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EL 30/2003 Near Bowry Creek

Annual Report

19 June 2013
to
18 June 2014

Publication date June 2014

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(1) Grange Savage River

Author: Roger A. Hill | Geology Manager
Grange Resources Tasmania
34a Alexander Street | Burnie | TAS | 7320
PO Box 659 | Burnie | TAS | 7320
Fax + 61 3 6432 3262| Mobile +61 437 523 989
www.grangeresources.com.au Grange Resources Tasmania

ABSTRACT:
Objective:

1.) Complete a resource estimate revision based on recently completed drilling that would meet the requirements of the 2012 Edition of the JORC code and would be in a format suitable for an ASX release in December of 2013.
2.) Establish the infrastructure and conduct the studies necessary to create a baseline of water quality, surface run-off (flow data) and a preliminary framework of hydro-geological data in order to obtain the data for a future hydro-geological model.

Method:

1.) Completion of an ordinary kriged geostatistical mineral resource estimate based upon mineralised envelopes derived from adequately spaced drill hoes and costeans at Long Plains.
2.) a)Drilling of water bores to allow groundwater levels to be monitored.
b) Conducting a detailed suite of some 33 down-hole packer tests on seven selected drill holes at Long Plains in order to provide a preliminary framework of hydro-geological (ie: permeability) data.

Results:
A new resource estimate has been declared (December 2013) for Long Plains consisting of 107.6Mt @ 35.2%DTR and this resource was based upon the new drilling completed during the previous reporting period. (Appendix 1 Resource Estimate Long Plains)
Hydro-Geology infrastructure installation and data acquisition work including thirty-three down-hole tests of seven selected exploration holes was conducted during the period using diamond drilling rigs, specialised down-hole inflatable packer devices and specialised consultant services.
Hydrology infrastructure consisting of six water-bores were drilled near the boundary of the possible open pit design during the reporting period to enable a baseline of ground-water levels and water quality to be recorded prior to disturbance.

Recommendations:
This most recent exploration and delineation campaign confirms and improves the confidence in the declared resource for Long Plains; establishes a new resource for Central zone and upgraded some of the tonnage to an indicated resource. Grange has confidence that this resource can be mined economically and has started a preliminary studies to evaluate mining, benefication, potential transport options and the potential “fit” of Long Plains into the Savage River Life of Mine Plan (LOMP)schedule.
This 5 year - $ 1.34 Million dollar work programme will conduct the necessary environmental studies and mine planning to allow for successful application for environmental permits to mine Long Plains. Grange intends to apply for a Mining lease in 2015 over much of the EL30/2003 area as part of this work.(EL to ML conversion provision is a separate budget item of $53,000).

INTRODUCTION

Exploration Rationale

Grange's interest is focussed on the Long Plains magnetic anomaly for a potential future source of magnetite ore as a feed material for its Savage River concentrator. EL30/2003 now contains the entire strike length of the Long Plains magnetic anomaly (aka "Long Plains").

The following report summarises exploration activities completed at EL30/2003 Near Bowry Creek during the nineth year of tenure (2013/14). This document will report all activities using the GDA94 datum.

Licence Details

Exploration licence EL30\2003 "Near Bowry Creek"
Located at Bowry Creek, 10km south of Savage River Tasmania.
ID: 23550
Area: 38 sq km blocks
Status: Pending renewal
Reporting period: June 19 -2013 to June 18 -2014
Tenement Holder: Grange Resources (Tasmania) Pty Ltd
Product categories: Category 1 - Metallic Minerals, Atomic Substances, Category 5 - Industrial Minerals, Semi/Precious Stone.

Location

The Long Plains Prospect is located approximately 10km south by road of the Savage River Mine and concentrator. Savage River is located approximately 100km south west by sealed road from Burnie (Figure 2). The lease is accessed by the all-weather gravel road between Savage River and Corinna, and then by a bush track of approximately 2km.

Local topography surrounding the lease is rugged, with incised valleys and steep hills. The North and Central Zones of the anomaly is located on top of a prominent north-south trending ridge. The west flowing Bowry Creek is the main drainage in the area and runs past the northern boundary of the lease area before joining with Main Creek w2hich drains much of the northern portion of the lease. The southern part of central zon3e is cut by a deeply incised tributary of main creek. Tne south zone continues on a prom4inent ridge south of the central zone.

Regional vegetation includes undisturbed rain forest, wet eucalypt, acacia and open heath land. The immediate area of the prospect has previously been logged extensively approximately 20 years ago, with almost no mature trees present in the working area. A bush fire not long after this time devastated the remaining vegetation, leaving the present vegetation as thick regrowth dominated by eucalypts with several rainforest species. Climate is wet temperate with an average annual rainfall of 1,950mm and mean monthly temperatures ranging from 3-19ºC.

Figure 1 Savage River Project Location

Tenure

Exploration Lease EL 30/2003 "Nine Mile Creek" was transferred to Goldamere Pty Ltd on 6th February 2008. Australian Bulk Minerals (ABM) was a wholly owned subsidiary of Goldamere and managed and conducted all exploration activities on this lease. ABM merged with Grange Resources Ltd (Grange) on the 1st January 2009 resulting in a name change for Goldamere to Grange Resources (Tasmania) Pty Ltd. Grange also manages the operation of the magnetite mine and concentrator at Savage River, and the pelletising plant and ship loading facilities at Port Latta on the North West coast. EL30/2003 was amalgamated with 2 other leases in 2010 and is now known as EL30/2003 Near Bowry Creek.

Grange's Long Plains Prospect is held under an amalgamated lease EL30/2003 Near Bowry Creek as shown in figure 2 land tenure below.

EL30/2003 comprises an area of 38km^2. The amalgamated lease EL30/2003 encompasses the entirety of the Long Plains magnetic anomaly and provides continuous leasehold connecting EL30/2003 and the Savage River Mine Lease 2M/2001.

Grange successfully applied to transfer EL30/2003 to Goldamere after negotiating with the holders, Gregory and Thorne. This transfer was granted on the 6th February 2008. It completes the coverage of the anomaly and incorporates ground adjacent to the anomaly necessary for extended exploration activities and potential mine infrastructure.

In September of 2010 Grange requested an amalgamation of leases EL19/2005, EL46/2007 and EL 30\2003 into EL30\2003. This request was granted in February 2011.

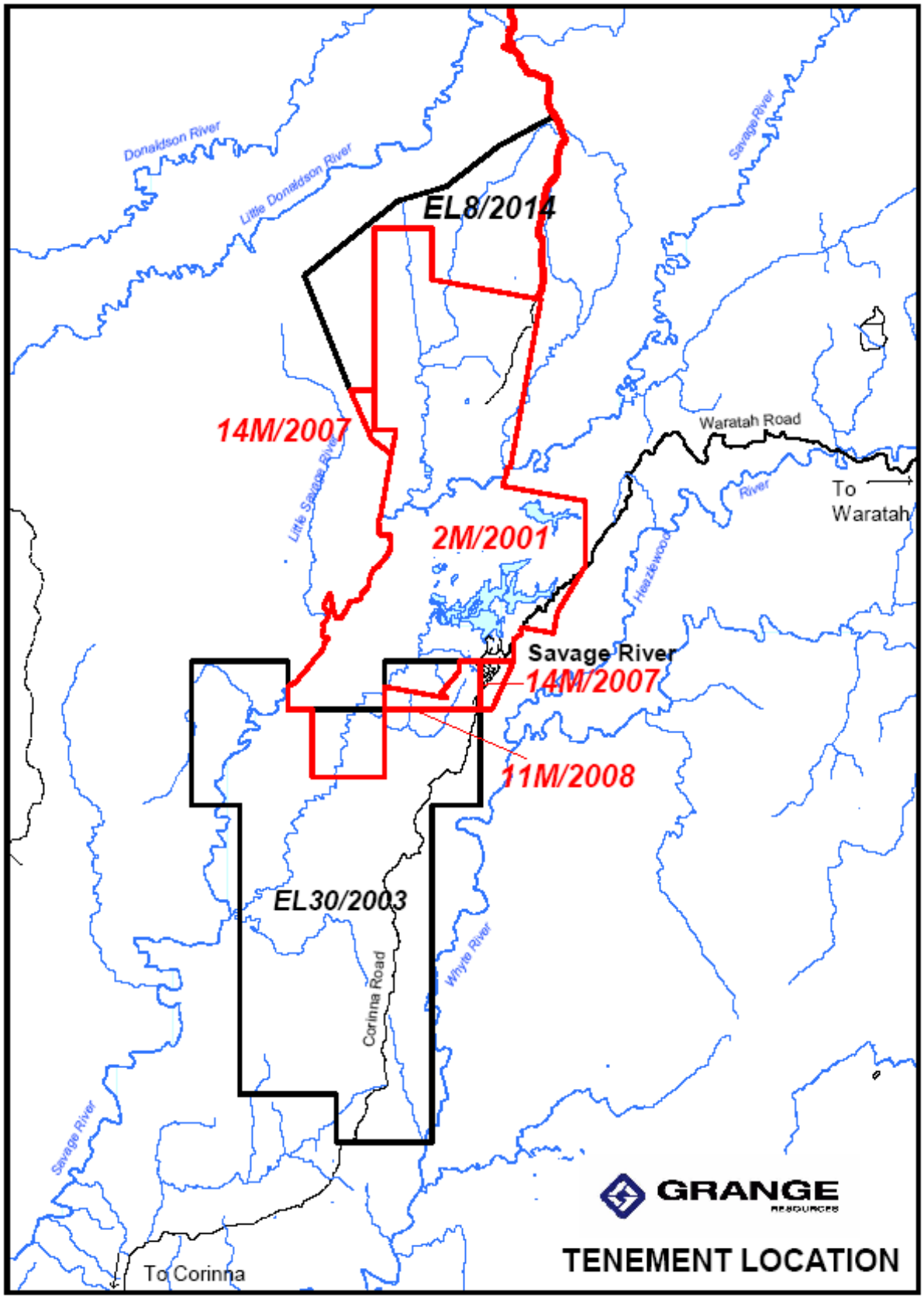

Figure 2 Land tenure as at June 2014: EL30/2003 and ML 2M/2001
(EL8/2014 under application at time of writing)

Geology

The Long Plains magnetite deposit lies within and near the eastern margin of the Proterozoic Arthur Metamorphic Complex in north-western Tasmania. The complex is exposed along a northeast-southwest trending structural corridor, the Arthur Lineament, which separates Proterozoic sedimentary rocks to the northwest from a variety of Palaeozoic rocks to the southeast (Figure 3).

The magnetite deposits at Long Plains represent a series of elongate, discontinuous magnetite lenses that extend over a three kilometre strike length (Figure 4). The deposit has been separated into three distinct zones on the basis of total magnetic intensity termed the Northern, Central and Southern Zones. The oblique view of the total magnetic intensity in Figure 4 illustrates the broad geometry of the Zones.

The magnetite zones are sub-vertical to strongly east dipping and hosted within ultramafic and mafic schists. A suite of late metabasalt and metadolerite intrusive dykes occur sub-parallel to the ore zones. Vein magnesite is developed at the western magnetite boundary with the contact marked by the strong weathering and the development of surface clays (Griffith, 2000, Internal memorandum).

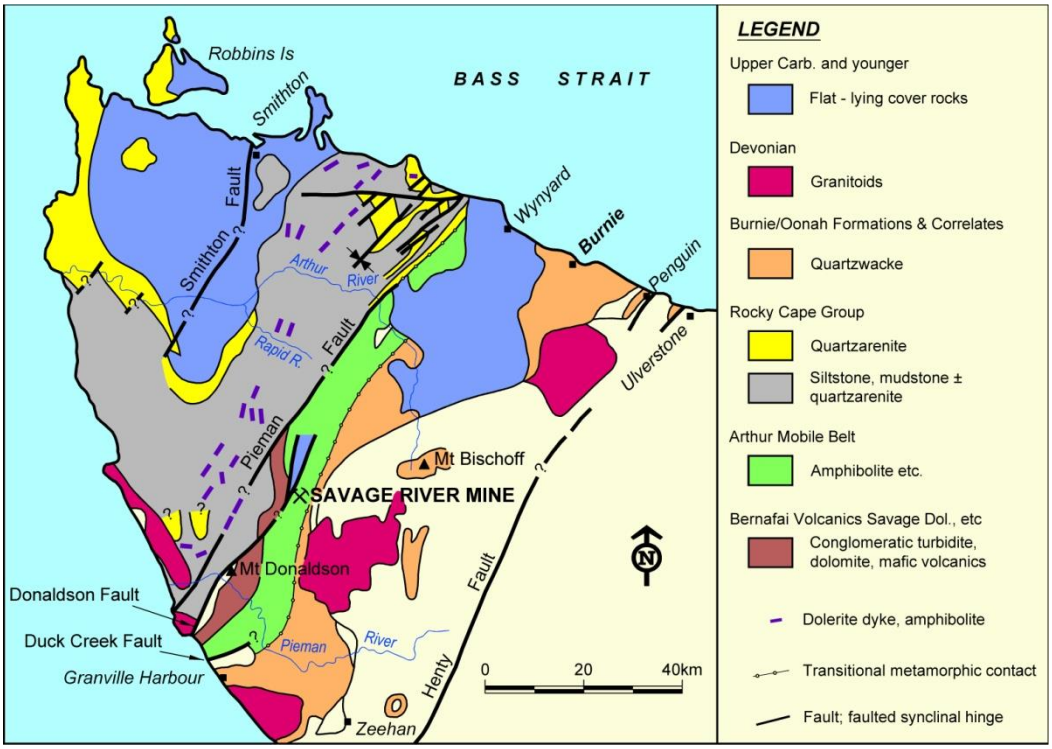

Figure 3 Regional Geology

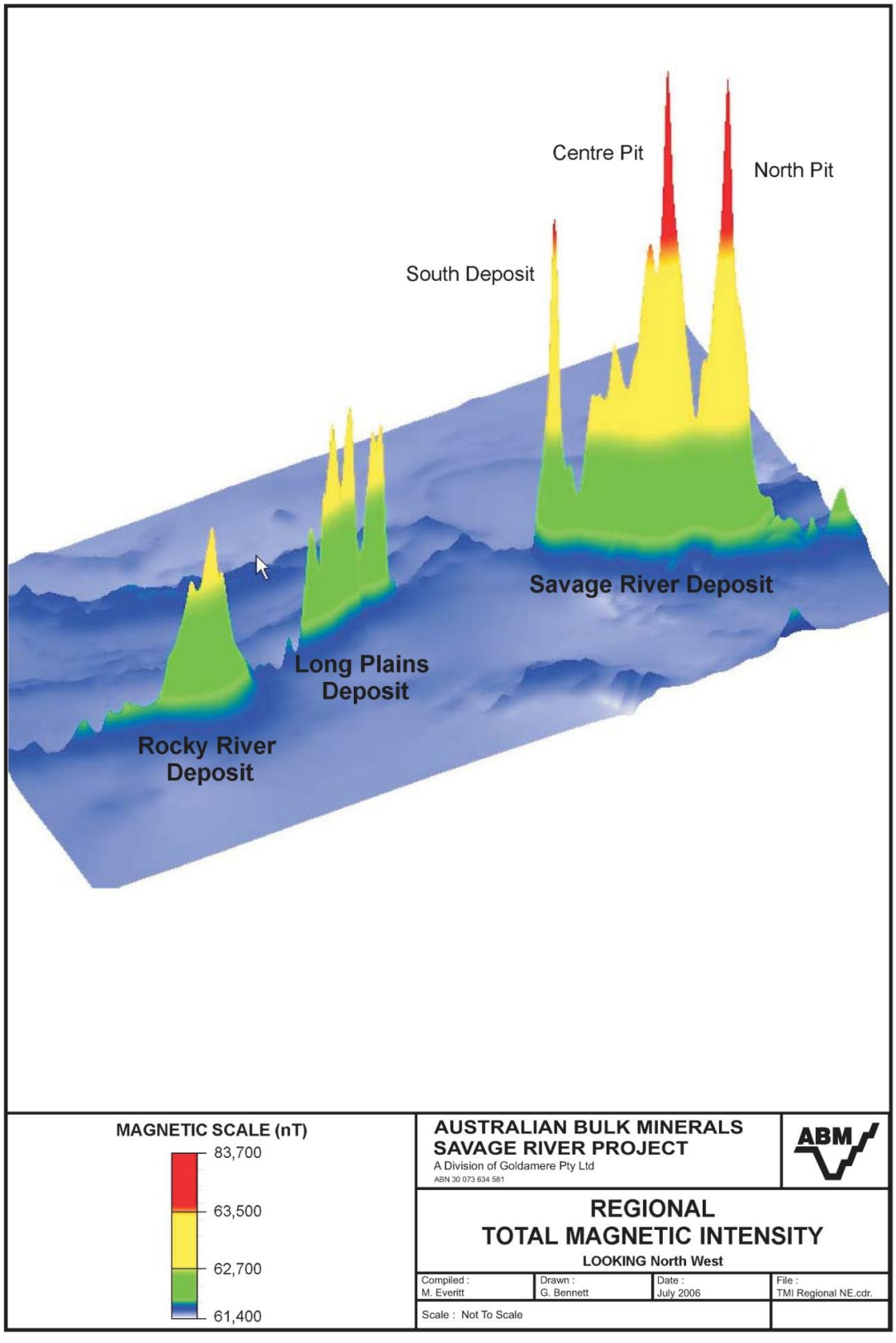

Figure 4 Regional Total Magnetic Intensity (TMI)

REVIEW OF PREVIOUS WORK

Prior to Current Tenement

Ironstone outcrops on the Savage River were first discovered by State Government surveyor C.P. Sprent in early 1877 during one of his exploration journeys through western Tasmania. The deposits were first reported as a possible source of iron ore in 1919. Modern, systematic exploration techniques were employed by the Australian Bureau of Mineral Resources during 1956 that included ground and airborne magnetic surveys. The largest magnetic anomaly was detected at Savage River with two smaller anomalies being detected at Long Plains and Rocky River further to the south.

The Long Plains magnetite anomaly was first investigated during the late 1950's by the Bureau of Mineral Resources (BMR), as part of a regional magnetic study of the Savage River area. A ground magnetics survey was completed in 1962 across the area (Eadie, 1962). The contour map produced for that report has been digitised and converted into AMG66 co-ordinates to be combined with other data.

Diamond drilling and ground magnetic surveys were undertaken by Rio Tinto Australia Exploration (RTAE) Pty Ltd during the early 1960's. One diamond drill hole RTAE-1 totalling 195.0 metres was drilled in the northern end of the deposit.

Ownership of the deposit was transferred to Industrial and Mining Investigations (IMI) Pty Ltd during the 1960's, who completed broadly spaced diamond drilling at Long Plains. A total of seven diamond drill holes (IMI28-30; IMI33-35 and IMI46) totalling 1,135.07 metres were drilled in the northern and southern areas of the deposit.

No further significant exploration was completed at the deposit until 1994 when Savage Resources Pty Ltd completed four diamond drill holes (LPDDH100-103) in the north of the deposit. The program totalling 525 metres was designed to provide a complete cross section through the deposit in an area of moderate grade magnetite development lying between drill holes RTAE 1 and IMI 29.

Some weak gold anomalies were identified on the lease by the Goldstream Mining/ Titan Resources JV during 1996/97. No further work was undertaken on these anomalies. Extensive historic gold workings are located in the north of the lease in the Golden Ridge area and on the adjacent mine lease 2M/2001.

An initial program in 2006 was devised to develop a geological model. This involved relogging historic core, costeaning across the mineralisation (1505 meters), logging the costeans and establishing survey control points

A follow-up program in 2007 completed 6 RC drill holes and 1 diamond hole, and completed a ground magnetic survey over part of the Northern Zone.

In 08/09, the work completed on lease EL 30/2003 included a review of historic data, review of Goldstream helimag data, a preliminary mining infrastructure plan, inspection of overgrown access tracks

- The program in 09/10 included a financial model or the potential impact of the deposit and detailed planning to develop a 5 year plan.
- In 2010 the amalgamation of lease EL30\2003 was submitted and granted in Feb 2011. The program in July10 -June 11 included the track cutting of proposed new track alignments, a follow-up fauna survey and cutting of gridlines in preparation for ground geophysics.
- During May-June of 2011, an exploration contractor hand cut 3.2 line km of proposed new track alignments and an additional 7.2 line km of 100m spaced grid lines in preparation for a ground magnetic geophysics survey that was completed In July of 2011.

Processing and reporting of the ground magnetic survey by Contactor Gap Geo was completed in 2011 as well as 2.15km of track construction and rehabilitation to enable the commencement of the drilling campaign in October 2011

Project drilling started 24th October 2011 with reverse circulation drilling and the last diamond –tail hole was completed on Thurs May 3rd 2012.

In total, 5,029m were drilled between July 2011-June 12 comprised of:

- 2,485m Diamond only

- 2,053m Reverse circulation
- 491.3m Diamond tails

A total of 5,029m were drilled vs 6,239m planned, with 4 of the planned holes in CZ (totalling 1,200m) were defferred to the next years (2012-2103) program.

June19 2012-June 18 2013
In October of 2012 funding of $1,837,920 over 12months was approved by Grange Resources Tasmania Pty Ltd for the exploration of Long Plains during the tenure period to 18 June 2013.
The Exploration programme on EL30/2003 between 19June 2012 and 18June 2013 consisted of:

1. Geological mapping compilation at 1:10,000 scale of the entire EL30-2003 lease area
2. Construction of 450m of new tracks in North zone and 450m of new track in Central Zone.
3. Drilling of 12 new holes in North zone totalling 3,196.5m to convert as much as possible of the inferred resource to an indicated resource.
4. Drilling of 5 new holes in Central zone totalling 1,421.1m to establish an inferred resource at central zone based on the magnetic anomaly there.
5. Assaying and waste characterisation work to enable a revised resource estimate and conceptual mine planning.
6. Resource estimation in August 2012 based on the 2011-12 drilling to establish a maiden resource estimate for the entire Long Plains resource. Preliminary conceptual mine planning to evaluate the potential contribution of Long Plains to the life of mine plan (LOMP) for the Savage River operation.

Environment Activities :
In October of 2012 funding of $1,324,890 over 5yrs was approved by Grange for studies, investigations and works at Long Plains between January 2013 and January 2017 to provide the following:

- Baseline environmental surveys/studies.
- Referral to SEWPaC under the EPBC Act.
- Development and submission of a Notice of Intent to the Tasmanian EPA
- Technical studies into the impacts of a mining and ore beneficiation operation at Long Plains and management of those impacts
- Preparation and submission of a DPEMP to the Tasmanian EPA and the Waratah Wynyard Council.

Exploration Completed during the Reporting Period
Desktop studies : Resource Estimation
Highlights from 19 Dec 2013 ASX release: (Appendix 1)
Updated JORC 2012 Mineral Resource includes 107 million tonnes of magnetite iron ore at Long Plains (up from 49 million tonnes)

- 25% of tonnage is in the Indicated Resource category, all in North Zone Mineralisation is very robust and continuous at various cut-off grades
- Estimated depth of mineralisation is variable and generally greater than 300 metres
- Ore outcrops on a prominent ridge, with very low planned strip ratios
- Deposit contains abundant alkaline waste rocks and low amounts of sulphide waste rock

Grange Resources Pty Ltd (ASX: GRR) ("Grange" or the "Company") is pleased to advise that the revised Mineral Resource Estimate for the Long Plains Magnetite Iron Ore Deposit has significantly increased since the previous estimate dated August 2012. This has been the result of a continued drilling and estimation program.
The resource consists of 107 million tonnes at 35% DTR (above a cut-off of 15% DTR) as detailed in the following table:

Table 1 Long Plains December 2013 Resource Estimate at 15% DTR cut-off

	Measured Resources	Indicated Resources	Inferred Resources	TOTAL Resources
Tonnes (Mt)	0.0	25.4	82.2	107.6
DTR (%)	0.0	33.9	35.6	35.2
Fe (%)	0.0	68.9	69.4	69.3
Ni (%)	0.00	0.05	0.03	0.03
TiO_2 (%)	0.00	0.63	0.56	0.57
MgO (%)	0.00	0.91	0.92	0.91
P (%)	0.000	0.004	0.007	0.007
V (%)	0.00	0.33	0.36	0.35
S (%)	0.00	0.05	0.07	0.07

The Mineral Resource has been estimated by Optiro in conjunction with the Company's geology staff, and reported in accordance with the guidelines of the JORC Code (2012 edition). 24% of the Long Plains resource, all located in North Zone, has been classified as an Indicated Resource – this category is able to be used as a basis for undertaking a pre-feasibility study and calculating a Probable Ore Reserve.
This resource estimate includes the entire three kilometre strike length of the Long Plains deposit (Figure 2 of ASX release), comprised of the North Zone, Central Zone and South Zone.

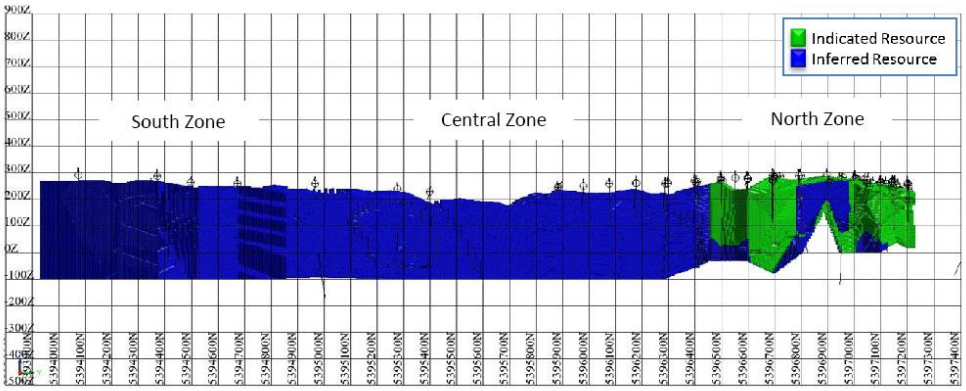

Figure 2 - Long Plains long section, looking west (GDA94 coordinate system)

Figure 5 Long Plains longitudinal section looking west gda94

The resource estimation was conducted between July and October of 2013 and included:

1. A data audit
2. The purchase of specialised software (OREPack Estimation Software)
3. *Maintenance, development and training on the software*
4. *Resource modeling including; data validation, variography, basisc statistics, block model estimation, validation and reporting.*
5. *Peer review of the resource and advice on writing of the ASX release to ensure compliance with the 2012 Edition of the JORC code.*

Table 2 Long Plains Resource Estimation Cost Estimate

Item	Total
OREpack™ Estimation Manager Software	$5,000
Estimation Manager Maintenance – 12 months (updates & support)	$ 900
Estimation Manager Training	$2,520
Long Plains Resource Model: data validation, variography, basic statistics, block model estimation, validation, and reporting	$8,820
Report writing	$7,560
Peer review	$1,460
Advice on ASX press release to ensure compliance with JORC 2012	$1,460
Long Plains resource data audit	$8,760
Total	**$36,480**

Geological Interpretation and Resource Estimation

Geological controls and relationships were used to define estimation domains with mostly hard boundaries, based on sharp mineralisation contacts and sulphide content. A nominal grade cut-off of 15% DTR is a natural grade boundary between magnetite lenses and disseminated wallrocks. This cut-off was used to help define the mineralised envelope within which the higher grade sub domains were interpreted. 3D wireframes were used to code the drilling intersects and select samples within each domain.

Samples were composited on one metre lengths within the resource wireframes and adjusted where necessary to ensure that no residual sample lengths were excluded (best fit). Statistical analysis

showed that populations in each domain had low coefficients of variation (CV) for all elements except sulphur and phosphorus. Only these two required top-cutting in order to achieve a reasonably low CV. Directional variograms were developed for each element, and subsequently used with ordinary kriging to estimate the DTR and grades in all domains. Due to the strong correlation of the DTR x density attribute with other elements, the search ellipse per domain was based on the variography ranges of DTR x density.
The block model was constructed using a 25 mY x 10 mX x 10 mZ parent block cell with sub-celling to 6.25 mY by 1.25 mX by 2.5 mZ for domain volume resolution. Ordinary Kriging was completed at the parent cell scale, using 45 discretisation points (5Y by 3X by 3Z) per parent block to determine the block grade. Kriging neighbourhood analysis (KNA) was carried out in order to optimise the block size, search distances and sample numbers used. It was also a factor guiding the resource classification decisions, resulting in some of the North Zone being classified as an Indicated resource. The mineralised domains have demonstrated sufficient geological and grade continuity to support the definition of a Mineral Resource, and classifications were applied under the guidelines of the JORC Code (2012 Edition).
Ref: Appendix 1 Grange ASX Release 19 December 2013

Regional Exploration Activities; None

Prospect-Based Exploration Activities.

During the lease period (18 June 2013-18 June 2014), the following works have been completed;

Water Bores:

Six water bores were drilled to establish baseline ground water levels and to enable water quality to be monitored distal to the planned mine active areas. An example of the installed environmental monitoring infrastructure (waterbores) is shown in Figure 6

Table 3 Water Bore Details

Hole ID	Hole type	Drilled max depth	PVC casing max depth	first wet sample	Stabilised GWL	falling Head of weathered profile	Gravel filter level		Bentonite seal		Hole backfill to surface		Monument installed
							From	To	From	To	From	To	
Env A	PQ2/HQ2	40	36	3	2.8	N	36	1.5	1.5	0.5	0.5	0	y
Env B	RC	50.2	50.17	15	11.98	N	50.2	12	12	10	10	0	Y
Env C	RC	70	56.3	4.9	7.6	N	56.3	6.2	6.2	5.2	5.2	0	Y
Env D	RC	70	abandoned hole- hole would not stay open										
Env D'	RC	70	56.65	4.9	10.6	N	56.65	9.4	9.4	7.4	7.4	0	Y
Env E	RC	70	64.15m		16.65	Y							Y
Env F	PQ2	60.6	60.6	-	6.3	N	60.6	4.7	4.7	1.7	1.7	0	Y

Figure 6 Long Plains water sampling bores typical installation

Water Sampling:

A program of baseline water sampling (scoping) was completed to establish the necessary tracks and infrastructure to enable safe access and the collection of regular high quality water samples for the development of a baseline of both water quality and water flow data. Water samples have been collected every two months during the period. The water chemistry baseline data is given in the images below.

Water Flow Gauging:

Two monitoring gauge sites have been surveyed by a hydrographer from Entura (Hydro Tasmania) and stream profiles have been calculated allowing a flow gauging curve to be established for each of site NF and Freeman Creeks at Long Plains. (see maps fig 7 and 8) . At these sites a guaging table , data-logger and probes have been installed which will allow the frequent acquisition of water flow data for use in establishing water run-off and hydraulic balance on the site.

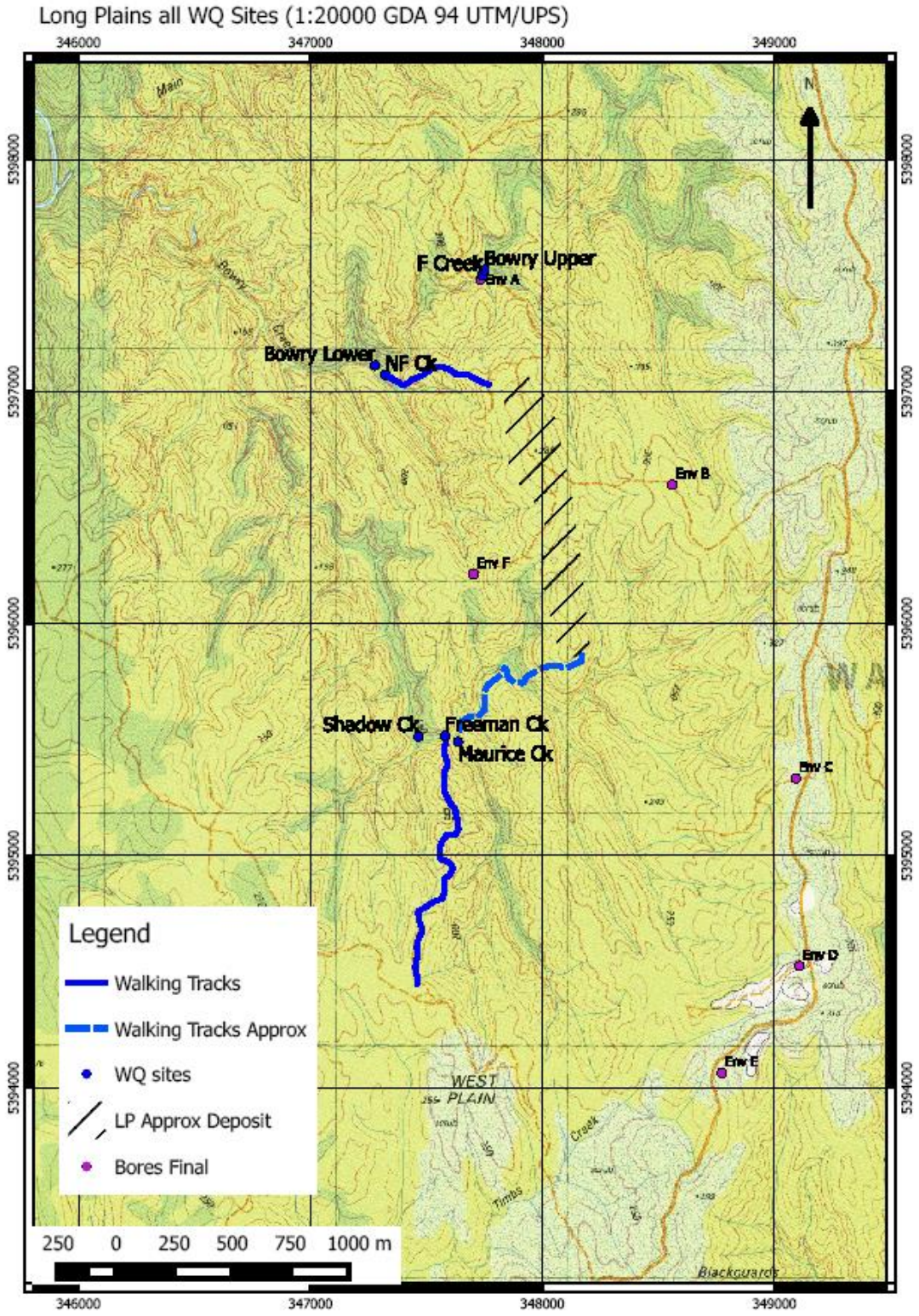

Figure 6 Water Sampling Sites All

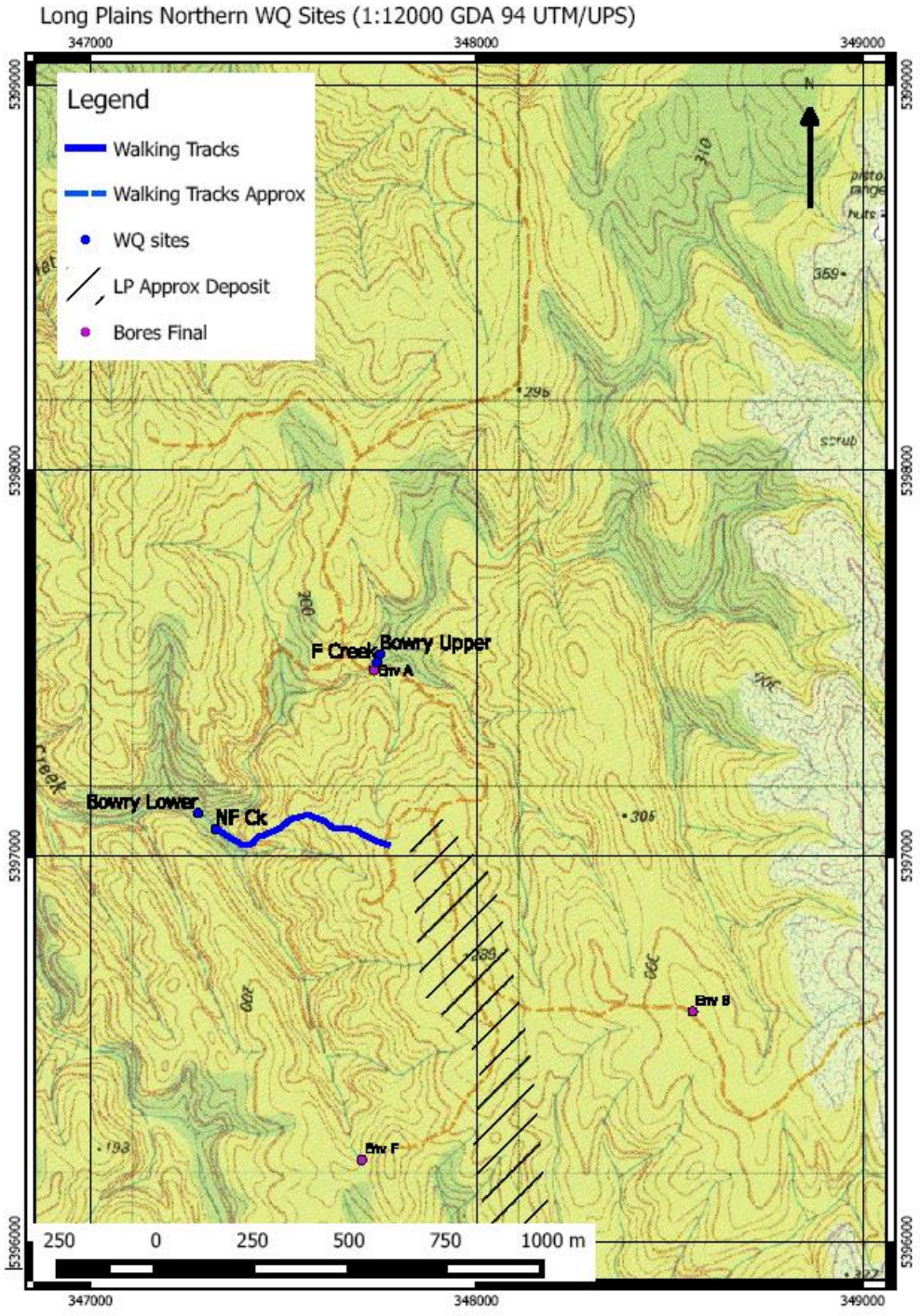

Figure 7Long Plains North water sampling location map

The water sampling sites in the north include ; Bowry Lower, Bowry Upper and F Creek with a flow gauging installation at NF creek and new drilled water monitoring bores at sites Env A, EnvB and Env F as shown above. The sampling sites were selected to capture data of the entire watershed runnning off of the snorthern end of the Long Plains ore body.

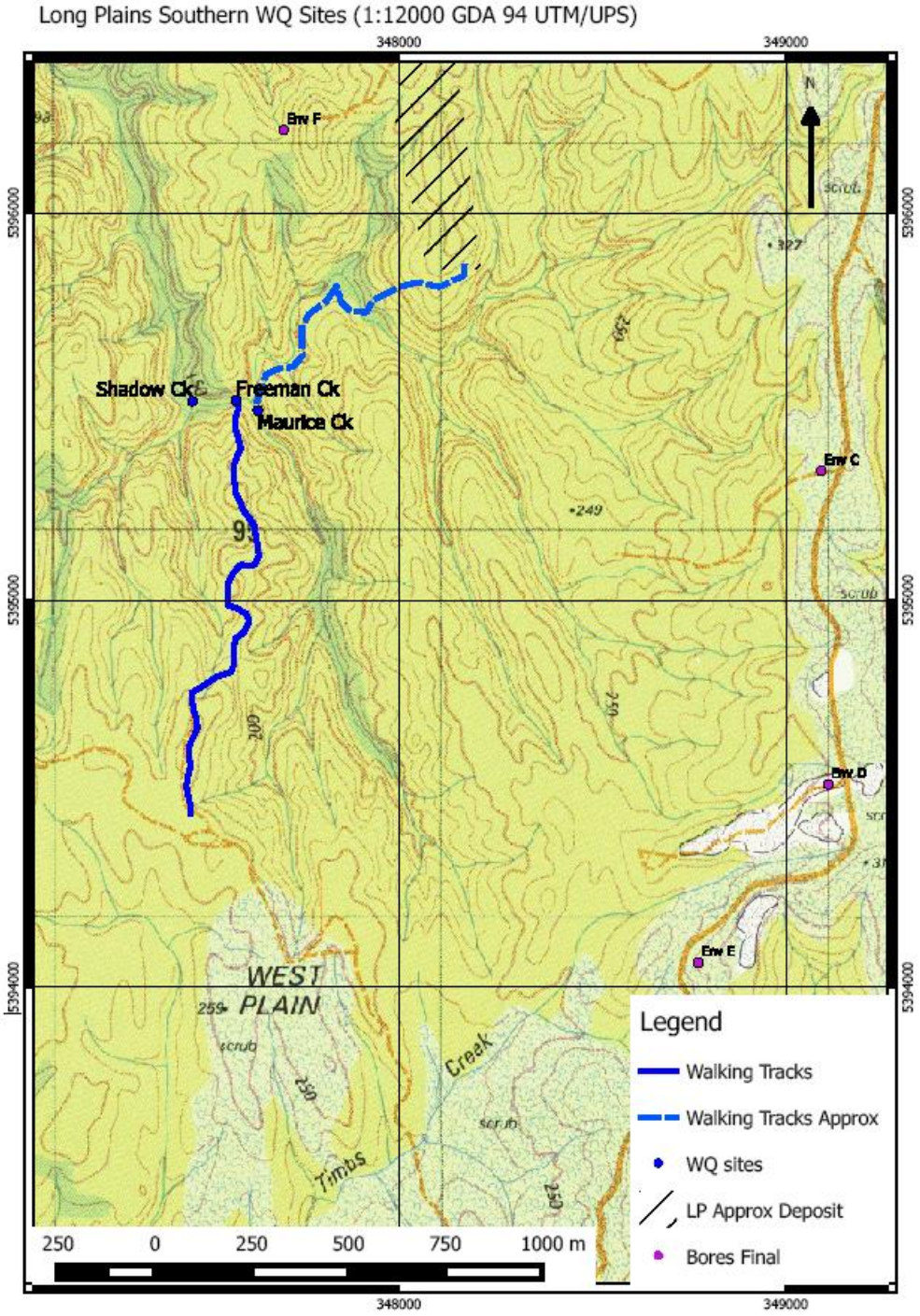

Figure 8Long Plains South Water Sampling location map

The water sampling sites in the south include ; Shadow and Maurice Creeks with a flow gauging installation at Freeman creek and new drilled water monitoring bores at sites Env C, EnvD and Env E as shown above. The sampling sites were selected to capture data of the entire watershed runnning off of the southern end of the Long Plains ore body.

Water Sampling Results > Graphs:

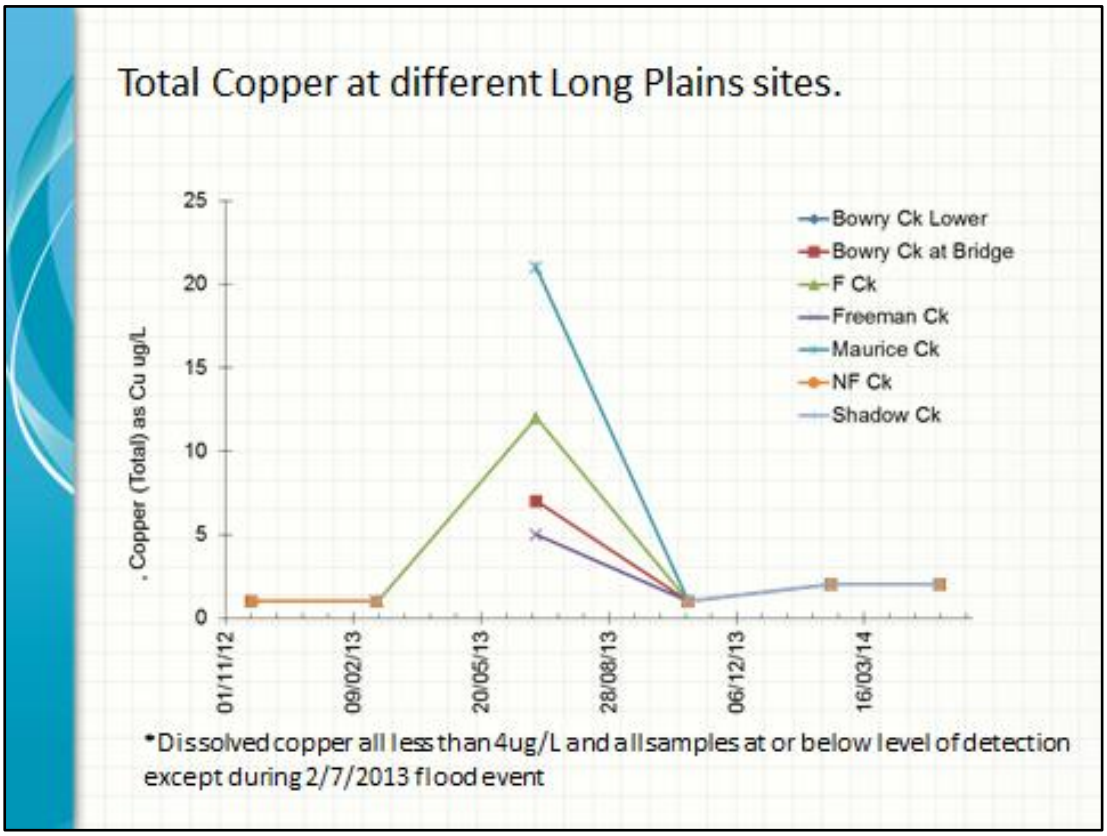

Figure 9 Water Quality Testing -Copper

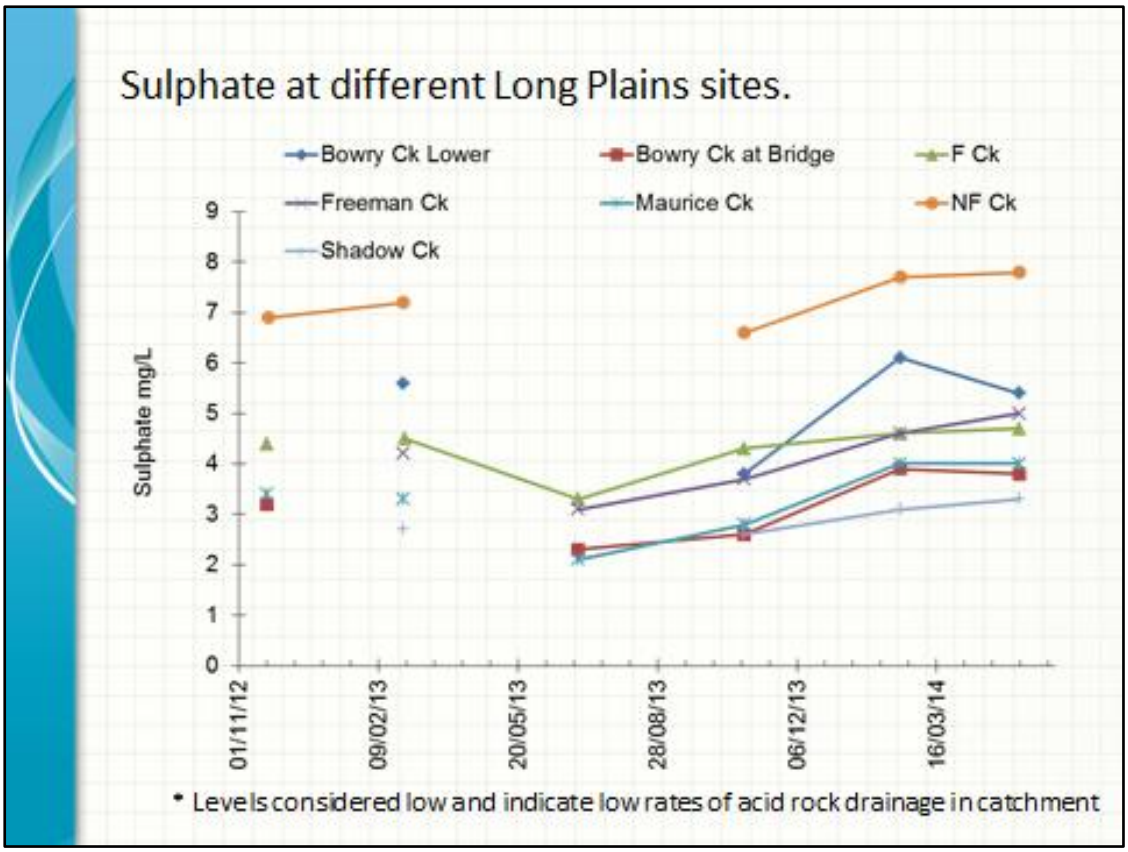

Figure 10Water Quality Testing Sulphate

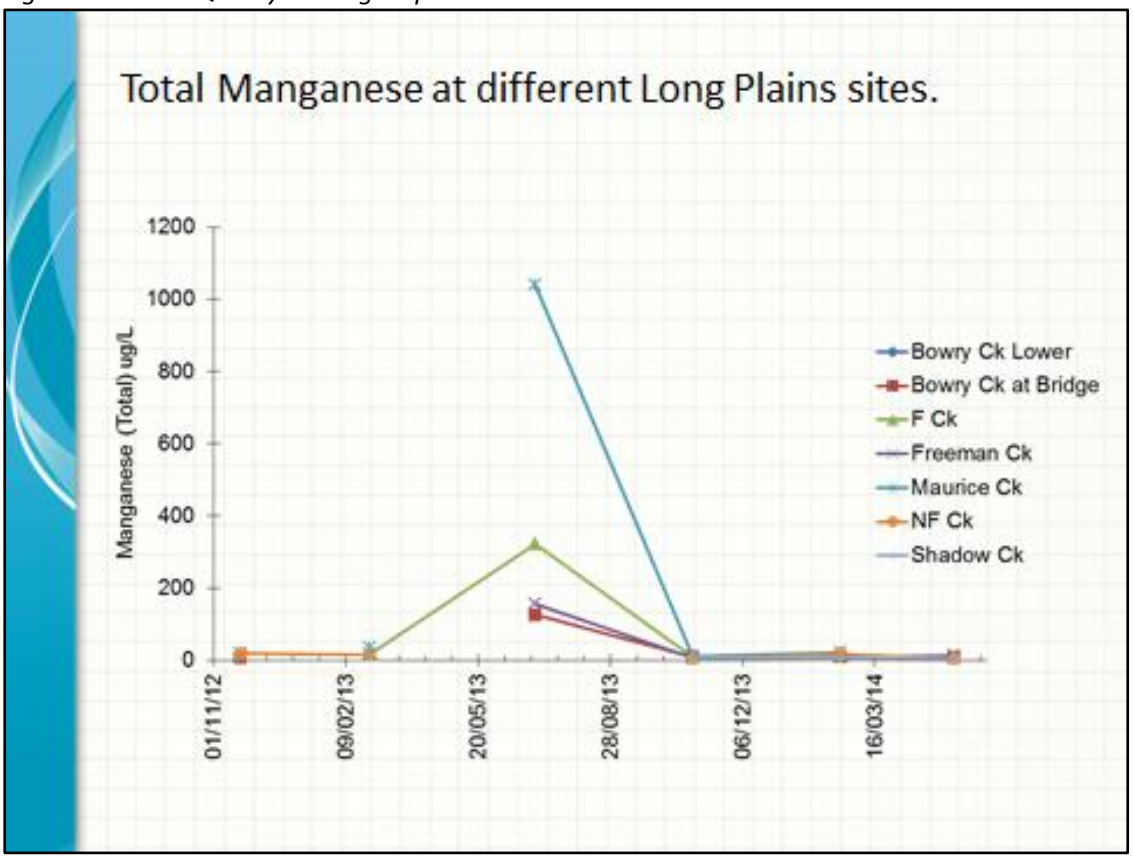

Figure 11Water Quality Testing Manganese

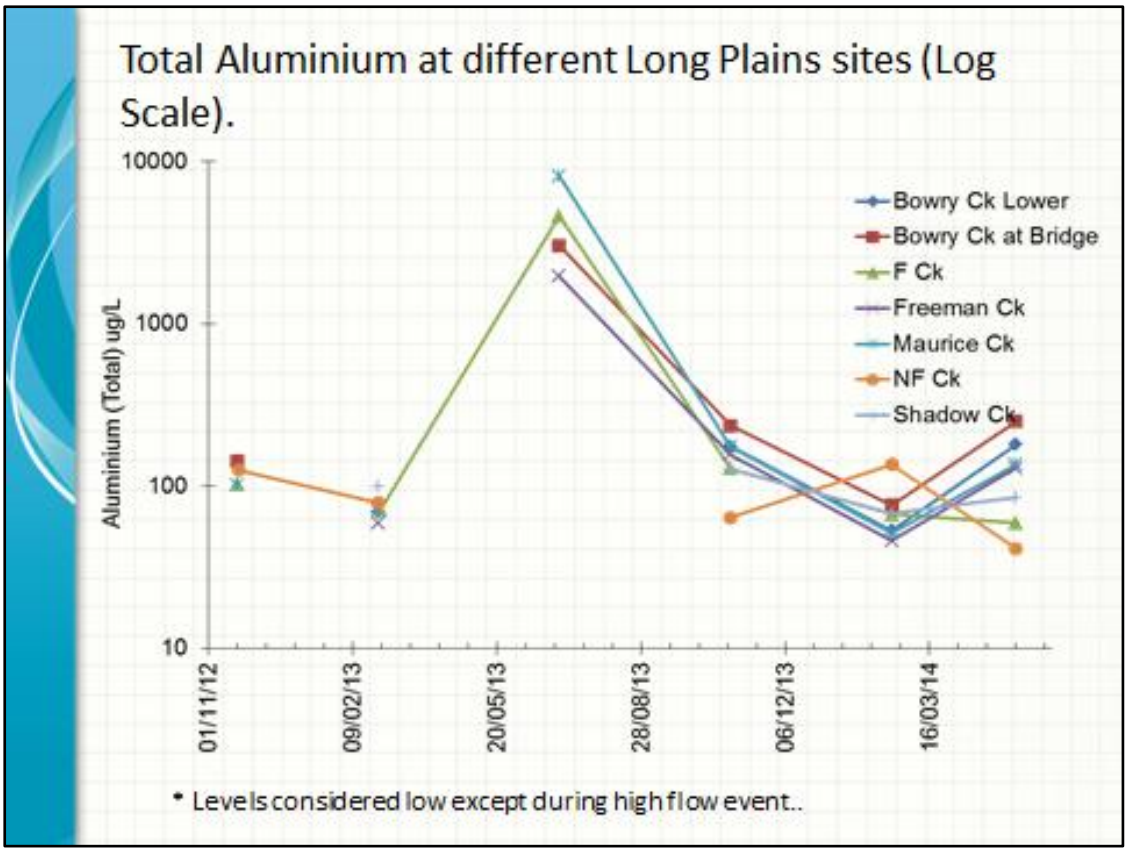

Figure 12 Water Quality Testing Aluminum

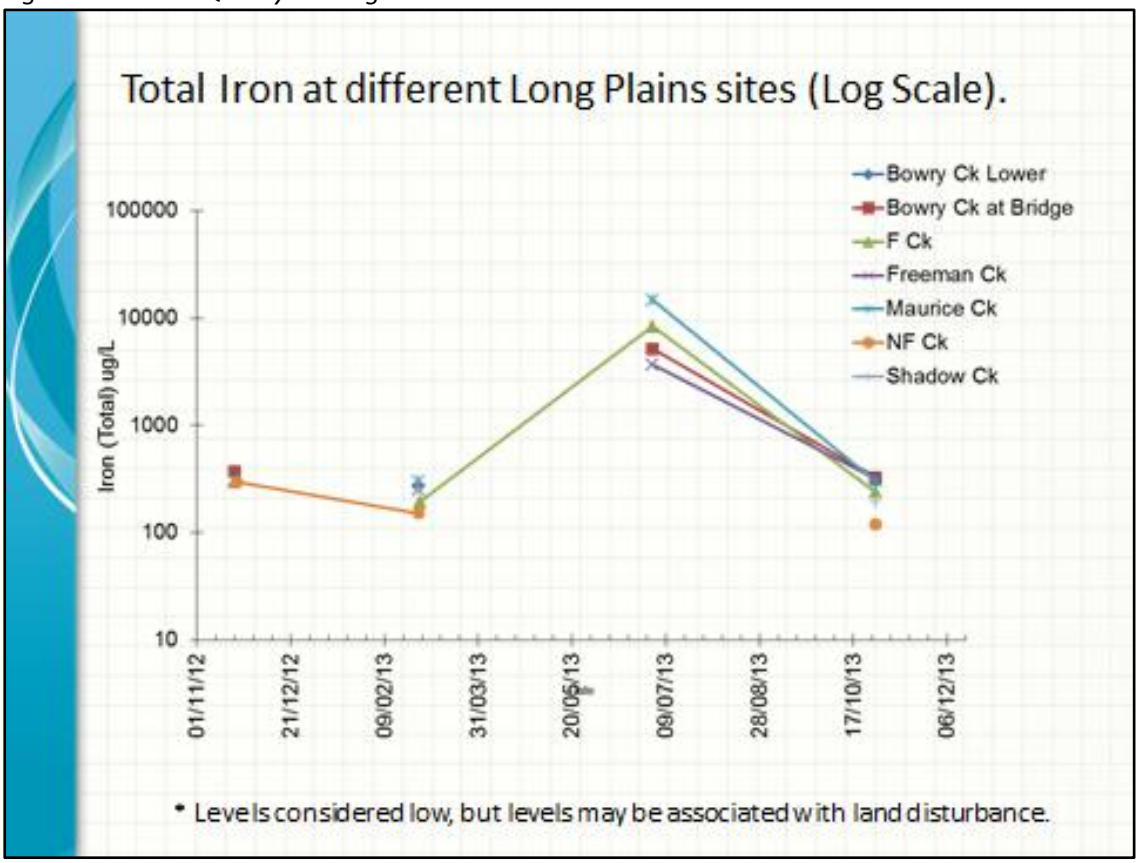

Figure 13 Water Quality Testing Total Iron

Hydro-Geology:Drilling, Packer testing and Installation of Vibrating Wire Peizometers

Hydro-Geology –Back Ground

The Long Plains Prospect is located approximately 10km south of the Savage River Mine.
Savage River is situated approximately 100km south west by sealed road from Burnie. The exploration licence, EL30/2003, comprises an area of 38km2 which encompasses the entirety of the Long Plains magnetic anomaly and provides continuous leasehold connecting EL30/2003 and the Savage River Mine Lease, 2M/2001.
In 2011, ground magnetic surveys were conducted to aid targeting of the drilling program. A first round of diamond drilling exploration was completed in May of 2012. It was recognised that significant information needs to be obtained from Long Plains before a meaningful evaluation can be carried out and the potential for supplying ore to the mill determined (GRT, 2012).
In order to confirm the potential, GRT has carried out the drilling of additional holes (inclined) for exploration and geotechnical testing between mid-2012 to mid-2013.
In a previous phase (early 2013), Mining One provided technical support for the definition of a monitoring program aiming to provide baseline data for the development of the environmental work plan. As part of the scope, Mining One assisted GRT assessing the possibility to use the existing inclined holes for environmental and groundwater assessment purposes. Mining One supported GRT in defining the specification for groundwater testing (packer test and falling head test) and installing Vibrating Wire Piezometers (VWP) at the site.
The hydrogeological data collection was required for:

- Furthering the hydrogeological understanding of weathered material and shear zones to enable more accurate geotechnical assessments to be completed in future when optimising the pit design and the potential dewatering requirements;
- Assessment of groundwater levels on the expansion of mining operations;
- Collection of test data in preparation of the development of a coupled conceptual model covering both geotechnical and groundwater aspects; and
- Collection of baseline groundwater data in preparation for the Environmental Approvals documentation associated with the mine development.

This Factual Report provides an account of the completed testing and monitoring instrument installation program and presents the collected hydrogeological data.
A glossary of technical abbreviations used in the Factual Report Tables and Appendices can be referenced in Appendix A – Glossary of Terms.

Hydro-Geology -Scope of Work

Early 2013, Mining One was involved with the definition and planning of a monitoring program1. The report proposed a series of groundwater tests (packer tests and falling head tests) and the installation of ***Vibrating Wire Piezometers (VWP),*** for the northern and southern sites.
A drilling campaign to collect exploration and geotechnical data was completed in June 2013 by Spauldings Drillers.
The testing was undertaken by Stacpoole Enterprises, under the supervision of a Mining One hydrogeologist and field technician. The following tasks were completed:
_ Liaise with GRT to select the holes to be tested;
_ Define the testing regime;
_ Supervise the undertaking of the falling head tests and packer tests on the selected holes;
_ Organise the selection, calibration and installation of VWPs in the selected holes;
_ Install the VWPs;
_ Collect the first series of readings; and
_ Summarise the test results together with the reporting of the first readings of the VWPs in a factual report

The testing and installation program on existing exploration and geotechnical holes was conducted from June to September 2013.

Hydro-Geology –Testing and Installation program
A total of seven drill holes were tested and equipped with VWPs.

Table 4 HydroGeology drill holes equipped with VWP instruments

Table 2-1: Hole ID for the Northern Site

Coordinates (GDA94 Zone 55s and Geoid 98)				Hole Size	Hole inclination against vert.
Hole ID	Y	X	Z		
LPDD1215	5396480.0	348123.4	271.78	HQ	31.4°
LPDD1304	5397050.1	347772.3	261.39	HQ	2.1°
LPDD1306	5396310.7	347795.3	276.33	HQ	35.0°
LPDD1310	5396676.7	348081.8	270.00	HQ	16.0°
LPDD1312	5396160.0	348090.0	262.53	HQ	19.6°

Table 2-2: Hole ID for the Southern Site

Coordinates (GDA94 Zone 55s and Geoid 98)				Hole Size	Hole inclination against vert.
Hole ID	Y	X	Z		
LPDD1204	5394950.2	348295.4	259.37	HQ	27.8°
LPDD1205	5395260.0	348194.8	240.68	HQ	31.9°

The location map showing the selected holes is shown in Appendix B.
For each hole, a series of packer tests were undertaken, followed by a series of falling head tests. At completion dual-level VWPs were installed (except for LPDD1310 with only one instrument installed).
Hydro-Geology Packer Test
Packer tests involve measuring the flow rate, and pressure build-up and decay of water injected into the test interval over a period of time (10 minutes). For this test, water is injected at specific pressure “steps” and the resulting flow is recorded when this has reached a quasi-steady state condition.
The steps are used to “ramp” up and down through the pressure range of 1 Mpa. The behaviour of the system to the increasing and recovery injection pressures can render useful information on the rock and fracture behaviour, as well as packer and injection performance[2] .
[2] Standard Operating Procedures for Borehole Packer Testing. M Royle

Packer testing was carried out through the drilling rods (wireline packer). AGE packers were used for the testing.
Mining One undertook the analysis of the cores to assess the ground conditions to determine the test horizons and the number of test for each hole (Table 2-3).

Table 5 Number Packer tests per hole

Table 2-3: Number of Packer Tests per Hole

Hole ID	Number of Tests
LPDD1312	4
LPDD1310	5
LPDD1306	5
LPDD1304	4
LPDD1215	5
LPDD1205	4
LPDD1204	6

The testing regime shown in Table 2-4 was adopted for the program. In some cases, the high degree of fracturing present in the rock mass did not allow for the full range of pressures to be developed in the cavity.
In highly fractured and sheared zones, water return in the cavity was observed, suggesting bypassing of the upper packer. Those tests have been recorded as having failed. The packer test calculation sheets are shown in Appendix C.

Table 6 Packer Testing Regime

Table 2-4: Packer Testing Regime

Test Phase	Step number	Pressure (kPa)	Time (min)
Up	1	400	10
	2	600	10
	3	800	10
	4	1000	10
	5	1200	10
Down	6	700	10
	7	500	10
	8	300	10

Hydro-Geology Falling Head Test
This method of testing uses a slug of introduced water to increase the water level in a well and monitor the subsequent water-level recovery. Each test involved the filling of the piezometer with water until either steady state is achieved or the piezometer overflowed.
Analytical solutions can then be applied to hydrographs of water-level recovery to determine the well characteristics and the hydraulic conductivity of the rock surrounding the well. Each test provides an estimate of the hydraulic conductivity in the vicinity of the response horizon of the piezometer.

Table 7 Number of Falling Head tests per hole

Table 2-5: Number of Falling Head Test per Hole

Hole ID	Number of Falling Head Tests
LPDD1312	2
LPDD1310	1
LPDD1306	2
LPDD1304	2
LPDD1215	2
LPDD1205	2
LPDD1204	2

Hydro-Geology VWP Installation

The VWP is an instrument sealed in boreholes to measure pore-water pressures. The VWP converts water pressure to a frequency signal via a diaphragm and a tensioned steel wire. The VWP is designed so that a change in pressure on the diaphragm causes a change in tension of the wire.

The VWP installation was overseen and completed to a design issued by the Mining One site hydrogeologist.

The instruments have been installed on a tremie line and lowered down the open hole, then grouted in. Installation levels are derived from the response of the vibrating wire reading before grouting. A summary of the VWP installations is presented in Appendix E.

Photographs of each completed VWP monument are shown in Appendix G.

Table 2-6 lists the serial number and true vertical depth (TVD) installation level for the instruments installed on site.

Table 8 VWP Instruments identification table

Table 2-6: VWP Instruments Identification Table

Hole ID	RL of Ground Level (mAHD)	Hole Depth (mAHD)	Shallow Instrument		Deep Instrument	
			Serial Number	Installation level (TVD mAHD)	Serial Number	Installation level (TVD mAHD)
LPDD1312	262.5	53.67	18345	71.29	N/A	N/A
LPDD1310	270.0	-27.8	18554	209.44	N/A	N/A
LPDD1306	276.3	-123.63	18553	202.84	18322	110.02
LPDD1304	261.4	60.49	18551	194.39	18320	77.39
LPDD1215	271.8	14.5	18549	244.46	18624	124.97
LPDD1205	240.7	-7.7	18556	189.94	18621	92.02
LPDD1204	259.4	-163.5	18557	193.56	18622	106.95

Hydro-Geology Results

The packer test results are summarised in Table 3-1. The preliminary results confirm that the sections of the hole tested are generally relatively permeable. Rock masses with a very high density of fractures could not be tested effectively, due to the limitation of the capacity of the pump. Those sections are believed to have permeabilities above 5E-06 m/s. Zones of high to medium fracture density have permeabilities in the range of 1.1E-06 to 4.7E-06 m/s. Media with a lower density of fractures have permeabilities below 5.7E-07 m/s.

The following test descriptions have been applied in Table 9:

- Test Completed: Test completed successfully, with 7 to 8 steps and a final pressure in the cavity at or above 1MPa.
- Test Extrapolated: Test completed successfully, with 5 to 6 steps and a final pressure inferior but close to 1MPa.
- Test Failed: Test unsuccessful, with a maximum of 2 to 4 steps and a final pressure in the cavity well under 1MPa. The failure is associated with the high density of fracture and a large inflow of water within the media. In those conditions, the pressure of 1 MPa was not achieved due to the limitation of the capacity of the rig pump.

Table 3-1: Packer Tests Summary Table

Hole ID	Test depth (mBGL)	Test Results	Test Response *	K (m/s)
LPDD1312	218-221	Failed	1	-
	195-199	Extrapolated	2	4.70E-06
	175-178	Failed	1	-
	128-132	Completed	2	4.66E-06
LPDD1310	274-278	Failed	1	-
	201-204	Failed	1	-
	173-176	Completed	6	2.81E-06
	132-136	Extrapolated	2	3.73E-06
	92-95	Failed	1	-
LPDD1306	219-223	Completed	6	1.50E-07
	182-186	Failed	1	-
	156-160	Failed	1	-

Table 9 Packer Tests summary table

Hole ID	Test depth (mBGL)	Test Results	Test Response *	K (m/s)
	92-96	Failed	1	-
	56-60	Failed	1	-
LPDD1304	195-199	Completed	2	1.69E-07
	118-123	Failed	3	-
	71-75	Completed	2	1.75E-08
	39-43	Failed	3	-
LPDD1215	255-259	Completed	6	2.02E-07
	193-197	Completed	6	1.25E-07
	171-175	Completed	6	1.21E-07
	159-163	Completed	6	1.16E-07
	132-136	Completed	2	1.45E-07
LPDD1205	208-212	Failed	4	-
	155-159	Failed	5	-
	96-100	Extrapolated	2	3.29E-06
	63-67	Extrapolated	2	2.65E-06
LPDD1204	266-270	Extrapolated	1	1.66E-06
	252-256	Extrapolated	1	5.76E-07
	171-175	Extrapolated	2	4.09E-06
	137-141	Extrapolated	1	1.06E-06
	88-92	Extrapolated	3	2.46E-06
	49-53	Failed	3	-

* Response explanation listed below:
(1) Water return due to bypass of the packer through the network of fractures
(2) Opening of the fractures at high pressure and increase of the permeability
(3) Failing to build up pressure within the cavity (inadequate sealing of the packer)
(4) Progressive blocking of the fractures and decrease in permeability
(5) Opening then blocking of the fractures
(6) Turbulent flow

Hydro-Geology Falling Head Testing

A series of falling head tests have been completed within the upper section of the media, which is generally highly weathered and could not be tested by packer testing.

The tests have been analysed in Aqtesolv, a pumping test and slug test analysis software.

Based on the analysis of the core logging undertaken by GRT, and an assessment of the Aqtesolv analyses, Mining One hydrogeologists have selected the following methods of analysis:

Confined aquifer

_ Cooper-Bredehoeft-Papadopulos

_ Dougherty-Babu

_ KGS Model

_ Butler

_ Butler-Zhan

_ Bouwer-Rice

_ Hvorslev

_ McElwee-Zenner

Fractured block_ Barker-Black

Unconfined_ KGS Model

Falling head test results are summarised in Table 3-2.

The preliminary results confirm that the top of the holes have generally low to very low permeabilities. Those sections have permeabilities around 6.8E-07 m/s, but as low as 1.0E-09 m/s.

Table 10 Falling Head Test Summary table

Table 3-2: Falling Head Test Summary Table

Hole ID	K (m/s)
LPDD1312	5.03E-08
LPDD1310	5.55E-09
LPDD1306	4.35E-08
LPDD1304	1.03E-07
LPDD1215	1.45E-08
LPDD1205	4.52E-06
LPDD1204	2.11E-09

Hydro-Geology VWP Initial Readings

The initial VWP water level and temperature readings were collected by Mining One and are shown in Appendix E.

Calibration certificates for all the installed VWPs are contained in Appendix F.

The initial readings indicate that the upper and lower instruments are showing different pore pressures for all the dual install holes. A difference in level of around 100 m was observed between the deep and shallow instrument, with the deeper instrument showing a higher pressure range. This is likely to indicate the presence of two different aquifers at depth.

The level recorded with the grouted instruments are substantially different from the water level recorded before the start of the testing program, which is in the range of 15 to 20m BGL.

Exploration holes have been drilled through the various aquifers and aquitards encountered at the site. The static level recorded is consequently a combination of levels from all the water bearing horizons encountered. The highest level is indicative of the shallow unconfined aquifer, which is recharged by direct rainfall.

The falling head test results indicate that the permeability of the upper section of the hole is relatively low, this prevents water from the shallow aquifer leaking directly into the lower aquifers, except when in contact with shear or fractured zones.

Hydro-Geology Conclusions and Recommendations

Mining One has completed a series of groundwater tests (packer test and falling head test) and the installation of Vibrating Wire Piezometers (VWP), for the northern and southern sites of the Long Plains extension project (GRT).

As part of this program, the following was undertaken:

- Analysis of core logs and definition of the testing and installation program;
- Completion of 33 packer tests;
- Completion of 13 falling head tests; and
- Installation of 12 VWPs.

The findings of this preliminary set of groundwater investigations is summarised below:

- Rock mass with a very high fracture density was encountered in some holes, with permeabilities around 5E-06 m/s and above.
- Zones of high to medium density of fractures has permeabilities ranging between 1.1E-06 and 4.7E-06 m/s, whilst the fresher rock has permeabilities around 5.7E-07 m/s and below.
- The weathered profile down to around 50 mBGL has permeabilities around 6.8E-07 m/s, but as low as 1E-09 m/s.
- Water levels recorded with the instruments installed at depth are substantially different from the water level recorded before the start of the testing program. Mining One understand that VWPs which are now grouted in are recording water levels in the actual response zones as opposed to the combined aquifers.
- At this stage of the investigations, it is likely that three separate aquifers can be distinguished at the site.

The development of a specific testing program to confirm these findings is recommended.

Ongoing monitoring should be set up to confirm the range of groundwater level variation associated with the proposed pit water level over wet seasons to confirm the water level range and potential variations.

A Conceptual Site Model (CSM) should be developed to better define the number of aquifers and their respective hydraulic properties and water levels, and determine their interrelationship. The model should also establish the zones of high conductivities associated with fracturing and identify high conductance areas to enable the assessment of the expected mine inflows based on the current and future anticipated hydraulic gradients (Mining One proposal 37693).

Discussion of Results
Preliminary Geological Model and Resource Estimation

The Long Plains mineralisation presents as an immature analogue of the Savage River magnetite / magnesite orebodies with less pronounced structural (strike and /or dip-slip) deformation. The North zone strikes N-S and has a steep dip to the east, with local dip rolling past vertical. A weakly serpentinised mafic host rock, denoted the main host assemblage, outcrops at surface and contains discreet lenses and pods of magnetite (weathered to haematite) that have an apparent shallow plunge to the south.

The original source of magnetite appears to be diagenetic magnetite after siderite with possible contribution of the incomplete separation of magnetite and magnesite components from the metamorphic process of serpentinisation of the original tholleitic basalts (now obducted in the Arthur lineament).
The orebodies / lens are separated by several late cross-cutting basalt/dolerite dykes, but the precise geometry of these is elusive given the current drill spacing.

The north zone (NZ) has a distinct magnesite (carbonate) sequence immediately to the west of the main host assemblage. The main host assemblage is comprised of variably altered mafic schists and the thin discreet magnetite lenses which commence and terminate parallel to the regional foliation suggesting a shear control on mineralisation and incomplete remobilisation of original (diagenetic?) magnetite.

The central zone (CZ), shows a very strong magnetic signature as intense as the one at NZ, and was drilled on 100m centres in 2013/4. A full kilometre of strike length in the Central zone between 5396250mN and 5395250mN contains an intense magnetic anomaly and was tested by this drilling. Drilling demonstrated thin and discontinuous high grade magnetite lenses that appear to pinch and swell as suggested by the recent surface geology compilation. Greatest continuity is in the dip component.

The south zone (SZ) was drilled on a much wider 300m drill spacing (first pass program) with the objective of early determination of the limits of probable economic mineralisation ahead of a targeted resource definition campaign (if warranted).
At the northern end of the South zone (section 5394960mN) is a very high grade and thick sequence of main host that lies above a discreet talc unit and the magnesite sequence is absent or located distal into the footwall rocks.
The thick high grade interval is co-incident with a very high magnetic signature.
The south zone at the southern end (section 5394060mN) shows an intercalated magnesite/magnetite “core” with thin but high grade and steeply dipping magnetite lenses flanking the core at the southern end. This is thought to be an immature or less mature/ less deformed analogue of the Savage River magnetite / magnesite orebodies suggesting a decreasing structural component of ore remobilisation / ore genesis.
The magnetic signature breaks up and becomes very granular south of 5394800mN. Logically, the probable southern limit of economic mineralisation is at 5394800mN.
The preparation of the geology model is now complete and the geological domains have been used to constrain the estimation of ore within the block model and to select representative samples for waste type characterisation. The resource estimation is described in detail in the attachment appendix A entitled; “significant magnetite resource increase at longplains 19 december 2013.pdf”

Discussion of Results; HydroGeology Data Collection:

As summarised above in " Hydro-Geology Conclusions and Recommendations" :

- Rock mass with a very high fracture density was encountered in some holes, with permeabilities around 5E-06 m/s and above.
- Zones of high to medium density of fractures has permeabilities ranging between 1.1E-06 and 4.7E-06 m/s, whilst the fresher rock has permeabilities around 5.7E-07 m/s and below.
- The weathered profile down to around 50 mBGL has permeabilities around 6.8E-07 m/s, but as low as 1E-09 m/s.
- Water levels recorded with the instruments installed at depth are substantially different from the water level recorded before the start of the testing program. Mining One understand that VWPs which are now grouted in are recording water levels in the actual response zones as opposed to the combined aquifers.
- At this stage of the investigations, it is likely that three separate aquifers can be distinguished at the site.

The development of a specific testing program to confirm these findings is recommended.
Ongoing monitoring should be set up to confirm the range of groundwater level variation associated with the proposed pit water level over wet seasons to confirm the water level range and potential variations.
A Conceptual Site Model (CSM) should be developed to better define the number of aquifers and their respective hydraulic properties and water levels, and determine their interrelationship. The model should also establish the zones of high conductivities associated with fracturing and identify high conductance areas to enable the assessment of the expected mine inflows based on the current and future anticipated hydraulic gradients (Mining One proposal 37693).

Discussion of Results;Water Quality Data Acquisition

For water sampling conducted at various sites as described in the text between June 19 2013 and June 18 2014;

- Dissolved copper all less than 4ug/L and all samples at or below level of detection except during 2/7/2013 flood event.
- Sulphate Levels are considered low and indicate low rates of acid rock drainage in catchment.
- Manganese levels are considered low (no comment on Figure 12 Water Quality Testing-Manganese).
- Aluminium levels are considered low except during high flow event.
- Total Iron levels are considered low, but levels may be associated with land disturbance.

The water quality sampling program will continue for the next few years with monthly samples to be taken and analysed to establish baseline data that covers high flow events

Conclusions

This most recent exploration campaign includes the recently released Mineral Resource and is providing baseline data on hydro-geology, hydrography and hydrology for the mineral resource.
The program of studies, investigations and works named the Long Plains Development Proposal and Environmental Management Plan (LP-DPEMP) is in progress between January 2013 and Aug 2018 to provide the following:

- Baseline environmental surveys/studies.
- Referral to SEWPaC under the EPBC Act.
- Development and submission of a Notice of Intent to the Tasmanian EPA
- Technical studies into the impacts of a mining operation at Long Plains and management of those impacts
- Preparation and submission of a DPEMP to the Tasmanian EPA and the Waratah Wynyard Council.

Grange has confidence that this resource can be mined economically and is planning a pre-feasibility study to evaluate mining, benefication, potential transport options and the potential “fit” of Long Plains into the Savage River Life of Mine Plan (LOMP)schedule.
Grange intends to apply for a Mining lease in 2015 over much of the EL30/2003 area as part of this work.

Environment

Surface disturbance operations for the period were limited to the clearing of an existing 250m of track (EnvF site) and drill pad preparations.
Rehabilitation: All drill sites have had their sumps filled in, collars have been capped (report previously sent to MRT) and holes have been surveyed.
No rehabilitation is planned due to the conversion of the exploration lease to a mining lease and the requirement to continue work and to maintain access to sampling infrastructure.

Table 4 EL30-2003 Near Bowry Creek Quarterly Report-Expenditure July 2013-June 2014

M:\Geology\Exploration Drilling\Exploration\Quarterly_Costs\2014\[MRT_costs_June_2014.xlsx]Cumulative annual end June						
Exploration Quarterly Report	EL30\2003 near Bowry Creek					
4 Quarters Q3 2013 to Q2 2014		Q3 2013 Jul-Sept	Q4 2013 Oct-Dec	Q1 2014 Jan-Mar	Q2 2014 to end May Apr-Jun	Total for reporting period
1.Geoscientific Costs	Geology	$ 30,225			$ 3,730	$ 33,956
	Geochemistry	$ 18,352				$ 18,352
	Geophysics	$ -	$ -	$ -	$ -	$ -
	Remote Sensing	$ -	$ -	$ -	$ -	$ -
	Total	$ 48,577	$ -	$ -	$ 3,730	$ 52,308
2. Drilling & Gridding Costs	Gridding					
	Drilling Diamond m	zero	zero	zero	99.8	$ 100
	Reverse Circulation m	zero	zero	zero	330	$ 330
	Total (see note below)	$ 604,953			$ 117,405	$ 722,358
3. Land Access Costs						
4. Rehabilitation Costs						
5. Feasibility Study Costs	HydroGeology /Hydrography	$ 331,135		$ 33,423	$ 8,800	$ 373,358
6. Other Costs						
		$ 984,665	$ -	$ 33,423	$ 129,936	$ 1,148,024
9. Cumulative Expenditure at time of last report		$ 4,425,532	$ 5,410,197	$ 5,410,197	$ 5,443,620	$ 5,573,556
Total expenditure to date	(sum of 8 and 9)	$ 5,410,197	$ 5,410,197	$ 5,443,620	$ 5,573,556	$ 6,721,580
Exploration Progress Report						
Q3 2013 The drilling of the 2012-13 drill campaign was completed in June 2013 but charges were invoiced in July (hence no drilling metres). Drilling charges were for hydro-geology , packer testing and installation of vibrating wire peizometers (ie: Drill used to conduct the testing but no metres drilled) and invoices received for drilling completed last quarter.						
Q4 2013 The drilling of the 2012-13 drill campaign was completed in June 2013. No field work was done Q4 2013						
Q1 2014 No field work was done Q1 2014						
Q2 2014 Hydro geology costs - Drilling and installation of open hole water bores and hydrologists> (LP-DPEMP) 6 holes totalling 430m were drilled to monitor ground water levels and water quality as baseline data for DPEMP.						
M:\Geology\Exploration Drilling\Exploration\Quarterly_Costs\2014\[MRT_costs_June_2014.xlsx]Cumulative annual end June						

Table 5 Exploration plans for 19 June '14-18June '15

M:\Geology\Admin\Budget\2013\Long_Plains\LP-DPEMP\[Long Plains - DPEMP PID-000363_01 Reforecast 16-08-13.xlsx]Reforecast 16-08-13

			2014 july	2014 august	2014 september	2014 october	2014 november	2014 december	2015 january	2015 february	2015 march	2015 april	2015 may	2015 june	June-June Totals
LongPlain	LongPlains DPEMP		-	-	-	-	-	-	-	-	-	-	-	-	-
	Preliminary Studies/ Works (for EPBC Referral and Preliminary EPA)		-	-	-	-	-	-	-	-	-	-	-	-	-
		Natural Values Assessment (incomplete)	10,000	10,000	10,000	-	-	-	-	-	-	-	-	-	30,000
		FRESHWATER SNAIL (BEDDOMEIA SURVEYS) (complete)	-	-	-	-	-	-	-	-	-	-	-	-	-
		Ecological assessment EPBC Support Reporting (complete)	-	-	-	-	-	-	-	-	-	-	-	-	-
		Baseline water scoping assessment (ongoing)	-	-	-	-	-	-	-	-	-	-	-	-	-
		Cultural heritage survey (complete)	-	-	-	-	-	-	-	-	-	-	-	-	-
		Geochemical assessment southern pit (test CZ holes)	-	-	-	-	-	-	-	-	-	-	-	-	-
		Preliminary mine plan, pit outlines and infrastructure requirement	-	-	-	-	-	-	-	-	-	-	-	-	-
		Disturbance maps	-	-	-	-	-	-	-	-	-	-	-	-	-
	Preliminary Studies/ Works (for EPBC Referral and Preliminary EPA) Total		**10,000**	**10,000**	**10,000**	-	-	-	-	-	-	-	-	-	**30,000**
	EPBC Act - SEWPaC - Preliminary		-	-	-	-	-	-	-	-	-	-	-	-	-
		Preliminary referral to SEWPaC under EPBC Act	-	-	-	-	-	-	-	-	-	-	-	-	-
		Discuss with SEWPaC	-	-	-	-	-	-	-	-	-	-	-	-	-
		Minister makes controlled action decision on referral	15,333	13,333	15,333	5,333	-	-	-	-	-	-	-	-	49,333
	EPBC Act - SEWPaC - Preliminary Total		**15,333**	**13,333**	**15,333**	**5,333**	-	-	-	-	-	-	-	-	**49,333**
															-
	Technical Issues		-	-	-	-	-	-	-	-	-	-	-	-	-
		Mining	-	-	-	-	-	-	-	-	-	-	-	-	-
		Water Management	10,000	10,000	10,000	10,000	10,000	10,000			-	-	-	-	60,000
		Waste Rock Management	10,222	13,889	17,500	5,667	1,750	1,750	-	-	-	-	-	-	50,778
		Traffic / Ore Movement	17,167	16,583	8,333	5,417	-	-	-	-	-	-	-	-	47,500
		Rehabilitation and Closure Plan	-	-	-	-	-	-	-	-	-	-	-	-	-
		Tailings	11,667	12,222	12,778	14,806	750	-	-	-	-	-	-	-	52,222
		Conservation	12,778	11,111	12,514	14,750	2,750	2,625	2,875	875	-	-	-	-	60,278
		Heritage	750	-	-	-	-	-	-	-	-	-	-	-	750
		Noise & Air management plans	-	3,150	3,850	-	-	-	-	-	-	-	-	-	7,000
		Miscellaneous										3,500	1,625	3,792	8,917
		Community Consultation	7,000	10,063	8,750	10,063	9,625	7,000	1,250	1,542	917	875	417	-	57,500
	Technical Issues Total		**69,583**	**77,018**	**73,725**	**60,701**	**24,875**	**21,375**	**4,125**	**2,417**	**917**	**4,375**	**2,042**	**3,792**	**344,944**
Grand Total			**92,917**	**102,351**	**89,058**	**66,034**	**24,875**	**21,375**	**4,125**	**8,017**	**9,717**	**9,975**	**4,292**	**11,542**	**444,277**

Totals $444,277 planned exploration expenditure on EL30-2003 for July 2014 to June 2015
Path=M:\Geology\LP_DPEMP\LP-DPEMP\[Long Plains - DPEMP PID-000363_01 Reforecast 30-5-14.xlsx]Reforecast 10-06-14

Appendix 1 Resource Estimate Long Plains

19 December 2013
ASX: GRR

GRANGE RESOURCES LIMITED

Australia's most experienced magnetite producer

SIGNIFICANT INCREASE IN MAGNETITE RESOURCE AT LONG PLAINS

HIGHLIGHTS

- **Updated JORC 2012 Mineral Resource includes 107 million tonnes of magnetite iron ore at Long Plains (up from 49 million tonnes)**
- **The deposit is located 6km from the Savage River magnetite mine**
- **25% of tonnage is in the Indicated Resource category, all in North Zone**
- **Mineralisation is very robust and continuous at various cut-off grades**
- **Estimated depth of mineralisation is variable and generally greater than 300 metres**
- **Ore outcrops on a prominent ridge, with very low planned strip ratios**
- **Deposit contains abundant alkaline waste rocks and low amounts of sulphide waste rock**

Commenting on the announcement Grange Resources Managing Director, Wayne Bould said:

"This significant resource upgrade at Long Plains caps the next phase of a successful drilling program at an exploration target in close proximity to the Savage River magnetite mine".

"These results provide Grange with the confidence to continue its exploration and pre-feasibility studies at Long Plains to determine if there is an opportunity for this magnetite resource to be integrated into the life of mine plans for the Savage River magnetite mine".

Appendix 2
Digital file= grange_resources_-_significant_magnetite_resource_increase_at_long_plains_-_19_december_2013
See A4 bound Hard copy

LONG PLAINS MINE
GROUNDWATER TESTING AND VIBRATING WIRE PIEZOMETER INSTALLATION

FACTUAL REPORT

For

GRT

Job No.	1890_G	Mining One Pty Ltd
Doc No.	3711v2.doc	Level 9, 50 Market Street
Date:	September 2013	Melbourne VIC 3000
Prepared by:	Alexis Valenza	Ph: 03 9600 3588
		Fax: 03 9600 3944

FINAL REPORT

Appendix 2 HydroGeology Factual Report
Digital file= Hydrogeology factual report Long Plains Sept 2013.pdf
See A4 bound Hard copy (294 pgs)

Appendix 3 Hydrologist Report Water Quality Long Plains

Appendix 3 HydrologyWater Quality Report
Digital fille path=M:\Geology\LP_DPEMP\LP-DPEMP\water baseline sampling.pdf
See A4 bound Hard copy (16 pgs)