Annual Technical Report
For the period ending 10th May 2013

EL 4869 Ediacara

Archer Energy and Resources Pty Ltd
Archer Exploration Limited

By Wade Bollenhagen
Archer Exploration Ltd
24/05/2013

Contents

Bibliographic Data

Report Title	Annual Report for Exploration Licence 4869 'Ediacara for the period 11th May 2012 to 10th May 2013
Project Name	Ediacara
Tenement Number	EL 4869
Tenement Holder	Archer Energy and Resources Pty Ltd
Operator	Archer Exploration Limited
Commodities	**Barite**
Tectonic Unit	Adelaide Geosyncline
Stratigraphic Unit	Skillogalee Dolomite
1:250,000 Map Sheet	SH 54-9 Copley
1:100,000 Map Sheets	6536 Copley
Keywords	**Wonoka Formation, Pound Subgroup**

SUMMARY

Exploration Licence 4869 'Ediacara, held by Archer Energy and Resources Pty Ltd (Archer) is located west south-west of Leigh Creek.

The tenement resides on the Eastern Side of the Torrens Hinge Zone with Adelaide Geosyncline covering the eastern part of the tenement. , in roughly the central part of the Arrowie Basin

Historically, only a few deep holes have been drilled within the tenement to penetrate the alluvial cover to understand basement mineralisation, outside of the reserve. One hole MJ_1 was drilled to determine if Pb_Cu_Ag mineralisation present at the historic Black Eagle mine was associated with a gravity anomaly. It was reported that low level mineralisation existed in the core however no assays were presented, the data could not be extracted from SARIG either.

Introduction

EL 4869 'Ediacara is located 10km south west of Leigh Creek in South Australia (Figure 1). Access is gained by established station tracks.

This report details exploration work completed by Archer Exploration Ltd between 11th May 2012 and 10th May 2013.

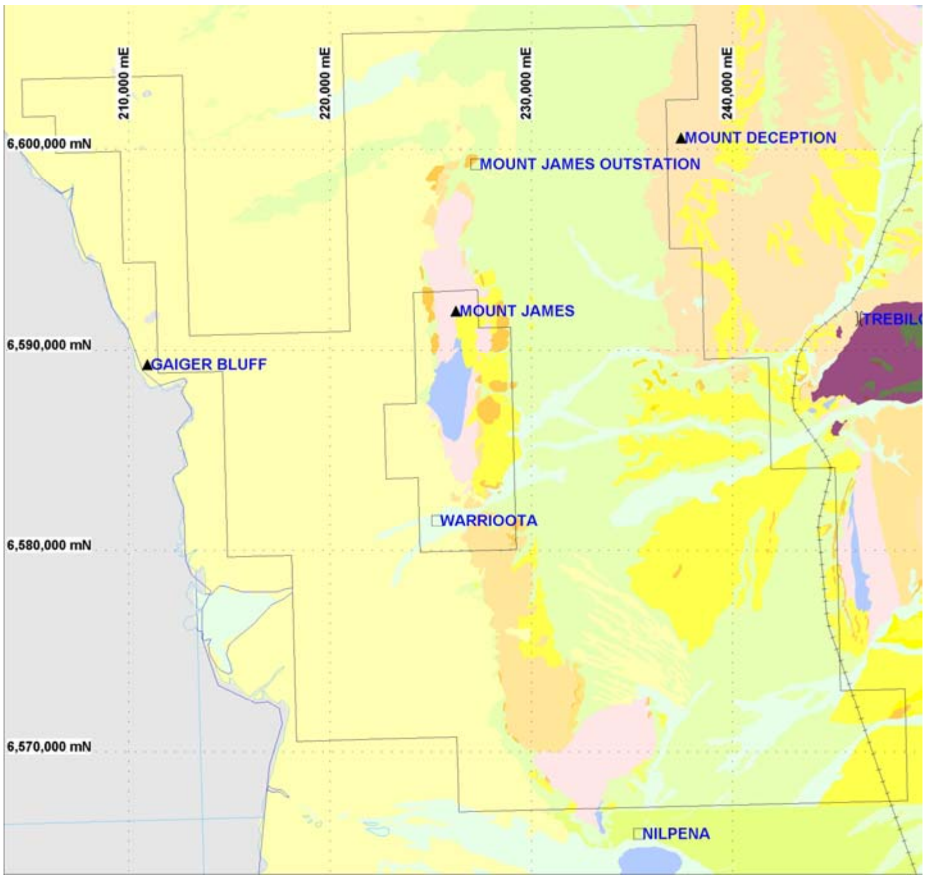

Figure 1: Location and geology map for EL 4567

Previous exploration activities on the tenement were focused on the Wonoka Formation which comprises grey shales and dolomites as a host to base metal mineralisation

1 Tenure

EL 4869 'Ediacara' covering 885km^2 was granted to Acher Energy and Resources Pty Ltd (a wholly owned subsidiary of Archer Exploration Ltd) on the 11th May 2012 for a term of 2 years. The tenement was designed and applied for in a manner that excluded the Reserve at the centre, which happens to be the centre of historic mining.

Archer Exploration listed on the Australian Stock Exchange on 14 August 2007.

2 Geology

EL 4869 'Ediacara" lies on the margin of the Torrens Hinge Zone and the Adelaide Geo-syncline. The geology is dominated by the long continuous strike of Neoproterozoic rocks, which are dominated by Tertiary and Quaternary alluvials with a central ridge (fault) dominating the topography.

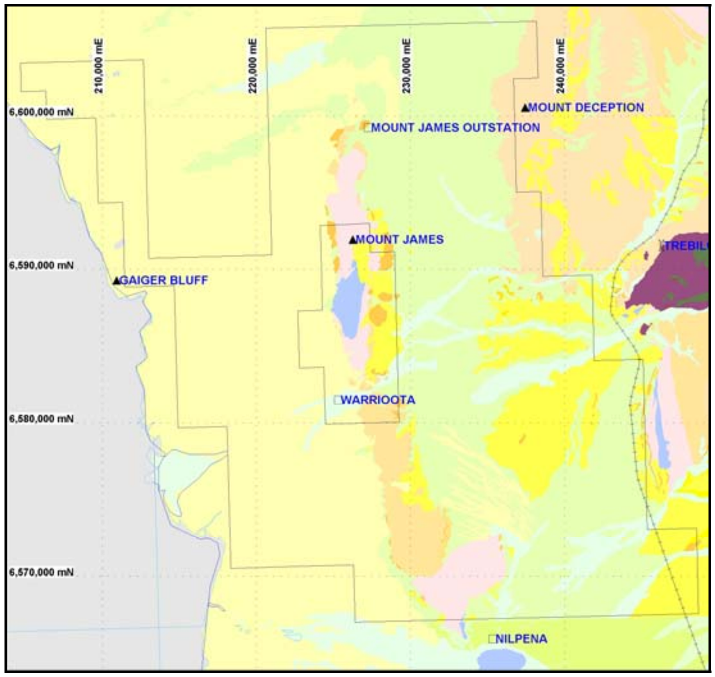

Figure 2: Geology and deposit location map for EL4869 (PIRSA)

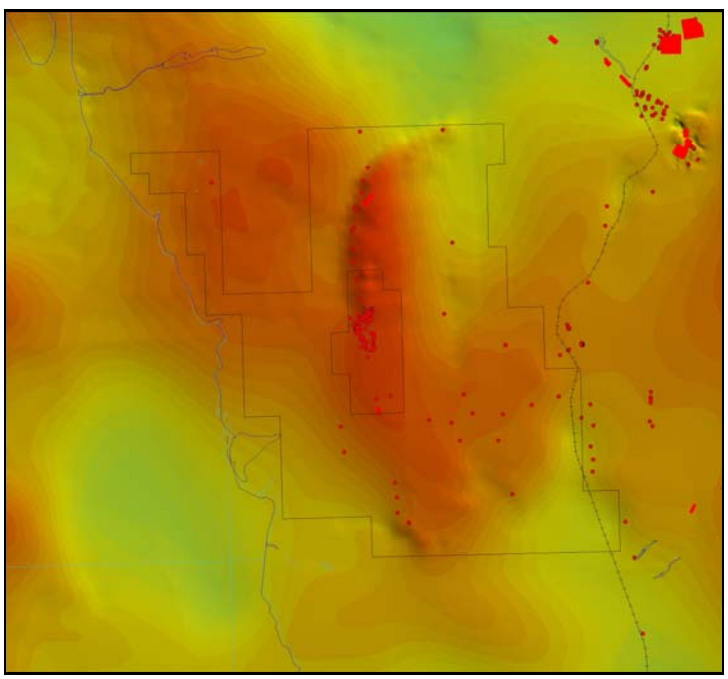

Figure 3. Gravity below the tenement, interpreteded as a thickening of Adelaidean rocks by thrusting

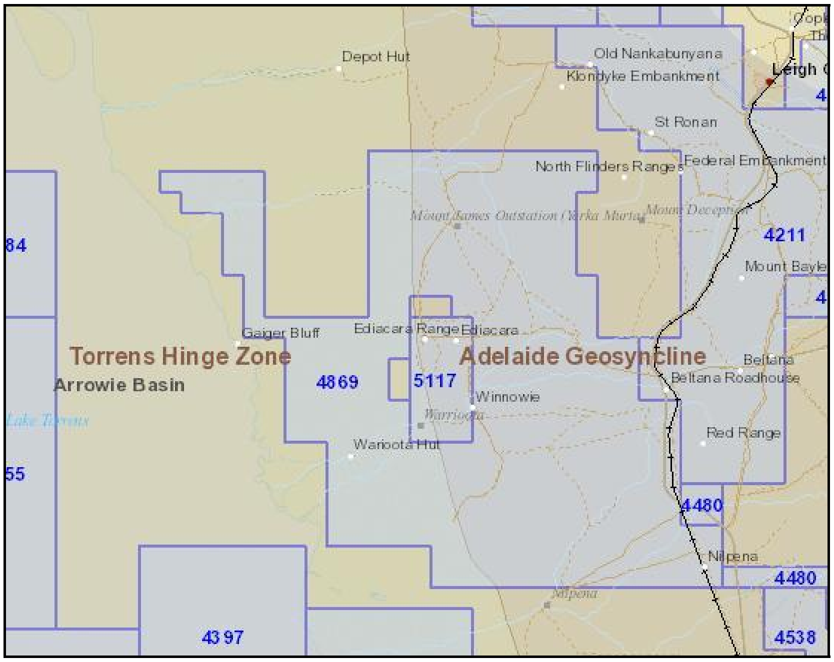

Figure 4. Location of the tenement wrt to the Adelaide Geosyncline and Torrens Hinge Zone

3 Work Completed

3.1 Laboratory

No laboratory work was performe on the EL.

3.2 Ground work

No onground activites were preformed during the period, reviews on historical work are ongoing.

4 Environment

No ground disturbing activities occurred during the year.

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EL 4869 Ediacara

Archer Energy and Resources Pty Ltd
Archer Exploration Limited

By Wade Bollenhagen
Archer Exploration Ltd
01/06/2014

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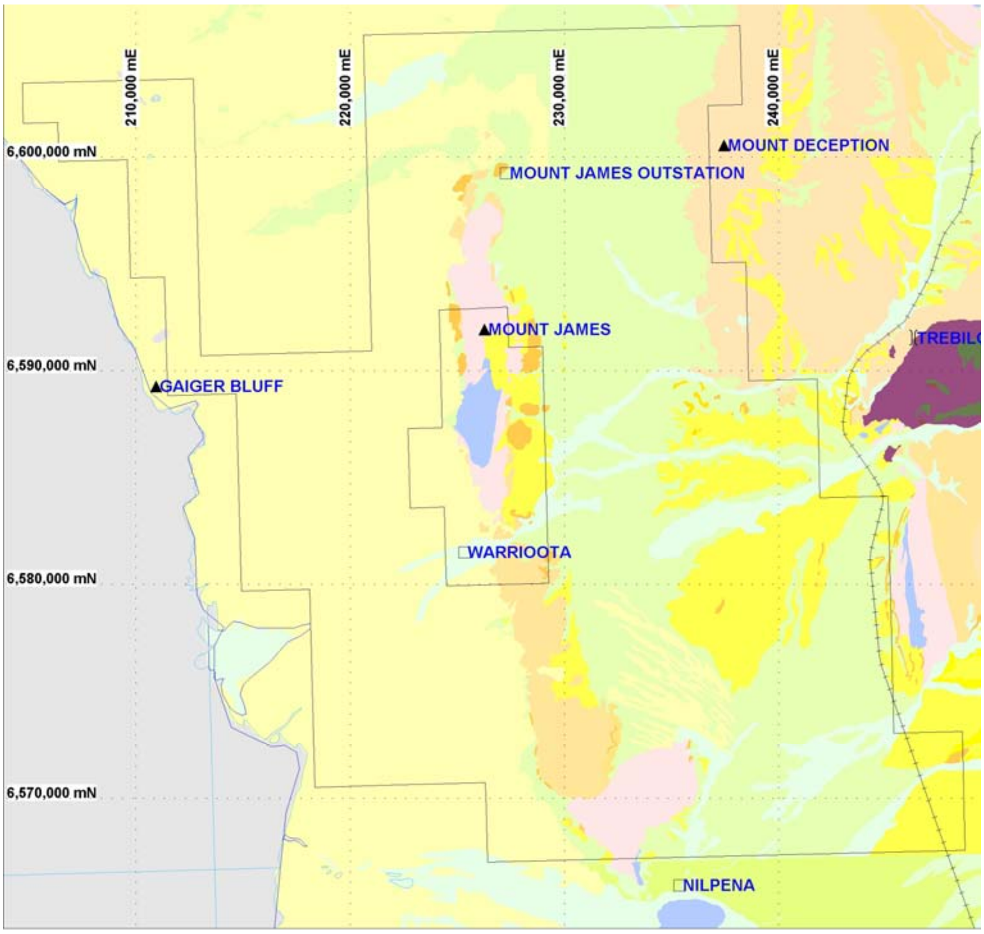

Figure 1: Location and geology map for EL 4567

Previous exploration activities on the tenement were focused on the Wonoka Formation which comprises grey shales and dolomites as a host to base metal mineralisation

1 Tenure

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Archer Exploration listed on the Australian Stock Exchange on 14 August 2007.

2 Geology

EL 4869 'Ediacara" lies on the margin of the Torrens Hinge Zone and the Adelaide Geo-syncline. The geology is dominated by the long continuous strike of Neoproterozoic rocks, which are dominated by Tertiary and Quaternary alluvials with a central ridge (fault) dominating the topography.

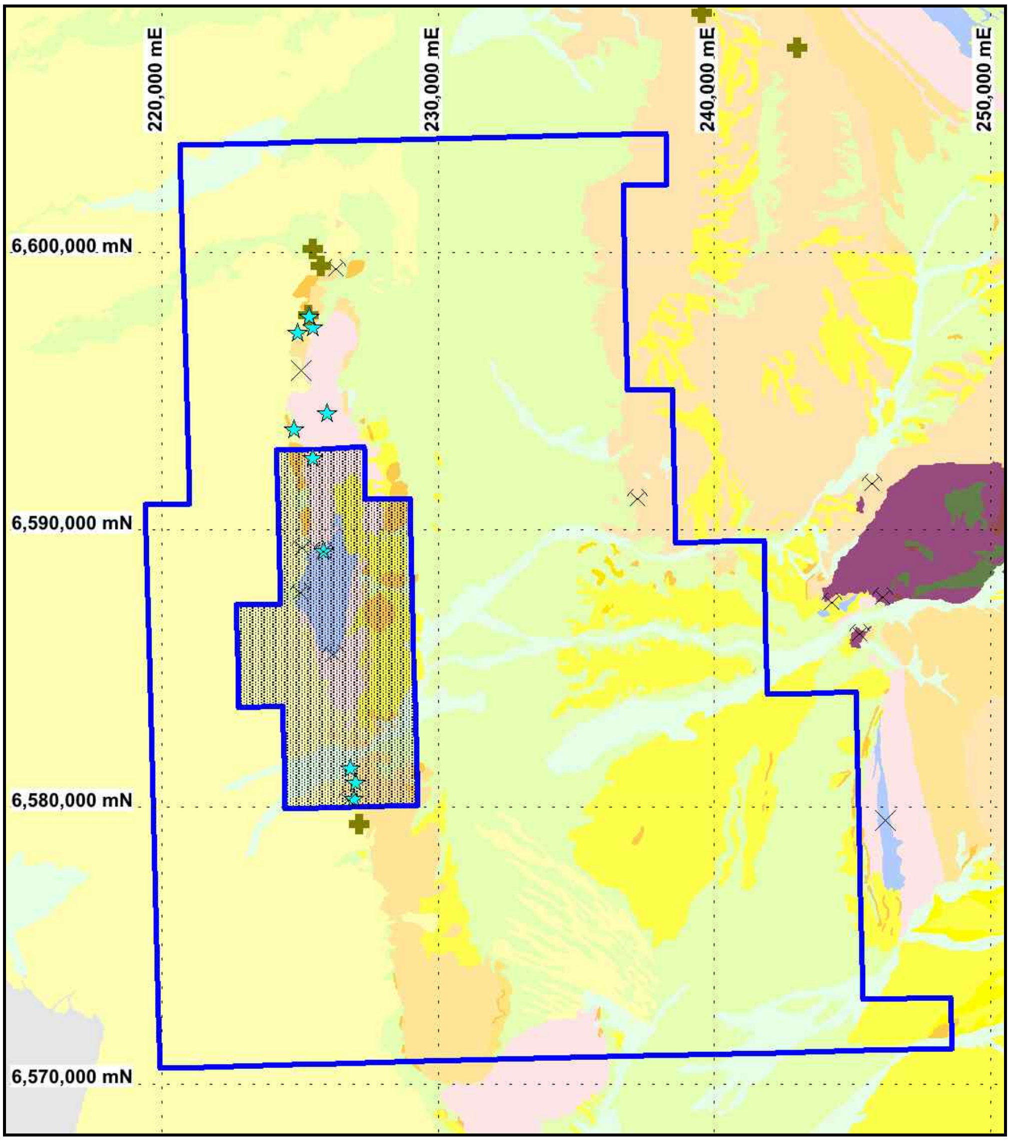

Figure 2: Geology and deposit location map for EL4869 (PIRSA)

Figure 3. Gravity below the tenement, Work Completed

2.1 Laboratory

No laboratory work was performe on the EL.

2.2 Ground work

No onground activites were preformed during the period, reviews on historical work are ongoing.

3 Environment

No ground disturbing activities occurred during the year.

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A total of 28 rock chip samples were taken to determine the barite value of the exposures, specific gravity determinations were also made to understand the materials marketability.

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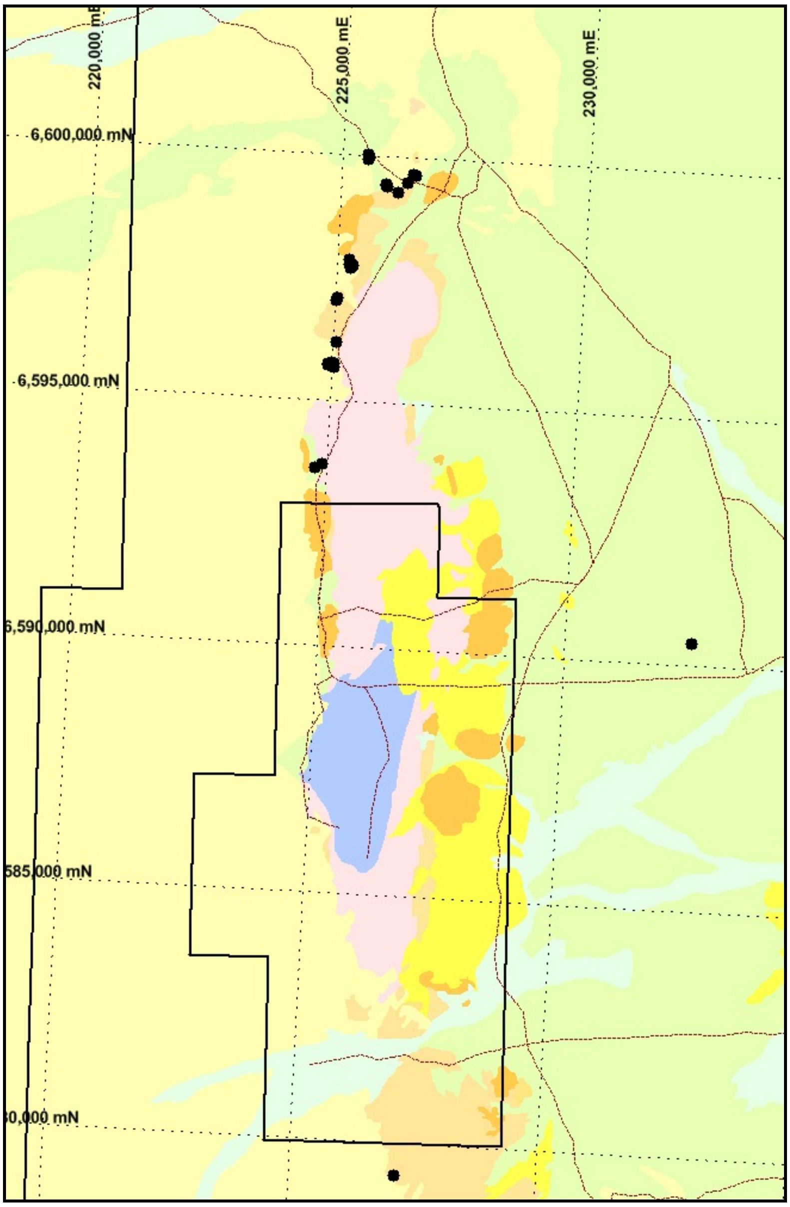

Figure 1: Location of rock chip samples and geology map for EL 4869

Previous exploration activities on the tenement were focused on the Wonoka Formation which comprises grey shales and dolomites as a host to base metal mineralisation

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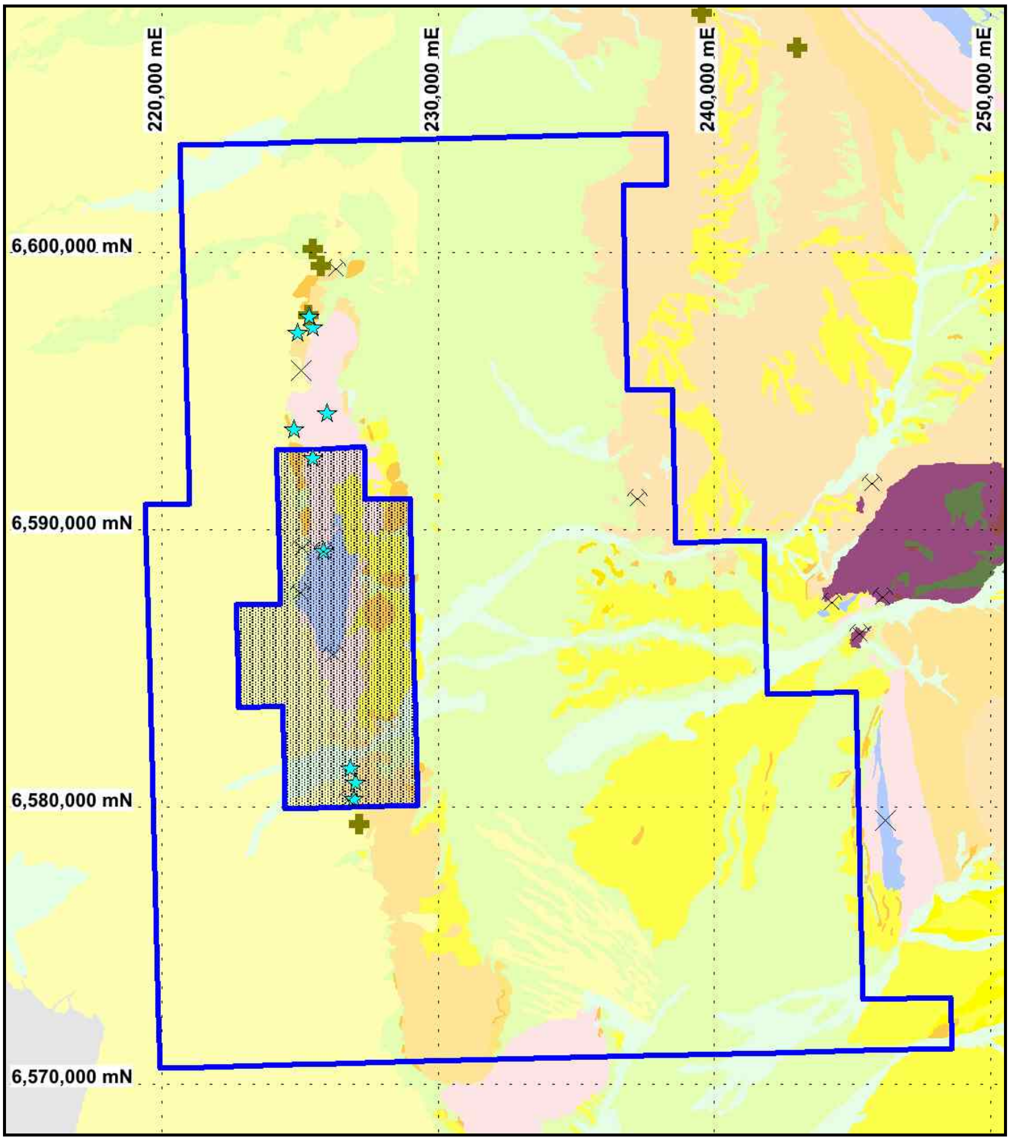


Figure 2: Geology and deposit location map for EL4869 (PIRSA)

3 Work Completed

3.1 Laboratory

A total of 28 samples were submitted for mutli-element rock analyses, then whole rock to determine their sulphate and barite values.

3.2 Ground work

One site visit was made and the landowner was met. Samples were taken form the remnant costeans to detmine the tenor od the barite present. All results are presented as tables at the end of this report.

4 Environment

No ground disturbing activities occurred during the year.

Northing	POSITION	SAMPLE NO	COMMENT	SG
6600015	3	16402	ba - silica - mn	
6599969	3	16403	ba - silica - mn	
6599933	3	16408	ba - silica - mn	
6599441	4	16409	ba - strikes 100 mtrs	4.17
6599408	4	16410	ba	4.21
6599389	4	16411	mn	
6599667	5	16412	ba pit stikes nth	
6599637	5	16413	ba pit	
6599283	6	16414	ba strikes sth	4.51
6599475	7	16415	ba middle strikes	4.22
6597696	8	16416	ba outcrop	4.01
6597760	9	16417	ba outcrop	4.22
6597780	10	16418	ba outcrop	4.03
6597870	11	16419	ba outcrop	
6597068	13	16420	ba	
6597037	14	16421	ba	
6596191	15	16422	cu workings minor	
6595686	16	16423	ba workings	
6595678	16	16424	ba workings	
6595735	18	16425	ba	
6595777	19	16426	ba workings	
6595766	19	16427	ba workings	
6595733	20	16428	ba workings	
6595724	20	16429	ba workings	
6593702	21	16430	ba outcrop	
6593626	22	16431	ba outcrop	
6590459	23	16432	ba outcrop	
6579347	24	16433	ba outcrop	

Table 1. Location and description of rock chip samples taken

Analyte	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SO3	SiO2	SrO	TiO2	Total	LOI
detection	0.01%	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
16402	0.07	62.4	0.23	<0.01	0.11	0.03	0.06	0.27	<0.01	<0.01	34.2	1.12	0.8	<0.01	99.83	0.51
16403	0.01	62.4	0.09	0.01	0.13	0.01	0.03	0.07	<0.01	<0.01	34.1	2.44	0.8	<0.01	100.4	0.28
16408	1.12	1.2	38.8	<0.01	1.15	0.6	1.02	12.5	1.8	0.03	0.64	5.04	0.28	0.05	98.49	33.25
16409	0.01	61.5	0.21	0.01	0.23	<0.01	0.01	0.03	<0.01	<0.01	34	2.33	1.2	<0.01	99.86	0.31
16410	0.01	62.9	0.17	<0.01	0.02	0.01	0.01	0.01	<0.01	<0.01	34.7	0.79	1.18	<0.01	100.1	0.29
16411	3.82	3.18	11.6	<0.01	19.2	1.22	0.8	13.6	0.19	0.3	1.32	28.1	0.18	0.24	100.7	15.69
16412	0.03	57.3	0.06	0.01	0.46	0.01	<0.01	0.03	<0.01	0.01	32.2	7.79	>1.50	<0.01	100.05	0.26
16413	0.11	56	0.22	<0.01	0.54	0.03	<0.01	0.25	<0.01	0.01	31.2	9.59	>1.50	<0.01	100.45	0.74
16414	0.01	50	0.19	0.01	0.4	<0.01	<0.01	<0.01	<0.01	<0.01	27.9	19.5	1.46	<0.01	99.65	0.16
16415	<0.01	58.2	0.03	<0.01	0.12	<0.01	<0.01	0.01	<0.01	<0.01	32.7	7.05	>1.50	<0.01	100.15	0.11
16416	<0.01	61.9	0.61	0.01	0.27	<0.01	<0.01	0.11	<0.01	<0.01	34.5	0.14	>1.50	<0.01	99.76	0.6
16417	0.03	61.5	0.02	0.1	0.14	0.01	<0.01	0.12	<0.01	<0.01	34.4	2.4	>1.50	<0.01	101	0.24
16418	0.24	57	0.15	0.03	0.23	0.07	0.01	0.01	<0.01	0.04	31.4	10	1.3	<0.01	100.85	0.3
16419	0.01	63	0.02	0.01	0.05	<0.01	0.13	<0.01	<0.01	0.01	34.7	0.22	1.28	<0.01	99.66	0.21
16420	0.06	61.7	1.09	0.32	0.16	0.01	0.01	0.01	<0.01	0.01	33.2	3.02	0.56	0.01	101.25	0.9
16421	0.18	53.5	0.12	0.21	0.38	0.04	0.01	0.01	<0.01	0.01	29.4	15.5	1.16	<0.01	100.9	0.23
16422	5.67	1.06	3.27	0.07	0.9	1.54	0.51	0.78	0.45	0.07	0.59	33.8	0.03	0.29	99.38	16.95
16423	0.11	59.4	0.15	0.01	0.28	0.01	<0.01	<0.01	<0.01	<0.01	33.1	4.82	>1.50	<0.01	99.88	0.25
16424	0.01	62.8	0.03	0.03	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	35.1	0.38	>1.50	<0.01	100.7	0.17
16425	0.03	61.3	0.76	<0.01	0.24	0.01	0.01	<0.01	<0.01	0.01	33.5	2.84	0.81	<0.01	100.15	0.62
16426	0.03	62.6	0.02	0.04	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	34.4	1.64	1.42	<0.01	100.65	0.37
16427	0.05	58.9	0.02	0.02	0.2	0.01	<0.01	<0.01	<0.01	<0.01	31.8	7.92	0.59	<0.01	99.7	0.17
16428	0.01	59	0.01	0.01	0.13	0.01	<0.01	<0.01	<0.01	<0.01	32.7	6.53	1.5	<0.01	100.05	0.1
16429	0.08	53.9	0.01	<0.01	0.31	0.01	<0.01	<0.01	<0.01	<0.01	30.2	13.6	1.44	<0.01	99.7	0.14
16430	0.01	62.7	0.01	0.02	0.45	0.01	<0.01	<0.01	<0.01	0.01	34.9	0.13	>1.50	<0.01	100.05	0.21
16431	0.27	38.8	0.1	<0.01	1.47	0.06	0.01	0.01	<0.01	0.02	21.8	35.4	1.41	<0.01	99.66	0.29
16432	<0.01	62.2	0.08	0.01	0.06	<0.01	0.01	<0.01	<0.01	<0.01	34.9	0.2	>1.50	<0.01	99.56	0.19
16433	0.01	62.1	0.49	<0.01	0.1	0.01	0.03	0.01	<0.01	<0.01	34.9	0.24	>1.50	<0.01	100.45	0.51
90714	0.01	1.06	26.9	<0.01	0.13	0.02	19.45	0.01	0.03	<0.01	0.59	9.14	0.18	<0.01	99.93	42.41

Table 2. Whole rock analyses

SAMPLE	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Ga	Ge	Hf	In	K	La	Li	Mg	Mn	Mo	Na
DESCRIPTION	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
16402	0.02	0.04	2.8	800	0.05	0.05	0.15	0.02	0.52	0.2	1	0.13	4.6	0.08	0.25	<0.05	<0.1	0.013	0.02	0.5	0.6	0.04	1970	0.59	0.01
16403	0.01	0.01	0.7	900	<0.05	0.03	0.05	<0.02	0.11	0.3	1	<0.05	7.2	0.07	0.12	<0.05	<0.1	<0.005	<0.01	<0.5	1	0.02	451	0.16	0.01
16408	0.02	0.6	134.5	6150	3.05	0.03	24.5	0.21	8.94	47.3	16	2.56	79	0.73	5.31	0.25	0.4	0.022	0.46	29.8	5.7	0.56	92500	92.2	1.36
16409	0.03	0.01	2.3	860	<0.05	0.02	0.15	<0.02	0.19	0.6	2	<0.05	11.9	0.13	0.12	<0.05	<0.1	<0.005	<0.01	<0.5	0.6	0.01	287	0.33	0.01
16410	0.01	0.01	<0.2	850	<0.05	0.01	0.11	<0.02	0.25	0.1	1	<0.05	2.1	0.02	0.12	0.05	<0.1	<0.005	<0.01	<0.5	0.3	0.01	37	0.05	0.01
16411	0.22	1.85	58.3	6140	4.05	2.24	7.21	0.32	80.4	150	26	1.62	807	11.1	8.47	0.22	2.1	0.543	0.89	18.4	7.3	0.41	97900	14.1	0.21
16412	0.02	0.02	1.3	630	<0.05	0.03	0.04	<0.02	1.19	0.6	2	<0.05	20.1	0.27	0.22	<0.05	<0.1	0.023	0.01	<0.5	1.3	0.01	222	0.15	0.01
16413	0.04	0.05	0.9	1060	0.11	0.05	0.13	0.02	2.3	3.1	2	0.05	29.4	0.32	0.33	0.05	<0.1	0.014	0.02	0.5	2.6	0.01	1760	0.33	0.01
16414	0.06	0.01	0.5	7450	<0.05	0.02	0.11	<0.02	0.27	0.2	2	<0.05	9.8	0.22	0.25	<0.05	<0.1	<0.005	<0.01	<0.5	2.1	<0.01	33	0.12	<0.01
16415	0.03	0.01	<0.2	940	<0.05	0.03	0.02	<0.02	0.89	0.3	1	<0.05	9.6	0.08	0.14	0.05	<0.1	<0.005	<0.01	<0.5	1.1	<0.01	67	0.12	0.01
16416	0.01	0.01	3.4	600	0.12	0.02	0.39	<0.02	0.22	4	1	<0.05	37	0.16	0.14	<0.05	<0.1	0.015	<0.01	<0.5	0.2	<0.01	803	0.08	0.01
16417	0.01	0.01	<0.2	600	<0.05	0.03	0.01	0.02	1.03	0.9	2	<0.05	17.5	0.07	0.15	<0.05	<0.1	<0.005	<0.01	<0.5	1	<0.01	866	0.2	0.01
16418	0.02	0.1	1.1	1270	0.1	0.43	0.06	<0.02	0.97	0.3	3	0.1	10.5	0.13	0.37	<0.05	0.1	<0.005	0.04	0.5	5.2	0.01	72	0.07	0.01
16419	0.01	0.01	1.8	830	<0.05	0.07	0.02	<0.02	0.2	0.2	1	<0.05	7.9	0.03	0.08	<0.05	<0.1	<0.005	<0.01	<0.5	0.2	<0.01	53	0.05	<0.01
16420	0.01	0.02	<0.2	1470	<0.05	0.08	0.69	0.04	0.77	0.1	2	<0.05	9.2	0.03	0.18	<0.05	<0.1	<0.005	0.01	<0.5	2.9	0.01	52	<0.05	0.01
16421	0.04	0.06	1	4140	0.07	0.01	0.06	<0.02	0.67	0.2	3	0.05	44.4	0.17	0.29	0.05	0.1	0.005	0.02	<0.5	8.2	0.01	47	0.12	<0.01
16422	0.54	2.64	28.3	5710	3.45	2.24	2.1	0.09	43.1	3.6	20	2.19	>10000	0.52	7.11	0.08	1.6	0.026	1.1	20.7	4.6	0.23	5240	12.1	0.16
16423	0.01	0.05	<0.2	550	<0.05	0.04	0.09	<0.02	0.48	0.1	2	<0.05	203	0.13	0.16	<0.05	<0.1	<0.005	0.01	<0.5	1.8	0.01	22	2.19	0.01
16424	0.01	0.01	<0.2	480	<0.05	0.01	0.02	<0.02	0.27	0.1	1	<0.05	51.8	0.03	0.08	0.06	<0.1	<0.005	<0.01	<0.5	0.4	<0.01	21	0.38	0.01
16425	0.21	0.02	0.5	570	<0.05	0.08	0.48	0.03	1.9	0.3	1	<0.05	47.5	0.13	0.13	0.06	<0.1	<0.005	<0.01	0.6	0.6	0.01	25	0.22	0.01
16426	0.05	0.02	<0.2	550	<0.05	0.07	0.01	<0.02	0.48	0.1	1	<0.05	11.2	0.06	0.09	<0.05	<0.1	<0.005	0.01	<0.5	0.5	<0.01	28	0.1	0.01
16427	0.03	0.03	<0.2	1860	<0.05	0.01	0.01	0.02	0.32	0.7	2	<0.05	9.3	0.12	0.13	<0.05	<0.1	<0.005	<0.01	<0.5	2	<0.01	35	0.2	0.01
16428	0.03	0.01	<0.2	1110	<0.05	0.03	0.01	<0.02	0.16	0.1	1	<0.05	4.6	0.08	0.13	<0.05	<0.1	<0.005	<0.01	<0.5	1.1	<0.01	15	0.07	0.01
16429	0.08	0.04	<0.2	7340	0.05	0.03	0.01	<0.02	0.32	0.2	2	<0.05	9.2	0.21	0.18	<0.05	<0.1	<0.005	0.01	<0.5	4.2	<0.01	31	0.15	0.01
16430	0.02	0.01	0.8	740	0.29	0.03	<0.01	<0.02	0.3	0.2	1	<0.05	12.1	0.26	0.1	<0.05	<0.1	<0.005	<0.01	<0.5	<0.2	<0.01	11	0.11	<0.01
16431	0.15	0.13	3.9	>10000	0.65	0.06	0.06	0.02	1.8	0.4	5	0.13	44.5	0.85	0.38	0.05	0.1	0.037	0.03	0.6	18.8	0.01	80	0.36	0.01
16432	0.08	<0.01	<0.2	470	<0.05	0.4	0.05	<0.02	0.14	0.1	<1	<0.05	64.6	0.04	0.06	<0.05	<0.1	<0.005	<0.01	<0.5	0.2	0.01	25	0.14	0.01
16433	0.06	0.02	<0.2	600	<0.05	0.34	0.34	<0.02	0.25	0.1	1	<0.05	82.2	0.07	0.1	<0.05	<0.1	0.007	0.01	<0.5	0.2	0.02	104	0.11	0.01

Table 3. Multi-element analyses

SAMPLE	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr	Dy	Er
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
16402	0.1	0.6	10	<0.5	0.8	<0.002	0.1	0.09	0.3	<1	<0.2	1700	<0.05	<0.05	<0.2	<0.005	1.68	0.1	3	0.1	0.6	2	0.8	0.18	0.08
16403	<0.1	0.2	<10	<0.5	0.2	<0.002	0.11	0.47	0.1	<1	<0.2	1600	<0.05	<0.05	<0.2	<0.005	0.07	<0.1	1	0.1	0.1	<2	<0.5	<0.05	<0.03
16408	1	66.7	150	0.7	16.3	0.003	0.1	1.47	23.5	2	0.5	2580	0.08	0.06	1.4	0.027	165.5	3.7	22	1.1	67.5	35	14.3	13.95	6.74
16409	<0.1	0.6	10	0.5	0.2	<0.002	0.12	1.38	0.2	<1	<0.2	2300	<0.05	<0.05	<0.2	<0.005	0.45	0.1	2	0.1	0.3	<2	<0.5	0.05	0.03
16410	<0.1	<0.2	10	<0.5	0.2	<0.002	0.14	0.66	0.1	<1	<0.2	2490	<0.05	<0.05	<0.2	<0.005	0.04	0.1	<1	<0.1	0.2	<2	<0.5	<0.05	<0.03
16411	3.8	26.3	1220	93.6	37.5	0.004	0.01	24.5	8.8	1	1	1560	0.31	0.1	7.9	0.118	3.54	34.8	207	0.9	27.8	129	84.5	6.72	3.36
16412	<0.1	0.6	20	<0.5	0.2	<0.002	0.14	0.94	0.3	<1	<0.2	3680	<0.05	<0.05	<0.2	<0.005	0.02	0.1	8	0.1	0.3	3	1.4	0.06	0.03
16413	0.1	0.9	50	0.9	0.8	<0.002	0.12	1.08	0.3	<1	<0.2	3740	<0.05	<0.05	0.2	<0.005	0.07	0.6	5	0.1	0.6	3	1.3	0.15	0.07
16414	<0.1	0.5	10	<0.5	0.1	0.005	0.02	1.31	0.2	<1	<0.2	3520	<0.05	<0.05	<0.2	<0.005	<0.02	0.1	2	<0.1	0.3	<2	1.1	0.05	0.03
16415	<0.1	0.6	<10	<0.5	0.1	<0.002	0.14	0.45	0.2	<1	<0.2	4370	<0.05	<0.05	<0.2	<0.005	<0.02	0.1	<1	<0.1	0.2	<2	<0.5	<0.05	<0.03
16416	<0.1	2.8	10	2.5	0.1	<0.002	0.15	1.01	0.3	<1	<0.2	3100	<0.05	<0.05	<0.2	<0.005	0.04	0.1	5	0.1	0.3	3	0.8	<0.05	0.03
16417	<0.1	0.3	10	1.8	0.2	<0.002	0.17	0.18	0.1	<1	<0.2	3890	<0.05	<0.05	<0.2	<0.005	0.04	0.1	3	<0.1	0.2	3	0.5	<0.05	<0.03
16418	0.2	0.5	20	<0.5	2.5	<0.002	0.07	0.71	0.3	<1	<0.2	2570	<0.05	<0.05	0.2	0.007	0.02	0.1	2	0.1	0.4	2	1.9	0.06	0.03
16419	<0.1	<0.2	10	<0.5	0.2	<0.002	0.15	0.37	0.1	<1	<0.2	2620	<0.05	<0.05	<0.2	<0.005	0.05	0.1	1	<0.1	0.1	2	<0.5	<0.05	<0.03
16420	<0.1	0.2	10	0.7	0.4	<0.002	0.09	3.94	0.2	<1	<0.2	1210	<0.05	<0.05	<0.2	<0.005	0.02	0.2	1	<0.1	0.7	2	<0.5	0.12	0.06
16421	0.1	0.6	20	0.9	1.1	0.002	0.03	3.84	0.2	<1	<0.2	2570	<0.05	<0.05	<0.2	0.005	0.02	0.1	2	<0.1	0.4	5	1.5	0.06	0.03
16422	4.1	7.8	180	35.4	54.5	0.003	0.15	8.11	17.1	4	1.7	235	0.4	0.08	8.1	0.157	9.77	61.7	168	1	12.5	27	52.2	3	1.64
16423	<0.1	0.4	<10	1	0.5	<0.002	0.14	0.74	0.1	<1	<0.2	3280	<0.05	<0.05	<0.2	<0.005	0.02	0.1	1	<0.1	0.9	2	0.8	0.19	0.09
16424	<0.1	<0.2	10	0.5	0.1	<0.002	0.2	0.2	0.1	<1	<0.2	4260	<0.05	<0.05	<0.2	<0.005	<0.02	<0.1	<1	<0.1	0.1	<2	<0.5	<0.05	<0.03
16425	<0.1	0.5	30	1	0.2	<0.002	0.15	0.75	0.1	4	<0.2	1680	<0.05	<0.05	<0.2	<0.005	0.06	0.1	1	<0.1	0.4	<2	1.2	0.07	0.04
16426	<0.1	0.5	10	0.9	0.2	<0.002	0.15	0.43	0.1	<1	<0.2	3000	<0.05	<0.05	<0.2	<0.005	<0.02	0.1	<1	<0.1	0.1	<2	<0.5	<0.05	<0.03
16427	<0.1	1	10	<0.5	0.2	<0.002	0.07	0.45	0.1	<1	<0.2	1310	<0.05	<0.05	<0.2	<0.005	<0.02	0.1	<1	<0.1	0.2	<2	<0.5	<0.05	<0.03
16428	<0.1	0.2	10	0.6	0.1	<0.002	0.12	0.69	0.1	<1	<0.2	3100	<0.05	<0.05	<0.2	<0.005	<0.02	<0.1	<1	<0.1	0.1	<2	<0.5	<0.05	<0.03
16429	<0.1	0.7	10	0.7	0.3	0.004	0.02	0.97	0.1	<1	<0.2	2710	<0.05	<0.05	<0.2	<0.005	<0.02	0.1	<1	<0.1	0.2	2	0.5	<0.05	<0.03
16430	<0.1	0.2	30	0.7	0.2	<0.002	0.16	0.16	0.2	<1	<0.2	3140	<0.05	<0.05	<0.2	<0.005	<0.02	0.1	3	<0.1	0.4	3	0.5	0.06	0.04
16431	0.1	1.7	80	2.8	1.6	0.007	0.02	2.08	1	<1	<0.2	3410	<0.05	<0.05	0.5	0.005	0.02	0.2	3	<0.1	1.3	8	2.8	0.27	0.13
16432	<0.1	<0.2	<10	0.5	0.2	<0.002	0.17	0.26	0.1	<1	<0.2	3550	<0.05	<0.05	<0.2	<0.005	<0.02	<0.1	<1	<0.1	0.1	2	<0.5	<0.05	<0.03
16433	<0.1	<0.2	10	0.6	0.4	<0.002	0.16	0.21	0.1	<1	<0.2	3510	<0.05	<0.05	<0.2	<0.005	<0.02	0.1	1	<0.1	0.3	<2	0.5	<0.05	<0.03

Table 4. Multi-element analyses

SAMPLE	Gd	Ho	Lu	Nd	Pr	Sm	Tb	Tm	Yb	Cu
DESCRIPTION	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
16402	0.25	0.03	0.01	1.4	0.27	0.37	0.03	0.01	0.06	
16403	<0.05	<0.01	0.01	0.1	<0.03	0.03	<0.01	<0.01	<0.03	
16408	18.9	2.56	0.78	79.1	16.75	22.6	2.69	0.9	5.31	
16409	0.06	0.01	0.01	0.2	0.04	0.07	0.01	<0.01	0.03	
16410	<0.05	0.01	0.01	0.1	0.03	0.03	<0.01	<0.01	<0.03	
16411	7.76	1.23	0.48	25	5.11	7.83	1.22	0.49	3.01	
16412	0.1	0.01	0.01	0.6	0.12	0.13	0.01	<0.01	0.03	
16413	0.21	0.03	0.02	1.1	0.21	0.25	0.03	0.01	0.06	
16414	0.05	0.01	0.08	0.1	0.03	0.06	0.01	0.01	0.06	
16415	0.05	0.01	0.01	0.4	0.07	0.08	0.01	<0.01	<0.03	
16416	0.05	0.01	0.01	0.1	<0.03	0.03	0.01	0.01	0.04	
16417	<0.05	0.01	0.01	0.2	0.05	0.05	0.01	<0.01	<0.03	
16418	0.08	0.01	0.02	0.5	0.11	0.11	0.01	0.01	0.04	
16419	<0.05	<0.01	0.01	0.1	<0.03	0.03	<0.01	<0.01	<0.03	
16420	0.15	0.02	0.02	0.5	0.09	0.14	0.02	0.01	0.06	
16421	0.09	0.01	0.05	0.3	0.07	0.1	0.01	0.01	0.05	
16422	3.95	0.59	0.33	19.9	4.76	4.41	0.56	0.26	1.8	27.3
16423	0.2	0.03	0.02	0.3	0.07	0.13	0.03	0.01	0.07	
16424	<0.05	<0.01	0.01	0.1	0.04	0.03	<0.01	<0.01	<0.03	
16425	0.09	0.01	0.01	0.8	0.21	0.11	0.01	0.01	0.03	
16426	<0.05	<0.01	0.01	0.2	0.05	0.05	<0.01	<0.01	<0.03	
16427	0.05	0.01	0.02	0.1	0.03	0.04	0.01	<0.01	<0.03	
16428	<0.05	<0.01	0.01	0.1	<0.03	0.03	<0.01	<0.01	<0.03	
16429	<0.05	0.01	0.07	0.2	0.05	0.07	0.01	0.01	0.04	
16430	0.06	0.01	0.01	0.2	0.03	0.04	0.01	0.01	0.04	
16431	0.37	0.05	0.12	1.5	0.29	0.45	0.05	0.03	0.15	
16432	<0.05	<0.01	0.01	0.1	<0.03	<0.03	<0.01	<0.01	<0.03	
16433	0.05	0.01	0.01	0.2	0.04	0.05	0.01	<0.01	<0.03	

Table 5. Multi-element analyses

Annual Technical Report
For the period ending 10th May 2016

EL 4869 Ediacara

Archer Energy and Resources Pty Ltd
Archer Exploration Limited

By Wade Bollenhagen
Archer Exploration Ltd
11/05/2016

Contents

Bibliographic Data

Report Title	Annual Report for Exploration Licence 4869 'Ediacara for the period 11th May 2015 to 10th May 2016
Project Name	Ediacara
Tenement Number	EL 4869
Tenement Holder	Archer Energy and Resources Pty Ltd
Operator	Archer Exploration Limited
Commodities	**Barite**
Tectonic Unit	Adelaide Geosyncline
Stratigraphic Unit	Skillogalee Dolomite
1:250,000 Map Sheet	SH 54-9 Copley
1:100,000 Map Sheets	6536 Copley
Keywords	**Barite, API Standard Barite, Mt James**

SUMMARY

Exploration Licence 4869 'Ediacara, held by Archer Energy and Resources Pty Ltd (Archer) is located west south-west of Leigh Creek.

The tenement resides on the Eastern Side of the Torrens Hinge Zone with Adelaide Geosyncline covering the eastern part of the tenement. , in roughly the central part of the Arrowie Basin

Historically, only a few deep holes have been drilled within the tenement to penetrate the alluvial cover to understand basement mineralisation, outside of the reserve. One hole MJ_1 was drilled to determine if Pb_Cu_Ag mineralisation present at the historic Black Eagle mine was associated with a gravity anomaly. It was reported that low level mineralisation existed in the core however no assays were presented, the data could not be extracted from SARIG either.

Mapping of the barite veins was undertaken as well as sampling to determine if a product could be created that met drilling grade specifications. It was shown that drilling grade barite could readily be made from material at Ediacara. It appears from ground inspection that the vein sets have been drilled, probably under the expired ML as no data exists for them.

Introduction

EL 4869 'Ediacara is located 10km south west of Leigh Creek in South Australia (Figure 1). Access is gained by established station tracks.

This report details exploration work completed by Archer Exploration Ltd between 11th May 2015 and 10th May 2016.

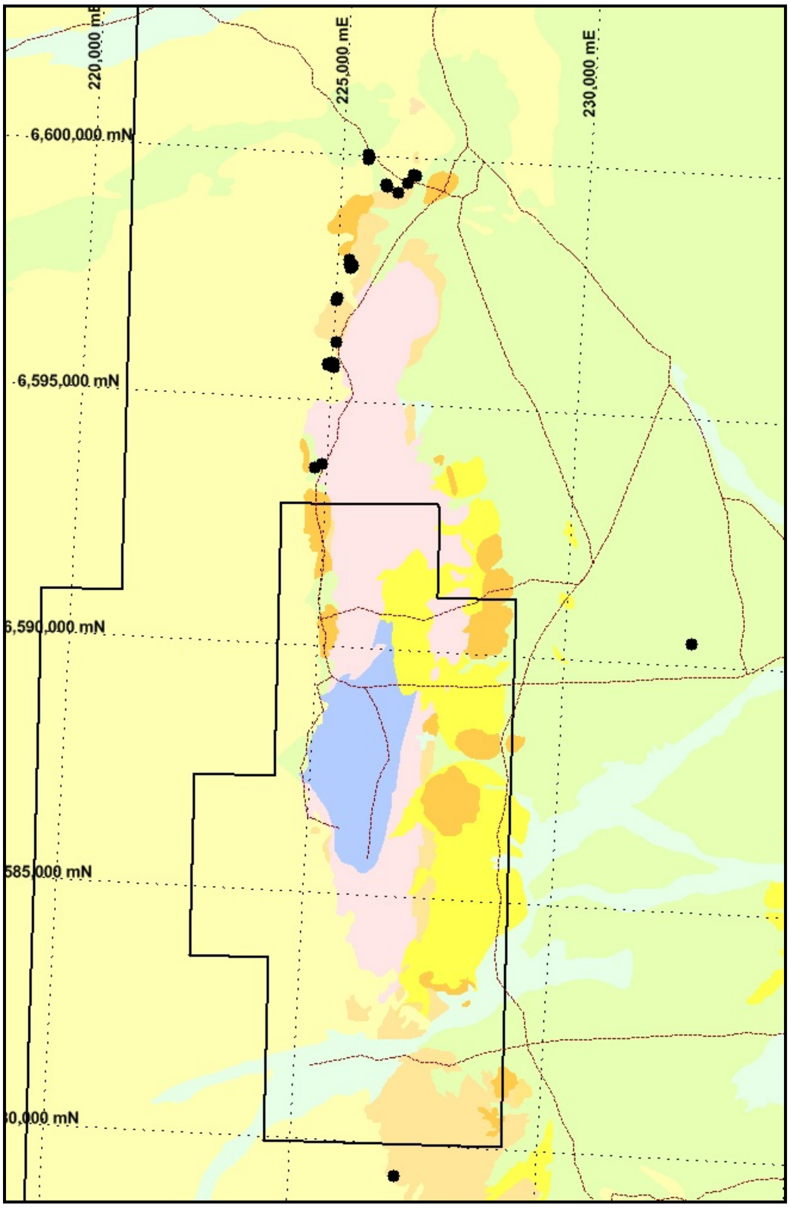


Figure 1: Location of rock chip samples and geology map for EL 4869

Previous exploration activities on the tenement were focused on the Wonoka Formation which comprises grey shales and dolomites as a host to base metal mineralisation.

1 Tenure

EL 4869 'Ediacara' covering 646km^2 was granted to Acher Energy and Resources Pty Ltd (a wholly owned subsidiary of Archer Exploration Ltd) on the 11th May 2012 for a term of 5 years. The tenement was designed and applied for in a manner that excluded the Reserve at the centre, which happens to be the centre of historic mining.

Archer Exploration listed on the Australian Stock Exchange on 14 August 2007.

2 Geology

EL 4869 'Ediacara" lies on the margin of the Torrens Hinge Zone and the Adelaide Geo-syncline. The geology is dominated by the long continuous strike of Neoproterozoic rocks, which are dominated by Tertiary and Quaternary alluvials with a central ridge (fault) dominating the topography.

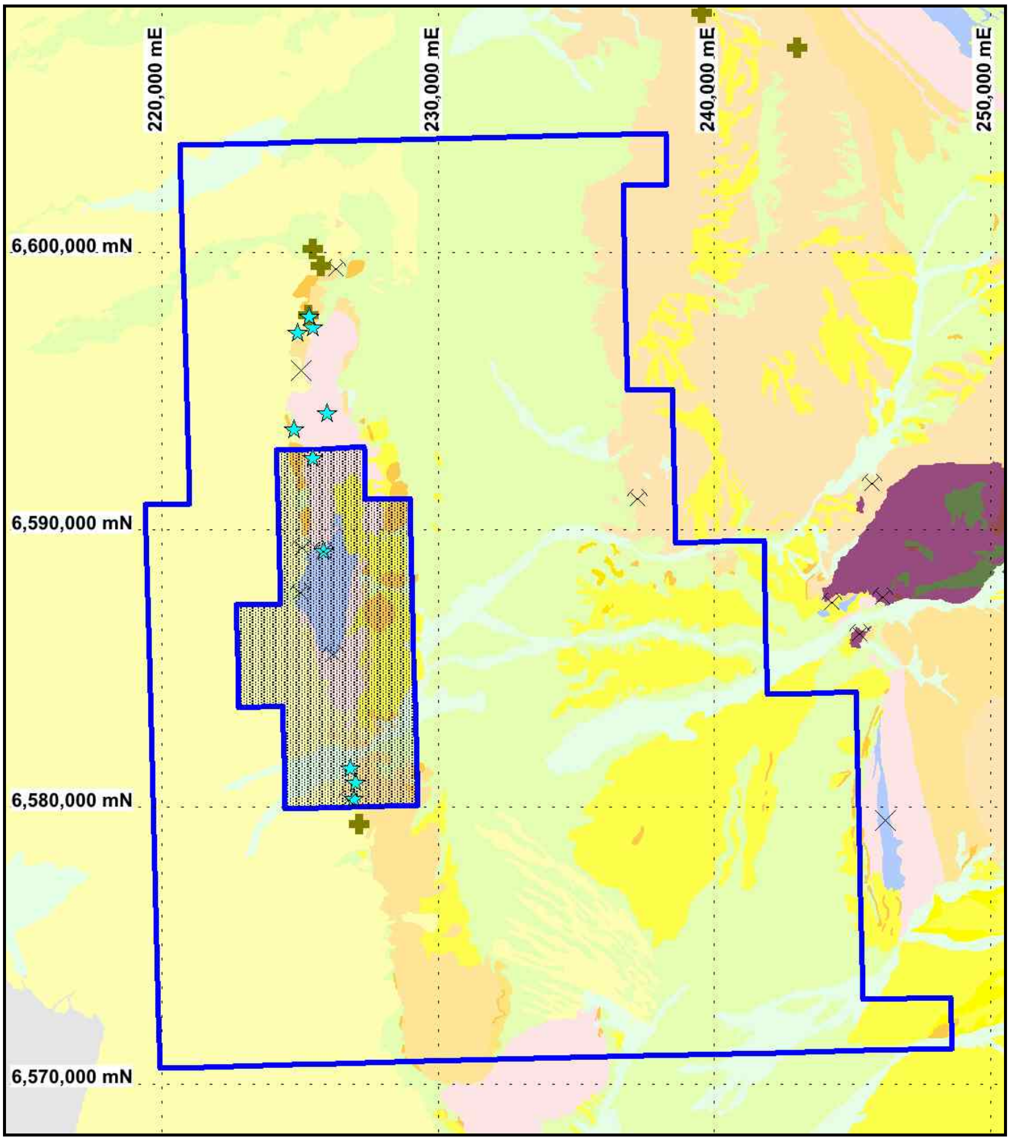


Figure 2: Geology and deposit location map for EL4869 (PIRSA)

3 Work Completed

3.1 Laboratory

A total of 15 rock chip samples were collected from various veins during the mapping exercise and submitted for analyses. These are reported in Appendix 1 of this report, photos of these samples are shown as Appendix 2.

Additionally, samples (60kg) were taken from several locations for API determination through ALS laboratory in Adelaide, called Project P0823. The API results are shown as Appendix 3.

Project P0823 – Preliminary Testing of a Barite Ore Sample

3.1.1 Sample Receipt and Preparation

An ore sample of approximately 60kg in the form of lumps up to 150mm was received for testing on 4th September, 2015. This sample was crushed to minus 25mm and riffled into two portions. One portion was crushed further to minus 12.5mm. One-quarter of the minus 12.5mm fraction was sized into eight size fractions. A size analysis of the -12.5mm fraction is shown below, table 1.

Size	**Weight Retained**		**Cumulative Weight**
mm	**g**	**%**	**Passing, %**
6700	859.60	22.44	77.56
3350	846.90	22.11	55.46
1700	486.90	12.71	42.75
850	472.90	12.34	30.41
425	585.60	15.28	15.12
212	225.80	5.89	9.23
106	128.40	3.35	5.88
53	83.40	2.18	3.70
-53	141.73	3.70	
Total	3831.23	100.00	

Table 1. Results of sizing analyses on -12.5mm fraction

A sample of minus 12.5mm ore was also prepared and submitted for detailed analyses including Cd and Hg.

3.1.2 Heavy Liquid Separation

Heavy liquid separation at SG 3.3 was carried out on the seven coarsest fractions of minus 12.5mm ore. SG determinations were carried out on the <3.3 SG and >3.3 SG products. Results of the heavy liquid separation tests are presented below, Table 2.

Sample #	Sample ID	Mass	%	*SG*
HL28939	P0823 +6750um -3.3SG	116.8	13.05	
HL28940	P0823 +6750um +3.3SG	778.07	86.95	4.27
		894.87	100	
		HLS Mass	189.05	
Sample #	Sample ID	Mass	%	
HL28939	P0823 +3350um -3.3SG	13.81	7.34	
HL28940	P0823 +3350um +3.3SG	174.39	92.66	4.27
		188.2	100	
		HLS Mass	129.7	
Sample #	Sample ID	Mass	%	
HL28941	P0823 +1700um -3.3SG	8.77	6.78	
HL28942	P0823 +1700um +3.3SG	120.67	93.22	4.36
		129.44	100	
		HLS Mass	119.76	
Sample #	Sample ID	Mass	%	
HL28943	P0823 +850um -3.3SG	6.88	5.76	
HL28944	P0823 +850um +3.3SG	112.5	94.24	4.42
		119.38	100	
		HLS Mass	141.07	
Sample #	Sample ID	Mass	%	
HL28945	P0823 +425um -3.3SG	10.2	7.25	
HL28946	P0823 +425um +3.3SG	130.41	92.75	4.44
		140.61	100	
		HLS Mass	114.98	
Sample #	Sample ID	Mass	%	
HL28947	P0823 +212um -3.3SG	10.8	9.40	
HL28948	P0823 +212um +3.3SG	104.13	90.60	4.47
		114.93	100	
		HLS Mass	109.73	
Sample #	Sample ID	Mass	%	
HL28949	P0823 +53um -3.3SG	16.03	14.63	
HL28950	P0823 +53um +3.3SG	93.55	85.37	4.52
		109.58	100	

Table 2. Results of Heavy liquid separation.

3.1.3 Preparation of a Barite Concentrate Sample

The plus 6.7mm >3.3 SG fraction with a specific gravity of 4.27 was stage ground to 98% minus 75µm in a wet rod mill grinding and screening process. A size analysis of the barite concentrate product is shown as table 3. A sample of the barite concentrate was also submitted for detailed chemical analysis, results of which are attached together with head sample analyses, table 4.

Size	Weight Retained		Cumulative Weight
µm	g	%	Passing, %
150	0.02	0.02	99.98
125	0.09	0.08	99.91
106	0.22	0.19	99.72
90	0.53	0.45	99.27
75	1.75	1.48	97.80
63	11.36	9.59	88.21
53	16.25	13.72	74.49
45	12.61	10.64	63.84
38	5.33	4.50	59.34
29	12.05	10.17	49.17
22	12.81	10.81	38.36
15	12.53	10.58	27.78
10	11.33	9.56	18.22
8	3.91	3.30	14.92
-8	17.67	14.92	
Total	118.46	100.00	

Table 3. Sizing of 6.7mm material ground to -75µm

SAMPLE	Cd	Hg	BaO	CaO	Ca	SO3	Fe2O3
DESCRIPTION	ppm	ppm	%	%	%	%	%
P0823 - Barite Concentrate Assay	0.11	0.019	58.6	0.5	0.35	31.9	0.17
P0823 - Head Sample Assay	0.03	0.013	56.5	0.49	0.32	30.5	0.07

Table 4.

3.1.4 Analyses for Water Soluble Calcium

The water soluble calcium content of barite concentrate after wet grinding to 98% minus 75µm was determined to be 35ppm. The water soluble calcium content of the plus 6.7mm >3.3 SG fraction after dry pulverising was 218ppm.

3.2 Mapping

Refer to Appendix 4 for results of mapping of the barite veins.

3.3 Native Title

The Claimant group were contacted and a survey was organised to clear areas for drill tersting the barite veins. This was cancelled on the companies request as the magneiste project (within the Claimant Area) progressed. It was decided by management that a survey in the future should cover both projects.

4 Environment

No ground disturbing activities occurred during the year.

Appendix 1 Geochemistry

Sample_Number	Easting	Northing	Description	Ag	Al	As	Be	Bi	Ca	Cd	Ce
				ppm	%	ppm	ppm	ppm	%	ppm	ppm
ED 010915_01	225585	6598690		0.1	0.02	4.8	0.07	0.06	<0.02	0.53	0.7
ED010915_02	225426	6598778	footwall mn - 271 nth ED010915_002	0.11	0.04	1.7	0.06	0.02	<0.02	0.51	0.3
ED010915_03	225489	6598565	vein - joins sth	0.31	0.06	8.5	0.09	0.62	0.03	0.81	10.4
ED010915_05	225388	6598515	sample ED010915_05 - VN set ba	0.13	0.05	1	0.09	0.12	0.01	<0.02	0.37
ED010915_06	225267	6597915	ED010915_06_07	0.09	0.01	1.4	<0.05	0.05	0.01	<0.02	0.35
ED010915_07	225267	6597915		0.1	0.03	0.8	<0.05	0.05	0.09	<0.02	0.66
ED010915_08	225417	6598548	sample ED010915_05 - VN set ba	0.24	0.05	6.3	0.2	0.13	0.05	0.02	0.76
ED020915_01	225445	6598942	vn 0.7 - 1.0m wide - ED020915_01	0.21	0.06	5.3	0.11	0.89	0.02	0.02	0.41
ED020915_02	225987	6598159	gy in alluvials- ED020915_02	0.65	0.03	0.7	0.06	0.43	0.68	0.02	2.83
ED020915_03	225750	6598278	qtz - ba vn	0.19	0.1	2.6	0.21	0.54	0.05	0.02	1.2
ED020915_04	224867	6596323	ba vn ED020915_04 - photo nth	1.05	0.05	1.8	0.05	0.35	0.14	0.03	0.93
ED020915_06	225072	6595983	photo looking sth - ED020915_06	0.64	0.09	4.4	0.46	0.42	1.05	0.07	3.21
point_262	225782	6598869	previous mined area - 4 samples for assay	0.08	0.02	0.6	<0.05	0.06	0.22	<0.02	0.31
Point_315	225894	6599434	ba vn	0.11	0.03	4	<0.05	0.16	0.24	<0.02	0.45
Point_320	225712	6599235	discontinued - photo looking sth - sample	0.13	0.01	0.8	<0.05	0.06	0.08	<0.02	0.17

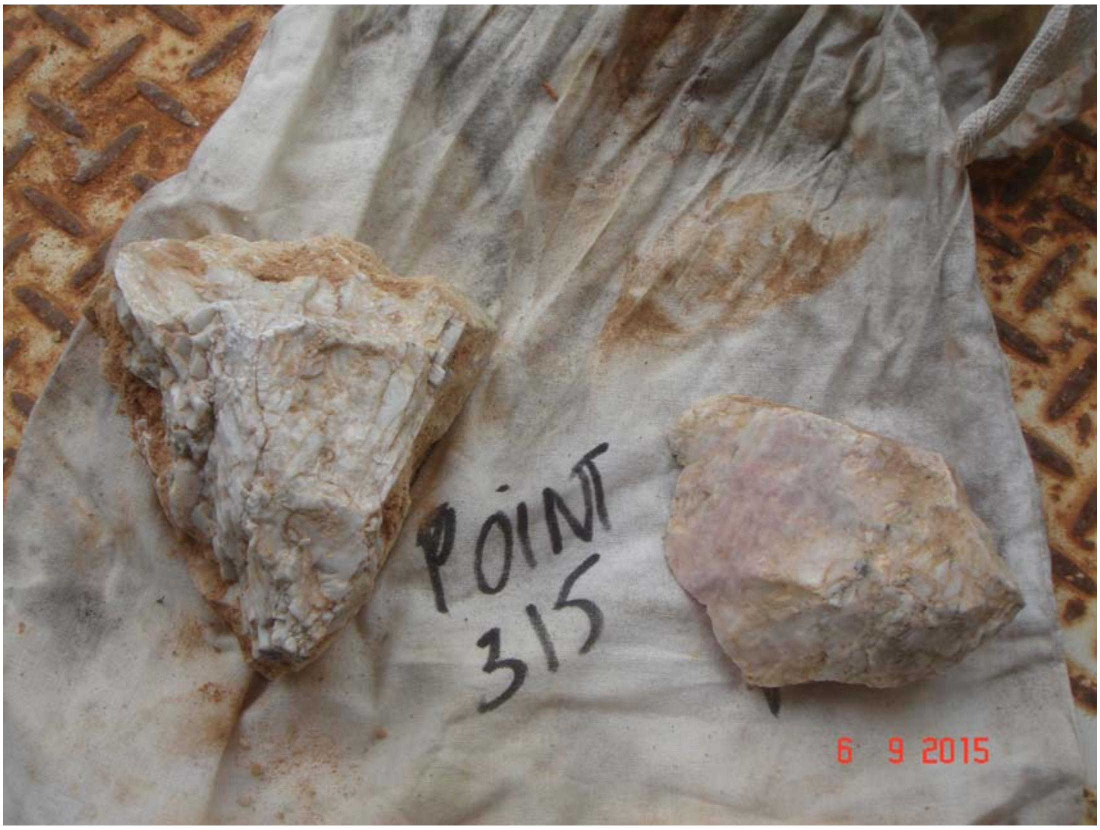
Sample_Number	Co	Cr	Cs	Cu	Fe	Ga	Ge	Hf	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P
	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm
ED 010915_01	8	<0.05	13.4	0.08	0.13	0.06	<0.1	0.023	0.01	<0.5	0.9	<0.01	262	0.24	<0.01	0.1	0.7	20	1.6
ED010915_02	19	0.05	24.2	0.06	0.21	0.06	<0.1	0.014	0.01	<0.5	1.4	0.01	203	0.21	<0.01	0.1	0.6	10	1.5
ED010915_03	51	0.05	99.2	0.24	0.54	0.07	<0.1	0.046	0.01	<0.5	4.8	0.01	6290	1.01	0.01	0.1	2.7	70	2.9
ED010915_05	0.6	107	<0.05	10	0.14	0.42	0.06	<0.1	<0.005	0.01	<0.5	6.4	<0.01	122	1.19	<0.01	0.1	1.6	30
ED010915_06	0.2	7	<0.05	4.8	0.07	0.11	0.05	<0.1	<0.005	<0.01	<0.5	0.3	<0.01	22	0.21	<0.01	<0.1	0.3	20
ED010915_07	1.8	9	<0.05	8.9	0.04	0.2	0.06	<0.1	0.006	0.01	<0.5	0.3	0.01	1300	0.35	<0.01	0.2	0.6	10
ED010915_08	1.1	53	<0.05	23.5	0.28	0.25	0.06	<0.1	0.035	0.01	<0.5	7.7	0.01	513	0.67	<0.01	0.1	1.7	40
ED020915_01	0.5	69	0.05	30.3	0.17	0.25	0.05	<0.1	0.016	0.01	<0.5	5.7	<0.01	203	0.85	0.01	0.1	2.9	20
ED020915_02	0.4	8	0.05	17.4	0.07	0.18	0.07	<0.1	0.018	0.01	0.9	0.3	0.01	40	0.11	0.01	0.1	0.8	40
ED020915_03	1.1	105	0.07	16	0.2	1.03	0.07	<0.1	<0.005	0.02	<0.5	9.3	0.02	149	1.22	0.01	0.2	2.2	100
ED020915_04	0.4	34	<0.05	23.2	0.07	0.2	0.06	<0.1	0.018	0.01	0.5	3.2	0.01	42	0.37	0.01	0.1	0.8	30
ED020915_06	2.3	44	0.12	54.6	0.23	0.31	0.07	<0.1	0.013	0.03	1.2	5.5	0.01	27	0.48	<0.01	0.1	1.9	50
point_262	0.1	18	<0.05	18.9	0.04	0.11	0.07	<0.1	<0.005	<0.01	<0.5	0.7	0.01	13	0.19	<0.01	<0.1	0.3	10
Point_315	1	11	<0.05	13.4	0.06	0.13	0.05	<0.1	0.006	<0.01	<0.5	1.2	<0.01	59	0.24	<0.01	<0.1	0.7	10
Point_320	0.4	9	<0.05	11.5	0.02	0.1	0.06	<0.1	<0.005	<0.01	<0.5	0.7	<0.01	61	0.15	<0.01	<0.1	0.6	10

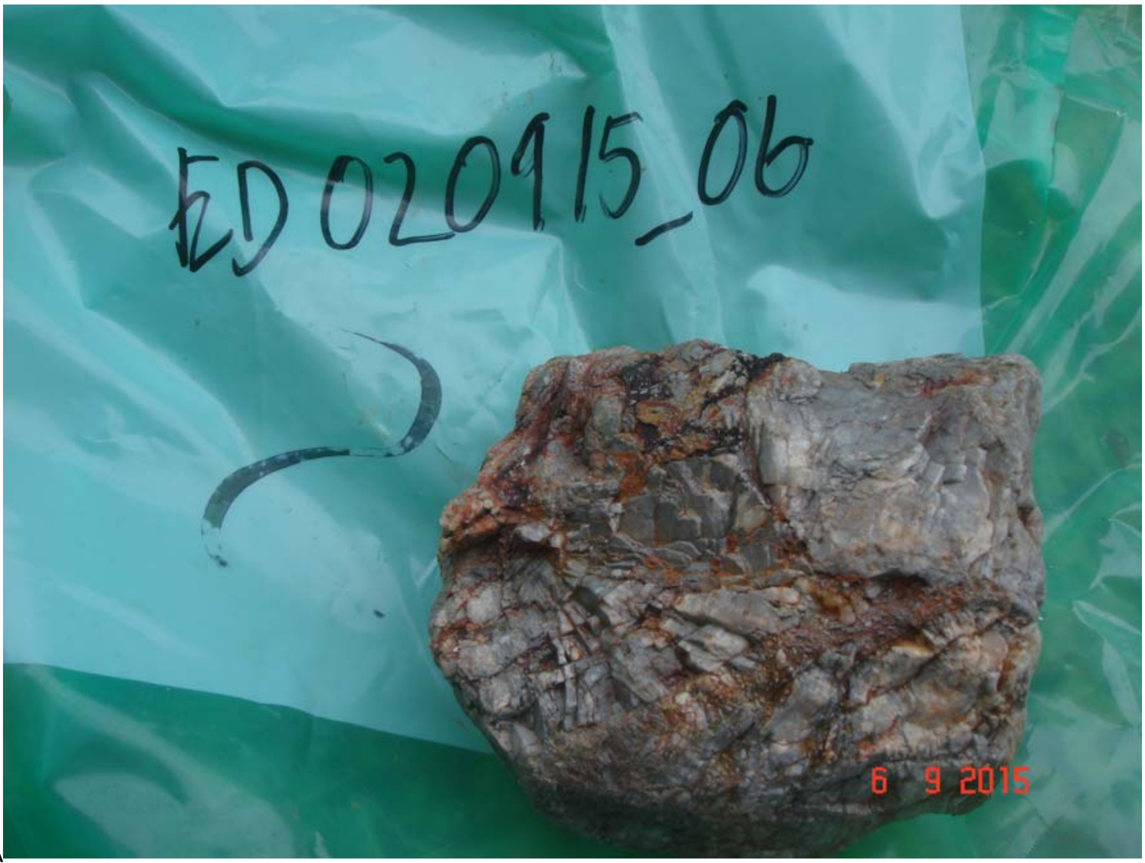
Sample_Number	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
ED 010915_01	0.3	<0.002	0.13	0.13	3.25	0.1	<1	<0.2	1865	<0.05	<0.05	<0.2	<0.005	0.04	0.2	2	<0.1	0.4	<2	0.7
ED010915_02	0.6	<0.002	0.17	0.17	3.85	0.1	<1	<0.2	3350	<0.05	<0.05	<0.2	<0.005	0.02	0.1	1	0.1	0.2	<2	0.7
ED010915_03	0.6	<0.002	0.08	0.08	6.16	0.3	<1	<0.2	1440	<0.05	<0.05	<0.2	<0.005	0.31	0.3	16	0.1	1.8	7	1.7
ED010915_05	1.3	0.5	<0.002	0.05	3.17	0.1	<1	<0.2	1435	<0.05	<0.05	<0.2	<0.005	0.02	0.1	2	0.1	0.2	<2	0.5
ED010915_06	1.2	0.2	<0.002	0.13	0.47	<0.1	<1	<0.2	1760	<0.05	<0.05	<0.2	<0.005	<0.02	0.1	1	<0.1	0.1	<2	0.6
ED010915_07	1.4	0.5	<0.002	0.17	0.56	0.1	<1	<0.2	3240	<0.05	<0.05	<0.2	<0.005	0.03	0.1	4	<0.1	0.3	<2	0.9
ED010915_08	1.9	0.6	<0.002	0.09	5.56	0.3	<1	<0.2	1520	<0.05	<0.05	<0.2	<0.005	0.04	0.2	4	0.1	2.9	4	1
ED020915_01	1.9	0.6	<0.002	0.11	9.32	0.2	<1	<0.2	2990	<0.05	<0.05	<0.2	<0.005	0.03	0.1	2	0.1	0.2	5	1.2
ED020915_02	1	0.6	<0.002	0.16	0.88	0.9	<1	<0.2	2220	<0.05	<0.05	0.8	<0.005	0.02	0.3	1	<0.1	1	<2	1.1
ED020915_03	1.8	1	<0.002	0.16	10.9	0.2	<1	0.2	4980	<0.05	<0.05	<0.2	<0.005	<0.02	0.1	3	0.2	0.5	2	1.5
ED020915_04	4.7	0.6	<0.002	0.11	5.74	0.2	<1	<0.2	1430	<0.05	<0.05	<0.2	<0.005	<0.02	0.2	3	0.1	0.5	<2	1.8
ED020915_06	1.1	1.4	<0.002	0.11	1.11	0.8	1	<0.2	1580	<0.05	<0.05	0.5	<0.005	0.05	0.4	3	0.1	2.1	6	2
point_262	2.9	0.2	<0.002	0.16	0.36	0.1	<1	<0.2	2880	<0.05	<0.05	<0.2	<0.005	<0.02	0.1	1	<0.1	0.1	<2	<0.5
Point_315	1.7	0.3	<0.002	0.14	2.73	0.1	<1	<0.2	2110	<0.05	<0.05	<0.2	<0.005	<0.02	0.1	3	<0.1	0.4	<2	0.5
Point_320	1.4	0.1	<0.002	0.15	2.05	<0.1	<1	<0.2	2530	<0.05	<0.05	<0.2	<0.005	<0.02	0.2	1	<0.1	0.1	<2	<0.5

Sample_Number	Dy	Er	Eu	Gd	Ho	Lu	Nd	Pr	Sm	Tb	Tm	Yb	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	%	%	%	%	%
ED 010915_01	0.07	0.03	<0.03	0.07	0.01	0.01	0.3	0.06	0.07	0.01	0.01	0.05	0.05	64.2	0.09	<0.01	0.12	0.01	0.04	0.04
ED010915_02	<0.05	<0.03	<0.03	<0.05	0.01	0.01	0.2	0.05	0.04	0.01	<0.01	0.04	0.09	60.8	0.03	0.01	0.07	0.02	0.03	0.03
ED010915_03	0.31	0.15	0.04	0.25	0.06	0.04	0.4	0.08	0.15	0.05	0.02	0.17	0.13	52.7	0.94	0.01	0.37	0.03	0.04	0.85
ED010915_05	<0.05	<0.03	<0.03	<0.05	<0.01	0.04	0.1	0.03	0.04	<0.01	0.01	0.09	0.11	42.4	0.02	0.03	0.21	0.02	0.02	0.02
ED010915_06	<0.05	<0.03	<0.03	<0.05	<0.01	0.01	0.1	0.03	0.03	<0.01	<0.01	0.04	0.04	64.4	0.02	<0.01	0.09	<0.01	0.03	<0.01
ED010915_07	0.06	0.03	<0.03	0.09	0.01	0.01	0.4	0.1	0.09	0.01	0.01	0.05	0.09	62.5	0.13	0.01	0.04	0.02	0.04	0.18
ED010915_08	0.47	0.23	0.08	0.42	0.09	0.04	0.4	0.08	0.21	0.08	0.03	0.19	0.12	52.1	0.06	0.01	0.41	0.02	0.03	0.07
ED020915_01	<0.05	<0.03	<0.03	<0.05	0.01	0.02	0.2	0.04	0.04	0.01	<0.01	0.05	0.13	47.3	0.03	0.02	0.24	0.02	0.03	0.02
ED020915_02	0.17	0.08	0.08	0.25	0.03	0.02	1.7	0.36	0.34	0.03	0.01	0.08	0.07	62.4	0.95	<0.01	0.07	0.02	0.04	0.01
ED020915_03	0.07	0.03	<0.03	0.08	0.01	0.01	0.4	0.1	0.08	0.01	0.01	0.05	0.18	35.8	0.07	0.02	0.28	0.03	0.04	0.02
ED020915_04	0.07	0.04	<0.03	0.11	0.01	0.02	0.5	0.1	0.1	0.02	0.01	0.05	0.1	56.6	0.19	0.02	0.1	0.02	0.03	<0.01
ED020915_06	0.35	0.15	0.15	0.69	0.06	0.02	2.3	0.52	0.47	0.07	0.02	0.12	0.2	55	1.56	0.01	0.35	0.05	0.05	0.01
point_262	<0.05	<0.03	<0.03	<0.05	<0.01	0.01	0.1	0.03	0.03	<0.01	<0.01	0.03	0.06	62.1	0.3	0.01	0.03	<0.01	0.04	<0.01
Point_315	0.05	0.03	<0.03	0.06	0.01	0.01	0.2	0.05	0.05	0.01	<0.01	0.04	0.07	63.6	0.33	<0.01	0.07	0.01	0.04	0.01
Point_320	<0.05	<0.03	<0.03	<0.05	<0.01	0.01	0.1	<0.03	<0.03	<0.01	<0.01	0.03	0.03	63.5	0.12	0.01	0.02	<0.01	0.03	0.01

Sample_Number	Na2O	P2O5	SO3	SiO2	SrO	TiO2	Total	LOI	Hg
	%	%	%	%	%	%	%	%	ppm
ED 010915_01	0.03	<0.01	34.3	1.3	0.89	<0.01	101.3	0.2	0.216
ED010915_02	0.05	<0.01	33	4.49	1.57	<0.01	100.4	0.2	0.077
ED010915_03	0.03	0.01	27.8	16.66	0.52	<0.01	101.25	1.09	0.096
ED010915_05	0.03	0.01	22.4	34.64	0.44	<0.01	100.55	0.19	0.052
ED010915_06	0.04	<0.01	34.3	0.39	0.89	<0.01	100.35	0.16	0.022
ED010915_07	0.09	<0.01	34	0.98	1.68	<0.01	100.05	0.27	0.014
ED010915_08	0.03	0.01	27.8	18.64	0.55	<0.01	100.1	0.23	0.115
ED020915_01	0.03	<0.01	25.5	26.51	1.06	<0.01	101.1	0.19	0.098
ED020915_02	0.04	0.01	33.7	0.99	1.24	<0.01	100.3	0.77	0.266
ED020915_03	0.03	0.02	19.7	42.06	1.32	<0.01	99.85	0.27	0.03
ED020915_04	0.05	0.01	30.1	11.68	0.59	<0.01	99.85	0.35	0.11
ED020915_06	0.03	0.01	29.2	12.52	0.62	<0.01	100.95	1.31	0.062
point_262	0.05	<0.01	33.4	2.57	1.3	<0.01	100.2	0.34	0.028
Point_315	0.04	<0.01	33.9	1.7	1.06	<0.01	101.2	0.35	0.049
Point_320	0.05	<0.01	34	1.68	1.16	<0.01	100.85	0.21	0.083

Appendix 2 Photos of samples of barite

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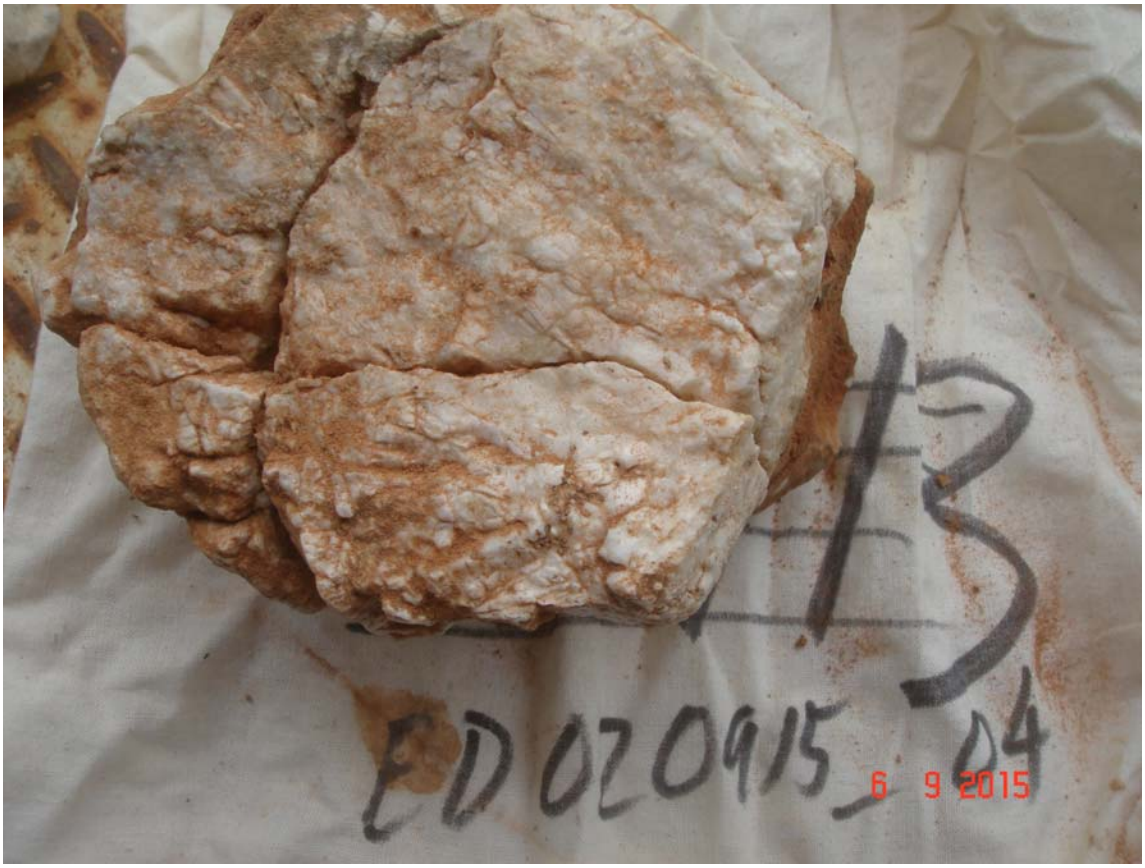
2
6 9 2015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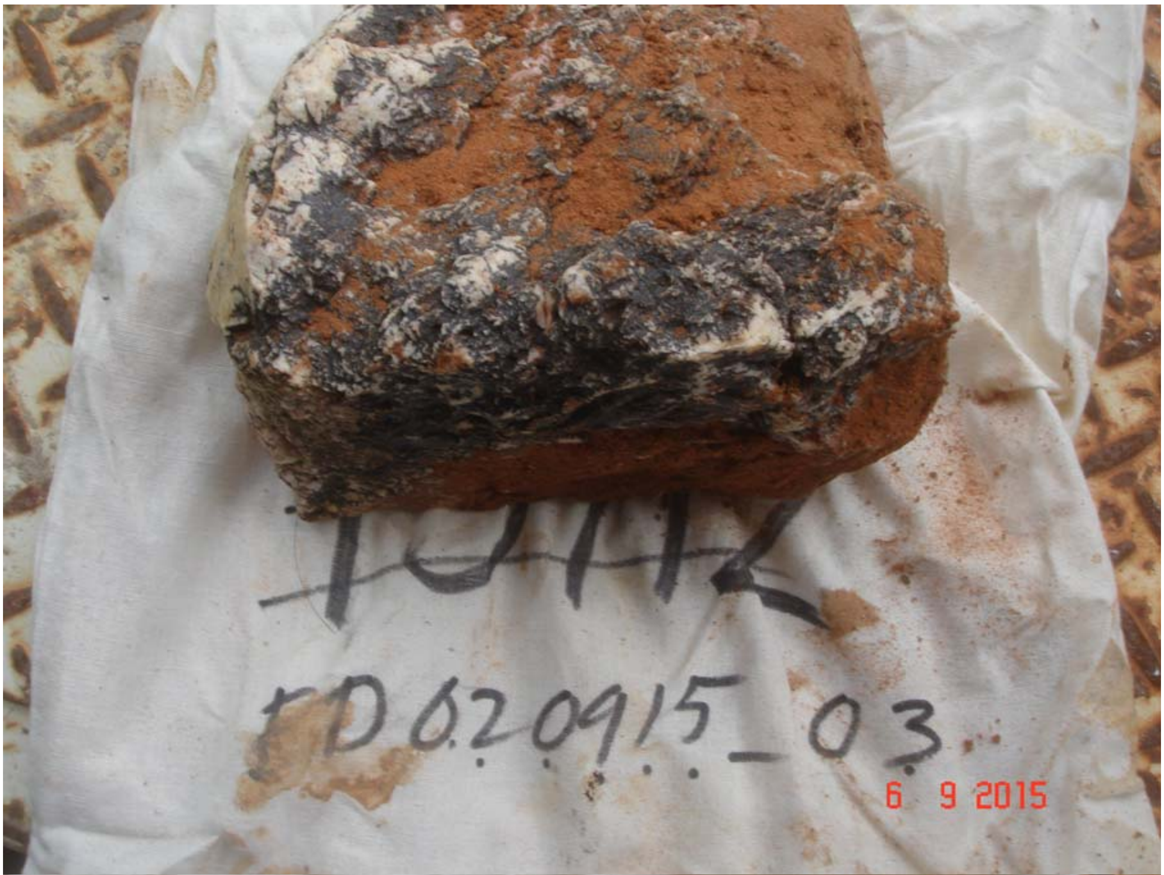
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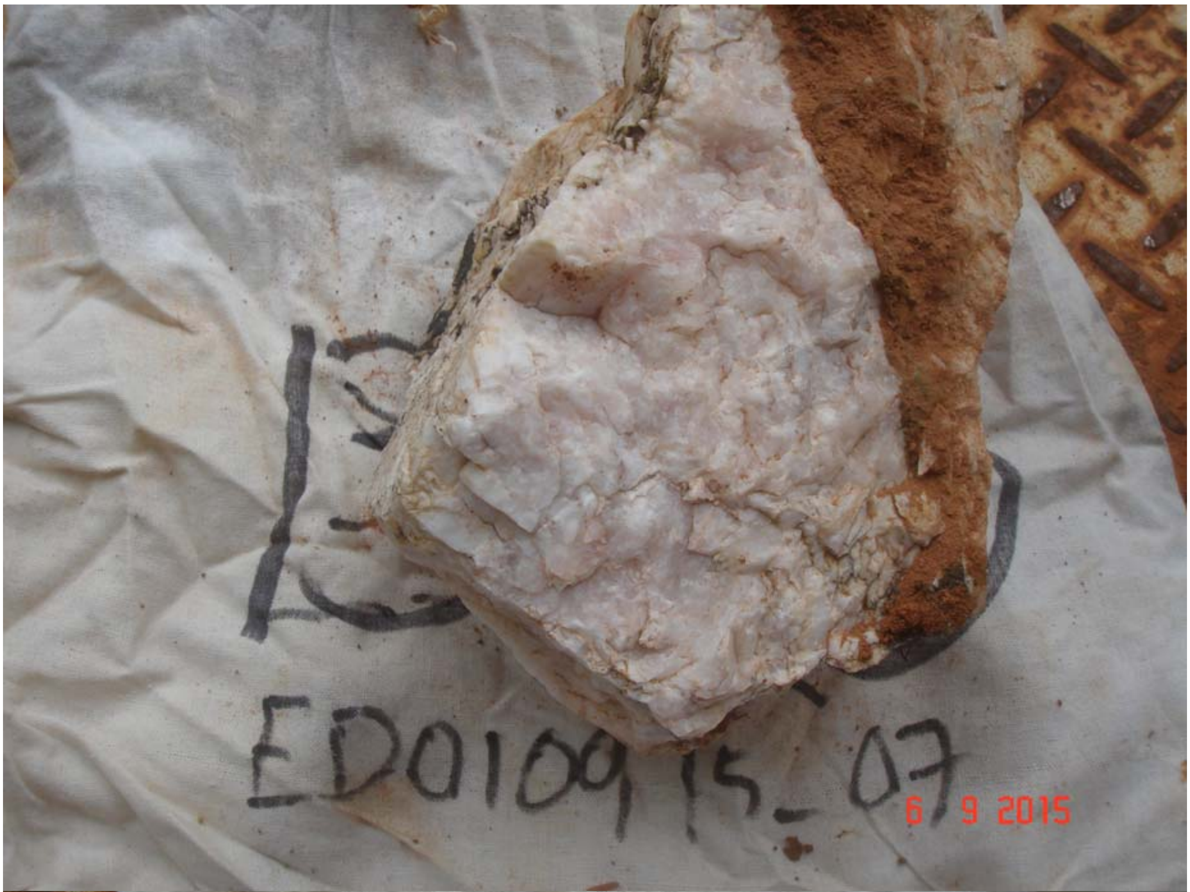
6 9 2015


ED020915_02
6 9 2015


ED020915_01
6 9 2015


6 9 2015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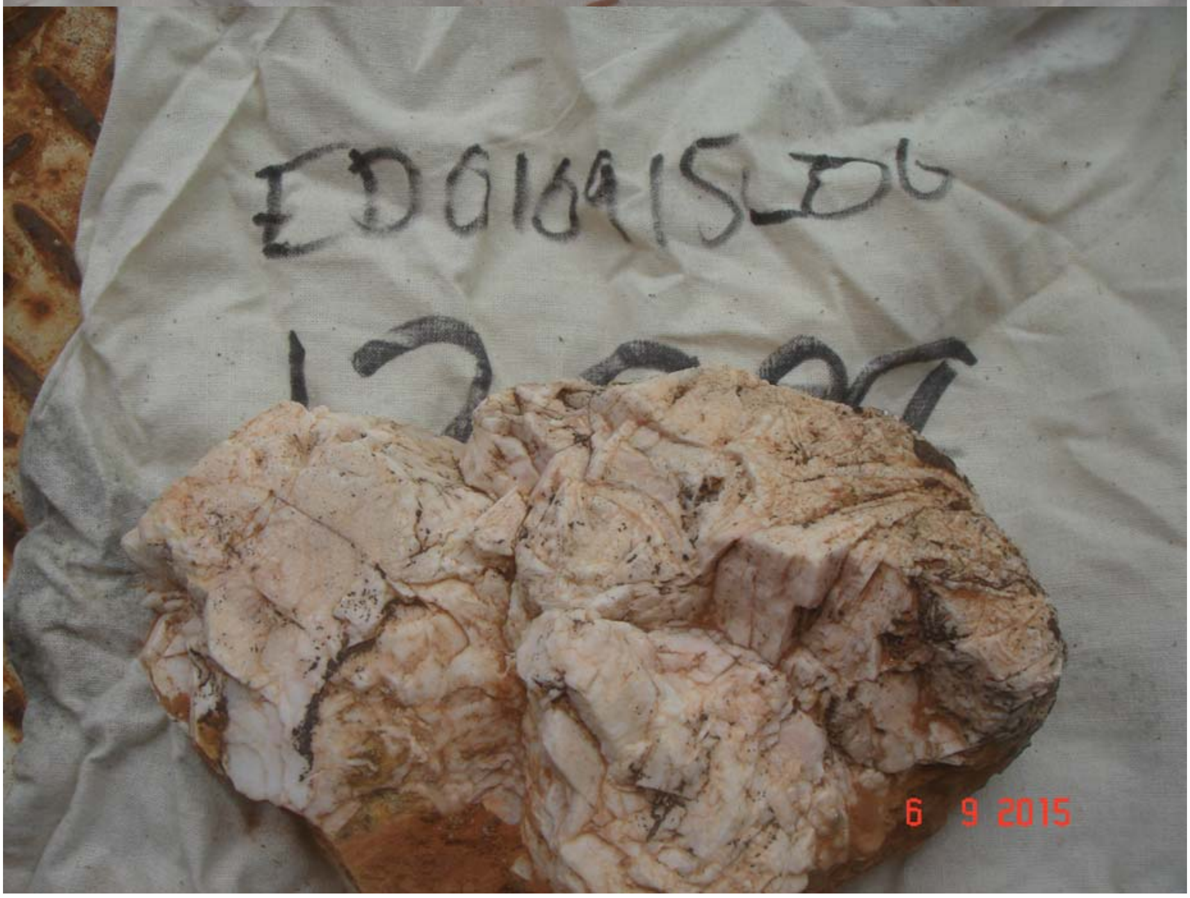
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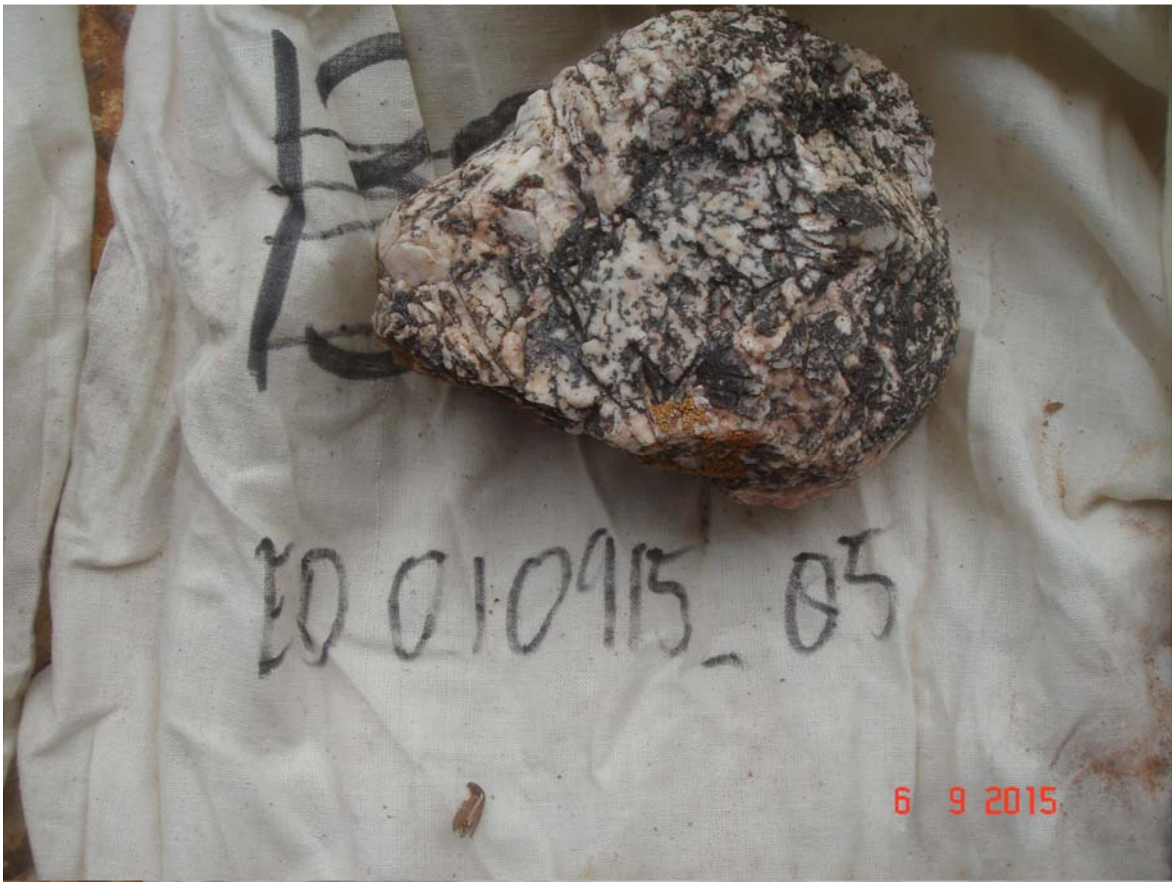
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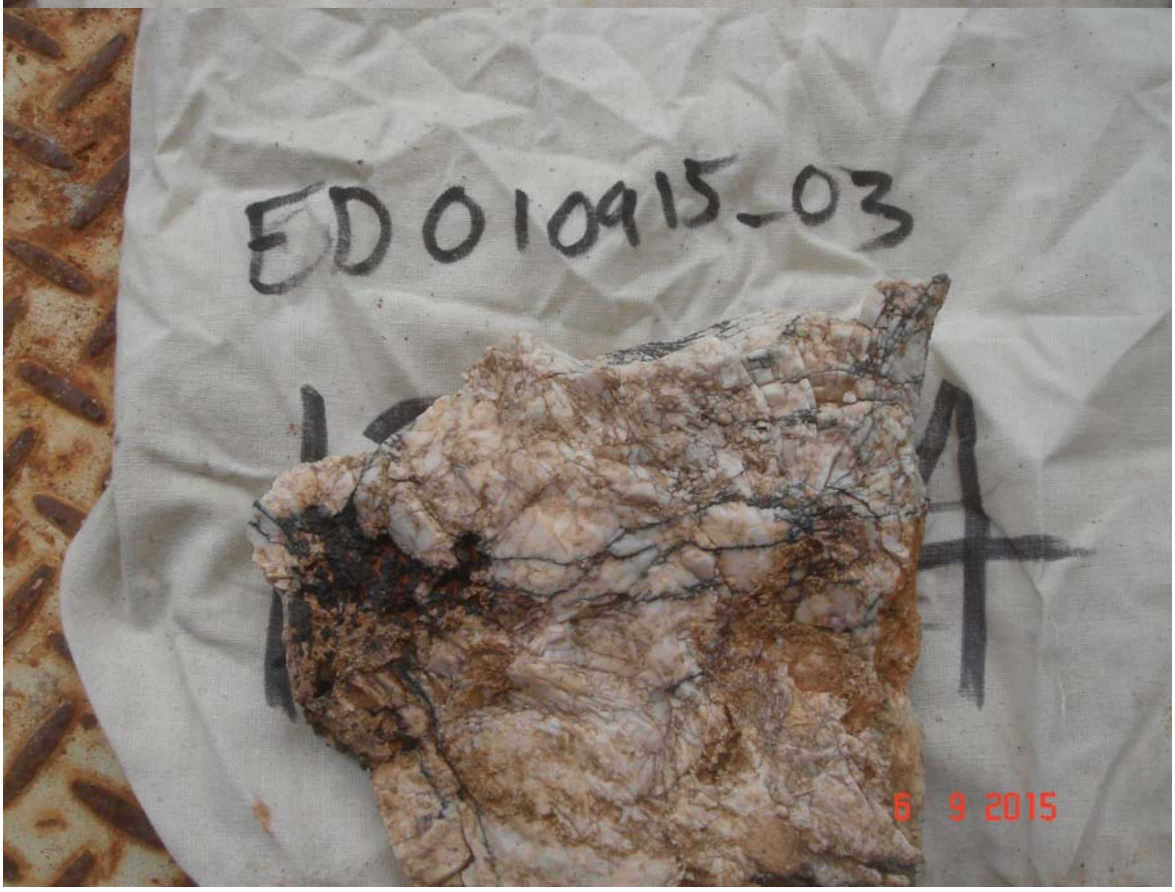
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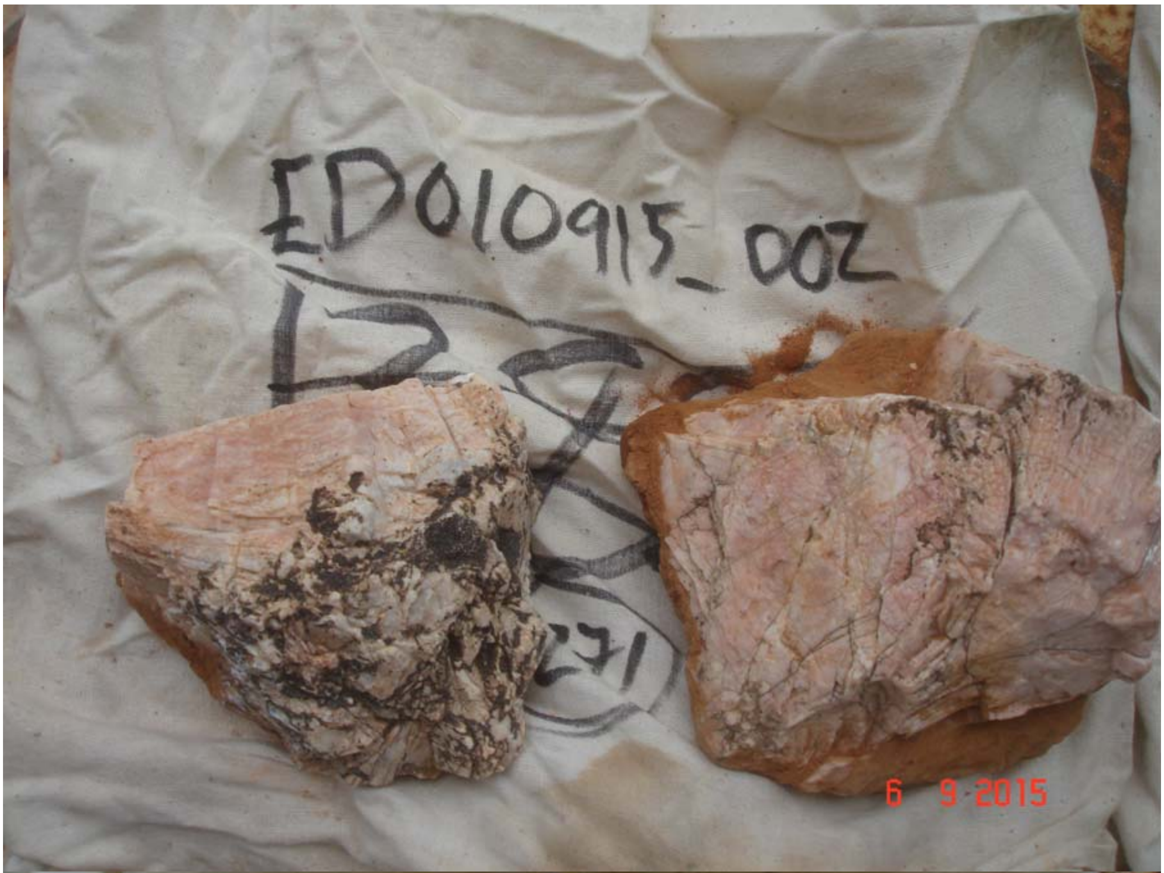
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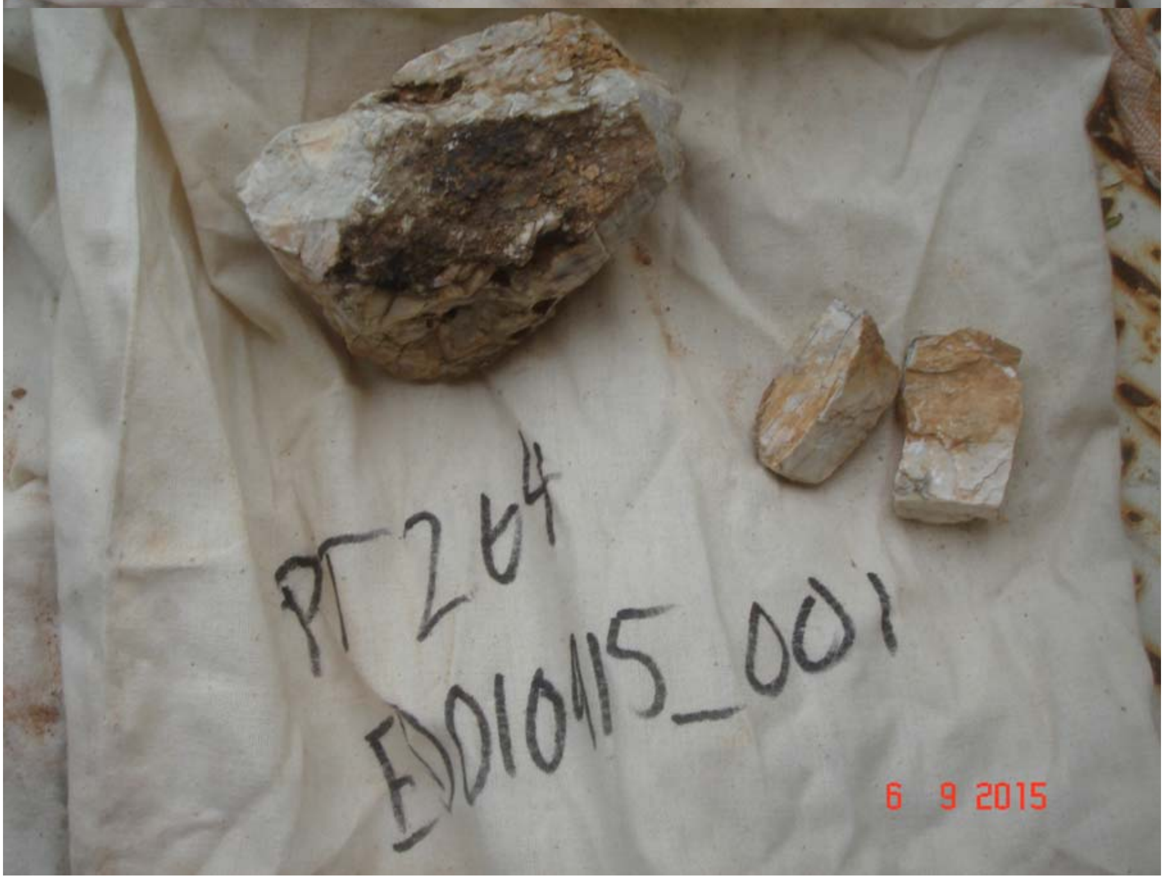
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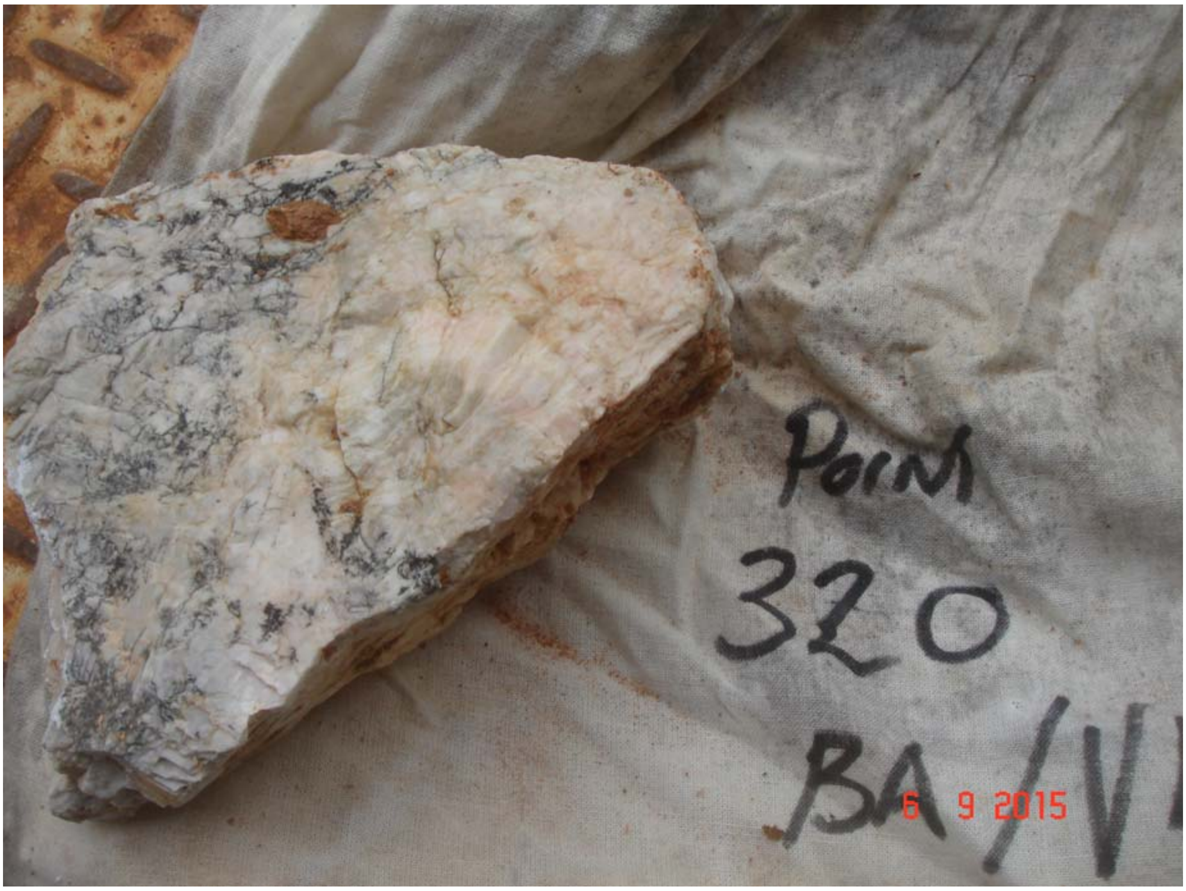
6 9 2015


Point
320
BA/V
6 9 2015

Appendix 3 API Certification

Mount James Project - Barite Test Results

In September 2015, Archer Exploration Limited submitted a 40kg composite sample to ALS Laboratories for assay and testing to determine if the barite is suitable for use as a drilling mud. Results of the test work are shown below.

API Specification 13A (4.2 density)

	API 13A Specification	Archer test results	Does Archer barite meet the standard?
Density (g/ml)	4.2 (min)	4.27	✓
Water-soluble alkaline earth metals, as calcium (mg/kg)	250 (max)	213	✓
Residue > 75 µm (mass fraction)	3.0% (max)	2.2%	✓
Particle less than 6 µm in equivalent spherical diameter (mass fraction)	30% (max)	14.9%	✓

U.S. Environmental Protection Agency (offshore drilling)

	EPA 1997 Specification	Archer test results	Does Archer barite meet the standard?
Mercury (mg / kg of barite)	1.0 (max)	0.019	✓
Cadmium (mg / kg of barite)	3.0 (max)	0.11	✓

Version 1.0

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Appendix 4 Mapping Report

Mount James Barite Project Mapping

(September 2015)

Contents

1. Executive Summary

During the period 2 - 3 September 2015, barite veins within the Mt James area of EL 4869 were mapped by Wade Bollenhagen, Exploration Manager, Archer Exploration Limited. A total of six different areas were mapped (refer to Figure 2). Key findings from the mapping include:

- 8 separate outcropping barite veins with widths > 1.0m were mapped with one of the veins outcropping for 1.3km before disappearing under cover.
- Previously unreported barite veins were discovered and mapped.
- Strong potential for further discovery exists under the alluvial cover to the east of known outcrops.
- Barite veins were mapped over a distance of > 3.5km. Additional 9km of potential strike in the Warioota Area (southern part of tenement) has not been explored.
- Numerous quartz rich barite veins were noted but not included in the mapping. Only barite with the potential for direct shipping ore was mapped.
- Most barite veins disappear under shallow cover along strike.
- Google imagery shows the presence of barite to the west and south of the current outcrops, but these areas were not mapped.
- < 30% of the favourable strike has been explored for barite with no previous exploration of barite undercover.
- Strong potential exists for further discovery under cover.

Mount James is considered very prospective for barite. Potential for the discovery of additional mineable veins undercover is considered high.

The barite veins at Mount James are hydrothermal in nature and have exploited fracture systems in the host rocks for mineralisation controls, it is these same controls that give rise to the unseen potential.

Possibility exists in certain locations for bulk mining opportunities, where the presence of mapped veins with the untested potential for “buried” parallel veins gives rise to possible tonnages that could be selectively mined.

Another 2.5km of prospective unmapped ground exists to the south of the mapped Mount James area, with only 2 samples being taken by Archer from this area in 2014.

Additional barite has been reported by others south of the Ediacara Conservation Park (Warioota Prospect). A sample taken by Archer from this area in 2014 reported 94% $BaSO_4$. There is an **additional 9km** of potential strike in this part of the tenement that has not been explored.

2. Methodology

Only the northern part of the tenement area was mapped by Archer (refer to Figure 1), other areas of known barite occurrence to the south (e.g. Warioota) and west were not mapped. The primary purpose of the mapping was to identify the strike, dip, widths and continuity of the outcropping barite veins. Barite veins that were < 0.2m wide or that were dominated by quartz were not mapped. Mapping was performed by recording a location with a hand held GPS and then recording the width and dip of the vein set.

All sites reported have a point number (its location). Some sites also have a photo reference. Samples were collected from some sites for density measurement and assay. Six discrete areas were mapped (refer to Figure 2) with 129 sites recorded over the two days.

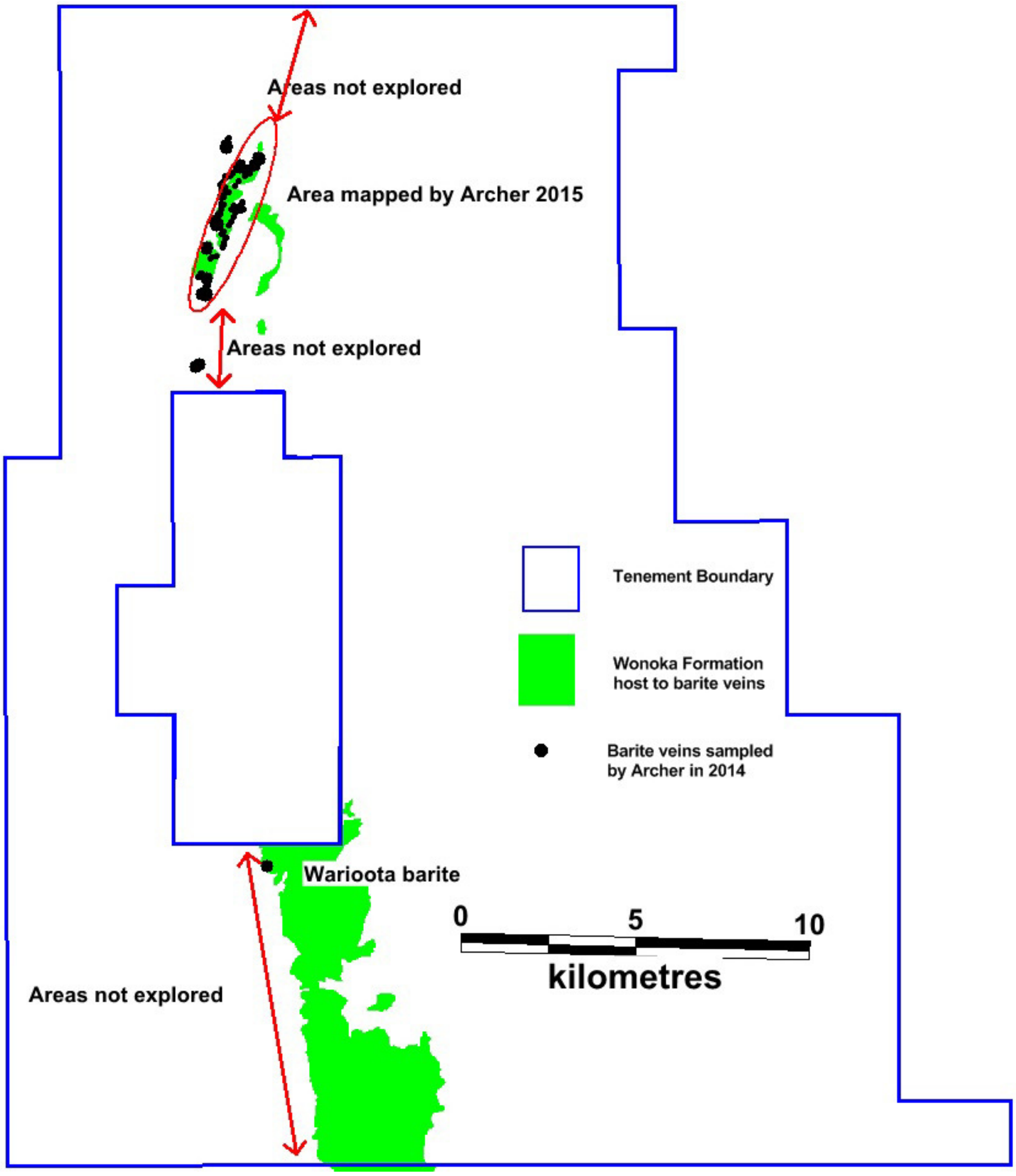

Figure 1: Extent of September 2015 mapping.

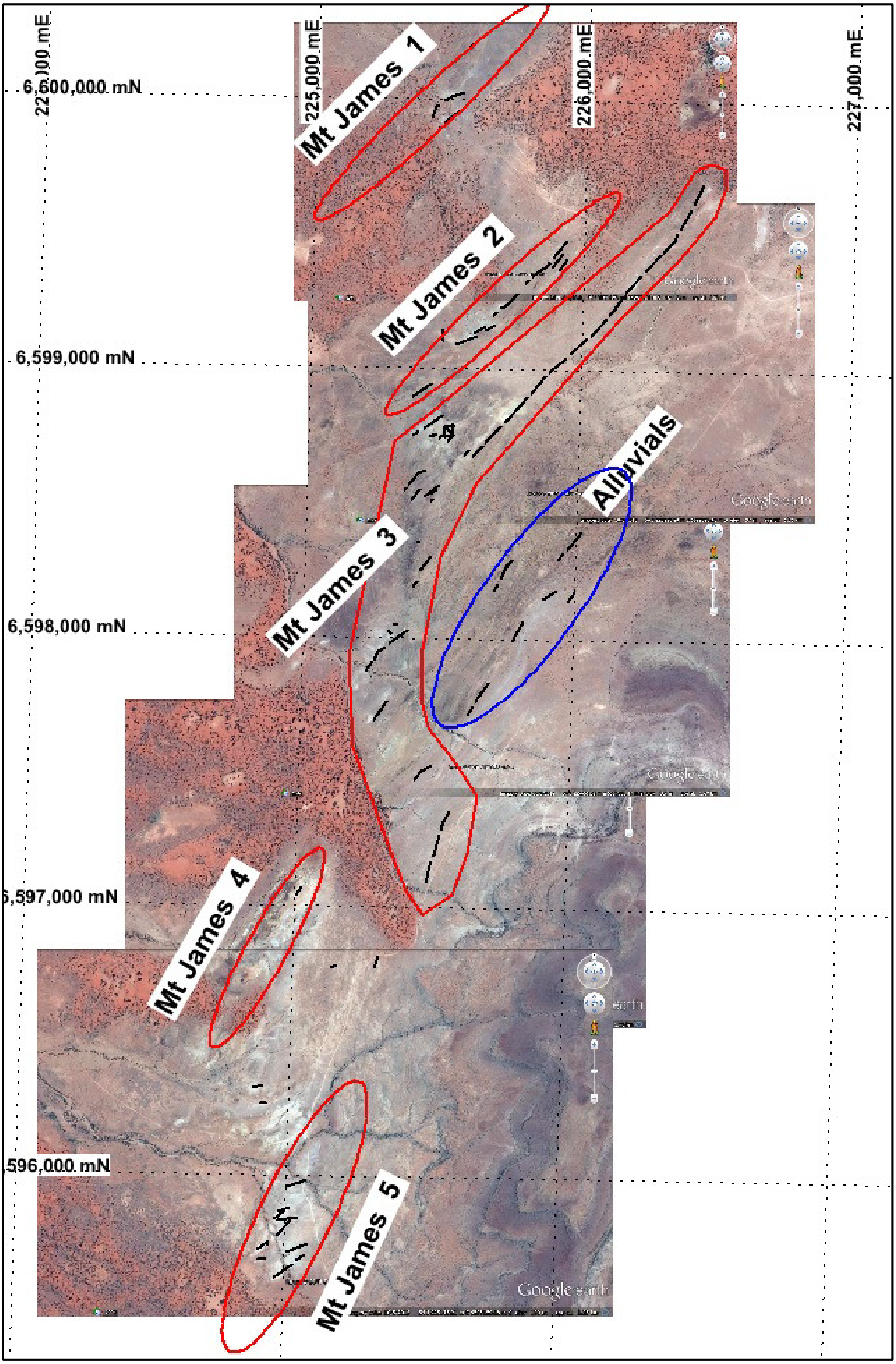

Figure 2: Location of areas mapped by Archer.

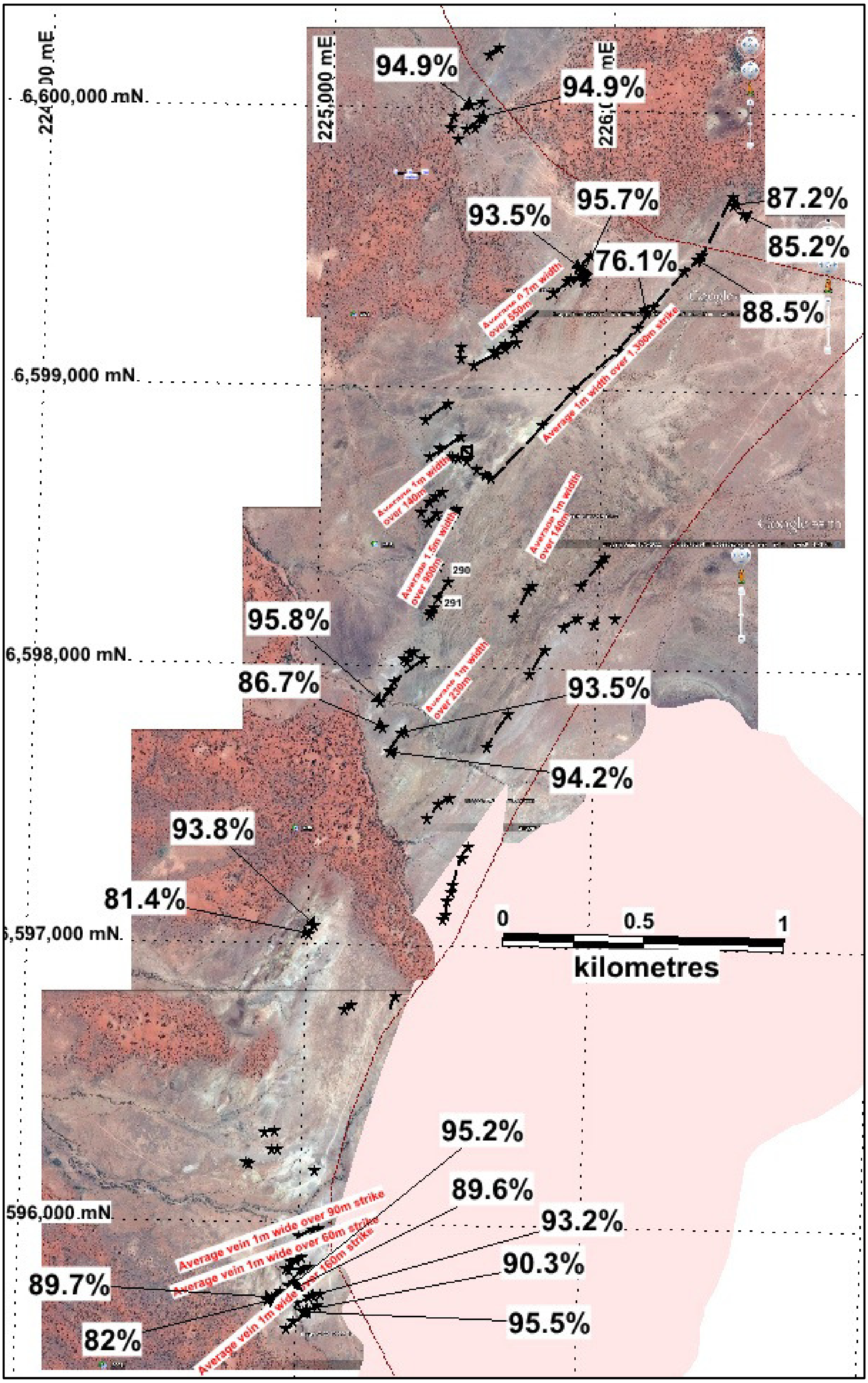

Figure 3: Location and extent of mapping, dashed lines represent the extent of outcropping barite veins. Labels identify the veins > 1m in width and 2014 $BaSO_4$ assay values.

3. Mt James 1

The Mount James 1 area represents the most northern and western occurrence of outcropping barite veins known at the time of mapping. An access track traverses the veins and a reasonable cross section can be reported. The strike length of the exposed veins is limited by sand dune cover to the south (Figure 4).

The most prominent of the vein outcrops is at points 306 to 309, where three separate veins occur in close proximity to each other, providing an overall width of around 1metre. Structural thickening of the veins occurs and is due to a fold hinge which swings around to the south-south west before disappearing under cover (refer Plate 1 to Plate 3). Another folded vein system exists (points 312 to 314) roughly parallel to the first, this vein system is also folded (refer to Plate 4 and Plate 5).

The total exposed length of the two observed veins sets are 110 and 160m respectively.

Archer believes that the sand cover between the two veins Mount James 1 has the potential to host further barite vein sets.

Figure 4: Mapped barite veins at Mount James 1, note sand cover to the southwest and northeast.

Plate 1: **Looking north from point 309, 3 veins (cumulative width of 1m) are observed.**

Plate 2: **Looking southeast from point 309**

Plate 3: **Point 310 looking southeast, note vein sets flexing towards the west**

Plate 4: **Thickening of vein sets, looking south from point 313.**

Plate 5: Panoramic view from point 313, south (LHS) to west (RHS). Vehicle is parked at point 309.

4. Mt James 2

The veins that occupy the Mt James 2 area are hosted within weathered dolomites, which are observable at surface (unlike other areas). The veins in this area stand less proud and have been weathered flat with the surface. Historical excavations by previous explorers are present near points 315, 316 and 319. Key findings of the Mt James 2 area mapping are:

- Individual vein widths vary from 0.5m to 0.7m.
- The area southwest of point 323 to 328 is structurally more complex with folding and faulting, numerous veins and dip can be observed on the ground.
- The area from 323 to 328 (190m of strike) is very prospective for additional buried veins.
- The change in strike direction between points 329 and 330 is unexplained but may be representative of local folding or faulting.
- The vein between points 274 and 275 may represent a possible extension along strike from point 328 which is buried under thin cover.

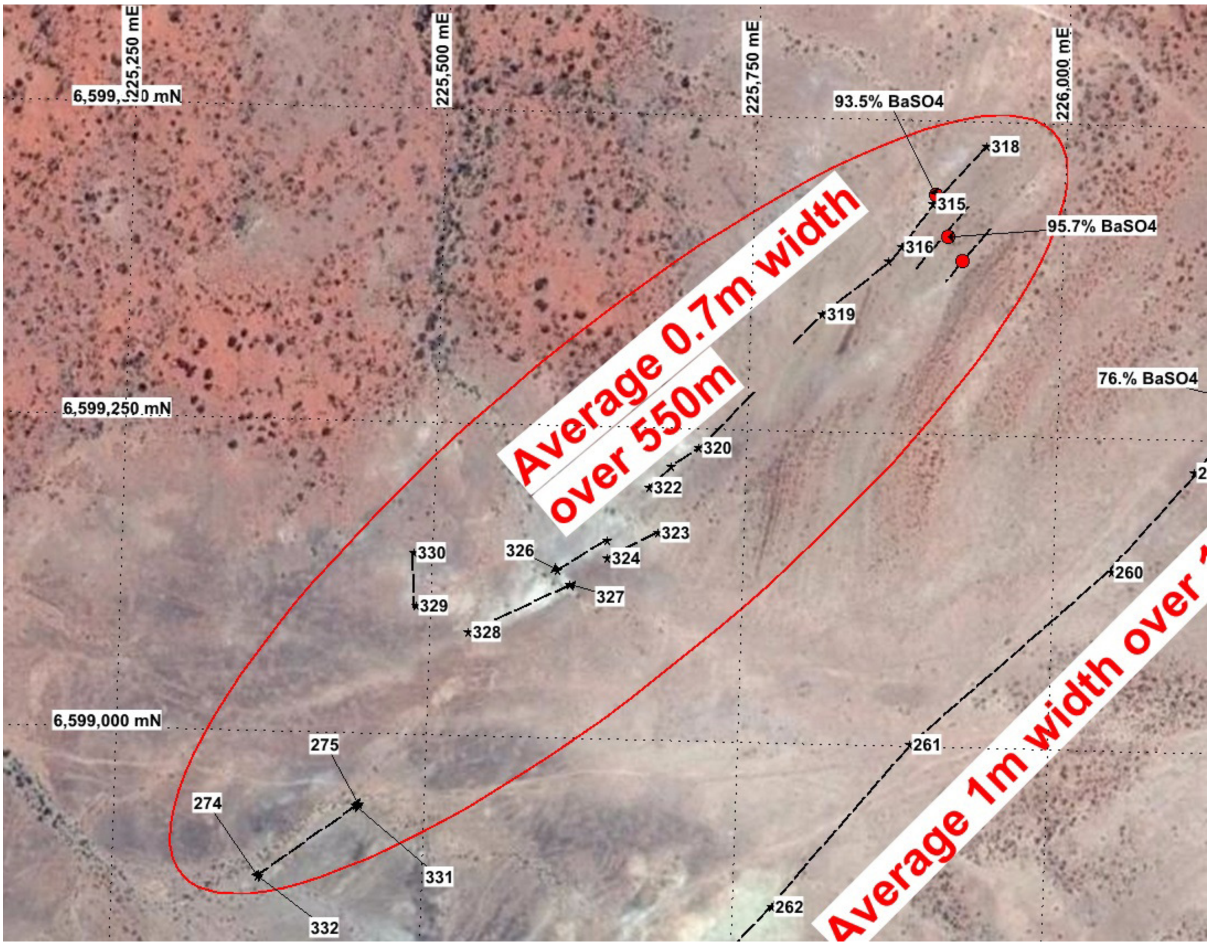

Figure 5: Mapped barite veins at Mount James 2.

Plate 6: Point 315 looking north at excavated vein (0.5m wide) possible near vertical dip.

Plate 7: Point 316 looking south at excavated vein (0.5m wide) possible near vertical dip.

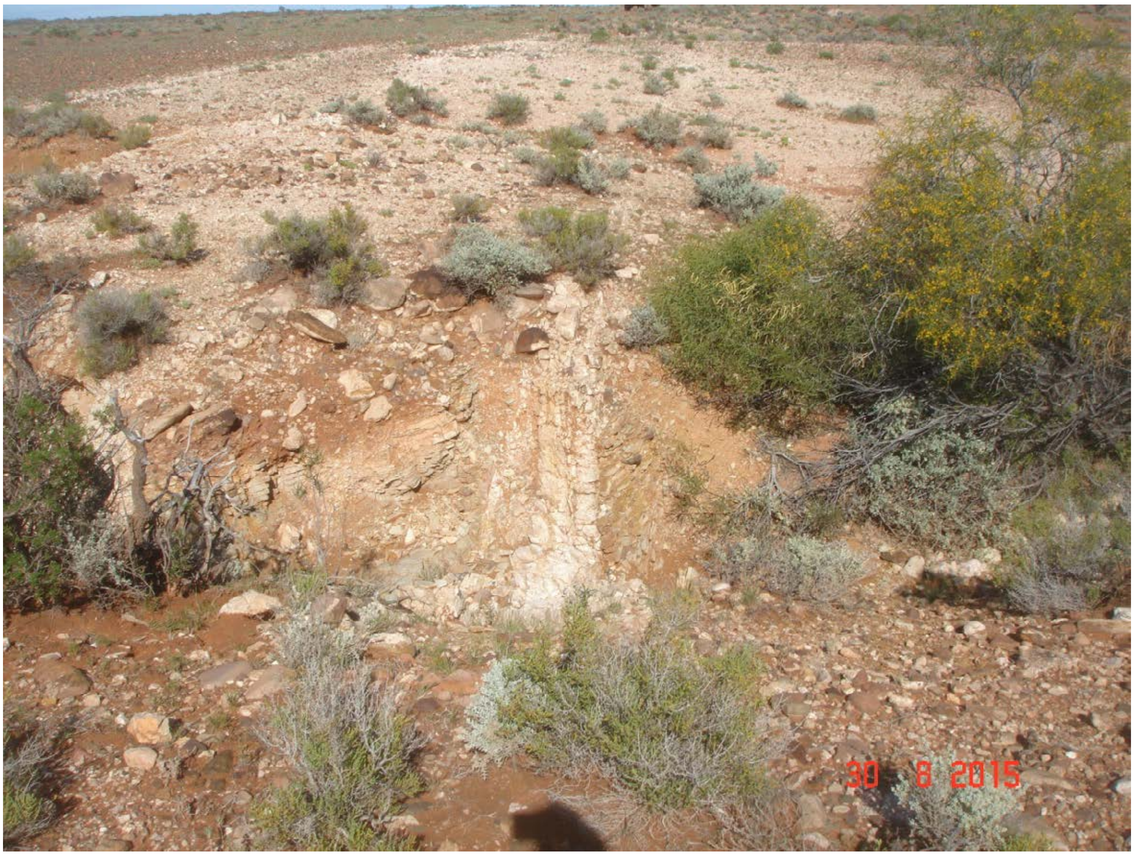

Plate 8: **Point 327 looking south, note flat lying barite unit to the west of vertical vein**

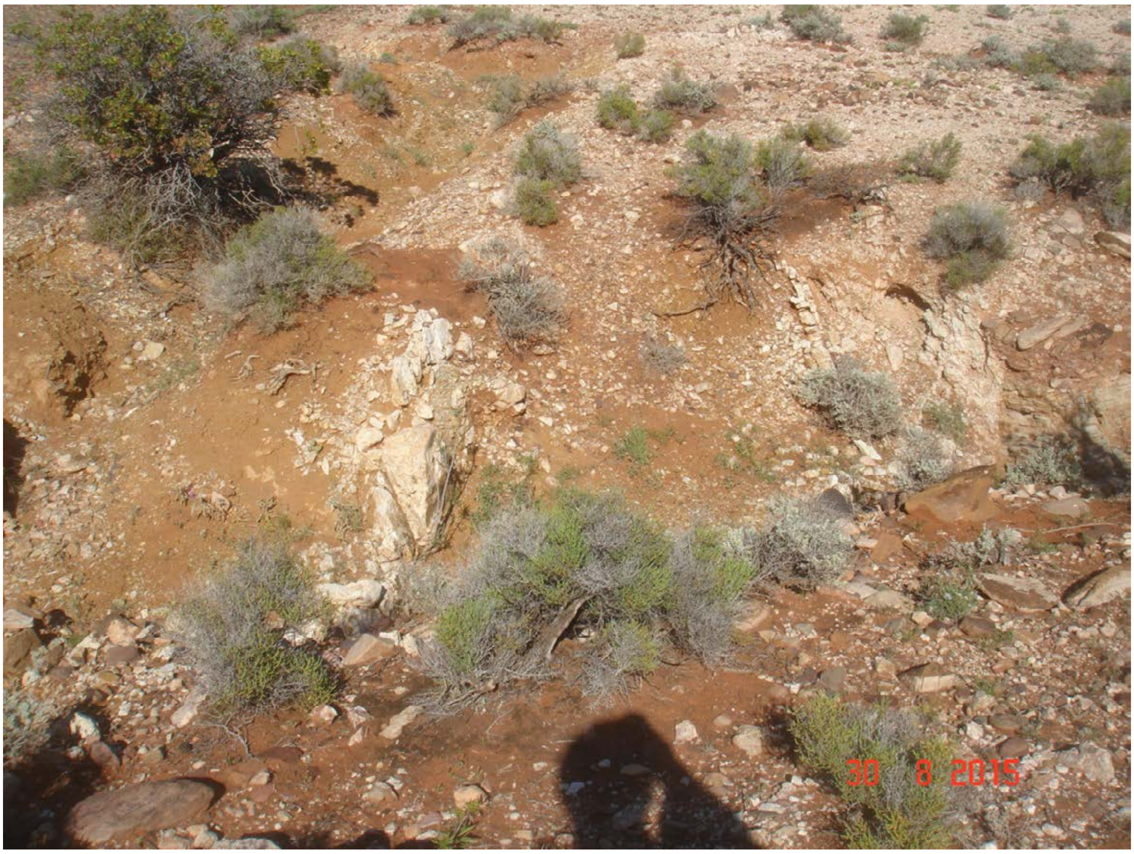

Plate 9: **To the west slightly of plate 8 showing additional parallel veins and complexity**

Plate 10: Point 323 looking south into area of complex barite vein system, white rocks are barite lag

5. Mt James 3

A 1m wide vein, with minor parallel veinlets, was mapped over a strike length of 1,300m. The vein dips around 70 degrees to the East.

Rehabilitation of historic workings was evident in two locations. No records are available to explain the work undertaken however, a mining lease for gold mining was previously pegged over the area.

The Mount James 3 area contains the longest continuous outcropping vein within the wider project area (refer to Figure 6, Figure 7 and Figure 8).

Key findings from Mount James 3 area mapping are:

- A 1m wide vein, with minor parallel veinlets, was mapped over a strike length of 1,300m.
- Vein is continuous from point 255 to 261, with minor historic excavations on the hanging wall to expose working faces and remove material (refer to Plate 13).
- An area has been rehabilitated south of point 262. The area is flat lying with no host outcrop observed which may be a result of previous mining operations.
- Barite veins appear again in rock outcrop at point 265.
- Veinlets west of point 265 (points 263 to 273), were narrow (<0.3m) with minimal strike length are not thought to be economic.
- Plate 11, Plate 12 and Plate 13 show the continuity of the main vein.
- and Plate 14 shows the style of barite mineralisation, with its radial cleavage.
- Plate 15 to Plate 18 show the styles of additional vein sets within the Mt James 3 area.

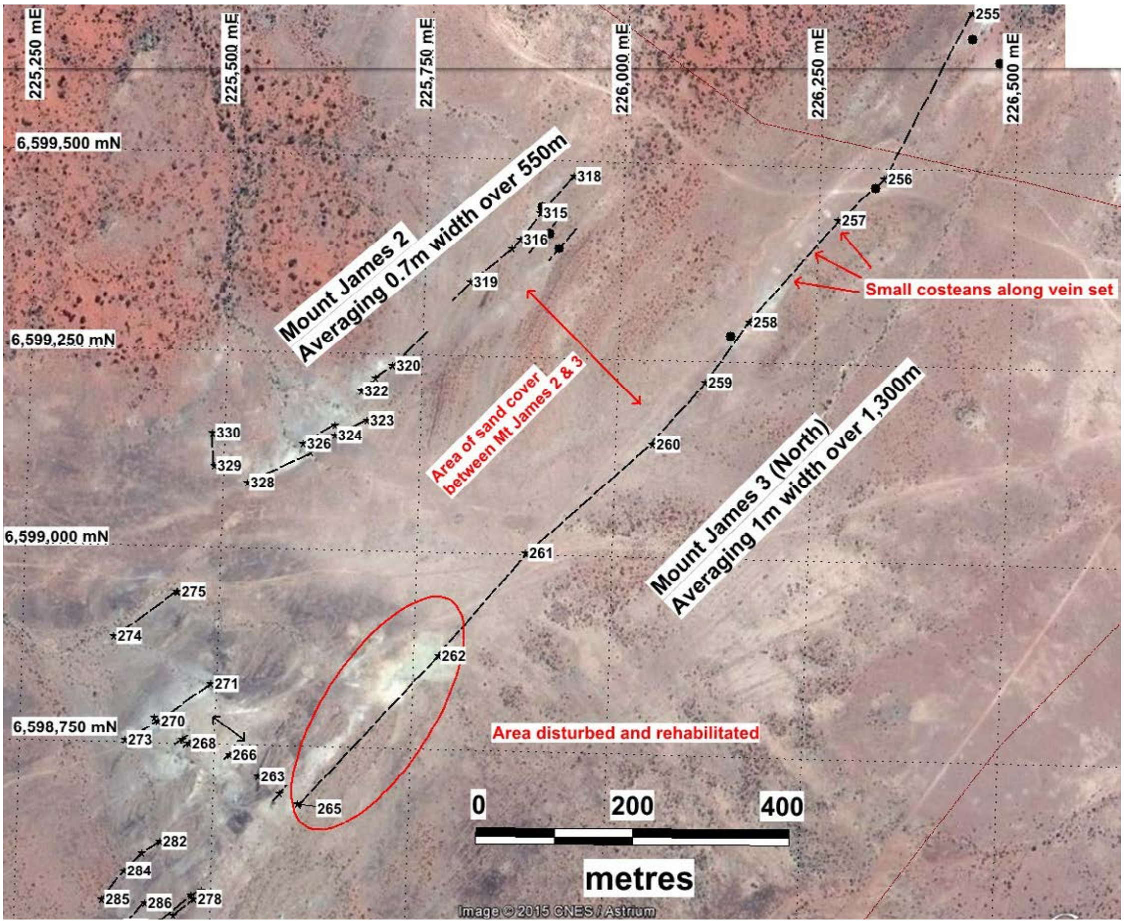

Figure 6: Northern extent of mapped Mount James 3 with Mount James2 mapped points

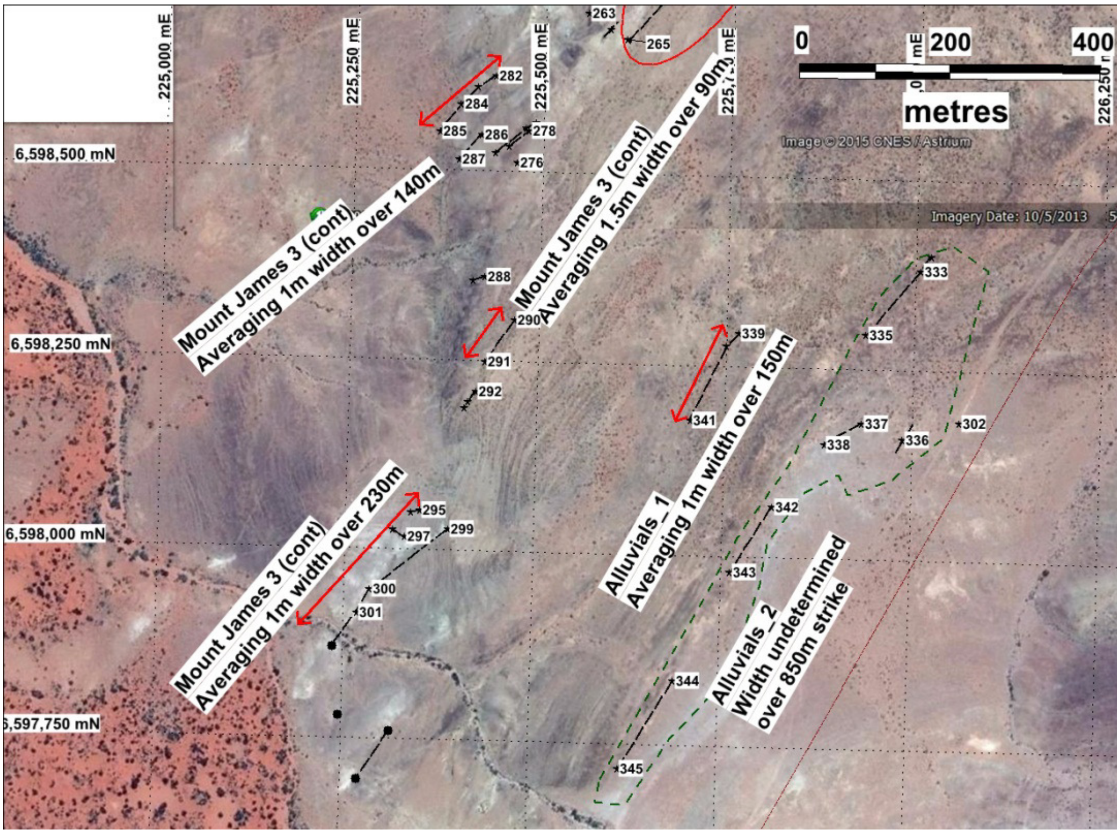

Figure 7: Central part of the Mt James 3 system

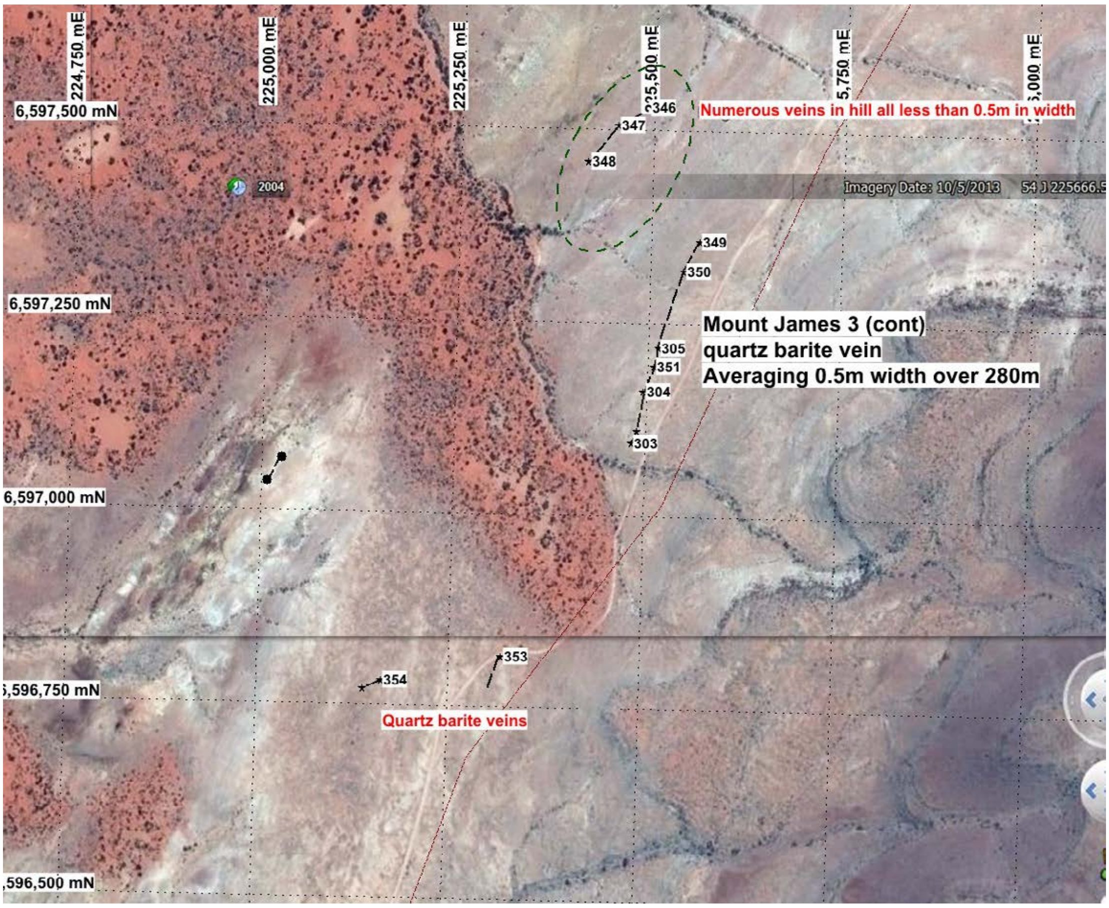

Figure 8: Southern part of the Mt James 3 system

Plate 11: North of point 255

Plate 12: **Point 255 Looking North, slight west dip to vertical, vein 1m wide**

Plate 13: **Point 257 looking South, steep East dip width 1m**

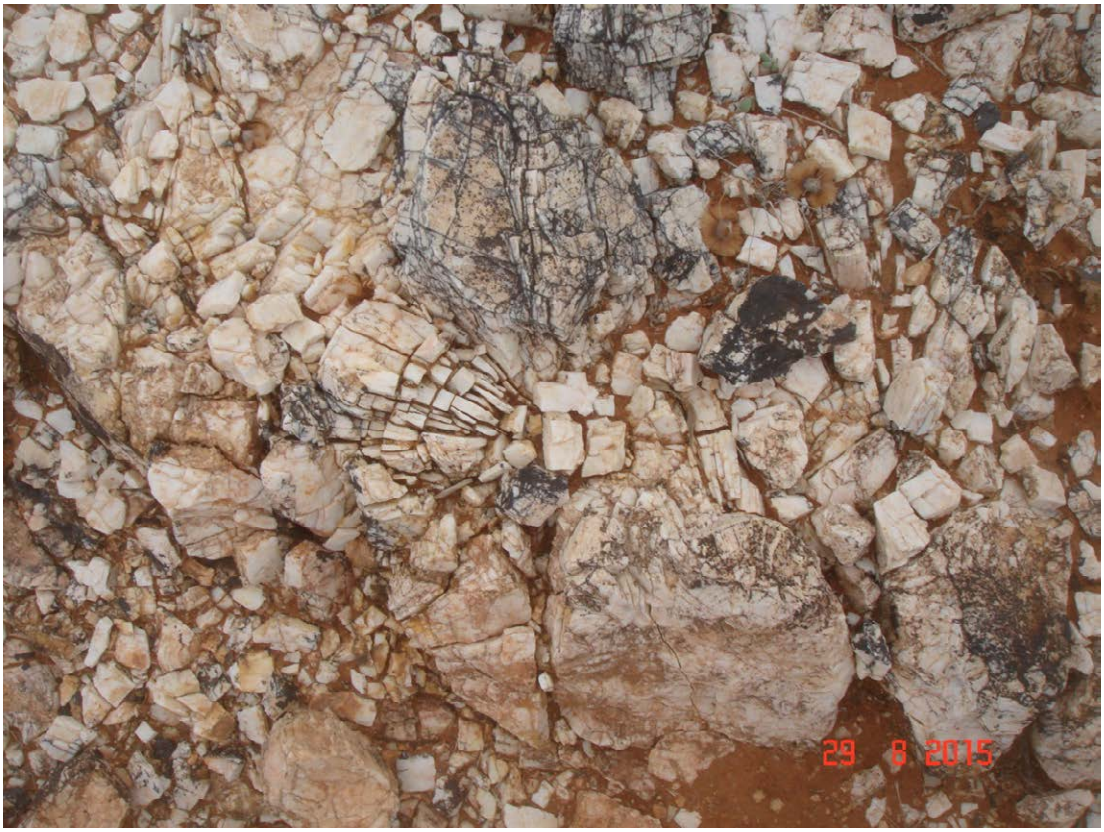

Plate 14: **Point 269 style of barite mineralisation, note radial formation**

Plate 15: **Point 282 looking South, approx. 50 dip with Mn in Hanging Wall (possibly overturned)**

Plate 16: Point 279 within an area of many coalescing vein sets, all barite dominant, vein width 0.2m to 0.3m

Plate 17: Points 298 to 300, panoramic view showing the numerous vein sets in southern area (Mount James 3)

Plate 18: Point 364 looking south, vehicle in far RHS is at Point 372 (Mount James 5)

6. Mount James 4

This area was not visited during the trip as more time was spent on areas like Mt James 5 where the barite potential was considered significant. Mount James 4 can be visited in the future and is more than likely a continuation of the southern extents of Mt James 3.

7. Mount James 5

The Mount James 5 area appears to have been costeaned in the past. Many of the vein sets appear to have faint markings indicating that they were individually identified. No publically available information is available to disclose the types of activities that may have occurred. However, it is noted that only the bright white barite veins appear to be disturbed which indicates that the previous explorers may have been targeting industrial grade, and not drilling grade, barite.

The location of the Archer mapped points is shown in Figure 9 with the veins presented as dashed lines. Key findings of the Mount James 5 area mapping include:

- **The exploration potential of this area is considered high due to the high volume of barite veins observed at the surface**.
- Identification of three pronounced 1m wide vein sets, with many other narrow veins (<1m wide) striking parallel to the main veins.
- The main vein sets in the south of the area all extend under cover.

Plate 19 to Plate 23 show the style of mineralisation and vein widths and strike present within the Mount James 5 area.

Plate 19: Point 382, an example of strongly crystalline and near white in colour barite

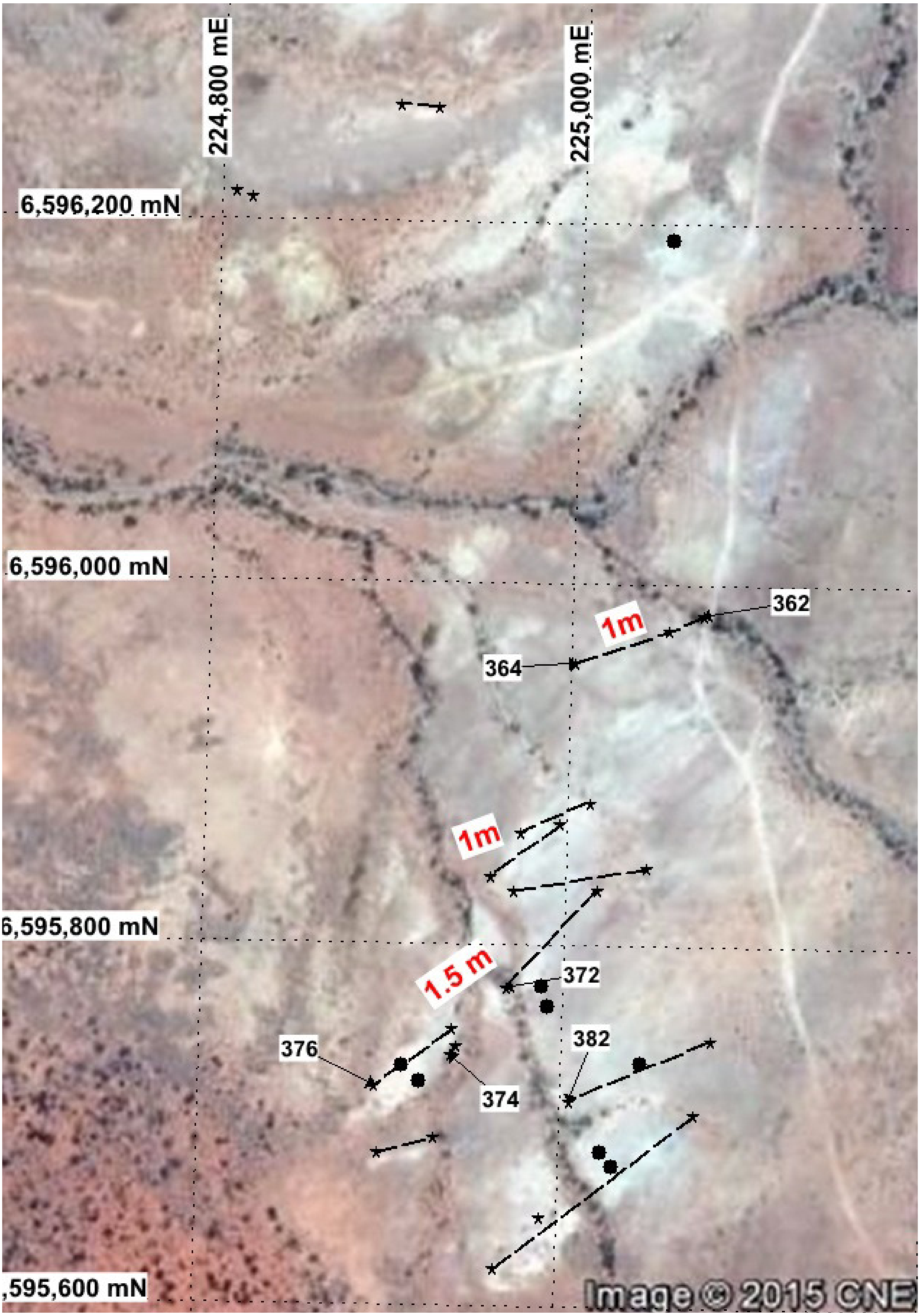

Figure 9: Location of points mapped at Mount James 5

Plate 20: Point 362 looking south. Barite vein cross cut by a creek.

Plate 21: Point 372 looking south. Typical “white vein” barite, site 376 (below) is in the distance

Plate 22: Point 376 looking south where veins are covered by dunes (extension of above)

Plate 23: Point 381 looking South

8. Alluvial plain

Aerial photos showed that there may be previously unknown barite outcrops in alluvial flats, to the east of Mount James 3 area (refer Figure 10). Mapping of this area by Archer showed the presence of barite sub-crop evident as pronounced veins (quartz-barite) and weathered veins level with topography. Key findings of the mapping of the Alluvial plains area include:

- **The exploration potential of this area is considered high.**
- Significant quartz-barite vein (>1m wide) over 150m strike was identified, dipping steeply (70 degrees to the west) was identified between point 339 to 341.
- Sub-crop of barite veins under shallow alluvium identified between points 333 to 336 with further extension mapped between points 342 to 345.

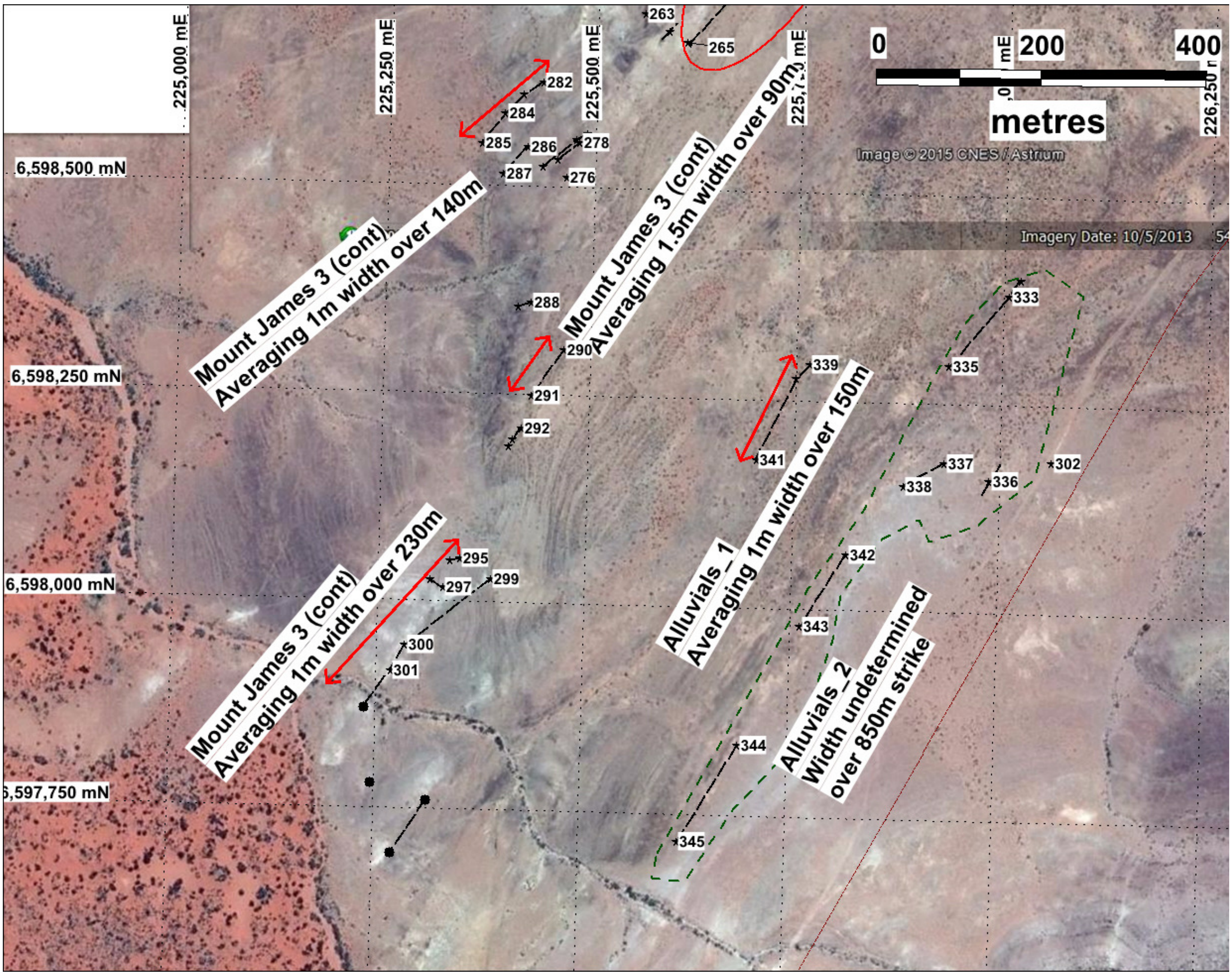

Figure 10: Location of "alluvials" mapped barite veins and sub-crop, supporting the concept for buried barite veins

Plate 24: Point 339, looking south down an east dipping quartz barite vein, width = 1m

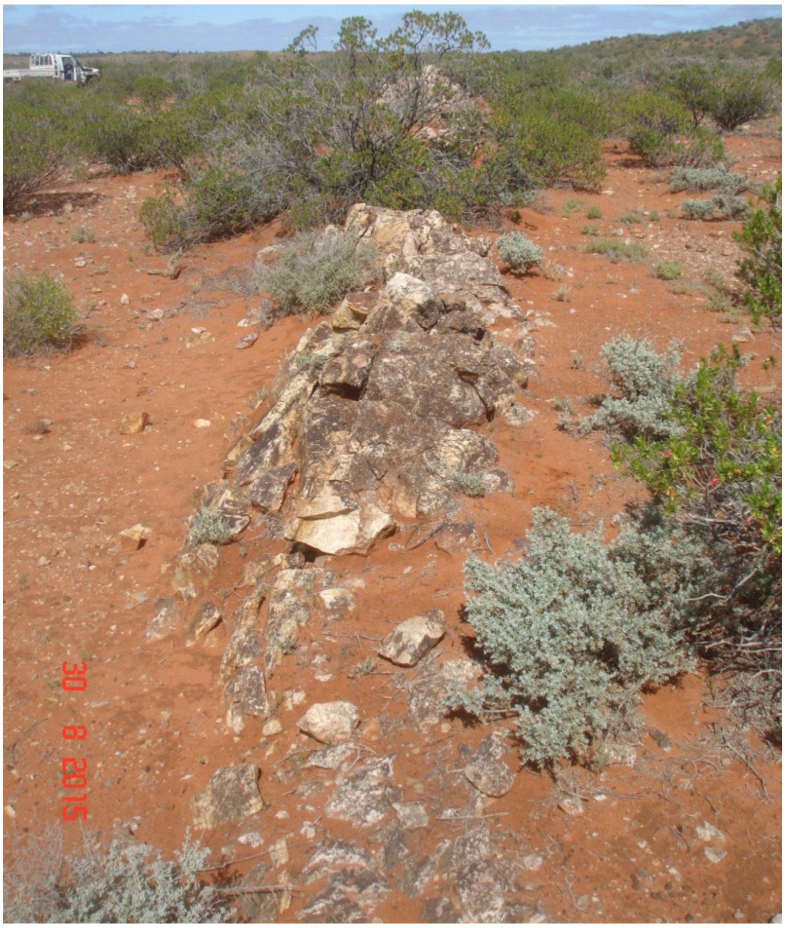

Plate 25: Point 340, looking South along same quartz barite vein, width 1m

Plate 26: Point 336 looking south, example of barite veins existing as sub-crop and buried under alluvials

9. Mount James Exploration Potential

Interpretation from existing sampling and historical exploration suggests that there is much potential for the discovery of buried barite vein sets along strike to existing outcropping barite veins. The presence of additional barite veins will significantly increase the size and extent of the Mount James mineralisation.

Archer views the known barite occurrences, away from the main Mount James vein sets themselves, as being highly prospective for additional minable barite lodes.

The project area has been the subject of minimal historical exploration. There are a number of targets that have not been adequately tested and which remain prospective for Mount James style mineralisation. These include the Warioota Prospect which is located south of the Ediacara Fossil Reserve (refer Figure 1) where Archer estimates potential for an **additional 9km** of potential strike.

Historical exploration within the project area away from the outcrop has been less intensive, partly because of previous exploration models, but also because significant areas of the project are under cover, which made exploration more difficult and expensive.

10. Disclaimer

This document has been prepared by Archer Exploration Limited (**Company**) and provided as a basic overview of the recent geological mapping exercise. This document does not purport to be all-inclusive or to contain all the information that a party may require to evaluate the prospects of the Company's barite project.

This document contains statements and geological results which may be in the nature of forward-looking statements. No representation or warranty is given, and nothing in this presentation or any other information made available by the Company or any other party should be relied upon as a promise or representation, as to the future condition of the respective businesses and operations of the Company.

Whilst this document reports exploration results, this document was not prepared in accordance with the JORC Code or the Valmin Code and no ascertain is made, or to be implied, that the exploration results reported in this documents are JORC compliant.

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Annual Technical Report
For the period ending 10th May 2017

EL 4869 Ediacara

Archer Energy and Resources Pty Ltd
Archer Exploration Limited

By Wade Bollenhagen
Archer Exploration Ltd
11/05/2017

Contents

Bibliographic Data

Report Title	Annual Report for Exploration Licence 4869 'Ediacara for the period 11th May 2016 to 10th May 2017
Project Name	Ediacara
Tenement Number	EL 4869
Tenement Holder	Archer Energy and Resources Pty Ltd
Operator	Archer Exploration Limited
Commodities	**Barite**
Tectonic Unit	Adelaide Geosyncline
Stratigraphic Unit	Skillogalee Dolomite
1:250,000 Map Sheet	SH 54-9 Copley
1:100,000 Map Sheets	6536 Copley
Keywords	**Barite, API Standard Barite, Mt James**

SUMMARY

Exploration Licence 4869 ‘Ediacara, held by Archer Energy and Resources Pty Ltd (Archer) is located west south-west of Leigh Creek.

The tenement resides on the Eastern Side of the Torrens Hinge Zone with Adelaide Geosyncline covering the eastern part of the tenement. , in roughly the central part of the Arrowie Basin

Historically, only a few deep holes have been drilled within the tenement to penetrate the alluvial cover to understand basement mineralisation, outside of the reserve. Archers previous work involved determining whether the barite present at the surface could be simply processed to make an API grade product with little beneficiation, this was achieved.

Whilst Mt James remains highly attractive for barite that meets drilling grade, other alternatives closer to available infrastructure have also been examined over the year.

Mt James barite remains a viable drill target for development into a low tonnage (<10, 000) barite operation to service the oil and gas industry.

Introduction

EL 4869 'Ediacara is located 10km south west of Leigh Creek in South Australia (Figure 1). Access is gained by established station tracks.

This report details exploration work completed by Archer Exploration Ltd between 11th May 2016 and 10th May 2017.

Previous exploration activities on the tenement were focused on the Wonoka Formation which comprises grey shales and dolomites as a host to base metal mineralisation.

1 Tenure

EL 4869 'Ediacara' covering 646km^2 was granted to Acher Energy and Resources Pty Ltd (a wholly owned subsidiary of Archer Exploration Ltd) on the 11th May 2012 for a term of 5 years. The tenement was designed and applied for in a manner that excluded the Reserve at the centre, which happens to be the centre of historic mining. A subsequent lisence application was made for the tenement on the 11th January 2017, this renewal included a significant tenement reduction, see figure 1 below.

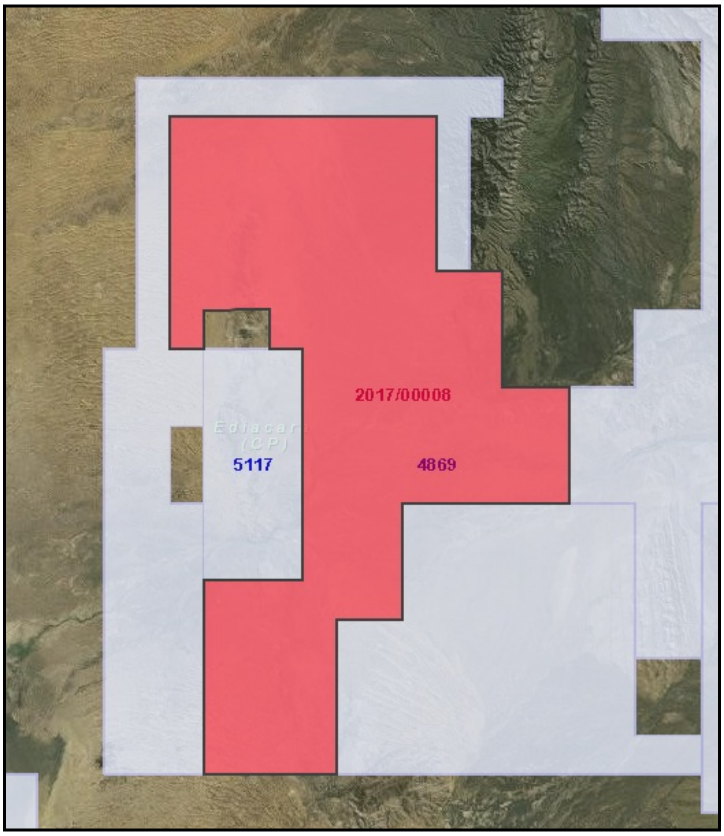

Figure 1. EL 4869, showing area retained (red) after subsequent lisence application.

Archer Exploration listed on the Australian Stock Exchange on 14 August 2007.

2 Geology

EL 4869 'Ediacara" lies on the margin of the Torrens Hinge Zone and the Adelaide Geo-syncline. The geology is dominated by the long continuous strike of Neoproterozoic rocks, which are dominated by Tertiary and Quaternary alluvials with a central ridge (fault) dominating the topography.

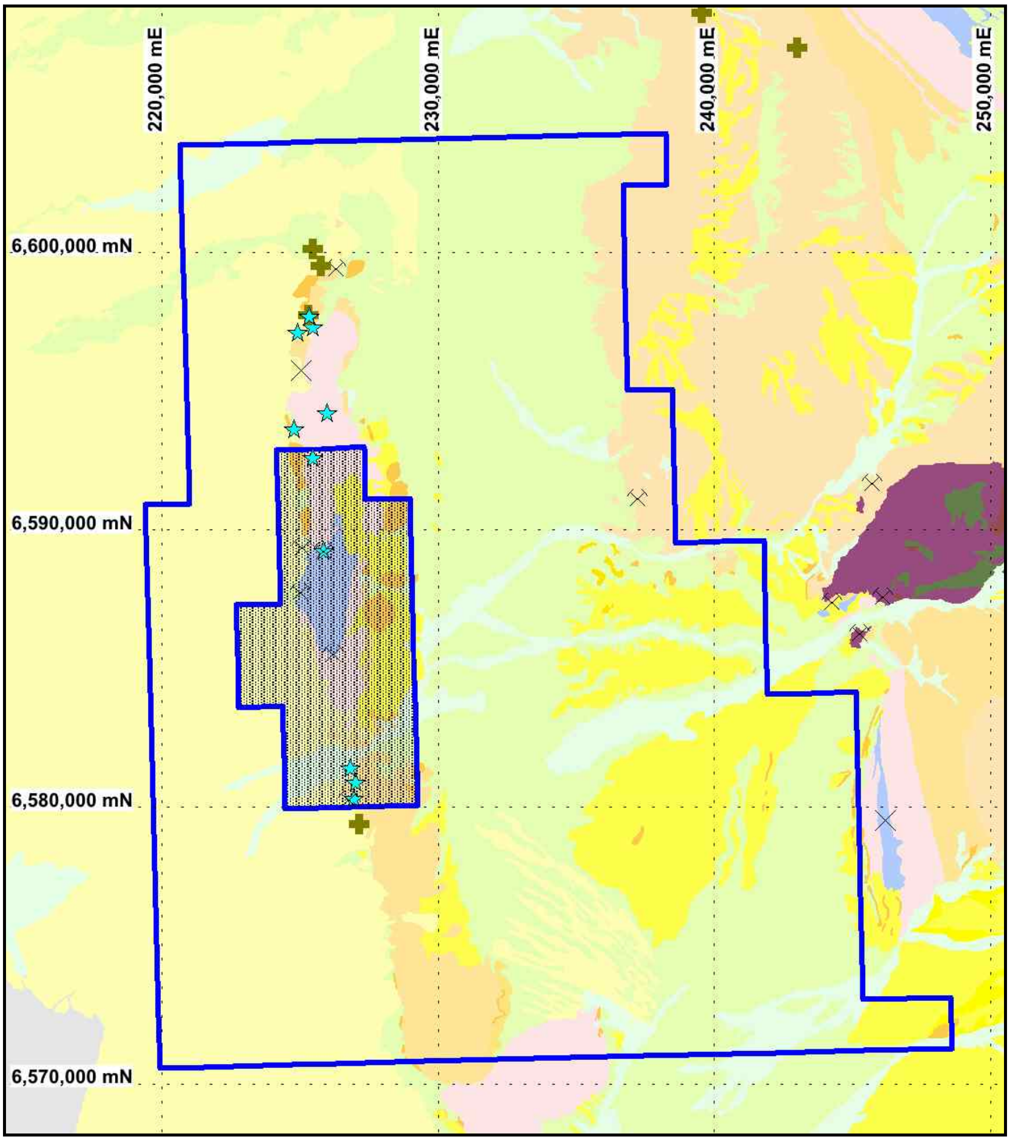

Figure 2: Geology and deposit location map for EL4869 (PIRSA)

3 Work Completed

3.1 Laboratory

No samples were taken ro submitted for analysis.

3.2 Mapping

No additional mapping was undertaken.

3.3 Native Title

No additional work was undertaken.

4 Environment

No ground disturbing activities occurred during the year.

Final Annual Technical Report
For the period ending 10th May 2018

EL 4869 Ediacara

Archer Energy and Resources Pty Ltd
Archer Exploration Limited

By Wade Bollenhagen Archer Exploration Ltd

10/05/2018

Subsequent licence application 2017/00008 Withdrawn 5/7/2018

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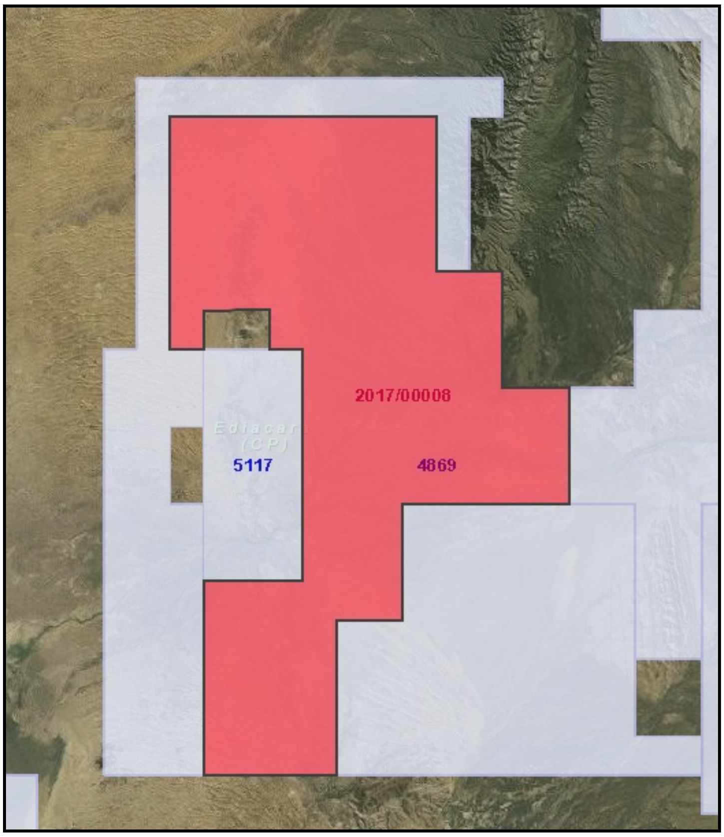

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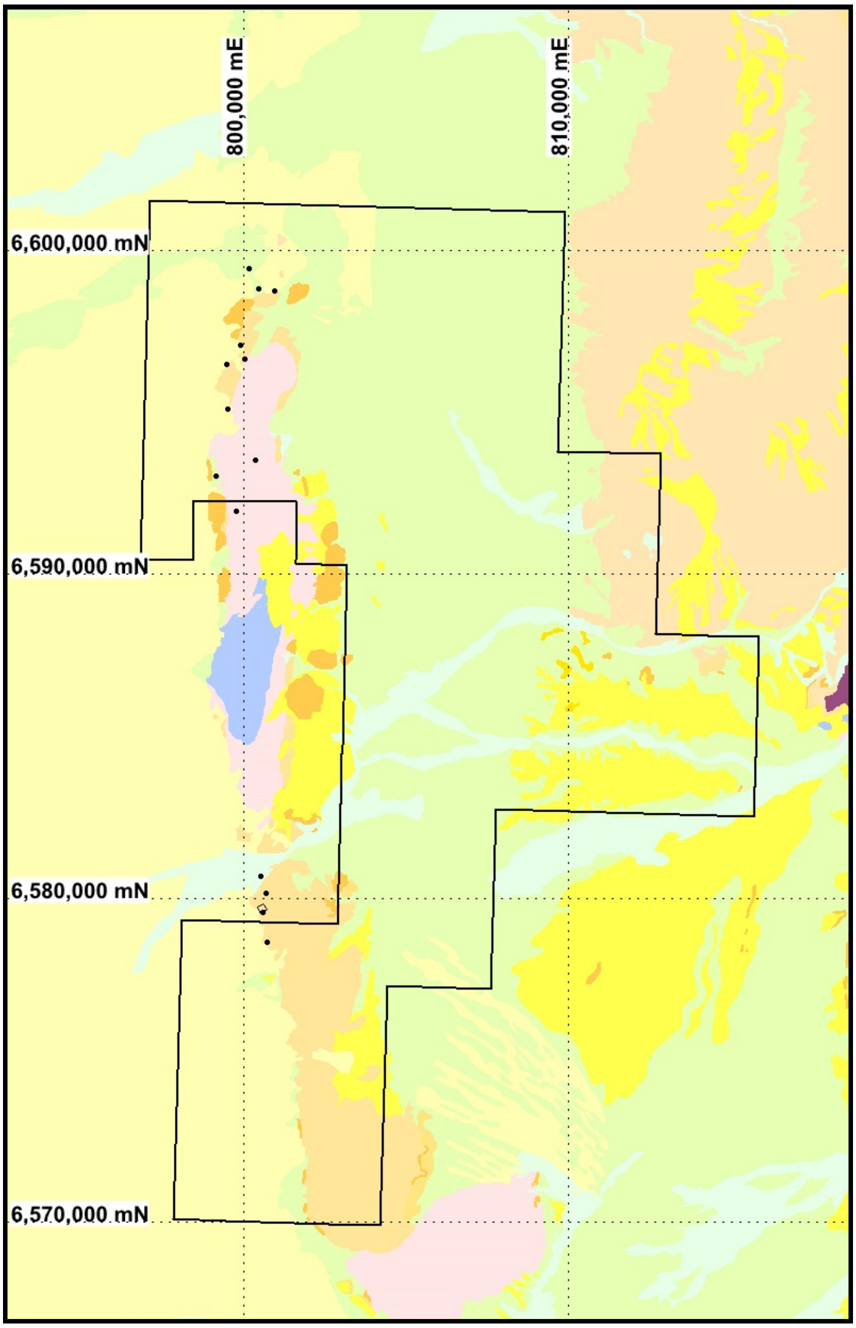

Figure 2: Geology and deposit location map for EL4869 (PIRSA)

3 Work Completed

3.1 Laboratory

A single visit was made to site with Sibelco staff to take a sample for them to examine for “white” barite, the market for drilling muds is no longer viable for Sibelco. As australian companies cannot compete with imported material (SG<4.2), as such Sibelco are closing their barite operations. Sibelco were not intersted in the material as it was not white enough for their purposes.

3.2 Mapping

No additional mapping was undertaken.

3.3 Native Title

No additional work was undertaken.

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