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Reference
Materials

Product Catalogue

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Certified Reference Materials

 **2400**
CUSTOMERS

 **135**
COUNTRIES

 **255**
UNIQUE PRODUCTS

 **33**
YEARS MAKING CRMs



We've got you covered

With global stockists in three locations, we supply large batch CRMs to customers in over 135 countries across a vast range of commodities, delivering what you need, when you need it. We provide quality assurance on the homogeneity of all CRMs produced, regardless of the nature of source materials, including 'nuggety' gold ores.

First class service

Our customer service, meticulous preparation and ISO certification methods are the reason OREAS proudly maintains an extensive list of clients worldwide.

Get in touch with our team of highly specialised geologists and chemists to assist you with any reference material related matter. info@ore.com.au.

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The perfect match

OREAS® CRMs are made from naturally occurring ore and waste materials, including gold occluded in silicates and key metals hosted in refractory minerals. Our CRMs will behave the same as your field samples during sample fusion and digestion to ensure the integrity of the analytical process and the utmost confidence in your assay data.

Gold CRMs

All gold OREAS® CRMs are tested by instrumental neutron activation analysis (INAA) to confirm and quantify the absolute level of homogeneity. We are the only manufacturer that test and offer a guarantee of homogeneity of gold (and PGE) across all OREAS® and custom CRMs irrespective of the presence of coarse gold in the source materials.



Custom CRMs

Can't find what you're looking for in the OREAS® range? Contact us today about our custom (matrix-matched) CRMs produced from customer supplied materials and prepared to your project specifications in batch sizes from 50kg to 12,000kg, packaged in unit sizes from 5g to 200kg ($\pm$ inert gas) and certified in a rigorous round robin program for the analytes of interest.

For custom CRM enquires contact: info@ore.com.au

OREAS SuperCRMs®

Offering full ICP-OES and MS elemental suites covering multiple analytical methodologies. With up to 179 analytes characterised in a single CRM making them ideally suited as a control for alteration mapping, pathfinder elements and other ICP applications. With 159 SuperCRMs® available from our range of 256 OREAS® CRMs, there is every chance of a close match to the matrix of your field samples.

pXRF Kits

We have eight thematic [kits available](#) based on commodity and mineralisation style or you can design your own custom kit from our OREAS® range. The kits come in tough storage cases for protection in field conditions. Cups are 32mm in diameter and fitted with 4 μ m polypropylene film to minimise signal attenuation of lighter elements.

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Product Description	CRM Code	Metal Concentration	Unit Size (grams)
BLANK CRMs (pulpes)			
Quartz 'oxide'	OREAS 21e*	Au <1ppb Cu Ni Pb Zn all <10ppm	10 / 1000
Quartz 'oxide'	OREAS 21f*	Au <1ppb Cu Ni Pb Zn all <10ppm	10 / 60 / 1000
Quartz primary	OREAS 22d*	Au <1ppb Cu Ni Pb Zn all <10ppm	1000
Quartz primary	OREAS 22h*	Au <1ppb Cu Ni Pb Zn all <10ppm	10 / 60 / 1000
Basalt lithogeochem	OREAS 24c*	Au <1ppb Cu 48.6ppm; Ni 138ppm	10
Basalt lithogeochem	OREAS 24d*	Au <1ppb Cu 43.2ppm Ni 137ppm	10 / 60 1000
Granodiorite lithogeochem	OREAS 20a**	Au <3ppb; Cu 46.7ppm; Ni 40.6ppm; Pb 21.4ppm	10 / 60 / 1000
Granodiorite lithogeochem	OREAS 23b*	Au <3ppb; Cu 46.5ppm; Ni 40.0ppm; Pb 22.6ppm	10 / 60 / 1000
Soil lithogeochem	OREAS 25a**	Au <2ppb Cu 33.9ppm Pb 25.2ppm	10 / 60
BLANK CHIP CRMs (nominal minus 6 mm)			
Basalt chip lithogeochem	OREAS C26d*	Au <2ppb Cu 46.8ppm Fe 7.82%	500g / 1kg / 20kg / 200kg
Rhyodacite chip lithogeochem	OREAS C27e*	Au <2ppb Cu 14.1ppm Pb 25.8%	500g / 1kg / 20kg / 200kg
Basalt lithogeochem	OREAS 30a**	Au <2ppb; Cu 44.4ppm; Ni 140ppm; Pb 3.75ppm	10 / 60 / 1000
Granodiorite lithogeochem	OREAS 20a**	Au <3ppb; Cu 46.7ppm; Ni 40.6ppm; Pb 21.4ppm	10 / 60 / 1000

Product Description	CRM Code	Metal Concentration	Unit Size (grams)
MULTI-ELEMENT GEOCHEM CRMs (pulpes)			
Pure glacial till	OREAS 46**	Au <3ppb; Cu 23.1ppm; Zn 35.5ppm; Ni 28.3ppm	10 / 60 / 1Kg
Anomalous glacial till	OREAS 47**	Au 44ppb; Cu 160ppm; Zn 222ppm; Ni 89ppm	10 / 60 / 1Kg
Anomalous ferruginous soil	OREAS 45f**	Au 19.3ppb; Pd 56.6ppb; Pt 38.1ppb; Cu 363ppm; Ni 256ppm; Cr 476ppm	10 / 60 / 500
Anomalous ferruginous soil	OREAS 45h**	Au 41.1ppb; Pd 128ppb; Pt 87.5ppb; Cu 767ppm; Ni 423ppm; Cr 677ppm	10 / 60 / 500
GOLD, GOLD-COPPER & GOLD-SILVER CRMs (pulpes)			
Copper ore (argillaceous sandstones)	OREAS 903**	Au AR <5ppb Cu 0.652% CuSol 0.434%	10 / 60 / 1000
Anomalous gold (Carlin style)	OREAS 260*	Au FA 16ppb Au AR 14ppb Cu AR 46.5ppm	60 / 500
Copper-gold bearing oxide (oxidised VMS / weathered rhyodacite)	OREAS 906**	Au 49ppb Cu 0.310% CuSol 0.259%	10 / 60 / 500
Anomalous gold (Carlin style)	OREAS 261*	Au FA 49ppb Au AR 41ppb Cu AR 64ppm	60 / 500
Gold ore (quartz-hosted, VCR-Witwatersrand style)	OREAS 293**	Au FA 72.5ppb U 2.40ppm; S 0.038%	60 / 500
Low level gold (Carlin style)	OREAS 262*	Au FA 99ppb Cu AR 118ppm Co AR 26.9ppm	60 / 500
Copper-gold bearing oxide (oxidised VMS / weathered rhyodacite)	OREAS 907**	Au 100ppb Cu 0.638% CuSol 0.533%	10 / 60 / 500
Copper-gold bearing (quartz monzonite porphyry)	OREAS 152a*	Au 116ppb Cu 0.385%	60
Iron oxide copper-gold bearing (IOCG felsic volcanic breccia)	OREAS 520**^	Au 176ppb Cu 0.293% Co 203ppm	10 / 60 / 500
Copper-gold ore (quartz monzonite porphyry)	OREAS 507**	Au 176ppb Cu 0.622% Mo 114ppm	10 / 60 / 500

Product Description	CRM Code	Metal Concentration	Unit Size (grams)
Copper-gold oxide ore (oxidised VMS / weathered rhyodacite)	OREAS 908**	Au 187ppb; Cu 1.26%; CuSol 1.06%	10 / 60 / 500
Silver-copper-gold ore (rhyodacite)	OREAS 600**	Au 200ppb Ag 24.8ppm Cu 482ppm	10
Gold ore (quartz-hosted, VCR-Witwatersrand style)	OREAS 294**	Au FA 207ppb U 4.46ppm S 0.067%	60 / 500
Low level gold (Carlin style)	OREAS 263*	Au FA 214ppb Au AR 166ppb Cu AR 87ppm	60 / 500
Copper-gold-molybdenum ore (quartz monzonite porphyry)	OREAS 501d**	Au 0.232ppm Cu 0.272% Mo 95ppm	10 / 60 / 500
Gold oxide ore (sediment-hosted, Carlin style)	OREAS 264**	Au FA 0.308ppm Au AR 0.295ppm Au CNL 0.273ppm Au XRPA 0.313ppm	60 / 500
Copper-gold bearing (quartz monzonite porphyry)	OREAS 153a*	Au 311ppb Cu 0.712%	60
Copper-gold bearing (quartz monzonite porphyry)	OREAS 153b*	Au 313ppb Cu 0.678%	60
Gold ore (quartz-hosted, VCR-Witwatersrand style)	OREAS 295**	Au FA 313ppb U 6.06ppm S 0.091%	60 / 500
Gold bearing oxide (weathered greenstone/sediments/scoria)	OREAS 250b**	Au FA 332ppb Au AR 310ppb Au CL 312ppb	60 / 1000
Gold bearing (greenstone-hosted orogenic lode)	OREAS 230**	Au FA 0.337ppm Au AR 0.318ppm Au CNL 0.321ppm Au XRPA 0.323ppm	60 / 500
Gold-copper-silver ore (rhyodacite)	OREAS 606**	Au 340ppb Ag 1.02ppm Cu 0.027%	10 / 60 / 1000
Zn-Pb-Au-Ag sulphide mine tailings (rhyolitic volcanoclastic sediments)	OREAS 630b**^	Au 358ppb Zn 1.11% Pb 0.442%	10 / 60
Copper-gold ore (quartz monzonite porphyry)	OREAS 506**	Au 364ppb Cu 0.444% Mo 87ppm	10 / 60 / 1000
Iron oxide copper-gold ore (IOCG felsic volcanic breccia)	OREAS 521**^	Au 376ppb Cu 0.607% Co 386ppm	10 / 60 / 100

Product Description	CRM Code	Metal Concentration	Unit Size (grams)
Copper-gold-molybdenum ore (quartz monzonite porphyry)	OREAS 502c**	Au 488ppb Cu 0.783% Mo 226ppm	10 / 60 / 1000
Gold oxide ore (weathered greenstone/sediments/scoria)	OREAS 251b**	Au FA 0.505ppm Au AR 0.497ppm Au CNL 0.491ppm Au XRPA 0.495ppm	60 / 500
Gold bearing (greenstone-hosted orogenic lode)	OREAS 231*	Au FA 0.542ppm Au AR 0.521ppm Au CNL 0.516ppm	60 / 500
Copper-gold ore (quartz monzonite porphyry)	OREAS 505**	Au 0.555ppm Cu 0.321% Mo 66ppm	10 / 60 / 500
Iron oxide copper-gold ore (IOCG felsic volcanic breccia)	OREAS 522**^	Au 0.574ppm Cu 0.916% Co 550ppm	10 / 60 / 100
Copper-gold-molybdenum ore (quartz monzonite porphyry)	OREAS 503d**	Au 0.666ppm Cu 0.524% Mo 348ppm	10 / 60 / 500
Gold bearing (greenstone-hosted orogenic lode)	OREAS 211**	Au FA 0.768ppm Au AR 0.730ppm Au CNL 0.749ppm Au XRPA 0.729ppm	60 / 500
Gold bearing oxide (weathered greenstone/sediments/scoria)	OREAS 252b**	Au FA 0.837ppm Au AR 0.793ppm Au CL 0.790ppm	60 / 1000
Gold bearing (greenstone-hosted orogenic lode)	OREAS 203*	Au FA 0.871ppm Au AR 0.825ppm	60
Iron oxide copper-gold ore (IOCG felsic volcanic breccia)	OREAS 523**^	Au 1.04ppm Cu 1.72% Co 728ppm	10 / 60 / 100
Gold ore (greenstone-hosted orogenic lode)	OREAS 233**	Au FA 1.05ppm Au AR 0.992ppm Au CNL 1.03ppm Au XRPA 1.00ppm	60 / 500
Gold ore (greenstone-hosted orogenic lode)	OREAS 234**	Au FA 1.20ppm Au AR 1.12ppm Au CNL 1.17ppm Au XRPA 1.16ppm	60 / 500
Gold oxide ore (weathered greenstone / scoria)	OREAS 253*	Au FA 1.22ppm Au AR 1.22ppm	60 / 500
Gold oxide ore (weathered greenstone/sediments/scoria)	OREAS 253b**	Au FA 1.24ppm Au AR 1.23ppm Au CNL 1.21ppm Au XRPA 1.25ppm	60 / 500
Iron oxide copper-gold ore (IOCG felsic volcanic breccia)	OREAS 524**^	Au 1.54ppm Cu 2.53% Co 728ppm	10 / 60 / 100

Product Description	CRM Code	Metal Concentration	Unit Size (grams)
Gold ore (metasediment-hosted orogenic lode)	OREAS 235*	Au FA 1.59ppm Au AR 1.54ppm Au CNL 1.38ppm	60 / 1000
Gold bearing (greenstone-hosted orogenic lode)	OREAS 236**	Au FA 1.85ppm Au AR 1.75ppm Au CNL 1.79ppm Au XRPA 1.78ppm	60 / 500
Gold ore (quartz-hosted, VCR-Witwatersrand style)	OREAS 296**	Au FA 2.19ppm U 24.8ppm S 0.238%	60 / 500
Gold oxide ore (weathered greenstone / scoria)	OREAS 254b*	Au FA 2.53ppm Au AR 2.50ppm Au CNL 2.45ppm	60 / 500
Gold ore (metasediment-hosted orogenic lode)	OREAS 238*	Au FA 3.03ppm Au AR 2.95ppm Au CNL 2.65ppm	60 / 1000
Gold ore (sediment-hosted, Carlin style)	OREAS 277*	Au FA 3.39ppm C 1.86% S 0.62%	60 / 500
Gold oxide ore (weathered greenstone/sediments/scoria)	OREAS 255b**	Au FA 4.16ppm Au AR 4.08ppm Au CL 4.12ppm	60 / 500
Gold ore (sediment-hosted, Carlin style)	OREAS 278*	Au FA 4.99ppm C 1.40% S 0.94%	60 / 500
Gold-copper-silver ore (rhyodacite)	OREAS 609**^	Au 5.16ppm Ag 24.6ppm Cu 0.495%	10
Gold ore (greenstone-hosted orogenic lode)	OREAS 240**	Au FA 5.51ppm Au AR 5.28ppm Au CNL 5.36ppm Au XRPA 5.23ppm	60 / 500
Gold ore (sediment-hosted, Carlin style)	OREAS 279*	Au FA 6.55ppm C 1.13% S 1.27%	60 / 500
Gold bearing (greenstone-hosted orogenic lode)	OREAS 241**	Au FA 6.91ppm Au AR 6.73ppm Au CNL 6.77ppm Au XRPA 6.78ppm	60 / 500
Gold oxide ore (weathered greenstone/sediments/scoria)	OREAS 256b**	Au FA 7.84ppm Au AR 7.58ppm Au CL 7.72ppm	60 / 500
Gold ore (greenstone-hosted orogenic lode)	OREAS 242**	Au FA 8.67ppm Au AR 8.33ppm Au CNL 8.48ppm Au XRPA 8.26ppm	60 / 500
Gold oxide ore (sediment-hosted, Carlin style)	OREAS 273**	Au FA 10.76ppm Au XRPA 10.69ppm	60 / 500

Product Description	CRM Code	Metal Concentration	Unit Size (grams)
Gold oxide ore (weathered greenstone/sediments/scoria)	OREAS 258**	Au FA 11.15ppm Au AR 10.82ppm Au CL 10.99ppm	60 / 500
Gold bearing (greenstone-hosted orogenic lode)	OREAS 243**	Au FA 12.39ppm Au AR 11.99ppm Au CNL 12.15ppm Au XRPA 12.17ppm	60 / 500
Gold ore (sediment-hosted, Carlin style)	OREAS 282**	Au FA 13.71ppm Au XRPA 13.41ppm	60 / 500
Gold oxide ore (weathered greenstone/scoria)	OREAS 257b*	Au FA 14.22ppm Au AR 14.17ppm Au CNL 13.96ppm	60 / 500
Gold ore (quartz-hosted, VCR-Witwatersrand style)	OREAS 297**	Au FA 17.83ppm U 83ppm S 0.630%	60 / 500
Gold ore (metasediment-hosted orogenic lode)	OREAS 245*	Au FA 25.73ppm S 0.765%	60 / 500
Gold ore (quartz-hosted, VCR-Witwatersrand style)	OREAS 298**	Au FA 34.99ppm U 78ppm S 0.721%	60 / 500
Gold ore (metasediment-hosted orogenic lode)	OREAS 247*	Au FA 42.96ppm S 0.714%	60 / 500
Gold ore (quartz-hosted, VCR-Witwatersrand style)	OREAS 299**	Au FA 89.97ppm U 52ppm S 0.603%	60 / 500
PGE CRMs (pulps)			
PGE ore, pyroxenite/gabbro-norite matrix	OREAS 681**^	Au 51ppb Pd 243ppb Pt 526ppb	60 / 1000
PGE ore, pyroxenite/gabbro-norite matrix	OREAS 682**^	Au 74ppb Pd 444ppb Pt 868ppb	60 / 500
PGE ore, pyroxenite matrix	OREAS 683**^	Au 207ppb Pd 853ppb Pt 1760ppb	60 / 500
PGE ore, pyroxenite matrix	OREAS 684**^	Au 0.248ppm Pd 1.72ppm Pt 3.87ppm	60 / 500
COPPER-NICKEL-PGE CRMs (pulps)			
Gabbro-norite (disseminated sulphides)	OREAS 13b*	Cu 2327ppm Ni 2247ppm Pt 197ppb; Pd 131ppb Au 211 ppb	10 / 60
Dishaba PGE ore with copper-nickel ore added to a gabbro-norite matrix	OREAS 680**^	Cu 0.904%; Ni 2.15% Pt 405ppb; Pd 218ppb Au 161ppb	60

Product Description	CRM Code	Metal Concentration	Unit Size (grams)
GOLD CHIP CRMs (-3mm)			
Gold ore chips (nominal <3mm, greywacke)	OREAS 7Ca	Au 2.54ppm	500
COPPER, COPPER-COBALT CRMs (pulpes)			
Barren shale / siliceous dolomite	OREAS 160*	Cu 13ppm	10 / 1000
Cu-bearing siltstone	OREAS 920**	Cu 112ppm	10 / 500
Cu-bearing siltstone	OREAS 91*	Cu 265ppm	10
Cu-bearing siltstone	OREAS 921**	Cu 274ppm	10
Silver-copper-gold ore (rhyodacite)	OREAS 600**	Cu 482ppm Au 200ppb Ag 24.8ppm	10
Copper-gold oxide ore (oxidised VMS / weathered rhyodacite)	OREAS 905**	Cu 0.153% CuSol 0.127% Au 391ppb	10 / 60 / 500
Massive sulphide low grade ore breccia	OREAS 110*^	Cu 0.160%	10
Copper ore (sediment-hosted)	OREAS 922**	Cu 0.212%	10 / 1000
Copper-gold-molybdenum ore (quartz monzonite porphyry)	OREAS 501d**	Cu 0.272% Au 0.232ppm Mo 95ppm	10 / 60 / 500
Copper-cobalt oxide ore dolomitic shale	OREAS 550**	Cu 0.278% Co 0.145%	10 / 1000
Copper low grade ore argillaceous sandstone	OREAS 902**	Cu 0.301% Cu-Sol 0.111%	10 / 60 / 1000
Copper-gold oxide ore (oxidised VMS / weathered rhyodacite)	OREAS 906**	Cu 0.310% CuSol 0.259% Au 49ppb	10 / 60 / 500
Copper-gold ore (quartz monzonite porphyry)	OREAS 505**	Cu 0.321% Au 0.555ppm Mo 66ppm	10 / 60 / 500
Cu sulphide low grade ore (sediment-hosted)	OREAS 161*^	Cu 0.400%	10
Copper ore (sediment-hosted)	OREAS 923**	Cu 0.423%	10 / 1000
Copper-gold ore (quartz monzonite porphyry)	OREAS 506**	Cu 0.444% Au 0.364ppm Mo 87ppm	10 / 60 / 1000
Copper ore (sediment-hosted)	OREAS 924**	Cu 0.512%	10 / 500

Product Description	CRM Code	Metal Concentration	Unit Size (grams)
Copper-gold-molybdenum ore (quartz monzonite porphyry)	OREAS 503d**	Cu 0.524% Au 0.666ppm Mo 348ppm	10 / 60 / 500
Copper-cobalt oxide ore dolomitic shale	OREAS 551**	Cu 0.569% Co 0.304%	10 / 1000
Copper-cobalt oxide ore dolomitic shale	OREAS 553**	Cu 0.581% Co 0.612%	10 / 1000
Copper ore (sediment-hosted)	OREAS 925**	Cu 0.615%	10 / 1000
Copper-gold ore (quartz monzonite porphyry)	OREAS 507**	Cu 0.622% Au 0.176ppm Mo 114ppm	10 / 60 / 500
Copper-gold oxide ore (oxidised VMS / weathered rhyodacite)	OREAS 907**	Cu 0.638% CuSol 0.533% Au 100ppb	10 / 60 / 500
Copper ore argillaceous sandstones	OREAS 903**	Cu 0.652% Cu-Sol 0.434%	10 / 60 / 1000
Cu sulphide ore (sed-hosted)	OREAS 162*^	Cu 0.761%	10
Copper ore (sediment-hosted)	OREAS 926**	Cu 0.813%	10 / 1000
Cu sulphide ore (sed-hosted)	OREAS 927**	Cu 1.08%	10 / 1000
Copper-gold oxide ore (oxidised VMS / weathered rhyodacite)	OREAS 908**	Cu 1.26% CuSol 1.06% Au 187ppb	10 / 60 / 500
Cu sulphide ore (sed-hosted)	OREAS 928*	Cu 1.53%	10 / 1000
Copper-cobalt ore dolomitic shale	OREAS 554**	Cu 1.58% Co 0.806%	10 / 500
Cu sulphide ore (sed-hosted)	OREAS 163*^	Cu 1.71%	10
Cu sulphide ore (sed-hosted)	OREAS 929*	Cu 2.00%	10 / 1000
Copper-cobalt ore dolomitic shale	OREAS 556**	Cu 2.18% Co 2.10%	10 / 500
Cu sulphide ore (sed-hosted)	OREAS 164*^	Cu 2.22%	10
Copper-cobalt ore dolomitic shale	OREAS 555**	Cu 2.28% Co 1.14%	10 / 1000
Massive sulphide ore breccia	OREAS 111*^	Cu 2.30%	10
Massive sulphide ore breccia	OREAS 111b*^	Cu 2.44%	10
Cu sulphide ore (sed-hosted)	OREAS 930*^	Cu 2.52%	10
Copper-cobalt ore dolomitic shale	OREAS 552**	Cu 3.07% Co 0.410%	10 / 1000
Cu sulphide ore (sed-hosted)	OREAS 165*^	Cu 3.21%	10
Cu sulphide ore (sed-hosted)	OREAS 931*^	Cu 3.82%	10

Product Description	CRM Code	Metal Concentration	Unit Size (grams)
Cu sulphide ore (sed-hosted)	OREAS 96*^	Cu 3.93%	10
Massive sulphide ore breccia	OREAS 112*^	Cu 5.13%	10
Cu sulphide ore (sed-hosted)	OREAS 932*^	Cu 6.13%	10
Cu sulphide ore (sed-hosted)	OREAS 97*^	Cu 6.31%	10
High grade copper ore	OREAS 933*^	Cu 8.37%	10
Cu sulphide ore (sed-hosted)	OREAS 166*^	Cu 8.75%	10
High grade copper ore	OREAS 934*^	Cu 9.59%	10
High grade copper ore	OREAS 935*^	Cu 12.6%	10
Massive sulphide ore breccia	OREAS 113*^	Cu 13.3%	10
Cu sulphide ore (sed-hosted)	OREAS 98*^	Cu 14.8%	10
CONCENTRATE CRMs (pulps)			
Copper-gold-silver sulphide concentrate	OREAS 990b**^	Cu 16.37% Ag 6741ppm Au 63.67ppm	10 / 50
Copper-gold-silver sulphide concentrate	OREAS 991^	Cu 20.66%; Ag 48.1ppm Au 47.0ppm	50
Copper-gold-silver sulphide concentrate	OREAS 993^	Cu 23.90% Ag 41.6ppm Au 54.85ppm	10 / 50
Copper sulphide refinery product	OREAS 994**^	Cu 30.00% Ag 181ppm	10
Copper sulphide refinery product	OREAS 992^	Cu 43.90% S 36.97%	10
Copper sulphide refinery product	OREAS 992b**^	Cu 45.98%; Ag 344ppm Au 14.9ppm; Pd 128ppm Pt 21.9ppm	10 / 50
Zinc sulphide concentrate	OREAS 350^	Zn 44.12% Pb 8.22% Ag 96.6ppm	10
Zinc sulphide concentrate	OREAS 354^	Zn 49.30% Pb 1.58% Ag 98.0ppm	10
Lead sulphide concentrate	OREAS 353^	Pb 61.26% Zn 4.13% Ag 2184ppm	10 / 50
Nickel-cobalt sulphide refinery product	OREAS 78^	Co 23.74% Ni 25.79% S 28.61%	10

Product Description	CRM Code	Metal Concentration	Unit Size (grams)
NICKEL SULPHIDE CRMs (pulps)			
Komatiite altered ultramafic	OREAS 70b**^	Ni 0.218%	10
Nickel-copper-cobalt ore magmatic	OREAS 85**^	Ni 0.344% Cu 0.176% Co 178ppm	10 / 60
Komatiite-hosted nickel sulphide ore	OREAS 72b**^	Ni 0.686%	10
Nickel-copper-cobalt ore magmatic	OREAS 86**^	Ni 1.23% Cu 0.562% Co 507ppm	10 / 60
Komatiite-hosted nickel sulphide ore	OREAS 73b**^	Ni 1.48%	10
Komatiite-hosted nickel sulphide ore	OREAS 74a*^	Ni 3.14%	10
Komatiite-hosted nickel sulphide ore	OREAS 74b**^	Ni 3.38%	10
Komatiite-hosted nickel sulphide ore	OREAS 75a*^	Ni 5.11%	10
Komatiite-hosted nickel sulphide ore	OREAS 75b**^	Ni 5.29%	10
Komatiite-hosted nickel sulphide ore	OREAS 76a*^	Ni 7.29%	10
Komatiite-hosted nickel sulphide ore	OREAS 76b**^	Ni 7.62%	10
Komatiite-hosted nickel sulphide ore	OREAS 77a*^	Ni 10.71%	10
Komatiite-hosted nickel sulphide ore	OREAS 77b**^	Ni 11.30%	10
NICKEL LATERITE CRMs (pulps)			
Transitional (saprolite-limonite) ore	OREAS 180**	Ni 3093ppm Co 244ppm Sc 41.5ppm	10 / 500
Transitional (saprolite-limonite) ore	OREAS 181**	Ni 5123ppm Co 541ppm Sc 38.2ppm	10 / 500
Transitional (saprolite-limonite) ore	OREAS 182*	Ni 0.707% Co 728ppm	10 / 1000
Saprolitic ore	OREAS 183*	Ni 0.995% Co 225ppm	10 / 1000
Transitional (saprolite-limonite) ore	OREAS 184*	Ni 1.02% Co 903ppm	10 / 1000
Saprolitic ore	OREAS 185*	Ni 1.14% Co 388ppm	10 / 1000
Transitional (saprolite-limonite) ore	OREAS 186*	Ni 1.23% Co 692ppm	10 / 1000
Saprolitic ore	OREAS 187*	Ni 1.37% Co 636ppm	10 / 1000

Product Description	CRM Code	Metal Concentration	Unit Size (grams)
Saprolitic ore	OREAS 189*	Ni 1.48% Co 326ppm	10 / 1000
Transitional (saprolite-limonite) ore	OREAS 190*	Ni 1.64% Co 889ppm	10 / 1000
Saprolitic ore	OREAS 191*	Ni 1.75% Co 665ppm	10 / 1000
Saprolitic ore	OREAS 192*	Ni 1.77% Co 404ppm	10 / 1000
Saprolitic ore	OREAS 193*	Ni 1.93% Co 495ppm	10 / 1000
Saprolitic ore	OREAS 194*	Ni 2.13% Co 428ppm	10 / 1000
Saprolitic ore	OREAS 195*	Ni 2.94% Co 477ppm	10 / 1000
Lateritic scandium (nickel-cobalt) ore	OREAS 197**	Sc 203ppm Co 331ppm Ni 524ppm	10 / 500
Lateritic scandium (nickel-cobalt) ore	OREAS 198**	Sc 401ppm Co 807ppm Ni 688ppm	10 / 500
Lateritic scandium (nickel-cobalt) ore	OREAS 199**	Sc 591ppm Co 557ppm Ni 995ppm	10 / 500
Zn-Pb-Ag CRMs (pulps) – Broken Hill Type			
Zinc sulphide ore (meta-sediment / sulphide)	OREAS 36*^	Zn 4.19% Ag 10.17ppm Pb 0.579%	10
Zinc sulphide ore (meta-sediment / sulphide)	OREAS 37*^	Zn 6.26% Ag 5.19ppm Pb 0.615%	10
Zinc sulphide ore (meta-sediment / sulphide)	OREAS 38*^	Zn 10.06% Ag 5.49ppm Pb 0.592%	10
Zn-Pb-Ag CRMs (pulps) – SEDEX Type			
Zn-Pb-Ag sulphide ore (sulphidic graphitic slate)	OREAS 130**^	Ag 6.57ppm Pb 0.13% Zn 1.71%	10
Zn-Pb-Ag sulphide ore (sulphidic graphitic slate)	OREAS 136**^	Ag 151ppm Pb 4.76% Zn 3.63%	10
Zn-Pb-Ag sulphide ore (sulphidic graphitic slate)	OREAS 137**^	Ag 25.9ppm Pb 0.673% Zn 4.92%	10
Zn-Pb-Ag sulphide ore (sulphidic graphitic slate)	OREAS 138**^	Ag 45.2ppm Pb 1.23% Zn 8.19%	10

Product Description	CRM Code	Metal Concentration	Unit Size (grams)
Zn-Pb-Ag sulphide ore (sulphidic graphitic slate)	OREAS 139***^	Ag 76.7ppm Pb 2.21% Zn 13.63%	10
Zn-Pb-Cu-Ag-Au CRMs (pulpes) – VMS Type			
Zn-Pb-Cu-Ag-Au sulphide ore (rhyodacite)	OREAS 620***^	Ag 38.5ppm; Pb 0.774%; Zn 3.15%; Cu 0.173%; Au 0.685ppm	10 / 60
MANGANESE CRMs (pulpes) – Sedimentary			
Manganiferous sedimentary	OREAS 173**	Mn 28.30%	10 / 1000
Manganiferous sedimentary	OREAS 174**	Mn 33.96%	10 / 1000
Manganiferous sedimentary	OREAS 171*	Mn 35.10%	10 / 1000
Manganiferous sedimentary	OREAS 175**	Mn 41.04%	10 / 1000
Manganiferous sedimentary	OREAS 172*	Mn 42.75%	10 / 1000
Manganiferous sedimentary	OREAS 170a*	Mn 45.06%	10 / 1000
Manganiferous sedimentary	OREAS 170b*	Mn 46.06%	10 / 1000
PHOSPHORUS CRMs (pulpes) – Sedimentary			
Phosphatic chert breccia	OREAS WON14*	P2O5 12.97%	10 /
Phosphatic chert breccia	OREAS WON20*	P2O5 19.31%	10 /
Phosphatic chert breccia	OREAS WON25*	P2O5 24.70%	10 /
Phosphatic chert breccia	OREAS WON30*	P2O5 29.21%	10 /
GRAPHITE CRMs (pulpes)			
Crystalline vein with granodiorite	OREAS 722	TGC 2.03%	10 / 500
Crystalline vein with granodiorite	OREAS 723	TGC 5.87%	10 / 500
Crystalline vein with granodiorite	OREAS 724	TGC 12.06%	10 / 500
Crystalline vein with granodiorite	OREAS 725	TGC 24.52%	10 / 500

Product Description	CRM Code	Metal Concentration	Unit Size (grams)
TIN CRMs (pulps)			
Sn laterite ore	OREAS 140*	Sn 1755ppm	10 / 500
Sn laterite ore	OREAS 141*	Sn 6061ppm	10 / 500
Sn laterite ore	OREAS 142*	Sn 1.04%	10 / 500
LITHIUM CRMs (pulps)			
Pegmatite ore	OREAS 147**	Li ₂ O 0.488%; Li 0.227% Nb 0.115%; Sn 699ppm	10 / 1000
Pegmatite ore	OREAS 750**	Li ₂ O 0.498%; Li 0.231% Nb 21.8ppm; Sn 43ppm	10 / 500
Pegmatite ore	OREAS 751**	Li ₂ O 1.01%; Li 0.468% Nb 40.9ppm; Sn 156ppm	10 / 500
Pegmatite ore	OREAS 148**	Li ₂ O 1.03%; Li 0.476% Nb 0.168%; Sn 1157ppm	10 / 500
Pegmatite ore	OREAS 752**	Li ₂ O 1.52%; Li 0.707% Nb 54ppm; Sn 238ppm	10 / 500
Pegmatite ore	OREAS 753**	Li ₂ O 2.19%; Li 1.02% Nb 36.2ppm; Sn 135ppm	10 / 500
Spodumene concentrate	OREAS 999**	Li ₂ O 5.76%; Li 2.67% Nb 74ppm; Sn 84ppm	10 / 500
TUNGSTEN CRMs (pulps) – Skarn			
Skarn tungsten magnetite ore	OREAS 700**	W 1.13% Au 0.506ppm Cu 0.202%	10 / 60 / 500
High grade skarn tungsten magnetite ore	OREAS 701**	W 2.43% Au 1.11ppm Cu 0.491%	10 / 60 / 500
MAGNETITE CRMs (pulps)			
Skarn tungsten magnetite ore (with Au-Cu-W mineralisation)	OREAS 700**	TOTAL Fe 16.06% FeO 12.07% DTR (MassRec) 11.28% Satmagan Fe ₃ O ₄ 10.91%	10 / 60 / 500
High grade skarn tungsten magnetite ore (with Au-Cu-W mineralisation)	OREAS 701**	TOTAL Fe 23.98% FeO 17.35% DTR (MassRec) 20.80% Satmagan Fe ₃ O ₄ 17.95%	10 / 60 / 500

Product Description	CRM Code	Metal Concentration	Unit Size (grams)
IRON CRMs (pulpes)			
Hematite ore (BIF-hosted)	OREAS 401*	Fe 45.63% SiO ₂ 24.88% P 0.105%	10 / 1000
Hematite ore (BIF-hosted)	OREAS 402*	Fe 48.41% SiO ₂ 19.77% P 0.119%	10 / 1000
Hematite ore (BIF-hosted)	OREAS 403*	Fe 52.31% SiO ₂ 13.67% P 0.123%	10 / 1000
Hematite ore (BIF-hosted)	OREAS 404*	Fe 55.14% SiO ₂ 7.88% P 0.151%	10 / 1000
Hematite ore (BIF-hosted)	OREAS 405*	Fe 58.02% SiO ₂ 8.37% P 0.111%	10 / 1000
Hematite ore (BIF-hosted)	OREAS 406*	Fe 61.44% SiO ₂ 7.96% P 0.085%	10 / 1000
Hematite ore (supergene)	OREAS 40*	Fe 66.72% SiO ₂ 4.64% P 0.004%	10 / 1000
URANIUM CRMs (pulpes) – Sedimentary and Hydrothermal			
U bearing sandstone	OREAS 120**	U 40.5ppm	10 / 1000
U bearing haematitic breccia	OREAS 100a*	U 135ppm	10 / 500
U ore (sandstone hosted)	OREAS 121**	U 215ppm	10 / 1000
U ore haematitic breccia	OREAS 101b*	U 396ppm	10 / 500
U ore haematitic breccia	OREAS 101a*	U 422ppm	10 / 500
U ore (sandstone hosted)	OREAS 122**	U 423ppm	10 / 1000
U ore haematitic breccia	OREAS 102a*	U 662ppm	10 / 500
U ore (sandstone hosted)	OREAS 123**	U 858ppm	10 / 1000
U ore (sandstone hosted)	OREAS 124**	U 1845ppm	10 / 1000

Product Description	CRM Code	Metal Concentration	Unit Size (grams)
REE-Nb CRMs (pulp) – Carbonatite (supergene)			
REE-Nb laterite ore	OREAS 460**	Nb 711ppm; La 1347ppm Ce 1813ppm; Nd 791ppm; Pr 244ppm; Sm 107ppm; Zr 472ppm	10 / 1000
REE-Nb laterite ore	OREAS 461**	Nb 1343ppm; La 2644ppm; Ce 3510ppm; Nd 1638ppm; Pr 491ppm; Sm 220ppm Zr 613ppm	10 / 1000
REE-Nb laterite ore	OREAS 462**	Nb 1452ppm; La 3798ppm Ce 4951ppm; Nd 2551 Pr 739ppm; Sm 369ppm Zr 598ppm	10 / 1000
REE-Nb laterite ore	OREAS 463**	Nb 1524ppm; La 4967ppm Ce 0.659%; Nd 3706ppm Pr 1004ppm; Sm 538ppm Zr 576ppm	10 / 1000
REE-Nb laterite ore	OREAS 464**	Nb 1917ppm; La 1.17% Ce 1.53%; Nd 0.994% Pr 2578ppm; Sm 1498ppm Zr 462ppm	10 / 1000
REE-Nb laterite ore	OREAS 465**	Nb 4759ppm; La 2.40% Ce 3.98%; Nd 1.18% Pr 3772ppm; Sm 1360ppm Zr 1806ppm	10 / 1000



Notes

All prices are quoted in Australian Dollars (AUD) and exclude Goods and Services Tax (GST).

GST is only applicable to Australian customers.

Ore Research & Exploration Pty Ltd reserves the right to change listed prices at any time.

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