

### Quarterly Report ending 30<sup>th</sup> June 2014

31<sup>st</sup> July 2014

#### **ROCKLANDS COPPER PROJECT (CDU 100%)**

#### HIGHLIGHTS POST-QUARTER END

#### First 1 million tonnes of ore at Rocklands

Audited Stockpile inventory to end June 2014 was 866,065 tonnes of ore. Current mining rates should see stockpiles reach 1 million tonnes in the coming week.

### Total ore: 1,052,125 tonnes @ 3.02% CuEq

#### **QUARTER HIGHLIGHTS**

Ore grades 400% higher than estimated after results of large single-batch ore-sorter trial

Large native copper masses (up to 50kg) recovered via crushing of oxide ore produces ~95% native copper concentrate product

Bank Credit Facility from China Minsheng Banking Corporation Ltd. for US\$65 million (~A\$70m) approved for withdrawal

#### DEVELOPMENT

- Rocklands Process Plant major components installed, structural completion underway
- Excess mining capacity diverted to construction of Tailings Storage Facility and Burke Development Road - Corella Park Road Intersection Upgrade

#### MINING

- After 8 years from first discovery mining reaches the bonanza zones of native copper identified during exploration drilling at Las Minerale
- Extremely rich supergene zone unique to Rocklands (central Las Minerale) reveals some of the world's highest grade copper ores known to exist with many museum specimen quality samples being recovered

BONANZA GRADES OF COARSE NATIVE COPPER (99.65% Cu)

MASSIVE CHALCOCITE BOULDERS (79.9% Cu), CUPRITE (88.8% Cu), TENORITE (79.6% Cu)

- Additional primary direct shipping ore (DSO) expected earlier than anticipated after design and scheduling changes to LM2 Pit
- Las Mineral Stage-1 Pit (LM1) mining high-grade native copper and chalcocite (high grade copper mineral) zones suitable for DSO
- Widespread zones of DSO estimated in the mining model translating into significantly higher grades during mining
- Ore stockpiles in excellent condition with mining dilution (0.5%) and losses (negative 23%)...collectively indicating 22.5% more ore reaching the stockpiles than anticipated by the mining model, yet maintaining the same grades



 Mining rates still ramping up as long-term ore stockpiles reach 866,065 tonnes, with mining of ore recently accelerating due to the release of further assets from infrastructure and prestripping operations

#### **EXPLORATION**

- Desk-top analysis of geophysics and geochemical surveys, field sampling and mapping, and target generation.
- New EPM25426 granted to CuDeco, south-west of and adjacent to CuDeco EPM18054

#### **OTHER**

- Annual Morris Creek Diversion (MCD) audit completed during June 2014 MCD passed audit and is fit for the pending 2014 wet-season.
- Waste management system at Rocklands to include further segregation of waste types and recycling
- Natural rehabilitation of disturbed areas after the 2013 wet season, showing encouraging early colonisation and soil stabilisation results
- The monitoring of; air quality; groundwater; surface waters are ongoing and progressing well.

#### CORPORATE

- Minsheng Bank A\$70 million credit facility finalised
- Chairman's Statement



Figure 1: Stage-1 Las Minerale Pit (LM1 Pit) reaches the RL175 level - accessing very high-grade coarse native copper & chalcocite.





Figure 2: Gravity Jig Building (looking west) - continuous alljig® units fade into the distance on level 3





Figure 3: Gravity Jig Building - Top image; feed bins (top), screen on middle floors and pump-boxes on ground floor. Feed chutes into ore jigs.



### First 1 million tonnes of ore at Rocklands

Audited Stockpile inventory to end June 2014 was 866,065 tonnes of ore.

Current mining rates should see stockpiles reach 1 million tonnes in the coming week.

Total ore: 1,052,125 tonnes @ 3.02% CuEq (see calculation page 6)



Figure 4: View to north-west showing all three stages of the Las Minerale Pit; Deepest pit is LM1; blast-hole drilling on the shoulder of the LM2 Pit floor and in the background; LM3 Pit (final pit) walls.



Figure 5: Mining on the shoulder of the LM2 Pit; LM1 Pit left background





Figure 6: Long-term stockpiles (6 of 12 main oretypes shown)

#### First 1 million tonnes of ore at Rocklands

The LM1 pit was scheduled to be completed by Friday 25th July, which would have contributed 186,060 tonnes of additional ore to the stockpiles during July, in the process pushing stockpiles well over 1 million tonnes. However, scheduling changes designed to reduce double handling of Direct Shipping Ore (DSO) from the pit meant mining activities were re-directed to the commencement of the LM2 Pit, which is dominated by waste removal in the initial periods.

### The schedule change was the result of ROM stockpiles of DSO being at full capacity ahead of planned crushing activities.

Focussing on the LM2 Pit whilst the ROM stockpiles are crushed and depleted, means when we go back into the LM2 pit (in approximately 2 weeks), DSO can be trucked directly to the ROM from the Pit for crushing, minimising mining and re-handling costs.

#### Ore inventory based on the Rocklands Resource Block Model;

	Tonnes	CuEq	Cu %	Co ppm	Au ppm	Mgt %
Remaining in LM1 Pit	186,060.00	4.87	3.51	795	0.53	5.03
Audited stockpiles to end June 2014	866,065.00	2.62	1.45	704	0.23	5.37
Total (audited stockpiles & remaining in LM Pit)	1,052,125.00	3.02	1.81	720	0.28	5.31

Note, the above tables include ore from pre-strip activity where significant quantities of low-grade ore was recovered. Copper grades are increasing with pit depth.

Results from drill & blast sampling and assay from LM1, are higher than indicated in the resource block model, however will not be reported to stockpile inventory until a full and complete audit of results and estimation methods have been completed for ore on stockpiles to end 2014, as part of the inventory audit process.

However, based on resource model estimates shown in the above table, over 30,000 tonnes of CuEq metal will be sitting on the stockpiles shortly. Ore processing costs at Rocklands are projected to be ~AUD\$14.30 per tonne.





Figure 7: Crushed native copper ore stockpiles - ready for upgrading through the Company's new ore sorter, currently in its final stages of construction in Hamburg Germany.

High-grade ore suitable for DSO has been blasted and remains in LM1 at the RL165m level and will be mined once space is available on the ROM, which is expected shortly.

Mining rates over the last 12 months have been in ramp-up phase, as assets are shared between mining, infrastructure and development activities and peaked at 44,000 tonnes per day.

Current mining rates are 30,000 tonnes of waste and ore per day, on single shift roster. CuDeco has not yet implemented night-shift activities.

Over the period ahead, mining rates are expected to increase to planned Life of Mine (LOM) mining rates.



Figure 8: Close up of above crushed (-40mm) native copper ore stockpiles - ready for upgrading to a premium grade concentrate through the Company's new ore sorter, currently in its final stages of construction in Hamburg Germany. The above image shows coarse native copper nuggets, coarse and fine native copper in rock matrix, chalcocite, cuprite and various secondary copper species, visually estimated at 26% Cu in the above image.





# Rocklands Process Plant - major components installed, structural completion underway.

CuDeco is developing one of the most significant copper discoveries in Australia in recent decades. The Rocklands deposit is dominated by primary copper mineralisation, however the first 10 years of production will treat large zones of supergene enriched ore including expansive zones of coarse native copper.

The Rocklands Process Plant is amongst the most sophisticated in Australia, capable of concurrently processing numerous ore types, including ore containing various native copper fraction sizes that will be processed through one of the worlds largest continuous gravity jigging circuits;



Figure 9: Rocklands Gravity Jig Circuit with multiple continuous gravity jigging units (alljigs®) supplied by German Company allmineral, capable of recovering various native copper fraction sizes (see flow-sheet diagrams from page 61)

Ore-types to be concurrently processed at the Rocklands Process Plant include;

Native copper ore (coarse, medium and fine) Primary sulphide copper ore (chalcopyrite) Secondary sulphide copper ore (chalcocite)

Oxide copper ore blended with other ore types (malachite, azurite, cuprite, tenorite)

Primary sulphide cobalt ore (pyrite)

**Gold** (as a by-product)

Magnetite (via magnetic separation)



Figure 10: Rocklands Process Plant - major components installed, structural completion underway.





Figure 11: Gravity Jig Building - from top to bottom; native copper metal screens, feed bins and light screens and continuous alljig® units (left and right)



The Rocklands Process Plant is designed to process 3 million tonnes of ore per annum and will concurrently produce six mineral products in five separate circuits;

#### Copper - cobalt - gold - magnetite - pyrite (sulphur)

The above end-products will be shipped in four final concentrates;

- Coarse and Fine Native Cu metal
- Copper sulphide / Oxide concentrate (+Au credit, +Ag credits)
- Pyrite / Cobalt Concentrate (+ sulphur credits, +Au, +Ag credits)
- Magnetite Concentrate (to specification suitable for washeries or metallurgical)

#### Copper recovery is split into three distinct areas;

- Primary Crushing Circuit to recover coarse native copper (+38mm) via scalping
- Gravity Circuit (jigs, spirals and tables) to recover sub 38mm native copper fraction, down to 0.2mm fine native copper
- Flotation to recover predominately copper sulphides (will also recover oxides) to a concentrate. Sub 0.2mm native copper fraction will float

#### Other metals to be concurrently recovered via;

- Flotation to recover cobalt in a pyrite concentrate
- Magnetic separation to recover magnetite from gangue (waste) from the flotation process on its way to the tailings waste



Figure 12: Gravity Jig Building - looking east; continuous alljig® units fade into the distance on level 3. From left to right in background; Table Separator Circuit; Spiral Separator Circuit; bank of three Thickener/Filtration Circuits; Flotation Cells; Cobalt Re-grind Circuit and; Magnetic Separation Circuit.



Civils and installation have been completed, or were nearing completion for;

- HPGR unit and infrastructure installed
- Ball Mill unit and infrastructure installed
- Scrubber unit and infrastructure installed
- Jigging Process area unit and infrastructure (screens and pump boxes) installed
- Tabling Area unit and infrastructure ( tables, screens and pump boxes) installed
- Spirals unit and infrastructure (pump boxes) installed
- Gravity thickener unit and infrastructure (pump boxes) installed
- Tails Thickener unit and infrastructure (pump boxes and floc unit) installed
- Flotation Area Tank installation unit and infrastructure installed
- Concentrate thickeners x3 installed
- Concentrate filters units and infrastructure installed
- Power House undergoing LV commissioning



Figure 13: Gravity Jig building - fines screen (left) and jig hutch (base of jig) on right.



#### Last remaining major infrastructure

The last remaining are of major infrastructure to be constructed is the Tailings Storage Facility (TSF), where preliminary ground clearance and strip-back has been completed and mobilisation of assets is underway.

The tailings pipeline to the TSF is currently under construction and major earth-moving and construction activity at the TSF will commence imminently.

#### Minor civils and infrastructure still ongoing or recently completed includes;

- Reagent Mixing area Completed
- Lime storage area 75% complete
- Flotation compressor area. Civils yet to be awarded
- Concentrate filtration (x3) Complete
- Concentrate storage sheds (x3) Complete
- Stockpile tunnel Tunnel redesign phase
- Conveyor footings All complete
- Pipe rack footings All complete
- TSF pipeline Construction underway



Figure 14: Flotation Cell building - flotation cells (top) and cell agitators (bottom)





Figure 15: Flotation Cells (top image) and in background; Spirals (left) and Thickener/Filtration circuits (right three structures)





Figure 16: Gravity Jig Building - feed bins (above) and close-up of lights screen (foreground).





Figure 17: Ball Mill feed chute (above) and drive-train and trommel screen unit (grey box - centre)







Figure 18: Pipe-bridge structure (top image); Ball Mill lining being installed (middle image); pre-start meeting at Ball Mill (bottom left) and shielded high-voltage transformer at the Ball Mill drive train (bottom right)







Figure 19: Ball Mill discharge trommel (top image) and high-impact poly-met lining of Ball Mill almost complete (bottom image)





Figure 20: Thickener/Filtration circuits viewed from the Flotation Cell building (top image) and; Thickener/Filtration circuit up close.





Figure 21: Top image shows Scrubber Circuit and bottom image shows the Gravity Jig building (far background), Spirals (middle distance) and copper concentrate thickener tank as viewed from the Thickener/Filtration circuit (foreground).





Figure 22: Thickener/Filtration circuits (above) and close up of filtration unit and panels (bottom images)





Figure 23: Scrubber discharge sump





Figure 24: Gravity Jig Building - level 2 Jig-feed chutes and bank of continuous alljig® units.







Figure 25: Rocklands Mine Site staff and contractor de-briefing, after recent full-site evacuation drill. The drill was an important exercise for gaining invaluable feedback for ongoing site safety improvements.



Excess mining capacity diverted to pre-construction activities at the Tailings Storage Facility and Burke Development Road -Corella Park Road Intersection Upgrade

Construction of the Tailings Storage Facility (TSF) is about to accelerate with significant assets allocated to its completion.

The TSF is scheduled to be completed over the coming months and is planned to be commissioned well before completion of the Process Plant orecommissioning phase.

The Rocklands Project TSF is designed for a minimum storage capacity of 30 million tonnes of tailings waste to match the 30mt of ore (less removed product) scheduled to be processed through the Rocklands Process Plant during the current 10 year mine plan.

The TSF is located on ML90188 (see *Figure 68 ref 04*), where clearing and initial cut-back earthworks have been completed and approval for changes and improvements to the TSF design were recently granted.

Upgrading of the Burke Development Road intersection which is the junction point of the Rocklands/Cloncurry Rd is underway, with recent preparations and surveying activities completed and earthworks commencing in May.

Streamlining this entry and exit point will improve access for Road Trains coming and going from the Rocklands Group Copper Project and will significantly increase safety at the existing intersection.

When completed it will set the benchmark for future Main Roads upgrades.



Figure 26: Equipment purchased during the GFC at fire-sale prices have being a significant contributor to low up-front mining costs.



Figure 27: Upgrading of the Burke Development Road intersection has recommenced after assets were temporarily diverted to mining activities. Streamlining this entry and exit point will improve access for Road Trains coming and going from the Rocklands Group Copper Project and will significantly increase safety at the existing intersection.





# After 8 years from first discovery mining reaches the bonanza zones of native copper identified during exploration drilling at Las Minerale

The LM1 Pit is currently at RL170m, or some 45m below surface and immediately above the area referred to by the Company as the "bonanza zone"...it is characterised by high-grade coarse native copper and coexisting chalcocite (native copper contains 99.65% copper metal, chalcocite contains 79.9% copper metal).

#### Las Minerale Stage 1 Pit (LM1) Reaches Top of Bonanza Coarse Native Copper Zone

The Las Minerale orebody was discovered in 2006 with spectacular copper assay results along a central supergene-enriched high-grade zone some 600 meters in length, within a total strike length of some 1200m for the entire Las Minerale ore body.

The high-grade supergene zone includes a unique coarse native copper zone that commences from near surface. Some of the most spectacular grades occur between 50-80m below surface, where the current LM1 Pit is about to mine.



Figure 28: Large, (up to 4 tonne) coarse native copper masses building on the various ROM DSO stockpiles (native copper contains 99.65% copper metal). Crushing circuit being modified to screen and process larger than expected masses of native copper for DSO.







Figure 29: Senior Pit Geologist Rosemary (Rosie) Taylor and Junior Pit Geologist Xavier (Xav) Smolders, showing off some grabsamples from the ROM native copper DSO stockpiles and below (left to right) a 40kg native copper mass dubbed the "Map of Oz" and a perfectly clean sample straight from the stockpiles with co-mingled native copper and chalcocite crystals (native copper contains 99.65% copper metal and chalcocite contains 79.9% copper metal)...."its like mining in a copper refinery!"



Both high-grade primary and supergene ore types co-exist at Las Minerale, particularly around the Morris Creek fault (see Figure 32).

To the east of the fault primary ore dominates and commences just 10m from surface, however to the west of the fault primary ore plunges steeply beneath a predominately supergeneenriched environment, that includes pervasive, high-grade coarse native copper to depths of ~180m, after which it enters a transition zone rich in chalcocite and then finally back into primary ore at depth.

For the most part primary ore sits below the beneath the central supergene zone, then rises as the pit grows.



base of the transitional chalcocite zone that runs Figure 30: Long-section of Las Minerale orebody, highlighting how from surface in the east, plunges to ~200m native copper, supergene and primary ore will be accessed concurrently



Figure 31: View of orebody looking along strike to the south-east end of the pit, where both high-grade primary and supergene ore types co-exist at the same depths, near the Morris Creek Fault (see Figure 3). At the opposite end of the pit (towards the north-west) the primary ore plunges steeply leaving predominately supergene enriched ore from surface, including pervasive high-grade coarse native copper, to depths of 180m, before entering a transition zone rich in chalcocite, then the plunging primary ore zone once again. Primary ore remains open at depth below the deepest confirmed drill intercepts ~650m down-dip.



back towards surface at the north-west where high-grade primary ore commences closer to surface, as it does in the east (just ~20m from surface at the north-west). Primary ore remains open at depth below the deepest confirmed drill intercepts at ~650m down-dip.

Exploration and resource infill drilling recorded intercepts up to 58% copper within the supergene zone and current blast-hole sampling is providing high-resolution (3x3m), bench-by-bench confirmation of the high-grade ore.

Below are drilling results from both the historic exploration programmes, and more recently from current blast-hole drilling within the bonanza zones (blast holes are drilled for loading explosives charge);

	Bench					
	intercept (m)		CuEq %	Cu %	Co ppm	Au g/t
DODH013	10.00	@	19.0	17.1	583	2.23
DODH082	10.64	@	12.7	11.3	605	1.30
DODH163	10.00	@	5.59	5.23	149	0.34
DODH166	10.00	@	23.8	20.9	691	4.06
DORC087	12.55	@	11.0	9.46	697	1.34
LMDH007	12.67	@	8.80	6.94	1080	1.02
LMDH025	10.00	@	16.8	14.3	833	2.86
LMRC191	12.21	@	11.2	9.11	600	2.59
LMRC201	10.00	@	16.3	14.5	680	1.83
LMRC220	10.00	@	9.67	8.46	535	1.07

#### Diamond Core and RC Drilling results of very high grade Copper in the area being mined;

#### Latest high grade Copper assays from blast-hole drilling the area being mined include;

hole_id	depth from	depth to	Total Cu%	hole_id		depth from	depth to	Total Cu%
LM170B10146	5	9.8	23.4		LM170B10119	0	5	14.2
LM170B10144	5	9.6	22.7		LM170B10164	5	9.9	13.5
LM170B10142	0	5	22.4		LM170B10188	5	9.7	13.2
LM170B10199	0	5	20.1		LM170B10200	0	5	13.1
LM170B10105	0	5	19.4		LM170B10149	5	9.7	12.9
LM170B10143	0	5	19.1		LM170B10098	0	5	12.8
LM170B10121	5	10	18.3		LM170B10117	0	5	12.7
LM170B10120	5	10	16.9		LM170B10161	5	9.7	12.5
LM170B10141	0	5	15.8		LM170B10122	5	10.1	11.8
LM170B10119	5	10.1	15.7		LM170B10107	5	9.8	11.2



hole_id	depth from	depth to	Total Cu%
LM170B10159	5	9.5	11
LM170B10157	5	9.6	10.6
LM170B10140	0	9.8	10.3
LM170B10270	0	5	9.7
LM170B10240	5	10.1	9.69
LM170B10266	0	5	9.5
LM170B10146	0	5	9.35
LM170B10139	0	5	9.25
LM170B10163	5	9.9	9.23
LM170B10184	5	9.9	9.23

hole_id	depth from	depth to	Total Cu%
LM170B10143	5	9.6	9.15
LM170B10183	5	9.9	8.98
LM170B10156	5	9.7	8.95
LM170B10158	0	5	8.71
LM170B10260	0	5	8.54
LM170B10105	5	9.7	8.43
LM170B10149	0	5	8.35
LM170B10252	0	5	8.33
LM170B10116	0	5	8.08
LM170B10132	5	10.2	7.79

\* See full details at end of document.

#### Two native copper resources

The Rocklands Project boasts two high-grade native copper deposits, namely Las Minerale and Rocklands South, which have a collective strike length of ~1200m.

Rocklands South was originally known as Double Oxide, and previously mined by a small private company using simple underground methods until ~1990, and achieved an average ore grade over its production life of 44% Cu.

The first blast into the Las Minerale high-grade bonanza zone was completed during the quarter and was one of the best executed blasts of the project to date, with only minor lateral displacement (~2m average) on the upper flitch (2.5m deep) and resulted in less than 1.5m vertical lift (heave) over the bonanza zone ore, meaning ore control will be maximised. Achieving such minor movement from a 10m deep blast is an exceptional result.

A shallow bedrock drilling programme commenced at Rocklands South to both map the depths of free-dig areas, and provide additional assay information directly over orebodies, often missed by angled drilling.

Mining at Rocklands South can commence once this programme is completed.

#### Las Minerale Stage 2 Pit (LM2) Commences

With LM1 Pit expected to be completed in the coming weeks, mining of LM2 has commenced in free-dig areas and blast-hole drilling is ongoing after several blasts at the eastern end of the LM2 Pit that took place after free-dig areas were exhausted.

The eastern end of LM2 contains shallow high-grade primary ore that was first accessed back in March this year with a small extension to the LM1 pit (see ASX announcement 17 Feb, 2014). The high-grade ore is suitable for crushing and use as DSO. The very high-grade ore was more wide-spread than expected, leading to a decision to expand stage-2 Pit designs with the view to extracting more of this ore earlier than originally anticipated.

The amended LM2 pit design will access significant quantities of this high-grade primary ore, with the view to achieving first sales of primary DSO ore.





Figure 32: Pit plans for both LM1 and LM2 at mid June 2014 - where the RL170 level had been blasted and assays had been received the northern half of the shot (bold red outline). The hatched green area was subsequently drilled, blasted and mined.





Figure 33: Top image shows current dig-plan schematic at mid June, with dig areas in yellow outline and drill areas in red outline. Below image shows the pit shortly after blasting of the RL170m ore zone on the floor of the pit. The waste area beside the ore (where the digger is) was removed first, leaving the ore proud for ore-mark-up and then selective mining,







Figure 34: Examples of coarse native copper in metallurgical drilling in the Bonanza native copper ore zone during resource drilling.





Figure 35: Diamond drill hole LMDH007 - among the first few diamond holes drilled into Las Minerale in the early days of the discovery. Above; copper filings can be seen remaining in the water-returns from diamond drilling and in the below image; drill core from the Bonanza area (LMDH007  $\sim$ 51m +/- 5m) that was accessed in the pit during the quarter.





Figure 36: Examples of coarse native copper and chalcocite in metallurgical drill core from the Las Minerale Bonanza zone







Figure 37: The size of massive copper pieces recovered from resource drilling was limited to the diamond core diameter used.



# Extremely rich supergene zone unique to Rocklands (central Las Minerale) reveals some of the world's highest grade copper ores known to exist - with many museum specimen quality samples being recovered

The Las Minerale orebody was discovered by CuDeco in 2006 with spectacular copper assay results within a central supergene-enriched high-grade Copper zone some 600 meters in length, within a total strike length of some 1200m for the entire Las Minerale ore body. Las Minerale is one of 11 copper orebodies at Rocklands including the Rocklands South orebody that includes similar supergene enrichment as that found at Las Minerale.



Figure 38: Large (~2.5 tonne) massive chalcocite boulder (chalcocite contains 79.9% Cu)...one of many excavated from the bottom of the LM pit. An impressive mix of supergene copper ore is being revealed during mining at Las Minerale, co-existing within a high-grade bonanza supergene environment associated with coarse native copper.






Figure 39: Top image; view of pit floor at end June 2014, highlighting large chalcocite boulders (see close-up image Figure 38) and; pit geologist Matthew Deane spot-checking the pit floor prior to grade-control spotting.

Mining has now reached the top of the Las Minerale supergene enriched zone and is revealing unique and exciting supergene copper species in many forms, including (see a selection of images on following pages);

**Native copper** - coarse, fine, sheet, stock-work and vein-infill, disseminated, free-nuggets in clays, agglomerates, crystals and magnificent dendritic examples;

**Chalcocite** - massive, vein-infill, sheet, disseminated friable (sooty) and crystal form;

**Cuprite** - massive, blebs, rock form (tile-ore), crystals and coatings on native copper;

**Many unidentified copper species** - numerous supergene copper species in various stages of transition/reduction/enrichment with copper contents ranging from 75-94% Cu (mineralogical analysis required to accurately determine species).

The supergene zone in Las Minerale is without doubt unique in modern day mining and will provide sufficiently high grades suitable to generate direct shipping ore (DSO) product.



Plans for early revenue were being finalised during the quarter, based on several product options;

1. Crushing and scalping of high-grade coarse native copper ore, +40mm to produce a high-grade premium products (as generated in recent trial crushing ~95% copper concentrate), with the remaining product after scalping (including smaller native copper, native copper in rock-matrix, chalcocite and other supergene copper species), to be shipped as a crushed DSO product, or further beneficiated through the Company's ore-sorter. The balance of the native copper to be processed through the mineral processing plant on completion and commissioning in 2014.

2. Ship DSO ore straight from the pit (uncrushed) for toll treating.

Without crushing and/or homogenising the co-mingled coarse native copper and supergene ore species, estimating copper grade of the DSO product is challenging.

### All evidence at Rocklands to date suggests significant underestimation of copper grades during sampling and assay when coarse native copper is present.

See ASX announcement 29 April 2014 where the Company reported ore grades 400% higher than estimated after large single-batch, ore-sorter trial). The Pre-processing head-grades of the trial feed-ore were estimated using a combination of laboratory analysis of samples taken from high-density (3x3m) blast-hole drilling in the pit (open-hole rotary air blast rig), and resource drilling (both RC and diamond drills)...all of which correlated well with the resource block model estimated grades.



Figure 40: LM1 Pit at the RL170m level (~45m from surface), showing the LM1 pit-floor mark-up at RL170. The mark-up shows the first hints of high-grade ore (+10% copper) emerging through the very top of the DSO ore zone. The average grade of the +10% zone in this area is 14.6% Cu (with highs in the range 22% Cu), and the average grade of the +5% zone is 8.2% Cu (highs of 9.8% Cu), based on blast-hole sampling. Blast-hole sampling correlates well with the resource model. Recent bulk-sample test recovery of native copper ore (estimated from blast-hole sampling at 0.5% Cu - that also correlated well with the resource model) resulted in a 400% increase in grade after processing generated significantly more copper than estimated, using the Company's trial ore-sorter. The trial results provide evidence not all native copper is being recovered during drill sampling (especially coarse native copper in clays and soft or weathered rock matrix), resulting in grade estimates less than are actually being mined.





Figure 41: Stage-2 (LM2) pit has commenced, whilst the deeper LM1 Pit (behind the excavator) continues to be deepened.

Mining of the supergene zone appears to support the Company's long held view that copper grades are underestimated in the coarse native copper and chalcocite zones, based on twin-hole programmes that compared native copper recovery in RC and diamond drilling, and in a separate twin-hole programme, that also compared chalcocite recoveries for each drilling method.

The Company is also surprised at the size of some of the coarse native copper masses being mined, and has recently embarked on further upgrades to the crushing circuit, which is seen as a prudent move whilst the process plant is still under construction.

During resource drilling, assumptions about the possible size of native copper masses were effectively limited to the size of the drill core being used. Further, the Company was unable to gain approval for large-scale bulk trial mining that would have recovered some of the masses of native copper mined in the box-cut excavation that commenced last year, and prior to the current LM1 Pit.

None the less, the very reason the crushing circuit was designed to be completed well ahead of the process plant, was to facilitate trial crushing and commissioning that allowed for modifications if required...and to generate a scalped native copper product suitable for sale directly from the screens.

The modifications to the crushing circuit include addition of purpose designed screens and modification to existing screen sizes to optimise performance during crushing of coarse native copper ore.

Coarse native copper ore continued to be stockpiled on the ROM during the quarter, in addition to the long-term stockpiles ready for crushing as soon as the current upgrades are complete.

DSO mined from the pit will be kept separate until a decision is made to crush this ore or ship direct from the pit as an un-crushed product. The second stage of the expansion of the Las Minerale pit (LM2 Pit) is now underway with strip-back and waste rock removal the priority so that the company can achieve its goal of more than 3 million tonne of ore stockpiled when production commences.





Figure 42: Large coarse native copper masses recently loaded onto the DSO stockpiles - this one estimated at over 4 tonnes.







Figure 43: In sequence diamond saw cutting of sample wedge from large boulder mined at the start the LM1 Pit, estimated at ~2.5 tonnes, that was visually "unexciting" but found to contain significant copper including native copper (99.65% copper), cuprite (88.8% Cu) and chalcocite (79.9% copper).





Figure 44: Small grab-sample of ore taken from native copper stockpile - rather unexciting on the outside, but once cut open the sample reveals the unique nature of the Las Minerale treasures, including native copper (99.65% Cu), cuprite (88.8% Cu) and chalcocite (79.9% Cu). The grab sample was selected by hand, so by necessity (due to the high density high-grade native copper ore), was limited to what could be easily carried. This grab sample from the stockpiles, whilst small, weighed well over 50kg.





Figure 45: Example of chalcocite rich clays co-mingled with chalcopyrite and resembling the consistency of soil, with copper grades ranging between 24-56% Cu from 30 random XRF spot-checks in the pit.



Figure 46: Weathered supergene rock matrix (ex dolerite), showing fine crystal form vein infill chalcocite.







Figure 47: Selection of native copper specimens hand-picked from the native copper stockpiles.





Figure 48: Selection of native copper specimens from the native copper stockpile; Sheet native copper (above), native copper sheets in rock-matrix (bottom right) and nuggetty agglomerates with chalcocite (grey-blue) and tenorite (blue-black), left.





Figure 49: Top image; Minor native copper (99.65% Cu - not visible) surrounded by cuprite (88.8% Cu - metallic red/grey), azurite (55.3% Cu - blue), and malachite (57.5% Cu - green)...as the high-grade native copper reduces into various copper species due to the influence of weathering. Bottom image; a version of cuprite known as tile ore (88.8% Cu), named after its colour and the sound it makes when broken (similar to roof tiles breaking).







Figure 50: Tenorite (79.6% Cu - blue/black) mantling cuprite (88.8% Cu - not visible) and beneath that native copper (99.65% Cu - not visible).

![](_page_46_Picture_4.jpeg)

Figure 51: Massive chalcocite (79.9% Cu)

![](_page_47_Picture_0.jpeg)

![](_page_47_Picture_1.jpeg)

![](_page_47_Picture_2.jpeg)

Figure 52: Examples of intricate crystal form and dendritic native copper masses.

![](_page_48_Picture_0.jpeg)

# Additional primary DSO ore expected earlier than anticipated after design and scheduling changes to LM2 Pit

At the eastern end of the LM1 Pit, primary ore co-exists with supergene ore, including massive chalcopyrite of surprisingly high grade (see ASX announcement 25th February). The high-grade nature of this ore lead to a decision to extend the initial pit design deeper at the eastern (primary ore dominated) end of the pit earlier than originally planned, in order to access significantly more of this high-grade primary ore specifically for generating primary DSO.

The decision to recover this ore earlier than originally planned required re-design and amendments to mining plans which, whilst slowing down the initial access to this high-grade primary ore, should result in significantly more ore being accessed earlier than was originally possible given the previous pit design.

Primary (chalcopyrite/chalcocite) DSO will be crushed at the Company's mobile crusher in a separate programme to the crushing and scalping of coarse native copper through the Company's main Crushing Circuit.

![](_page_48_Picture_6.jpeg)

Figure 53: High-grade primary ore after passing through the mobile crushing circuit -80mm crush (left) and a chalcocite/chalcopyrite rich product after passing through the -20mm crush (right).

![](_page_49_Picture_0.jpeg)

# Las Mineral Stage-1 Pit (LM1 Pit) currently mining high-grade native copper and chalcocite zones suitable for direct shipping ore (DSO) - significant tonnes expected over coming weeks

Mining of high-grade native copper and chalcocite ore in LM1 Pit, to be crushed and screened to produce a native copper rich DSO product continues and is due to access some of the highest grade ore of the project from the LM1 Pit in the period ahead.

Ore not mined for DSO is sent to long-term stockpiles for future processing as per mining schedule.

Preliminary open-cut operations at the new Rocklands South Pit is mostly completed, paving the way for a second pit campaign to commence as spare capacity comes on line from other areas of the project.

# Widespread zones of DSO estimated in the mining model translating into significantly higher grades during mining

Mined copper grades from the LM1 Pit are increasing as high-grade zones begin to be accessed. Block model grades that are based on kriged estimates of resource drilling, are translating into higher-grades during mining based on results from high-density drill & blast sampling and in-pit confirmation via visual grade estimates and XRF analysis.

The Company recently processed via bulk test ore programme ~5,000 tonnes of low-grade native copper/ chalcocite ore (<0.5% Cu) through the primary crushing circuit, to investigate the impact on mineralogical characteristics at various size fractions.

Approximately 1000 tonnes of this ore was processed under the bulk test programme continuously through the Company's trial-test ore-sorter and produced ~26 tonnes of native copper concentrate product averaging ~77% Cu, and 974 tonnes of copper-rich "waste" averaging ~0.5% Cu, that was sent back to the stockpiles for later processing through the main process plant.

#### The results indicate head-grades were well above 2.5% Cu for this apparently "low-grade" ore.

![](_page_49_Picture_11.jpeg)

Figure 54: LM1 Pit at RI180, with indicative ore outlines shown - high-grade native copper ore suitable for DSO is highlighted.

![](_page_50_Picture_0.jpeg)

![](_page_50_Picture_1.jpeg)

![](_page_50_Picture_2.jpeg)

Figure 55: LM1 Pit shown at RL180, directly above the high-grade copper zone suitable for use as DSO

![](_page_50_Picture_4.jpeg)

Figure 56: LM1 Pit planned depth is RL145m, from which significant ore suitable for DSO is being mined.

The ore-sorter was a bulk-test trial unit and successfully produced an end-product that contained ~50% copper by volume, which equates to ~77% Cu by weight in concentrate. Optimised recovery and concentrate output was achieved at rates of 30tph, processing the >40mm <110mm fractions. Back-calculating copper contained in the concentrate and "waste", indicated head-grades of the feed ore were ~2.5% Cu, which was more than 5 times expectations.

Evidence suggests feed ore grades were underestimated, possibly due to insufficient recovery of native copper metal portion of the ore during drill sampling. When combined with results from the ore-sorter trials, clear support exists for the Company's view that solid native copper metal within soft matrix, may not be fully accounted for during drilling and sampling. It has long been the Company's view that coarse native copper metal was not sufficiently recovered during resource drilling and sampling processes at Rocklands and if so, is likely to be underestimated in the resource model.

![](_page_51_Picture_1.jpeg)

![](_page_51_Picture_2.jpeg)

Figure 57: Blast-holes are sampled, geologically logged and sent for assay prior to being loaded for blasting. The changes in colour represent the different ore types, from primary with native copper associated (white colour), transitional chalcocite-rich native copper ore (black/grey), and high-grade supergene native copper ore in clays (olive/yellow/grey).

Ore stockpiles in excellent condition with mining dilution (0.5%) and losses (negative 23%)...collectively indicating 22.5% more ore reaching the stockpiles than anticipated by the mining model, yet maintaining the same grades.

CuDeco recognises the cost benefits of maintaining strict ore control and grade management.

Assuming as little as a 2% loss in copper head-grades due to inability to optimise recoveries through poor ore-type segregation, or dilution of ore with waste (mining dilution), or indeed loss of ore to waste dumps (mining loss), equates to potential losses of revenue to the project of some \$50m over the 10 year life of the mine. Most mining operations typically accept between 5%-10% ore loss and a similar level of loss to dilution, depending on the resource type and mining methods used.

Up to the 14<sup>th</sup> of May, we had sent 22.5% more ore to the stockpiles than anticipated by the mining model, yet maintaining the same grades, indicating net gains of ore rather than losses.

**Mining dilution** (less than 0.5%) - Dilution typically occurs into areas only slightly below-cut-off (ie. soft ore/waste margins due to varying multi-commodity boundaries). Larger than anticipated ore zones are also reducing mining dilution. Adoption of strict ore management and mining procedures, including detailed pit-floor mark-ups and use of grade-control spotters at diggers whilst in ore, is further improving outcomes.

**Mining loss** (negative 23%) - significantly more ore is being recovered than indicated in the mining model, offsetting mining loss to waste which is normally seen in any mining operation. Stockpile and ROM managers further reduce the incidence of ore losses through accidental misplacement.

![](_page_52_Picture_1.jpeg)

![](_page_52_Picture_2.jpeg)

Figure 58: Mining of the very high-grade native copper ore in the LM1 Pit (foreground) as the next blast is loaded (right background). Whilst the truck under the digger is being loaded, another truck arrives (foreground ramp) and the previously loaded truck exits via the background ramp fully loaded. At surface, the truck loaded prior to that is heading to the stockpiles. This cycle continues all day, with 4 trucks per digger ensuring maximum cycle efficiencies.

![](_page_53_Picture_1.jpeg)

![](_page_53_Picture_2.jpeg)

Figure 59: Mining concurrently underway at the north-west of the LM3 Pit (Final pit), accessing ore and waste previously blasted and remaining in-situ.

Mining rates still ramping up as long-term ore stockpiles reach 700,000 tonnes, with mining of ore recently accelerating due to the release of further assets from infrastructure and pre-stripping operations

In its simplest form ore at Rocklands is separated into three classifications including oxide, chalcocite and chalcopyrite oretypes. These simple categories are then split into high and low grade versions of each, and further subdivided into native copper bearing ore or not, resulting in the following stockpile categories designed to match optimised process plant performance ranges;

- 1. High-grade oxide
- 2. Low-grade oxide
- 3. High-grade chalcocite
- 4. Low-grade chalcocite
- 5. High-grade chalcopyrite
- 6. Low-grade chalcopyrite

- 7.High-grade oxide +native copper8.Low-grade oxide +native copper9.High-grade chalcocite +native copper
- 10.Low-grade chalcocite +native copper
- 11. High-grade chalcopyrite + native copper
- 12.Low-grade chalcopyrite +native copper

The native copper stockpiles (numbered 7-12) will not exist after the native copper ore has been depleted via processing.

![](_page_53_Picture_17.jpeg)

Figure 60: ROM and Stockpile Manager oversees every load of ore and waste coming form the pit to ensure mining losses are kept to a minimum and ore-type segregation remains optimal for the process plant recovery regime. Just one load of high-grade ore accidently sent to waste can represent over \$100,000 of lost metal value to the project. With well over 400 truck-loads removed from the pit every day (soon to increase) a 2% mining loss equates to 8 truck loads a day of lost or poorly reconciled ore...or some 240 trucks per month representing ~22,000 tonnes of potentially lost ore to the project.

![](_page_54_Picture_0.jpeg)

# Desk-top analysis of geophysics and geochemical surveys, field sampling and mapping, and target generation

Exploration has been scaled back to allow 100% focus of Rocklands staff on development activities.

#### ML90177

Desk-top analysis of geophysical surveys continued into the June quarter for the Rocklands area (ML90177), which contains numerous major and minor targets yet to be drill-tested.

#### EPM18054

Field reconnaissance has been ongoing at EPM18054, including mapping, rock-chip and soil sampling, with numerous target styles identified for follow-up investigation.

Significant drill targets have been defined, however testing has been delayed whilst access agreements were put in place and native title clearances sought.

The final impediment to bedrock and diamond drilling is clearance of access roads to the drilling sites.

#### Granting of new EPM25426

The Company was granted new EPM25426 during the quarter, which is located to the south-west and adjacent to the Company's EPM18054. This ground was sought due to its prospectivity and after recommendations from the Rocklands geology department.

EPM25426 and EPM18054 will be concurrently explored due to several interpreted structures of interest, and significant targets straddling both properties.

The two blocks also offer strategic interest for future expansion of operations at Rocklands.

![](_page_54_Figure_14.jpeg)

Figure 61: CuDeco Mining Lease and EPM holdings

![](_page_55_Picture_0.jpeg)

#### Environment

An environmental awareness programme designed to educate all CuDeco employees and contractors has been implemented and is ongoing through the Rocklands site induction program, toolbox talks, information posters and site inspections.

Other key environmental areas of focus during the quarter include;

- Annual Morris Creek Diversion (MCD) audit was completed during June 2014 which included a visual assessment of the soundness of the diversion channel post 2013-2014 wet season. This was conducted as a baseline study of the channel and to identify any areas of concern in regards to potential erosional weakness. The Morris Creek Diversion passed this audit and is considered to be in good condition and suitable for use in the coming wet season.
- An overhaul of the waste management system on site to include further segregation of waste types and the recycling of;
  - Aluminium soft drink cans with proceeds to go to the Leukaemia Foundation
  - Used printer cartridges going to Cartridges 4 Planet Ark program
- Natural rehabilitation of disturbed areas after the wet season are showing encouraging early colonisation and soil stabilisation results
- The monitoring of; air quality; groundwater; and surface waters is ongoing and progressing well.

![](_page_55_Picture_11.jpeg)

Figure 62: Trial area for "do nothing" land rehabilitation - fish and bird species are colonising the area (natural wind blown seed).

![](_page_56_Picture_0.jpeg)

#### Minsheng Bank A\$70 million credit facility finalised

The final requirements that were conditional for the credit facility between CuDeco Ltd. and the China Minsheng Banking Corporation Ltd. have now been completed. The Company was advised by the Minsheng Bank late in the evening of Wednesday 4th June that CuDeco and the Minsheng Bank were to formally sign the final documents on Friday 6th June 2014. The facility is for \$US65m (approximately \$A70m).

The Minsheng Bank has also agreed to increase the facility to \$US100m if the Company's Cloncurry rail and Townsville port facility require additional funding.

Directors completed the formal contract signing for the Credit Facility with Minsheng Banking Corporation in China on Friday 6<sup>th</sup> June, under the "terms and conditions" announced to the market (see ASX release - 7 April 2014). The credit facility is to provide financing for the 3 million tonne per year, mineral processing plant at the CuDeco's 100% owned Rocklands Group Copper Project near Cloncurry in NW Queensland.

Construction and installation of processing equipment for the mineral processing plant commenced in August 2013.

The Company was advised by the EPC contractors that installation of the major componentry for the mineral processing plant was approximately 98% complete, with only piping, cable and electrical, conveyors and lighting installations left to complete. The EPC contractor for the Rocklands Project, China State-owned giant engineering company, Sinosteel Corporation of China, advised that it is on time with the project and they are expecting to commence commissioning of the mineral processing facility before the end of 2014.

![](_page_56_Picture_8.jpeg)

Figure 63: CuDeco Chairman Wayne McCrae (right) and CuDeco Director Zhijun (Jonathon) Ma, signing the Credit Facility contract documents, assisted by China Minsheng Bank Officials.

![](_page_57_Picture_0.jpeg)

### Chairman's comments

The Process Plant is coming together nicely, and at this stage is on track for preliminary wet commissioning activities towards the end of this year.

The Tailings Storage Facility (see Figure 68 - ref 04) is the last of the large infrastructure works to be completed, and we see no impediments for its timely completion.

Meanwhile, mining continues on several fronts and within the next few months is expected to ramp up to full production rates in order to meet planned ore stockpile requirements prior to full scale production.

Current mining activity includes;

- LM1 Pit expected to re-commence accessing ore from RL167.5 level once crushing reduces DSO stockpile sizes on the ROM (expected in ~2 weeks);
- LM2 Pit accessing ore from both the RL210 and RL215 levels;
- LM3 Pit accessing free-dig ore when excess capacity permits;
- SRE Pit accessing ore from the RL210 level; and
- SR1 & SR2 Pit free-dig mapping and surface grade control via extensive bedrock drilling programme.

High-grade DSO ore on the ROM has reached capacity, and crushing has commenced to make room for additional DSO ore to be trucked straight from the LM1 pit when it recommences in ~2 weeks.

The base of the pit resembles a copper museum, with some of the most exciting high-grade ore and mix of unique copper species I have seen in my 35+ years in mining.

On behalf of the board.

![](_page_57_Picture_15.jpeg)

Figure 64; high-grade copper ore from the LM1 Pit - iron-rich yellow jaspilite rock matrix impregnated with massive and vein infill chalcocite (79.9% Cu), massive cuprite (88.8% Cu) and fine to coarse native copper species (99.65% Cu) - inset shows similar jaspilite after crushing through the mobile crusher, accessed in the original box-cut pit.

![](_page_58_Picture_0.jpeg)

### **Process Flowsheet**

![](_page_58_Figure_2.jpeg)

Figure 65: Process Plant flow-sheet: Crushing Circuit

![](_page_59_Picture_0.jpeg)

### **Process Flowsheet**

![](_page_59_Figure_2.jpeg)

Figure 66: Process Plant flow-sheet: gravity Circuit

![](_page_60_Picture_0.jpeg)

### **Process Flowsheet**

![](_page_60_Figure_2.jpeg)

Figure 67: Process Plant flow-sheet: Flotation Circuit and Magnetic Separation

![](_page_61_Picture_0.jpeg)

### **Quarter Highlights - Development**

![](_page_61_Figure_2.jpeg)

Figure 68: General Arrangement plans and location references.

![](_page_62_Picture_0.jpeg)

# **Process Plant Layout**

![](_page_62_Figure_2.jpeg)

#### Legend:

- A ROM pad
- B Crushing Circuit
- $\boldsymbol{C}$  Power Station
- **D** Flotation Plant
- E Thickener/Filtration
- F Concentrate Storage
- G Process Ponds
- H Tailings Thickener
- I High Pressure Grinding Rolls (HPGR)
- J Gravity Thickener
- K Ball Mill
- L Process Office
- M Spiral Concentrator
- N Table Separator
- O Scrubber
- P Stores Warehouse
- **Q** Gravity Jigs
- R Project Office
- **S** Final Product Container Storage
- T Magnetic Separation

Figure 69: Process Plant - schematic location plan with key areas noted

![](_page_63_Picture_0.jpeg)

![](_page_63_Picture_1.jpeg)

Measured Rocklands Resource November 2013 at various cut-off grades											
cut-off	Tonnes		Estimate	ed Grade		Copper Equ	ivalents	Conta	ained Metal & Equ	ivalent	
CuCoAu*		Cu	Co	Au	Mag	CuCoAu*	CuEq*	Cu	Cu CuCoAu*		
%	Mt	%	ppm	ppm	%	%	%	Mlb	Mlb	Mlb	
0.20	83	0.36	273	0.09	6.4	0.74	1.0	669	1,369	1,787	
0.40	44	0.63	355	0.13	5.6	1.13	1.3	614	1,108	1,300	
0.80	19	1.23	504	0.22	5.8	1.96	2.2	506	809	894	
Indicated Rocklands Resource November 2013 at various cut-off grades											
cut-off	Tonnes	Estimated Grade				Copper Equ	ivalents	Contained Metal & Equivalent			
CuCoAu*		Cu	Co	Au	Mag	CuCoAu*	CuEq*	Cu	CuCoAu*	CuEq*	
%	Mt	%	ppm	ppm	%	%	%	Mlb	MIb	Mlb	
0.20	98	0.16	226	0.07	6.5	0.47	0.7	339	1,021	1,518	
0.40	40	0.32	287	0.13	4.1	0.74	0.9	282	652	779	
0.80	11	0.68	405	0.19	3.0	1.28	1.4	170	319	346	
Total Measured and Indicated Rocklands Resource November 2013 at various cut-off grades											
cut-off	Tonnes		Estimate	ed Grade		Copper Equivalents		Contained Metal & Equivalent			
CuCoAu*		Cu	Co	Au	Mag	CuCoAu*	CuEq*	Cu	CuCoAu*	CuEq*	
%	Mt	%	ppm	ppm	%	%	%	Mlb	MIb	Mlb	
0.20	181	0.25	248	0.08	6.5	0.60	0.8	1,008	2,390	3,306	
0.40	84	0.48	323	0.13	4.9	0.95	1.1	896	1,759	2,079	
0.80	30	1.02	467	0.21	4.8	1.71	1.9	676	1,128	1,240	
Inferred Rockla	nds Resource	Novembe	r 2013 at v	various cut	-off grade	S					
cut-off	Tonnes		Estimate	ed Grade		Copper Equ	ivalents	Contained Metal & Equivalent			
CuCoAu*		Cu	Co	Au	Mag	CuCoAu*	CuEq*	Cu	CuCoAu*	CuEq*	
%	Mt	%	ppm	ppm	%	%	%	Mlb	Mlb	MIb	
0.20	91	0.06	146	0.09	4.6	0.3	0.4	117	573	902	
0.40	12	0.24	200	0.10	2.6	0.5	0.6	63	142	166	
0.80	0.5	0.54	413	0.12	3.2	1.1	1.2	6	12	13	
Total Resource	<b>Rocklands Re</b>	source No	ovember 2	013 at vari	ous cut-of	f grades					
cut-off	Tonnes		Estimate	ed Grade		Copper Equ	ivalents	Conta	ained Metal & Equ	ivalent	
CuCoAu*		Cu	Co	Au	Mag	CuCoAu*	CuEq*	Cu	CuCoAu*	CuEq*	
%	Mt	%	ppm	ppm	%	%	%	Mlb	Mlb	Mlb	
0.20	272	0.19	214	0.08	5.9	0.5	0.7	1,125	2,962	4,208	
0.40	96	0.45	308	0.13	4.6	0.9	1.1	959	1,902	2,244	
0.80	30	1.01	466	0.21	4.8	1.7	1.9	681	1,140	1,253	

Additional Magnetite only Inferred Resource Rocklands Resource November 2013 at various cut-off grades										
cut-off Tonnes Estimated Grade Contained Magnetite										
Magnetite		Cu	Co	Au	Mag					
%	Mt	%	ppm	ppm	%	Mt				
10	328	0.02	70	0.01	14.3	47				
15	102	0.02	78	0.01	19.5	20				
20	26	0.01	77	0.00	26.6	7				

Note - Figures have been rounded to reflect level of accuracy of the estimates

\*Copper equivalent CuCoAu% = Cu % + Co ppm\*0.001232 + Au ppm\*0.518238 \*Copper equivalent CuEq% = Cu % + Co ppm \*0.001232 + Au ppm \*0.518238 + magnetite %\*0.035342

This information is extracted from the report entitled "Rocklands Resource Update 2013" created on 29 November 2013 and is available to view on www.cudeco.com.au. The company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

![](_page_64_Picture_0.jpeg)

Information in this report that relates to Exploration Targets and Exploration Results is based on information compiled by Mr Andrew Day. Mr Day is employed by Geoday Pty Ltd, an entity engaged by Cudeco to provide independent consulting services. Mr Day has a BAppSc (Hons) in geology and is a Member of the Australian Institute of Mining and Metallurgy (Member #303598). Mr Day has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (JORC Code). Mr Day consents to inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report insofar as it relates to Metallurgical Test Results and Recoveries, is based on information compiled by Mr Peter Hutchison, MRACI Ch Chem, MAusIMM, a full-time executive director of CuDeco Ltd. Mr Hutchison has sufficient experience in hydrometallurgical and metallurgical techniques which is relevant to the results under consideration and to the activity which he is undertaking to qualify as a competent person for the purposes of this report. Mr Hutchison consents to the inclusion in this report of the information, in the form and context in which it appears.

#### Rocklands style mineralisation

Dominated by dilational brecciated shear zones, throughout varying rock types, hosting coarse splashy to massive primary mineralisation, high-grade supergene chalcocite enrichment and bonanza-grade coarse native copper. Structures hosting mineralisation are sub-parallel, east-south-east striking, and dip steeply within metamorphosed volcano-sedimentary rocks of the eastern fold belt of the Mt Isa Inlier. The observed mineralisation, and alteration, exhibit affinities with Iron Oxide-Copper-Gold (IOCG) classification. Polymetallic copper-cobalt-gold mineralisation, and significant magnetite, persists from the surface, through the oxidation profile, and remains open at depth.

#### Hand-held X-ray Fluorescence (XRF) Analysis

Hand-held XRF typically analyses a single point area of just 7-10mm in diameter, and is used to determine the composition of unidentified minerals during geological logging (particularly useful in identifying potential telluride minerals at Wilgar, which can be difficult to visually distinguish). It is important to note that selective point analysis is not suitable for determining average sample grade without first ensuring the area being tested is representative. This usually requires the sample to be crushed/pulverised, from which a homogenous and representative fraction can be selected for analysis. Analysis is completed with an Innovx Delta Premium hand-held XRF, which uses a Au/Ta anode x-ray tube and silicon drift detector. A measurement time of 30 seconds each for transition metals and heavy elements (beams 1 and 2, respectively) was used, in Mining Mode, for a total read time of 60 seconds for each sample.

#### Copper Equivalent (CuEq) Resource Calculation

The formula for calculation of copper equivalent is based on the following metal prices and metallurgical recoveries:

Copper: \$2.00 US\$/lb; Recovery: 95.00% Cobalt: \$26.00 US\$/lb; Recovery: 90.00% Gold: \$900.00 US\$/troy ounce Recovery: 75.00% Magnetite: \$195.00 US\$/tonne: 75.00%

#### CuEqu% = Cu% +Co ppm\*0.001232 + Au ppm\*0.5181 + Mag%\*0.035342

The recoveries used in the calculations are the average achieved to date in the metallurgical test-work on primary sulphide, supergene, oxide and native copper zones.

The Company's opinion is that all of the elements included in the copper equivalent calculation have a reasonable potential to be recovered.

This information is extracted from the report entitled "Rocklands Resource Update 2013" created on 29 November 2013 and is available to view on www.cudeco.com.au.

![](_page_65_Picture_0.jpeg)

### **Disclaimer and Forward-looking Statements**

This report contains forward-looking statements that are subject to risk factors associated with resources businesses. It is believed that the expectations reflected in these statements are reasonable, but they may be affected by a variety of variables and changes in underlying assumptions which could cause actual results or trends to differ materially, including, but not limited to: price fluctuations, actual demand, currency fluctuations, drilling and production results, reserve estimates, loss of market, industry competition, environmental risks, physical risks, legislative, fiscal and regulatory developments, economic and financial market conditions in various countries and regions, political risks, project delays or advancements, approvals and cost estimates.

#### Tenement Information

Further to the requirements of ASX Listing Rule 5.3.3, CuDeco Limited provides the following information regarding its mining tenements as part of its quarterly reporting obligations.

• The mining tenements held at the end of 30 June 2014 and their location;

Tenement reference	Project	Company interest	Location
ML90177	Rocklands	100%	Cloncurry, NW Qld
ML90188	Rocklands	100%	Cloncurry, NW Qld
ML90219	Rocklands	100%	Cloncurry, NW Qld
MLA90235	MURLF	100%	Cloncurry, NW Qld
EPM18054	Morris Creek	100%	Cloncurry, NW Qld
EPM25426	Camelvale	100%	Cloncurry, NW Qld

• The mining tenements acquired and disposed of during the 30 June 2014 quarter and their location.

Nil

• The beneficial percentage interests held in farm-in or farm-out agreements at the end of the 30 June 2014 quarter.

#### Nil

• The beneficial percentage interests in farm-in or farm-out agreements acquired or disposed of during the 30 June 2014 quarter.

Nil

![](_page_66_Picture_0.jpeg)

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	Representative 1 meter samples were taken from ¼ (NQ, HQ) or ½ (NQ, BQ) diamond core. Reverse circulation (RC) and rotary air blast (RAB) drilling was used to obtain 1 m and 3 m samples respectively, from which 3 kg was used for sample analysis. Drill and Blast samples were taken as 5m composites through a riffle splitter. The last meter of a 5m composite is sampled to the end of hole and may exceed 5m, but is recorded as the final depth.
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face- sampling bit or other type, whether core is oriented and if so, by what method, etc).	LMDH007 and LMDH025 Diamond drill hole (DD) were HQ, with standard recovery. DODH013, LMDH082, DODH163 and DODH166 diamond drill hole were PQ, with standard recovery. DORC087, LMRC191, LMRC201 and LMRC220 Reverse circulation (RC). Blast holes reported were open hole Rotary Air Blast (RAB) 89mm holes.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	DD core recovery for drill holes were 100% in reported meters. RC recovery averaged 60% in reported meters. Blast drilling averaged 70% recovery.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged.	Drill samples were logged for lithology, mineralisation and alteration using a standardised logging system, including the recording of visually estimated volume percentages of major minerals. Drill core was photographed after being logged by the geologist. Drill core not used for bulk metallurgical testing and RC drill chips are stored at the Rocklands site.

![](_page_67_Picture_0.jpeg)

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled.	<ul> <li>All DD core was orientated along the bottom of hole, where possible. A cut line was drawn 1 cm to the right of the core orientation line.</li> <li>Core was cut with a diamond saw, ½ core was used for NQ and ¼ core was used for PQ</li> <li>Sample intervals were 1 m down-hole in length unless the last portion of DD hole was part of a meter.</li> <li>SGS Minerals Townsville Sample Preparation:</li> <li>All samples were dried. Drill core was placed through jaw crusher and crushed to approx. 8mm. RC chips and core were split if necessary to a sample of less than approximately 3.5kg.</li> <li>Native copper samples were prepared by 2 methods for DD and RC drilling. Grain size of native copper determined which method was used.:</li> <li>Samples where native copper grain size was less than 2mm were disc ground to approximately 180µm. 500g was split and lightly pulverised for 30 seconds to approximately 100µm.</li> <li>Samples where native copper grain size was greater than 2mm were yut through a roller crusher to approximately 3mm. Samples were sieved at 2mm with copper greater than 2mm hand picked out of sample. Material less than 2mm and residue above 2mm was disc ground to approximately 180µm. 500g was split from the sample and lightly pulverised for 30 seconds to approximately 100µm.</li> <li>All other sampled material not containing native copper was pulverised to a nominal 90% passing 75µm.</li> <li>Native copper samples in blast drilling are visually logged and size fraction &gt;3mm is separately noted. Grade control assays use a 3 acid digest (outlined below) and apply a digest time designed NOT to fully digest native copper pieces &gt;3mm in the sample. Final copper values (Total copper) is calculated by adding lab-assay to logged native copper fraction &gt;3mm. Umpire and check assay</li> </ul>
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	<ul> <li>methods, but with less variability indicating superior results.</li> <li>Cu and Co grades were determined by 3 acid digest with either an ICP-AES (Inductively-Coupled Plasma Atomic Emission Spectrometer) or AAS (Atomic absorption Spectrometer) determination (SGS methods, ICP22D, ICP40Q, AAS22D AAS23Q, AAS40G).</li> <li>Au grades were determined by 50g Fire Assay (at SGS Townsville method FAA505).</li> <li>All analyses were carried out at internationally recognised, independent assay laboratorie SGS.</li> <li>Quality assurance was provided by introduction of known certified standards, blanks and duplicate samples on a routine basis.</li> <li>Assay results outside the optimal range for methods were reanalysed by appropriate methods. Copper assay results differ little between acid digest methods but cobalt assay results show a significant underestimation when analysed using the AAS.</li> <li>Ore Research Pty Ltd certified copper and gold standards have been implemented as a part of QAQC procedures, as well as coarse and pulp blanks, and certified matrix matched coppercobalt-gold standards. Performance for standards has been adequate.</li> <li>QAQC monitoring is an active and ongoing process on batch by batch basis by which unacceptable results are re-assayed as soon as practicable.</li> </ul>

![](_page_68_Picture_0.jpeg)

Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data.	Results between twinned RC and diamond holes are in approximate agreement, when taken into consideration with the natural variation associated with breccia-hosted ore bodies, identified coarse mineralisation, and subsequent weathering overprinting. All assay data QAQC is checked prior to loading into the CuDECO Explorer 3 data base. No adjustments have been made to assay data.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control.	All drill holes at Rocklands have been surveyed with a differential global positioning system (DGPS) to within 10 cm accuracy and recorded in the CuDECO Explorer 3 database. All drill holes, apart from vertical, have had down hole magnetic surveys at intervals not greater than 50 m and where magnetite will not affect the survey. Surveys where magnetite is suspected to have influenced results have been removed from the Database. Where surveys are dubious the hole was resurveyed, where possible, via open hole in non-magnetic material.
Data spacing and distribution	Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied.	Drilling has been completed on nominal local grid north-south sections, commencing at 100 m spacing and then closing to 50 m and 25 m for resource estimation. Local drilling in complex near-surface areas is further closed in to 12.5m Vertical spacing of intercepts on the mineralised zones similarly commences at 100 m spacing and then closing to 50m and 25m for resource estimation, again some closer spacing is used in complex areas. Drilling has predominantly occurred with angled holes approximately 55° to 60° inclination below the horizontal and either drilling to the local grid north or south, depending on the dip of the target mineralised zone. Holes have been drilled to 600 m vertical depth Blast drilling is planned on 3m x 3m grid pattern over the blasting campaign.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	Drilling was completed on local grid north-south section lines along the strike of the known mineralised zones and from either the north or the south depending on the dip Vertical drilling at Las Minerale. Vertical drilling has been used in key mineralised zones at Las Minerale and Rocklands South to achieve unbiased sampling of possible structures, mineralised zones and weathering horizons. Horizontal layers of supergene enrichment occur at shallow depths in Las Minerale and Rocklands South and a vertical drill program was undertaken to address this layering and to provide bulk samples for metallurgical test work. Blast drilling occurred vertically through apparent flat laying enriched high grade supergene zones.
Sample security	The measures taken to ensure sample security.	Samples are either dispatched from site through a commercial courier or company employees to the Laboratories. Samples are signed for at the Laboratory with confirmation of receipt emailed through. Samples are then stored at the laboratory and returned to a locked storage shed on site.

![](_page_69_Picture_0.jpeg)

Criteria	JORC Code explanation	Commentary
Sample security	The measures taken to ensure sample security.	Samples are either dispatched from site through a commercial courier or company employees to the Laboratories. Samples are signed for at the Laboratory with confirmation of receipt emailed through. Samples are then stored at the laboratory and returned to a locked storage shed on site.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	CuDECO conducts internal audits of sampling techniques and data management on a regular basis, to ensure industry best practice is employed at all times. External reviews and audits of sampling have been conducted by the following groups; 2007 – In July 2007, Snowden were engaged to conduct a review of drilling and sampling procedures at Rocklands, provide guidance on potential areas of improvement in data / sample management and geological logging procedures, and to ensure the Rocklands sampling and data record was appropriate for use in resource estimation. All recommendations were implemented. 2010 – In early 2010 Hellman & Schofield conducted a desktop review of the Rocklands database, as part of their due diligence for the resource estimate they completed in May 2010. Apart from limited logic and spot checks, the database was received on a "good faith" basis with responsibility for its accuracy taken by CuDECO. A number of issues were identified by H&S but these were largely addressed by CuDECO and H&S regarded unresolved issues at the time of resource estimation as unlikely to have a material impact on future estimates. 2010 - Mr Andrew Vigar of Mining Associates Limited visited the site in 12 to 15 October, 3 to 5 November and 8 to 10 December 2010 during the compilation of detailed review the drilling, sampling techniques, QAQC and previous resource estimates and 17 to 19 March 2011 to confirm the same for new drilling incorporated into this resource estimate. Methods were found to conform to international best practise, including that required by the JORC standard.

![](_page_70_Picture_0.jpeg)

#### JORC Table 1 - Section 2 - Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary								
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	<ul> <li>r, The Rocklands Project is located within granted mining leases ML90177 and ML90188, and Infrastructure Lease ML90219. Landowner agreements formed part of the granting, and remain current for the duration of the mining leases.</li> <li>S, Native Title Ancillary agreements have been signed with the Mitakoodi &amp; Mayi peoples and the Kalkadoon peoples, the local custodians of the areas covered by the mining leases.</li> <li>e Mining Leases detailed above are granted for a period of 30 years; there is no known impediment to operating for this period of time. The Project operates under a Plan of Operations, the most recent of which was approved on 17<sup>th</sup> October, 2013.</li> </ul>								
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Previous report 1987 and 1994 parallel mineral	ts on the Dou describe a lised zones v	uble Oxide mi wide shear zo vith a cumulai	ine by C one con tive leng	RA ar taining th of 6	nd othe g a nur S km.	ers between mber of sub		
Geology	Deposit type, geological setting and style of mineralisation.	Hosted within metamorphosed meso-Proterozoic age volcano- sedimentary rocks and intrusive dolerites of the Eastern Fold Belt of the Mt Isa Inlier. Dominated by dilational brecciated shear zones containing coarse patchy to massive primary mineralisation, with high-grade supergene chalcocite enrichment and bonanza-grade coarse native copper in oxide. Structures hosting mineralisation are sub-parallel, east- southeast striking and steeply dipping. The observed mineralisation, and alteration, exhibit affinities with Iron Oxide-Copper-Gold (IOCG) style deposits. Polymetallic copper-cobalt-gold mineralisation, and significant magnetite, persists from the surface, through the oxidation profile, and remains open at depth.								
Drill hole	A summary of all information									
monnation	exploration results including a tabulation of the following information for all Material drill holes:	Hole ID	Easting	Northing	RL (m)	AZI (°)		Hole		
			133634	771/080 1	215.0	0	-90	110.8		
	easting and northing of the drill hole collar		433651 1	7714085.9	216.1	210	-76	142.6		
	elevation or RL (Reduced Level – elevation above sea level in metres)	DODH163	433644.2	7714057.8	210.1	0	-90	118.3		
	of the drill hole collar dip and azimuth of the bole	DODH166	433645.1	7714056.3	215.5	0	-90	112.3		
	down hole length and interception	DORC087	433660.4	7714102.9	216	210	-55	422.1		
	depth hole length.	LMDH007	433666.9	7714096.3	215.8	210	-55	141		
	If the exclusion of this information is justified on the basis that the	LMDH025	433639.8	7714077	216	0	-90	89.4		
	information is not Material and this exclusion does not detract from the	LMRC191	433609.8	7714075.1	216.4	30	-55	102		
	understanding of the report, the	LMRC201	433644.8	7714055.2	216.1	0	-90	188.1		
	Competent Person should clearly explain why this is the case.	LMRC220	433630.9	7714079.6	215.9	0	-90	121		
		Datum: MGA9 10cm accuracy	4 Project: L	JTM54 surve	yed witl	h Diffe	erentia	I GPS with		

![](_page_71_Picture_0.jpeg)

#### JORC Table 1 - Section 2 - Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary						
		LM170B10098	433657.7	7714066	169.3	0	-90	9.7
		LM170B10105	433658.1	7714060.8	169.2	0	-90	9.7
		LM170B10107	433654.3	7714065.4	169.3	0	-90	9.8
		LM170B10116	433636.7	7714085.7	169.4	0	-90	9.9
		LM170B10117	433634.7	7714088.1	169.4	0	-90	9.9
		LM170B10119	433630.5	7714092.5	169.6	0	-90	10.1
		LM170B10120	433628.9	7714094.8	169.5	0	-90	10
		LM170B10121	433626.8	7714097	169.5	0	-90	10
		LM170B10122	433625	7714099.5	169.6	0	-90	10.1
		LM170B10132	433623.8	7714096.3	169.7	0	-90	10.2
		LM170B10139	433637.4	7714080.5	169.4	0	-90	9.9
		LM170B10140	433639.4	7714078.2	169.3	0	-90	9.8
		LM170B10141	433641.4	7714075.8	169.1	0	-90	9.7
		LM170B10142	433643.3	7714073.6	169	0	-90	9.6
		LM170B10143	433645.3	7714071.2	169.1	0	-90	9.6
		LM170B10144	433647.4	7714068.9	169.1	0	-90	9.6
		LM170B10146	433651.3	7714064.5	169.3	0	-90	9.8
		LM170B10149	433657.1	7714057.7	169.2	0	-90	9.7
		LM170B10156	433645.8	7714065.9	169.2	0	-90	9.7
		LM170B10157	433643.9	7714068.1	169.1	0	-90	9.6
		LM170B10158	433641.9	7714070.3	169.1	0	-90	9.6
		LM170B10159	433640	7714072.8	169	0	-90	9.5
		LM170B10161	433636	7714077.5	169.2	0	-90	9.7
		LM170B10163	433632.3	7714081.9	169.4	0	-90	9.9
		LM170B10164	433630.3	7714084.2	169.4	0	-90	9.9
		LM170B10183	433627	7714083.2	169.4	0	-90	9.9
		LM170B10184	433629	7714080.9	169.4	0	-90	9.9
		LM170B10188	433636.8	7714071.8	169.2	0	-90	9.7
		LM170B10199	433645.1	7714057.4	169.4	0	-90	10.1
		LM170B10200	433643.2	7714059.7	169.3	0	-90	10
		LM170B10240	433645.9	7714052	169.6	0	-90	10.1
		LM170B10252	433656.4	7714049.1	169.5	0	-90	10
		LM170B10260	433657.1	7714052.2	169.4	0	-90	9.9
		LM170B10266	433669.8	7714047.1	169.7	0	-90	10.2
		LM170B10270	433664.2	7714054	169.2	0	-90	9.7
		Datum: MGA94 10cm accuracy	Project: UT	M54 survey	ed with	Diffe	rential	GPS with


# **Competent Person Statement**

#### JORC Table 1 - Section 2 - Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary		
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. The assumptions used for any reporting of metal equivalent values should be clearly stated.	In order to be consistent the drill intersections reported above have been calculated on the basis of copper cut-off grade of 0.2% Cu, or a copper equivalent grade of 0.35%, with an allowance of up to 4m of internal waste between RL160m – RL170m, and constrained to LM1 Pit design and survey. Mined grade is determined based on weighted averages of drill intercepts from blast drilling (3x3m grid) constrained to interpreted grade-control domains. Where blast drilling data is not available, resource model grades are used. Metal equivalents are reported using the following formula. CuCoAu equivalent grades were based on metal prices and metallurgical recoveries provided by CuDECO and refer to recovered equivalents: Cu 95% recovery US\$2.00 per Pound Co 90% recovery US\$26.00 per Pound Au 75% recovery US\$195 per Tonne The recovered copper equivalent formula was: CuEq%= Cu% + Co ppm *0.001232 + Au ppm *0.518238		
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	Drill holes reported here are vertical holes within a vertical mineralised structure. The holes reported were drilled to delineate high grade horizontal secondary mineralisation zones that occur within the vertical structure. Down hole widths are reported here.		
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.			



# **Competent Person Statement**

#### JORC Table 1 - Section 2 - Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Resources have been reported at a range of cut-off grades, above a minimum suitable for open pit mining.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	Extensive work in these areas has been completed, and was reported by CuDECO in earlier statements to the ASX.
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Mineralisation is open at depth. Current estimates are restricted to those expected to be reasonable for open pit mining. Limited drilling below this depth (-250m RL) shows widths and grades potentially suitable for underground extraction. CuDECO are currently considering target sizes and exploration programs to test this potential to 1,000m from surface.

Rule 5.5

# **Appendix 5B**

### Mining exploration entity and oil and gas exploration entity quarterly report

Introduced 01/07/96 Origin Appendix 8 Amended 01/07/97, 01/07/98, 30/09/01, 01/06/10, 17/12/10, 01/05/2013

Name of entity	
CUDECO LIMITED	
ACN	Quarter ended ("current quarter")
000 217 251	20 June 2014

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### Consolidated statement of cash flows

Cash flows related to operating activities		Current quarter \$A'000	Year to date (12 months)	
			`\$A'000 ´	
1.1	Receipts from product sales and related debtors			
1.2	Payments for (a) exploration & evaluation (b) development (c) production	(295) (10,515) -	(1,536) (36,145) -	
1 2	(d) administration	(1,523)	(3,259)	
1.4	Interest and other items of a similar nature received	42	1,735	
1.5	Interest and other costs of finance paid	-	-	
1.6	Income taxes paid	-	-	
1.7	Other (provide details if material)	72	72	
	R & D Concession received	-	867	
	Net Operating Cash Flows	(12,758)	(38,805)	
1.8	<b>Cash flows related to investing activities</b> Payment for purchases of: (a) prospects	-	-	
	(b) equity investments	- (2.540)	- (11 511)	
19	Proceeds from sale of: (a) prospects	(2,043)	(++,31+)	
1.0	(b) equity investments (c) other fixed assets	-	- 60	
1.10	Loans to other entities	-	-	
1.11	Loans repaid by other entities	-	-	
1.12	(Increase)/Decrease in security deposits	(245)	(246)	
	Net investing cash flows	(2,794)	(44,700)	
1.13	Total operating and investing cash flows (carried forward)	(15,552)	(83,505)	

<sup>+</sup> See chapter 19 for defined terms.

1.13	Total operating and investing cash flows	(15,552)	(83,505)
	(brought forward)		
1.14	Proceeds from issues of shares, options,		
	etc.	-	56,500
1.15	Proceeds from sale of forfeited shares	-	-
1 16	Proceeds from borrowings – Part funds		
1.10	received from underwriter (balance		
	received and chores issue in January 2014)		
4 4 7	Den even ent of hereevinge	-	-
1.17	Repayment of borrowings	-	-
1.18	Dividends paid	-	-
1.19	Other – Share issue costs	-	(2,973)
	Other – Shares acquired under employee		
	share plan	-	(3,924)
	Not financing cook flows		40 603
	Net financing cash nows		49,003
	Net increase (decrease) in cash held	(15,552)	(33,902)
1.20	Cash at beginning of quarter/year to date	26,298	45,522
1 21	Exchange rate adjustments to item 1 20	(1 515)	(2,389)
		(1,010)	(2,000)
4 00	Cook at and of supertor	0.004	0.001
1.22	Cash at end of quarter	9,231	9,231

# Payments to directors of the entity, associates of the directors, related entities of the entity and associates of the related entities

		Current quarter \$A'000
1.23	Aggregate amount of payments to the parties included in item 1.2	358
1.24	Aggregate amount of loans to the parties included in item 1.10	-

#### 1.25 Explanation necessary for an understanding of the transactions

### Non-cash financing and investing activities

2.1 Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows

During the quarter the Company issued fully paid shares in payment for the following services relating to the Rocklands project:a. 550,000 shares at \$2.00 as part payment for Civil Work; and b. 535,852 shares at \$2.00 as payment for freight.

<sup>+</sup> See chapter 19 for defined terms.

2.2 Details of outlays made by other entities to establish or increase their share in projects in which the reporting entity has an interest

Nil

#### Financing facilities available

Add notes as necessary for an understanding of the position.

		Amount available \$A'000	Amount used \$A'000
3.1	Loan facilities	70,000	Nil
3.2	Credit standby arrangements	N/A	N/A

### Estimated cash outflows for next quarter

		\$A'000
4.1	Exploration and evaluation	300
4.2	Development	12,000
4.3	Production	-
4.4	Administration	1,250
	Total	13,550

### **Reconciliation of cash**

Reconciliation of cash at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts is as follows.		Current quarter \$A'000	Previous quarter \$A'000
5.1	Cash on hand and at bank	1,288	1,862
5.2	Deposits at call	7,943	24,436
5.3	Bank overdraft	-	-
5.4	Other (provide details)	-	-
	Total: cash at end of quarter (item 1.22)	9,231	26,298

<sup>+</sup> See chapter 19 for defined terms.

### Changes in interests in mining tenements and petroleum tenements

		Tenement reference and location	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter
6.1	Interests in mining tenements and petroleum tenements relinquished, reduced or lapsed		Nil		
6.2	Interests in mining tenements and petroleum tenements acquired or increased		Nil		

**Issued and quoted securities at end of current quarter** Description includes rate of interest and any redemption or conversion rights together with prices and dates.

		Total number	Number quoted	Issue price per security (see note 3) (cents)	Amount paid up per security (see note 3) (cents)
7.1	Preference *securities (description)				
7.2	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy- backs, redemptions				
7.3	*Ordinary securities	235,119,260	235,119,260		
7.4	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy- backs	1,085,852	1,085,852	200	200
7.5	+Convertible debt securities (description)				

<sup>+</sup> See chapter 19 for defined terms.

7.6	Changes during quarter (a) Increases through issues (b) Decreases through securities matured, converted				
7.7	Options			Exercise price	Expiry date
	(description	22 500 422	22 500 422	¢0 50	21 December 2015
	factor)	22,599,423	22,399,423	φ2.30	31 December 2015
7.8	Issued during				
	quarter				
7.9	Exercised				
	during quarter				
7.10	Expired during quarter				
7.11	Debentures				
	(totals only)				
7.12	Unsecured				
	notes (totals				
	oniy)				

### **Compliance statement**

- 1 This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Act or other standards acceptable to ASX (see note 5).
- 2 This statement does /does not\* (delete one) give a true and fair view of the matters disclosed.

Banal

Sign here:

(Director/Company secretary)

Date: 31 July 2014

Print name: Bruno Bamonte

## Notes

1 The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity wanting to disclose additional information is encouraged to do so, in a note or notes attached to this report.

<sup>+</sup> See chapter 19 for defined terms.

- 2 The "Nature of interest" (items 6.1 and 6.2) includes options in respect of interests in mining tenements and petroleum tenements acquired, exercised or lapsed during the reporting period. If the entity is involved in a joint venture agreement and there are conditions precedent which will change its percentage interest in a mining tenement or petroleum tenement, it should disclose the change of percentage interest and conditions precedent in the list required for items 6.1 and 6.2.
- 3 **Issued and quoted securities** The issue price and amount paid up is not required in items 7.1 and 7.3 for fully paid securities.
- 4 The definitions in, and provisions of, AASB 6: Exploration for and Evaluation of Mineral Resources and AASB 107: Statement of Cash Flows apply to this report.
- 5 **Accounting Standards** ASX will accept, for example, the use of International Financial Reporting Standards for foreign entities. If the standards used do not address a topic, the Australian standard on that topic (if any) must be complied with.

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<sup>+</sup> See chapter 19 for defined terms.