

#### **ASX ANNOUNCEMENT AND MEDIA RELEASE**

20 March 2015

# **DOWN DIP EXTENSIONS CONFIRMED AT NAMDINI**

#### **HIGHLIGHTS**

- Down dip extensions confirmed
  - 13m @ 1.58g/t from 53m vertical depth
  - 10m @ 1.80g/t from 116m vertical depth
  - 9m @ 3.23g/t from 81m vertical depth
- Further RC drill holes are planned to expand the gold potential at Namdini

Cardinal Resources Limited (ASX: CDV) ("Cardinal" or "the Company") announces that further down dip gold intersections have been confirmed at the Namdini Mining Licence ("Namdini"), located within Cardinal's Bolgatanga Project in Ghana.

Commenting on today's results from Ghana, Cardinal Resources Managing Director Archie Koimtsidis said:

"Several mineralised gold intersections within drill hole NMRC353-731 confirm an 80m down dip continuation of gold mineralisation from this drill hole to NMRC349-754 (see Figure 2). These down dip extensions are very encouraging as they increase the gold bearing potential.

"Within drill hole NMRC353-731, an intersection of 2m from surface confirms the continuation of shallow gold mineralisation in Zone 5 and a 7m intersection at 32m vertical depth also confirms the continuation of Zone 4 down dip (see Figure 2).

"Drill hole NMRC349-754 located a 13m wide zone of gold mineralisation within Zone 2. Unfortunately the hole was terminated prematurely due to caving before Zone 3 could be tested (see Figure 2). Nonetheless, these very encouraging results provide additional information that will guide the next stage of the drill plan to test for further strike and depth extensions which are anticipated to expand the gold potential.

"We have 163 samples which will be sent to the SGS laboratory in Ouagadougou, Burkina Faso this week. These results will be reported to the market as they become available."



Table 1: Namdini NMRC 353-731 and NMRC349-754 Drill Results

Hole ID	Easting	Northing	Dip	Azim	RL	Length	From	То	Vertical	Width	Gold
	UTM	UTM	(°)	(°)	(m)	(m)	(m)	(m)	(m)	(m)	(g/t)
NMRC353-731	757326	1176686	-45	100	214		0	2	0	2	1.36
and							45	52	32	7	1.95
and							80	84	56	4	1.31
and							89	91	63	2	1.40
and							106	110	75	4	1.03
and							115	124	81	9	3.23
and							131	135	92	4	1.55
and							164	166	116	2	1.05
and							181	191	116	10	1.80
NMRC349-754	757440	1176665	-45	100	212		16	18	11	2	3.13
and						_	27	29	19	2	1.42
and							48	51	33	3	2.49
and							75	88	53	13	1.58

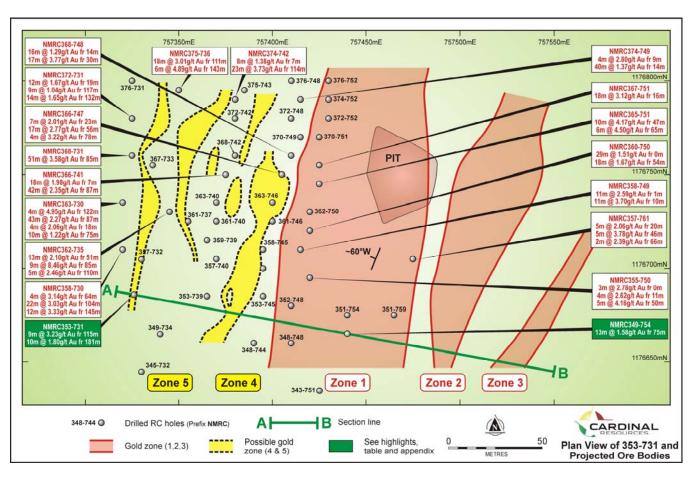


Figure 1: Namdini Plan View of drill hole collars, A-B Section Line and projected gold zones



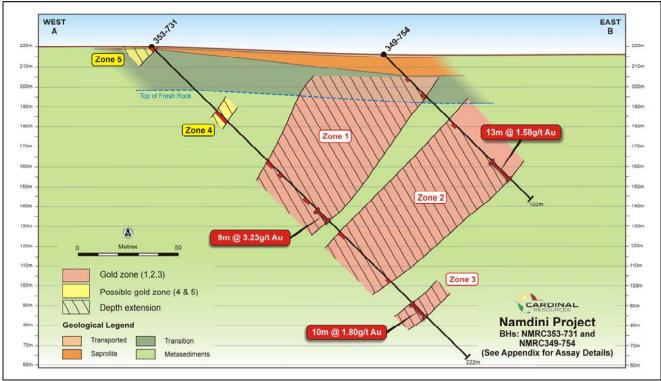
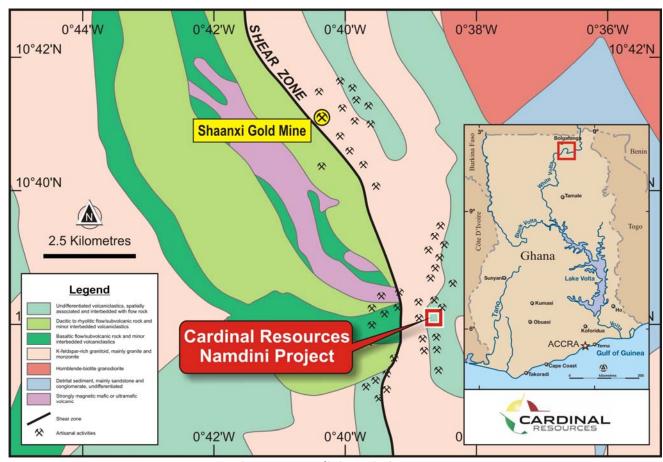


Figure 2: Section of Drill Holes NMRC 353-731 and NMRC349-754



**Figure 3: Namdini Proximity Map** 

#### Cardinal Resources Limited ABN 56 147 325 620

www. cardinal resources. com. au



#### **FURTHER RC DRILLING PLANNED AT NAMDINI**

Cardinal is the owner and operator of its own drill rig and has established an express assaying service with its drilling results, enabling the Company to continuously improve its drill plan strategy as new information becomes available.

The Company will continue drilling selective holes, submitting the samples and be on standby as results are received. Once the results have been assessed Cardinal can plan further drill holes to maximise expansion of the gold potential at Namdini.

For further information contact:

Archie Koimtsidis Managing Director **Cardinal Resources Limited** P: +233 (0)26 190 5220 Skype: cardinal.archie



# APPENDIX Namdini NMRC353-731 Drill Results

From (m)	To (m)	Gold (g/t)	Grade (m @ g/t)
0	1	1.54	) 2m @ 1.36 g/t
1	2	1.17	
45	46	1.59	)
46	47	1.93	)
47	48	3.74	) 7 m @ 1.95 g/t
48	49	1.11	)
49	50	2.84	)
50	51	1.79	)
51	52	0.67	)
80	81	1.60	)
81	82	1.67	) 4m @ 1.31 g/t
82	83	0.59	)
83	84	1.39	)
90	00	1.64	\ 2 @ 1 40 =/t
89	90	1.61	) 2m @ 1.40 g/t
90	91	1.18	)
106	107	1.05	)
107	108	1.37	) 4m @ 1.03 g/t
108	109	0.68	)
109	110	1.03	1)
115	116	1.95	)
116	117	1.73	)
117	118	1.15	)
118	119	14.40	) 9m @ 3.23 g/t
119	120	3.40	)
120	121	4.50	)
121	122	0.50	)
122	123	0.08	)
123	124	1.32	)
131	132	1.07	)
132	133	0.49	1
133	134	2.07	) 4m @ 1.55 g/t
134	135	2.56	) 4 iii @ 1.33 g/t
134	133	2.30	'
181	182	2.23	)
182	183	3.32	)
183	184	0.43	)
184	185	0.69	)
185	186	1.26	) 10m @ 1.80 g/t
186	187	2.60	)
187	188	1.45	)
188	189	2.37	)
189	190	2.19	)

# Cardinal Resources Limited ABN 56 147 325 620

www.cardinalresources.com.au



190	191	1.41	)

Cut-off grade of 0.5 g/t Au;

Grade calculated with not more than 3m below 0.5 g/t Au within intersections

#### Namdini NMRC349-754 Drill Results

From (m)	To (m)	Gold (g/t)	Grade (m @ g/t)
16	17	1.95	)
17	18	4.30	) 2m @ 3.13g/t
27	28	1.19	) 2m @ 1.42g/t
28	29	1.65	)
48	49	1.05	)
49	50	4.11	) 3m @ 2.49g/t
50	51	2.32	)
75	76	2.14	)
76	77	2.72	)
77	78	2.26	)
78	79	1.74	)
79	80	3.39	) 13m @ 1.58g/t
80	81	0.76	)
81	82	2.07	)
82	83	1.32	)
83	84	0.80	)
84	85	0.95	)
85	86	1.01	)
86	87	0.79	)
87	88	0.61	)

Cut-off grade of 0.5 g/t Au;

Grade calculated with not more than 3m below 0.5 g/t Au within intersections

#### **Competent Person's Statement**

Information in this report that relates to the Namdini Project is based on information compiled by **Mr Paul Abbott**, a full time employee of Cardinal Resources Limited, who is a Fellow of the Australasian Institute of Mining and Metallurgy and a Member of the Geological Society of South Africa. Mr Abbott has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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'. Mr Abbott consents to the inclusion in this report of the statements based on his information in the form and context in which it appears.

#### Disclaimer

This ASX announcement (Announcement) has been prepared by Cardinal Resources Limited (ABN: 56 147 325 620) ("Cardinal" or "the Company"). It should not be considered as an offer or invitation to subscribe for or purchase any securities in the Company or as an inducement to make an offer or invitation with respect to those securities. No agreement to subscribe for securities in the Company will be entered into on the basis of this Announcement.

# Cardinal Resources Limited ABN 56 147 325 620

www.cardinalresources.com.au



This Announcement contains summary information about Cardinal, its subsidiaries and their activities which is current as at the date of this Announcement. The information in this Announcement is of a general nature and does not purport to be complete nor does it contain all the information which a prospective investor may require in evaluating a possible investment in Cardinal.

By its very nature exploration for minerals is a high risk business and is not suitable for certain investors. Cardinal's securities are speculative. Potential investors should consult their stockbroker or financial advisor. There are a number of risks, both specific to Cardinal and of a general nature which may affect the future operating and financial performance of Cardinal and the value of an investment in Cardinal including but not limited to economic conditions, stock market fluctuations, gold provide movements, regional infrastructure constraints, timing of approvals from relevant authorities, regulatory risks, operational risks and reliance on key personnel and foreign currency fluctuations.

Certain statements contained in this announcement, including information as to the future financial or operating performance of Cardinal Resources and its projects, are forward-looking statements that:

- may include, among other things, statements regarding targets, estimates and assumptions in respect
  of mineral reserves and mineral resources and anticipated grades and recovery rates, production and
  prices, recovery costs and results, capital expenditures, and are or may be based on assumptions and
  estimates related to future technical, economic, market, political, social and other conditions;
- are necessarily based upon a number of estimates and assumptions that, while considered reasonable by Cardinal Resources, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies; and,
- involve known and unknown risks and uncertainties that could cause actual events or results to differ materially from estimated or anticipated events or results reflected in such forward-looking statements.

Cardinal Resources disclaims any intent or obligation to update publicly any forward-looking statements, whether as a result of new information, future events or results or otherwise. The words 'believe', 'expect', 'anticipate', 'indicate', 'contemplate', 'target', 'plan', 'intends', 'continue', 'budget', 'estimate', 'may', 'will', 'schedule' and similar expressions identify forward-looking statements.

All forward looking statements made in this announcement are qualified by the foregoing cautionary statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and accordingly investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein.

No verification: Although all reasonable care has been undertaken to ensure that the facts and opinions given in this Announcement are accurate, the information provided in this Announcement has not been independently verified.



# JORC CODE 2012 EDITION – TABLE 1 DOWN DIP EXTENSIONS CONFIRMED AT NAMDINI Section 1 – Sampling Technique and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry	Nature and quality of sampling is carried out under QAQC procedures as per industry standards, with
teemiques	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.	duplicates taken every 22nd sample, while standards and blanks are inserted in the ratio of 1:44.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Sample representivity is ensured through a 3 tier riffle splitter, as it provides an unbiased sample.
	Aspects of the determination of mineralisation that are Material to the Public Report.	The determination of mineralisation is not yet known.
	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.	Industry standard reverse circulation drilling was used to obtain 1m samples from which 3 kg was pulverised to produce a 50 g charge for fire assay.
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).	Reverse Circulation drilling with a standard tube, Remet 5½ inch Hard Face (face-sampling) button drilling bit.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Method of recording and assessing chip samples was on a hand held Motion F5te Tablet PC using a set of standard templates supplied by Maxwell Geoservices, Perth (Maxwell).
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	The measures taken to maximize sample recovery are through a cyclone and a 3 tier riffle splitter. This method ensures maximum sample recovery and an unbiased representative sample to be assayed.
	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.	No relationship is known to exist between sample recovery and grade, and no sample bias may have occurred due to preferential loss/gain of any fine/coarse material.
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.	Chip samples have been geologically logged to a level of detail to support appropriate future Mineral Resource estimations.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Logging is quantitative. Chip samples are photographed in dry form.

## Cardinal Resources Limited ABN 56 147 325 620

www.cardinalresources.com.au



Criteria	JORC Code Explanation	Commentary
	The total length and percentage of the relevant intersections logged.	All holes are logged in full.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	No core has been drilled.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	The sub-sampling technique is with a 3 tier riffle splitter, and sampled dry.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation is completed at SGS Laboratories, Ouagadougou, Burkina Faso. All preparation equipment is flushed with barren material prior to the commencement of sample preparation. The entire sample is dried, crushed to a nominal 2mm using a Jaw Crusher, and pulverised (85- 90% passing 75 micron size fraction) using LM5 grinding mills. A 250 gram split is retained for fire assay with AAS finish to 10 ppb detection limit. The remainder is returned and stored at Cardinal's Bolgatanga premises.
	Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples.	Quality control procedures adopted for all sub- sampling stages to maximize representivilty of samples uses commercial certified reference material (CRM) for standards.
	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.	Measures taken to ensure that the sampling is representative of the in situ material collected are to insert duplicates at every 22nd sample. Approximately 3kg samples from the splitter are retained from each sample and stored on the company's premises for possible re-assay.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample sizes are considered appropriate to give an accurate indication of gold mineralisation.
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.	The pulverized rock sample is weighed and mixed with flux and fused using lead oxide at 1,100°C, followed by cupellation of the resulting lead button (Dore bead). The bead is digested using 1:1 HNO₃ and HCl and the resulting solution is submitted for analysis.
		The digested sample solution is aspirated into the Flame Atomic Absorption Spectrometer (AAS), aerosolised, and mixed with the combustible gas, acetylene and air. The mixture is ignited in a flame whose temperature ranges from 2,100 to 2,800°C. During combustion, atoms of the gold in the sample are reduced to free, unexcited ground state atoms, which absorb light. Light of the appropriate wavelength is supplied and the amount of light absorbed can be measured against a standard curve.
		Results have a lower gold detection limit of 10 ppb. The AAS equipment is calibrated with each job.
		The analytical technique is industry standard fire assay which is considered to be a total digest of gold.

www.cardinalresources.com.au



Criteria	JORC Code Explanation	Commentary
	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.	No hand held geophysical tools are used.
	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.	Sample preparation checks for fineness are carried out by the laboratory as part of their internal procedures to ensure the grind size of 85-90% passing 75 micron is being attained. Each batch of 100 samples has 5 checks (20%), with the grind size varying between 87-99% passing 75 micron, which is acceptable. Laboratory QAQC involves the use of internal lab standards using certified reference material and blanks.
		Certified reference materials, having a range of values, and in-house blanks are inserted in the ratio of 1:44. Duplicate samples are taken every 22nd sample.
		External laboratory checks are done on a three monthly basis through Laboratories Quality Services International (LQSI). Recent LQSI checks of Fire Assay analyses on Low Grade Oxide Material produced acceptable levels of accuracy and precision.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	The verification of significant intersections by either independent or alternative company personnel has not occurred.
	The use of twinned holes.	There has been no use of twinned holes.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Primary data was collected on a hand held Motion F5te Tablet PC using a set of standard templates supplied by Maxwell Geoservices, Perth (Maxwell). Daily data was synchronised and digitally captured by Maxwell for validation and compilation into Excel and Access spreadsheets and stored on the Cardinal servers located in Bolgatanga, Ghana, West Africa.
	Discuss any adjustment to assay data.	No adjustments were 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.	Accuracy of drill hole collar surveys is +/- 3m using a hand held Garmin GPSmap 62s GPS.
	Specification of the grid system used.	WGS84 Sector 30N, with local grid baseline at 010° True North and lines at 20m to 30m intervals and stations at 10-25m along lines.
	Quality and adequacy of topographic control.	The quality and adequacy of topographic control is +/-3m using a hand held Garmin GPSmap 62s GPS.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Data spacing is 10-25m (northing) and 20-30m (easting).
	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.	The data spacing and distribution is considered to be sufficient to establish a degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.

# Cardinal Resources Limited ABN 56 147 325 620

www.cardinalresources.com.au



Criteria	JORC Code Explanation	Commentary
Orientation of data in relation to geological structure	Whether sample compositing has been applied.	No sample compositing has been applied.
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The orientation of sampling achieves unbiased sampling of possible structures as drilling is orientated normal to the dip and foliation of the deposit.
	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.	No orientation based sampling bias has been identified in the data to date.
Sample security	The measures taken to ensure sample security.	The measures taken to ensure sample security are through an independent Ghanaian security contractor. Samples are stored at Cardinal's base camp located at Bolgatanga, Ghana, West Africa under security until collected by SGS Laboratories and transported to their Ouagadougou laboratory in Burkina Faso.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Sampling techniques are of industry standards. Data is audited by Maxwell Geoservices (Perth), who have not made any other recommendations.

## **Section 2 – Reporting of Exploration Results**

(Criteria listed in section 1 will also apply to this section where relevant)

Criteria	JORC Code Explanation	Commentary	
Mineral Tenement and Land Status	Type, name/reference number, location and ownership including agreements or material issues with third parties including joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Namdini Mining Licence is located in NE Ghana. Namdini Mining Limited (NML) holds the mining licence. NML signed a Heads of Agreement with Savannah Mining Ltd (Savannah) to provide "Mining Support" services to NML. Savannah has signed a Heads of Agreement with Cardinal Mining Services Ltd (CMS) to provide "Mining Support" services in relation to the Namdini Mining Licence.	
	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.	There are no known impediments to offer "Mining Support" services to Namdini Mining Limited within the Namdini Mining licence area.	
Exploration Done by Other Parties	Acknowledgment and appraisal of exploration by other parties.	No previous systematic exploration has been undertaken.	
Geology	Deposit type, geological setting and style of mineralisation	The deposit type comprises gold mineralisation within sheared and highly altered rocks containing sulphides (pyrite and arsenopyrite).	
		The geological setting is a Paleoproterozoic Greenstone Belt comprising Birimian metavolcanics, volcaniclastics & metasediments located in close	

www.cardinalresources.com.au



Cuitania	IODO Cada Familianatian	Commenter
Criteria	JORC Code Explanation	proximity to a major 30 km ~N-S regional shear zone with splays.
		The style of mineralisation is hydrothermal alteration containing disseminated gold-bearing sulphides
Drill hole information	A summary of all information material to the understanding of the exploration results including tabulation of the following information for all Material drill holes:  • Easting and northing of the drill hole collar  • Elevation or RL (Reduced Level – elevation above sea level in meters) of the drill hole collar  • Dip and azimuth of the hole  • Down hole length and interception depth  • Hole length	A summary of all information is contained within this announcement.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	There has been no exclusion of information.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	No weighting averaging techniques nor cutting of high grades have yet been undertaken.
	Where aggregated 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.	Aggregated intercepts incorporating short lengths of high grade will be calculated and will include no more than intervals of 3m below cut-off grades of 0.5 g/t Au.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values were used for this report.
Relationship between mineralisation widths and	These relationships are particularly important in the reporting of exploration results.	The relationship between mineralisation widths and intercept lengths is not yet known.
intercept lengths	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	The geometry of the mineralisation with respect to the drill hole angle is not yet known.
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	Only down hole lengths are reported and true widths of mineralisation are not yet known.
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 plane view of drill hole collar locations and appropriate sectional views.	Appropriate map and plan view are included in this announcement.

# Cardinal Resources Limited ABN 56 147 325 620

www.cardinalresources.com.au



Criteria	JORC Code Explanation	Commentary
Balanced Reporting	Where comprehensive reporting of all Exploration Results is not practical, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	A representative summary of low and high grade results is contained within this announcement.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observation; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	Historical drill results are included in this announcement as an image (Figure 1). These results are the subject of previous announcements to the ASX.  The interpretation of the geological observations shown in Figure 2 is subject to possible change as new information is gathered.
		No geochemical surveys, bulk sampling, metallurgical, mineralogical or geotechnical assessments were undertaken.
Further Work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large – scale step – out drilling).	A combination of reverse circulation and diamond drilling is planned, followed by possible additional ground geophysical surveys depending on the results of the 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.	The plan included shows the possible extent of mineralisation based on geological observations and previous assay results. Future drilling is planned west of the pit to obtain down dip extensions to the ore bodies.

4823-3390-5698, v. 3