MINERAL HOLDINGS AUSTRALIA PTY LTD

EXPLORATION LICENCE EL47/2011
DIP RANGE, NW TASMANIA

ANNUAL REPORT ON EXPLORATION
TO AUGUST 2014

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28 August 2014

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EL47/2011 DIP RANGE, NW TASMANIA - ANNUAL REPORT 2014

ABSTRACT

This report gives a review of the exploration work carried out by Mineral Holdings Australia Pty. Ltd. (MHA) over the past 12 months on EL47/2011. The Licence originally covered 186km² but this was reduced to 38km² at the last renewal in September 2013. The Licence is located in the Dip Ranges and surrounds the Thomas Mountain silica mine within 23M/2009 and RL1/2005.

The licence covers outcrops of the Detention Quartzite and the Jacobs Quartzite of the Rocky Cape Group and the target of the exploration program is silica, silica sand and quartzite for the chemical, metallurgical, glass and coal seam gas industries.

Previous exploration by MHA and its joint venture partners has outlined a substantial inventory of potential silica products in retention licence RL1/2005 and the intention was to explore the adjacent areas for any further resources of those

A detailed program of foot traversing was carried out. No significant quartzite bodies were located but new frac sand deposits have been located in the Shakespeare Hills area in the north-west, at Alarm River along strike from the Thomas Mountain sand deposit and in the Meunna area. Samples have been taken for size analysis and evaluation of roundness.

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1.0 INTRODUCTION

EL47/2011 was granted to Mineral Holdings Australia Pty. Ltd. (MHA) on 16 September 2012 for a period of 5 years. The licence originally covered 186km^2 in the Dip Ranges, surrounding the Thomas Mountain silica mine within 23M/2009 and RL1/2005. The Licence was reduced to 38km² on the first renewal in September 2013.

The Thomas Mountain mine contains significant resources of high-quality quartzite and frac sand located in the northern Dip Range about 25km south-west of Wynyard and 20km south-east of a deep water harbour at Port Latta. Access is via the township of Montumana on the Bass Highway, 25km west of Wynyard, thence 6 km south along Montumana and Newhaven roads to a turn-off just east of Hogarths Creek. The mine site is held within 23M/2009, an area of 2km² inside RL1/2005.

Exploration licence EL47/2011 covers outcrops of the Detention Quartzite and the Jacobs Quartzite of the Rocky Cape Group surrounding the Thomas Mountain mine and the target of the exploration program is for any additional resources of silica, silica sand and quartzite for the chemical, metallurgical, glass and coal seam methane industries.

Initial exploration during 2013 located an area of silica sand in the Alarm River area, extending over a length of at least 500 metres and running south west from the boundary with RL1/2005. This area is directly along strike from the large area of frac sand south of Hogarth Creek. Follow up hand auger drilling has been carried out to determine the full extent and width of the zone.

A detailed program of foot traversing was carried out in the northern section of the Licence in the Shakespeare Hills area. A second area of sand was located, covering an area of 300 by 100 metres. Three samples were taken for detailed size analysis.

2.0 GEOLOGY

Resources of high-grade quartzite have been reported in various government publications as occurring within the Proterozoic rocks of north- west Tasmania. The better quartzite occurred within the Detention Quartzite and Jacob Quartzite sub-groups and rocks of these sub-groups underlie most of the licence area.

Gee (1971) described the Proterozoic sequence within the Rocky Cape Group from youngest to oldest as – the Jacob Quartzite (1130m in thickness), the Irby Siltstone (760m) and the Detention Quartzite (1400m). Gee suggested the Detention Quartzite contained about 10% siltstone in beds from a few metres to more than 80 metres in thickness, while the Jacob Quartzite is a pure quartz sandstone and is the coarser grained of the two. The Rocky Cape Group, in turn, overlies the Cowrie Siltstone which was at least 2,\400m in thickness.

Structurally the Detention Quartzite and the Jacob Quartzite are folded into a tight series of anticlines and synclines with north-east trending and dipping axes with folds becoming overturned in the east, resulting in north-west dipping beds at 45 degrees or above.

Gee (1971) described the quartzites as uniformly fine grained orthoquartzites with 99% quartz grains and a granular to glassy texture, depending on the degree of cementation by silica. Turner (1989), on the other hand, preferred to call the mature, quartzose, sandy sediments quartz arenites and attributes their variable physical character as mostly due to variable silicification and occasionally to metamorphism.

Along with the quartzites are areas of loose silica sand which appear to be areas of uncemented quartzite. The sands are high purity silica sand and are suitable for use in coal bed methane extraction.

3.0 CURRENT EXPLORATION

The area was extensively traversed on foot by prospector, Mr Kevin Pinner, and much of the area was better exposed after recent bushfires, giving a much better look at the geology. No new significant quartzite deposits were identified but an additional area of frac sand was located in the Shakespeare Hills area. This area is approximately 300 metres by 100 metres and three samples were taken for size and roundness analysis. Results are detailed in Appendix 1 but the relative proportions of the favourable -20/+40 and -40/+70 US Mesh fractions are:

Sample No.	Easting	Northing	-20 +40	-40 +70
SH 1	369904	5466034	22.0%	55.0%
SH 2	370033	5465996	35.6%	42.3%
SH 3	370146	5465954	27.5%	43.1%

TABLE 1: Shakespeare Hills – Sand Sample Sizing Analysis

Four samples were previously taken in the Alarm River area, which is a continuation of the Hogarth Creek frac sand deposit. An attempt was made to hand auger across the width of the sand area but the auger could only penetrate to about 1 to 1½ metres and a power auger will be necessary to evaluate the deposit at depth. Although too hard to penetrate by hand auger, the sand will still break up and be easy to dig by mechanical means.

Four additional samples were collected and the zone is at least 200 metres in width. In all, eight samples have been assayed from the Alarm River area. Samples AR 1 to 4 were reported last year and sample results for samples for AR 5 to 8 are given in Appendix 2.

The relative proportions of the favourable -20/+40 and -40/+70 US Mesh fractions and the location for all the Alarm River samples are shown below.

Sample No.	Easting	Northing	-20 +40	-40 +70
AR 1	370619	5461570	9.0%	23.2%
AR 2	370830	5461686	12.9%	40.6%
AR 3	371075	5461811	29.3%	22.3%
AR 4	371245	5461895	17.0%	30.2%
AR 5	370615	5461524	26.4%	17.3%
AR 6	370839	5461714	10.8%	10.5%
AR 7	371085	5461774	34.6%	12.7%
AR 8	371094	5461737	29.0%	29.9%

TABLE 2: Alarm River – Sand Sample Sizing Analysis

Both the Shakespeare Hills and Alarm River sands are derived from the Detention Quartzite. The one sample collected from the Meunna area in 2013 is from the Jacob Quartzite and contained more of the favourable -20/+40 and -40/+70 fractions.

Sample No.	Easting	Northing	-20 +40	-40 +70
M 1	370857	5452348	38.8%	46.4%

TABLE 3: Meunna – Sand Sample Sizing Analysis

This area of sand is not large but follow-up mapping and sampling will be carried out.

4.0 EXPENDITURE

Expenditure on the Licence to the end of June 2014 by MHA has been $32,166.99, but this does not include any time spent by Mr Neil Thomas or any other overheads. Expenditure for the twelve months from 30 June 2013 to 30 June 2014 was $23,853.68. Expenditure for the next twelve months is expected to be in the order of $10,000.

5.0 CONCLUSION

Several new sources of potential frac sand material have been identified and evaluation of the sand is continuing.

6.0 REFERENCES

Bacon, C.A. 1989. Silica. Mineral Resources Tasmania. 12.

Gee, R.D, 1971. Table Cape, Tasmania. Tasmanian Geological Atlas 1 Mile Series Expl. Rep., Sheet 22 (8016S).

Dickson, T.W., 2013. Annual Report on Exploration to August 2013, Exploration Licence 47/2011 Dip Range NW Tasmania. Mineral Holdings Australia Pty. Ltd.

Dickson, T.W., 2013. Exploration Licence 47/2011 Dip Range Partial Relinquishment Report August 2013, Mineral Holdings Australia Pty. Ltd.

7.0 KEYWORDS

Dip Range, Thomas Mountain, Detention Subgroup, Jacob Quartzite, Rocky Cape Group, Frac Sand, Quartzite, Silica Resources.

FIGURE 1: Location Diagram - EL47/2011 Dip Range

APPENDIX 1

SHAKESPEARE HILLS

Sample Locations,
Size Analysis &
Size Fraction Photographs

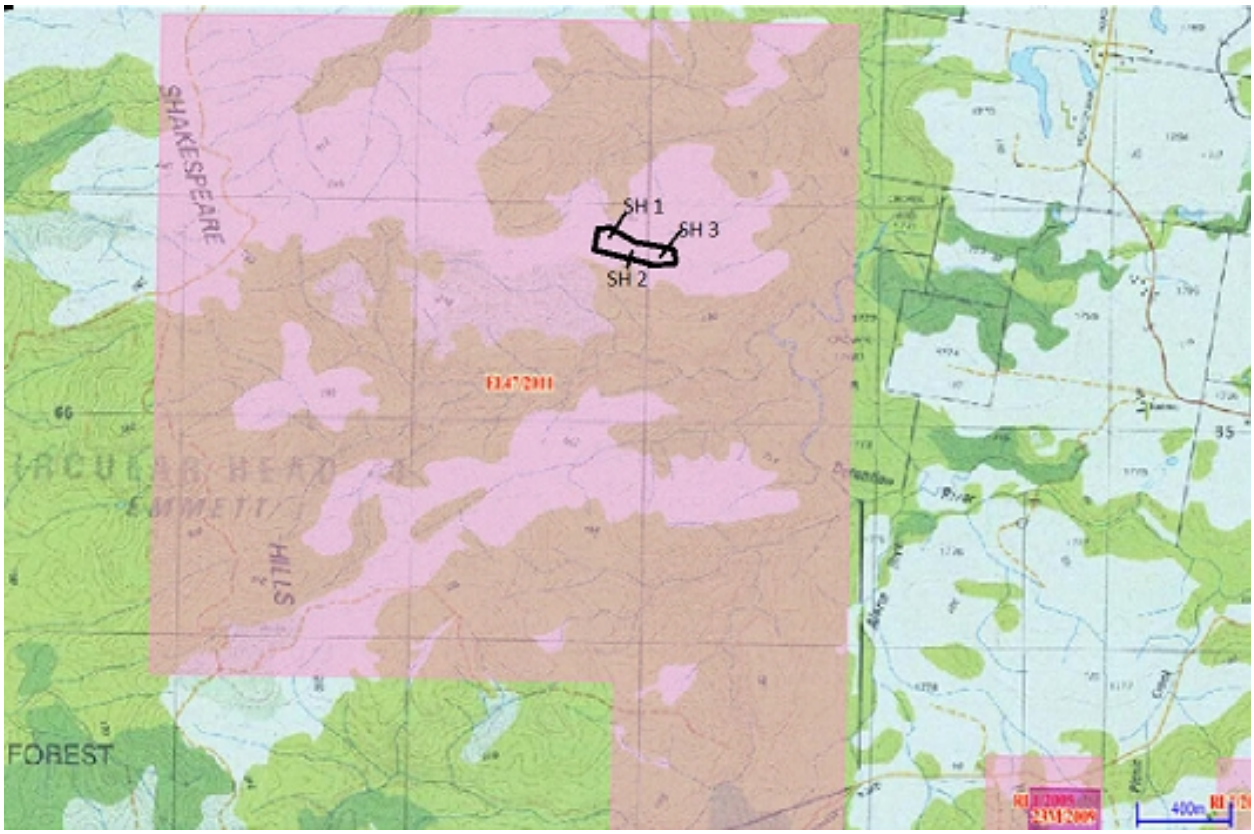

FIGURE A1-1: Shakespeare Hills Sand Deposit Location & Sample Sites

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GENERAL SIZING REPORT SHEET

PROJECT	T0906
SAMPLE	Shakespear Hills
	No 3
DATE	230714
TECHNICIAN	MS

SAMPLE SIZED			SIZE	WEIGHTS			P80
Shakespear Hills			um	gm	(%)	% Pass	um
			850	4.76	3.17	96.8	
			600	15.89	10.57	86.3	
			425	25.52	16.97	69.3	**535**
			300	35.81	23.81	45.5	
			212	28.99	19.28	26.2	
			150	20.02	13.31	12.9	
			106	9.76	6.49	6.4	
			75	2.98	1.98	4.4	
			53	1.41	0.94	3.5	
			38	0.88	0.59	2.9	
CYCLOSIZER		CS1	34	0.00	0.00	2.9	
FLOW	185	CS2	28	0.00	0.00	2.9	
TEMP	21	CS3	19	0.00	0.00	2.9	
SG	**2.50**	CS4	12	0.00	0.00	2.9	
TIME	20min	CS5	8	0.00	0.00	2.9	
		<CS5	CALC	4.35	2.89	0.0	
			TOTAL	150.37	100.0		

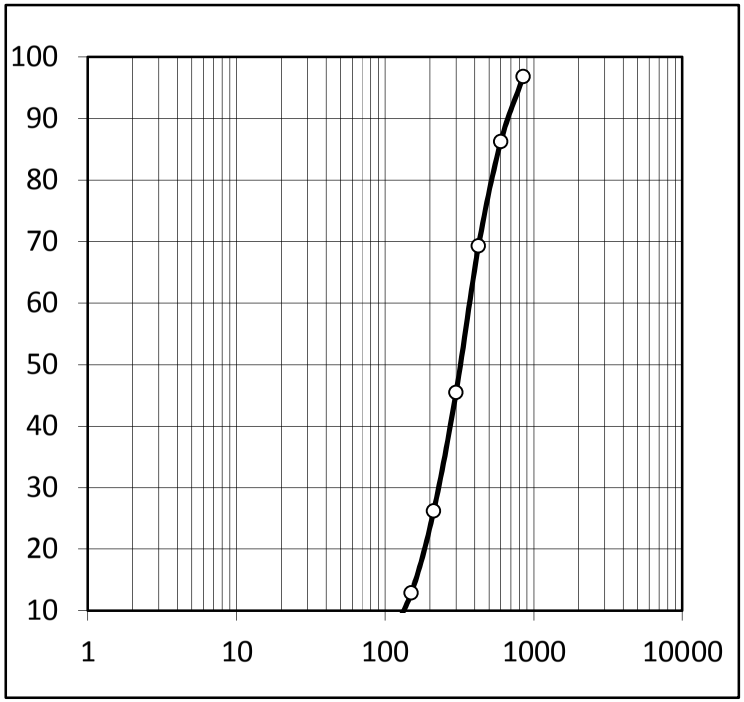

TABLE A1-1: Shakespeare Hills Sand Sizing Analysis - Sample SH 3

SHAKESPEARE HILLS - SAMPLE SH 3
-20 +40 US MESH FRACTION PHOTOGRAPHS

PHOTO A1-1: Sample SH3 -0.850 +0.600µm (-20 +30 US Mesh) fraction

PHOTO A1-2: Sample SH 3 -0.600 +0.425µm (-30 +40 US Mesh) fraction

SHAKESPEARE HILLS - SAMPLE SH 3
-40 +70 US MESH FRACTION PHOTOGRAPHS

PHOTO A1-3: Sample SH 3 -0.425 +0.300µm (-40 +50 US Mesh) fraction

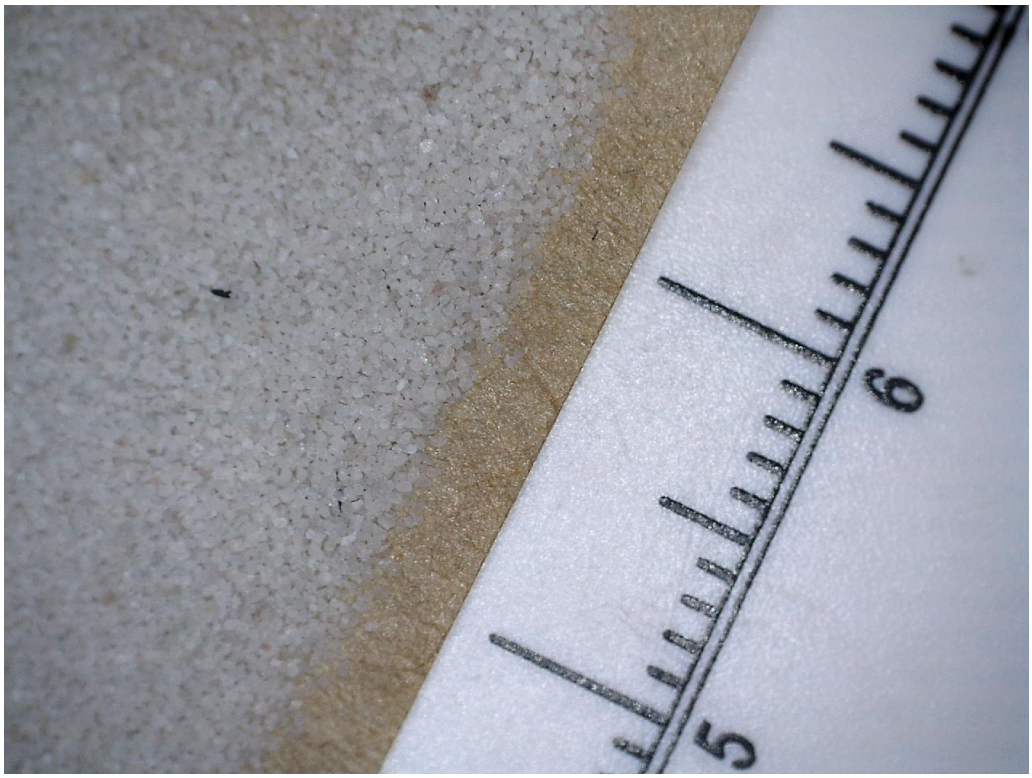

PHOTO A1-4: Sample SH 3 -0.300 +0.212µm (-50 +70 US Mesh) fraction

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BURNIE LABORATORY
GENERAL SIZING REPORT SHEET

PROJECT	T0906
SAMPLE	Shakespear Hills
	No 4
DATE	230714
TECHNICIAN	MS

SAMPLE SIZED Shakespear Hills		SIZE um	WEIGHTS gm	(%)	% Pass	P80 um
		850	3.54	1.69	98.3	
		600	22.66	10.82	87.5	
		425	52.01	24.83	62.7	**547**
		300	53.79	25.68	37.0	
		212	34.69	16.56	20.4	
		150	25.26	12.06	8.4	
		106	12.54	5.99	2.4	
		75	3.17	1.51	0.9	
		53	0.75	0.36	0.5	
		38	0.14	0.07	0.4	
CYCLOSIZER	CS1	34	0.00	0.00	0.4	
FLOW 185	CS2	28	0.00	0.00	0.4	
TEMP 21	CS3	19	0.00	0.00	0.4	
SG **2.50**	CS4	12	0.00	0.00	0.4	
TIME 20min	CS5	8	0.00	0.00	0.4	
	<CS5	CALC	0.92	0.44	0.0	
		TOTAL	209.47	100.0		

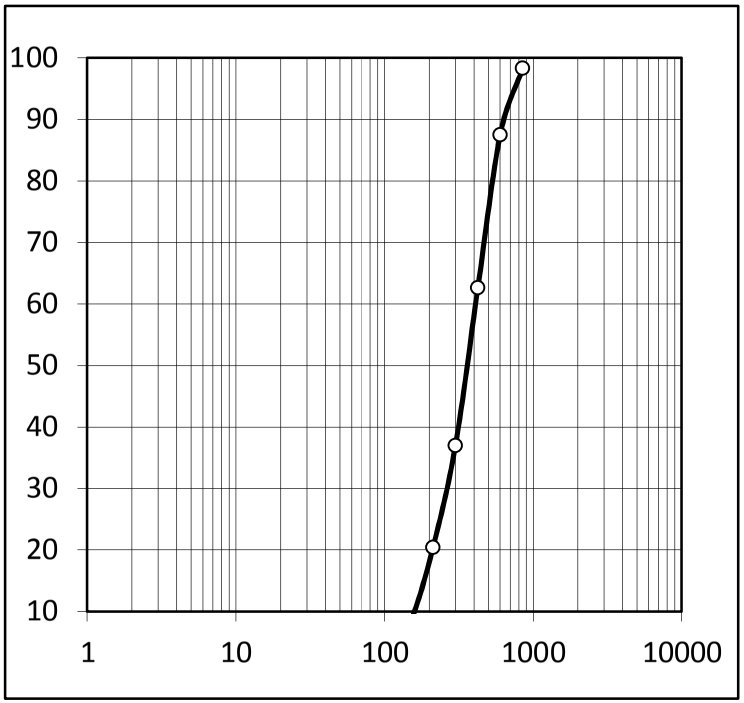

TABLE A1-2: Shakespeare Hills Sand Size Analysis - Sample SH 4

SHAKESPEARE HILLS - SAMPLE SH 4
-20 +40 US MESH FRACTION PHOTOGRAPHS

PHOTO A1-5: Sample SH 4 -0.850 +0.600µm (-20 +30 US Mesh) fraction

PHOTO A1-6: Sample SH 4 -0.600 +0.425µm (-30 +40 US Mesh) fraction

SHAKESPEARE HILLS - SAMPLE SH 4
-40 +70 US MESH FRACTION PHOTOGRAPHS

PHOTO A1-7: Sample SH 4 -0.425 +0.300µm (-40 +50 US Mesh) fraction

PHOTO A1-8: Sample SH 4 -0.300 +0.212µm (-50 +70 US Mesh) fraction

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GENERAL SIZING REPORT SHEET

PROJECT	T0906
SAMPLE	Shakespear Hills
	No 5
DATE	230714
TECHNICIAN	MS

SAMPLE SIZED		SIZE	WEIGHTS			P80
Shakespear Hills		um	gm	(%)	% Pass	um
		850	0.17	0.13	99.9	
		600	4.60	3.39	96.5	
		425	25.06	18.48	78.0	**444**
		300	41.89	30.90	47.1	
		212	32.30	23.82	23.3	
		150	18.16	13.39	9.9	
		106	7.56	5.58	4.3	
		75	2.06	1.52	2.8	
		53	0.77	0.57	2.2	
		38	0.27	0.20	2.0	
CYCLOSIZER	CS1	34	0.00	0.00	2.0	
FLOW 185	CS2	28	0.00	0.00	2.0	
TEMP 21	CS3	19	0.00	0.00	2.0	
SG **2.50**	CS4	12	0.00	0.00	2.0	
TIME 20min	CS5	8	0.00	0.00	2.0	
	<CS5	CALC	2.74	2.02	0.0	
		TOTAL	135.58	100.0		

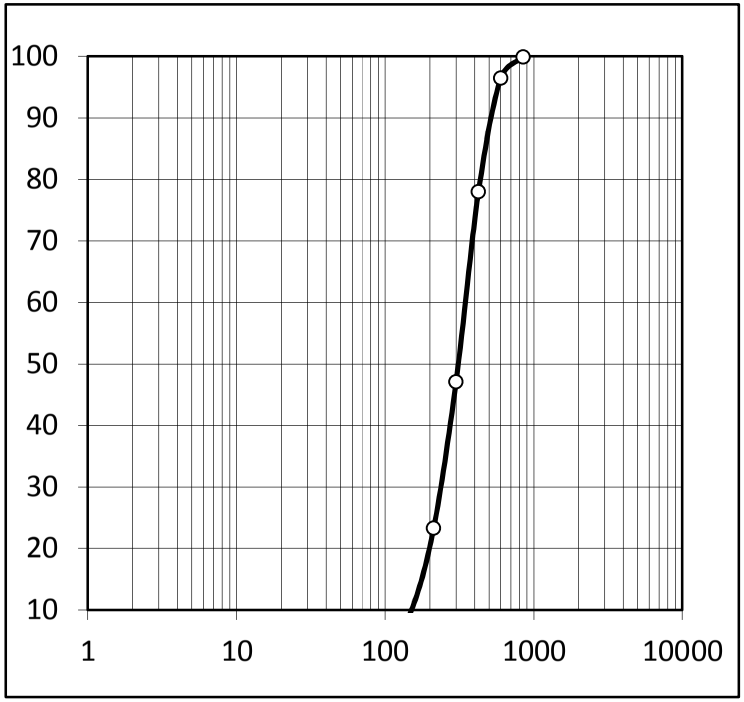

TABLE A1-3: Shakespeare Hills Sand Size Analysis - Sample SH 5

SHAKESPEARE HILLS - SAMPLE SH 5
-20 +40 US MESH FRACTION PHOTOGRAPHS

PHOTO A1-9: Sample SH 5 -0.850 +0.600µm (-20 +30 US Mesh) fraction

PHOTO A1-10: Sample SH 5 -0.600 +0.425µm (-30 +40 US Mesh) fraction

SHAKESPEARE HILLS - SAMPLE SH 5
-40 +70 US MESH FRACTION PHOTOGRAPHS

PHOTO A1-11: Sample SH 5 -0.425 +0.300µm (-40 +50 US Mesh) fraction

PHOTO A1-12: Sample SH 5 -0.300 +0.212µm (-50 +70 US Mesh) fraction

APPENDIX 2

ALARM RIVER

Sample Locations,
Size Analysis &
Size Fraction Photographs

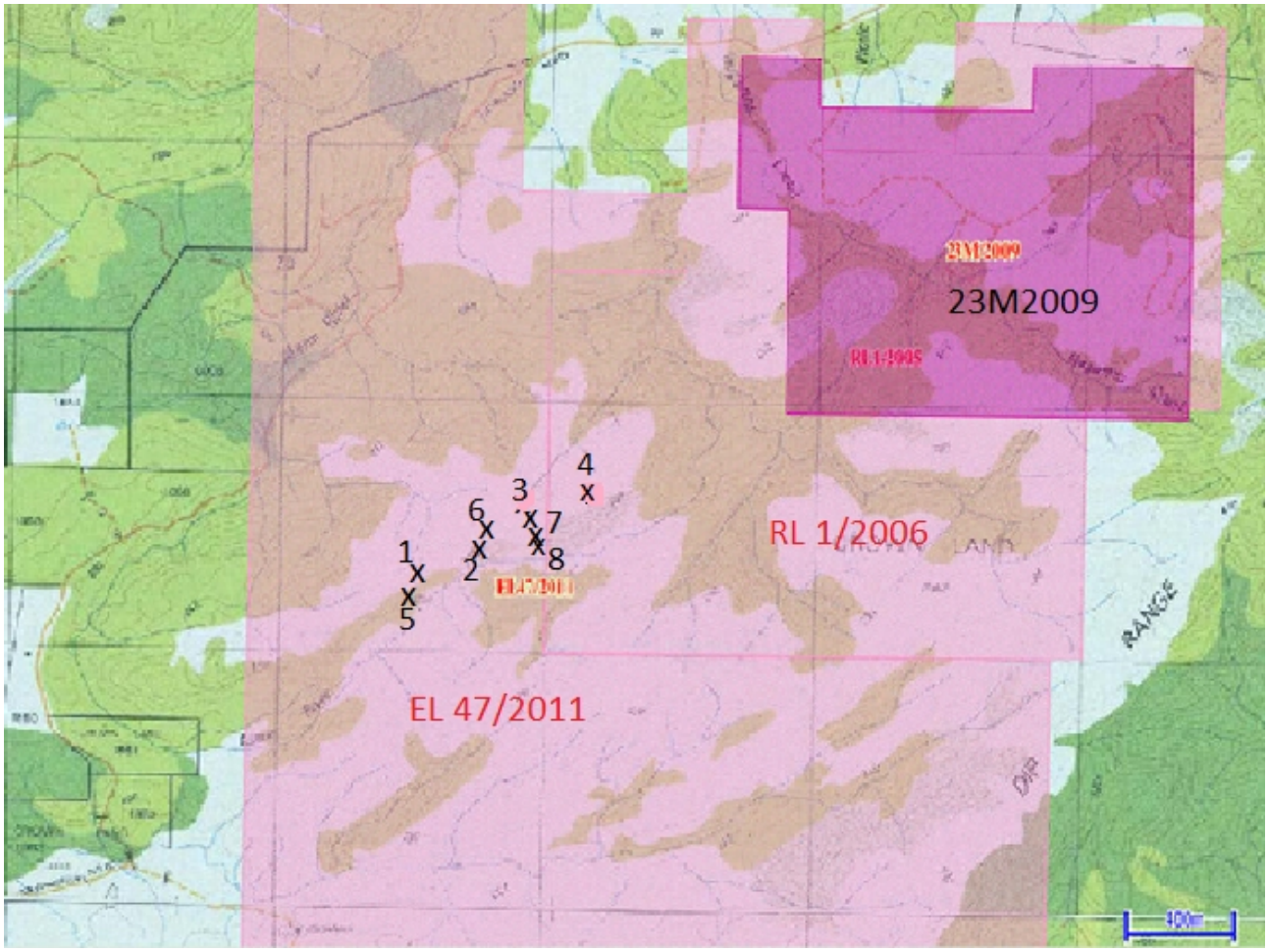

FIGURE A2-1: Alarm River Sand Deposit - Sample Locations

(Samples AR 1 to 4 reported previously)

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GENERAL SIZING REPORT SHEET

PROJECT	T0906
SAMPLE	Alarm River Sand
	Sample 5
DATE	190814
TECHNICIAN	MS

SAMPLE SIZED	SIZE	WEIGHTS			P80
Alarm River Sand	um	gm	(%)	% Pass	um
	1180	1.15	0.72	99.3	
	850	34.70	21.63	77.7	**886**
	600	30.23	18.84	58.8	
	425	11.90	7.42	51.4	
CYCLOSIZER	300	12.99	8.10	43.3	
FLOW 185	212	14.82	9.24	34.1	
TEMP 21	150	17.29	10.78	23.3	
SG **2.50**	106	13.18	8.21	15.1	
TIME 20min	75	9.43	5.88	9.2	
	53	3.33	2.08	7.1	
	38	1.54	0.96	6.2	
<38	CALC	9.90	6.17	0.0	
	TOTAL	160.46	100.0		

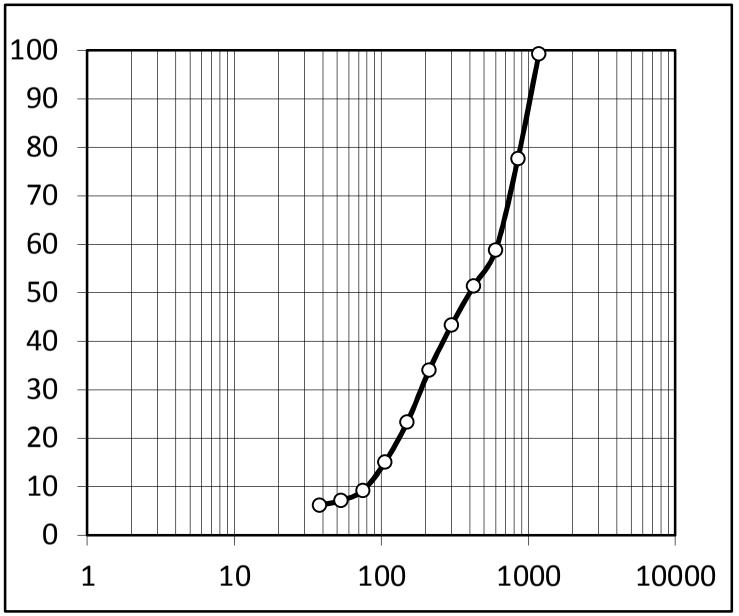

TABLE A2-1: Alarm River Sand Size Analysis - Sample AR 5

ALARM RIVER - SAMPLE AR 5
-20 +40 US MESH FRACTION PHOTOGRAPHS

PHOTO A2-1: Sample AR 5 -0.850 +0.600µm (-20 +30 US Mesh) fraction

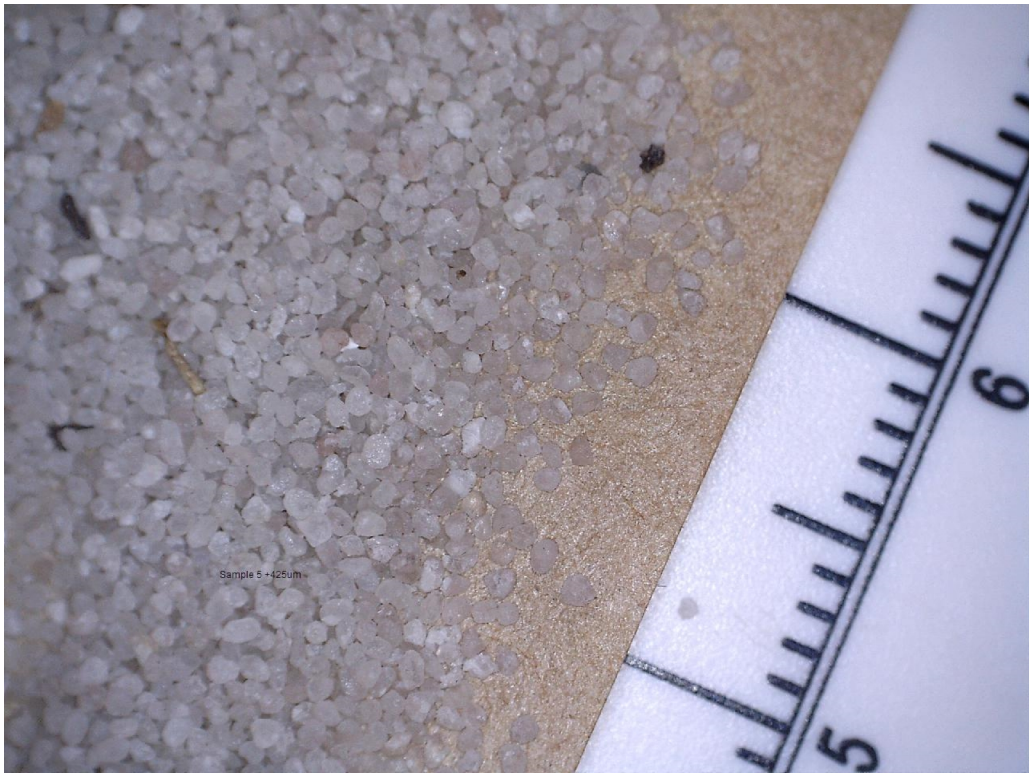

PHOTO A2-2: Sample AR 5 -0.600 +0.425µm (-30 +40 US Mesh) fraction

ALARM RIVER - SAMPLE AR 5
-40 +70 US MESH FRACTION PHOTOGRAPHS

PHOTO A2-3: Sample AR 5 -0.425 +0.300µm (-40 +50 US Mesh) fraction

PHOTO A2-4: Sample AR 5 -0.300 +0.212µm (-50 +70 US Mesh) fraction

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GENERAL SIZING REPORT SHEET

PROJECT	T0906
SAMPLE	Alarm River Sand
	Sample 6
DATE	190814
TECHNICIAN	MS

SAMPLE SIZED	SIZE	WEIGHTS			P80
Alarm River Sand	um	gm	(%)	% Pass	um
	850	7.91	5.03	95.0	
	600	5.61	3.57	91.4	
	425	11.30	7.19	84.2	
	300	16.60	10.56	73.7	**375**
CYCLOSIZER	212	15.23	9.69	64.0	
FLOW 185	150	20.70	13.17	50.8	
TEMP 21	106	13.95	8.87	41.9	
SG **2.50**	75	6.21	3.95	38.0	
TIME 20min	53	2.74	1.74	36.2	
	38	1.90	1.21	35.0	
<38	CALC	55.07	35.03	0.0	
	TOTAL	157.22	100.0		

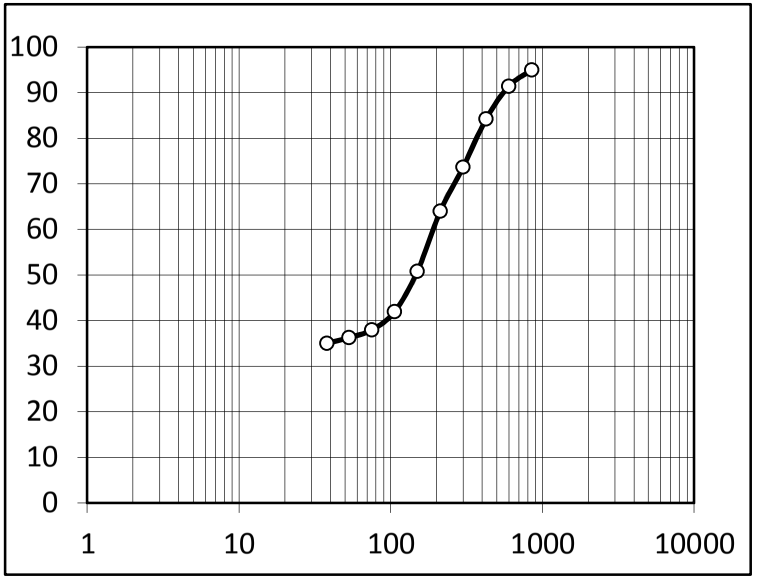

TABLE A2-2: Alarm River Sand Size Analysis - Sample AR 6

ALARM RIVER - SAMPLE AR 6
-20 +40 US MESH FRACTION PHOTOGRAPHS

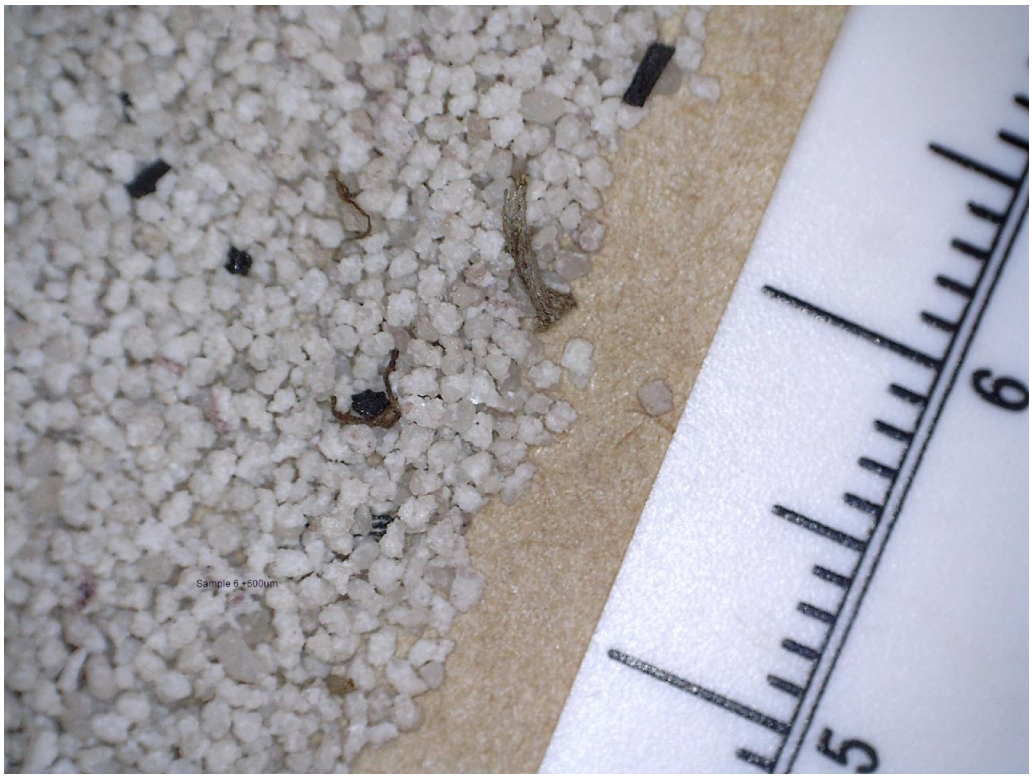

PHOTO A2-5: Sample AR 6 -0.850 +0.600µm (-20 +30 US Mesh) fraction

PHOTO A2-6: Sample AR 6 -0.600 +0.425µm (-30 +40 US Mesh) fraction

ALARM RIVER - SAMPLE AR 6
-40 +70 US MESH FRACTION PHOTOGRAPHS

PHOTO A2-7: Sample AR 6 -0.425 +0.300µm (-40 +50 US Mesh) fraction

PHOTO A2-8: Sample AR 6 -0.300 +0.212µm (-50 +70 US Mesh) fraction

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GENERAL SIZING REPORT SHEET

PROJECT	T0906
SAMPLE	Alarm River Sand
	Sample 7
DATE	190814
TECHNICIAN	MS

SAMPLE SIZED		SIZE	WEIGHTS			P80
Alarm River Sand		um	gm	(%)	% Pass	um
		850	9.75	6.28	93.7	
		600	25.88	16.68	77.0	**644**
		425	27.86	17.95	59.1	
		300	19.76	12.73	46.4	
CYCLOSIZER		212	15.46	9.96	36.4	
FLOW	185	150	22.18	14.29	22.1	
TEMP	21	106	14.07	9.07	13.0	
SG	**2.5**	75	6.64	4.28	8.8	
TIME	20min	53	6.05	3.90	4.9	
		38	1.78	1.15	3.7	
	<38	CALC	5.77	3.72	0.0	
		TOTAL	155.20	100.0		

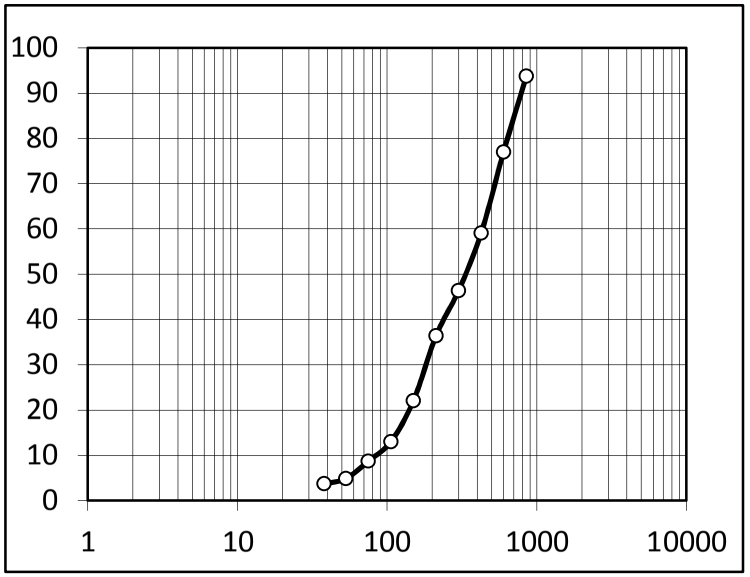

TABLE A2-3: Alarm River Sand Size Analysis - Sample AR 7

ALARM RIVER - SAMPLE AR 7
-20 +40 US MESH FRACTION PHOTOGRAPHS

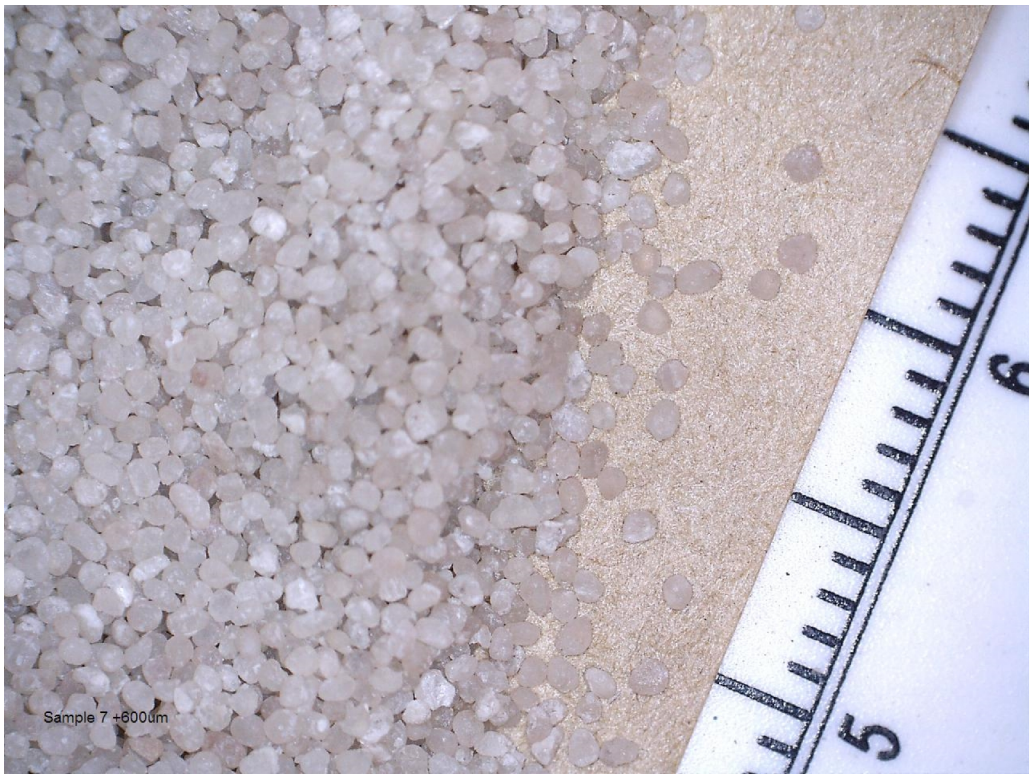

PHOTO A2-9: Sample AR 7 -0.850 +0.600µm (-20 +30 US Mesh) fraction

PHOTO A2-10: Sample AR 7 -0.600 +0.425µm (-30 +40 US Mesh) fraction

ALARM RIVER - SAMPLE AR 7
-40 +70 US MESH FRACTION PHOTOGRAPHS

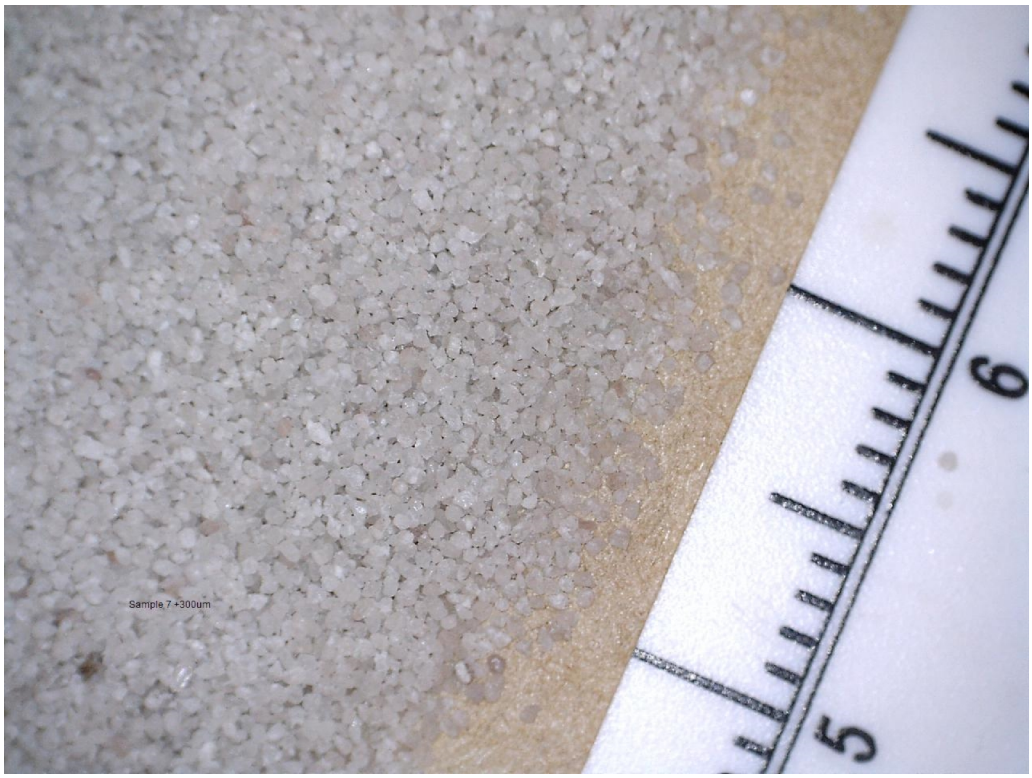

PHOTO A2-11: Sample AR 7 -0.425 +0.300µm (-40 +50 US Mesh) fraction

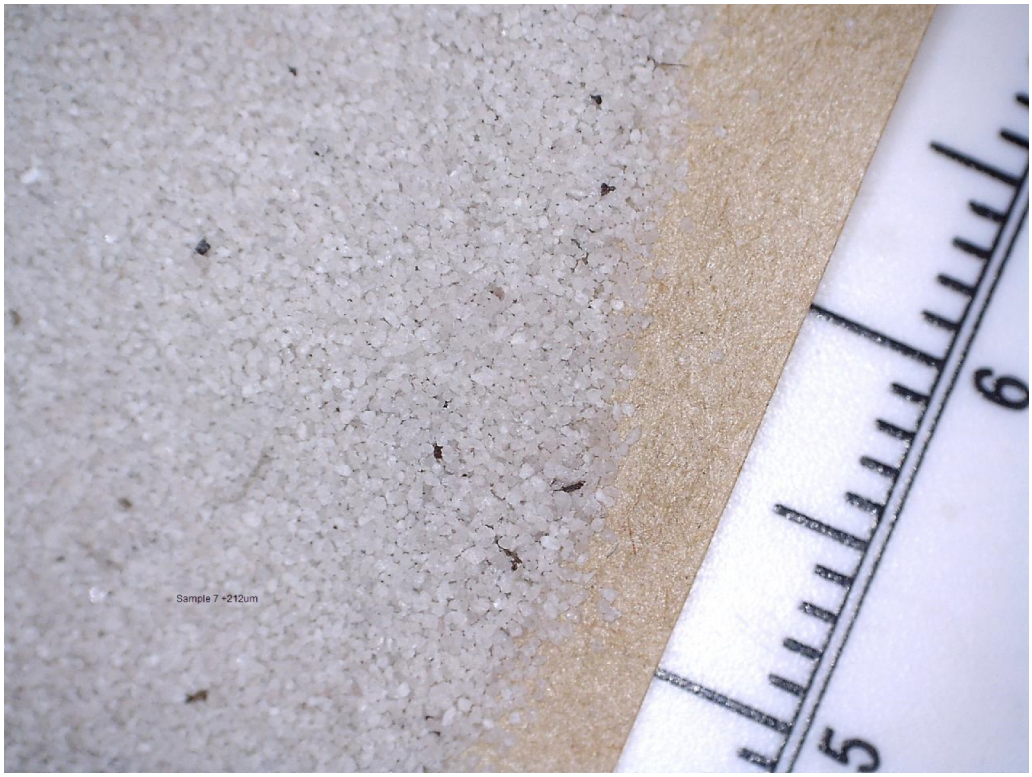

PHOTO A2-12: Sample AR 7 -0.300 +0.212µm (-50 +70 US Mesh) fraction

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GENERAL SIZING REPORT SHEET

PROJECT	T0906
SAMPLE	Alarm River Sand
	Sample 8
DATE	190814
TECHNICIAN	MS

SAMPLE SIZED		SIZE	WEIGHTS			P80
Alarm River Sand		um	gm	(%)	% Pass	um
		850	2.85	1.89	98.1	
		600	16.45	10.91	87.2	
		425	27.23	18.06	69.1	**530**
		300	25.22	16.73	52.4	
CYCLOSIZER		212	19.87	13.18	39.2	
FLOW	185	150	27.52	18.26	21.0	
TEMP	21	106	14.51	9.63	11.3	
SG	**2.50**	75	7.30	4.84	6.5	
TIME	20min	53	3.03	2.01	4.5	
		38	1.53	1.01	3.5	
	<38	CALC	5.23	3.47	0.0	
		TOTAL	150.74	100.0		

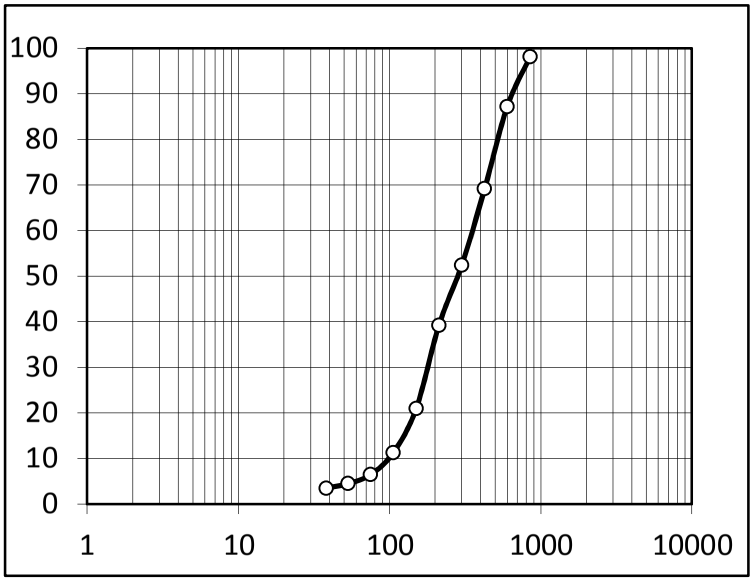

TABLE A2-4: Alarm River Sand Size Analysis - Sample AR 8

ALARM RIVER - SAMPLE AR 8
-20 +40 US MESH FRACTION PHOTOGRAPHS

PHOTO A2-13: Sample AR 8 -0.850 +0.600µm (-20 +30 US Mesh) fraction

PHOTO A2-14: Sample AR 8 -0.600 +0.425µm (-30 +40 US Mesh) fraction

ALARM RIVER - SAMPLE AR 8
-40 +70 US MESH FRACTION PHOTOGRAPHS

PHOTO A2-15: Sample AR 8 -0.425 +0.300µm (-40 +50 US Mesh) fraction

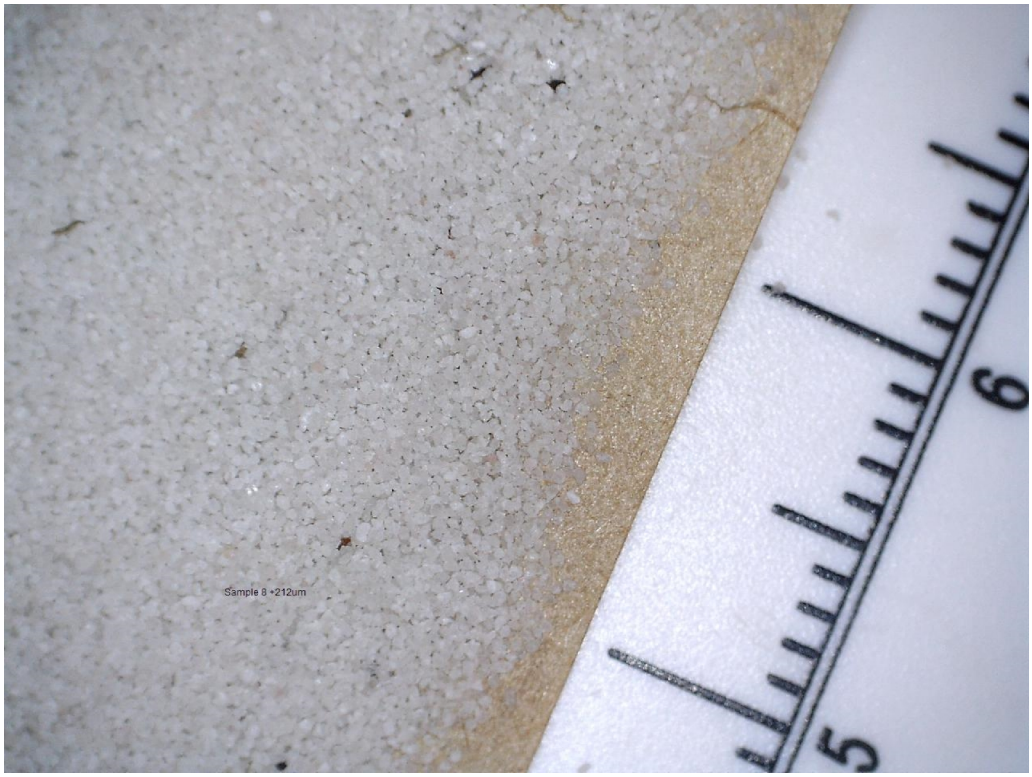

PHOTO A2-16: Sample AR 8 -0.300 +0.212µm (-50 +70 US Mesh) fraction

APPENDIX 3

MEUNNA AREA

Sample Locations &
Size Analysis

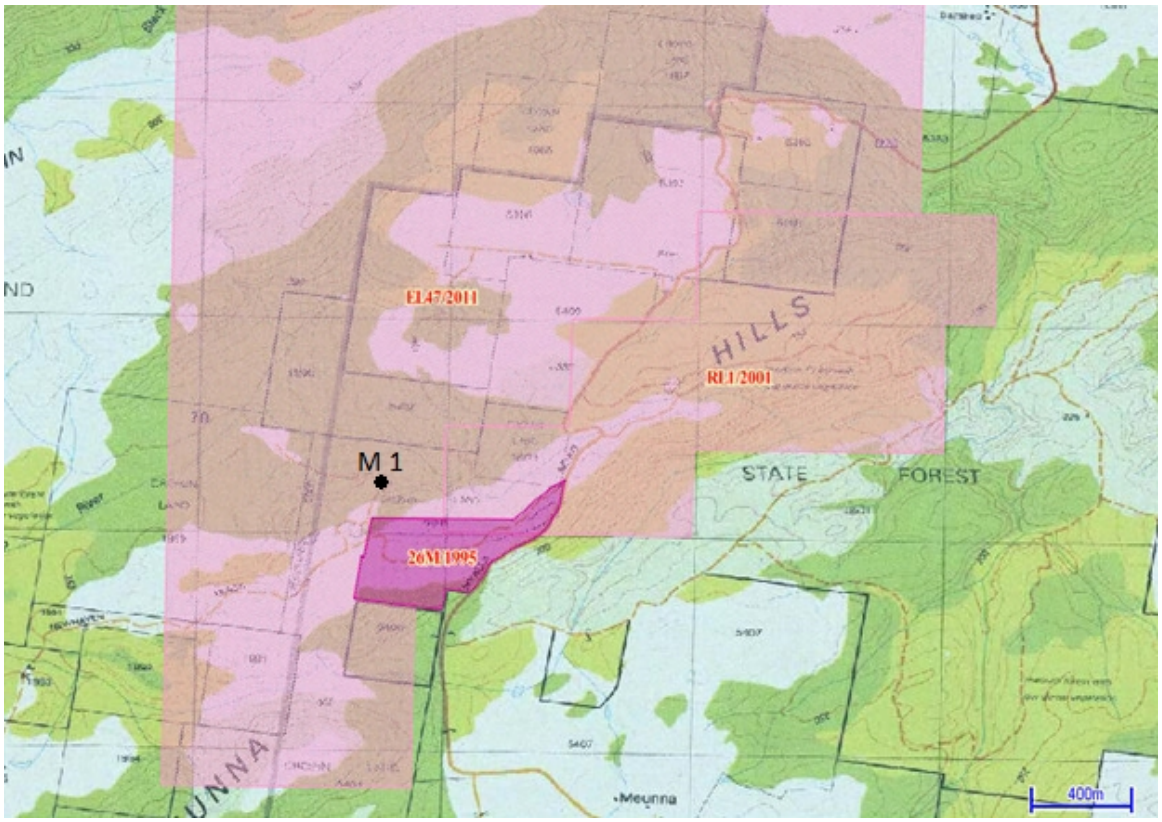

FIGURE A3-1: Meunna Area – M 1 Sample Location

SIZE DISTRIBUTION

Test No	5			
Sample Tested	~~Alarm River 5~~ Meunna Area (M 1)			
SCREEN SIZING				
Sample Weight	251.51 g			
Screen Aperture	**Weight Retained**		**Cumulative Weight**	
mm	**g**	**%**	**% Retained**	**% Passing**
1.180	4.46	1.8	1.8	98.2
0.850	6.74	2.7	4.5	95.5
0.600	21.86	8.7	13.2	86.8
0.425	75.66	30.1	43.3	56.7
0.300	83.12	33.1	76.3	23.7
0.212	33.32	13.3	89.6	10.4
0.106	20.20	8.0	97.6	2.4
-0.106	6.00	2.4		
Total	251.36	100.0		
Wt Loss	0.15	0.06		

Printed	10/04/13
Job No.	N5532CO13
Technician	WW
Test Date	02/04/13
File ref	AR5

Gamdel

Sizings.xls 10/Apr/2013 **Version 5a**

Comments:
d95 = 0.820 mm
d80 = 0.535 mm
d50 = 0.394 mm
d10 = 0.207 mm

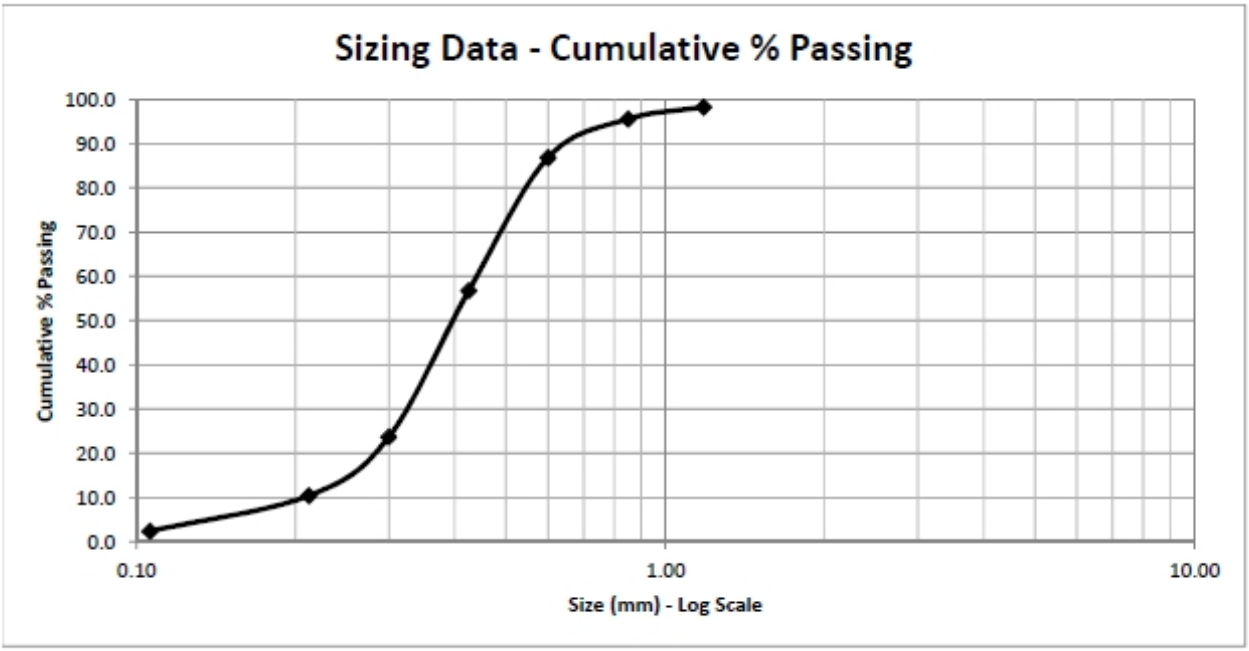

TABLE A3-1: Meunna Area Sand Size Analysis - Sample M 1

(Previously referred to as Sample AR 5 in Dickson (2013))