



15th September 2017

ASX Announcement

Predictive Discovery Limited is a gold exploration company with strong technical capabilities focused on a large gold exploration portfolio in West Africa.

ASX: PDI

Issued Capital: 163 million shares

Share Price: 8.0 cents

Market Capitalisation: \$13.0M

Directors

Phillip Jackson
Non-Exec Chairman

Paul Roberts
Managing Director

David Kelly
Non-Executive Director

Joint Venture on Burkina Faso Properties

Predictive Discovery Limited (ASX: PDI) is pleased to advise that it has entered into a joint venture agreement with Canada-based company Progress Minerals International Inc (**Progress**) on PDI's eastern Burkina Faso exploration permits - with the aim of advancing towards a future multi-pit mine development based on the Company's gold prospects. Agreement details include:

- Progress can earn a **70% interest in the project** by funding a **US\$5 million (A\$6.3 million) program of exploration and evaluation** in three stages:
 - US\$1 million expenditure (minimum expenditure) within 1 year to earn 51%.
 - Additional US\$1.5million expenditure by the end of the second year to increase its equity to 60%.
 - Additional US\$2.5 million expenditure by the end of the fourth year to increase its equity to 70%.
- Other aspects of the agreement are:
 - The agreement will commence on 30 September 2017 subject to compliance with one condition precedent viz. Progress demonstrating that it holds US\$1.5 million in cash allocated specifically to the Burkina Joint Venture i.e. exclusive of the funds required to meet the PDI-Progress Cote D'Ivoire Joint Venture commitments and its own operating expenses.
 - If Progress decides not to continue spending money after achieving a 51% equity, it is obliged to offer its entire interest back to Predictive. If a price cannot be agreed, Predictive has the option to dilute Progress's equity down through in-ground expenditure in accordance with a standard dilution formula.
 - Progress will take responsibility for PDI's current Burkina Faso overhead costs.
 - The Joint Venture arrangements will extend to any permits that are granted to either party within an Area of Influence around the current permits (Figure 1).
- The Companies' joint objective is to advance PDI's eastern Burkina Faso prospects as quickly as possible towards a scoping study on a multi-pit mining operation feeding a central mill.
- Progress details – a Vancouver-based private company with strong mine development expertise. Predictive's current JV partner on the Bobosso Project in Cote D'Ivoire.

Mr Paul Roberts, Predictive's Managing Director said: *"We are pleased to work with Progress Minerals in Burkina Faso as we have found them to be a committed, technically competent and very cost-effective partner on our Bobosso Project. We expect that field work in Burkina will commence in the next month and that drilling will be underway by the end of the December Quarter."*

This agreement marks another major step forward in the implementation of PDI's Prospect Generator strategy, which seeks to advance evaluation of our large and highly prospective gold exploration ground position in West Africa while maintaining substantial equities in the best projects and minimising cash outlays."

EASTERN BURKINA PROJECT BACKGROUND

Predictive's current tenement holdings in Burkina Faso are located in the east of the country, and cover approximately 100km of strike length of the Samira Hill greenstone belt in eastern Burkina Faso (Figure 1). This belt hosts the 2.5 million ounce Samira Hill gold deposit across the border in Niger and contains numerous active artisanal gold mine sites along its length. PDI currently owns 100%, or has the rights to earn 95% to 100% of all its permits in Burkina Faso. PDI has discovered gold mineralisation on multiple prospects in Eastern Burkina Faso area (Figure 1).

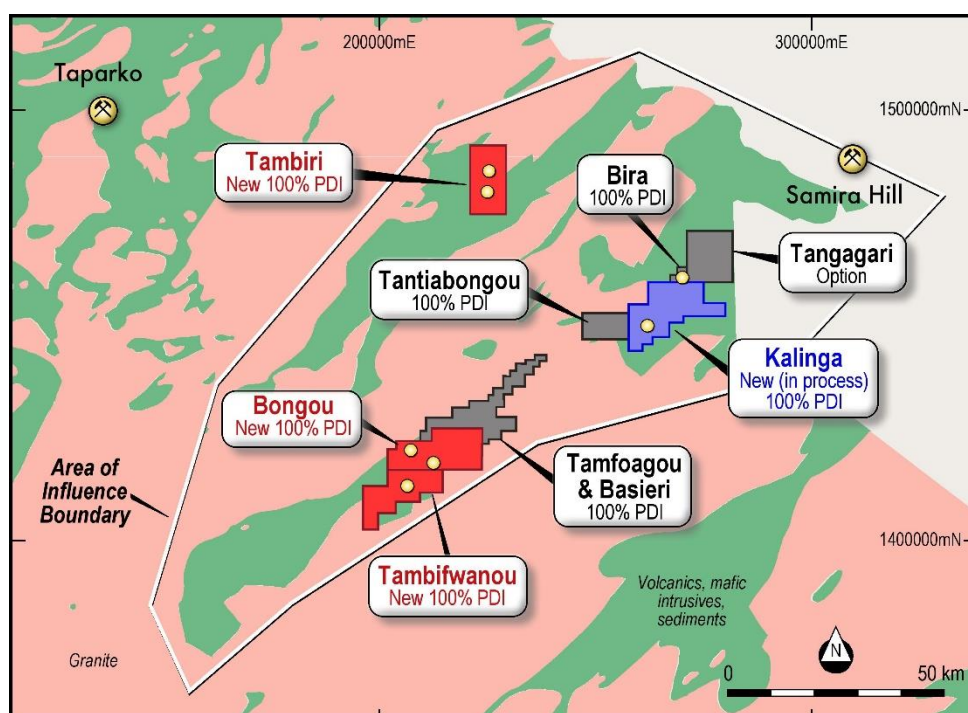


Figure 1: Locality map of PDI permits in eastern Burkina Faso, showing the Company's permits on a geology background. Red coloured polygons are new permits replacing old permits which reached the end of their terms in July 2017. The blue polygon is the Kalinga permit for which fees have now been paid (and therefore formal grant of the new permit grant is expected soon). Apart from Bira, these four new permits cover all the key gold prospects explored by PDI (yellow dots). The grey polygons are older permits also held by Predictive

Bongou Area (Bongou and Tambifwanou Permits – Figure 1)

In recent years, PDI's focus in Burkina Faso has been on the high-grade Bongou gold discovery (100% PDI, Figures 2 and 3) and the immediate surrounding area. Information about key prospects in this area follows.

Mineral Resource Estimate – Bongou

In September 2014, a formal Mineral Resource Estimate on Bongou resulted in 184,000oz of gold in the Inferred and Indicated Mineral Resource categories with an average grade of 2.6g/t Au,

including 136,000oz at 3.8g/t Au (ASX release dated 4 September, 2014). Details of this estimate are tabulated as follows:

	Indicated Resources			Inferred Resources			Total Resources		
Cut-off grade (g/t Au)	Million tonnes	Au (g/t)	Ounces	Million tonnes	Au (g/t)	Ounces	Million tonnes	Au (g/t)	Ounces
0.4	1.21	2.54	99,000	1.33	2.13	91,000	2.55	2.32	190,000
0.8	1.14	2.67	98,000	1.09	2.48	86,000	2.22	2.58	184,000
2.0	0.64	3.64	75,000	0.49	3.90	61,000	1.13	3.75	136,000
3.0	0.34	4.68	52,000	0.28	4.95	45,000	0.62	4.80	96,000

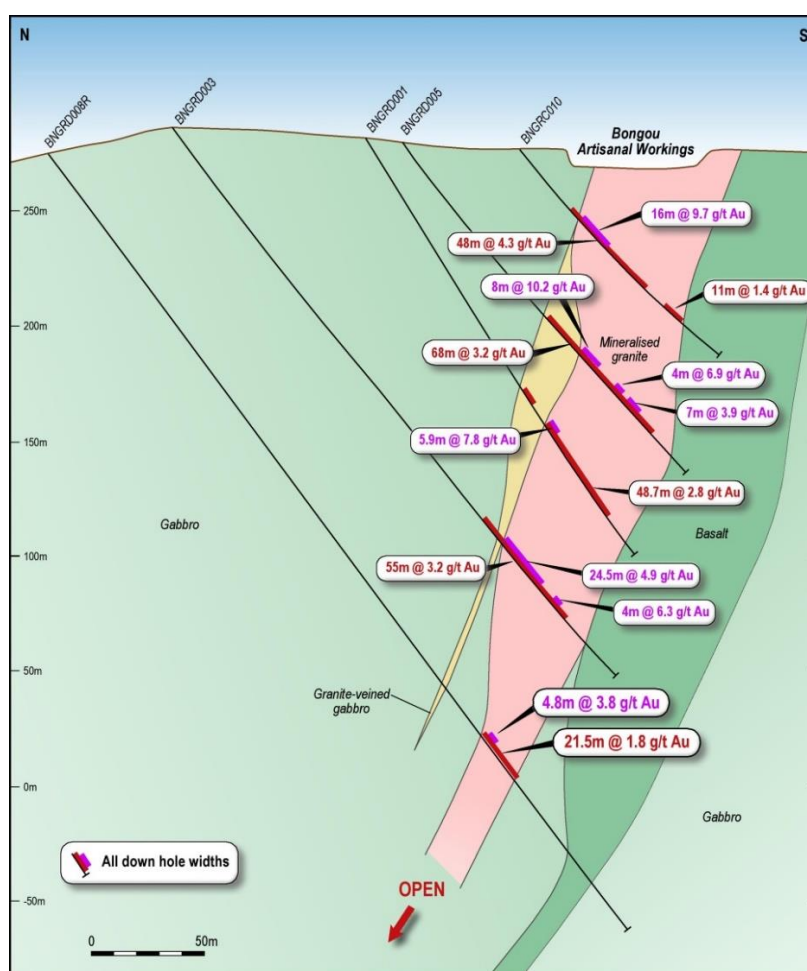


Figure 2: Cross Section through drill holes BNGRC010, BNGRD001, BNGRD003, BNGRD005 and BNGRD008R, Bongou Prospect. No vertical exaggeration. Only down-hole widths are shown on this cross-section. Intervals marked in dark red are calculated at a 0.5g/t Au cut-off and in magenta at a 3g/t Au cut-off. Assay data reported in PDI's ASX releases dated 2nd December 2013, 16th December 2013, 20th March 2014 and 1st April 2014.

The Mineral Resource estimate was undertaken by Golder Associates, an internationally recognised mining consultancy. Highlights of the estimate included:

- The Bongou deposit is intrinsically high grade, because:

- There is very little difference in contained ounces between the 0.4g/t Au cut-off and the 0.8g/t Au cut-off grades, and
- Over 70% of the resource ounces are retained when the cut-off grade is raised from 0.8g/t Au to 2.0g/t Au, with a high average grade of 3.75g/t Au.
- The bulk of the estimated resources are contained in one mineralised granite body, which is thick in the near surface and appears to taper to the east.
- The shape of the mineralisation lends itself to a simple open pit mining operation, with high-grade mineralisation in the near surface position, which would suggest the possibility of early strong cash flow in a future mining operation.
- Gold grades are associated with pyrite-bearing altered granite, which is very visibly distinct from the adjacent low grade gabbro, suggesting that dilution can be minimised quite easily by standard grade control practice.
- Previously reported metallurgical work on a composite sample of primary gold mineralisation from Bongou gave a 94% gold recovery from a standard 75 micron grind, 72 hour cyanidation test (ASX release dated 14th May 2013¹) suggesting that gold recoveries from mining this deposit would be very high.

Exploration Target Near Bongou

The Company also calculated an Exploration Target on drilled prospects exclusive of but within 10km of the Bongou gold deposit (ASX release dated 3/9/15). The Exploration Target detailed in the following table is estimated to be in a range of 9.4 to 10.4 million tonnes averaging between approximately 1.5 to 1.7 g/t Au and containing approximately 460,000 to 563,000 ounces of gold, as follows:

Prospect Names (see Figure 3 for locations)	Million Tonnes		Grade		Ounces Gold	
	Lower estimate	Higher estimate	Lower estimate	Higher estimate	Lower estimate	Higher estimate
Dave	6.71	7.41	1.49	1.65	322,000	394,000
Laterite Hill	1.48	1.63	1.62	1.79	77,000	94,000
Near Bongou (W2/W8)	0.27	0.30	1.57	1.74	14,000	17,000
Prospect 71	0.68	0.75	1.21	1.33	26,000	32,000
Target 92	0.23	0.26	2.88	3.18	21,000	26,000
Totals	9.37	10.35	1.53	1.69	460,000	563,000

The potential quantity (tonnage) and grade of the Exploration Target is conceptual in nature. There has been insufficient exploration to estimate Mineral Resources and it is uncertain if further exploration will result in the estimation of Mineral Resources.

¹ This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

The calculation was restricted to prospects for which there is good evidence of mineralisation orientation and continuity. Most of these prospects are open along strike and at depth. Some other isolated gold intercepts within 10km of Bongou were excluded, so there is significant potential to expand the Exploration Target further within range of PDI's own drilling.

Additionally, PDI's extensive ground holdings in Eastern Burkina Faso hold other significant prospects for which Exploration Targets could be calculated.

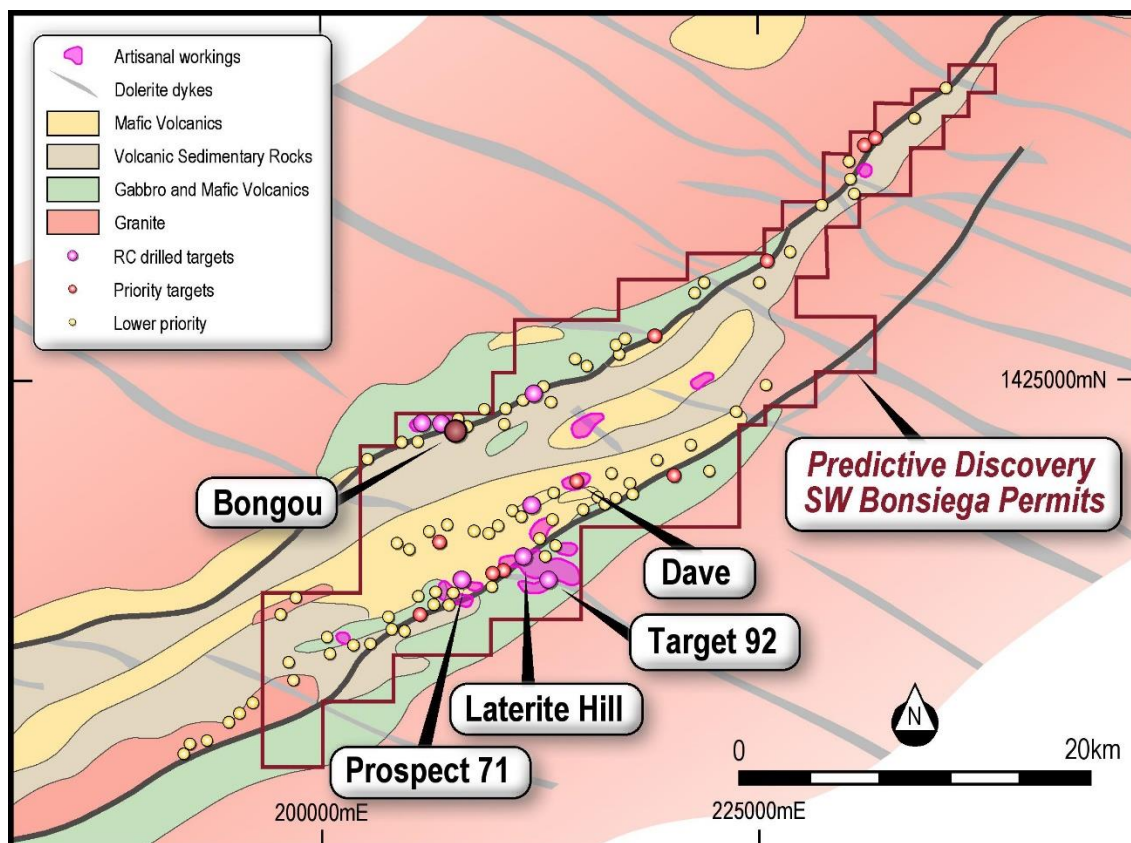


Figure 3: Outline of PDI permits near Bongou, showing the Bongou gold deposit and prospects which are included in the Exploration Target.

Data and parameters used in calculating this Exploration Target were as follows:

- Data:
 - Gold intercepts from 291 reverse circulation holes, 4 air core holes and 5 diamond drill holes² were used in the calculation.
 - The holes were mostly drilled on lines spaced from 50m to 100m apart, with a spacing along the lines ranging from 10m to 50m.
- Parameters:

² These drilling results were reported to the ASX in the following Quarterly Reports: June Quarter 2011, March Quarter 2012, June Quarter 2012, March Quarter 2014 and June Quarter 2015. The drill results reported in these Quarterly Reports up to the June Quarterly of 2012 were prepared and first disclosed under the JORC Code 2004; they have not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

- 0.5 g/t gold cut-off grade;
- Minimum internal waste of 3m except for a few holes where it was clear that the holes had drilled almost down-dip and where the inclusion of larger down-hole intervals of internal waste made geological sense;
- Minimum downhole intercept width of 2m and a minimum grade times width intercept of 2g*m;
- Maximum of 100m strike extent from drill holes (where the continuity of the mineralisation is supported by mapping and/or the location of artisanal workings and/or anomalous auger results);
- Maximum of 70m vertical extent below surface;
- Dry bulk density estimates as follows:
 - Laterite: 2.2
 - Saprolite: 1.8
 - Weathered rock between base of saprock and base of complete oxidation (BOCO): 2.3
 - Fresh mafic volcanics: 2.8
 - Fresh felsic to intermediate rocks including granite and granodiorite: 2.7
- The calculation was carried out using a cross sectional method with volumes projected half way to the next hole (on the section) or half way to the next section to a maximum distance of 100m (along strike).

The largest component of the Exploration Target was derived from the Dave Prospect where multiple mineralisation zones have been intersected over a strike length of 3km (Figure 4).

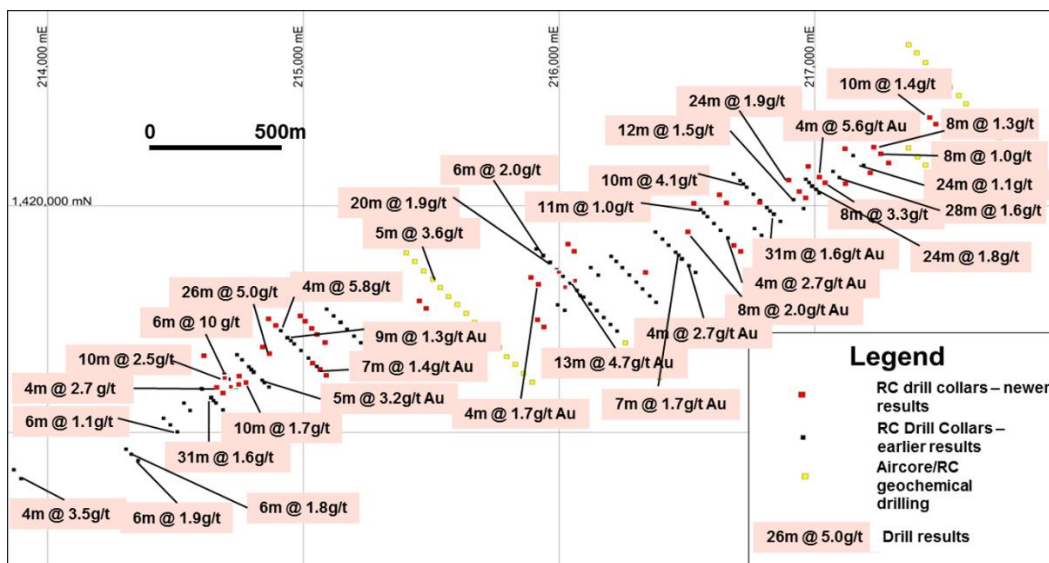


Figure 4: Plan view showing better drill intercepts in the Dave Prospect (Figure 3). Results released to the ASX in Quarterly Reports of September 2011, March 2012, June 2012, September 2012. This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

Additional Potential

Most of the zones of gold mineralisation included in the Exploration Target are open at depth and along strike. In addition, there are a series of other mineralised intercepts within the immediate Bongou area which have potential for resource discovery either along strike or at depth.

Other Prospects

Tambiri and Solna Prospects (Tambiri Permit – Figure 1)

Tambiri Prospect

Gold mineralisation at Tambiri consists of multiple quartz veins within a steeply dipping sheared zone in steeply dipping altered mafic volcanics. Higher grade gold values are associated with base metal sulphides (sphalerite, galena and chalcopyrite). Mineralisation continuity is generally good (Figure 5).

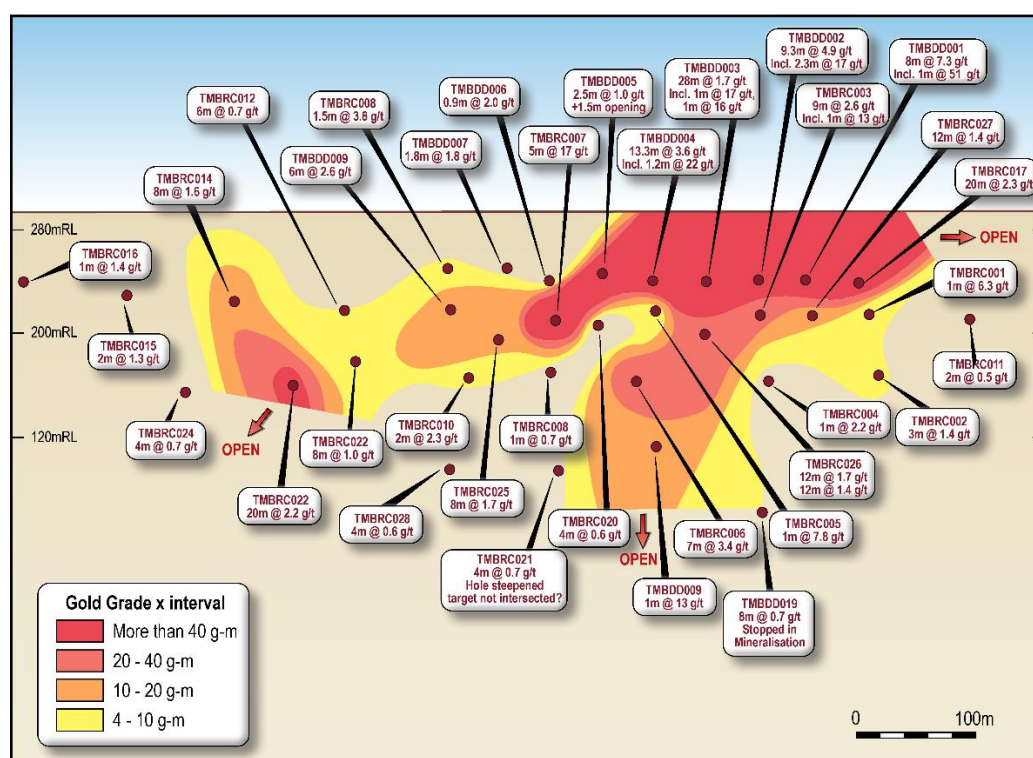


Figure 5: Longitudinal projection through the well drilled portion of the Tambiri shear zone (ASX releases in Quarterly Reports of June 2011, December 2011, March 2012, June 2012. This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported

Solna Prospect

Gold mineralisation at Solna consists of a series of shallowly plunging high grade shoots within moderately south dipping shear zones through a granodiorite. Mineralisation continuity is less clear than at Tambiri and requires close spaced drilling to resolve.

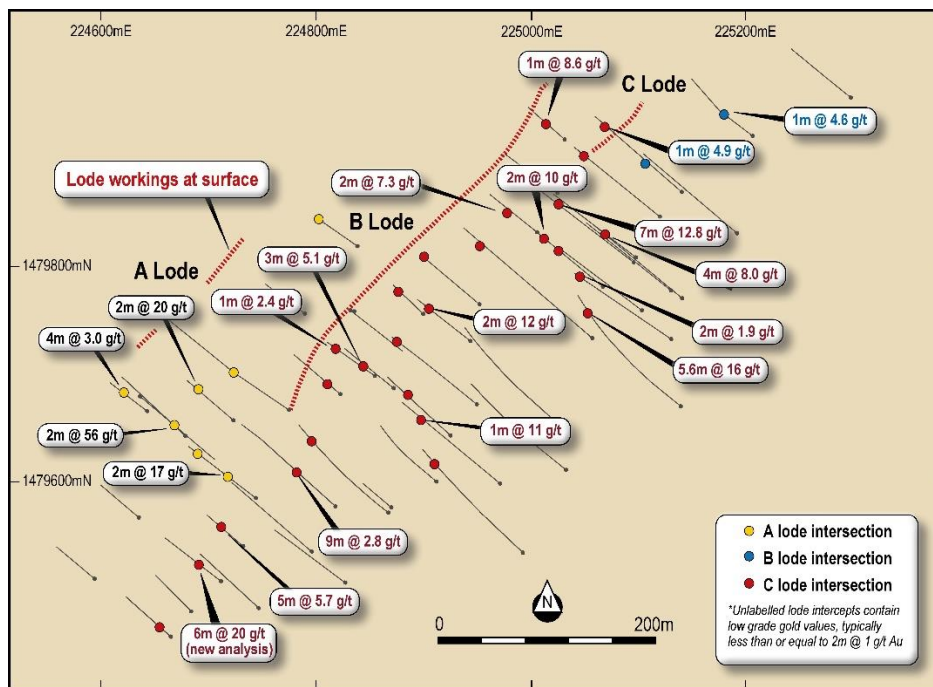


Figure 6: Plan view of drill results from the Solna Prospect. Results were released to the ASX in Quarterly Reports of June 2011, December 2011, March 2012, June 2012, March 2013. This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported

Bira Permit (Figure 1)

The area was explored by Anglo American through its subsidiary Anmercosa in the late 1990's. PDI holds a database of Anmercosa information including soil geochemistry and RC drill data from the Bira permit. The RC drill data includes a series of very encouraging gold intersections (Figures 7 and 8). While PDI does not have access to the quality control data and the original laboratory assay files, it has verified the location of some of the drill holes on the ground.

Gold mineralisation was intersected in a series of holes extending over more than 1km of strike. Some of the best intercepts (e.g. **14.5m at 3.1g/t Au** and **13m at 2.5g/t Au**) were obtained from multiple, closely spaced ore zones in a series of shallow angled holes in two lines in the HL10 series of holes (Figures 7 and 8) which were drilled to depths of 15 to 30m.

The consistency of reported intercepts both from section to section and down-dip from hole to hole in the southern part of the drilled area suggests good continuity, which, if confirmed by future drilling, will be important for the future resource inventory.

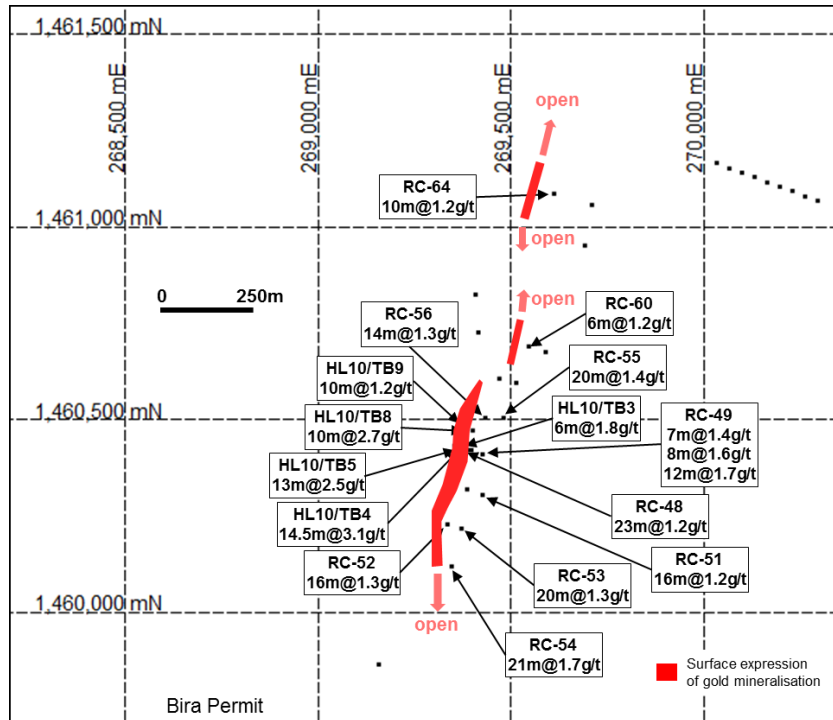


Figure 7: Historical drill results from the Bira permit, Burkina Faso (ASX release 25/1/13).

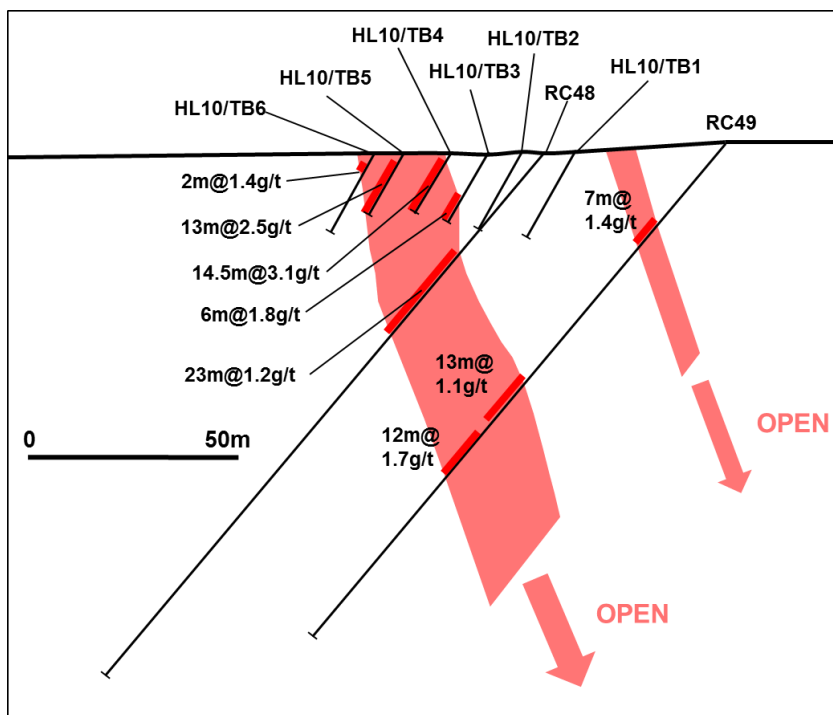


Figure 8: Cross section through historical gold intercepts, Bira prospect, Burkina Faso (ASX release 25/1/13).
No vertical exaggeration.

NEXT STEPS

Predictive and Progress technical personnel will visit the project area in the next two weeks, prior to finalising detailed exploration plans. Exploration work will follow shortly thereafter, and the commencement of drilling is planned by the end of the December Quarter.

PROGRESS MINERALS BACKGROUND

Progress is a private, Vancouver based, precious metals focused company, which aims to find and develop mid-sized gold assets in West Africa.

The management and directors of Progress have been responsible for the discovery, exploration, permitting, development and operation of multiple mining projects globally, including projects within East and West Africa. Summary CVs are as follows:

Karl van den Brenk – President & CEO, Director

Mining Executive with 25 years expertise in exploration, construction, mining operations and mine management. Strong career experience in remote mine development. International experience: Australia, Africa, Latin America & Asia. Mr van den Brenk was the co-founder and Managing Director of the STRACON Group in Latin America.

Scott Ansell – VP Corporate Development, Director

Mining Executive with 25 years expertise in project management, feasibility studies, permitting and mining finance. Mr. Ansell worked most recently with Sunridge Gold Corp as VP Project Development on the successful Asmara Project in Eritrea. Mr Ansell was previously Technical Director of Studies and Manager of Consulting, Geology and Mining for AMEC Americas. He has previous experience in Africa with Nevsun Resources as Project Manager in Mali and Eritrea.

K. Kirk Woodman – VP Exploration

Geologist with more than 30 years of mining industry experience, focused on gold with expertise in exploration, mine development, feasibility studies and mining operations including experience in Africa and North America. He is a registered professional geoscientist (P.Geo. APEGNL). His most recent role was as VP Geology with Endeavour Mining and previously as the Exploration Manager for Etruscan Resources.

Doug Reddy – Director

Mining Executive with 30 years international expertise in exploration, resource and business development and investor relations. He is a registered professional geoscientist (P.Geo. APEGBC). His most recent African role was as Executive VP Business Development with Endeavour Mining; and a key member of the team which fast-tracked four mines into production in West Africa over the past 5 years. Mr Reddy is the Senior Vice President - Technical Services for Leagold.

Tony Carr – Director

Executive with 30 years extensive investment and business management experience in the mining, exploration, civil, power generation, agriculture and transport sectors. Mr Carr was a founder and CEO of MonuRent, an African focused equipment rental business and is now the CEO of StarSight Power Utility Limited, a new Pan-African Sustainable Energy Company.

Predictive Discovery Limited (PDI) was established in late 2007 and listed on the ASX in December 2010. The Company is focused on exploration for gold in West Africa. The Company operates in Burkina Faso, West Africa where it has assembled a substantial regional ground position covering 1,000km² and is exploring for large, open-pittable gold deposits. Exploration in eastern Burkina Faso has yielded a large portfolio of exciting gold prospects, including the high grade Bongou gold deposit on which a resource estimate was calculated in September 2014. PDI also has interests in a large portfolio of permits and permit applications in Côte D'Ivoire covering a total area of over 6,000 km².

Competent Persons Statement

The exploration results reported herein, insofar as they relate to mineralisation are based on information compiled by Mr Paul Roberts (Fellow of the Australian Institute of Geoscientists). Mr Roberts is a full time employee of the company and has sufficient experience relevant to the style of mineralisation and type of deposits being considered to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Roberts consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The Mineral Resource estimation and classification of Mineral Resources for the Bongou deposit is based on, and fairly represents, information and supporting documentation compiled by Mr Richard Gaze. Mr Gaze is a full-time employee of Golder Associates Pty Ltd and a Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy. Mr Gaze has sufficient experience that is 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 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (2012 Edition). Mr Gaze consents to the inclusion of the estimates, classification and the supporting information in the form and context in which it appears.

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