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REPORT ON EDDYSTONE QUADRANGLE (NO. 25)

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REPORT ON EDDYSTONE QUADRANGLE (NO. 25)

INTRODUCTION

The following report refers to that portion of Tasmania which is situated in the north-eastern corner of the State and referred to as the Eddystone Quadrangle or Quadrangle No. 25. The naming of the area is in conformity with methods adopted by the military authorities and by the State for its aerial survey programme. By this system the State is divided into areas (quadrangles) bounded by lines spaced latitudinally fifteen minutes and longitudinally thirty minutes apart.

The area under review comprises some 200 square miles of land surface. The township of Gladstone is situated in its south-western corner, its southern and western boundaries passing within two miles of that township. On the east and north, the area is bounded by the sea shore extending from Eddystone point on the east to a point on the north a little to the east of Cape Portland.

The area is served by moderately good road communication from Herrick, the terminus of the railway line from Launceston. Within the area communication is by moderately good to poor roads radiating from Gladstone. During the wet season some roads become more or less impassable.

Object of the Investigation

The annual output of tin ore from the Gladstone Tin Field has for many years steadily deteriorated. The object of this investigation was, therefore, to determine the future possibility of the area as a source of tin ore and, if possible, to determine what areas were worthy of testing by boring. Full use has been made of published reports, records and plans and a geological survey made of those areas not already treated by previous writers.

PREVIOUS LITERATURE

The literature available for Quadrangle 25 covers only that portion of the area situated in the vicinity of Gladstone, in its south-western corner, where mining has been active for upwards of 50 years. The relevant reports are covered by the following :-

Published Reports

In the year 1881, G. Thureau F.G.S. , Geological Surveyor, wrote a Report on Gladstone, Mussel Roe and Waterhouse.

The report gives a résume of the mines, their position and the state of their development at that time.

In 1885, G. Thureau, F.G.S., and G.J. Bourke M.I.C.E. reported on Great Mussel Roe Water Scheme; Mt. Cameron Hydraulic Tin Mining Company's Water Race.

Recommendations relative to purchase by the Government of the race now known as the Mount Cameron Water Race are embodied in this report.

In 1901, W.H. Twelvetrees, Government Geologist, submitted a Report on the Tin Bearing Capabilities of the Gladstone District.

Recommendations for boring to test the Mussel Roe deep lead are contained in this report.

In 1916, W.H. Twelvetrees, Government Geologist, published as Geological Survey Bulletin No. 25 a report on the Gladstone Mineral Field. Bulletin 25 gives a detailed description of the geological features of the district and a resume of the mining industry to that date. A description of past boring and all available information relative to the gold mining is given.

Unpublished Reports.

In 1928, A.M. Reid, Director of Mines, reported on Some Tin-ore Deposits of the Gladstone District. Reid gives a ganeral description of the geology of the district and describes in detail holdings of the Garfield and New Esk Mines and the Empress Lead.

In 1928, F. Blake, Assistant Government Geologist reported on Tin Deposits of Portion of the Gladstone Mining Field.

The chief feature of this report is the tabulated list of 51 samples taken from the alluvial material at points in the area. The grade as shown by these samples ranges from 0.024 to 6.02 pounds tin oxide per cubic yard.

In 1930, J.B. Scott, State Mining Engineer, reported on Gold Areas at Portland and Gladstone.

Scott states that "the idea of continuing work has long since been abandoned. The situation in this regard is the same today as when Geological Survey Bulletin No. 25 was issued."

In 1932, P.B. Nye, Government Geologist, reported on Proposed Restoration of Syphon at Site of Old No.6 Syphon, Mt. Cameron Water Race.

Nye describes briefly both the various leads and the mine workings of the district. He suggests that "if the restoration of the Syphon was to be considered from the strictly economic point of view then a boring campaign taking 3 to 6 months should be undertaken."

In 1933, P.B. Nye, Government Geologist, wrote The Gladstone Goldfield.

The possibilities of the Gladstone area as a goldfield are discussed, particularly the mines on the Grand Flaneur to Portland line of reef. He describes the veins as being "of the quartz - arsenopyrite - gold type" and also states "areas contain old mines which were not successfully operated and which do not appear to offer favourable possibilities."

Reports on Individual Mines or Groups of Mines

In 1926, J.B. Scott, State Mining Engineer, reported on the Scotia Mine at North Mount Cameron.

A general description of the mine with suggestions for future development is given.

In 1927, P.B. Nye, Government Geologist, reported on the Amber Creek Mine.

This report with the mine now known as the Amber Hill Mine. Nye states "it is evident that a deep lead traverses the property. Its eastern limit is definitely established but there is opportunity for a considerable extension in a south-westerly direction."

In 1927, P.B. Nye, Government Geologist, submitted a report on the Fly-by-Night Mine.

This report describes the nature of the deposit particularly the several types of tin-bearing veins occurring there. The difficulty experienced in testing these deposits is emphasised.

In 1927, A.M. Reid, Director of Mines, reported on the Garfield Mine, Gladstone. He describes and criticises the methods adppted by the Company in their preliminary works.

In 1928, J.B. Scott, State Mining Engineer, in his Report on the Garfield Tin Mine, gives a summary of the data and particulars obtained from levelling and surveying.

GENERAL GEOLOGY

The gological features of the district have been enumerated fully by W.H. Twelvetrees, Government Geologist, in Geological Survey Bulletin No. 25, published in 1916 and by P.B. Nye, B.M.E., MSc., Government Geologist, in his report of 1932. Geological plans to accompany these reports show clearly the distribution of the various formations. It is, therefore, considered necessary to refer again only briefly to the various formations and to place on record the occurrence of a limited area of Permian strata.

Silurian (?) - The oldest rocks of the area occur as a series of sandstones and slates which are of widespread distribution. Definite outcrops are not plentiful and their mapping, over the greater portion of the area, has been based on the occurrence of comparatively low ridges, capped by numerous slate and sandstone boulders, rising fromflat and often swampy land to the north and north-east of Gladstone. In part, the series has been covered by shallow depths of alluvial material which has, in general, been omitted from the present map except where it occurs over an appreciable area. Where definite outcrops occur, it was observed that the series strikes in a north-easterly direction. The series of slates and sandstones has previously been referred to as of Cambro-Ordovician age but has more recently been regarded as of Silurian age because the only fossils so far recorded from strata correlated with this series are plants like Hostimella which are not known from Pre-Silurian rocks.

Upper Palaeozoic Granites - In the Eddystone Quadrangle granites have been extensively developed. They are a continuation of the Mt. Cameron and Blue Tier Granites which extend easterly from Mt. Cameron to the sea. In a northerly direction they extend along the coast in almost unbroken continuity towards the mouth of the Little Mussel Roe River at Lyme Regis. In the vicinity of the Gladstone the granites are obscured by slates of Silurian age but again outcrop to the west of the quadrangle. The granites vary considerably in texture ranging from coarsely porphyritic to comparatively fine-grained. The porphyritic varieties show phenocrysts of orthoclase felspar ranging to lengths of upwards of two inches in a groundmass varying from fine grained to coarse and consisting essentially of quartz, orthoclase, felspar, biotite and hornblende.

The evidence available as to the age of the granites shows that they have intruded the sandstones and slates of Silurian age but are immediately overlain by sandstones of Permian age. Whilst previously they were allotted to the Devonian age, they are now allotted more generally to the Upper Palaeozoic period.

Permian - A limited area of Permian strata occurs on the banks of and near Cuckoo River not far from its entry to the western extremity of Mussel Roe Bay. Here the series is represented by a series of flatly dipping calcareous sandstones on the river banks and by numerous boulders on an area adjoining the river. On the south bank of Mussel Roe Bay a further narrow occurrence of Permian sandstones occur.

In the Cuckoo River area fossil specimens of Fenestella and Aviculopecten were common.

Mesozoic - Messozoic dolerite occurs as the cappings of a series of hills, on the western side of the Gladstone-Cape Portland road known as the Ringarooma Tier and as hillocks in the coastal area near Cape Portland. The Cape Portland occurrences extends south-easterly to the vicinity of Mussel Roe Bay.

Tertiary - Tertiary sediments are widely distributed over the northern plain extending from Gladstone northerly to the sea shore. It is these sediments that most of the older mines have been operating. The sediments are in places cemented to form hard bands but, in general, they are comparatively free and amenable to treatment by sluicing.

Recent - Recent sediments are represented by sandy soils extending over extensive areas devoid of rock outcrops.

ECONOMIC GEOLOGY

Mode of Occurrence of Ores.

Only two minerals have proved of economic importance in the Eddystone Quadrangle.

Gold, as an economic mineral, was the first to be exploited in the district under review. Its discovery in the Waterhouse district stimulated prospecting activities and in the year 1870 the Blue Bell reef was disclosed at a point about six miles north-east from the Gladstone township.

Though Gold was the first mineral product of the district tin has been the more important one and is the only mineral product of the area.

Tin ore was originally won by ground sluicing of shallow ground with limited local water supplies. It was soon realised, that to insure continuous production, a greater water supply was necessary. In the year 1884 the Mount Cameron Hydraulic Tin Mining Company Limited of Melbourne had exhausted its capital in constructing portion of what is now known as the Mount Cameron Water Race. The assets of the Company were offered to the Government. In the year 1885, an examination of the race was made by Mr. E.J. Bourke and in 1887, after purchase of the Company's assets, the Mount Cameron Water Race Board was established. This body has since been responsible for the maintenance of the race and the distribution of the water to the miners on the field. The race draws its water from the head of the Mussel Roe River and delivers approximately 45 sluice heads of water over a maximum of approximately 30 miles.

The history of gold mining on the field shows that in every instance the grade of ore deteriorated rapidly with depth and that the ore has been, in general, difficult of treatment, due to a marked content of one or all of pyrites galena, chalcopyrite or arsenopyrite.

Tin ore has been of greater economic importance to the mining interests. First discovered by Mr. Geo. Renison Bell in the year 1870 on the west bank of Boobyalla River it was soon after discovered near Gladstone. The production of tin ore is now the chief occupation of the area. Tin ore occurs both in a primary and in a secondary condition.

As a primary ore it occurs as cassiterite as a contituent of the numerous greisen veins of the marginal phase of the granite of the district.

These greisen veins are variable in width and it is in general only in the narrow veins that tin ore occurs in profitable quantity. Veins of upwards of two inches in width have been observed with high grade ore, the cassiterite being readily visible. When occurring with sufficient frequency such veins have, in the past, been profitably mined, but as their extent both laternally and in depth is extremely limited, their testing has been difficult and profitable mining has always been problematical.

The accompanying plan of workings in Lease No. 10565 at the head of Fly-by-Night Creek illustrates the irregular nature of the veins.

Future developments may well be directed towards the examination of greisenised areas as sources of tin ore.

In a secondary condition tin ore occurs as a constituent of widely distributed alluvial deposits. The earliest operations resulted from the discovery of high grade wash in shallow ground from which profitable returns were won by ground sluicing.

As the field developed deeper ground was revealed so that boring plants for prospecting purposes and hydraulic elevators for treatment of the wash were necessary.

Production

The amount and distribution of production both by tonnage and value are shown on the maps accompanying this report. As only incomplete records of production are available in the Department, an attempt has been made to estimate the total production from the various workings of the field. It is emphasised that the results are at best diagramatic being based on an assumed average recovery of eight ounces of tin oxide for every cubic yard removed from the workings.

Present Operations

Mining operations in the Quadrangle were practically at a standstill during the period of this investigation. Two persons were operating on the old Edina area whilst one was operating in the vicinity of the MacGregor Workings. At the Star Workings operations were temporarily at a standstill waiting for the installation of electric power for pumping purposes.

Past Boring

Boring was first recommended by W.H. Twelvetrees, Government Geologist, in the year 1901. His recommendations were carried out in 1902 when M. Griffen put down a series of bores which have been recorded in Geological Survey Bulletin No. 25 published in 1916.

A more extensive campaign was carried out by H.G. Roach in 1916 when 515 bores were completed, the total depth bored being 9,218 feet. Wash of profitable grade was proven in a number of small areas. This boring was designed to test only the extensions of known areas of profitable ore and was not sufficiently extensive to determine the grade for new areas.

An analysis of the boring carried out by Roach is attached hereto, the information being taken from plans and records of the Mines Department.

Plan No.	No. of Bores	Deepest Bore	Shallowest Bore	Total Footage	Aver. Grade	No. of bores with Tin	Av. Grade p.c.y.	Aver. Depth.
247	21	29'6"	4'0"	289'6"	Tr.	4	9.46 oz.	11'7"
248	13	36'6"	6'6"	165'6"	Tr.			
249	13	44'6"	16'0"	273'6"	Tr.	1	3.84	44'6"
250	32	40'0"	5'6"	740'6"	Tr.	6	4.47	24'6"
251	14	28'0"	6'0"	173'0"	Nil.			
252	8	15'6"	8'0"	130'0"	Tr.	3bores2 shafts	4.05	13'6"
253	11	37'6"	11'0"	259'6"	Tr.	1	2.88	26'0"
254	30	35'6"	10'6"	418'0"	Tr.	3	7.92	23'4"
255	10	42'0"	5'0"	185'0"	Tr.	3	6.24	13'0"
256	16	22'0"	5'0"	183'6"	Tr.	11	3.94	11'6"
257	11	27'0"	9'0"	166'6"	Tr.	1	2.88	11'6"
258	13	27'6"	5'0"	194'0"	Tr.	1	2.24	17'0"
259	11	31'6"	19'6"	278'6"	Tr.	4	5.56	27'6"
260	5	66'6"	42'6"	290'0"	Tr.			
261	13	72'0"	9'0"	363'6"	Tr.	1	6.72	26'5"
262	24	10'6"	4'0"	140'0"	7.38	21	8.44	5'6"
263	27	44'6"	9'6"	686'0"	7.68	13	15.94	27'4"
264)								
265)	19	38'0"	11'0"	386'0"	Tr.	2	4.51	18'3"
266	36	43'0"	7'0"	782'0"	Tr.	5	4.93	29'0"
267	16	23'6"	4'0"	253'0"	Tr.	9	8.66	18'8"
268	5	30'0"	25'0"	137'0"	Tr.			
269	10	33'6"	11'0"	233'6"	Tr.	1	7. 2	33'6"
270)								
271)	118	27'6"	10'0"	2,154'0"	2.12oz.	51	4. 9	19'1"
272	39	15'6"	8'0"	441'0"	6.46	28	8. 6	11'1"
	515			9,218'9"				

Maps

Three maps have been prepared to accompany this report.

(1) Geological Sketch Map of the Eddystone Quadrangle drawn at a scale of 1 inch to a mile. This map has been compiled from the charts issued by the several Government Departments of Tasmania. Added features such as roads, creeks etc. have been fixed by compass survey or sketch traverses carried out during the present investigation. Other recorded features are indicated in the Legend.

(2) Sketch Map of the Gladstone District showing Boring recorded by the Department of Mines. This map has been drawn at a scale of 1 inch to 20 chains and has been compiled from plans previously recorded by the Department of Mines. The positions of all recorded boring have been shown and reference has been made to individual bore plans at present recorded with the Department. So that detailed information is available, a tabulated list referring to the results of boring has been added.

(3) A map showing on larger scales than the previous ones certain workings where operations have more recently been carried out. On this map are shown :-

(1) Plan of workings on Lease No. 10565 at the head of Fly-by-Night Creek showing the irregular nature of greisenised veins which have been revealed.

(2) Plan of abandoned Star Workings on the Gladstone-Mussel Roe Road. This shows the irregular nature of the individual channels.

(3) Bore plan of the most recent boring near Mussel Roe River about east from the old Cybele Workings.

PROSPECTS FOR FUTURE

Tin: Work carried out by early companies and individual miners in the Gladstone district has established the fact that the tin ore is confined to comparatively narrow channels in the alluvial areas. Even in the more highly developed mines the width of individual channels seldom exceeds a chain. The boring recommended by W.H. Twelvetrees, Government Geologist, in 1901 and completed by M. Griffin in 1902 was designed to confirm the direction of known channels and to demarcate extensions of profitable areas in existing mines.

The boring by Roach in 1916 served to prove extensions of known areas and to further confirm directions of known channels, in the vicinity of existing workings. Since the year 1916, with the exception of that performed on the Scotia area, there has been no systematic attempt to prove further extensions of channels. Some attempts have been made by boring, to determine the grade of isolated areas, fortunately with some success, but generally without result.

In any future campaign for testing the alluvial deposits of this area, it must be borne in mind that seldom if ever do the tin bearing channels exceed one chain in width and bores should, therefore, be spaced at no greater distance than one chain to ensure success in tapping any ore reserves.

It has been recognised that the tin ore contained in the deep leads and otherwise, being won in the Gladstone area had its origin in the greisen veins occurring in the granite mass situated to the south of the area under review. Its accumulation in its present position has resulted from weathering and distribution of sediments along drainage channels, generally in a northerly direction from the central part of the area, at present represented by the Blue Tier. With the exception of the northern portion of the Mussel Roe Lead of Twelvetrees, which has a westerly course, all the known leads have a northerly to north-westerly course. Generally, the present drainage near Gladstone and to the south-east of Gladstone has a northerly trend, although it is not nec-

essarily coincident with that ruling at the time of deposition of the tin bearing sediments. It is considered, therefore, that where areas of gravel etc. have been accumulated on or near these northern streams such gravels may also be tin bearing and are worthy of further attention. Such an area occurs where the road from Gladstone to Ansons Bay crosses the Mussel Roe River. At that position, on each side of the river, fairly extensive flats occur on which alluvial material has been observed without the occurrence of rock outcrops. These flats extend for upwards of a mile in an easterly direction and for even a greater distance in a southerly direction.

The southern extremity of the flat on the eastern side of the river has recently been tested by boring. The boring is incomplete but, results from the 26 bores completed, show that five bores have revealed tin bearing wash and their positbns suggest the possibility of the presence of a narrow tin bearing channel, bearing in a general north-westerly direction. The depth of the ground ranges to 31 ft. (See diagram on map 987/25).

Gold: Gold has not been produced in economic quantity from the Eddystone Quadrangle for at least 30 years. A group of mines in the immediate vicinity of Gladstone and a further group situated about four miles to the north-east of the town, in the area extending from the Portland Mine to the Grand Flaneur Mine were responsible, during the last 20 years of the past century, for the production of small quantities of gold. In every instance the grade of ore depreciated at shallow depths. In the case of the Portland Mine treatment of the ore was complicated by the occurrence of ores of copper, galena, zinc, and arsenic in association with the gold.

Of the mines situated on the Portland-Grand Flaneur line the Portland and Blue Bell Mines were the most important. Several attempts have been made to re-open the Portland Mine. It is therefore, considered advisable to requote from the report by W.H. Twelvetrees, Government Geologist, in 1916. Of the Portland Mine he then wrote in Geological Survey Bulletin No. 25 :-

"In 1902 the mine was resuscitated under the title of the New Portland Gold Mining Company, and Mr. J.A. Windred was placed in charge. Mr. Windred has kindly supplied the following information :-

The lode down to No. 1 level carried a fair proportion of free gold, but was small, varying from 6 inches to a foot in width. Between this level and No. 2 it averaged 10 to 12 inches, and was plentifully charged with arsenical pyrites, accompanied by galena and zinc blende. There was very little free gold in this section of the lode, but the gold values were high, namely, from 1 to 3 oz. per ton. At No. 2 level, and below it, values were poor and patchy.

An intermediate level between Nos. 2 and 3 levels still showed the presence of arsenical pyrites, and the ore looked as well as at the higher levels, but the values were not there. The width averaged about a foot. At No. 3 level the lode was 6 inches wide where struck, nearly all quartz, worth 4 dwts. to the ton. It was driven on for 40 feet, being about a foot wide on the average, and consisting of low grade stone. This was very disappointing, and had a good deal to do with closing the mine down."

At present spasmodic attempts are being made to win gold from a narrow vein in badly broken ground in Coarse Gold Creek but prospects are not encouraging.

Other prospects for gold were examined during this investigation. These are situated to the north of the road from Gladstone to Ansons Bay between the Ringarooma and Mussel Roe Rivers.

The first of these prospects is situated about four chains east of the Mount Cameron Water Race and about half a mile north from the road. A shaft, McGowan's shaft, has been sunk to a reported depth of 70 feet on an indefinite formation carrying free gold. The formation strikes at 70 degrees and dips south at 70 degrees. It is an intimate mixture of quartz veins with slates extending over a width of 12 inches. The hanging wall is fairly well developed.

Although a reasonable prospect was obtained by dish prospect, the veins, when sampled, returned only 4 dwts. 10 grs. per ton. In the vicinity of these workings several trenches have been dug without revealing profitable ore. Four samples taken from trenches close to the western boundary of Grove's 400 acre block all yielded "Nil" when assayed.

Galena, arsenopyrite, zinc-blende and copper ores were all recorded as impurities in the ore from the Portland Gold Mine.

Wolfram, though recorded in the district, has never been profitably mined.

Further information relative to the gold mines near Gladstone is available in the report by P.B. Nye, M.Sc., B.M.E., in 1933. In that report he outlined the available information relative to all the gold mines of the district.

CONCLUSIONS AND RECOMMENDATIONS

(1) Search for Extensions of Known Leads

The work done by Twelvetrees and Nye together with the results of boring carried out by Griffin in 1902 and Roach in 1916 has shown the position and direction of the known leads in the Gladstone district and later boring has given detailed information relative to the Scotia Lead.

Portions of the leads have been exhausted by mining operations but considerable sections have been left as reference to map 984/25 will show. It is reasonable to expect that the unworked sections of the leads will be tin bearing and boring across the line of the lead between positions of old workings should be fruitful.

(2) New Areas Worth Testing

Mining operations have generally been directed towards the exploitation of the known leads and emphasis has at all times been laid on their occurrence. The source of tin, regarded as the greisen and other tin bearing veins associated with the finer grained granite, is widespread and suggests that although the main leads should be the main source of tin ore any areas of alluvial material occurring in the area should be tested. Despite the fact that the Mussel Roe lead of Twelvetrees turns to a westerly course in its northern end there is evidence of an accumulation of alluvial material near the Mussel Roe River north of the Mussel Roe Lead. Such an area occurs on and south of the Gladstone-Ansons Bay road at its crossing with the Mussel Roe River. The area extends for at least a mile and a half along the road and for a greater distance to the south of the road. Close boring on this area may reveal tin ore. The

southern extremity of this flat has recently been tested by boring which suggests the possibility of the existence of narrow leads.

As mining operations generally have shown that the tin ore occurs only in narrow gutters in any boring campaign it should be stipulated that the bores should be spaced in line at distances not greater than one chain. For scout boring the lines of bores may be spaced at distances of five chains, later boring to be governed by the earlier results.

In the Mussel Roe River flat the first line of bores should be on an easterly bearing to ensure cutting any channels. The general experience being for this district that the gutters trend northerly to north-westerly.

(3) Investigation of Primary Ores

Greisen veins are known to occur and have been worked in the mining lease No. 10565/M at the head of Fly-by-Night Creek and there is a similar occurrence at the present Star workings. In each instance the workings are situated on or near the contact between the Granites and the Slates. The area lying between these two positions and other positions along the contact are worthy of further prospecting.

There is difficulty at all times in estimating the grade of vein country. The veins are narrow and do not as a rule persist for any great distance either laterally or in depth. The grade of ore, therefore, depends to a great extent on the frequency with which the veins occur and can only be estimated as and when new areas are found.

(4) Search for Gold

There have been no real developments in the gold industry since P.B. Nye reported in the year 1933. His report dealt in general with thw whole of the field and his conculsions were unfavourable. There has been no new discovery since 1933 and recent sampling of prospects yielded Nil returns. The most likely area for future development will be southern end of the Grand Flaneur-Portland-McGowan's line of reefs but it is considered that future prospects are negligible.

H.G.W. Keid, MSc.

FIELD GEOLOGIST

Mines Department,
HOBART.

30th September, 1946.

Name	Quadrangle	Latitude S	Longitude E
Blue Bell	Eddystone 25	40°53'	148° 4'
Blue Tier	Blue Tier 33	41°12'	147°59'
Boobyalla River	Boobyalla 24, Ringarooma 32	41° 5'	147°49'
Cape Portland	Boobyalla 24	40°44'	147°56'
Cuckoo River	Eddystone 25	40°50'	148° 9'
Cybele Workings	Eddystone 25	40°59'	148° 5'
Eddystone Point	Eddystone 25	40°58'	148° 2'
Edina Area	Eddystone 25	40°59'	148° 4'
Gladstone	Eddystone 25	40°56'	148° 1'
Grand Flaneur Mine	Eddystone 25	40°52'	148° 4'
Herrick	Ringarooma 32	41° 6'	147°53'
Launceston	Launceston 39	41°26'	147° 5'
Little Mussel Roe River	Eddystone 25	40°47'	148° 3'
Lyme Regis	Eddystone 25	40°46'	148° 2'
MacGregor Workings	Boobyalla 24	40°57'	147°59'
Mt. Cameron	Boobyalla 24	40°59'	147°57'
Mussel Roe Bay	Eddystone 25	40°50'	148° 7'
Mussel Roe River	Eddystone 25	41°	148° 5'
Portland Mine	Eddystone 25	40°55'	148° 4'
Star Workings	Eddystone 25	40°56'	148° 2'
Scotia Mine	Eddystone 25	40°57'	148°