

26 August 2014

# HIGH GRADE GOLD, SHALLOW INTERCEPTS AT NAMDINI CONTINUE

# HIGHLIGHTS

- Encouraging results received from another 6 RC drill holes recently completed at Namdini project in Ghana
- Results include:
  - 6m @ 4.50 g/t from 65m vertical
  - 10m @ 4.17 g/t from 47m vertical
  - 5m @ 4.16 g/t from 50m vertical
  - o 2m @ 3.13 g/t from 11m vertical
  - o 3m @ 2.78 g/t from surface
  - o 4m @ 2.62 g/t from 10m vertical
  - o 3m @ 2.49 g/t from 34m vertical
  - 13m @ 1.70 g/t from 51m vertical
  - 18m @ 1.67 g/t from 54m vertical
  - o 13m @ 1.58 g/t from 53m vertical
  - o 29m @ 1.51 g/t from surface
- A further 14 RC holes planned to expand Namdini gold project

**Cardinal Resources Limited** (ASX: CDV) ("Cardinal" or "the Company"), is pleased to announce further encouraging results from part of the Phase II 2,500m RC drilling program at the Namdini gold bearing mining license located within Cardinal's Bolgatanga Project in Ghana.

Extensive mining activities occur all around the Namdini licence attesting to the gold bearing potential of this whole area (Figure 1).

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

"We are very pleased that Cardinal has now completed ahead of schedule, a further part of the Phase II RC drilling program at a greater depth from the previous gold intercepts.

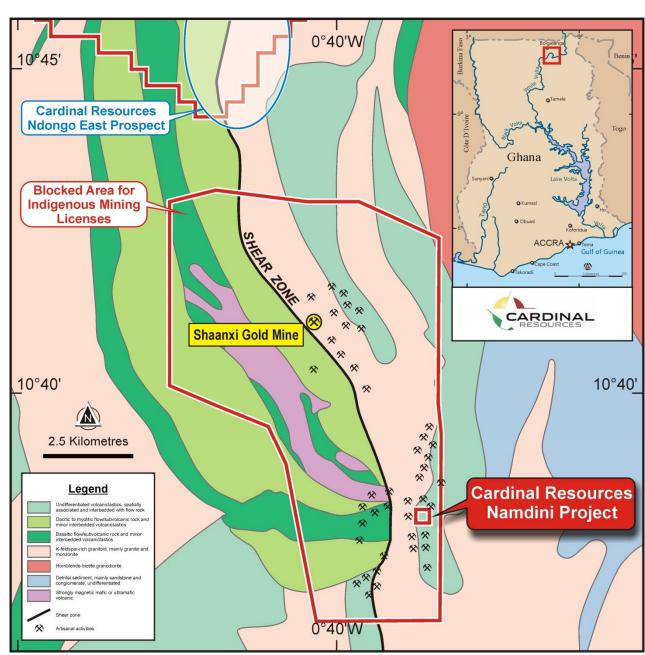
"Very encouraging gold grades deeper than previously drilled have been intersected in all six RC drill holes confirming that a second zone of mineralisation occurs from ~70 to ~100m down hole depths (Table 1).

"These very encouraging results will assist with further drill planning which we anticipate will further expand the gold resources at Namdini".



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

The favourable results from all of the RC drilling to date has prompted the planning of a further 14 RC drill holes at Namdini to confirm continuation of the gold mineralisation both along strike and at depth. Drilling will take place over 24 hours per day with the Company owned drill rig and is expected to be completed by mid-September.



**Figure 1: Namdini Proximity Map** 



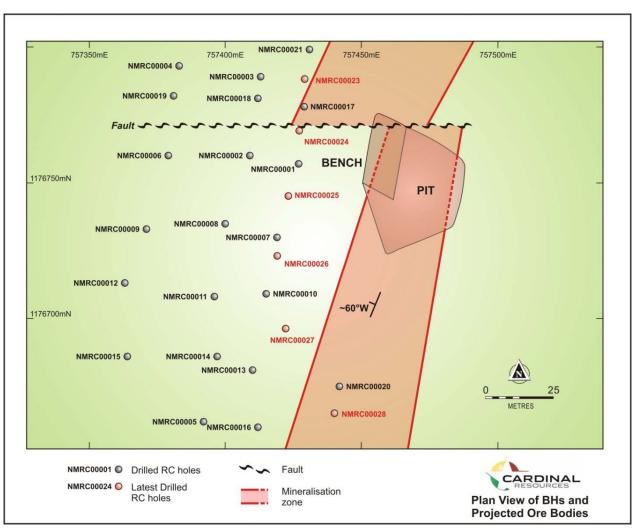


Figure 2: Namdini Plan View of pits, drill holes and projected mineralised ore body

Hole ID	Easting	Northing	Dip	Azim	RL	Length	From	То	Width	Au
	UTM	UTM	(°)	(°)	(m)	(m)	(m)	(m)	(m)	(g/t)
NMRC00023	757429	1176788	-45	100	211	108.00	86	91	5	1.75
NMRC00024	757427	1176769	-45	100	210	106.00	28	42	14	1.26
and							73	86	13	1.70
NMRC00025	757423	1176745	-45	100	211	101.00	67	76	10	4.17
and							92	98	6	4.50
NMRC00026	757419	1176723	-45	100	212	96.00	0	29	29	1.51
and							64	74	10	1.50
and							77	95	18	1.67
NMRC00027	757422	1176696	-45	100	213	94.00	0	3	3	2.78
and							15	19	4	2.62
and							57	62	5	1.80
and							71	76	5	4.16
NMRC00028	757440	1176665	-45	100	217	102.00	16	18	2	3.13
and		·					48	51	3	2.49
and							75	88	13	1.58

**Table 1: Namdini RC Drill Results** 



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#### **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.

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,

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 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 forwardlooking statements.

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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**

### HIGH GRADE GOLD, SHALLOW INTERCEPTS AT NAMDINI CONTINUE

# Section 1 – Sampling Technique and Data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code Explanation	Commentary
Sampling	Nature and quality of sampling (eg cut	Nature and quality of sampling is carried
techniques	channels, random chips, or specific specialised	out under QAQC procedures as per industry
	industry standard measurement tools	standards, with duplicates taken every
	appropriate to the minerals under	22nd sample, while standards and blanks
	investigation, such as down hole gamma	are inserted in the ratio of 1:44.
775	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 is ensured through a
	sample representivity and the appropriate	3 tier riffle splitter, as it provides an
	calibration of any measurement tools or	unbiased sample.
	systems used.	·
	Aspects of the determination of mineralisation	The determination of mineralisation is not
	that are Material to the Public Report.	yet known.
	In cases where 'industry standard' work has	Industry standard reverse circulation
$(,(\cup))$	been done this would be relatively simple (eg	drilling was used to obtain 1 m samples
	'reverse circulation drilling was used to	from which 3 kg was pulverised to produce
	obtain 1 m samples from which 3 kg was	a 50 g charge for fire assay.
	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.	
¥12)	Unusual commodities or mineralisation types	
	(eg submarine nodules) may warrant	
	disclosure of detailed information.	
Drilling	Drill type (eg core, reverse circulation, open-	Reverse Circulation drilling with a standard
techniques	hole hammer, rotary air blast, auger, Bangka,	tube, Remet 5 ½ inch Hard Face (face-
	sonic, etc) and details (eg core diameter, triple	sampling) button drilling bit.
	or standard tube, depth of diamond tails,	
	face-sampling bit or other type, whether core	
7	is oriented and if so, by what method, etc).	
Drill sample	Method of recording and assessing core and	Method of recording and assessing chip
recovery	chip sample recoveries and results assessed.	samples was on a hand held Motion F5te
		Tablet PC using a set of standard
П		templates supplied by Maxwell
		Geoservices, Perth (Maxwell).
	Measures taken to maximise sample recovery	The measures taken to maximize sample
	and ensure representative nature of the	recovery are through a cyclone and a 3 tier
	samples.	riffle splitter. This method ensures
		maximum sample recovery and an unbiased
		representative sample to be assayed.

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Criteria	JORC Code Explanation	Commentary
	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.  The total length and percentage of the	Logging is quantitative. Chip samples are photographed in dry form.
110)	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.



Criteria	JORC Code Explanation	Commentary
	Whether sample sizes are appropriate to the	The sample sizes are considered
	grain size of the material being sampled.	appropriate to give an accurate indication
		of gold mineralization.
Quality of	The nature, quality and appropriateness of the	The pulverized rock sample is weighed and
Assay data and	assaying and laboratory procedures used and	mixed with flux and fused using lead oxide
laboratory tests	whether the technique is considered partial or total.	at 1100°C, followed by cupellation of the resulting lead button (Dore bead). The bead
	total.	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
75		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.
リリ		During combustion, atoms of the gold in the
7		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
TO		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
90		be a total digest of gold.
	For geophysical tools, spectrometers,	No hand held geophysical tools are used.
75	handheld XRF instruments, etc, the	ne nana nela geophysical tools are ascal
	parameters used in determining the analysis	
	including instrument make and model,	
	reading times, calibrations factors applied and	
	their derivation, etc.	Cample propagation charles for finances are
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external	Sample preparation checks for fineness are carried out by the laboratory as part of
	laboratory checks) and whether acceptable	their internal procedures to ensure the
<i>)</i> )	levels of accuracy (ie lack of bias) and	grind size of 85-90% passing 75 micron is
1	precision have been established.	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.



Criteria	JORC Code Explanation	Commentary
		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 22 <sup>nd</sup> 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.  Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	There has been no use of twinned holes.  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.	No down hole surveys were performed.  WGS84 Sector 30N, with local grid baseline at 010° True North and lines at 20m to 30m intervals and stations at 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 25m (northing) and 20-30m (easting).
distribution	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 continuity for this reverse circulation drilling program.

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Criteria	a	JORC Code Explanation	Commentary
		Whether sample compositing has been	No sample compositing has been applied.
		applied.	
Oriento	ation of	Whether the orientation of sampling achieves	The orientation of sampling achieves
data in	relation	unbiased sampling of possible structures and	unbiased sampling of possible structures
to geol	logical	the extent to which this is known, considering	as drilling is orientated normal to the dip
structu	ıre	the deposit type.	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	e 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	Type, name/reference number, location and	The Namdini Mining Licence is located in
Tenement and	ownership including agreements or material	NE Ghana. Namdini Mining Limited (NML)
Land Status	issues with third parties including joint	holds the mining licence. NML signed a
	ventures, partnerships, overriding royalties,	Heads of Agreement with Savannah
	native title interests, historical sites,	Mining Ltd (Savannah) to provide "Mining
((  ))	wilderness or national park and	Support" services to NML. Savannah has
	environmental settings.	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	There are no known impediments to offer
	reporting along with any known impediments	"Mining Support" services to Namdini
	to obtaining a licence to operate in the area.	Mining Limited within the Namdini Mining
		licence area.
Exploration Done	Acknowledgment and appraisal of exploration	No previous systematic exploration has
by Other Parties	by other parties.	been undertaken.
Geology	Deposit type, geological setting and style of	The geological setting is a
	mineralisation	Paleoproterozoic Greenstone Belt
		comprising Birimian metavolcanics,
		volcaniclastics & metasediments located
		in close proximity to a major 30 km ~N-S

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Criteria	JORC Code Explanation	Commentary
		regional shear zone with splays.
		The gold mineralisation occurs within sheared and highly altered rocks containing sulphides (pyrite & arsenopyrite).
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 2m 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 intercept lengths	These relationships are particularly important in the reporting of exploration results.	The relationship between mineralisation widths and intercept lengths is not yet known.
	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.



Criteria	JORC Code Explanation	Commentary
	If it is not known and only the down hole	Only down hole lengths are reported and
	lengths are reported, there should be a clear	true widths of mineralisation are not yet
	statement to this effect (e.g. 'down hole	known.
	length, true width not known').	
Diagrams	Appropriate maps and sections (with scales)	Appropriate maps and plan view are
	and tabulations of intercepts should be	included in this announcement.
	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.	
Balanced	Where comprehensive reporting of all	A representative summary of low and high
Reporting	Exploration Results is not practical,	grade results is contained within this
715	representative reporting of both low and high	announcement.
	grades and/or widths should be practiced to	
	avoid misleading reporting of Exploration	
((I/I)I	Results.	
Other substantive	Other exploration data, if meaningful and	Geophysical results are included as an
exploration data	material, should be reported including (but	image (Figure 1). The interpretation
	not limited to): geological observation;	shown is subject to possible change as
	geophysical survey results; geochemical	new information is gathered.
	survey results; bulk samples – size and method	Interpretation of geophysical data is by
	of treatment; metallurgical test results; bulk	its nature, subject to ambiguity.
40	density, groundwater, geotechnical and rock	
	characteristics; potential deleterious or	No geochemical surveys, bulk sampling,
	contaminating substances.	metallurgical, mineralogical or
		geotechnical assessments were
(( _ ))		undertaken.
Further Work	The nature and scale of planned further work	A combination of reverse circulation and
$(d/\cap)$	(e.g. tests for lateral extensions or depth	diamond drilling is planned, followed by
	extensions or large – scale step – out drilling).	possible additional ground geophysical
2		surveys depending on the results of the
715	Diggrams clearly highlighting the group of	drilling.
	Diagrams clearly highlighting the areas of possible extensions, including the main	The plan included shows the possible
	geological interpretations and future drilling	extent of mineralisation based on geological observations and previous
(( ) )	areas, provided this information is not	assay results. Future drilling is planned
	commercially sensitive.	west of the pit to obtain down dip
~	commercially sensitive.	extensions to the ore body.
		extensions to the ore body.

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