



**Daylight Jack Minerals  
Miss Devine**

**Kirkimbie Diamond  
Project**

**Annual Report - 2018**

**ELS: 30219, 29803, 30655, 30657. GR467**

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## 1. Executive Summary

The Kirkimbie project consists of four granted Exploration Licenses, EL 30655, EL 30657, EL 30219 and EL 29803 (Figure 1).

Previous exploration within the area of EL is limited to early reconnaissance work by major mining companies over a period of several years. Regional scale stream sediment, soil and rock chip sampling has been periodically completed since the late 1970s for diamonds and minerals.

Daylight Jack Minerals Pty Ltd first pass reconnaissance geological mapping and soil /rock chip sampling was completed in August 2010. Target areas for on-ground follow-up were identified from a review of historical exploration data and an interpretation of the area based on airborne geophysical survey data. Since 2010 soil / rock chip sampling programs were completed between 2014 to 2018. The soil / rock chip sampling programs completed over the area were both selective and systematic in nature, in order to obtain an indication of mineralisation.

This report covers the exploration activities on the tenement and details the outcomes of a soil / rock chip sampling program completed in June 2018 (Figure 2 and 3). This year's program was based on target areas determined by previous assay results and findings from the last two years of field exploration and focused on a number of di-pole targets selected from airborne magnetic survey modelling (Figure 2).

The area has exploration potential for rare-earth-elements (REE), particularly cobalt (Co), copper (Cu) and nickel (Ni) however the work programmes are contingent on the completion of work and positive indications of mineralisation within the granted area of ELs.

## 2. Location and Area

The Daylight Jack Minerals Pty Ltd Kirkimbie project is located 150km south southeast of the Argyle Diamond Mine and 50km south west of Rio Tinto's Victoria River Diamond Project (Figure 1). The project is located approximately 230km west of the nearest town Kalkarindji.

### Tenement Summary

Title ID	Granted Date	Area SqKm	Area Units
EL30219	2014-10-13	42.48	13
EL30657	2015-09-09	39.18	12
EL29803	2013-09-24	725.51	22
EL30655	2015-10-20	0	138

## 3. Geology

The Kirkimbie Project lies in the Palaeoproterozoic to Mesoproterozoic aged Limbunya Basin and the southern part of the Neoproterozoic aged Victoria Basin.

EL 30655, EL 30657, EL 30219 and EL 29803 lie within the Limbunya Basin sediments. The Paleoproterozoic Limbunya Group consist principally of sandstone, siltstone, mudstone and dolomitic rocks with minor water-laid tuff horizons. These tuff horizons have been dated at 1635 Ma for the Blue Hole Formation. Interestingly, these dates are very similar to dates on volcanic pipes in the microdiamond bearing Coanjula area kaersutite xenocrysts dated at 1665 Ma.

Geology of the Kirkimbie project area comprises of principally of Cenozoic cover but with some outcrops of Paleoproterozoic Stirling Formation quartz arenites.

## 4. Project History

The project had been the subject of extensive exploration by BHP in the 1990s. The program involved widespread regional stream sediment and soil sampling. Two (2) samples contained possible kimberlitic chromite. Three (3) magnetic targets were drilled on Daylight Jack Minerals Pty Ltd current EL's, but no Kimberlite was intersected. One (1) microdiamond was found in Moonbool Creek by Rio Tinto in the 1980s.

Two companies; AusQuest and Gravity Diamonds held leases and have reported on the area covered by the Kirkimbie Project however no significant exploration has taken place in the previous 15 years.

In 2008 Grant Boxer completed an assessment on the kimberlite or lamproite potential of the Kirkimbie project for Daylight Jack Minerals Pty Ltd. This work compiled significant historical information for the surrounding area. Identified were six (6) AusQuest di-pole targets for follow up and involved a review of the available regional aeromagnetic data. From this work seventeen (17) magnetic anomalies were identified and considered potentially significant kimberlite or lamproite targets.

In early 2013 Daylight Jack Pty Ltd conducted a high resolution aeromagnetic survey over ELs 29803, 30655, 30657 and 30219. This data was processed for targets that may represent kimberlite or lamproite. Six (6) di-pole targets (Figure 2) were selected for ground inspection, with ground magnetic surveys recommended for those targets that are unexplained after surface inspection.

The exploration program completed in July 2015 involved over 3.5km traverse of Moonbool Creek and systematic sampling of di-pole targets. Results indicate anomalous values of chromium (Cr), cobalt (Co), barium (Ba), manganese (Mn), and iron (Fe) compared to background values elsewhere in the region.

The assay results from a geochemical soil / rock chip sampling programme completed in 2016 on EL 29803 found anomalous values of Cr, Pb, Cu, Co, As, Ga, P, Sr, Th and V. And of particular interest niobium (Nb).

For EL 30655 to detect mineralization in basement rocks below a substantial thickness of sediment cover (>50m), a systematic grid soil sampling traverse was completed along strike length of a north-south trending dyke that was identified from recent airborne magnetic survey. The results of the grid soil sampling included anomalous assay results for Cu, Pb and Co.

## 5. History of Exploration

### DIM Database Information

The area has experienced three main periods of diamond exploration: - in the early 1980s the early 1990s, and more recently, in the early 2000s. Exploration has followed the conventional sampling programs of regional stream-sediment sampling for indicator heavy mineral content, followed with aeromagnetic follow-up. Large areas of the project area are underexplored and have been sparsely sampled.

## Open File Reports (Post DIM version DIP 006)

In the NT open file records, no significant diamond exploration has been recorded over these tenement areas within the last 10 years. Exploration companies, AusQuest and Gravity Diamonds have reported on the area but no field work was completed. AusQuest was exploring predominantly for base-metals, whereas Gravity Diamonds were exploring for diamonds.

## Geophysics

The project area is covered by regional scale aeromagnetic survey flown by the NTGS. The Limbunya map sheet was flown in 1995 by the NTGS at a line spacing of 500m and the Birrindudu and Waterloo sheets were flown in 1997 and 2001 respectively at 400m line spacing on north-south lines. Two company surveys, the Inverway and Napier surveys were flown by BHP in 1984. The area is covered by regional 10km spaced gravity data survey.

Stockdale Prospecting reviewed the NTGS aeromagnetic data and although they selected targets, none appear to have been followed-up in the field.

Interpretation and modeling of aeromagnetic data was completed by eminent geophysicists, Jayson Gregg and Frank Lindeman. This information has provided us with valuable insight for further exploration. Don Cherry has contributed valuable insight that is based on analytical data.

## Review of Aeromagnetic Data

Magnetic data for the Birrindudu, Inverway, Limbunya, Napier, and Waterloo geophysical surveys were imported into a geophysical program and filtered using a first vertical derivative. Stacked profiles were then produced. These profiles were then imported into MapInfo and used to identify discrete magnetic targets that may represent kimberlite pipes.

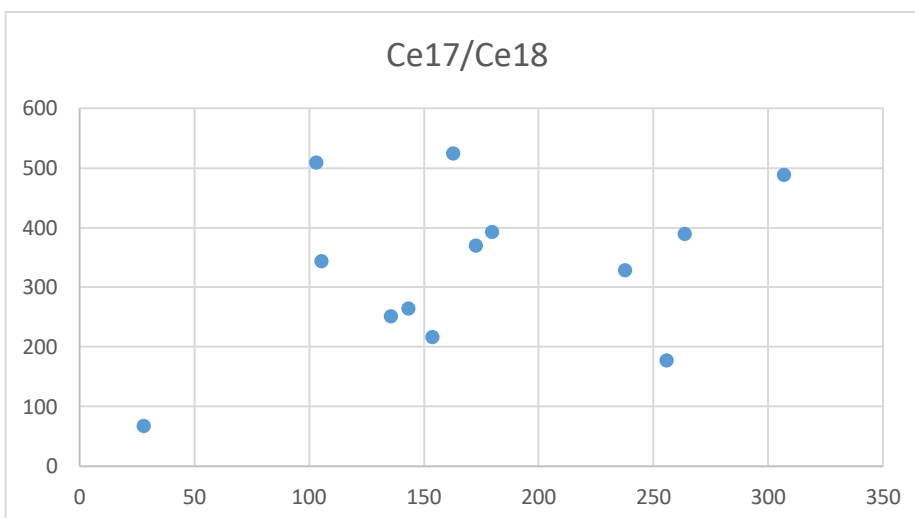
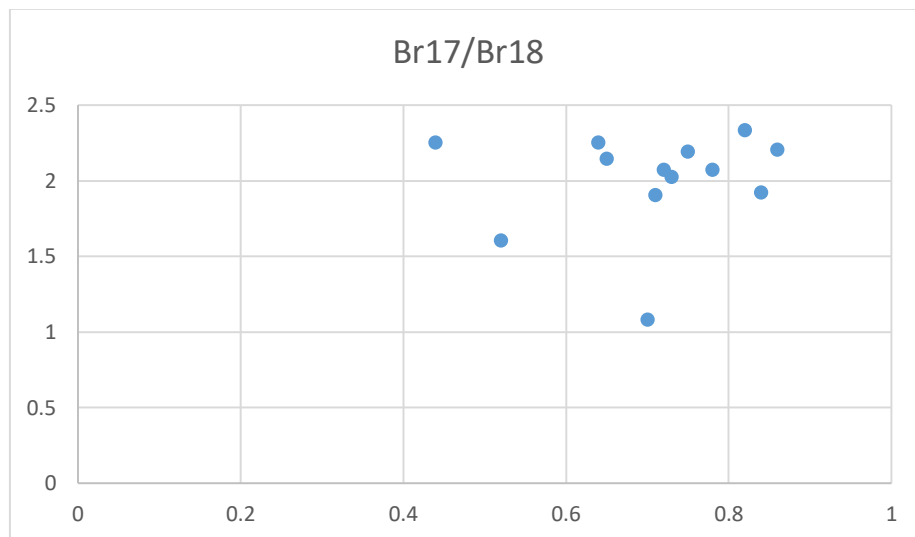
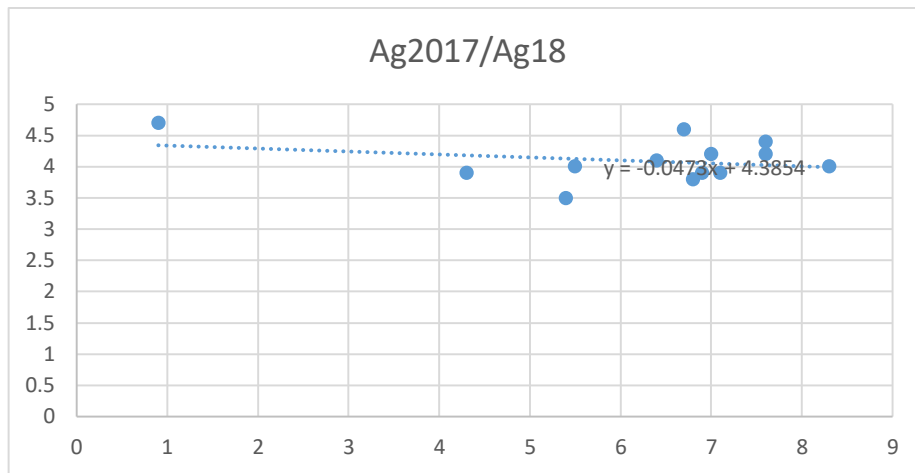
## 6. Exploration Field Work

### Soil and Rock chip Sampling Programme (2018)

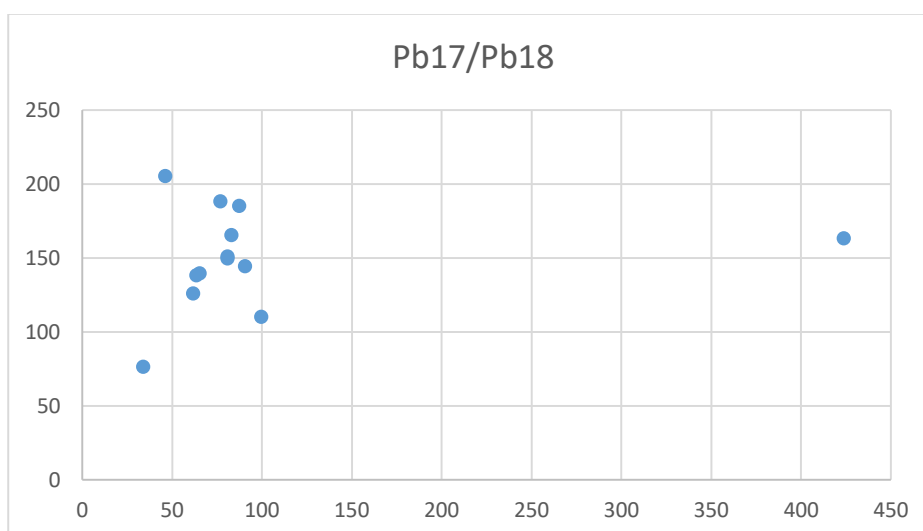
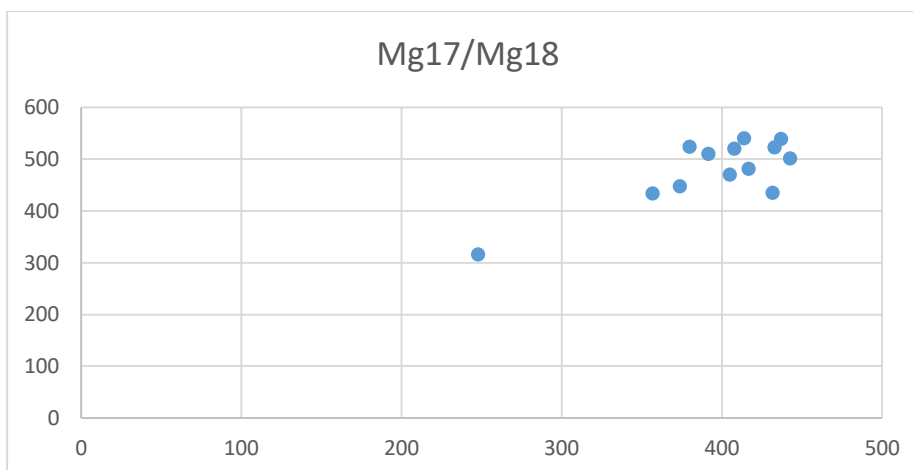
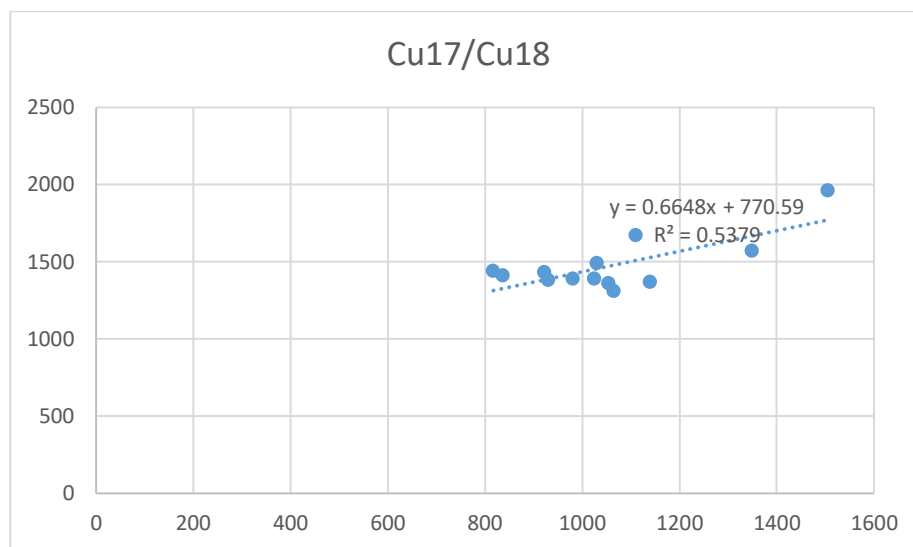
During the past year Daylight Jack Minerals Pty Ltd conducted a systematic soil and rock chip sampling program at the Kirkimbie Project to locate minerals of economic importance. Soil and Rock chip samples were analysed by ALS Laboratory in Adelaide, S. A. on 26th June, 2018 by ICP MS, a mass spectrometer instrument. A total of twenty three (23) soil and twenty three (23) rock chip samples were analysed using the ME-ICP61 method and fifty two (52) soil samples were analysed using the ME-MS23 and pH-MS23 method.

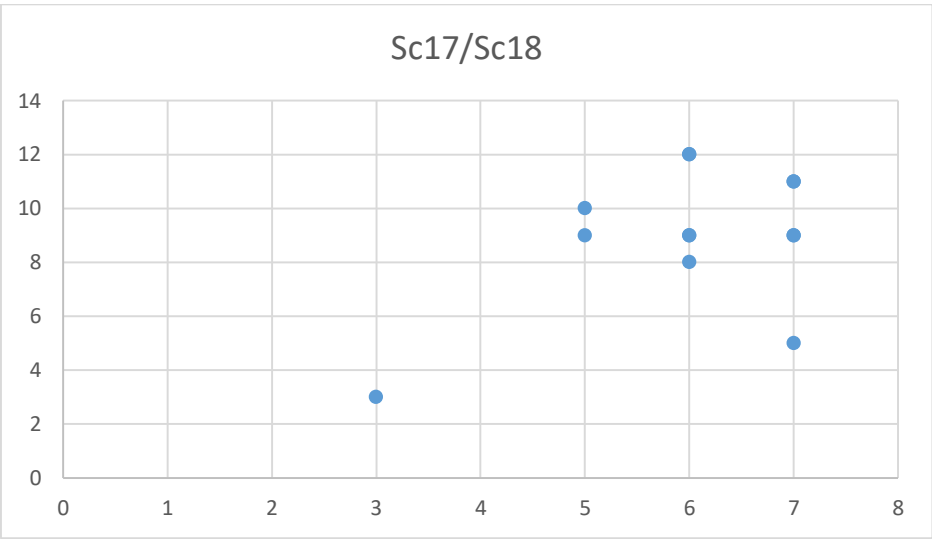
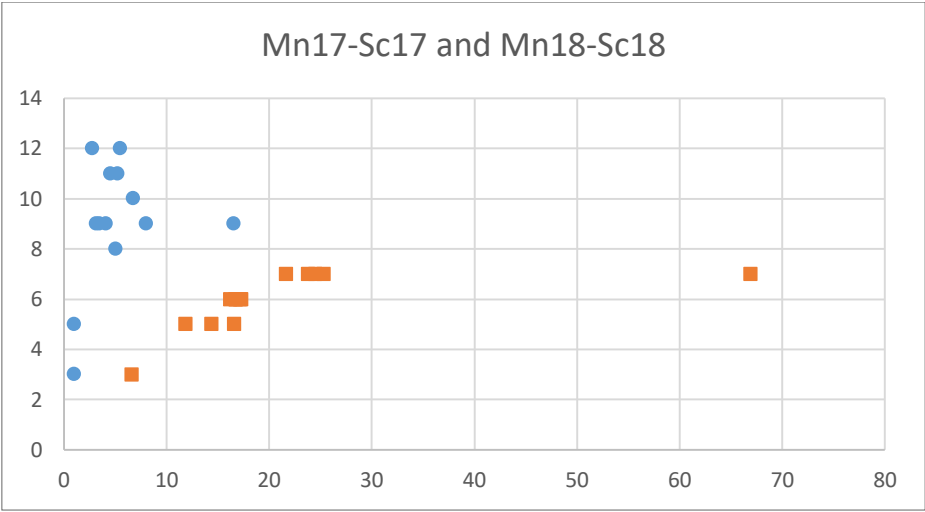
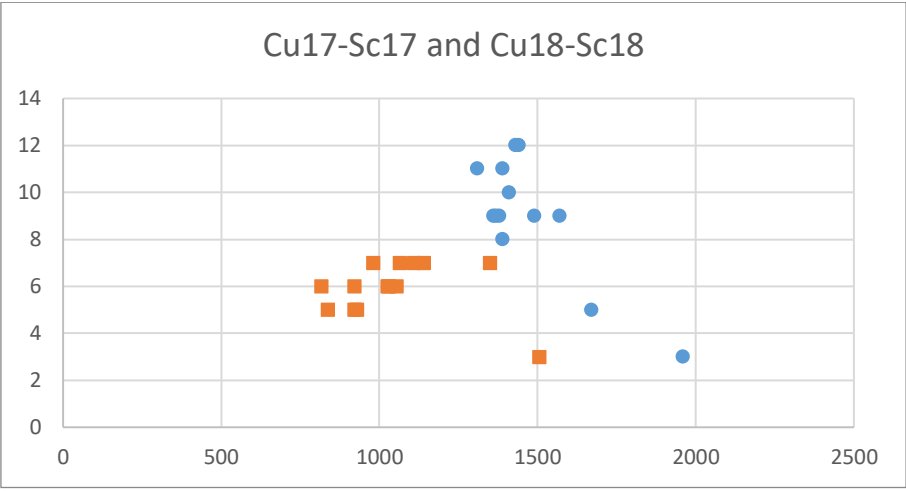
A total of thirty (30) soil samples were taken from EL 30655 on the most promising CLD Traverse, a 9.5km x 400m wide dyke. A detailed statistical analysis of the CLD, DJM, MBCHEW and MBCH samples is detailed in results.

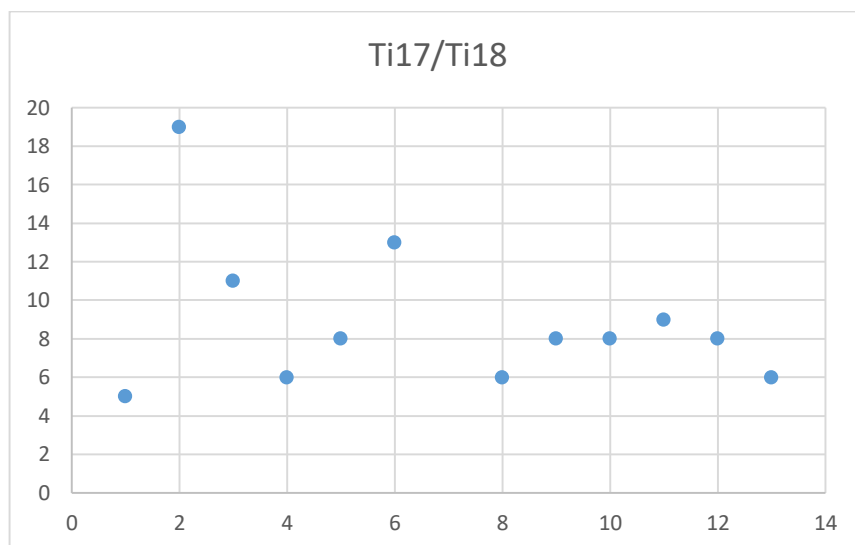
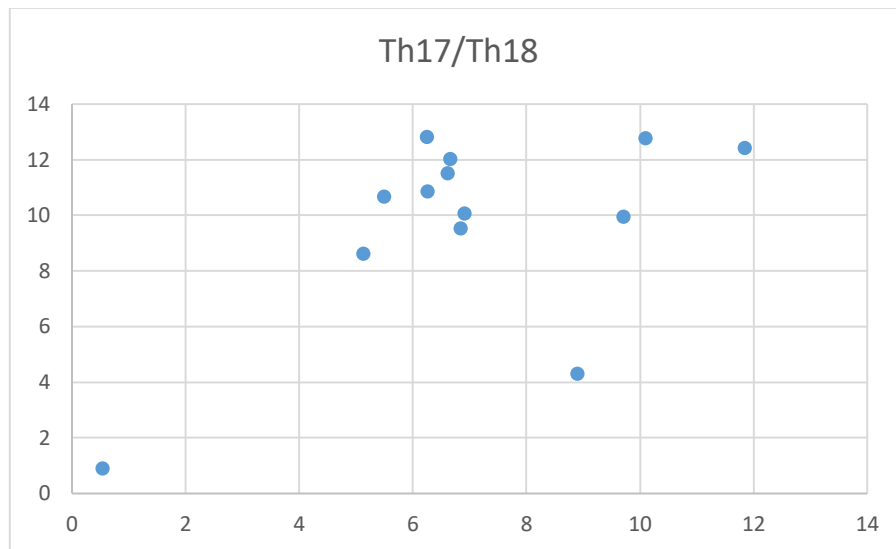
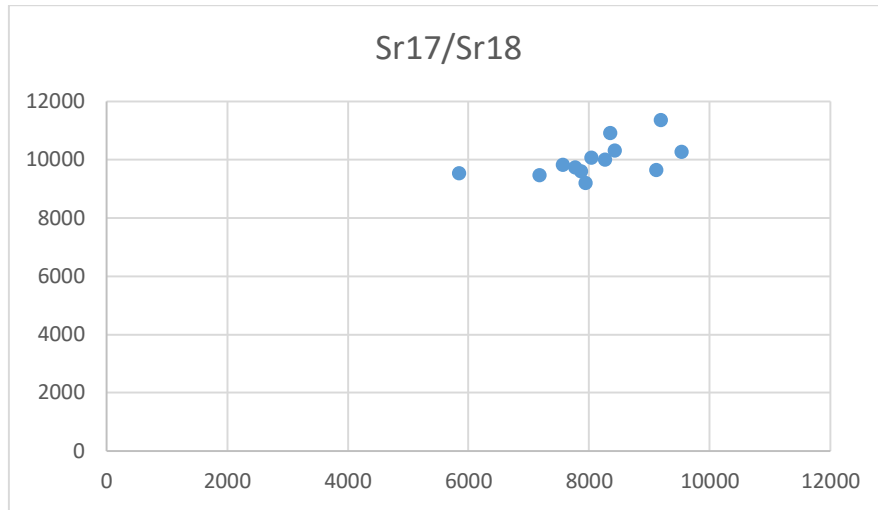
## 7. Results

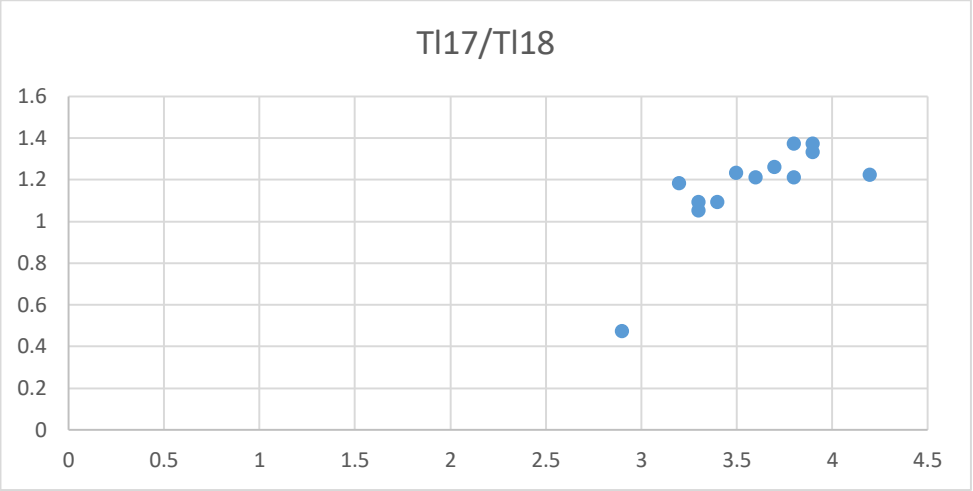












## 8. Interpretations and Recommendations

With the recent discovery and evidence for cobalt, manganese, copper and lead mineralization over approximately 1.8km defined strike length. We are seeing cobalt grades over good widths, and strike length. The surface expression of cobalt is significant in scale and grade. Extensive cobalt anomalism is evident across the project area. This outcropping mineralization may extend further south. These cobalt anomalies are considered “high priority” for further work.

With assays for cobalt returning between 0.08% and 0.11% not only are these results significant from a global perspective, but they clearly demonstrate the cobalt potential of this project. We consider this area of the tenement a geologically complex, potentially target rich land package. There is potential for a high-grade cobalt vein system that exists near surface in an area previously underexplored. This mineralisation might indicate a hydrothermal halo around the vein systems, an example of previously unknown metal zoning. There is potential for the discovery of multiple massive sulphide cobalt mineralisation. Consistently high values of Ba, Co, Cu (>1000 ppb), Ni, Sr and Rb raises the question, is this a reflection of magnetic anomaly or is it migration transported minerals. Assay results show continuity of the mineralised zone, confirm the presence of mineralisation as predicted and are consistent with data from previous years exploration.

In close proximity to sample MBCE vesicular basalt litters the creek bed. Vesicles are filled with Malachite and it is extensive. Vesicular basalt is evident in Moonbool Creek tributaries approximately 10km to the east.

Below is a list of sample sites where high assays for various minerals is evident in the Kirkimbie project area:

- Cobalt - CLD 14, MBCH4\_b, MBCH5, MBCH4\_a, MBCH14\_b, MBCH15, DJM41\_b
- Lead - DJM41\_b, CLD3, MBCH10\_b
- Copper - DJM39\_b, CLD1
- Aluminium - 29803C-1, MBCHEW2 to 4, MBCHEW6, 7, 9, 10 to 12, MB7, MBCH11
- Manganese - MBCHEW6, MB8, MB3, MBCH4\_a, MBCH4\_b, MBCH5, MBCH14\_a, MBCH14\_b
- Chromium - MB6, MB8\_a
- Iron - 29803C-2

To rapidly advance our understanding of the mineralised system with a view to bringing targets to drill-ready stage Daylight Jack Minerals Pty Ltd intends to undertake the following:

- A low-cost, systematic geochemistry program
- A ground-based geophysical survey that is integrated with soil geochemistry data to refine and generate targets for drill testing
- A heliborne electromagnetic (EM) survey at a nominal 100m line spacing
- Acquire additional infill soil and rock chip sampling data, particularly to the north and south of Moonbool creek over the potential strike extents of this anomalism
- Follow up Niobium and Chromium occurrences in tributaries of Moonbool Creek

Daylight Jack Minerals Pty Ltd considers the Project to have the following advantages:

- Large scale and grade potential. Evidence from surface/near surface assays
- Favourable mineralogy: cobalt, copper, manganese, lead and aluminium minerals
- Mining friendly, geologically stable location
- Surface / near surface mineralisation indicating that any future mining operation at this site may only require a simple quarry-like mining method
- Cobalt: best exposure to lithium ion battery boom

Highlights from the latest batches of assays received from the recently completed field sampling program include:

Anomalous values for Cobalt:

CLD 14	1235 ppb
MBCH4_b	586 ppm
MBCH5	881 ppm
MBCH4_a	1185 ppm
MBCH14_b	454 ppm
MBCH15	608 ppm
DJM41_b	875 ppb

Anomalous values for Chromium:

MB6	328 ppm
MB8_a	118 ppm



Anomalous values for Manganese:

MBCHEW6	3850 ppm
MB8	2560 ppm
MB3	1725 ppm
MBCH4_a, MBCH4_b, MBCH5, MBCH14_a, MBCH14_b	>100,000 ppm

Anomalous values for Iron:

29803C-2	46.5%
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Anomalous values for Lead:

DJM41_b	208 ppb
CLD3	188 ppb
MBCH10_b	338 ppm

Anomalous values for Copper:

DJM39_b	1680 ppb
CLD1	1960 ppb (Consistent with 2017 assays 1505 ppb)

Anomalous values for Barium:

MBCH2-5, MBCH 14-15	>10,000 ppm
MBCHEW3	1020 ppm
CLD11	18100 ppb
DJM44_b	26000 ppb

Anomalous values for Aluminium:

29803C-1	7.25%
MBCHEW2 to 4, MBCHEW6, 7, 9, 10 to 12	5%
MB7	6.23%
MBCH11	2.37%,

A comparison of results from 2017 and 2018 is provided below. The following samples collected from EL 30655 returned the highest assays for the various metals:

**CLD7** returned significant values for RRE's, Mg and Nb:-

	2017	2018
Dy	256 ppb	381 ppb
Eu	271 ppb	152.5 ppb
Gd	288 ppb	761 ppb
Ho	588 ppb	667.8 ppb
Lu	24.9 ppb	
Mg	443 ppb	501 ppm
Nd	599 ppb	1880 ppb
Pb	424 ppb	163 ppb
Pr	104 ppb	287 ppb
Sr	9540 ppb	10250 ppb
Tb	40.5 ppb	82.8 ppb
Tm	20.4 ppb	13.8 ppb
Yb	114.5 ppb	59.4 ppb

**CLD 14** returned significant values for (in particular Ni and U):-

	2017	2018
Ba	12700 ppb	15250 ppb
Co	6330 ppb	1235 ppb
Mn	66.9 ppm	16.55 ppm
Mo	28.3 ppb	16.3 ppb
Ni	1655 ppb	1320 ppb
U	37 ppb	10.9 ppb
Y	1515 ppb	2280 ppb

**CLD1** returned significant values for (in particular Cu):-

	2017	2018
Ca	1000 ppm	>1000 ppm
Cu	1505 ppb	1960 ppb

**CLD3** returned significant values for REE's:-

	2017	2018
Ce	307 ppb	488 ppb
La	332 ppb	637 ppb

**CLD11** returned significant values for RRE:-

	2017	2018
Cs	24.5 ppb	5.6 ppb

2017 Anomalous values for Cobalt:

CLD 14	6330 ppb
MDC17	1125 ppb
Mdc28	1760 ppb
Mdc29	1065 ppb
Mdc30	1160 ppb
MBCH2	693 ppm
MBCH3	575 ppm
MBCH4_a	495 ppm

**Assay results from other traverses** returned the following significant results:

**(Results for 2018 are pending)**

Sample **MDC15** returned significant assay values for:- (MDC waiting....)

Er	83.6 ppb
Sr	9260 ppb
Pb	1055 ppb
Ba	18400 ppb
Ca	1000 ppm

**MDC16** returned a very high value for Ba of 20900 ppb, and

**MDC17** returned high values for:-

Ba	15600 ppb
Co	1125 ppb

Cu 536 ppb

**MDC28** returned high values for:-

Ba 15250 ppb

Co 1760 ppb

Cu 256 ppb

**MDC29** returned high values for:-

Ba 11800 ppb

Co 1065 ppb

Cu 498

**MDC30** returned high values for:-

Co 1160 ppb

Cu 502 ppb

**MBCSE3** returned high values for:-

Al 7.69%

Cr 191 ppm

Mn 3170

**MBCSE4** returned high values for:-

Al 5.81%

Cr 187 ppm

Mn 2420

**MBCBE** returned high values for:-

Ba 1900 ppm

## 9. Copyright Statement

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## Appendix A

### Tables

#### 2018 Sampling Locations

Sample ID	Latitude	Longitude	Type: Rock or Soil
29803c	-17.75283053	129.3535564	R
29803c1	-17.75803689	129.3550099	R
29803c2	-15.617224	131.12779	R
29803c3	-15.617224	131.12779	R
29803c4	-15.617224	131.12779	R
29803c5	-15.617224	131.12779	R
29803c6	-15.617224	131.12779	R
cld1	-17.76512695	129.1780537	S
cld10	-17.78493245	129.171692	S
cld11	-17.78577923	129.1717638	S
cld12	-17.78930933	129.167884	S
cld13	-17.78845796	129.1640687	S
cld14	-17.78844442	129.1641991	S
cld14	-17.760281	129.332412	S
cld2	-17.77040273	129.1755408	S
cld3	-17.77134938	129.174622	S
cld4	-17.77140228	129.172577	S
cld5	-17.7722854	129.1697526	S
cld6	-17.77320444	129.1679797	S
cld7	-17.77769529	129.1697421	S
cld9	-17.77951174	129.1698311	S
DJM38	-17.85526885	129.0803691	S
djm38.5	-17.85081279	129.0802444	S
DJM39	-17.86459398	129.0870656	S
DJM40	-17.87509108	129.0994554	S
DJM41	-17.87392254	129.1043255	S
DJM42	-17.87722102	129.1055452	S
DJM43	-17.88071901	129.1055472	S
DJM44	-17.88985458	129.1102256	S
DJM45	-17.89995777	129.1138855	S
DJM46	-17.90830822	129.1161189	S
fe	-17.75064819	129.3511003	R
mb1	-17.80327285	129.3236842	S
mb2	-17.80462509	129.3250589	S
mb3	-17.817254	129.3283192	S



mb4	-17.81878167	129.3300092	S
mb5	-17.81968617	129.3334129	R
mb6	-17.82038115	129.3349253	S
mb7	-17.82077406	129.3359835	R
mb8	-17.82081109	129.3389051	R
mb9	-17.82092021	129.3397801	R
mbch	-17.77767218	129.3221346	R
mbch	-17.77858963	129.3220962	R
mbch	-17.77930102	129.3221136	R
mbch	-17.77855864	129.3222149	R
mbch1	-17.821404	129.352014	R
mbch10	-17.76639188	129.3218136	R
mbch11	-17.768457	129.3214813	R
mbch12	-17.77055517	129.3214673	R
mbch13	-17.77269543	129.3218177	R
mbch14	-17.77539637	129.3215982	R
mbch14	-17.77481957	129.3216577	R
mbch15	-17.77617533	129.3215918	R
mbch16	-17.77745638	129.3221331	R
mbch17	-17.77840795	129.3219933	R
mbch19	-17.78263178	129.322183	R
mbch5	-17.7787854	129.3217665	R
mbch6	-17.77352581	129.3219878	R
mbch7	-17.76263765	129.3218529	R
mbch8	-17.76188694	129.321331	R
mbch9	-17.76550955	129.3218475	R
mbchew	-17.78049551	129.3223224	S
mbchew	-17.77756657	129.3223181	S
mbchew10	-17.76811987	129.3218507	S
mbchew11	-17.76801618	129.3222224	S
mbchew12	-17.76798333	129.3223907	S
mbchew13	-17.7661214	129.3215402	S
mbchew14	-17.76605218	129.3217629	S
mbchew15	-17.76606925	129.321983	S
mbchew16	-17.76604148	129.3221865	S
mbchew2	-17.78048167	129.3219217	S
mbchew3	-17.78051097	129.3218076	S
mbchew4	-17.78053962	129.3216922	S
mbchew5	-17.77302296	129.3221439	S
mbchew6	-17.77310136	129.3218726	S
mbchew7	-17.77312419	129.3216301	S
mbchew8	-17.77299307	129.3215474	S

mbchew9	-17.76823056	129.3215658	S
mtmyo	-17.71230808	129.3425864	R
mtmyo2	-17.64059026	129.3108762	R
mtmyo3	-17.63949128	129.3082276	R
mtmyo4	-17.71055	129.3907326	R
mtmyo5	-17.70943965	129.372319	R
mtmyo6	-17.70869204	129.3534798	R
mtmyo7	-17.70727688	129.3380227	R

## Appendix B

### Figures and Maps

Rock samples enriched with Cobalt.

