



Tim Callaghan – Resource and Exploration Geology

3 Main Rd Penguin 7318

ph. 0428 888 896 email: timcallaghan@netspace.net.au

EL19/2001

ANNUAL REPORT, 2013

KING ISLAND

NW TASMANIA

December 2013

CONTENTS

Executive Summary	3
1 Introduction	4
2 Geology	7
3 Exploration Prospects EL19/2001	11
4 Work Completed 2013	12
4.1 Drilling Program	12
4.2 Pit Design	15
5 Proposed Work 2014	12
Additional Notes	13
References	14

LIST OF FIGURES

Figure 1	King Island Project Geology, Tenements and Major Prospects	6
Figure 2	Regional Geology Northwest Tasmania	8
Figure 3	Stratigraphic column of the Grassy Group	10
Figure 4	Section 10550N	14
Figure 5	Section 10600N	14
Figure 6	Section 10650N	15
Figure 7	Conceptual Pit design upper Bold Head Mine	15

EXECUTIVE SUMMARY

EL19/2001 is an integral component of the tenement package required for the development of the King Island Scheelite Project. The EL covers 7kms of prospective ground around the Grassy Granite and hosts a number of significant deposits and exploration targets including the Bold Head Mine, Investigator 21 and Grassy West.

During 2013, King Island Scheelite (KIS) have reviewed the 2012 DFS with the aim of modifying the operation to reduce upfront capital. There is potential to commence operations through production from several open pit mines and the construction of a lower cost gravity concentration plant. It is anticipated that the mill will be upgraded to the full DFS design and the Dolphin Mine rehabilitated after the operation starts.

Work completed on EL19/2001 during 2013 included the drilling of 7 diamond drill holes for 589.4m in the upper Bold Head Mine. The program was designed to confirm remnant mineralisation on the upper mine and test for extensions to the high grade fault mineralisation associated with C-Lens adjacent to the Boundary and No2 Faults.

Significant mineralisation was returned from the following holes:

BH002	60.0 – 66.5	6.5m @ 0.6% WO ₃
BH003	67.5 – 70.5	3.0m @ 0.6% WO ₃
BH005	28.0 – 37.0	9.0m @ 1.5% WO ₃
BH006	40.1 – 41.5	1.4m @ 7.3% WO ₃
BH007	Assays Pending (Scheelite present under uv lamp)	

The program has confirmed significant high grade remnant mineralisation is located near surface in the Bold Head Mine. The Fault related mineralisation remains open to the north along strike and further exploration was ongoing at the time of reporting. The program has provided confidence in the Inferred Resources in this area. Much of the remnant resource was already included so only a limited increase in tonnes is anticipated in the order of 15-20Kt.

1 INTRODUCTION

The King Island Scheelite Project is located in the southeastern corner of King Island, Tasmania (Figure 1). Project tenure includes a Mine Lease (1M/2006), a Retention License (RL2/1998) and two Exploration Licenses (EL19/2001 and EL16/2002). The full tenement package is integral to the development of the King Island Scheelite Project. The tenements are held by Australian Tungsten Pty Ltd a wholly owned subsidiary of King Island Scheelite Limited (KIS) a public company listed on the Australian Securities Exchange.

The Dolphin Mine located on 1M/2006 was originally operated by Geopeko Ltd. along with the satellite Bold Head Mine located several kilometers to the north on EL19/2001.

The Dolphin and Bold Head Scheelite Mines operated intermittently since their discovery and start up in 1920 until the 1990's, with several forced shutdowns due to low tungsten prices. The site was decommissioned and rehabilitated in 1990.

KIS have been investigating the potential of re-opening the mines. Initial investigations into the viability of an open cut and seawall were inconclusive and the focus has changed to rehabilitation of the underground workings and production from remnant resources. KIS completed a definitive feasibility study into a 350ktpa mine and processing facility producing 5700t of concentrate per annum over an 11 year mine life in early 2012.

Project funding has proved to be difficult in the current financial climate and KIS are revising the project to a staged start up commencing with a gravity concentration plant and several low cost open cut mines in the first few years of operations. Ramp up to full production is anticipated in year three with dewatering and rehabilitation of the Dolphin Mine.

Mine rehabilitation and mill construction are scheduled to commence within twelve months of securing full project funding.

Resource and reserve estimation of the Dolphin and Bold Head Deposits and historic tailings storage facility (TSF) have been completed by KIS and form the basis of the King Island Scheelite Project (Table 1 and 2).

TABLE 1. KING ISLAND SCHEELITE PROJECT RESOURCES			
	Tonnes	WO₃	Tonnes WO₃
Dolphin	0.70% WO ₃ cutoff		
Indicated	4,752,000	1.29	61,300
Inferred	7,000	0.73	50
Total	4,759,000	1.29	61,350
Bold Head	0.50% WO ₃ cut off		
Indicated	1,500,000	0.93	13,950
Inferred	150,000	1.22	1,830
Total	1,650,000	0.96	15,780
TSF	0.08% WO ₃ cut off		
Measured	2,700,000	0.17	4,590
Total	9,109,000	0.90	81,720

TABLE 2. KING ISLAND SCHEELITE PROJECT RESERVES			
	Tonnes	WO₃	Tonnes WO₃
Dolphin Probable	2,687,000	1.04	28,060
Bold Head Probable	609,000	0.76	4,640
Tailings Proven	1,910,000	0.19	3,630
Total	5,196,000	0.70	36,330

Technical studies associated with the Definitive Feasibility Study that have now been completed include:

- Resource estimation
- Mining studies
- Reserve estimation
- Metallurgical testwork
- Process flow sheet design
- Cost estimates and construction plans
- Environmental management plan
- Negotiations with potential market off-taker
- Financial modeling
- Negotiations with potential project funding providers
- Resource extension drilling

Work over the past year focused on the feasibility of commencing mining operations through initial open cut operations on the Dolphin Pit and upper Bold Head mines. Resource definition and extension drilling programs were conducted at Bold Head and the Dolphin Mines.

EL19/2001 is integral to the development of the King Island Scheelite Project and is expected to add longevity to the project through exploration once operations recommence.

It is anticipated that exploration will focus on resource extension and regional exploration once project funding is completed and construction has commenced in late 2014.

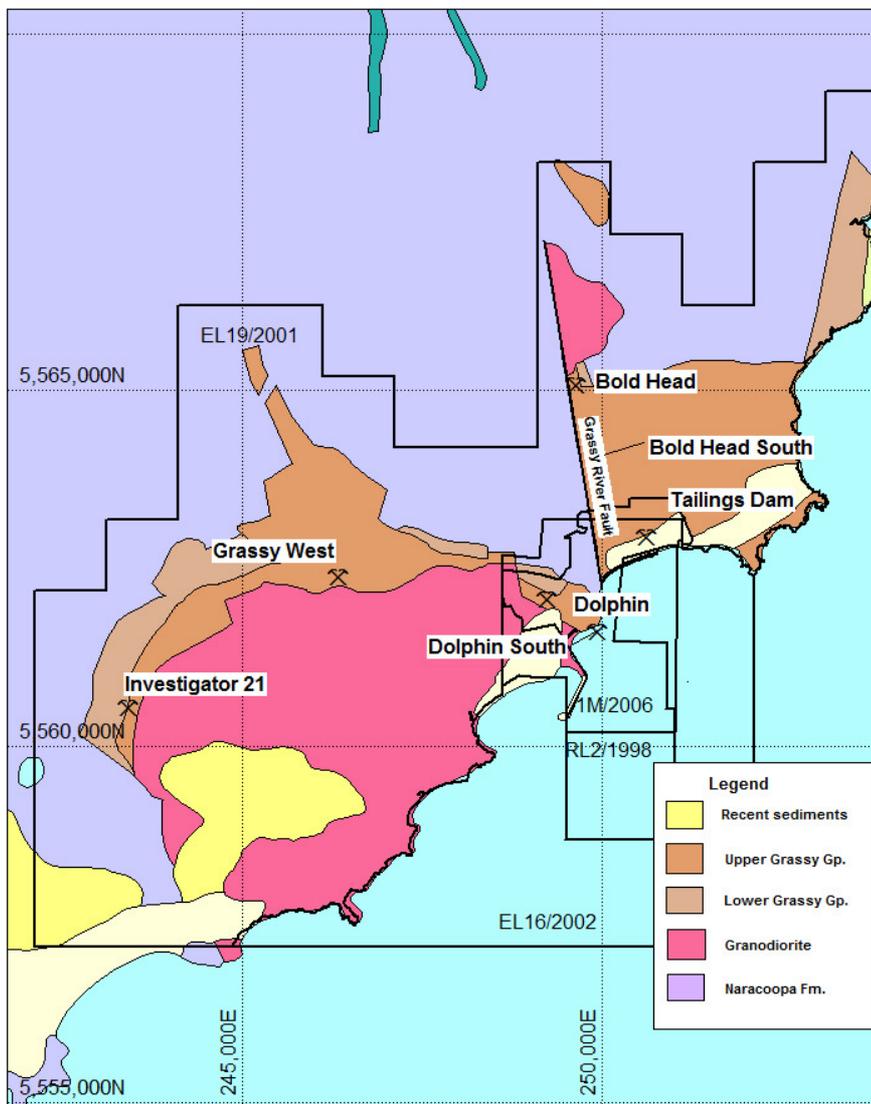


Figure 1. King Island Project Geology, Tenements and Major Prospects.

2 GEOLOGY

The regional geology of King Island is best described in Tasmanian Geological Record 2007/02, *Some Notes on the Geology of King Island* (Calver, 2007). Much of the geology described in this section is summarized from this publication (Figure 2).

The geology of King Island consists primarily of Proterozoic rocks with lesser Devonian Granites and extensive wind blown Pleistocene to Recent sand cover. The Proterozoic Geology of the eastern half of the island (hosting the Bold Head and Dolphin WO₃ deposits) is distinctly different from the geology of the western half. The relationship between the western and eastern halves remains problematic.

The western half is dominated by the Mesoproterozoic (1300Ma) Surprise Bay Formation. The Surprise Bay Formation is dominantly a N-S striking regionally metamorphosed amphibolite grade meta-sedimentary unit with minor mafic intrusives. The western margin of the Surprise Bay Group was intruded by a 790Ma granite body (Calver, 2007) post dating the 760Ma Wickham Orogeny (Cox, 1989, Turner *et. al.* 1998).

The Eastern half of the Island is dominated by the (1000-750Ma) Naracoopa Formation which appears to be a correlate of the Cowrie Siltstone in NW Tasmania (Calver, 2007). The Naracoopa Formation consists of a thick succession of relatively unmetamorphosed shale, siltstone and fine grained muscovite-quartz sandstone. Along the Southeast Coast the siltstone is conformably overlain by the 580Ma Grassy Group which is considered a correlate of the Togari Group in NW Tasmania, (Calver, 2007).

The Grassy Group in the City of Melbourne Bay area is well described by Calver (2007) and Meffre *et al* (2004). A summary of the Grassy group stratigraphic sequence is described below:

Cottons Breccia - A basal unit of polymict cobble to boulder diamictite.

Cumberland Creek Dolostone - Calcareous sediments, shale with limestone/dolomite inter-beds. (Host Horizon for the King Island Scheelite Mineralisation).

Yarra Creek Shale - Planar laminated shale with rare volcanoclastic interbeds.

Grimes Intrusive Suite - Gabbroic intrusive sills of andesitic composition.

City of Melbourne Volcanics - Tholeiitic pillow lava, peperite and volcanoclastic sandstone.

Shower Drop Volcanics – Picritic, high MgO pillow lava and hyaloclastite.

Bold Head Volcanics – Tholeiitic basalt, volcanoclastic sandstone and conglomerate.

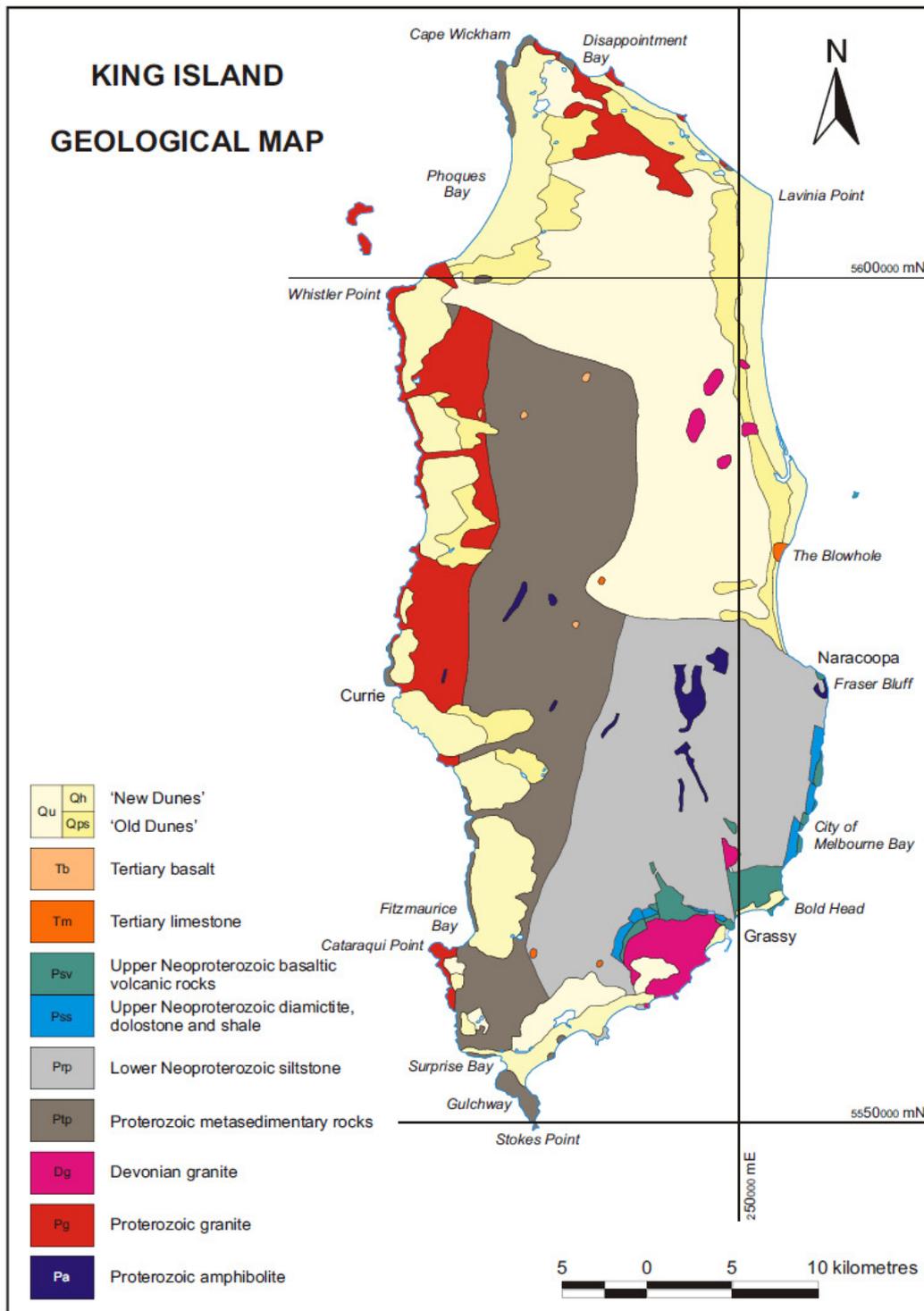


Figure 2. Regional Geology of King Island, (Calver 2007). Coordinates GDA94.

Three granite bodies, the Grassy, Bold Head and Sea Elephant plutons intrude the Proterozoic sediments on the southeast coastline of King Island. The intrusions are classified as I-type monzogranite-granodiorite (Calver, 2007). The Bold Head Granite may be a sliver of the larger Grassy granite, separated by the N-S trending Grassy River Fault (Figures 1 and 2).

The Bold Head Granodiorite is porphyritic with large pink k-feldspar phenocrysts. The mineralogy consists of quartz, k-feldspar, plagioclase, biotite and amphibole with minor apatite, allanite, sphene, magnetite and zircon.

Scheelite skarn mineralisation has formed within the metamorphic aureole of the Bold Head and Grassy Granodiorite plutons where they have come into contact with the calcareous sediments and carbonates of the Lower Grassy Group Cumberland Creek Dolostone. Both the Bold Head and Grassy mineralisation is hosted in a similar stratigraphic sequence, although the carbonate units appear to be thicker in the Grassy area (Danielson, 1975, Figure 2). Mineralisation has formed by selective metasomatism, mainly within and immediately adjacent to carbonate horizons. The deposits formed over a 100-200m sequence of complex skarn mineralogy located in the lower part of the Grassy Group, with two main host horizons known as B and C lens hosted in carbonates of 10-30m thickness separated by a similar thickness of skarn altered volcanic sediments. Mineralisation appears to have occurred where carbonates come into direct contact with the intrusion, or adjacent to brittle faults tapping into the nearby intrusion. Mineralisation grades increase towards major structures such as the Central, Decline and Grassy Faults at Grassy and the Number 2 and Boundary Faults at Bold Head.

Mine sequence rocks have been intensely contact metamorphosed and metasomatised and are described in Geopeko drill logs and maps by the resultant skarn mineralogy and not the stratigraphic protolith described in the regional geology. Geopeko logging codes include:

DDH logging codes

Code	Geology
um	Upper metavolcanics
bh	Biotite-actinolite hornfels
pbh	Pyroxene-biotite hornfels
pgh	Pyroxene-garnet hornfels banded pyroxene andradite skarn (+/- Scheelite)
gh	Garnet hornfels, andradite skarn (+/- Scheelite)
ch	Marble
bfb	Banded footwall beds, interbedded marble and biotite-pyroxene grossularite skarn (+/- garnet, Scheelite)
lv	Lower metavolcanics

Mineralisation occurs predominantly as coarse Scheelite with lesser Powellite in either garnet-hornfels, pyroxene garnet hornfels and garnet-pyroxene altered banded footwall beds.

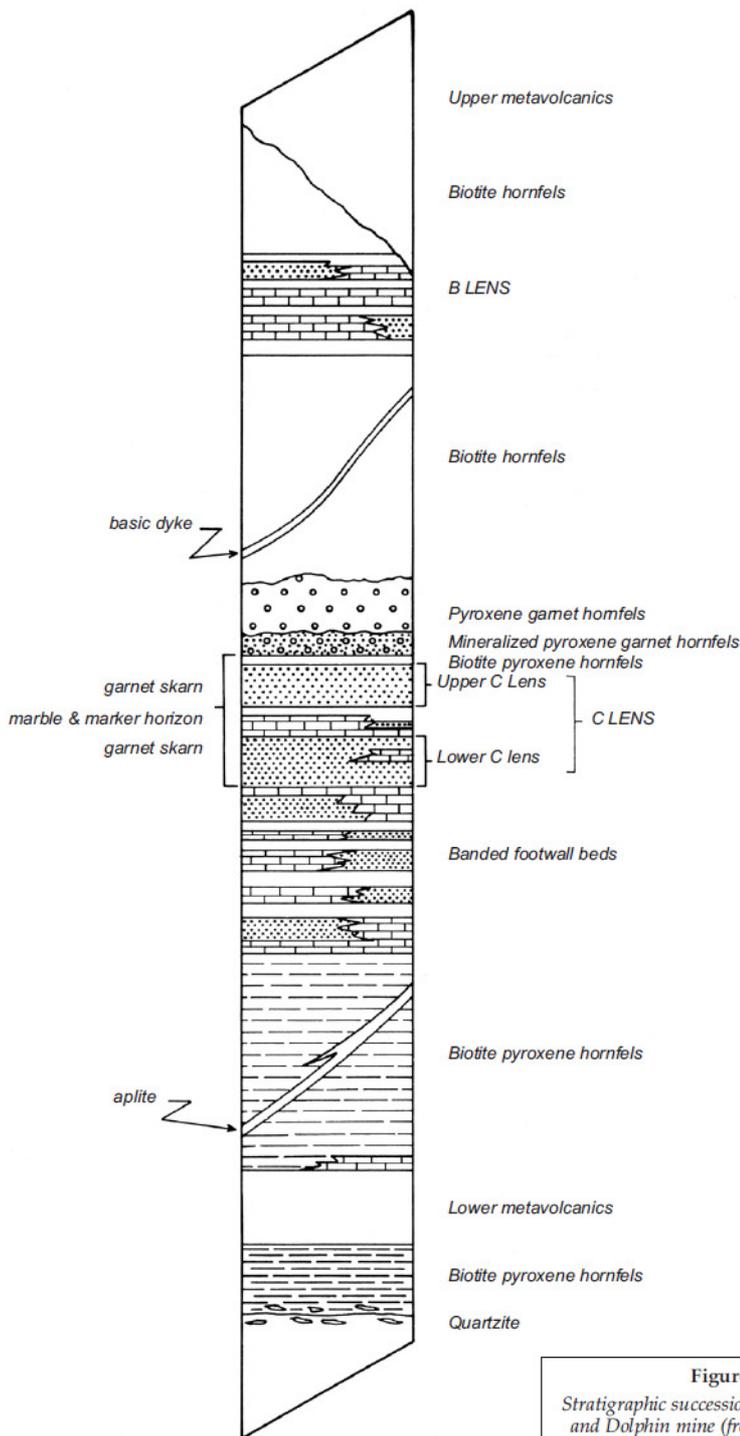


Figure 4
 Stratigraphic succession, No. 1 Open Cut
 and Dolphin mine (from Brown, 1990).

Figure 3. Stratigraphic column of the Grassy Group host sequence in the Grassy open cut (from Brown, 1990). The sequence is very similar to the Bold Head sequence 3km north.

3 EXPLORATION PROSPECTS EL19/2001.

EL19/2001 host several advanced prospects including the Bold Head Resource which forms a significant component of the King Island Project. Minor resource extensions are anticipated from exploration adjacent to the Bold Head Resource. A mine plan is currently being finalized for Bold Head and an ML application will be submitted on completion. Mining is envisaged to involve some small scale open cut mining and rehabilitation of the underground workings.

A significant conceptual exploration target is located at South Bold Head. South Bold Head is a purely conceptual exploration target located south of the Graham's Road Fault along the eastern side of the Grassy Fault. The Graham's Road Fault is a ductile shear with a south-side down throw of over 200m. Mine sequence is postulated to occur at depth beneath the outcropping upper volcanics of the Grassy Group.

Detailed geophysical surveys were completed in 1982 and reported in 1983 (Brown, 1983). Gravity surveys indicate a number of residual bouger anomaly highs and lows suggestive of a granite surface similar to the Bold Head setting. The presence of the upper volcanic sequence suggests there is the potential for a deep target (800m+) adjacent to the Grassy River Fault on its eastern margin. Although conceptual this target has the potential to host a world class deposit the size of the Dolphin Mine.

A seven kilometer length of Grassy Group volcanics is exposed along the northern and western margin of the Grassy Granite. The contact has been loosely defined by first pass drilling, mapping and magnetic surveys through exploration activities of the previous mine operators. Significant exploration prospects have been located further west of the Dolphin Mine adjacent to the Grassy Granite. The two most advanced of these include Grassy West and Investigator 21, both of which have several significant Scheelite intersections hosted in similar metasomatised lower Grassy Group lithologies as the Bold Head and Dolphin Deposits.

These targets have two of the three components required for large Dolphin style skarn deposits, proximity to the granite and calcareous host lithologies. The third criteria of major brittle fault structures remain to be identified. Additional detailed exploration is required including collation of drilling data and geological information and interpretation of gravity and genetic data followed by further targeted exploration drilling.

EL19/2001 of strategic importance to the King Island Scheelite project and maintaining tenure of the EL is important for the longevity of the King Island Scheelite Project.

4 WORK COMPLETED 2013

Following on from the finalization of the DFS in 2012 KIS were unable to secure funding from financiers or off take partners. A study into a staged start up involving low cost open cut mining and a gravity only concentration plant is currently underway. This has required some conceptual pit modeling, revised flow sheet design and definition drilling. Work was undertaken on both EL19/2006 and RL2/1998 during the past year.

Exploration and technical studies specifically conducted on EL19/2006 during 2013 involved

- Resource definition and extension drilling at Bold Head
- Conceptual pit design at Bold Head

4.1 DRILLING PROGRAM

A seven hole diamond drilling program for 576.9m was completed at bold head in October-November 2013. An eighth hole was in progress at the time of reporting. Drill sites were located in a paddock used for grazing cattle on the rehabilitated Bold Head Mine Site. The property is managed by Richard Cole who gave permission for the program.

The program was designed to test remnant mineralisation modeled in the upper B-lens and C-lens area of the No 2 and Boundary Faults. This area is close to surface and is amenable to open cut mining. Some of the modeled mineralisation was classified as Inferred Resource (Callaghan, 2009) and requires definition drilling. Several holes were also drilled north along strike from the modeled mineralisation to test for extensions.

Drilling was completed by Whole Core Drilling Pty Ltd with a track mounted Cortech CSD1800 drill rig. Sites were prepared using local earthmoving contractor Rab Denby. All sites required minor leveling and sump construction. All sites were rehabilitated on completion of the program. A mobile electric fence was used to prevent cattle from entering each site.

Drill collars were surveyed with a hand Held Garmin GPS accurate to 3-5m. Collars will be located by licenced surveyor at the end of the program and included in the 2014 annual report.

Drill core was logged in the KIS core facility in Grassy. All core is stored in the Grassy core compound. Logging was completed on excel spreadsheets and loaded into an access database. A low wavelength ultraviolet lamp was used to delineate zones with significant scheelite mineralisation. Areas with strong fluorescence were marked for sampling. Drill core was cut with a diamond saw with samples taken on 1m lengths whilst respecting geological boundaries. Drill core was bagged on site, sealed in poly-weave bags and sent to ALS Laboratories in Burnie for Analysis. Samples were analysed for WO_3 , Sn, S, Mo and SG by fusion disc XRF. Results were received electronically and loaded onto log sheets and uploaded to the database.

Drill collar details are listed in Table 3. Drill logs are located in Appendix 1.

Table 3. Drill Collar Details and Significant Results

BHID	Easting	Northing	RL	Depth	Azm	Dip	Results
BH001	249745	5565148	1120	106.5	267.3	-70	no significant results
BH002	249745	5565148	1120	78.5	263	-48	60.0 - 66.5 6.5m @ 0.6% WO ₃ inc. 64.0 - 66.0 2.0m @ 1.1% WO ₃
BH003	249745	5565148	1120	97.2	272	-60	67.5 - 70.5 3.0m @ 0.6% WO ₃ 74.5 - 78.2 3.7m @ 0.2% WO ₃ 83.4 - 85.4 2.0m @ 0.2% WO ₃
BH004	249710	5565198	1120	64.2	244	-70	62.1 - 62.9 0.8m @ 0.2% WO ₃
BH005	249684	5565189	1118	72.5	253	-55	28.0 - 37.0 9.0m @ 1.5% WO ₃ inc. 33.0 - 36.0 3.0m @ 3.0% WO ₃
BH006	249705	5565263	1119	69	246.1	-55.6	40.1 - 41.5 1.4m @ 7.3% WO ₃
BH007	249700	5565263	1119	101.5	244	-85	Pending
BH008	249701	5565283	1118		250	-60	In Progress

The drilling program was designed to test and extend near surface open pitable resource at Bold Head. Three sections of drillholes were completed in the upper mine. The Bold Head Resource model has been constructed from historic cross-sections, plans of underground workings and historic drilling data (Callaghan, 2011). The mine model is in the old Bold Head Grid which is a rotated plane projection with north at approximately 340° AMG. It was referenced to the old NSW ISG grid as used at the Dolphin Mine. Unfortunately no reference to the grid origin has been able to be obtained. The grid has been located from measuring old drill hole locations off plans and picking up the location of vent rises. Unfortunately it can only be regarded as approximate to 3-5m until further survey work is completed.

Three drill sections were completed this spring, 10550N, 10600N and 10650N.

Three holes were drilled on section 10550N. Drill hole BH001 was designed to test the fault related mineralisation associated with C-Lens above old workings on the Boundary Fault. The hole did not intersect any significant skarn mineralisation, closing off the fault related mineralisation to the south. Drillhole BH002 and BH003 confirmed remnant mineralisation contained in B-Lens between the Boundary Fault and the No 2 Fault. BH002 returned 6.5m @ 0.6% WO₃ from pyroxene-garnet skarn on the contact zone before intersecting unmineralised limestone. The hole was terminated at 80.5m after intersecting old workings. BH003 intersected pyroxene-garnet skarn with patchy scheelite mineralisation returning three separate mineralised zones of low to moderate grades (Table 3).

Two holes were drilled on Section 10600N. BH004 was designed to test the fault mineralisation associated with the upper part of C-Lens. The hole intersected the top of the mineralised zone returning 0.8m @ 0.2% WO₃. The second hole BH005 was designed to test the remnant B-Lens Mineralisation above old workings. The hole intersected well mineralised garnet-pyroxene hornfels returning 9.0m @ 1.5% WO₃.

Section 10650N was designed to test the northern extension of the high grade fault related mineralisation. Drillhole BH006 intersected high grade mineralised pyroxene-garnet skarn associated with the Boundary Fault returning 1.4m @ 7.3% WO₃. BH007 intersected significant mineralised skarn confirming the northern extension of the fault related mineralisation. Assays are pending.

The drilling campaign has successfully confirmed the remnant mineralisation and increased confidence in an area of resource that was previously classified as Inferred Resource (Callaghan, 2009). The program will not result in a significant increase in tonnes as only small volumes of mineralisation were added by extension drilling. It is likely that the program has increased the resource by 10-15000t.

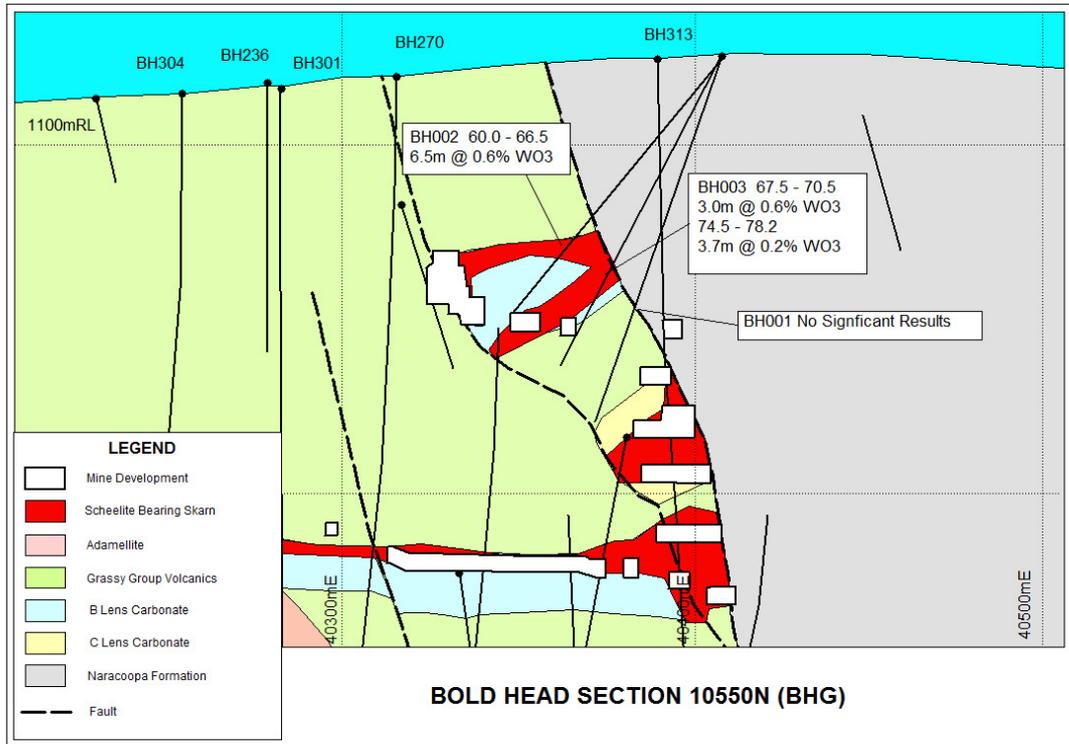


Figure 3. Bold Head Section 10550N

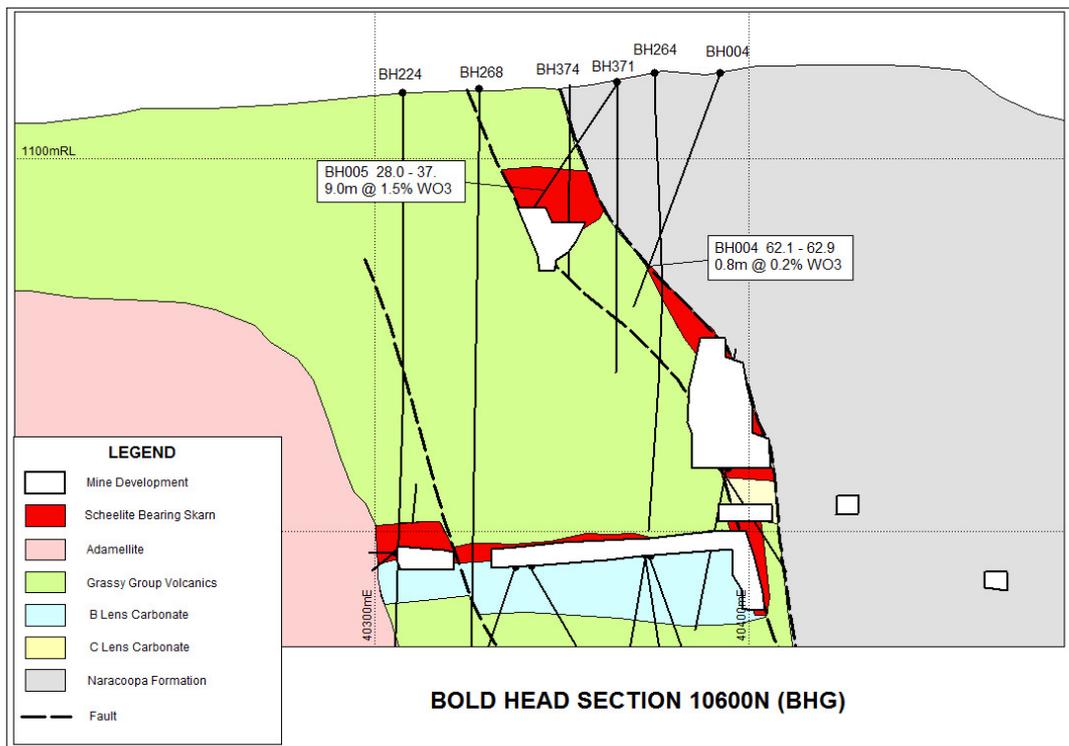


Figure 4. Bold Head Section 10600N

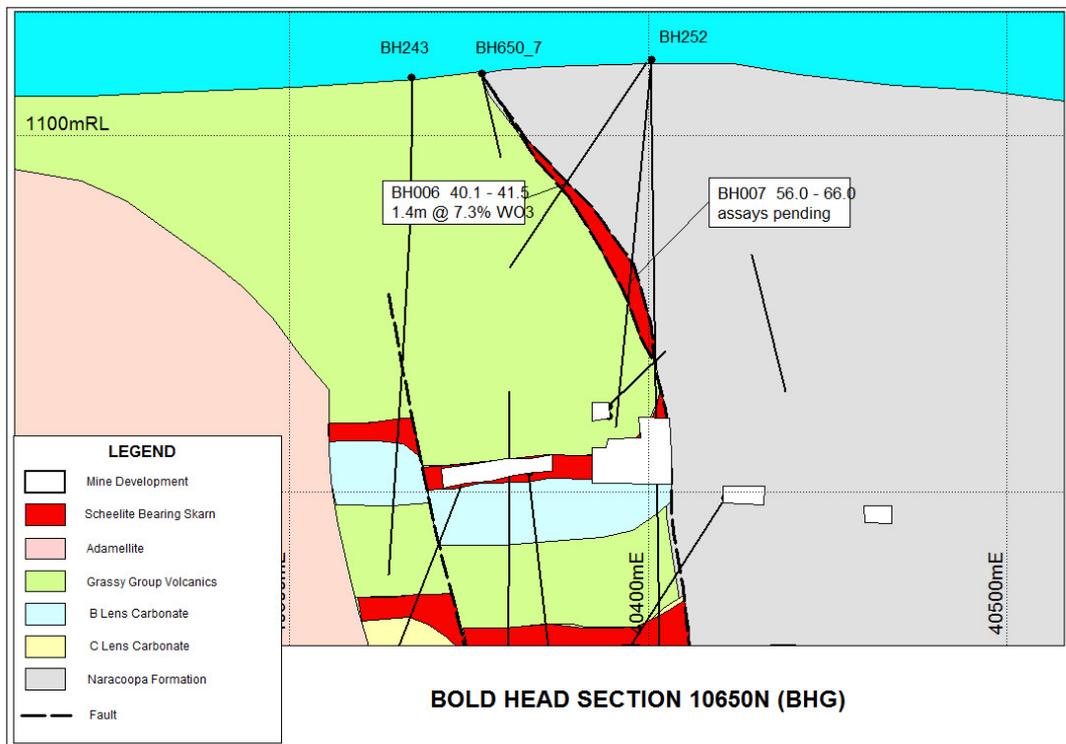


Figure 5. Bold Head Section 10650N

4.2 Pit Design

Conceptual open pit designs on the near surface mineralisation were completed by Xenith consultants in Sydney to allow scoping studies to proceed. Pit designs were only preliminary and have yet to be finalised.

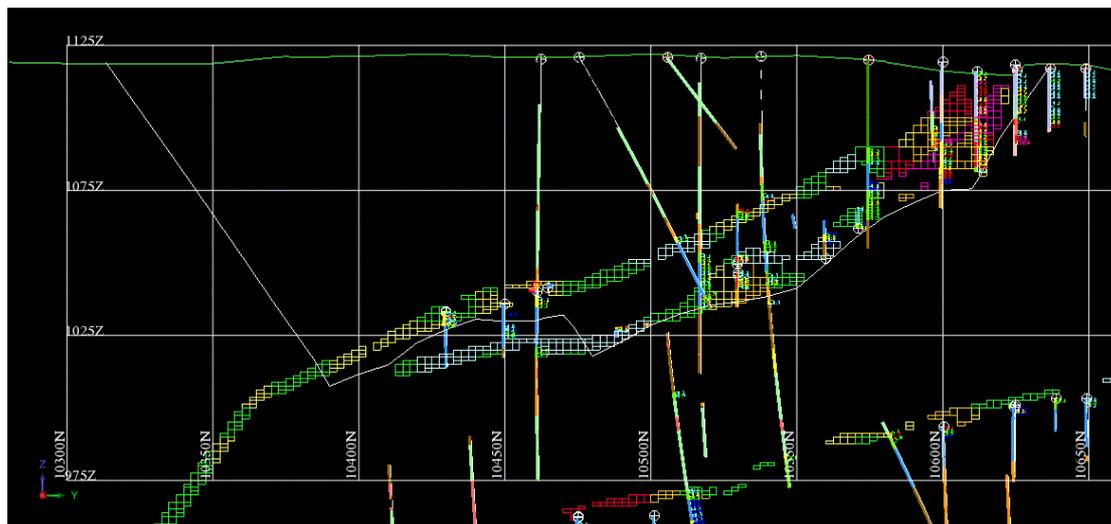


Figure 6. Conceptual Pit design upper Bold Head Mine, Section 40350E.

5 PROPOSED WORK 2013

The project work program for 2013 is scheduled to include:

- Update resource model.
- Finalise Bold Head pit design and reserve revision.
- ML application for the Bold Head Mine.

With the focus on construction and commissioning next year a limited exploration program is anticipated for 2014, though some historic data collation and targeting in preparation for future exploration drilling programs is likely. Exploration drilling of the tenement package is expected to resume once operations commence.

ADDITIONAL NOTES

COMPETENT PERSON AND JORC CODE

The information within this report that relates to Mineral Resources and Reserves and Exploration Results is based on information compiled by Mr Tim Callaghan who is a consultant geologist working for King Island Scheelite. Tim is a Member of the Australasian Institute of Mining and Metallurgy (AUSIMM) and has sufficient experience in the styles of mineralisation and types of deposits in consideration to qualify as a competent person according to the 2004 edition of the Australasian Code for reporting Exploration Results, Mineral Resources and Ore Reserves (the JORC Code). He consents to the inclusion of this material in the form and context in which it appears in this report.

The information within this report that relates to Mineral Reserves is based on information compiled by Consultant Mining Engineer Mr Alan Fudge of Polberro Consulting, who is a Member of The Australasian Institute of Mining and Metallurgy ("AusIMM") and has a minimum of five years experience in the estimation, assessment and evaluation of Mineral Reserves of this style and is a Competent Person as defined in the JORC Code (2004). This announcement accurately summarises and fairly reports his estimations and he has consented in writing to this review in the form and context in which it appears.

COORDINATES

All coordinates in this report are recorded in AGD94 Zone 55 or Bold Head Mine Grid

REFERENCES

- Brown, SG, 1981. Six Monthly Report to the Mines Department, Report No KI/81/5
Unpublished company report for Warman Services Ltd.
- Callaghan, TJ, 2009. Bold Head Geology, Resources and Mine Infrastructure Digital
Model. Unpublished consultants report for King Island Scheelite.
- Callaghan, TJ, 2011a. King Island Tailings Mineral Resource Estimation.
Unpublished consultants report for King Island Scheelite.
- Callaghan, TJ, 2011b. King Island Tailings Mineral Reserve Estimation.
Unpublished consultants report for King Island Scheelite.
- Calver CR, 2007. Some Notes on the Geology of King Island. *Tasmanian
Geological Survey Record 2007/02.*
- Cox, S F, 1989. 'Cape Wickham' in Burrett, CF and Martin CF, (editors) Geology and
Mineral Resources of Tasmania, *Special Publication Geological society of
Australia*, vol15, pp26 - 27
- Danielson MJ, 1975. King Island Scheelite deposits. In Knight CL (editor), Economic
Geology of Australia and Papua New Guinea. *Monograph Serial Australian
Institute of Mining and Metallurgy.*
- Meffre S, Direen NG, Crawford AJ, and Kamenetsky V, 2004. Mafic Volcanic rocks
on King Island, Tasmania: Evidence for 579Ma break up in East Gondwana.
Precambrian research, vol. 135 pp177 – 191.
- Turner NJ, Black LP, and Kamperman M, 1998. Dating of Neoproterozoic and
Cambrian Orogenies in Tasmania. *Australian Journal of Earth Sciences, vol
45, pp 789 – 806.*

Appendix 1

Drill Logs

Stratigraphy

Q	Quaternary alluvial, colluvial and dune deposits
Df	Devonian fine grained qtz sst and ssst (Florence Quartzite). Fossiliferous
Dsk	Devonian Skarn
Dg	Devonian Granite
Sc	Silurian sandstone and siltstone
Scs	Silurian pebble-cobble conglomerate.
Su	Silurian sediments
Og	Limestone (Gordon Limestone)
Oc	Pebble conglomerate, PC derivation (Owen Gp).
Os	Siliceous sst and conglomerate.
Ccc	Contiguous Creek Fm
Ccch	Contiguous Creek Fm chert
Ccarb	Contiguous Creek Fm carbonate and calcareous sediments.
Cba	Cambrian Basalt (McIvor Hill Complex)
Cgg	Cambrian Grassy Group
Cbg	Cambrian gabbro
Cba	Cambrian basaltic volcanics
Csu	Cambrian ultramafic
Cud	Cambrian ultramafic dunite
Cup	Cambrian ultramafic orthopyroxenite
Lrbq	Proterozoic siltstone and sandstone, (Cassiterite Ck Fm)
Lrbl	Proterozoic carbonaceous siltstone, (Skinners Flat Siltstone)
Lrl	Proterozoic siltstone and Quartzite, (Lagoon River Quartzite)
Ln	Proterozoic Naracoopa Formation.

Rock Types

Volcanic Rocktypes have a four letter code. The first letter is the style (intrusive, volcanoclastic etc)
The second is the chemical composition (basaltic, rhyolitic), the third is the major component (qtz phyr, lithic rich etc)
the last is the texture (fine grained, breccia etc). For example IUPC is an intrusive, ultramafic, pyroxene phyr and coarse grained.

Style codes

I	Intrusive
L	Lava
V	Volcanoclastic
E	Epilastic

Composition codes

U	Ultramafic
B	Basaltic (mafic)
A	Andesitic
D	Dacitic
R	Rhyolitic

Composition Codes

Q	Qtz phyr (qtz xtal rich)
F	feldspar phyr
H	Hornblende phyr
P	Pyroxene phyr
L	Lithic rich
X	crystal rich
V	Vitric

Texture codes

F	fine
M	medium
C	coarse
B	breccia

Other Rock codes

CHRT	Chert
CARB	Carbonate
GWAC	Greywacke
SSLT	Siltstone
SAND	Sandstone
SERP	Serpentine
CONG	Conglomerate
GRAN	Granite
GRAD	Granodiorite
SKRN	Skarn
LOSS	No Core recovery
CLAY	Clay
MMAG	Massive magnetite
SKSP	Serpentine Skarn
SHAL	Shale
HEVC	Heamatitic Volcanoclastic
PHLG	Phlogopite schist
GABB	Gabbro
QZIT	Quartzite
gh	garnet hornfels
pgh	pyroxene-garnet hornfels
fz	fault zone
ap	aplite
bh	biotite hornfels
ph	pyroxene hornfels
bfb	banded footwall beds
ch	carbonate-chert
q	Naracoopa Formation quartzite
ad	Adamellite
mv	middle Grassy Group volcanics

Colour

Colours can be classified by shade using a 1 to 5 scale. ie. B1 = pale brown, B5=dark Brown

N	Black
B	Brown
P	Purple
G	Green
C	Cream
W	White
Y	Yellow
T	Tan
R	Red
O	Orange

Alteration

Ac	Actinolite
Ch	Chlorite
Se	Sericite
Cb	Carbonate
Di	Diopside
Ax	Axinite
Sc	Serpentine-chrysotilic
Sp	Serpentine
So	Schorl
Ph	Phlogopite
Sx	Sulphidic
Py	Pyritic
Po	Pyrrhotitic
Ht	Haematitic
Mg	Magnetite
To	Tourmaline
Si	Silica
Qz	Quartz

Geotech

Intact Rock Strength Code		UCS
Extremely weak	EW	0.5 Mpa
Very Weak	VW	
Weak	W	2.5 Mpa
Moderately strong	MS	37.5 Mpa
Strong	S	75 Mpa
Very strong	VS	100 Mpa
Extremely strong	ES	150 Mpa

Roughness type	Code	Jr
Stepped Smooth	SS	3.5
Discontinuous	DC	4
Planar Smooth	PS	1
Stepped Rough	SR	3
Planar rough	PR	1.5
Undulating Smooth	US	2
Undulating Rough	UR	3

No of Defect Sets	Code	Jn
Default	0	1
One Set	1	2
One Set + random	1.5	3
Two Sets	2	4
Two Sets + random	2.5	6
Three Sets	3	9
Three Sets + random	3.5	12
Four Sets	4	15

Joint Alteration	Code	Ja
Default	0	1
Carb	CB	2
Serpentine	SP	5
Clay	CY	5
Quartz	QZ	1
Sericite	SE	3
Chlorite	CH	3
Clean	X	1
Iron	FE	1.5
Haematite	H	2



Tim Callaghan – Resource and Exploration Geology

3 Main Rd Penguin 7318

ph. 0428 888 896 email: timcallaghan@netspace.net.au

Drill Log													
Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L. Cont.	Struct	BCA	Description	
Bold Head	BH001	0	2		nc								No Core Recovery, Clay and Soil
Bold Head	BH001	2	14.6	Ln	q	Cy	B		Gd	Bd	80		Intensely weathered brown quartzite. Moderately to strongly weathered. Minor Shale. Clay seams. Significant core loss.
Bold Head	BH001	14.6	23.8	Ln	q	SiBi	A2		Gd	Bd	80		Massive, pale grey to brown quartzite with minor shale bands. Strongly hornfelsed with silica alteration, biotite spotting and muscovite on joint surfaces. Minor weathering on joint surfaces.
Bold Head	BH001	23.8	41.2	Ln	q	SiBi	A2		Sp	Bd	80		Massive, pale grey to brown quartzite with minor shale bands. Strongly hornfelsed with silica alteration, biotite spotting and muscovite on joint surfaces.
Bold Head	BH001	41.2	41.4	Dg	ap	SiBi	A2		Sp				Medium grained porphyritic aplite dyke. Siliceous matrix with 1-2mm porphyritic biotite and feldspar crystals. Irregular sharp contact.
Bold Head	BH001	41.4	55	Ln	q	SiBi	B3		Sp	Bd	80		Massive, pale grey to brown quartzite with minor shale bands. Strongly hornfelsed with silica alteration, biotite spotting and muscovite on joint surfaces. Pervasive biotite alteration. Minor Po and Py as microveins with chloritic selvage
Bold Head	BH001	55	56.6	Dg	ap	SiBi	A2		Sp				Medium grained porphyritic aplite dyke. Siliceous matrix with 1-2mm porphyritic biotite and feldspar crystals. Irregular sharp contact.
Bold Head	BH001	56.6	76	Ln	q	SiBi	B3		Sp	Bd	30		Massive, pale grey to brown quartzite with minor shale bands. Strongly hornfelsed with silica alteration, biotite spotting and muscovite on joint surfaces. Pervasive biotite alteration. Minor Po and Py as microveins with chloritic selvage
Bold Head	BH001	76	83.6	Ln	q	SiBi	B3						Massive, pale grey to brown quartzite with minor shale bands. Strongly hornfelsed with silica alteration, biotite spotting and muscovite on joint surfaces. Very strong pPervasive biotite alteration. Minor scheelite at 79.7m
Bold Head	BH001	83.6	84		fz								Broken ground, minor limonite on joint surfaces.
Bold Head	BH001	84	86	Cgg	ph	PxAc	G3						Banded cream and dark green pyroxene hornfels. Crystalline pyroxene-biotite and garnet hornfelsed carbonate. Minor scheelite to 0.2%
Bold Head	BH001	86	89.6	Cgg	bh	Bi	B5						Intensely biotite altered Grassy Group volcanics.
Bold Head	BH001	89.6	94	Dg	ap	SiBi	C2		Sp				Medium grained porphyritic aplite dyke. Siliceous matrix with 1-2mm porphyritic biotite and feldspar crystals. Irregular sharp contact.
Bold Head	BH001	94	106.5	Cgg	lv	Bich	b2			Bd	80		Bedded volcanoclastic sandstone and conglomerate. Strong biotite and chlorite alteration. Brown to grey. EOH



Tim Callaghan – Resource and Exploration Geology

3 Main Rd Penguin 7318

ph. 0428 888 896 email: timcallaghan@netspace.net.au

Geotech Sheet

Project	BHID	From	To	Recovery	Recovery %	Lithology	Weathering	Alteration	Strength	length>10cm	RQD%	No. defects	Defect sets	Defect type	bca struct 1	bca struct 2	Roughness	Fill
Bold Hea	BH001	0	2	0	0	LOSS	W	Cy	W									
Bold Hea	BH001	2	3.5	0.2	13.3	q	W	Cy	W									
Bold Hea	BH001	3.5	5.5	0.6	30	q	W	Cy	W									
Bold Hea	BH001	5.5	7	0.2	13.3	q	W	Cy	W									
Bold Hea	BH001	7	10	2	66.7	q	W	Cy	W									
Bold Hea	BH001	10	11.5	0.7	46.7	q	W	Cy	W									
Bold Hea	BH001	11.5	12.2	0.7	100	q	W	Cy	W									
Bold Hea	BH001	12.2	13.6	0.7	50	q	W	Cy	W									
Bold Hea	BH001	13.6	14.5	0.5	55.6	q	W	Cy	W									
Bold Hea	BH001	14.5	16	1.1	73.3	q	P	SiBi	ES									
Bold Hea	BH001	16	16.7	0.4	57.1	q	P	SiBi	ES									
Bold Hea	BH001	16.7	17.4	0.6	85.7	q	P	SiBi	ES									
Bold Hea	BH001	17.4	17.6	0.1	50	q	P	SiBi	ES									
Bold Hea	BH001	17.6	18.7	0.9	81.8	q	P	SiBi	ES									
Bold Hea	BH001	18.7	19.3	3	500	q	P	SiBi	ES									
Bold Hea	BH001	19.3	20.5	1.2	100	q	P	SiBi	ES									
Bold Hea	BH001	20.5	21.4	1	111	q	P	SiBi	ES									
Bold Hea	BH001	21.4	21.8	0.4	100	q	F	SiBi	ES									
Bold Hea	BH001	21.8	23.5	1.7	100	q	F	SiBi	ES									
Bold Hea	BH001	23.5	24.9	1	71.4	q	F	SiBi	ES									
Bold Hea	BH001	24.9	25.8	0.1	11.1	q	F	SiBi	ES									
Bold Hea	BH001	25.8	26.5	0.7	100	q	F	SiBi	ES									
Bold Hea	BH001	26.5	29.1	2.6	100	q	F	SiBi	ES									
Bold Hea	BH001	29.1	31.4	2.3	100	q	F	SiBi	ES									
Bold Hea	BH001	31.4	32.5	1.1	100	q	F	SiBi	ES									
Bold Hea	BH001	32.5	38.1	5.6	100	q	F	SiBi	ES									
Bold Hea	BH001	38.1	39.6	1.5	100	q	F	SiBi	ES	1.3	87							
Bold Hea	BH001	39.6	41.4	1.8	100	q	F	SiBi	ES	1.5	83							
Bold Hea	BH001	41.4	41.8	0.4	100	q	F	SiBi	ES	0.4	100							
Bold Hea	BH001	41.8	42.3	0.5	100	q	F	SiBi	ES	0	0							
Bold Hea	BH001	42.3	44.5	2.2	100	q	F	SiBi	ES	2	91							
Bold Hea	BH001	44.5	47.3	2.9	104	q	F	SiBi	ES	2.7	96							
Bold Hea	BH001	47.3	48.1	0.7	87.5	q	F	SiBi	ES	0.2	25							
Bold Hea	BH001	48.1	50.5	2.4	100	q	F	SiBi	ES	1.9	79							
Bold Hea	BH001	50.5	53.5	3	100	q	F	SiBi	ES	3	100							
Bold Hea	BH001	53.5	56.5	3	100	ap	F	SiBi	ES	3	100							
Bold Hea	BH001	56.5	59.5	3	100	q	F	SiBi	ES	1.7	57							
Bold Hea	BH001	59.5	60.6	1.1	100	q	F	SiBi	ES	0.6	55							
Bold Hea	BH001	60.6	61.4	0.8	100	q	F	SiBi	ES	0.7	88							
Bold Hea	BH001	61.4	62.5	1.1	100	q	F	SiBi	ES	0.8	73							
Bold Hea	BH001	62.5	65.5	3	100	q	F	SiBi	ES	3	100							
Bold Hea	BH001	65.5	68.5	3	100	q	F	SiBi	ES	3	100							
Bold Hea	BH001	68.5	71.5	3	100	q	F	SiBi	ES	2.8	93							
Bold Hea	BH001	71.5	73.7	2.2	100	q	F	SiBi	ES	2.1	95							
Bold Hea	BH001	73.7	76.7	3	100	q	F	Bi	ES	3	100							
Bold Hea	BH001	76.7	79.5	2.8	100	q	F	Bi	ES	2.7	96							
Bold Hea	BH001	79.5	80.5	1	100	q	F	Bi	ES	0.9	90							
Bold Hea	BH001	80.5	82.4	1.9	100	q	F	Bi	ES	1.7	89							
Bold Hea	BH001	82.4	84.2	1.8	100	FALT	F	Bi	ES	0.4	22							
Bold Hea	BH001	84.2	86.5	2.3	100	ph	F	Bi	ES	2.3	100							
Bold Hea	BH001	86.5	89.5	3	100	bh	F	Bi	ES	2.7	90							
Bold Hea	BH001	89.5	90	0.5	100	ap	F	Bi	ES	0.4	80							
Bold Hea	BH001	90	91	1	100	ap	F	Bi	ES	0.9	90							
Bold Hea	BH001	91	92.2	1.2	100	ap	F	Bi	ES	0.3	25							
Bold Hea	BH001	92.2	95	2.8	100	ap	F	Bi	ES	0.2	7.1							
Bold Hea	BH001	95	96.8	1.8	100	lv	F	Bi	ES	0.4	22							
Bold Hea	BH001	96.8	98.5	1.7	100	lv	F	Bi	ES	1.6	94							
Bold Hea	BH001	98.5	101.5	3	100	lv	F	Bi	ES	3	100							
Bold Hea	BH001	101.5	102.8	1.3	100	lv	F	Bi	ES	1	77							
Bold Hea	BH001	102.8	105.5	2.7	100	lv	F	Bi	ES	2.7	100							
Bold Hea	BH001	105.5	106.5	1	100	lv	F	Bi	ES	0.8	80							



Tim Callaghan – Resource and Exploration Geology

3 Main Rd Penguin 7318

ph. 0428 888 896 email: timcallaghan@netspace.net.au

Drill Log												
Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Bold Head	BH002	0	8		nc							No Core Recovery, Clay and Soil
Bold Head	BH002	8	21.6	Ln	q	Cy	B		Gd	Bd	80	Intensely weathered brown quartzite. Moderately to strongly weathered. Minor Shale. Clay seams. Significant core loss.
Bold Head	BH002	21.6	38	Ln	q	SiBi	A2		Ft	Bd	80	Massive, pale grey to brown quartzite with minor shale bands. Strongly hornfelsed with silica alteration, biotite spotting and muscovite on joint surfaces. Minor weathering on joint surfaces.
Bold Head	BH002	38	38.7		fz							Broken Ground. Fault Zone.
Bold Head	BH002	38.7	46.4	Ln	q	Bi	B4		Sp	Bd	70	Siliciclastic sandstone and siltstone. Bedded. Intense biotite alteration overprinting chlorite.
Bold Head	BH002	46.4	46.5		fz	Ca	C2			Ft		Calcite filled vughy vein in fault zone.
Bold Head	BH002	46.5	54.3	Cgg	lv	Bi	B5		Sp			Massive, medium grained porphyritic gabbro. Strong biotite alteration forming coarse spotted texture.
Bold Head	BH002	54.3	58.9	Cgg	ph	Bi	B5		Sp	Bd	80	Basaltic volcanoclastic sandstone. Well bedded. Chlorite-biotite alteration. Sparse fine specks of scheelite
Bold Head	BH002	58.9	60.4	Cgg	ph	Bi	B5		Sp	Bd	80	Basaltic volcanoclastic sandstone. Well bedded. Chlorite-biotite alteration. Coarse scheelite in veins.
Bold Head	BH002	60.4	66.4	Cgg	pgh	GtAc	G5					Dark green and brown pyroxene-garnet-biotite hornfels, Coarse scheelite and molybdenum. Very high grade scheelite.
Bold Head	BH002	66.4	78.5	Cgg	ch	Cbdm	A2			Bd	70	Massive and bedded white to pale grey crystalline dolomite. Talcy. Intersected old workings at 80.5m. EOH



Tim Callaghan – Resource and Exploration Geology

3 Main Rd Penguin 7318

ph. 0428 888 896 email: timcallaghan@netspace.net.au

Geotech Sheet											
Project	BHID	From	To	Recovery	% Recovery	Lithology	Weathering	Alteration	Strength	length>10cm	RQD%
Bold Hea	BH002	0	2	0.1	5	LOSS	W	Cy	W	0	0
Bold Hea	BH002	2	4.5	0.4	16	q	W	Cy	W	0	0
Bold Hea	BH002	4.5	8	0.3	9	q	W	Cy	W	0	0
Bold Hea	BH002	8	9.5	0.2	13	q	W	Cy	W	0	0
Bold Hea	BH002	9.5	10.9	1.2	86	q	W	Cy	MS	0	0
Bold Hea	BH002	10.9	12.3	1.2	86	q	W	Cy	MS	0.2	14
Bold Hea	BH002	12.3	13.1	0.8	100	q	W	Cy	MS	0	0
Bold Hea	BH002	13.1	15.3	1	45	q	W	Cy	MS	0	0
Bold Hea	BH002	15.3	16.8	1.1	73	q	W	Cy	MS	0.3	20
Bold Hea	BH002	16.8	18.9	1.4	67	q	W	Cy	MS	0.5	24
Bold Hea	BH002	18.9	20	0.9	82	q	W	Cy	MS	0.9	82
Bold Hea	BH002	20	22.2	2	91	q	W	Cy	MS	2	91
Bold Hea	BH002	22.2	23.7	1.5	100	q	F	Bi	ES	1	67
Bold Hea	BH002	23.7	24.8	1.1	100	q	F	Bi	ES	0.6	55
Bold Hea	BH002	24.8	25.8	1	100	q	F	Bi	ES	0.3	30
Bold Hea	BH002	25.8	26.7	0.9	100	q	F	Bi	ES	0.2	22
Bold Hea	BH002	26.7	29	1.3	57	q	F	Bi	ES	1	43
Bold Hea	BH002	29	32	3	100	q	F	Bi	ES	1.6	53
Bold Hea	BH002	32	33	1	100	q	F	Bi	ES	0.6	60
Bold Hea	BH002	33	35	2	100	q	F	Bi	ES	1.8	90
Bold Hea	BH002	35	36.7	1.7	100	q	F	Bi	ES	1.1	65
Bold Hea	BH002	36.7	38	1.3	100	q	F	Bi	ES	0.6	46
Bold Hea	BH002	38	38.8	0.8	100	fz	F	Bi	ES	0	0
Bold Hea	BH002	38.8	41	2.2	100	bh	F	Bi	ES	2	91
Bold Hea	BH002	41	44	3	100	bh	F	Bi	ES	2.4	80
Bold Hea	BH002	44	47	3	100	fz	F	Bi	ES	3	100
Bold Hea	BH002	47	50	3	100	bh	F	Bi	ES	3	100
Bold Hea	BH002	50	51.8	1.8	100	bh	F	Bi	ES	1.5	83
Bold Hea	BH002	51.8	53	1.2	100	bh	F	Bi	ES	0.7	58
Bold Hea	BH002	53	54.5	1.5	100	bh	F	Bi	ES	1.1	73
Bold Hea	BH002	54.5	55.5	1	100	bh	F	Bi	ES	0.1	10
Bold Hea	BH002	55.5	57.1	1.6	100	bh	F	Bi	ES	1.4	87
Bold Hea	BH002	57.1	59	1.9	100	gh	F	Ga	ES	1.9	100
Bold Hea	BH002	59	61.8	2.8	100	gh	F	Ga	ES	2.7	96
Bold Hea	BH002	61.8	64.9	3.1	100	gh	F	Ga	ES	2.9	94
Bold Hea	BH002	64.9	68	3.1	100	ch	F	Ca	ES	3.1	100
Bold Hea	BH002	68	71	3	100	ch	F	Ca	ES	3	100
Bold Hea	BH002	71	74	3	100	ch	F	Ca	ES	3	100
Bold Hea	BH002	74	77	3	100	ch	F	Ca	ES	3	100
Bold Hea	BH002	77	78.5	1.5	100	ch	F	Ca	ES	1.5	100



Tim Callaghan – Resource and Exploration Geology

3 Main Rd Penguin 7318

ph. 0428 888 896 email: timcallaghan@netspace.net.au

Drill Log												
Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L. Cont.	Struct	BCA	Description
Bold Head	BH003	0	6.1		nc							No Core Recovery, Clay and Soil
Bold Head	BH003	6.1	15	Ln	q	Cy	B					Intensely weathered brown quartzite. Moderately to strongly weathered. Minor Shale. Clay seams. Significant core loss.
Bold Head	BH003	15	17.5	Ln	cy	Ka	W					Maissive white kaolin clay seam. Potentially saprolite or saprock. Significant core loss.
Bold Head	BH003	17.5	26.2	Ln	q	SiBi	A2			Bd	30	Massive, pale grey to brown quartzite with minor shale bands. Strongly hornfelsed with silica alteration, biotite spotting and muscovite on joint surfaces. Limonitic jts.
Bold Head	BH003	26.2	66	Ln	q	SiBi	A2			Bd	40	Massive dark grey quartzite with minor shale bands. Strongly hornfelsed. Pervasive botite-muscovite-silica alteration. Minor Py-Po microveins with chloritic selvage.
Bold Head	BH003	66	66.2		fz	Ch	G3					Broken, chloritic brittle fault.
Bold Head	BH003	66.2	68.5	Cgg	bh	Bi	B3					Dark brown and grey basaltic volcanoclastic sandstone. Strongly hornfelsed. Pervasive biotite alteration. Pyrite on joint surfaces.
Bold Head	BH003	68.5	71.4	blens	pgh	AcGt	G5					Massive, mottled green, orange and white pyroxene garnet skarn. Abundant coarse scheelite. Vughy. Minor tourmaline clots and blebs.
Bold Head	BH003	71.4	71.6		fz							Vughy fault/void. No recovery
Bold Head	BH003	71.6	73	blens	pgh	AcGt	G5					Massive, mottled green, orange and white pyroxene garnet skarn. Abundant coarse scheelite. Vughy. Minor tourmaline clots and blebs. Patchy carbonate/calcite.
Bold Head	BH003	73	74.7	blens	ch	CaCh	W5					Pale grey to white limestone. Strongly recrystallised with chlorite stylolites. Crystalline calcite. No scheelite.
Bold Head	BH003	74.7	78	blens	pgh	PxGa	G5			Bn	75	Mottled green, orange and cream pyroxene-garnet hornfels. Patchy tourmaline and calcite. Abundant coarse and fine scheelite, Banded.
Bold Head	BH003	78	83.4	blens	ch	CaCh	W5			Bn	70	Pale grey to white limestone. Strongly recrystallised with chlorite stylolites. Crystalline calcite. No scheelite.
Bold Head	BH003	83.4	86.4	blens	pgh	PxGa	G5			Bn	75	Mottled green, orange and cream pyroxene-garnet hornfels. Patchy tourmaline and calcite. Abundant coarse and fine scheelite, Banded.

Drill Log												
Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Bold Head	BH003	86.4	97.2	Cgg	lv	ph	B3			Bd	65	Banded siltstone and sandstone. Strongly hornfelsed. Intense biotite alteration. Late calcite-chlorite veining. Chloritic joints. EOH

Geotech Sheet											
Project	BHID	From	To	Recovery	% Recovery	Lithology	Weathering	Alteration	Strength	length>10cm	RQD%
Bold Hea	BH003	0	3	1	33	LOSS	W	Cy	W	0	0
Bold Hea	BH003	3	5	0	0	q	W	Cy	W	0	0
Bold Hea	BH003	5	6.1	0.7	64	q	W	Cy	W	0	0
Bold Hea	BH003	6.1	8.1	0.6	30	q	W	Cy	W	0.1	5
Bold Hea	BH003	8.1	10	0.3	16	q	W	Cy	W	0	0
Bold Hea	BH003	10	11.5	1.3	87	q	W	Cy	W	0.2	13
Bold Hea	BH003	11.5	12.9	0.8	57	q	W	Cy	W	0.1	7.1
Bold Hea	BH003	12.9	13.7	0.4	50	q	W	Cy	W	0	0
Bold Hea	BH003	13.7	14.5	0.4	50	q	W	Cy	W	0	0
Bold Hea	BH003	14.5	16	1.1	73	q	W	Cy	W	0.2	13
Bold Hea	BH003	16	17.5	0.6	40	q	W	Cy	W	0.2	13
Bold Hea	BH003	17.5	20.5	3	100	q	F	BiCh	ES	1.9	63
Bold Hea	BH003	20.5	21.4	0.9	100	q	F	BiCh	ES	0	0
Bold Hea	BH003	21.4	22.1	0.7	100	q	F	BiCh	ES	0.6	86
Bold Hea	BH003	22.1	23	0.7	78	q	F	BiCh	ES	0.4	44
Bold Hea	BH003	23	24.6	1.6	100	q	F	BiCh	ES	1.2	75
Bold Hea	BH003	24.6	25	0.4	100	q	F	BiCh	ES	0	0
Bold Hea	BH003	25	26.1	1	91	q	F	BiCh	ES	0.5	45
Bold Hea	BH003	26.1	27.1	1	100	q	F	BiCh	ES	0.3	30
Bold Hea	BH003	27.1	28.2	1.2	109	q	F	BiCh	ES	0.4	36
Bold Hea	BH003	28.2	30.3	1.1	52	q	F	BiCh	ES	1	48
Bold Hea	BH003	30.3	32.3	2	100	q	F	BiCh	ES	1.9	95
Bold Hea	BH003	32.3	35.4	3.1	100	q	F	BiCh	ES	2.8	90
Bold Hea	BH003	35.4	38.5	3.1	100	q	F	BiCh	ES	3	97
Bold Hea	BH003	38.5	39.8	1.3	100	q	F	BiCh	ES	1	77
Bold Hea	BH003	39.8	42.9	2.1	68	q	F	BiCh	ES	1.7	55
Bold Hea	BH003	42.9	44.5	1.6	100	q	F	BiCh	ES	1.2	75
Bold Hea	BH003	44.5	46.9	2.4	100	q	F	BiCh	ES	2.2	92
Bold Hea	BH003	46.9	48.9	2	100	q	F	BiCh	ES	1.7	85
Bold Hea	BH003	48.9	51.9	3	100	q	F	BiCh	ES	2.8	93
Bold Hea	BH003	51.9	53.5	2.6	163	q	F	BiCh	ES	2.4	150
Bold Hea	BH003	53.5	56.4	2.9	100	q	F	BiCh	ES	2	69
Bold Hea	BH003	56.4	59.5	3.1	100	q	F	BiCh	ES	2.2	71
Bold Hea	BH003	59.5	62.5	3	100	q	F	BiCh	ES	2.8	93
Bold Hea	BH003	62.5	65.5	3	100	q	F	BiCh	ES	2.8	93
Bold Hea	BH003	65.5	66.2	0.7	100	q	F	BiCh	ES	0.1	14
Bold Hea	BH003	66.2	68.3	2.1	100	q	F	BiCh	ES	1.3	62
Bold Hea	BH003	68.3	71.4	3.1	100	pgh	F	GaPx	ES	3	97
Bold Hea	BH003	71.4	73.2	1.4	78	pgh	F	GaPx	ES	1.3	72
Bold Hea	BH003	73.2	74.3	1.1	100	ch	F	Cb	ES	1.1	100
Bold Hea	BH003	74.3	77.3	3	100	pgh	F	GaPx	ES	3	100
Bold Hea	BH003	77.3	80.1	2.8	100	pgh	F	GaPx	ES	2.8	100
Bold Hea	BH003	80.1	83.2	3.1	100	ch	F	Cb	ES	3.1	100
Bold Hea	BH003	83.2	86.3	3.1	100	ch	F	Cb	ES	3.1	100
Bold Hea	BH003	86.3	88.7	2.4	100	pgh	F	GaPx	ES	2	83
Bold Hea	BH003	88.7	89.2	0.5	100	bh	F	BiCh	ES	0.2	40
Bold Hea	BH003	89.2	91.5	2.3	100	bh	F	BiCh	ES	1.4	61
Bold Hea	BH003	91.5	94.2	2.7	100	bh	F	BiCh	ES	2.4	89
Bold Hea	BH003	94.2	97.2	3	100	bh	F	BiCh	ES	3	100



Tim Callaghan – Resource and Exploration Geology

3 Main Rd Penguin 7318

ph. 0428 888 896 email: timcallaghan@netspace.net.au

Drill Log												
Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L. Cont.	Struct	BCA	Description
Bold Head	BH004	0	5		nc							No Core Recovery, Clay and Soil and Boulders
Bold Head	BH004	5	14.5	Ln	q	Cy	B			Bd	30	Intensely weathered brown quartzite. Moderately to strongly weathered. Minor Shale. Clay seams. Significant core loss.
Bold Head	BH004	14.5	16.1	Ln	cy	Ka	W					Massive white kaolin clay seam. Potentially saprolite or saprock. Significant core loss.
Bold Head	BH004	16.1	21	Ln	q	SiBi	A2			Bd	30	Intensely weathered orange- brown quartzite. Moderately to strongly weathered. Minor Shale. Coarse grained. Clay seams. Significant core loss.
Bold Head	BH004	21	56.3	Ln	q	SiBi	A2			Bd	75	Massive pale and dark grey quartzite with minor shale bands. Strongly hornfelsed. Pervasive botite-muscovite-silica alteration. Minor Py-Po microveins with chloritic selvage. Coarse biotite.
Bold Head	BH004	56.3	56.9		fz	Ch	G3					Broken, chloritic brittle fault. Core Loss
Bold Head	BH004	56.9	62.1	Cgg	bh	Bi	B3			Bd	65	Dark brown and grey basaltic volcanoclastic sandstone. Strongly hornfelsed. Well bedded Pervasive biotite alteration. Minor Pyrrhotite-Pyrite veining.
Bold Head	BH004	62.1	62.9	Blens	pgh	GaPx	G5					Dark green, cream and orange mottled pyroxene-garnet skarn. Crystalline and vughy. Coarse schellite crystals and minor molybdenite.
Bold Head	BH004	62.9	63.3	Cgg	bh	Bi	B3			Bd	65	Dark brown and grey basaltic volcanoclastic sandstone. Strongly hornfelsed. Well bedded Pervasive biotite alteration. Minor Pyrrhotite-Pyrite veining.
Bold Head	BH004	63.3	64	Dg	ap	BiFd	C3					Massive, medium to coarse grained biotite-quartz-feldspar ademaellite. Cream to brown.
Bold Head	BH004	64	64.2	Cgg	bh	Bi	B3			Bd	65	Dark brown and grey basaltic volcanoclastic sandstone. Strongly hornfelsed. Well bedded Pervasive biotite alteration. Minor Pyrrhotite-Pyrite veining.



Tim Callaghan – Resource and Exploration Geology

3 Main Rd Penguin 7318

ph. 0428 888 896 email: timcallaghan@netspace.net.au

Geotech Sheet											
Project	BHID	From	To	Recovery	% Recovery	Lithology	Weathering	Alteration	Strength	length>10cm	RQD%
Bold Hea	BH004	0	3	1	33.3		W	Cy	W	0.3	10
Bold Hea	BH004	3	5	0.2	10	q	W	Cy	W	0	0
Bold Hea	BH004	5	8.1	0.2	6.45	q	W	Cy	W	0	0
Bold Hea	BH004	8.1	9.2	0.1	9.09	q	W	Cy	W	0	0
Bold Hea	BH004	9.2	12	1.8	64.3	q	W	Cy	W	0.6	21
Bold Hea	BH004	12	14.5	2.2	88	q	W	Cy	W	0	0
Bold Hea	BH004	14.5	15.4	0	0	q	W	Cy	W	0	0
Bold Hea	BH004	15.4	17.5	0.6	28.6	q	W	Cy	W	0	0
Bold Hea	BH004	17.5	20.5	2.7	90	q	W	Cy	W	1.2	40
Bold Hea	BH004	20.5	23	2.4	96	q	F	BiCh	W	0.9	36
Bold Hea	BH004	23	25.1	2.1	100	q	F	BiCh	W	1.4	67
Bold Hea	BH004	25.1	26.4	1.3	100	q	F	BiCh	ES	1	77
Bold Hea	BH004	26.4	29.5	3.1	100	q	F	BiCh	ES	2.7	87
Bold Hea	BH004	29.5	30.9	1.4	100	q	F	BiCh	ES	1.3	93
Bold Hea	BH004	30.9	32.3	1.4	100	q	F	BiCh	ES	1.4	100
Bold Hea	BH004	32.3	35.5	3	93.7	q	F	BiCh	ES	3	94
Bold Hea	BH004	35.5	37.6	2.1	100	q	F	BiCh	ES	1.8	86
Bold Hea	BH004	37.6	38.9	1.2	92.3	q	F	BiCh	ES	1	77
Bold Hea	BH004	38.9	39.1	0.2	100	q	F	BiCh	ES	0.2	100
Bold Hea	BH004	39.1	41.5	2.4	100	q	F	BiCh	ES	2.4	100
Bold Hea	BH004	41.5	43.2	1.7	100	q	F	BiCh	ES	1.4	82
Bold Hea	BH004	43.2	44.5	1.3	100	q	F	BiCh	ES	1.3	100
Bold Hea	BH004	44.5	47.5	3	100	q	F	BiCh	ES	2.8	93
Bold Hea	BH004	47.5	50.5	3	100	q	F	BiCh	ES	2.7	90
Bold Hea	BH004	50.5	53.7	3.2	100	q	F	BiCh	ES	2.7	84
Bold Hea	BH004	53.7	56.3	2.6	100	q	F	BiCh	ES	1.9	73
Bold Hea	BH004	56.3	56.9	0	0	q	F	BiCh	ES	0	0
Bold Hea	BH004	56.9	58.8	1.9	100	q	F	BiCh	ES	1.3	68
Bold Hea	BH004	58.8	60.5	1.7	100	q	F	BiCh	ES	0.9	53
Bold Hea	BH004	60.5	62.6	2.1	100	q	F	BiCh	ES	0.5	24
Bold Hea	BH004	62.6	64.2	1.6	100	q	F	PxGa	ES	1.3	81



Tim Callaghan – Resource and Exploration Geology

3 Main Rd Penguin 7318

ph. 0428 888 896 email: timcallaghan@netspace.net.au

Drill Log												
Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Bold Head	BH005	0	2		nc							No Core Recovery, Clay and Soil and Boulders
Bold Head	BH005	5	23	Cgg	cy	Cy	O					Orange, deeply weathered coarse volcanoclastic sandstone/ gritty conglomerate Intensely weathered clay alteration.
Bold Head	BH005	23	30.1	Cgg	mv	CyLi	O					Orange and brown, deeply weathered and clay altered skarn or volcanoclastic. Orange clay. Limonite veining and spots.
Bold Head	BH005	30.1	36	Blens	pgh	GaPx	G5					Massive dark green, orange and cream mottled pyroxene-garnet-biotite skarn. Coarse Scheelite crystals. Tourmaline/biotite bands. Minor molybdenite and bismuthinite? Vughy zones.
Bold Head	BH005	36	37.9	Blens	bh	BiPx						Mottled black and dark green biotite-pyroxene hornfels. Banded
Bold Head	BH005	37.9	39		fz							Puggy brittle fault zone.
Bold Head	BH005	39	63.8	Cgg	mv	AcCh						Massive pale and dark green basaltic lava and autobreccia. Aphyric. Intense actinolite-chlorite alteration. Strongly hornfelsed.
Bold Head	BH005	63.8	64.2	Dg	ap							Massive, crystalline medium grained biotite-feldspar-quartz adamellite. Pale cream with 30% coarse biotite.
Bold Head	BH005	64.2	68.9	Cgg	mv	AcCh						Massive pale and dark green basaltic lava and autobreccia. Aphyric. Intense actinolite-chlorite alteration. Strongly hornfelsed.
Bold Head	BH005	68.9	72.2	Dg	ap							Massive, crystalline medium grained biotite-feldspar-quartz adamellite. Pale cream with 30% coarse biotite.
Bold Head	BH005	72.2	72.5	Cgg	mv	AcCh						Massive pale and dark green basaltic lava and autobreccia. Aphyric. Intense actinolite-chlorite alteration. Strongly hornfelsed. EOH



Tim Callaghan – Resource and Exploration Geology

3 Main Rd Penguin 7318

ph. 0428 888 896 email: timcallaghan@netspace.net.au

Geotech Sheet											
Project	BHID	From	To	Recovery	% Recovery	Lithology	Weathering	Alteration	Strength	length > 10cm	RQD%
Bold Hea	BH005	0	3	1.6	53.3		W	Cy	W	0	0
Bold Hea	BH005	3	5	1	50		W	Cy	W	0.5	25
Bold Hea	BH005	5	6.5	0.2	13.3		W	Cy	W	0	0
Bold Hea	BH005	6.5	9.5	1.8	60		W	Cy	W	0	0
Bold Hea	BH005	9.5	11	1	66.7		W	Cy	W	0	0
Bold Hea	BH005	11	12.5	1.5	100		W	Cy	W	0.7	47
Bold Hea	BH005	12.5	15.5	3	100		W	Cy	W	0.6	20
Bold Hea	BH005	15.5	17	1	66.7		W	Cy	W	0.4	27
Bold Hea	BH005	17	20	2.8	93.3		W	Cy	W	2	67
Bold Hea	BH005	20	21.5	1.5	100		W	Cy	W	1	67
Bold Hea	BH005	21.5	23.8	1.3	56.5	uv	W	Cy	W	0.6	26
Bold Hea	BH005	23.8	26	1.3	59.1	uv	W	Cy	W	0	0
Bold Hea	BH005	26	27	0.9	90	uv	W	Cy	W	0.7	70
Bold Hea	BH005	27	28.5	1.5	100	uv	W	Cy	W	1.3	87
Bold Hea	BH005	28.5	30	1.5	100	uv	W	Cy	W	1.5	100
Bold Hea	BH005	30	32	2	100	pgh	F	Px	ES	2	100
Bold Hea	BH005	32	32.9	0.9	100	pgh	F	Px	ES	0.9	100
Bold Hea	BH005	32.9	35	2.1	100	pgh	F	Px	ES	2.1	100
Bold Hea	BH005	35	37.5	2.5	100	pgh	F	Px	ES	2.2	88
Bold Hea	BH005	37.5	39.3	1.8	100	pgh	F	Px	ES	0.6	33
Bold Hea	BH005	39.3	42.5	3.2	100	lv	F	Ac	ES	3	94
Bold Hea	BH005	42.5	45.5	3	100	lv	F	Ac	ES	2.8	93
Bold Hea	BH005	45.5	48.5	3	100	lv	F	Ac	ES	2.7	90
Bold Hea	BH005	48.5	51.5	3	100	lv	F	Ac	ES	2.6	87
Bold Hea	BH005	51.5	53	2.5	167	lv	F	Ac	ES	2.1	140
Bold Hea	BH005	53	53.5	0.5	100	lv	F	Ac	ES	0	0
Bold Hea	BH005	53.5	55.5	2	100	lv	F	Ac	ES	1.6	80
Bold Hea	BH005	55.5	58.6	3.1	100	lv	F	Ac	ES	3	97
Bold Hea	BH005	58.6	61.7	3.1	100	lv	F	Ac	ES	3	97
Bold Hea	BH005	61.7	63.4	1.7	100	lv	F	Ac	ES	1.2	71
Bold Hea	BH005	63.4	66.2	2.8	100	lv	F	Ac	ES	2.3	82
Bold Hea	BH005	66.2	68	1.8	100	lv	F	Ac	ES	1.8	100
Bold Hea	BH005	68	70.3	2.3	100	lv	F	Ac	ES	2.3	100
Bold Hea	BH005	70.3	72.5	2.2	100	lv	F	Ac	ES	2.2	100



Tim Callaghan – Resource and Exploration Geology

3 Main Rd Penguin 7318

ph. 0428 888 896 email: timcallaghan@netspace.net.au

Drill Log												
Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Bold Head	BH006	0	2.2		nc							No Core Recovery, Clay and Soil and Boulders
Bold Head	BH006	2.2	9.1	Ln	cy	Cy	O					Orange, deeply weathered quartzite and shale. Intensely weathered clay alteration.
Bold Head	BH006	9.1	20.2	Ln	q	Bi	A2					Pale grey and orange massive quartzite and minor laminated shale. Hornfels spotting. Pervasive biotite alteration. Moderately weathered. Limonitic Jts.
Bold Head	BH006	20.2	22.7	Ln	fz	Cy	O					Orange, broken, weahtered clay altered and limonitic sandstone. Significant core loss.
Bold Head	BH006	22.7	24.7	Ln	q	Bi	A2					Pale grey and orange massive quartzite and minor laminated shale. Hornfels spotting. Pervasive biotite alteration. Moderately weathered. Limonitic Jts.
Bold Head	BH006	24.7	26.3	Ln	Gabb	Cy	A5					Massive, dark grey extremely weathered gabbro dyke. Altered to grey clay.
Bold Head	BH006	26.3	38.5	Ln	q	Bi	B4			Bd	60	Pale grey and dark brown hornfelsed quartzite and shale. Intense silica-biotite alteration. Limonitic joints.
Bold Head	BH006	38.5	39.5	Cgg	pgh	PxGa	G5			Bd	70	Massive, dark green and cream pyroxene-biotite-garnet skarn. Patchy calcite and coarse scheelite. Vuggy. Minor molybdenite and pyrohtite or bismuthinite?
Bold Head	BH006	39.5	40.1		fz							Open void.
Bold Head	BH006	40.1	41	Cgg	pgh	PxGa	G5			Bd	70	Massive, dark green and cream pyroxene-biotite-garnet skarn. Patchy calcite and coarse scheelite. Vuggy. Minor molybdenite and pyrohtite or bismuthinite?
Bold Head	BH006	41	52.6	Cgg	mv	Bi						Massive, dark brown and grey medium to fine grained basaltic volcanoclastic sandstone and siltstone. Strongly hornfelsed. Intensely biotite altered.
Bold Head	BH006	52.6	55.4	Dg	ap	BiSe	A1		Sp			Massive, crystalline coarse grained equigranular feldspar-quartz-biotite adamellite dyke
Bold Head	BH006	55.4	69	Cgg	mv	Bi						Massive, dark brown and grey medium to fine grained basaltic volcanoclastic sandstone and siltstone. Strongly hornfelsed. Intensely biotite altered. EOH



Tim Callaghan – Resource and Exploration Geology

3 Main Rd Penguin 7318

ph. 0428 888 896 email: timcallaghan@netspace.net.au



Tim Callaghan – Resource and Exploration Geology

3 Main Rd Penguin 7318

ph. 0428 888 896 email: timcallaghan@netspace.net.au

Geotech Sheet											
Project	BHID	From	To	Recovery	% Recovery	Lithology	Weathering	Alteration	Strength	length > 10cm	RQD%
Bold Head	BH006	0	2	1.6	80		W	Cy	W	0	0
Bold Head	BH006	2	5.5	1	28.6		W	Cy	W	0	0
Bold Head	BH006	5.5	9.1	0.2	5.56		W	Cy	W	0	0
Bold Head	BH006	9.1	10.2	1.8	164		W	Cy	W	0	0
Bold Head	BH006	10.2	11.5	1	76.9		W	Cy	W	0.5	38
Bold Head	BH006	11.5	14.5	1.5	50		W	Cy	W	0.1	3.3
Bold Head	BH006	14.5	17.1	3	115		W	Cy	W	0	0
Bold Head	BH006	17.1	20.2	1	32.3		W	Cy	W	0.5	16
Bold Head	BH006	20.2	22.9	2.8	104		W	Cy	W	0	0
Bold Head	BH006	22.9	24.7	1.5	83.3		W	Cy	W	0.6	33
Bold Head	BH006	24.7	26.5	1.3	72.2	q	W	Bi	ES	0.8	44
Bold Head	BH006	26.5	29.3	1.3	46.4	q	F	Bi	ES	1.8	64
Bold Head	BH006	29.3	30.7	0.9	64.3	q	F	Bi	ES	0.2	14
Bold Head	BH006	30.7	33.7	1.5	50	q	F	Bi	ES	2.1	70
Bold Head	BH006	33.7	36.5	1.5	53.6	q	F	Bi	ES	2.4	86
Bold Head	BH006	36.5	39.5	2	66.7	q	F	Bi	ES	2.7	90
Bold Head	BH006	39.5	40.1	0.9	150	pgh	F	Px	ES	0	0
Bold Head	BH006	40.1	41.5	2.1	150	pgh	F	Px	ES	1.3	93
Bold Head	BH006	41.5	43.7	2.5	114	lv	F	Bi	ES	2	91
Bold Head	BH006	43.7	45.2	1.8	120	lv	F	Bi	ES	1.4	93
Bold Head	BH006	45.2	47.5	3.2	139	lv	F	Bi	ES	2.1	91
Bold Head	BH006	47.5	50.5	3	100	lv	F	Bi	ES	2.8	93
Bold Head	BH006	50.5	53.5	3	100	lv	F	Bi	ES	2.7	90

Drill Log												
Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Bold Heat	BH007	0	14		nc							No Core Recovery. Clay and Soil and Boulders
Bold Heat	BH007	14	23	Ln	q	Bi	A2			Bd	60	Pale grey and orange massive quartzite and minor laminated shale. Hornfels spotting. Pervasive biotite alteration. Moderately weathered. Limonitic Jts.
Bold Heat	BH007	23	37.9	Ln	q	Bi	B4			Bd	60	Pale grey and dark brown hornfelsed quartzite and shale. Intense pervasive biotite alteration. Chloritic alteration with minor py on joints.
Bold Heat	BH007	37.9	40		fz	ChBi	G5			Ft	20	Pale grey quartzite with low angle brittle chloritic fault zone. Pervasive biotite with late chlorite overprint. Broken core.
Bold Heat	BH007	40	54.1	Ln	q	Bi	B4			Bd	65	Pale grey and dark brown hornfelsed quartzite and shale. Intense pervasive biotite alteration. Hornfels spotting. Chloritic alteration with minor py on joints. Increasing biotite down hole.
Bold Heat	BH007	54.1	54.3		fz	Ch	G4			Ft	30	Fault zone. Broken Chlorite altered core.
Bold Heat	BH007	54.3	56	Cgg	mv	Bi	B3					Massive, dark brown and grey medium to fine grained basaltic volcanoclastic sandstone and siltstone. Strongly hornfelsed. Intensely biotite altered. Patchy late actinolite-diopside overprint.
Bold Heat	BH007	56	56.3		fz		G3			Ft	30	Chloritic brittle fault. Vughy. Strong chlorite overprint of pyroxene-garnet skarn.
Bold Heat	BH007	56.3	58	Cgg	mv	Bi	B3					Massive, dark brown and grey medium to fine grained basaltic volcanoclastic sandstone and siltstone. Strongly hornfelsed. Intensely biotite altered. Patchy late actinolite-diopside overprint.
Bold Heat	BH007	58	65.2	C_lens	pgh	PxGa	G5	2.00				Coarse, mottled green, white and orange pyroxene-garnet-biotite skarn. Coarse and fine scheelite between 58.8 and 64m. Coarse disseminated Po and Py to 2%. Faulted lower contact.
Bold Heat	BH007	65.2	65.3		fz		G3			Ft	30	Chloritic brittle fault. Vughy. Strong chlorite overprint of pyroxene-garnet skarn.
Bold Heat	BH007	65.3	65.8	Cgg	mv	DiBi	A2					Pale grey/green bleached and pyroxene altered volcanoclastic basaltic sandstone. Strongly altered and hornfelsed.
Bold Heat	BH007	65.8	73.2	Cgg	mv	Bi	B3					Massive, dark brown and grey medium to fine grained basaltic volcanoclastic sandstone and siltstone. Strongly hornfelsed. Intensely biotite altered.
Bold Heat	BH007	73.2	78.8	Dg	ad	BiSe	A1			Sp		Massive, crystalline coarse grained equigranular feldspar-quartz-biotite adamellite dyke

Drill Log												
Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Bold Heat	BH007	78.8	83	Cgg	GABB	Bi	B4					Massive, coarse grained feldspar-pyroxene gabbro. Strongly hornfelsed with intense biotite alteration.
Bold Heat	BH007	83	85.1	Dg	ad	BiSe	A1			Sp		Massive, crystalline coarse grained equigranular feldspar-quartz-biotite adamellite dyke
Bold Heat	BH007	85.1	87.9	Cgg	GABB	Bi	B4					Massive, coarse grained feldspar-pyroxene gabbro. Strongly hornfelsed with intense biotite alteration.
Bold Heat	BH007	87.9	88.5	Dg	ap	Si	A1			Sp		Massive, crystalline fine grained equigranular feldspar-quartz-biotite aplitic dyke. Intensely silicified.
Bold Heat	BH007	88.5	101.5	Cgg	GABB	Bi	B4					Massive, coarse grained feldspar-pyroxene gabbro. Strongly hornfelsed with intense biotite alteration. EOH

Geotech Sheet												
Project	BHID	From	To	Recovery	% Recovery		Lithology	Weathering	Alteration	Strength	length>10cm	RQD%
Bold Hea	BH007	0	3	1.6	53.3	loss		W	Cy	W	0	0
Bold Hea	BH007	3	6.1	1	32.3	loss		W	Cy	W	0	0
Bold Hea	BH007	6.1	8.5	0.2	8.33	loss		W	Cy	W	0	0
Bold Hea	BH007	8.5	9	1.8	360	loss		W	Cy	W	0.2	40
Bold Hea	BH007	9	11.5	1	40	loss		W	Cy	W	0	0
Bold Hea	BH007	11.5	13	1.5	100	loss		W	Cy	W	0	0
Bold Hea	BH007	13	14.2	3	250	loss		W	Cy	W	0.1	8.3
Bold Hea	BH007	14.2	15.9	1	58.8	q		W	Cy	W	1.2	71
Bold Hea	BH007	15.9	18.9	2.8	93.3	q		W	Cy	W	2	67
Bold Hea	BH007	18.9	21	1.5	71.4	q		W	Cy	W	1.6	76
Bold Hea	BH007	21	22	1.3	130	q		W	Cy	W	0.7	70
Bold Hea	BH007	22	25	1.3	43.3	q		F	Bi	ES	2	67
Bold Hea	BH007	25	28	0.9	30	q		F	Bi	ES	2.5	83
Bold Hea	BH007	28	31.2	1.5	46.9	q		F	Bi	ES	1.6	50
Bold Hea	BH007	31.2	34.3	1.5	48.4	q		F	Bi	ES	1.9	61
Bold Hea	BH007	34.3	37.1	2	71.4	q		F	Bi	ES	2.1	75
Bold Hea	BH007	37.1	38.3	0.9	75	q		F	Bi	ES	0	0
Bold Hea	BH007	38.3	40.7	2.1	87.5	q		F	Bi	ES	0.6	25
Bold Hea	BH007	40.7	41.5	2.5	313	q		F	Bi	ES	0.8	100
Bold Hea	BH007	41.5	44.5	1.8	60	q		F	Bi	ES	3	100
Bold Hea	BH007	44.5	47.5	3.2	107	q		F	Bi	ES	2.9	97
Bold Hea	BH007	47.5	50.5	3	100	q		F	Bi	ES	2.7	90
Bold Hea	BH007	50.5	53.5	3	100	q		F	Bi	ES	3	100
Bold Hea	BH007	53.5	56.3	3	107	fz		F	Bi	ES	2.4	86
Bold Hea	BH007	56.3	59.5	2.5	78.1	mv		F	Bi	ES	2.9	91
Bold Hea	BH007	59.5	62.1	0.5	19.2	pgh		F	Ga	ES	2.6	100
Bold Hea	BH007	62.1	64.3	2	90.9	pgh		F	Ga	ES	2.2	100
Bold Hea	BH007	64.3	67.5	3.1	96.9	pgh		F	Ga	ES	3	94
Bold Hea	BH007	67.5	70.1	3.1	119	lv		F	Bi	ES	2.4	92
Bold Hea	BH007	70.1	73	1.7	58.6	lv		F	Bi	ES	2.8	97
Bold Hea	BH007	73	76.2	2.8	87.5	ad		F	Bi	ES	2	62
Bold Hea	BH007	76.2	79.3	1.8	58.1	ad		F	Bi	ES	2.7	87
Bold Hea	BH007	79.3	82.4	2.3	74.2	ad		F	Bi	ES	3	97
Bold Hea	BH007	82.4	84.6	2.2	100	ad		F	Bi	ES	1.7	77
Bold Hea	BH007	84.6	86.8	2.2	100	lv		F	Bi	ES	1.6	73
Bold Hea	BH007	86.8	89.5	2.2	81.5	ap		F	Bi	ES	2.7	100
Bold Hea	BH007	89.5	92.5	2.2	73.3	lv		F	Bi	ES	3	100
Bold Hea	BH007	92.5	95.5	2.2	73.3	lv		F	Bi	ES	3	100
Bold Hea	BH007	95.5	98.5	2.2	73.3	lv		F	Bi	ES	2.8	93
Bold Hea	BH007	98.5	101.5	2.2	73.3	lv		F	Bi	ES	3	100