**ASX** Release

# Quarterly Activities Report for period ending 30<sup>th</sup> March 2017

## Highlights

Double Magic Project Ni & Cu – West Kimberley

- 3D geological interpretation and drill plan completed
- Program of Work (POW) approved for upcoming 10,000m combined RC and diamond drill program
- Site visit to consult with pastoral operators regarding access arrangements for the upcoming season and monitor the wet season completed
- Drill contractor engaged
- Staff, contractors and equipment ready to mobilise (currently waiting on the end of the northern Australian wet season)
- Site works expected to commence May 2017

#### **Corporate**

- Cash balance (31 December 2016) of approximately \$1.47 million
- Stuart Fogarty appointed to the Board



#### Double Magic Ni & Cu – West Kimberley

Buxton confirmed that the most attractive exploration target at Double Magic is a primary magmatic Ni-Cu sulphide deposit. Conceptually, this is likely to be a core of high-grade stringer or net-textured sulphides within a larger disseminated envelope (see Figure 1 below). Remobilised massive sulphide veins may or may not be present anywhere within several hundred metres.

Figure 1 – Disseminated primary Ni-Cu sulphides in hole DMDD001 (56.37-56.53 metres, HQ3 61mm diameter) at the Merlin Prospect. This mineralisation is non-conductive and cannot be detected by TEM.



Previous electrical surveys in the region have been confined to various types of Transient Electro-Magnetic (TEM) surveys such as VTEM, FLTEM and DHTEM. These surveys have effectively detected highly conductive but thin veins of remobilized massive sulphide at Double Magic. Critically however, TEM may not detect high-grade but much less conductive stringer or net-textured "massive matrix" sulphide zones or pods, and will not detect disseminated sulphides, which have been found to be completely non-conductive.

Benchtop testwork on Buxton's 2015 drillcore indicates even high-grade (>3% Ni) nettextured sulphide zones are only around 1/20th as conductive as the thin massive sulphide veins. The risk that extreme EM responses from remobilised massive sulphide veins could mask any response from primary Ni-Cu sulphides is considered by Buxton to be substantial, and real.

Induced Polarisation/Resistivity (IP) surveys measure electrical chargeability and resistivity properties of the rock mass, unlike TEM, which measures conductivity. Therefore, IP will detect the demonstrably chargeable disseminated, stringer, or net-textured zones but will not "see" distracting highly conductive bodies such as massive sulphide veins or graphite, for example.

Buxton chose to proceed with a ground-breaking IP survey at Double Magic because it has been recognized that the main exploration target type - primary magmatic sulphides - may not be detected by TEM, the only electrical survey technique applied in the region to date. Buxton's pioneering use of IP represents a paradigm shift for exploration in the West Kimberley. This IP survey is using some of the highest powered transmitters available as part of a complex array laid out over approximately 67 kilometres of transmitting and receiving lines.



Results from the Induced Polarisation (IP) survey are considered by Buxton to be outstanding.

This work has detected a previously unknown, very large body of moderately chargeable material at depth, beneath the entire Merlin prospect. The body appears to be >2 km long and at least several hundred metres across, ranging in depth between ~60 to 400m below surface. Adding to potential, this body appears to plunge down and be open beyond 500m depth at the eastern end, possibly indicating a magmatic feeder zone (see Figure 2).

At this early stage, Buxton considers that supporting surface and drillhole geochemistry, supporting geology, geometry and location of the body, as well as the structural/tectonic setting all indicate that the chargeable body will prove to be related to Ni-Cu sulphides within the Ruins Dolerite.



Figure 2 – Merlin IP survey volume looking north-east, chargeability iso-surface 20 mV/V displayed, topography above, horizontal model slice displayed at base is ~530m below surface (-420RL)

So far, only two drillholes have intersected this chargeability anomaly, being DMRC0004 and DMDD0003 drilled under Conductor C in 2015. Both holes may have just intersected the very top of the chargeable body (see Figure 3), returning intersections of;

- 18 metres @ 0.51% Ni, 0.21% Cu (DMRC0004 152-170m downhole, reported 2/11/15), and;
- 9.6 metres @ 0.59% Ni, 0.21% Cu (DMDD0003 142.4-152.0m downhole, reported 27/11/15).



Figure 3 – Cross-section looking north-west showing chargeability iso-surface 20mV/V with drilling

This chargeable body may represent a large volume of mafic rock which is prospective for accumulations of nickel-copper sulphides. It exhibits irregular geometries in places, which may further enhance potential for sulphide accumulations.

Buxton reminds readers that this chargeability anomaly could represent a number of different geological entities, such as;

- Mafic rock with variable grade nickel-copper sulphide mineralisation
- Disseminated magnetite within later mafic rocks, or within surrounding schists, or
- Some other mass of chargeable rock of an unexpected nature.

However, considering the supporting surface and drillhole geochemistry, size, location, geometry, lack of magnetic expression of the body, possible geological model/s as well as the structural and tectonic setting, it is Buxton's opinion that that the chargeable body will prove to be a reflection of nickel-copper sulphides within a large volume of Ruins Dolerite.

The contraction and focussing to depth of the chargeability anomaly at the eastern end, extending beyond the depth of investigation, may suggest a magmatic feeder chamber to the more flat-lying portion. Importantly, previous shallow drilling targeting TEM conductivity anomalies appears to have largely missed these deeper targets.

Buxton believes this survey has dramatically enhanced the prospectivity of Double Magic for magmatic nickel-copper sulphide deposits and added a massive amount of information to the evolving 3D geological picture. These results have also validated the innovative use of high-power 3D IP at Merlin.



#### **Outcropping Ni-Cu Sulphides supports IP Results**

As part of the extensive work program carried out at Double Magic during the 2016 field season detailed mapping and rock chip sampling defined nickel-copper sulphides in outcrop with a strike length of over 700m (Figure 4). This nickel-copper sulphide zone is directly up dip from the 2015 drilling at Conductor D and also interpreted to be directly related to the recent IP chargeable anomaly (announced 24/10/2016). Additional nickel-copper mineralisation was also identified at surface on Conductor C.

All geological indications are pointing towards potentially a much larger Ni-Cu mineralised system existing than was previously understood at Double Magic. The surface mineralisation extends the strike length of the Conductor D mineralisation from ~65m in drilling to over 700m on surface. The occurrence of this mineralisation adds confidence to the interpretation that the IP chargeability anomaly represents a large disseminated Ni-Cu sulphide target, with the top of the IP anomaly ranging from 60m to 100m from surface.



Figure 4 – Plan view of 2016 rock chip assay results Ni (ppm), highlighting ~700m strike of Ni-Cu sulphides in outcrop up dip from the drilling at Conductor D, showing the recently defined IP chargeability anomaly (20mV/V)

#### **Comment: Eamon Hannon, Managing Director**

"The Double Magic project has ticked all the key technical criteria required to host a large sulphide body. The Buxton team believes that we could have a tiger by the tail and all of the work to date suggests there is a high possibility for a significant Ni-Cu deposit to exist at our Double Magic project. We are eagerly awaiting access to drill test this exciting Project"





Figure 5 – Location of Buxton's two West Kimberley projects, also showing the location of Panoramic's Savannah Ni-Cu Mine

#### Northampton

During the quarter the Company relinquished all tenement holdings in the Northampton region of Western Australia.

#### **Corporate**

On 15 March 2017, Buxton announced the appointment of Mr Stuart Fogarty as an independent Non-Executive Director of the Company.

Buxton continues to meet all necessary expenditure needs and is, per usual, operating with demonstrable financial constraint and responsibility. Cash balance as at 31 March 2017 was approximately \$1.47 million.

For further information please contact:

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## **Competent Persons**

The information in this report that relates to exploration results and geology for the Double Magic Project is based on information previously reported under the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves based on information compiled by Mr Mark Glassock, Member of the Australasian Institute of Mining and Metallurgy, and Mr Derek Marshall, Member of the Australian Institute of Geoscientists. Mr Glassock is an Independent Consultant to Buxton Resources Limited and Mr Marshall is a full-time employee. Mr Glassock and Mr Marshall have sufficient experience which is relevant to the activity being undertaken to qualify as a "Competent Person", as defined in the 2012 edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Forster and Mr Marshall consent to the inclusion in this report of the matters based on the information in the form and context in which it appears.



# Appendix 1: Changes in interests in mining tenements - Buxton Resources Ltd 01/01/17 – 30/03/17

	Tenement	Location	% at beginning of quarter	% at end of quarter
Interests in mining	E66/87	Northampton	100	0
tenements relinquished,	E66/88	Northampton	100	0
reduced or lapsed	E70/4730	Northampton	100	0
	E66/90	Northampton	100	0
	E66/91	Northampton	100	0
	E66/92	Northampton	100	0
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Interest in mining	E28/2620	Fraser Range	0	100
tenements acquired or				
increased				
	E 28/2201	Widowmaker	10	10
	E 28/1959	Zanthus	10	10
The mining tenements held at				
the end of the quarter and	E 63/1595	Dempster	100	100
their location	E 63/1582	Dempster	90	90
	E 63/1720	Dempster	100	100
	ELA63/1675	Dempster	100	100
	ELA63/1676	Dempster	100	100
	ELA63/1677	Dempster	100	100
	ELA63/1685	Dempster	100	100
	ELA63/1686	Dempster	100	100
	ELA63/1687	Dempster	100	100
	ELA63/1688	Dempster	100	100
	E09/1985	Yalbra	100	100
	E09/1972	Yalbra	90	90
	E09/2101	Yalbra	100	100
	ELA77/2237	Yilgarn	100	100
	ELA77/2238	Yilgarn	100	100
	E04/1533	Derby/West Kimberley	100	100
	E04/2026	Derby/West Kimberley	100	100
	E04/2060	Derby/West Kimberley	100	100
	E04/2142	Derby/West Kimberley	100	100
	E04/2408	Derby/West Kimberley	100	100
	E04/2406	Derby/West Kimberley	100	100
	ELA04/2407	Derby/West Kimberlev	100	100
	E04/2411	Derby/West Kimberley	100	100
	P04/269	Derby/West Kimberley	100	100

Abbreviations and Definitions used in Tenement Schedule:

E Exploration Licence

ELA Exploration Licence Application

P Prospecting Licence