Technical Report for the
REEFTON PROJECT

Located in the province of Westland,

NEW ZEALAND

Prepared by

OceanaGold Corporation

Level 5, 250 Collins Street, Melbourne, Victoria

AUSTRALIA

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 SUMMARY

1.1 Description of Property

The Reefton Project comprises a group of minerals permits, with a combined area of 30,117 hectares, covering the Reefton Goldfield on the west coast of New Zealand's South Island (Figure 1.1). This goldfield is historically one of New Zealand's most prolific gold mining areas, having produced over 2Moz (excluding alluvial gold) at an average mined grade of 16g/t Au.

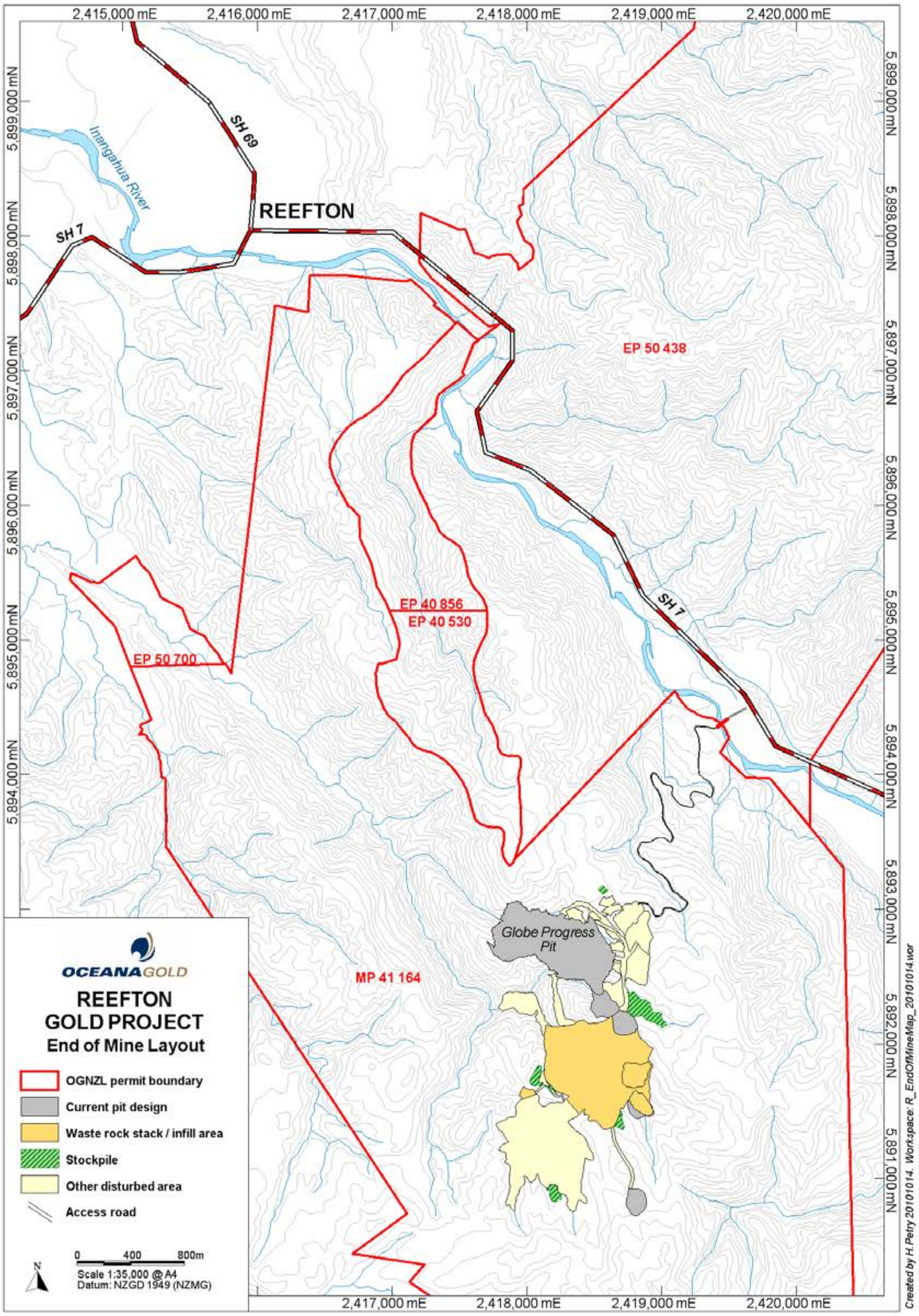
Figure 1.1: General Location of the Reefton Project

1.2 Location

The Globe Progress Mine is located approximately 7km southeast of the township of Reefton, within the West Coast Region of New Zealand (Figure 1.2). Access to the project is via state highways and local sealed roads, then by an unsealed access road to the site. Within the project area, access is restricted to a few 4 wheel drive tracks and walking. Heavy equipment is moved to more remote locations by helicopter.

The land on which the Globe Progress Mine is located is administered by the Department of Conservation (DoC) and is included in the Conservation Forest Park.

Figure 1.2: Globe Progress Mine location plan



1.3 Ownership

The minerals permits over the Reefton Goldfield are held 100% by Oceana Gold (New Zealand) Limited (Oceana). Oceana is a wholly-owned subsidiary of Oceana Gold Limited and OceanaGold Corporation.

1.4 Geology and Mineralization

Gold mineralization in the Reefton Goldfield is orogenic-style and the deposits occur in and around steeply dipping, north to north-northeast trending shear zones that cut across the hinges of earlier folds in weakly altered metasedimentary rocks. The deposits are similar in many respects to those found at Bendigo and Ballarat in Victoria, Nova Scotia in Canada (Christie et al., 1999 and 2000), Beaconsfield in Tasmania, Gympie in Queensland and the 'Mother Lode' deposits of California.

Most of the gold-bearing mineralization, including all of the larger deposits, is arranged along a linear belt, which runs approximately north-south through a sequence of deformed metasedimentary rocks of the Greenland Group. This suggests the presence of a deep-seated structure that has permitted mineralizing fluids to migrate from their source to sites in the upper crust where the gold was deposited.

The two dominant styles of gold mineralization in the Reefton Goldfield are:

- coarse native gold associated with minor sulphides in quartz veins; and
- microscopic refractory gold within sulphides in sheared sediments and clay alteration (pug) zones adjacent to the quartz veins.

The coarse native gold style of mineralization comprises the majority of historical gold production. Both styles however provide important exploration targets.

1.5 Exploration Concept

The exploration strategy for the Reefton Goldfield is to identify high grade / low tonnage mineralisation similar to that of the Birthday Reef located at Blackwater and to continue to explore for low grade high tonnage refractory mineralisation similar to that being mined at Globe Progress. Historically within the Reefton Goldfield high-grade quartz vein hosted mineralization was extensively mined but the refractory gold hosted within the sulphide mineralization was too low grade and metallurgically challenging to be economical. This style of mineralization receives only passing mention in historical reports and it is possible that sulphide gold mineralization is much more widespread than currently documented. Both high grade and refractory mineralisation are being actively explored for focusing initially around historical and current mining areas, then moving along strike of those areas.

1.6 Status of Exploration and Resources

Exploration of the Reefton Goldfield progressed concurrently with mining of the Globe Progress ore. Programmes were conducted to provide both resource definition and test new targets.

Oceana controls tenements covering approximately 35 km by 5 km of the Reefton Goldfield. This package of land hosts the majority of historical mines within the Reefton Goldfield. Oceana has completed and will continue to complete geochemical sampling and drilling in the vicinity of historical mines. Several historical mines and large tracts of land between historical mines still remain untested.

Oceana has defined CIM compliant Measured, Indicated and Inferred resources for the Reefton Project (Table 1.6.1).

Table 1.6.1: Reefton Goldfield Resource Estimate depleted to 31 December 2012

Reserve Cut Off	Resource Area	Measured		Indicated		Measured & Indicated			Inferred Resource		
		Mt	Au g/t	Mt	Au g/t	Mt	Au g/t	Au Moz	Mt	Au g/t	Au Moz
0.5g/t	Globe Progress	1.70	1.93	12.34	1.50	14.04	1.55	0.70	3.3	1.1	0.1
0.5g/t	Souvenir			0.10	2.65	0.10	2.65	0.01	0.2	1.8	0.0
0.8g/t	Supreme								0.8	1.5	0.0
	Blackwater[1]								0.9	21	0.6
0.5 g/t	Stockpiles	0.05	1.02			0.05	1.02	0.00			
	Reefton Total	**1.75**	**1.90**	**12.44**	**1.51**	**14.18**	**1.56**	**0.71**	**5.2**	**4.6**	**0.8**

[1] The Blackwater resource is geologically constrained and was updated in March 2013

The cut-off grades are based on a gold price of NZ$1,750/oz.

All Mineral Reserves reported are fully included in the Mineral Resources reported for the same deposit.

1.7 Operations

The physical and financial projections presented in this report are based upon the Life of Mine Plan as at January 2013 (LOMP12). LOMP12 has been depleted for mining as at December 31, 2012.

The Globe Progress mine is a conventional open pit operation. Through to April 2011, mining was carried out through a "cost plus" alliance arrangement. From April 2011, Globe Progress became an Owner Operated mine, using the same leased mining equipment comprising of 180t hydraulic excavators, 90t and 150t rear dump trucks. The strip ratio averages approximately 13:1 (waste:ore). Waste material is deposited in a nearby valley which has now been filled above the neighbouring ridges and profiled to suit the landscape, with some material being used to form retention dams for the storage of tailings.

The Globe Progress pit has two remaining stages which will supply ore to the mill for the remaining 4 years. Plant feed ore is defined as 1.2 g/t Au or higher, with lower grade material from 0.5 g/t Au to 1.2 g/t Au being treated when required for blending reasons or stockpiled for treatment at the end of mining operations. At the planned mining and plant throughput rate of approximately 1.5Mt/year, the defined sulphide reserves provide production until 2017 based on the economic assumption of NZ$2,000/oz.

Mineral Reserve estimates compliant with CIM standards for the Reefton Goldfield as at 31 December 2012 using a 0.5g/t Au cut-off grade are 5.91Mt at 1.57g/t for 0.30Moz. A summary of the Mineral Reserves by pit is shown in Table 1.7.1.

Table 1.7.1: Reefton Goldfield Mining Reserve as at 31 December 2012

Reserve Cut Off	Reserve Area	Proven		Probable		Total Reserve (Proven + Probable)			Resource Model
		Mt	Au g/t	Mt	Au g/t	Mt	Au g/t	Au Moz	
0.5g/t	Globe Progress	1.09	1.91	4.77	1.50	5.86	1.58	0.30	GP06
0.5g/t	Stockpiles	0.05	1.02			0.05	1.02	0.002	
0.5g/t	**Reefton Total**	**1.14**	**1.87**	**4.77**	**1.50**	**5.91**	**1.57**	**0.30**	

The cut-off grades are based on a gold price of NZ$1,750/oz.

1.8 Conclusions and Recommendations

1.8.1 Geology and Resources

The exploration and resource drilling data is considered to meet acceptable industry standards. While a few RC drill holes that were drilled under wet conditions remain in the database, these have either been excluded from the resource estimates or have largely been mined out.

The Globe Progress resource provides the sole basis for the current Life of Mine plan. The resource estimate is a large panel recoverable resource estimate using multiple indicator kriging. Oceana considers this an appropriate modelling approach. Reconciliation data indicates that the Globe Progress resource model provides acceptable long term predictions of tonnes and grade.

The Blackwater resource is based upon polygonal estimation. Given the nature of the deposit and the historical data used, this is considered appropriate. The resource is classified as Inferred.

The Supreme resource estimate is based also on polygonal estimation due to the low number of drill hole samples. It has been classified as Inferred accordingly.

There are two main exploration targets in the Reefton Goldfield:

- Low to medium grade mineralization that consists of predominantly "halo" mineralization interspersed with narrow high-grade quartz veins that can be mined by open pit mining methods; and
- Narrow 1m to 3m thick high-grade quartz veins that can be mined by underground methods. Over 2 Moz of gold has already been recovered by underground mining from mines such as Blackwater, Big

River, Capleston and Crushington. Individual quartz veins have been known to contain up to 40 g/t, with the average historical recovered grade being 16 g/t.

Future exploration efforts in the Capleston, Blackwater permits and the mining permit will target the discovery of new open pit and/or underground resources and reserves.The current exploration strategy focuses on the known mineralization trends in the vicinity of the Globe Progress Mine and Blackwater area particular near areas of historical workings. Identification of new Globe Progress or Blackwater style deposits remains a high priority.

1.8.2 Mining

Globe Progress is mined by conventional open pit mining method along the line of strike.

The open pit mining operation utilises hydraulic excavators and rear dump diesel trucks to extract both overburden and ore. Blasting requires relatively light powder factors compared with some other operations due to the comparatively weak and fractured rock mass. Ore is blasted in 7.5m high benches and excavated in three, nominally 2.5m high flitches. Waste is blasted in 15m benches and excavated in four flitches.

The LOMP12 schedule has factors applied to account for poor weather, public holidays, equipment availability, equipment utilisation, historically justified limitations on mine production and historically justified limitations on mill throughput.

The Globe Progress deposit provides the bulk of future reserves under LOMP12 so the operation is benefiting from fewer equipment moves, fewer haul roads to maintain and more homogeneous feed to the mill.

The open pit operation is owner-operated by Oceana. A range of other contracts support the mining operations.

Oceana's performance at Globe Progress has shown that the mining equipment and mining methods are suited to the required mining rates and deposit geometry. Open pit mine design procedures are appropriate and have been conducted in accordance with established industry standards and with input from appropriately qualified geotechnical specialists, hydrological specialists and consultants. Historical productivity and safety records are generally in line with or better than industry standards. The LOMP12 open pit life of mine plan schedule has been prepared to 2017. The schedules rely only on reserves, and are considered appropriate and reasonable.

The Globe Progress pit has had localised slope failures on the North and North-East domains, which delayed production for a few days at a time. A permanent geotechnical contractor at Reefton utilises cable bolts and straps to support the batters. Reefton personnel conduct 24 hour slope monitoring using Leica GeoMoS system. Oceana is managing the geotechnical risk in the Globe Progress pit and updates geotechnical parameters continuously.

The Globe Progress pit is in an area that was previously mined by underground methods until the early 1920's. Oceana has developed procedures for mining in these areas and has successfully mined these areas for approximately 6 years.

Pit optimisations, designs and scheduling were carried out at a time when gold price was approximately NZ$2000/oz. Economic analysis was performed during the time when gold price was higher than that at the time of submitting this report. Further optimisation and economic analysis work is being completed in light of the current gold price decline and may affect LOMP12.

1.8.3 Processing

Over the past 6 years the Globe processing plant has ramped up to achieve steady and consistent production rates in excess of the original nameplate capacity. Production has maintained consistent performance and relationships between feed grade, recovery and throughput.

Forward estimates of production rates, recoveries, throughput and availability are based on established relationships.

1.8.4 Infrastructure, Environment and Tenement Status

1.8.4.1 Infrastructure

The major site infrastructure includes open pits, tailings storage area, waste rock disposal areas, process plant and access roads.

The Stillwater-Westport Railway passes through Reefton and is of importance for transporting locally mined coal to the Port of Lyttelton, Christchurch. The Globe Progress Mine utilises this railway and the existing Reefton sidings for transportation of concentrate to the Macraes Operation.

Fuel is available in bulk ex rail at Greymouth and power from the 66kV Reefton to Dobson trunk line. There are numerous timber mills in the area and a large cement works at Westport.

1.8.4.2 Environment

Oceana holds all necessary resource consents, licenses and concessions for the present mining operations at the Globe Progress Mine. A key limitation for access across Department of Conservation managed Crown land is a requirement for an access arrangement, which Oceana successfully obtained in 2001. Since that time, resource consents and access arrangement variations have been obtained from the relevant authorities to acommodate various changes in the mine plan and will continue to be necessary to accommodate operations as the mine plan evolves. Oceana has a history of being granted the changes required.

There have been a number of instances of non-compliance with suspended solid discharge limits since commisioning. These non-compliance events have arisen from fine colloidal material not settling out as anticipated in downstream sediment control pond. A mitigation strategy of chemically flocculating the colloidal material has been successfully implemented and ongoing sediment compliance has been achieved since 2010 with only one divergence in 2011 and none in 2012.

There were two technical exceedances of the timings of blasts in 2012 which had no environmental impact or enforcement implications.

The environmental documentation is substantial with a number of management plans prepared for a range of issues. These plans meet the requirements of the environmental and access approvals for the site and as a whole form a robust suite of environmental management plans.

1.8.4.3 Tenement Status

Oceana has completed a considerable amount of work over recent years to ensure that it is compliant and up to date with the requirements on all its permits. Permit work commitments are reviewed at least twice a year and work programmes are structured to ensure commitments are met. In some cases a planned work programme will be modified based on exploration or mining results and changes are submitted to NZP&M in a timely fashion.

Oceana is currently compliant on all of its permits.

1.8.5 Production

Oceana has prepared LOMP12 production plans from reserves which only cover 2013-2017 for Reefton based on the economic assumption of NZ$2,000/oz. During the scheduling process, dilution and grade downgrade factors were applied to the scheduled ore tonnes and insitu grades.

The production rates forecast are consistent with recent performance and the anticipated grades. The mine production plans are considered reasonable for the purpose of long term scheduling.

During the 2013-2017 peak production years the open pit excavator fleet is planned to comprise two Caterpillar 5130's, one O&K RH90 to load four Caterpillar 785 haul trucks and nine Caterpillar 777 haul trucks. Oceana is satisfied that there are sufficient working areas for the excavators to operate and there is reasonable opportunity to reassess the requirements.

The projected plant throughput fluctuates between 1.5Mt and 1.6Mt for 2013 to 2016 with the reduction in 2017 of the mined material at the end of mine life.

1.8.6 Management

Management structures at Reefton include sufficient supervision from General Manager, Managers, Superintendents and Supervisors for the safe and efficient operation of the mine in line with the developed LOMP12.

1.8.7 Capital and Operating Costs

Reefton mining costs have been derived from first principles direct mining costs (drill and blast, load, and haul) and technical and supervision costs average NZ$2.87/t mined over the five year life.

Processing costs for the Reefton operation have been estimated at approximately NZ$19.60/t over the life of the operation including the costs of operating the Reefton processing plant, water treatment plant, transporting the concentrate to Macraes, and processing the concentrate through the Macraes concentrate treatment flowsheet.

The Reefton operation is supported from Macraes site and from Oceana's Dunedin offices, limiting administration costs to some extent. Annual costs of between NZ$3M and NZ$7M, have been proposed for administration, environment and health and safety costs. Royalties have been costed at NZ$0.73/t ore processed over the proposed mine life.

Oceana has developed a capital expenditure programme for the Globe Progress Mine for an anticipated 4 year mine life with 2 additional years of restoration and monitoring.

2 INTRODUCTION

2.1 Report Preparation

This report has been prepared at the request of OceanaGold Corporation and Oceana Gold (New Zealand) Limited (Oceana). OceanaGold Corporation is the ultimate holding company in which Oceana (New Zealand) Limited is a subsidiary. OceanaGold Corporation is the reporting issuer in Canada. References in this report to "Oceana" include Oceana Gold (New Zealand) Limited, OceanaGold Corporation and their subsidiaries.

2.1.1 Purpose of the Report

This report was prepared as a Canadian National Instrument 43-101 Technical Report for Oceana by internal, qualified persons, employed by Oceana to provide updated technical information relating to the upgrading of Blackwater resource. The quality of information, conclusions and estimates contained in this report is based upon:

i) information available internally at the time of preparation;
ii) data obtained from outside sources; and
iii) the assumptions, conditions, and qualifications set forth in this report.

This report is intended to be used by Oceana and to be filed as a Technical Report with Canadian Securities regulatory authorities pursuant to Canadian provincial securities legislation. Except for the purposes legislated under Canadian provincial securities laws, any other use of this report by any third party is at that party's sole risk.

2.1.2 Reporting Standards

The report has been prepared in accordance with Canadian National Instrument 43-101 for the 'Standards of Disclosure for Mineral Projects' of December 2005 (the Instrument) and the resource and reserve classifications adopted by CIM Council. This report complies with disclosure and reporting requirements set forth in the Instrument, Companion Policy 43-101CP, and Form 43-101F1. This report has also been prepared in accordance with the 'Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports' of 2005 (the "Valmin Code") as adopted by the Australasian Institute of Mining and Metallurgy (AusIMM), and is consistent with the 'Australasian Code for Reporting of Mineral Resources and Ore Reserves' of December 2004 (the "JORC Code"), as prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC). The satisfaction of requirements under both the JORC and Valmin Codes is binding upon the authors as Members of the AusIMM.

2.1.3 Currency

All monetary amounts expressed in this report are in New Zealand dollars (NZ$) unless otherwise stated.

2.2 Authors of the Report

This technical report has been prepared by or under the supervision of the following authors:

- Knowell Madambi, who is employed by Oceana as Technical Services Manager, and
- Jonathan Moore, who is employed by Oceana as Chief Geologist.

The authors are the Qualified Persons, as defined by the Instrument, and have the qualifications and experience set out below. Both Mr Madambi and Mr Moore are members and Chartered Professionals of the AusIMM.

2.3 Qualifications and Experience of the Qualified Persons

2.3.1 Mr Madambi

Mr Madambi holds a Bachelor of Science Mining Engineering (Honours) from the University of Zimbabwe, graduating in 1994. He has experience in open pit and underground mining. He has worked in Zimbabwe, Botswana, New Zealand, Australia, Malaysia and the Philippines in Coal, Diamond, Uranium, Vanadium, Gold and Copper.

Mr Madambi has been with Oceana for over seven years in a variety of roles including Senior Mining Engineer, Technical Services Superintendant, Principal Development Engineer. He is currently Technical Services Manager.

Mr Madambi is responsible for sections 1.7, 1.8.2, 1.8.5, 1.8.7, 2.3.1, 15.1, 15.2, 15.3, 16.2, 17.4, 17.5, and 17.6.1 of this technical report.

2.3.2 Mr Moore

Mr Moore holds a BSc (Hons) in Geology, a GradDip in Physics and has 23 years' experience in exploration, open pit and underground mining and resource geology. He has worked in epithermal gold, porphyry copper and gold, mesothermal gold and lead-zinc deposits within Australia, New Zealand and the Philippines. Mr Moore has been employed with OceanaGold since 1996 in a variety of project, mine geology and resource geology roles. He is currently Chief Geologist.

Mr Moore is responsible for sections 1.1 to 1.6, section 1.8.4.3, sections 2 to 16.1.5, sections 17.1 to 17.3, and sections 17.11 to 19.

2.4 Sources of Information

The authors of this technical report have not relied upon other experts in its preparation, other than obtaining input from persons employed within Oceana who have provided information concerning legal, environmental or other matters relevant to this report. The information used to prepare all sections relating to Mineral Resources and Reserves was furnished by Oceana, including (specifically in relation to Reserves) input from Knowell Madambi (Technical Services Manager), Nigel Slonker (General Manager, Reefton Operations through to April 2013), Isaac Burwell (Technical Services Superintendent, Reefton Operations), Luke Matheson (Geotechnical Engineer, Reefton Operations), Sean Doyle (Senior Resource Geologist), Justin Jones (Process Plant Manager – Reefton operations), Simone Creedy (Consent and Environment Project Advisor) and John Bywater (Manager Consenting and Environment).

Oceana furnished all data, modelling, test work and financial analysis to verify the information relating to Mineral Resources and Reserves and the conclusions regarding the resource and reserve estimates. In so far as other persons have had input into the preparation of this report, the authors have conducted appropriate due diligence and consider such reliance to be reasonable. A list of the publications and internal reports that were used in the preparation of this report, and to which specific reference is made in the body of this report, appears in section 19.

3 PROPERTY DESCRIPTION AND LOCATION

3.1 Area of Property

The Reefton Project comprises a mining permit (MP), 7 exploration permits (EP) and 2 prospecting permits (PP) granted under the New Zealand Crown Minerals Act 1991. The combined area of these permits is 30,117 hectares (Table 3.3.1).

3.2 Location in Terms of Latitude and Longitude

The Globe Progress Mine is located approximately 7km to the southeast of the Reefton township, on the South Island of New Zealand.

The latitude/longitude location of the mine is at -42.17° South, 171.89° East (World Geodetic System 1984). The coordinates of the mine with respect to the standard New Zealand Map Grid (New Zealand Geodetic Datum, 1949) are 5,892,800mN, 2,418,200mE.

3.3 Tenure

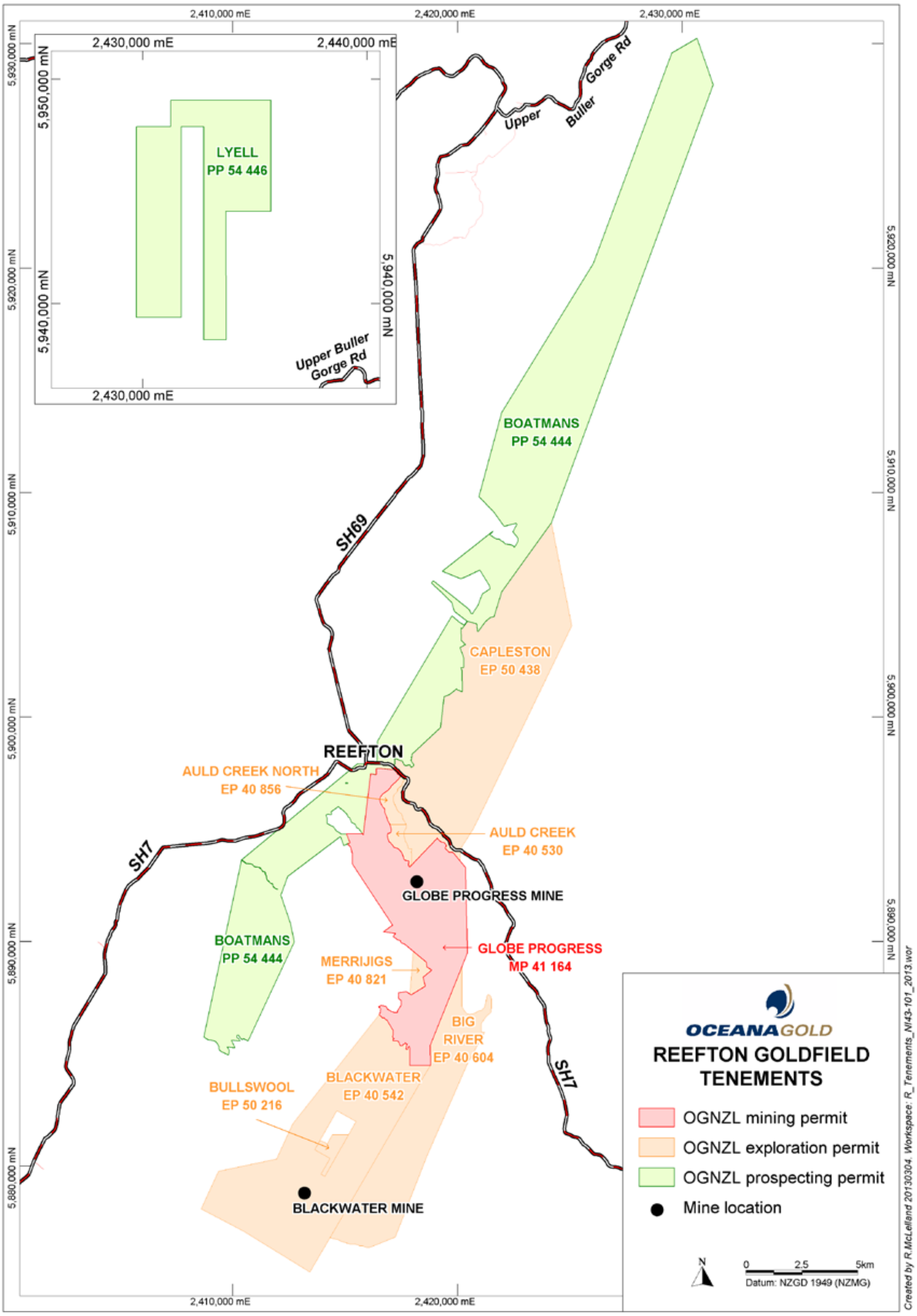
The Exploration Permits are held 100% by OGNZL, a wholly-owned subsidiary of Oceana Gold Limited and OceanaGold Corporation.

The Reefton Line of Strike is currently covered by the tenements detailed in Table 3.3.1 and shown on Figure 3.1.

Table 3.3.1: Reefton Project Tenement Schedule

Tenement No.	Licensee	Location Name	Date Granted	Term	Date Expires	Area (ha)	Interest in Permit
MP 41 164	Oceana	Globe Progress	22.03.1995	25 years	21.03.2020	3,041	100%
EP 40 530	Oceana	Auld Creek	29.11.2001	14 years	28.11.2015	98	100%
EP 40 542	Oceana	Blackwater	19.11.2002	Appraisal app currently under consideration	18.11.2012*	4,308	100%
EP 40 604	Oceana	Big River	12.03.2004	2nd	11.03.2014	2,328	100%
EP 40 821	Oceana	Merrijigs	14.09.2006	2nd	13.09.2016	100	100%
EP 40 856	Oceana	Auld Creek North	09.06.2008	1st	08.06.2013	114	100%
EP 50 216	Oceana	Bullswool	21.12.2007	2nd	20.12.2017	211.75	100%
EP 50 438	Oceana	Capleston	22.09.2008	1st	21.09.2013	4,849	100%
PP 54 444	Oceana	Boatmans	02.11..2012	1st	01.11.2014	111.6km^2	100%
PP 54 446	Oceana	Lyell	15.11.2012	1st	14.11.2014	39.07km^2	100%

Figure 3.1: Reefton Goldfield Mineral Tenements and Location of the Globe Progress and Blackwater Mines



3.4 Nature and Extent of Title

3.4.1 Mineral Rights

The allocation of rights to prospect, explore and mine for minerals owned by the Crown, including gold and silver, is carried out by the issuing of permits under the Crown Minerals Act 1991 (CMA). The CMA is an Act to restate and reform the law relating to the management of Crown owned minerals.

Under the CMA, every permit holder is the owner of all minerals lawfully obtained by or on behalf of the permit holder in the course of activities authorised by the permit.

3.4.2 Mineral Permits

3.4.2.1 Prospecting Permits

A prospecting permit remains in force for a period of up to four years, with no rights of renewal beyond four years. A prospecting permit is granted to enable identification of land likely to contain exploitable deposits of minerals.

3.4.2.2 Exploration Permits

An exploration permit remains in force for a period of up to ten years, with no rights of renewal beyond ten years except for appraisal purposes. The Crown may and generally will impose requirements for the relinquishment of up to 50% of the original permit area during the ten year term of the permit. The term of the permit may be extended beyond ten years for up to a further 8 years for appraisal purposes only. An exploration permit is granted to enable determination of the potential for, and feasibility of, mining in an area. The activities permitted pursuant to an exploration permit include drilling, bulk sampling and mine feasibility studies. Exploration permits are generally conditional on the permit holder:

a) exploring the permit area in accordance with good exploration practice; and

b) undertaking a defined minimum work programme.

Additional conditions may be imposed and may vary from one permit to another.

3.4.2.3 Mining Permits

A mining permit is granted to allow extraction of Crown owned minerals from land. The nature and extent of the mineral deposits in the land must be accurately known prior to such a permit being granted.

A mining permit may be issued for a maximum period of 40 years. The duration granted will depend upon the extent of mineral reserves in the land, the permit holder's resources and its work programmes. The duration of a permit will generally only be extended if the permit holder satisfies the Minister that the discovery to which the permit relates cannot be economically depleted before the date of expiration.

Mining permits are generally conditional on payment of a royalty to the Crown and on the permit holder:

a) undertaking permitted activities pursuant to its work programmes;

b) undertaking mining and exploration operations in accordance with good exploration or mining practice;

c) complying with the Health and Safety in Employment Act 1992;

c) paying all prescribed fees and complying with other conditions of the CMA;

d) complying with any additional conditions may be imposed, which will vary from one permit to another.

3.4.3 Land Access

The majority of land within the Reefton area was State Forest Land, gazetted in 1981 as the Victoria State Forest Park. The land was subsequently renamed as the Victoria Conservation Park and came into administration by the Department of Conservation under the Conservation Act 1987. Parts of the land have further conservation protection with the additional gazettal of Wildlife Management Areas, Amenity Areas and Ecological Areas. Timberlands West Coast administers exotic and some indigenous forest stands. Freehold land forms a minority of the tenement distribution.

The Department of Conservation (DoC) is a central government agency that administers the Conservation Act 1987. The Department therefore has primary responsibility for the conservation of New Zealand's natural and historic heritage. The Department also has responsibilities under other related legislation including the National Parks Act 1980 and the Reserves Act 1977.

The granting of a mineral permit does not confer a right of access to land subject to the permit. The permit holder must arrange land access with the owner and occupier of the land subject to the permit before beginning any prospecting, exploration or mining for minerals on or in land (other than minimum impact activity as defined in the Crown Minerals Act 1991).

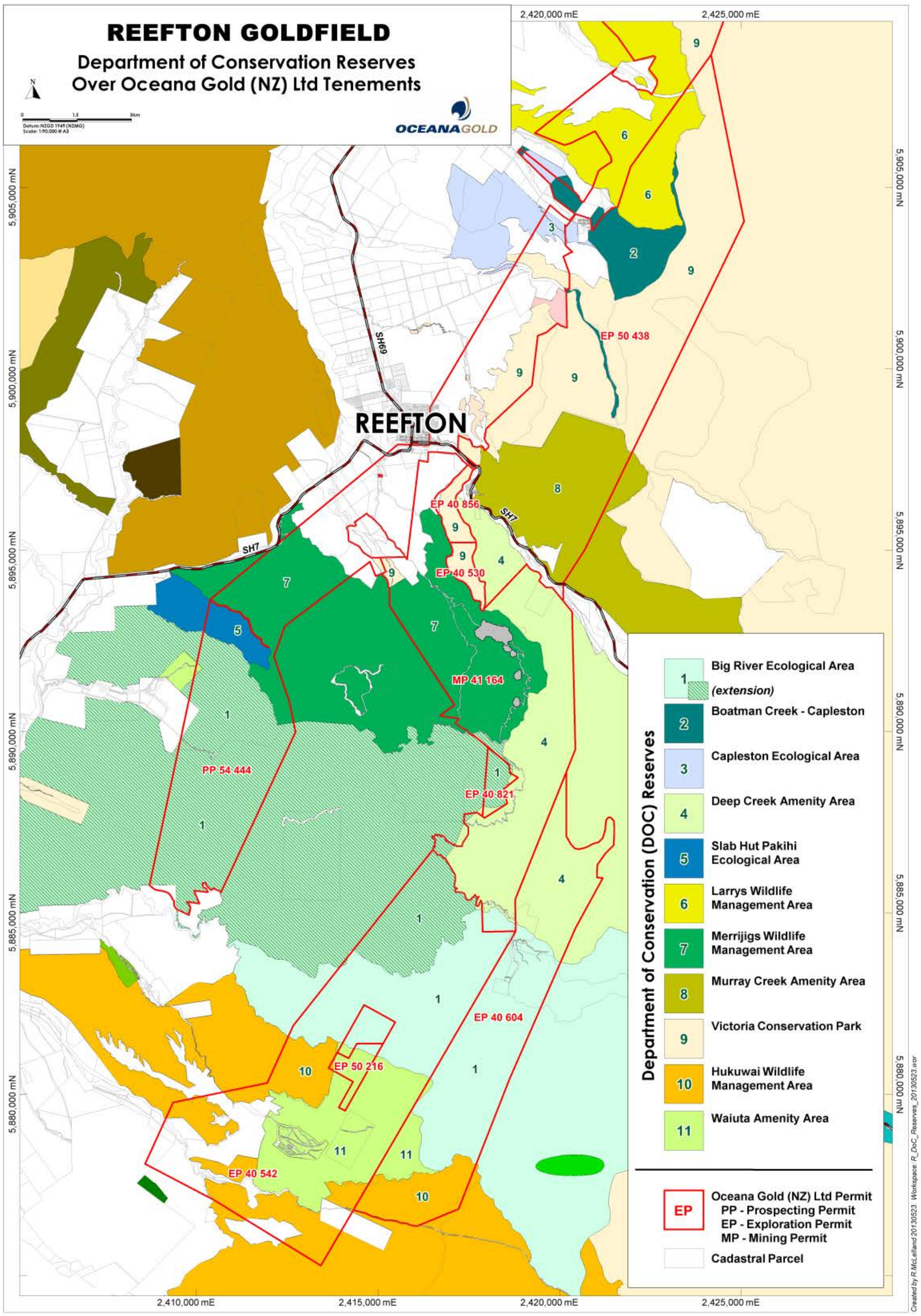
Any activity carried out below the surface of any land subject to a permit will not be considered, for the purposes of the Crown Minerals Act, to be prospecting, exploration or mining on or in the land and consequently not require an access arrangement, if the activity will not or is not likely to:

a) Cause any damage to the surface of the land or any loss or damage to the owner and/or occupier of the land; or

b) Have any prejudicial effect regarding the use and enjoyment of the land by the owner and/or occupier; or

c) Have any prejudicial effect regarding any possible future use of the surface of the land.

Figure 3.2: DoC Land Classification in the Reefton Area



As most of the tenements at the Reefton Project are situated over land administered by the Department of Conservation (DoC), Oceana has entered into Access Arrangements to allow it to prospect, explore and mine. These Access Arrangements are for specific terms that can be extended by agreement. Access arrangements covering EPs generally expire with the EP. The main Access Arrangement, giving access to mine Globe Progress, expires in October 2019 unless extended by agreement with DoC.

3.4.4 Work Programmes

Work programmes are prescribed by the Crown at the time of permit grant and are subject to variation upon application.

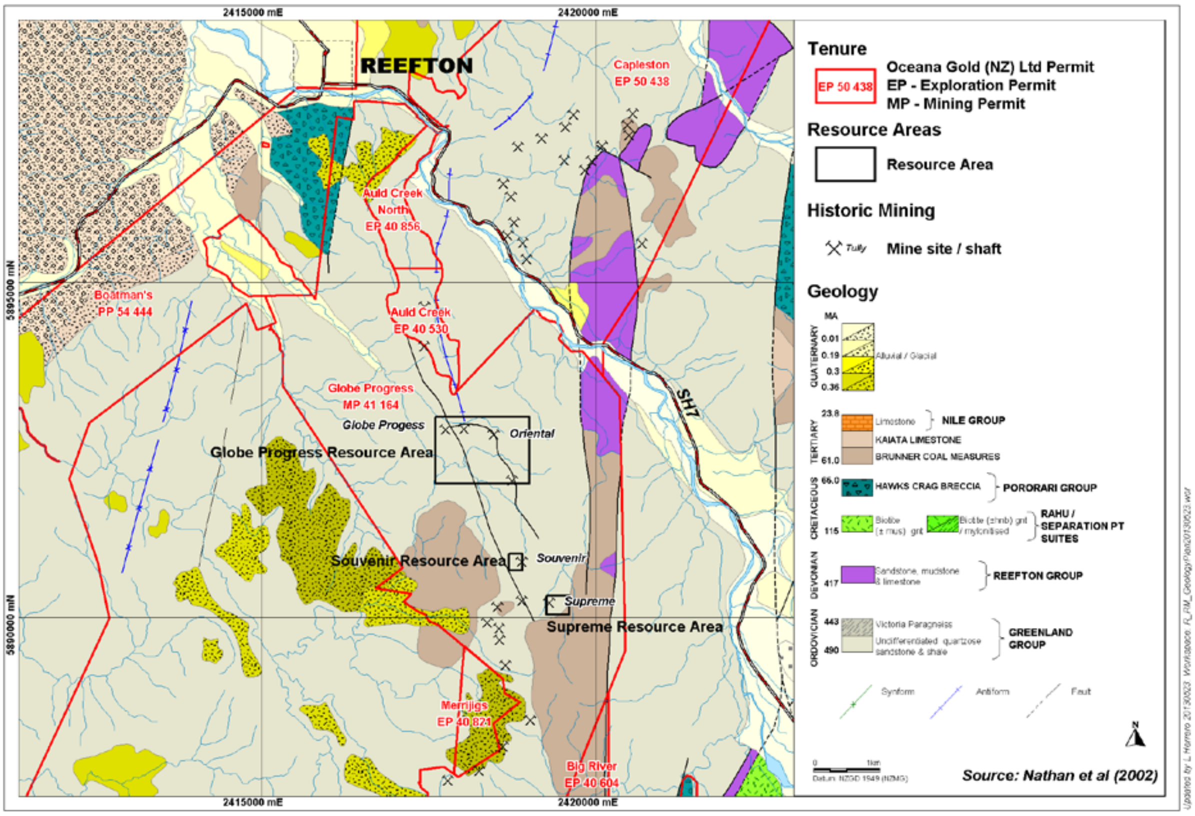
3.5 Property Boundaries

The Reefton mineral permit boundaries are legally described according to the location of registered survey points and the boundaries of registered land titles, as documented in the relevant permits. All boundaries are verified prior to granting by a registered surveyor.

3.6 Location of Mineral Resources

There are a number of mineral resources defined within the exploration permit areas. The locations of these prospects are shown in Figure 3.3.

Figure 3.3: Reefton Goldfield Resource Areas



3.7 Royalties

3.7.1 NZ Royalty

Reefton Globe Progress Permit (MP41-164) - NZ Government Mining Permit

With respect to MP 41-164, royalties to a maximum of 1% ad valorem or 5% of accounting profits, whichever is greater, are payable to the Crown annually.

3.7.2 Royalco Resources Ltd & Pty Ltd

Royalco Royalty

Most of the Reefton tenements are also subject to an agreement between Royalco Resources Limited & Pty Ltd ("Royalco") and a subsidiary of the Company, under which a variable gross royalty is payable to Royalco. For the current mining operations carried out under MP 41-164, the amount of royalty payable varies from 1,000 to 5,000 ounces of gold per year, according to the gold price at the time the royalty is due. That royalty applies until the mine attains total production of 400,000 ounces, when the royalty ceases (a milestone that the Company achieved during 2012).

Production from other resources within the Reefton tenements attracts an annual royalty of between 1% and 3% of gold produced according to the gold price at the time the royalty is due.

The royalty reverts to 1.5% of annual gold production from all of the Reefton tenements once an aggregate of 1,000,000 ounces of gold is produced (including from the current Globe Progress mine).

3.8 Environmental Liabilities

3.8.1 Overview

There are three principal agencies that oversee the environmental effects of Oceana's mining and exploration activities at Reefton together with a number of secondary agencies. The three principal agencies are the territorial authorities (comprising district councils and regional councils) and the Department of Conservation (DoC). Secondary agencies include the Historic Places Trust, from whom authority is required where mining and exploration activities threaten to affect archaeological sites, and the Environmental Protection Authority, which regulates the transport, handling and storage of hazardous goods.

New Zealand's principal environmental protection law is the Resource Management Act 1991 ("RMA"). District and regional councils have primary responsibility for administering the RMA. Oceana's use of land, water, and air in the course of its mining operations must be permitted by a rule in a district or regional plan, or sanctioned under resource consents. Consents are granted subject to various conditions such as the requirement to lodge an environmental bond; conditions to avoid, remedy, or mitigate significant adverse effects on the environment; and monitoring and periodic reporting on environmental effects. Failure to comply with the conditions of consent may lead to payment of fines, prosecution and in most severe cases, the cancellation of the consent. Oceana holds a range of resource consents relating to its Reefton operations, which are periodically varied and extended by application to the relevant local authorities. Oceana's operations are monitored and have a history of general compliance, although water management issues have been present at the Globe Progress mine as discussed in 3.8.2.

The environmental effects of Oceana's activities, including restoration and rehabilitation obligations, are also prescribed under the conditions of its access arrangements with DoC, as owner of the land over which the company holds its permits to mine and, for the most part, its permits to explore at Reefton.

Current mining and exploration activites at Reefton are fully permitted. However, it is the nature of large scale projects such as these that variations and new consents (and permits and access arrangements) are required from time to time as the project develops. It is noted that Oceana has a successful track record in obtaining the required statutory approvals for its Globe Progress Mine.

3.8.2 Resource Consents

Oceana has been deemed, in obtaining the consents to license activities with environmental effects for the Reefton Project, to have met the purpose and requirements of the Resource Management Act 1991, which establishes a significant threshold for the granting of such consents (see Section 3.9.1).

The consents sought and obtained were based on a commissioned and operating mine site.

There have been a number of incidents in the past where non-complying sediment levels occurred at the compliance point in the Devils Creek as a result of mining activities. The non-compliances primarily relate to colloidal clay fines not settling in the sediment ponds. A system of chemically flocculating the fines has been introduced and the compliance limit for suspended solids, apart from one isolated divergency, has been achieved since 2012.

Overall the Globe Progress Mine operating practices comply with the environmental conditions. The issue of compliance with the suspended solids limit has been resolved.

3.8.3 Access Arrangements

Oceana has successfully obtained the necessary access arrangement ("AA") from the Department of Conservation (DoC), with a term sufficient for the current mine plan (see Section 3.4.3). The AA requires management plans to be in place regarding matters such as heritage, flora and fauna. All management plans are approved and in place. It also requires the granting of annual authority to enter and operate ("AEO") based on a forecast annual work and restoration plan ("AWRP"). The company periodically updates its AA, AWRP and AEO to take into account changes in the mine plan. Oceana has a successful track record in obtaining the required updates to its AA arrangements for the Globe Progress Mine.

3.8.4 Crown Minerals Act 1991

All necessary approvals are in place from New Zealand Petroleum and Minerals Group for the current mine plan.

3.9 Work Permits

3.9.1 Resource Consents

Territorial authorities and regional councils have primary responsibility for administering the Resource Management Act 1991 (RMA). Their functions are defined within the RMA (sections 30 and 31 RMA) but in simple terms, relevant to Oceana's activities, territorial authorities manage the effects of land use change and noise, whilst regional councils manage effects associated with:

- water quality (surface, ground and coastal water);
- taking, damming, diversion of water;
- discharges of contaminants into or onto land, air, or water, and discharges of water into water; and
- the bed of any water body, and the planting of any plant in, on, or under that land.

In managing the effects of activities on the matters above, both territorial authorities and regional councils seek to give effect to the purpose of the RMA (section 5 RMA), which is "to promote the sustainable management of natural and physical resources". Sustainable management is defined by the RMA to mean:

…managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enable people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while-

- *sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations;*
- *safeguarding the life-supporting capacity of air, water, soil, and ecosystems;*
- *avoiding, remedying, or mitigating any adverse effects of activities on the environment;*
- *safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- *avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

Supporting the purpose of the RMA are a number of principles that persons exercising functions and powers under the RMA, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for (section 6 RMA), have particular regard to (section 7 RMA), and take into account (section 8 RMA).

The term "effect" includes (section 3 RMA):

- any positive or adverse effect;
- any temporary or permanent effect;
- any past, present, or future effect;

- any cumulative effect which arises over time or in combination with other effects – regardless of the scale, intensity, duration, or frequency of the effect, and also includes-
- any potential effect of high probability; and
- any potential effect of low probability which has a high potential impact.

The RMA places restrictions on the use of land (section 9 RMA), the subdivision of land (section 11 RMA), the use of the coastal marine area (Section 12 RMA), on certain uses of beds of lakes and rivers (section 13 RMA), water (section 14 RMA), and the discharge of contaminants into the environment (section 15 RMA). Activities that 'use' land, water, and air cannot legally occur unless they are permitted by a rule in a district or regional plan, or have a resource consent granted.

A resource consent is therefore permission from a territorial authority or regional council to undertake an activity that would otherwise contravene a statutory plan prepared under the RMA (or sections 9, 11, 12, 13, 14, or 15 RMA).

Resource consents may be granted or declined, and are subject to appeal procedures. Applications for resource consents are typically processed in one of three ways. Non-notified applications (no general public submissions allowed) may occur when the environmental effects of the activity to be consented are considered to be no greater than minor and written approvals have been obtained from any deemed affected parties. Limited notification applications may occur where the environmental effects are minor and the consenting agency identifies only parties that have a specific interest in the project Notified applications occur when the environmental effects of the activity to be consented may be greater than minor, and provide an opportunity for any person in New Zealand to make a submission supporting or opposing the application.

If a consent application is granted it will have conditions attached to it that may require an environmental bond to be paid by the consent holder, and/or contain conditions to avoid, remedy, or mitigate significant adverse effects on the environment and provide for the monitoring of these effects.

4 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

4.1 Topography, Elevation and Vegetation

The Reefton Goldfield is situated in hilly country of moderate to steep relief, in the foothills of the Victoria Range. Topography is locally very steep and varies in elevation from 240m to over 1,000m above sea level. The area is strongly dissected by creeks and rivers.

The region is primarily covered with regenerating indigenous beech forest growing on poor and immature soils. There are areas of exotic pine plantations near the township of Reefton and the historical township of Waiuta. Limited farming (cattle and sheep) is carried out on some of the larger river flats but there are few farming areas in the tenements.

The Globe Progress Mine is at about 550m above sea level in an area of highly dissected relief with dense beech forest re-growth.

4.2 Access to the Property

Reefton has a State Highway and a railway connection south to Greymouth (79km) and north to Westport (81km) and is connected to Christchurch (250km to the east) by Highway 7 via the Lewis Pass (Figure 4.1). Commercial airlines provide regular services from the nearby regional centres of Westport and Hokitika to other main centres in New Zealand, including Christchurch.

The Globe Progress Mine is located 5.5km southeast of the Reefton township. A new access road to the site from State Highway 7 was completed in May 2006. This road crosses the Inangahua River via a Class I bridge that was built in 2005.

A few side roads from the highways provide vehicle access to various parts of the goldfield and old mining access roads locally provide 4 wheel drive access to the major old mines. The Department of Conservation (DoC) maintain renovated walking tracks to most of the prospects for recreational use. Heavy machinery access requires helicopter transport to some tenement areas.

Local firms operate helicopter charter services, and fixed wing charter services are available through the Greymouth aero club.

4.3 Proximity to Population Centres

With a population of approximately 1,000, Reefton is the rural service centre for a number of smaller settlements such as Ikamatua, Inangahua, Maruia and Springs Junction. The town has a long (by New Zealand standards) history, serving as a focal point for travellers between the West Coast, Nelson and Canterbury, and providing a services base for resource development activities for over 100 years. A detailed socio-economic report commissioned by Oceana was completed in 2000 (Taylor Baines, 2000).

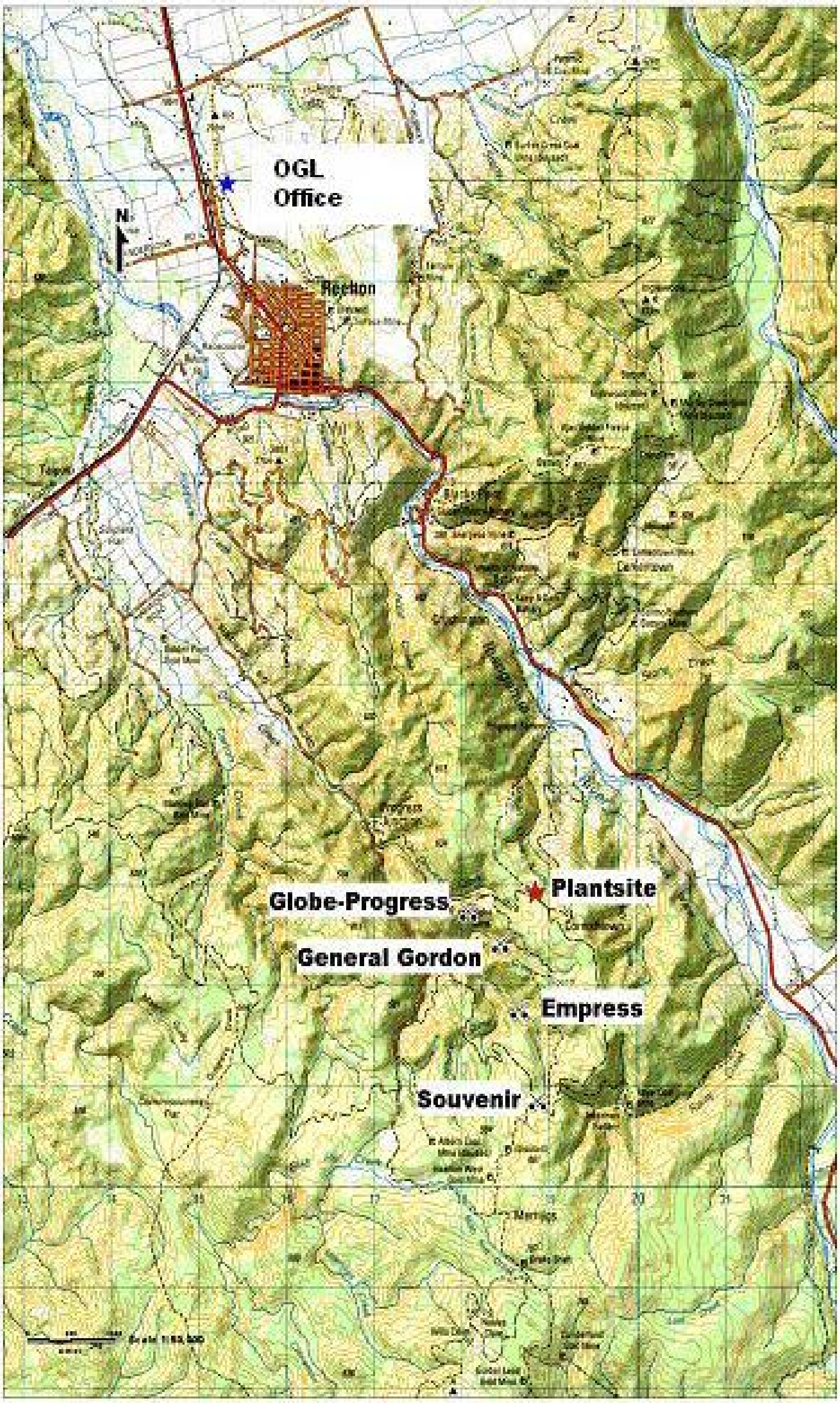
4.4 Climate and Operating Season

The local climate is wet and temperate, though moderated to some degree by the sheltering effect of the Paparoa Range to the west and the Victoria Range to the east. Annual rainfall ranges from about 1,990mm at Reefton (1987-1991 records), to 2,340mm at the Globe Progress Mine site. Spring tends to be the wettest season and late summer/early autumn the driest.

Average monthly mean temperature at Reefton ranges from 5°C in June/July to 17°C in January/February. Reefton averages 2 days of snowfall per year while 10 to 15 days of snowfall are predicted for the more elevated mine site. Frosts can be severe with an average of 68 days of ground frost per year at Reefton and 115 days at the minesite.

The climate is not expected to affect the operating season at the Reefton Project.

Figure 4.1: Location of the Reefton Project



4.5 Infrastructure

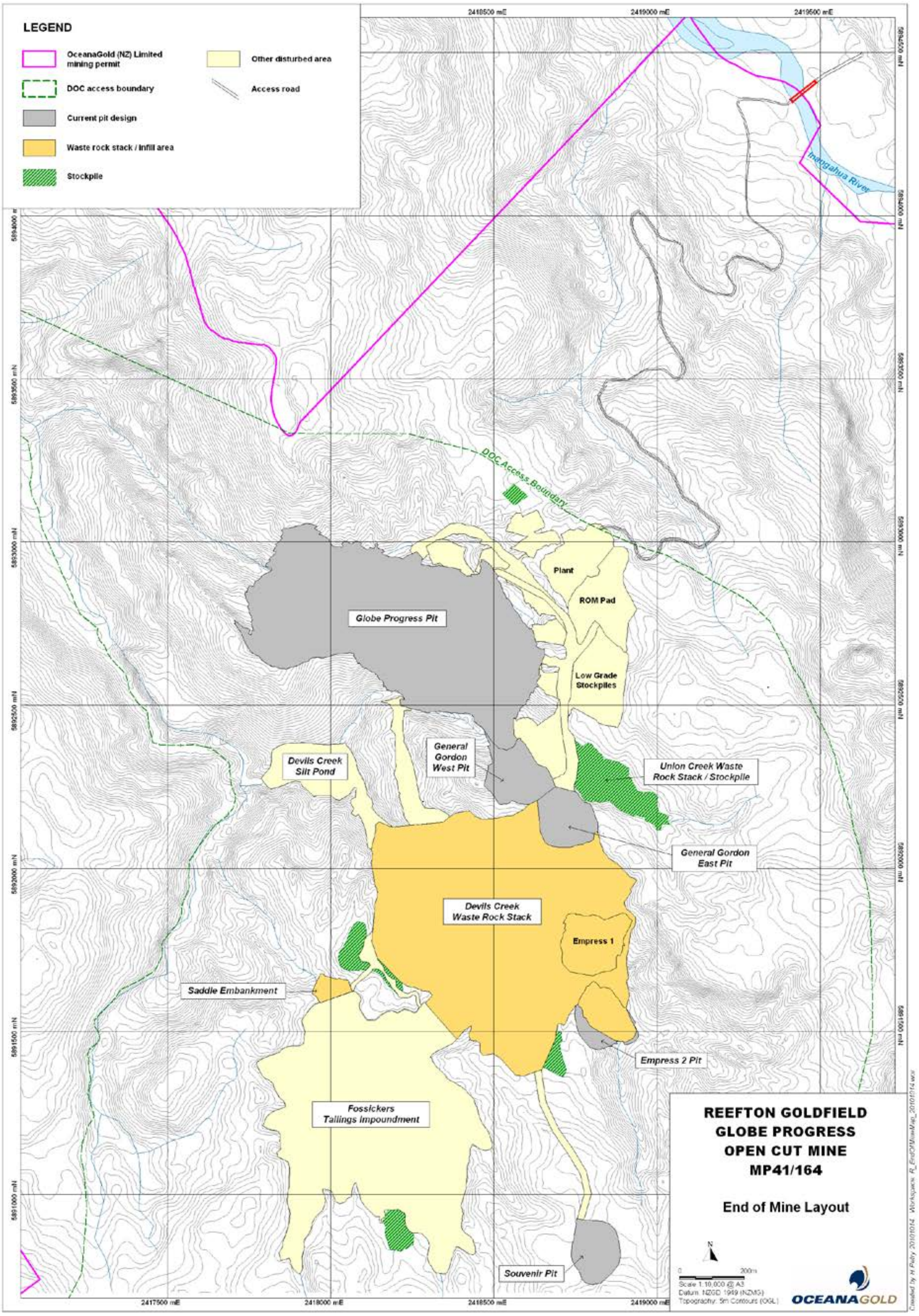
4.5.1 Sufficiency of Surface Rights

Oceana has the necessary mining permit, access arrangements, resource consents and environmental permits for mining operations at the Globe Progress deposit. The project area within the DoC access arrangement for the mining operations encompasses all of the main mining infrastructure, including: open pit mines, tailings storage areas, waste rock disposal areas, sediment control dams, process plant site and access roads.

4.5.2 Site Infrastructure

A diagram of the Globe Progress Mine layout is shown in Figure 4.2. The locations of the major site infrastructure are shown, including: open pits, tailings storage area, waste rock disposal areas, process plant and access roads.

Figure 4.2: Globe Progress Mine Infrastructure



The Stillwater-Westport Railway passes through Reefton and is of importance for transporting locally mined coal to the Port of Lyttelton, Christchurch. The Globe Progress Mine utilises this railway and the existing Reefton sidings for transportation of concentrate to the Macraes Operation.

Fuel is available in bulk ex rail at Greymouth and power from the 66kV Reefton to Dobson trunk line. There are numerous timber mills in the area and a large cement works at Westport.

4.5.3 Labour

In the commuting area, there are over 430 people experienced and currently employed in the mining sector.

Mining (coal and gold), timber milling and farming provided, and still provide, a broad economic base. As a consequence, the Reefton workforce is diverse and has a good skills base. During recent years, the Reefton community has endeavoured to diversify the local economy by strengthening the district's image as a tourism destination.

Reefton has also suffered a general population decline over the last 40 years, in response to a succession of industry retrenchments and the redirection of services to other centres. Permanent employees of the Globe Progress Mine reside either in Reefton itself or within the commuting area, as far as Greymouth or Westport, both approximately one hours drive from the operation.

5 HISTORY

5.1 Mining History

5.1.1 Alluvial Mining

Alluvial gold was first discovered in the Reefton area in 1866, at the height of the West Coast gold rush (Barry, 1993). Efficient dredging operations of the local rivers and tributaries (1900-1913 and 1934-1957), and more recent alluvial mining (1980-1997) have recovered a total of approximately 8 Moz gold.

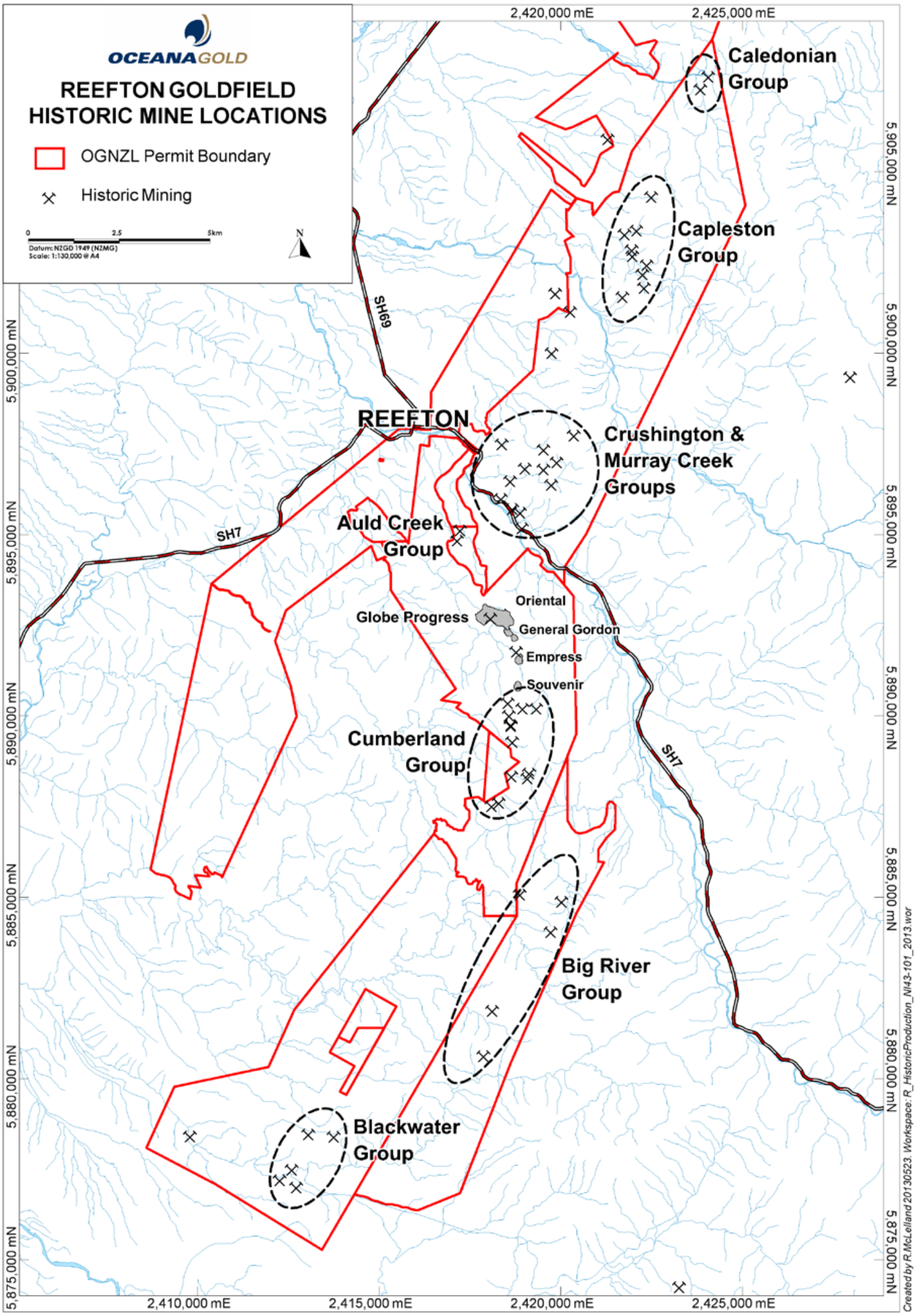
5.1.2 Quartz Lode Mining

Gold bearing quartz lodes containing high grade mineralization were discovered in the Reefton area in 1870 (Barry, 1993). Further discoveries and mine developments over the next decade resulted in Reefton becoming a major goldfield (Table 5.1.1 and Figure 5.1). However, other than the discovery of the Alexander Reefs in 1920, there were no further significant discoveries. Gold production steadily declined as several major mines closed. At the outbreak of World War II, the Big River and Blackwater mines were the only producers. Wartime labour shortages were responsible for the closure of the Big River Mine in 1942. The Blackwater Mine closed in 1951 after failure of the mine services due to collapse of a ventilation shaft. Total recorded quartz lode production was about 2Moz Au (Table 5.1.1).

Table 5.1.1: Reefton Goldfield Historical Production

Rank	Mine Name	Production		Recovered Grade (g/t Au)	Percent of Total oz Au
		Tonnes	Ounces		
1	Blackwater	1,603,157	740,403	14.2	37.1
2	Globe Progress	1,062,727	418,345	12.2	21.2
3	Wealth of Nations	458,034	208,980	14.2	10.6
4	Keep-It-Dark	333,780	182,616	17.0	9.2
5	Big River	124,060	135,965	34.1	6.9
6	Ajax/Golden Fleece	136,642	89,636	20.4	4.5
7	Welcome/Hopeful	44,867	88,607	61.4	4.5
8	Alexander	48,492	41,089	26.4	2.1
9	Murray Creek mines	52,943	33,887	19.9	1.7
10	Fiery Cross	24,956	27,843	34.8	1.4
11	Just-In-Time	13,755	17,168	38.8	0.9
Total Production		**3,903,413**	**1,984,639**		**100**

Figure 5.1: Location of Historical Mine Workings



5.1.3 Globe Progress Mine

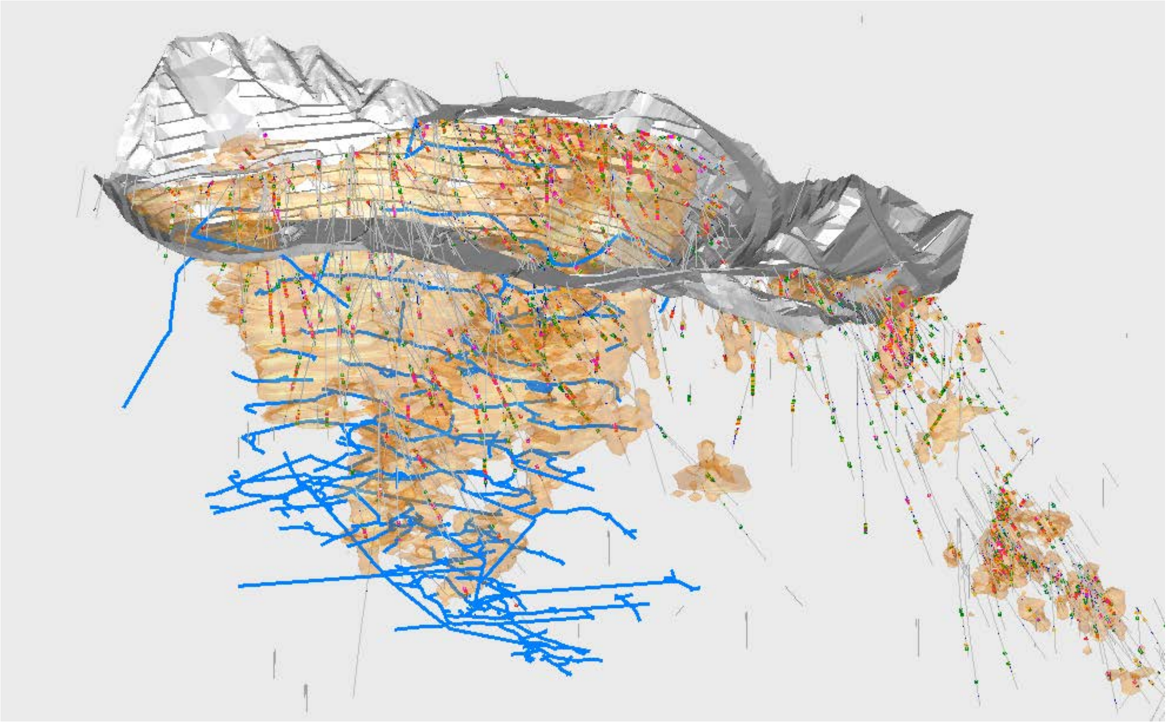
Gold bearing quartz lodes were discovered on Globe Hill around 1876. By the late 1870s, the Globe Hill lodes were being worked in several claims: the Union Company (later Globe Company 1882) worked the eastern side of the project area, while the Oriental Quartz Mining Company worked a separate claim on the western side of the project area without success. This company was subsequently purchased and renamed the Progress Company. In 1896, both Globe and Progress Companies were taken over by Consolidated Goldfields of New Zealand.

For the period 1876 to 1920, the Globe Progress underground mine produced from 11 levels to a final depth of 432m (83mRL). Final recorded production was 1,062,727 tonnes at a recovered grade of 12.2 g/t Au for a total of 418,345 oz gold recovered (gold recovery was probably about 80%). Production for individual levels is not known as few mining records or plans survive. The only available plans show the main development drives and production shafts. An oblique view of this plan is shown in Figure 5.2.

Mining at Globe Progress was abandoned in 1920 with most of the surface mining infrastructure being removed shortly thereafter. Beech forest regrowth covered the area of old mine workings until the commencement of open pit mining operations in 2007.

Figure 5.2 below shows the mined surface (grey), the modelled orebody (orange) the historical underground development (blue) and resource drill holes.

Figure 5.2: Oblique View (down to NE) of Globe Progress Underground Workings



At General Gordon, Empress and Souvenir prospects, no significant historical mining was undertaken. At both prospects, exploration adits and trenches were excavated along the lodes as part of the Government-funded 1937 Gold Subsidy Scheme. Lack of significant grade and width prevented miners of the time from developing either of these prospects.

5.2 Prior Ownership

The northern portion of the Reefton permit area was previously held by Lime and Marble Limited (L&M) between 1970 and 1971 (Riley and Ball, 1971), and subsequently by CRA Exploration Limited (CRAE) between 1981 and 1990.

Ground at Blackwater (southern part of current permit area) was held by Carpentaria Exploration Company Limited (CEC) between 1973 and 1976 (Murfitt, 1975); and then by Samantha Exploration Limited (Samantha) between 1979 and 1980. CRAE took ownership with joint venture partner Golden Shamrock Mines Limited from 1981 to 1990.

The permits were acquired by Macraes Mining Company Limited (MMCL) from CRAE in 1990. On 14 May 1999, Macraes Mining Company Limited changed its name to Gold and Resource Developments (NZ) Limited and again to GRD Macraes Limited (GRDM) on 30 June 2000. The permits subsequently formed part of the asset portfolio of Oceana Gold (New Zealand) Limited, listed in May, 2004.

5.3 Previous Work

5.3.1 Government Assisted Surveys (1938-1948)

During the late 1930's to 1940's Government assisted surveys in the form of work schemes, or as part of scientific studies, surveyed the goldfield with resistivity tests and mapped the mineralization controls (Gage, 1948).

During 1938, the DSIR geophysically surveyed two areas of the Reefton Goldfield: from Crushington to the Cumberland/Exchange workings and around the Blackwater Mine area. A potential drop ratio (resistivity) method was utilised to identify mineralized structures by their low resistivity zones relative to the country rocks.

5.3.2 1951-1980

From the closure of the Blackwater Mine in 1951, up to the early 1980's, there was little exploration due to the poor gold price. Small scale exploration for antimony over a couple of prospects was completed by Lime and Marble Limited in the 1970's. Also some exploration for quartz lodes over the Blackwater area was conducted by Samantha and CEC.

5.3.3 CRA Exploration (1983-1990)

5.3.3.1 Summary

From 1983 to the acquisition of the tenements by Macraes Mining Company Limited in 1990, CRA Exploration Limited (CRAE) was a major explorer in the Reefton Goldfield. They conducted regional scale stream sediment geochemical sampling and flew the goldfield with airborne magnetics/radiometrics. This also included a photo-based interpretation of the mineralized corridor.

On a prospect scale, CRAE were responsible for the discovery of a disseminated mineralization halo at the Globe Progress deposit. CRAE also attempted to open the Prohibition Shaft at the Blackwater mine in conjunction with their joint venture partner, Golden Shamrock Mines. CRAE drilled 52 drill holes throughout the goldfield, of which 39 were completed at the Globe Progress deposit.

The exploration completed is recorded in a number of CRAE company reports (i.e. Begg & Foster, 1983; Foster, 1983; Green & Rosengren, 1984; Rosengren, 1984; Lew, 1986, 1987a, b &c, 1988; Corner, 1987; Patterson 1987a & 1987b; Lawrence, 1998a & 1998b, 1989; Corner 1990a & 1990b; Hartshorn, 1990).

5.3.3.2 Airborne Geophysical Surveys

An airborne goldfield-wide magnetic/radiometric survey was completed by CRAE in 1988. This coverage is illustrated in Figure 5.3. The survey was conducted by Geo Instruments Pty Ltd, with a flight line spacing of 200m and mean terrain clearance of 85m.

5.3.3.3 Ground Geophysical Surveys

Several techniques were trialed on a prospect by prospect basis by CRAE eg. ground magnetics, IP-Resistivity and down-hole logging. The ground magnetics had little application due to the poor magnetic contrast of the Greenland Group sediments except for Murray Creek where a mineralized dolerite was identified. These methods were never routinely used except for IP-resistivity surveys.

IP-Resistivity surveys were utilised on a major scale by CRAE in 1986 over three key prospects: Globe Progress (Harvey, 1986a); Capleston (Harvey, 1986b & 1987) and Waiuta (von Strokirch, 1989). These surveys in their early phase were hindered by poor data quality. Craven (1996b) attributes this to low transmitter currents, problems with the receiver and the low conductivities of the host rock. Furthermore, the data is strongly affected by topography.

5.3.3.4 Stream Sediment Geochemistry

During 1984 and 1988 limited stream sediment sampling was conducted by CRA Exploration. The work was concentrated around known areas of interest and was of little value to a regional evaluation of the goldfield. Most of this early work involved sampling in the Alexander River area with limited sampling in tributaries of Krantz Creek and the Waitahu River.

In 1989 a systematic regional stream sediment/pan concentrate/float rock chip sampling programme was implemented by CRAE over most of the Greenland Group stratigraphy (Lew & Agnew, 1989). The survey involved the collection of 221 stream sediment, 221 pan concentrate and 297 rock chip samples which tested an area of 745 km^2. A theoretical sampling density of 1 sample per 2.4km^2 was applied. Stream sediment samples were sieved to -80# in the field and ring milled to -200# in the laboratory. An analytical suite comprising: Au, As, Sb, Ag, Bi, Cu, Pb, Zn and W was tested.

CRAE considered that the technique was not an effective method in the goldfield due to: contamination from old workings, interference from fluvio-glacial derived gold and the poor chemical weathering of the area. The pan concentrates were considered a better technique. Nevertheless some anomalies were identified. These included: Snowy River Tributary; South Capleston; Snow Creek; Montgomery Tributary; Shaw Stream and Bateman's Creek.

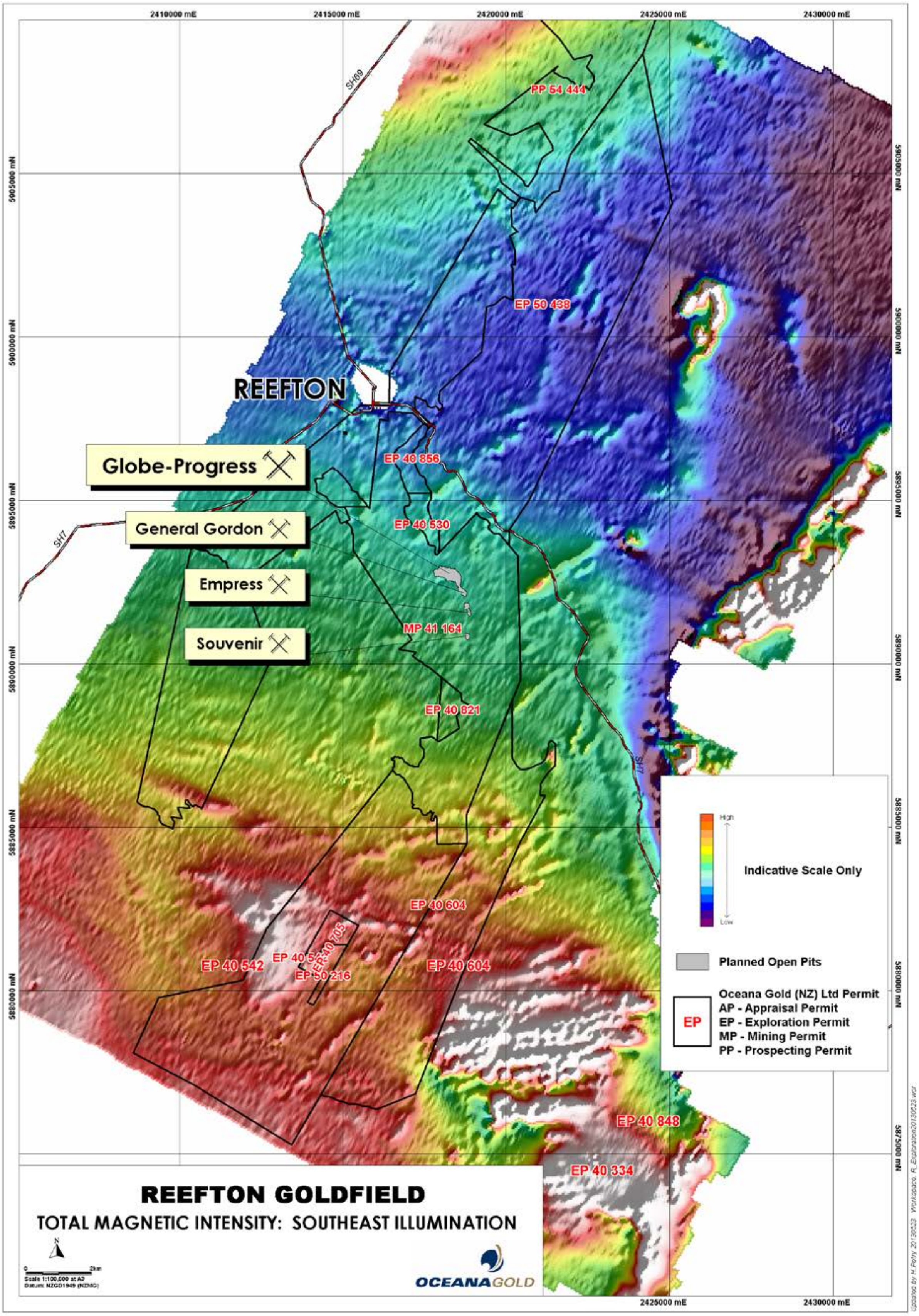
5.3.3.5 Soil Sample Geochemistry

Soil sampling within the Reefton Goldfield has primarily been completed by CRA Exploration. The initial strategy for soil sampling employed by CRAE was to conduct a series of ridge line 'A' horizon traverses. Due to the poor anomaly definition they implemented 'C' horizon sampling.

The sampling by CRAE was chiefly conducted over historical mine areas with minimal greenfield reconnaissance sampling. Gold, arsenic and antimony were primarily assayed by CRAE although in some instances this suite was extended to include other chalcophile elements.

The technique is successful, especially with arsenic in detecting a regional level of anomalism. However, the steepness of terrain, strong hydromorphic dispersion of the anomalies in conjunction with two distinct populations of arsenic, often produces misleading anomalies. In an attempt to combat this problem, particularly at the prospect scale, wacker sampling has been employed.

Figure 5.3: Reefton Airborne Magnetic Survey



5.3.3.6 Air Photo Interpretation

A photogeological study of the Reefton Goldfield was undertaken in by Hunting Australia (1986) for CRA Exploration. The aim of the study was to enhance the understanding of the regional stratigraphic and structural controls of primary gold mineralization. The study utilised black and white 1:15,000 scale aerial photographs flown by NZ Aerial Mapping in 1973/74 and some 1:40,000 scale photography taken in 1982-

1984. The photogeological mapping was assisted by reference to detailed traverse data contained in published geological maps and was supported by road traversing.

The survey highlighted the influence of northwest and north-trending fracture corridors in the distribution of gold occurrences. A concentration of gold mines is also evident along the northeast-trending lineament corridor occupied by a basic dyke swarm passing south of Blacks Point.

5.3.3.7 Drilling

By April 1990, a total of 39 diamond drill holes (GB01-39) for 6,716.2m drilling had been completed by CRAE on the Globe Progress deposit (see Section 10).

The CRAE drill holes were all drilled using a helicopter (Hughes 500) supported Edeco 40 drilling rig supplied by Alton Drilling Limited of Westport. All holes were down hole surveyed at 25m intervals using an Eastman single shot camera.

5.3.3.8 Development Studies

A mineral resource study was commissioned, initial feasibility study parameters were estimated and some metallurgical, environmental and mining studies were completed. CRAE decided not to continue with the project and in 1991 title to the Reefton Goldfield tenements passed to Oceana.

5.4 Historical Estimates

A mineral resource estimate for the Globe Progress deposit was compiled by CRAE in 1987 using the 22 drill holes completed at that time (Lew, 1987a). The estimate was not reported in accordance with NI43-101 rules or CIM guidelines and due to the number of drill holes is regarded as very low reliability.

5.5 Previous Production

A total of approximately 2Moz Au was produced between 1870 and 1954. Recorded historical production from the Reefton Goldfield can be found in section 5.1.2, see Table 5.1.1.

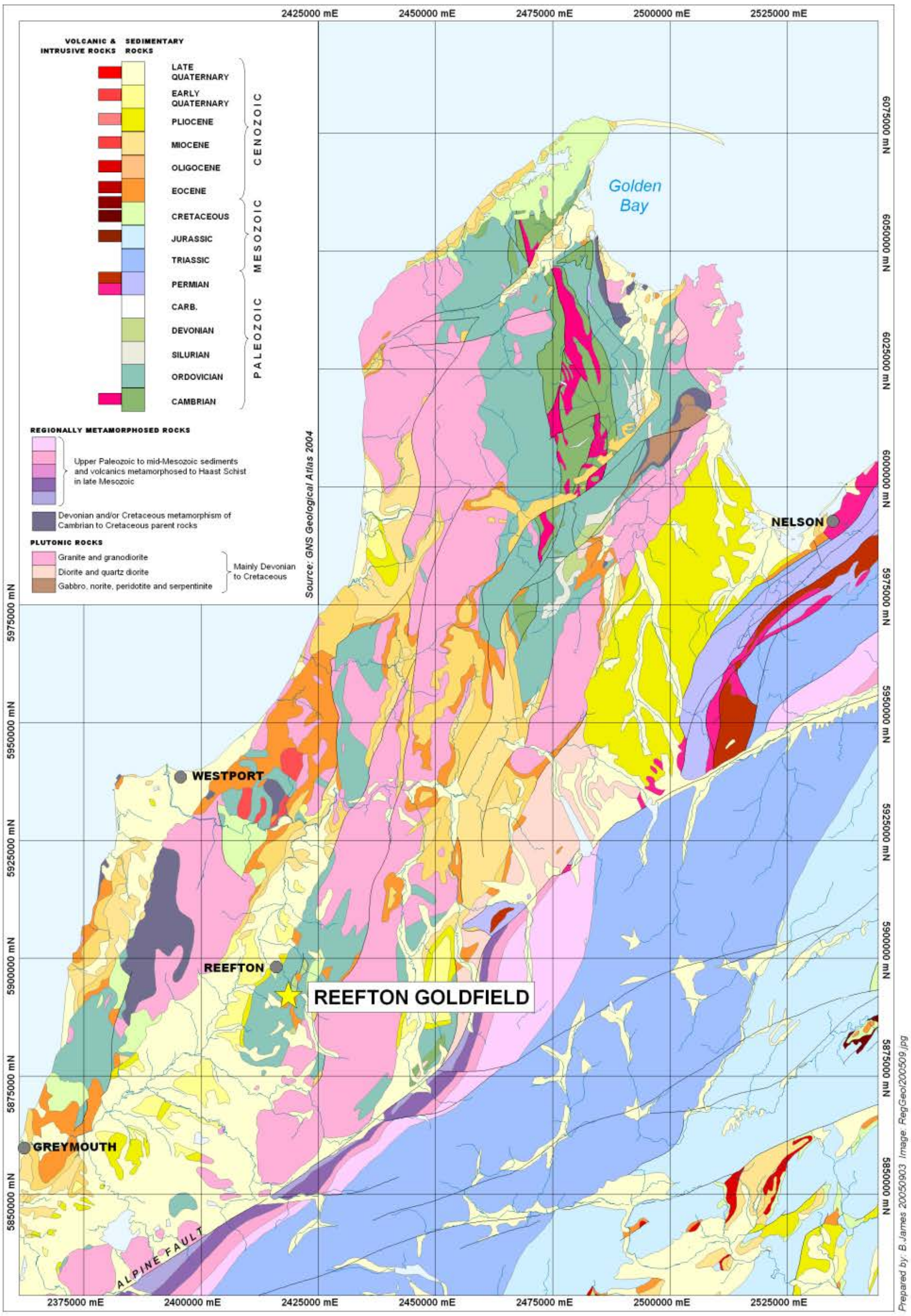
There has been no production in recent times from hardrock sources within the Reefton Goldfield. Production from the Oceana Globe Progress Mine commenced in the first quarter of 2007.

6 GEOLOGICAL SETTING AND MINERALISATION

6.1 Regional Geology

New Zealand straddles the boundary between the Australian and Pacific crustal plates, the boundary being marked by the Alpine Fault (Figure 6.1). Western New Zealand is interpreted to have originally been part of Gondwana and lay adjacent to eastern Australia until about 80Ma (Cooper and Tullock, 1992; Adams, 2004). The north west of the South Island of New Zealand is characterised by a series of fault-bounded geological terrains comprised of predominantly early Paleozoic rocks arranged in broad northerly trending belts that terminate in the southeast against the Alpine Fault. The Reefton Goldfield is hosted by early Ordovician age Greenland Group meta-sedimentary rocks (Cooper, 1974), which are part of the Buller Terrain.

Figure 6.1: Regional Geology



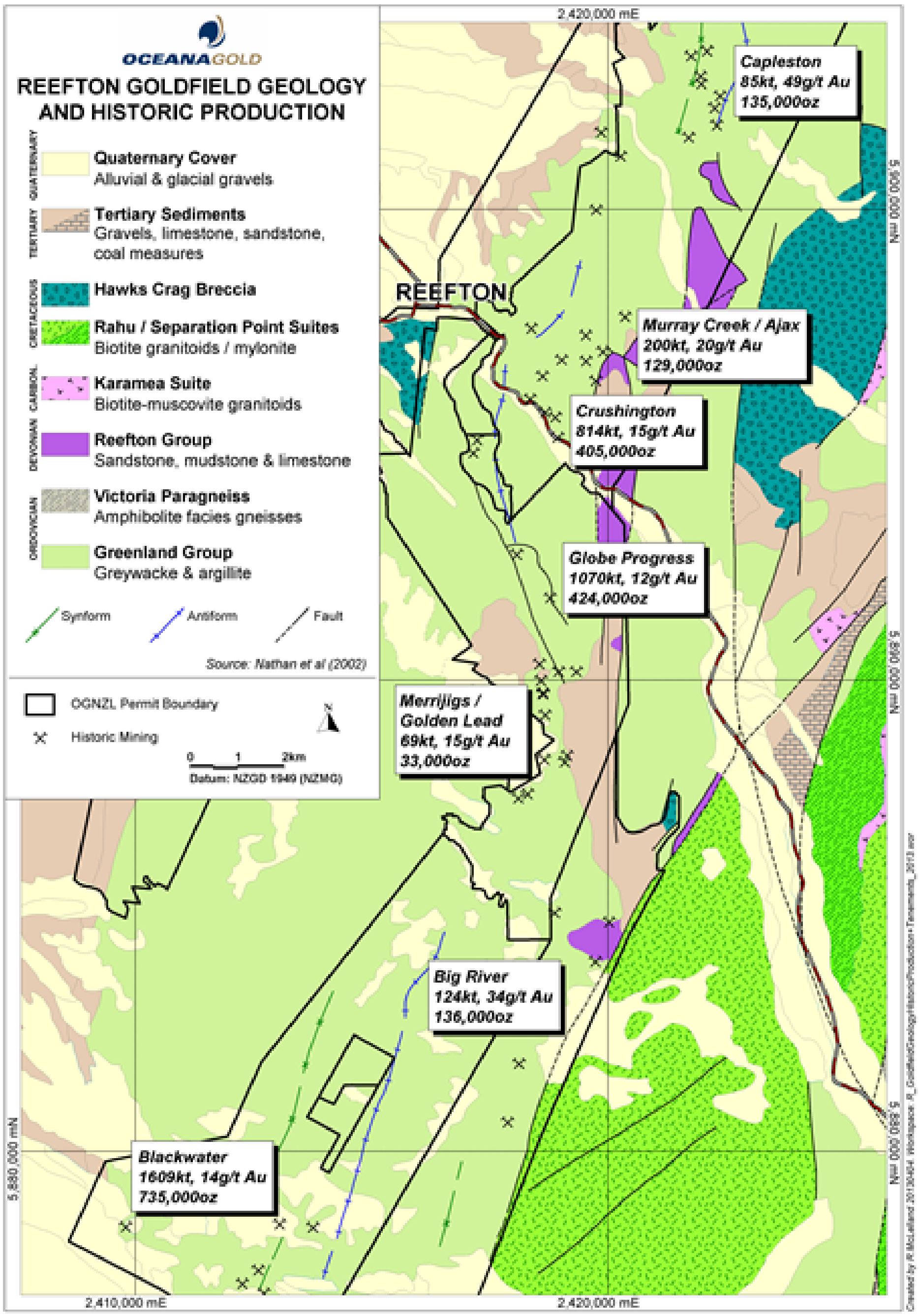
6.2 Local Geology

6.2.1 Overview

The Reefton Goldfield occupies an area about 35km long by 15km wide in the foothills of the Victoria Range. The Reefton Goldfield is a fault-bound block bounded by uplifted Karamea granitoids to the east and the down-thrown Grey-Inangahua Depression (graben) to the west. The Greenland Group rocks of the Reefton Goldfield therefore comprise a mid-level (±500m elevation) terrain between a Tertiary horst and graben.

The Reefton Goldfield is assigned to the Buller tectono-stratigraphic terrane and comprises a monotonous succession of greywackes and argillites which are interpreted as a continental-derived turbidite sequence (Laird and Shelley, 1973), (Figure 6.2). The geology and mineralization of the goldfield has been documented over time by Henderson (1917), Downey (1928), Gage (1948), Suggate (1957) and Corner (1992).

Figure 6.2: Reefton Goldfield Geology, Location and Production of Historical Mine Workings



During the Late Ordovician or Early Silurian, the Greenland Group was subjected to lower greenschist facies metamorphism (the Greenland Tectonic Event) with the development of north-south trending, upright, gently plunging folds with conspicuous axial plane cleavage and sub-vertical axial planes. The axial planes are locally intensely sheared and fold closures are not commonly preserved.

6.2.2 Stratigraphy

The Greenland Group meta-sediments hosting the Reefton Goldfield mineralization are among the oldest rocks in New Zealand. The Late Cambrian to Early Ordovician age range has been allocated on the basis of a mid-Lancefieldian graptolite collected near Reefton. These deformed turbidites are overlain and intruded by younger rocks.

At the northern and southern ends of the Reefton Goldfield, the meta-sediments are intruded by Devonian to Carboniferous (Tuhua Phase) and lower-mid Cretaceous (Rangitata Phase) granitoid plutons.

Mafic dykes of the Kirwan Intrusive were emplaced during the Cretaceous. Some of these mafic dykes occur in the same structural zones as the gold mineralization, although none has yet been found on Globe Hill.

The Reefton Goldfield is bounded to the east by the White Creek Fault and to the west by the Lyell Fault. In the east, the Greenland Group rocks are faulted against the Karamea Batholith. In the west, the fault contact is obscured by Tertiary and Quaternary sediments which fill the Grey-Inangahua Depression (a graben separating the Paparoa Range from the Victoria Range) and lap onto the Greenland Group rocks.

Tertiary sandstones, mudstones, limestones and coal measures fill the Grey-Inangahua Depression and also occur as fault-bound blocks within the Reefton Goldfield. Most of the region's coal (lignite to bituminous) has been extracted from the Eocene Brunner Coal Measures.

A succession of Pleistocene glacial and interglacial events has resulted in the development of extensive fluvio-glacial deposits. These are marked by prominent terrace deposits in the main valleys and by erosional remnants scattered over the Reefton Goldfield. The basement geology of the Reefton Goldfield is consequently often obscured by scattered outliers of Tertiary coal measures and Pleistocene fluvioglacial deposits.

6.2.3 Deformation

The Greenland Group metasediments of the Reefton Goldfield are folded into a broad structural corridor with sub-horizontal north to north-northeast trending fold axes. The fold hinge zones and overturned limbs within the corridor have provided loci for shearing and subsequent gold mineralization. Gold deposits are found in zones of closely spaced folding, typically with wavelengths of 100m to 500m, compared with kilometre scale folding elsewhere (Christie et al., 2000; Rattenbury and Stewart, 2000). The pattern of folding is also thought to have a strong influence on the localisation of ore shoots (Lew and Corner, 1988).

The long and complex tectonic history of the Reefton Goldfield is evidenced by the presence of sheared-out folds, offset fold axes and ore-shoots, crush zones, breccia and pug zones, recently uplifted mountain ranges and local earthquake epicentres.

Shearing-out of fold hinge zones is common and thrust faulting appears to have been critical for ore genesis at some deposits, such as the Globe Progress deposit. The gold mineralization event was initiated under a compressional regime after the main episode of folding.

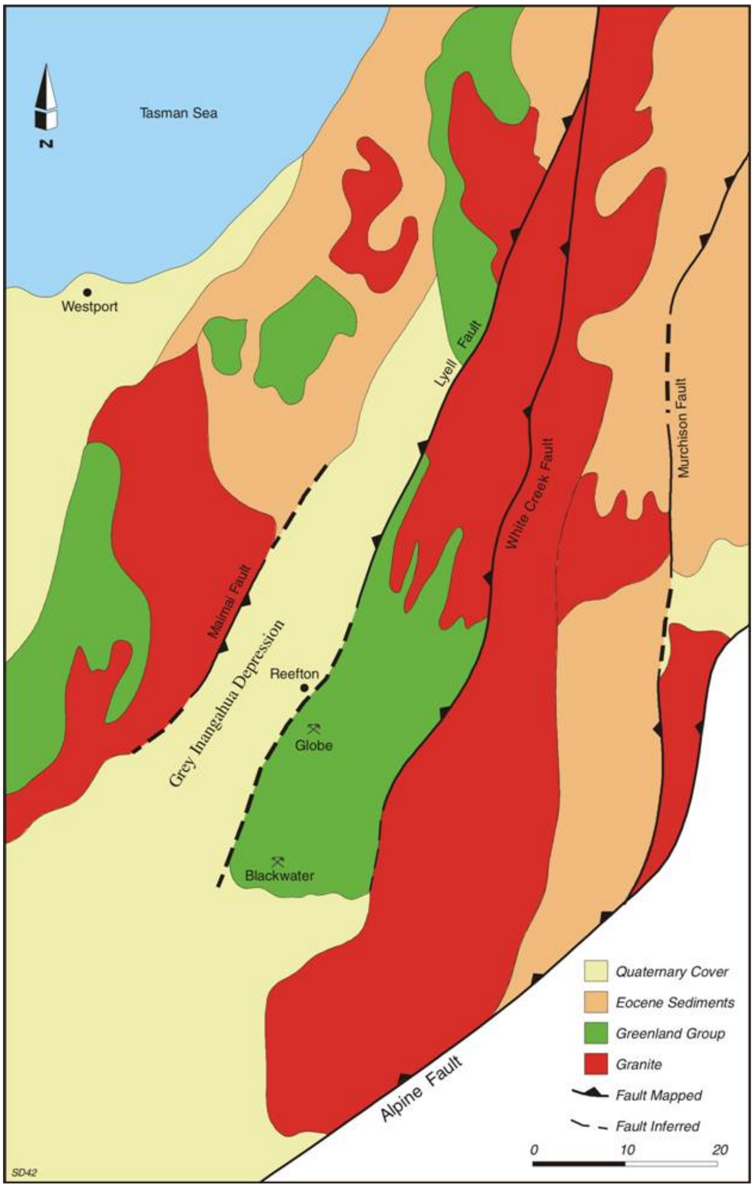
The fold axes have a markedly sinuous trend in the central sector of the Goldfield. This may be due to overprinting deformation (i.e., Maw, 2000) or due to drag on northwest trending faults with a strike-slip component of movement.

Cross-faults, which dissect, offset and terminate the mineralized lodes, are found in most mines of the goldfield. These are predominantly normal faults and are thought to have occurred after the gold mineralization event.

6.3 Active Faulting

The Globe Progress Mine is located approximately 35 km west of the Alpine Fault (**Figure 6.3**) which is the major element separating the Australian and Pacific tectonic plates. Within the Buller terrain, faults and folds are approximately north trending and accommodate the region's predominant compressional strain.

Figure 6.3: Location of Major Faults Within 50km of the Globe Progress Mine



Three major faults in the Reefton area, namely White Creek Fault, Lyell Fault and Maimai Fault, bound the eastern side of the Paparoa Range. Only the White Creek Fault can be clearly related to surface displacement during an historic earthquake (1929). The other faults show clear evidence of surface displacement along part of their length during the last 20,000 years and are therefore considered active and capable of producing large earthquakes. However, there is no evidence available at present to determine the timing of the last movement on either the Lyell or Maimai Faults.

Surface movement on the White Creek Fault associated with the 1929 Murchison earthquake (Ms 7.8) was 4.5m vertical and 2.5m left lateral. During the 1968 Inangahua earthquake (Ms 7.4), movements of 0.4m vertical and 0.3m left lateral occurred along several traces. The total length of surface disruption was less than 8km in both earthquakes, although the 40km long aftershock zone for the Inangahua earthquake suggests that, at depth, the extent of faulting was probably much greater. Surface faulting during the Inangahua earthquake is probably not directly related to the primary causative fault at depth. The surface faults probably reflect slip along minor secondary structures that accommodate contraction within the sedimentary cover. Similar features are associated with the Maimai Fault at Giles Creek, Big River and Blackball at the foot of the Paparoa Range.

Major faults such as the White Creek, Lyell and Maimai Faults must be considered capable of producing further earthquakes of Ms 7.8. Thus, there are at least three potential sources of Ms 7.8 earthquakes with a reverse-sinistral mechanism within 15km of the Globe Progress Mine. These faults must also be regarded as the minimum number of potential earthquake sources. The 1968 Inangahua earthquake, however, was not associated with significant surface rupture of a major late Quaternary active fault trace and no surface rupture is known to have been associated with 1868 and 1893 earthquakes in the northern part of the Reefton Goldfield.

6.4 Globe Progress Deposit Geology

6.4.1 Introduction

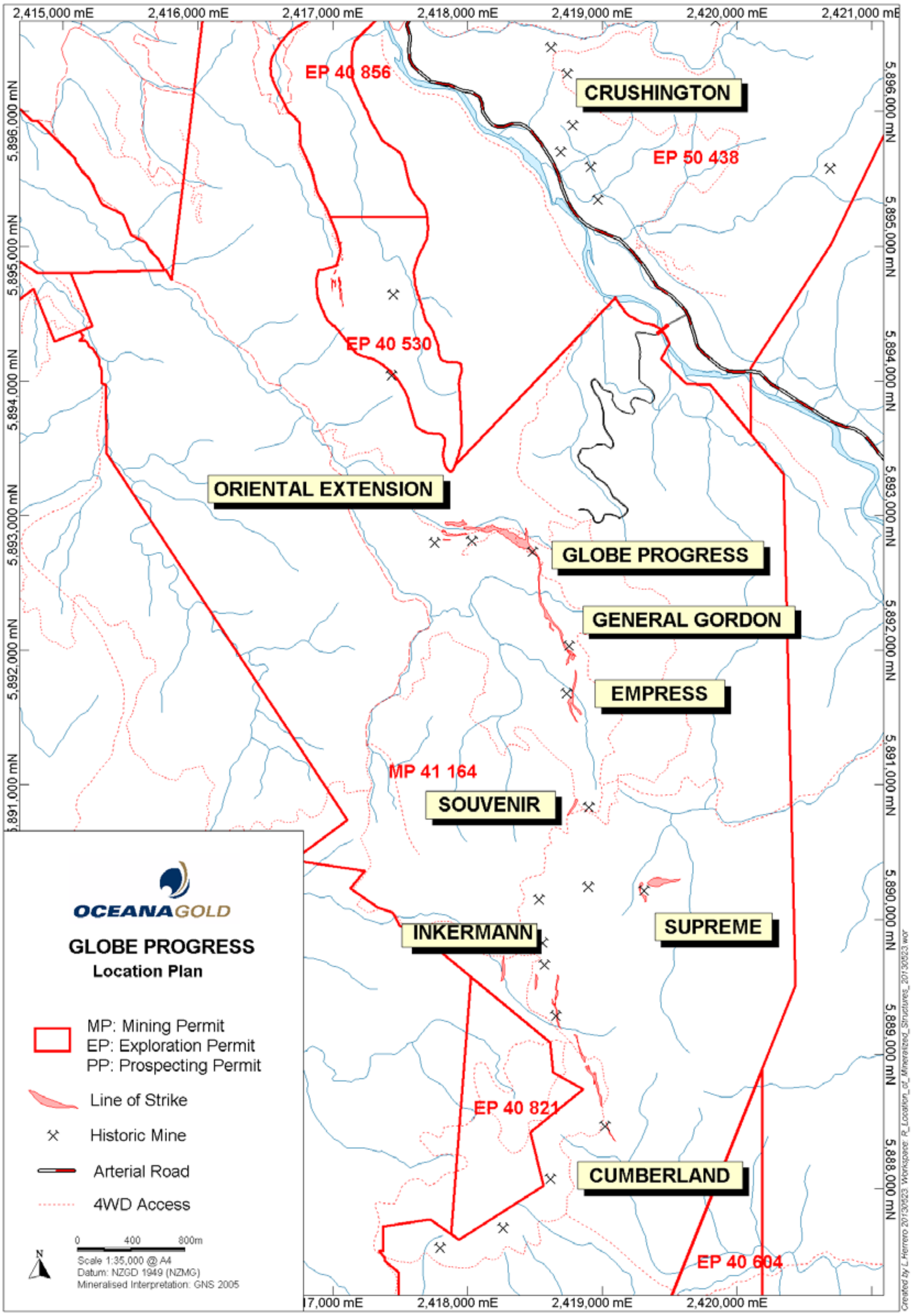
The Globe Progress deposit is situated centrally within a 5km wide, north-northeast trending fold belt that encompasses the majority of the significant producers of the Reefton Goldfield. The deposit straddles the Globe Hill Anticline, which is locally disrupted by the curvilinear Globe Progress Shear and by northwest to west-northwest trending cross-faults.

Host rocks for the gold-arsenic-antimony mineralization are typical interbedded Greenland Group metasedimentary rocks, originally comprising sandstone, siltstone and mudstone. In the vicinity of Globe Progress Mine, the Greenland Group has been structurally deformed by a major penetrative phase of folding about north-south axes.

Globe Progress is the largest sulphide-associated deposit currently known in the Reefton gold field. The Globe Progress deposit occurs within an arcuate shear zone which trends from a north-south orientation into an east-west strike, discordant to the regional structural grain. The shear zone has a strike length of approximately 1km and dips steeply (to the south and south west) at the surface but shallows at depth, forming a quarter bowl shape. The shear pinches and swells between 8 and 30m in thickness, whilst the internal geometry displays variable shear textures. The deposit has an identifiable alteration halo that extends >200m beyond the limits of economic mineralization.

The Globe Progress shear changes to a north-south orientation at its eastern extremity and merges into a line of mineralized structures extending to the south through General Gordon, Empress and Souvenir deposits (Figure 6.4). The relationship of the shears to structures further south at Inkerman and Supreme; and to the north at Auld Creek and Crushington is not well understood.

Figure 6.4: Location of Mineralized Structures along the Reefton Line of Strike



6.4.2 Globe Progress Stratigraphy

At the Globe Progress Mine, Greenland Group metasediments comprise stacked, mostly upward-fining sequences of metre scale interbedded, predominantly fine-grained greywackes and argillites. A typical sequence is made up of greenish-grey argillites, often thinly interlaminated with very fine-grained greywackes, which coarsen down into basal fine to medium, occasionally fine to coarse, lithic greywackes (Barry, 1994). A sharp, scoured contact is invariably present between the greywacke unit and the top of the underlying argillite bed. Sedimentary structures observed in argillite-rich units at the top of the sequence include rip-up structures and load casts. Thick units of massive and thinly laminated argillites are present throughout the sequence.

The absence of marker horizons combined with rapid vertical and lateral facies changes make correlation of individual beds between drill holes very difficult. Despite these constraints, there appears to be gross similarities in the top sections of many of the drill holes. Mine exposures confirm the absence of marker units, the small scale structures observed make correlation of sedimentary units between drillholes very problematic.

Intervening sediments are predominantly fine to medium-grained greywackes that occupy the lower part of the underlying sequence, and also include thick beds of greenish grey and light olive grey argillite. Lamellae and very thin beds of greyish-black argillite are also present in the lower sections of some units. Greyish black carbonaceous argillites are also found to occur in footwall zone. The gross similarity of the Greenland Group sequences in the lower and upper sections of drill holes suggests that the strata dip gently southwest (Barry, 1994).

As a consequence of regional metamorphism, interstitial clays and detrital feldspars in the quartz rich sediments have been resorbed and recrystallised as a sericitic muscovite-quartz rich mineral assemblage (Cooper & Craw, 1994). A granite and low grade metasediment source area for the Greenland Group is suggested by the presence of quartz, rare feldspar, quartzite, pelite, tourmaline, zircon and apatite in the coarse grained greywackes. The pale red colouration observed in some greywackes has been identified as a limonitic or haematitic dust formed from the hydration or oxidation of iron oxides or sulphides (Cooper & Craw, 1994).

6.4.3 Deformation

During the late Ordovician to Early Silurian, east-west compression resulted in the formation of open to tight upright north-south trending folds. Fold hinges are frequently sheared by high angle reverse faults. The hinge zones, bedding planes and limbs of these folds have created loci for subsequent shearing, hydrothermal channelling and gold mineralization. Progressive deformation and concurrent granitoid pluton emplacement during the Silurian led to the development of a weak, pervasive, axial planar cleavage. The axial plane cleavage is evident in the finer-grained sediments and it has a moderately steep southwesterly dip over most of the Globe Progress Mine area.

One major episode of folding is evident from surface mapping at Globe Progress Mine. Locally, an almost chevron-style folding is tight with commonly overturned eastern limbs and sub-horizontal, north-northwest or south-southeast plunging fold axes. The footwall sequence is extensively folded, with fold wavelengths commonly less than 50m (Rattenbury, 1994). By contrast, folding in the hangingwall sequence has been recognised only in the eastern sector. In the relatively undeformed sections, the bedding attitude is relatively uniform, with a moderate southwest dip. In folded sections, moderate to steep west-southwest and steep easterly dips are more prevalent. Historical miners noted both north-south and east-west folding in the sub-horizontal ore horizon of the lower mine levels. The east-west “folding” might be due to drag on later faults.

6.4.4 Shearing and Fracturing

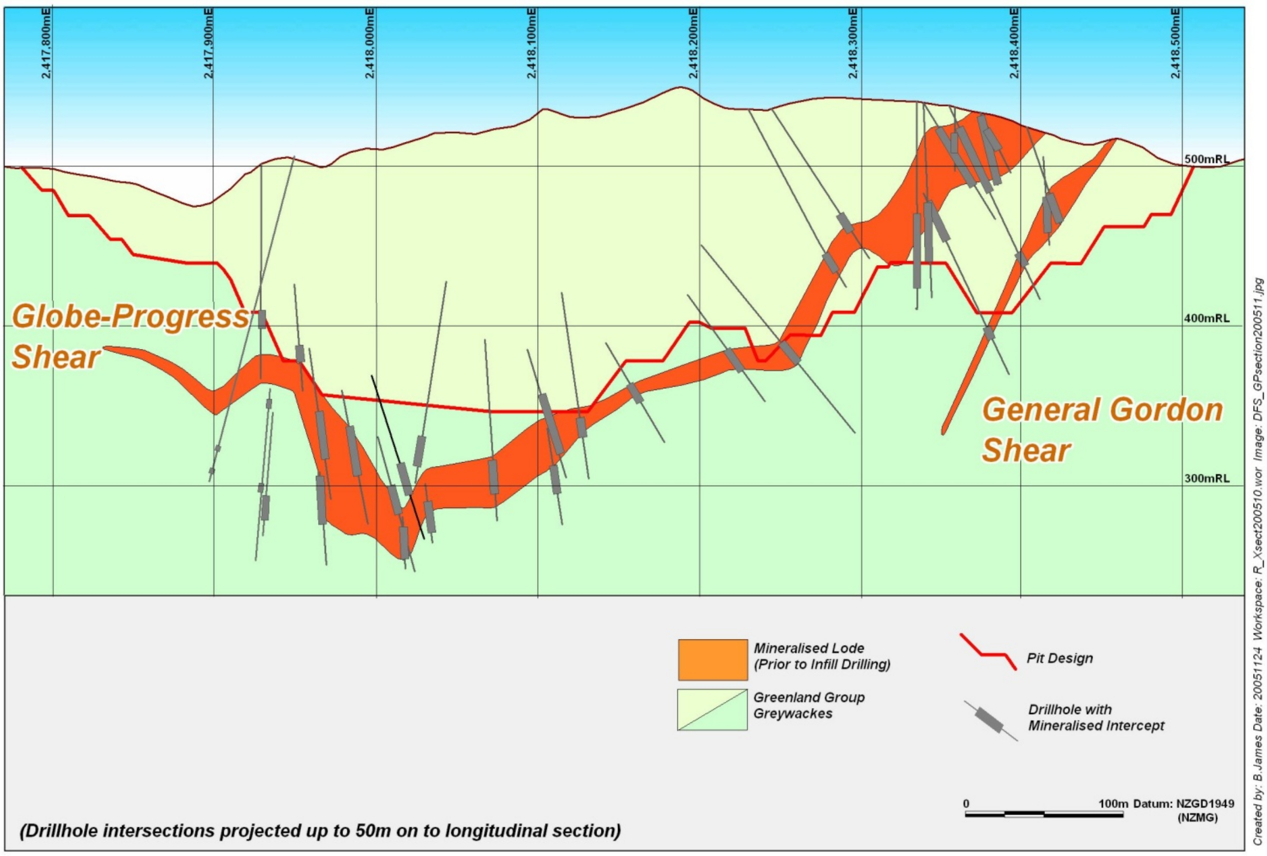
Shearing in the siltstone and mudstone units results in clay pug zones, whereas there is a propensity for breccias to be formed in the sandstone units. Broader zones of increased fracturing (and low grade mineralization and alteration) typically are associated with zones of axial plane shear.

Bedding plane shear is also common, especially in folded sections. It is generally focussed in the finer-grained interbeds. Although the shear zones are commonly less than 5cm wide, they may be laterally quite persistent. More substantial bedding plane shears are found along the margins of thicker sandstone units. Mapping of >30cm fault and shear zones demonstrate a predominant northerly trend.

6.4.5 Globe Progress Shear

The Globe Progress Shear is a major shear zone, which is locally highly discordant to the regional structure and has been of prime importance in the localisation of mineralization at the Globe Progress Mine (Figure 6.5). Minor structures in the hangingwall indicate west over east directed movement of the Globe Progress Shear. The shear is concave in form, with generally a southwest dip, which is truncated at depth by the northwest trending, southwest dipping Chemist Shop Fault.

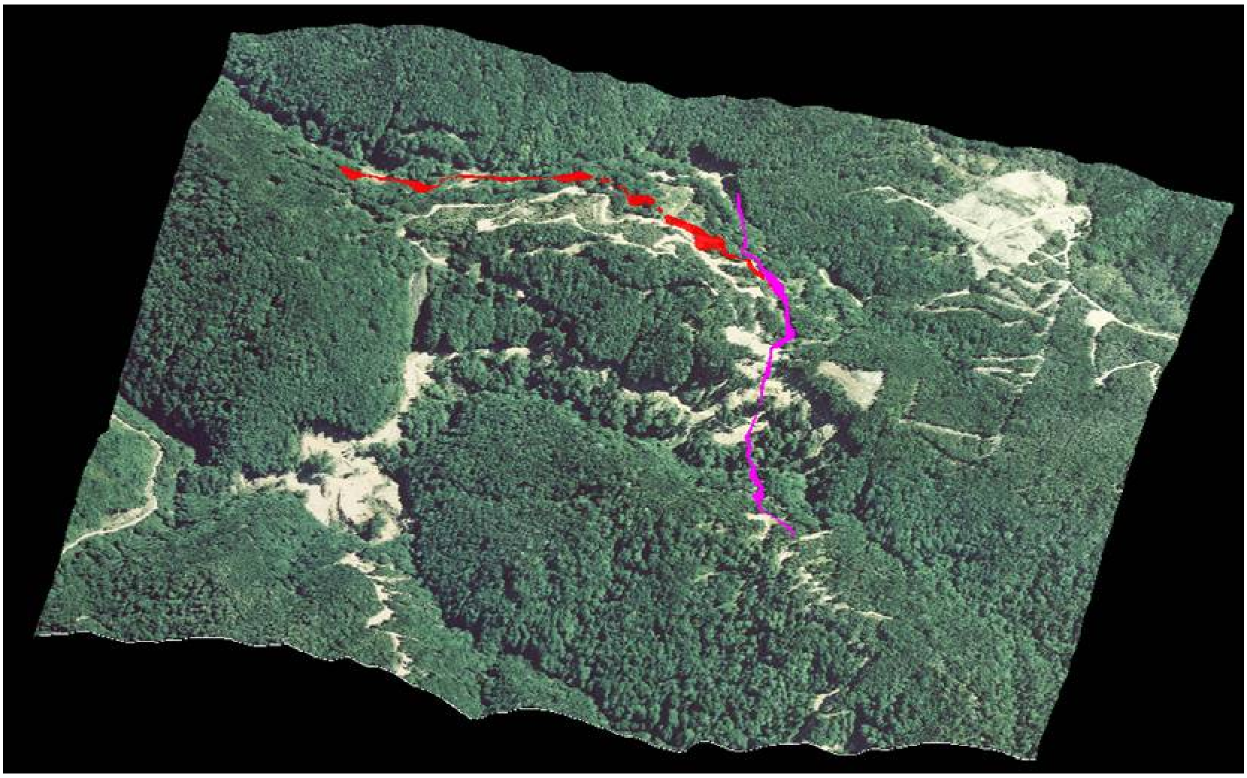
Figure 6.5: Typical Long Section through the Globe Progress Shear Zone



The Globe Progress Shear is characterised by a mineralized zone consisting of variable proportions of cataclasite (pug), quartz vein, crushed/sheared quartz vein and crushed/sheared greywacke. The mineralized pug, typically plastic and dark grey to black, contains up to 10% or more of fine grained arsenopyrite and typically surrounds sub-rounded quartz and country rock clasts. The General Gordon (west) Shear to the south is characterised by a 1m to 5m wide mineralized zone consisting predominantly of cataclasite, with minor quartz vein, crushed/sheared quartz vein and crushed/sheared greywacke. The eastern extent of the General Gordon deposit shows some minor crushed and brecciated greywacke/argillite.

The Globe Progress Shear, which is interpreted to be a thrust fault is steeply-dipping near the surface but shallows to approximately 35 degrees dip in the lower levels of the mine. The Globe Progress Shear connects with the Oriental Shear just north of “C” shaft. The Oriental Shear is then contiguous with the General Gordon Shear Zone further to the south.

Figure 6.6: Surface Expression of the Globe Progress Shear (red) and General Gordon Shear (purple)



6.4.6 Post Mineralization Faults

The Globe Progress deposit is offset at depth by the northwest trending Chemist Shop Fault (CSF), which dips 60° northeast and is interpreted as a reverse fault with primarily dip-slip movement (Rattenbury, 1994; Rattenbury and Jongens, 2005). The regional dominance of dip slip faulting, the offset of the Brunner Coal Measures and the geometry of nearby faults all point towards dip-slip movement for the CSF. Other interpretations support a left lateral strike-slip fault and this interpretation is supported to some degree by the apparent drag arising from displacement of the axes of the Blacks Point Syncline, Globe Hill Anticline and Inkerman Syncline and also from the photo-geological interpretation completed by Hunting Geology and Geophysics.

The east-west trending Main South Fault (MSF) terminates mineralization in the south. This normal fault dips at 58° to the north and probably pre-dates the CSF. The MSF intersects the General Gordon Shear and displaces it 50m to 100m to the east indicating normal movement.

Virtually all mineralized structures have undergone considerable post-mineral movement, resulting in dismemberment of quartz veins and crushing of quartz casts and sulphide grains. Locally, late-stage stibnite has infilled fractures in quartz, sulphide aggregates and country rock.

6.4.7 Hydrothermal Alteration

The host metasediments are greenish-grey in colour when fresh but often altered to a light olive grey colour. Petrographic studies (Cooper and Craw, 1994) attribute this colour change to the presence of carbonate. This carbonate is usually associated with quartz, occasional pyrite and arsenopyrite and forms a broad halo around the hydrothermally altered gold mineralized shear zones.

Whole rock analyses confirm that, compared with the greenish grey greywacke, the olive grey greywacke is:

- enriched in carbonate (increase in CO_2, MgO, CaO);
- enriched in sulphide (increase in S); and
- depleted in plagioclase, feldspar and chlorite (decrease in SiO_2, Al_20_3, H_2^+).

Increases in MgO and CaO identify the principal carbonates as calcite and dolomite, although it is probable that some ankerite is also present.

Christie and Brathwaite (2003) document and compare the alteration associated with larger disseminated gold deposits such as Globe Progress and the narrow quartz vein hosted lodes. They conclude that increasing intensity of hydrothermal alteration with proximity to mineralized structures is indicated by:

- Bleaching of the wall rocks;
- The development of carbonate spotting and carbonate flooding;
- An abundance of disseminated sulphides (pyrite-arsenopyrite±stibnite);
- Increased abundance of carbonate, quartz and sulphide veinlets;
- The development of a K-mica+carbonate±chlorite assemblage and alteration of chlorite to carbonate; and
- Albite replacement by K-mica.

The chemical and mineralogical changes associated with hydrothermal alteration are best developed around the disseminated deposits (up to 150m) and are narrow (2-10m) around quartz lodes.

On a mine scale hydrothermal alteration can be regarded as subtle with some lithologic controls to the intensity.

6.4.8 Weathering and Water Table

There is minimal oxidation at the Globe Progress Mine, with fresh sulphides being common in track and trench exposures at the surface. Some limonitic alteration locally extends to 10m depth, with limonite on fractures extending to a maximum of 25m. Metallurgical test work on samples from five drill holes has shown that most were unoxidised and unweathered below about 3m depth. A review of drill holes led to a depth of 8m below topography being applied globally to define the extent of the oxidation zone for both the geological modelling and resource estimation. Mining confirmed the weathering depth to be approximately the same discounting local variations.

Water level information from drill holes indicates that the water table generally follows surface topography. The water table dips towards Oriental Creek in the north and towards Union Creek in the south, and varies between 5m and 10m below the surface. On slopes, the depth of the water table below surface decreases to daylight in the two creeks. A steep gradient in the water table has been identified coincident with an area of old mine workings, suggesting low permeability for the host rocks.

6.5 Souvenir Deposit Geology

The Souvenir deposit is located some 2.5km to the south of the Globe Progress open pit (Figure 6.4).

The Souvenir Shear that hosts mineralization is interpreted as part of a dislocated shear system and therefore probably does not represent a strike continuation of the General Gordon / Empress Shear. The Souvenir Shear strikes north-northeast and dips 70° east. It ranges from 5 to10m thick. The Souvenir Shear is characterised by discontinuous, medium grade quartz and minor pug within argillaceous units, and high-grade stockwork quartz veining and disseminated arsenopyrite mineralization within greywacke units. The Souvenir shear has an on-surface strike length of 100m, with an average width of approximately 8m and a down dip extent of 100m.

6.6 Supreme Deposit Geology

At the Supreme deposit, some 3km south of the Globe Progress deposit (Figure 6.4), drilling has confirmed the presence of a mineralized structure similar to the Globe Progress deposit (Corner, 2006). Mineralization comprises a central core of gold-bearing quartz veins, locally containing visible gold, surrounded by a more extensive halo of refractory sulphide-associated gold mineralization (Applied Petrological Services, 2006).

Three sub-parallel mineralized structures extend approximately 250m along strike and at least 220m down-dip with an average thickness of 12m and moderate dip to the south-east (Figure 6.7 and Figure 6.8). Historical workings indicate mineralization extends further down-dip and remains open at depth.

Figure 6.7: Supreme Prospect Plan

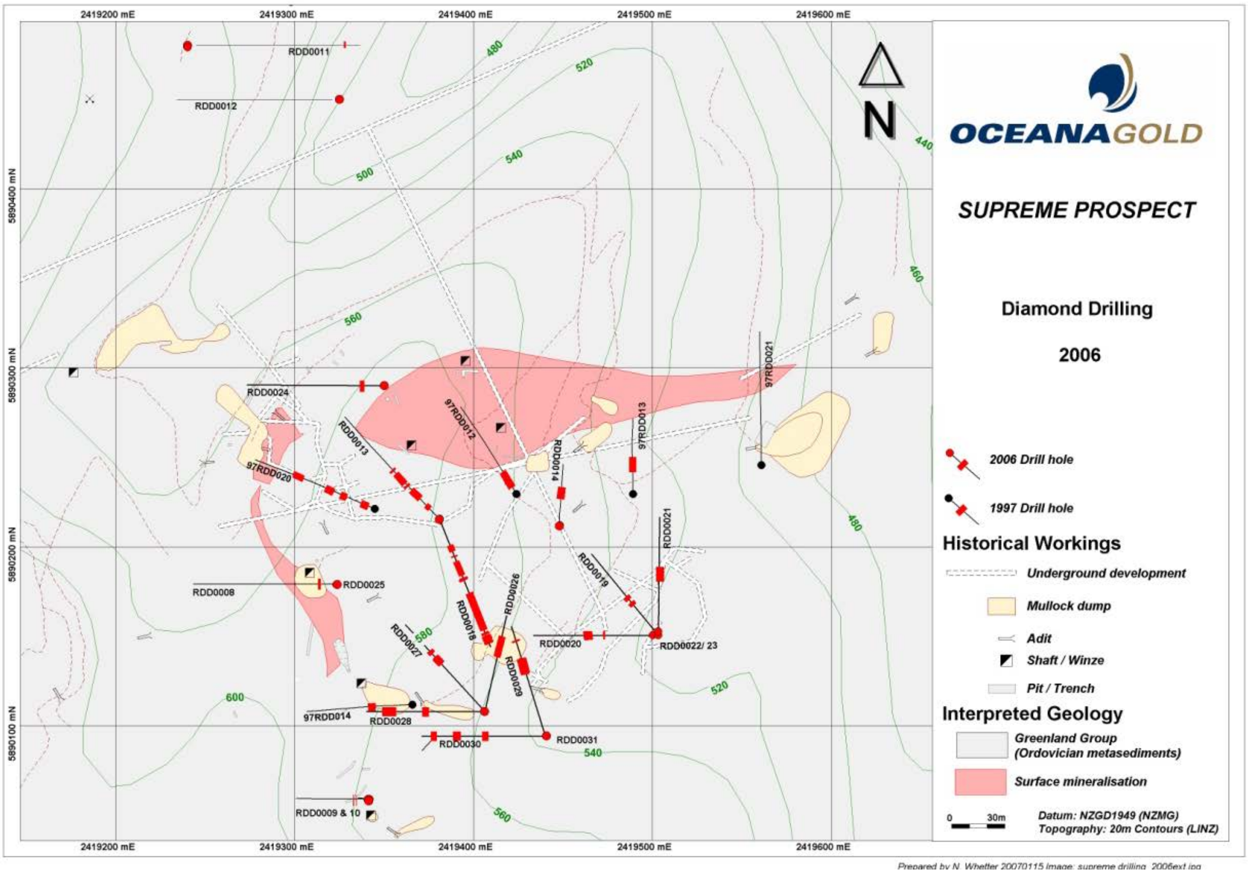
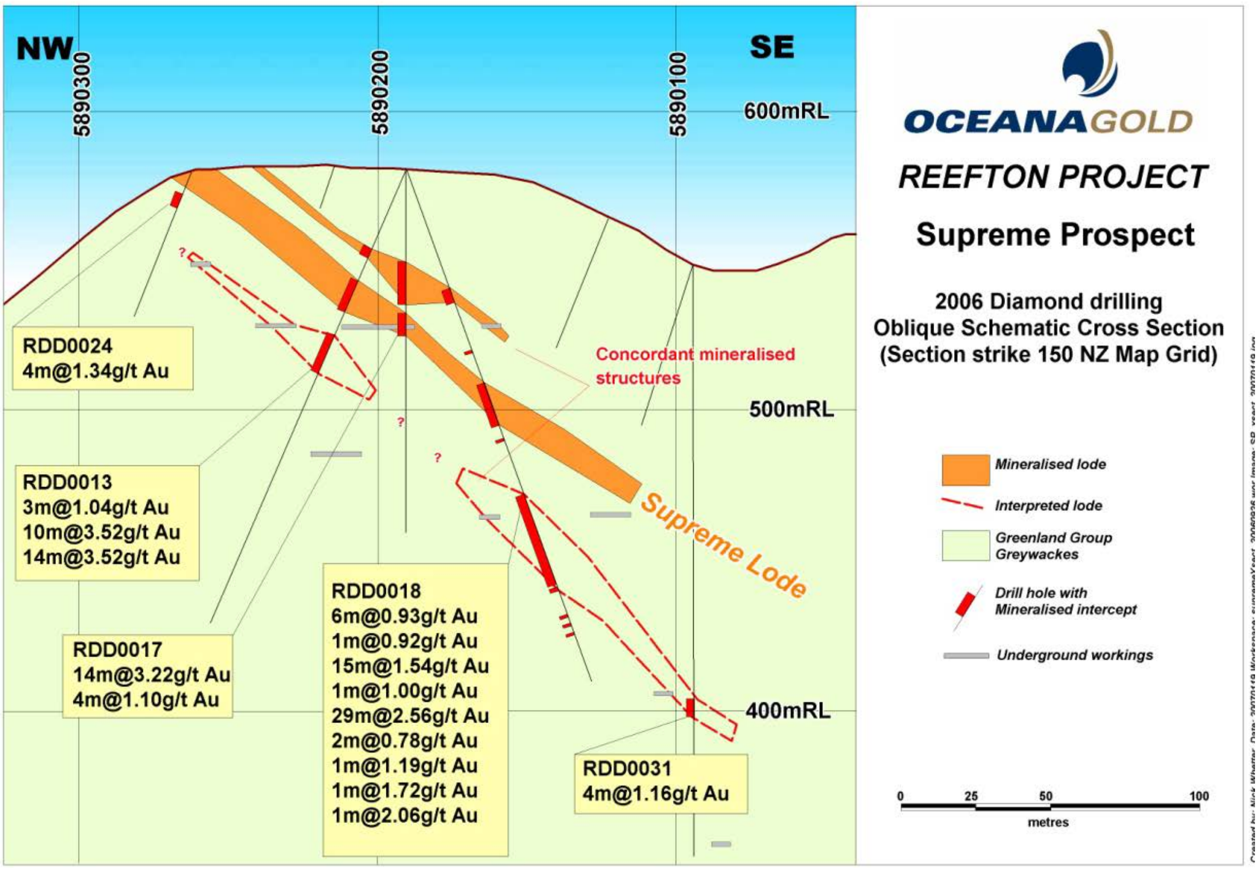


Figure 6.8: Supreme Prospect Cross Section



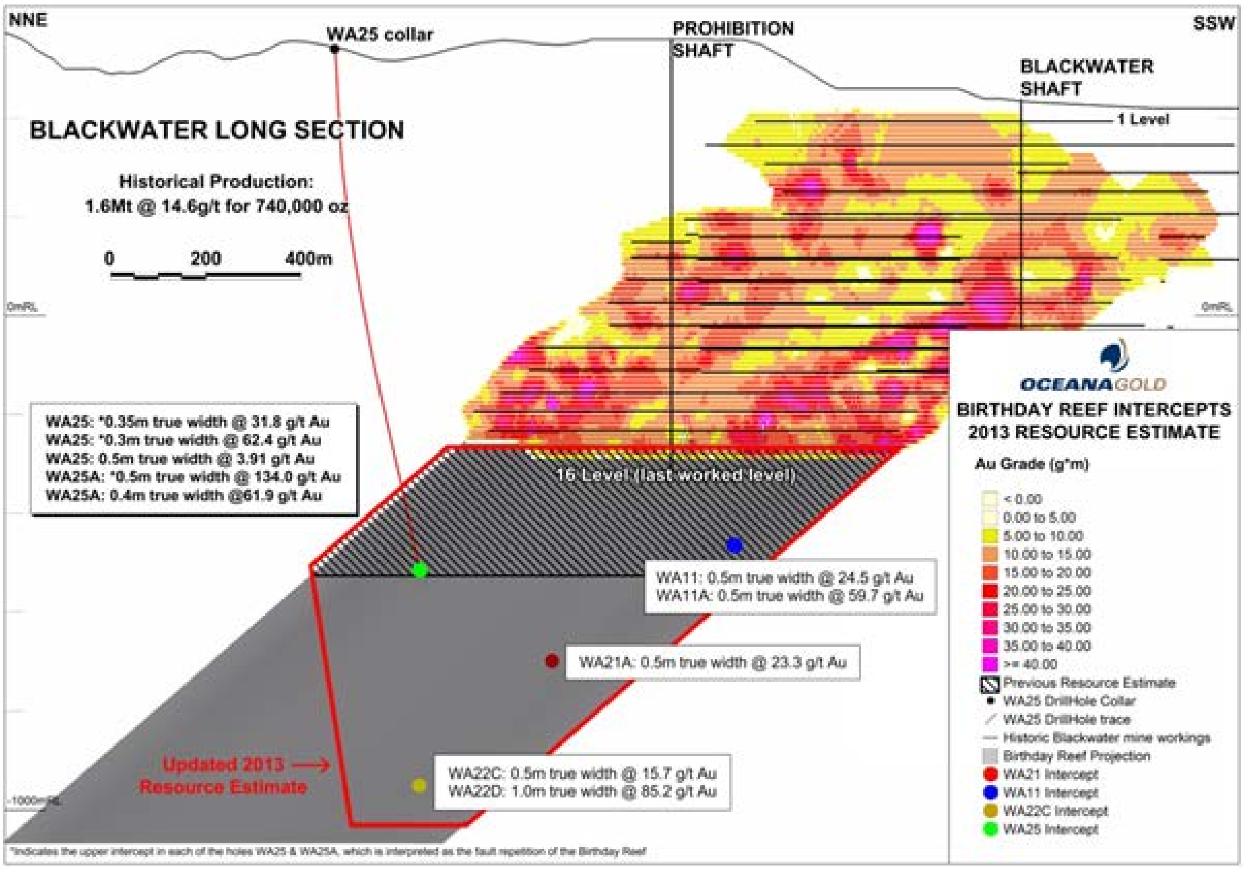
6.7 Blackwater Deposit Geology

The Blackwater Mine is located 37 km south (by road) of Reefton at the abandoned township of Waiuta.

The Blackwater Mine was the largest producer in the Reefton Goldfield with a production of 740,400oz Au from 1.58Mt of ore at a recovered grade of 14.6g/t. The mine was in production from 1906 until a main shaft collapse forced its closure in 1951. All the gold production from the Blackwater mine came from the Birthday Reef, a single quartz vein that was mined continually for over 1,000m in strike and over 710m depth. The reef ranged in thickness from 0.2 to 2.5m and averaged 0.64m, over the life of the mine, while the average in-situ grade was 22g/t Au.

Figure 6.9 presents a long sectional view with gold gram-metre contours of the historical face samples, recent exploration drill hole intercepts, and the updated resource limits.

Figure 6.9: Blackwater Deposit Long Section



Approximately 70-80% of the gold is present as native gold, with the remainder occurring as refractory gold locked in the lattice of pyrite and arsenopyrite. Sulphides comprise up to 1% by volume of the vein and besides pyrite and arsenopyrite, include minor stibnite and rare chalcopyrite and molybdenite. Multi element analysis of core from diamond drill hole WA11 returned a value of 0.09% sulphur confirming that only a very small proportion of gold is in sulphides. Ribbon-banded textures with bands of quartz separated by thin sericite-chlorite laminae are interpreted to demonstrate that the vein formed by incremental growth by repeated fracturing and quartz vein deposition. The sericite-chlorite laminae are the fracturing residues of slivers of wall rock peeled off during the ongoing deformation and vein growth. Minor calcite also occurs within the reef.

The hangingwall portion of the vein is often brecciated and fissile while the footwall is of harder more massive quartz. This suggests ongoing movement along the hangingwall contact perhaps both contemporaneously with the mineralizing event and post-mineralization. Two types of quartz are described, a massive milky variety with occasional coarse visible gold and no sulphides, and a darker blue-grey laminated quartz with laminae and ribbons of country rock, high gold grades and abundant sulphides.

The surrounding greywacke and argillite are weakly altered and mineralized, with only a very narrow aureole of disseminated sulphide minerals occurring in the sediments. This aureole comprises weak bleaching and finely disseminated pyrite and coarser-grained arsenopyrite, within a groundmass of quartz, chlorite, sericite and carbonate, which extends for up to 1m into the hangingwall and 2m into the footwall. In addition to the alteration, for several metres individual argillite beds may be structurally dislocated and display shearing and brecciation.

Ore at the Blackwater Mine was produced from five main ore shoots in a narrow quartz vein (the Birthday Reef), which is some 1,000m in horizontal length and, based on the WA22 intersection, extends to at least 1350m depth below the surface. From south to north the five ore blocks (and their approximate horizontal lengths) were South Block (122m), No.2 Block (244m), No.3 Block (427m), North Block (92m) and Prohibition Block (uncertain length due to lack of data). This suggests an ore length of over 885m, but as the Southern, North and Prohibition Blocks were not always mined, an actual average horizontal ore (based on the historical diluted cut-off grade of 8-10g/t) length of about 850m per level in 1,050m of strike (81%) has been estimated.

The Birthday Reef ranged in thickness from 0.2 to 2.5m and averaged (arithmetic) 0.65m, over the life of the mine. The reef trended at 030°, dipped at 75° west and pitched at about 40° to the north. Sixteen levels were developed in the mine with the seventeenth level just commenced at the time of mine closure. The 16 Level is at 831m depth in the Prohibition Shaft, although as this shaft is situated on a hilltop the 16 Level, is only about 710m below the surface at the Waiuta Township.

While the average (arithmetic) in-situ grade was 21.9g/t Au, it was known to have varied from year to year within the range 16.9-27.0g/t Au.

7 DEPOSIT TYPES

7.1 Orogenic Gold Deposits

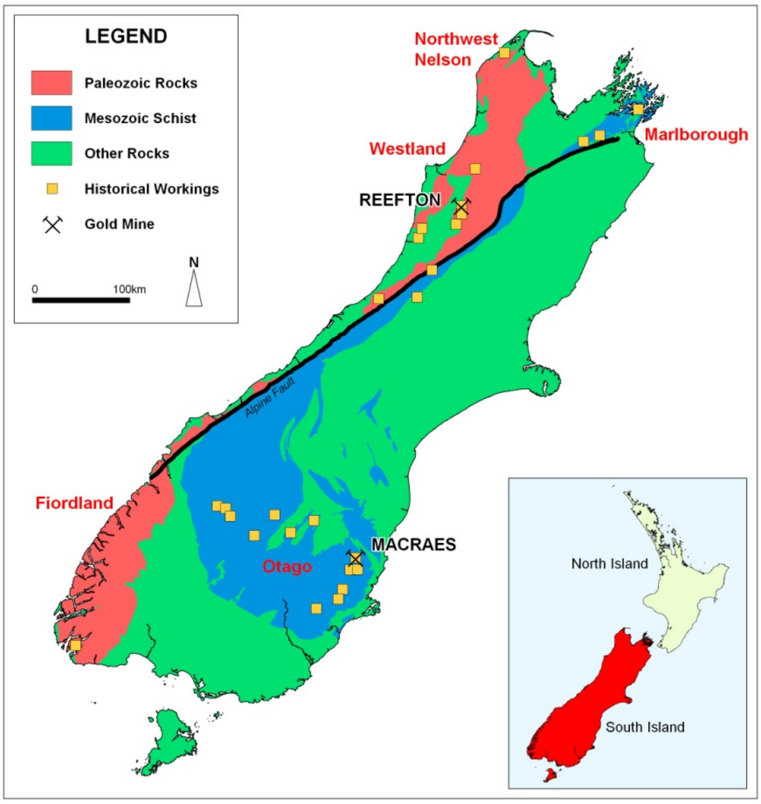
The mineral deposit types at Reefton are considered to be representative of higher-level, orogenic-style gold deposits (Christie et al., 2006; Goldfarb et al., 2005) that occur within Palaeozoic rocks west of the Alpine Fault on the South Island (Figure 7.1). This style of deposit is recognized to be broadly synchronous with deformation, metamorphism, and magamatism during lithospheric-scale continental-margin orogeny (Groves et al., 1998). Most orogenic gold deposits like Reefton occur in greenschist facies rocks. Orogenic deposits typically formed on retrograde portions of pressure-temperature time paths during the last increments of crustal shortening and thus postdate regional metamorphism of the host rocks (Powell et al., 1991 and references therein). Orogenic deposits can be subdivided into epizonal, mesozonal, and hypozonal based on pressure-temperature conditions of ore formation. The Reefton deposits falls into the epizonal category with mineralization having occurred under brittle deformation conditions.

In orogenic deposits the association between gold and greenschist grade rocks is commonly thought to be related to: 1) the large fluid volume created during the amphibolite and/or greenschist transition and released into the greenschist zone; 2) the structurally favourable brittle-ductile zone that lies just above this transition; 3) fluid focusing and phase separation that are most likely to occur as fluids ascend into the greenschist pressure-temperature regime and/or gold solubility shows a sharp drop under greenschist facies temperatures (Phillips, 1991). Fluid migration along fault-fracture networks was likely to be driven by episodes of major pressure fluctuations during seismic events.

The higher-level orogenic-style gold mineralization at Reefton is interpreted to lie along a locally complex north-south trending structural corridor within and between the thermal aureoles of two oxidised granites. Based on the orogenic-style deposit model, the gold systems are likely to be depth extensive, with deposits occurring as small specific shoots in favourable structural settings.

The goldfield shows a strong bimodal distribution of mineralization, dominated by a large number of small, high-grade quartz vein-associated gold deposits; and apparently fewer large, disseminated sulphide-associated gold deposits. A model has been proposed whereby the central free-gold bearing vein was the main conduit for oxidised fluids and gold was deposited by phase separation or mixing of this oxidised fluid with a reduced country-rock fluid. The refractory gold halo was deposited by mixing of oxidised and reduced fluids.

Figure 7.1: Orogenic gold deposits in New Zealand



8 MINERALIZATION

8.1 Introduction

Gold mineralization in the Reefton Goldfield is hosted in transgressive shear zones within the weakly metamorphosed turbidites. These are typical “slate-belt” type gold deposits, similar in many respects to mineralization at Bendigo and Ballarat in Victoria, Nova Scotia in Canada (Christie et al., 1999 and 2000), Beaconsfield in Tasmania, Gympie in Queensland and the Mother Lode deposits of California.

In the Reefton Goldfield, mineralization is interpreted to have occurred towards the end of the main folding and low-grade metamorphic event. The gold mineralization is structurally controlled (Leach et al., 1997; Rattenbury et al., 2005) in transgressive, steeply dipping, north to north-northeast trending shear zones within the turbidites. These mineralized shear zones clearly cut across the hinges of the earlier folds.

Most of the gold-bearing lodes in the Goldfield, including all of the large deposits, are arranged along a linear belt which runs north-south through the Greenland Group sequence. This suggests the presence of a deep-seated, major structure that has tapped a large reservoir of mineralizing fluid. The low salinity nature of the fluid suggests that the mineralization may have been derived from metamorphic devolatilisation of the sedimentary pile, although the possibility of some igneous component to the source fluids cannot be discounted.

There are two dominant styles of gold mineralization in the Reefton Goldfield. The first style, and historically most important, is native gold with minor sulphides in quartz veins (quarz lodes); while the second style comprises refractory gold within sulphides in sheared sediments and clay alteration (pug) zones. Where both styles occur together, quartz shoots exploited by the early miners occur within a tectonic melange of sulphidic clay, brecciated quartz and tectonised Greenland Group greywackes.

The similar mineralogy of the lodes and wall rock alteration in the two styles suggests that the gold-pyrite-arsenopyrite-stibnite mineralization was deposited from the same hydrothermal fluids as the quartz lode mineralisation, which formed through repeated vein opening and deposition. Most of the gold deposits host both mineralization styles, with the varying proportions probably depending on the local structure, lithology and orientation of the deposit.

8.2 Quartz Lodes

Historic mining in the Reefton Goldfield primarily exploited the free gold-bearing quartz shoots and pods that exhibit a strong component of brittle structural control and are often contained within a sub-vertical shear zone or fault structure developed along the axial plane of a host rock fold. These shoots are typically tabular with regular parallel-sided geometry. Spaced, sub-parallel shoots along a continuous structure are common. Alteration halos associated with the shoots are known to be narrow (<10’s of metres, Christie and Brathwaite, 2003).

Examination of the less deformed quartz lodes in the Reefton area (i.e. Blackwater) has shown that the quartz typically contains well developed ribbon-banded textures with bands of quartz separated by thin sericite-chlorite laminae. This texture is interpreted to demonstrate that the veins formed by incremental growth of the lodes by repeated fracturing and quartz vein deposition. The sericite-chlorite laminae are the fracturing residues of slivers of wall rock peeled off during the ongoing deformation and vein growth.

Individual shoot dimensions are typically small, steeply dipping and narrow (50 – 200m along strike, 100 – 400m down-dip and approximately 1m wide) but are high-grade (average ~12 g/t Au). In contrast, the Birthday Reef at the Blackwater gold mine is a 1,000m long by >800m deep, by 0.7m thick, laminated quartz vein, which is surrounded by a narrow 1-3m wide, sulphide-bearing shear zone.

These deposits are interpreted to have formed in reverse fault shear zones that are parallel or sub-parallel to the regional fold axes, cleavage and bedding. The attitude of these deposits has not always allowed the formation of significant shear zones, dilatant zones or fluid channelways.

The limited aerial extent means that these deposits are unlikely to deliver opportunities for large open pit targets. However, they are depth extensive and may be amenable to underground mining. Note that the skill of historical miners in discovery and exploiting these shoots was very high and potential for further discovery of near surface high-grade resources is limited, except in areas mantled by younger cover where surface prospecting has been ineffective.

8.3 Sulphide-Associated Mineralization

Sulphide-associated mineralization, such as at Globe Progress, is interpreted to have formed within longer-lived shear and cataclastic zones, which could have acted as effective fluid conduits and mixing zones. These shear zones appear to have two distinct mineralizing events: an early phase of brittle faulting with associated quartz veining and deposition of free gold; followed by brecciation and deposition of sulphides and gold during subsequent deformation.

Sulphide mineralization consequently seems to form an anastamosing halo around the remnant quartz shoots, with typically indistinct and gradational margins with the surrounding host rock. The shear zones are developed at high angles to the host rock fold structures, in structural orientations that apparently contributed to polycyclic mineralization, alteration and deformation events.

The behaviour of the different minerals under deformation, and in the presence of a fluid phase, has led to recrystallisation and localised remobilisation of the more soluable and easily deformed minerals. Vein breccias show well developed cataclastic textures in the more brittle minerals such as quartz, arsenopyrite and pyrite. The more plastic minerals, carbonate, sericite, illite, chlorite and stibnite, tending to fill fractures and low strain zones. The illitic clay/arsenopyrite/pyrite pug is interpreted to result from the deformation of argillaceous intra-vein laminae or lenses of wall rock at the same time as much of the brecciation of the brittle quartz bands.

The Globe Progress Shear is characterised by a 1m to 15m wide mineralized zone consisting of variable proportions of cataclasite (pug), quartz vein, crushed/sheared quartz vein and crushed/sheared greywacke. The mineralized pug, typically plastic and dark grey to black, contains up to 10% or more of fine grained arsenopyrite and typically surrounds sub-rounded quartz and country rock clasts. The General Gordon Shear to the south is characterised by a 1m to 5m wide mineralized zone consisting predominantly of cataclasite, with minor quartz vein, crushed/sheared quartz vein and crushed/sheared greywacke.

The surface expression of the Globe Progress mineralization extends over at least 1,200m. Drilling has shown it to be significantly mineralized over some 800m, but grade and width are variable. The Globe Progress Shear exhibits a 90° swing in strike from near concordance with the regional structure in the south, to being highly discordant in the region of the Progress workings. In zones within the deposit where the bedding shear angle is generally >70º, there is a corresponding higher grade area within the resource model (Cox, 2005). Where the shear cuts the bedding at a high angle, it is thicker and better mineralized. Conversely, the mineralization zone is thinner and more discrete where the shear is sub parallel to bedding.

In the dip direction, the Globe Progress Shear is steeply-dipping near the surface but quite shallow in dip in the lower levels of the mine.

Wall rock alteration extends beyond the mineralized shear zones and includes carbonate flooding, arsenopyrite, pyrite and illite alteration. The width and degree of wallrock alteration is larger (up to 200m) than for the quartz lode deposits due to the more intense and long-lived deformation of the structures.

8.4 Mineralogy

Mineralogical studies indicate that much of the gold mineralization at the Globe Progress deposit is refractory, with the gold occurring primarily as sub microscopic inclusions in fine pyrite and arsenopyrite grains. Both pyrite and arsenopyrite occur as fine-grained, disseminated euhedral crystals or crystal aggregates, in pug, quartz veins or wall rocks. Visible gold has rarely been observed in quartz veins from the Globe Progress deposit.

Stibnite is found in varied concentrations from all the prospects at the Globe Project area. Fine-grained stibnite typically infills fractures and voids in crushed, brecciated or fractured quartz, country rock or earlier sulphide grains. Thus, it may resemble a stockwork and was deposited late in the paragenetic sequence. Antimony content shows poor correlation with either gold or arsenic.

Trace concentrations of zinc, lead, copper and silver occur in conjunction with the principal ore minerals. Nowhere do these elements approach economic concentrations.

8.5 Mineralization Types

A variety of mineralization types are found in the Globe Progress Shear, all of which are extensively deformed. Petrology studies (Cooper and Craw, 1994) show evidence of several episodes of mineral deposition and remobilisation. Mineralization types identified (Barry, 1994) include quartz, quartz breccia, pug breccia, host rock breccia and mineralized host rock. These mineralization types are described in the sections below.

8.5.1 Quartz (QTZ)

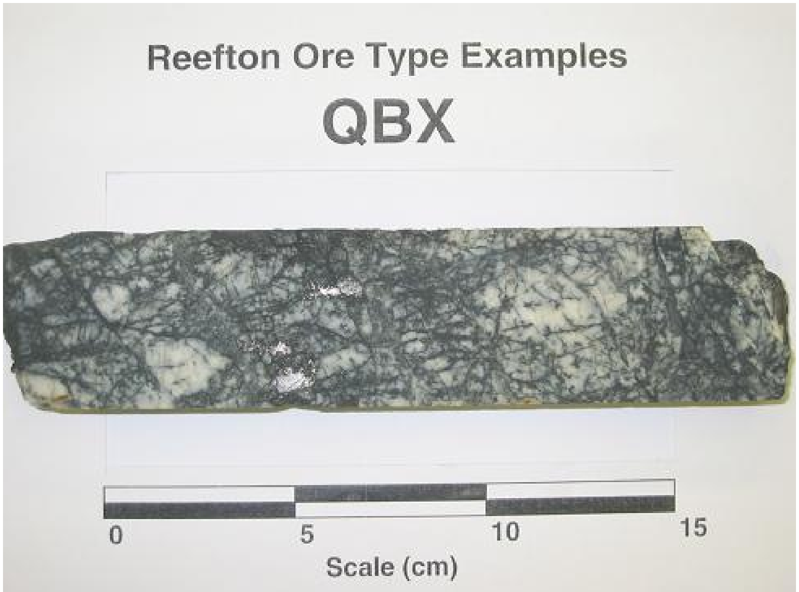
Previous mining has largely extracted this type. The quartz is white to dark grey in colour (Figure 8.1). It is sometimes massive, occasionally banded and invariably fractured. Often, the defects are annealed with thin films of sulphide, clay or stibnite coating the original discontinuities. Fine-grained pyrite and arsenopyrite occur frequently, while stibnite is less common.

Figure 8.1: Example of a Quartz Mineralization Type

8.5.2 Quartz Breccia (QBX)

This mineralization type consists of medium grey-greyish black, quartz dominated breccia (Figure 8.2). The angular to sub-round clasts range from coarse sand to cobble dimensions. Sheared host rock clasts of argillite and greywacke are present in lesser amounts. Fine-grained pyrite, arsenopyrite and stibnite occur commonly throughout.

Figure 8.2: Example of a Quartz Breccia Mineralization Type



8.5.3 Pug Breccia (PBX)

Pug breccia comprises medium grey to dark grey, soft, cohesive pug containing sheared and stretched clasts of argillite and greywacke (Figure 8.3). Quartz clasts are of secondary importance. Variable amounts of pyrite and arsenopyrite are often present and very thin sulphide veins are not uncommon. Where argillite or greywacke clasts predominate, the lithotype has been identified as an argillite or greywacke breccia.

Figure 8.3: Example of a Pug Breccia Mineralization Type

8.5.4 Host Rock Breccia (HBX)

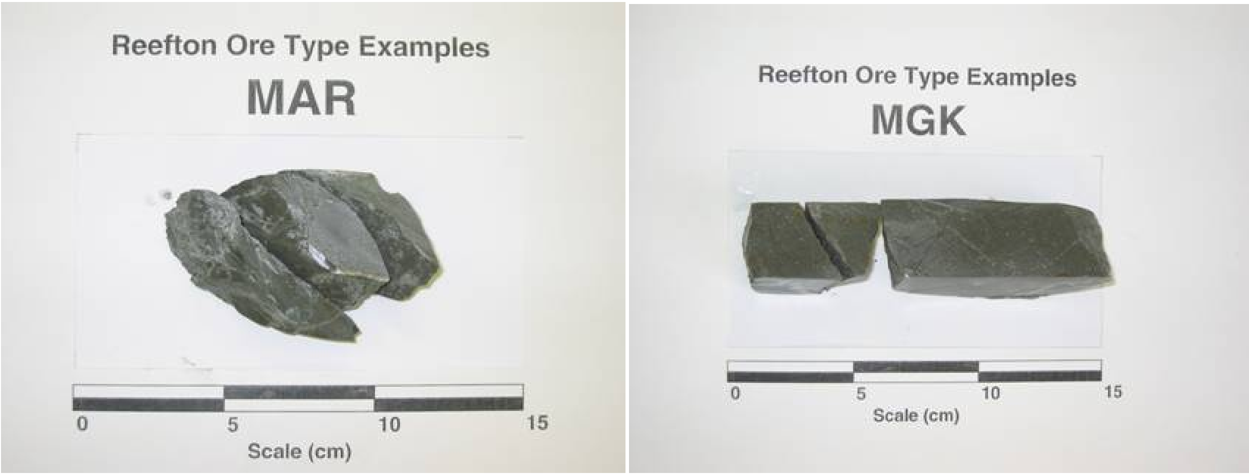
Sheared and brecciated argillites and greywackes in the footwall and hangingwall of the shears are assigned to this mineralization type (Figure 8.4). Disseminated pyrite-arsenopyrite mineralization is characteristic, together with very thin veins of massive sulphide. Blasting prior to mining makes visual identification of this ore type problematic in the field and it is best identified in drill core. This ore type is almost never refered to by personal supervising ore mining (Production Geologist and Mine Technicians)

Figure 8.4: Example of a Host Rock Breccia Mineralization Type

8.5.5 Mineralized Greywacke (MGK), Mineralized Argillite (MAR)

Brecciated host rock within and adjacent to the shear zones is often gradational into a relatively unbrecciated, undeformed argillite or greywacke that hosts disseminated sulphide mineralization. This mineralization type is visually distinguished from unmineralized host rock by its 2-10% sulphide content (Figure 8.5).

Figure 8.5: Example of Mineralized Argillite (MAR) and Mineralized Greywacke (MGK)



8.6 Geochemistry

Studies of the geochemical profiles and results of core analyses show that there is generally an abrupt decrease in gold and arsenic content at the hangingwall and footwall contacts of the mineralized shears. Although there is some MGK/MAR above the shear zone, most disseminated mineralization occurs adjacent to the Globe Progress Shear (Yeo, 2005). Economic gold mineralization is often present in the greywacke rafts between diverging and converging shears.

Lithological and geochemical profiles of some mineralization zone intersections indicate that gold and arsenic abundance is a function of mineralization type. There is a strong correlation between the distribution of gold and arsenic in some of the lithological groups. When gold and arsenic assays were segregated into lithological groups, it was found that the quartz breccia mineralization type contained, on average, the highest gold and arsenic values.

9 EXPLORATION

9.1 Introduction

Since acquisition of the Reefton tenements from CRAE, exploration conducted by Oceana initially focused on the near mine environment proving up and increasing the Globe Progress resource. Recently exploration moved away from the near mine targeting in and around the numerous historical mines, successfully intercepting significant mineralisation ~680 m vertically below the last worked level of the Blackwater Mine.

Exploration and development activities were routinely documented and reported to NZPAM.

9.2 Geophysical Surveys

9.2.1 Airborne Geophysical Surveys

As a trial method, airborne magnetics and electromagnetics (DIGHEM[v]) were flown over the Globe Progress and General Gordon Project areas by Geoterrex Pty Ltd (1996). The survey comprised a total of 110 line km with 50m line-spacing and a nominal sensor height of 30m.

Two curvilinear EM/vertical gradient magnetic anomalies were defined; one coincident with the Globe Progress and another to the south. In addition, several lineaments were identified which tend to correlate with the drainage patterns of the area.

A geophysical consultancy, Southern Geophysics was also commissioned to reprocess and interpret the CRAE flown aeromagnetic data (Craven, 1996a).

9.2.2 Ground Geophysical Surveys

Orientation ground magnetic surveys were conducted by Groundsearch EES Limited over Devils Creek at Globe Progress (Wood, 1995a) and a portion of the Murray Creek workings (Wood, 1995b). The method was designed to discriminate if magnetic contrasts could be observed between pug shear zones. In essence, raw magnetic data did not differentiate the shear trend, although by extensive processing of the data, some expression was visible.

A vector gradient resistivity survey was completed in late 1994 over the Waiuta area by the Institute of Geological and Nuclear Sciences (IGNS) as a method to define the quartz lodes of the area (Knight, 1995). This technique was promoted as a method able to penetrate through thick surficial cover but apparently had practical limitations in the Reefton environment.

Downhole logging was tested in several holes as a supplementary geophysical tool to the resistivity at Waiuta. The IGNS logging of the Waiuta drill holes did demonstrate that shear zones within the Greenland Group can have significantly lower resistivities than the unsheared country rock. The measured contrast (approximately 130 Ωm for the shear compared with 800 Ωm for the country rock) is not large. Craven (1996b) suggests that the normal variability within the surficial material and perhaps the Greenland Group could produce similar results.

Early in 2011, induced polarisation (IP) and ground magnetometer surveys were carried out over the Souvenir deposit prior to the deposit being mined (Jenke, 2011). The survey results showed a variable signature which indicates that the mineralisation as deliminated by the drilling does not have definitive, strong chargeability or resisitivity signature at the electrode spacing used in the surveys.

9.3 Geochemical Sampling

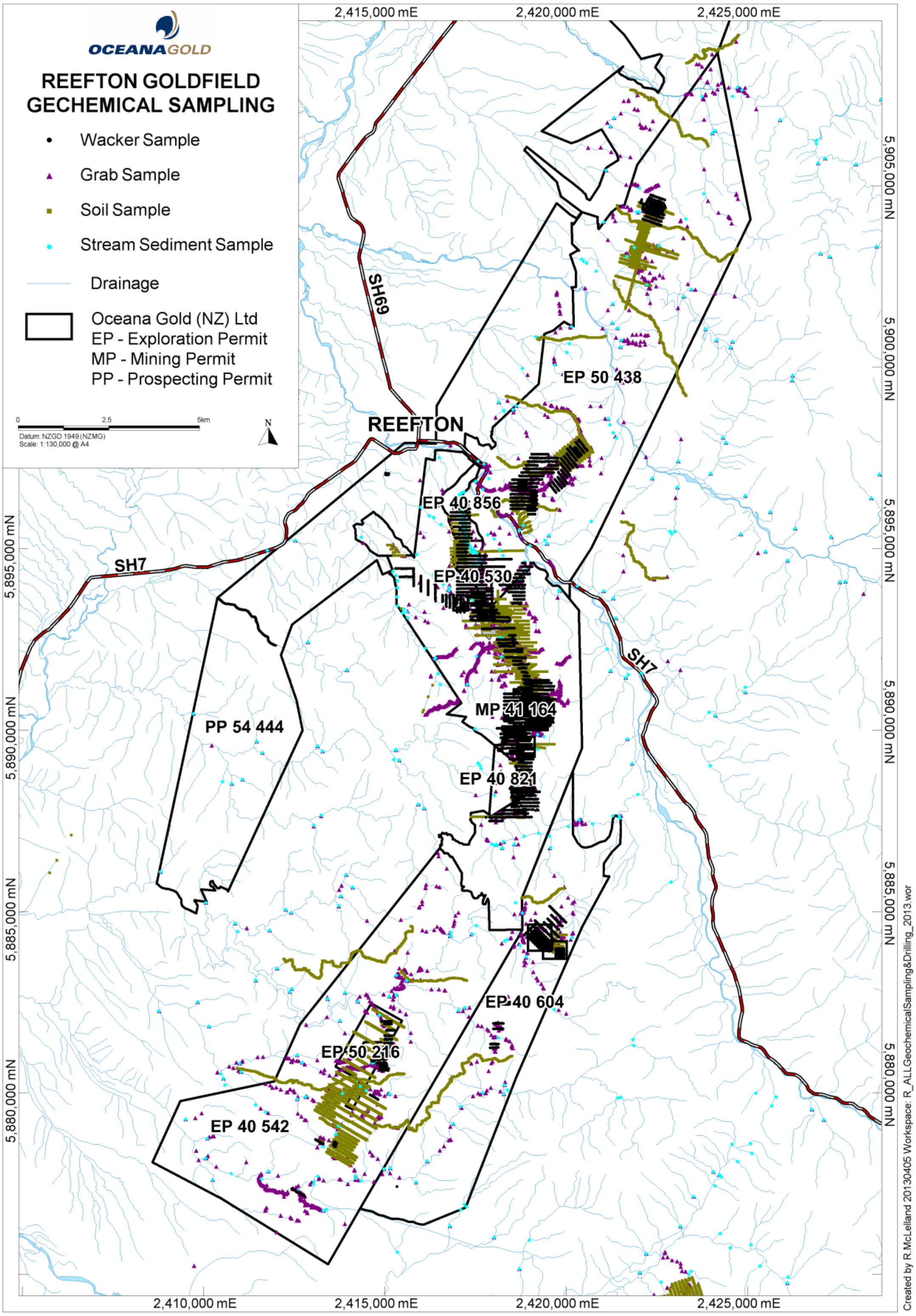
9.3.1 Stream Sediment Sampling

Little advancement on the stream sediment coverage of CRAE has been completed. However, some prospects (i.e. Auld Creek, north of Globe Progress) have had closer sample density coverage to determine the spatial resolution of the technique.

9.3.2 Soil/Wacker Sampling

Wacker (modified jack hammer) sampling through the unmineralized overburden (either fluvioglacial or thick colluvial cover) to collect a sample at the bedrock/soil interface has been extensively utilised. The method has proved effective, tightly constraining geochemical anomalies minimalising slope processes (Magner et al., 1997). Within the wacker sampling, arsenic and to a lesser extent antimony, have been effective pathfinder elements (Figure 9.1).

Figure 9.1: Reefton Goldfield Geochemical Sample Locations



9.4 Geological Mapping

Prior to 2009 mapping over the goldfield had been completed on a prospect basis with high density mapping (i.e. 1:1000 scale) on several key prospects (Rattenbury 1994 & 1995; Stewart, 1995 & 1996; Maw, 2000 and 2001). Systematic regional mapping has been completed by Gage (1948) and to a lesser extent at Waiuta, as part of stream traversing of the goldfield (Cox, 2000; Rattenbury and Stewart, 2000). Since 2009 OGL geologist with the assistance of external contractors have re-mapped Oceana's entire tenement package at a regional scale and completed prospect scale mapping (i.e. 1:1000 scale) around many of the historical mines e.g. Blackwater, Big River, Capleston.

9.5 Trenching

Trenches have been mapped and rock chip sampled with samples generally assayed for gold, arsenic, stibnite and periodically for an additional range of elements. In the region, due to the thickness of colluvial cover and restrictions placed by the Department of Conservation, trenching has only been utilised on a limited basis. Furthermore, this often necessitates the construction of the trenches by manual methods rather than mechanical excavators. Where trenching has been used, it has proven to be an effective exploration tool for mapping and geochemical sampling.

In areas that are restrictive to trenching, wacker sampling has been utilised as a surrogate for a point geochemical and geological sample. To date it has been a very useful method.

9.6 Remote Sensing

Aerial photography was flown over the Globe Progress deposit in late 1994. Photography contractor GeoSmart obtained high resolution color photography and digital ortho-imagery over the wider Reefton project area in 2005. Periodically high resolution color photography is obtained over the Globe Mine.

9.7 Database and GIS

Compilation of a geological database was commenced by Taylor (1995) using *Techbase* software. Oceana compiled and validated a geoscientific *acQuire* database in 2005, incorporating historical and current exploration data. Interrogation and display of these data is done using the *MapInfo* geographic information system (GIS). Available datasets comprise (but are not necessarily limited to):

- survey control
- topographic survey data, contours and digital elevation model (DEM)
- aerial photography images
- historical mine workings
- archaeology and environmental surveys
- drillhole database
- structural geology measurements
- geological mapping data, outcrop and interpretation
- geochemical survey data and interpretation
- geophysical survey data and interpretation
- access and infrastructure
- land use
- hydrography
- mineral permit data

9.8 Exploration statement

Exploration surveys and investigations of the Reefton area detailed above have been carried out by qualified Oceana technical staff, except where a contractor or consultant has been identified.

10 DRILLING

10.1 Summary

During the late 1930's the DSIR drilled two vertical conventionally-rigged diamond drill holes to test for the western extensions of the faulted Globe Progress deposit. These two holes, drilled to depths of: 1,165' and approximately 1,500' constitute the first drill holes in the goldfield. The mineralization extensions were not located.

In the late 1970's, Samantha Exploration Limited and followed by CRA Exploration Limited in the early 1980's, attempted to define the strike extensions of the Blackwater Reef. In 1983 CRA Exploration drilled five holes into the old Globe Progress Underground Mine and defined significant widths of low-grade mineralization peripheral to the mined quartz shoots.

From 1986 to 1990, CRAE's drilling programmes were chiefly centred on defining the Globe Progress resource with several phases of diamond drilling. Small scale drilling operations on other prospects, generally with a maximum of three holes, was also completed.

Oceana's drilling is summarized in the following sections.

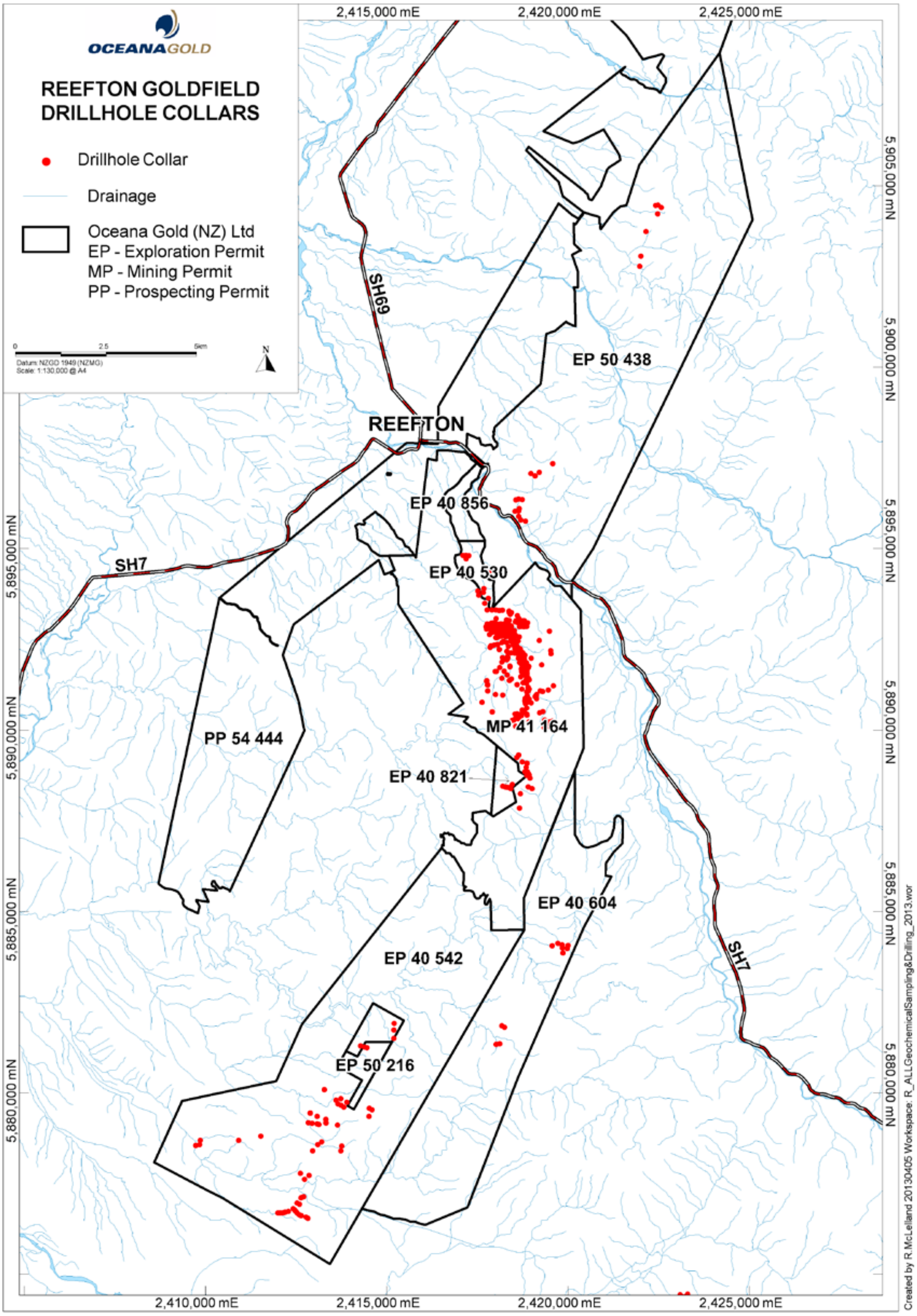
This uneven density of drilling throughout the goldfield is reflected in Table 10.1.1.

Table 10.1.1: Breakdown of Drilling by Prospect (Total to 31 March 2013)

Prospect/ Tenement	Drill Type				
	RC Perc. Holes	RC Perc. (m)	Diamond Holes	Diamond (m)	Total metres
Globe Progress – General Gordon	219	17879	282	40712	58591
Empress	48	4338	9	894	5232
Souvenir	32	3210	3	262	3472
Supreme	0	0	34	4463	4463
Globe Progress (MP 41 164) – Exploration Drilling	0	0	46	5862	5862
Blackwater Deeps	0	0	25	10474	10474
Blackwater (EP 40 542)	20	2503	26	4392	6895
Big River (EP 40 604)	0	0	26	5033	5033
Bullswool (EP 50 216)	0	0	4	544	544
Krantz Creek (EP 40 705)	0	0	3	508	508
Merrijigs (EP 40 821)	6	499	0	0	499
Auld Creek (EP 40 530)	0	0	13	1298	1298
Capleston (EP 50 438)	0	0	24	3232	3232
Alexander (Old EP40 334)	0	0	7	481	481
Total Drilling	**325**	**28,429**	**502**	**78,155**	**106,584**

Areas within the Reefton Goldfield mineralized corridor which have been drilled are shown in Figure 10.1.

Figure 10.1: Reefton Goldfield Drill Hole Locations



Because of environmental and access restrictions, and the steepness and inaccessibility of the terrain, almost all of the drilling operations have been helicopter supported. As a consequence, diamond drilling forms relatively large component of the total drilling. Other methods of drilling eg reverse circulation (RC) percussion have only been used in areas with good track access.

10.2 CRAE Exploration 1981 to 1991

10.2.1 1983 Diamond Drilling

The first CRAE drilling programme took place in 1983 and comprised 5 diamond drill holes (DD83GB01-GB05) for a total of 593.5m, an average of 119m per hole. This work was essentially reconnaissance drilling of the deposit at 200m strike intervals to about 60m depth. The drilling discovered significant widths of low grade halo material around the previously mined lodes. These results were considered encouraging and were followed up with further drilling programmes (Rosengren, 1984).

10.2.2 1986 Diamond Drilling

In 1986, the second CRAE drilling programme comprised 6 diamond drill holes (DD86GB06-GB11) for a total of 1,031.1m, averaging 172m per hole. This work extended and infilled the area previously drilled (Lew, 1987).

10.2.3 1987 Diamond Drilling

In 1987, CRAE completed a total of 11 diamond drill holes (DD87GB12-GB22) on the Globe Progress deposit for a total of 2,300.9m, an average of 209m per hole. This work closed the drill spacing over the deposit down to 100m x 100m to 350mRL, an average of 150m below the surface (Lew, 1987). An Indicated Mineral Resource estimate was then compiled using the 22 drill holes completed at that time.

10.2.4 1989 Diamond Drilling

In the period June 1989 to January 1990, a total of 17 diamond drill holes (DD89GB23-GB39) totalling 2,790.7m were completed by CRAE at Globe Progress. This work infilled the previous programmes and essentially closed the drill hole spacing down to a nominal 50m x 100m spacing down to a depth of 200m in the plane of the lode (Hartshorn, 1990).

10.3 Oceana 1991 to 2006

On securing title to the Globe Progress deposit, Oceana commenced metallurgical test work, mine planning, environmental studies and secured the necessary consents for a mining operation. Further infill diamond drilling also commenced to better delineate the gold mineralization.

10.3.1 1992 Diamond Drilling

The first Oceana drilling was completed between the 24/4/1992 and 12/9/1992 and consisted of 47 diamond drill holes totalling 6,589.1m (GB40-GB86), for an average length of 140m. This total includes 1,325.8m of RC percussion and tricone drilling and 5,263.3m of PQ, HQ and NQ core drilling (by far the majority being HQ3). The drilling infilled the existing CRAE drilling down to a 50m x 50m spacing in the upper 150m of the deposit (Hughes, 1992).

Five drilling rigs were used on this programme including a skid-mounted Longyear 38 and Shramm 25 (for pre-collars) from Doug Hood of Ashburton; a skid-mounted Edeco 40 and toyota-mounted Gemco HP7 from Alton Drilling of Westport and a second skid-mounted Longyear 38 from Radial Drilling of Waihi.

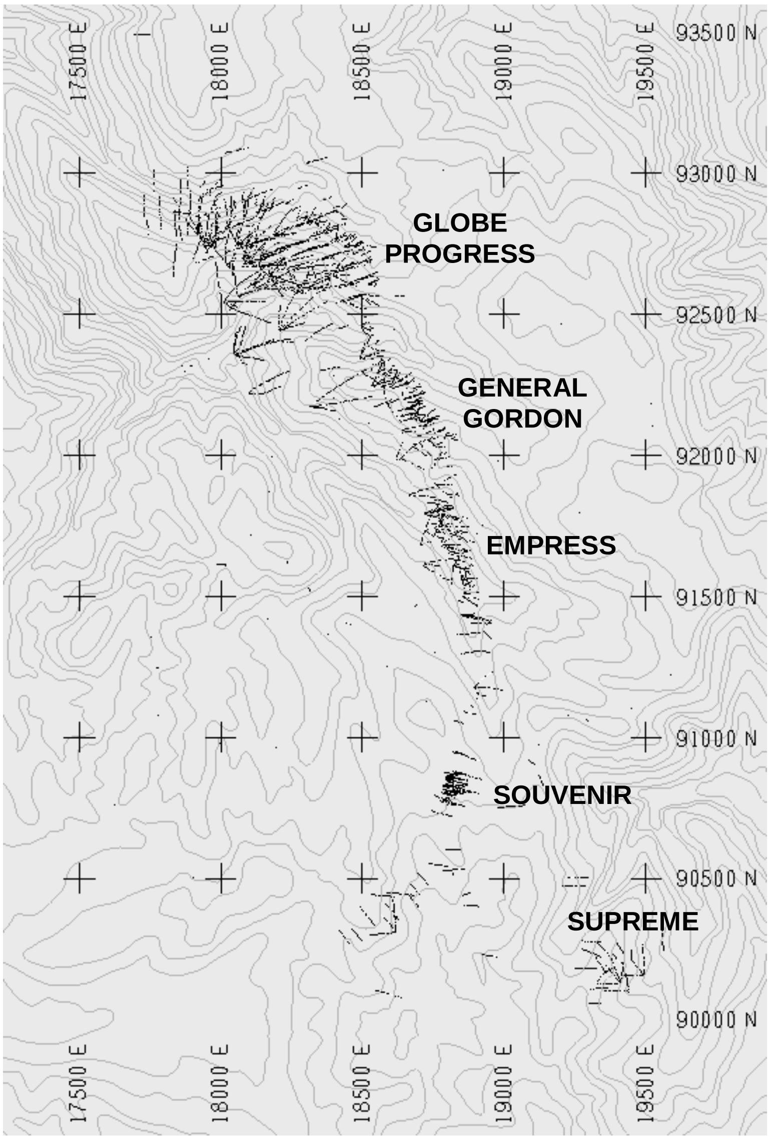
A total of 49 bulk density determinations were also completed on core from this drilling programme.

10.3.2 1992 Engineering Drilling

A programme of 27 drill holes totalling 965.2m of cored and non-cored drilling was completed between 29/9/1992 and 6/12/1992 (Barrell, 1992). This work concentrated on tailings and waste dump locations in Fossickers Creek (20 holes, FE1A-FE12), Union Creek South (3 holes, GE2, 3, 5) and sites around the old Globe mine (4 holes, GE1A, 1B, 4A, 4B). This drilling allowed determination of rock mass characteristics and permeabilities, and piezometer installation into the drill holes for long term studies of water-level and water chemistry sampling.

Alton Drilling of Westport provided a skid-mounted Gemco HP7 and skid-mounted Mindrill F40 (both helicopter supported) for this diamond drilling. The core was all logged to engineering standards, photographed and any potentially mineralized zones sampled and assayed.

Figure 10.2: Globe Progress and General Gordon Drilling Plan



10.3.3 1993/1994 Diamond Drilling (Globe Progress "Deeps" Drilling)

Between 4/11/1993 and 8/2/1994 Oceana completed a second diamond drilling programme to extend the drill pattern at depth below the previous drilling (Barry, 1994).

A total of 13 diamond drill holes were completed along the strike of the deposit at approximately 250m depth, for a total of 3,273m of drilling (GB87-GB90 and GB90A-GB98), average length 252m. A total of 2,848.9m of this drilling was in core and 424.1m open hole rotary drilling.

Alton Drilling of Westport supplied four drill rigs for this programme including a truck-mounted Longyear 44, skid-mounted Boyles 17A, skid-mounted Edeco 40 and skid-mounted Acker Mountaineer. Drill holes were routinely down hole surveyed at 50m intervals by the geologist using an Eastman and then Humphry down hole camera.

10.3.4 1993/1994 Reverse Circulation Drilling

A reverse circulation (RC) percussion drilling programme was carried out by Oceana between 4/11/1993 and 30/1/1994. A total of 64 RC percussion drill holes (RC01-RC60 and WT01-WT03 & WT05 (WT04 is the first 10m of RC37) for 2,243m and averaging 37m deep were completed along the surface outline of the lode systems to infill the shallow drilling to 25m spacing (Winward 1994).

Alton drilling of Westport provided a truck-mounted Gemco H22 and track-mounted Gardner Denver RC16 for this work. Inclined holes were down hole surveyed for dip and azimuth at the collar and at total depth. WT01-WT05 were drilled to obtain weathered ore for metallurgical test work on the depth of oxidation.

10.3.5 1993/1994 Engineering Drilling

Between 12/8/1993 and 24/2/1994 a total of 41 drill holes were completed for engineering studies in the regions of the proposed tailings and waste dump areas at the Globe Project (McKenzie, 1994a). These holes were in Devils Creek (29 holes, DE01A-DE20), Fossickers Creek (10 holes, FE02B-FE15) and Union Creek South (2 holes, UE1A, 1B). Consulting firms, Engineering Geology Ltd and Woodward Clyde NZ Ltd, both of Auckland, designed this programme. Woodward Clyde installed piezometers into all of the drill holes.

Where there was more than one drill hole at a site, the deepest was diamond core and the others were completed using the fastest available drill method (usually tricone or stratapak bit, but occasionally core was faster).

Alton Drilling of Westport provided a truck-mounted Longyear 44 drill rig, a Toyota Landcruiser-mounted Gemco HP7 drill rig and a skid-mounted Mindrill F40 drill rig (helicopter supported) for this diamond drilling. The core was all logged to engineering standards, photographed and any potentially mineralized zones sampled and assayed.

10.3.6 1994 Diamond Drilling (RC Percussion Twin Holes)

The third Oceana diamond drilling programme comprised a total of 6 drill holes (GB99-GB104) for a total of 296.2m, which were completed between 16/1/1994 and 17/2/1994 in conjunction with the above RC percussion drilling as twin holes (Winward, 1994). Only GB99-GB101 were completed without core loss due to bad ground conditions or being abandoned.

Alton Drilling of Westport provided a truck-mounted Longyear 44 drill rig and a unimog-mounted Gemco HP13 drill rig for this diamond drilling programme. The diamond holes were down hole surveyed at the collar, at bottom and at 25m intervals, or the mid-point if a short hole.

A total of 50 bulk density determinations were also completed on core from this drilling programme.

10.3.7 1994 Sterilisation Drilling (Devils Creek)

Between 18/2/1994 and 8/4/1994, a total of 12 diamond drill holes were completed in the Devils Creek catchment area in order to sterilise the Devils Creek Tailiings Dam and Waste Stack area (McKenzie, 1994b). The twelve holes (DV01-DV12) totalled 811.8m, comprising 736.8m of HQ core and 74.9m of NQ core were completed. Sections of mineralization from previous engineering drill holes (DE13, 14 & 16) were also sent for assay. The programme outlined scattered small pods of mineralization in the shear zone system between General Gordon and Souvenir. None of these were of significant size.

Alton Drilling of Westport provided a skid-mounted Acker mountaineer, a skid-mounted Gemco HP7 and a unimog-mounted Gemco HP13 drill rig for this diamond drilling. The diamond holes were down hole surveyed at the collar, at total depth and at an intermediate depth if a deeper hole.

10.3.8 1994 Sterilisation Drilling (Cornishtown)

Between 2/5/1994 and 2/6/1994, a total of 19 RC percussion drill holes were completed in the Cornishtown Processing Plant area in order to sterilise the process plant area (McKenzie, 1994c). The nineteen holes (RC61-RC79) totalled 940m of drilling. No significant gold or arsenic values were returned from this drilling.

Alton drilling of Westport provided a truck-mounted Gemco H22 and a track-mounted Gardner Denver RC16 drill rig for this work. All holes were down hole surveyed for dip and azimuth at the collar and at total depth.

10.3.9 1994 Diamond Drilling ("Deeps Extension")

The fourth Oceana diamond drilling programme was completed between 12/5/1994 and 24/6/1994 and comprised a further two deep diamond drill holes for a total of 432m (McKenzie, 1994d). The holes were cored from the surface and aimed to test a high arsenic zone in the Globe hanging wall and provide a better understanding of the Oriental lode at depth.

A truck-mounted Longyear 44 drill rig from Alton Drilling of Westport was used for this work. Down hole surveys were completed at about 40m intervals in the holes.

10.3.10 1994 Engineering Drilling Programme

Between 27/9/1994 and 3/10/1994 a 45^{o} inclined, diamond drill hole 94.6m deep (GE06) was drilled to the west of B Shaft at Globe to test below an outcropping fault zone. The drill hole collected detailed engineering geological rock mass information (McKenzie, 1994e).

Alton Drilling of Westport provided a Unimog-mounted Gemco HP13 rig for this diamond drilling. The diamond hole was down hole surveyed near the collar and near the total depth.

10.3.11 1995 Reverse Circulation Drilling (Globe West)

During the period 17/3/1995 to 12/4/1995, a total of 9 RC percussion drill holes (RC80-88), totalling 978m were drilled to better define the western end of the Globe Progress structure and delimit the extent of the Hangingwall Lode (McKenzie, 1995).

Alton Drilling of Westport supplied a track-mounted Gardner Denver drill rig and a truck-mounted Gemco H22 RC percussion drilling rig. Down hole surveys were completed at both the collar and total depth of the holes using an Eastman camera supplied by Alton Drilling. Surveys for dip only were taken in the RC percussion rods at the bottom and middle of the hole.

10.3.12 1996 Reverse Circulation Drilling Phase 1 (Oriental to Souvenir)

During the period 28/3/1996 to 14/6/1996, a total of 19 RC percussion drill holes (96RCOL1-96RCOL3, 96RCGG01-96RCGG11, 96RCEL01-96RCEL03 and 96RCSL01-96RCSL02), totalling 1,420m were drilled to better define the Oriental, General Gordon, Empress and Souvenir prospects (McLaughlan, 1996).

Alton Drilling of Westport supplied a track-mounted Gardner Denver RC percussion drill rig and skid-mounted Duetz V8 compressor for auxiliary air. Down hole surveys were completed at the collar, an intermediate depth and at total depth, using an Eastman camera supplied by Alton Drilling. Surveys for dip only were taken in the RC percussion rods at the bottom and middle of the hole.

10.3.13 1996 Diamond Drilling (General Gordon Deeps)

Between 20/5/1996 and 27/6/1996, 2 deep diamond drill holes (96DDGG12 and 96DDGG13) were completed for 757.6m of HQ3 drilling, on the General Gordon prospect. These holes aimed to prove that the General Gordon prospect continues at depth and is probably contiguous with the Globe Deeps.

Alton Drilling of Westport supplied a helicopter dismountable CS1000 drilling rig for this programme. Down hole surveys were completed at 50m intervals in these holes.

10.3.14 1996 Reverse Circulation Drilling Phase 2 (Oriental to Souvenir)

During the period 7/11/1996 to 13/12/1996, a total of 24 RC percussion drill holes (96RCOL4-96RCOL6, 96RCGG14, 96RCGG15, 96RCGG15A, 96RCGG16-96RCGG21, 96RCGG21A, 96RCEL04, 96RCSL03-96RCSL09, 96RCSL09A, 96RCSL10, 96RCSL11), totalling 2,624m were drilled. This work infilled the early 1996 RC percussion drilling programme on the Oriental, General Gordon, Empress and Souvenir prospects.

Ausdrill Ltd of Macraes Flat supplied a track-mounted Schramm 25M RC percussion drill rig for this programme. Plastic pipe was placed into all holes immediately after the RC percussion rods were withdrawn to allow down hole camera surveys at 50m intervals at a later date. Unfortunately it was later found that the Macraes Eastman camera was only slightly smaller than the inside diameter of the pipe and hence the camera would not sink to the bottom on deeper holes. Down hole surveys were completed at the collar and at near surface depths down to about 50m, depending on the water table depth.

10.3.15 1997 Diamond Drilling (Souvenir)

Between 26/3/1997 and 28/5/1997, 7 diamond drill holes (97RDD005-97RDD011) were completed for 1,475m of HQ3 drilling, on the Souvenir prospect. These holes followed up on the promising results from the earlier RC percussion drilling.

Ausdrill Ltd of Macraes Flat supplied a skid-mounted Longyear 38 drilling rig for this programme. Down hole surveys were completed at 50m intervals in these holes.

10.3.16 2000 Reverse Circulation Drilling

In the period 16/6/2000 to 16/8/2000, a total of 25 RC percussion drill holes, including 4 at Globe (GBR89-GBR91, GBR94), 13 at General Gordon (GGR023-GGR035) and 8 at the Souvenir prospect (SVR012-SVR019) were completed. A total of 2,102m of drilling was completed in these 25 holes for an average depth of 84m. These holes aimed to improve the geological understanding and extend the known mineralization in the Oriental (southern Globe) to Souvenir prospects (Munro et al., 2000a).

This work was completed using an Ausdrill Ltd of Macraes Flat track-mounted Schramm 685 RC percussion drilling rig and truck-mounted auxiliary booster and compressor pack. Down hole surveys were completed, where possible, every 50m using the GRDM single shot survey camera.

10.3.17 2000 Diamond Drilling

In the period 15/6/2000 to 11/8/2000 a total of 7 diamond drill holes were completed, 6 at Globe (GBD107-GBD112) and 1 at the General Gordon prospect (GGD022). These holes totalled 1309.7m, including 441.7m of HQ3 core and 868m of RC percussion pre-collars (Munro et al., 2000). Hole GBD111 was lost while running in casing and was abandoned as an uncompleted pre-collar.

The Globe holes aimed to test the mineralization at the approximate base of then defined pit and to improve resource status (Munro et al., 2000). The General Gordon hole aimed to test the mineralization adjacent to a previous RC percussion hole that returned exceptional mineralization results. The good results were repeated in the diamond hole.

Ausdrill Limited of Macraes Flat provided a skid-mounted Hydrill 110 diamond drilling rig and ancillary equipment for the diamond drilling, while the Schramm 685 RC percussion drilling rig completed 60m to 180m deep precollars for the six Globe holes. Downhole surveys were completed, where possible, every 25m in diamond portions of the hole and 50m intervals in the pre-collars, using the GRDM single shot survey camera.

10.3.18 2000 Metallurgical Reverse Circulation Drilling

A total of 13 RC percussion holes (GBR92, GBR93, GBR95-GBR105) were completed at Globe to produce a bulk metallurgical sample from the Globe Progress mineralization (Munro et al., 2000). These holes were drilled between 14/8/2000 and 28/8/2000 and totalled 1,202m in depth. A one eighth split was taken from all 1m drill samples for assay and on receipt of the results a bulk sample of nine tonnes of RC percussion chips was composited from the seven eighths residue on site at Reefton. About five tonnes of this was shipped to Ammtec in Perth for flotation test work and then the concentrate sent to Hazen Laboratories in Denver USA. The residual four tonnes of sample is stored at Reefton.

The Ausdrill track-mounted Schramm 685 RC percussion drilling rig, and truck-mounted auxiliary booster and compressor pack completed this work. Downhole surveys were completed, where possible, every 50m using the GRDM single shot survey camera.

10.3.19 2000 Metallurgical Diamond Drilling

Between the 12/8/2000 and 18/8/2000, 1 vertical HQ3 diamond drill hole (GBD113) for a total of 146.2m was completed on the Globe prospect to provide solid rock samples for metallurgical test work (Munro et al., 2000). About 900kg of whole core with mineralization were obtained by this hole, and this was all shipped intact to Ammtec Laboratories in Perth for metallurgical test work.

This was the last hole completed by the Ausdrill Hydrill 110 diamond drilling rig before it left the Reefton area. The hole was down hole surveyed at 25m intervals.

10.3.20 2002 Diamond Drilling (Globe & Empress)

Between the 16/02/2002 to 21/8/2002 12 diamond drill holes were drilled (of which 7 had RC percussion pre-collars) at Globe Progress (GBD114, GBD115, GBD118, GBD123, GBD125- GBD130) and Empress prospects (GGD058, 062). A total of 955.9m of HQ diamond core were drilled (Whetter and Munro, 2002).

The Globe Progress prospect holes were designed to infill large ‘gaps’ in the drill pattern close to the base of the 2000 proposed open cut. The drill programme was designed to improve the geological confidence in the resource estimate and to also improve the tonnes and grade of the Globe resource estimate, which would result in a larger pit.

Two diamond drill holes were also drilled at Empress to improve the understanding of the mineralization and obtain a reliable comparative sample next to particularly good RC percussion intercepts in the ore shoots.

Major Pontil Ltd provided a Schramm 685 drill rig for drilling pre collars, and a skid mounted Hydrill 110 top head drive diamond drilling rig for diamond coring.

10.3.21 2002 Reverse Circulation Drilling (Globe, Cornishtown & Empress)

Between the 16/02/2002 to 21/8/2002 a total of 4,601m in 36 RC percussion holes were drilled (Whetter and Munro, 2002). 3 RC percussion holes drilled in Globe Progress (GBR116, GBR117, GBR124), 4 in Cornishtown (GBR119 - GBR122) and 29 in Empress (GGR036 – GGR057, GGR059 – GGR061, GGR062 – GGR068) prospects.

A pattern of four vertical RC percussion drill holes was completed on the Cornishtown ridge to test for gold in the Tertiary conglomerates that cover the ridge. Drilling on the Empress prospect was designed to test the southern extensions of the lode structure that was known to extend from Globe Progress through the General Gordon prospect and then into the Empress area. A few drill holes previously completed in this area had returned highly variable results. This work became more urgent with the decision to commence construction of the Globe Progress Mine, as it became necessary to quickly test any potentially economic mineralization in the Devils Creek area as the intention was to use Devils Creek as a waste storage site.

Major Pontil Ltd, using a 33 tonne track-mounted Schramm 685 RC percussion drill rig, carried out drilling. This rig used an auxiliary booster and compressor pack mounted on a support truck when drilling deeper holes (over about 100m depth).

10.3.22 2003 Diamond Drilling (Globe, General Gordon & Empress)

Between the 02/02/2003 to 12/06/2003 a total of 949.9m of core were drilled in 10 diamond drill holes (of which 2 were diamond tailed RC percussion pre-collars) in the Globe Progress (GBD131 - GBD133), General Gordon (GGD080, GBD082 and GBD086), and Empress prospects (GGD091 - GBD094).

With the exception of GGD091-GGD094, drilling was designed to infill areas of the Globe, General Gordon and Empress resource models that were not covered by a 25m by 25m drill pattern. GGD091-GGD094 drill holes were drilled in Empress to test the southern extent of the Empress lode, based on soil anomalies, workings and geological interpretation.

424m were drilled using a UDR650 drilling rig supplied by Major Pontil Ltd. Alton Drilling Ltd drilled 525.9m using a CS 1000 Helicopter portable rig (Whetter, 2003).

10.3.23 2003 Reverse Circulation Drilling (General Gordon & Empress)

Between the 02/02/2003 to 12/06/2003 1,494m of RC percussion were drilled over 21 drill holes in the General Gordon (GGR078- GGR081, GGR083- GGR085, GGR087- GGR090) and Empress (GGR067-GGR077) prospects (Whetter, 2003).

The RC percussion drilling in conjunction with the diamond drilling was designed to infill areas of the General Gordon and Empress resource models that were not covered by a 25m by 25m drill pattern.

Drilling was completed using the Major Pontil Ltd track-mounted UDR650 drill rig. This rig used an auxiliary booster pack mounted on a support truck when drilling deeper holes (over about 100m depth).

10.3.24 2005 Diamond Drilling (Globe Progress)

Between November 2004 and May 2005, three programmes of diamond drilling were completed at the Globe- Progress deposit.

8 shallow diamond drill holes were completed for 697m drilling (GBD135, GBD137-143) to twin a number of previous RC percussion drill holes and provide additional resource confidence for the early stages of mining in the Globe Progress open pit. The diamond drilling generally confirmed the results of the reverse circulation drilling and there was a good correlation between diamond and RC percussion geology and assay results (McIntosh, 2005a).

A further 14 diamond drill holes (GBD136, GBD144-155), for a total of 3,613.8m drilling was completed to infill and extend the Globe Progress deposit resource at depth. The work effectively confirmed the potential to upgrade the Globe Progress resource down-dip from current drilling intersections (McIntosh, 2005b).

Between July 2005 and November 2005 14 diamond drill holes (GBD156-169) were completed for 3,897.7m. The objectives of this drilling programme was to extend mineralization down dip and along strike of current drill intersections in the south central area of the open pit resource and to increase the open pit resource and geological knowledge in the western part of the Globe deposit within 200m of the surface (McIntosh, 2006).

Drilling was completed by Boart Longyear (New Zealand) Limited, using a track-mounted CS1000 diamond drill rig. Down hole surveys were completed using an electronic single-shot tool at 50m intervals.

10.3.25 2006 Reverse Circulation and Diamond Drilling (General Gordon & Empress)

Between September 2006 and January 2007, programmes of diamond and RC percussion drilling at the General Gordon and Empress deposits, were completed to infill and extend mineralization defined by existing drilling.

A total of 5 holes (RDD032-34 and RDD041-42) for 475.1m diamond drilling and 17 holes (RRC001-16) for 1,527m RC percussion drilling were completed at General Gordon; while 7 holes for 605.6m diamond drilling and 24 holes (RRC017-41) for 2,022m RC percussion drilling were completed at Empress (Whetter, 2007).

The location, width and grade of mineralization were consistent with expectations enabling recalculation of the resource for General Gordon and providing a greater level of confidence prior to the commencement of mining operations.

10.3.26 2007 Reverse Circulation and Diamond Drilling (Globe Progress, General Gordon & Empress)

Between November and December 2007, 13 RC holes were completed for a total of 1,155m (RRC0042-RRC0054) at General Gordon, Empress and Globe Progress.

6 of the drillholes (RRC0042 to RRC0044 and RRC0048 to RRC0050) were located at General Gordon to provide increased drill density within the planned pit outline. These drillholes successfully intercepted the targeted high grade ore shoots with mineralised grades confirming the model in target areas.

4 drillholes (RRC0051 to RRC0054) were testing the down dip extent of structures highlighted by grade control trending NW-SE in the Globe Progress pit which were dissimilar to the general W-E trend. The drillholes were successful in providing additional information on grade continuity of these NW-SE mineralised shoots.

At Empress 1 hole (RDD043) for 72m diamond drilling and 3 drillholes (RRC0045 to RRC0047) were completed to better understand the geometry of the mineralised ore shoot. The main ore shoot was successfully intercepted in the North of the existing pit design providing increased confidence in the geological model (McCulloch 2007).

The drill program was completed by Washingtons Drilling and Exploration Limited, using a track mounted Schramm.

10.3.27 2007 Diamond Drilling (Auld Creek)

Between February and March 2007, and October to December 2007, 7 diamond drill holes were completed in the Auld Creek Prospect for a total of 769.1m (RDD0044-RDD0045 and RDD0056-RDD0059).

These drillholes were collared in both the Reefton North Tenement EP 40 183 and the Auld Creek Tenement EP 40 530. The program was drilled by Boart Longyear (Drillwell New Zealand Limited brought out in 2005) using a helicopter portable CS1000 rig.

The program was designed to test significant soil and wacker geochemical anomalies and historic workings of a mineralised structure. Results from this program were disappointing with weakly mineralised and sporadic structures indicating variability of shoots along strike (McCulloch and Timms, 2009).

10.3.28 2007 Diamond Drilling (Crushington)

Between March 2007 to October 2007, 9 diamond holes (RDD0047-RDD0055) were drilled for a total of 1366.8m in the Crushington prospect within EP 50 438.

The drilling program was designed to test mineralised structures highlighted from historic workings. The program was completed by Boart Longyear's helicopter supported CS1000 diamond rig.

3 drillholes were abandoned due to ground conditions and old workings. Intercepted mineralisation was narrow and/or low grade in brecciated host rock. Interceptions through the inferred northern strike of Crushinghton mineralisation, within the vicinity of historic workings, suggests there is significant peripheral mineralisation in the broken/crushed host rock and associated mineralised pug. This mineralised halo does not appear to continue along strike to the south (McCulloch, 2008).

10.3.29 2008 Diamond Drilling (Supreme)

During the period January to February 2008, 5 diamond drillholes (RDD0060 to RDD0064) were completed for a total of 613.6m at the Supreme Prospect located within the Reefton North permit EP 40 183. Following on from results of the 2006 Supreme program, this drill program was completed to further delineate mineralisation.

Results of the program were positive, significantly increasing the understanding of geological structure and style of mineralisation and increasing the Supreme resource to a higher confidence level.

Boart Longyear Limited used a heli-portable CS1000 diamond rig to complete the program (Whetter and McCulloch 2008)

10.3.30 2008 Reverse Circulation Waste Rock Stack Geochemical Drilling

In January 2008 14 RC drillholes for a total of 635m were drilled into the waste rock stack at the Globe Progress Open Pit (PAG0001 to PAG0014).

Drillholes were shallow and designed to test waste rock stack geochemistry for environmental compliance. Drilling was completed by Washingtons Drilling and Exploration Limited using a track mounted Schramm.

10.3.31 2008 Diamond Drilling (Globe Progress)

From March to June 2008, 8 diamond holes were drilled for a total of 1355.4m (RDD0065 to RDD0072). The program was drilled within the Globe Progress MP 41 164 and was designed to test the structurally complex footwall of the Globe Progress Shear for the northern extension of the Oriental Shear Zone. NW trending ore shoots had been identified from grade control in the Globe Progress pit which appeared to correlate with anomalous Arsenic zones from soil geochemistry. Drilling was planned along a fenceline with holes drilled towards the east to intercept the westerly dipping structure. The program was suspended early before all planned holes were drilled.

Results were disappointing with only weak gold mineralisation intercepted within thin NW striking steep or easterly dipping shears. These shears can be correlated to mineralised NW trending structures within the Globe Progress pit, with two drillholes located closer to Globe Progress producing higher gold and arsenic results. The results from this program highlight the variability of mineralisation along strike. Useful structural data was gained from the drill program as tight northerly trending folds from the Globe Progress footwall can be traced northwards.

The drilling was completed by Boart Longyear using a heli-portable CS1000 diamond rig (Whetter and McCulloch, 2008)

10.3.32 2008 Reverse Circulation and Diamond Drilling (Globe Progress to Empress)

Between October to December 2008, a total of 3 diamond drillholes and 9 reverse circulation drillholes were completed for a total of 1194m.

Three diamond drillholes RDD0073 to RDD0075 for a total of 306m. These drillholes were planned to increase geological understanding of W-E trending, south dipping parallel mineralisation within the footwall of the western segment of the main Globe Progress ore body. Results from these drillholes successfully increased geological understanding of the structure and grade continuity of the mineralised shoot dipping SW behind the footwall of the main E-W trending Globe Shear.

Five of the RC drillholes (RRC0055 to RRC0059) were drilled within the General Gordon south pit to further delineate the resource within an area that had not been drilled previously. RRC0060 was planned to test the down dip mineralisation within the footwall shear of the General Gordon east pit defined by grade control. Results from drilling at General Gordon were disappointing with mineralisation weakening in grade and decreasing in thickness.

Four RC drillholes (RRC0060-RRC0063) were planned to increase geological understanding of the geometry of down dip mineralisation at the Empress pit by increasing drillhole density south of the main ore shoot. These holes were successful in intercepting down dip mineralisation of the main Empress shoot.

Boart Longyear Limited completed the drill program using a multipurpose UDR650 with the addition of a track mounted compressor mounted for the RC drill holes (Whetter & McCulloch (2009)

10.3.33 2009 Diamond Geotechnical Drilling

Between July and August 2009 3 diamond drillholes for a total of 284.8m were completed at Globe Progress for geotechnical purposes. These holes were completed to assist with the design of the East wall cutback of the Globe Progress open pit.

The program successfully provided the required geotechnical information and was completed by CW Drilling using a UDR1000 diamond drill rig.

10.3.34 2009 Diamond Drilling (Empress)

During November 2009, 2 diamond drillholes were completed for a total of 280.1m at the Empress pit. These drillholes were designed to test grade continuity and down dip extent of a westerly dipping, N-S trending structure within the Empress Prospect.

The program was successful in intercepting the main Empress ore shoot at depth providing increased confidence in the geological model. Mineralised intercepts returned good results and mineralisation remains open down plunge (Blakemore and Hood Hills 2010).

Drilling was completed by CW Drilling Ltd using a UDR1000 rig.

10.3.35 2009/2010 Reverse Circulation Drilling (Souvenir)

Between November and December 2009, February to March 2010, and October 2010, 32 reverse circulation drillholes were completed at the Souvenir prospect within the Globe Progress MP 41 164. The three rounds of drilling were completed for a total of 3210m.

These holes were designed to further delineate mineralisation within the Souvenir deposit and improve the resource model and potentially increase the resource through pit design optimisation (Blakemore and Hood Hills 2010).

The program was successful in further defining the resource and increasing confidence in the geological model. This led to the development of a well constrained resource model of the souvenir deposit.

The program was completed using a track mounted Schramm rig supplied by Washingtons Drilling and Exploration Limited.

10.3.36 2010 Reverse Circulation Drilling (General Gordon and Empress)

Between March and May 2010, 13 reverse circulation drillholes were completed for a total of 2023m at the General Gordon and Empress prospects within the Globe Progress MP 41 164.

11 drillholes for a total of 1516m were completed at General Gordon. These drillholes were targeting areas where mineralisation remained open at depth and potential plunging mineralised shoots identified from structural contouring and gram-metre plots. Results from this program were promising with results enabling some constraint of the geometry and orientation of the plunging ore shoot. The program also successfully provided further information on grade continuity and the extent of the mineralised splay off the main shear.

2 drillholes were completed at Empress for a total of 507m targeting approximately 100m down plunge from mineralised intercepts identified from previous diamond drilling. These drillholes were successful in intercepting mineralisation down plunge and indicate mineralisation is still open at depth (Blackmore and Hood Hills 2010).

The program was completed using a track mounted Schramm rig supplied by Washingtons Drilling and Exploration Limited.

10.3.37 2010 Reverse Circulation and Diamond Drilling (Globe Progress, General Gordon, Empress and Souvenir)

Between August 2010 to January 2011 a total of 56 drillholes were completed targeting the Globe Deeps, Souvenir, Empress and General Gordon mineralised shear zones. A total of 11,464.1m was drilled of both RC and Diamond. 40 RC holes were drilled for a total of 5610m. 16 Hybrid drillholes with RC pre-collars and diamond tails were drilled for a total of 5854.1m.

Percussion drill holes and pre-collars were completed by Washington's Drilling and Exploration Limited using a track mounted Schramm. Diamond drillholes and diamond tails were completed by CW Drilling or Horizon Drilling using an ALTON HD900 rig.

The Globe drilling programmes were successful in increasing understanding of the structure, controls and continuation of mineralisation at depth. It also allowed the addition of 95,000 oz Au to the inferred resource.

At General Gordon and Empress, drilling was planned to test the down plunge potential and grade continuity of mineralisation beneath these deposits. Drilling was successful with 26 RC drill holes completed for a total depth of 3936m.

At Souvenir an infill and extension RC drilling programme was completed and successfully allowed for an expanded pit shell and reserve, and confirmed down dip continuation of mineralisation. A total of 6 RC drill holes were completed for a total of 692m.

10.3.38 2010 Geotechnical Drilling (Globe Progress)

During December 2010 2 diamond drillholes were completed for a total of 187.1m in the Northwest region of the Globe Progress open pit. These drillholes (GE001 and GE002) were designed for geotechnical purposes to confirm the interpretation of ground conditions within the pit and better define the limits of faulting.

The drill program was completed by CW Drilling and successfully provided the required geotechnical information.

10.3.39 2010 Diamond Drilling (Auld Creek and South Souvenir)

During April to January 2011, 13 diamond drill holes were completed for a total of 1371.9m on near mine exploration targets. These drillholes were collared in MP 41 164, EP 4530 and EP 50 438.

3 drillholes were completed south of the Souvenir prospect, RDD0078-RDD0080 for a total of 261.5m. These drillholes were targeting significant results from geochemical sampling and and structural data.

Results from these drillholes were disappointing intercepting narrow low grade mineralisation indicating the variability of grade and mineralised width along strike of these deposits.

3 diamond drillholes, RDD0082-RDD0084 were completed at Auld Creek south totalling 365.3m with RDD0083 a re-drill of RDD0082. These holes were targeting geochemical anomalies from wacker sampling which occurs immediately east of the interpreted Globe Anticline/shear. Results were disappointing although several metres of strong pyrite mineralisation up to 7% were intercepted.

7 diamond drill holes (RDD0081, RDD0081a and RDD0085 to RDD0089) were completed off 3 different drillpads at the Fraternal prospect at Auld Creek for a total of 585.2m. These drill holes were targeting anomalous results from geochemical soil and rock samples and trenches. Results were encouraging intercepting a north striking steeply east dipping mineralised structure of variable width although the strike length of mineralisation appears to be limited to less than 100m.

Drillholes were completed by Boart Longyear, CW Drilling or Horizon Drilling using helicopter supported CS1000 or CS500 rigs.

10.3.40 2010 Blackwater Deeps Diamond Drilling

Between September 2010 and January 2011 1427.2 metres of diamond drilling was completed at Balckwater targeting the down plunge extent of the Birthday Reef. Three parent holes and two daughters were unsuccessful in reaching target depth. The program was postponed.

10.3.41 2010 Blackwater North Diamond Drilling

Between January to May 25th 2011 a total of 5 diamond drill holes (WN0001 - WN0005) were completed along strike to the north of the known extent of the Birthday Reef, for a total of 869m. These drill holes targeted significant gold values from trenches and also aimed to improve structural understanding of the area. Obtaining orientated structural information proved difficult in some drill holes due to the broken nature of the drill core, but where possible, valuable structural data was obtained as well as information on mineralised structures which were intersected. One drill hole (WN0005) was not drilled to its intended total depth due to drilling complications arising from ground conditions.

10.3.42 2011-2012 Globe Drilling Program

Between November 2011 and August 2012, 8 diamond drill holes and 13 hybrid (stratapak/diamond) drillholes were completed for a total of 9959.4 m. The drill holes were targeting down dip extension of the Globe Progress ore body to increase confidence in areas of poor drill coverage and to evaluate the underground potential. Significant assay results were returned.

10.3.43 2011 Millerton Geotechnical Drilling

Two drill holes were completed at Millerton (MIL0002 and MIL0003) in February 2011 for a total of 512.1m. Both drill holes had the same collar location. Millerton drill holes were planned to test the down dip extension of historic mining of the Millerton Goldmine. These drill holes were also studied for geotechnical purposes to determine the ground conditions in the area. The drill program was completed by Horizon Drilling and successfully provided the required geotechnical information.

10.3.44 2011 Big River Diamond Drilling Program

Between March and December 31st 2011 a total of 19 diamond drillholes (BR0001 to BR0019) were completed for 4,106m. Drillholes were targeting geochemical anomalies from surface ‘wacker’ sampling and also testing within the vicinity of the historic underground workings of the Big River mine. Drilling identified significant mineralisation along strike to the south of the old workings and mineralisation remaining within the mined area.

10.3.45 2011 Big River South Diamond Drilling Program

Between early January and the 2nd March 2012 a total of 7 diamond drill holes (BRS001-BRS007) were completed for a total of 926.6m. Drill holes targeted geochemical anomalies from wacker samples that were collected over the St George workings and the Big River South workings during 2010. Significant assay results returned from the program indicate that mineralisation remains open along strike in both directions of the old workings.

10.3.46 2011 Crushington Diamond Drilling Program

Eight diamond drill holes (CR001-CR007 incl. daughter drillhole CR001-A) were completed between July and October 2011. A total of 1,046m of drilling was completed. Drillholes targeted the largest and most significant geochemical anomalies within the field area. Drilling targeted areas of known mineralization but also targeted areas that appeared to represent surface locations of the offset portions of historically worked lodes.

10.3.47 2011 Target 38 and HVS Diamond Drilling Program (with Merrijiggs RC)

Six diamond drillholes (HVS001-HVS006) were completed at the Happy Valley prospect between October and December 2011. A total of 805.4m of drilling was completed. Drilling and trenching during the mid 80's and 90's identified the Happy Valley Shear (HVS). The purpose of this drill program was to target the untested ground surrounding the encouraging intercepts recorded in historic drillholes. The HVS zone was intercepted in five of the programs six drillholes.

Two diamond drillholes (T38001-T38002) were collared off a single pad at Target 38 between November 2011 and February 2012. A total of 515.4m of drilling was completed. Drillholes were targeting significant geochemical results from trenching and wacker sampling which identified a ~250m by 100m gold anomaly. Results established the existence of minor shearing and strong arsenopyrite (rhombic crystals) mineralisation.

Between November and December 2011, six RC drillholes (MJRC06-MJRC11) were drilled for a total of 498.5m. The drilling programme set out to achieve a fence-line of drillholes along 4WD tracks situated in the northern and southern portion of the Merrijigs tenement, to chase the along strike extent of the Sir Francis Drake mineralisation. The southern portion drilling completed in 2011 returned no significant mineralisation. Difficulties experienced during RC drilling resulted in the northern fenceline being cancelled.

10.3.48 2012 Bullswool Program

Heli-supported diamond drilling of the prospective Bullswool corridor commenced in late August and was completed by early November 2012. The programme consisted of four holes (BU001–BU004) for a total of 544.3m. The principle aim of the programme was to test as much of the prospective corridor as possible for Blackwater style mineralisation. No significant assay results were received from the diamond drilling completed at Bullswool.

10.3.49 2011-2012 Globe Drilling Program

Between November 2011 and August 2012, 8 diamond drill holes and 13 hybrid (stratapak/diamond) drillholes were completed for a total of 9959.4 m. The drill holes were targeting down dip extension of the Globe Progress ore body to increase confidence in areas of poor drill coverage and to evaluate the underground potential. Significant assay results were returned.

10.3.50 2012 Krantz Creek Program

Heli-supported diamond drilling within the Krantz Creek permit commenced in July and was completed by mid-August 2012. The program consisted of three holes (KC001 to KC003) for a total of 508.4m. A 500m strike length of the Krantz Creek shear was tested and drill targets were selected based on anomalous gold in wacker sample results. Best results include a zone of quartz veining in KC002 returning 3m @ 1.21g/t Au from 15m depth.

10.3.51 2012 Homer Drilling Program

Six diamond drill holes were competed at the Homer Prospect between the 8^{th} of October and the 30^{th} of November, totalling 836.7m. Drill holes targeted the Homer Reef in the vicinity of the historic Homer Mine. Drill hole design was dictated by rock chip sampling and inferred structural orientations. Results were inconsistent and no further work is recommended at the prospect.

10.3.52 2012 Blackwater South RC Drilling Program

A fence-line of 20 RC holes (totalling 2503m) were completed from the 24^{th} of October to the 28^{th} of November in the Southern part of Blackwater EP. RC drilling along an existing forestry road was seen as an effective way to test for mineralisation south of the Blackwater Mine, where thin alluvial cover masked underlying geology. This program exposed patchy low grade mineralisation directly south from the Homer Prospect. No follow-up diamond drilling is recommended.

10.3.53 2012-2013 Battery Drilling Program

To date, three drill hoes have been completed at the Battery Prospect. A total of 821.4m have been completed in a fence-line pattern ~400m south of the historic Blackwater Mine. Target style for this prospect is narrow vein gold, analogous to the Birthday Reef, or offset continuation of it. Thick alluvial cover inhibits surface prospecting in this area. No significant results have been returned. Drilling at this prospect has been ongoing since 19^{th} of November 2012.

10.3.54 2012 Blackwater Deeps Drilling Program

From October 2011 to February 2013 drilling beneath the last mined level of the Blackwater Mine took place. In total 5611.8m were drilled over the course of the program. Drilling operations ran 24 hours a day, 7 days a week from the beginning to the end of the program except for a brief period over Christmas 2012. There were 5 holes drilled from surface and 6 daughter holes. Two of the surface holes and four of the daughter holes were successful in achieving target depth and intercepting the Birthday Reef.

10.4 Down Hole Surveys

Both RC percussion and diamond drill holes can suffer significant down hole deviation. As a result, diamond holes were generally surveyed downhole at least at 50m intervals. RC percussion drill holes drilled prior to 1996 were not downhole surveyed. All drill holes since then have been surveyed at 50m intervals.

11 SAMPLING METHOD AND APPROACH

11.1 Sampling Methods

A summary of sampling methods is detailed in Table 11.1.1. Relevant details of the location and type of drilling are contained in Section 10. As mining has progressed, the majority of resource based on RC drill holes has been mined out. The remaining resource is based predominantly on diamond core samples.

Diamond drill core (HQ or NQ size) is routinely half cut through zones of mineralization using a diamond core saw. Care is taken where the core is clay-rich to prevent excessive loss from the sample. Core samples are immediately collected from the core trays and transferred to sequentially numbered sample bags and then transported to an analytical laboratory (see Section 12) by a commercial courier.

RC percussion drill chip samples are bagged at the drill hole site, using either portable or rig-mounted riffle-splitter systems. An approximate 2 to 5kg sub-sample is collected for submission to the assay laboratory. Samples are immediately transported to Reefton and are then shipped to the laboratory by commercial courier.

Every sample submitted for analysis has a unique sample number that is cross-referenced between drill hole log, sample submission sheet and assay result. Sampling details are all recorded in the Oceana *acQuire* database system.

Table 11.1.1: Summary of Drill Sample Type and Methods of Collection

Type	Company	Sample Types	Sample Intervals	Rig Type
RC	Oceana (1993/94)	RC chip – poor recovery and wet	RC bagged at 1m intervals but spear composited over 2m	GEMCO H22 and Gardner Denver (Alton Drilling Ltd)
	Oceana (1996/97)	RC chip	RC bagged at 1m intervals but composited to 2m	Schramm 25M (Ausdrill NZ Ltd)
	Oceana (2000)	RC chip	RC bagged at 1m intervals	Schramm 685W (Ausdrill NZ Ltd)
	Oceana (2002)	RC chip	RC bagged at 1m intervals	Schramm 685 (Major Pontil Ltd)
	Oceana (2003)	RC chip	RC bagged at 1m intervals	UDR650 (Major Pontil Ltd)
	Oceana (2006)	RC chip	RC bagged at 1m intervals	Schramm T660H (Washingtons Explortation Ltd)
	Oceana (2007)	RC Chip	RC bagged at 1m intervals	Schramm T660H (Washingtons Exploration Pty Ltd)
	Oceana (2008)	RC Chip	RC bagged at 1m intervals	UDR650 (Boart Longyear)
	Oceana (2009)	RC Chip	RC bagged at 1m intervals	Schramm T660H (Washingtons Exploration Pty Ltd)
	Oceana (2010)	RC Chip	RC bagged at 1m intervals	Schramm T660H (Washingtons Exploration Pty Ltd), UDR650 (Boart Longyear)
Diam ond	CRAE	Half drill core	1 or 2m or geologically defined intervals in mineralization	Edeco 40 (Alton Drilling)
		Drill core grinds	1 or 2m ground core in the barren hanging wall	
	Oceana (1992)	Drill core grinds	2m bagged composite	Multiple Rigs (Alton Drilling, Doug Hood, Radial Drilling)
		Half drill core	1m or geologically defined intervals in mineralization	
	Oceana (1993/94)	Half drill core	1m or geologically defined intervals in mineralization	Multiple Rigs (Alton Drilling)
		Drill core grinds	1m ground core in unmineralized intervals	
	Oceana (1995/97)	Half drill core	1m or geologically defined intervals in mineralization	Multiple Rigs (Alton Drilling, Ausdrill NZ Ltd)
		Drill core grinds	1m ground core in unmineralized intervals	
	Oceana (2000)	Half drill core	1m or geologically defined intervals in mineralization	Hydrill 110 (Ausdrill NZ Ltd)

Type	Company	Sample Types	Sample Intervals	Rig Type
		Drill core grinds	2 to 5m ground core in unmineralized intervals	
	Oceana (2002/03)	Half drill core	1m or geologically defined intervals in mineralization	Hydrill 110 (Major Pontil NZ Ltd) UDR650 (Major Pontil NZ Ltd) CS1000 (Alton Drilling Ltd)
		Drill core grinds	2 to 5m ground core in unmineralized intervals	
	Oceana (2004/06)	Half drill core	1m intervals in mineralization	CS1000 (Boart Longyear NZ Ltd)
		Drill core grinds	2 to 5m ground core in unmineralized intervals	
	Oceana (2007)	Half drill core	1m intervals in mineralization	CS1000 (Boart Longyear NZ Ltd)
		Drill core grinds	2 to 5m ground core in unmineralized intervals	
	Oceana (2008)	Half drill core	1m intervals in mineralization	CS1000 and UDR650 (Boart Longyear NZ Ltd)
		Drill core grinds	2 to 5m ground core in unmineralized intervals	
	Oceana (2009)	Half drill core	1m intervals in mineralization	UDR1000 (CW Drilling)
		Drill core grinds	2 to 5m ground core in unmineralized intervals	
	Oceana (2010)	Half drill core	1m intervals in mineralization	UDR1000 (CW Drilling), CP650 (Horizon Drilling), Alton HD900 (Horizon Drilling)
		RC chip	RC bagged at 1m intervals or 4m composites in unmineralised intervals	Schramm T660H (Washingtons Exploration Pty Ltd), UDR650 (Boart Longyear)
	Oceana (2011)	Half drill core	1m intervals	

11.2 Accuracy and Reliability

11.2.1 Summary

Based on the drill logs, no material drilling, sampling or recovery factors have been identified in the diamond core, except poorer recoveries noted in the high clay zones.

Grind samples taken from diamond holes have a low sample volume and are composited from 1m to 5m intervals. These samples are considered to be low reliability and have not been used in the resource estimation.

The accuracy and reliability of RC percussion samples is considered to be lower than for the diamond drilling due to the inherent characteristics of this drilling technique. Where specific drilling, sampling or recovery factors are considered to have resulted in an assay bias, these have been addressed (see Section 11.3.2). Local twinning of RC percussion holes with diamond drilling (i.e. Section 10.3.24) has shown a generally good correlation with the logged geology and assays from RC percussion drill holes although the RC percussion drilling is consistently higher grade. As mining has progressed, the majority of resource based on RC drill holes has been mined out.

Diamond drill core recoveries and zones of lost core have been routinely logged, and an assessment of recovery is also recorded on RC percussion drill hole logs.

Core recovery from all drilling, including the mineralized zones is generally very good (100%), though the core can be quite broken in appearance. Local zones of core loss are typically <0.5m wide. Where core loss occurs within the mineralized zones, it does not appear to introduce any systematic grade bias.

All of the core for the Reefton Project area has been retained and is stored in aluminum core trays in core modules under cover in the Oceana core store in Reefton.

11.2.2 RC Percussion Recovery

A discussion of the RC percussion drilling recovery is provided as part of sample quality discussions in Section 11.3.

11.3 Sample Quality

11.3.1 Summary

The sample quality for diamond drilling is considered to be high where samples are halved diamond drill core. Grind (unmineralized) samples are not considered to be representative and have been excluded from resource estimation studies.

11.3.2 RC Percussion Drill Bias

Comparisons of the early Globe Progress/General Gordon reverse circulation drilling with diamond drilling twins identified an apparent bias in favour of the RC percussion drilling. Of particular concern were a series of closely spaced, shallow (less than 60m) RC percussion drill holes (RC01 to RC60) drilled in 1993/1994 along the surface outcrop projection of the Globe Progress mineralization.

In mid February 2005, Oceana completed 8 diamond drill holes (GBD134 and GBD138 to GBD143) to complement the existing 6 diamond drill holes (GBD99 to GBD104) drilled in 1994. Eight RC percussion drill holes were completed in 1994 and 6 diamond drill holes in 2000. The RC percussion drill holes RC01 to RC60 were excluded from any mineral resource estimates.

A review of the relevant drilling programme is fully described in the previous (May 2007) Technical Report

The areas covered by these RC holes and Diamond twins have been subsequently mined.

11.4 Definition of Sample Intervals

Sample intervals are shown in Table 11.1.1. Definition of sampling intervals for RC percussion drilling has generally been based on 1m intervals, over the full depth of the drill hole.

Definition of sampling intervals for diamond drilling are based on geological intervals or 1m intervals, within and beyond the margins of mineralized zones identified during logging. Grind samples have been taken from all unmineralized drill core and composited from 1 to 5m intervals. Where anomalous mineralization is detected, the zone is resampled at 1m intervals.

Higher grade intervals within a lower grade intersection are characterised by more abundant sulphide mineralization and generally can be detected visually during core logging. The 1m sampling interval established by CRAE and continued by Oceana is considered to be sufficient to define these higher grade intervals.

Drilling has been conducted in a radial pattern on the Globe Progress deposit (Figure 10.2) in order to minimise the obliquety of the drilling intersections with respect to the strike and dip of the mineralized structures.

12 SAMPLE PREPARATION, ANALYSES AND SECURITY

12.1 Sample Preparation Statement

Half cut core samples (diamond drill core) and drill cuttings (RC percussion drilling) samples from the Oceana drilling programmes at Reefton were collected from the source drill core or cuttings by employees of Oceana.

Subsequent sample preparation and assay was not conducted by any employee, officer, director or associate of Oceana.

12.2 Sample Preparation, Assay and Analytical Procedures

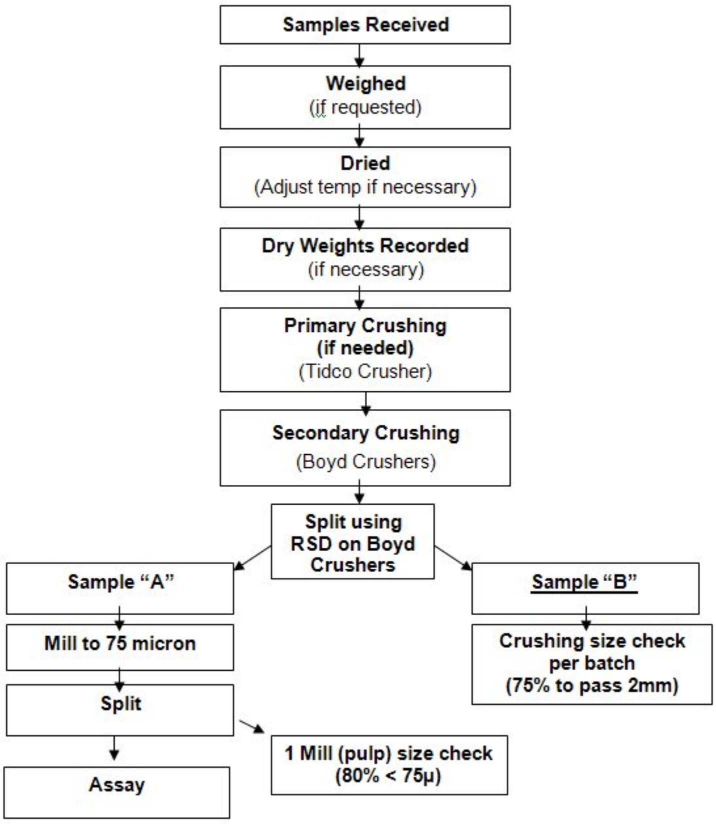
Until 2010 half cut diamond drill core samples from the recent Oceana drilling programmes typically underwent sample preparation and assay for Au, As and S by Amdel Limited (Amdel) at the Macraes Flat laboratory or the Reefton laboratory, New Zealand. Grind samples were also prepared and assayed at the Amdel Macraes Flat laboratory or Reefton laboratory. These samples were assayed for Au and As only.

Sample preparation of geological samples by Amdel routinely comprised drying, crushing, splitting (if required) and pulverising to obtain an analytical sample sample of 250g with >95% passing 75µm.

Since the start of 2010 half cut diamond drillcore samples have been sent to SGS Westport laboratory for preparation and S and As analysis and SGS Waihi for Au Analysis.

Until 2010 RC samples from the recent Oceana drilling programmes typically underwent sample preparation and assay for Au, and S by Amdel Limited (Amdel) at the Macraes Flat laboratory or the Reefton laboratory, New Zealand. As was only analysed at Macraes Flat. Since the start of 2010 RC samples have been sent to SGS Westport laboratory for preparation and S and As analysis and SGS Waihi for Au Analysis (see flow chart in Figure 12.1).

Figure 12.1: Geological Sample Preparation Flowsheet - SGS



Assay and analytical protocols used for the Reefton Project have varied between drilling programmes, and are summarised in Table 12.2.1.

The Macraes Flat laboratory and Reefton Laboratory are certified under ISO 9000 through the umbrella of NZLabs. Both laboratories have a comprehensive QC/QA programme and actively participate in internal Amdel and International Laboratory Round Robin surveys managed by Geostats Pty Ltd of Western Australia.

Table 12.2.1: Analytical Methods

Sample	Company		Gold		Arsenic	
Type		Laboratory	Method	Detection limit ppm	Method	Detection limit ppm
RC Chip	Oceana (1993/94)	Graysons (Macraes)	50g FAS	0.01	AAS	100
	Oceana (2000/02/03)	Amdel (Macraes)	50g FAS	0.01	AAS (M1006) AAS (M1008)	10 100
	Oceana (2006)	Amdel (Macraes	50g FAS	0.01	AAS (M1006) AAS (M1008)	10 100
	Oceana (2006-2009)	Amdel (Macraes)	50g FAS	0.01	AAS (M1006) AAS (M1008)	10 100
		Amdel (Reefton)	50g FAS (1033)		AAS (M1006)	10
Diamond Drill Core	CRAE	ISL Laboratories	30g FAS	0.05	AAS	10
	Oceana (1992)	Analabs (Perth)	50g FAS	0.005	XRF	2

Sample	Company		Gold		Arsenic	
	Oceana (1993/94)	Graysons (Macraes)	50g FAS	0.01	AAS	100
	Oceana (1995/97)	ALS Tauranga	50g FAS	0.01	AAS	100
	Oceana (2000-2006)	Amdel (Macraes)	50g FAS	0.01	AAS (M1006) AAS (M1008)	10 100
	Oceana (2006-2012)	Amdel (Macraes)	50g FAS	0.01	AAS (M1006) AAS (M1008)	10 100
		Amdel (Reefton)	50g FAS (1033)		AAS (M1006)	10
		SGS	50g FAS (1033)		XRF	

12.3 QA/QC Measures

12.3.1 Standards

Both CRAE and Oceana routinely submitted standards in each batch of samples sent for assay. This data is discussed in Section 13.

Laboratory repeats are generally completed every 15th sample. With each batch of samples, 1 or 2 field duplicate samples are also submitted. The results are recorded in the drilling completion reports for each drilling programme. The results of this work indicate that there is no reason to doubt the reliability of the laboratories.

During 1994, Resource Service Group (RSG) (Barnes and Hogan, 1994) randomly selected a group of both CRAE (ISL Laboratories) and 1992 Oceana (Analabs, Perth) drill sample pulps for repeat analysis by Genalysis Laboratories in Perth, on behalf of Oceana. The results were statistically analysed, and show good reproducibility. Summary statistics are provided in Table 12.3.1. Further detailed investigation can be found in the previous (May 2007) Technical Report.

Table 12.3.1: Gold Check Sampling Programme

Statistic	CRAE		Oceana		COMBINED	
	ISL Average	Genalysis Average	Analabs Average	Genalysis Average	Original Average	Genalysis Average
Number	73	73	83	83	156	156
Mean (g/t)	1.566	1.536	3.328	3.284	2.503	2.479
Std. Dev.	2.274	2.334	7.014	7.124	5.404	5.488
Minimum (g/t)	0.070	0.050	0.013	-	0.013	-
Maximum (g/t)	15.90	17.25	55.75	58.00	55.75	58.00

The results confirm that the quality of the original analytical work completed by CRAE is high, and that it is reasonable to combine the CRAE assay data with the Oceanagold assay data for purposes of resource estimation.

12.3.2 Replicates and Duplicates

Laboratory repeats are generally completed every 15th sample. With each batch of samples, 1 or 2 field duplicate samples were also submitted. The results are recorded in the drilling completion reports for each drilling programme. This data indicate that there is little reason to doubt the reliability of the assay information used in the resource estimates.

12.4 Sample Security

Oceana has not assessed the sample security of any data prior to November 2005.

Oceana managed drilling has been sampled and submitted to the Amdel laboratory by trained Oceana staff. Once the samples have been submitted to the laboratory, Amdel staff process the samples and have completed and managed all aspects of the assaying independent of the Oceanagold personnel.

While no measures are in place to ensure the samples security, the exploration and resource drilling data have been reviewed by many independent consultants.

12.5 Statement of Sample and Assaying Adequacy

The adoption of the analytical methods, including fire assay for gold, is entirely appropriate. Sufficient quality control data exists to allow review of the analytical performance of assay laboratories. The sampling methods, chain of custody procedures, sample preparation procedures and analytical techniques are all considered appropriate.

13 DATA VERIFICATION

13.1 Introduction

The Reefton Gold Project has a long history of exploration during which data collection protocols and quality control procedures have varied substantially (Sections 10 and 12).

The analytical quality is monitored by the submission of certified standards, blanks, laboratory duplicates and field duplicates. Oceana has reviewed the data management protocols and effectiveness, analytical data quality and the impact of wet RC percussion drilling.

13.2 Drillhole Database

The drillhole database is stored in acQuire geoscientific database software and a high level of effort has taken place to capture all digital and met data.

A review of the drillhole database and data capture processes was completed by external consultants RSG Global (now Coffey) during a site visit completed in 2005 and as part of the preparation for the May 2007 Reefton Technical Report. Random checks of the drillhole database assay against laboratory assay sheets were completed during the site visit and no material errors were identified. They concluded that the drillhole database was robust and suitable for use in resource estimation studies. Oceanagold concurs with this view. A more detailed discussion can be found in the previous, May 2007 Reefton Technical report.

The sections below supplement the previous review and highlight assay quality since the previous review and pertain to laboratory performance from 1st January 2007.

13.3 Statistical Analysis of Assay Quality Control Data

Oceana has undertaken detailed statistical analysis of the available assay quality control data for the Reefton Gold Project. Two major data groupings are available for investigation. The first data set pertains to the exploration data of the deposits within the mining lease (Globe Progress, Empress, General Gordon, Souvenir and Surpreme), while the second relates to the grade control data of mined areas.

The statistical analysis resulted in a number of interpretive plots from which the analytical accuracy and precision over specific grade ranges has been assessed. The types of plots produced are briefly described below:

- Thompson and Howarth Plot showing the mean relative percentage error of grouped assay pairs across the entire grade range, used to visualise precision levels by comparing against given control lines.

- Rank % Absolute Mean Paired Relative Difference (AMPRD) Plot, which ranks all assay pairs in terms of precision levels measured as half of the absolute relative difference from the mean of the assay pairs (% HARD), used to visualise relative precision levels and to determine the percentage of the assay pairs population occurring at a certain precision level.

- Mean Paired Relative difference (MPRD) Plot, used as another way of illustrating relative precision levels by showing the range of mean paired relative difference over the grade range with the sign retained, thus allowing negative or positive differences to be computed. This plot gives an overall impression of precision and also shows whether or not there is significant bias between the assay pairs by illustrating the MPRD between the assay pairs. This is double the Half Relative Difference (HRD) value.

- Scatter Plot is a simple plot of the correlation of value of assay 1 against assay 2 (check assay). This plot allows an overall visualisation of precision and bias over selected grade ranges. Correlation coefficients are also used.

- Quantile-Quantile (Q-Q) Plot is a means where the marginal distributions of two datasets can be compared. Similar distributions should be noted if the data is unbiased.

13.3.1 Exploration Drill Data

The Reefton exploration data is stored within an acQuire relational database (RGPEX). The quality control or check data within the database contains certified standards, duplicate and replicate data. In addition, check sampling was completed by RSG Global in 1994 to test the veracity of previous assay data quality. A discussion of the investigation is provided in the previous (May 2007) Technical Report.

13.3.1.1 Standards

The standards data available for review comprised 312 Au standards assays. The majority of these were Rocklabs Au standards. The source and details of these data are well documented. Statistics of the performance of these standards are shown in tables 13.3.1.1 and 13.3.1.2.

Table 13.3.1.1 – Performance of Au Standards in RGPEX Database - AMDEL Laboratories

	OxE74	SE44	SG31	SH41	Si42	SJ39	SK43	SN38	SN50	ST29	ST35	ST39	ST43
# of Analyses above Threshold	5	9	7	2	4	17	15	4	2	7	4	11	6
# Outside Warning Limit	2	2	2	2	2	3	4	1	1	2	0	1	0
# Outside Error Limit	2	2	2	2	2	3	4	1	1	2	0	1	0
# of Analyses below Threshold	0	0	0	0	0	0	0	0	0	0	0	0	0
% Outside Error Limit	40.00	22.22	28.57	100.00	50.00	17.65	26.67	25.00	50.00	28.57	0.00	9.09	0.00
Expected (certified) Value	0.615	0.606	0.996	1.344	1.761	2.641	4.086	8.573	8.685	0.597	1.323	0.87	3.64
Min	0.50	0.01	1.00	1.21	1.64	2.50	2.01	8.19	8.66	0.58	1.24	0.71	3.16
Max	0.65	0.65	1.06	1.44	1.89	2.84	4.31	8.57	9.17	0.65	1.38	0.95	3.92
# Lower Extreme Outliers	0	1	0	0	0	0	1	1	0	0	0	0	0
# Lower Outliers	1	0	0	0	1	0	0	0	0	0	1	1	1
Mean	0.60	0.56	1.03	1.33	1.79	2.71	3.89	8.47	8.92	0.61	1.33	0.83	3.44
Median	0.63	0.64	1.05	1.33	1.82	2.72	4.00	8.57	8.92	0.62	1.35	0.82	3.38
# Upper Outliers	0	0	0	0	0	0	0	0	0	0	0	1	0
# Upper Extreme Outliers	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Range	0.15	0.64	0.06	0.23	0.25	0.34	2.30	0.38	0.51	0.07	0.14	0.24	0.76
Standard Deviation	0.05	0.20	0.02	0.12	0.09	0.10	0.52	0.16	0.26	0.02	0.05	0.06	0.23
% Rel. Std. Dev.	9.04	34.80	2.36	8.68	5.17	3.51	13.35	1.93	2.86	3.57	3.96	7.00	6.77
Standard Error	0.02	0.07	0.01	0.08	0.05	0.02	0.13	0.08	0.18	0.01	0.03	0.02	0.10
% Rel. Std. Err.	4.04	11.60	0.89	6.14	2.58	0.85	3.45	0.96	2.02	1.35	1.98	2.11	2.76
Total Bias	-0.02	-0.07	0.04	-0.01	0.02	0.03	-0.05	-0.01	0.03	0.03	0.00	-0.05	-0.06
% Mean Bias	-1.79	-7.04	3.84	-1.41	1.65	2.68	-4.72	-1.17	2.65	2.90	0.34	-5.02	-5.59

Table 13.3.1.2 – Performance of Au Standards in RGPEX Database - SGS Laboratory

	SE44	OxE74	SJ39	SK43	SN38	OxA71	OxD73	SG40	SH41	SK52	SL46	SN50
# of Analyses above Threshold	51	4	14	2	12	18	10	10	35	21	6	36
# Outside Warning Limit	16	1	3	1	6	4	0	2	7	4	0	15
# Outside Error Limit	16	1	3	1	6	4	0	2	7	4	0	15
# of Analyses below Threshold	0	0	0	0	0	0	0	0	0	0	0	0
% Outside Error Limit	31.37	25.00	21.43	50.00	50.00	22.22	0.00	20.00	20.00	19.05	0.00	41.67
Expected (certified) Value	0.606	0.615	2.641	4.086	8.573	0.0849	0.416	0.976	1.344	4.107	5.867	8.685
Min	0.43	0.58	2.35	3.88	2.71	0.07	0.39	0.93	1.18	3.72	5.59	7.41
Max	0.68	0.63	8.15	3.96	8.94	0.12	0.42	1.03	1.41	4.42	5.87	11.80
# Lower Extreme Outliers	1	0	0	0	1	0	0	0	0	0	0	0
# Lower Outliers	4	0	1	0	0	0	0	1	0	1	0	1
Mean	0.58	0.61	3.03	3.92	7.99	0.08	0.41	0.99	1.32	4.11	5.72	8.55
Median	0.60	0.61	2.65	3.92	8.48	0.08	0.41	1.00	1.33	4.10	5.72	8.47
# Upper Outliers	1	0	0	0	0	0	0	0	0	1	0	1
# Upper Extreme Outliers	0	0	1	0	0	1	0	0	0	0	0	1
Total Range	0.25	0.05	5.80	0.08	6.23	0.05	0.03	0.10	0.23	0.70	0.28	4.39
Standard Deviation	0.05	0.02	1.42	0.04	1.62	0.01	0.01	0.03	0.06	0.15	0.09	0.68
% Rel. Std. Dev.	8.77	3.75	47.05	1.02	20.26	13.26	2.55	2.83	4.87	3.59	1.63	7.95
Standard Error	0.01	0.01	0.38	0.03	0.47	0.00	0.00	0.01	0.01	0.03	0.04	0.11
% Rel. Std. Err.	1.23	1.87	12.57	0.72	5.85	3.13	0.81	0.90	0.82	0.78	0.67	1.32
Total Bias	-0.03	-0.01	0.15	-0.04	-0.07	-0.01	-0.02	0.02	-0.02	0.00	-0.03	-0.02
% Mean Bias	-3.48	-1.22	14.65	-4.06	-6.77	-1.19	-1.68	1.54	-1.76	0.07	-2.51	-1.53

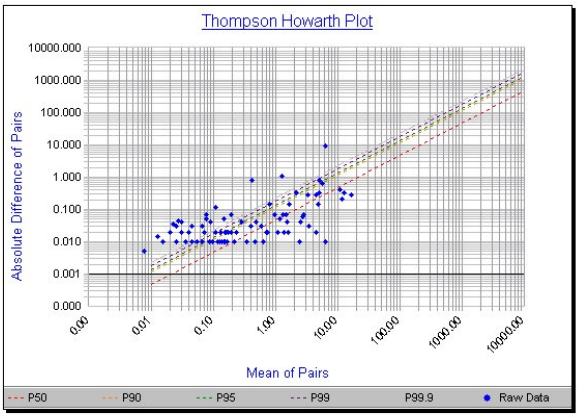
13.3.1.2 Laboratory Repeats

Laboratory repeats (duplicate 50g samples of sample pulp collected after pulverisation) have been assessed. The following data is presented as quality control statistics in the following tables.

Figure 13.3.1.3: Globe Progress Rgpex database - Quality Control Statistics, SGS Laboratory Repeats

AU_FAA515_ppm

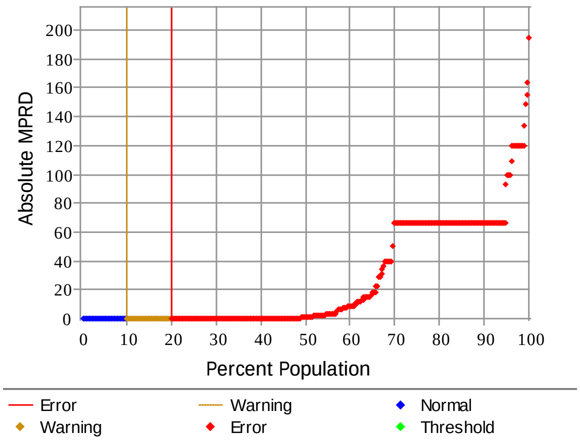
	Value	Check Value	units
No Pairs	417		
Minimum	0.01	0.01	g/t
Maximum	13.4	13.6	g/t
Mean	0.28	0.27	g/t
Median	0.01	0.01	g/t
Coefficient of Variation	4.18	4.18	
Std Deviation	1.15	1.14	
Bias	-0.01		
Correlation Coefficient	1.00		



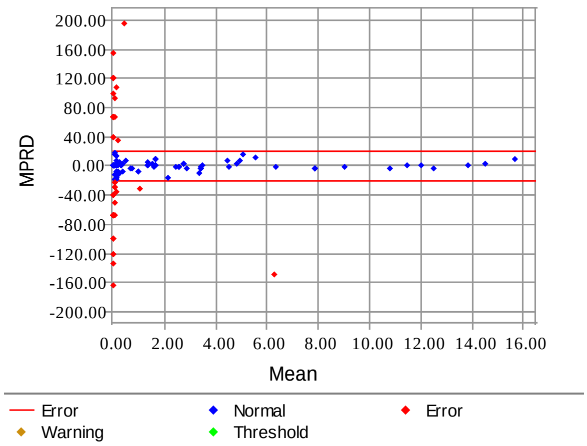
Precision Control Lines based on a Precision of 10%

Note. A point is not charted where the Absolute paired difference is zero

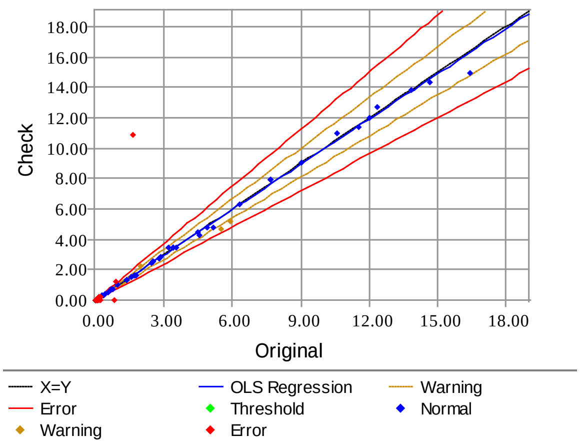
LAB REPLICATE DATA
Abs(MPRD) by Percentile: Au_1033_ppm



LAB REPLICATE DATA
MPRD by Mean Grade: Au_1033_ppm



LAB REPLICATE DATA
Scatter: Au_1033_ppm



LAB REPLICATE DATA
QQ: Au_1033_ppm

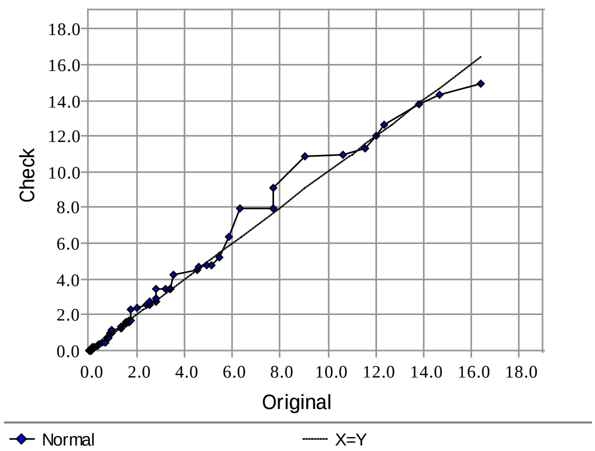
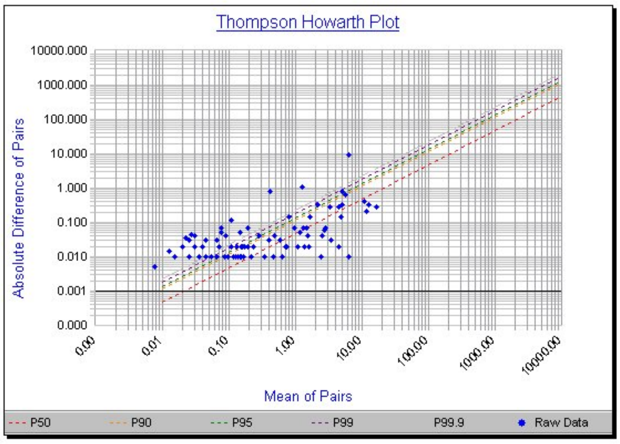


Figure 13.3.2.4: Globe Progress Rgpex database - Quality Control Statistics, AMDEL Laboratory Repeats

AU_1033_ppm

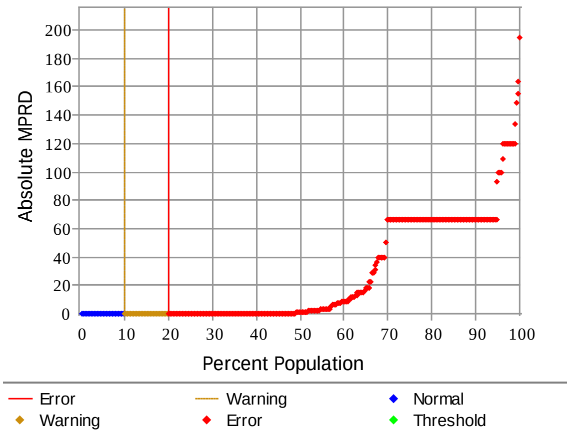
	Value	Check Value	units
No Pairs	433		
Minimum	0.01	0.01	g/t
Maximum	16.44	14.91	g/t
Mean	0.60	0.62	g/t
Median	0.01	0.01	g/t
Coefficient of Variation	3.35	3.31	
Std Deviation	2.02	2.06	
Bias	0.03		
Correlation Coefficient	0.97		



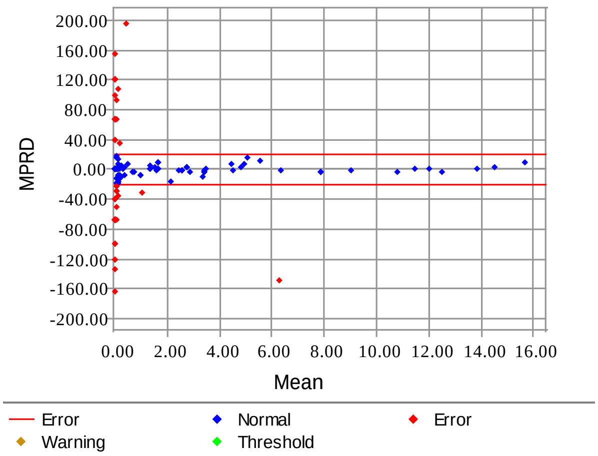
Precision Control Lines based on a Precision of 10%

Note. A point is not charted where the Absolute paired difference is zero

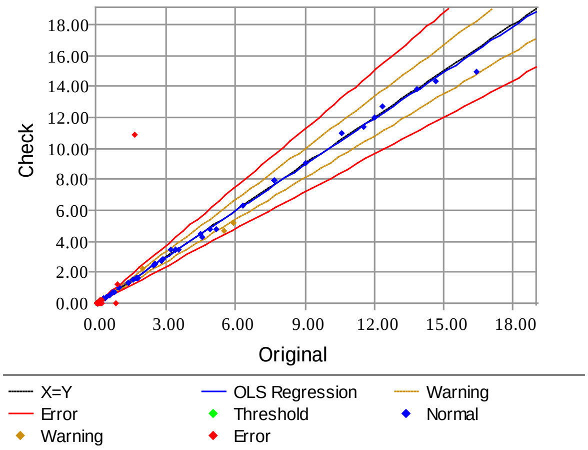
LAB REPLICATE DATA
Abs(MPRD) by Percentile: Au_1033_ppm



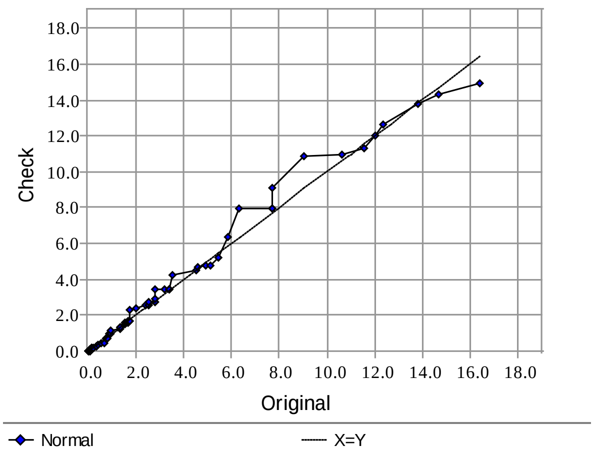
LAB REPLICATE DATA
MPRD by Mean Grade: Au_1033_ppm



LAB REPLICATE DATA
Scatter: Au_1033_ppm



LAB REPLICATE DATA
QQ: Au_1033_ppm



13.3.2 Assay QAQC Summary

The available exploration and grade control quality control data has been assessed and Oceanagold considers the assay data to be of a suitable quality for resource estimation and reconciliation purposes.

14 ADJACENT PROPERTIES

There are no adjacent properties that impact on the potential merit of the Reefton Project.

15 REEFTON PROCESSING

15.1 Introduction

Ore is supplied from the Globe Progress open pit to the run-of-mine (ROM) pad from which the processing plant is fed. Most of the gold is associated with two main sulphide minerals of pyrite & arsenopyrite thereby leading to sulphide flotation as the preferred concentration route.

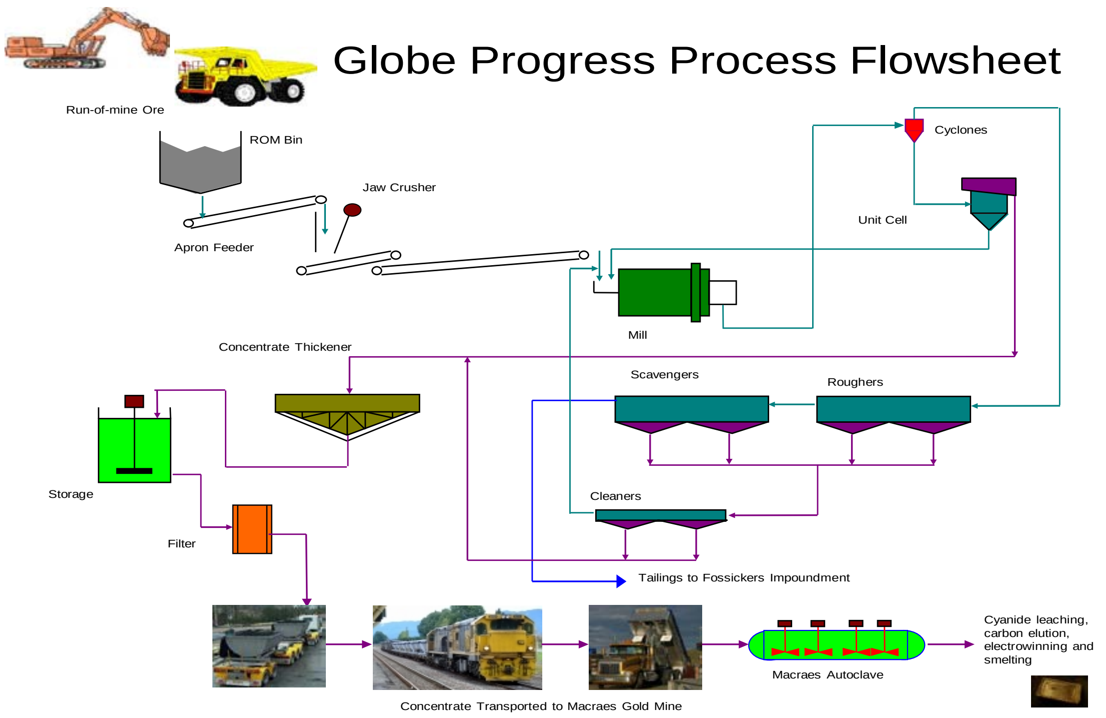
The Reefton processing facility produces a refractory gold concentrate through a crushing, grinding, flotation and de-watering circuit process, this is then transported to the Macraes processing facility as filter cake (approx. 90% solids). At Macraes the concentrate is reconstituted into slurry of 25% solids which is reground through an Isa Mill and pumped into a storage tank prior to processing through the pressure oxidation and CIL circuits.

The Process Plant was designed to treat approximately 1Mtpa but has steadily improved to 1.8Mtpa since start-up in 2007. This is concentrated to approximately 3.1% of the initial feed (56kt) to be railed to and processed through the Macraes processing facility. The operating philosophy is to maximise grade, plant throughput and then recovery by maintaining consistent plant operations and control.

15.1.1 Circuit Configuration

The Process Plant comprises a single train crushing and grinding circuit that reduces ROM ore to a nominal particle size of 80% passing 145 µm. The sulphide ore is then recovered through the flotation circuit to produce a concentrate, which is subjected to a dewatering stage in order to obtain a dry filter cake suitable for handling & transport purposes.

Figure 15.1: Reefton Ore Process Flowsheet



15.1.2 Reefton Concentrate Processing

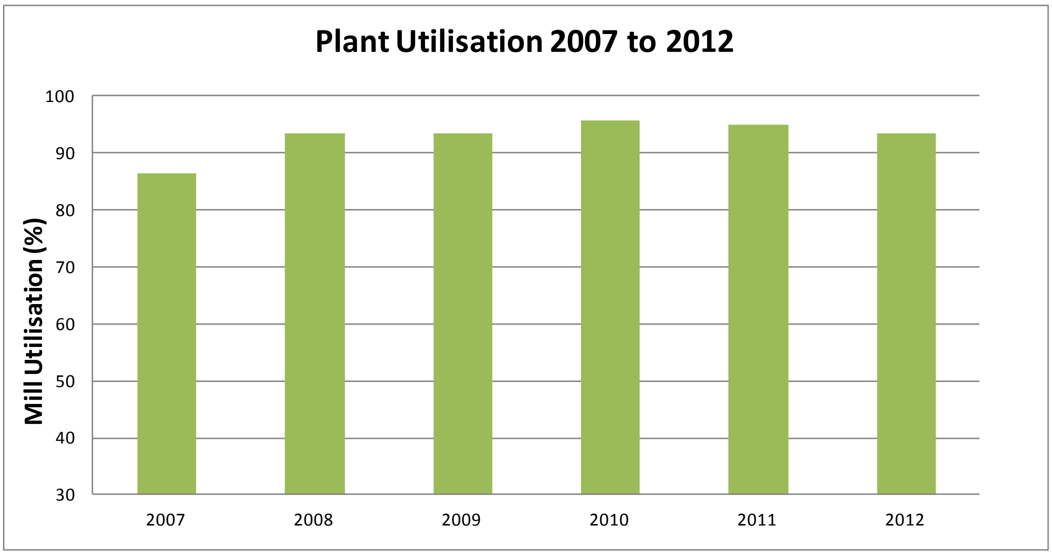
The Reefton filtered concentrate is loaded into specifically designed kibbles and transported by truck to Reefton town rail yard and by rail to Palmerston in Otago. The filter cake is emptied into a concentrate storage shed located adjacent the rail spur and empty kibbles back loaded on rail.

Thirty tonne combined B-double truck and trailer units are loaded using a front end loader and Reefton concentrate is trucked to the Macraes site.

15.2 Production

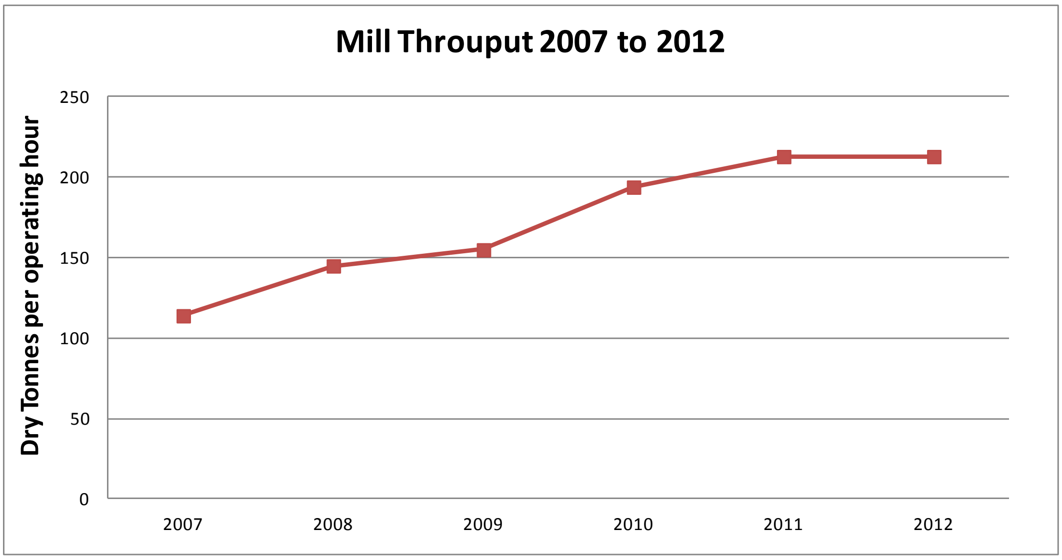
Processing of sulphide ore at the Globe mill commenced in 2007 and has ramped up to a steady state over several years. Figure 15.2 shows the mill utilisation each year since operations commenced and ongoing budget assumptions are based on a conservative approach.

Figure 15.2: Reefton Process Plant Utilisation



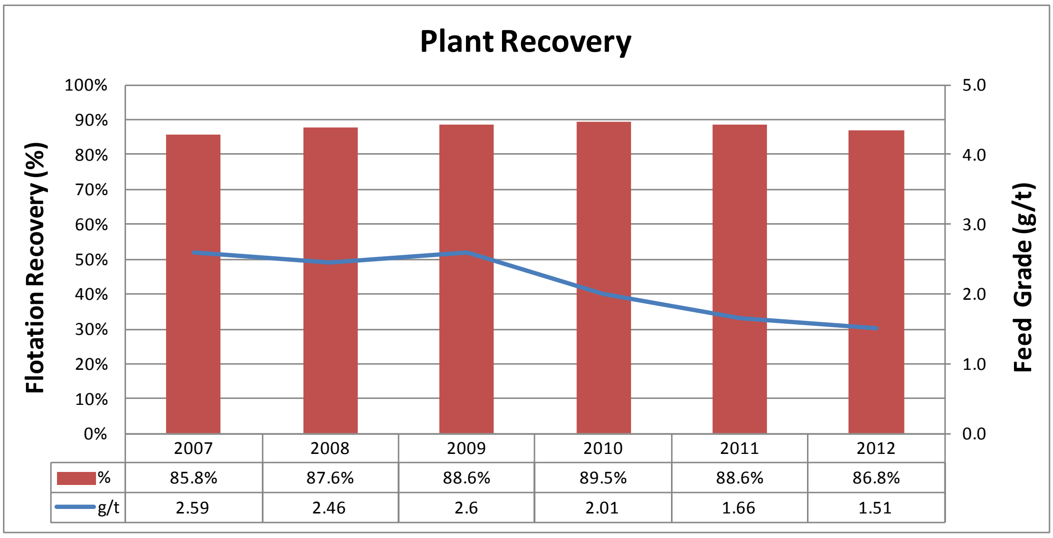
Plant throughput has exceeded the original nameplate design through a program of investigation and debottlenecking. Current operation has been established with the ability to treat in excess of 200tph with annualised throughput rates demonstrated in Figure 15.3.

Figure 15.3: Reefton Process Plant Utilisation



Recovery of gold to flotation concentrate has remained within the expectations of ore testing and consistent since stable operation of the plant, despite a decrease in the ore grade fed to the mill with increasing throughput. The mill feed grade and flotation recovery since startup are shown in Figure 15.4.

Figure 15.4: Reefton Process Plant Recovery



The consistent performance of the process plant on treating the Globe ore has allowed relationships to be validated to predict future throughput and recovery rates. The assumptions used to predict future LOM plant performance are based on predictions from the mine plant and rates that have been demonstrated to be achievable within the current mill.

Table 15.1:LOMP13 Processing Schedule

Key Parameters	2013	2014	2015	2016	2017	2018	LOM
Globe OP (kt)	1,533	1,543	1,628	1,628	615		**6,948**
Head Grade (g/t)	**1.55**	**1.46**	**1.35**	**1.32**	**1.29**		**1.40**

Sulphide mill throughput for 2013 is projected to be ~1.55 million tonnes. The mill throughput for the LOM has been set at nominally 1.5 Mtpa. The milling rate has been set at 201tph (at an overall availability of 89.8%). Availability is slightly lower in the first two years due to lack of ROM stocks.

Table 15.2: Key Parameters

Key Parameters	2013	2014	2015	2016	2017	2018	LOM
Mill availability (%)	89.8	88.9	95.0	95.0	11.5		**76.0**
Flotation recovery (%)	88.4	88.0	87.4	87.8	87.8		**87.9**
CIL recovery	94.5	94.5	94.5	94.5	94.5		**94.5**
Overall Recovery (%)	82.8	82.6	82.0	82.4	82.4		**82.4**

The key operating parameters are highlighted in Table 15.2.

Flotation recovery has been based on an empirical plant relationship derived between recovery and head grade – the higher the head grade, the higher the recovery.

15.3 Processing Operating Costs

Table 15.3: Operating Costs Summary

	2013	2014	2015	2016	2017	2018	2019	LOM
Reefton Processing Cost (NZ$M)	29.7	29.1	29.5	27.5	16.8	1.8	1.8	**136.3**
Unit cost (NZ$/t)	**19.39**	**18.87**	**18.12**	**16.9**	**27.26**			**19.62**

The costs per activity are detailed below in **Table 15.4** and **Table 15.5**.

Table 15.4: Operating Costs by Activity

	2013	2014	2015	2016	2017	2018	LOM
Crushing	0.7	0.7	0.7	0.7	0.1	0.0	**2.9**
Engineering	0.8	0.8	0.9	1.0	0.1	0.3	**4.0**
Filtration	4.0	3.7	4.2	3.4	0.4	0.1	**15.8**
Flotation	2.5	2.5	2.6	2.6	0.3	0.0	**10.4**
Grinding	5.1	5.2	5.5	5.8	0.6	0.0	**22.2**
Metallurgy	1.3	1.2	0.7	0.5	0.1	0.0	**3.8**
Operations	2.1	2.2	2.0	1.9	1.2	0.4	**9.9**
Plant Services	0.6	0.6	0.5	0.5	0.2	0.0	**2.4**
Power	3.4	3.5	3.6	2.5	0.3	0.4	**13.7**
Tailings	0.7	0.7	0.8	0.8	0.7	0.4	**4.1**
Water Treatment	1.2	0.9	0.9	0.8	0.4	0.3	**4.5**
Total(NZ$M)	**22.4**	**22.0**	**22.4**	**20.5**	**4.4**	**1.8**	**93.6**

Table 15.5: Reagent Usage

Reagent	Driver	Usage	Comment
Balls - SAG Mill	kg/kWhr	0.072	
Xanthate	kg/t	0.2	
CMS 41 Collector	kg/t	0.021	
Copper Sulphate	kg/t	0.15	
Flocculant - Cons	kg/t	0.005661	
Ferric Chloride - water	kg/cu m	0.18	Water Treatment Plant
Lime - water	kg/cu m	0.2	Water Treatment Plant
Flocculant - Water	kg/cu m	0.003004	
Antiscalent/Other	kg/t	0.003	
Flocculant - Tails	kg/t tails	0.025	
Crystalfloc - Water Treatment	kg/m3	0.003	Water Treatment Plant
HCl	kg/cu m	0.09	WTP - Phase out
Crystalfloc - Concentrate	kg/t con	0.4	
Interfroth 635 (Scav)	kg/t	0.042	

16 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

16.1 Resource Estimates

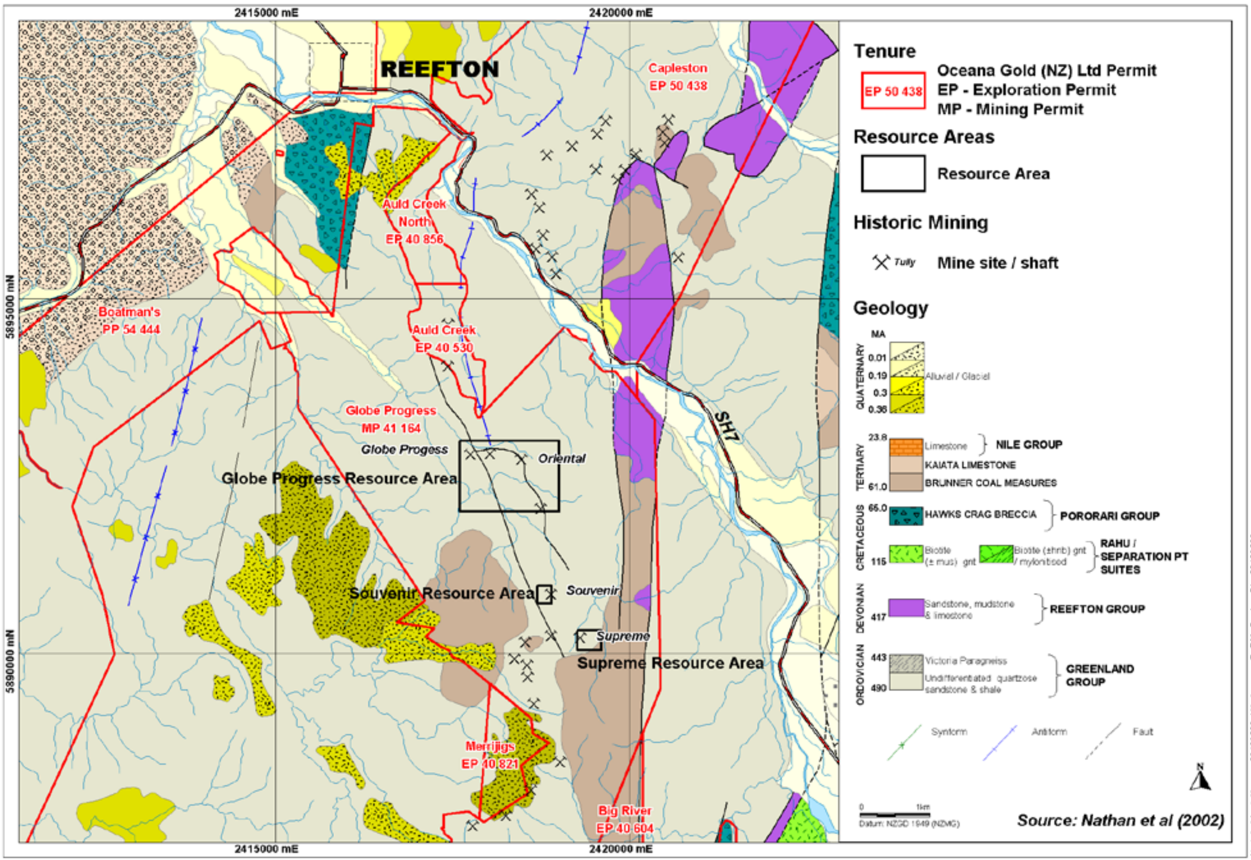
Oceana has generated Mineral Resource estimates for four deposits within the Reefton Gold Field; Globe Progress / General Gordon, Souvenir, Supreme and Blackwater (see Figure 16.1).

Approximately 6 Mt of ore has been mined from Globe / General Gordon, Empress and Souvenir deposits since commissioning of the mine in 2007, the majority having been mined from Globe. Empress was mined to completion in Q2 2013.

The weathering profile is typically shallow, on average approximately 10 metres to fresh rock from surface. Most of the mineralised oxide has now been mined.

A description of the individual estimates is provided below.

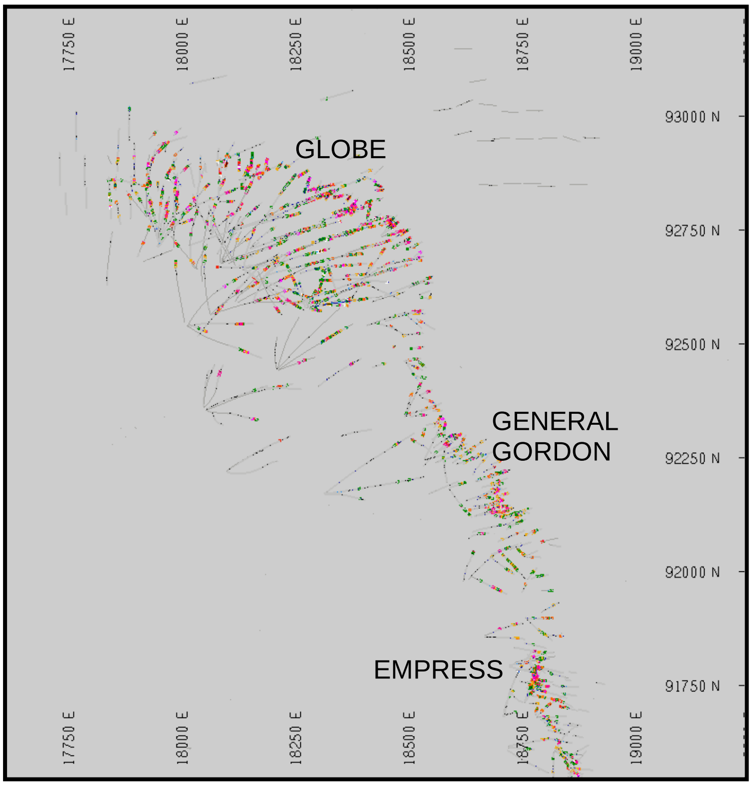
Figure 16.1: Reefton Project Resource Areas



16.1.1 Globe Progess

The Globe Progress resource includes the Globe Progress and General Gordon deposits as shown in Figure 16.2. The resource estimates are based on a combined database of 261 drill holes (193 diamond and 68 RC percussion) for 26,477m of drilling. Diamond core represents 82% of the total meterage. Challenging terrain, and complex three dimensional geometry have resulted in erratic drill hole coverage; in general coverage averages about 40m x 40m in the plane of mineralisation. Reverse circulation drill holes RC01 to RC60 were excluded due to suspected wet sampling bias. These represent mineralisation that has now been mined out.

Figure 16.2: Globe Progress Project - Drill hole Location Plan



16.1.1.1 Geological Modelling

Figure 16.3 presents a simplified geological map of the Globe open pit geology. The Globe orebody is geometrically complex, particularly in the footwall. The hangingwall is defined by the Globe Shear, believed to be a thrust fault which delineates a tightly folded greywacke sequence to north from a less structurally complex greywacke package to the south. The shear is the primary control on the Globe mineralisation with secondary controls along fold axial planar faulting into the footwall (and to a lesser extent into the hangingwall).

Figure 16.3: Simplified Globe Geology from A. Allibone Pit Mapping during 2009

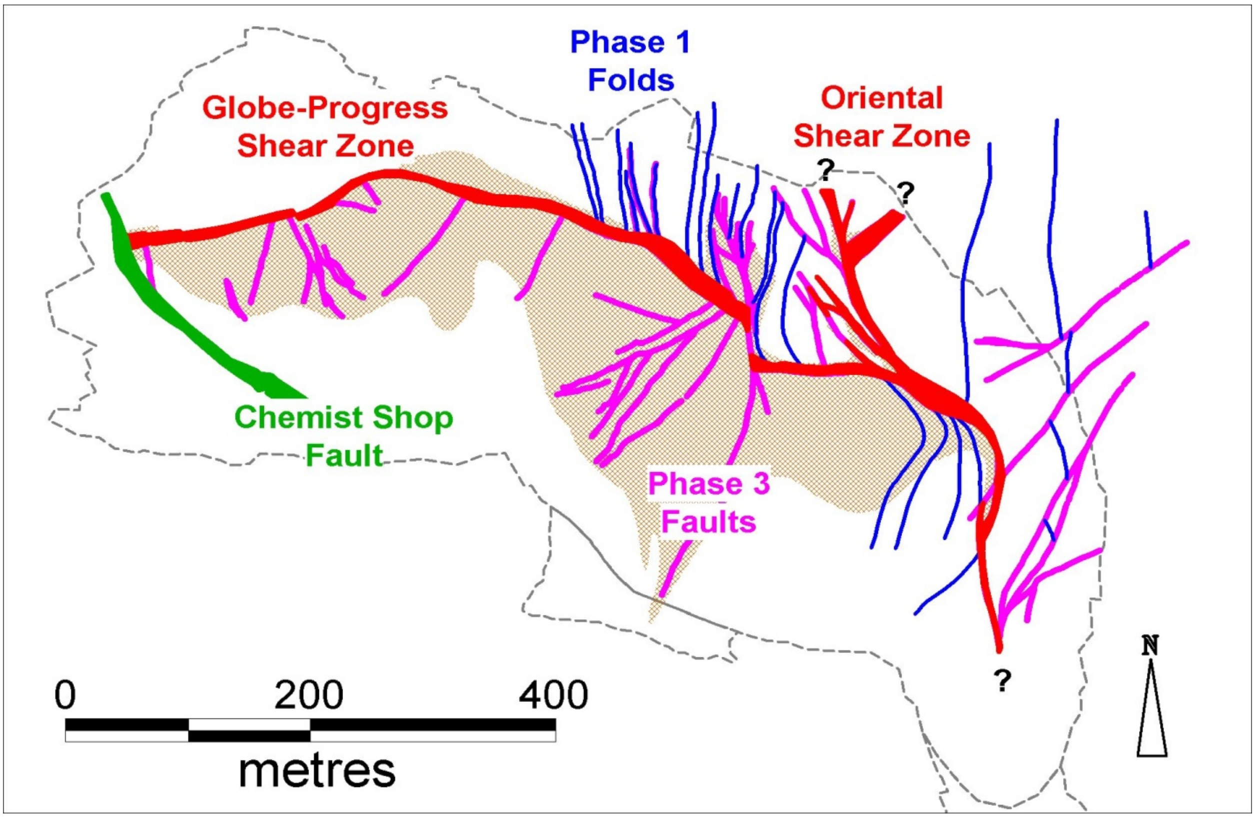
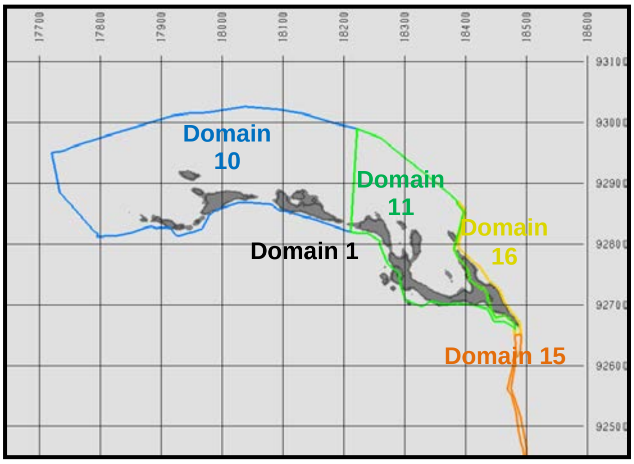


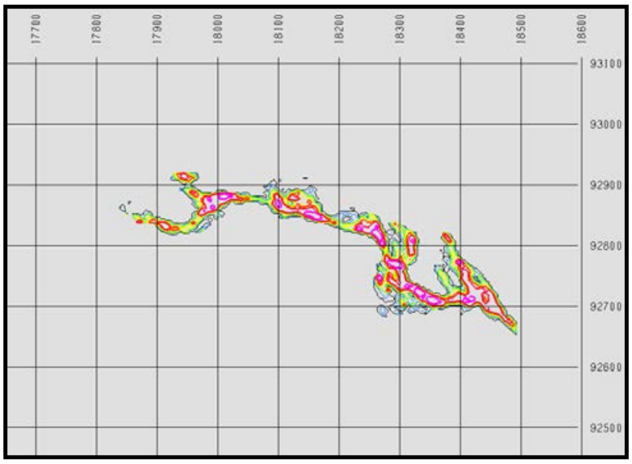
Figure 16.4 shows a plan slice through the resource model domains relative to the orebody footprint on the LHS and the grade control model on the RHS. The grade model is based on 5m x 5m x 1.25m inclined reverse circulation drilling. Colour contours from grey to magenta represent ordinary kriged gold grades from 0.05 g/t to 4.0 g/t Au. The complex grade distribution reflects the structural complexity seen in the pit geology.

The Oriental Shear (domains 15 and 16) is wireframed-constrained on both its upper and lower boundaries, while the Globe domains (10 and 11) are constrained only on the hangingwall (Globe Shear, with a 5m stand-off). The unconstrained footwall accommodates increased geological complexity.

Further to this, the domains were subdivided at the 300mRL to account for a general flattening of the structures at depth. This vertical domaining was implemented by constructing the model in two parts, firstly above the 300mRL and secondly below the 300mRL (see search parameters at bottom of this section).

Figure 16.4: Plan View Slice, 420mRL showing grade control footprint and modelling domains on LHS and Grade Control Ordinary Kriged Grade Contours on RHS





Bulk density values have been coded into the resource model and are based on 375 specific gravity measurements (see section 17.1).

Table 16.1.1: Globe Progress / General Gordon Deposits

	Block Model Bulk Density Assignment	
	Rock Type	**Bulk Density (t/m^3)**
Oxide	Ore Waste	2.52 2.52
Fresh	Ore Waste	2.62 2.65

Table 16.1.2 below summarizes the domain gold statistics. Note that the indicator thresholds for domains 1, 10 and 11 were based on truncated populations. That is, a 0.5 g/t Au lower cut-off was applied to increase discretisation for the higher grades.

Table 16.1.2: Globe Progress/General Gordon- Gold Statistics by Gold Domain for 1m composites

Domain	1	10	11	15	16
Number of Samples	18,492	5,584	6,794	248	908
Minimum g/t Au	0.01	0.01	0.01	0.01	0.01
Maximum g/t Au	121	47.0	83.1	18.4	61.2
Mean g/t Au	0.11	0.78	1.06	1.47	1.97
Median g/t Au	0.01	0.04	0.13	0.56	1.28
Coeff of Variation	5.1	2.6	2.0	1.6	1.28

Note all grades were top cut to 25 g/t Au.

16.1.1.2 Grade Modelling

The resource model is a large panel, multiple indicator kriged, recoverable resource model, built using GS3M Resource Modelling Software[1]. The recoverable tonnes and grade were estimated at nominated cut-offs (in this case 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1 and 1.2 g/t cut-offs).

A top cut of 25 g/t Au was applied.

The model dimensions are:

17700.0 92240.0 10.0 \ xmin

18600.0 93060.0 575.0 \ xmax

900.0 820.0 565.0 \ xspan

20.0 20.0 2.5 \ xps (block size)

The SMU (smallest mining unit) assumed for block support is 5 mE, 10 mN, 2.5 mRL

The search strategy above the 300mRL (note axes: 1=x, 2=y, 3=z)

Domain 1 Above 300mRL

35.00 25.00 10.00 \ radius x.y.z primary search

77.00 39.00 22.00 \ radius x.y.z secondary search

16 6 48 \ minimum no. data, minimum no. octants, maximum no. data

2 \ nrot axis angle

3 60.0

2 -55.0

Domain 10 ***Above 300mRL*** *\ Domain GrpName*

35.00 25.00 5.00 \ radius x.y.z primary search

77.00 39.00 11.00 \ radius x.y.z secondary search

16 6 48 \ minimum no. data, minimum no. octants, maximum no. data

2 \ nrot axis angle

3 90.0

2 -55.0

Domain 11 ***Above 300mRL*** *\ Domain GrpName*

35.00 25.00 5.00 \ radius x.y.z primary search

77.00 39.00 11.00 \ radius x.y.z secondary search

16 6 48 \ minimum no. data, minimum no. octants, maximum no. data

2 \ nrot axis angle

3 55.0

2 -55.0

[1] Marketed by FSSI Consultants

<u>Domain 15 Above 300mRL</u> *\ Domain GrpName*

35.00 25.00 5.00 \ radius x.y.z primary search

77.00 39.00 11.00 \ radius x.y.z secondary search

16 4 48 \ minimum no. data, minimum no. octants, maximum no. data

2 \ nrot axis angle

3 0.0

2 -60.0

<u>Domain 16 Above 300mRL</u> *\ Domain GrpName*

35.00 25.00 5.00 \ radius x.y.z primary search

77.00 39.00 11.00 \ radius x.y.z secondary search

16 4 48 \ minimum no. data, minimum no. octants, maximum no. data

2 \ nrot axis angle

3 30.0

2 -60.0

The search strategy below the 300mRL (note axes: 1=x, 2=y, 3=z)

<u>Domain 1 Below 300mRL</u> *\ Domain GrpName*

35.00 25.00 10.00 \ radius x.y.z primary search

77.00 39.00 22.00 \ radius x.y.z secondary search

16 6 48 \ minimum no. data, minimum no. octants, maximum no. data

2 \ nrot axis angle

3 60.0

2 -35.0

<u>Domain 10 Below 300mRL</u> *\ Domain GrpName*

35.00 25.00 5.00 \ radius x.y.z primary search

77.00 39.00 11.00 \ radius x.y.z secondary search

16 6 48 \ minimum no. data, minimum no. octants, maximum no. data

2 \ nrot axis angle

3 90.0

2 -35.0

Domain 11 Below 300mRL \ Domain GrpName

35.00 25.00 5.00 \ radx.y.z primary search

77.00 39.00 11.00 \ radx.y.z secondary search

16 6 48 \ minimum no. data, minimum no. octants, maximum no. data

2 \ nrot axis angle

3 55.0

2 -35.0

Domain 15 Below 300mRL *\ Domain GrpName*

35.00 25.00 5.00 \ radius x.y.z primary search

77.00 39.00 11.00 \ radius x.y.z secondary search

16 4 48 \ minimum no. data, minimum no. octants, maximum no. data

2 \ nrot axis angle

3 0.0

2 -60.0

Domain 16 Below 300mRL *\ Domain GrpName*

35.00 25.00 5.00 \ radius x.y.z primary search

77.00 39.00 11.00 \ radius x.y.z secondary search

16 4 48 \ minimum no. data, minimum no. octants, maximum no. data

2 \ nrot axis angle

3 30.0

2 -35.0

16.1.1.3 Historical Underground Workings

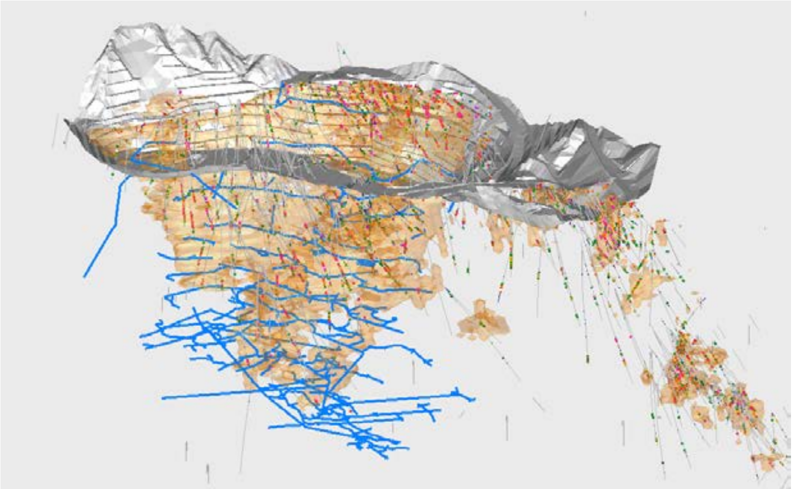
The Globe Progress/General Gordon resource incorporates the historical Globe Progress underground mine from which 1,062,727t of ore were recovered to produce 418,345 oz Au (see

Figure 16.5 which shows the modelled resource veiled orange, the open pit as at December 31, 2012, historical underground development in blue and the drilling). This equates to a recovered gold grade of 12.2g/t. Production was from 11 levels between 477mRL and 83mRL while the modelled resource extends to 60mRL.

The resource drilling was undertaken subsequent to the closure of the underground mine, so from this perspective, the drilling represents the remaining in-situ resource. Despite this, up until 2012, Oceana models used various approaches to compensate for historical mining depletion. No detailed mine plans exist. This absence of spatial void information for Globe Progress makes depletion of the resource model problematic.

The Oceana reconciliation experience has shown that given the resource drill hole spacing, it is not possible to identify and locate many mining voids – this is a hit or miss exercise. While local estimation clearly suffers from encountering voids during mining, the global resource estimates balance without any depletion for historical mining. Top cutting reduces the impact of local estimation, but at the expense of global estimation; it introduces undue global conservatism. For this reason, recent resource estimates have not attempted to mitigate the local impact of voids. Refer to section 16.1.1.5 for the model reconciliation.

Figure 16.5: Oblique View (down to north) of Globe Progress Underground Workings



16.1.1.4 Resource Classification

The resource classification is based both on search criteria and the panel grade. Approximately 15% of the resource is classified as Measured.

MEASURED; within the 35mX x 25mY x 5mZ rotated search ellipsoid a minimum of 16 samples must be found and 4 octants must be populated AND 80% of the panel must exceed 0.5 g/t Au

INDICATED; within the 77mX x 55mY x 11mZ rotated search ellipsoid a minimum of 16 samples must be found and 4 octants must be populated AND 20% of the panel must exceed 0.5 g/t Au

INFERRED; within the 77mX x 55mY x 11mZ rotated search ellipsoid a minimum of 8 samples must be found and 4 octants must be populated AND 20% of the panel must exceed 0.5 g/t Au

16.1.1.5 Reconciliation

Between 31 December 2007 and 31 December 2012, 5.8 Mt of mineralisation were mined at a 0.6 cut-off grade. The resource model has over-estimated tonnes by 1%, grade by 0% and contained gold by 1% (at a 0.6 g/t Au cut-off). While the model provides reasonable predictions at a larger scale, complex pit staging has at times resulted in erratic reconciliations for periods up to a year. The largest grade swings have historically been associated with the partial mining of benches (ie pit staging). With time, as staging allows benches to be mined across their full lateral extent, the grade reconciliation comes into parity.

As Figure 16.6 shows, the lower benches are experiencing poor reconciliation. These are typically partially mined benches and some areas are poorly drilled. Based on the Globe long term reconciliation performance, the reconciliation is expected to recover as the full lateral extent of these benches is mined.

Figure 16.6: Resource Model vs Grade Control kriged model Reconciliation December 2007 to December 2012

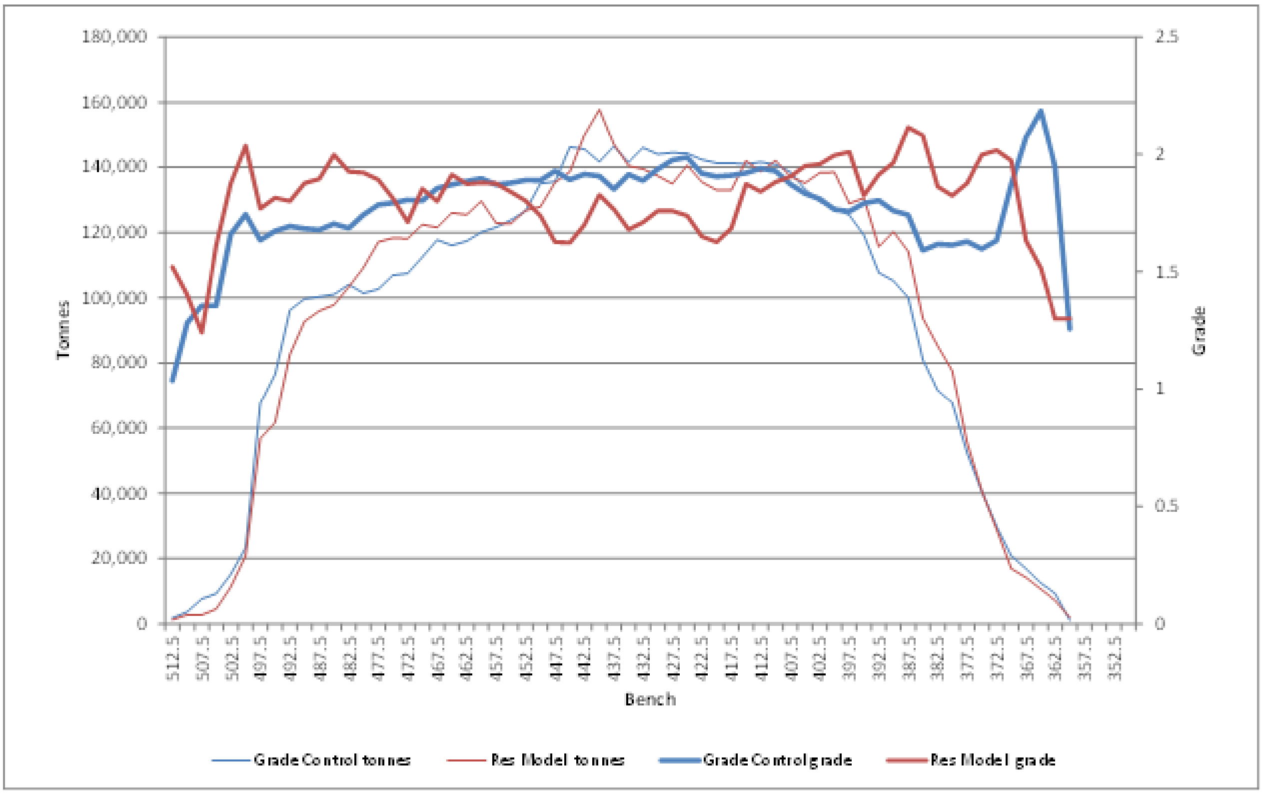


Table 16.1.3: Globe Progress - Mineral Resource

	Total Resources, December 31 2012		
Resource Category	**Mt**	**Au g/t**	**Moz**
Measured	1.70	1.93	0.11
Indicated	12.34	1.50	0.59
Measured & Indicated	14.04	1.55	0.70
Inferred	3.3	1.1	0.1

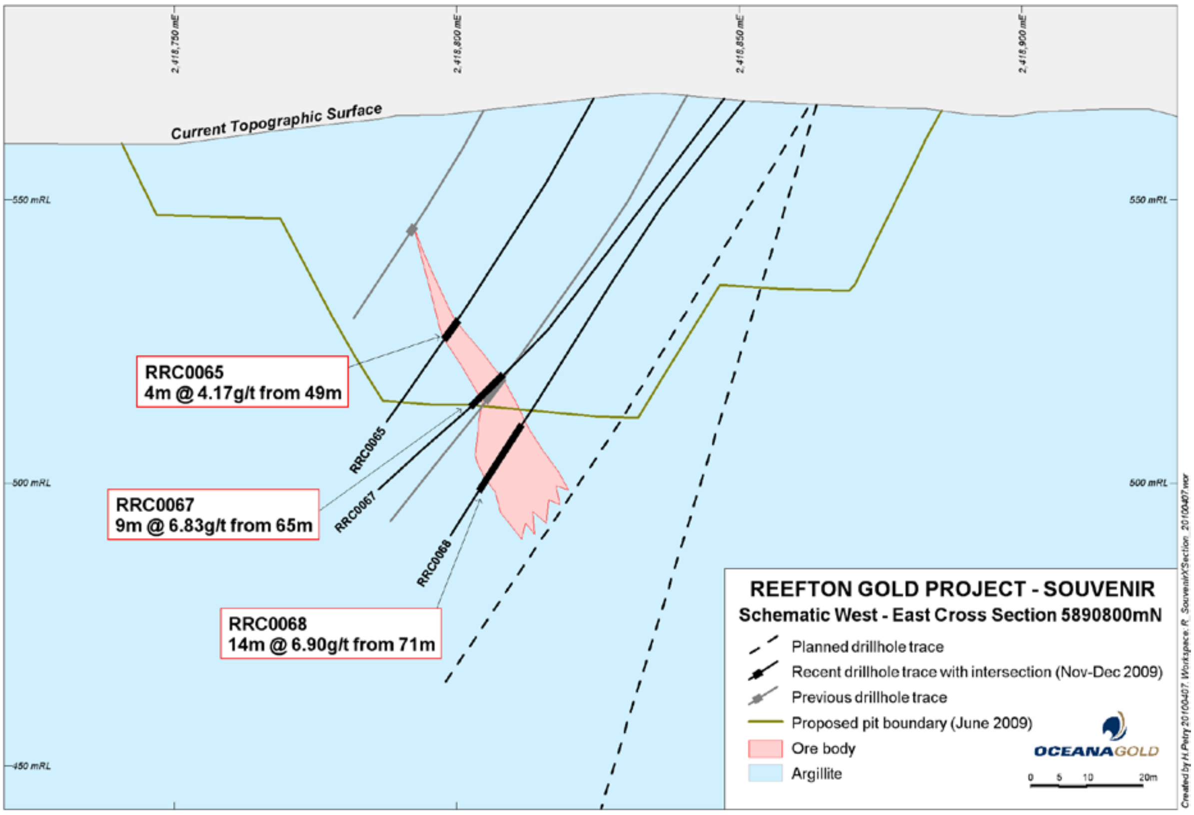
16.1.2 Souvenir

The Souvenir deposit is located approximately 2km to the south of Globe Progress/General Gordon. The Souvenir resource is defined by 49 drill holes for 5,470m of drilling, including 6 diamond drill holes and 43 RC percussion drill holes. The model was updated in November 2010. The current pit design has been mined to completion.

Oceana generated an ore zone interpretation based on a nominal 0.5 g/t grade envelope using 1m composites. A high grade zone within this was also modelled as the mineralised lode.

A typical cross section through the center of the deposit is provided in Figure 16.7.

Figure 16.7: Souvenir Deposit Cross Section



Based on 1m composites, statistics were generated for the data coded within the mineralization domain. As displayed in Table 16.1.4, a mean grade of 3.71g/t Au has been calculated.

Table 16.1.4: Souvenir Deposit - Summary Statistics of Data in the Grade Envelope

Item	Au (g/t)
Number	441
Minimum	0.001
Maximum	36.3
Mean	3.71
Median	1.14
CV	1.57

A recoverable resource estimate block model was constructed with a parent cell size of 20.0mE x 20.0mN x 2.5mRL. The block model construction parameters for the Souvenir deposit are presented in Table 16.1.5.

A proportions model was constructed wherein the percentage was coded into the model to allow accurate reporting of the zone volumes and therefore resource tonnages. A bulk density of 2.55gcm^{3} was assigned to all oxide, a bulk density of 2.62gcm^{3} was assigned to sulphide ore and 2.65gcm^{-3} bulk density was assigned to waste. These values are based on the Globe Progress / General Gordon deposits and also data collected from diamond core.

Table 16.1.5: Souvenir Deposit - Block Model Extents

	Souvenir (Reef15.svr)		No of Blocks
	Limits	Block Size	
Easting	18,500 mE to 19,300 mE	20.0 m	40
Northing	90,500 mN to 91,200 mN	20.0 m	35
RL	200 mRL to 625 mRL	2.5 m	170

The Souvenir gold grade was estimated via multiple indicator kriging and reported as recoverable resource estimates.

The Souvenir resource, reported using a 0.5 g/t lower cut-off grade below the 31st December 2012 surface, is tabulated in Table 16.1.6. The Souvenir resource estimate is based on relatively limited drill hole spacing at the southern end of the shoot and at depth. Oceana has elected to categorise the resource as a combination of Indicated and Inferred Resource.

Table 16.1.6: Souvenir Resource Estimate depleted to 31 December 2012

Resource Category	Mt	Au g/t	koz
Indicated	0.10	2.65	9
Inferred	0.2	1.8	12

16.1.3 Supreme

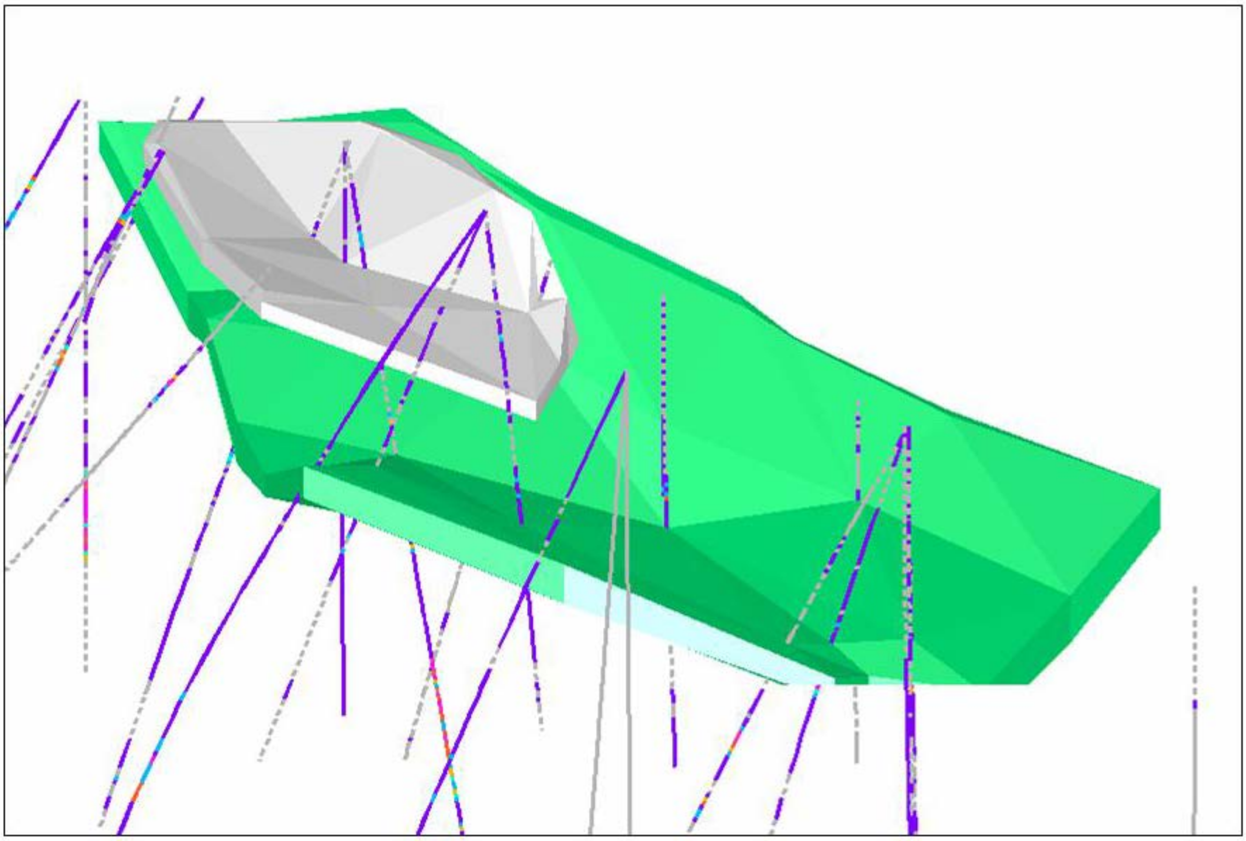
The Supreme prospect is located 3km south of Globe Progress and lies within the Mining Permit MP 40-164.

Exploration completed by Lime and Marble, CRAE and Oceana has included; stream sediment, rock, soil and wacker sampling, airborne geophysics (EM and magnetics), trenching and diamond drilling.

The resource estimate is based on 14 diamond holes for 1,861 metres (some with RC pre-collars). No trench assay data was used in the resource estimate although mapped lithology and mineralized intervals from the trenches were used in conjunction with wacker drill hole information to interpret the surface position of lode structures.

The Supreme Lode system is interpreted as a number of south south-east striking shears that dip moderately to the southeast. Figure 16.8 shows a north facing view across the Supreme lode (green) and the second lode (grey).

Figure 16.8: View of Supreme Prospect looking Grid North



The mineralization zone interpretation was completed in 3D using *MINESIGHT* software. These formed the basis for the volume and tonnage estimates. Grade estimates were obtained by the mean grades of samples within these wireframes.

The data used in the manual polygonal resource estimate totalled some 179 samples within the interpreted wireframes. These data were top cut to 6g/t (approximately the 97 percentile) prior to the grade estimation.

Table 16.1.7 summarises the statistics for all the 1m composited drill hole assays within the interpreted wireframes.

Table 16.1.7: Summary Drill Hole Statistics

Item	Supreme Lode	Second Lode
Number	141	38
Minimum (g/t Au)	0.01	0.25
Maximum (g/t Au)	7.92	20.8
Mean (g/t Au)	1.50	1.84
Median (g/t Au)	1.10	0.92
Std Deviation	2.35	3.37
Coef of Variation	1.02	1.83

Due to the low number of samples, the polygonal estimation approach was used. The estimate has been categorised as Inferred Mineral Resource accordingly.

The Supreme grade estimate is reported in Table 16.1.8 below.

Table 16.1.8: Supreme Prospect - Grade Tonnage Report of the Mineral Resource Estimate as at 31 December 2006

	No Cut-off Total		
Mineral Resource Category	Tonnes (Mt)	Grade (Au g/t)	Contained Gold (koz Au)
Inferred	0.8	1.5	39

Note: Mt = million tonnes, koz = 000's contained ounces

16.1.4 Blackwater

The Blackwater mine is located approximately 37 km south of Reefton and was the largest historical producer in the Reefton Goldfield with 740,400 ounces from 1.58 Mt for a recovered grade of 14.6 g/t Au (in situ grade of 22 g/t Au). This represents more than one third of the two million ounces of gold historically produced from hard rock sources in the region.

Mining of the Birthday Reef commenced in 1906 with the establishment of the Blackwater Mine and ceased in 1951. Records indicate production ceased due to a catastrophic collapse of the Blackwater Shaft. At the time of the collapse, approximately 2 years of reserves were available for mining, and the reef was open at depth.

The Birthday Reef is a simple, relatively planar, steeply-dipping quartz vein striking NNE for approximately 1,000 metres. The lode is remarkably persistent both along strike, and down-plunge, with the average widths and grades remaining consistent with depth.Table 16.1.9 below summarizes historical face sample data collected at the time of mining.

Table 16.1.9: Birthday Reef - Analysis of Level Face Sampling and Stope Widths and Grades in all Samples

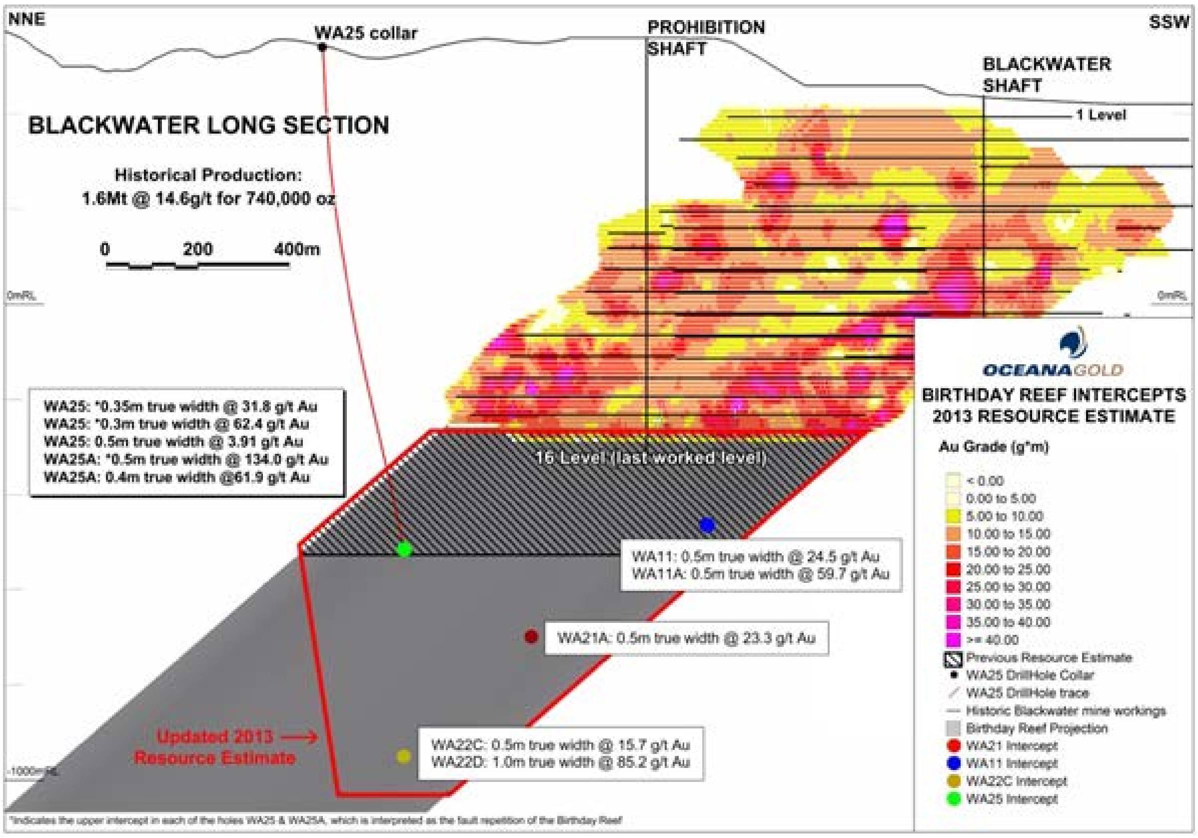
	Northern Levels 11-16 Sample Set (431 samples)		Central Levels 4-13 Sample Set (1,083 samples)		Stopes on Levels 1-16 Sample Set (334 samples)	
	Width cm	**Grade (g/t)**	**Width cm**	**Grade (g/t)**	**Width cm**	**Grade (g/t)**
Average	67.02	22.51	63.53	21.57	62.51	22.89
Standard Deviation	34.55	17.34	30.33	18.10	18.19	8.81
Variance	1,193	300	919.66	327.51	330.96	77.69
Median	60.96	19.43	60.96	18.96	60.71	21.74
Mode	30.48	35.96	60.96	35.96	55.88	26.01
1st Quartile	38.10	10.97	43.18	10.33	50.80	18.01
3rd Quartile	87.63	29.96	76.20	29.96	73.66	26.01
95% Percentile	133.60	50.47	116.84	44.95	96.01	34.21
Min	**5.08**	**0.50**	**10.16**	**0.00**	**21.84**	**6.58**
Max	**194.31**	**209.90**	**251.46**	**299.88**	**134.62**	**110.89**
Number	**431**	**431**	**1,083**	**1,083**	**334**	**334**

Oceana has successfully drilled four holes (as well as additional daughter holes) below the area of historical mining. These holes and their daughter holes are summarized in Table 16.1.10 and Figure 16.9. The results are consistent with the range of historically mined widths and grades and indicate that the Birthday Reef continues for at least 680 metres vertically below the last worked level of the Blackwater Mine. Historically, each vertical metre of the reef produced approximately 1,000 ounces of gold.

Table 16.1.10: Blackwater Deep Drill Hole Intercepts

Hole ID	From (m)	To (m)	Intercept (m)	True Width (m)	Grade (Au g/T)	Grade width (g*m)	Comment
WA11	979.6	980.3	0.7	0.5	24.50	12.3	Parent Hole
WA11A	980.3	981.0	0.7	0.5	59.70	29.9	Daughter Hole
WA21A	1,315.9	1,316.9	1.0	0.5	23.30	11.7	Daughter Hole
WA22C	1,632.30	1,632.91	0.61	0.5	15.65	7.8	Parent Hole
WA22D	1,623.90	1,625.03	1.13	1.0	85.2	85.2	Daughter Hole
WA25	1,118.95	1,119.40	0.45	*0.35	31.8	11.1	Parent Hole
WA25	1,134.18	1,134.59	0.41	*0.3	62.4	18.7	Parent Hole
WA25	1,190.77	1,191.36	0.59	0.5	3.91	1.9	Parent Hole (BR)
WA25A	1,136.40	1,137.11	0.71	*0.5	134.00	67.0	Daughter Hole
WA25A	1,195.20	1,195.65	0.45	^0.4	61.90	24.7	Daughter Hole (BR)

Figure 16.9: Blackwater Mine Long Section showing gram-metres from historical workings, drill intercept locations with estimated true widths, gold assay results and the limits of the updated resource estimate.



16.1.4.1 Updated Resource Estimate

The Blackwater resource estimate presented in this section has been based on a combination of deep diamond drilling and historical mine sample data.

The resource estimate was completed in two steps:

The first was to estimate the projected volume; a reef plane with a 900 metre strike length[2] was projected to depth. Within this projected plane, the resource limit was broadly based on a 200 metre maximum distance to the nearest sample (see thick red line in the long section in Figure 16.9). The historical average (declustered) reef thickness of 0.68 metres was used to estimate the volume. The bulk density of 2.60t/m^3 used throughout for the mineralization was selected as the lode zone was documented to be quartz with some carbonate and sulphides.

The second step was to estimate the grade within this volume. The exploration drilling results fall within the range of historically mined thicknesses and grades. Given however, the small number of exploration drilling intercepts, the grade assigned to the projected resource is based on the historical average (declustered) of in-situ face samples grades.

An Inferred Resource of 0.9Mt @ 21 g/t Au for 0.6 Moz of gold is estimated. This represents an increase of 0.25 Moz on the previous estimate. The resource estimate is in-situ and in line with historical estimates of between 922 and 1,134oz per vertical metre for a total of 1.58Mt @ 14.6g/t Au for 740,400oz recovered gold. The estimate excludes all remnant mineralisation above the 16 level.

Significant mining dilution would need to be added to the estimate to reflect realistically recovered grade.

The Blackwater estimate has been classified as an Inferred Mineral Resource by Oceana and is shown in Table 16.1.11 below.

[2] Note that the average strike length of the historically mined reef is approximately 1,000 metres, but only about 900 metres of strike length was mined below level 12.

Table 16.1.11: Blackwater Mineral Resource (Polygonal Estimate)

Category	Birthday Reef		
	Tonnes (Mt)	Grade (Au g/t)	Contained Gold (Moz)
Inferred Resource	0.9	21	0.6

No cut-off applied, geologically constrained

16.1.5 Combined Mineral Resource Reporting

Resource estimates have been compiled for 5 deposits / prospects. These have been categorised in accordance to NI 43-101 as reported in below in Table 16.1.12.

Table 16.1.12: Reefton Goldfield Resource Estimate depleted to 31 December 2012

Reserve Cut Off	Resource Area	Measured		Indicated		Measured & Indicated			Inferred Resource		
		Mt	Au g/t	Mt	Au g/t	Mt	Au g/t	Au Moz	Mt	Au g/t	Au Moz
0.5g/t	Globe Progress	1.70	1.93	12.34	1.50	14.04	1.55	0.70	3.3	1.1	0.1
0.5g/t	Souvenir			0.10	2.65	0.10	2.65	0.01	0.2	1.8	0.0
0.8g/t	Supreme								0.8	1.5	0.0
0.0 g/t	Blackwater[1]								0.9	21	0.6
0.5 g/t	Stockpiles	0.05	1.02			0.05	1.02	0.00			
	Reefton Total	**1.75**	**1.90**	**12.44**	**1.51**	**14.18**	**1.56**	**0.71**	**5.2**	**4.6**	**0.8**

[1] The Blackwater resource is geologically constrained and was updated in March 2013

The cut-off grades are based on a gold price of NZ$1,750/oz.

All Mineral Reserves reported are fully included in the Mineral Resources reported for the same deposit.

16.2 Reserve Estimates

The Reefton area reserves include Globe Progress. The estimate represents that part of the Measured and Indicated Mineral Resource which can be economically mined and for which the necessary design work and mine planning have been carried out. Proven and Probable reserve blocks are based on Measured and Indicated resource blocks respectively. Inferred blocks are considered to be too poorly defined to be included in reported reserves, although if they fall within the pit outlines they do represent potential additions to ore mined if confirmed by grade control drilling. The reserves are included within the overall resource figures.

The Reefton reserve tonnages and grades are based on Whittle 4X pit optimisations, using projected costs, slope angles based on geotechnical studies, plant recoveries and future gold prices. Projected gold prices for the selection of pit shells are based on NZ$1750/oz, an overall recovery of 82.4% for sulphide ore

Mining parameters vary from domain to domain, depending on the geotechnical conditions. As a result, pit designs include batter angles ranging from 55-70^{o}, 5-7.5m wide berms at 7.5-15m spacing and inter-ramp slope angles of 34-46^{o}. Mining costs were derived from first principles and checked against actual costs. The optimisation used average mining costs of NZ$2.87/t, and processing costs of NZ$19.60/t, inclusive of process costs at both Reefton and Macraes and concentrate haulage costs. Stripping ratios over the life of the operation average 13:1 (waste:ore).

Reserve tonnages and grades are required by JORC Code (JORC, 2004) criteria to include any anticipated mining losses and mining dilution. On the basis that the Oceana resource estimation procedure includes allowances for small amounts of dilution around resource blocks, no additional dilution or mining losses are applied by Oceana to the block model inventory. Oceana considers that the block model estimation methodology already incorporates some dilution and it has been independently confirmed that the results of the modelling procedure provide a recoverable resource estimate.

The combined Proven and Probable reserve for the Globe Progress deposit and stockpiles at a 0.5g/t Au cut off as of December 2012 is shown in Table 16.2.1.

Table 16.2.1: Summary of Reefton Reserve Estimate as at 31 December 2012

Reserve Category	Tonnage Mt	Gold Grade Au g/t	Contained Au Moz
Proven	1.14	1.87	0.07
Probable	4.77	1.50	0.23
Total	**5.91**	**1.57**	**0.30**

The breakdown of reserves by deposit is shown in Table 16.2.2 below.

Table 16.2.2: Reefton Reserves by Deposit - December 2012

Deposit	Tonnage Mt	Gold Grade Au g/t	Contained Au Moz
Globe Progress / General Gordon	5.86	1.58	0.30
Stockpiles	0.05	1.02	0.002
Total	**5.91**	**1.57**	**0.30**

At the planned mining and plant throughput rate of approximately 1.5Mt/year, the defined sulphide reserves provide production until 2017.

17 OTHER RELEVANT DATA AND INFORMATION

17.1 Bulk Density Determinations

Bulk density determinations on rock types at the Globe Progress Project were carried out by Oceana in 1992, 1994 and 2000. Prior to the 2000 drilling programme, 122 bulk density determinations had been carried out, of which 89 were of likely ore grade material. As part of the 2000 drilling programme, bulk density determinations were completed on almost all cut core samples from the diamond drill holes. This provided an additional 253 bulk density samples of which 91 were mineralized and 162 waste rock.

The average bulk density of the 176 sulphide Globe Progress/General Gordon mineralized samples is 2.67 gcm^3 - based on the weighted average of all ore types recognised in the deposit. The ore types and their respective ore percentages based on drill core are presented in Table 17.1.1.

Table 17.1.1: Weight Averaged Bulk Densities for Sulphide Ore

Ore Type	Bulk Density gcm^{-3}	No. of Samples	Weighting (%)
Quartz (QTZ)	2.62	19	7
Quartz breccia (QBX)	2.59	27	15
Pug breccia (PBX)	2.58	41	11
Host rock breccia (HBX)	2.65	37	10
Mineralized greywacke (MGK)	2.72	32	35
Mineralized argillite (MAR)	2.73	20	22
Average Bulk Density	**2.67**	**176**	**100**

The measured bulk density value has been discounted by $0.05t/m^3$ to $2.62t/m^3$ to allow for the effect of fractures and joints in the bulk rock.

The average bulk density of the 165 unweathered waste samples is $2.70gcm^3$. The rock types and their respective percentages based on drill core are presented in Table 17.1.2. A value of 2.65 gcm^3 has been used for the current feasibility study to allow for the effect of fractures and joints.

Table 17.1.2: Weight Averaged Bulk Densities for Sulphide Waste

Rock Type	Bulk Density gcm^{-3}	No. of Samples	Weighting (%)
Greywacke	2.69	105	64
Argillite	2.73	60	36
Average Bulk Density	**2.70**	**165**	**100**

For the thin veneer of transitional ore (partially oxidised) a bulk density value of 2.52 gcm^3 has been applied. This is the average of 7 trench samples. This value is also used for near surface waste.

Table 17.1.3 shows a summary of the bulk densities used in the Globe Progress/General Gordon, Empress and Souvenir resource estimates.

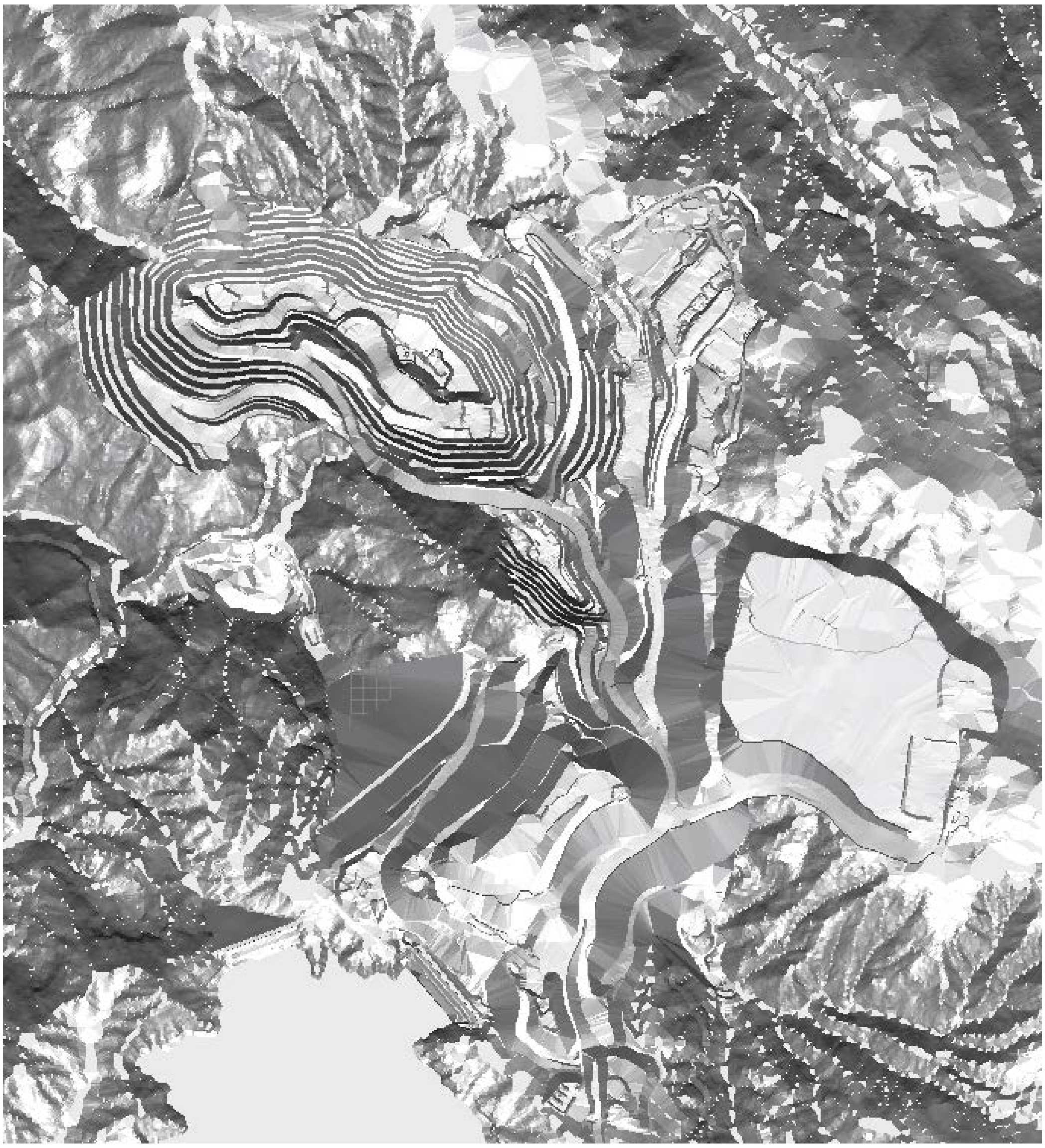
Table 17.1.3: Bulk Densities Used in Current Resource Estimates

Rock Type	Bulk Density gcm^{-3}
Transition Ore	2.52
Transition Waste	2.52
Sulphide Ore	2.62
Sulphide Waste	2.65

17.2 Topography

A topographic survey was compiled using LIDAR survey and close spaced ground survey in the pits. The digital terrain model is based on LIDAR and ground survey data updated on a monthly basis.

Figure 17.1: Globe Progress/General Gordon Topographic Control



17.3 Oxide/Sulphide Surface

Oxidation at the Globe Progress Project is minimal, with fresh sulphides common in surface tracks and trench exposures. Limonitic alteration extends locally to 10m depth, with limonite on fractures extending to a maximum of 20m. Metallurgical test work on ore samples from five drill holes has shown that most of the material is unoxidised and unweathered below about 3m depth. Following a review of drill logs used to define the mineralization, a depth of 8m below topography was used to define the limit of oxidation for both the additional requirements for technical reports on development properties and production properties

17.4 Mining Operations

The Globe Progress mine is a conventional open pit operation. Through to April 2011, mining was carried out through a "cost plus" alliance arrangement. From April 2011, Globe Progress became an Owner Operated mine, using the same leased mining equipment comprising of 180t hyadraulic excavators, 90t and 150t rear dump trucks. The strip ratio averages approximately 13:1 (waste:ore). Waste material is deposited in a nearby valley which has now been filled above the neighbouring ridges and profiled to suit the landscape, with some material being used to form retention dams for the storage of tailings.

The Globe Progress pit has two remaining stages which will supply ore to the mill for the remaining 4 years. Plant feed ore is defined as 1.2 g/t Au or higher, with lower grade material from 0.5 g/t Au to 1.2 g/t Au being treated when required for blending reasons or stockpiled for treatment at the end of mining operations.

Globe Progress reconciliation has been analysed over the life of the operation and has been noted to swing from negative to positive depending on mining width and the part of the deposit being mined during a particular month. Over a long period the reconciliation however normalises. To reduce the production fluctuation risk and hence cashflow fluctuations, LOMP12 production schedule was based on factoring up resource model tonnes by 16% and the grade down by 10% based on most recent monthly reconciliation work. The diluent material has been observed to be mainly low grade material at approximately 0.45 g/t, resulting in 5% more ounces compared to Reserves.

The annualised LOMP12 physicals schedule is presented below in Table 17.4.1.

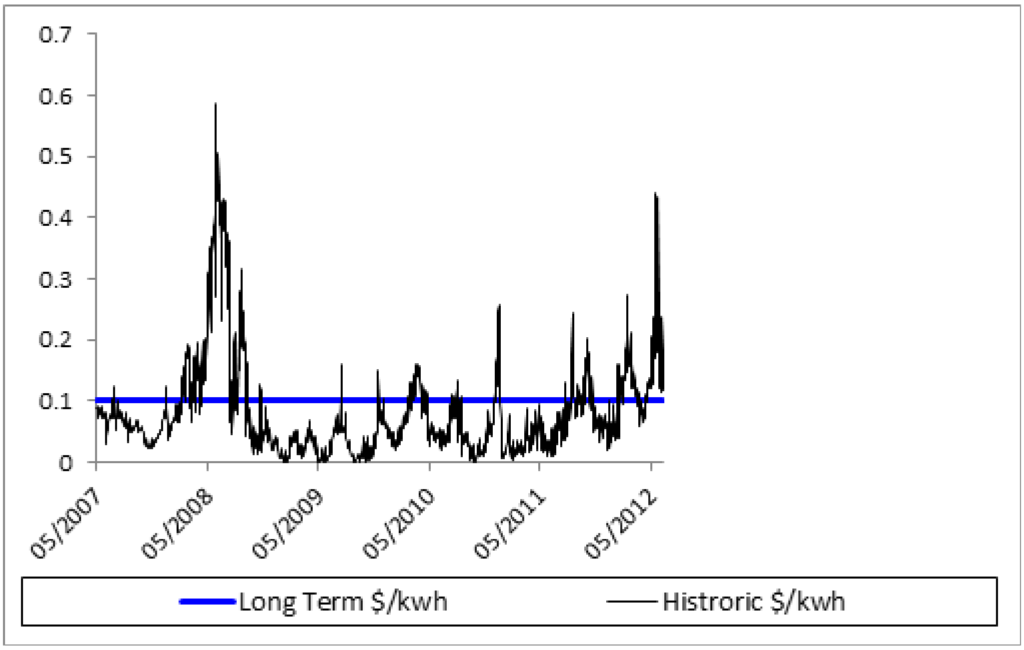
Table 17.4.1: LOMP12 Physicals

PHYSICALS		2013	2014	2015	2016	2017	LOM
Gold Sold	oz	61,258	61,227	63,005	56,700	20,984	**263,174**
Gold Produced	oz	63,248	59,693	57,824	56,700	20,984	**258,448**
Total Movement (Open Cut only)	kt	23,641	25,210	21,668	4,696	1	**75,215**
Prestrip	kt	17,885	11,853	-	-	-	**29,738**
Ore Tonnes mined	kt	1,577	1,929	1,763	1,627	-	**6,897**
Ore Grade mined	g/t	1.56	1.43	1.35	1.29	-	**1.41**
Ore Grade Milled	g/t	1.55	1.46	1.35	1.32	1.29	**1.40**
Recovery	%	82.8	82.6	82.0	82.4	82.4	**82.4**
Ore Tonnes Milled - at Reefton Plant	kt	1,533	1,543	1,628	1,628	615	**6,948**

17.5 Processing

Processing and overhead costs were based on adjusted 2012 actual costs. Historical cost data was used to validate the selected processing costs. Figure 17.2 shows optimisation electricity cost per kWhr (long term) versus historic cost per kWhr.

Figure 17.2: Long Term and Historic Electricity Cost



Overhead costs were split between processing and mining based on what the individual overhead costs were. Table 17.2 shows overhead and processing costs used during optimisations.

Table 17.2: Overhead and Processing Costs

TIME COST SUMMARY		Proportion of Cost to every tonne			
Overhead Classification	**Cost estimate pa**	**milled**	**mined**		
Mining Department	$9,472,500		100%		$0.41/t mined
Environmental	$1,162,390	100%		$0.72/ t milled	
Administration	$3,775,394	100%		$2.32/ t milled	
Refining & Royalties		100%			
Processing	$4,866,254	100%		$2.99/ t milled	
Sustainable Development		100%			
Sustaining Capital			100%		
TOTAL TIME COSTS	**$19,276,538**	51%	49%	**$6.03/ t milled**	**$0.41/t mined**
Expected yearly mill throughput	1,625,720 tpa				
Expected yearly mining capacity	22,828,500 tpa				
Time costs per tonnes milled	**$6.03/t milled**			$9,804,038	
Time costs per tonne mined	**$0.41/t mined**			$9,472,500	
				$19,276,538	
PROCESSING COSTS					
Mill				$18.34 / t milled	
Feeding Crusher				$.77 / t milled	
Total Mill				$19.11 t milled	
FT Dam Construction				$0.61/ t milled	
Mill cost per tonne				$19.72 t milled	

17.6 Contracts

17.6.1 Mining

Globe Progress Mine is an Owner Operated mine with Equipment being provided through a supply contract with Gough, Gough and Hamer Limited and funded through a Master Asset Finance Agreement with Caterpillar Financial New Zealand Limited. The terms of the asset finance agreement are generally in accordance with current mining practice. Maintenance is undertaken by the company with additional services supplied by Gough, Gough and Hamer Limited as required.

Bulk explosives are supplied by Orica New Zealand Limited. RedBull Mining Services Ltd supplies initiating and packaged explosives.

17.6.2 Concentrating, Smelting and Refining

Treatment of the Reefton ores to produce a combined concentrate for further processing at Macraes is part of the operation carried out by Oceana at the Globe Progress site and is not contracted out. Similarly, smelting is completed by Oceana at the Macraes site. Refining of gold bullion is completed by Western Australian Mint. No smelting is involved at the Globe Progess site.

17.6.3 Transportation

Globe Progress concentrate is transported to Macraes by truck and rail under contracts with Reefton Hire (2008) Limited and Kiwirail. The trucking contract is current until December 2013. The rail contract is renewed monthly. Both contracts include terms and conditions which are within industry norms; pricing of trucking was arrived at after a tender process and pricing of rail freight was arrived at after negotiations with the monopoly service provider with the alternative all-trucking alternative as a fall back position.

17.6.4 Power Supply

Power is supplied by Genesis Energy under a fixed price variable volume power supply agreement which complies with industry norms.

17.7 Environmental Considerations

Bonding is required as a condition of the statutory approvals required to licence mining activities. The bonding levels are calculated on the basis of a third party being required to complete rehabilitation/remediation of mining activities. In particular, the RMA (section 108A) makes provision for a bond to be attached as a condition of resource consent “to secure the ongoing performance of conditions relating to long term effects”. The bond may cover:

- Structures;
- Remedial, restoration, or maintenance work; and
- Ongoing monitoring of long-term effects.

The bond requirement may continue beyond the term of the operations. Annual bond limit reviews may occur to account for the progressive nature of mine site development and operation with associated rehabilitation.

Globe Progress Mine bonding has been assessed by Golders and all requisite bonding is in place. The Globe Progress Mine bond is a joint bond in favour to the West Coast Regional Council, the Buller District Council and the Minister of Conservation

17.8 Taxes

17.8.1 Income taxes

NZ company tax rate is 28%. NZ tax rules allow mining companies operating in NZ to claim an immediate tax deduction for mining related capital expenditure rather than an amount for tax depreciation. Consequently due to Oceana’s high levels of capital expenditure in recent years the company has built up considerable tax losses. The immediate deductability of capital expenditure is under review; however the proposed changes are not expected to impact existing tax losses.

17.8.2 Capital Expenditure Programme

Oceana has developed a capital expenditure programme for the Globe Progress Mine for an anticipated 5 year mine life with 2 additional years of restoration and monitoring. Projected yearly expenditures are shown in Table 17.8.1.

Table 17.8.1: Globe Progress Mine Capital Expenditure Summary Schedule (NZ$M)

Item	2013	2014	2015	2016	2017-19	Total
Mining	50.9	32.9	0.0	0.0	0.0	83.8
Processing	0.5	0.1	0.0	0.0	0.0	0.6
Other	7.0	6.9	3.3	0.2	13.0	30.4
Total	**58.4**	**39.9**	**3.3**	**0.2**	**13.0**	**114.8**

The programme covers the period from 2013 to 2019 and includes a range of expenditure categories, as follows:

- mine pre-strip,
- essential for the continuity of the operation,
- justified by improvement in the economics of the operation,
- required for regulatory compliance,
- required to maintain plant conditions at satisfactory levels, and
- closure costs, including site rehabilitation.

Based on the historical performance since the project was recommissioned, specific estimates are regarded as reasonably reliable and accurate, now that Oceana has experience of the equipment condition and more details of further refurbishment requirements

17.8.3 Operating Cost Estimates

Reefton mining costs have been derived from first principles direct mining costs (drill and blast, load, and haul) and technical and supervision costs average NZ$2.87/t mined over the five year life.

Processing costs for the Reefton operation have been estimated at approximately NZ$19.60/t over the life of the operation including the costs of operating the Reefton processing plant and water treatment plant, transporting the concentrate to Macraes, and processing the concentrate through the Macraes concentrate treatment flowsheet.

Reefton processing plant operating costs have been estimated in a similar manner to those for the Macraes plant. Unit consumption of power, reagents and consumables has been estimated from testwork data and from in-house knowledge and prices have been applied to the consumption rates. A manning schedule has been prepared and estimated salary and wage applied to each position. A contract for transport of concentrate to Reefton, loading of rail cars with containers, unloading of rail cars at Palmerston, transport of the containers to Macraes and discharge into the repulp system has been negotiated and signed.

The Reefton operation is supported from Macraes site and from Oceana's Dunedin offices, limiting administration costs to some extent. Annual costs of between NZ$3M and NZ$7M, have been proposed for administration, environment and health and safety costs. Royalties have been costed at NZ$0.73/t ore processed over the proposed mine life.

Table 17.8.2: Operating Cost Schedule for Reefton 2013 to 2019

Item	Unit	2013 Plan	2014 Plan	2015 Plan	2016 Plan	2017 Plan	2018 Plan	2019 Plan	Total 13 – 19
Unit Cash Cost/oz Au - Reefton	NZ$/oz	911	1,064	1,.445	958	1,062	0	0	1,111
	US$/oz	729	830	1,098	728	807	0	0	878

17.9 Economic Analysis

Table 17.9.1 shows the projected net cash flow for the Reefton Project assuming a gold price of US$1,600 per ounce in 2013, US$1,560 per ounce in 2014, and US$1,520 per ounce in 2015 onward.

Table 17.9.1: Net Cash Flow (NZ$'000) by Year for Reefton Open Pits

Baseline Scenario	2013	2014	2015	2016	2017	2018	2019	Total
Reefton	7,636	8,717	27,375	57,188	19,041	(14,371)	(2,125)	103,462

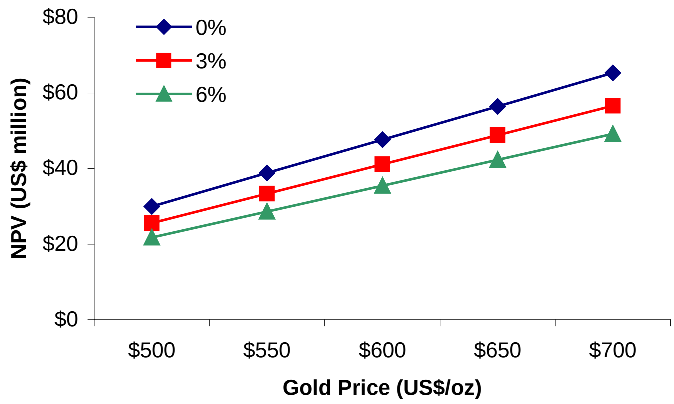
The forecast net mine cash flows from the Reefton operation are estimated to total NZ$103.5 million.

Table 17.9.2 below shows the sensitivity of the Reefton operation net cash flow to variations in operating expenditure, capital expenditure and gold grade. The operation shows net positive cash flows for all scenarios.

Table 17.9.2: Sensitivity of Net Cash Flow (NZ$'000) by Year for Reefton Open Pits

Reefton						
Upside Scenario	**2013**	**2014**	**2015**	**2016**	**2017**	**Total**
Opex -15%	16,003	18,488	41,033	65,340	22,384	163,247
Capex -15%	16,391	14,714	27,873	57,214	19,064	135,255
Grade +5%	17,952	11,873	23,018	63,318	21,175	137,336
Downside Scenario	**2013**	**2014**	**2015**	**2016**	**2017**	**Total**
Opex +15%	(731)	(1,054)	13,717	49,036	15,698	76,667
Capex +15%	(1,119)	2,720	26,877	57,163	19,019	104,659
Grade -5%	5,301	(90)	11,432	51,934	16,975	85,552

NPV of Reefton Project Net Mine Cash Flows (1)



1. Changes to gold price only applied in 2008 onward

17.10 Mine Life

Current reserves at Reefton are scheduled to be mined until 2017 based on the economic assumption of NZ$2,000/oz (equivalent to US$1,600 at USD/NZD exchange rate of 0.8). Due to the current decline in gold pricing, the company will continue to assess and review the operating parameters and the LOMP12.

17.11 Exploration Potential

Between 1870 and 1951, the Reefton Goldfield produced approximately 2.1 Moz or 67t of gold from narrow quartz reefs at an average grade of 14 g/t Au. The goldfield had approximately seventy producing mines during this period, with five mines each producing over 100 koz.

Prior to 2006 the majority of exploration effort, in particular drilling (MMCL, 1998), had focused on exploring the immediate environs of the Globe Progress Mine, which covers approximately 2 km of the 30 km strike length of the Reefton Goldfield. Outside the Globe Progress Mine environs, very limited drilling has been completed although from 2009 to 2012 exploration drilling targeted beneath other historical workings e.g. Big River, Merrijigs, Crushington, Blackwater. After a successful deep drilling program beneath the Blackwater Mine, recent exploration drilling has focused on this area. Given that the Reefton Goldfield has two potential 1 Moz deposits and has numerous historic mines it is now considered probable that additional significant resources and reserves will be discovered.

There are two main exploration targets in the Reefton Goldfield:

- Low to medium grade mineralization that consists of predominantly “halo” mineralization interspersed with narrow high-grade quartz veins that can be mined by open pit mining methods. Globe Progress, General Gordon, Empress and Souvenir are examples of this style of mineralization. Mineralization thickness ranges from 5m to 30m with average grades of 2 g/t to 3 g/t; and

- Narrow 1m to 3m thick high-grade quartz veins that can be mined by underground methods. Over 2 Moz of gold has already been recovered by underground mining from mines such as Blackwater, Big River, Capleston and Crushington. Individual quartz veins have been known to contain up to 40 g/t, with the average historical recovered grade being 14 g/t.

Future exploration efforts will focus on exploring for both low grade minable mineralization within reasonable trucking distance of the Globe Progress plant site (Oceana, 2006b) and high grade quartz viens that can be mined underground. Exploration targets will be analogues of the Globe Progress mineralization (higher tonnage low-grade refractory gold) and Blackwater mineralisation (high grade free gold in quartz veins).

Future exploration effort in the Capleston, Blackwater tenements and the mining permit will target the discovery of new open pit and/or underground resources and reserves.The current exploration strategy focuses on the known mineralization trends in the vicinity of the Globe Progress Mine and Blackwater area particular near areas of historical workings. Identification of new Globe Progress or Blackwater style deposits remains a high priority.

A proportion of the Reefton Line of Lode is mantled by younger sedimentary rocks and recent glacial gravel cover. These areas have been less effectively prospected and represent a further exploration opportunity within the goldfield.

18 GLOSSARY

>	greater than
<	less than
=	equal
%	percent
±	plus or minus
‘	feet
#	mesh
$	dollars
^{o}	degrees
^{o}C	degrees Celsius
Ωm	ohm metres
3D	Three dimensional
a	annum
A	Australia
AA	access arrangement
AAS	atomic absorption spectroscopy
ACD	autoclave discharge
Ag	silver
Al	aluminium
AP	appraisal permit
As	arsenic
asl	above sea level
Au	gold
AusIMM	Australasian Institute of Mining and Metallurgy
BDA	Behre Dolbear Australia Pty Ltd
Bi	bismuth
BIOX	proprietary bio-oxidation process
C	carbon
Ca	calcium
CCD	counter current decantation
ccdf	conditional cumulative distribution function
CEC	Carpentaria Exploration Company Limited

CIL	carbon-in-leach
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
cm	centimetre
CMA	Crown Minerals Act, 1991
CO_3^{2-}	carbonate
Cost/oz	Cost per ounce
Cost/t	Cost per tonne
CRAE	CRA Exploration Limited
CSF	Chemist Shop Fault
Cu	copper
CV	coefficient of variation
d	day
DDH	Daimond drill hole
DEM	digital elevation model
DIGHEM	digital helicopter electromagnetics
DoC	Department of Conservation
DSIR	Department of Scientific and Industrial Research
EM	electromagnetic
EMS	environment management strategy
EP	exploration permit
EPCM	engineering, procurement and construction management
FAS	fire assay
FBT	Fringe Benefit Tax
Fe	iron
Fe^{2+}	Ferrous iron
Fe^{3+}	Ferric iron
F_{80}mm	fail (80 percent) millimetres
g	gram
g/L	Grams per litre
g/m	Grams per metre
g/m^3	Grams per cubic metre
g/rev	Grams per revolution
Gbp	Ball mill grindability
gcm^{-3}	Grams per cubic centimetre
GHD	GHD Limited

GIS	geographic information system
GRDM	GRD Macraes Limited
g/t	Grams per tonne
h	hour
H	hydrogen
ha	hectare
HBX	host rock breccia mineralization type
HIC	high intensity conditioning
hpa	Hours per annum
IGNS	Institute of Geological and Nuclear Sciences
INCO	proprietary Inco Limited metallurgical process
IP	induced potential
JORC	Joint Ore Reserves Committee
K	potassium
kg	kilogram
kg/h	Kilograms per hour
kg/L	Kilograms per litre
$kg/m^2.h$	Kilogram per sqaure metre hours
$kg/m^2/cycle$	Kilogram per sqaure metre per cycle
km	kilometre
km^2	square kilometre
koz	thousand ounces
kPa	kilopascal
kt	thousand tonnes
kW	kilowatt
kWh/m^3	Kilowatt hour per cubic metre
kWh/t	Kilowatt hour per tonne
L	litre
L&M	Lime and Marble Limited
$l/m^2.h$	
m	metre
M	million
m^3	Cubic metres
Ma	million years (before present)
MAR	mineralized argillite

m/h	Metres per hour
m^3/h	Cubic metres per hour
m^3/t	Cubic metres per tonne
mE	Metres east
Mg	magnesium
MGK	mineralized greywacke
MGM	Macraes Gold Mine
Min	minute
MIK	Multiple indicator kriging
mN	Metres north
µm	micrometer or micron
mm	millimetre
MMCL	Macraes Mining Company Limited
Moz	million ounces
MP	mining permit
MPa	megapascal
mRL	Metres relative level
Ms	magnitude at surface
MSF	Main South Fault
Mt	million tonnes
Mt/a	million tonnes per annum
mV	millivolts
Na	sodium
Na_2CO_3	sodium carbonate
Ni	nickel
NZ	New Zealand
NZ$	New Zealand dollars
NZ$/oz	New Zealand dollars per ounce
NZ$/t	New Zealand dollars per tonne
NZ$M	New Zealand million dollars
NZMG	New Zealand Map Grid
O	oxygen
Oceana	Oceana Gold (New Zealand) Limited
oz	ounce
P_{80}	80 percent passing

PAX	potassium amyl xanthate
Pb	lead
PBX	pug breccia mineralization type
POX	pressure oxidation
pH	acidity
PP	prospecting permit
ppm	parts per million
QA	quality assurance
QBX	quartz breccia mineralization type
QC	quality control
QP	quartz-pug mineralization
QTZ	quartz mineralization type
RC	Reverse Circulation drilling
RCD	Diamond drill hole with reverse circulation collar
Rec	recovery
Rec%	recovery
RL	relative level
RMA	Resource Management Act, 1991
rpm	revolutions per minute
RSG	Resource Service Group Limited, RSG Global Consulting Pty Ltd
s	second
S	sulphur
S^{2-}	Sulphide sulphur
S^{2-} Ox	Sulphide sulphur oxidation
S^{2-} Ox %	Percentage sulphide sulphur oxidation
SAG	semi-autogenous grinding
Sb	antimony
SEX	sodium ethyl xanthate
Si	silicon
SIBX	sodium iso-butyl xanthate
SMU	standard mining unit
t	tonne
t/a	Tonnes per annum
t/d	Tonnes per day
t/h	Tonnes per hour

t/m^3	Tonnes per cubic metre
$t/m^2/h$	Tonnes per square metre per hour
t/t	Tonnes per tonne
TML	transportable moisture limit
UCS	unconfined compressive strength
US$	United States of America dollars
US$/oz	United States of America dollars per ounce
V	volt
WCRC	West Coast Regional Council
w	weight
W	tungsten
wt%	Weight %
XRF	X-ray fluorescence
Zn	zinc

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TECHNICAL REPORT CERTIFICATION AND SIGN OFF

The effective date of this Technical Report and sign off is May 24, 2013.

Jonathan Godfrey MOORE

Date of Signature: May 24, 2013

Knowell MADAMBI

Date of Signature: May 24, 2013

CERTIFICATE OF AUTHOR

As a qualified person responsible for the report “Technical Report for the Reefton Project” dated May 24, 2013, (the “Technical Report”) to which this certificate applies, I, Knowell Madambi do hereby certify that:

1. I, Knowell Madambi, am the Technical Services Manager of Oceana Gold (New Zealand) Limited. My business address is OceanaGold, Taunton Mews, 22 Maclaggan Street, Dunedin, New Zealand.

2. I graduated with a BSc Engineering (Hons) degree in Mining from University of Zimbabwe in 1994.

3. I am a member and chartered professional in good standing with the Australasian Institute of Mining and Metallurgy.

4. I have worked as a Mining Engineer in the mining industry for over 19 years since my graduation.

5. I have read the definition of “qualified person” set out in National Instrument 43-101 – Standards of Disclosure for Mineral Projects (“NI 43-101”) and confirm that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.

6. My most recent personal inspection of the Reefton Project was in May 2013.

7. I am responsible for sections 1.7, 1.8.2, 1.8.5, 1.8.7, 2.3.1, 15.1, 15.2, 15.3, 16.2, 17.4, 17.5, 17.6.1 of the Technical Report.

8. I am not independent of OceanaGold Corporation applying all the tests in section 1.4 of NI 43-101 because I am an employee of Oceana Gold (New Zealand) Limited.

9. Prior to my employment with OceanaGold in 2005 I had no involvement with the Reefton Project.

10. I have read NI 43-101 and the Technical Report has been prepared in compliance with NI 43-101.

11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Knowell MADAMBI

Date of Signature: May 24, 2013

CERTIFICATE OF AUTHOR

As a qualified person responsible for the report "Technical Report for the Reefton Project" dated May 24, 2013, (the "Technical Report") to which this certificate applies, I, Jonathan Godfrey Moore do hereby certify that:

1. I, Jonathan Godfrey Moore, am the Chief Geologist of Oceana Gold (New Zealand) Limited. My business address is OceanaGold, Taunton Mews, 22 Maclaggan Street, Dunedin, New Zealand.

2. I graduated with a BSc (Hons) Mining degree in Geology from the University of Otago in 1985 and a Graduate Diploma (Physics) in 1993 also from the University of Otago.

3. I am a member and chartered professional in good standing with the Australasian Institute of Mining and Metallurgy.

4. I have worked as a geologist in the mining industry for 23 years since my graduation.

5. I have read the definition of "qualified person" set out in National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and confirm that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

6. My most recent personal inspection of the Reefton Project was in April 2012.

7. I am responsible for sections 1.1 to 1.6 and 1.8.1, sections 2 to 16.1.5, section 17 and sections 17.11 to 19 of the Technical Report.

8. I am not independent of OceanaGold Corporation applying all the tests in section 1.4 of NI 43-101 because I am an employee of Oceana Gold (New Zealand) Limited.

9. Prior to my employment with OceanaGold in May 1996 I had no involvement with the Reefton Project.

10. I have read NI 43-101 and the Technical Report has been prepared in compliance with NI 43-101.

11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Jonathan Godfrey MOORE

Date of Signature: May 24, 2013