Lamboo Resources is an Australian company focusing on substantial flake graphite assets located in the East Kimberley and South Korea

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McIntosh Flake Graphite Achieves 96.1%TC with High Purity

The Company is now close to fulfilling the market requirements for battery grade crystalline grade flake graphite from the McIntosh Flake Graphite Project.

Highlights

- **Graphite concentrates from Target 1 have achieved grades of 96.1% TC with trace element contents below the level of detection (high purity).**
- **The metallurgical techniques involve simple gravity Wilfley Table separation followed by flotation using gangue mineral depressants then followed by a caustic bake.**
- **An optimum beneficiation flow sheet has been developed and will be incorporated into the project scoping study.**

Metallurgical beneficiation of flake graphite from the McIntosh Project conducted by Nagrom Laboratories at Kelmscott WA has achieved high concentrate grades of 96.1% TC as well as high purity for Target 1 flake graphite (Location – Figure 1). The next step is now to produce bulk flake graphite concentrates for commercial testing.

Technical Director, Dr Craig Rugless, said "The McIntosh Project is living up to its potential to become a major flake graphite producer in Australia. It is gratifying that testwork has produced excellent results after a single re-grind and using standard metallurgical techniques to preserve the flake graphite required by potential high-tech customers".

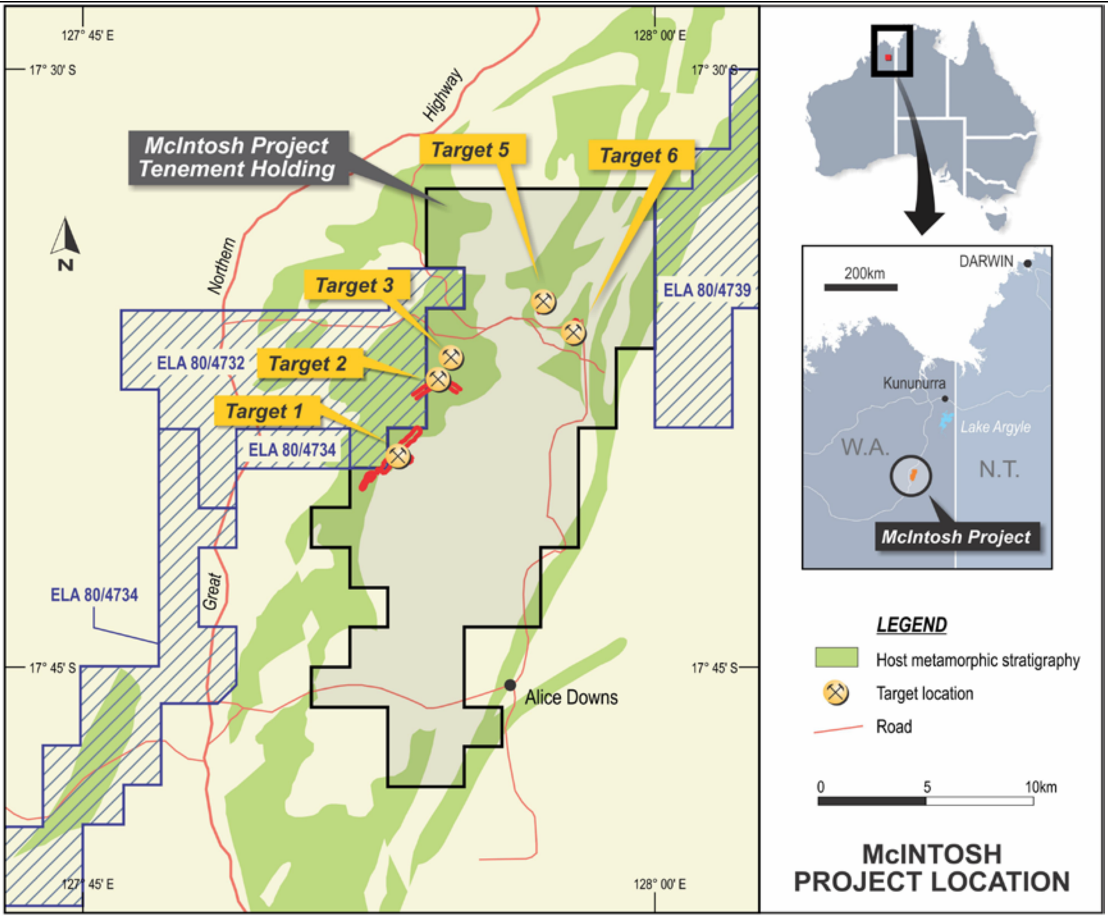

Figure 1: Location of flake graphite Target areas in the McIntosh Project that are currently subject to baseline environmental studies. Lamboo ELA applications – hatched.

A significant goal of the metallurgical testing is, not only to produce high concentrate flake graphite, but also to produce a product that will potentially satisfy the large and increasing demands of the lithium battery industry as well as burgeoning high technology uses. Nanotechnology research has identified that utilising fine flake graphite could provide the breakthrough for fast charge batteries. High purity flake graphite required for this process can command premium prices as it demands specifications that have been difficult to achieve to date with natural flake graphite.

McIntosh Metallurgy

Nagrom Laboratories in Kelmscott have successfully continued the beneficiation of bulk RC pulps (approx. 100 Kg) from Target 1 including negative gravity concentrate using a Wilfley Table followed by rougher and cleaner flotation (Table 1), then a single re-grind and the use of various depressants followed by another flotation stage (Figures 2A and 2B) and weak HNO_3 leach. The initial results achieved 72.9% TC in the cleaner float and this was enhanced to 94.9% TC after a caustic bake procedure by Nagrom. Analysis of the caustic bake concentrates by ALS Laboratory – Metallurgy in Adelaide, using a propriety high concentrate graphite analysis, achieved grades of 96.1%TC and 84.1%TGC. X-ray diffraction (XRD) analysis of the mineral content has confirmed the presence of up to 99% crystalline graphite in the caustic bake (NaOH) concentrate based on quantitative results that have been normalised to 100% (Appendix 1). Overall, Nagrom has managed to remove the majority of the SiO2, Al2O3, K2O and S using the caustic bake process that has been successfully used by other graphite explorers including Zenyatta Resources in Canada.

The trace element content (see below) of the caustic bake concentrate shows that elements such as V, Co, Ni, Cu, Zn, Pb, Ba, Zr are below levels of detection by the analytical method employed (XRF total digest). Further work involving a hydrometallurgical approach should significantly reduce the balance of the major elements that are already at low levels.

Target 1 WTS Cleaner Float HNO_3 Leach - Caustic Bake Residue Analysis (Nagrom Labs)

Fe%	SiO2%	CaO%	Al2O3%	TiO2%	MgO%	K2O%	Mn%	P%	S%
0.55	1.3	0.126	0.41	0.067	0.142	0.017	<0.001	<0.001	0.089

V%	Cr%	Co%	Ni%	Cu%	Zn%	Pb%	Ba%	Zr%	Na2O%
<0.001	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	1.173

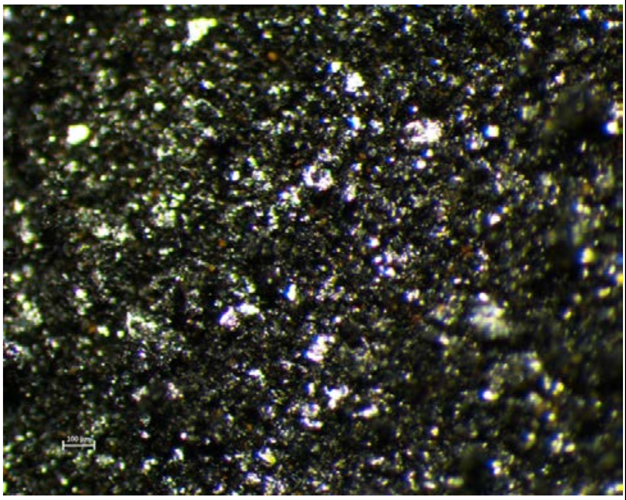

Figure 2A Flake graphite head sample preserving flake textures.

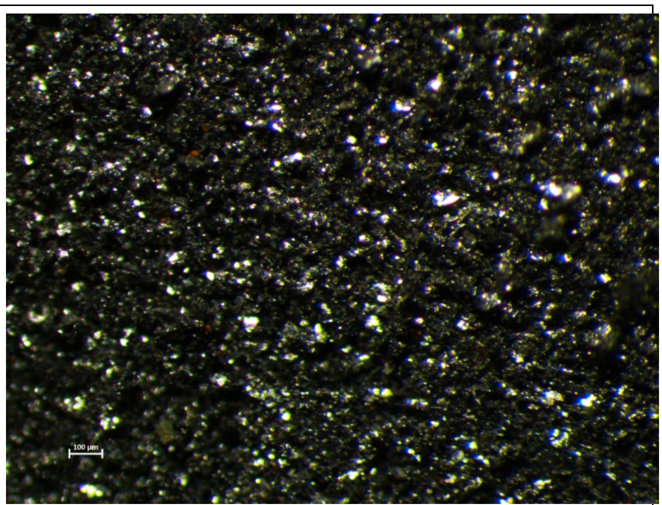

Figure 2B Flake graphite – NaOH bake residue also preserving flake textures.

Preliminary Metallurgical Flow Sheet

A preliminary flow sheet has been prepared by Nagrom Laboratories. Nagrom estimates flake graphite recoveries of 76% to 80% overall based on benchtop testing. A simple gravity process was employed at the initial stage to remove the sulphide component and thereafter the graphite was recovered by flotation and caustic bake techniques. Recoveries are anticipated to improve with further testing.

A simplified Optimum Flow sheet is based on the beneficiation of a 70 kg bulk sample of RC pulps by Nagrom (Figure 3). Note that RC pulps being used by Nagrom are not necessarily ideal and Lamboo will use metallurgical/wide diameter drill holes to optimise the metallurgical methods in terms of recoveries and flake size, and establish the final process flow sheet during the pre-feasibility stage at McIntosh.

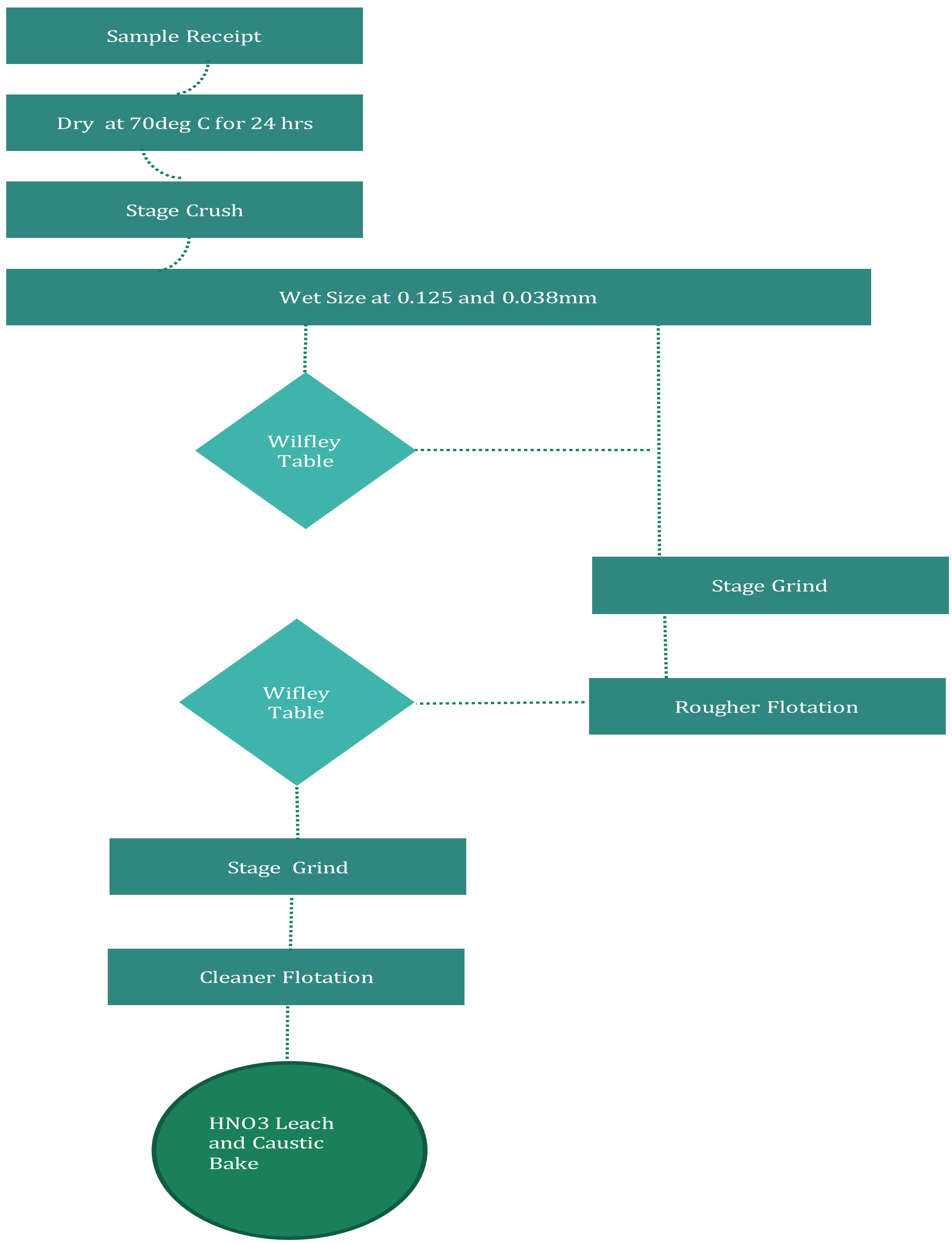

Figure 3 – Simplified optimum flow sheet for Target 1 graphite

Petrology – QEMSCAN – MLA Study

Actlabs Canada conducted a QEMSCAN – MLA study of the McIntosh flake graphite to assess flake size and have confirmed previously announced petrographic data (refer Photomicrographs – Figure 4A - D). The method can also establish the graphite content, the ranges in flake graphite size and associated minerals. Some minerals with potentially deleterious trace elements (ie V – rich mica or roscoelite) can also be detected.

MLA analysis involving Scanning Electron Microscopic (SEM) analysis of RC graphite pulps have confirmed that the average flake size for the Target 1 flake graphite is 95 µm and larger for Target 6 (refer Figures 2 and 3, Appendix 2). Significantly, the QEMSCAN recognised more than double the amount of graphite (as flake graphite and graphite clay) than assayed by the laboratory (ie up to 14.77wt% graphite vs 5.13% TGC – Table 1, Appendix 2). The development of graphite clay may be the result of pulverising of graphite in the RC pulps because it is not evident in the petrographic analysis of the core.

It is important to note that flake graphite size in Targets 5 and 6 appears to be larger - in the order of 100 to 500 um and could well provide flexibility in terms of flake graphite production for selected markets. Bulk samples from these Targets will be subject of further metallurgical work.

Photomicrographs of flake graphite from Target 1 diamond drill holes under the polarising microscope

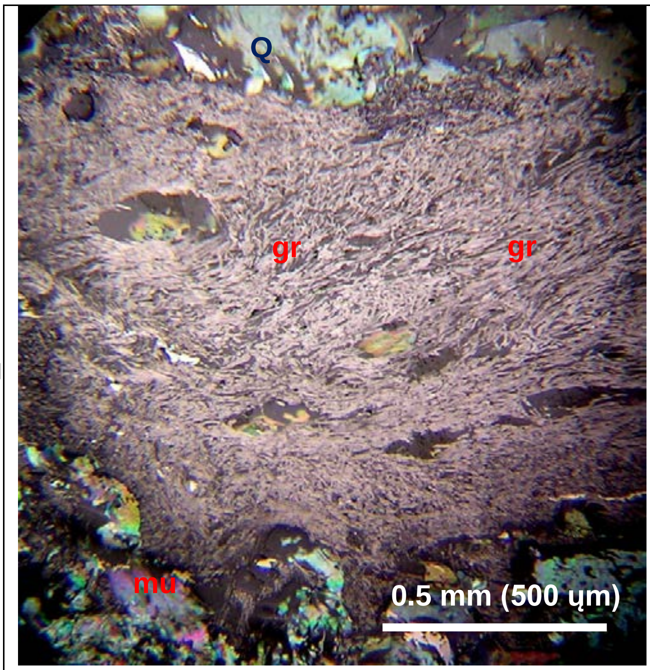

Figure 4A: Target 1 (Sample 507224 – T1GRD 84 100.85 m) showing flake graphite (gr) aggregates or "clumps" associated with minor quartz (Q) and muscovite (mu) in the graphitic schist host. Crossed polars under reflected and transmitted light. Field of view – 1.5 mm.

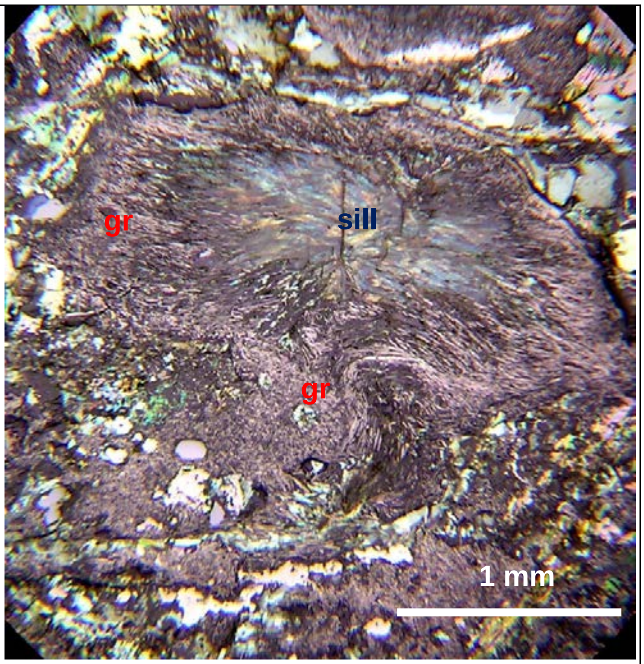

Figure 4B: Target 1 (Sample 507225 – T1GRD 84 102.41 m) – detail of flake graphite rimming sillimanite (sill). Graphite appears to have been re-mobilised during the metamorphic process. Crossed polars under reflected and transmitted light Field of view – 3 mm.

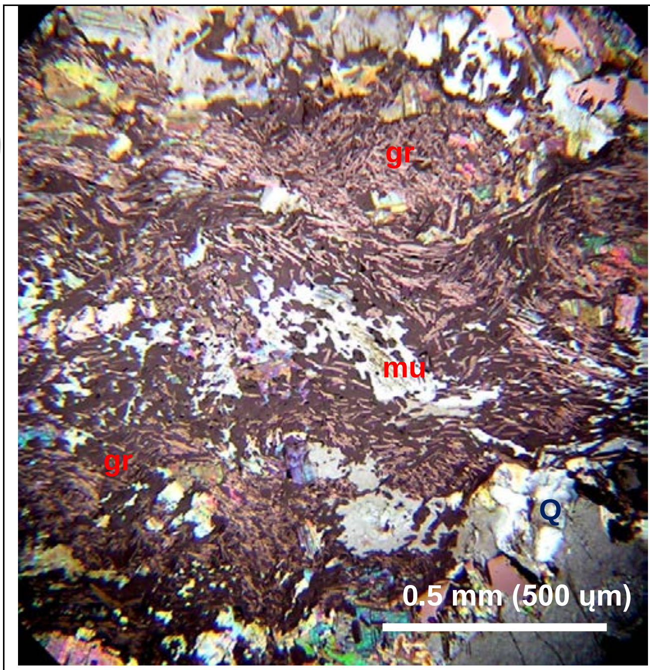

Figure 4C: Target 1 (Sample 508488-T1GRD 085 107.35 m) flake graphite (gr) parallels an anastomosing schistosityin the graphite schist host. Note that graphite (gr) occurs as discrete aggregates locally rimming muscovite (mu) and quartz (Q). Crossed polars under reflected and transmitted light. Field of view – 1.5 mm.

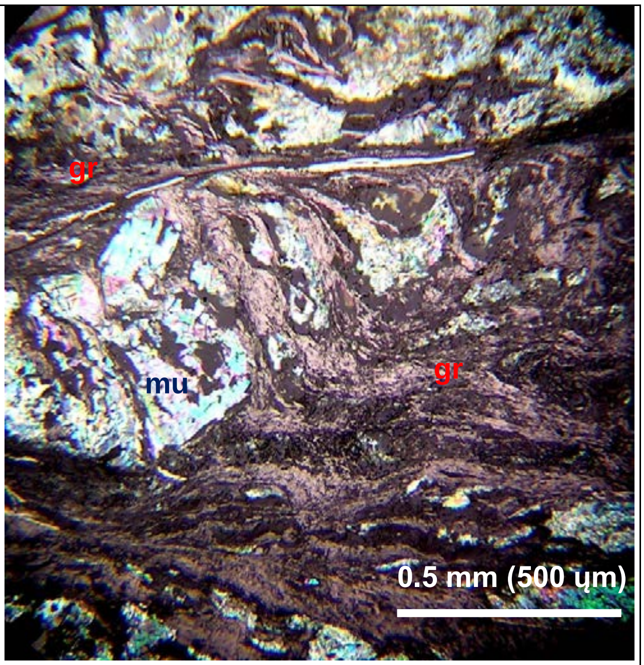

Figure 4D: Target 1 (Sample 508500 – T1GRD 084 88.6m) anastomosing graphite (gr) occurring as "shredded concentrates" associated with muscovite (mu) in the graphite schist host. Crossed polars under reflected and transmitted light Field of view – 1.5 mm.

Craig Rugless
Technical Director

Competent Persons Statements

Information in this "ASX Announcement" relating to Exploration Results and geological data has been compiled by the Technical Director of Lamboo Resources Ltd, Dr Craig S. Rugless who is a Member of the Australian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. Dr Rugless has sufficient experience that is relevant to the types of deposits being explored for and qualifies as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (JORC Code 2012 Edition). He consents to the inclusion of this information in the form and context in which it appears in this report.

Appendix 1: McIntosh PROJECT – XRD Analysis of Target 1 T1 410 Cleaner Float and T1 410 WTS Cleaner – Caustic Bake Concentrates - ALS Mineralogy, Perth.

Mineral ID	MASS PERCENT %	
	T1410 WTS Cleaner Float Con	T1410 WTS Cln NaOH Bake
Clay mineral	< 1	0
Zeolite	0	1
Chlorite and/or kaolinite	2	< 1
Mica	1	< 1
Talc	0	< 1
Amphibole	0	< 1
Pyroxene	< 1	0
K-feldspar and/or rutile	< 1	0
Alpha quartz	< 1	< 1
Dolomite - ankerite	0	< 1
Pyrite	< 1	0
Gypsum	< 1	0
Sulphur	< 1	< 1
Graphite	**97%**	**99%**

Note that quantitative results have been normalised to 100%. The high graphite content is very positive and probably reflects the flakey nature of the crystalline graphite component.

Appendix 2 McIntosh Project - QEMSCAN MLA Study by Actlabs Canada

Table 1 - McIntosh samples analysed by QEMSCAN - MLA

Sample Number	Hole ID	Depth	TGC%	MLA graphite content
Target 1 -LB559585	T1GRC079	21-22m	7.16%	13.81wt%
Target 2 -LB559586	T2GRC033	123-124m	4.33%	11.34wt%
Target 5 -LB559587	T5GRC112	26-27m	unknown	13.27wt%
Target 6 -LB559588	T6GRC093	41-42m&70-71m	5.13% Average	14.77wt%

Table 1 confirms the standard mineralogy for a high grade metamorphosed carbonaceous pelitic rock with some variations including a relatively high quartz and muscovite mica content for Sample LB559585 (Target 1) that may be at the expense of feldspar due to retrograde alteration during shearing. The clay content of Sample LB559587 (Target 5) is relatively high due to weathering.

The identification of “graphite clay” may be due possibly to weathering coupled with the strong pulverising of the samples in the RC hole samples provided. Graphite clay was not recognised during standard petrographic analysis of unpulverised surface and core samples from Targets 1, 2, 5 & 6. The presence of graphite clay at McIntosh may account for the lower than expected laboratory %TGC values in the RC samples compared with diamond drill hole samples in paired holes. This is borne out by the high MLA graphite content in the samples (refer Table 1 - above).

Table 2. Graphite associations as determined by MLA 1-

LB559585			**5-LB559587**		
Graphite Weight % in...	Binary Particle	Ternary+ Particle	Graphite Weight % in...	Binary Particle	Ternary+ Particle
Quartz	13.67	34.98	Quartz	2.11	30.32
K-feldspar	0.02	0.05	K-feldspar	0.06	1.63
Plagioclase	0.12	0.34	Plagioclase	0.22	1.74
Muscovite	5.6	22.38	Muscovite	1.63	15.66
Biotite	0.13	0.91	Biotite	0.04	0.43
Clay	1.37	7.42	Clay	1.15	27.81
Fe Clay	0.53	5.33	Fe Clay	0.42	7.84
Rutile	0.01	0.14	Rutile	0.03	0.93
Pyrite	0.49	0.7	Pyrite	0.61	3
Pyrrhotite	0.01	0.07	Pyrrhotite	0	0.1
Fe Sulphate	0.01	0.06	Fe Sulphate	0	0
Fe Oxide/Hydroxide	0.05	0.18	Fe Oxide/Hydroxide	0.01	0.08
Epidote	0	0	Epidote	0.01	0.04
Amphibole	0	0	Amphibole	0.01	0.04
Other	0.15	0.06	Other	0.35	0.68
Sub Total	22.16	72.62	Sub Total	6.65	90.3
Total		**94.78**	**Total**		**96.95**
Free		**5.22**	**Free**		**3.05**

Table 1. Modal mineralogy (wt %) as determined by MLA

	A13-10759-1	A13-10759-2	A13-10759-3	A13-10759-4
Mineral Wt%	1-LB559585	2-LB559586	5-LB559587	6-LB559588
Graphite	5.79	5.6	6.29	5.91
Graphite Clay	8.02	5.74	6.98	8.86
Quartz	54.13	16.87	32.47	15.49
K-feldspar	0.14	11.95	2.71	0.99
Plagioclase	0.65	9.11	2.67	11.84
Muscovite	18	8.01	10.48	12.15
Biotite	1.13	15.51	1.23	22.54
Clay	4.97	4.95	19.03	0.91
Fe Clay	4.19	1.09	8.72	2.54
Rutile	0.27	0.11	0.84	0
Pyrite	2.03	3.45	6.57	1.3
Pyrrhotite	0.12	15.12	0.21	8.18
Fe Sulphate	0.07	0.03	0	0.04
Fe Oxide/Hydroxide	0.31	1.22	0.31	1.18
Epidote	0	0.39	0.12	0.4
Amphibole	0	0.01	0.11	0.06
Other	0.17	0.84	1.28	7.62
Total	100	100	100	100

Note: Fe rich clays also have some sulphate clays. Graphite Clay is graphite but includes mixed spectra of graphite and muscovite and biotite, as well as kaolinite, illite and other clay. Clay entry includes kaolinite, illite and other clays. For sample Target 6-LB559588, the Graphite Clay entry is considered to be more clay than graphite.

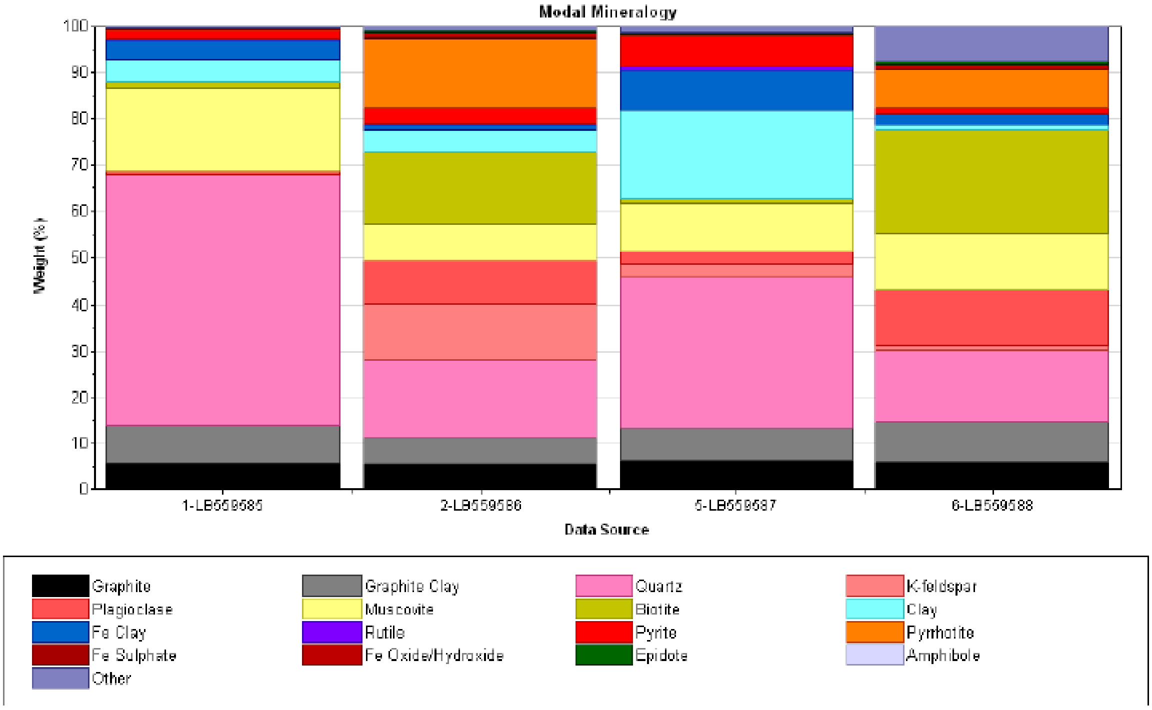

Figure 1. Modal mineralogy presented in a graphical format.

The graphite flake sizes in Tables 4 and 5 and Figure 6 are probably skewed to finer sizes by the pulverising of the samples although they generally show that most of the graphite occurs between 27# and 180# with an average size of 95µm for Sample LB559585 (Target 1) and 100µm based on the maximum diameters in Figures 6 & 7. The QEMSCAN analysis confirms the absence of deleterious trace elements in the McIntosh samples.

Table 4. Graphite grain size distribution as defined by equivalent circle.

	Retained Wt%		Cumulative Retained Wt%		Cumulative Passing Wt%	
Sieve Size	1-LB559585	5-LB559587	1-LB559585	5-LB559587	1-LB559585	5-LB559587
355	0	0	0	0	100	0
300	0.88	0	0.88	0	99.12	100
250	0	0.89	0.88	0.89	99.12	99.11
212	0.42	1.03	1.3	1.92	98.7	98.08
180	1.41	2.55	2.71	4.46	97.29	95.54
150	2.59	2.28	5.3	6.75	94.7	93.25
125	2.48	4.65	7.78	11.4	92.22	88.6
106	2.53	3.78	10.31	15.18	89.69	84.82
90	5.13	5.63	15.45	20.81	84.55	79.19
75	6.9	6.79	22.35	27.6	77.65	72.4
63	8.04	8.67	30.39	36.27	69.61	63.73
53	8.61	8.98	39	45.25	61	54.75
45	8.86	7.68	47.86	52.92	52.14	47.08
38	8.7	8.22	56.56	61.14	43.44	38.86
32	8.52	7.51	65.08	68.65	34.92	31.35
27	7.76	7.28	72.84	75.93	27.16	24.07
22	8.16	7.14	81	83.08	19	16.92
19	4.47	4.24	85.47	87.31	14.53	12.69
16	4.35	3.79	89.82	91.1	10.18	8.9
13.5	3.18	2.85	92.99	93.95	7.01	6.05
11.4	2.26	1.86	95.25	95.81	4.75	4.19
9.6	1.46	1.18	96.71	96.98	3.29	3.02
8.1	0.98	0.77	97.69	97.75	2.31	2.25
6.8	0.68	0.53	98.37	98.28	1.63	1.72
5.7	0.45	0.41	98.83	98.69	1.17	1.31
4.8	0.27	0.25	99.1	98.95	0.9	1.05
4.1	0.29	0.29	99.39	99.24	0.61	0.76
3.4	0.1	0.12	99.49	99.36	0.51	0.64
2.9	0.25	0.31	99.74	99.67	0.26	0.33
2.4	0	0	99.74	99.67	0.26	0.33
2	0.18	0.22	99.92	99.89	0.08	0.11
1.75	0	0	99.92	99.89	0.08	0.11
1.45	0.08	0.11	100	100	0	0
1.2	0	0	100	100	0	0

Table 5. Graphite grain size distribution as defined by maximum diameter.

	Retained Wt%		Cumulative Retained Wt%		Cumulative Passing Wt%	
Sieve Size	1-LB559585	5-LB559587	1-LB559585	5-LB559587	1-LB559585	5-LB559587
710	0	0	0	0	0	100
600	0	0.42	0	0.42	100	99.58
500	0.88	0.68	0.88	1.1	99.12	98.9
425	0.28	1.5	1.16	2.61	98.84	97.39
355	1.57	2.09	2.73	4.7	97.27	95.3
300	2.85	4.24	5.59	8.94	94.41	91.06
250	3.76	3.4	9.34	12.33	90.66	87.67
212	3.9	5.21	13.25	17.54	86.75	82.46
180	5.13	4.88	18.37	22.42	81.63	77.58
150	7.07	6.46	25.45	28.89	74.55	71.11
125	6.91	7.8	32.35	36.69	67.65	63.31
106	7.45	8.56	39.8	45.25	60.2	54.75
90	7.19	6.6	46.99	51.85	53.01	48.15
75	8.06	7.55	55.05	59.4	44.95	40.6
63	7.32	6.65	62.36	66.06	37.64	33.94
53	7.06	6.25	69.42	72.31	30.58	27.69
45	5.95	5.26	75.37	77.57	24.63	22.43
38	5.42	5.41	80.79	82.98	19.21	17.02
32	4.36	4.11	85.15	87.09	14.85	12.91
27	3.77	3.41	88.92	90.5	11.08	9.5
22	3.57	3.29	92.49	93.78	7.51	6.22
19	1.84	1.42	94.33	95.2	5.67	4.8
16	1.77	1.36	96.11	96.55	3.89	3.45
13.5	1.13	0.9	97.24	97.45	2.76	2.55
11.4	0.75	0.58	97.99	98.03	2.01	1.97
9.6	0.51	0.42	98.5	98.45	1.5	1.55
8.1	0.4	0.36	98.91	98.81	1.09	1.19
6.8	0.26	0.23	99.17	99.04	0.83	0.96
5.7	0.24	0.24	99.41	99.28	0.59	0.72
4.8	0.15	0.17	99.56	99.45	0.44	0.55
4.1	0.18	0.22	99.74	99.67	0.26	0.33
3.4	0	0	99.74	99.67	0.26	0.33
2.9	0.18	0.22	99.92	99.89	0.08	0.11
2.4	0	0	99.92	99.89	0.08	0.11
2	0.08	0.11	100	100	0	0
1.75	0	0	100	100	0	0

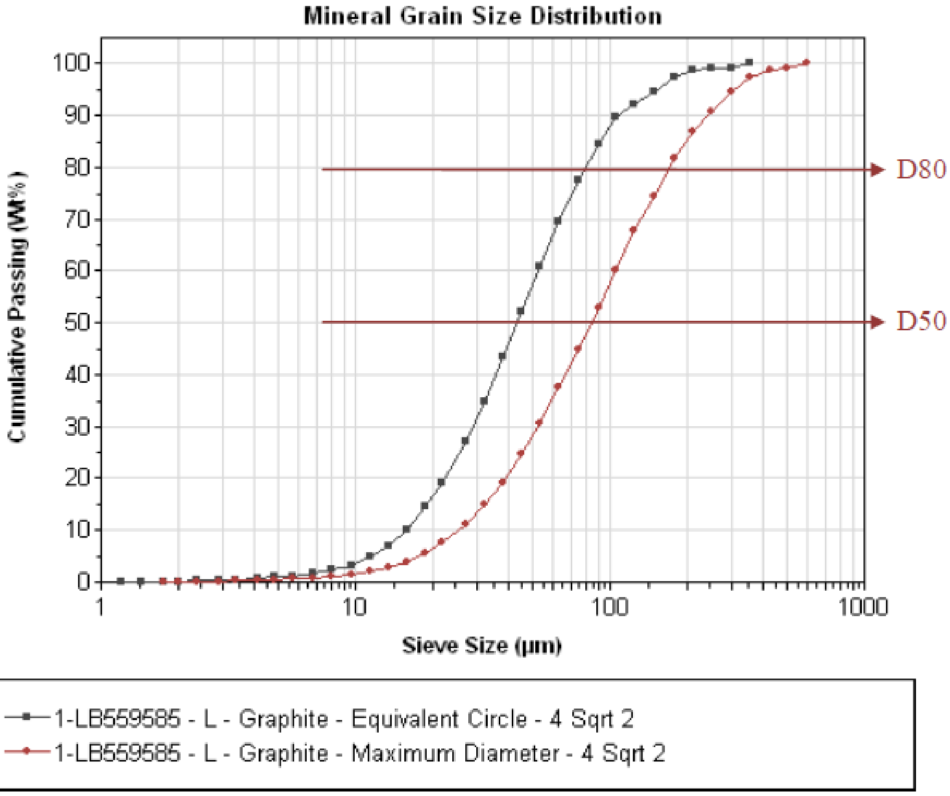

Figure 2. Sample 1-LB559585, cumulative size distribution of graphite flakes by Equivalent Circle and Maximum Diameter. Flake size, calculated by Maximum Diameter is the longest distance between two points of the grain.

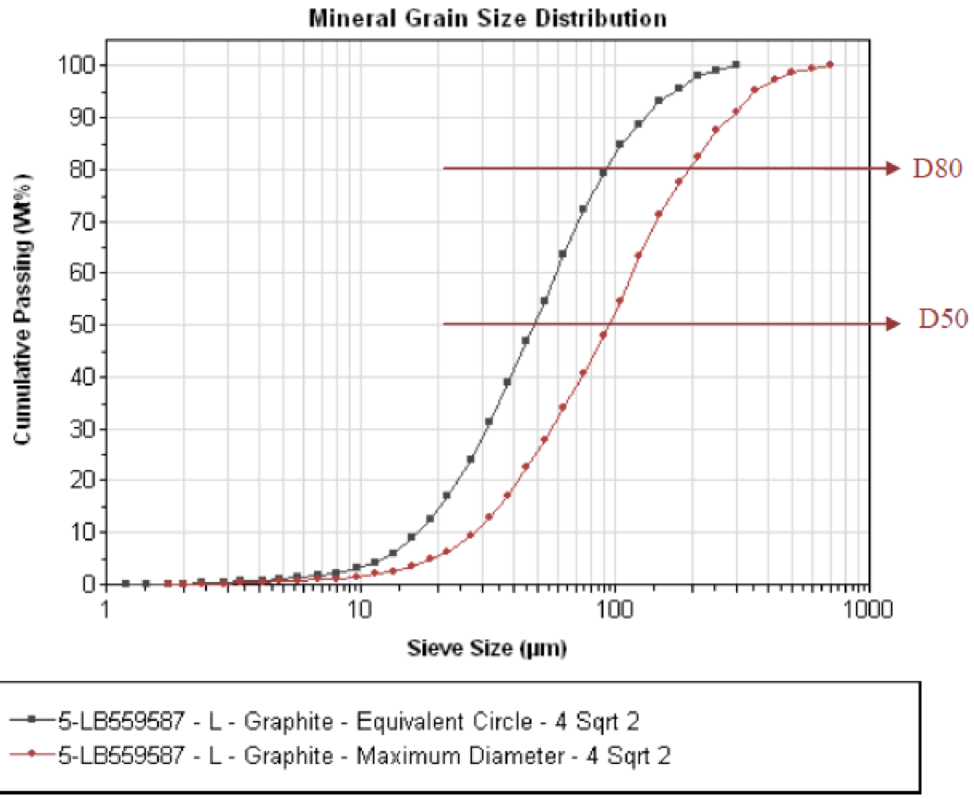

Figure 3. Sample 5-LB559587, cumulative size distribution of graphite flakes by Equivalent Circle and Maximum Diameter. Flake size, calculated by Maximum Diameter is the longest distance between two points of the grain.