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RELINQUISHMENT REPORT

ON

E.L. 40/84 DELORAINE AND E.L. 46/84 LIENA

by

C.H.C. Shannon

May, 1986

SAVAGE RESOURCES LTD.

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016002

Contents

Maps:

- E.L. 40/84 and E.L. 46/84 Deloraine and Liena, Sheet 1, Geology
- E.L. 40/84 and E.L. 46/84 Deloraine and Liena, Sheet 2, Geology

Introduction

This report finalizes work on E.L. 40/84 Deloraine and E.L. 46/84 Liena. The project has been dropped instead of being carried through according to the original intentions for the following reasons:

(1) The first run of photo interpretation and field checks indicates that the area of prospective ground is smaller than expected, and is not efficiently covered by the E.L.'s. There is also a severe problem with superficial cover.

(2) The idea behind the project turns out to have been anticipated by Montgomery (1893). The idea was probably communicated to the prospecting fraternity of the time; so the ground has probably been examined previously.

The work done prior to the decision to drop the project covered geological mapping only but since the concepts developed are likely to be of use to future workers in the area they are reported here although they have not been checked exhaustively.

Comments on Bedrock Geology

The target formation for the project, the Moina Sandstone, is underlain by the Owen Conglomerate and overlain by the Gordon Limestone. Superficially the formations are conformable but it is likely that there is an unconformity within the beds mapped previously as Owen Conglomerate. This would correspond to the Haulage Unconformity at Mt. Lyell. On this interpretation the true Owen Conglomerate occupies localized basins outcropping in the Gog Range and Mt. Roland, with a false "Owen Conglomerate", thin and not always mappable, occurring at the base of the Moina Sandstone and above the unconformity.

The Moina Sandstone is relatively sheet like but a portion of the outcrop shown in the Standard Hill area on the Middlesex sheet is considered to be Cambrian sediments. They are folded on a 310 degree axis in contrast to the 290 degree axis of Standard Hill itself. The western part of the ridgeline is capped by a south-facing escarpment of the basal beds of the Moina and the convergence of strike is obvious.

Along the contact with the Gordon Limestone on the south of Standard Hill the Moina Sandstone is thin to locally absent. It appears this area was persistantly rising with the beds reduced by onlap initially and with some removal of the upper portion

prior to deposition of the Gordon Limestone. In contrast the western end of the north flank of Standard Hill shows a thick Moina Sandstone section.

Photolinears were detectable mainly in the Deloraine to Punch's Terror portion of the outcrop. Elsewhere these traces tend to be obscured in the photographs either by superficial cover or clearfelling areas (Golden Valley).

Comments on Superficial Deposits

There is a general cover of stony soil over the Moina Sandstone ridges which often exceeds 2m in thickness judging by gravel pit and cutting exposures. There is a top layer with bleached matrix and often a lower layer with red matrix, this material usually has a noticeably higher ratio of matrix to clasts. The talus cover spreads on to the adjoining formations and tend to be included in the area mapped in the Moina Sandstone.

Lateral spread of talus can be extreme, a debris flow to the east of Sensation Gorge has spread blocks of sandstone over 500m across a limestone area indicated by dolines. This example is probably periglacial.

A large proportion of the mapped extent of Moina Sandstone on the south fall of Mt. Roland and eastward along the Merseylacks the usual obvious bedding trends. This area is thought to include moraine deposits from the early and penultimate glaciations which were each more extensive than the final glaciation. Deposits of this nature in the area would be expected since it lies between the central plateau and Railton where an early glaciation till is known (K. Kiernan, pers. comm). Dolerite boulders in pebbly clay matrix were observed in two localities and these are considered to be tills (see appendix).

References

Jennings, I.B. (1963); Geological Survey Explanatory Report, Middlesex; Tasmania Department of Mines.

Montgomery, A. (1893); Report on the country between Mole Creek and the Mount Dundas silver field, and on the discovery of coal at Barn Bluff, Annual Report Secretary of Mines Tasmania for 1892-1893.

Appendix: Notes on localities of interest.

603006, on hwy. Cherty boulders and labile sandy sediments mapped Om but more likely silcrete and interflow sediment related to adjoining basalt, or glacial.

601015, end of vehicle access, Lobster Falls Track. Indications of thick trasported soil with sandstone clasts.

586014, saddle on basalt ridge with track. Labile sands with pebbles; possibly glacial, possibly interflow sediment.

588017, edge of basalt; track from here to quarry at 590020 has deep talus with red subsoil.

590020, gravel pit with deep talus over pavement of white leached ex carbonate matrix? sandstone. Dip 10 degrees S.

581014, disused logging track. Red earth with rounded pebbles, faceted cobbles of meta-quartzite and dolerite boulders with weathering rinds up to 2 cm. Probable till (of penultimate glaciation?)

570001, new dam excavation. dense laminated clay with lignite and plant fossils. Associated with basalt flows.

547994, cutting on hwy. at Tas. Wildlife Park; mapped as dolerite but the dolerite is all isolated boulders in a pebbly red earth matrix. Probable till.

466983, dolerite bolders at surface, associated with pebbly clay. Probable till.

467985, gravel pit and tracks; sandstone bedrock covered with red matrix subsoil (till?), covered with bleached matrix stony soil.

458985, gravel pit; broken sandstone talus c.4m thick covers some south-dipping sandstone bedrock in E. and red clay with pebbles (glacial) in W. Further W. a large scale (periglacial) slump has placed a cover of sand and blocks of sandstone overlimestone bedrock indicated by sinkholes. The red clay would assist as a lubricant.

443993, dry waterfalls in Sensation Gorge. Dips of 10 deg. SE. indicate unconformity with Cambrian sediments in gorge below thin Moina Sandstone. Sediments include grey sandstone, white sandstone,red mudstone, all flinty, fresh rocks. Bed thicknesses 0.1m to 1.5m.

441989, dip 70 deg. S in Moina Sst.

415997, gravel pit, sandstone talus soil to 5m.,no bedrock.

401002, saddle on main road at Kubla Khan reserve. Pink clay to S. glacial or limestone residual; to N. pebbly clay, glaial. To W. flinty

"pipestem beds" represent reduced Moina Sst., or possibly Cambrian. The base of the Gordon Limestone is locatable to a few metres.

389011, gravel pit; leached sandstone pavement with fossil moulds, (gastropod? nautiloid), below 2m sandstone breccia soil. One faceted dolerite cobble of glacial aspect. Access track to area has shallow dips at 388008 and 389006 indicating a syncline axis between them. The prevalent sandstone may become friable on weathering.

359956, gravel pit; pebbly clay with dolerite boulders; till overlying limestone.

3002

54 08 000mN
54 06 000mN
54 04 000mN
54 02 000mN
54 00 000mN
53 98 000mN
53 96 000mN
53 94 000mN
53 92 000mN
53 90 000mN
4 34 000mE
4 36 000mE
4 38 000mE
4 40 000mE
4 42 000mE
4 44 000mE
4 46 000mE
4 48 000mE
4 50 000mE
4 52 000mE
4 54 000mE

MINNOW RIVER
ROAD
UNION BRIDGE
GOG RANGE
MERSEY RIVER
MT. ROLAND PROTECTED AREA
E.L. 46/84
E.L. 40/84
KING SOLOMONS CAVE
KUBLA KHAN CAVE
STATE RESERVE
LIENA
LIENA ROAD
MAYBERRY ROAD
MERSEY FOREST RD
OLIVERS ROAD
VALLEY
ECHO
CROESUS CAVE RESERVE
NOINA Creek
Overflow
BRIDGE
Mole Creek ROAD
DEN ROAD
MOLE CREEK
GREENS ROAD
TUSONS RD.
CAVESIDE ROAD
ALUM CLIFFS STATE RESERVE
MERSEY HILL ROAD
POOL ROAD
LAKE MACKENZIE ROAD
LAKE PARANGANA
GREAT WESTERN TIERS

Qt Qs Qa Om Og Se Pp Pg Pm Tb Oc Es

L E G E N D

- Qa — Recent Alluvium: Alluvium with point bar textured surface.
- Qs — Quaternary Lowland Deposits: Alluvium, slopewash, till and talus with relatively low slope angles.
- Qt — Quaternary Slope Deposits: Till, talus and slopewash with relatively high slope angles.
- Tb — Tertiary Basalt: Basalt with minor sediments.
- Pp — Permian to Triassic Parmeener Supergroup Sediments with Jurassic dolerite intrusions.
- Se — Silurian Eldon Group: Sediments.
- Og — Ordovician Gordon Limestone: Limestone.
- Om — Ordovician Moina Sandstone: Sandstone with minor mudstone.
- Oc — Ordovician Owen Conglomerate: Conglomerate and sandstone.
- Es — Cambrian Sediments: Undifferentiated sediments and minor volcanics. Some Precambrian included.
- Pg — Precambrian Dove Granite: Weathered granite.
- Pm — Precambrian Metasediments: Metaquartzite and metapelite.

GN TN MN
GRID CONVERGENCE 0·4°
GRID/MAGNETIC ANGLE 12·4°
5 cm

86-2564

016010

SAVAGE RESOURCES LIMITED

E.L. 40/84 & E.L. 46/84

DELORAINE AND LIENA

SHEET 1

GEOLOGY 3002

DRAWN BY : H.S.
DRAFTSMAN : T.G.D.S.
DATE : May 1986
REVISIONS :
FILE NO.

SCALE 1:25,000
500 0 500 1000 METRES

3003

54 08 000mN
54 06 000mN
54 04 000mN
54 02 000mN
54 00 000mN
53 98 000mN
53 96 000mN
53 94 000mN
53 92 000mN
53 90 000mN

4 56 000mE
4 58 000mE
4 60 000mE
4 62 000mE
4 64 000mE
4 66 000mE
4 68 000mE
4 70 000mE
4 72 000mE
4 74 000mE
4 76 000mE

MERSEY RIVER
BASS HIGHWAY
MEANDER RIVER
DELORAINE
ALUM CLIFFS STATE RESERVE
Rivulet
RED HILLS ROAD
MOLE CREEK
LAKE HIGHWAY
CHUDLEIGH
Lobster Creek ROAD
Caveside Road
Western Creek
E.L. 40/84
E.L. 40/84
MEANDER RIVER
LAKE HIGHWAY
ROAD
MEANDER

Tb Qs Qt Om Es Qm Qa Pp Og

016011

L E G E N D

- **Qa** Recent Alluvium: Alluvium with point bar textured surface.
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- **Eg** Precambrian Dove Granite: Weathered granite.
- **Pm** Precambrian Metasediments: Metaquartzite and metapelite.

5 cm

GN TN MN
GRID CONVERGENCE 0.2°
GRID/MAGNETIC ANGLE 12.7°

86-2564

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E.L. 40/84 & E.L. 46/84

DELORAINE AND LIENA

SHEET 2

GEOLOGY 3003

DRAWN BY	H.S.
DRAFTSMAN	T.G.D.S.
DATE	May 1986
REVISIONS	
FILE NO.	

SCALE 1:25,000 — 500 0 500 1000 METRES