7	18.6	-	18.6
16	206,608	0.08	173.5	42%	100.7	72.9	63.0	9.9
20	20,888	0.04	7.5	35%	4.9	2.6	-	2.6
21	16,883	0.18	29.7	42%	17.2	12.5	10.0	2.5
21a	5,023	0.14	7.1	42%	4.1	3.0	-	3.0
22	53,986	0.11	57.2	42%	33.2	24.0	24.0	0.04
NDC1	2,393	0.05	1.2	35%	0.8	0.4	-	0.4
NDC2	3,151	0.05	1.5	35%	1.0	0.5	-	0.5
Total Sulphide & Mixed	**441,436**	**0.09**	**414.6**	**42%**	**241.4**	**173.2**	**110.3**	**62.9**
Total								
Grand Total	**595,116**	**0.10**	**587.3**	**43%**	**332.5**	**254.7**	**179.3**	**75.4**

Notes:

1. Tonnes are Indicated Mineral Resources as presented in Section 14.16 of this report.
2. Grades and contained metal are reported as total copper.
3. Totals may not represent the sum of the parts due to rounding.

14.15 Reasonable Prospects for Eventual Economic Extraction

The Kounrad in situ dump leach operation is not a conventional mining operation where reasonable prospects for eventual economic extraction (RPEEE) can be tested by an open pit optimisation or mineable shape optimisations, or other similar methods.

The authors have therefore reviewed the financial model for the LOM and showed the Mineral Resources to be economic based on the technical and economic assumptions detailed in Sections 17 and 21 of this report, respectively, and a copper price of US$11,080 per tonne. The authors consider this is reasonable to satisfy the criteria for RPEEE.

14.16 Mineral Resource Reporting

A summary of the Mineral Resource estimate for the Kounrad in situ dump leach operation is shown in Table 14-13. The reported Mineral Resources are within the concession boundary.

The stated Mineral Resources are not materially affected by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant issues, to the best knowledge of the authors. There are no known mining, metallurgical, infrastructure, or other factors that materially affect this Mineral Resource estimate, at this time.

Table 14-13: Audited Mineral Resource Statement for the Kounrad In Situ Dump Leach Operation (Effective Date of December 31, 2025)

Classification	Tonnes (Mt)	Cu (%)	Contained Cu Metal (kt)
Measured	-	-	-
Indicated	595.1	0.07	407.9
Inferred	-	-	-

Notes:

1. CIM (2014) definitions were followed for Mineral Resources.
2. Cu grade is total copper.
3. Mineral Resources are estimated using a cut-off grade of 0% Cu.
4. Mineral Resources are estimated using a copper price of US$11,080 per tonne.
5. Mineral Resources are estimated using a calculated leach recovery of 18.5%.
6. Mineral Resources are estimated using average dry densities of 1.875 to 2.07 t/m^3.
7. Kounrad is an in situ dump leach operation, and therefore no minimum mining width has been applied.
8. Contained metal refers to estimated contained metal in the ground not adjusted for metallurgical recovery.
9. Mineral Resources are inclusive of Mineral Reserves.
10. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
11. Totals may not represent the sum of the parts due to rounding.

15.0 Mineral Reserve Estimates

The Mineral Reserve estimate is based on the Mineral Resource estimate produced by SK and audited by SLR.

15.1 Dilution and Mining Recovery

Kounrad is an in-situ dump leach operation and therefore dilution and mining recovery factors are not applicable.

15.2 Cut-Off Grade and Leach Recovery

Kounrad is an in-situ dump leach operation and is not selectively mined. A cut-off grade of 0% Cu is therefore used to report the Mineral Reserves.

A calculated leach recovery of 18.5%, and a copper price of US$11,080 per tonne are used to estimate the Mineral Reserves.

15.3 Mineral Reserve Statement

The Mineral Reserve estimate for the Kounrad in situ dump leach operation is classified in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves (2014).

Mineral Reserves are derived from Indicated Mineral Resources after applying economic parameters to calculate that portion of the Indicated Mineral Resources that can be mined economically. Mineral Reserves are classified using the following criteria:

- No Proven Mineral Reserves were classified because no Measured Mineral Resources were estimated.
- Probable Mineral Reserves are those Indicated Mineral Resources where information on processing/metallurgy and other relevant factors demonstrate that economic extraction is achievable.

The term “Mineral Reserve” need not necessarily signify that extraction facilities are in place or operative, or that all governmental approvals have been received. It does signify that there are reasonable expectations of such approvals.

The audited Mineral Reserve statement is shown in Table 15-1. The reported Mineral Reserves are within the concession boundary.

The stated Mineral Reserves are not materially affected by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant issues, to the best knowledge of the authors. There are no known mining, metallurgical, infrastructure, or other factors that materially affect this Mineral Reserve estimate, at this time.

Table 15-1: Audited Mineral Reserve Statement for the Kounrad In Situ Dump Leach Operation (Effective Date of December 31, 2025)

Classification	Tonnes (Mt)	Cu (%)	Contained Cu Metal (kt)
Proven	-	-	-
Probable	595.1	0.07	407.9

Notes:

1. CIM (2014) definitions were followed for Mineral Reserves.
2. Cu grade is total copper.
3. Mineral Reserves are estimated using a cut-off grade of 0% Cu.
4. Mineral Reserves are estimated using a copper price of US$11,080 per tonne.
5. Mineral Reserves are estimated using a calculated leach recovery of 18.5%.
6. Contained metal refers to estimated contained metal in the ground not adjusted for metallurgical recovery.
7. Kounrad is an in situ dump leach operation, and therefore no minimum mining width has been applied.
8. Totals may not represent the sum of the parts due to rounding.

16.0 Mining Methods

The operation is an in situ dump leach and no mining is undertaken.

17.0 Recovery Methods

In 2010, the Beijing General Research Institute of Mining and Metallurgy (BGRIMM) developed a detailed leaching schedule and designed a plant capable of treating a range of flow rates and solution grades to produce 10 ktpa of copper cathodes at a minimum 99.99% Cu quality. The design took the extremes of climate into consideration, especially the operability through the winter. The construction of the plant was completed in 2012 with a capital expenditure of US$39 million.

The first copper was produced at the end of April 2012 and since then the plant has operated continuously to successfully produce high quality copper cathode.

There have been two stages of expansion since start up:

- Stage 1 – Increasing the existing facilities to 50 tpd copper cathode (2015):
  - An additional two boilers were installed to increase the overall heating capacity to 14 MWh. This expansion allowed the PLS flows to be increased by 25% during winter.
  - The capacity of the SX-EW circuit was increased from 900 m^3/h to 1,200 m^3/h by installing an additional settler.
  - An extra 24 EW cells were installed to increase capacity from 35 tpd to 50 tpd.
- Stage 2: - Developing the western dumps (2016):
  - The construction of two 12.5 km transfer pipelines for PLS and raffinate.
  - A 12 km overhead power line and substation.
  - Intercept trenches and ponds.
  - Pumping stations.
  - A 25 km water pipeline from Lake Balkhash for requirement of additional water.
  - A 8.4 MWh boiler house.

Stage 2 was commissioned in 2017 and marked the completion of all the significant capital expenditure at Kounrad.

Leaching of eastern dumps 6, 7, and 9-10 is now largely complete although some additional recovery is realised through further leaching. Dump 5 is partially leached and further production is planned. The remaining eastern dump (Dump 2) will be leached at the end of the life of mine due to lower recoveries associated with a higher clay content. Production is now mainly focussed on the western dump area.

17.1 Process Flowsheet

The process design is based on the in situ heap leaching of the Kounrad dumps with raffinate solution at pH 1.2 which is used to dissolve the copper mineralisation. The PLS is collected at the base of the dumps by an HDPE lined interceptor trench and pumped to a series of holding ponds.

From these ponds, the PLS is treated by the SX-EW plant, located south of the eastern dumps.

The east plant site, containing the SX-EW plant, solution ponds, boiler houses, stores and offices is shown in Figure 17-1.

PLS solutions from the western dumps are pumped a distance of 12.5 km to the east plant for copper recovery.

Figure 17-1: Eastern Dump Plant Site

Source: KCC (April 2026)

17.1.1 Leach Solution Distribution

The raffinate (barren solution from the SX-EW plant) is pumped via a 450 mm pipeline.

When commencing a new leach area, referred to as an ILA (initial leach area) the dumps are first flattened using a bulldozer and then the surface is ripped to break up any compacted material.

The solution is distributed around the site using a system of pipes ranging from 225 to 90 mm diameter. The solutions then pass to 16 mm dripper pipes which are 0.6 m apart and with hole spacings of 0.6 m at a rate of some 2.5-3 $l/m^2/h$ as shown in Figure 17-2. In winter additional dripper systems can be installed on each dump as a backup in case of freezing.

During the winter months the solutions are heated using coal fired boilers. Heat exchangers in the SX-EW plant are used to warm the PLS solutions to approximately 10°C and they are then distributed under a HDPE liner (Figure 17-3).

Figure 17-2: Dump Leaching Dripper System

Source: KCC (April 2026)

Figure 17-3: Winter Leach Pads using HDPE Liner

Source: KCC (April 2026)

The acidic solutions percolate down through the dumps, dissolving copper minerals together with other acid soluble elements present. When the solutions reach the base of the heap they flow out laterally due to the topography which is elevated in the area of the Kounrad open pit but falls away in the areas in which the dumps are located.

The low permeability clay base, on which the dumps are located, restricts solution losses and the solutions are recovered into drainage ditches.

17.1.2 Solution Collection

For collection of the PLS draining from the dumps, the same technique is used at both the eastern and western dumps. In both locations, a collection interceptor trench is excavated at the toe of the dump. The collection trench for the western dumps is shown in Figure 17-4.

Figure 17-4: Leach Solution Collection System

Source: KCC (April 2026)

The solutions gravitate along the channel to the collection ponds located at the southwest corner of the western dumps. The trenches are typically 3.5 m deep and 7 m wide and are all HDPE lined. In places the trenches have been backfilled, and the solutions flow through pipework. There are also areas where some degree of pumping is used where the topography is unfavourable.

The western dumps ponds and boiler plant area is shown in Figure 17-5.

There are three ponds located at the western plant site, each of 10,000 m^3 capacity. One is used for raffinate, one for PLS and the third is an emergency pond. There is also a further 3,500 m^3 capacity in the “15-22” Pond.

The PLS from the western dumps is pumped a distance of 12.5 km to the eastern SX-EW plant while the raffinate is pumped through a separate pipeline back to the western irrigation solution pond.

There is a total of seven emergency discharge ponds located along the pipeline between the western and eastern areas, ranging in volume from 500 m^3 to 1,800 m^3. These are used if the line is required to be drained or for collecting spillages.

At the eastern plant site there are four main ponds which are predominantly used for PLS storage. They have a capacity of 40,000 m^3, two of 6,000 m^3, and 4,000 m^3.

Figure 17-5: Western Dumps Collection Ponds, Boiler Houses and Pump Stations

Source: KCC (April 2026)

17.1.3 Solvent Extraction

The solvent extraction plant was commissioned in 2012 and its PLS treatment capacity was increased to 1,200 m^3/hr as part of the Stage 1 expansion. PLS, received from both the western and eastern dumps, is delivered into the mixing pond (primary emergency pond) and then pumped to the PLS ponds (primary PLS sand pond, PLS pond and raffinate pond together). From here, the PLS is pumped to the SX section through two pipelines.

17.1.3.1 Process Description

In winter, the PLS can have a temperature of -3 to 3°C in which case it is heated to 10°C by passing the solution through two plate heat exchangers installed in parallel.

The SX circuit consists of six mixer-settler tanks complete with two-stage mixer boxes having a dimension of 2.8 x 2.8 x 3.4 m and the settlers with dimensions of 20.0 x 13.0 x 12.0 m (260 m^2). In the mixer boxes the PLS is agitated with an organic phase consisting of LIX and Escaid. LIX is an organic liquid with an ability to selectively absorb copper over iron and Escaid acts as a diluent. Copper in the PLS is transferred into the organic phase and when the liquids pass into the settler area a separation is achieved due to the difference in densities between the organic and inorganic phases. The SX plant is shown in Figure 17-6.

Figure 17-6: Solvent Extraction Plant

Source: KCC (April 2026)

There are a number of circuit configurations that can be utilised based on operating the units in either series or parallel.

The settlers are constructed with appropriate off-takes and valves to allow the volume of PLS passing through the circuit to be modified as required. This allows the process to be run in a number of circuit variations to optimise flow rates and extraction efficiencies. The loaded organic phase is contacted with the acid rich return from the electrowinning circuit which has the effect of recovering the copper back into an enriched aqueous phase.

The loaded organic can also be subjected to a wash stage to remove unwanted elements using water from a reverse osmosis plant.

The circuit is designed for a rich electrolyte flow rate of 180 m^3/h. Two stages of electrolyte filtration are used to remove the organic material from the rich electrolyte ahead of electrowinning. The first stage involves coagulation and the second uses filtration.

17.1.3.2 Crud Formation

In many SX-EW plants the formation of “crud” may be an issue where some of the solid impurities in the system build up in the settlers. This can occur at the surface of the organic phase, between the aqueous and organic phases, as well as at the bottom of the settlers. To prevent crud formation the TSS levels are monitored every 4 hours and flow rates adjusted if necessary.

17.1.3.3 Design Parameters

The basic design parameters for the SX plant are summarised in Table 17-1.

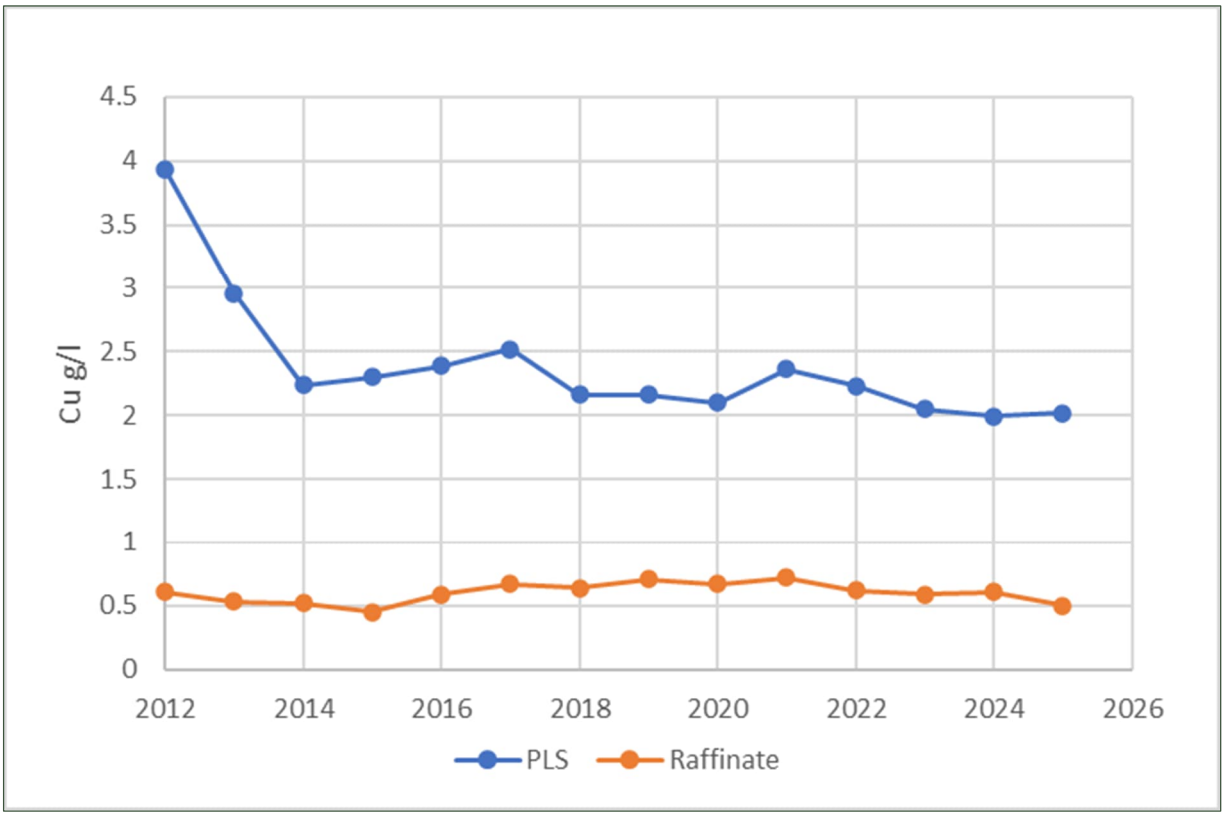
Table 17-1: Solvent Extraction Design Parameters

Process Stream	Parameters	Level
PLS	Copper (Cu), g/l	>1.8
	Sulphuric acid, g/l	≈1
	pH	>1.2
	Iron (Fe), g/l	<40
	Suspended particles (TSS), g/l	<0.050
Raffinate	Copper (Cu), g/l	<0.5

The copper content of PLS can vary significantly between summer and winter, and the PLS also contains other unwanted elements such as iron, chlorine and manganese. The content of suspended solids (TSS) is controlled below 50 mg/l by settling in the ponds.

The annual average grades of the PLS and raffinate since start up are shown in Figure 17-7. During the period the PLS grades have ranged from 3.93 to 1.99 g/l Cu and have been generally stable over the last three years. The raffinate grades have ranged from 0.72 to 0.45 g/l Cu.

Figure 17-7: Kounrad Plant Average PLS and Raffinate Grades



Source: KCC (June 2026)

17.1.4 Electrowinning

The copper in the rich electrolyte from the SX plant is recovered to a high-quality cathode product by electrowinning (EW). In this process a current is applied to the solution in a series of tanks fitted with stainless steel cathodes and lead alloy anodes. Copper is produced at the cathodes and is periodically stripped using mechanical means. Oxygen and hydrogen, in the form of sulphuric acid, are produced at the anodes.

17.1.4.1 Process Description

There are two sections of the EW plant; the original circuit (EW1) and a second circuit (EW2) that was installed in 2015 as part of the plant expansion.

The rich electrolyte from the SX section is heated to a minimum of 35°C via heat exchangers and is then pumped to the first stage (EW2) consisting of 24 EW cells with the anodes and cathodes at 90 mm spacing, producing copper cathode. The lean electrolyte is then pumped to the second stage EW1 consisting of 50 EW cells where further copper cathode is produced. Placed inside these cells are typically a total of 2,500 lead anode plates and 2,500 stainless steel cathode sheets.

The EW cells are shown in Figure 17-8.

Figure 17-8: Electrowinning Cells

Source: KCC (April 2026)

The spent electrolyte from EW1 is then split with a proportion being recirculated back to the head of the cells and the remainder being pumped back to the SX plant.

The rich electrolyte contains approximately 45g/l Cu and 150g/l H_2SO_4 and the spent electrolyte approximately 35 g/l Cu and 180 g/l H_2SO_4.

The chlorine levels are maintained below 30 ppm as higher levels can result in deterioration of the cathodes. Guar is added to smooth the surfaces of the cathodes and cobalt sulphate added to reduce anode erosion. The addition of cobalt sulphate to the electrolyte inhibits the reaction of lead oxide formation, subsequently extending the life of the anode.

The EW plant reduces the concentration of acid in the atmosphere to less than 1.0 mg/m^3 using an acid mist suppressant which is added to the electrolyte. Each unit is covered with a vacuum hood, and exhaust fumes are sent to a scrubber where vapours are neutralized with sodium hydroxide solution.

17.1.4.2 Copper Harvesting

The copper is periodically removed or “harvested” from the cathodes. Every three days on a planned schedule a proportion of the stainless-steel cathodes are lifted from the cells by crane and washed with hot and cold water. Physical removal of the copper metal is achieved after loosening them with mechanical vibration.

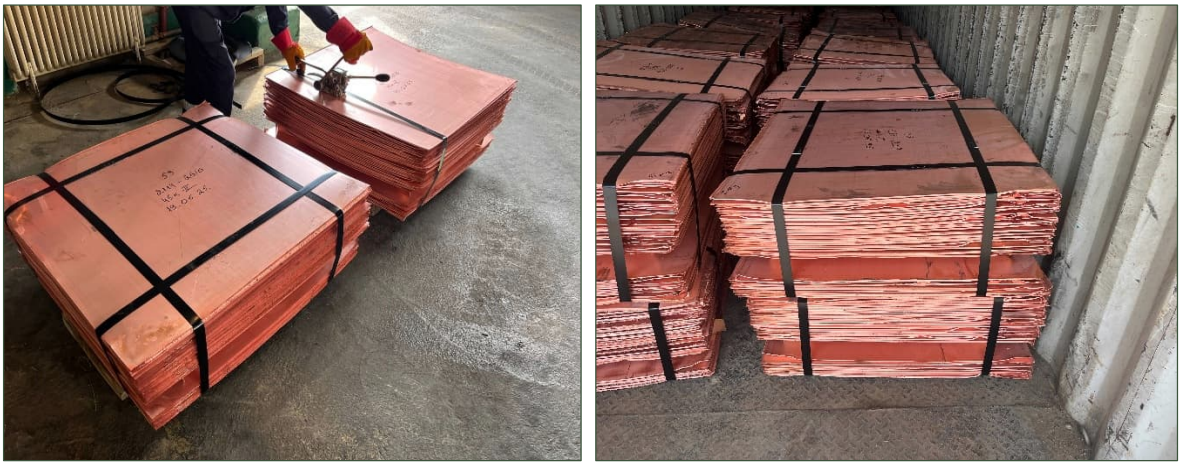
Once the copper is removed the cathodes are returned to the cells and the cycle is repeated. The first stage of the harvesting process is shown in Figure 17-9.

Figure 17-9: Copper Cathode Harvesting

Source: KCC (April 2026)

The copper sheets are formed into bundles of about 30 - 40 sheets with a weight of about 1.5 – 2.0 tonnes and sampling is carried out on one copper sheet from the bundle. Further sampling is undertaken as the production is consolidated into larger batches. The copper is sampled by drilling followed by cone and quartering of the shavings although a new system is being introduced where the copper is melted and poured into moulds to reduce sampling errors. The copper cathode handling and storage is shown in Figure 17-10.

Figure 17-10: Copper Product Handling and Storage



Source: KCC (April 2026)

17.1.4.3 Boiler House

The facility operates a total of eight coal-fired boilers with a combined installed capacity of 22 MW (8 x 2.8 MW), distributed across the two primary locations. The east boiler house contains 5 x 2.8 MW units and utilises a mechanical feeding system comprised of a hopper and an inclined conveyor.

The west boiler house consists of 3 x 2.8 MW units that are manually fed. Boiler utilisation is heavily weather-dependent. Operations are limited during the summer, with units progressively brought online as winter approaches. While the site maintains operational redundancy throughout most of the year, peak winter conditions can require 100% utilization of all units for periods of up to a month.

The operation utilises small front-end loaders for managing the coal yards and feeding coal into the boiler receiving hoppers. The site consumes approximately 20 kt of coal annually, sourced from regional Pavlodar coalfields. Large volumes are stockpiled on-site prior to the onset of the winter season.

A scheduled programme to replace three of the boilers is planned to commence in 2026.

17.1.4.4 Emergency Generator Capacity

Critical backup power is provided by six emergency generator units across both sites to ensure the continuity of safety systems, essential fluids management, fire pumps and boiler house.

There is a total of six units, as shown in Table 17-2. Further capacity is provided by the 4.7 MW solar farm. However, there is no battery installation, so contributions are limited to daytime periods only.

Table 17-2: Emergency Generator Capacity

Area	No.	Rating	Power	Description
East	1	680	550	EW2 – crane, Raff. Pumps SX PLS pump
	2	250	200	EW-1 rectifier, pumps, crane, boilers and offices
	3	250	200	Pond ED 1 and 2
	4	250	200	Pond 6 Dump pumps
West	1	710	630	Raff. and PLS pumps, offices and boilers
	2	275	220	WD Pond pumps

17.2 Copper Cathode Analysis

The typical quality of the Kounrad copper cathode product is shown in Table 17-3. The cathode quality conforms to LME Grade A (>99.99% Cu). Levels of impurities are historically generally very low.

Table 17-3: Kounrad Copper Cathode Analysis

Element	Percentage (%)
Cu	99.99
Ag	<0.0006
As	<0.00005
Bi	<0.00006
Cd	<0.00004
Co	<0.00005
Cr	<0.00004
Fe	<0.0001
Mn	<0.00005
Ni	<0.0001
P	<0.00004
Pb	<0.00015
S	<0.0005
Sb	<0.00015
Se	<0.00008
Sn	<0.00008
Si	<0.00004
Te	<0.0001
Zn	<0.0001

17.3 Site Laboratory

There is a site laboratory which is used to analyse routine plant control samples. The major equipment items include:

- Optima 8000 ICP-OES ICP.
- Atomic adsorption spectrophotometer (ICE 3300).
- Spectrophotometer UV-1700.
- Automatic titration equipment.
- Induction furnace.

Samples from the leach plant are sampled on a daily basis and analysed for copper, iron, pH acidity (g/l) and chloride. Solutions within the SX-EW site are sampled manually on a 2 - 4 hour basis. The laboratory is operated with a total of 13 staff using a 12-hour shift rota.

The copper cathode product is sampled by drilling, and the samples are split and sent to SGS Laboratories as an umpire service.

17.4 Maintenance

Maintenance is undertaken using a four-shift system and is managed through the Chief Mechanical Engineer and Chief Power Engineer who are supported by a specialized team of 45 - 50 mechanical and electrical personnel.

Maintenance interventions are planned and scheduled using MS Excel, primarily driven by manufacturers recommendations and operating hours. A formal work order system is utilised for both planned preventive maintenance and unplanned breakdown responses. Daily morning plant rounds by maintenance staff ensure that operational defects are logged and addressed promptly.

Major invasive maintenance is concentrated into two annual 12-hour shutdowns in April and October.

Kounrad has extensive spares which are stored in warehouses and containers within the facility and, where appropriate in external laydown areas. Duty/standby configurations feature at important installations and critical parts have been identified and stocked.

There is an electrical and mechanical workshop at the eastern site that undertakes general repairs as well as welding and cutting. There is also a workshop at the western site.

The plant has a very high degree of utilisation averaging 99.0% since start up.

17.5 Process Consumables

The main process consumables are shown in Table 17-4 expressed as an annual total and kg per kg of copper produced.

Table 17-4: Annual Total Consumables Data for 2025

Item	Annual Consumption	Annual kg/t Cu
Sulphuric Acid * (t)	3,964	297.79
Escaid (t)	607.46	45.6
LIX-984 (t)	85.96	6.46
Cobalt sulphate (t)	5.46	0.41
Guar/Vecosol (t)	3.719	0.279
Genesys L.F. (t)	0.39	0.029
Clay (t)	0.075	0.056
Acid mist suppressant (t)	1.412	0.105
Power and Water		
Electricity** (kWh)	56,934,833	-
Water (m^3) - lake and shaft	717,950	-

Notes: *Added in the SX/EW process; **Including electricity produced by the Solar Farm.

A total of 3,964 t of acid was used in the SX-EW plant which was sufficient to maintain the correct pH for leaching. The annual consumption of organic solvents Escaid and LIX-984 were 607.46 t and 85.96 t respectively. Annual total electrical consumption was 56,934,833 kWh.

The majority of consumables are stored in containers on the eastern site. Two separate areas are used to store the Escaid and there is an acid storage area with a capacity of 180 m^3. Acid can be delivered either by rail or road.

The pipework for solution distribution is sourced both locally and outside the country. In general, the larger pipes are sourced in Kazakhstan, and the dripper pipes are sourced from Israel/Greece. The latter is sourced as a single annual order.

17.6 Personnel

A total of 328 permanent personnel is employed at the Kounrad operation. Additionally, 30 personnel are employed on a seasonal basis each year to assist with pipe laying in the summer and covering the dumps in winter.

17.7 Production

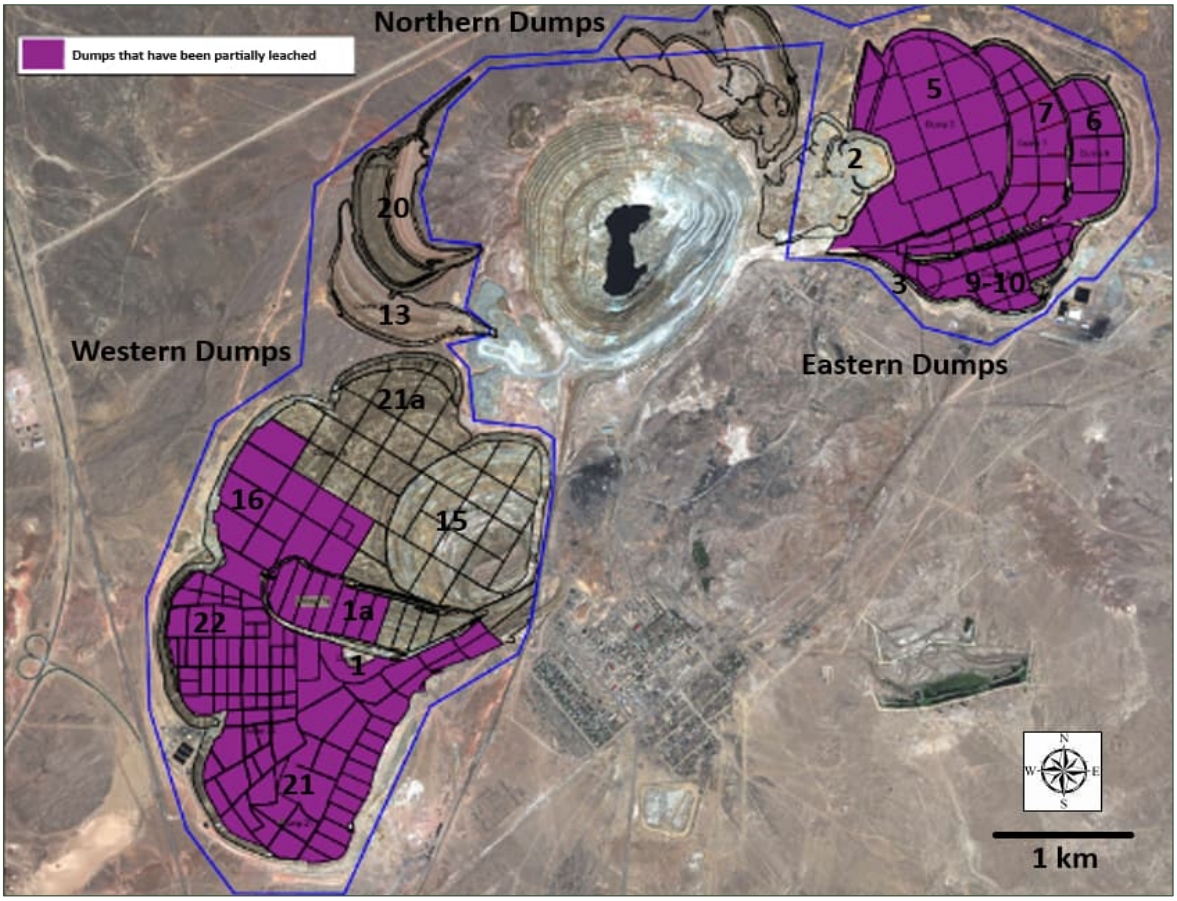
17.7.1 Historical Production

The historical production of the Kounrad operation is summarised in Table 17-5. Following commencement of operations in 2012, production steadily increased to 10,509 t of copper cathode in 2013 and reached 12,071 t in 2015. Following completion of the western dumps expansion project, production has been in steady state with a maximum production of 14,254 t reached in 2022. A total of 178,961 t of copper cathode has been produced since 2012. A plan view showing the dumps that have been irrigated is shown in Figure 17-11.

Table 17-5: Kounrad Annual Copper Production

Year	2012	2013	2014	2015	2016	2017	2018
Copper Cathode (t)	6,586	10,509	11,136	12,071	14,020	14,103	14,049
Year	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Copper Cathode (t)	13,771	13,855	14,041	14,254	13,816	13,439	13,311

Figure 17-11: Dumps that have Undergone Leaching



Source: SK (June 2026)

The eastern dumps, which contained the highest proportion of acid soluble copper with the faster leach kinetics, were initially targeted for production and extensive leaching of this area has been undertaken.

Leaching of eastern dumps 6, 7, and 9-10 is now largely complete although some additional recovery is realised through further leaching.

Dump 5 is partially leached and further production is planned.

The remaining eastern dump (Dump 2) will be leached at the end of the life of mine due to lower recoveries associated with a higher clay content.

Exploitation of the western dumps began in 2017 and is the focus of current production. Western dumps that are in the process of being irrigated are 1,1a,16, 21 and 22.

17.7.2 Forecast Production

A summary of the copper cathode production schedule for the Kounrad operation is provided in Table 17-6. A total of 74,459 t of copper cathode is planned for the life of mine up to 2034.

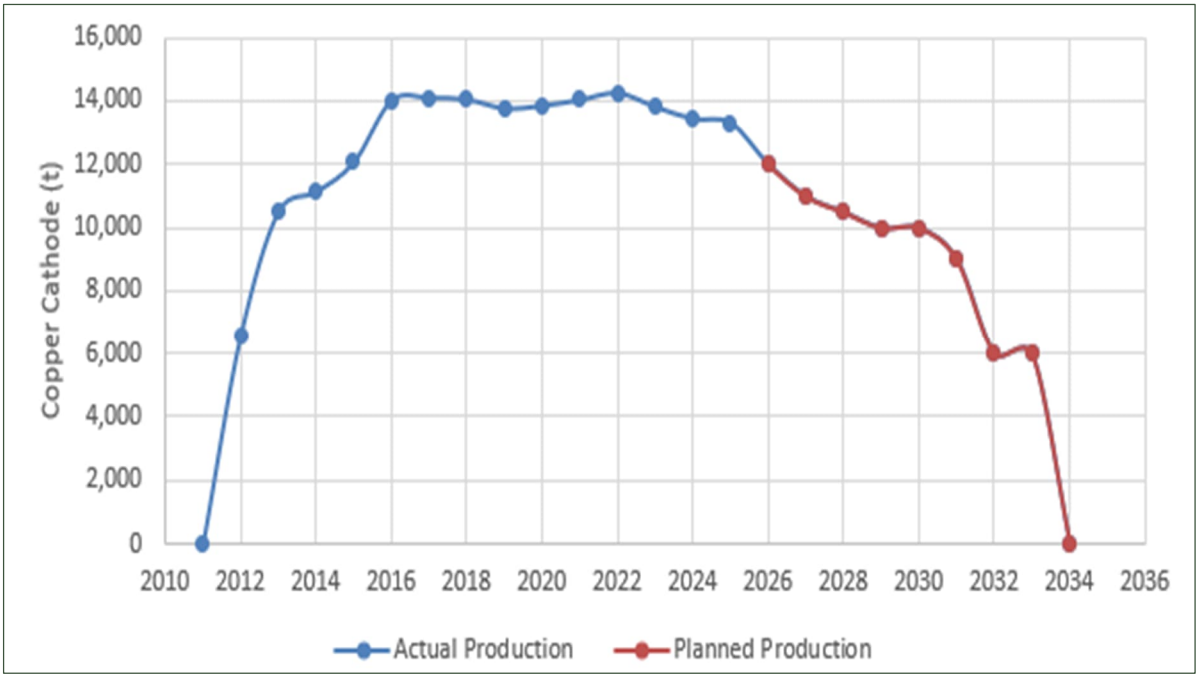
During this time production is planned to decline from 12,000 t in 2026 to around 6,000 t in 2032 and 2033.

Table 17-6: Summary of Kounrad Production Schedule

Year	2026	2027	2028	2029	2030	2031	2032	2033
Copper Cathode (t)	12,000	11,000	10,500	10,000	10,000	9,000	6,000	5,959

A summary of the actual and planned copper cathode production is shown in Figure 17-12.

Figure 17-12: Summary of Actual and Planned Cathode Production



Source: SLR (June 2026)

The production plan involves a general trend of northward advance across the main western dumps including Dumps 15, 16 and 1a and culminating with Dump 21a. The low-grade Dumps 13 and 20 will be the last of the western dumps to be irrigated. Eastern Dump 2 and the small northern dumps (NDC 1 and NDC 2) will also be irrigated last.

17.8 Metallurgical Recoveries

17.8.1 Leach Recoveries

Due to the overlapping nature of the dumps and an inability to collect and measure the leach solutions from each dump separately, it is not possible to accurately measure the amount of copper leached from each individual dump. However, SK metallurgical staff prepare estimates of the recovered copper based on the results of laboratory and pilot plant testing, assumptions of leach and solution migration rates and cathode production.

A summary of the estimated leach recoveries and the estimated remaining recoverable copper is shown in Table 17-7.

The leach recoveries used are consistent with the metallurgical testwork and from experience of the leaching operations. A leach recovery of 25% was applied to Dump 2, due to perceived percolation issues associated with a higher clay content. Testwork is continuing to improve the leach recovery.

From the oxide dumps a total of 69.0 kt of copper has been recovered at an overall leach recovery of 51%. A total of 12.5 kt of copper remains to be recovered, albeit at lower recoveries due to Dump 2.

For the mixed and sulphide dumps a total 110.3 kt of copper has been recovered at an overall leach recovery of 42%. A total of 62.9 kt of copper remains to be recovered.

Overall, a total of 179.3 kt of copper has been recovered and 75.4 kt of copper remains to be recovered.

A leach recovery of 18.5% is calculated based on recovering the remaining 75.4 kt from 407.9 kt of remaining in situ copper metal (total contained metal (587.3 kt) minus total recovered metal (179.3 kt).

Table 17-7: Leach Recoveries and Recoverable Contained Metal

Dump	Mineral Resources Before Start of Leaching Operations			Average Leach Recovery (%)	Contained Cu Metal (kt)			
	Tonnes (kt)	Cu (%)	Contained Cu Metal (kt)		Unrecoverable	Recoverable	Recovered	Remaining Recoverable
Eastern Dumps								
6	11,364	0.13	14.6	51%	7.2	7.5	7.4	0.02
7	27,606	0.16	43.1	51%	21.1	22.0	21.8	0.22
9-10	12,214	0.19	23.5	51%	11.5	12.0	11.9	0.02
2	32,435	0.08	25.0	25%	18.7	6.2	-	6.2
5	70,061	0.09	66.6	51%	32.6	33.9	27.9	6.0
Total Oxide	**153,680**	**0.11**	**172.7**	**47%**	**91.1**	**81.6**	**69.0**	**12.5**
Western and Northern (NDC) Dumps								
1	1,136	0.04	0.4	35%	0.3	0.2	0.04	0.12
1a	49,984	0.18	89.0	42%	51.6	37.4	13.3	24.1
13	11,139	0.03	3.1	35%	2.0	1.1	-	1.1
15	70,247	0.06	44.3	42%	25.7	18.6	-	18.6
16	206,608	0.08	173.5	42%	100.7	72.9	63.0	9.9
20	20,888	0.04	7.5	35%	4.9	2.6	-	2.6
21	16,883	0.18	29.7	42%	17.2	12.5	10.0	2.5
21a	5,023	0.14	7.1	42%	4.1	3.0	-	3.0
22	53,986	0.11	57.2	42%	33.2	24.0	24.0	0.04
NDC1	2,393	0.05	1.2	35%	0.8	0.4	-	0.4
NDC2	3,151	0.05	1.5	35%	1.0	0.5	-	0.5
Total Sulphide & Mixed	**441,436**	**0.09**	**414.6**	**42%**	**241.4**	**173.2**	**110.3**	**62.9**
Total								
Grand Total	**595,116**	**0.10**	**587.3**	**43%**	**332.5**	**254.7**	**179.3**	**75.4**

Notes:

1. Tonnes are Probable Mineral Reserves as presented in Section 15.3 of this report.
2. Grades and contained metal are reported as total copper.
3. Totals may not represent the sum of the parts due to rounding.

17.8.2 SX-EW Efficiency

Copper recovered to the PLS, has recovery inefficiencies during the downstream processing at the SX-EW plant. A loss factor of 0.5% is applied to the solution recovery rates of copper in the SX and EW sections and this is considered in the production schedules. Therefore, a leach recovery of 42.0% equates to an overall recovery (to cathode) of 41.5%.

17.9 QP Opinion

A total of 178,961 tonnes of copper cathode has been produced since the start of the operation in April 2012 and December 31, 2025. The production schedule contains a total of 74,459 tonnes of copper cathode that will be produced between 2026 and 2034. Based on the Mineral Reserve estimate and the estimated metallurgical recoveries the authors consider there is sufficient leachable metal to support the production plan.

The authors consider the Kounrad in situ dump leach operation has sufficient supply of energy and water for the forecast throughputs for the processing plant. The sourcing of process consumables is well established with recognised suppliers and logistics.

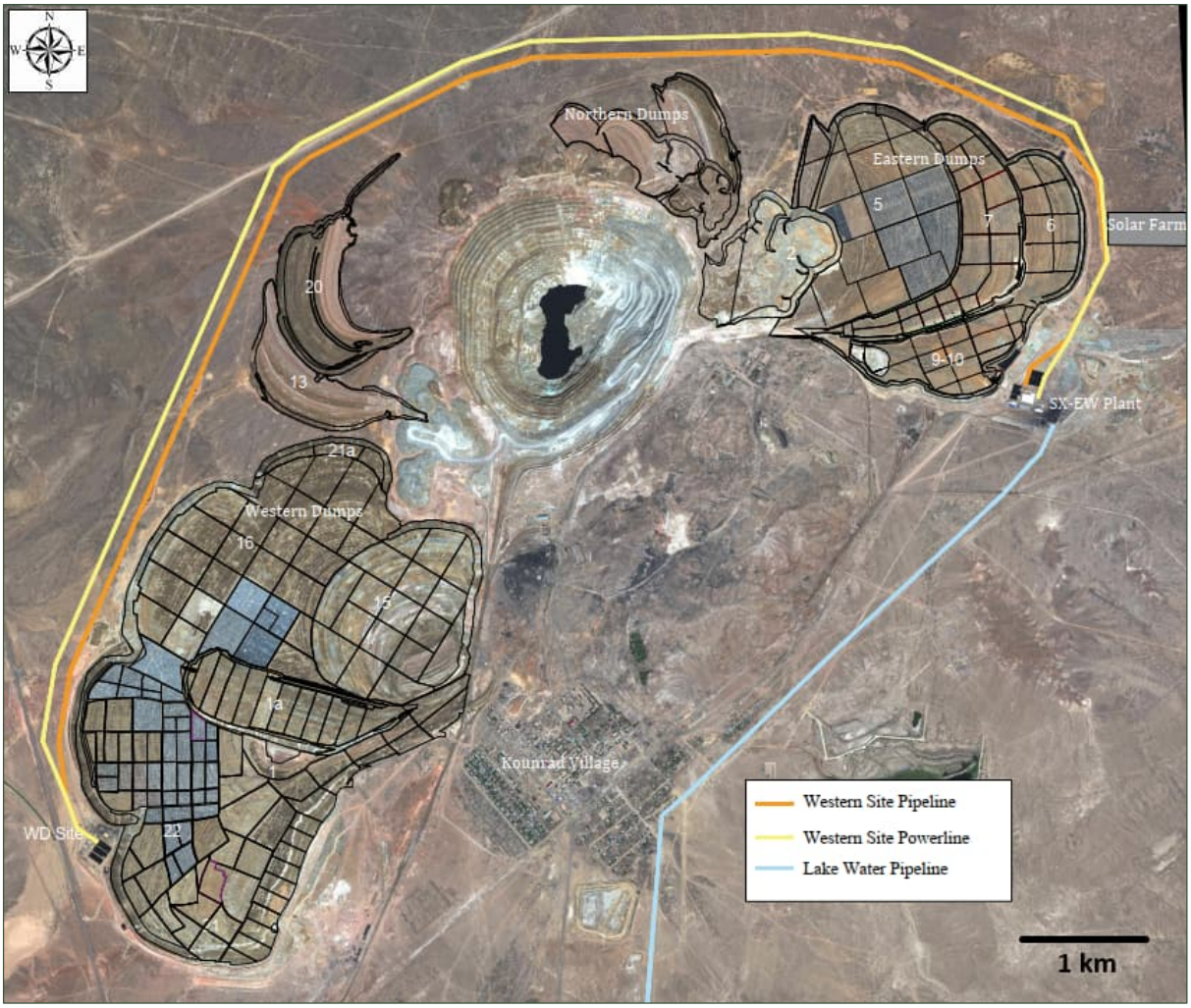
18.0 Project Infrastructure

18.1 Site Layout

Infrastructure associated with the Kounrad in situ dump leach operation includes the waste dumps and their network of leaching pipework, channels for directing PLS, pipelines connecting the east and west plants for transporting solutions, water pipelines and an electricity distribution network.

The overall site layout is shown in Figure 18-1. Infrastructure associated with the east and west plants is discussed in the following sections.

Figure 18-1: Site Layout of the Kounrad In Situ Dump Leach Operation



Source: SK (June 2026)

18.1.1 East Plant

Infrastructure associated with the east plant is summarised in Table 18-1. Numbers assigned to the infrastructure items correspond to the locations shown in Figure 18-2.

Table 18-1: East Plant Infrastructure

Infrastructure Item			
Emergency Pond (1)	Solvent Extraction Plant (SX) (8)	PLS Pond (15)	Plant Office (22)
Emergency Pond Pump Station (2)	Electrowinning Unit EW1 (9)	Fire Water Tank (16)	Security (23)
Store (3)	Electrowinning Unit EW2 (10)	Fire Water Pump Station (17)	Product Warehouse (24)
Fire Station (4)	Boiler House (11)	Reagent Store (18)	Acid Warehouse (25)
Workshops (5)	Coal Storage (12)	Diluent Warehouse (19)	Rail Spur (26)
Office (6)	Storm Water Pond (13)	PLS Pump House (20)	
Electrical Substation (7)	Pump Station (14)	Diluent Warehouse (21)	

Figure 18-2: East Plant Site Layout

Source: SLR (June 2026)

18.1.2 West Plant

Infrastructure associated with the west plant is summarised in Table 18-2. Numbers assigned to the infrastructure items correspond to the locations shown in Figure 18-3.

Table 18-2: West Plant Infrastructure

Infrastructure Item		
Coal Storage (1)	PLS Pond (5)	Fire Water Pump Station (9)
Boiler House (2)	Emergency Pond (6)	Office (10)
Workshops (3)	Pond and Pump Station (7)	
Raffinate Pond (4)	Substation and MCC (8)	

Figure 18-3: West Plant Site Layout

Source: SLR (June 2026)

18.2 Power

Electrical power is supplied by the national grid via a 7 km 35 kV overhead transmission line (AC-95/16) originating from the GPP-1 Kazakhmys Distribution LLP substation. This feed connects to the 35/10 kV Zavodskaya substation, which serves as the primary distribution point to the east plant and via a dedicated distribution link to the west plant.

The east plant power transformation is through a 10 MVA main transformer. A 6.3 MVA 35/10 kV spare transformer is maintained on-site. While smaller than the primary unit, it can support 80-90% of the peak demand.

The centralised metallurgical hub includes a 1.25 MVA transformer for the SX plant and a 0.8 MVA and 1 MVA units for the EW sections and the administration building. The EW process also has two 4.5 MVA rectifier transformers.

The west plant is powered by a 10 kV overhead powerline from the east substation. The west plant has its own substation and Motor Control Center (MCC) to manage the localized pumping of PLS and raffinate irrigation. Local transformation for the west plant is provided by 10/0.4 kV transformers, including 0.315 MVA units that feed the pump stations and auxiliary services required to maintain the fluid cycle between the west dumps and the east plant.

Critical backup power is provided by localized diesel generator units across both sites.

In addition, a 4.7 MW solar farm is connected directly to the 10 kV busbar, contributing approximately 15% of the site's total power requirements. There is no battery storage, therefore power from the solar farm is limited to daytime only.

18.3 Heating

The extreme climatic conditions of the region mean that heating is essential during the winter to maintain PLS and raffinate at optimal reaction temperatures for copper recovery and for prevent freezing of site infrastructure. The heating facilities include eight coal-fired boilers with a combined installed capacity of 22 MW (8 x 2.8 MW).

The east plant boiler house contains five 2.8 MW units and includes a mechanical feeding system comprised of a hopper and an inclined conveyor.

The west plant boiler house consists of three 2.8 MW units that are manually fed. These units are specifically configured to produce hot water rather than high-pressure steam.

Boiler utilisation is limited during the summer, with units progressively brought online towards winter. Peak winter can require 100% utilisation of all 16 MW for periods of up to a month.

The site consumes approximately 20 kt of coal annually, sourced from the Pavlodar coalfields. Large volumes are stockpiled on-site prior to the onset of the winter season.

18.4 Water

In the summer months process water is sourced from Lake Balkhash via a 25 km pipeline, using a land-based pump station with centrifugal pumps in a duty/standby configuration that alternates weekly. The lake supply utilises a single HDPE pipeline installed in 2017, which is buried beneath the regional frost line to prevent seasonal freezing. To maintain system integrity, the pipeline is automated to monitor pressure differentials, which shutdowns the pumping if a pressure drop is triggered.

In the winter months (when the lake freezes) process water is supplied from a flooded underground mine located 6 km from Kounrad, utilising submersible pumps in a duty/standby arrangement. The supply pipeline was installed in 2011 and has similar installation and monitoring to the Lake Balkhash pipeline.

A new pumping station is planned to be installed at Lake Balkhash to enable water extraction throughout the year.

The main consumer of water is the irrigation system, which due to evaporation losses requires make-up of up to 12% to maintain the PLS/raffinate balance. Other uses include heating, fire water and cleaning. On-site tanks provide a buffer for short-term interruptions. Potable water is sourced from the local supply network and an on-site reverse osmosis plant.

19.0 Market Studies and Contracts

Copper cathode produced by the Kounrad Operation is 99.99% purity meeting London Metal Exchange (LME) Grade A equivalent standards. The copper cathode is sold under an annual rolling offtake contract with Traxys Europe S.A. (Traxys), which is entitled for a minimum of 90% of Kounrad's cathode production. Small volumes of cathodes are also sold to the domestic market. Cathode ownership transfers to the offtaker at the Kounrad factory gate.

The commercial terms of the offtake contract with Traxys are negotiated on an annual basis based on the prevailing market conditions.

20.0 Environmental Studies, Permitting, and Social or Community Impact

20.1 Permitting

The Kounrad operation complies with Kazakhstan's environmental protection legislation, which requires an impact assessment process for projects of this type. Baseline environmental data are collected by specialist ecological contractors as part of the OVOS procedure (the Kazakh equivalent of an Environmental and Social Impact Assessment, ESIA). Based on the OVOS findings, the competent authorities establish project-specific regulatory limits, including Maximum Allowable Concentrations (MACs) and Maximum Allowable Emissions (MAEs), for the planned operations.

The facilities are not required to implement, an automated control/management system (ACM) for air emissions, as total emissions are below 500 tonnes per year.

Active permits for SK and KCC are shown in Table 20-1.

Table 20-1: Kounrad Environmental and Special Water use Permits

Permit type	Validity dates	Permit number
SK Environmental Permit	2025 - 2034	№: KZ16VCZ03815016
KCC Environmental Permit	2023 - 2031	№: KZ25VCZ03180571
SK Special Water Use Permit	2022 - 2026	KZ71VTE00125208
KCC Special Water Use Permit	2026 - 2031	KZ68VTE00372903

The MAEs documentation was developed internally by SK and KCC.

CAML has engaged the state-approved, independent ecological contractor CAIER (Almaty) to carry out environmental monitoring. CAML also prepares and submits all required environmental reporting to the authorities.

An updated special water use permit for SK is currently under review by the state authorities.

Water supply sources include:

- Potable water from Balkhash SU water company.
- Balkhash source (KCC) — valid until 2031.
- Underground water source (SK) — renewal/decision on permit application due August 15, 2026.
- A new water abstraction point will be constructed due to elevated chloride levels at the existing abstraction point in Balkhash

Drinking water is treated using reverse osmosis (RO) at the SW/EX plant.

An additional lake water treatment plant (ultrafiltration) is planned to be constructed in 2026.

20.2 Environmental Reporting

CAML has commissioned independent ecological contractors CAIER, based in Almaty, to provide monitoring. The company provides all required reporting to the state.

An OVOS was prepared for SK in 2024 by Proekt Service (Karaganda) (Proekt). Additionally, a new mine closure plan and reclamation design were developed by Proekt.

The most recent OVOS prepared for KCC was in 2020 by SBK LLP (Karaganda).

As part of the two OVOSs, two separate public hearings were held. In addition, baseline environmental and social information (including air quality, soils, surface water and groundwater, flora and fauna, cultural heritage, and socio-economic conditions) were derived from existing data sources.

The authors consider that both OVOS documents for the Kounrad operations provide a required review of baseline conditions and have been prepared in accordance with Kazakhstan's legislative requirements.

20.3 Environmental Liabilities

In agreement with the Ministry of Natural Resources, it is considered that the Kounrad site had previously been disturbed and contaminated as a result of historical operations, natural leaching, and other local industrial activities. Accordingly, CAML are not responsible for any historical contamination and are required to ensure that existing environmental conditions are not worsened.

In 2007, Ecolimit undertook a baseline environmental assessment of the site, including baseline monitoring, to establish an environmental benchmark for key parameters such as soil, surface water, and groundwater quality. These baseline parameters are used for internal monitoring, while state-mandated monitoring provides measured values for comparison against the permitted MACs.

The current conceptual closure plan for the dumps envisages removal of infrastructure; however, it does not include re-vegetation or re-profiling. The use of lime gravel along with other options is proposed to neutralise any residual drainage.

Post-closure monitoring is envisaged for one year. Notwithstanding the above, further closure measures are likely to be required to ensure that the dumps do not represent an ongoing environmental liability. This may include extended post-closure monitoring and potentially some re-profiling and/or additional stabilisation measures. CAML is aware of this need and is in the process of commissioning an updated closure plan.

20.4 EHS Management

20.4.1 Policies and Practice

CAML employs an in-country ESG Manager who oversees a team of 18 staff covering HSE (safety, environment and social), PR (Public Relations) and corporate communications, and site monitoring as part of day-to-day operations. Specialist support is also provided by in-house hydrogeologist (1), technicians (2) and site ecologists (2), who hold defined responsibilities within the management system.

CAIER is expected to continue as the Project's environmental monitoring subcontractor, appointed through an annual tender process. CAML has an Environmental Management Plan (EMP) in place that sets out mitigation measures for key environmental aspects and identified issues. Health and Safety (H&S) roles and responsibilities are defined and assigned across the team, supported by H&S plans and procedures and delivery of appropriate training.

CAML is required to submit annual environmental performance reports to the relevant state authorities. The environmental and climate change policies assign overall responsibility for implementation of the policy to the CAML Group Head of Sustainability.

20.4.2 Security

A perimeter fence and a staffed security control point are in place at the site entrance. High-risk areas (including the raffinate ponds) are separately fenced, and appropriate danger/warning signage is posted. Reagent storage and process plant areas are also

secured. Given the extent of the waste dump footprint, fencing the entire site perimeter is not considered practicable.

20.4.3 Fire Safety

Fire safety training forms part of CAML's sustainability training programme and is delivered by the H&S Department. CAML maintains a permanently stationed, fully equipped subcontracted fire brigade on site, including a fire engine and firefighting equipment. State fire inspections are carried out regularly, and no recent non-compliances have been reported.

In addition, fixed fire suppression systems are installed in both the SX and EW areas of the processing plant.

20.4.4 Contingency Plans and Emergency Procedures

Emergency response plans are reviewed regularly by department managers to confirm they remain fit for purpose, reflect current site conditions, and comply with Kazakh regulatory requirements and relevant international good practice. The plans are subject to annual revision.

Personnel receive appropriate training to implement the plans, and readiness is periodically verified through emergency drills and exercises.

20.4.5 Staff Training and Supervision

Health and safety training is delivered to all staff in accordance with applicable Kazakh legal requirements and standards. Additional training is also provided to meet corporate requirements, including enhanced first-aid provision. Site medical staff receive CPR and first-aid training aligned with relevant international standards. CAML also delivers safety culture training, covering topics such as hazard identification, near-miss reporting, and strengthened communication and reporting channels.

Environmental and social training is provided to both staff and contractors at Kounrad, including induction training and monthly internal sessions delivered in line with the training plan and relevant international requirements. Environmental engineers undertake refresher and capacity-building environmental training approximately twice per year.

20.5 Internal and External Stakeholder Dialogue

20.5.1 Internal Employee Consultation Practice

An internal and external communications plan is in place for the Kounrad operations and was last reviewed in 2020. The plan is scheduled to be updated again in Q3 2026. It includes a functioning complaints and grievance mechanism for employees. Training sessions are also used as an additional channel for internal communication.

20.5.2 External Stakeholder Dialogue

Under Kazakh law, there is no ongoing requirement for public consultation once the OVOS process has been completed. A complaints and grievance management system is in place at Kounrad, with records maintained in a grievance register monitored by the Sustainability department. A stakeholder register was developed in 2024, and the Stakeholder Engagement Plan is scheduled to be updated in Q3 2026.

To strengthen external communications, dedicated Corporate Communications and PR Manager positions were added to the team in 2018 and 2019, respectively. The Kounrad Foundation was established in 2020. Local communities are reported to be broadly supportive of the operation, particularly due to associated employment opportunities. As part of the

Project's social management system, procedures have been established for external communications, expectation management, and the management of commitments. SLR considers that the CSR team has developed robust systems and procedures that are broadly aligned with international good practice.

20.6 Environmental Monitoring and Compliance

20.6.1 Internal Monitoring

No non-compliance issues were reported to SLR. Groundwater monitoring is undertaken on a continuous basis under the responsibility of the company hydrogeologist. Groundwater samples are analysed in the company laboratory, while CAIER carries out external monitoring for air quality, surface water and groundwater, as well as soils, vegetation, and fauna.

Groundwater is monitored through 30 boreholes located around 200 - 700 m from the dumps. Water quality results are not currently benchmarked against MACs due to the lack of established state standards. Water is internally sampled weekly and analysed for Cu, pH, total Fe, and chloride. Data on groundwater levels and composition are collected manually and entered into spreadsheets in the MonitorPro system, which serves as a central database for monitoring results. Groundwater levels are measured weekly.

Based on local hydrogeological conditions, monitoring results indicate a low hydraulic conductivity and slow groundwater flow, with precipitation being the principal source of recharge. In addition, CAML monitors materials, water, and energy consumption as part of operational performance tracking.

20.6.2 External Monitoring

External monitoring is carried out by CAIER and other appropriately licensed contractors, with results documented in the quarterly monitoring reports.

Existing exceedances of maximum permissible concentrations of pollutants in soil and vegetation reflect historical contamination at the site, and not the current impact of industrial activities.

Available data indicate that waste rock materials at Kounrad have acid-generation potential and that there is a legacy of metalliferous groundwater contamination. Drainage points and process manholes are routinely monitored. In addition, biodiversity studies are being implemented on a voluntary basis as part of the company's Biodiversity Strategy.

20.7 Raw Materials, Products and Waste Streams

20.7.1 Raw Materials

Various reagents are used in the SX-EW process. Sulphuric acid for leaching is sourced from the local smelter at Balkhash, and the limited quantity of diesel currently used is obtained locally. Escaid 110 is used in the processing operation and is imported from Belgium. LIX, the organic component in the process is stored in a bunded area and is imported from Ireland. Cobalt sulphate is stored as a powder in bags in a locked container. Tyres are obtained from a company in Karaganda. Coal is sourced regionally from the Pavlodar area.

Audits of raw materials consumed, handled or stocked on site are performed internally to assess usage and options for recycling, or reduce consumption where possible.

20.7.2 Energy

Electrical power is supplied to the Project via an overhead 35 kV transmission line feeding an on-site substation, where voltage is stepped down to 10 kV for distribution. In 2025, electricity

consumption from the national grid was 39.9 GWh for KCC and 8.2 GWh for SK. CAML commissioned the Kounrad Solar Power Project in November 2023. In 2025, the solar facility generated approximately 8.8 GWh, representing approximately 15% of total electricity consumption.

Coal-fired boilers are used to heat buildings during the winter period and to heat solutions. Coal (grade B) is sourced from the Shattykkol (Maikuben deposit, Pavlodar Region) and stored on site. In 2025, coal consumption totalled 12,280 tonnes for KCC (permitted limit 15,000 tpa) and 2,921 tonnes for SK (permitted limit 7,000 tpa).

An audit of energy use and supply options has been completed, and monthly sustainability reporting includes energy consumption and associated greenhouse gas (GHG) emissions, including emissions from on-site coal combustion and fuel use (diesel and gasoline). A GHG calculation tool aligned with the GHG Protocol was developed by SRK in 2018 to support emissions estimates.

At Kounrad, combined Scope 1 and Scope 2 emissions in 2025 were 48,640 tCO_2e, a reduction of 5% on 2024 (51,236 tCO_2e), reflecting operational efficiency improvements during the year.

20.7.3 Intermediate Products

The dumps are leached in situ, and intermediate process wastes (including spent raffinate) are recovered and recycled back into the leaching circuit.

Crud, a solid residue from the hydrometallurgical process in the SX section, is removed and typically returned to the dump; when required, it is also used for minor road repairs. Crud generation of approximately 18.25 tpa is permitted

Slime from the EW baths is collected and sold to third-party companies.

Slag and dust/ash from the coal-fired boiler are captured via cyclone de-dusting and the slag removal system. Most of the resulting ash/dust mixture is collected by local community members for brickmaking, and consequently boiler ash is generally not disposed of to landfill.

20.7.4 Effluent

Since 2017 sanitary wastewater has not been treated via an on-site septic tank. Instead, wastewater is now discharged via a dedicated pipeline to a sewage pond operated by Balkhash Su.

Within the processing plant, waste solutions and spillages are collected and returned to the process, with liquids routed back to the fully lined raffinate pond. The processing circuit is therefore reported to operate on a zero liquid discharge basis, with no routine discharge of process liquids to the environment.

CAML has modelled and assessed potential seepage losses to groundwater (JH Groundwater), which indicated a very low potential loss rate, and has also implemented mitigation measures to be applied in the event that contamination is detected.

20.7.5 Air Emissions

The main potential sources of air emissions are coal combustion from boilers and windblown aerosol droplets generated by the evaporation of solutions from dumps, trenches and ponds. Dust may also be generated by vehicle movements on site; to mitigate this, roads are watered during the summer months.

The SX–EW process is not a significant source of gaseous emissions. The principal potential emission is in the EW circuit, where oxygen evolution at the anodes can generate a fine acid mist. The EW cells are covered, and PVC balls are added to reduce mist formation. CAML

also doses the circuit with FC1100 (with ongoing testing of alternative/additional reagents), which further reduces mist and associated emissions.

Additional emissions may arise from coal combustion in the boiler system and dust from coal storage/handling. These emissions are currently reported to remain below permitted limits, with no exceedances reported.

20.7.6 Noise

Noise levels associated with hydrometallurgical operations are relatively low, averaging approximately 65 dB. Given the industrial setting and the proximity of a community accustomed to mining activity, noise impacts are not expected to be significant. Workers are provided with appropriate personal protective equipment (PPE).

20.7.7 Waste

Tyres are disposed of by a licensed waste contractor based in Karaganda. Domestic waste is sent to the local municipal landfill. Packaging materials and waste reagents are segregated into recyclable and non-recyclable streams; non-recyclable waste is collected by a licensed contractor and transported to approved disposal facilities.

Recyclable materials, including scrap metal, paper, and plastics, are transferred to a licensed third party for recovery/utilisation.

20.8 Chemical Storage

As part of the process circuit, PLS, leachate and raffinate are captured in trenches and ponds lined with welded HDPE on compacted bases. Containment capacity is designed to accommodate snowmelt and full plant upset/failure scenarios, and an additional emergency pond is available if required.

ESCAID (used in the SX–EW process) is stored in four 75 m³ tanks located within a concrete bund sized for full containment in the event of a leak; the bund is lined/coated with viniplast. LIX (an organic process reagent) is stored in intermediate bulk containers (IBCs) in the commodities and materials storage area; the storage area is covered, with a concrete pad and shed installed in 2017.

Sulphuric acid is stored in a dedicated facility comprising a bunded cage within a secured storage container, with automatic level monitoring; the area is viniplast-lined/coated. The limited quantity of diesel used on site is stored in a 6.5 m³ fuel tank truck; deliveries are typically up to 3.0 m³, occurring 2–3 times per week.

Cobalt sulphate and guar are stored in plastic bags in the reagent warehouse, and a dedicated coal storage area is in operation for the boiler fuel. During the site visit, personnel were observed wearing appropriate PPE for the tasks being undertaken.

20.9 Soil, Surface and Groundwater Contamination

The dumps are leached in-situ, using a solution acidified with sulphuric acid. Metal contamination is historically present in the groundwater at the eastern site, and in surface soils from former operations.

The dumps are unlined, and collection measures for PLS are via a lined interceptor trench and a retention berm.

SRK was commissioned in 2014, 2015 and 2016 to develop a regional geological and hydrogeological conceptual model to assess whether the Kounrad operations could impact groundwater resources. A Source–Pathway–Receptor framework was applied, identifying the dumps and associated leach operations as the potential contaminant source, and the Tokrau

alluvial aquifer (to the east) plus nearby springs/shallow groundwater manholes as the principal potential receptors. Overall, the review concluded that material impacts to these wider groundwater receptors are unlikely, primarily because there is no viable groundwater pathway linking the site to the key receptors.

Localised impacts are largely confined to groundwater beneath and immediately around the eastern dumps, where seepage of historic and more recent acidic drainage/leach solutions has resulted in low pH and elevated solutes (notably copper, sulphate and chloride).

No major spills or losses of any PLS or chemicals used in the process have been recorded.

20.10 Health and Safety

A dedicated Lead of Health and Safety (H&S) is responsible for day-to-day H&S management for site personnel, supported by two safety engineers and eight full-time medics. In addition, CAML maintains a permanently stationed subcontracted firefighting team on site, equipped with a fire engine and firefighting equipment.

An approved H&S Plan is in place and was updated in 2025. The plan is designed to meet Kazakh regulatory requirements and is aligned with international good practice, covering key elements such as induction and training, emergency preparedness and response, H&S communications, and community H&S. Accident and incident statistics are compiled and reported monthly through sustainability reporting.

CAML implements a structured risk assessment process. Site safety reporting extends beyond statutory requirements to include the recording and investigation of incidents and near-misses, consistent with international good practice. SLR considers that this approach, together with management focus and oversight, has supported a positive safety culture.

Two lost-time injuries (LTIs) were recorded: one in 2025 and one in March 2026. All staff are issued with task-appropriate PPE and were observed wearing appropriate PPE during SLR's site visit.

In 2026, CAML intends to roll out a structured safety culture programme, including incentives aimed at strengthening safe behaviours, with the objective of achieving zero LTIs and incidents. Continuous improvement initiatives are also pursued; for example, a modified EW mask has been introduced to enable workers to communicate without removing respiratory protection.

A site clinic and ambulance vehicle are available at Kounrad, supported by a first-aid point and on-site medics. All staff have medical insurance and access to medical facilities in Balkhash.

SLR considers that H&S management at the site is robust and broadly aligned with both Kazakh legislative requirements and international good practice.

20.11 Closure

In 2022, a conceptual closure plan and Asset Retirement Obligation (ARO) for the Kounrad in situ dump leach operation was prepared by WSP Golder / WSP (UK) Ltd and sets out a high-level closure vision, closure measures, and an indicative cost estimate for the operation and associated infrastructure. The closure vision focuses on leaving the site safe, physically stable, non-contaminating, and visually acceptable, enabling beneficial re-use of selected infrastructure where agreed with stakeholders, and supporting the natural re-establishment of local vegetation rather than intensive engineered revegetation.

The plan assumes most physical closure works occur at the end of production and includes: demolition and removal of plant and supporting infrastructure not required post-closure; neutralisation and closure of process ponds (lime neutralisation, sediment management, liner

handling, and reshaping); and water/solution management by recirculating remaining solutions to the dumps to flush and evaporate residual inventories.

For the dumps, the closure plan generally does not propose major earthworks, relying on their existing long-term stability and the presence of a cemented surface crust, with risk managed through trench rehabilitation/backfilling (including limestone) once no longer needed. Post-closure monitoring is proposed for groundwater quality and general surface rehabilitation and vegetation recovery, with contingency measures if monitoring indicates unacceptable trends.

Closure costs are detailed in Section 21.1.

20.12 Community Development

The majority of the workforce is drawn from Balkhash; however, where possible, personnel are also recruited from Kounrad, located within a few kilometres of the site. Overall, local stakeholders are reported to be broadly positive about the operation, and the Project generally benefits from community support.

The Kounrad Foundation (established in 2017) operates under a defined strategy that combines both reactive and proactive programmes and is intended to maintain operational independence from CAML as a funding source.

In 2025, a local needs assessment was undertaken in Balkhash and Kounrad microdistrict with support from national external consultants (Creative & Innovation Institute). The assessment engaged 698 residents and stakeholders (including youth, educators, healthcare workers, entrepreneurs and local officials) through surveys, six focus groups and 20 in-depth interviews. The results confirmed that community priorities differ by location, supporting a tailored approach to social investment: in Balkhash, priorities relate to education, cultural and recreational infrastructure, and youth retention, whereas Kounrad Village faces more fundamental needs, including healthcare access, employment, and basic social infrastructure.

These findings are being used to guide future community investment. To strengthen accountability and assess impact, the Foundation held its first annual beneficiaries' forum (Kurultai) in January 2025, bringing together beneficiaries to share experiences, present outcomes and provide feedback; local media attendance also helped raise awareness and visibility of the Foundation's activities.

20.12.1 Community Initiatives

SK and KCC support the Kounrad microdistrict through practical, community-request–driven actions focused on local living conditions and safety. Key initiatives include: (i) regular clean-up and removal of bulky waste; (ii) winter snow clearing of roads and yards to maintain safe access for vehicles and pedestrians; and (iii) emergency support during drinking-water supply disruptions, including provision of water trucks. These activities form part of ongoing engagement with residents and local authorities and are intended to maintain a safe and comfortable community environment.

20.12.2 Infrastructure Projects of the Kounrad Foundation

The Kounrad Foundation channels social investment into priority infrastructure in Balkhash/Kounrad, with projects largely focused on healthcare, education, social support, and community/sports facilities. The Kounrad Foundation has three pillars to social investment through the Foundation; charity, infrastructure and capacity building. The Kounrad Foundation is continuing its second year of building capacity in science, technology, engineering, arts and mathematics (STEAM) for all schools in Balkhash. Recent flagship investments include the reconstruction of the JasSpace Youth Intellectual and Sports Centre and major repairs to the Children's Rehabilitation Centre, alongside procurement of medical equipment for the Multidisciplinary Hospital in Balkhash (e.g., patient monitors and endoscopy systems).

Education support includes equipping Balkhash Medical College with interactive classrooms/panels, complemented by targeted assistance such as restoration of housing after a fire, procurement of an ambulance, and upgrades to local sports and inclusive facilities.

From 2017 to December 31, 2025, the Fund allocated a total of approximately US$1.64 million).

20.12.3 Grievance Mechanism

A grievance mechanism is in place, and grievances received are recorded and reported through monthly sustainability reporting. Grievances may be submitted via multiple channels, including public hearings, social media, direct submissions through the Kounrad Fund/Foundation, and complaints raised directly with site management.

Overall, SLR considers CAML's social development programmes demonstrate a proactive approach to engagement and support for local communities.

21.0 Capital and Operating Costs

21.1 Capital Costs

A summary of the capital costs for the Kounrad operation is presented in Table 21-1. An additional cost of US$16.1 million has been estimated for closure.

Table 21-1: Summary of Kounrad Capital Costs

Item	Unit	2026	2027	2028	2029	2030	2031	2032	2033
Sustaining SK	US$M	0.59	0.59	0.59	0.50	0.41	0.33	0.20	0.12
Sustaining KCC	US$M	1.31	1.31	1.31	1.11	0.91	0.74	0.45	0.28
Total Capital Costs	**US$M**	**1.90**	**1.90**	**1.90**	**1.61**	**1.32**	**1.10**	**0.66**	**0.40**

21.2 Operating Costs

A summary of the operating costs for the Kounrad operation is provided in Table 21-2.

Table 21-2: Summary of Kounrad Operating Costs

Item	Unit	2026	2027	2028	2029	2030	2031	2032	2033
SK Eastern Production	US$M	2.42	2.20	2.15	2.09	2.06	2.10	1.90	1.65
SK Western Production	US$M	3.90	3.77	3.67	3.57	3.47	3.20	2.76	2.76
KCC Production	US$M	11.85	10.85	10.53	10.23	10.04	9.85	8.40	7.04
KCC Water Pipeline	US$M	0.25	0.24	0.23	0.22	0.22	0.20	0.17	0.17
Solar Farm	US$M	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07
G&A	US$M	4.27	4.17	4.09	4.00	3.93	3.80	3.49	3.49
Total Operating Costs	**US$M**	**22.75**	**21.32**	**20.73**	**20.18**	**19.79**	**19.22**	**16.79**	**15.18**

22.0 Economic Analysis

Producing issuers may exclude the information required under Item 22 of Form 43-101F1 for Technical Reports on properties currently in production unless the Technical Report includes a material expansion of current production.

The financial model for the LOM was reviewed by the authors and showed the Mineral Reserves to be economic based on the assumptions used and a copper price of US$11,080 per tonne.

23.0 Adjacent Properties

The Kounrad open pit is located adjacent to the Property and is owned by Kazakhmys. Further information on this is provided in Section 4.1 and 4.2.

The QP has not relied upon any information from these adjacent claims in the preparation of this report.

24.0 Other Relevant Data and Information

There are no other relevant data or information to report in this Technical Report about the Kounrad in situ dump leach operation.

25.0 Interpretation and Conclusions

The authors make the following recommendations in their respective areas of expertise, based upon the review of the available data.

25.1 Geology, Exploration and Mineral Resource Estimates

- The Kounrad waste dumps are laterally extensive man-made landforms. Drilling of the dumps has been undertaken on a maximum spacing of 200 – 100 m. The composition of the dump material, the copper grades and amenability to leaching is well understood through exploration, testwork and production.
- The sample preparation, analyses, QA/QC procedures, and sample security are acceptable. The samples are representative of the mineralisation of the dumps and there is no evidence that the drilling or sample preparation or analyses process has resulted in a bias that could materially impact the accuracy and reliability of the results.
- Data verification identified no significant issues with the databases used for Mineral Resource estimation.
- Mineral Resources for the Kounrad in situ dump leach operation were prepared by SK and audited by SLR. The audit involved a check estimate produced by SLR using a block modelling approach. The check estimate confirmed the tonnes and grades reported by SK.
- The quality and spatial distribution of the available data, together with the integrity of the Mineral Resource estimates and the demonstrated confidence in predicting production from the operation, are sufficient to support the classification of the Kounrad dumps as Indicated Mineral Resources.
- The Mineral Resource estimate conforms to the resource categories defined by the CIM Definition Standards for Mineral Resources and Mineral Reserves (2014).
- The Mineral Resource estimate has been appropriately depleted to account for leaching operations conducted from the start of production in April 2012 to December 31, 2025.
- A comparison of the production guidance and actual production showed there is an acceptable level of confidence in predicting annual production from the operation.

25.2 Mineral Processing and Metallurgical Testing

- Column tests were undertaken in large diameter columns at the Kounrad site. The objective was to produce a realistic model leaching curve which is applicable to the western dump material. Two curves were produced, one for lower grade material (<0.05% Cu_{Total}) with a final recovery of 35%, and a higher grade (>0.5% Cu_{Total}) terminating at 42% total Cu recovery, both at 20 months.
- As a cross check, the historical performance of Dump 9/10 together with the VNIITSvetmet and Kounrad Dump 22-12 column leach test results were incorporated onto the same graphical plot. These show good correlation with the Design Curve up to a cumulative recovery level of about 20 to 25%.
- Pilot trials have been undertaken on the eastern and western dumps:
    - The eastern dumps yielded a recovery of 50.2% and this has been confirmed in practice with a leach recovery of 51% being achieved.
    - The western dumps, being more refractory to acid leaching (due to the presence of sulphide material), respond less favourably to leaching with recoveries ranging from 35% (sulphide material) and 42% (mixed material). However, it is feasible that material will yield higher recoveries due to the natural biological oxidation of the copper sulphide minerals.

25.3 Mineral Reserve Estimates

- Mineral Reserves for the Kounrad in situ dump leach operation have been prepared to industry best practice and conform to the reserve categories defined by the CIM Definition Standards for Mineral Resources and Mineral Reserves (2014).
- Indicated Mineral Resources were converted to Probable Mineral Reserves through the application of modifying factors. No Measured Mineral Resources are estimated, and therefore no Proven Mineral Reserves are reported.
- The current life of mine runs until 2034.

25.4 Recovery Methods

- The operation has a proven track record of processing copper mineralization from the waste dumps since 2012. Processing methods are conventional, and the metallurgy is relatively simple.
- In-situ leaching using raffinate solution is used to dissolve the copper mineralisation contained within the dumps. The PLS is collected at the base of the dumps by HDPE lined interceptor trenches and pumped to a series of holding ponds before being treated in a SX-EW plant. The presence of a layer of low permeability clay underneath the dumps acts as a highly effective barrier that restricts the loss of the PLS, allowing for efficient in situ collection without engineered pads.
- The operation works year-round with leaching during the winter period achieved by heating the leach solutions before irrigating the pads under a HDPE cover.
- The Kounrad operation is well managed, and the SX-EW plant has high levels of utilisation.
- The eastern dumps were targeted first for leaching due to their higher grades and faster leaching rates due to the oxidised nature of the mineralisation. Leaching of the western dumps commenced in 2017 with the PLS being collected and pumped some 12.5 km to the SX-EW plant located at the eastern dumps.
- Annual copper production ramped up between 2012 and 2015, increasing from 6,586 t to 12,071 t, before reaching a plateau between 2016 and 2022 of approximately 14,000 tpa. Since 2022, there has been a small decline in production, reaching 13,311 t in 2025 and there will be a downward trend in future years as fewer dumps remain to be leached and those that remain are lower grade and comprise mainly sulphide or mixed material.
- The cathode quality conforms to LME Grade A (>99.99% Cu) and levels of impurities are historically generally very low.
- The operation has excellent logistics and is supplied with electrical power from the national gris and by its own solar farm. Water is provided either from Lake Balkhash in the summer months or from a mine shaft in the winter months when the lake is frozen. It is planned to install a new pumping station at Lake Balkhash to enable water extraction throughout the year. Acid for the operation is sourced locally from Balkhash.
- A total of 178,961 tonnes of cathode copper has been produced since the start of operations. The production schedule contains a total of 74,459 t of copper cathode that will be produced from 2026 – 2034. Based on the Mineral Reserve estimate and the estimated metallurgical recoveries there is sufficient leachable metal to support the production plan.

25.5 Infrastructure

- All major infrastructure required by the operation is in place and no significant additional infrastructure projects are currently planned.

25.6 Environmental Studies, Permitting, and Social or Community Impact

- Environmental and social management systems, permitting processes, monitoring programmes, and closure planning at Kounrad are sufficiently developed to support ongoing operations and the assumptions typically required for Mineral Resource and Reserve estimation and future production, subject to continued compliance performance and active management of key risks.
- The principal E&S matters are:
  - Continued effective solution containment and groundwater protection;
  - Maintaining compliance under Kazakhstan's permitting framework (including monitoring and reporting);
  - Ensuring closure obligations and funding remain aligned with evolving plans and cost estimates, and
  - Sustaining a robust community engagement and grievance response system to support the Project's social licence to operate.
- Permits held by SK and KCC for the Property are sufficient to ensure that mining activities are conducted within the regulatory framework.
- There are currently no known environmental, permitting, or social/community risks that could impact the Mineral Resources or Mineral Reserves.

25.7 Capital and Operating Costs

- Total capital costs for the operation to 2034 are estimated at US$10.8 million. A cost of US$16.1 million is also estimated for closure.
- The total operating cost for the LOM (to 2034) is estimated at US$156.0 million.

25.8 Economic Analysis

- The financial model for the LOM was reviewed by the authors and showed the Mineral Reserves to be economic based on the assumptions and metal prices used.

25.9 Risks and Uncertainties

- The Kounrad in situ dump leach has been in continuous production since 2012. The authors consider there are no significant risks or uncertainties that could be expected to affect the reliability or confidence of the Mineral Resources, Mineral Reserves and projected production based on the assumptions used.

26.0 Recommendations

The authors make the following recommendations in their respective areas of expertise, based upon the review of the available data.

26.1 Geology, Exploration and Mineral Resource Estimates

- Progress the alignment of the surface rights with the concession boundary.
- Progress with an application to expand the concession to include other areas of the dumps (including further areas of the northern dumps) to provide additional Mineral Resources.

26.2 Mineral Processing and Mineral Reserve Estimates

- Continue testwork to improve the estimated leach recoveries of 25% for Dump 2 resulting from lower solution percolation rates due to a higher clay content.
- Continue testwork to improve the estimated leach recoveries of the northern dumps (mixed material) from the current 35% recovery.

26.3 Infrastructure

- No significant additional infrastructure for the operation is recommended by the authors.

26.4 Environmental Studies, Permitting, and Social or Community Impact

- Maintain and periodically optimise the groundwater monitoring network to ensure it remains fit-for-purpose. Monitoring should continue to focus on key indicator parameters (e.g., pH, Cu, SO_4, Cl) and incorporate trend analysis and early-warning triggers tied to operational responses.
- Strengthen benchmarking and interpretation of water quality results by clearly defining baseline/background conditions (including legacy-impacted baselines) and documenting how compliance results are assessed against regulatory thresholds versus operational performance indicators. Where exceedances are attributed to legacy contamination, maintain supporting technical justification and regulator-facing documentation.
- Continue periodic review of seepage capture efficiency and containment integrity for lined trenches/ponds and process solution management, including verification inspections and targeted studies where monitoring indicates potential changes in plume behaviour, preferential pathways, or localised pH/copper level changes.
- Update and consolidate the technical evidence base supporting the conceptual hydrogeological model and any risk conclusions regarding regional receptors when new data becomes available, particularly where monitoring indicates divergence from expected trends or where new receptors or water users are identified.
- Maintain a forward-looking permitting register covering all environmental approvals (air emissions, waste, water abstraction/special water use, discharge limits, monitoring obligations), including renewal timelines, responsible persons, and required supporting studies.

- Ensure environmental monitoring contractors and laboratories remain appropriately certified and QA/QC procedures are documented (chain of custody, calibration, data validation), with results consistently integrated into periodic compliance reporting.
- Formalise an internal compliance assurance process (e.g., quarterly compliance reviews) to identify emerging risks early, including changes in regulatory requirements and any gaps between operational controls and permitted limits.
- Update and implement the Stakeholder Engagement Plan on a defined cycle and align it with the most recent needs assessment findings, ensuring a location-specific approach.
- Strengthen grievance mechanism effectiveness by: (i) clarifying intake channels and response timelines; (ii) improving categorisation and close-out documentation; and (iii) implementing an approach for handling social media complaints, while retaining records for auditability.
- Enhance impact measurement of social investment by expanding beneficiary feedback mechanisms into a light-touch monitoring framework with measurable outputs/outcomes for key programmes such as healthcare, education, infrastructure, supporting transparency and continuous improvement.
- Periodically reconcile closure-related studies, closure cost estimates, and closure funding provisions to ensure they remain aligned with current infrastructure, monitoring outcomes, and evolving regulatory expectations. Prioritise where closure assumptions such as monitoring duration, trench rehabilitation timing and pond closure approach interact with ongoing compliance and stakeholder expectations.
- Integrate closure planning with operations planning (including progressive measures where practicable) to reduce future closure risk and improve long-term environmental performance including proactive management of legacy-impacted areas, refinement of solution management strategies, and targeted rehabilitation trials where appropriate.

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CERTIFICATE OF QUALIFIED PERSON

I, Ruslan Erzhanov, MSc, FGS, CGeol, PONEN RoK, as an author of this report titled "NI 43-101 Technical Report, Kounrad In Situ Dump Leach Operation, Kazakhstan" dated August 12, 2026, and with an effective date of December 31, 2025, do hereby certify that:

- I am a Principal Resource Geologist with SLR Consulting (Kazakhstan), with a business address at 29/6 Satpaev Street, Rahat Palace Hotel, Business Centre, 9th Floor, Almaty, Kazakhstan, 50040.
- I am a graduate of the Kyrgyz State University, Bishkek, Kyrgyzstan (MSc Geological Surveying, Prospecting and Exploration of Mineral Deposits, 2009). I have practiced my profession continuously since 2009 and have estimated and audited Mineral Resources for a variety of commodities, including base metals related to porphyry copper deposits.
- I have read the definition of "Qualified Person" set out in NI 43-101 and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfil the requirements of a "Qualified Person" for the purposes of NI 43-101.
- I am a registered member in good standing of the Geological Society of London as a Fellow and Chartered Geologist (# 1023579).
- I last personally inspected the Kounrad Operation on May 13 to May 14, 2026.
- I am the co-author of this report and responsible for Sections: 1.0, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.11, 1.20 (Mineral Resources), 1.21.1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 23, 24, 25.1, 25.9 (Mineral Resources) and 26.1.
- I am independent of the issuer, Central Asia Metals plc, as defined by Section 1.5 of NI 43-101.
- I have had prior involvement with the Kounrad Operation that is the subject of the Technical Report as part of a Competent Persons Report in 2017.
- I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
- At the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections 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 12th day of August, 2026.

(Signed & Sealed) Ruslan Erzhanov

Ruslan Erzhanov, MSc, FGS, CGeol, PONEN RoK

CERTIFICATE OF QUALIFIED PERSON

I, Philip Arthur King, BSc, ARSM, CEng, FIMMM, as an author of this report titled "NI 43-101 Technical Report, Kounrad In Situ Dump Leach Operation, Kazakhstan" dated August 12, 2026, and with an effective date of December 31, 2025, do hereby certify that:

- I am an independent consultant, with an address at 35 Penoweth, Mylor Bridge, Falmouth, Cornwall, United Kingdom, TR11 5NQ.
- I am a graduate of the Imperial College, London in the United Kingdom (BSc Mineral Technology, 1980). I have practiced my profession continuously since 1980 in a variety of countries and commodities and have been involved with the minerals processing of porphyry copper mineralisation for more than 40 years.
- I have read the definition of "Qualified Person" set out in NI 43-101 and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfil the requirements of a "Qualified Person" for the purposes of NI 43-101.
- I am a registered member in good standing of the Institute of Mining, Metallurgy and Materials and Chartered Engineer (# 358035).
- I last personally inspected the Kounrad Operation on May 13 to May 14, 2026.
- I am the co-author of this report and responsible for Sections: 1.10, 1.12, 1.13, 1.14, 1.15, 1.16, 1.18 (Processing Capital and Operating Costs), 1.19, 1.20 (Mineral Reserves), 1.21.2, 1.21.3, 13, 15, 16, 17, 18, 19, 21.1 (Processing Capital Costs), 21.2, 22, 25.2, 25.3, 25.4, 25.5, 25.7 (Processing Capital and Operating Costs), 25.8, 25.9 (Mineral Reserves and Projected Production), 26.2 and 26.3.
- I am independent of the issuer, Central Asia Metals plc, as defined by Section 1.5 of NI 43-101.
- I have had prior involvement with the Kounrad Operation that is the subject of the Technical Report as part of a Competent Persons Report in 2006.
- I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
- At the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections 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 12th day of August, 2026.

(Signed & Sealed) Philip A. King

Philip King BSc, ARSM, CEng, FIMMM

CERTIFICATE OF QUALIFIED PERSON

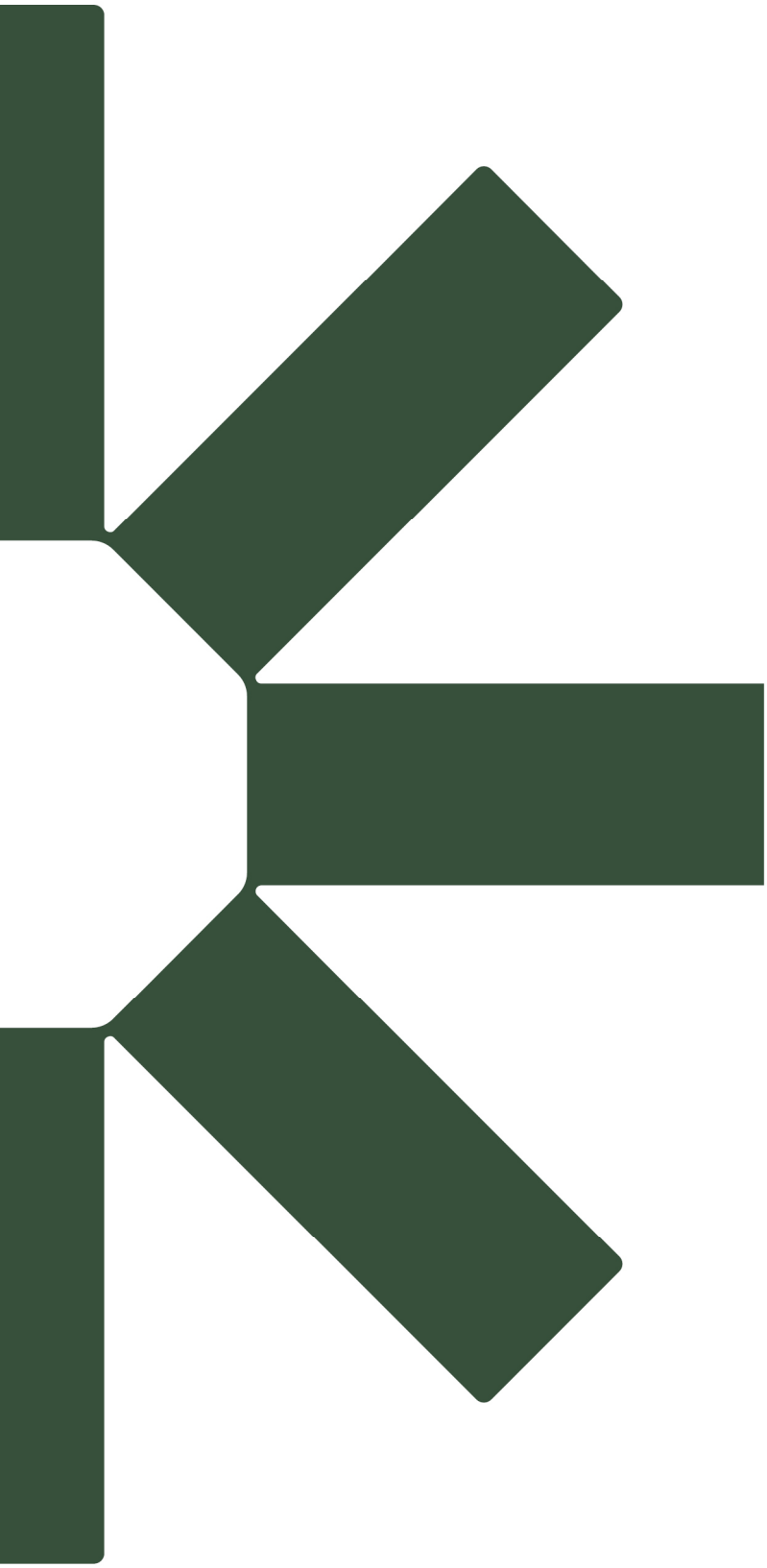
I, Alessandra Pheiffer, BSc, MSc, PrSciNat, MIMMM, as an author of this report titled "NI 43-101 Technical Report, Kounrad In Situ Dump Leach Operation, Kazakhstan" dated August 12, 2026, and with an effective date of December 31, 2025, do hereby certify that:

- I am a Technical Director ESIA, Europe, with SLR Consulting France SAS, of 2 Square Roger Genin, 38000, Grenoble.
- I am a graduate of the Rand Afrikaans University in South Africa (BSc Biological Sciences, 1999 and MSc Environmental Management, 2004). I have practiced my profession continuously since 2002 in a variety of countries and commodities and including preparing and reviewing Environmental and Social Chapters and Impact assessments for gold, base metals and PGMs.
- I have read the definition of "Qualified Person" set out in NI 43-101 and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfil the requirements of a "Qualified Person" for the purposes of NI 43-101.
- I am registered as a Professional Natural Scientist (PrSciNat) in Environmental Science (Reg. No. 400183/05) with the South African Council for Natural Scientific Professions and am a member in good standing of the Institute of Materials, Minerals and Mining (#708325).
- I did not visit the Kounrad Operation.
- I am the co-author of this report and responsible for Sections: 1.17, 1.18 (Closure Costs), 1.21.4, 20, 21.1 (Closure Costs), 25.6, 25.7 (Closure Costs) and 26.4.
- I am independent of the issuer, Central Asia Metals plc, as defined by Section 1.5 of NI 43-101.
- I have not had prior involvement with the Kounrad Operation that is the subject of the Technical Report.
- I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
- At the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections 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 12th day of August, 2026.

(Signed & Sealed) Alessandra Pheiffer

Alessandra Pheiffer BSc, MSc, PrSciNat, MIMMM



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