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EL22/1997 TRIAL HARBOUR

ANNUAL REPORT TO

JULY 2008

Volume 1 of 1.

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Allegiance Metals Pty Ltd

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All figures and coordinates in this report are in Geodetic Datum AGD66.

1 SUMMARY

Exploration Licence 22/1997 lies adjacent to ML's 3M/2003 and 6M/2007 which hosts the Avebury Nickel Sulphide deposit. The EL is highly prospective for similar styles of mineralisation. The Avebury Nickel Sulphide deposit is hosted in Cambrian Ultramafic Rocks which have been demonstrated to extend onto the surrounding EL's, including EL22/1997. Geophysical surveys and subsequent first pass diamond drilling have confirmed the extension of the host sequence onto EL 22/1997 to the north, west and southwest. Earlier drilling has focused on the Burbank prospect with later drilling completed in 2006 - 2007 aimed at testing geophysical anomalies immediately west and north of the Avebury ML.

In the past twelve months the following work was completed:

DDH's P010 and P011 were targeted on a prominent aeromagnetic and IP anomaly directly north along strike from outcropping serpentinite containing nickel sulphide mineralisation. The holes intersected a massive magnetite and serpentinite body underlying gabbros. However the holes did not return significant nickel assays.

DDH MH001 was targeted on a strong aeromagnetic high associated with gabbros in the far northeast of the prospect. The hole intersected magnetite bearing gabbros and basaltic dykes. No significant nickel mineralisation was identified.

DDH A221 was targeted on the eastern extension of the Trial Harbour ultramafic. No significant sulphides were intersected, however adjacent holes A223 and A224 on EL28/1988 have identified nickel sulphide mineralisation that requires follow up drilling.

An access track, grid and soil sampling was completed at the Fen Creek Prospect, south of the Little Henty River.

An interpretive geological map of the Avebury district was updated with all current information.

Exploration planned for 2008-2009 includes:

- Follow up drilling of the mineralisation identified in the Trial Harbour ultramafic.

- Additional soil sampling, mapping and drilling on the Fen Creek Grid.

The minimum estimated expenditure for the program is $350,000, with total estimated expenditure for the Avebury District in excess of $2.1M.

2 INTRODUCTION

EL22/1997 Trial Harbour was granted to Allegiance Mining in 1997. The EL has been held under an annually renewed Term of Extension since 2003.

EL22/1997 is a licence in two parts bordering the ML to the north and southwest (Figure 1). The EL covers areas that are highly prospective for Avebury style nickel sulphide deposits. The Avebury deposit is hosted in serpentinised dunite or strongly metasomatised, tremolite-diopside ultramafic skarn intruded into Mid Cambrian basaltic volcaniclastics. The altered ultramafics have a strong magnetic signature due to high concentrations of magnetite. High resolution aeromagnetics is a key early exploration tool. Much of the ultramafic is not outcropping and time consuming and expensive diamond drilling in often rugged terrain is a required for effective exploration.

Allegiance Metals are actively exploring ML's 3M/2003 and 6M/2007, and surrounding EL28/1988, EL22/1997 and EL37/2003. All of the EL's are prospective and will be adequately tested in a district wide program. The Avebury Mine has been in production for over a year and the Mill was being commissioned at the time reporting with first concentrates produced in July. The current mine is designed to produce 7,000tpa of Ni in high grade concentrates from 900,000tpa of ore. The current resource is tabulated in Tables 1 - 3.

Avebury Mineral Resources, January 2008.

Table 1. Mineral Resources 0.4% Ni Cut Off				**Contained Ni t**	
Clasification	**Tonnes**	**Ni %**	**As ppm**	**Ni t**	Previous
Inferred	9,760,000	0.88	381		
Indicated	6,050,000	1.01	338		
Measured	2,370,000	1.03	346		
Total	**18,180,000**	**0.95**	**362**	**172,000**	158,000

Table 2. Mineral Resources 0.7% Ni Cut Off				**Contained Ni t**	
Clasification	**Tonnes**	**Ni %**	**As ppm**	**Current**	Previous
Inferred	6,880,000	0.99	465		
Indicated	4,900,000	1.09	390		
Measured	2,220,000	1.06	294		
Total	**14,000,000**	**1.04**	**412**	**145,000**	131,000

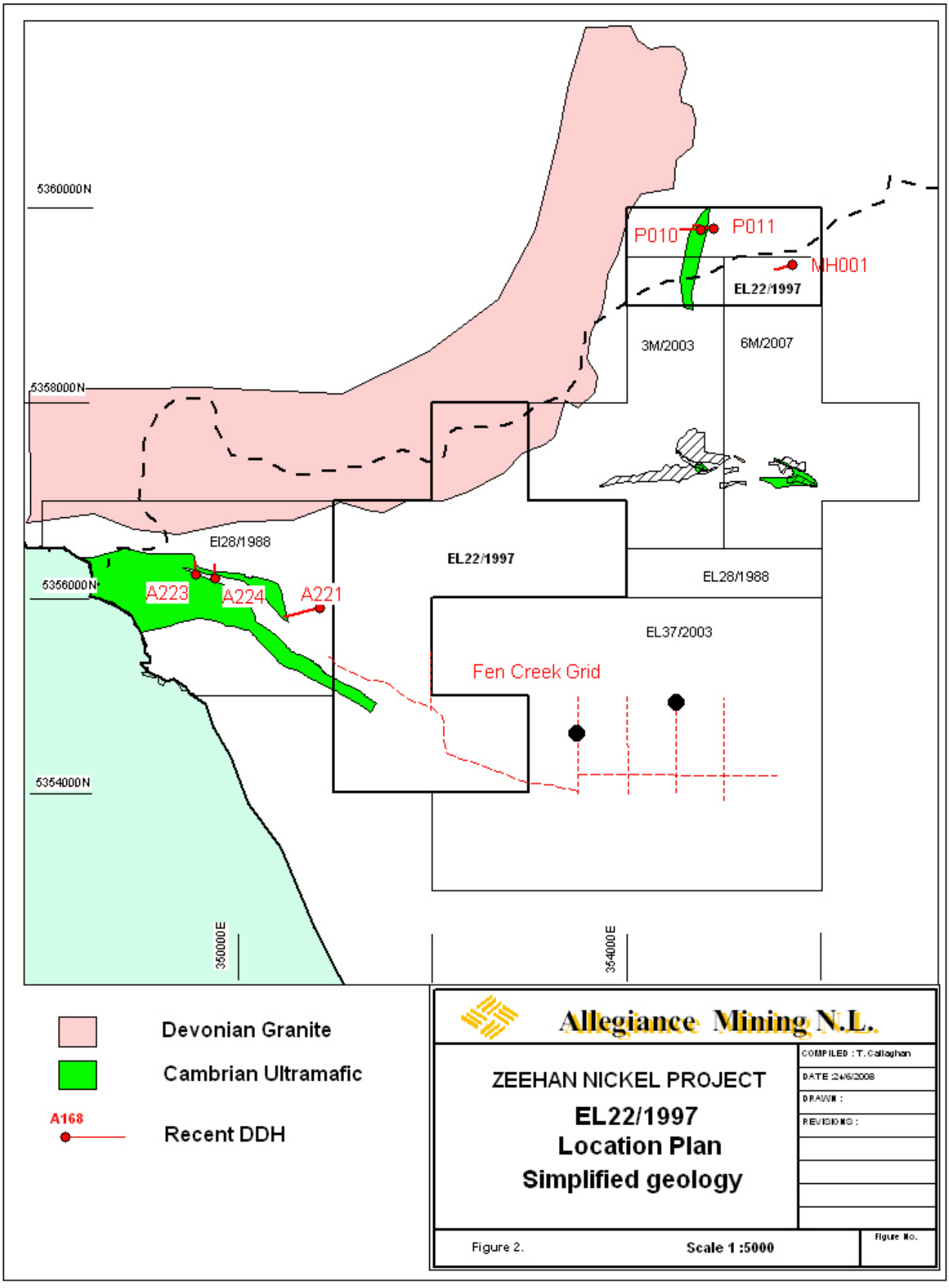
Table 3. Mineral Resources 0.85% Ni Cut Off				**Contained Ni t**	
Clasification	**Tonnes**	**Ni %**	**As ppm**	**Current**	Previous
Inferred	3,720,000	1.18	672		
Indicated	3,370,000	1.24	355		
Measured	1,730,000	1.14	345		
Total	**8,820,000**	**1.20**	**488**	**105,000**	102,000

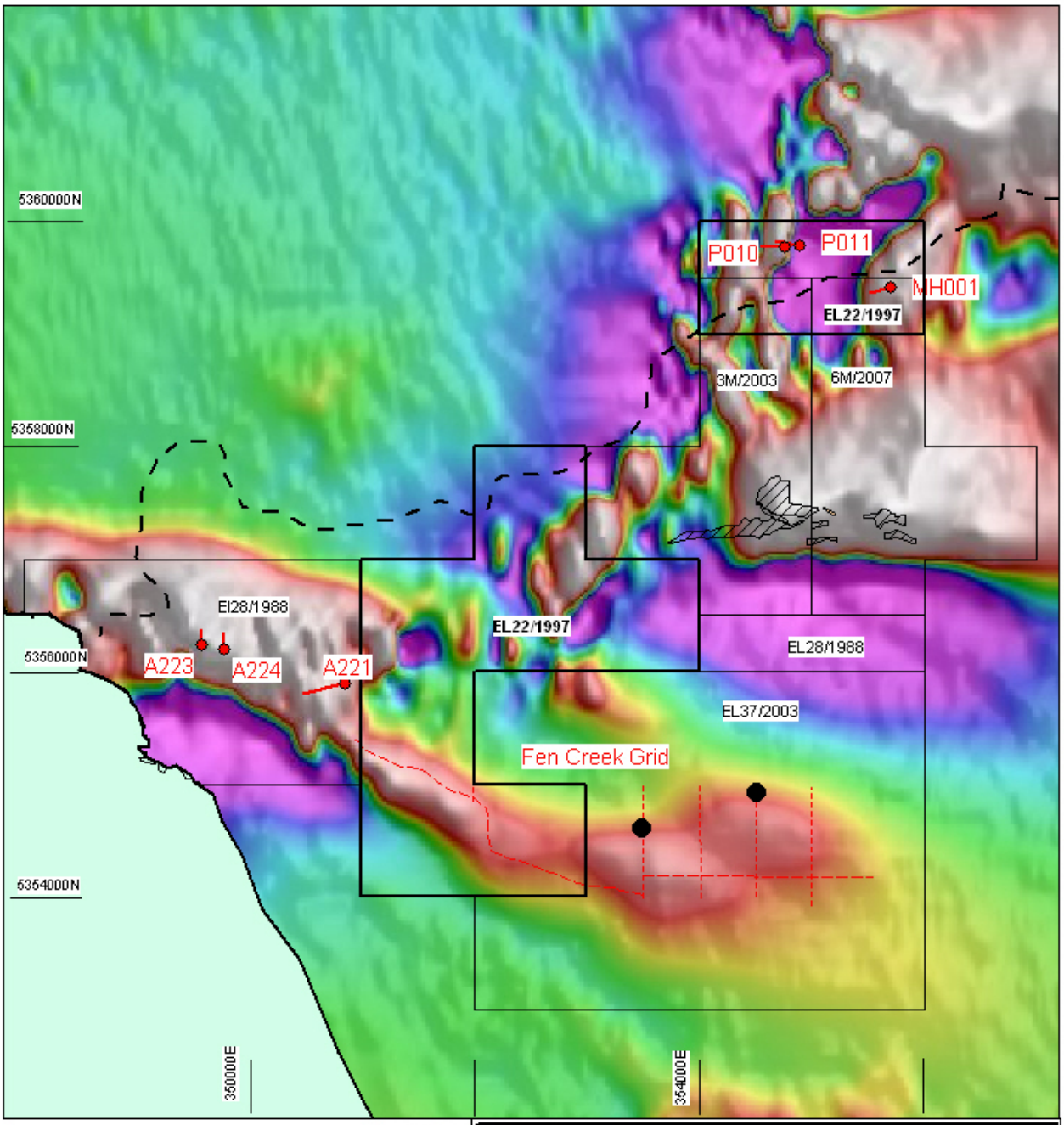
Exploration has continually extended the Avebury Resource with an additional Mine lease 6M/2006 added to the existing operations last year. Further resource additions from the ML's and surrounding EL's are anticipated.

On April 4 2007 a request for amalgamation of exploration expenditure on the near Mine Exploration was granted. Exploration for the past year focused on EL28/1988 with resource definition drilling of the East Avebury and Saxon Resources as well as district exploration on EL's 28/1988, 22/1997 and 37/2003. The Avebury Geology department had a budget in excess of $6M, much of which was spent on diamond

drilling. The Avebury Geology Budget for the current year is in excess of $5M, $2.1M allocated to district exploration.

EL22/1997 is strategically important to the Avebury Project and will continue to be the focus of exploration and resource expansion.


5360000N
5358000N
5356000N
5354000N
350000E
354000E
P010
P011
MH001
EL22/1997
3M/2003
6M/2007
EL28/1988
EL22/1997
EL28/1988
EL37/2003
A223
A224
A221
Fen Creek Grid
Devonian Granite
Cambrian Ultramafic
A168
Recent DDH
Allegiance Mining N.L.
ZEEHAN NICKEL PROJECT
EL22/1997
Location Plan
Simplified geology
COMPILED : T. Callaghan
DATE :24/6/2008
DRAWN :
REVISIONS :
Figure 2.
Scale 1 :5000
Figure No.



Devonian Granite

Cambrian Ultramafic

A168 Recent DDH

Allegiance Mining N.L.

ZEEHAN NICKEL PROJECT

EL22/1997
Location Plan
TMI Image

COMPILED : T. Callaghan
DATE :24/6/2008
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REVISIONS :

Figure 2. **Scale 1 :5000** Figure No.

3 EXPLORATION COMPLETED 2007 – 08

The following work was completed on or adjacent to EL22/1997 during the twelve month period ended 31 July 2008:

- Diamond Drilling the aeromagnetic anomaly on the NE of EL22/1997 (McIvor Hill, 1 DDH).
- Drilling at Pontiac (2 DDH)
- Drilling of the Trial Harbour Anomaly (A221, A223 and A224)
- Gridding and soil sampling at Fen Creek.

3.1 Trial Harbour Aeromagnetic Anomaly

Three DDH's were drilled into the high amplitude Trail Harbour aeromagnetic anomaly (Figure 1 and 2). One drill hole A221 was drilled on EL28/1988 immediately west of EL 22/1997. The other two were drilled on EL28/1988 near Trial Harbour. Drill logs are located in the appendices.

DDH A221 was a helicopter supported hole collared in what is interpreted to be Dundas Group volcaniclastic conglomerate, sandstones and siltstones. The volcaniclastics were variably phlogopite altered or actinolite-diopside altered. A thin dyke of metasomatised ultramafic was intersected between 29.1 and 30.3m. The hole intersected a large body of quartz-feldspar-phyric rhyolite from 279 to 430m down hole. The hole successfully identified the eastern margin of the Trial Harbour ultramafic intrusion, however no significant nickel sulphides were identified. The hole was terminated in the host ultramafic rocks.

DDH A223 and A224 were designed to test the Trial Harbour ultramafic intrusion at shallow levels beneath an intense magnetic high. Both holes intersected serpentinised ultramafic, ultramafic skarn and massive magnetite with what are interpreted to be xenoliths of volcaniclastic sandstones. The holes ended in Crimson Creek Formation volcaniclastics to the north. Drill hole A223 intersected several zones of nickel sulphide mineralisation with a best intercepts of:

61.0 – 64.0m 3.0m @ 0.8% Ni.

A petrographic and mineragraphic report on selected samples is included in the appendices.

These three holes all successfully identified the host ultramafic rock, one of which identified Avebury Style Nickel sulphide mineralisation. Follow up exploration is required particularly around the outcropping northern margin of the Trial Harbour Anomaly. Drilling will recommence in the summer.

3.2 Pontiac

Two diamond drill holes were completed to the north of the Pontiac prospect (P010 and P011). The holes were targeted on what was interpreted to be the northern extension of the mineralised serpentinite intersected in P004. A strong magnetic anomaly and coincident IP anomaly is located along strike north of P004 and P006. Drill logs are located in the appendices and sections in the enclosures.

DDH P010 was collared in coarse feldspar-pyroxene gabbro before intersecting a relatively thick sequence of massive magnetite and serpentinite with up to 5% coarse sulphide mineralisation. The hole then passed through a large fault into variably skarn altered siltstones, sandstone and carbonate of the Oonah Formation.

The intercept caused some excitement and a second hole P011 was collared beneath P010 before the results were received from the laboratory.

Unfortunately the sulphides were pyrite and pyrrhotite with no anomalous Ni present. In fact the Ni (0.01%) and Cr (3ppm) were extremely low which suggests that the serpentinite and magnetite are not associated with the ultramafic intrusion. Typically the ultramafic contains back ground Ni of 0.2% and Cr of >1000ppm. It is possible the serpentine-magnetite mineralisation is associated with skarn dolomites of the Oonah Fm. The magnetite formed coarse bladed textures possibly replacing actinolite. The magnetite serpentinite may be a retrograde metasomatic alteration of high grade actinolite-olivine skarn. However the close proximity of the gabbro and structural setting is identical to the layering of the gabbro-serpentinite intersected in P004 and P006 500m south which suggests the intercept is quite possibly associated with the mafic-ultramafic intrusions. Interestingly the carbonates intersected within the Oonah Formation were only moderately altered.

The massive magnetite-serpentinite intercepts are similar to the massive magnetite intercepts of the Tenth Legion Prospect to the north and are significant for their magnetite iron ore potential.

Further study is required.

3.3 Mc Ivor Hill

A strong magnetic high is located beneath non magnetic gabbroic rocks in the far NE corner of EL22/1997 (Figure 7). Recent drilling at the Pontiac Prospect on the Mine Lease (3M/2003) has intersected medium grained feldspar-pyroxene gabbros associated with layered serpentinised dunite. The serpentinite contains 5-15% magnetite and low concentrations of coarse pentlandite mineralisation. The magnetic high targeted was considered to represent another serpentinite body associated with the mafic-ultramafic intrusions.

One DDH MH001 was targeted on the anomaly. The hole did not intersect any serpentinised ultramafics. The sequence consisted of multiple coarse to medium grained gabbro intrusions. The coarse gabbro consisted of equigranular and porphyritic feldspar-pyroxene-magnetite. The gabbros were cut by numerous highly magnetic basalt dykes that are considered to be responsible for the strong magnetic anomalism. The magnetic susceptibility was recorded down the hole and is located with the drill logs in the appendices.

No further holes are planned for this area at this stage.

Drill logs are located in the appendices and a section is located in enclosures.

3.4 Fen Creek.

The Fen Creek prospect is located 2km South of the Avebury Mine (Figure 1 and 2). A large linear aeromagnetic anomaly extends from the Burbank Prospect ultramafic ESE for 4km onto EL's 22/1997 and EL43/2003.

The area is located in particularly remote and rugged country south of the Little Henty River. A foot access track and broad spaced reconnaissance grid was established this year. A b/c soil sampling program was completed and geological mapping initiated on the grid. The grid location is displayed in figures 1 and 2 and the following figures 3-6. Soil sample analyses and locations are located in the Appendix 2. The mapping is still to be completed.

Moderate level soil Ni (>40ppm), As (>300ppm) and Cr (>100ppm) anomalism is coincident with strong aeromagnetic magnetic highs on lines 352000mE and 353500mE. Line 353500 also has moderate level Zn anomalism (100 -300ppm).

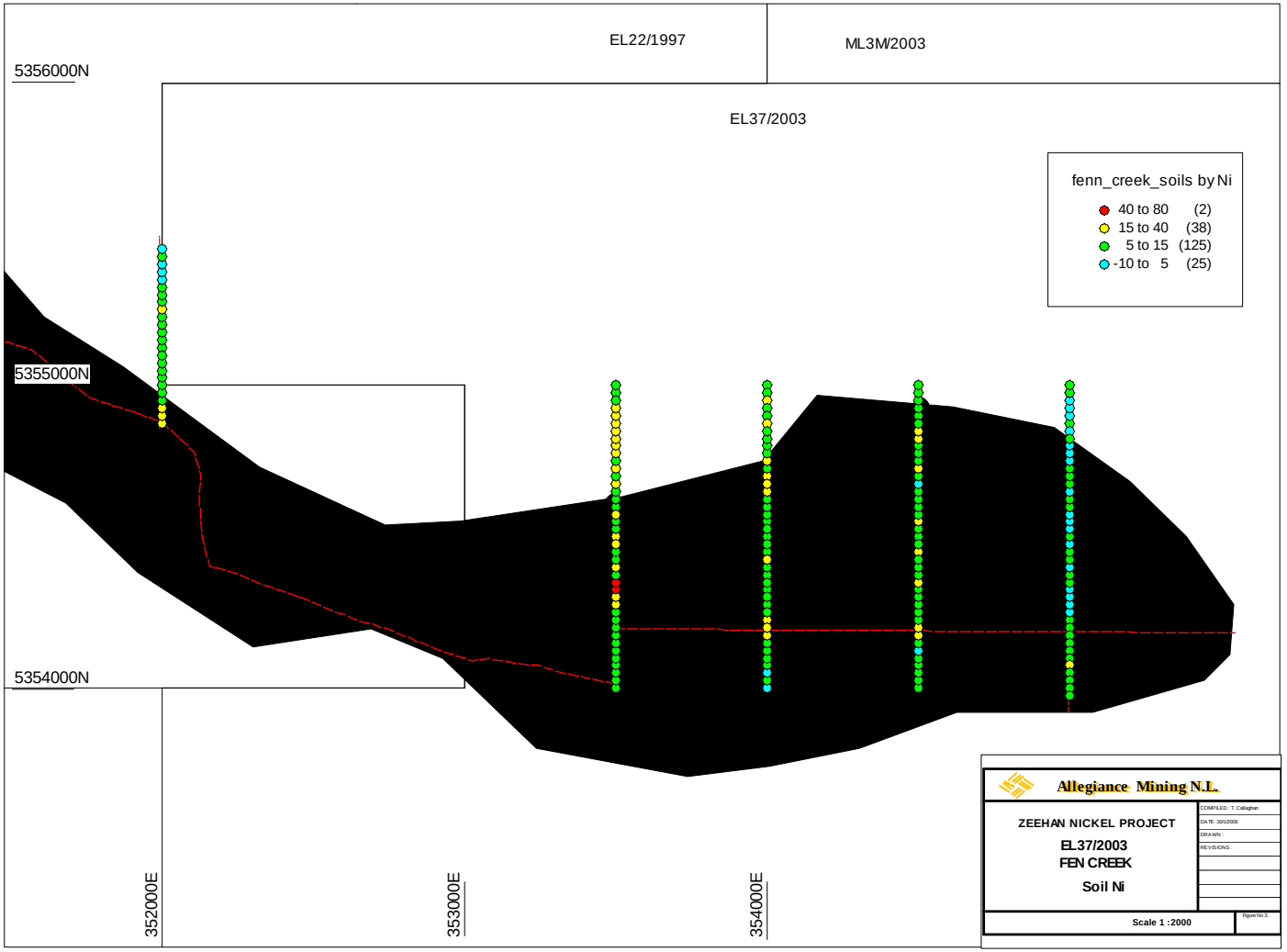
The Ni and Cr soil analyses are an order of magnitude lower than what would be expected from fresh ultramafic rocks, although they are of the same order as the b-horizon soil sampling over Avebury and East Avebury. The soil As anomalism is particularly encouraging.

Both of these deposits have very limited outcrop. Follow up work involving additional gridding, sampling, mapping and possibly drilling is warranted.

3.5 Geological Mapping

The Avebury district Interpretive Geology Map was updated this year with the additional information gained over the past 5 years. Much of the additional information has come from drilling which has increased our understanding of the field relationships of the geology in the Avebury district. Some field checking and remapping of selected areas was used to update the map.

The 1:10 000 map sheet is located in the Enclosures.


EL22/1997
ML3M/2003
5356000N
EL37/2003
fenn_creek_soils by Ni
40 to 80 (2)
15 to 40 (38)
5 to 15 (125)
-10 to 5 (25)
5355000N
5354000N
352000E
353000E
354000E
Allegiance Mining N.L.
ZEEHAN NICKEL PROJECT
EL37/2003
FEN CREEK
Soil Ni
COMPILED : T. Callaghan
DATE : 30/1/2008
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REVISIONS :
Scale 1 :2000
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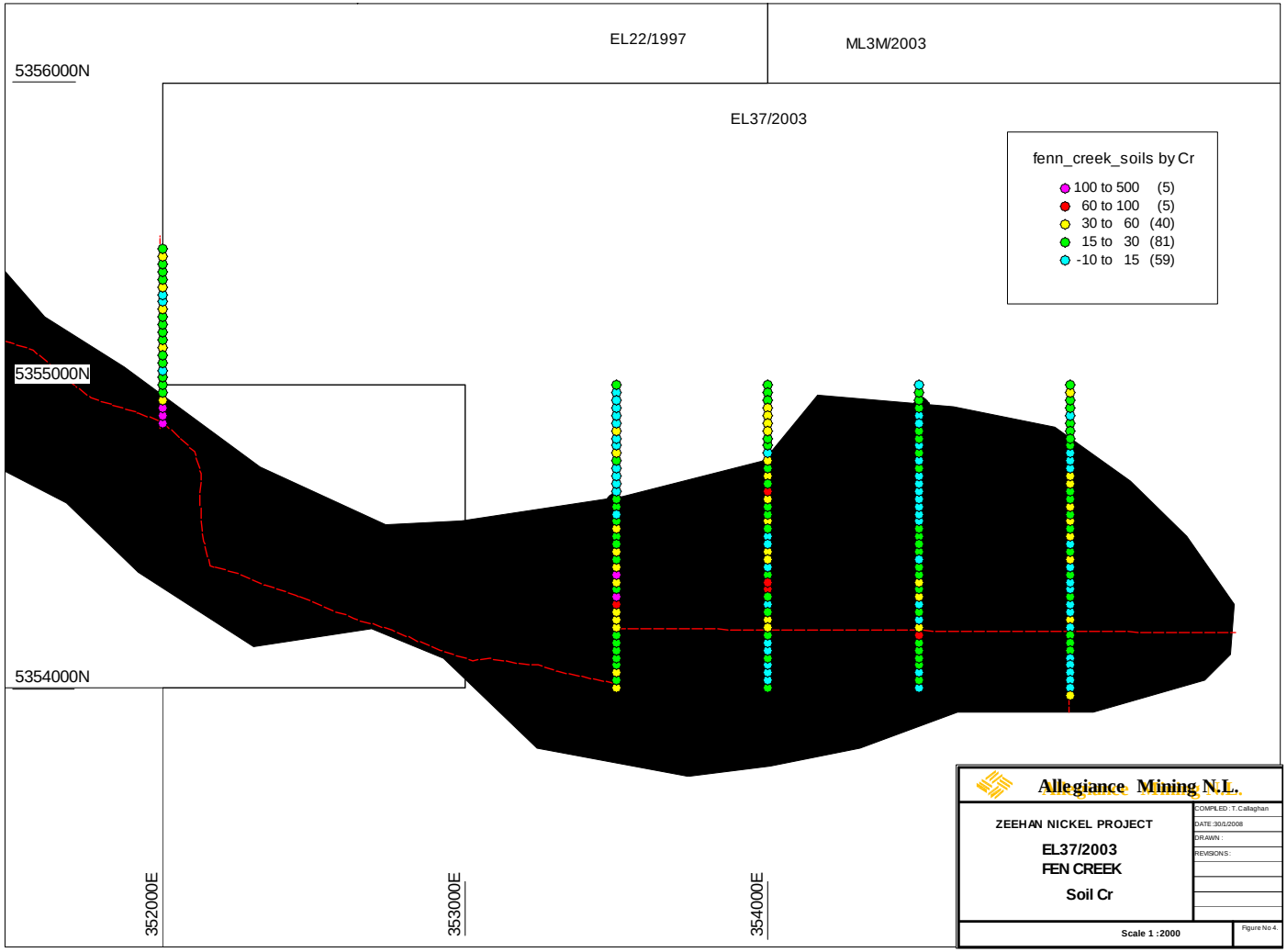
EL22/1997
ML3M/2003
5356000N
EL37/2003
fenn_creek_soils by Cr
100 to 500 (5)
60 to 100 (5)
30 to 60 (40)
15 to 30 (81)
-10 to 15 (59)
5355000N
5354000N
352000E
353000E
354000E
Allegiance Mining N.L.
ZEEHAN NICKEL PROJECT
EL37/2003
FEN CREEK
Soil Cr
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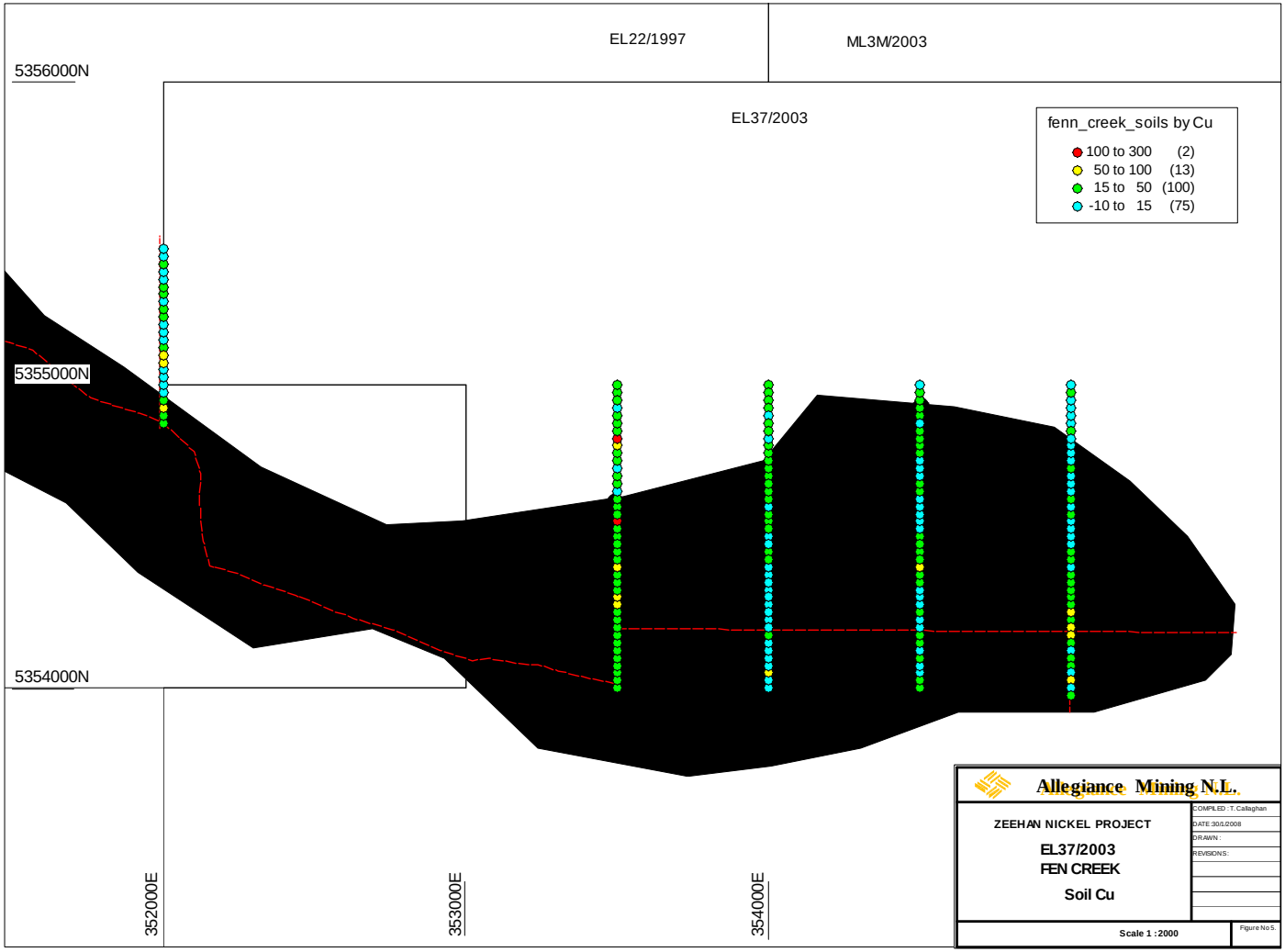
EL22/1997
ML3M/2003
5356000N
EL37/2003
fenn_creek_soils by Cu
100 to 300 (2)
50 to 100 (13)
15 to 50 (100)
-10 to 15 (75)
5355000N
5354000N
352000E
353000E
354000E
Allegiance Mining N.L.
ZEEHAN NICKEL PROJECT
EL37/2003
FEN CREEK
Soil Cu
COMPILED : T. Callaghan
DATE: 30/1/2008
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Scale 1 : 2000
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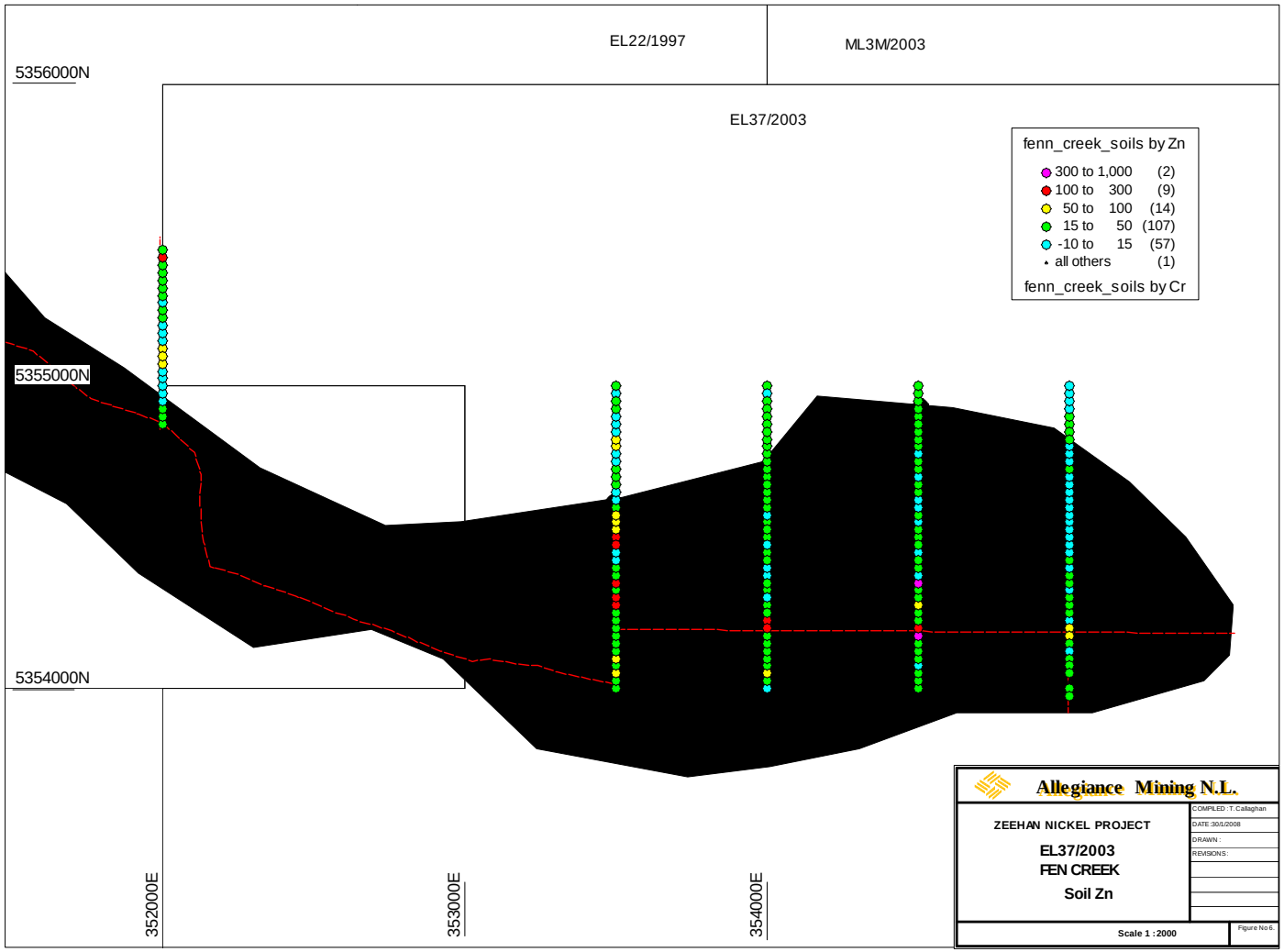
EL22/1997
ML3M/2003
5356000N
EL37/2003
fenn_creek_soils by Zn
300 to 1,000 (2)
100 to 300 (9)
50 to 100 (14)
15 to 50 (107)
-10 to 15 (57)
all others (1)
fenn_creek_soils by Cr
5355000N
5354000N
352000E
353000E
354000E
Allegiance Mining N.L.
ZEEHAN NICKEL PROJECT
EL37/2003
FEN CREEK
Soil Zn
COMPILED : T. Callaghan
DATE :30/1/2008
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Scale 1 : 2000
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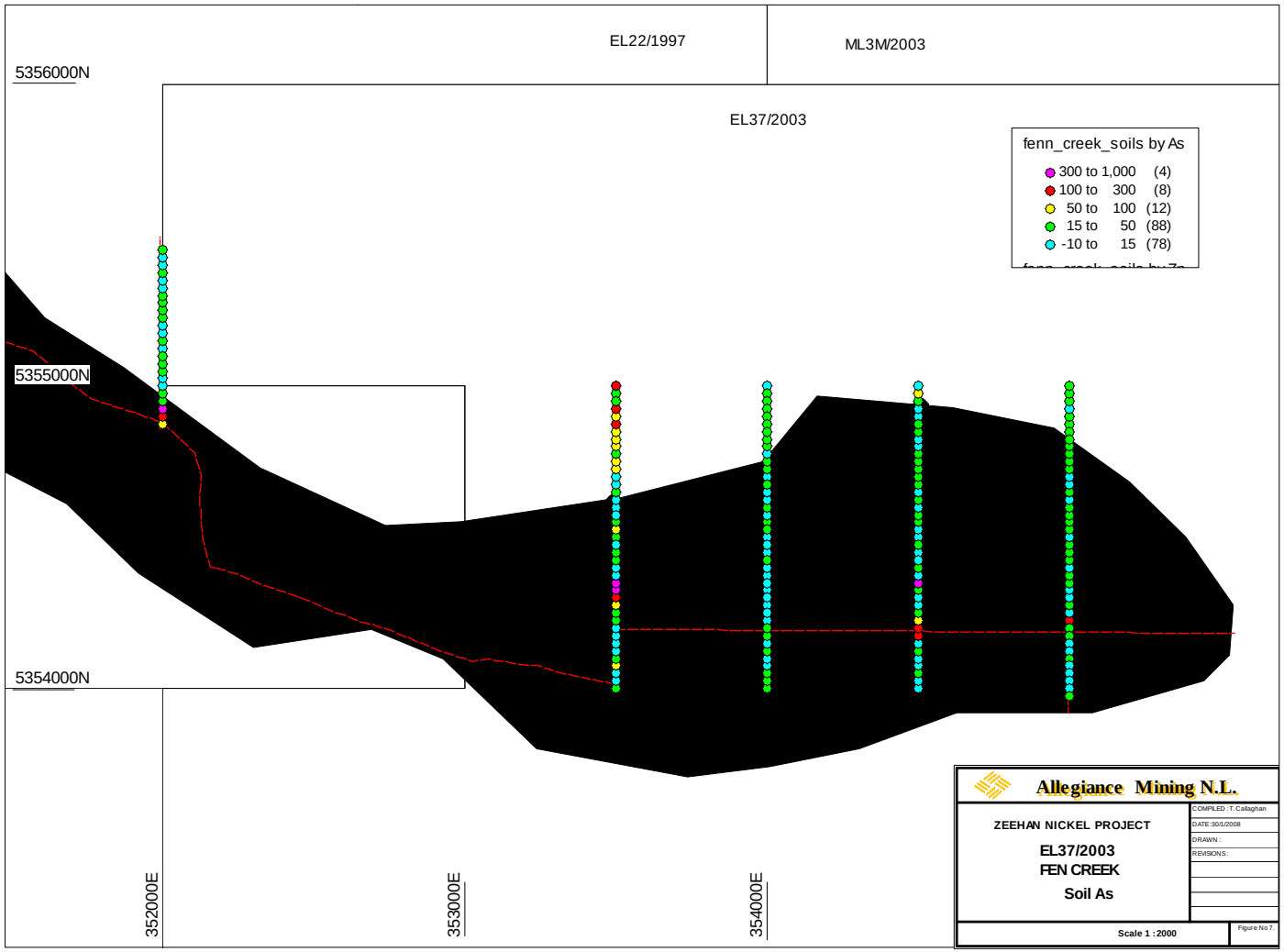
EL22/1997
ML3M/2003
5356000N
EL37/2003
fenn_creek_soils by As
300 to 1,000 (4)
100 to 300 (8)
50 to 100 (12)
15 to 50 (88)
-10 to 15 (78)
5355000N
5354000N
352000E
353000E
354000E
Allegiance Mining N.L.
ZEEHAN NICKEL PROJECT
EL37/2003
FEN CREEK
Soil As
COMPILED : T. Callaghan
DATE :30/1/2008
DRAWN :
REVISIONS :
Scale 1 : 2000
Figure No 7.

4 EXPLORATION PLANNED 2008 – 09

Exploration planned for 2008 – 09 will include:

- Drilling of the Trial Harbour anomaly
- A study of the Pontiac-Tenth Legion area.
- Additional griding, soil sampling and mapping of the Fen Ck Grid.
- Drilling of selected targets on the Fen Creek Grid.

4.1 Trial Harbour Anomaly

A drilling program following up on the Ni-sulphide mineralisation identified in the Trial Harbour area will commence this summer. Much of the drilling is likely to occur on EL28/1988 immediately west of the EL22/1997 boundary. A minimum of three holes are planned.

4.2 Pontiac – Tenth Legion

Research on the relationships between the Tenth Legion massive magnetite-serpentinite-sulphide mineralisation and the Pontiac serpentinite-magnetite-pentlandite mineralistion should be initiated. Previous work needs to be collated and further research designed to investigate the potential of this area for Ni mineralisation (or any other eg. Iron Ore, Sn).

4.3 Fen Creek

Additional griding soil sampling and mapping of the Fen Creek Grid is required to follow up on the coincident soil/aeromagnetic anomalies identified this year. It is likely that at least one drill hole will be completed this summer testing the better anomalies.

5 SCHEDULE AND BUDGET

Drilling and griding of the Fen Creek area is likely to commence in late spring 2008. Drilling of the Trial Harbour anomaly is also likely to commence in late spring. The total work program southwest of the Mine leases is expected to cost a minimum of $350 000, much of which will be on EL43/2003 and EL28/1988. The Avebury District exploration budget for the current year is $2.1M.

APPENDIX 1

Drill Logs and Assay Data

Allegiance Metals - Drill Log

BHID

P010

Collar

Project	BHID	Easting	Northing	RL	Depth	Date	Geologist
Pontiac	P010	354828.2	5359777.2	2195.7	374.5	3/09/2007	TC

Surveys

Project	BHID	Depth	Azm_Amg	Dip
Pontiac	P010	0	278	-50
Pontiac	P010	50	278	-48
Pontiac	P010	100	278	-48
Pontiac	P010	150	278	-49
Pontiac	P010	200	278	-50
Pontiac	P010	250	278	-49
Pontiac	P010	300	278	-48
Pontiac	P010	350	278	-49
Pontiac	P010	374.5	278	-48
Raw data (uncorrected)				

Hole Sizes

From	Size
0	HQ

Drilled By

Almac

Analyses By

BRL

Comments

P010 was an exploration hole testing the northern Pontiac ultramafic on EL22/1997.
The target was a combined aeromagnetic and IP anomaly.

Significant Intersections

The hole intersected a massive magnetite-serpentinite unit with 1-3% Po.
No significant Ni was intersected.

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Pontiac	P010	0	3		LOSS							No core recovery.
Pontiac	P010	3	16.9	Cgb	GABB	AcSi	G2	0.00	Bk			Massive, pale green and cream feldspar-pyroxene phyric gabbro. Pervasive-actinolite-ser-silica alteration. Bleached mottled white silicified zones. Broken and weakly weathered.
Pontiac	P010	16.9	50	Cgb	GABB	AcSi	G2	0.00	Gr			Massive, pale green and cream feldspar-pyroxene phyric gabbro. Pervasive-actinolite-ser-silica alteration. Bleached mottled white silicified zones. Large tourmaline nodules in bleached zones.
Pontiac	P010	50	67.6	Cgb	GABB	AcSi	C2	0.00				Massive, White and cream feldspar-pyroxene phyric gabbro. Pervasive-diopside-ser-silica alteration. Bleached mottled white silicification. Veined and vughy. Large tourmaline nodulesand veins. Intensely metasomatised.
Pontiac	P010	67.6	70.6	Cgb	GABB	DiEp	G5	0.10	Sp			Massive, dark green, black and pink, intensely metasomatised Gabbro/skarn. Mottled diopside-actinolite-k-feldspar and late overprinting epidote veins. Tourmaline nodules and veins.
Pontiac	P010	70.6	79.8	Cbg	GABB	MtCh	A1	0.00	Sp	Fo	40	Foliated and brecciated dark grey and black intensely altered gabbro. Numerous (10%) veins of magnetite and chlorite. Strongly tectonised.
Pontiac	P010	79.8	81.4	Csu	MMAG	MtSp	N	0.10	Sp	Vn	40	Massive black magnetite. Crystaline and weakly foliated. Minor associated apple green serpentinite. Trace Py as veins.
Pontiac	P010	81.4	83	Cbg	GABB	MtCh	A5	0.00	Sp	Fo	40	Foliated and brecciated dark grey and black intensely altered gabbro. Numerous (10%) veins of magnetite and chlorite. Strongly tectonised. Annealed breccia.
Pontiac	P010	83	104	Csu	MMAG	MtSp	N	0.10	Gr	Vn	40	Massive black magnetite. Crystaline and weakly foliated. Minor associated apple green serpentinite. Trace Py as coarse disseminations and veins. Minor Po. Lesser carbonate? veins and infilling. Massive weakly foliated texture. Radiating, acicular, crystalline magnetite needles.
Pontiac	P010	104	113.3	Csu	MMAG	MtDi	A5	1.00	Gr			Massive ,pale grey and black, massive magnetite and diopside altered ultrmafic skarn. Magnetie forms abundant (50%) coarse nodules in diopside matrix. Variable coarse sulphides (Po-Py-Pe?) locally to 2%.
Pontiac	P010	113.3	118.3	Csu	SERP	SpMt	A5	2.00	Gr			Massive, dark grey to black serpentinite with 20% disseminated medium grained magnetite. Coarse Pe-Po aggregates and disseminations. Apple green serpentinite blebs.

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraph	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
												Minor Py veins. Pale brown colour.
Pontiac	P010	193.2	198		FALT	Cy	W	0.00	Ft	Ft	75	Soft puggy, leached fault.
Pontiac	P010	198	210.2	Po	CARB	SpCb	A5	0.00	Sp	Bd	60	Pale grey, laminated dolomite and calcareous siltstone. Well bedded. Zones of pale green to brown serpentine-talc alteration
Pontiac	P010	210.2	231.4	Po	SAND	PhSi	B1	0.00	Gr	Bd	30	Well bedded siliciclastic sandstone and siltstone. Numerous laminated beds of 2-10cm. Weakly hornfelsed. Pervasive weak phlogopite alteration.
Pontiac	P010	231.4	266	Po	SILT	PhSi	G1	0.10	Gr			Well bedded siliciclastic sandstone and siltstone. Numerous laminated beds of 2-10cm. Moderately hornfelsed. Pervasive bleaching and silicification. Vughy leached zones. Tourmaline veins and nodules. Minor fine Po-Py veins.
Pontiac	P010	266	300.5	Po	SAND	PhSi	B1	0.00	Gr	Bd	30	Well bedded siliciclastic sandstone and siltstone. Numerous laminated beds of 2-10cm. Weakly hornfelsed. Pervasive weak phlogopite alteration. Minor actinolite altered zones with Py-Po.
Pontiac	P010	300.5	323.5	Po	SAND	PhAc	B4	0.10	Gr	Bd	70	Well bedded siliciclastic sandstone and siltstone. Numerous laminated beds of 2-40cm. Minor black shale and qtz sandstone beds. Strongly hornfelsed. Pervasive phlogopite-actinolite-silica alteration. Minor disseminated and vein Py with minor hematite. Qtz veins.
Pontiac	P010	323.5	325.9	Po	SAND	Si	A2	0.05	Gr			Massive siliclastic sandstone. Bleached and silicified with late epidote-Ch veins with minor disseminated py.
Pontiac	P010	325.9	343.6	Po	SAND	PhAc	B4	0.10	Gr	Bd	70	Well bedded siliciclastic sandstone and siltstone. Numerous laminated beds of 2-40cm. Minor black shale and qtz sandstone beds. Strongly hornfelsed. Pervasive phlogopite-actinolite-silica alteration. Minor disseminated and vein Py with minor hematite. Qtz veins.
Pontiac	P010	343.6	350	Po	SKRN	SiAc	G3	0.20				Mottled, intensely metasomatised siltstone and sandstone. Mottled k-feldspar-silica alteration with actinolite veins/selvedge. Late epidote veins with disseminated py. Texture destructive skarned sediments.
Pontiac	P010	350	374.5	Po	SAND	PhAc	B4	0.10	Gr	Bd	70	Well bedded siliciclastic sandstone and siltstone. Numerous laminated beds of 2-40cm. Minor black shale and qtz sandstone beds. Strongly hornfelsed. Pervasive phlogopite-actinolite-silica alteration. Minor disseminated and vein Py with minor hematite. Qtz veins.

Assay Sheet															
Project	**BHID**	**From m**	**To m**	**Ni %**	**Cu ppm**	**Pb ppm**	**Zn ppm**	**As ppm**	**Co ppm**	**S%**	**MgO %**	**FeO %**	**Cr ppm**	**Strat**	**Rock**
Pontiac	P010	80	81	0.03				200	240	1.9	18.5	34.3			
Pontiac	P010	81	82	0.02				200	140	0.3	11.5	24.4			
Pontiac	P010	82	83	0.01				100	20	0.2	15.2	9.4			
Pontiac	P010	83	84	0.04				150	340	0.2	8.5	53.8			
Pontiac	P010	84	85	0.05				150	340	0.2	13.5	50.2			
Pontiac	P010	85	86	0.01				100	-20	0.2	32.4	4.5			
Pontiac	P010	86	87	0.02				150	60	-0.10	32.7	15.0			
Pontiac	P010	87	88	0.03				100	160	0.1	28.3	28.8			
Pontiac	P010	88	89	0.02				150	180	2.4	22.6	22.1			
Pontiac	P010	89	90	0.03				150	140	1.2	17.0	24.6			
Pontiac	P010	90	91	0.03				100	120	0.2	30.2	24.6			
Pontiac	P010	91	92	0.05				150	300	0.8	18.7	46.8			
Pontiac	P010	92	93	0.04				150	240	0.2	23.6	38.5			
Pontiac	P010	93	94	0.04				150	160	0.3	28.4	29.2			
Pontiac	P010	94	95	0.04				100	180	0.4	29.2	27.7			
Pontiac	P010	95	96	0.05				150	200	0.4	27.8	32.4			
Pontiac	P010	96	97	0.05				100	200	0.6	28.3	33.4			
Pontiac	P010	97	98	0.06				100	260	1.1	25.0	38.8			
Pontiac	P010	98	99	0.05				100	220	1.1	30.0	30.4			
Pontiac	P010	99	100	0.02				200	220	0.4	28.4	36.2			
Pontiac	P010	100	101	0.01				150	140	0.3	29.3	26.9			
Pontiac	P010	101	102	0.01				200	100	0.2	27.4	19.3			
Pontiac	P010	102	103	0.02				200	220	2.4	28.1	36.5			
Pontiac	P010	103	104	0.02	215	146	886	250	200	0.6	31.2	35.1	3		
Pontiac	P010	104	105	0.03	73	1124	857	150	280	2.8	23.0	45.6	2		
Pontiac	P010	105	106	0.03	206	108	111	250	320	5.3	21.9	46.5	2		
Pontiac	P010	106	107	0.02	44	115	88	100	220	1.4	28.7	39.8	2		
Pontiac	P010	107	108	0.02	48	95	84	150	200	1.0	30.1	37.4	2		
Pontiac	P010	108	109	0.01	28	101	87	100	220	0.8	29.4	40.0	2		
Pontiac	P010	109	110	0.01	58	100	80	100	240	1.5	27.9	40.1	2		
Pontiac	P010	110	111	0.02	78	100	88	150	240	1.1	27.8	41.9	2		
Pontiac	P010	111	112	0.01	103	102	93	150	220	1.4	29.1	37.8	2		
Pontiac	P010	112	113	0.01	72	101	91	150	200	0.7	31.5	35.8	3		

Assay Sheet															
Project	**BHID**	**From m**	**To m**	**Ni %**	**Cu ppm**	**Pb ppm**	**Zn ppm**	**As ppm**	**Co ppm**	**S%**	**MgO %**	**FeO %**	**Cr ppm**	**Strat**	**Rock**
Pontiac	P010	113	114	0.01	134	89	57	500	120	1.7	34.7	24.6	8		
Pontiac	P010	114	115	0.01	58	77	84	350	60	0.3	34.9	19.8	13		
Pontiac	P010	115	116	0.01	14	95	69	300	160	0.3	32.5	30.9	5		
Pontiac	P010	116	117	0.01	268	109	419	400	200	2.9	31.2	33.0	3		
Pontiac	P010	117	118	0.02	333	109	555	450	220	3.4	31.3	33.3	3		
Pontiac	P010	118	119	0.01	42	96	53	300	140	0.9	35.8	26.6	3		
Pontiac	P010	119	120	0.01	48	111	97	300	120	0.9	36.2	25.9	3		
Pontiac	P010	120	121	0.01	72	94	137	350	200	2.0	29.4	35.9	3		
Pontiac	P010	121	122	0.01	33	98	662	350	200	0.4	29.9	37.3	3		
Pontiac	P010	122	123	0.01	32	87	35	550	20	0.2	42.5	13.6	4		
Pontiac	P010	123	124	0.01	57	84	75	550	40	0.3	42.7	15.6	3		
Pontiac	P010	124	125	0.01	137	87	221	550	80	1.0	41.9	17.6	2		
Pontiac	P010	125	126	0.01	108	84	35	650	20	0.5	44.0	10.6	3		
Pontiac	P010	126	127	0.01	810	92	99	600	20	0.7	43.7	9.0	2		
Pontiac	P010	127	128	0.01	417	94	97	400	60	0.4	41.5	17.0	3		
Pontiac	P010	128	129	-0.01	161	77	45	400	20	0.1	37.0	12.2	2		
Pontiac	P010	129	130	-0.01	152	44	50	200	-20	-0.1	27.3	4.2	3		
Pontiac	P010	130	131	-0.01	156	75	76	100	-20	0.2	21.5	6.1	16		
Pontiac	P010	131	132	0.01	108	83	52	550	160	2.8	31.6	22.0	7		
Pontiac	P010	132	133	0.01	451	112	194	150	220	2.3	30.2	36.9	3		
Pontiac	P010	133	134	0.02	235	100	124	150	220	2.9	20.8	36.4	8		
Pontiac	P010	134	135	0.01				100	20	1.3	13.2	6.5			
Pontiac	P010	135	136	0.01				100	100	2.0	14.1	12.2			
Pontiac	P010	136	137	0.01				150	200	2.1	13.0	17.9			
Pontiac	P010	145	146	-0.01				50	-20	0.7	5.9	5.6			
Pontiac	P010	146	147	0.01				50	20	1.3	13.6	9.2			
Pontiac	P010	147	148	-0.01				50	-20	1.2	11.4	4.6			
Pontiac	P010	148	149	0.01				100	-20	0.6	8.1	3.6			
Pontiac	P010	149	150	0.02				100	-20	1.0	8.2	4.6			
Pontiac	P010	179	180	0.01				100	-20	0.3	5.9	1.4			
Pontiac	P010	180	181	0.01				50	-20	0.7	14.7	6.8			

Allegiance Metals - Drill Log

BHID

P011

Collar

Project	BHID	Easting	Northing	RL	Depth	Date	Geologist
Pontiac	P011	354878.8	5359781.7	2197.8	245.3	13/09/2007	TC

Surveys

Project	BHID	Depth	Azm_Amg	Dip
Pontiac	P011	0	282.05	-47.6
Pontiac	P011	50	281.73	-47.47
Pontiac	P011	100	283.28	-46.86
Pontiac	P011	150	283.03	-46.81
Pontiac	P011	200	283	-48
Pontiac	P011	240	283	-47
Raw data (uncorrected)				

gyro survey by NES.

Hole Sizes

From	Size
0	HQ
47.9	NQ

Drilled By

Almac

Analyses By

BRL

Comments

P011 was designed to test a strong coincident magnetic and IP anomaly in the North Pontiac area.

Significant Intersections

P011 intersected a massive magnetite-serpentinite unit with 2-5% sulphides. The sulphides did not contain significant nickel (<0.1%)

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Pontiac	P011	0	4	Cgb	GABB	AcCh	G3	0.00	Sp			Massive, medium grained, phaneritic feldspar-pyroxene gabbro. Pervasive actinolite alteration of pyroxenes.
Pontiac	P011	4	28.2	Cgb	GABB	AcCy	G3	0.00	Gr			Massive, medium grained, phaneritic feldspar-pyroxene gabbro. Pervasive actinolite alteration of pyroxenes. Moderately weathered along joint planes and fault surfaces. Weathered calcite veins.
Pontiac	P011	28.2	35.4	Cgb	GABB	AcCh	G3	0.00	Ft			Massive, medium grained, phaneritic feldspar-pyroxene gabbro. Pervasive actinolite alteration of pyroxenes. Fine grained, aphyric intensely actinolite altered basaltic dyke intrusions. Late calcite veining.
Pontiac	P011	35.4	37.1		FALT	AcCa	G3	0.00	Ft	Vn	10	Very broken and faulted gabbro. Puggy shear zones. Low angle calcite veins.
Pontiac	P011	37.1	41	Cgb	GABB	AcCh	G3	0.00	Ft			Massive, medium grained, phaneritic feldspar-pyroxene gabbro. Pervasive actinolite alteration of pyroxenes. Fine grained, aphyric intensely actinolite altered basaltic dyke intrusions. Late calcite veining.
Pontiac	P011	41	41.4		FALT	AcCa	G3	0.00	Ft	Vn	10	Very broken and faulted gabbro. Puggy shear zones.
Pontiac	P011	41.4	98.2	Cgb	GABB	AcDi	A1	0.00	Ft			Massive, medium grained, phaneritic feldspar-pyroxene gabbro. Pervasive actinolite alteration of pyroxenes. Intense texture destructive bleaching and diopside alteration. Tourmaline nodules. Vughy silica-calcite veins. Actinolite veins.
Pontiac	P011	98.2	115.8	Cgb	GABB	AcDi	A1	0.00				Massive, intensely metasomatised gabbro. Pervasive texture destructive, diopside actinolite-k-feldspar alteration. Late tourmaline epidote overprint. Bleached and skarn altered.
Pontiac	P011	115.8	116.3		MMAG	MtAc	N	0.00	Vn	Vn	70	Massive magnetite-actinolite vein.
Pontiac	P011	116.3	131.5	Cgb	GABB	AcDi	A1	0.00				Massive, intensely metasomatised gabbro. Pervasive texture destructive, diopside actinolite-k-feldspar alteration. Late tourmaline epidote overprint. Bleached and skarn altered.
Pontiac	P011	131.5	145.9	Csu	MMAG	MtSp	N	0.20				Massive, mottled black magnetite. Minor interstitial talc-serpentinite. Minor coarse disseminated Po. Patchy coarse acicular magnetite needles.
Pontiac	P011	145.9	180.8	Csu	SERP	MtPy	N	2.00				Massive black to apple green serpentinite with 20% coarse magnetite veins and blebs. 2-5% coarse py-po disseminations and nodules. Intensely metasomatised ultramafic.

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraph	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Pontiac	P011	180.8	188.3	Pou	SHAL	PhSi	A3	0.10	Gr	Ft	75	Laminated shale, siltstone, siliciclastic sandstone and altered dolomite. Intensely hornfelsed and locally metasomatised. Pervasive phlogopite alteration and patchy silicification.
Pontiac	P011	188.3	194	Pou	SILT	PhDi	A3	0.80	Sp			Intensely metasomatised siliciclastic sandstone and dolomite. Disrupted and veined. Patchy intense crystalline phlogopite alteration. Diopside-tremolite-silica alteration. 0.8% coarse Po disseminations.
Pontiac	P011	194	196	Csu	SERP	SpMt	N	3.00	Sp			Massive serpentinised ultramafic intrusive. Pervasive disseminated magnetite. Coarse Po-Py nodules to 3%.
Pontiac	P011	196	203.7	Pou	SILT	PhDi	A3	0.80	Sp			Intensely metasomatised siliciclastic sandstone and dolomite. Disrupted and veined. Patchy intense crystalline phlogopite alteration. Diopside-tremolite-silica alteration. 0.8% coarse Po disseminations.
Pontiac	P011	203.7	206.1		FALT	CySp	A2	0.20	Ft	Ft	80	Puggy sheared fault. Talcy zones.
Pontiac	P011	206.1	216	Csu	SERP	SpMt	N	3.00	Sp			Massive black serpentinised ultramafic intrusive. Pervasive disseminated magnetite. Patchy metasomatised ultramafic, diopside-tremolite.
Pontiac	P011	216	217.8	Csu	SERP	SpMt	N	3.00	Sp			Massive black serpentinised ultramafic intrusive. Massive magnetite veins. 2% disseminated Po.
Pontiac	P011	217.8	219.8	Csu	SKSP	TrDi	A2	0.10				Massive, intensely metasomatised ultramafic skarn or latered dolomitic sandstone? Crystalline, texture destructive tremolite-diopside alteration.
Pontiac	P011	219.8	225.8	Csu	SERP	SpMt	N	3.00	Sp			Massive black serpentinised ultramafic intrusive. Massive magnetite veins. disseminated magnetite. Patchy metasomatised ultramafic, diopside-tremolite.
Pontiac	P011	225.8	245.3	Pou	SILT	PhDi	A3	0.80	Sp			Intensely metasomatised siliciclastic sandstone and dolomite. Disrupted and veined. Patchy intense crystalline phlogopite alteration. Diopside-tremolite-silica alteration. EOH

Assay Sheet															
Project	**BHID**	**From m**	**To m**	**Ni %**	**Cu ppm**	**Pb ppm**	**Zn ppm**	**As ppm**	**Co ppm**	**S%**	**MgO %**	**FeO %**	**Au ppm**	**Strat**	**Rock**
Pontiac	P011	132	133	0.04				100	360	3.2	19.7	51.4	-0.01		
Pontiac	P011	133	134	0.03				100	460	9.0	21.2	45.5	-0.01		
Pontiac	P011	134	135	0.03				100	740	17.0	14.9	57.9	-0.01		
Pontiac	P011	135	136	0.03				100	620	14.5	18.8	52.2	-0.01		
Pontiac	P011	136	137	0.03				50	580	11.8	20.6	50.4	-0.01		
Pontiac	P011	137	138	0.03				50	560	11.7	19.4	51.1	-0.01		
Pontiac	P011	138	139	0.02				100	360	3.1	23.9	45.6	-0.01		
Pontiac	P011	139	140	0.02				150	320	0.9	20.4	50.7	-0.01		
Pontiac	P011	140	141	0.02				100	320	2.3	21.5	49.7	-0.01		
Pontiac	P011	141	142	0.02				100	240	1.5	25.8	41.4	-0.01		
Pontiac	P011	142	143	0.02				200	280	6.0	23.7	44.0	-0.01		
Pontiac	P011	143	144	0.01				150	220	0.8	28.8	37.4	-0.01		
Pontiac	P011	144	145	0.01				150	220	0.9	27.4	39.3	-0.01		
Pontiac	P011	145	146	0.01				500	160	2.7	33.4	29.1	-0.01		
Pontiac	P011	146	147	0.01				800	60	0.5	38.6	16.8	-0.01		
Pontiac	P011	147	148	0.01				450	140	1.3	32.7	27.7	-0.01		
Pontiac	P011	148	149	0.01				300	180	0.9	29.3	35.7	-0.01		
Pontiac	P011	149	150	0.01				300	200	2.3	30.2	33.9	-0.01		
Pontiac	P011	150	151	0.01				250	240	1.7	27.8	38.8	-0.01		
Pontiac	P011	151	152	0.02				200	300	1.2	19.4	49.7	-0.01		
Pontiac	P011	152	153	0.02				150	360	5.3	18.8	51.0	-0.01		
Pontiac	P011	153	154	0.01				350	360	4.5	25.8	40.6	-0.01		
Pontiac	P011	154	155	0.02				250	440	6.3	16.6	53.1	-0.01		
Pontiac	P011	155	156	0.02				150	340	3.7	17.0	53.5	-0.01		
Pontiac	P011	156	157	0.02				150	320	4.4	17.4	52.3	-0.01		
Pontiac	P011	157	158	0.02				150	300	4.5	22.4	46.3	-0.01		
Pontiac	P011	158	159	0.02				150	300	3.4	21.8	47.1	-0.01		
Pontiac	P011	159	160	0.03				200	460	12.6	26.1	36.6	-0.01		
Pontiac	P011	160	161	0.04				200	540	16.2	24.2	38.8	-0.01		
Pontiac	P011	161	162	0.02				200	340	4.4	21.6	45.9	-0.01		
Pontiac	P011	162	163	0.01				200	560	11.1	26.4	36.9	-0.01		
Pontiac	P011	163	164	0.01				200	660	14.1	25.2	38.0	-0.01		
Pontiac	P011	164	165	0.01				200	720	11.0	24.7	39.2	-0.01		

Assay Sheet															
Project	**BHID**	**From m**	**To m**	**Ni %**	**Cu ppm**	**Pb ppm**	**Zn ppm**	**As ppm**	**Co ppm**	**S%**	**MgO %**	**FeO %**	**Au ppm**	**Strat**	**Rock**
Pontiac	P011	165	166	0.01				250	500	5.0	30.0	26.2	-0.01		
Pontiac	P011	166	167	0.01				350	480	3.2	38.2	18.3	-0.01		
Pontiac	P011	167	168	0.01				300	800	6.4	35.3	18.9	-0.01		
Pontiac	P011	168	169	0.01				250	1200	10.1	30.2	27.4	-0.01		
Pontiac	P011	169	170	0.02				250	1120	12.3	28.2	33.3	-0.01		
Pontiac	P011	170	171	0.01				400	1080	10.5	31.4	25.8	-0.01		
Pontiac	P011	171	172	0.01				550	760	6.3	38.0	18.5	-0.01		
Pontiac	P011	172	173	0.01				450	520	4.8	35.7	20.5	-0.01		
Pontiac	P011	173	174	0.01				400	360	2.8	31.3	31.6	-0.01		
Pontiac	P011	174	175	0.01				350	320	2.0	29.4	35.6	-0.01		
Pontiac	P011	175	176	-0.01				750	100	0.8	42.4	7.4	-0.01		
Pontiac	P011	176	177	-0.01				250	-20	0.2	32.7	5.8	-0.01		
Pontiac	P011	177	178	-0.01				650	-20	0.1	45.4	4.5	-0.01		
Pontiac	P011	178	179	-0.01				600	-20	-0.10	43.7	5.5	-0.01		
Pontiac	P011	179	180	0.01				450	40	0.1	40.4	13.5	-0.01		
Pontiac	P011	180	181	0.01				350	40	-0.10	33.0	14.9	-0.01		
Pontiac	P011	192	193	-0.01				100	-20	0.3	9.5	4.7	-0.01		
Pontiac	P011	193	194	-0.01				100	-20	0.2	13.3	3.7	-0.01		
Pontiac	P011	194	195	0.01				100	160	3.8	26.9	27.2	-0.01		
Pontiac	P011	195	196	0.02				150	360	16.0	22.1	34.9	-0.01		
Pontiac	P011	196	197	-0.01				50	-20	0.2	34.4	6.4	-0.01		
Pontiac	P011	197	198	-0.01				50	-20	0.4	32.4	4.7	-0.01		
Pontiac	P011	198	199	0.01				-50.00	40	2.3	29.3	10.0	-0.01		
Pontiac	P011	206	207	-0.01				50	-20	0.1	32.3	7.1	-0.01		
Pontiac	P011	207	208	-0.01				100	-20	-0.10	32.5	5.8	-0.01		
Pontiac	P011	208	209	-0.01				50	-20	0.4	32.0	6.0	-0.01		
Pontiac	P011	215	216	0.01				100	180	0.9	24.5	33.3	-0.01		
Pontiac	P011	216	217	0.02				100	340	8.5	13.4	50.3	-0.01		
Pontiac	P011	217	218	0.02				50	220	4.6	12.2	36.3	-0.01		

Allegiance Metals - Drill Log

BHID

MH001

Collar

Project	BHID	Easting	Northing	RL	Depth	Date	Geologist
MCIVOR	MH001	355709.3	5359412.5	2221	459.4	13/08/2007	TC

Surveys

Project	BHID	Depth	Azm_Amg	Dip
Avebury	MH001	0	251	-58
Avebury	MH001	50	251.6	-58.3
Avebury	MH001	100	252.7	-58.3
Avebury	MH001	150	253	-58.5
Avebury	MH001	200	254	-58.5
Avebury	MH001	250	255	-58
Avebury	MH001	300	256	-58
Avebury	MH001	350	257	-58
Avebury	MH001	400	258	-58
Avebury	MH001	450	259	-57.5
Raw data (uncorrected)				

Surveys by eastman.
Azm affected by magnetic field.

Hole Sizes

From	Size
0	HQ
	NQ

Drilled By

Almac

Analyses By

BRL

Comments

MH001 is the first drillhole into a previously untested magnetic anomaly towards the western edge of McIvor Hills.

Significant Intersections

The hole intersected magnetite bearing basalts and gabbros explaning the aeromagnetic anomaly.
No signigficant mineralisation was intersected.

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
MCIVOR	MH001	0	3.5		LOSS							Tri-cone to 3.5m no core recovery
MCIVOR	MH001	3.5	24.4	Cdg	GABB	Ac	G4	0.20				Massive dark green very fine grained gabbro. Pervasive actinolite alteration. Small amounts of medium to coarse grained disseminated pyrrhotite and chalcopyrite; very minor disseminated magnetite in places and sparse fine calcite-magnetite veins. Hard massive competent rock, occasional planar joints. Rare fine epidote veins. Limonite on fractures to about 16m.
MCIVOR	MH001	24.4	54.2	Cdg	GABB	Ac	G4	0.05	Sp			Massive, dark green, fine to very fine grained feldspar pyroxene gabbro. Intense, pervasive actinolite overprint. Minor fine tourmaline veins. Rare disseminated chalcopyrite with minor qtz veining. Non magnetic.
MCIVOR	MH001	54.2	56.5	Cba	VBA	AcCh	G5	0.01	Sp			Massive to flow banded, aphyric vesicular basalt. Pervasive fine actinolite-chlorite alteration. Qtz filled vesicles. Weakly magnetic.
MCIVOR	MH001	56.5	56.9	Cdg	GABB	Ac	G4	0.05	Sp			Massive, dark green, fine to very fine grained feldspar pyroxene gabbro. Intense, pervasive actinolite overprint. Minor fine tourmaline veins.
MCIVOR	MH001	56.9	63.5	Cba	VBA	AcCh	G5	0.10	Sp			Massive to flow banded, aphyric vesicular basalt. Pervasive fine actinolite-chlorite alteration. Qtz filled vesicles. Spots and veins of pyrrhotite-pyrite-cpy and pentlandite to 0.1%?
MCIVOR	MH001	63.5	95.5	Cdg	GABB	Ac	G4	0.05	Sp			Massive, dark green, fine to very fine grained feldspar pyroxene gabbro. Intense, pervasive actinolite overprint. Very fine actinolte needles. Minor fine tourmaline veins and clots. Very rare disseminated py-cpy to 0.05%.
MCIVOR	MH001	95.5	96.4	Cba	VBA	AcCh	G5	0.10	Sp			Layered, intrusive fine grained basaltic dyke. Aphyric basalt with coarse pyroxene feldspar gabbro. Fine diseminated pyrrhotite and magnetite. Pervasice actinolite alteration.
MCIVOR	MH001	96.4	97.5	Cdg	GABB	Ac	G4	0.05	Sp			Massive, dark green-grey, coarse grained feldspar-pyroxene gabbro. Intense, pervasive actinolite overprint. Minor tourmaline veins.
MCIVOR	MH001	97.5	99.8	Cba	VBA	AcCh	G5	0.10	Sp			Layered, intrusive fine grained basaltic dyke. Aphyric basalt with coarse pyroxene feldspar gabbro. Fine diseminated pyrrhotite and magnetite. Pervasice actinolite alteration.
MCIVOR	MH001	96.4	97.5	Cdg	GABB	Ac	G4	0.05	Sp			Massive, dark green-grey, coarse grained feldspar-pyroxene gabbro. Intense, pervasive actinolite overprint. Minor tourmaline veins.

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraph	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
MCIVOR	MH001	97.5	106.6	Cdg	GABB	Ac	G4	0.05	Sp			Massive, dark green-grey, coarse grained feldspar-pyroxene gabbro. Intense, pervasive actinolite overprint. Minor tourmaline veins. Weakly magnetic
MCIVOR	MH001	106.6	118	Cdg	GABB	Ac	G4	0.05	Sp			Massive, dark green, fine to very fine grained feldspar pyroxene gabbro. Intense, pervasive actinolite overprint. Very fine actinolte needles. Minor fine tourmaline veins and clots. Very rare disseminated py-cpy to 0.05%. 0.2% magnetite stringer veins with intense actinolite alteration.
MCIVOR	MH001	118	139	Cdg	GABB	Ac	G4	0.01	Sp			Massive, dark green, fine to very fine grained feldspar pyroxene gabbro. Intense, pervasive actinolite overprint. Minor fine tourmaline veins and clots veins and clots. Very rare disseminated py-cpy to 0.01%. Sparse magnetite stringer veins with intense actinolite alteration.
MCIVOR	MH001	139	185	Cdg	GABB	AcCh	G4	0.01	Gr			Massive, dark green, fine to very fine grained feldspar pyroxene gabbro. Intense, pervasive actinolite-chlorite overprint. Minor fine tourmaline veins and clots. Fine disseminated magnetite, moderate to high magnetic susceptability. Layered gabbros/fine basalts of very fine to medium grained feldspar pyroxene/ actinolite.
MCIVOR	MH001	185	194.6	Cdg	GABB	AcCh	A5	0.10	Sp			Massive, dark green, fine to very fine grained feldspar pyroxene gabbro. Intense, pervasive actinolite-chlorite overprint. Layered gabbro/basaltic dykes. Fine disseminated magnetite, moderate to high magnetic susceptability. Late cpy-mag veinlets with chlorite-magnetite-epidote alteration (to 0.1%).
MCIVOR	MH001	194.6	210.5	Cdg	GABB	AcCh	A5	0.05	Sp			Massive dark green coarse grained feld-pyroxene gabbro with numerous very fine grained basaltic dykes cross cutting. Pervasive actinolite-chlorite alteration. Pervasive, fine magnetite disseminations. Late-qtz-epidote veins with very minor cpy-magnetite-po mineralisation.
MCIVOR	MH001	210.5	235.2	Cba	VBA	AcCh	A5	0.01	Sp			Massive black very fine grained gabbro/basalt. Massive dark grey fine grained rock with pervasive mesh textured actinolite alteration. Minor very fine grained feldspar-pyroxene gabbro. Strongly magnetic from fine disseminated magnetite associated with rock matrix.
MCIVOR	MH001	235.2	296	Cdg	GABB	AcCh	A5	0.01	Sp			Intrusive complex composed of massive coarse gabbro, fine gabbro and abundant magnetite basaltic dykes. Coarse gabbro composed of euhedral feldspar-

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraph	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
												pyroxene and coarse magnetite grains. fine actinolite basaltic dykes with abundant fine magnetite cross cutting all rock types. Pervasive actinolite alteration. Minor cpy-epidote alteration.
MCIVOR	MH001	296	347.7	Cba	VBA	AcCh	A5	0.00	Sp			Massive black very fine grained gabbro/basalt. Massive dark grey fine grained rock with pervasive mesh textured actinolite alteration. Minor very fine grained feldspar-pyroxene gabbro. Strongly magnetic from fine disseminated magnetite associated with rock matrix.
MCIVOR	MH001	347.7	348.2	Cba	VBA	AcMt	A5	0.10	Sp			Massive black very fine grained gabbro/basalt. Massive dark grey fine grained rock with pervasive mesh textured actinolite alteration. Minor very fine grained feldspar-pyroxene gabbro. Strongly magnetic from fine disseminated magnetite associated with rock matrix. Late magnetite-cpy veins. Weakly foliated.
MCIVOR	MH001	348.2	367	Cba	VBA	AcCh	A5	0.00	Sp			Massive black very fine grained gabbro/basalt. Massive dark grey fine grained rock with pervasive mesh textured actinolite alteration. Minor very fine grained feldspar-pyroxene gabbro. Strongly magnetic from fine disseminated magnetite associated with rock matrix.
MCIVOR	MH001	367	367.2		FALT	Cy	A1					Puggy brittle fault.
MCIVOR	MH001	367.2	376	Cdg	GABB	AcMt	A3	0.01	Gr			Massive, coarse grained feldspar-orthopyroxene-magntite gabbro. Coarse euhedral xtals of magmatic magnetite. Rare sulphide veinlets. Lesser cross cutting fine grained gabbro and basalt dykes. Late qtz-carb-heamatite veins and associated disseminated cpy and pyrrhotite.
MCIVOR	MH001	376	440.4	Cdg	GABB	AcMt	A3	0.01	Gr			Massive, coarse grained feldspar-orthopyroxene-magntite gabbro. Coarse euhedral xtals of magmatic magnetite. Rare cpy-gal veinlets. Lesser cross cutting fine grained gabbro and basalt dykes. minor late qtz veins with epidote-sericite selvedge.
MCIVOR	MH001	440.4	445.4	Cdg	GABB	AcMt	A3	0.01	Gr			Massive, coarse grained feldspar-orthopyroxene-magntite gabbro. Coarse euhedral xtals of magmatic magnetite. late vuggy qtz veins. Minor epidote-sericite selvadge taround veins.
MCIVOR	MH001	445.4	459.4	Cdg	GABB	AcMt	A3	0.01	Gr			Massive, coarse grained feldspar-orthopyroxene-magntite gabbro. Coarse euhedral xtals of magmatic magnetite. Rare cpy-gal veinlets.

Assay Sheet															
Project	**BHID**	**From m**	**To m**	**Ni %**	**Cu ppm**	**Pb ppm**	**Zn ppm**	**As ppm**	**Co ppm**	**S%**	**MgO %**	**FeO %**	**Au ppm**	**Strat**	**Rock**
MCIVOR	MH001	39	40	0.01				100	20	-0.10	4.4	8.5			
MCIVOR	MH001	56	57	0.01				150	120	0.2	4.1	11.6			
MCIVOR	MH001	57	58	0.01				50	60	-0.10	4.0	12.4			
MCIVOR	MH001	58	59	0.01				50	60	-0.10	3.8	12.3			
MCIVOR	MH001	59	60	0.01				100	60	-0.10	4.0	12.8			
MCIVOR	MH001	60	61	0.01				50	60	-0.10	4.0	13.1			
MCIVOR	MH001	61	62	-0.01				100	40	0.1	2.7	11.6			
MCIVOR	MH001	84	85	0.01				50	40	0.3	4.6	10.8			
MCIVOR	MH001	95	96	0.01				100	40	0.2	5.5	10.8			
MCIVOR	MH001	98	99	0.01				50	60	0.2	5.1	11.3			
MCIVOR	MH001	99	100	-0.01				50	40	0.3	3.0	9.7			
MCIVOR	MH001	185	186	0.01				100	60	-0.10	4.8	13.4			
MCIVOR	MH001	186	187	0.01				50	60	-0.10	4.6	11.4			
MCIVOR	MH001	190	191	0.01				100	60	0.1	5.1	12.4			
MCIVOR	MH001	191	192	0.01				50	40	-0.10	4.5	10.8			
MCIVOR	MH001	192	193	0.01				100	60	-0.10	3.9	11.6			
MCIVOR	MH001	193	194	0.01				50	40	-0.10	4.0	11.3			
MCIVOR	MH001	194	195	0.01				50	40	-0.10	4.0	11.2			
MCIVOR	MH001	198	199	0.01				50	80	0.6	4.4	11.8			
MCIVOR	MH001	285	286	0.01				50	80	0.2	5.2	12.9			
MCIVOR	MH001	286	287	0.01				50	20	-0.10	4.3	9.0			
MCIVOR	MH001	347.5	348.5	0.01				50	40	-0.10	4.4	11.6			
MCIVOR	MH001	374	375	0.01				50	100	0.6	4.8	17.7			
MCIVOR	MH001	375	376	0.01				50	40	-0.10	7.8	10.5			
MCIVOR	MH001	409	410	0.01				50	40	-0.10	5.8	9.9			
MCIVOR	MH001	410	411	0.01				50	20	-0.10	5.4	9.7			

BHID	Depth	Mag Sus 10 -5
MH001	44	144
MH001	50	600
MH001	58	3100
MH001	61	1700
MH001	64	8
MH001	69	600
MH001	74	3100
MH001	82	700
MH001	86	1800
MH001	90	61
MH001	100	3650
MH001	105	900
MH001	110	426
MH001	115	4150
MH001	120	970
MH001	125	3800
MH001	130	250
MH001	135	80
MH001	140	7000
MH001	145	5500
MH001	150	3300
MH001	155	100
MH001	160	5900
MH001	165	6300
MH001	170	12200
MH001	175	2400
MH001	180	12300
MH001	185	5400
MH001	190	5200
MH001	195	9700
MH001	200	9300
MH001	205	13100
MH001	210	6100
MH001	215	7600
MH001	220	4700
MH001	225	5700
MH001	230	280
MH001	235	10100
MH001	240	3100
MH001	245	10200
MH001	250	5000
MH001	255	11000
MH001	260	600
MH001	265	2000
MH001	270	9900
MH001	275	10300
MH001	280	8400
MH001	285	4300
MH001	290	5200
MH001	295	8800
MH001	300	8300
MH001	305	6200
MH001	310	10000
MH001	315	11000
MH001	320	2600
MH001	325	2100
MH001	330	10100
MH001	335	18500
MH001	340	7400
MH001	345	5700
MH001	350	1800
MH001	355	8500
MH001	360	12400
MH001	365	8000
MH001	370	1700
MH001	375	262
MH001	380	2300
MH001	385	1600
MH001	390	400
MH001	395	2300
MH001	400	100
MH001	405	4600
MH001	410	7300
MH001	415	2400

Allegiance Metals - Drill Log

BHID

A223A

Collar

Project	BHID	Easting	Northing	RL	Depth	Date	Geologist
Trial_Harb	A223A	349777.5	5356223.4	2104.72	175.1	20/02/2007	DG

Surveys

Project	BHID	Depth	Azm_Amg	Dip
Trial_Harb	A223A	0	0	-50
Trial_Harb	A223A	50	0	-45.3
Trial_Harb	A223A	100	0	-45.7
Trial_Harb	A223A	150	0	-46.1
Raw data (uncorrected)				

Hole Sizes

From	Size
13.3	HQ
32.6	NQ

Drilled By

BLY

Analyses By

BRL

Comments

A223A is a helicopter supported drillhole targeted at a magnetic anomaly near Trial Harbour. It starts at 13.3m where the hole lipped off rods left in the original hole (A223) which was abandoned due to a parted rod string and driller error.
A223A was not gyro surveyed but a nearby hole in similar ground conditions (A224) was gyro surveyed and spun first west and then east, with a maximum deflection of 4 degrees from the collar azimuth. Given this result, assuming A223A stayed straight seems reasonable and any uncertainty in E-W hole position should be on the order of meters rather than tens of meters. Downhole dips taken from singleshot camera surveys. DG 3 March 07.

Significant Intersections

Trial_Harbour, 61.0 - 64.0, 3m @ 0.8% Ni, 0.01% As, 0.05% Co and 3.6% S

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Trial_Ha	A223A	0	13.3		LOSS							Hole starts at 13.3m where it lips off rods left in A223.
Trial_Ha	A223A	13.3	18.3	Csu	SKSP	DiMt	W2	0.05	Bk	Fo	60	Massive white, black-and-white and rarely dirty khaki green altered ultramafic. Intense diopside alteration. Magnetite veins and blebs common, occasionally with very minor to trace brassy sulphide, possibly pyrrhotite. Patchy weak folation at around 60 to CA. Small zones of semi-massive magnetite, increasing downhole.
Trial_Ha	A223A	18.3	20.5	Csu	MMAG	MtDi	N	0.05	Gr			Massive and semi-massive magnetite. Minor diopside. Trace sulphide. Very small clay altered fault at 20.0m.
Trial_Ha	A223A	20.5	40.5	Csu	SKSP	DiMt	W2	0.01	Sp	Fo	65	Massive white and black-and-white altered ultramafic. Intense diopside alteration. Magnetite veins and blebs common. Trace brassy sulphide associated with magnetite. Minor accessory red-brown garnet and late coarse calcite patches. Moderately strong foliation between 60-70 degrees to CA. Minor disseminated bright green silicate (probably Ni rich). Small zones semi-massive magnetite.
Trial_Ha	A223A	40.5	43.7	Ccc	GWAC	DiSi	A2	0.00	Sp			Massive pale purplish, off-white, grey and green intensely altered mafic rock probably volcaniclastics. Alteration varies from silica-k-feldspar to diopside and actinolite-chlorite. Somewhat broken.
Trial_Ha	A223A	43.7	44.3	Csu	SKSP	Di	A1	0.05	Sp			Massive pale grey/grey-green intensely altered ultramafic skarn? Intense diopside alteration, trace sulphide, minor calcite and epidote veinlets.
Trial_Ha	A223A	44.3	48.1	Ccc	GWAC	SiKf	P2	0.00	Sp			Massive pale purplish, off-white and cream intensely altered and metasomatised mafic rock, probably volcaniclastics. Intense silica-k-spar alteration with minor epidote and actinolite.
Trial_Ha	A223A	48.1	50	Csu	SKSP	Di	A1	0.05	Sp	Fo	50	Massive pale grey/grey-green intensely altered ultramafic skarn. Intense diopside alteration, trace sulphide, trace zaratite. Moderate foliation around 50 degrees to CA.
Trial_Ha	A223A	50	55.1	Ccc	GWAC	SiKf	P2	0.00	Sp			Massive pale purplish, off-white and cream intensely altered and metasomatised mafic rock, probably volcaniclastics. Intense silica-k-spar alteration with minor epidote and actinolite.
Trial_Ha	A223A	55.1	56.1	Csu	SKSP	Di	A1	0.05	Sp	Fo	50	Massive pale grey/grey-green intensely altered ultramafic skarn. Intense diopside alteration, trace sulphide, trace zaratite. Moderate foliation around 50 degrees to CA. Minor epidote.

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraph	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Trial_Ha	A223A	56.1	57.8	Ccc	GWAC	SiKf	P2	0.00	Sp			Massive pale purplish, off-white and cream intensely altered and metasomatised mafic rock, probably volcaniclastics. Intense silica-k-spar alteration with minor epidote and garnet.
Trial_Ha	A223A	57.8	66.1	Csu	SKSP	DiSi	G2	0.70	Sp			Massive pale green and mid grey intensely altered and metasomatised ultramafic and possibly some minor xenoliths of mafic rock? To about 60.9 interval is pale green diopside +/- tremolite with minor zaratite, epidote and sulphide; from 60.9 to about 64.2m the rock becomes dark grey, strongly silicified and considerably more sulphide rich, along with common magnetite as disseminations and semi-massive patches. The remainder of the interval is pale green tremolite-diopside-calcite altered. Sulphide is probably a combination of po and pe.
Trial_Ha	A223A	66.1	69.7	Cba	VBLB	PhAc	B3	0.10	Gr			Massive mid to dark brown and green, brecciated and altered basaltic volcaniclastic sandstone and siltstone. Pervasive phlogopite alteration with patchy strong actinolite +/- diopside overprint; also minor intense epidote overprint.
Trial_Ha	A223A	69.7	92.4	Ccc	GWAC	PhAc	B3	1.00	Ft	Bd	45	Massive to well-bedded quartz-feldspar lithic wacke, siltstone and minor shale. Bedding variable where noted, from 30 to 60 degrees to CA. Moderate pervasive phlogopite alteration with minor actinolite +/- diopside overprint. Sulphide rare to about 86m, then quite pyrrhotitic to end of interval with trace associated cp. Trace coarse red/honey-brown sphalerite and galena as disseminations at uphole end of interval.
Trial_Ha	A223A	92.4	92.6		FALT	Ch	G4	0.00	Ft	Ft	60	Small brittle fault in altered sediments. Minor chlorite alteration.
Trial_Ha	A223A	92.6	147.9	Ccc	GWAC	PhAc	B3	1.00	Gr	Bd	45	Massive to foliated dark brown/grey-brown lithic greywacke and siltstone. Bedding generally indistinct and/or brecciated. Where preserved/noted typically around 45-60 degrees to core axis but variable. Some zones foliation appears tectonic at 60 degrees to CA. Pervasive phlogopite alteration. Hornfelsed. Mostly sulphide is rare, but locally abundant (eg 5% average over 103-107m). Where present sulphide is mostly pyrrhotite as blebs and stringers with trace chalcopyrite and commonly associated with fine grained milky silica. Domainal actinolite-diopside overprinting towards lower contact.

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraph	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Trial_Ha	A223A	147.9	166.2	Ccc	VBLF	AcPh	A4	1.50	Gr	Bd	45	Massive to bedded dark brown, grey, pale grey and green moderately to intensely altered and metasomatised basaltic volcaniclastic sediments. Highly variable alteration assemblage includes actinolite, diopside, silica, phlogopite, magnetite, axinite, carbonate. Bedding locally preserved but mostly unrecognisable. Locally strongly pyrrhotitic.
Trial_Ha	A223A	166.2	171.4	Ccc	GWAC	PhSi	B4	1.00	Gr	Bd	55	Massive to well-bedded dark brown/grey-brown greywacke and siltstone. Pervasive phlogopite-silica alteration. Minor pyrrhotite stringers. Core moderately broken. Bedding brecciated and core somewhat vughy with chlorite alteration adjacent to uphole contact.
Trial_Ha	A223A	171.4	175.1 END	Ccc	VBLF	PhPr	B3	0.00	Bk			Massive dark brown and pale cream-grey patchily altered basaltic volcaniclastics. Pervasive phlogopite alteration with strong domainal diopside-silica-prehnite? overprint. Bedding indistinct.

Assay Sheet															
Project	**BHID**	**From m**	**To m**	**Ni %**	**Cu ppm**	**Pb ppm**	**Zn ppm**	**As ppm**	**Co ppm**	**S%**	**MgO %**	**FeO %**	**Au ppm**	**Strat**	**Rock**
Trial_Harb	A223A	59	60	0.12				50	-20	-0.1	10.1	3.9			
Trial_Harb	A223A	60	61	0.09				100	-20	-0.1	11.0	4.7			
Trial_Harb	A223A	61	62	0.92				100	480	2.7	7.1	13.8			
Trial_Harb	A223A	62	63	0.50				100	360	5.0	11.7	28.7			
Trial_Harb	A223A	63	64	0.95				50	600	3.1	6.0	20.6			
Trial_Harb	A223A	64	65	0.23				50	40	0.1	13.3	3.8			
Trial_Harb	A223A	**86**	**87**	0.04				100	80	3.0	4.5	8.9			
Trial_Harb	A223A	87	88	0.03				50	80	3.0	4.9	8.7			
Trial_Harb	A223A	**150**	**151**	0.02				50	80	2.1	6.0	8.1			
Trial_Harb	A223A	151	152	0.04				-50	180	3.5	8.8	11.2			
Trial_Harb	A223A	152	153	0.05				-50	220	3.4	14.6	23.7			
Trial_Harb	A223A	153	154	0.05				900	300	2.1	12.2	20.8			
Trial_Harb	A223A	154	155	0.05				50	200	4.0	11.4	17.1			
Trial_Harb	A223A	155	156	0.04				50	160	2.3	11.5	13.5			
Trial_Harb	A223A	156	157	0.04				-50	120	1.9	12.1	9.7			

Allegiance Metals - Drill Log

BHID A221

Collar

Project	BHID	Easting	Northing	RL	Depth	Date	Geologist
Trial_Harb	A221	350836.3	5355895.6	2127.5	485.0	12/12/2007	DG

Surveys

Project	BHID	Depth	Azm_Amg	Dip
Trial_Harb	A221	0	240.2	-50.8
Trial_Harb	A221	50	240.7	-50.0
Trial_Harb	A221	100	246.2	-49.5
Trial_Harb	A221	150	250.2	-48.5
Trial_Harb	A221	200	255.2	-47.0
Trial_Harb	A221	250	257.2	-46.0
Trial_Harb	A221	300	262.2	-43.5
Trial_Harb	A221	350	262.2	-42.0
Trial_Harb	A221	400	262.2	-40.5
Trial_Harb	A221	450	262.2	-39
Trial_Harb	A221	485	262.2	-39

Hole Sizes

From	Size
0	HQ
70	NQ

Drilled By

Almac

Analyses By

BRL

Comments

A221 is a helicopter supported drillhole targeted at a magnetic anomaly near Trial Harbour.
The collar of the hole was surveyed by a licenced surveyor using high resolution DGPS. The downhole surveys were done using an Eastman singleshot camera. Magnetic correction of 13.2 degrees was added and a further 8 degrees was added to all surveys from 50 to 350m inclusive. The additional 8 degrees was added to bring the 50m azimuth around to the collar azimuth.
The Eastman azimuths were not used below 350m as they were close to the magnetic source and inconsistent with the established spin trend.
The hole intersected a serpentinised ultramafic body at approx 430m and ended in this body at 485m. No significant sulphides were detected in the ultramafic.

Significant Intersections

No significant Ni intersections.

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Trial_Ha	A221	0	12		LOSS							Tri-cone to 12m no core recovery
Trial_Ha	A221	12	18	Ccc	SILT	CyLi	A3	0.30	Bk	Bd		Mid-grey thinly bedded/laminated siltstone and lithic sandstone. Broken rubbly ground with poor core recovery. Recovered fragments fairly fresh but some minor clay and limonite is present. Bedding appears inconsistent, probably deformed.
Trial_Ha	A221	18	29.1	Ccc	VBLB	PhSi	B4	0.80	Gr			Massive dark grey-brown basaltic volcaniclastics. Mix of thinly bedded/laminated siltstones, lithic wacke/greywacke and thin zones of poorly sorted polymictic breccias. Bedding disrupted and brecciated. Alteration dominated by phlogopite-silica with minor actinolite and/or diopside. Sulphide, mostly pyrite, as disseminations, selective clast replacement and fracture coatings. Minor disseminated sphalerite adjacent to lower contact which is mixed over about 1m. Increasingly sulphide rich towards downhole contact.
Trial_Ha	A221	29.1	30.3	Csu	SKSP	TmSp	G3	1.50	Sp			Massive mid-green strongly altered ultramafic/mafic dyke. Tremolite-serpentine altered with disseminated pyrrhotite, galena, sphalerite and possibly pentlandite? Lower contact sharp but undulating. Minor calcite veins and blebs with diffuse edges.
Trial_Ha	A221	30.3	66.6	Ccc	VBLB	PhSi	B4	0.80	Gr	Bd	35	Massive dark grey-brown basaltic volcaniclastics. Mix of thinly bedded/laminated siltstones, lithic wacke/greywacke and zones of poorly sorted polymictic breccia/ conglomerate. Bedding disrupted and brecciated. Alteration dominated by phlogopite-silica with minor actinolite and/or diopside. Sulphide, mostly pyrrhotite as veins and blebs. Good ground conditions. BCA highly variable.
Trial_Ha	A221	66.6	74.4	Ccc	VBLB	DiAc	A2	0.80	Gr			Massive pale grey and grey-green altered basaltic volcaniclastics. Strongly brecciated and altered greywacke/lithic wacke and siltstone. Alteration dominated by pale-bleached diopside with lesser actinolite and minor phlogopite. Pyrrhotite veins and disseminations throughout. Very good ground, case off to NQ at 70m.
Trial_Ha	A221	74.4	84.2	Ccc	SILT	PhSi	B3	2.50	Sp			Pale to mid-brown laminated siltstone with lesser lithic wacke and shale. BCA highly irregular, bedding disrupted and brecciated. Pyrrhotite veins and blebs common.
Trial_Ha	A221	84.2	109	Ccc	LRQB	KfSi	A1	0.75	Sp			Massive very pale grey quartz phyric to aphyric rhyolite lava and lava breccia. Peperitic lower contact. Small lithic clasts (siltstone) occur sporadically

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraph	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
												throughout. Pyrrhotite blebs and small stringers occur in localised concentrations. Patchy crystalline k-feldspar/diopside alteration.
Trial_Ha	A221	109	193.4	Ccc	SILT	PhAc	B4	0.50	Sp	Bd	30	Mid to pale brown laminated coarse siltstone/fine grained greywacke/lithic wacke with much lesser thin lithic sandstone beds and rare poorly sorted pebble breccia. BCA generally quite consistent around 30 degrees, but variable between 5 and 60 degrees. Pervasive phlogopite alteration. Phyrrotite-pyrite locally common but overall minor, as cross-cutting veins, stratabound/stratiform disseminations and selective clast replacement. Graded beds mainly fine uphole. Rare Ac veins, usually with minor associated epidote, sphalerite and galena.
Trial_Ha	A221	193.4	194.6	Ccc	EBLB	PhAc	B4	0.75	Sp			Massive dark brown and green pebble polymictic pebble breccia/conglomerate. Poorly sorted sub-rounded clasts. Some clasts appear to be a mafic plutonic possibly dolerite or gabbro. Pervasive phlogopite alteration with some actinolite overprinting and disseminated/clast replacement pyrrhotite.
Trial_Ha	A221	194.6	203.2	Ccc	GWAC	Ph	B3	0.50	Gr	Bd	20	Mid to pale brown thinly bedded to massive fine to medium grained greywacke. Planar joints with chlorite-pyrite coatings. Disseminated and vein pyrrhotite. Fine bleached fractures and some larger brecciated zones which are also bleached. Pervasive phlogopite alteration.
Trial_Ha	A221	203.2	207.4	Ccc	GWAC	SiPo	A4	1.00	Gr			Very dark grey greywacke with minor siltstone and shale. Hard brittle ground, silicified? Silica-pyrrhotite veining.
Trial_Ha	A221	207.4	232.1	Ccc	GWAC	PhDi	B3	0.50	Gr	Bd	20	Mid to pale brown thinly bedded to massive fine to medium grained greywacke. Lesser siltstone and rare pebble conglomerate/breccia. Pervasive phlogopite alteration with fine bleached fractures. Some diopside alteration in siltstones increasingly common downhole. Planar joints with chlorite-pyrite coatings. Bedding usually consistent around 20-30 degrees to core axis, brecciated and disrupted in places.
Trial_Ha	A221	232.1	233	Ccc	CONG	PhAc	B4	0.50	Sp			Massive dark brown and green polymictic pebble breccia/conglomerate. Poorly sorted well-rounded clasts. Some clasts appear to be a mafic plutonic possibly dolerite or gabbro. Pervasive phlogopite alteration with some actinolite overprinting and veinlet pyrrhotite.

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraph	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Trial_Ha	A221	233	244.8	Ccc	SILT	PhDi	B3	0.50	Gr	Bd	25	Mid to pale brown thinly bedded to laiminated siltstone with lesser coarse sandy layers and minor thin zones of pebble breccia. Pervasive phlogopite alteration with fine bleached fractures. Some diopside alteration in siltstones Bedding usually consistent around 20-30 degrees to core axis, brecciated and disrupted in places. Hard brittle core (hornfelsed) moderately broken.
Trial_Ha	A221	244.8	256	Ccc	VBLB	SiKf	R3	0.75	Sp			Massive to foliated red-brown and pale grey, hard to very hard and brittle altered basaltic volcaniclastics? Some preserved clastic textures, also textures which appear sub-mylonitic/deformation related. Alteration dominated by silicification with K-feldspar? and some remanent phlogopite. Carbonate veins with minor sulphides which include py-cp-po-galena and at least two phases of sphalerite (one fe-rich, one fe-poor). Probably altered and deformed Crimson/Contiguous Ck.
Trial_Ha	A221	256	266.4	Ccc	SILT	PhDi	B4	0.75	Gr			Massive dark brown siltstone and greywacke. Pervasive phlogopite alteration. Bedding generally obscure or disrupted and brecciated. Hornfelsed. Brittle, moderately broken. Some diopside alteration. Po disseminations and stringers.
Trial_Ha	A221	266.4	279.4	Ccc	VBLB	PhAc	B4	0.50	Sp			Massive to foliated brown, red-brown to green and white altered basaltic volcaniclastics. Some preserved coarse clastic textures, also textures which appear sub-mylonitic/deformation related. Alteration varies from phlogopite to phlogopite-diopside and actinolite-diopside, also silicified. Probably Contiguous Ck Moderately broken, hard brittle ground.
Trial_Ha	A221	279.4	429.8	Ccc	LRQB	SiKf	A2	0.50	Sp			Massive very pale grey quartz phyric to aphyric rhyolite. Commonly contains pebble to cobble size sub-rounded to well-rounded clasts of sedimentary rock, dominantly siltstone. Patches foliated (flow-banding?). Partially resorbed quartz phenocrysts. Common soft black to dark green laths; possibly chloritised biotite? Some later quartz veining. Minor to trace po-py-sp.
Trial_Ha	A221	429.8	434.8	Csu	SERP	SpCb	N	0.00	Ft			Massive mottled black, dark green and grey moderately to strongly altered serpentinised ultramafic. Alteration is serpentine-calcite-magnetite-tremolite. No significant sulphide detected.
Trial_Ha	A221	434.8	435.3		FALT	CyCb	N	0.00	Ft			Brittle fault in ultramafic. Some core loss. In recovered core, minor clay alteration and some carbonate fill.

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraph	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Trial_Ha	A221	435.3	441.2	Csu	SERP	TmSp	G3	0.00	Gr			Massive mottled mid-green and very dark green-grey altered serpentinised ultramafic. Strong tremolite alteration. No significant sulphide detected.
Trial_Ha	A221	441.2	445.2	Csu	SKSP	Di	W2	0.00	Gr			Massive white/off-white intensely altered ultramafic. Very strong to intense diopside alteration.
Trial_Ha	A221	445.2	451.4	Csu	SERP	SpTm	G4	0.00	Sp			Massive, mottled very dark green, grey and paler green-white serpentinised ultramafic. Mottled tremolite alteration. Abundant magnetite near start of interval but very minor in remainder. Minor coarse grained disseminated calcite.
Trial_Ha	A221	451.4	465.9	Csu	SKSP	DiSi	A2	0.00	Sp			Massive white/off-white intensely altered ultramafic. Very strong to intense diopside alteration with some later intense silicification in parts. Fine flecks and veinlets of a bright green nickel silicate in silicified zone. Late calcite-molybdenite veining in silicified zone (very minor).
Trial_Ha	A221	465.9	485	Csu	SERP	SpCb	G3	0.05	Bk			Massive mottled black, dark green and grey moderately to strongly altered serpentinised ultramafic. Alteration is serpentine-calcite-magnetite-tremolite. Trace brassy sulphide. Parts weakly foliated at around 10-20 degrees to CA END

Assay Sheet															
Project	**BHID**	**From m**	**To m**	**Ni %**	**Cu ppm**	**Pb ppm**	**Zn ppm**	**As ppm**	**Co ppm**	**S%**	**MgO %**	**FeO %**	**Au ppm**	**Strat**	**Rock**
Trial_Harb	A221	28	29	0.33				50	140	3.3	8.4	12.5			
Trial_Harb	A221	29	30	0.15				-50	20	1.3	10.6	5.5			
Trial_Harb	A221	30	30.3	0.04				50	-20	0.2	10.2	4.7			
Trial_Harb	A221	244	245	0.02				50	20	1.2	3.4	8.6	0.0		
Trial_Harb	A221	245	246	0.01				50	-20	0.5	2.6	5.8	0.0		
Trial_Harb	A221	251	252	0.01			3810	-50	-20	0.6	1.8	4.5	0.0		
Trial_Harb	A221	294	295												
Trial_Harb	A221	333	334												
Trial_Harb	A221	367	368										0.0		
Trial_Harb	A221	453	454	0.03				50	-20	-0.1	3.2	4.6			
Trial_Harb	A221	454	455	0.02				-50	-20	-0.1	1.5	2.1			
Trial_Harb	A221	468	469	0.51				50	160	0.1	27.6	6.6			
Trial_Harb	A221	469	470	0.46				50	140	0.1	31.3	6.1			
Trial_Harb	A221	470	471	0.33				50	80	-0.1	29.3	5.8			
Trial_Harb	A221	471	472	0.43				100	120	0.1	25.6	6.6			

Allegiance Metals - Drill Log

BHID

A224

Collar

Project	BHID	Easting	Northing	RL	Depth	Date	Geologist
Trial_Harb	A224	349581.5	5356259.1	2103.1	188	21/11/2006	TC

Surveys

Project	BHID	Depth	Azm_Amg	Dip
Trial_Harb	A224	0.00	1.03	-51.62
Trial_Harb	A224	50	357.47	-50.37
Trial_Harb	A224	100	357.57	-50.72
Trial_Harb	A224	150	359	-50.71
Trial_Harb	A224	180	359.34	-50.28
Raw data (uncorrected)				

Hole Sizes

From	Size
0	HQ
41.6	NQ

Drilled By

Boart Longyear

Analyses By

BRL

Comments

A171 is a resource definiton drillhole for the East Avebury and Saxon deposits.
It was designed to test updip of A033 and the Saxon deposit on 354600E.

Significant Intersections

No significant Ni sulphides present.
Minor enrichment of Ni oxides with massive magnetite.

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Trial_Ha	A224	0	1		SOIL							Peat soil.
Trial_Ha	A224	1	3.6	Ccc	SSLT	Li	B3	0.00	Sp			Weathered and fissile, pale cream to brown siltstone. Deeply weathered and broken. Clay altered with Humic acid staining.
Trial_Ha	A224	3.6	12.7		CLAY	Cy	OB	0.00	Sp			Orange and brown/green clay. Deeply weathered and completely decomposed siltstones.
Trial_Ha	A224	12.7	21.5	Ccc	GWAC	PhDi	C2	0.00	Sp			Pale cream and brown siltstone and greywacke. Intense phlogopite alteration and overprinting cream diopside alteration. Intensely metasomatised. Minor relict bedding and feldspar grains.
Trial_Ha	A224	21.5	24	Csu	SKSP	TrDi	C1	0.00	Sp			Massive, pale cream, intensely metasomatised ultramafic skarn. Pervasive fine grained crystalline diopside alteration with minor relict magnetite veining. Late vughy alteration veins with trace sphalerite-galena.
Trial_Ha	A224	24	25.5	Csu	MMAG	Mt	N	0.00	Sp	Fo	80	Massive foliated and veined magnetite. Coarse magnetite with minor serpentinite and diopside altered ultramafic. Strongly sheared with late vughy bleaching. Minor disseminated sphalerite.
Trial_Ha	A224	25.5	34	Csu	SKSP	MtDi	A3	0.00	Sp	Fo	75	Laminated and mylonitic ultramafic skarn and magnetite. Alternating mylonitic layers of 2 to 50 cm. Strongly foliated and sheared. Ultramafic is composed of cream fine grained diopside skarn with black magnetite banding. Vughy and faulted zones within mylonite.
Trial_Ha	A224	34	54.1	Csu	SERP	SpMt	G4	0.00	Gr	Vn	70	Massive, dark grey/green serpentinite. Mine disseminated magnetite and minor medium grained euhedral magnetite to 2mm. Sparse, late carbonate/chalcedony veins.
Trial_Ha	A224	54.1	70.1	Csu	SKSP	SpDi	A2	0.00	Ft			Massive, pale grey and black ultramafic skarn. Mottled (colloidal?) textured diopside skarn with relict remnant serpentinite. Up to 5% massive magnetite nodules and veins.
Trial_Ha	A224	70.1	73.7		FALT							Faulted skarned ultramafic. 2.8m cavity.
Trial_Ha	A224	73.7	86	Cba	VBLM	DiAc	A2	0.00	Gr	Bd	45	Massive feldspar-lithic volcaniclastic greywacke and siltstone. Intense actinolite-diopside alteration overprinting earlier phlogopite alteration. Graded beds facing up hole. Strong hornfelsing and metsomatic alteration.
Trial_Ha	A224	86	107	Ccc	GWAC	PhAc	B4	0.00		Bd	45	Massive, dark brown, feldspar-lithic volcaniclastic greywacke. Graded beds with

Allegiance Metals Drill Log

Project	BHID	From	To	Stratigraph	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
												up hole facing. Pervasive phlogopite alteration. Moderately hornfelsed.
Trial_Ha	A224	107	113	Cba	VBLM	DiAc	A2	0.00	Gr	Bd	60	Massive feldspar-lithic volcaniclastic greywacke and siltstone. Intense actinolite-diopside alteration overprinting earlier phlogopite alteration. Graded beds facing up hole. Strong hornfelsing and metsomatic alteration.
Trial_Ha	A224	113	153	Ccc	GWAC	PhAc	B4	0.00	Ft	Bd	60	Massive, dark brown, feldspar-lithic volcaniclastic greywacke. Graded beds with up hole facing. Pervasive phlogopite alteration. Moderately hornfelsed. Patchy, late actinolite-diopside alteration veins and selvedges.
Trial_Ha	A224	153	153.2		FALT	Cb	W	0.00	Ft	Ft	30	Late brittle fault. White calcite infill.
Trial_Ha	A224	153.2	157	Ccc	GWAC	PhAc	B4	0.00	Gr	Bd	65	Massive, dark brown, feldspar-lithic volcaniclastic greywacke. Graded beds with up hole facing. Pervasive phlogopite alteration. Moderately hornfelsed. Patchy, late actinolite-diopside alteration veins and selvedges.
Trial_Ha	A224	157	171.1	Cba	VBLM	DiAc	A2	0.30	Gr	Bd	60	Massive feldspar-lithic volcaniclastic greywacke and siltstone. Intense actinolite-diopside alteration overprinting earlier phlogopite alteration. Graded beds facing up hole. Strong hornfelsing and metsomatic alteration. Coarse sporadic pyrrhotite veining and blebsassociated with intense actinolite alteration.
Trial_Ha	A224	171.1	188	Ccc	GWAC	PhAc	B4	0.10	Gr	Bd	65	Massive, dark brown, feldspar-lithic volcaniclastic greywacke. Graded beds with up hole facing. Pervasive phlogopite alteration. Moderately hornfelsed. Patchy, late actinolite-diopside alteration veins and selvedges with minor pyrrhotite veins. EOH

Assay Sheet															
Project	**BHID**	**From m**	**To m**	**Ni %**	**Cu ppm**	**Pb ppm**	**Zn ppm**	**As ppm**	**Co ppm**	**S%**	**MgO %**	**FeO %**	**Au ppm**	**Strat**	**Rock**
Trial_Harb	A224	24	25	0.57				150	380	-0.1	20.4	35.5			
Trial_Harb	A224	25	26	0.18				100	200	-0.1	11.4	22.6			
Trial_Harb	A224	32	33	0.29				100	140	-0.1	22.9	15.1			
Trial_Harb	A224	33	34	0.31				100	220	-0.1	20.7	21.9			
Trial_Harb	A224	58	59	0.22				100	200	-0.1	26.9	21.7			
Trial_Harb	A224	59	60	0.26				100	240	-0.1	33.6	22.8			
Trial_Harb	A224	60	61	0.22				100	180	-0.1	31.9	18.7			
Trial_Harb	A224	61	62	0.17				50	120	-0.1	31.3	12.8			
Trial_Harb	A224	158	159	0.03				50	120	2.9	8.7	11.2			
Trial_Harb	A224	159	160	0.02				50	120	2.4	6.4	9.6			
Trial_Harb	A224	160	161	0.03				50	120	3.2	5.0	9.6			
Trial_Harb	A224	161	162	0.03				50	100	3.3	6.0	11.3			
Trial_Harb	A224	162	163	0.03				50	80	2.8	5.6	10.7			
Trial_Harb	A224	163	164	0.02				-50	60	2.6	4.4	8.8			
Trial_Harb	A224	164	165	0.02				-50	40	2.6	5.1	8.6			
Trial_Harb	A224	165	166	0.02				50	40	2.7	4.2	8.1			

Appendix 2

Fen Creek Soil Samples

easting	northing	sample no	depth	colour	horizon		Ni ppm	As ppm	Co ppm	Cu ppm	Pb ppm	Zn ppm	Cr ppm
353500	5354000	26001					13	19	5	39	14	38	49
353500	5354025	26002					9	12	6	32	11	45	17
353500	5354050	26003					14	-1	4	34	8	69	49
353500	5354075	26004					12	58	6	24	2	25	27
353500	5354100	26005					7	16	7	39	23	50	24
353500	5354125	26006					13	4	6	28	8	25	21
353500	5354150	26007					10	3	5	48	13	24	23
353500	5354175	26008					9	9	4	28	8	18	24
353500	5354200	26009					9	-1	8	19	6	27	41
353500	5354225	26010					13	15	10	31	8	20	30
353500	5354250	26011					8	24	9	25	11	24	52
353500	5354275	26012					19	83	10	63	33	121	68
353500	5354300	26013					18	133	24	50	7	120	100
353500	5354325	26014					42	396	53	28	-1	30	25
353500	5354350	26015					40	519	47	21	-1	136	54
353500	5354375	26016					10	4	8	24	4	36	138
353500	5354400	26017					15	6	6	70	16	31	53
353500	5354425	26018					11	34	6	23	-1	11	29
353500	5354450	26019					11	40	9	17	3	7	36
353500	5354475	26020					15	13	13	18	36	246	15
353500	5354500	26021					19	38	13	25	106	203	28
353500	5354525	26022					14	54	7	30	17	84	37
353500	5354550	26023					14	26	10	101	56	94	16
353500	5354575	26024					19	4	14	41	23	62	11
353500	5354600	26025					9	-1	8	26	6	21	24
353500	5354625	26026					11	-1	10	23	3	12	17
353500	5354650	26027					11	23	8	12	52	10	4
353500	5354675	26028					18	9	8	19	12	18	10
353500	5354700	26029					9	10	8	25	12	18	14

easting	northing	sample no	depth	colour	horizon		Ni ppm	As ppm	Co ppm	Cu ppm	Pb ppm	Zn ppm	Cr ppm
353500	5354725	26030					27	73	12	14	23	41	12
353500	5354750	26031					7	61	11	18	-1	6	25
353500	5354775	26032					18	24	10	28	6	12	43
353500	5354800	26033					16	58	11	60	14	50	14
353500	5354825	26034					15	73	8	108	41	93	11
353500	5354850	26035					25	68	10	36	20	14	47
353500	5354875	26036					17	109	9	25	1	8	10
353500	5354900	26037					16	94	10	29	-1	10	12
353500	5354925	26038					31	188	16	13	45	26	13
353500	5354950	26039					10	18	16	26	-1	19	12
353500	5354975	26040					13	31	8	16	35	11	12
353500	5355000	26041					8	207	7	21	-1	17	17
355000	5354225	26042					13	123	8	26	2	8	36
355000	5354200	26043					8	30	9	84	29	81	11
355000	5354175	26044					8	24	7	90	30	82	15
355000	5354150	26045					11	4	6	32	3	20	18
355000	5354125	26046					8	7	8	14	-1	8	15
355000	5354100	26047					12	20	2	23	11	16	7
355000	5354075	26048					15	14	2	20	2	16	13
355000	5354050	26049					7	4	-1	13	26	37	9
355000	5354025	26050					9	-1	5	56	3401	1647	11
355000	5354000	26051					11	1	5	9	24	24	8
355000	5353975	26052					12	42	5	19	80	48	46
354000	5354175	26053					7	4	5	7	9	10	9
354000	5354200	26054					21	31	15	11	81	185	37
354000	5354225	26055					16	9	24	10	56	129	34
354000	5354250	26056					9	5	4	14	37	44	24
354000	5354275	26057					8	10	3	9	22	26	12
354000	5354300	26058					6	-1	4	10	21	10	18

easting	northing	sample no	depth	colour	horizon		Ni ppm	As ppm	Co ppm	Cu ppm	Pb ppm	Zn ppm	Cr ppm
354000	5354325	26059					9	-1	3	10	26	16	64
354000	5354350	26060					11	4	4	13	19	23	71
354000	5354375	26061					7	10	4	14	8	7	17
354000	5354400	26062					10	4	4	12	4	13	12
354000	5354425	26063					18	16	9	31	16	27	32
354000	5354450	26064					11	9	3	20	6	16	30
354000	5354475	26065					7	10	2	12	13	10	12
354000	5354500	26066					9	8	5	14	9	16	13
354000	5354525	26067					11	24	3	19	7	16	18
354000	5354550	26068					14	30	2	19	6	19	31
354000	5354575	26069					11	10	1	20	10	14	29
354000	5354600	26070					5	18	1	11	9	19	15
354000	5354625	26071					11	6	3	17	13	25	30
354000	5354650	26072					21	-1	4	33	12	39	78
354000	5354675	26073					15	19	3	23	6	17	28
354000	5354700	26074					15	10	5	22	13	38	34
354000	5354725	26075					12	21	7	21	7	15	27
354000	5354750	26076					21	17	4	25	17	25	30
354000	5354775	26077					10	10	1	15	30	35	14
354000	5354800	26078					11	38	6	17	36	20	17
354000	5354825	26079					7	15	2	14	47	18	15
354000	5355000	26080					13	9	3	15	24	18	16
354000	5354975	26081					14	33	5	17	14	13	17
354000	5354950	26082					17	15	3	17	8	22	25
354000	5354925	26083					12	44	2	22	13	20	51
354000	5354900	26084					8	18	6	13	17	21	35
354000	5354875	26085					18	44	9	33	19	27	52
354000	5354850	26086					10	19	8	15	12	21	30
355000	5354250	26157	0.5	brown	b/c	pink rock chips	2	3	1	59	11	25	12

easting	northing	sample no	depth	colour	horizon		Ni ppm	As ppm	Co ppm	Cu ppm	Pb ppm	Zn ppm	Cr ppm
355000	5354275	26158	0.8	brown	b/c	white rock chips	2	28	2	23	12	28	10
355000	5354300	26159	1.2	brown	b/c	white rock chips	1	7	-1	19	9	16	15
355000	5354325	26160	1.2	brown	b/c	white rock chips	3	5	1	18	-1	13	14
355000	5354350	26161	1	brown	b/c	white rock chips	8	24	2	17	4	15	10
355000	5354375	26162	1.1	grey/br	b/c	clay	9	31	2	15	98	31	26
355000	5354400	26163	0.6	grey/br	b/c		3	3	-1	12	24	10	10
355000	5354425	26164	0.2	grey/br	b/c		10	17	-1	15	25	19	30
355000	5354450	26165	0.6	grey	c	beside creek white rc	10	28	-1	18	3	12	22
355000	5354475	26166	0.8	brown	c	white rock chips	4	24	3	12	1	12	14
355000	5354500	26167	1	brown	c	white rock chips	8	5	-1	14	14	8	45
355000	5354525	26168	0.6	grey	c	white rock chips	3	26	2	14	3	12	17
355000	5354550	26169	0.5	grey/br	c	white rock chips	3	35	1	11	5	12	30
355000	5354575	26170	0.9	brown	b/c	white rock chips	2	39	2	15	18	9	21
355000	5354600	26171	0.8	brown	b/c	white rock chips	6	23	-1	12	22	13	32
355000	5354625	26172	1.4	brown	b	white rock chips	9	9	-1	19	20	14	26
355000	5354650	26173	0.6	grey/br	b/c	white rock chips	3	41	3	13	11	9	17
355000	5354675	26174	1	brown	c	white rock chips	8	10	2	13	8	14	37
355000	5354700	26175	0.8	brown	b/c	white rock chips	5	12	2	10	80	10	38
355000	5354725	26176	1.4	brown	b/c		8	46	-1	15	13	32	14
355000	5354750	26177	1	brown	b/c	white rock chips	4	19	-1	12	7	6	13
355000	5354775	26178	0.4	brown	b/c		3	41	1	14	8	12	13
355000	5354800	26179	1	brown	b/c		2	16	1	9	8	6	17
355000	5354825	26180	0.5	grey/br	b/c	white rock chips	8	23	-1	12	12	22	29
355000	5354850	26181	0.6	brown	c	white rock chips	2	38	-1	15	-1	15	24
355000	5354875	26182	0.8	brown	c	white rock chips	6	29	2	11	5	16	18
355000	5354900	26183	0.6	white/br	c	white rock chips	2	15	-1	9	-1	18	13
355000	5354925	26184	0.7	brown	b/c	white rock chips	4	-1	-1	12	1	12	18
355000	5354950	26185	0.5	brown	c	white rock chips	3	23	1	10	5	13	19
355000	5354975	26186	0.7	brown	b/c	white rock chips	7	15	3	15	-1	8	39

easting	northing	sample no	depth	colour	horizon		Ni ppm	As ppm	Co ppm	Cu ppm	Pb ppm	Zn ppm	Cr ppm
355000	5355000	26187	0.3	brown	b		6	40	2	13	5	13	20
354500	5354000	26231	0.2	grey/br	b/c	white rock chips	9	5	2	25	17	44	6
354500	5354025	26197	0.2	grey/br	b/c	white rock chips	10	-1	1	23	18	24	27
354500	5354050	26196	0.3	grey/br	c	white rock chips	6	24	2	12	13	24	10
354500	5354075	26195	0.3	grey/br	b/c	white rock chips	11	-1	-1	13	8	12	24
354500	5354100	26194	0.4	brown	c	white rock chips	8	14	-1	23	33	25	23
354500	5354125	26193	0.5	brown	c	white rock chips	4	40	-1	11	23	22	21
354500	5354150	26192	0.4	brown	c	white rock chips	9	11	3	15	9	40	29
354500	5354175	26191	1.2	brown	b/c	white rock chips	22	273	20	15	27	504	75
354500	5354200	26205	0.6	brown	c	white rock chips	22	293	14	13	61	231	34
354500	5354225	26204	0.4	brown	c	white rock chips	7	90	7	14	12	26	13
354500	5354250	26198	0.5	brown	c	white rock chips	9	15	1	16	14	23	21
354500	5354275	26199	0.7	grey/blk	c		7	10	3	10	13	60	12
354500	5354300	26200	0.6	grey/blk	c		11	-1	4	10	19	31	38
354500	5354325	26201	0.5	brown	c	white rock chips	7	18	2	14	13	31	20
354500	5354350	26202	0.4	grey/br	b/c	white rock chips	31	407	80	33	111	368	49
354500	5354375	26203	1	black	c	white rock chips	7	14	5	15	-1	13	17
354500	5354400	26230	1	black	b/c	white rock chips	14	16	7	50	23	40	19
354500	5354425	26229	0.6	black	b	white rock chips	8	9	5	16	25	23	7
354500	5354450	26228	0.5	black	b	white rock chips	16	9	4	22	13	10	21
354500	5354475	26227	0.6	black	b	white rock chips	13	33	10	17	12	22	18
354500	5354500	26226	1	brown	b	white rock chips	14	14	7	16	47	24	19
354500	5354525	26225	0.7	brown	b	white rock chips	12	-1	7	14	15	23	19
354500	5354550	26224	0.6	grey/br	c	white rock chips	15	19	3	14	31	12	7
354500	5354575	26223	0.5	grey/br	c	white rock chips	10	29	4	10	15	28	9
354500	5354600	26222	0.6	grey/br	c	white rock chips	10	-1	3	9	220	2	11
354500	5354625	26221	0.5	grey/br	c	white rock chips	10	24	3	11	59	14	14
354500	5354650	26220	0.6	grey/br	c	white rock chips	10	10	6	20	42	22	10
354500	5354675	26219	0.4	grey/br	c	white rock chips	4	41	5	15	50	19	12

easting	northing	sample no	depth	colour	horizon		Ni ppm	As ppm	Co ppm	Cu ppm	Pb ppm	Zn ppm	Cr ppm
354500	5354700	26218	0.8	brown	c	white rock chips	9	27	5	10	26	13	12
354500	5354725	26217	1	brown	c	white rock chips	18	39	6	11	19	22	25
354500	5354750	26216	1	brown	b	white rock chips	10	27	3	10	20	34	9
354500	5354775	26215	0.8	brown	c	white rock chips	11	29	3	20	19	12	20
354500	5354800	26214	0.6	brown	c	white rock chips	11	6	5	20	17	34	14
354500	5354825	26213	1	brown	c	white rock chips	17	10	3	22	14	25	29
354500	5354850	26212	1	brown	c	white rock chips	17	44	4	22	17	28	18
354500	5354875	26211	0.8	brown	c	white rock chips	10	16	5	10	15	20	10
354500	5354900	26210	1	brown	b/c	white rock chips	13	5	7	17	17	21	14
354500	5354925	26209	1.2	brown	c	white rock chips	12	10	3	18	24	23	16
354500	5354950	26208	1	brown	b/c	white rock chips	9	27	8	16	18	29	15
354500	5354975	26207	1.1	brown	b	white rock chips	12	81	5	19	15	40	18
354500	5355000	26206	1	brown	c	white rock chips	6	14	5	14	12	19	9
354000	5354000	26188	0.5	black	a/c	white rock chips	2	20	-1	12	6	13	22
354000	5354025	26156	0.4	grey/br	a/c	white rock chips	5	36	-1	12	14	23	8
354000	5354050	26155	0.3	grey/br	a/c	pink rock chips	3	48	-1	62	46	62	8
354000	5354075	26154	0.4	brown	b/c	white rock chips	6	-1	3	11	12	23	13
354000	5354100	26153	0.3	grey/blk	a/c	white rock chips	9	7	2	12	15	49	15
354000	5354125	26152	0.3	grey/br	b	white rock chips	5	27	3	12	19	27	13
354000	5354150	26151	1	black	a/b	white rock chips	5	10	1	12	14	22	11
354000	5354175	26150	1	grey/blk	b/c	white rock chips	15	47	2	23	11	34	24
352000	5354875	26232	0.7	orange/br	c		29	90	116	45	21	32	241
352000	5354900	26233	1	orange/br	c	orange rock chips	30	210	14	40	26	42	187
352000	5354925	26234	0.8	orange/br	c	grey rockchips	30	355	15	74	19	45	157
352000	5354950	26235	0.7	orange/br	c	orange rock chips	10	25	6	15	16	6	37
352000	5354975	26236	0.8	brown	b/c		10	40	8	8	13	3	22
352000	5355000	26237	0.6	grey	c	white rock chips	14	12	7	7	7	4	16
352000	5355025	26238	0.7	grey	c	white rock chips	12	7	6	7	24	6	19
352000	5355050	26239	1	grey	c	white rock chips	10	15	6	13	11	6	11

easting	northing	sample no	depth	colour	horizon		Ni ppm	As ppm	Co ppm	Cu ppm	Pb ppm	Zn ppm	Cr ppm
352000	5355075	26240	0.8	orange/br	c	clay	12	37	8	54	20	59	29
352000	5355100	26241	0.8	orange/br	c	clay	12	27	7	86	40	88	22
352000	5355125	26242	0.8	orange/br	c	white rock chips	14	5	12	17	14	70	33
352000	5355150	26243	1	orange/br	c	white rock chips	9	18	6	13	28	10	26
352000	5355175	26244	0.5	grey	c	white rock chips	9	-1	7	12	15	-1	18
352000	5355200	26245	0.5	grey/br	b/c	grey rockchips	8	14	6	14	23	8	16
352000	5355225	26246	0.4	grey	c	white rock chips	12	26	3	16	40	28	26
352000	5355250	26247	0.3	orange/br	c	orange rock chips	20	30	12	16	43	24	44
352000	5355275	26248	0.4	grey	c	white rock chips	13	45	5	14	15	7	13
352000	5355300	26249	0.4	grey/or	c	white rock chips	9	27	6	28	31	22	14
352000	5355325	26250	0.3	orange/br	c	white rock chips	9	-1	6	18	57	32	32
352000	5355350	26251	0.3	lite brown	b/c	white rock chips	4	10	-1	13	63	20	22
352000	5355375	26252	0.4	grey/br	c	white rock chips	1	16	-1	7	59	19	23
352000	5355400	26253	0.5	grey	c	white rock chips	-1	6	2	17	25	18	17
352000	5355425	26254	0.6	grey/yw	c	white rock chips	14	14	5	9	24	156	34
352000	5355450	26255	0.3	grey/blk	b/c	white rock chips	1	22	5	10	15	45	18

Appendix 3

Petrography

Prospect	BHID	Depth	Code	Field Description
East_Avebury 30001	A214A	532	SERP	Massive dark grey to black serpentinite. Abundant lustrous medium grained disseminated magnetite, with some pentlandite intergrown, usually associated with coarser grained magnetite or large grain aggregates. Minor tremolite-diopside alteration. Around 532m there are coarse crystalline textures that appear to be preserved primary textures, ie pseduomorphed olivine from a cumulate(?) dunite or peridotite. Sample for thin section.
Avebury 30002	U025	58.5	SKRN	Intensely skarn altered, vuggy rock. Pale green, often euhedrally acicular, mineral that is likely tremolite (+possible vesuvianite?) dominant with silica infil of some vugs (along with coarse grained, crystalline, dark red sphalerite or pentlandite?/ pyrrhotite[?]towards uphole contact. Minor dissemiated magnetite towards uphole contact with associated pyrrhotite(?)-pentlandite(?)-very minor chalcopyrite(?). Vug infil often including axinite. Grades to silica matrix around angular breccia clasts of tremolite skarn.
Avebury 30003	A196	583	PHLG	Phlogopite schist with coarse grained phlogopite and frequent veins of white mineral (unidentified carbonate?). Small intermittant zones of skarn veining and/or remnant actinolite/diopside alteration. Skarn alteration appears to be mainly tremolite/diopside with minor tourmaline. Sulphides: in skarn areas, minor chalcopyrite and in phlogopite schist, pyrrhotite/pentlandite?
Avebury 30004	U025	63	SKRN	Intensely skarn altered, vuggy rock. Pale green, often euhedrally acicular, mineral that is likely tremolite (+possible vesuvianite?) dominant with silica infil of some vugs (along with coarse grained, crystalline, dark red sphalerite or pentlandite?/ pyrrhotite[?]towards uphole contact. Minor dissemiated magnetite towards uphole contact with associated pyrrhotite(?)-pentlandite(?)-very minor chalcopyrite(?). Vug infil often including axinite. Grades to silica matrix around angular breccia clasts of tremolite skarn.
Avebury 30005	U022	69.6	SKRN	Intensely diopside veined (possibly fault related: cataclasite?) with interstitial sulphides. High specific gravity.
East_Avebury 30006	A192A	170.8	SERP	Massive dark grey to black serpentinite. Common disseminated magnetite. Under magnification, texture appears to be possibly preserved cumulate textures. Very minor disseminated sulphide (pe?), grains very small. If texture is cumulate, sulphide is interstitial.
Avebury 30007	A189	532	VBLF	Massive, pale grey intensely altered and metasomatised volcaniclastics? Intense prehnite-silica alteration. Minor pink felted mineral - amphibole? Some dark red-black euhedral andradite garnet. Very minor disseminated pyrrhotite.
Avebury 30008	A172	619.3	SKSP	Pale green, intensely metasomatised ultramafic skarn. Crystalline tremolite-diopside. Vuggy and altered. Minor Serpentinite. Sparse coarse Py and Po.
East_Avebury 30009	A182	561.7	SAND	Massive pale grey intensely altered and metasomatised sandstone? Textures are largely destroyed; zones of mottling with various shades of grey appear somewhat conglomeratic or brecciated, other uniform zones may indicate a more homogenous parent (i.e. sandstone). Intense bleaching, silica-phrenite-epidote alteration. Minor sulphide, possibly pyrrhotite, associated with epidote. Minor axinite.
Avebury 30010	U031	100.3	SKRN	Possibly continuation of xenolith(?)/ skarned ultramafic. Grading from crystalline, acicular radiating mica(?)/aluminous hydroxide(? Brucite-like) with sulphide (pentlandite/nikelite?) psudomorphs of larger crystals (with associated magnetite), to vuggy meranosite(???) with silica plus minor sulphide and tremolite(?).
East_Avebury 30011	A217	432.30	SKRN	Fresh, moderately hard, massive, partly crystalline, in places veined, mid grey, brown-grey, becoming grey-black, fine to very coarse-grained, sericite-diopside-sparse magnetite skarn facies; atypical of ultramafic skarn; resembles an altered impure limestone, but no acid reaction; locally very coarse-grained, with large 5-12mm flakes of ?phlogopite, after pyroxene; crude compositional banding in places; broken to fragmented core in patches, with soft, waxy sericite coatings on fractures; sparse fine-grained mgt. interstitial, increasing near down hole contact; sparse cream diopside as veins and veinlets; trace zaratite as thin waxy coatings on undulating fractures at 473.25m; broken at down hole contact.
East_Avebury 30012	A219	275.2	SKSP	Fresh, hard to moderately hard, micro-fractured, veined, light to mid grey, in places cream-green, fine to coarse-grained, partly crystalline, diopside-carbonate-minor tremolite-magnetite skarn, after ultramafic; tremolite-diopside rich in patches; moderate HCl acid reaction, with carbonate intergrowths in dominantly calc-silicate groundmass; complex crystal twinning textures in places; minor 5% mgt. interstitial; massive mgt. in 30 cm zone at down hole contact; rare trace brown
Trial_Harbour 30013	A221	321.9	LRQB	Massive very pale grey quartz phyric to aphyric rhyolite. Commonly contains pebble to cobble size sub-rounded to well-rounded clasts of sedimentary rock, dominantly siltstone. Patches foliated (flow-banding?). Partially resorbed quartz phenocrysts. Common soft black to dark green laths; possibly chloritised biotite? Some later quartz veining. Minor to trace po-py-sp.
Trial_Harbour 30014	A223A	61.8	SKSP	Massive pale green and mid grey intensely altered and metasomatised ultramafic and possibly some minor xenoliths of mafic rock? To about 60.9 interval is pale green diopside +/- tremolite with minor zaratite, epidote and sulphide; from 60.9 to about 64.2m the rock becomes dark grey, strongly silicified and considerably more sulphide rich, along with common magnetite as disseminations and

REPORT N2885PE08

PETROLOGY OF SIXTEEN SAMPLES FROM AVEBURY TASMANIA

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30 May 2008

Allegiance Metals Pty Ltd
P O Box 62
ZEEHAN
TAS 7469

Attention: David Gibbons

REPORT N2885PE06

PETROLOGY OF SIXTEEN SAMPLES FROM AVEBURY TASMANIA

YOUR REFERENCE:	Email of 18 March 2008
SAMPLE IDENTIFICATION:	30001-30014, 22114 and 22117
MATERIAL:	Diamond drill core and rock samples.
DATE RECEIVED:	27 March 2008
PROJECT MANAGER:	Frank Radke

Frank Radke
Senior Mineralogist

FR : mb

SUMMARY

Sixteen (16) samples submitted by Allegiance Mining for petrological descriptions were given the following rock names.

SAMPLE NUMBER	ROCK NAME
30001	Serpentinised Dunite
30002	Mineralised Diopside Skarn
30003	Diopside Skarn
30004	Diopside Skarn
30005	Chlorite Altered Diopside Skarn
30006	Serpentinite
30007	Greisenised Diopside Skarn
30008	Diopside Skarn
30009	Prehnite Altered Diopside Skarn
30010	Mineralised Serpentinite
30011	Tremolite Schist
30012	Carbonate Altered Ultramafic Rock
30013	Rhyolite
30014	Mineralised Serpentinite
22114	Tuffaceous Sediment
22117	Fine-Grained Sandstone

This group of samples consists mainly of altered ultramafic rocks. Most of the samples have been altered to diopside skarns. Most of the diopside skarns contain disseminated chromite indicating the original rocks were ultramafic rocks. This suite also contains some serpentinised ultramafic rocks as well as one sample (30012) which show pervasive carbonate (probably calcite) alteration. Some of the diopside skarns exhibit prehnite veining and alteration and this is most pronounced in sample 30009.

The sulphide mineralisation in these samples consists mainly of pentlandite and pyrrhotite. Sample 30010 shows supergene replacement of pentlandite by violarite and pyrrhotite by pyrite.

Sample 30013 is thought to be a welded tuff or ignimbrite of rhyolitic composition while sample 22114 is a sedimentary rock with a significant tuffaceous component. Sample 22117 is a recrystallised, fine-grained detrital sedimentary rock. Samples 22114 and 22117 contain moderate amounts of a reddish brown, intensely pleochroic biotite of metamorphic or metasomatic origin.

1. INTRODUCTION

Sixteen (16) samples were submitted by Allegiance Metals Pty Ltd for petrographic and mineragraphic description. Seven of the samples were submitted for both petrographic and mineragraphic description and nine samples for petrographic description only.

2. PROCEDURE

Thin sections were made of the nine samples submitted for petrographic description and polished thin sections were made of the seven samples submitted for petrographic and mineragraphic description. The sections were microscopically examined and mineral proportions were visually estimated. Selected hand specimens (samples 30013, 22114 and 22117) were stained with sodium cobaltinitrite after hydrofluoric acid etch to detect the possible presence and location of potash feldspar. This is only mentioned in the hand specimen descriptions where potash feldspar has been detected. Some samples were also tested for calcite using dilute hydrochloric acid.

3. PETROGRAPHIC AND MINERAGRAPHIC DESCRIPTIONS

The individual petrographic and mineragraphic descriptions follow.

SAMPLE: 30001

ROCK NAME: Serpentinised Dunite

HAND SPECIMEN: This is a massive rock with a mottled dark to medium grey colour.

POLISHED THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Serpentine	60	Alteration
Olivine	20	Igneous
Talc	14	Alteration
Magnetite	5	Alteration/(?)Igneous
Chromite	1	Igneous
Pentlandite	Trace	(?)Igneous
(?)Pyrite	Trace	(?)Igneous
(?)Violarite	Trace	Alteration

This sample consists of olivine crystals between 10mm and 25mm in size partially replaced by serpentine forming veins and fracture linings within the olivine crystals. Remnants of the olivine crystals show uniform extinction over areas ranging up to 2mm indicating the size of the original olivine crystals. Talc is concentrated in patches up to several millimetres wide as small, randomly oriented flakes below 0.1mm long located interstitially between the olivine crystals.

Magnetite is disseminated through the rock as anhedral grains ranging up to 1mm wide although most of the magnetite has a grain size below 0.1mm. The magnetite is intergrown with the serpentine and is locally concentrated in irregular patches up to a few millimetres wide.

Chromite is disseminated through the rock as crystals ranging up to 0.8mm wide. Most of the chromite crystals are rimmed by magnetite. Traces of sulphide were noted in an area approximately 1mm wide. The sulphide consists mainly of small pentlandite grains below 0.1mm. Very small amounts of possible pyrite and violarite were also noted in the area containing pentlandite. The sulphides are also intergrown with the serpentine.

This is an olivine rich ultramafic rock (probably a dunite), which has been largely replaced by serpentine. Most of the magnetite is thought to be an alteration product associated with the serpentinisation but some of the magnetite could be an original igneous mineral.

SAMPLE: 30002

ROCK NAME: Mineralised Diopside Skarn

HAND SPECIMEN: This is a fine-grained rock with a mottled green to pale grey colour.

POLISHED THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Clinopyroxene (Diopside)	75	Metamorphic
Pentlandite	13	(?)Igneous
Pyrrhotite	10	(?)Igneous
(?)Perovskite	1	(?)Igneous
Alteration Product	1	Alteration

This sample consists mainly of a coarse-grained clinopyroxene mosaic with a grain size of 1 to 2mm. In some areas the clinopyroxene forms much finer grained aggregates with a grain size below 0.5mm. The clinopyroxene is probably diopside

Sulphides are concentrated in patches up to 1cm and consist of both pentlandite and pyrrhotite in sub-equal amounts. Minor sulphides also form fine disseminations with a grain size below 0.1mm. Some clinopyroxene crystals contain skeletal intergrowths of pentlandite.

A mineral tentatively identified as perovskite is disseminated through the rock as inclusions within clinopyroxene crystals below 0.02mm wide. The perovskite generally has a translucent reddish brown colour and forms angular crystals. A small number of these crystals have euhedral cubic shapes. The perovskite is concentrated in patches of finer grained pyroxene up to a few millimetres wide with a slightly turbid character. The perovskite crystals are generally rimmed by an unidentified mineral thought to be an alteration product of perovskite.

This is a calc-silicate skarn comprised mainly of clinopyroxene. Sulphide mineralisation consisting of pentlandite and pyrrhotite is present as patches up to about 1cm in size and may have been inherited from an original ultramafic rock.

SAMPLE: 30003

ROCK NAME: Diopside Skarn

HAND SPECIMEN: This is a fragmental appearing rock containing brown areas up to several centimetres in size separated by irregular veins with a pale grey colour. Minor sulphides are locally present as small patches within areas up to a few millimetres wide.

THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Clinopyroxene (Diopside)	55	Metamorphic
Phlogopite	25	Metamorphic
Chlorite	13	Alteration
Sphene	5	Metamorphic
Opaques	2	Metamorphic

This sample consists of randomly oriented prismatic clinopyroxene (probably diopside) crystals up to 1.5mm long forming a mosaic intergrown with interstitial phlogopite. The phlogopite is a weakly pleochroic brown phyllosilicate forming flakes up to 0.5mm long. Although most of the phlogopite forms interstitial intergrowths between clinopyroxene crystals in some areas the phlogopite forms flaky aggregates comprised of small flakes below 0.2mm long. Small grains and granular aggregates of sphene are typically intergrown with the phlogopite.

The phlogopite shows varying degrees of alteration to a colourless chlorite with low birefringence. In some areas the phlogopite has been completely replaced by chlorite but other areas consist of phlogopite marginally replaced by chlorite. It is thought that the grey veins noted in hand specimen represent areas in which the phlogopite has been largely or completely replaced by chlorite.

The thin section includes a small patch, approximately 1mm wide, comprised of finely divided opaque grains with a grain size below 0.2mm.

This is a diopside skarn thought to be a metamorphosed and ultramafic rock.

SAMPLE: 30004

ROCK NAME: Diopside Skarn

HAND SPECIMEN: This is a massive rock with a mottled, pale green colour.

POLISHED THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Clinopyroxene (Diopside)	95	Metamorphic
Sphalerite	3	Metamorphic
(?)Biotite	2	Alteration
Chalcopyrite	Trace	Alteration
Pentlandite	Trace	Alteration
Pyrite	Trace	(?)Alteration

This is essentially a monomineralic rock comprised of clinopyroxene (probably diopside) crystals between 0.5 and 2mm long. Most of the clinopyroxene forms a mosaic of anhedral to weakly prismatic crystals but irregular voids up to approximately 1mm wide are lined with prismatic clinopyroxene crystals. Within localised areas the clinopyroxene forms very finely granular aggregates with a grain size below 0.1mm. Locally the clinopyroxene shows incipient alteration to a pale brown phyllosilicate thought to be biotite. This is alteration is particularly pronounced around some of the irregular voids.

The thin section includes an area approximately 1cm wide consisting of anhedral sphalerite. In transmitted light this sphalerite has a dark reddish brown colour indicating a high iron content. The sphalerite also contains abundant finely divided chalcopyrite inclusions. The sphalerite appears to fill an irregular void lined with recrystallised clinopyroxene. Trace levels of chalcopyrite, pentlandite and pyrite form very small disseminations with a grain size below 0.05mm. These disseminated sulphides generally occur interstitially between clinopyroxene crystals and are generally associated with areas showing incipient biotite alteration.

This is a diopside skarn possibly representing a metamorphosed ultramafic rock such as a pyroxenite. Sulphide mineralisation consists mainly of sphalerite with very small amounts of other sulphides including chalcopyrite, pentlandite and pyrite.

SAMPLE: 30005

ROCK NAME: Chlorite Altered Diopside Skarn

HAND SPECIMEN: This is a pale green rock, which is cut by randomly orientated pale grey to off-white veins up to a few millimetres wide.

POLISHED THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Clinopyroxene (Diopside)	75	Metamorphic
Chlorite	20	Alteration
Magnetite	3	Alteration
Pentlandite	1	Alteration
Pyrrhotite	Trace-1	Alteration
Chalcopyrite	Trace	Alteration
Phlogopite	Trace	Alteration

This sample consists mainly of weakly prismatic clinopyroxene (probably diopside) crystals up to 1.5mm long with a random orientation. Within some areas the clinopyroxene form very finely granular aggregates with a grain size below 0.05mm

The clinopyroxene is altered to chlorite along irregular veins, which would represent the paler coloured veins noted in hand specimen. Most of the chlorite forms well-developed flakes up to 0.5mm long with a weakly pleochroic green colour and anomalous birefringence. A small proportion of the chlorite forms finely divided flaky aggregates with a pale brown colour. Some of the larger, weakly pleochroic green chlorite flakes contain small areas with high birefringence and a weakly pleochroic brown colour, which appear to be remnants of a phyllosilicate (probably phlogopite).

Magnetite and sulphides comprised largely of pentlandite and pyrrhotite with traces of chalcopyrite are generally intergrown with the chlorite veins. The magnetite forms anhedral grains up to 0.3mm wide. Some of the larger magnetite crystals have a zoned character with darker cores. These cores lack the deep red translucence in transmitted light typical of chromite and are thought to be chrome rich magnetite rather than true chromite. The sulphides form anhedral grains generally below 0.2mm wide located interstitially between the chlorite flakes. In some areas pentlandite forms very fine interstitial intergrowths between fine-grained clinopyroxene crystals. Some magnetite and sulphides are disseminated through the rock as interstitial intergrowths between clinopyroxene grains.

This is a diopside skarn alteration with chlorite veins containing concentrations of magnetite and sulphides. There is some evidence that much of the chlorite represents original phlogopite, which has been subsequently completely replaced by chlorite.

SAMPLE: 30006

ROCK NAME: Serpentinite

HAND SPECIMEN: This is a massive rock with a fine-grain size and a dark green colour. A margin of this sample has a white vein approximately 3cm wide. Testing with dilute hydrochloric acid produces strong effervescences in this vein indicating it contains calcite. The fine-grained host rock also shows localised effervescence along what narrow veins or granular areas indicating they contain calcite.

POLISHED THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Serpentine	85	Alteration
Magnetite	8	Alteration
Chromite	3	Igneous
(?)Greenalite	3	Alteration
Pentlandite	Trace-1	Alteration
Pyrrhotite	Trace	Alteration
Carbonate	Trace	Alteration
Sphalerite	Trace	Alteration
Chalcopyrite	Trace	Alteration
Olivine	Trace	Alteration

This sample consists of the fibrous serpentine forming a matrix through which anhedral magnetite crystals are disseminated. The serpentine generally forms an interlocking mesh with a localised weakly developed preferred orientation. The rock shows no remnant textures from the original ultramafic rock although a single small remnant of olivine 0.05mm wide was noted. Intergrown with the serpentine is a reddish brown phyllosilicate as irregular flakes up to 0.1mm long. This phyllosilicate was identified as a member of the kaolinite-serpentine group (possibly greenalite) by X-ray diffraction analysis in sample 30008.

Magnetite forms anhedral grains and aggregates up to 0.2mm wide. Large chromite crystals up to 1mm wide are disseminated through the rock and are typically rimmed by magnetite. Sulphides comprised mainly of pyrrhotite are disseminated through the rock as irregular patches up to 1mm wide. Minor pyrrhotite and traces of sphalerite and chalcopyrite are intergrown with some of the pentlandite rich sulphide patches. In transmitted light the sphalerite ranges in colour from a pale yellow to a deep red indicating variable iron content. Minor carbonate was noted as fine intergrowths with some of the sulphides. Testing of the hand specimen suggests this carbonate could be calcite. Calcite was also noted in the hand specimen as fine disseminations in the serpentinite but none could be seen in thin section.

This is an ultramafic rock possibly representing a dunite or peridotite, which has been completely altered to serpentine with the development of moderate amounts of magnetite.

SAMPLE: 30007

ROCK NAME: Greisenised Diopside Skarn

HAND SPECIMEN: This is a fine-grained rock with a massive texture and a mottled pale grey to off-white colour. The rock contains irregular black patches up to about 1 cm in size.

THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Clinopyroxene (Diopside)	45	Metamorphic
Clay/Sericite	35	Alteration
Tourmaline	15	Alteration
Sphene	3	Metamorphic
Chlorite	1	Alteration
Opaques	1	Alteration

This sample consists mainly of prismatic clinopyroxene crystals up to 2mm long intergrown with large patches of finely divided phyllosilicates termed clay/sericite in the above list of minerals. The clinopyroxene is most likely diopside and shows variations in grain size and texture within different areas although most areas consist of prismatic clinopyroxene crystals. The clay/sericite forms patches up to a few centimetres wide as a fine, felsic matrix of weakly to moderately birefringent phyllosilicates. The clay/sericite could represent completely altered pre-existing mineral such as feldspar.

Tourmaline forms prismatic crystals up to 1mm in size as well as angular, interstitial intergrowths between clinopyroxene crystals. The tourmaline is a pleochroic variety ranging in colour from orange to green. Sphene is disseminated through the rock as crystals and aggregates up to 0.3mm wide. Most of the sphene grains and aggregates have anhedral shapes although some exhibit euhedral prismatic shapes.

A colourless chlorite with low birefringence occurs interstitially between clinopyroxene crystals. Minor opaques were also noted locally as angular, interstitial fillings between clinopyroxene crystals.

This is thought to be a diopside skarn, which has been subjected to a greisen style alteration with the development of poorly defined phyllosilicates termed clay/sericite in the above list of minerals and tourmaline.

SAMPLE: 30008

ROCK NAME: Diopside Skarn

HAND SPECIMEN: This is a massive, pale green rock with white mottling and dark grey to black patches up to several millimetres in size.

THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Clinopyroxene (Diopside)	80	Metamorphic
Phlogopite	8	Metamorphic
Chlorite	5	Alteration
Garnet	3	Metamorphic
(?)Greenalite	2	Alteration
Opaques	2	Metamorphic/Alteration

This sample consists mainly of clinopyroxene with variations in grain size and texture within different areas. In some areas the clinopyroxene has a very fine-grain size below 0.1mm while in other areas it forms coarser grained mosaic with grain sizes ranging up to 0.4mm. The thin section includes some irregular void spaces several millimetres wide, which are rimmed by large, prismatic diopside crystals ranging up to 1.5mm in length. Large phlogopite crystals up to 2mm long also rim these voids. The phlogopite has a very weakly pleochroic brown colour and is partially altered to a pleochroic green chlorite.

Garnet forms small crystals below 0.1mm wide concentrated in irregular patches up to several millimetres wide. The garnet is generally intergrown with the diopside and is associated with opaque minerals. Opaques are also disseminated through the rock as anhedral grains and aggregates intergrown with the diopside.

An unusual orange clay mineral forms flakes and flaky aggregates, which fill irregular voids spaces. In some areas this clay contains inclusions of degraded clinopyroxene. X-ray diffraction analysis identified this clay as a member of the kaolinite-serpentine group (possibly greenalite).

This is a diopside skarn showing some late development of phlogopite. The phlogopite has a degraded character showing partial alteration to chlorite and the diopside shows localised alteration to possible greenalite.

SAMPLE: 30009

ROCK NAME: Prehnite Altered Diopside Skarn

HAND SPECIMEN: This is a massive rock with a mottled pale green to white colour.

THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Prehnite	75	Alteration
Clinopyroxene (Diopside)	24	Metamorphic
Sphene	1	Metamorphic
Opaques	Trace	Alteration

This sample consists mainly of prehnite crystals ranging up to 1mm in length intergrown with a clinopyroxene, which is almost certainly diopside. The prehnite crystals form a mosaic, which in some areas have a radiating texture. The clinopyroxene forms prismatic crystals typically below 0.1mm long. A small number of larger clinopyroxene crystals ranging up to 0.4mm wide are present. The clinopyroxene is concentrated in localised areas and in some cases occurs as disseminations through larger prehnite crystals.

Accessory sphene forms anhedral-disseminated grains up to 0.4mm wide. Opaques are disseminated through the rock as very small grains and aggregates below 0.1mm wide. Most of the opaques occur as inclusions in prehnite crystals.

This is thought to be a diopside skarn, which has been largely replaced by prehnite.

SAMPLE: 30010

ROCK NAME: Mineralised Serpentinite

HAND SPECIMEN: This is a massive, pale grey rock containing irregular sulphide patches up to 1cm long, which generally have ovoid shapes.

POLISHED THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Serpentine	45	Alteration
Pentlandite	30	Alteration
Magnetite	20	Alteration
Chromite	2	Igneous
Tremolite	2	Alteration
Clay	1	Alteration

The polished thin section was cut from a sulphide rich area and the above mineral proportions reflect this. The sample consists largely of a matted intergrowth of fibrous serpentine through which large pentlandite bodies are disseminated. The pentlandite bodies range up to approximately 1cm in size and are intergrown with magnetite. Most of the magnetite occurs marginal to pentlandite and contains inclusions of chromite.

Acicular tremolite crystals are concentrated around the margins of the magnetite and pentlandite bodies. The tremolite generally forms crystals below 0.2mm in length, which radiate outward from the magnetite and pentlandite. Locally orange clay forms small intergrowths with the magnetite. This clay is similar the clay identified as possible greenalite in sample 30008 by XRD.

This is a serpentinised ultramafic rock containing moderate amounts of pentlandite and magnetite.

SAMPLE: 30011

ROCK NAME: Tremolite Schist

HAND SPECIMEN: This is a massive rock with a greenish grey colour containing irregular, pale to white grey veins up to 4mm wide.

POLISHED THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Amphibole (Tremolite)	90	Metamorphic
Chlorite	4	Alteration
Prehnite	3	Alteration
Leucoxene	1	Alteration
Opaques	2	Metamorphic

This sample consists mainly of large amphibole crystals up to 2mm wide with a weakly developed preferred orientation defining a vague foliation. The amphibole has a very pale green to colourless character and is most likely tremolite. Although most of the amphibole has a relatively coarse grain size being above 1mm, a small proportion of amphibole forms much finer grained aggregates with a grain size of about 0.1mm.

Chlorite is present as colourless flakes located interstitially between amphibole crystals. Chlorite also forms flaky aggregates up to several millimetres wide. Prehnite forms discontinuous veins up to several millimetres wide as crystals ranging up to 0.2mm long. Turbid aggregates of leucoxene ranging up to 0.2mm are locally intergrown with the amphibole. The leucoxene tends to be concentrated in areas up to several millimetres wide.

Opaques form small, disseminated grains, which are generally below 0.05mm and are included within tremolite crystals.

This is considered to be a metamorphic rock comprised mainly of tremolite and could represent a metamorphosed and altered ultramafic rock. The rock is also veined by prehnite.

SAMPLE: 30012

ROCK NAME: Carbonate Altered Ultramafic Rock

HAND SPECIMEN: This is a very fine-grained rock with a pale grey colour exhibiting an irregular banding comprised of concentric ovoid bodies. Testing with dilute hydrochloric acid produces strong effervescences indicating the sample contains abundant calcite. The rock is also weakly magnetic to a hand magnet.

THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Carbonate (Calcite)	85	Alteration
Talc	5	Alteration
Serpentine	5	Alteration
Chromite	1	Igneous
Sphalerite	Trace	Alteration
Opaques	4	Alteration

This sample consists mainly of a granular carbonate mosaic with variations in grain size along vague bands. The banding noted in hand specimen is emphasised by concentrations of finely divided opaque material within different bands. The opaques are thought to consist largely of magnetite. Testing of the hand specimen indicates the carbonate consists mainly if not exclusively of calcite.

Serpentine forms fibrous aggregates ranging up to 0.4mm wide. Well-developed flakes of a birefringent phyllosilicate, which is almost certainly talc, are disseminated through the rock. These flakes range up to 0.2mm in length and have a random orientation.

Chromite crystals ranging up to 0.6mm wide are disseminated through the rock and have angular to anhedral shapes. Many of the chromite crystals have opaque rims of probable magnetite. Traces of sphalerite were noted as anhedral grains below 0.1mm wide with a pale yellow colour.

This is thought to be an ultramafic rock such as a dunite or peridotite, which has been subjected to serpentinisation as well as the development of abundant carbonate (mainly calcite), magnetite and talc.

The opaques consist mainly of magnetite but it could include small amounts of sulphides. A trace of sphalerite is present in the sample.

SAMPLE: 30013

ROCK NAME: Rhyolite

HAND SPECIMEN: This is a massive, fine-grained rock with a pale grey colour and fine dark grey to black spotting. Staining with sodium cobaltinitrite after hydrofluoric acid etch produces localised staining suggesting minor potash feldspar is locally present.

THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Felsic Matrix	75	Alteration
Sericite	20	Alteration
Quartz Phenocrysts	4	Igneous
Chlorite	1	Alteration
Rutile/Leucoxene	Trace	Alteration
Opaques	Trace-1	Alteration

This sample consists mainly of very finely granular felsic minerals with a grain size below 0.05mm intergrown with finely divided sericite. The sericite is concentrated in irregular patches some of which have shard shapes indicating a tuffaceous origin. The felsic minerals are thought to consist mainly of quartz although testing of the hand specimen indicates minor potash feldspar is locally present and is also possible that plagioclase could be present. Quartz phenocrysts up to 0.4mm wide are disseminated through the rock and generally have angular, broken appearing shapes.

Chlorite is locally present, as flaky aggregates up to a few millimetres wide comprised of flakes below 0.1mm long. The chlorite is a pale green weakly pleochroic variety with low, anomalous birefringence. The chlorite is commonly intergrown with slightly coarser grained felsic minerals. Very small grains and aggregates of rutile/leucoxene occur as inclusions within the chlorite flakes. Opaques are disseminated through the rock as small grains below 0.05mm wide. The opaques tend to be concentrated in localised areas up to a few millimetres wide, which would represent the dark spots noted in hand specimen.

This is thought to be a welded tuff or ignimbrite of rhyolitic composition showing pervasive alteration to sericite and probable quartz.

SAMPLE: 30014

ROCK NAME: Mineralised Serpentinite

HAND SPECIMEN: This is a fine-grained, massive rock with dark grey and pale grey areas.

POLISHED THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Serpentine	25	Alteration
Tremolite	25	Alteration
Magnetite	20	(?)Igneous/Alteration
Pyrrhotite	10	(?)Igneous
Chlorite	5	Alteration
Olivine	5	Igneous
Violarite	3	Supergene
Pentlandite	3	(?)Igneous
Pyrite	3	Supergene
Chromite	1	Igneous

This thin section was cut from both the dark grey and pale grey areas, which can be seen to consist of serpentine rich and tremolite rich areas respectively. The serpentine forms a fibrous mesh containing remnants of olivine ranging up to 0.6mm wide. The tremolite forms small crystals, which are generally below 0.2mm long and have vague prismatic shapes. The tremolite forms a somewhat matted interlocking matrix with no preferred orientation.

Magnetite is concentrated in irregular patches up to several millimetres wide as anhedral grains and aggregates. Sulphides are intergrown with the magnetite and also form discontinuous veins. The sulphides consist mainly of pyrrhotite but include minor pentlandite as grains ranging up to 0.4mm wide. In the serpentine rich areas the pentlandite has been largely replaced by violarite and the pyrrhotite shows some replacement by supergene pyrite. The supergene alteration is less pronounced in the tremolite rich areas although minor violarite and supergene pyrite are also present in these areas.

Chlorite is locally present as pale yellow flakes with low birefringence. Chromite is disseminated through the rock as anhedral grains ranging up to 1mm in size, which are typically rimmed by magnetite.

This is an ultramafic rock such as a dunite or possibly a peridotite, which shows serpentinisation as well as the localised development of tremolite. Sulphide mineralisation is associated with magnetite. The primary sulphide mineralisation consists of pentlandite and pyrrhotite showing some supergene alteration of pentlandite to violarite and pyrrhotite to pyrite.

This rock consists mainly of felsic minerals thought to be comprised largely of feldspar and quartz. The exact proportions of feldspar and quartz are difficult to determine due to the fine-grain size of the felsic minerals and the presence of finely divided sericite and clay. The felsic minerals show great variations in texture ranging from finely granular aggregates with a grain size below 0.05mm to larger, aggregates comprised of areas up to 0.2mm wide with patchy extinction. These different textures occur in bands up to several millimetres wide, which accounts for the banding noted in hand specimen. The felsic minerals with patchy extinction could be a product of devitrification suggesting that the original sedimentary rock may have had a glassy and probably tuffaceous component. The finely granular bands appear to be a fine-grained detrital sediment.

A reddish brown biotite occurs interstitially between the coarse grained, patchy extincting felsic minerals. Slightly better developed biotite flakes ranging up to 0.1mm in length are locally present in discontinuous lenses below 0.2mm wide. The rock also contains an unusual orange clay with low birefringence. Finely divided sericite and weakly birefringent clay are intergrown with the felsic minerals as interstitial intergrowths between grains and as fine dustings of the coarser patchy extincting felsic minerals.

Traces of tourmaline were noted as very small prismatic crystals below 0.05mm wide. The well-developed prismatic shape of the tourmaline suggests it could be an alteration product. Minor opaques are disseminated through the rock as small grains below 0.1mm wide.

This is thought to be a sedimentary rock, which has been subjected to low grade metamorphism and alteration with the development of a reddish brown biotite. This sample has a lamellar banded character thought to be a sedimentary origin with some bands having textures suggesting a devitrification and possibly a tuffaceous component.

SAMPLE: 22117

ROCK NAME: Fine-grained Sandstone

HAND SPECIMEN: This is a massive, fine-grained rock with a medium brown colour.

THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Quartz	85	Recrystallised Detrital
Biotite	13	Alteration/(?)Metamorphic
Tourmaline	1	Alteration/Detrital

Zircon	Trace	Detrital
Opaques	1	Alteration

This sample consists of a granular quartz mosaic with a grain size between 0.05 and 0.15mm. The quartz has a recrystallised texture but still retains vague remnant detrital shapes. A reddish brown biotite forms finely divided flaky aggregates below 0.1mm wide located interstitially between the quartz grains. This biotite is similar in character to biotite in Sample 22114.

Accessory tourmaline forms disseminated grains up to 0.4mm wide. Some of the tourmaline forms rounded grains, which are thought to be of detrital origin but tourmaline also forms prismatic crystals, which are thought to be an alteration product. Much of the prismatic tourmaline is intergrown with biotite. A few small zircon crystals below 0.05mm wide are disseminated through the rock. The rock also contains some finely divided opaque grains below 0.05mm wide.

This is a fine-grained quartz rich sedimentary rock such as a fine-grained sandstone, which has been subject to low-grade metamorphism producing a recrystallised texture. The rock also contains interstitial biotite of alteration or possibly metamorphic origin.

SAMPLE: 22114

ROCK NAME: Tuffaceous Sediment

HAND SPECIMEN: This is a banded and foliated rock containing pale grey to white and darker grey bands and lenses ranging from a few millimetres to 1cm in width. Many of the wider, darker grey bands have irregular lenticular shapes. The rock also exhibits a schistose foliation and the banding has a somewhat folded character. Microchemical tests produced localised weak staining suggesting minor potash feldspar could be present.

THIN SECTION:

An optical estimate of the constituents gives the following:

Mineral	**%**	**Origin**
Quartz/Feldspar	75	Sedimentary/(?)Igneous
Biotite	10	Alteration

Clay	10	Alteration
Sericite	5	Alteration
Limonite	Trace	Alteration
Tourmaline	Trace	(?)Alteration
Opaques	Trace-1	Alteration