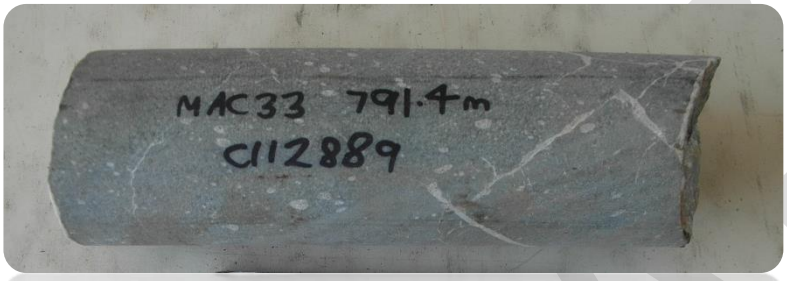
Mineral Resources Tasmania

Laboratory Report

LJN2020-015

PETROPHYSICAL TESTS: TAYATEA BRIDGE AND MT CHARTER



An unpublished Mineral Resources Tasmania Report for:

Mark Duffett, MRT

By: T Coyte, R King and R S Bottrill

Date: 20 March 2020

Mineral Resources Tasmania
Department of State Growth

Tasmanian Government

INTRODUCTION

Twenty one rock samples were collected from two Diamond Drill Cores; one located on the Tarkine Tourist Rd - Tayatea Bridge and the other at Mt Charter near lake Mackintosh. Samples were submitted by M Duffett, for physical property measurements; with details listed in Table 1 below.

Table 1: Sample details.

Reg. #	Field # Depth (m)	Location (with Drill hole ID & No.)	Sample Description
L301389	14.25	34365 BH_02_10 Tayatea Bridge	Dark grey laminated pyritic siltstone
L301390	14.5	34364 BH_01_10 Tayatea Bridge	Dark grey laminated pyritic siltstone
L301391	18.2	37058 BH_05_10 Tayatea Bridge	Dark grey laminated pyritic siltstone
L301392	100.55	16369 MAC33	Black shale
L301393	150	16369 MAC33	Black shale
L301394	199.95	16369 MAC33	Black shale
L301395	859.9	16369 MAC33	Greywacke
L301396	905.2	16369 MAC33	Greywacke
L301397	51.9	16369 MAC33	Dolerite
C112875	250	16369 MAC33	Basaltic lava breccia
C112876	320.8	16369 MAC33	Feldspar phyric dacite lava
C112877	340.5	16369 MAC33	Si altered feldspar phyric dacitic hyaloclastite
C112878	362.8	16369 MAC33	Basalt lava
C112879	427.3	16369 MAC33	Feldspar phyric andesite lava
C112880	438.2	16369 MAC33	Silica-chlorite altered dacite lava breccia
C112881	468.2	16369 MAC33	Feldspar phyric dacitic hyaloclastite breccia
C112882	495.3	16369 MAC33	Trachytic evolved andesite lava
C112884	524	16369 MAC33	Perlitic feldspar phyric dacite lava
C112887	733.6	16369 MAC33	Feldspar phyric dacite lava
C112889	791.4	16369 MAC33	Silica-chlorite altered banded andesite lava
C112890	813.2	16369 MAC33	Andesitic lithic crystal tuff

SAMPLE DESCRIPTION

The samples consisted of coherent diamond drill core, from the Tayatea Bridge and Mt Charter in Tasmania. Photos of each sample are listed below (Photo 1-21). The Tayatea samples are of pyritic and carbonaceous siltones of the Late Proterozoic

Rocky Cape Group. The Mt Charter (MAC) samples are probably all from the mid-Cambrian Mt Read volcanics, including sediments, dolerites and volcanics.

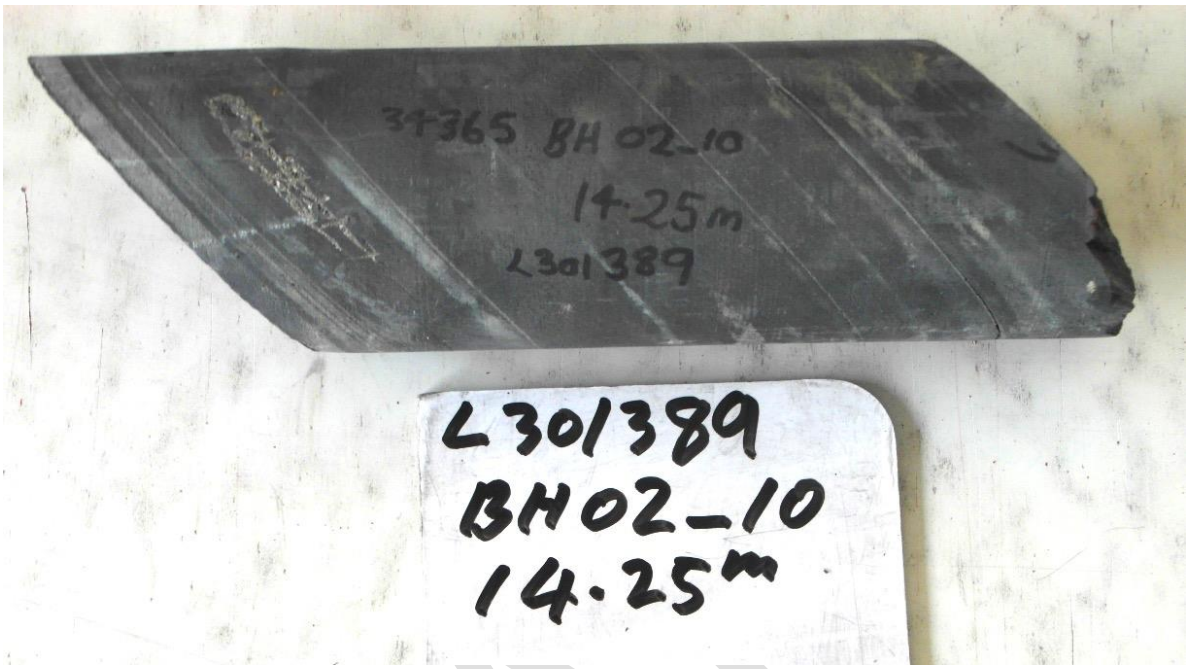


Photo 1: Sample L301389 - dark grey laminated pyritic siltstone. FOV: about 200 mm

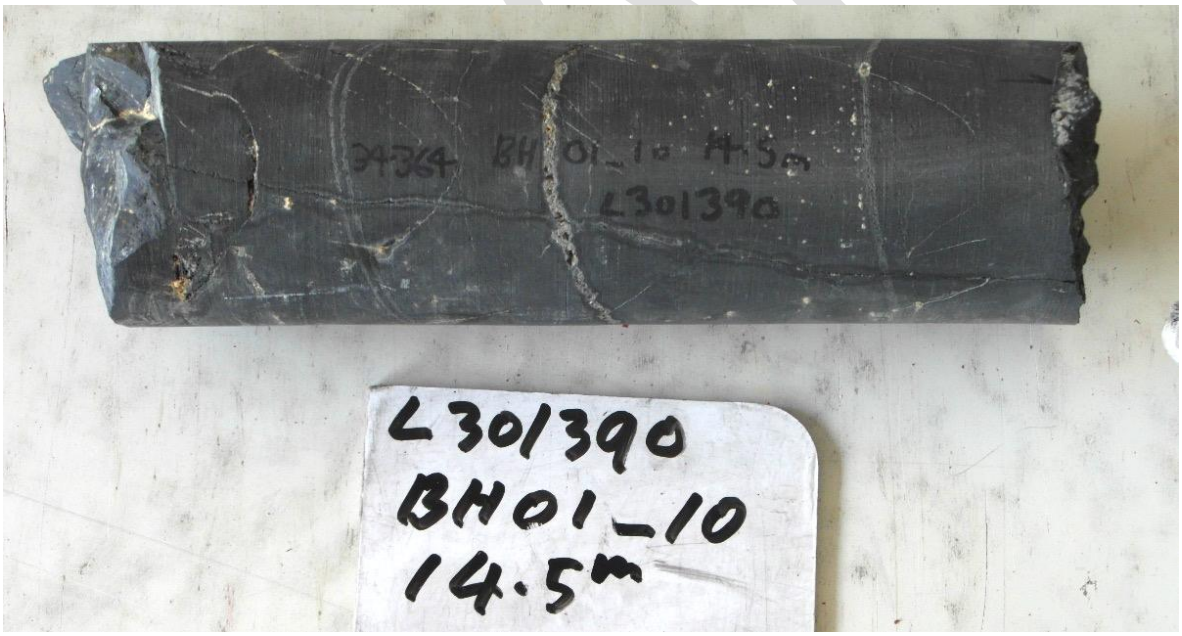


Photo 2: Sample L301390 - dark grey laminated pyritic siltstone. FOV: about 250 mm

Photo 3: Sample L301391 - dark grey laminated pyritic siltstone. FOV: about 150 mm

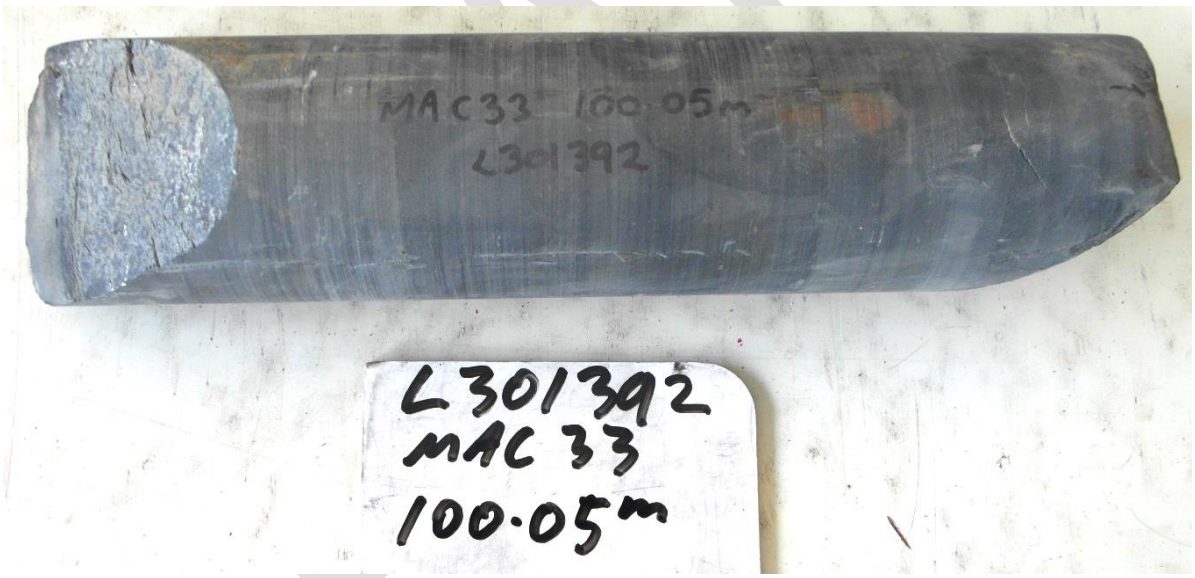


Photo 4: Sample L301392 - black shale. FOV: about 300 mm

Photo 5: Sample L301393 - black shale. FOV: about 150 mm

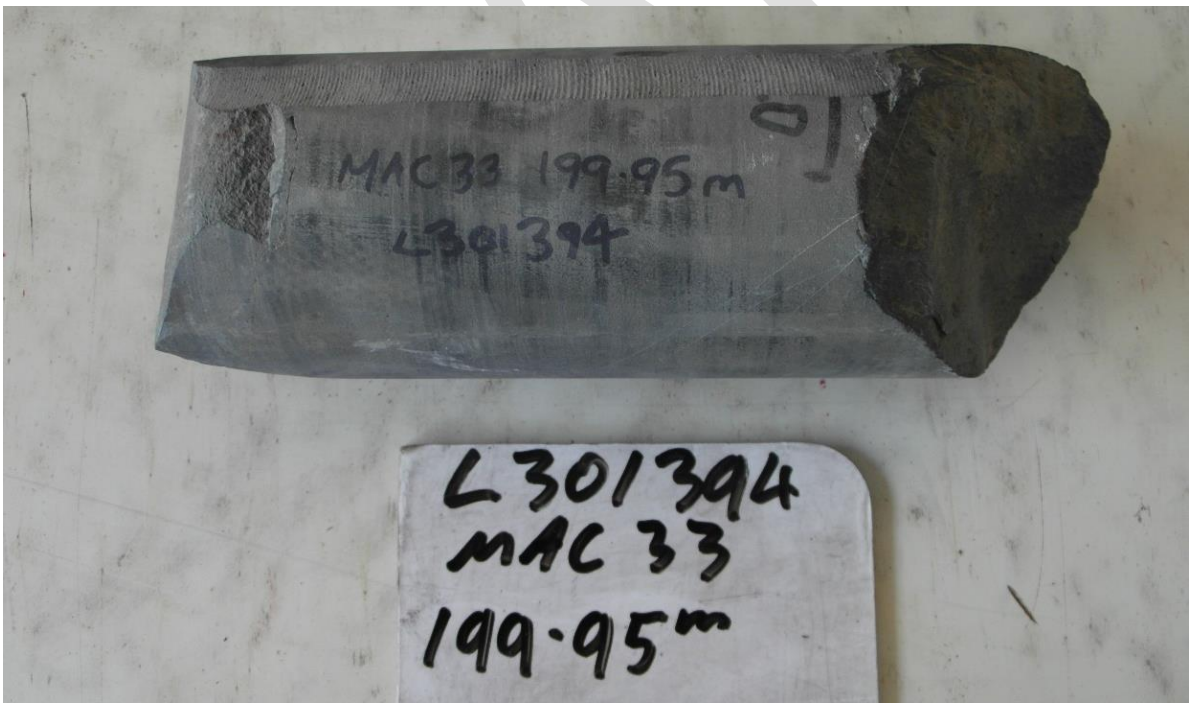


Photo 6: Sample L301394 - black shale. FOV: about 150 mm

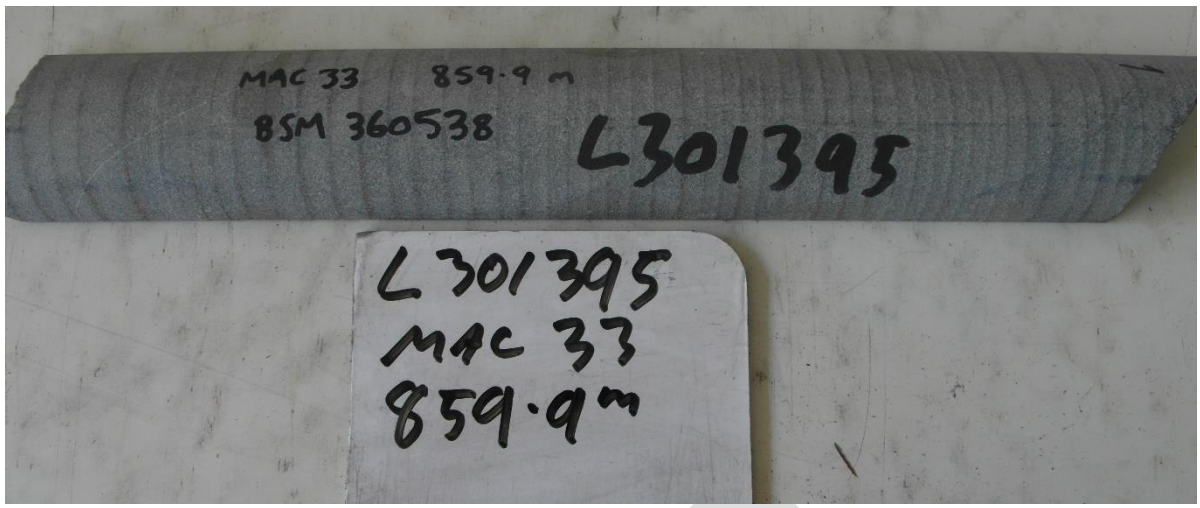


Photo 7: Sample L301395 - greywacke. FOV: about 400 mm

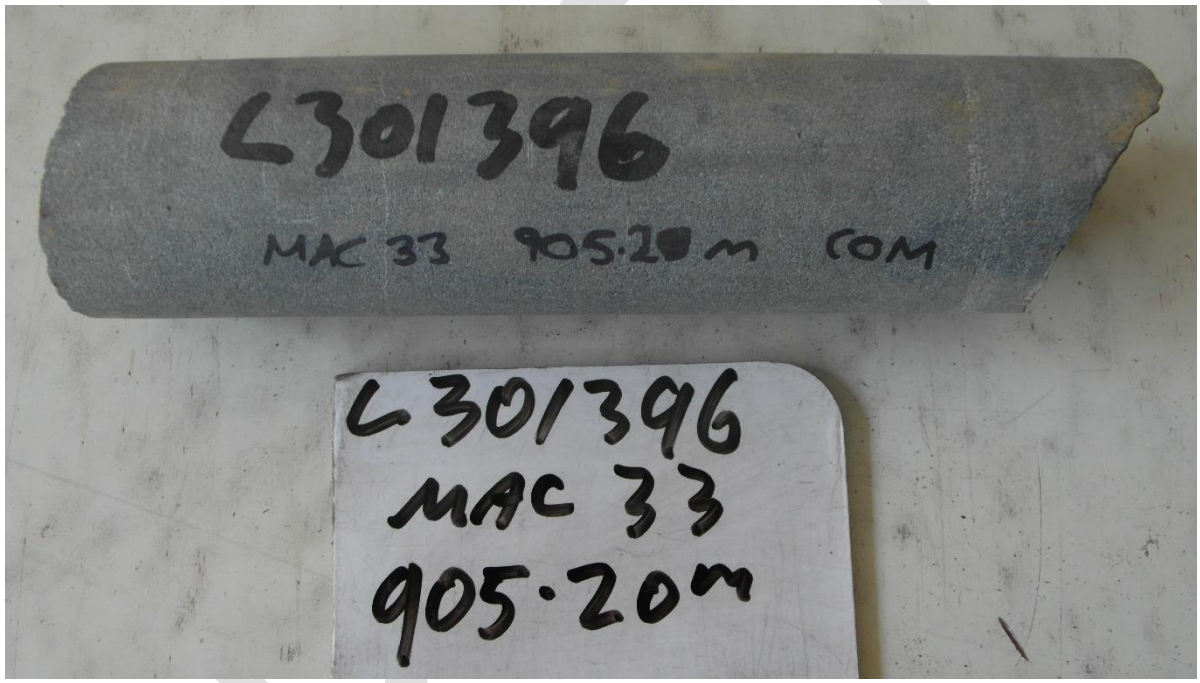


Photo 8: Sample L301396 - greywacke. FOV: about 250 mm

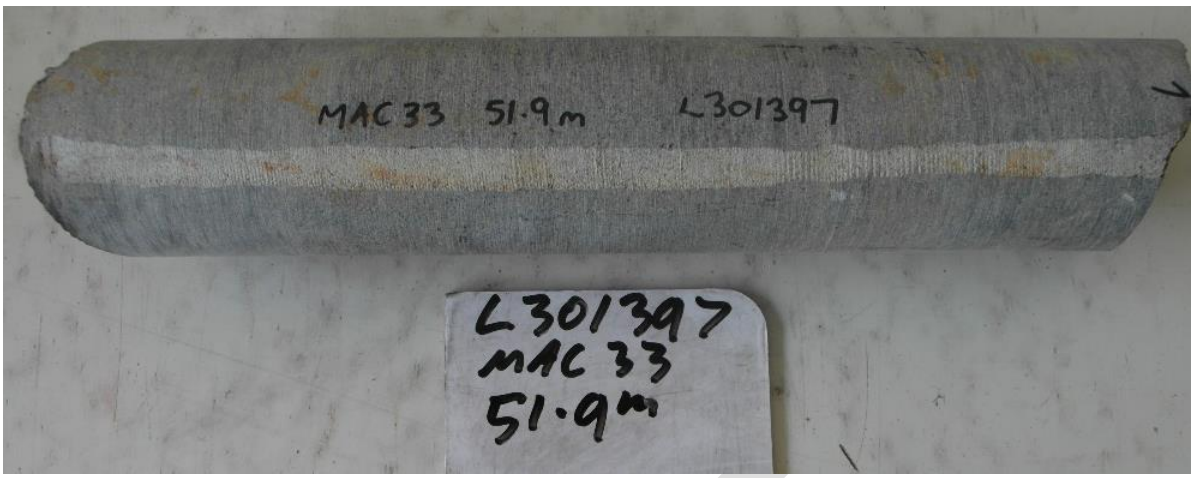


Photo 9: Sample L301397 – dolerite. FOV: about 350 mm

Photo 10: Sample C112875 - Basaltic lava breccia. FOV: about 200 mm

Photo 11: Sample C112876 - Feldspar phyric dacite lava. FOV: about 150 mm

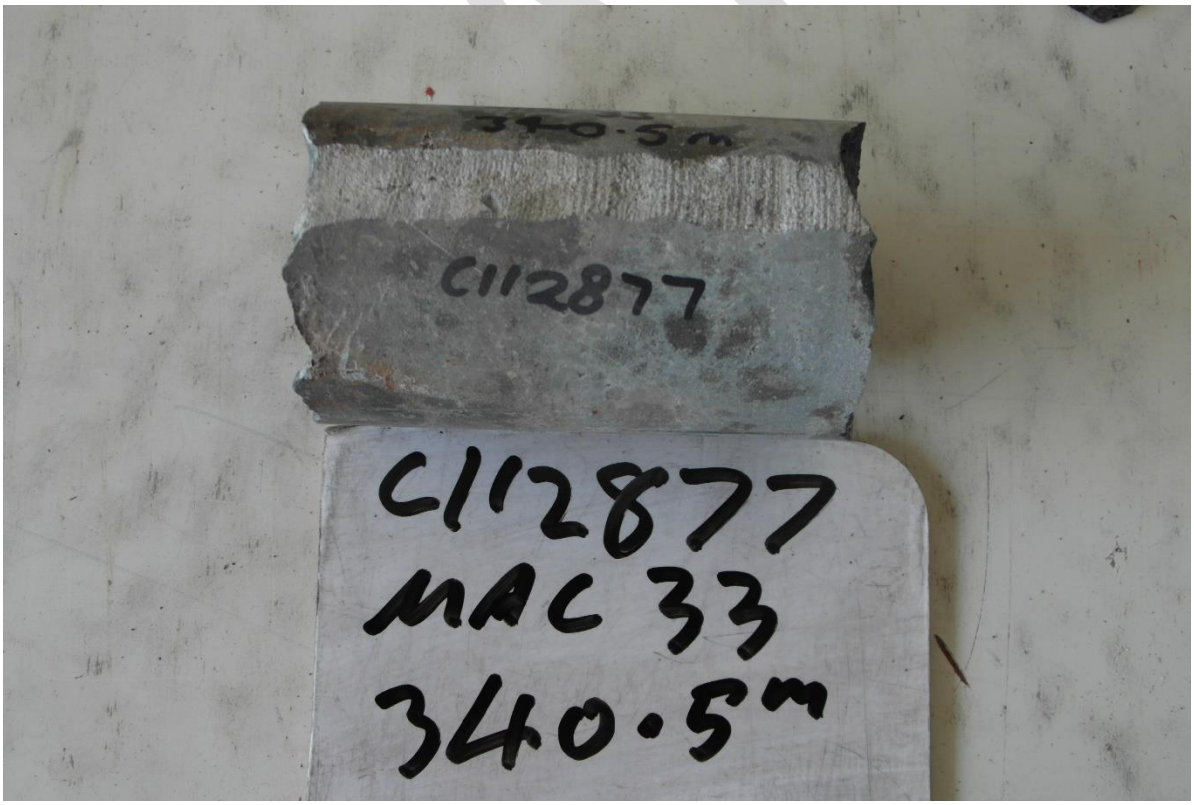


Photo 12: Sample C112877 - Si altered feldspar phyric dacitic hyaloclastite. FOV: about 150 mm

Photo 13: Sample C112878 - Basalt lava. FOV: about 150 mm

Photo 14: Sample C112879 - Feldspar phyric andesite lava. FOV: about 300 mm

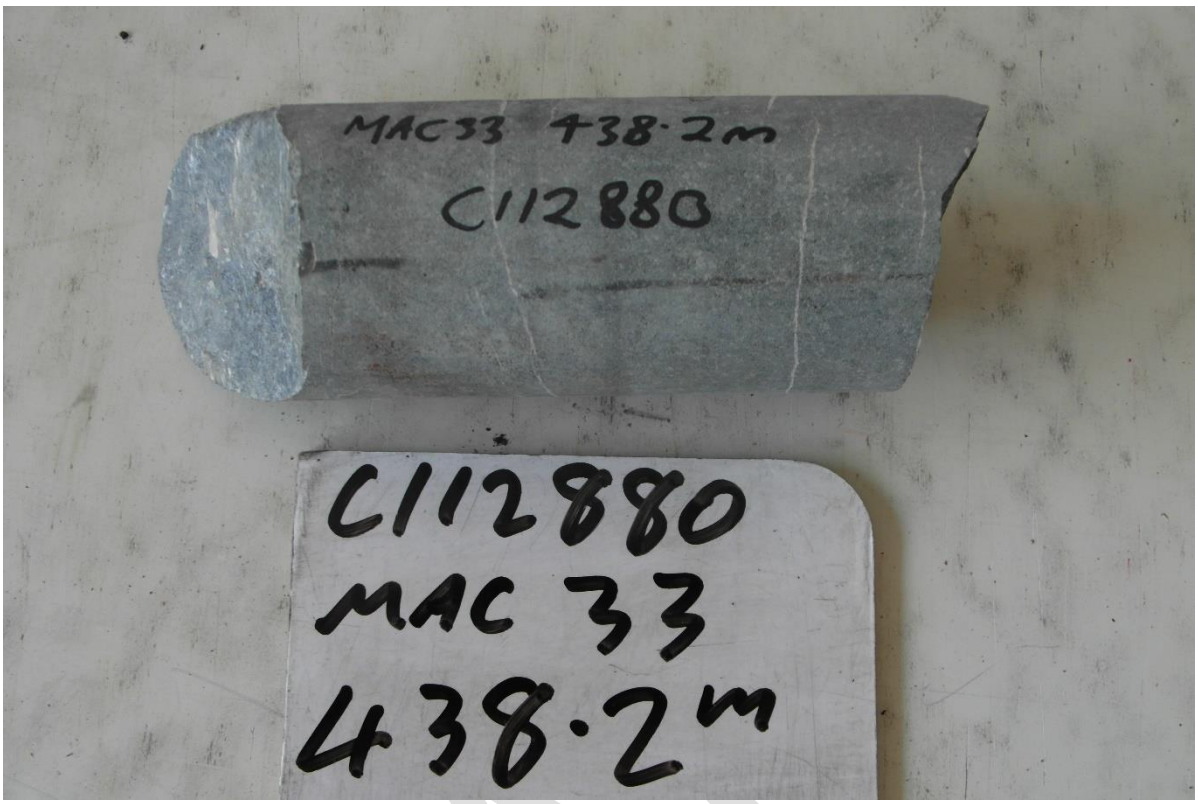


Photo 15: Sample C112880 - Silica-chlorite altered dacite lava breccia. FOV: about 150 mm

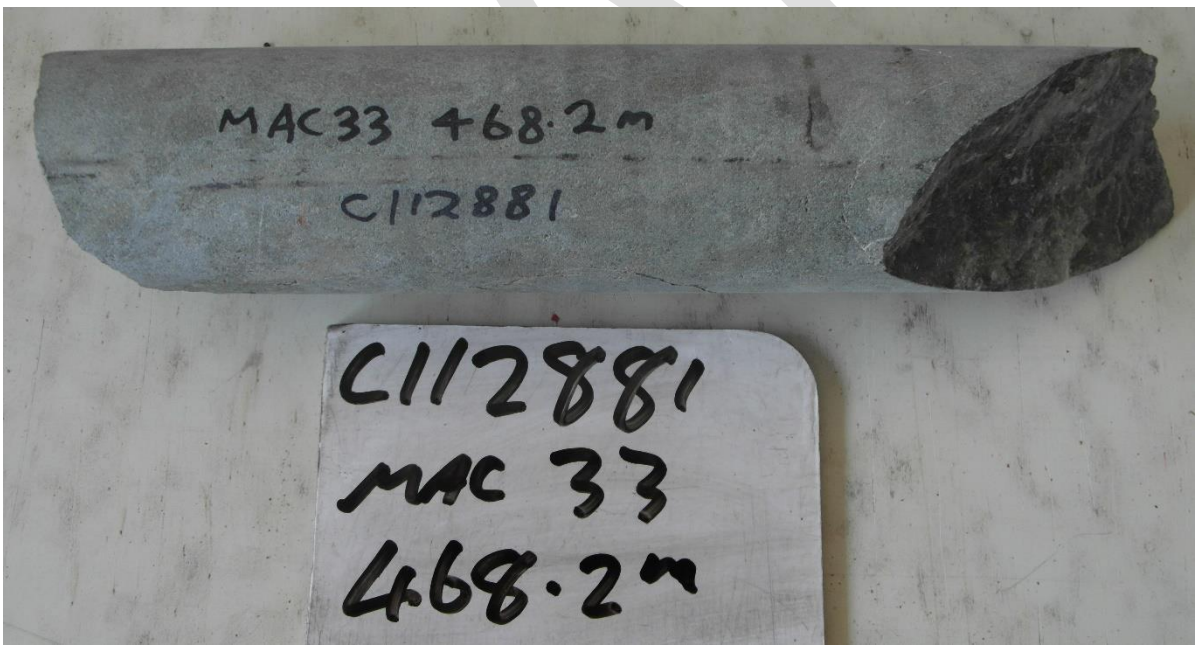


Photo 16: Sample C112881 - Feldspar phyric dacitic hyaloclastite breccia. FOV: about 250 mm

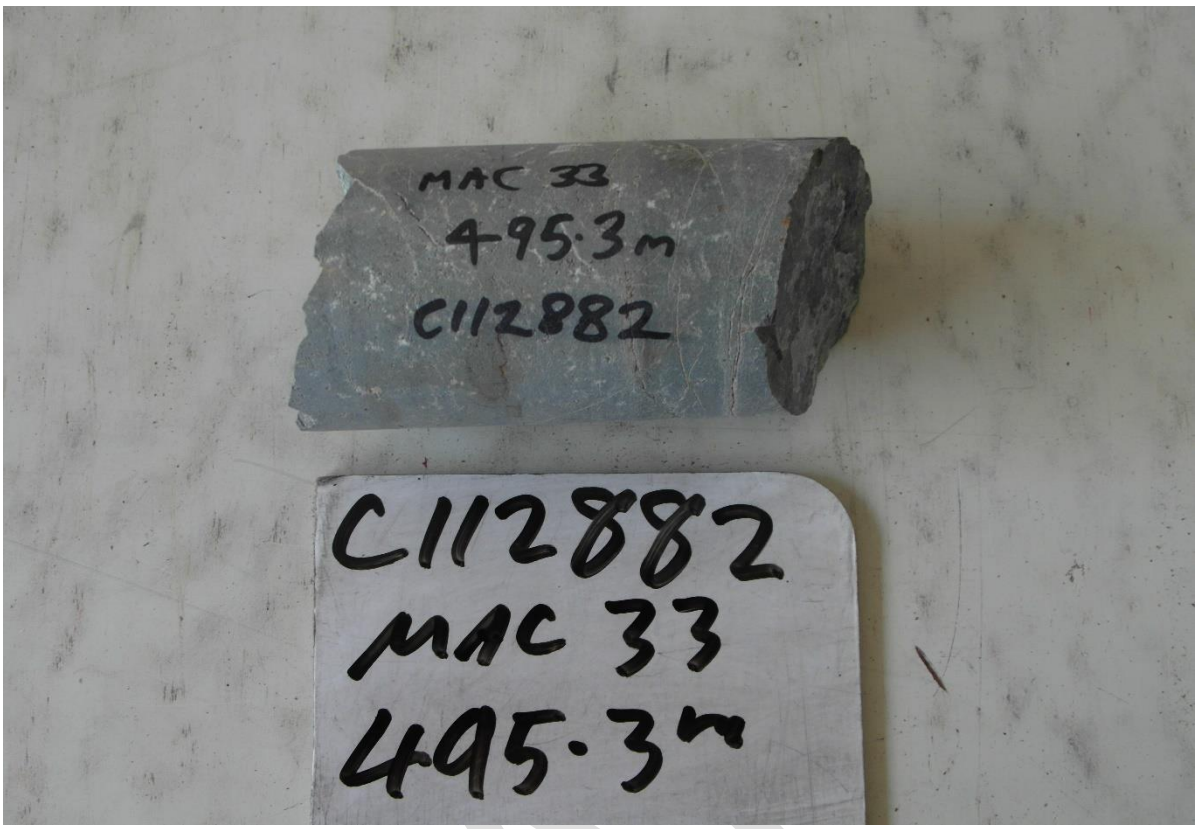


Photo 17: Sample C112882 - Trachytic evolved andesite lava. FOV: about 150 mm

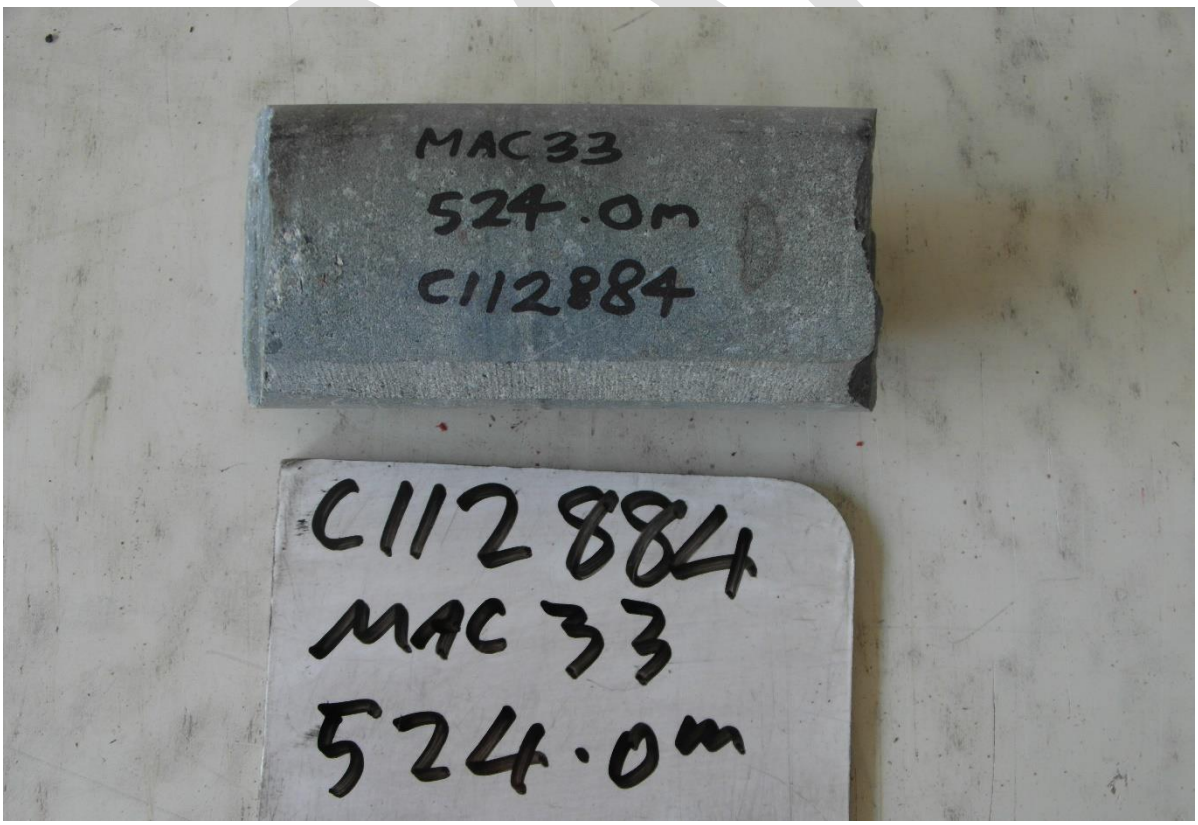


Photo 18: Sample C112884 - Perlitic feldspar phyric dacite lava. FOV: about 150 mm

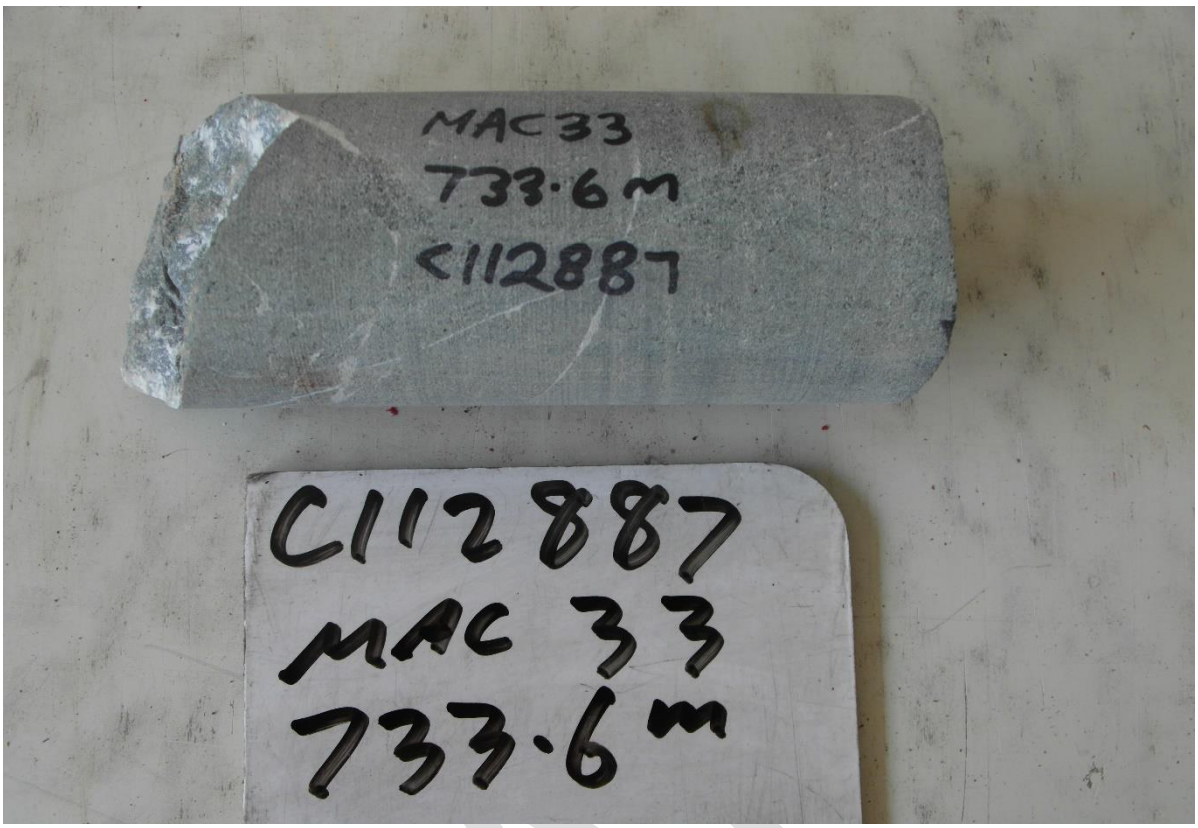


Photo 19: Sample C112887 - Feldspar phyric dacite lava. FOV: about 150 mm

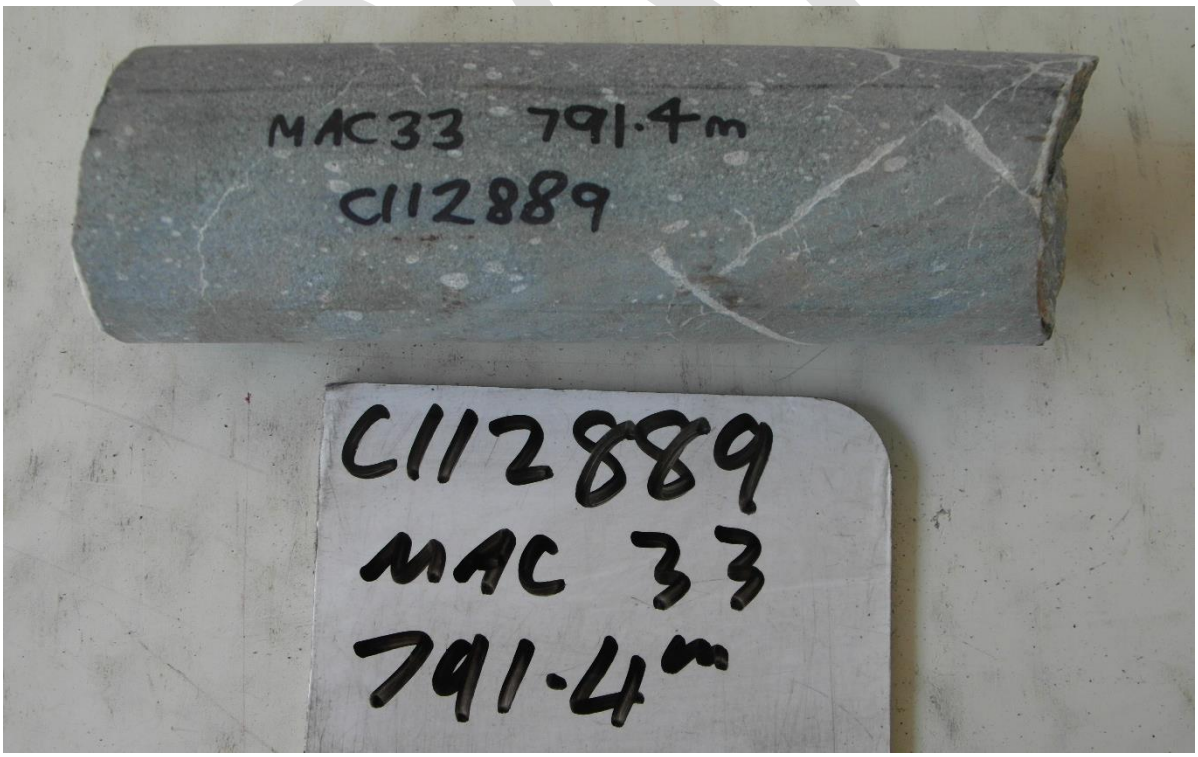


Photo 20: Sample C112889 - Silica-chlorite altered banded andesite lava. FOV: about 150 mm

Photo 21: Sample C112890 - Andesitic lithic crystal tuff. FOV: about 150 mm

LABORATORY TESTS

The samples were soaked for a minimum of 48 hours and weighed in water, and then wet in air. Samples were dried in a 90°C oven for a minimum of 12 hours then weighed dry. The wet porosity and density (specific gravity) was determined by standard gravimetric methods in the Mineral Resources Tasmania (MRT) Core Library, with an electronic balance accurate to 0.1g. The relative accuracy of the results is ~1% for specific gravity and ~5% for wet porosity. The summary of results is shown in Table 2 and full details listed in Appendix 1.

The Tayatea samples and Cambrian black shales are all moderate in porosity, probably due to oxidation and weathering of its abundant pyrite.

Table 2: Summary of Specific Gravity and Wet porosity

Sample ID	Location	Rocktype	Dry bulk SG	Wet bulk SG	Wet porosity (%)
L301389	34365 BH_02_10 Tayatea Bridge	Dark grey laminated pyritic siltstone	2.68	2.70	1.58
L301390	34364 BH_01_10 Tayatea Bridge	Dark grey laminated pyritic siltstone	2.73	2.76	2.43
L301391	37058 BH_05_10 Tayatea Bridge	Dark grey laminated pyritic siltstone	2.71	2.74	2.89
L301392	16369 MAC33	Black shale	2.72	2.73	0.69
L301393	16369 MAC33	Black shale	2.70	2.71	1.36
L301394	16369 MAC33	Black shale	2.73	2.74	0.84
L301395	16369 MAC33	Greywacke	2.71	2.72	0.09
L301396	16369 MAC33	Greywacke	2.71	2.72	0.16
L301397	16369 MAC33	Dolerite	2.91	2.91	0.12
C112875	16369 MAC33	Basaltic lava breccia	2.78	2.78	0.37
C112876	16369 MAC33	Feldspar phyric dacite lava	2.81	2.81	0.04
C112877	16369 MAC33	Si altered feldspar phyric dacitic hyaloclastite	2.75	2.75	0.22
C112878	16369 MAC33	Basalt lava	2.83	2.83	0.14
C112879	16369 MAC33	Feldspar phyric andesite lava	2.74	2.74	0.13
C112880	16369 MAC33	Silica-chlorite altered dacite lava breccia	2.75	2.75	0.05
C112881	16369 MAC33	Feldspar phyric dacitic hyaloclastite breccia	2.74	2.75	0.28
C112882	16369 MAC33	Trachytic evolved andesite lava	2.67	2.67	0.35
C112884	16369 MAC33	Perlitic feldspar phyric dacite lava	2.72	2.72	0.12
C112887	16369 MAC33	Feldspar phyric dacite lava	2.71	2.72	0.16
C112889	16369 MAC33	Silica-chlorite altered banded andesite lava	2.70	2.70	0.11
C112890	16369 MAC33	Andesitic lithic crystal tuff	2.77	2.77	0.20

R S Bottrill — **MINERALOGIST-PETROLOGIST**

R King, T Coyte — **LABORATORY ASSISTANTS**

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Mineral Resources Tasmania

Appendix 1: Laboratory Report – Physical Property analyses

Client: M Duffett

Analysis: Physical Properties

Method: Gravimetric S.G. & Porosity

Location: Tarkine Tourist Rd - Tayatea Bridge and Mackintosh Mt Charter

Job No.: LJN2020-015

Date: 20/2/2020

Results:

Sample ID	Dry Weight in Air (g)	Sub-sat Wt in water (g)	Sat. Wt. in Air (g)	Dry bulk SG	Wet bulk SG	Wet porosity (%)
L301389	1371.9	868.9	1380.0	2.68	2.70	1.58
L301390	1639.3	1054.2	1653.9	2.73	2.76	2.43
L301391	655.4	420.5	662.4	2.71	2.74	2.89
L301392	1937.5	1231.1	1942.4	2.72	2.73	0.69
L301393	794.8	504.3	798.8	2.70	2.71	1.36
L301394	1034.3	658.3	1037.5	2.73	2.74	0.84
L301395	587.2	371.1	587.4	2.71	2.72	0.09
L301396	870.7	550.5	871.2	2.71	2.72	0.16
L301397	2753.5	1809.4	2754.6	2.91	2.91	0.12
C112875	822.8	527.4	823.9	2.78	2.78	0.37
C112876	714.5	460.4	714.6	2.81	2.81	0.04
C112877	367.0	233.8	367.3	2.75	2.75	0.22
C112878	403.0	260.7	403.2	2.83	2.83	0.14
C112879	1304.5	828.4	1305.1	2.74	2.74	0.13
C112880	526.3	334.7	526.4	2.75	2.75	0.05
C112881	888.0	565.3	888.9	2.74	2.75	0.28
C112882	379.0	237.4	379.5	2.67	2.67	0.35
C112884	467.4	295.6	467.6	2.72	2.72	0.12
C112887	499.6	315.8	499.9	2.71	2.72	0.16
C112889	706.7	445.0	707.0	2.70	2.70	0.11
C112890	561.9	359.1	562.3	2.77	2.77	0.20

Analyst: R. King
Date: 20/2/2020