A C A HOWE INTERNATIONAL LIMITED

UPDATED AND AMENDED
TECHNICAL REPORT.
REVIEW OF HISTORIC RESOURCE ESTIMATES AND NEW RESOURCE ESTIMATE FOR THE ATLANTIS II DEEP COPPER, ZINC, SILVER AND MANGANESE DEPOSIT, RED SEA

for
DIAMOND FIELDS INTERNATIONAL LTD

by
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EXECUTIVE SUMMARY

This report is an amendment of the ACA Howe International Limited (ACA Howe) technical report dated October 28, 2011, entitled "Updated Technical Report Review of Historic Resource Estimates and CIM Compliant Resource Estimate for The Atlantis II Deep Copper, Zinc, Silver and Manganese Deposit, Red Sea for Diamond Fields International Ltd (DFI)". This report incorporates updates to Section 11. *Data Verification* and Section 17. *Recommendations*.

Section 11. is updated to include the details of a site visit made by ACA Howe Geologist Mr. Tom Dowrick to the core storage facility at IFM Geomar, Kiel, Germany between 16th and 19th July 2014. During the visit a personal inspection of the Atlantis II Deep core was made and independent verification samples were collected. Mr. Dowrick is independent of Diamond Fields International and a qualified person as defined by NI 43-101. Section 17. is updated to include a breakdown of reasonably estimated costs for additional phases of work recommended in this report.

The effective date of the mineral resource estimate detailed in Section 13 and the report conclusions detailed in Section 16, remains as October 28, 2011.

ACA Howe International Limited (ACA Howe) was commissioned by Diamond Fields International Ltd (DFI) to review and revise historic zinc, copper and silver resource estimates for the Atlantis II Deep sub-sea poly-metallic deposit. An NI 43-101 compliant Technical Report entitled "Review of Historic Resource Estimates for The Atlantis II Deep Copper, Zinc and Silver Deposit" for Diamond Fields International Ltd was completed on July 14th, 2011.

On the 17th October 2011, DFI requested that ACA Howe prepare an estimation of manganese resources at the Atlantis II Deep deposit and amend the July 14th 2011 report accordingly. This updated report entitled "Updated Technical Report. Review of Historic Resource Estimates and CIM Compliant Resource Estimate for the Atlantis II Deep Copper, Zinc, Silver and Manganese Deposit, Red Sea", dated October 28th, 2011, incorporates a review of available Preussag manganese assay data and an updated resource estimate for manganese. There are no other material changes.

The Atlantis II Deep basin containing the Atlantis II Deep hydrothermal sedimentary deposit has a surface area of 60 km^2 and is located approximately 2,000 m below sea level in the median valley of the Red Sea between Port Sudan in Sudan and Jeddah in Saudi Arabia. The seabed at the Atlantis II Deep deposit is defined as a common economic zone to be managed by the Saudi-Sudanese Red Sea Commission (RSC) for the exploration and exploitation of natural resources.

The licence to develop the Atlantis II Deep deposit within the common economic zone has been granted to DFI's joint venture partner, Manafa International Trade Company of Saudi Arabia (Manafa), by the RSC for a period of 30 years. Pursuant to the terms of the joint venture agreement, a joint venture company owned 50.1% by DFI and 49.9% by Manafa, holds the Red Sea mining licences.

The Red Sea Basin Province is an active rift zone where sea-floor spreading has occurred for the last 5 million years. The axial rift system of the central portion of the Red Sea is dominated by northwest trending normal faults that form a deep basin which hosts the Atlantis II Deep deposit. Historic resource drilling at the Atlantis II Deep deposit has defined a hydrothermal sedimentary deposit, typically 11 m thick extending over an area of 60 km^2. It is postulated that the deposit was formed by chemical precipitation from inflowing hot brines and subsequent sedimentation. The distributions of high zinc, copper and silver grades show a strong correlation with the epigenetic anhydrite veins related to brine venting. A general association between, zinc, copper and silver mineralisation, active venting and the intersection of transform faults has been proposed.

Manganese mineralisation appears to be associated with oxidation of dissolved Mn^{2+} ions to hydrated manganese dioxide in the upper brine solution with subsequent precipitation and deposition in shallower portions of the deposit including the central sill, marginal slopes and western and northern sub-basins.

Early work on the deposit evaluations has been undertaken by several interested parties at different times, utilising information provided by various exploration campaigns. In May 1984 a resource based on 605 core samples was estimated as 89.5 million tonnes of sediment at a grade of 2.06% zinc, 0.45% copper and 38.4ppm silver on a dry salt free basis ("DSF"). No significant historic resource estimates were completed for manganese.

A pre-pilot test mining study has demonstrated that the mineralised sediments of the Atlantis II Deep can be continuously mined and concentrated at sea, using conventional flotation techniques. During test mining operations, 15,750 m^3 of sea floor sediments and brines from four test sites in the Atlantis II basin were processed. Results from the pilot study also identified historic cadmium and gold resources.

No new drilling has been undertaken by the issuer.

The 2011 ACA Howe estimates of mineral resources for the Atlantis II Deep project utilised historic drill data from the Valdivia and Meseda exploration cruises undertaken by Preussag A.G. (Preussag) on behalf of the RSC between 1969 and 1981.

DFI have initiated a data verification programme on the available cores. Currently this is limited to 27 samples for zinc analyses and 31 samples for copper and silver analyses and 24 samples for manganese analyses. Results show that Preussag assay values are suitable for use in the estimation of Inferred category mineral resources.

Accordingly, the resource estimate presented in this report was performed using the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Definition Standards for Mineral Resources and Mineral Reserves in accordance with Regulation 43-101 – Standards of Disclosure for Mineral Projects. The effective date of this estimate is October 28th, 2011.

Hard copy records from the Valdivia and Meseda cruises were compiled by DFI and provided to ACA Howe. Assay data for the earliest cruise, Wando River, were not available.

A resource development database was created utilising MICROMINE software that contains all available historic drilling and sampling data for the project. A series of data validation functions were run and any errors encountered were rectified by referring to the original source data.

Prior to processing of sample assay data for use in resource estimation, exploratory data analysis was undertaken on the raw sample database to assess the statistical characteristics of each sampling programme and to investigate the grade distribution of each. For the deposit as a whole, it is considered that there are sufficient samples to allow an evaluation of the geostatistical characteristics of the deposit. The review of raw sample data suggests that assay values obtained in each of the cruises are suitable for use in resource estimation of the Atlantis II Deep deposit.

Prior to interpolation, raw assay values were top-cut to the 97.5 percentile grade. Top-cuts are equal to 9.70 DSF % Zn, 1.32 DSF % Cu, 0.0223 DSF % Ag and 12.90 DSF % Mn. Data compositing was undertaken on raw sample data prior to geostatistical analysis and interpolation, in order to standardise the sample database and to generate sample points of equal support to be used in estimation.

Volume grades were calculated for zinc, silver, copper and manganese using geostatistical analysis and variography. Error statistics for each field analysed show that the variograms produced are suitable for use in ordinary kriging. An empty block model was generated to cover the maximum extents of the Atlantis II Deep deposit and in accordance with previous studies, 300 m^2 blocks were utilised.

Metal grades were estimated globally for the entire Atlantis II Deep basin. Geological variables were estimated in a single run using ordinary kriging.

It is ACA Howe's opinion that resources estimated as part of the 2011 resource study meet with the CIM "Inferred" category. The mineral estimate prepared by Leon McGarry, ACA Howe Resource Geologist, is compliant with current standards and definitions as required under NI 43-101 and is reportable as a mineral resource by Diamond Fields International Ltd. However, the reader should understand that mineral resources are not mineral reserves and do not have demonstrated economic viability. The tabulation on the following page presents a summary of total resources attributable to the Atlantis II Deep deposit.

To the best of ACA Howe's knowledge, the stated mineral resources are not materially affected by any known environmental, permitting, legal title, taxation, socio-economic, marketing, political or other relevant issues.

SUMMARY OF THE 2011 ACA HOWE INFERRED RESOURCES FOR THE ATLANTIS II DEEP DEPOSIT

	Wet Density	Sediment Vol m^3*[1] $[10^6]$	Sediment Tonnage $[10^6]$	DSF Tonnage *[3] $[10^6]$	Metal Tonnes $[10^3]$	Metal Volume Grade*[2]	DSF Metal Grade
Zinc	1.28	473.93	604.21	80.88	1,643	3.47 kg/m^3	2.03 %
Copper	1.28	473.93	604.21	80.88	368	0.78 kg/m^3	0.46 %
Silver	1.28	473.93	604.21	80.88	3.35	7.07 g/m^3	41.14 g/t
Manganese	1.28	473.93	604.21	80.88	2,179	4.60 kg/m^3	2.69%

Notes:
* Omnidirectional Ordinary Kriging (OK) has been used to interpolate resource block values for Zinc, Copper and Silver volume grades, Dry Salt Free (DSF) %, thickness of material above the Detrital Oxide Pyrite layer (DOP), Wet density and Water Depth.
*[1] Volume is derived from the thickness of sediment above the DOP later in m multiplied by 300 m^2 resource blocks informed by a metal grade. Resource blocks are sub blocked down to 100 m^2 and constrained to the -1990 m bathymetry contour.
*[2] Raw assay grades were cut at the 97.5% quantile value equal to 9.70 DSF % Zn, 1.32 DSF % Cu, 0.0223 DSF % Ag and 12.90 DSF % Mn.
*[3] The global mean Dry Salt Free (DSF) material percentage of 13.39 % was used to calculate DSF metal grades.

The current resource estimates compare well with the Guney et al. (1984) resource estimate completed for the RSC for zinc, copper and silver grades and tonnages. A 13% decrease in total sediment tonnage is responsible for a corresponding 13% decrease in contained zinc and copper and an 11% decrease in contained silver.

It is considered that the historic and July 2011 resource estimates are robust for those metals. Although manganese demonstrates an inverse relationship with other metals studied, the October 2011 manganese resource estimate is also considered robust.

Historic estimates contain values for a range of metals including lead, cobalt, cadmium and gold. During historic exploration no attempt was made to systematically analyze for these metals. Resource estimates have not been recreated for:

- lead (80,000 tonnes Pb),
- cobalt (58.53 g/t Co for 5,368 tonnes of Co).
- cadmium (6,500 tonnes Ca),
- gold (0.512 g/t Au for 47 tonnes Au).

It is considered that there is a significant potential to develop resources for a number of metals.

The management team of DFI and its joint venture partner, Manafa, have established and maintained excellent relationships with the Saudi Sudanese Red sea commission, the relevant local authority for the project area.

DFI has significant experience in the exploitation of sub-sea resources. Whilst there are fundamental differences between the DFI's marine diamond project and the Atlantis II Deep deposit, it is considered that DFI is well placed to develop the Atlantis II Deep deposit.

1. INTRODUCTION

This report is an amendment of the ACA Howe International Limited (ACA Howe) technical report dated October 28, 2011, entitled "Updated Technical Report Review of Historic Resource Estimates and CIM Compliant Resource Estimate for The Atlantis II Deep Copper, Zinc, Silver and Manganese Deposit, Red Sea for Diamond Fields International Ltd (DFI)". This report incorporates updates to Section 11. *Data Verification* and Section 17. *Recommendations*.

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The principal author and resource geologist for ACA Howe is Leon McGarry, with advice from Felix Lee, President, ACA Howe International Ltd, Canada. The Competent Person for ACA Howe is John Langlands, previously Principal Geologist and Director and now Senior Associate Geologist.

The Atlantis II Deep basin containing the Atlantis II Deep deposit is located in the Red Sea, approximately 115 km west of Jeddah. The Atlantis II Deep basin is comprised of four interlinked sub-basins lying approximately 2,000 m below sea level. Base and precious metal mineralisation contained within the sediments have attracted a significant amount of exploration since their discovery in 1965. Historical exploration work has identified extensive and continuous mineralisation of zinc, copper, silver, gold, lead, and other metals and investigated the economic potential of these deposits.

2. RELIANCE ON OTHER EXPERTS

The Saudi-Sudanese Red Sea Commission (the RSC) was established in the 1970s with the objective of assessing the economic potential of the Atlantis II Deep. Preussag A.G. (Preussag), a German exploration company, was commissioned by the RSC to conduct a five-year geological exploration programme and technical feasibility study.

The RSC's feasibility study was concluded with completion of their 1982 report entitled, "Final Report on the Geostatistical Evaluation of Metal Reserves of the Atlantis II Deep, Red Sea" and the

1984 report, "Final Report: Preliminary economic evaluation of the Atlantis II Deep metalliferous sediments". These two reports are the principal references utilised in the undertaking of this study.

ACA Howe has relied upon the accuracy of all information provided by DFI and has no reason to believe that the information is not accurate. ACA Howe has relied upon the documentary data cited in this report and listed in the References section.

3. PROPERTY DESCRIPTION AND LOCATION

The Atlantis II Deep basin containing the Atlantis II Deep hydrothermal sedimentary deposit is located approximately 2,000 m below sea level in the median valley of the Red Sea between Port Sudan in Sudan and Jeddah in Saudi Arabia (see Figure 1 (IML, 2011)). The Atlantis II Deep has a surface area of 60 km^2.

A 1975 agreement between Sudan and Saudi Arabia limits their respective exclusive economic zones in the Red Sea to the sea bed less than 1,000 m deep, measured from their respective coastlines. The seabed below this depth is defined as a common economic zone to be managed by the RSC for the joint exploration and exploitation of natural resources.

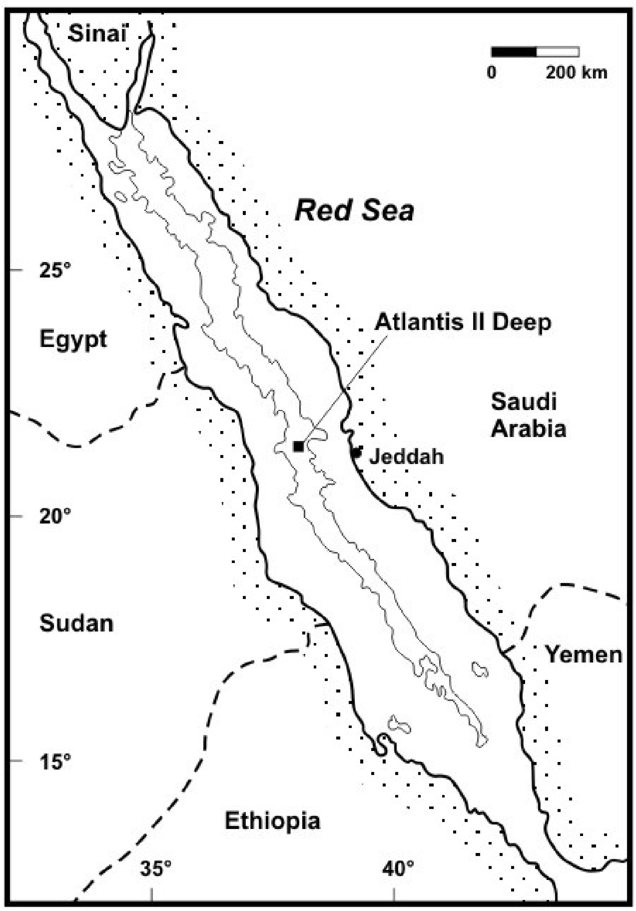


FIGURE 1.LOCATION OF THE ATLANTIS II DEEP PROJECT

The licence to develop the Atlantis II Deep deposit within the common economic zone has been granted to DFI's joint venture partner Manafa International Trade Company of Saudi Arabia

(Manafa) by the RSC for a period of 30 years. Pursuant to the terms of the joint venture agreement reviewed by ACA Howe, a joint venture company owned 50.1% by DFI and 49.9% by Manafa holds the Red Sea mining licences.

The licence has been reviewed by ACA Howe and the following terms have been noted.

- The licence issued by the RSC grants Manafa unilateral rights to exploit the ores of copper, zinc, gold, silver and associated minerals in the licensed area.
- The company pays rent to the surface of ten thousand Saudi Riyals per km^2 or part of it for the year or part of it for the licensed area.
- The company must pay equally to the order of the two countries an amount corresponding to the exploitation which includes the following: (A) 20% of the annual net income (to be deducted the Zakat due on it, and (B) royalties amounting to 5% of the total income.

4. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, PHYSIOGRAPHY

The Atlantis II Basin is located approximately 2000 m below sea level in the median valley of the Red Sea between Port Sudan, Sudan, 100 km to the southwest, and the more developed city of Jeddah, Saudi Arabia, 115 km to the east.

Jeddah is the major urban center of western Saudi Arabia and is and the second largest city in the country after the capital Riyadh. The population of the city currently stands at 3.2 million.

Jeddah has the largest sea port on the Red Sea. Occupying an area of 10.5 km^2, deep water quays provide an overall berthing length of 11.2 km with a maximum draft of 16 m. The city is also served by the King Abdul-Aziz International Airport with daily schedules to major air transport hubs. The highway network connecting Jeddah to surrounding towns and cities is well maintained.

Port Sudan is Sudan's main port city and is the capital of the Red Sea State. At the time of the 2007 census the city had population of 489,725 residents. The city is served by an international airport, motorways links to the capital Khartoum and is connected to the Sudanese rail network.

Afternoon temperatures at Jeddah can range from 25°C (77°F) in winter to above 40°C (104°F) in summer. The rainfall over the Red Sea and its coasts is extremely low, averaging 6 cm per year.

Very high surface temperatures coupled with high salinities make the Red Sea one of the hottest and saltiest bodies of seawater in the world. The rain is mostly in the form of short showers, often associated with thunderstorms and occasionally with dust storms. It is considered that operations will not be limited by seasonal climatic conditions.

As the tenement does not include any habitable land and is not near coastal waters, there is no requirement to negotiate access rights with local landowners.

5. GEOLOGICAL SETTING

The geological setting of the Red Sea Basin Province is described by Lindquist et al. (1998), as a Tertiary cratonic rift south of Egypt's Sinai Peninsula between northeastern Africa and the Arabian Peninsula. The northwest-southeast length of the province is 2,300 km, with a width of up to 400 km. The province is an active rift zone where sea-floor spreading has occurred for the last 5 million years and where water depths locally exceed 2,300 m in the axial region.

The Red Sea Basin Province originated as an Oligocene continental rift impacted by left-lateral wrenching. Rift location and borders are defined by crustal weaknesses created more than 500 million years ago. Late Proterozoic to early Palaeozoic cratonisation of the Arabian-Nubian shield, its suturing to the African continent, and subsequent supercontinent breakup resulted in the juxtaposition of structurally and compositionally different basement terranes and the establishment of major fault systems (Lindquist et al., 1998).

Oligocene continental rifting began with subsidence, extension and normal faulting associated with the episodic and segmented movement of the Arabian Peninsula away from Africa. Magmatic expansion resulted in igneous emplacements. Between about 31 and 29 million years ago, flood basalts erupted covering some 600,000 km^2 of the region. Along the margins of the Red Sea these lavas are up to 2,000 m thick (Wolfenden et al., 2004).

During the Upper Miocene reduced subsidence rates resulted in the development of a major marine evaporitic basin. Extensive evaporite sequences are present throughout the basin but are generally thicker in the central part of the province and in graben centers where, locally, it obtains a maximum thickness of 900 m (Lindquist et al., 1998).

A continuous marine connection from the Gulf of Suez to the Indian Ocean was first established 5 million years ago in the Pliocene with the advent of sea-floor spreading in the southern part of the province (Lindquist et al., 1998).

5.1. THE ATLANTIS II DEEP

The axial rift system of the central portion of the Red Sea is dominated by northwest southeast normal faults striking perpendicular to the direction of extension. These faults form a deep basin containing as many as 25 isolated bathymetric depressions colloquially referred to as “deeps” (Bertram et al., 2011). These depressions are filled with geothermal salt brines that are denser than the surrounding waters.

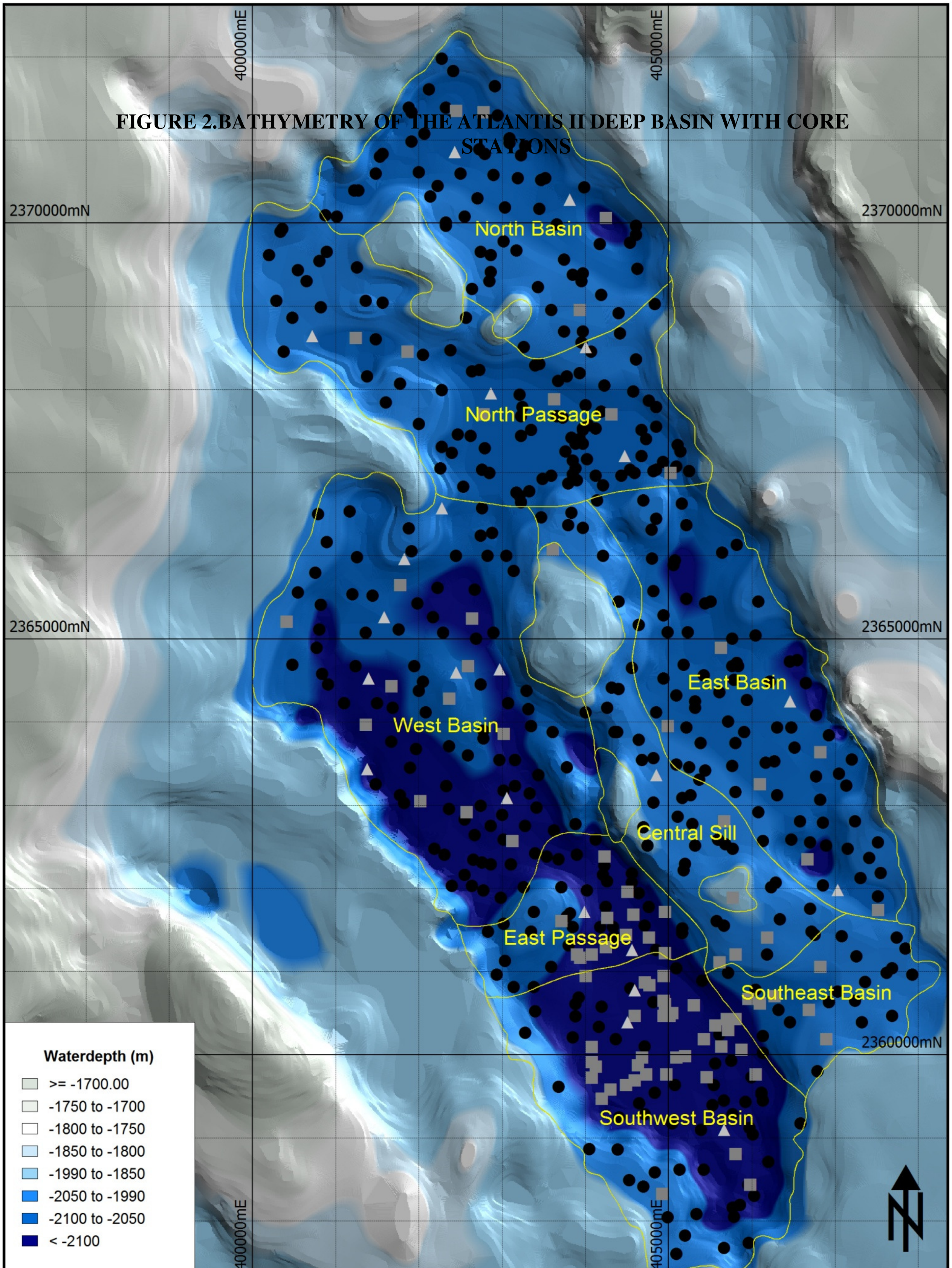
The Atlantis II Deep bathymetric depression shown in Figure 2 has a water depth of 1,900 m to 2,200 m, encompassing an estimated volume of 17 km^3 and is the largest basin of this kind in the axial rift zone (Bertram et al., 2011). Within the depression, brines of up to 27% salinity and temperatures of up to 66°C are underlain by metalliferous sediments.

5.2. GEOTHERMAL BRINES

Hovland et al. (2007) and others, propose that saturated brines observed in the Atlantis II Deep result from the dissolution of Miocene salt deposits as water penetrates deep fissures associated with the axial rift system (see Figure 3). Sixteen kilometres to the east of the Atlantis II Deep, at a water depth of 1,228 m, exploratory drilling has penetrated 230 m and terminated 54 m into a Late Miocene evaporite (salt) sequence.

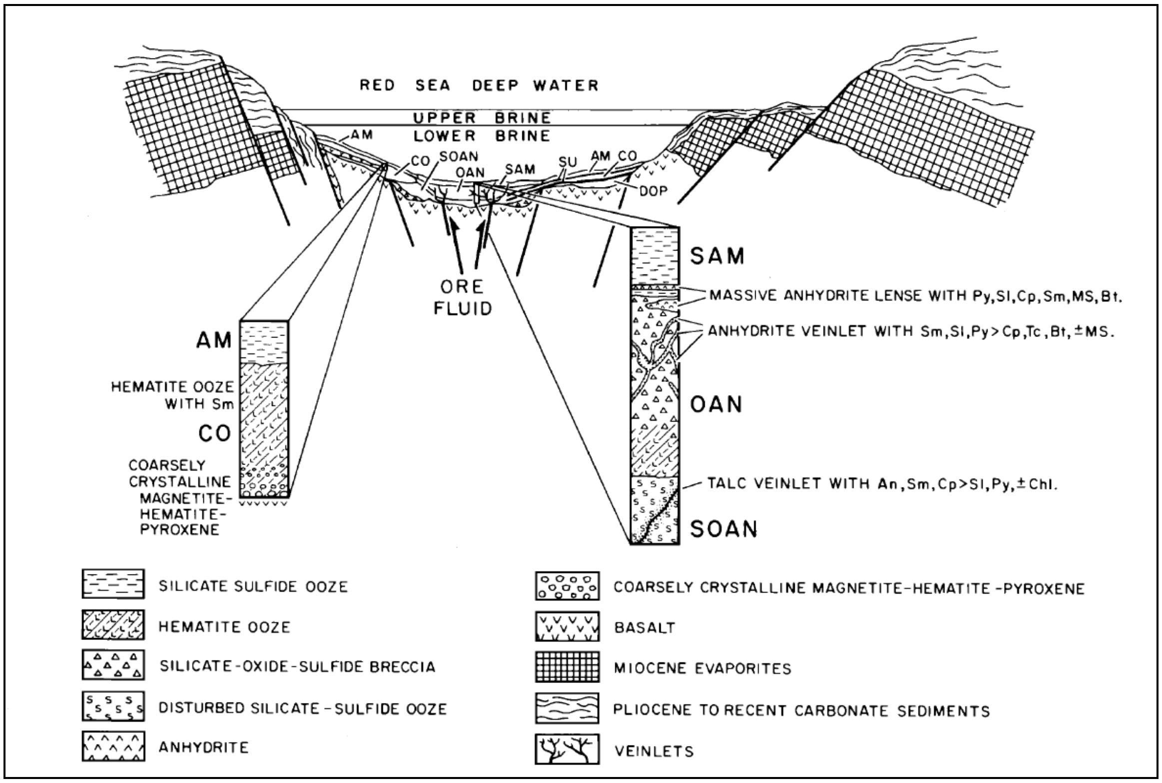
At greater depths the circulating brines become heated and absorb minerals from submarine magma. Drilling in the Atlantis II Deep has identified anhydrite and halite, inter-bedded with black shales and occasionally enriched with Fe, V (1,000 ppm), and Mo (500 ppm), indicating a hydrothermal origin (Hovland et al., 2007).

FIGURE 2.BATHYMETRY OF THE ATLANTIS II DEEP BASIN WITH CORE STATIONS



A C A Howe International Limited

Legend	Scale 1 : 65000	Plot Date 15-Jul-2011	Sheet 1 of 1	FIGURE 2. Bathymetery of the Atlantis II Deep Basin with Core Stations.	ATLANTIS II DEEP COPPER,ZINC AND SILVER DEPOSIT. DIAMOND FIELDS INTERNATIONAL LIMITED.
Sub Basin Boundary Meseda Station Valdivia Station Wando River Station	500 0 500m	Plot File: Collars Depth			



The section illustrates the graben tectonics of the rift valley and shows metalliferous sediment deposited on rift zone basalts. Insert on left shows typical core containing metalliferous sediment hydrothermally recrystallised to magnetite hematite-pyroxene, probably due to the intrusion of basalt into the metalliferous sediments. Right insert shows epigenetic veining in a core from the southwest basin. Thickness of metalliferous sediment has been expanded for clarity. Sediment cores are typically 5 to 20 m in length (Zierenberg and Shanks, 1983).

FIGURE 3.SCHEMATIC EAST-WEST SECTION OF SOUTHERN PART OF ATLANTIS II DEEP.

The interpreted hydrothermal origin demonstrates that seawater circulates deep into sedimentary formations and also the underlying oceanic crust. For the Atlantis II Deep hydrothermal system, this means it is likely that seawater circulates within close proximity of the magma chamber.

As the water heats, convective currents drive it back to the seafloor surface and observations confirm the existence of 'fountains' occurring on the seafloor at the southwest of the Atlantis II Deep basin (Zierenberg and Shanks, 1983).

The main driving force of the convective, circulatory fluid system is postulated to be a high temperature gradient caused by a shallow magma chamber (temperature range from 900 to 1,200°C). Its depth is suspected to be 1 km below the seabed (~ 3 km below mean sea level) and within the supercritical pressure and temperature range for circulating seawater (Hovland et al., 2007).

Due to an increased density associated with increase in salinity, brine fluids pool together as distinctive layers within the Atlantis II Deep depression. The lowest brine layer has a density of 1.20 g/cm^3, a temperature of 61.5°C, and chlorinity of 156 parts per ml as measured in 1977 (Zierenberg and Shanks, 1983). This is overlain by a cooler (50°C), less dense (1.10 g/cm^3) brine layer with a chlorinity of 82 parts per ml.

Hydrographic observations indicate that these brines comprise a dynamic system, with significant temporal changes in temperature and total dissolved salts related to active brine venting in the southwest basin of the Deep (Zierenberg and Shanks, 1983).

Within the axial rift of the Red Sea, geothermal brine pools typically deposit metal-rich sediments containing sulphides of zinc, copper, iron with significant amounts of zinc, copper, silver, manganese, gold, cobalt and other elements of economic value.

6. DEPOSIT TYPE

Portions of following section are taken from the 1982 Preussag Report.

The Atlantis II Deep is a hydrothermal sedimentary deposit. The deposit was formed by chemical precipitation from inflowing hot brines and subsequent sedimentation. It has been revealed from long sediment cores provided by exploration cruises and sub-bottom acoustical information that the maximum deposit thickness is about 25 m but less on the sills and marginal slopes of the basin. In general, the average thickness of the metal rich muds is 11 m.

The information gathered from exploration observations and detailed studies suggests that the Atlantis II Deep in general, excluding the South West Basin, can be divided into six lithostratigraphic units of varying thickness and composition, as follows:

- AM: Amorphous Silicate Zone
- SU2: Upper Sulphidic Zone
- CO: Central Oxide Zone
- COS: Central Oxide-Silicate Zone (locally present)
- SU1: Lower Sulphidic Zone
- DOP: Detrital-Oxide-Pyritic zone

The southwest basin has a different sequence namely:

- SAM: Sulphidic-Amorphous-Silicate zone
- OAN: Oxide Anhydritic Zone
- SOAN: Sulphidic-Oxide-Anhydrite Zone
- DOP: Detrital-Oxide-Pyritic Zone (rarely present)

Figure 4 is a generalised lithostratigraphic sequence of the Atlantis II Deep metalliferous sediments (after Backer and Richter, 1975, in Zierenberg, R. A., and Shanks, 1983).

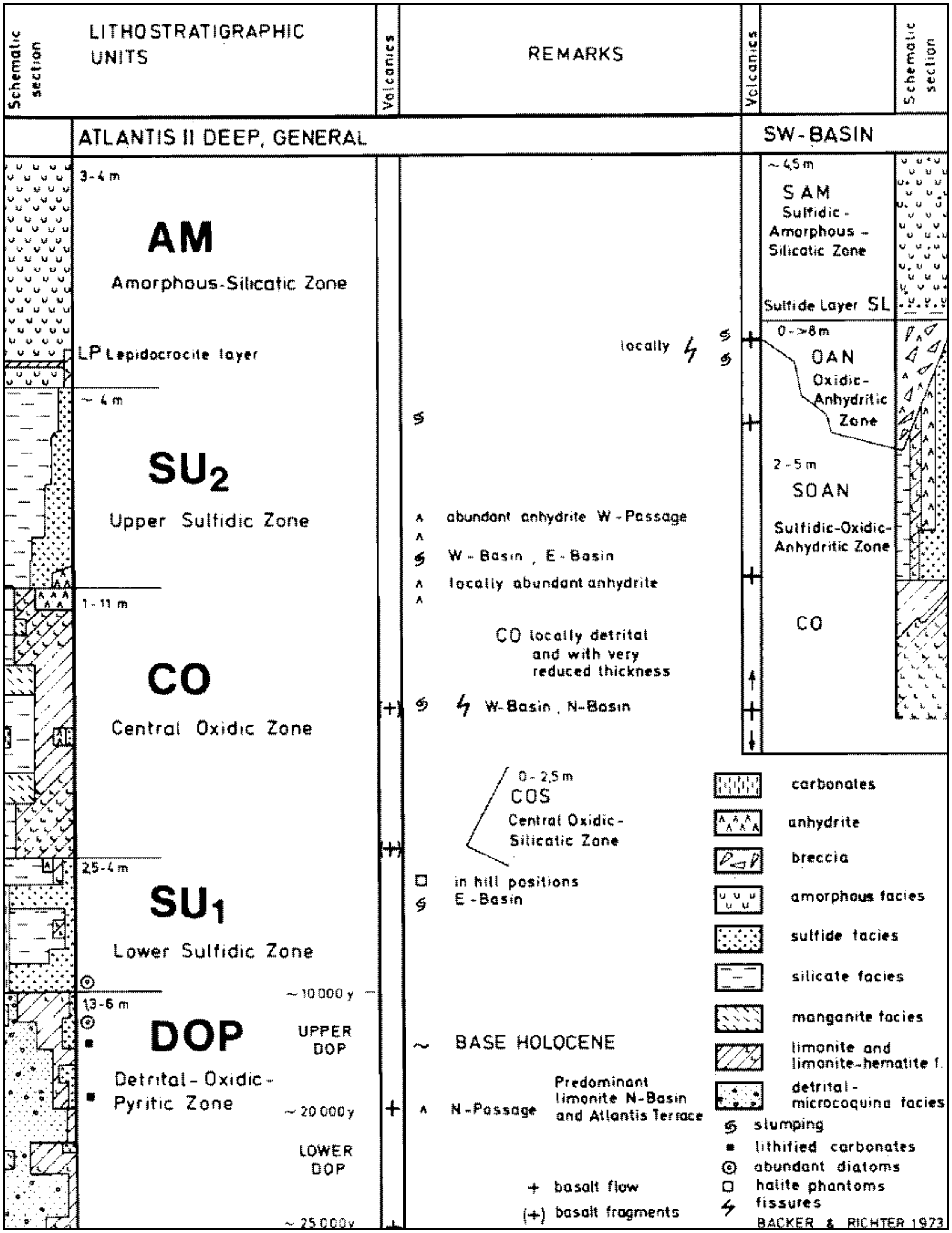


FIGURE 4.GENERALISED LITHOSTRATIGRAPHY OF ATLANTIS II DEEP.

Lithostratigraphic units are illustrated in Figure 4 where the difference in sequence can be observed. The spatial discontinuity of the facies is a result of the propagation and cooling scheme of metalliferous brines, the morphology of the sea floor and mixing with the sea water.

The Atlantis II Deep metalliferous sediments consist of predominantly of sphalerite, chalcopyrite, iron oxides with concentrations of zinc, copper and silver. The SAM and SOAN zones of the southwest basin, and SU1 and SU2 zones of the remaining areas are richer in base metals than other zones whilst the COS and the CO zones are almost without zinc and copper. It also appears that there is a tendency for metal content to vary considerably in the lateral and vertical direction in the deposit, but a significant decrease is noticeable from south to north.

Examination of core from the Atlantis II Deep has revealed that epigenetic features are common in the metalliferous sediment, especially in the southwest basin. Two important types of epigenetic features have been distinguished: veins and discontinuous layers of anhydrite and talc predominantly associated with copper, zinc and silver mineralisation, and metalliferous sediments recrystallised to hematite-magnetite-pyroxene, probably due to the intrusion of basalt into the metalliferous sediments (Zierenberg and Shanks, 1983).

The distribution of cores containing epigenetic veins shows that the veins occur predominantly in the southwest basin and are most prevalent in the deepest part of that basin. Thus, veins appear to be related to the current phase of brine venting. Veins located in the west basin and north passages, cut sediments no younger than the CO zone and appear to represent an earlier phase of brine venting in those areas (Zierenberg and Shanks, 1983).

In addition, the location of some cores containing epigenetic veins show a linear distribution trending approximately northeast across the central portion of the southwest basin. This trend is parallel to the direction of transform faulting in the Red Sea and coincides with a transform fault proposed by Bicker et al. (1975) on the basis of detailed bathymetric mapping. A general association of brine pools in the Red Sea with the intersection of transform faults and sea-floor spreading has been also been observed (Bignell, 1975 in Zierenberg and Shanks, 1983).

Precipitation of metalliferous sediments directly from the brine is responsible for extensive blanket-like mineralisation throughout the Atlantis II Deep. Sediment particles are characterised by their extremely fine grain size, generally having a diameter not exceeding 0.1mm. More than half are about 0.0002 mm in diameter. Sediments are finely laminated as a result of fluctuating physico-chemical conditions and quiescent sedimentation rates, particularly in sub-basins distal to the southwest basin vent area (Zierenberg and Shanks, 1983).

Manganese mineralisation has epigenetic features that are distinct from silver and base metals. The availability of oxygen limits manganese mineralisation both spatially and temporally. Within the upper brine layer, soluble Mn^{2+} ions are oxidised to hydrated manganese dioxide and subsequently precipitated as manganite and todorokite (Butuzova et al., 2009). The highest concentrations of manganese mineralisation are found in the more oxidised portions of the deposit within the CO zone and at the sills and marginal slopes of the basin.

Particles of hydrated manganese dioxide that sink to the lower brine layer, which is completely devoid of oxygen, are reduced by Fe^{2+} and passed back into solution. The result is an absence of manganese in the deepest and sulphidic parts of the Atlantis II Deep. Manganese has an inverse relationship with the distribution of copper, zinc and silver mineralisation (Butuzova et al., 2009).

If these features are preserved during lithification, the Atlantis II deposit would have most of the characteristics typically ascribed to distal massive sulphide deposits, including a low Cu/Zn ratio. However, it is possible that the area of active venting in the southwest basin is underlain by a copper-rich stringer zone as is typical of many proximal volcanogenic massive sulphides.

7. HISTORY

7.1. HISTORIC EXPLORATION

The brine pools of the Atlantis II Deep were discovered in 1963 by scientists from the Woods Hole Oceanographic Institute (WHOI) on board their research vessel Atlantis II.

In the mid-1970s, the Saudi-Sudanese Red Sea Commission (RSC) was established with the directive of assessing the economic potential of the deposit. Preussag A.G., a German exploration company, was commissioned by the RSC to conduct a five-year geological exploration programme and technical feasibility study. This process concluded in 1984 with positive results.

Together with Manafa, DFI has obtained the documented records and hard copy data generated during the study and have located the original Preussag Meseda sediment cores.

On average, the Preussag coring programme sampled only the uppermost 8.5 m of the sedimentary sequences. The programme demonstrated that mineralisation is open at depth and extended over an area of approximately 57 km^2.

A historical resource estimate based on 605 core samples, was reported as 89.5 million tonnes of sediment at a grade of 2.06% zinc, 0.45% copper and 38.4 ppm silver on a dry salt free basis (“DSF”). No historic estimates for manganese were prepared by Preussag.

A pre-pilot test mining study undertaken by Preussag demonstrated that the mineralised sediments of the Atlantis II Deep can be continuously mined and concentrated at sea, using conventional flotation techniques. During test mining operations, 15,750 m^3 of sea floor sediments and brines from four test sites in the Atlantis II basin were processed.

7.2. PREUSSAG DRILLING

The coring method utilised for the Wando River, Valdivia and Meseda cruises, is described in the 1979 Preussag Technical report 19A, “Chemical data and completion logs of the Meseda 1 sediment Cores”.

Technique of sediment sampling

In order to fulfil the sediment coring programme, two types of Kasten corers and piston corers were employed:

- Heavy box corer (KS) with 25 x 25 cm core boxes and up to 4 tonne head weights,
- a box corer with 750 to 950 kg head weights and 15 x 15 cm^2 boxes (Kogler-type),
- piston corer (modified Ewing-type),
- a gravity corer.

7.2.1. LITHOLOGICAL LOGGING DESCRIPTION

In the geological laboratory the cores were described by Preussag's geologists in terms of type of sediment, colour, accessories, inclusions, consistency, texture, and lithostratigraphic classification conducted by visual inspection, simple qualitative chemical tests, and microscope investigations.

For the lithostratigraphic classification in most cases the lepidocrocite layer at the base of the AM-unit and the sulphide layer at the base of the SAM-unit served as suitable lithological marker beds. The depths of these horizons below sea floor are well known in each area. Moreover, some key minerals and key fossils served as useful tools to determine the lithostratigraphic boundaries.

Pseudomorphs after halite (phantom crystals) mark the base of the COS-unit. Diatom fossils could be utilised to determine the DOP-unit.

7.2.2. TOP LOSS CALCULATION

The following description is derived from the 1979 Preussag Technical report 19A, "Chemical data and completion logs of the Meseda 1 sediment Cores".

Before starting sampling sediment cores for the shore-based chemical analyses, the top loss of the core had to be determined. With a specially developed computer program the top loss could be calculated within a short time using the following input data: thickness of the lithostratigraphic units, geographic coordinates, radius of selection, core recovery. The output provided the calculated top loss, the core numbers selected for the top loss calculation, the weighted average of neighbouring cores, and the sampling interval for chemical analyses.

Despite considerable lithological differences, even in adjacent core, the whole 10 to 25 m sequence of metalliferous muds in the Atlantis II Deep can be divided into several lithostratigraphic units.
In the case of super penetration the length of core lost by extrusion from the top of the coring rig can be determined by the relative positions of these units. In most cases the lepidocrocite layer at the base of the AM unit and the sulphide layer at the base of the SAM unit served as a suitable marker horizon. The depths of these horizons below the sea floor are well known for each area and can be used to offset cored intervals and account for lost core.

In the absence of these horizons another calculation procedure was followed. At first, the lithological units and their boundaries in the recovered core were determined. In a second step the average thickness of these units in the cores of neighbouring drill sites within a 1 km radius was calculated. By comparison of these values and technical geological and mineralogical criteria the top loss for each station was determined.

Two examples of the calculation and subsequent top loss are given in Figure 5, example 1 with the lepidocrocite layer recovered and example 2 without the lepidocrocite layer.

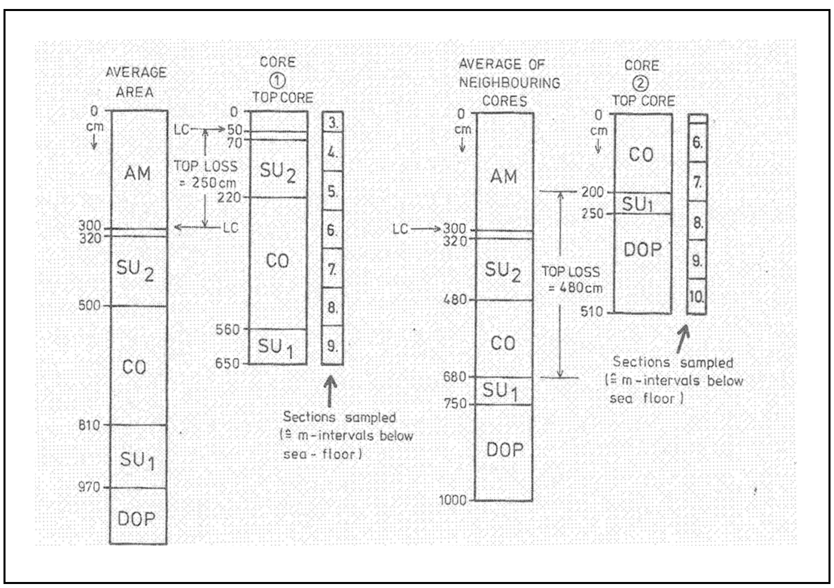


FIGURE 5.PROCEDURE FOR TOP LOSS CALCULATION

7.3. PREUSSAG SAMPLE PREPARATION, ANALYSES AND SECURITY

The coring method utilised for the Wando River, Valdivia and Meseda cruises, is described in the 1979 Preussag Technical report 19A "Chemical data and completion logs of the Meseda 1 sediment Cores".

7.3.1. SHIPBOARD PREPARATORY WORK

The shipboard laboratory work was performed by Preussag. The cores recovered were opened on deck immediately if possible. By inserting plastic boxes of 7.5 x 15 x 100 cm size into the cored sediment, the core was divided into 1 m sections. The core boxes were cleaned, the surface properly smoothed, and subsequently photographed.

7.3.2. SAMPLING OF CORES FOR SHORE BASED INVESTIGATIONS

Samples were taken by using a special stainless steel sampling box (4 x 7 x 100 cm) containing 2 litres of bulk sediment. The sampling box was emptied and the sediment transferred into an electrical stirrer for homogenisation. After 10 minutes of stirring, 4 sample types were collected. The series normally consisted of representative average channel samples of 100 cm length.

At the top and base of a core, the sampled length could be less than 100 cm if the calculated top loss was between 1 and 50 cm. In these cases lengths of 99 to 50 cm were taken as representative for the whole 1 m section. If top-loss values of 51 to 99 cm were calculated, no sampling of the top-most metre section was carried out.

The samples were generally transferred into jars, sealed with paraffin wax and labelled:

Cl: PREUSSAG series for laboratory analyses (250 ml),
SC: For analyses carried out by the Saudi Sudanese Red Sea Commission (250 ml),
BR: For check analyses by BRGM (250 ml),
D: Documentation series to be kept in cold storage (100 ml).

The core descriptions with the relevant information are documented on core logs.

7.3.3. CHEMICAL ANALYSES METHODOLOGY

The following components were determined quantitatively in the laboratories of Preussag at Berkhopen:

- wet density
- water content (110 °C)
- dry salt free material (DSF)
- Ca, CO^2 , Fe, Mn, Zn, Cu, Ag, Si, sulphide sulphur

All analytical values refer to the dry salt free material.

<u>Homogenisation</u>
The total amount of each sample was transferred into a 250 ml beaker and mechanically homogenised with a manually operated electrical mixer for about 3 minutes.

If the sample contained large amounts of coarse grains (e.g. anhydrite), the sample was ground in a mortar by hand mixing before transferring it into the electrical mixer.

The degree of homogenisation of the sample was assessed as sufficient by three wet density determinations within a 3% tolerance limit.

Wet density
Wet density was determined by filling a cone shaped jar of 10 cm^2 volume with the homogenised sample and weighing the jar empty and full. The conical shape with a slope of about 45° prevents the formation of air bubbles.

Water content
The water contents of the sample were determined by drying them at 110 °C in a vacuum-drying oven.

Desalting of the sample
The interstitial water of the sediments in the lower part of the Atlantis II Deep contains approximately 27 % salts. At the time of the Preussag study, highly saline samples could not be accurately analysed. Additionally, it was not possible to accurately compare metal concentrations in samples of differing salinities. To remedy these issues, desalting of samples was undertaken.

About 40 to 100 g of the sample were suspended in about 1 litre of salt free water and kept in suspension by means of a stirrer and 3 ml of 0.05 % Praestol 2900-solution were added as flocculant. Buchner-funnels (Polypropylene) were used for filtration. The sample was dried at 110°C and weighed in the funnel.

Wet digestion
The desalted sample was again homogenised in a ball mill and 200 mg of the sample were weighed and transferred into a crucible. After moistening the sample with distilled water, 10 ml of concentrated HCL were added in order to vaporise the sulphides as H_2S.

On a sand bath (temperature 250°C) the excess hydrochloric acid was evaporated until nearly dry. About 30 ml of hydrofluoric acid, to dissolve the silicates, and 10 ml perchloric acid, for oxidation, were added.

The mixture was evaporated to dryness and dissolved in 10 ml concentrated hydrochloric acid. The evaporation was repeated once more in order to destroy the remaining perchloric and fluoric acid. The residue was again dissolved in 10 ml concentrated hydrochloric acid and adjusted to 100 ml volume by adding distilled water.

Before final filling up to the calibration mark of the measuring flask, each dilution was adjusted to a 1N (normal) HCl concentration.

Atomic absorption spectrophotometry
The elements calcium, copper, zinc, silver, manganese and iron were analysed using a Perkin Elmer 430 atomic absorption spectrophotometer. The determinations of silver, manganese, lead copper, iron and zinc were not influenced by matrix effects. The calcium analysis was influenced by high anion concentrations, especially of sulphate. The matrix effect was reduced using a nitrous oxide flame and by adding lanthanum in a 0.1 % concentration.

Determination of sulphide sulphur
The sample was treated with a stannous chloride solution containing a high hydrochloric acid concentration. The hydrogen sulphide expelled was precipitated as cadmium sulphide. The sulphur content was determined iodiometrically in hydrochloric acid solution.

Determination of carbon dioxide

In a closed system 200 to 1,000 mg of the salt-free material were treated with sulphuric acid and heated. The carbon dioxide obtained was measured volumetrically or in case of lower concentrations absorbed in potassium hydroxide and titrated.

Determination of silicon dioxide

Five hundred mg of the salt-free sample were several times treated with a mixture of hydrochloric and nitric acid and evaporated approximately to dryness. The solution was filtered, the filter ashed and the remaining material weighed.

The analytical techniques employed by Preussag are considered to produce assay data with a high level of accuracy and precision. The sample preparation practices employed by Preussag are considered satisfactory so as to minimise the risk of contamination.

7.4. HISTORIC RESOURCE ESTIMATES

Early work on the deposit evaluations was undertaken by several interested parties at different times, utilising information provided by various exploration campaigns. Previous estimations cover the period from discovery of the Atlantis II Deep in 1963 to the cessation of exploration in 1981 and the final Red Sea Commission estimate in May 1984.

Subsequently, resource estimates based on the data compiled up until 1984 have been undertaken by various organisations including the Kiel Institute for the World Economy.

There are no historic mineral resources reported for the Atlantis II Deep deposit that are compliant with CIM guidelines.

In 1966, an exploration programme in the axial rift of the sea was conducted by the Research Vessel Chain and a number of sediment piston cores up to 8 m in length were collected, of which 66 were analysed. In 1969, Bischoff and Manheim published resource figures generated from volume weighted metal grades from 41 analyses of 7 cores that fell within the Atlantis II Deep.

In 1969, the Motor Vessel Wando River conducted a research cruise mainly in the Atlantis II Deep vicinity. This cruise yielded 287 channel samples from 28 stations. In 1973, Hacket and Bisherhoff published resource figures generated from volume weighted metal grades.

In 1975, the Valdivia cruises were undertaken to assess the total amount of metal resources in the Atlantis II Deep deposit and to study the general economic geology of hydrothermal-sedimentary mineralisation. The 2,500 analyses from 136 stations were used by Ehrisman and Kron in 1975 to estimate revised resources.

Between 1977 and 1981, the three Meseda cruises collected an additional 195 cores from statistically distributed stations at the Atlantis II Deep. Prior to the collection of these cores, resource estimations were dependent on the number and distribution of core stations.

Analysis of Wando River, Valdivia and Meseda cores were utilised in several re-calculations up until 1984 when two resource estimates were completed using the kriging method. The results from these studies are presented in Al Ukayli et al. (1981) and Guney et al. (1984). Resources were estimated by sub-basin area.

In 2011, the Kiel Institute for the World Economy published a working paper (Bertram et al., 2011) which sought to review the economic potential of the deposit. Utilising 480 core stations from the Meseda cruises, Kiel's research team undertook a resource estimate using Delaunay triangulation as well as a modified ridge estimator. Resources were estimated on a series of 1 m planar slices through the deposit.

Contained metal estimates are presented in Table 1. Because these estimates often have differing grade formats only the total metal tonnages are presented for comparison.

TABLE 1. HISTORIC CONTAINED METAL ESTIMATES *

	Bischoff &Manheim	Preussag	Hackett & Bischoff	Ehrisman & Kron	Al Ukayli et al.	Guney et al.	Bertram et al
Year	1966	1969	1973	1975	1981	1984	2011
Method	Volume Weighting	Volume Weighting	Volume Weighting	Volume Weighting	Kriging	Kriging	Delaunay
Model	Global	By Sub-Basin	By Sub-Basin	By Sub-Basin	By Sub-Basin	By Sub-Basin	By Slice
Zinc [10^6t]	2.9	2.1	3.22	2.4	1.60	1.89	3.27
Copper [10^6t]	1.06	0.5	0.81	0.5	0.36	0.425	0.74
Silver [t]	4,500	2,300	-	8,600	3,183	3,750	6,502
Manganese [10^6t]	8.0	-	-	-	-	-	3.83
Lead [t]	80,000	-	-	-	-	-	-
Cobalt [t]	-	-	-	-	-	5,369	-
Cadmium [t]		6,500	-	-	-	-	-
Gold [t]	45		-	-	-	47	-
Cores [n]	7	28	28	136	628	605	480

Notes:
* Modified from Bertram et al., 2011.
- means no data are available

Up until 1984, the estimates vary considerably due to the increasing number of core stations used. Initially, the Chain and Wando River cruises predominantly focused on the higher grade, southeastern portion of the deposit. Grades from discreet, higher grade portions of the deposit were extrapolated throughout the Atlantis II Deep. Drilling in the lower grade, northern portion of the deposit was sparse, resulting in higher estimations of metal tonnage.

The exploration data were obtained over a much greater area during the Meseda cruises enabling the use of more robust interpolation methods and enabling more representative mineral resource estimates.

The 2011 estimate published by Bertram et al. was also completed using the Meseda exploration data but shows a large increase in tonnages. This estimate was completed on a slice by slice basis. Samples that can be attributed to slices become increasingly sparse with depth. Upon review, it appears that assays assigned to deep slices have been extrapolated over large distances. For example, slices 11 to 14 are each informed by less than 100 samples and account for 28.5% of the total resource but only 7.6% of samples.

Resource estimates completed by Al Ukayli et al. (1981) and Guney et al. (1984) utilise the largest number of core stations and both are considered to be robust. In each, geostatistical analysis was undertaken for the generation of experimental semi-variograms that characterise the distribution of geological variables. Zinc, copper and silver grades for a series of sub-basins defined by geological and bathymetric characteristics, were interpolated using ordinary kriging. No significant historic resource estimates were completed for manganese by Preussag, despite the metal being included in the analysis suite for Valdivia and Meseda cores. The 1969 Bischoff and Manheim study based on only 7 cores does include manganese but is not considered reliable.

It can be seen in Tables 1 and 2 that historic estimates contain values for a range of metals including lead, cobalt, cadmium and gold. During historic exploration no attempt was made to systematically analyse these metals. Resources figures for lead and cadmium are based on a limited number of samples (7 and 28 respectively).

The 1984 cadmium and gold resource estimates were developed during the pre-pilot mining campaign undertaken by Preussag in 1979. It is stated that about 15,750 m^3 of metalliferous mud were recovered from four mine sites in different areas and 1,950 m^3 of this was subjected to on-board flotation processing tests and 3.5 tonnes of bulk concentrate on a dry-salt-free basis were produced. Taking the off-shore processing data and analysis of the solids in flotation concentrates into account, assessment calculations were carried out for gold and cobalt.

Total resources from the 1984 Guney et al. estimate are given below:

TABLE 2. 1984 HISTORIC RESOURCES OF THE ATLANTIS II DEEP DEPOSIT

	Volume Grade	DSF Grade*	Tonnage [10^3]
Zinc	3.41 kg/ m^3	2.06 %	1,890
Copper	0.77 kg/ m^3	0.46 %	425
Silver	6.77 g/ m^3	40.95 g/t	3.75
Gold*[1] :	-	0.512 g/t	0.047
Cobalt*[1]	-	58.53 g/t	5.368
Dry-salt-free Material	-	-	91,700
Metalliferous Sediments	-	-	696,330

* Grade of the dry-salt-free material.

*[1]Not included in the 2011 ACA Howe resource estimate.

7.5. HISTORIC MINERAL PROCESSING AND METALLURGICAL TESTING

The following section is derived from Section 4: Exploitation, in Al Ukayli et al. (1984) which gives a very brief summary of the proposed method of mineral processing and metallurgical recoveries identified in the RSC 1984 report, "Final Report: Preliminary economic evaluation of the Atlantis-II- Deep metalliferous sediments".

Previous reports from the contracting firm of Preussag and the French consulting institute of Bureau de Recherche Géologiques et Minières (BRGM) contain detailed descriptions of the proposed schemes for the mining and processing of the Atlantis II Deep sediments. These reports are based on the extensive work and research carried out during the past years. The proposed schemes are not described in detail in this report but some of the data are tabulated on the following page.

The method of pumping sediments to a stationary mining vessel and using on-board processing methods as a first concentration stage is sound and has been used in marine mining with success for some decades.

The transport of material concentrates by ship to onshore installations for further processing is also a well-established practice. Many problems remain to be investigated when considering the depth at which the deposit lies and the environment in which the equipment will operate. However, the results from the pre-pilot operation indicate that the method is feasible, but requires further mining trials. The on-board flotation processing of these particular ultra-fine sediments has been successfully accomplished, and evidence from other similar flotation work elsewhere indicates that the method is feasible. Metallurgical processes of leaching and electro-winning, as proposed, are established practices and require only further refinement to suit these particular concentrate conditions.

At the stage of preliminary feasibility study, it appears that the exploration methods of these mineral-bearing sediments are technically feasible, but the equipment and mining methods will require further development and trials before commercial operations can be embarked upon with confidence.

The following data have been used to estimate a production schedule for economic evaluation:

TABLE 3. HISTORIC MINERAL PROCESSING DATA USED IN THE 1984 ECONOMIC EVALUATION OF THE ATLANTIS II DEEP

Pumping Capacity:	6,040 m^3/hour	
Metallurgical Plant Production:	60,000 t zinc/year	
Mining Days Per Year	290	
Production Period	16 years	
	Flotation recoveries%	Metallurgical recoveries%
Zinc	75	98.6
Copper	70	95.3
Silver	75	94.3
Gold*	70	60.0
Cobalt*	70	88.0

*Not included in the 2011 ACA Howe resource estimate

8. EXPLORATION

This report predominantly utilises the historic exploration data detailed in Section 7.1 above, *Historic Exploration*.

In 2011, DFI undertook exploration of the Atlantis II Deep deposit in conjunction with the Leibniz Institute of Marine Sciences at the Christian-Albrechts Universität zu Kiel (IFM Geomar). The marine research vessel RV POSEIDON has conducted a sub-bottom profiling (SBP) survey using the state-of-the-art Abyss 6000 unmanned autonomous vehicle (UAV). The survey has for the first time, using specially adapted cameras operating within the brine pool, obtained detailed photographs and video of the Atlantis II Deep sea-bed.

9. DRILLING

No new drilling has been undertaken by the issuer. This report utilises the historic drill data detailed in Section 7.2 above, *Preussag Drilling*, where logging and sampling methodologies are described.

10. SAMPLE PREPARATION, ANALYSES, AND SECURITY

No new drilling has been undertaken by the issuer. Details of historic sample preparation analyses and security practices are described in Section 7.3 above, *Preussag Sample Preparation Analyses and Security*.

11. DATA VERIFICATION

There are no Quality Assurance and Quality Control (QA/QC) data available for chemical analysis of Atlantis II Deep exploratory cores.

Cores retrieved from the Valdivia, Meseda 1, 2 and 3 cruises undertaken by Preussag were subsequently donated to the IFM Geomar Institute in Kiel, Germany, where they have been stored since 1988. Sample duplicates as well as comprehensive original supporting documents from the Meseda cruises are also stored at IFM Geomar. Documents from the Valdivia Cruise are presently unavailable

11.1. CORE STORAGE

The cores were stored in a refrigerated shed (<4°C) at IFM Geomar until 2006. Since 2006, they have been stored in a warehouse at room temperature. An audit of the core samples from the Meseda Cruises was undertaken by DFI at the IFM Geomar institute to establish the available core database. To date, a total of 457 cores have been located from a total of 567 cores within the Preussag Meseda cruises database utilised in current resource estimation.

The available cores were cross-checked, photographed and re-logged against original core log data contained within Preussag Technical reports 19C, 19D, 19E, 22B, 22C and 35A. Core logs commence at the start of core recovery, with calculated top-loss noted on individual core logs. Cores were also visually cross-checked against original core photographs to ensure core identification. No discrepancies were found during this audit.

11.2. CHANNEL SAMPLES

The original "D" series or "Documentation" series consist of representative average channel samples over 100 cm of length from the cores, which were collated in conjunction with the original CL or Chemical samples analyses by Preussag.

The D samples were stored in brown wax-sealed 100 ml glass jars and were originally refrigerated by Preussag. The samples are stored at room temperature in plastic crates at IFM Geomar. Sample jars are clearly labelled by cruise number, core ID and sample interval and sample number.

Reference to the D sample series is made in Preussag Technical reports 19C, 19D, 19E, 22B, 22C and 35A and Section 7.3 above of this report, *Preussag Sample Preparation Analysis and Security*, where the channel sample intervals are recorded on geological and sampling logs. These logs graphically display sample number over the logged sample interval, together with the CL series.

An audit of the D samples was conducted and cross-referenced with the sample intervals on the geological logs to validate sample numbering, core identification and interval. No discrepancies were found during this exercise.

11.3. ACA HOWE SITE VISIT

In July 2014, Mr Tom Dowrick of ACA Howe visited the IFM Geomar Institute in Kiel to inspect the Atlantis II Deep cores collected by Preussag, the core storage facility and original supporting documents including geological logs and analytical results. During the 2014 site visit, verification samples were collected by Mr Dowrick to independently check historical Preussag assay grades.

Storage and condition of the core:

The Meseda and Valdivia core samples are housed within a racking system in the IFM Geomar core storage facility (See Figure 6). The facility is kept locked when not in use and it is considered by ACA Howe that the facility provides suitable storage for the core samples. The samples are stored within 1 m length plastic core boxes, labelled on the lid, side and end with cruise number, core ID, and sample interval.

The boxes are sealed with tape to prevent core dehydration and, although not refrigerated, the storage facility was cool at the time of the visit. As a result, core preservation is superficially good, but condition varies from tray to tray. Although the core is generally moist, some cracking, dehydration oxidation and salt crystallisation has occurred over time.

The majority of core boxes are full over their metre length. Boxes that contain the terminal core run, which is often less than one metre, are partially full. Core composites from the first metre or two, which typically penetrated the AM/SAM layers of the deposit are not full, but the boxes contain dehydrated slurry along the core box length, reflecting the high water content within the original core composite sample.

Review of core logs:

As described in Section 11.1, a selection of cores were checked against the Preussag logs. Logs were found to give detailed lithological descriptions and contacts were generally observed as being accurately measured. A small number of contacts were observed as having inaccuracies in measurement of up to 10 cm, but it is thought that adjustments for core loss made by Preussag could account for this.

Generally the geological characteristics of cored sediments and the boundaries between lithological contacts are accounted for in historical logs and current DFI digital records. ACA Howe is of the opinion that the geological database for the Atlantis II Deep deposit is of sufficient quality to provide the basis for the conclusions and recommendations reached in this report.

11.4. ACA HOWE VERIFICATION SAMPLING

During the 2014 site visit to the IFM Geomar Institute, resampling of a selection of cores was undertaken. In total, 47 samples were taken from six (6) cores.

Cores 2M146, V048 and 1M481 were randomly selected from the Valdiva l and Meseda 1 cruises. A number of cores from the Meseda 3 cruise were inspected, however remaining core was found to be desiccated and broken into small fragments within the core tray and was not considered suitable for verification sampling. It was also necessary to retain a significant portion of each sample in the event that further sampling or study is required.

In 2011, DFI undertook a programme to check the historic assay values. DFI selected 32 samples from Meseda 2 cores 2M133, 2M258 and 2M264 for repeat analysis using Inductively Coupled Plasma (ICP) method at the Alfred H Knight laboratory, Fairbanks, Alaska. These cores were resampled as part of the 2014 programme to investigate the repeatability of core duplicate grades generated by modern ICP methods.

An overview of the sampling procedures employed during the DFI check sampling programme in 2011 was provided by IFM Geomar staff.

1. Samples had a width of 2 cm and extended to the bottom of the tray.

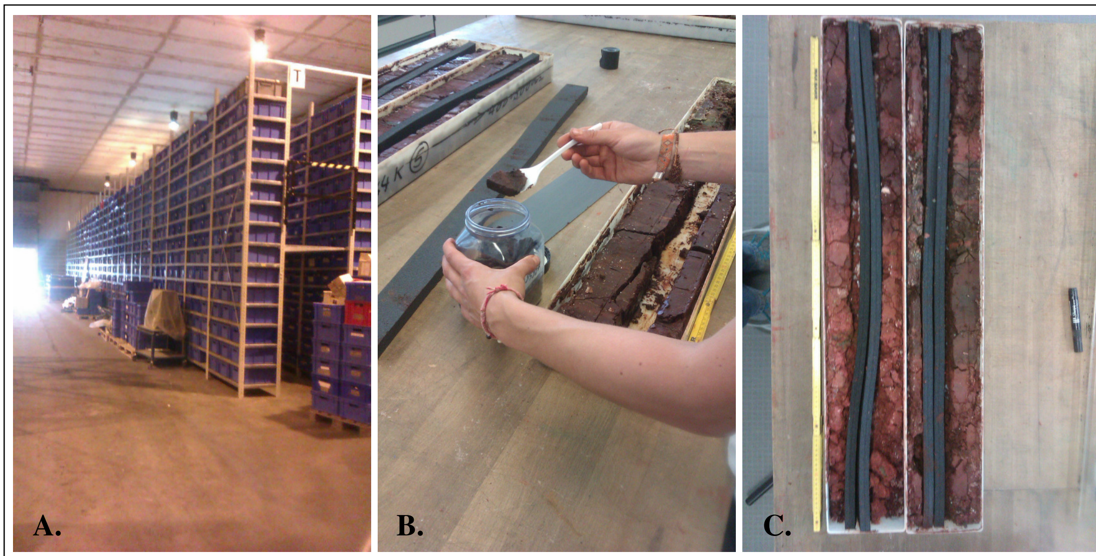
2. A cut line was scored with a plastic knife to demarcate a 2 cm wide strip along the core length.
3. Salt crystals were scraped off the core surface using a plastic knife.
4. The core was cut to the bottom of the tray using a thin plastic sheet.
5. The core sample was scooped into a plastic jar using a plastic spoon. For large samples two jars were used.
6. Foam or polystyrene was inserted into the resulting void to stop the remaining core from breaking.
7. Equipment and work surfaces were thoroughly cleaned between each sample.

ACA Howe verification sampling procedures were as above, but with the exception that salt crystals were not scraped from the top of the sample as the analysis was completed with salt included. As in the sampling completed by DFI, core loss was not taken into account during the sampling so each sample began at the start of a new tray.

Mr. Dowrick collected and sealed the samples within two plastic boxes with zip ties and maintained possession of all samples until delivery to a DHL associated courier in Germany. The samples were couriered to the ALS Minerals, OMAC Laboratories Ltd. geochemistry laboratory at IDA Business Park, Dublin Road, Loughrea, County Galway, Ireland. ALS Minerals - OMAC is a reputable, ISO/IEC17025 accredited laboratory qualified to analyse the material submitted. The laboratory has method specific control procedures that include duplicate samples, blanks, replicates, reagent / instrument blanks for the individual methods.

The verification samples were prepared using the following ALS Minerals preparation packages: DRY-21, PREP-31B or PUL-32. Samples were dried at 105^{o}C. After drying, a 1,000g sample split was pulverized to 85% passing 75 microns.

The verification samples were analysed using the ALS Minerals 33 multielement analysis package ME-ICP61. Aliquots of 30 g underwent four acid digestion followed by ICP-AES analysis. Thirteen ore grade samples underwent repeat ICP analysis for zinc using the ALS Minerals package Zn-OG62.



A. Core storage racks at the Geomar Institute. B. Sample collection. C. Sampled core with foam insert.

FIGURE 6. ACA HOWE 2014 SITE VISIT PHOTOS.

11.5. VERIFICATION SAMPLE RESULTS

It is not possible to generate representative dry salt-free samples and reproduce the original Preussag analysis method which required the desalting of samples as described in Section 7.3.3. Cores have undergone chemical alteration over the 30 year storage period. The original sulphide mineralogy (non-water soluble) has complexed to form soluble chloride and or sulphate complexes that wash out with the salt in the salt washing preparation stage.

To allow a relative comparison of the original and repeat assay values, original Preussag sample analyses are recalculated to account for the diluting influence of the removed salt. Salt content was taken to be the remainder after dry salt free material and water percentages were discounted.

A summary of analytical results are presented in Table 4. Scatter plots for Preussag and ACA Howe repeat results are shown in Figures 7 to 10. Original Preussag and ACA Howe 2014 repeat assays show good correlation with Pearson coefficients between 0.69 and 0.86.

There is no apparent bias between Preussag and ACA Howe zinc and copper results. Silver has poorest repeatability and an average HARD[2] value of 30.28%. This is probably because of a higher minimum detection limit for Preussag silver analysis. Low grade samples that assayed below 0.0001 % Ag in 2014 consistently have higher Preussag grades indicated by a HRD[1] value of 25%. At higher silver grades correlation improves. Manganese shows reasonable repeatability with a slight bias to under reporting in Preussag assays relative to the ACA Howe assays indicated by a HRD[1] value of -9.33%.

DFI 2011 and ACA Howe 2014 repeat assays show very good correlation with Pearson coefficients between 0.87 and 0.99. The repeatability of duplicate sample assays indicates a low inherent short-scale variability of metal grades or 'nugget effect' within the cores.

TABLE 4. VERIFICATION SAMPLING SUMMARY STATISTICS

Sample		n	Original Mean	2014 ACA Howe Mean	Absolute Difference	Average HRD%[1]	Average HARD%[2]	Pearson Corr.
Original Preussag (Salt Diluted)	Zn %	45	0.723	0.723	0.000	-0.62	13.23	0.81
	Cu %	45	0.143	0.144	0.001	-1.28	11.95	0.86
	Ag %	44	0.0016	0.0011	0.0006	25.64	30.28	0.69
	Mn %	44	0.369	0.373	0.004	- 9.33	20.98	0.72
2011 DFI	Zn %	27	0.45	0.36	0.09	10.61	11.16	0.99
	Cu %	31	0.13	0.11	0.01	6.07	10.79	0.96
	Ag %	31	0.0008	0.0007	0.0001	-1.10	20.96	0.87
	Mn %	27	0.45	0.36	0.09	-3.59	5.58	0.99

[1] Half the Relative Difference ("HRD") is half the difference between the original and the duplicate assay, expressed as percentage of the pair mean. It is a measure of precision and relative difference, a positive HRD value shows that the duplicate assay value is lower than the original assay value. A negative HRD value shows the duplicate is higher than the original.

[2] Half the Absolute Relative Difference ("HARD"), is half the absolute difference between the original and the duplicate assay, expressed as percentage of the pair mean. A HARD value of 0% is an optimum result where both the first and duplicate analyses have identical results and therefore perfect precision. The larger the HARD value, the greater the difference between the two analytical results and the poorer the precision.

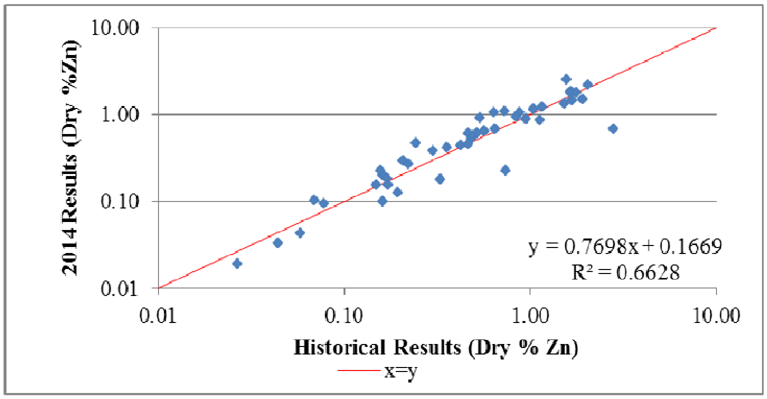


FIGURE 7. PREUSSAG VS. ACA HOWE ZINC SCATTER PLOT

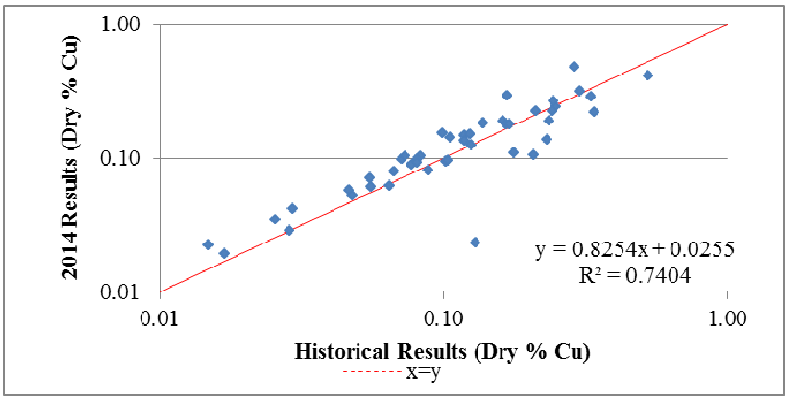


FIGURE 8. PREUSSAG VS. ACA HOWE COPPER SCATTER PLOT

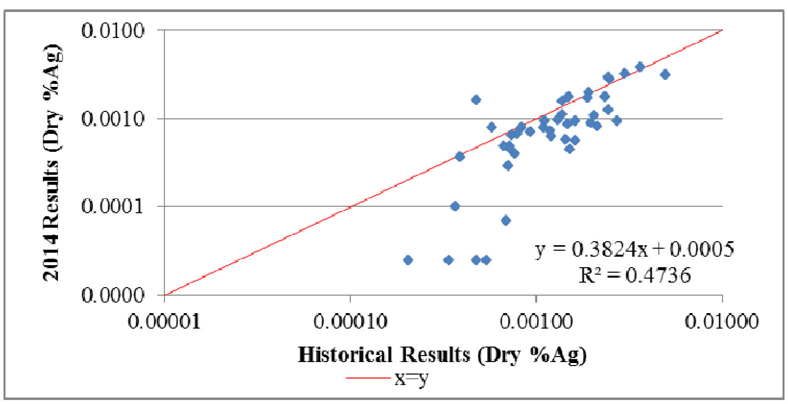


FIGURE 9. PREUSSAG VS. ACA HOWE SILVER SCATTER PLOT

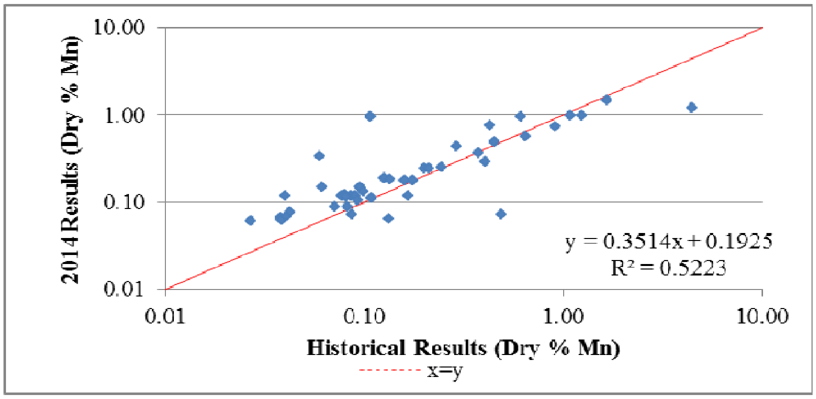


FIGURE 10. PREUSSAG VS. ACA HOWE MANGANESE SCATTER PLOT

11.6. DATA VERIFICATION CONCLUSIONS

Independent data verification samples collected by ACA Howe, show a positive correlation between 2014 duplicate and historical Preussag metal determinations. For holes tested, the 2014 samples provide an independent verification of zinc, copper, silver and manganese at the concentrations reported by Preussag. It may be concluded that the Preussag exploration database contains assays that are representative of in situ mineralisation.

ACA Howe is of the opinion that the geology and assay database for the Atlantis II Deep Deposit is of sufficient quality to provide the basis for an inferred mineral resource estimate and the conclusions and recommendations reached in this report.

At present, the number of comparable duplicate assays within detection limits is insufficient to provide a statistically definitive assessment of the accuracy of Preussag assays (45 for zinc and copper, 44 for manganese and silver).

Due to the absence of relevant data, comments on possible inherent bias introduced during coring, sample collection or preparation cannot be made. Therefore, the use of historic assay data is limited to the generation of Inferred category resources only. ACA Howe recommends that DFI continue the data verification programme. An appropriate QA/QC programme should be implemented as part of any future exploration programmes.

12. MINERAL PROCESSING AND METALLURGICAL TESTING

No new mineral processing and metallurgical testing has been undertaken by the issuer. A brief summary of the assumptions used in the 1984 economic evaluation of the Atlantis II Deep is given in Section 7.5 above, *Historic Mineral Processing and Metallurgical Testing*.

13. MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

In December 2010, ACA Howe was commissioned by DFI to generate a mineral resource estimate for the Atlantis II Deep deposit. The resource estimation study presented in this report utilises core data from historic exploration undertaken between 1969 and 1981. Data from these historic campaigns and the estimation methodologies used in producing the 1984 estimates have been reviewed and validated for resource estimation by ACA Howe.

The resource estimate presented in the following section was performed using the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Definition Standards for Mineral Resources and Mineral Reserves in accordance with Regulation 43-101 – Standards of Disclosure for Mineral Projects.

The effective date of this estimate is October 28th, 2011.

13.1. INPUT DATA

Only historic exploration data were used in the estimation of mineral resources for the Atlantis II Deep project. Hard copy records of the core data obtained from the three exploration cruises undertaken by Preussag, were obtained and complied by DFI. All available data were digitised and provided to ACA Howe electronically.

Complete data sets for the 1969 Valdivia bathymetry survey and core data from the Valdivia and Meseda cruises were obtained. Assay data for the earliest cruise, Wando River, were not available.

Processed and composited assays for each cruise, used in the 1982 resource study are available in Appendix II of the 1982 RSC report "Final Report on the Geostatistical Evaluation of Metal Reserves of the Atlantis II Deep, Red Sea".

Whilst these pre calculated composites could be used to estimate the resources at Atlantis II Deep the lack of original assay data and uncertainties in the processing techniques preclude their use in the generation of resources that comply with CIM guidelines.

Therefore, the Wando river cruise data were not used in the resource study. This is the smallest of the three data sets, comprising 23 core stations. It is considered that this will not affect the relative accuracy of the ACA Howe estimate compared with historic studies.

The principal data sources used in this study are contained in Table 5.

TABLE 5. INPUT DATA FOR THE 2011 ACA HOWE RESOURCE ESTIMATE

Data	Wando River	Valdivia 1	Valdivia 3	Meseda 1	Meseda 2	Meseda 3	All
Core Stations	23	22	73	121	51	299	589
Survey Data	23	22	73	121	51	299	589
Lithology	-	244	65	726	328	1,794	3,157
Zinc Assays	-	474	1392	736	368	2,012	4,983
Copper Assays	-	474	1394	736	368	2,011	4,982
Silver Assays	-	473	1394	736	368	2,012	4,983
Manganese Assays		474	1394	736	368	2,011	4,983
Bathymetric Data	227,235 data points						

A random selection of records for each of the Excel files provided by DFI was checked by ACA Howe against scanned copies of the hardcopy logs. Following this process, a resource development database was created utilising MICROMINE software.

The resulting database contains all available historic drilling and sampling data for the project. Upon finalisation the MICROMINE input database a series of data validation functions were run. Key fields within core station collar, assay, survey and geology data files were checked for the following potential numeric and alpha-numeric errors:

- Duplicate drill holes or channels

- One or more collar coordinates missing in the collar file
- FROM or TO missing in the assay file
- FROM ≥ TO in the assay file
- Sample intervals non contiguous
- Overlapping sample intervals
- First sample ≠ 0m in the assay file
- First survey ≠ 0m in the survey file
- Multiple surveys for the same depth
- Azimuth not between 0 and 360 degrees in collar or survey file
- Angle not between 0 and 90 degrees in collar or survey file
- Azimuth or angle missing in survey file
- Depth of hole less than depth of final sample
- Down hole survey depth greater than drill hole depth

Any errors encountered were rectified by referring to the original source data.

13.2. DATA EDITING

The 1982 RSC report, "Final Report on the Geostatistical Evaluation of Metal Reserves of the Atlantis II Deep, Red Sea", states that for resource estimation, exploration data from the five cruises were supplied in digital records on magnetic tape. The 1982 digital data set for the first five cruises was compared to the data reports for each cruise published by Preussag and examined for errors.

The RSC report states that during the assessment of the 1982 database, instances were discovered where collar data existed, but there were no corresponding chemical analysis given. In those instances, the core station data were removed from the record. All station data with no corresponding chemical analyses were deleted. The following cores were excluded from the study: WR-7, 20 and 34; V3-391, 579, 586 and 629, M3-321, 359, 386, 390,394, 430, 490, 560 and 650. The 2011 DFI dataset received by ACA Howe already had each of these changes applied.

The following stations were missing from the 1982 data set are also absent from the 2011 records: M1 268, M3-365, 463 and 481.

The RSC also identified a difference in recorded total core length of between 1 and 100 cm that affected 13 holes. The report states that, "these differences were considered to be the result of the reanalysis of lithostratigraphy or the reanalysis of top loss - however the reason could not be determined." The report goes on to state that for these holes, total core lengths contained in the 1982 digital database were used.

A number of data editing criteria were developed during preliminary analysis undertaken by the RSC. All stations with a core length of less than 1 m were removed from the database, excluding stations, WR-9, 12; V3-591; M3-317, 385, 416, 484, 490, 597 and 665. Stations V3-557, 550 and 580 were deleted because they were outside of the resource zone.

Following the assessment and validation of the data set provided to ACA Howe, additional changes were made. Holes V356, 568 and V601 were found to have assay data but no record of the dry salt free material percentage (DSF %), preventing determination of volume grades for samples at these stations. Stations 3M490, 3M499, 3M282, 3M499 had no assay data. These holes were retained in the database for geological analysis but not used in resource estimation.

The Wando River station collar data were retained, however original assay data could not be obtained and these core stations were not utilised in resource estimation.

The list of stations and number of assays utilised in the estimation of resources for the Atlantis II Deep deposit is given in Table 5.

13.3. CLASSICAL STATISTICS

Prior to processing of sample assay data for use in resource estimation, exploratory data analysis was undertaken on the raw sample database to assess the statistical characteristics of each sampling programme and to investigate the grade distribution of each. A summary of raw assay data for the Valdivia 1 and 2 and the Meseda 1, 2 and 3 cruises is provided in Table 6.

For the deposit as a whole, it is considered that there is a sufficient number of samples to allow an evaluation of the geostatistical characteristics of the deposit.

The statistics for zinc, copper, silver and manganese are comparable for each cruise. Valdivia cruises returned higher mean grades for zinc, copper and silver. Cores obtained from the Valdivia cruise were sampled by lithology resulting in a thinner average sample thickness of 30 cm. Cores from Meseda cruises were sampled at 1 metre intervals and the difference in mean grades can be attributed to the fact that Meseda samples were not constrained to higher grade strata material and therefore diluted to some degree by lower grade interstitial sediments. Furthermore, it is documented in the 1982 RSC report that Valdivia cruises were focused on known areas of mineralisation, whilst Meseda cruise stations were more statistically distributed to better profile the grade characteristics of the entire Atlantis II Deep basin.

TABLE 6. CLASSICAL STATISTICS OF THE VALDIVIA AND MESEDA CRUISES.

	Cruise	Minimum	Maximum	Mean	Std Dev	Variance	Coeff. of variation	No of points
DSF %Zn	V1	0.02	19.00	4.01	3.44	11.82	0.86	472
	V3	0.01	78.94	3.22	4.36	19.04	1.36	1,310
	M1	0.06	16.02	2.29	2.22	4.91	0.97	702
	M2	0.02	22.47	3.17	3.13	9.81	0.99	363
	M3	0.02	20.09	2.07	2.11	4.47	1.02	1,914
	All	0.01	78.94	2.69	3.18	10.12	1.18	4,761
DSF %Cu	V1	0.00	2.20	0.63	0.36	0.13	0.56	472
	V3	0.00	4.80	0.54	0.46	0.21	0.86	1,311
	M1	0.02	1.56	0.45	0.29	0.09	0.64	702
	M2	0.02	2.00	0.53	0.35	0.12	0.65	363
	M3	0.01	2.05	0.44	0.33	0.11	0.76	1,913
	All	0.00	4.80	0.49	0.38	0.14	0.76	4,761
DSF %Ag	V1	0.0000	0.2360	0.0092	0.0149	0.0002	1.62	472
	V3	0.0001	0.7760	0.0106	0.0299	0.0009	2.84	1,311
	M1	0.0000	0.0302	0.0045	0.0037	0.0000	0.82	702
	M2	0.0005	0.0228	0.0062	0.0040	0.0000	0.64	363
	M3	0.0000	0.0338	0.0042	0.0029	0.0000	0.68	1,914
	All	0.0000	0.7760	0.0067	0.0168	0.0003	2.53	4,762
DSF %Mn	V1	0.00	51.80	1.38	4.66	21.73	3.38	472
	V3	0.00	86.00	2.32	6.08	36.97	2.62	1,312
	M1	0.00	38.41	2.29	4.07	16.56	1.78	702
	M2	0.00	69.90	1.65	4.17	17.41	2.53	363
	M3	0.00	40.20	2.55	3.91	15.27	1.53	1,912
	All	0.00	86.00	2.09	4.73	22.37	2.26	4,761

Histograms for the dry salt free percentage of zinc, copper, silver and manganese show a strong log-normal distribution. The distribution of assays around the mean grade is measured by the

Coefficient of Variation (COV) or the standard deviation divided by the mean. Greater grade variability in the Valdivia cruises is expressed as a greater deviation from an ideal log-normal COV of 1.

COV values for the Meseda cores are acceptable, with very good distributions for zinc indicated by a COV of 0.99 for M, 0.97 for M2 and 1.05 for M3. Although negatively skewed, the distribution of copper assay grades for the Valdivia and Meseda data sets are comparable. Of concern is the relatively large difference in mean silver grades and COV values for each cruise, indicating that statistical treatment of assays by top cutting and compositing is required.

The review of raw sample data from each of the five different sample supports suggests that assay values obtained in each of the cruises are suitable for use in resource estimation of the Atlantis II Deep deposit.

13.4. TOP-CUTS

Prior to interpolation, top-cut analysis was performed on raw assay data. Top-cutting is an important step in resource estimation, and particularly so for the estimation of resources for the Atlantis II Deep project since extreme grades have been reported. Whilst extreme grades are considered real, they are not geostatistically representative of the whole domain and represent outliers that have the potential to locally overestimate deposits grades if left un-capped since, were a core obtained from any given domain, the probability of returning an extreme grade assay is low, and it is more likely that a grade closer to the mean grade of the domain will be returned.

When considering an appropriate top-cut grade, both the sample histogram for core assays were reviewed in order to see the grade at which the histogram tail deteriorates, i.e. where grades become non-representative for each domain. In addition, sample data were sorted into descending order and several top-cut values applied in order to see what effect the top-cut value has on the COV as well as the loss of metal from the sample population.

The minimum top cut for ordinary kriging without a search constraint would be the 97.5 percentile grade. This is based on log-normal statistics and is the top cut which removes the bias from the arithmetic mean, making it equivalent to the log estimate of the mean. Top-cut analysis suggests an appropriate top-cuts to be 9.70 DSF % Zn, 1.32 DSF % Cu, 0.0223 DSF % Ag and 12.90 DSF % Mn.

Once a top-cut value was determined, the sample statistics were generated again, using top-cut data and compared to the sample statistics for raw data. Top-cut mean grades for each domain are contained in Table 7 and show only a minor reduction in average domain grades following the application of a top-cut.

13.5. COMPOSITING

Data compositing was undertaken on raw sample data prior to geostatistical analysis and interpolation, in order to standardise the sample database and generate sample points of equal support to be used in estimation. Valdivia core sampling was undertaken over drilled intervals of between 0.10 m and 3.0 m, averaging 0.3 m. Meseda core sampling was undertaken over intervals of 1 m.

It is considered that there is an inherent uncertainty in the correlation of assays over large distances and a declining number of samples available at increasing depth. To generate an estimate of potential resources with a level of confidence sufficient for the Inferred categorisation under CIM guidelines the estimate will include all assays above the Detrital Oxide Pyrite (DOP) layer, composited into a total station grade.

Raw drill hole samples above the DOP layer were subset into a separate file. Compositing was undertaken using the length weighted average of assays above the DOP layer.

Within the Valdivia database, the presence of high-grade, narrow strata result in a high degree of grade variability. Grade variability is smoothed following the compositing process. The average composite grade in some domains is lower than the average raw assay grade. Mean composite grade for each domain is contained in Table 7.

Sample population statistics for composite data compare well to that of raw assay data and the mean grade of each correlate well, taking into account the grade smoothing as a result of compositing. Raw assay data, top cut data and composite data for each domain are contained in Table 7.

TABLE 7. RAW, TOP CUT AND COMPOSITE STATISTICS.

		Valdivia Cruises			Meseda Cruises			All		
	Item	Un-Cut	Top-Cut	Comp	Un-Cut	Top-Cut	Comp	Un-Cut	Top-Cut	Comp
DSF %Zn	Minimum	0.01	0.01	0.10	0.02	0.02	0.18	0.01	0.01	0.10
	Maximum	78.94	9.70	9.52	22.47	9.70	7.97	78.94	9.70	9.52
	No of points	1,782	1,782	92	2,979	2,979	467	4,761	4,761	561
	Mean	3.43	3.22	3.71	2.25	2.22	2.17	2.69	2.59	2.42
	Variance	17.24	9.71	4.64	5.34	4.49	2.11	10.12	6.68	2.85
	Std Dev	4.15	3.12	2.15	2.31	2.12	1.45	3.18	2.58	1.69
	COV	1.21	0.97	0.58	1.03	0.96	0.67	1.18	1.00	0.70
DSF %Cu	Minimum	0.00	0.00	0.06	0.01	0.01	0.02	0.00	0.00	0.02
	Maximum	4.80	1.32	1.00	2.05	1.32	1.31	4.80	1.32	1.31
	No of points	1,784	1,784	92	2,978	2,978	467	4,762	4,762	561
	Mean	0.56	0.54	0.60	0.45	0.45	0.45	0.49	0.48	0.48
	Variance	0.19	0.14	0.06	0.11	0.10	0.04	0.14	0.12	0.05
	Std Dev	0.44	0.37	0.25	0.33	0.32	0.21	0.38	0.34	0.22
	COV	0.78	0.69	0.42	0.72	0.70	0.46	0.76	0.70	0.47
DSF% Ag	Minimum	0.0000	0.0000	0.0009	0.0000	0.0000	0.0004	0.0000	0.0000	0.0004
	Maximum	0.7760	0.0223	0.0158	0.0338	0.0223	0.0134	0.7760	0.0223	0.0158
	No of points	1,783	1,783	92	2,979	2,979	467	4,762	4,762	561
	Mean	0.0102	0.0071	0.0075	0.0045	0.0045	0.0045	0.0067	0.0055	0.0050
	Variance	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000
	Std Dev	0.0268	0.0059	0.0034	0.0033	0.0032	0.0022	0.0168	0.0046	0.0027
	COV	2.6280	0.8400	0.4450	0.7270	0.7100	0.4960	2.5250	0.8390	0.5380
DSF% Mn	Minimum	0.00	0.13	0.13	0.00	0.14	0.14	0.00	0.00	0.13
	Maximum	86.00	12.90	6.53	69.90	12.90	12.35	86.00	12.90	12.35
	No of points	1,784	1,784	92	2,977	2,977	467	4,761	4,761	559
	Mean	2.07	1.53	1.12	2.38	2.17	2.19	2.26	1.93	2.01
	Variance	33.10	5.75	1.16	15.91	7.69	2.14	22.37	7.05	2.13
	Std Dev	5.75	2.40	1.08	3.99	2.77	1.46	4.73	2.66	1.46
	COV	2.78	1.57	0.97	1.68	1.28	0.67	2.09	1.38	0.73

13.6. VOLUME GRADES

Within the sedimentary sequence zinc, copper, silver and manganese have a multivariate distribution. Assayed grades presented as percentages of the dry salt free material do not give an accurate representation of the amount of metal present in a given volume of sediment. The generation of volume grades incorporates the effect of variations in the percentage of dry salt free material and allows the geostatistical analysis of metal content.

After compositing of all chemical analysis data into values for each hole, volume grades were calculated as per previous resource estimates and as described in the 1982 RSC report.

Volume Grade= Wet Density X Dry Salt Free Material (DSF)
X Metal as % of (DSF) X Factor

The factors for zinc, copper and silver are 0.1, 0.1 and 0.01 respectively resulting in volume grades expressed as kg/m^3, kg/m^3 and g/m^3.

Volume grades show an improved log-normal distribution and suitability for geostatistical analysis.

13.7. GEOSTATISTICS

The purpose of geostatistical analysis is to generate a series of semi-variograms that describe the orientations and ranges of metal volume/grade continuity that can be used as the input weighting mechanism and search parameters for kriging algorithms or to define the search ellipse parameters for the Atlantis II Deep deposit.

A range of omnidirectional variograms with variable lag distance were generated. The optimum lag distance was determined to be between 140 m and 160 m. The details of each variogram are summarised in Table 8 and presented in Figures 11 to 18.

TABLE 8. SUMMARY OF VARIOGRAM MODELS

		Zinc kg/m^3	Copper kg/m^3	Silver g/m^3	Manganese kg/m^3	Thickness above DOP (m)	DSF %	Wet Density	Water Depth (m)
Nugget Value		1.57	0.12	1.2	2.1	1.9	5	0.001	50
Model 1	Type	Spherical	Spherical	Spherical	Exponential	Spherical	Spherical	Exponential	Linear
	Range/ slope	200	180	400	2,030	188	200	1,000	1.56
	Partial Sill	2.22	0.5	7.6	11.3	2.1	12	0.0041	-
Model 2	Type	Exponential	Exponential	Exponential	-	Exponential	Exponential	-	-
	Range	1,570	1,570	2,050	-	1,440	2,000	-	-
	Partial Sill	2.98	0.8	9.7	-	3.5	25.6	-	-

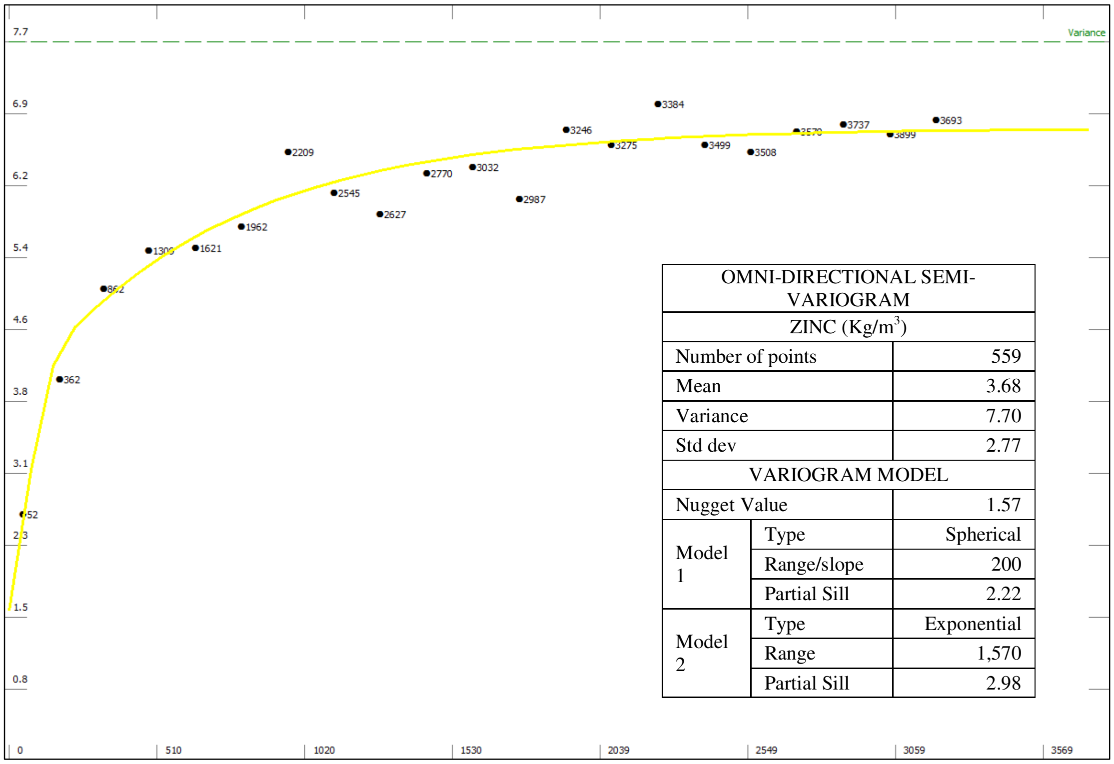


FIGURE 11. OMNI-DIRECTIONAL SEMI-VARIOGRAM FOR ZINC (Kg/m^3)

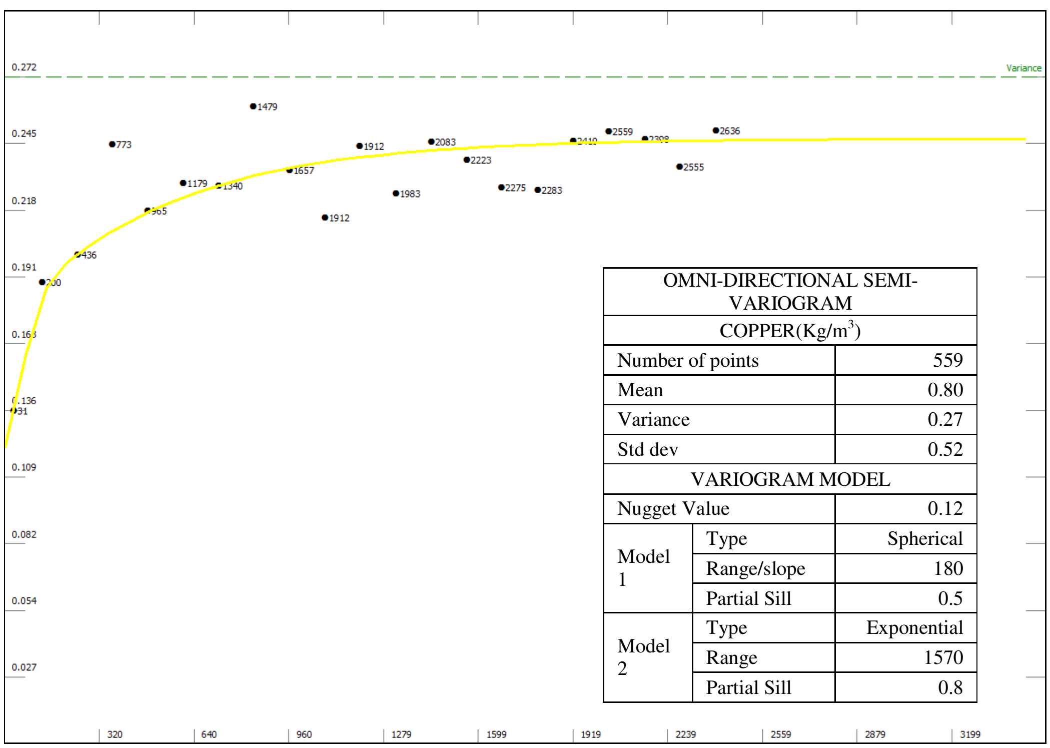
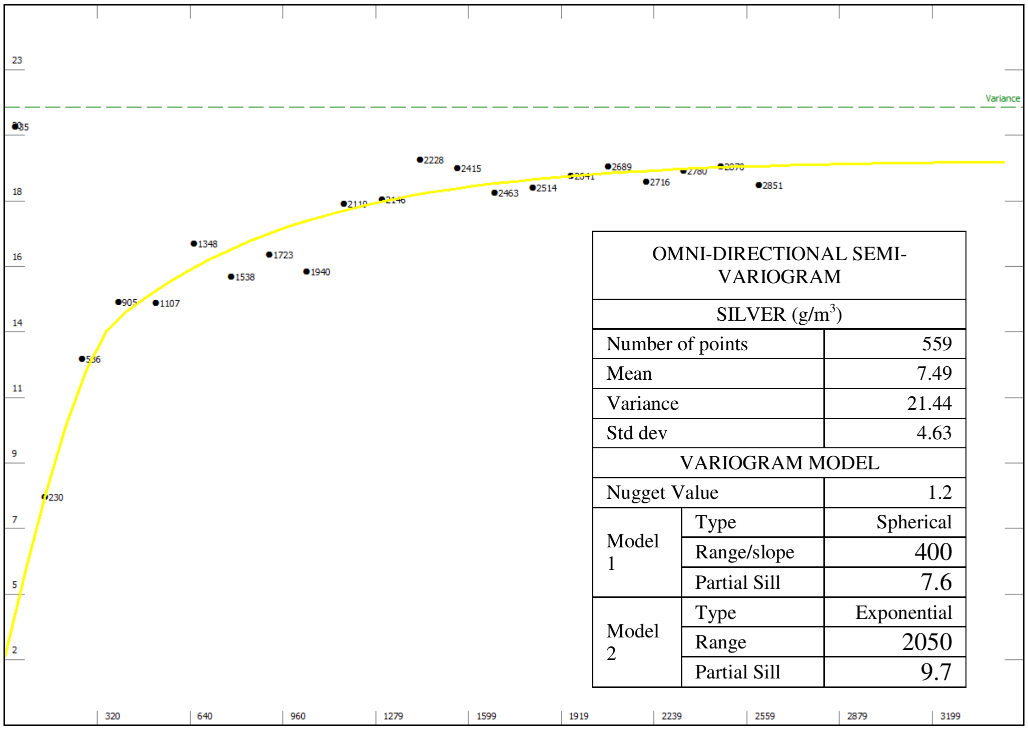
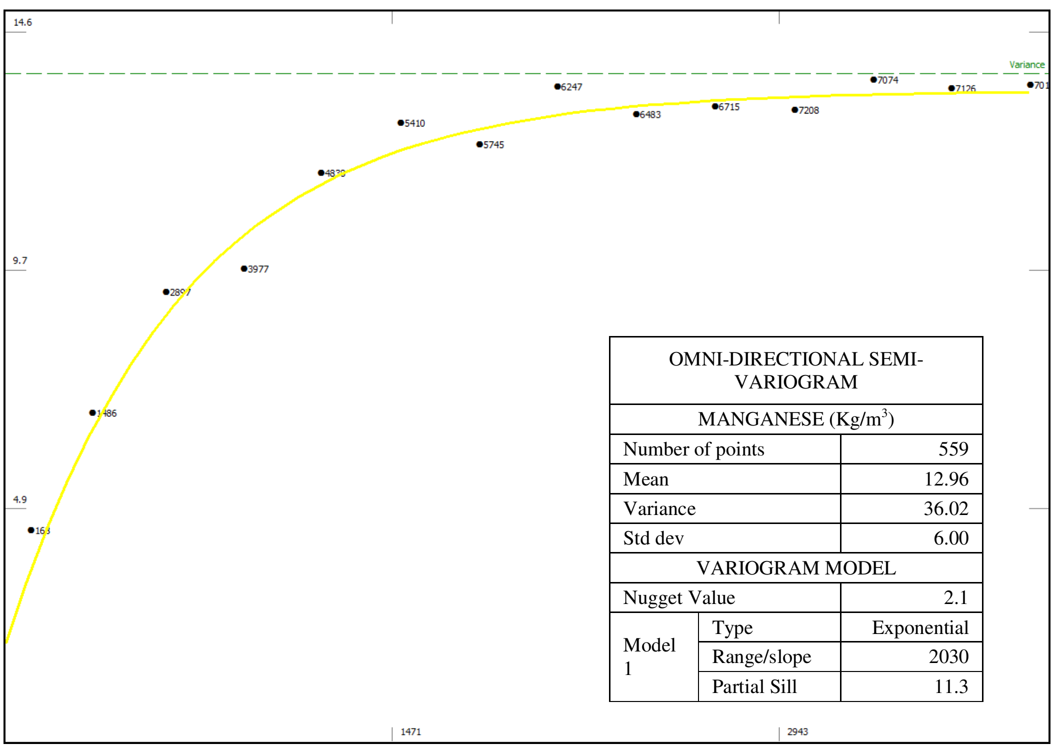


FIGURE 12. OMNI-DIRECTIONAL SEMI-VARIOGRAM FOR COPPER (Kg/m^3)



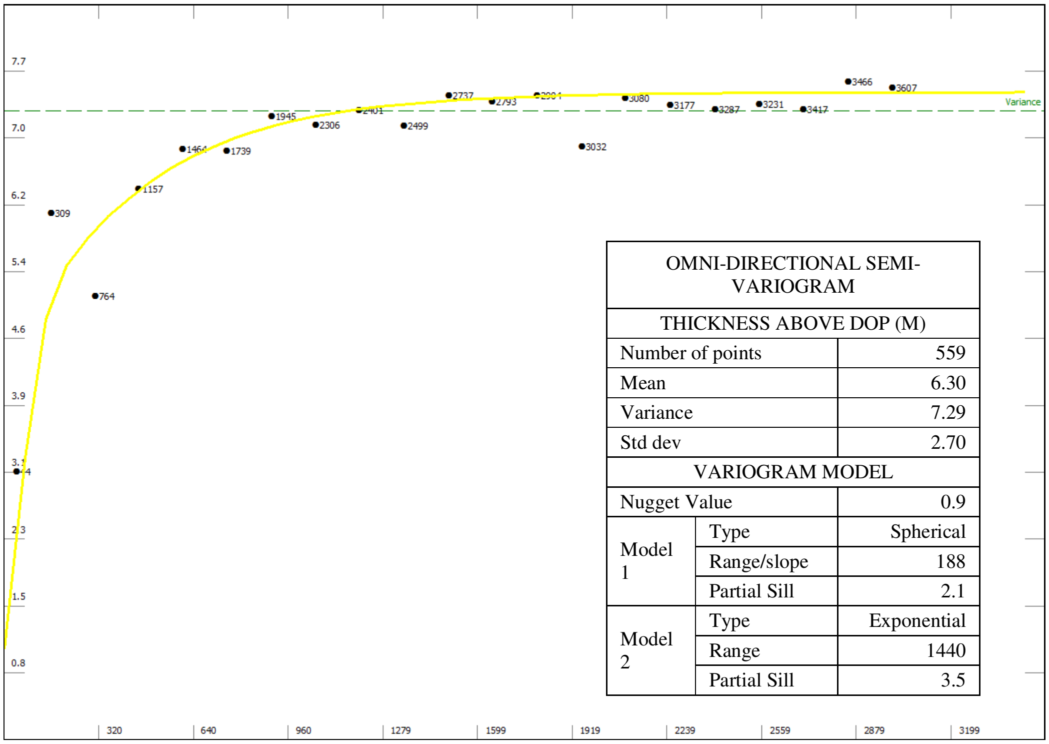
OMNI-DIRECTIONAL SEMI-VARIOGRAM		
SILVER (g/m³)		
Number of points		559
Mean		7.49
Variance		21.44
Std dev		4.63
VARIOGRAM MODEL		
Nugget Value		1.2
Model 1	Type	Spherical
	Range/slope	400
	Partial Sill	7.6
Model 2	Type	Exponential
	Range	2050
	Partial Sill	9.7

FIGURE 13. OMNI-DIRECTIONAL SEMI-VARIOGRAM FOR SILVER (g/m^3)



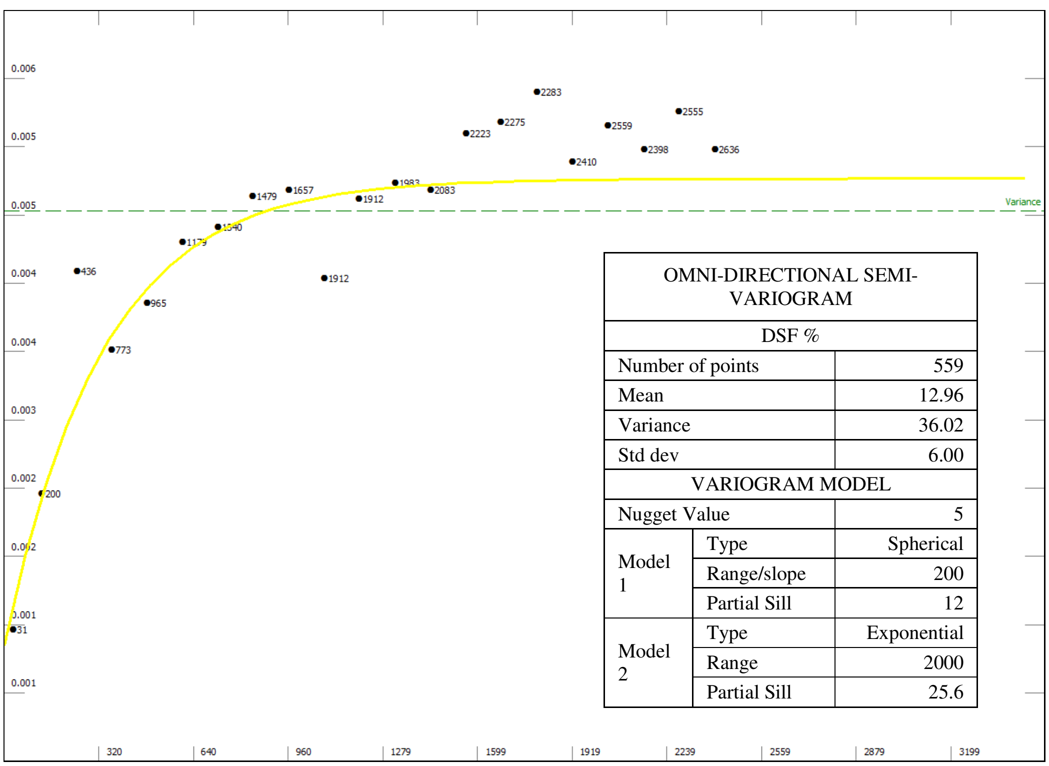
OMNI-DIRECTIONAL SEMI-VARIOGRAM		
MANGANESE (Kg/m³)		
Number of points		559
Mean		12.96
Variance		36.02
Std dev		6.00
VARIOGRAM MODEL		
Nugget Value		2.1
Model 1	Type	Exponential
	Range/slope	2030
	Partial Sill	11.3

FIGURE 14. OMNI-DIRECTIONAL SEMI-VARIOGRAM FOR MANGANESE (Kg/m^3)



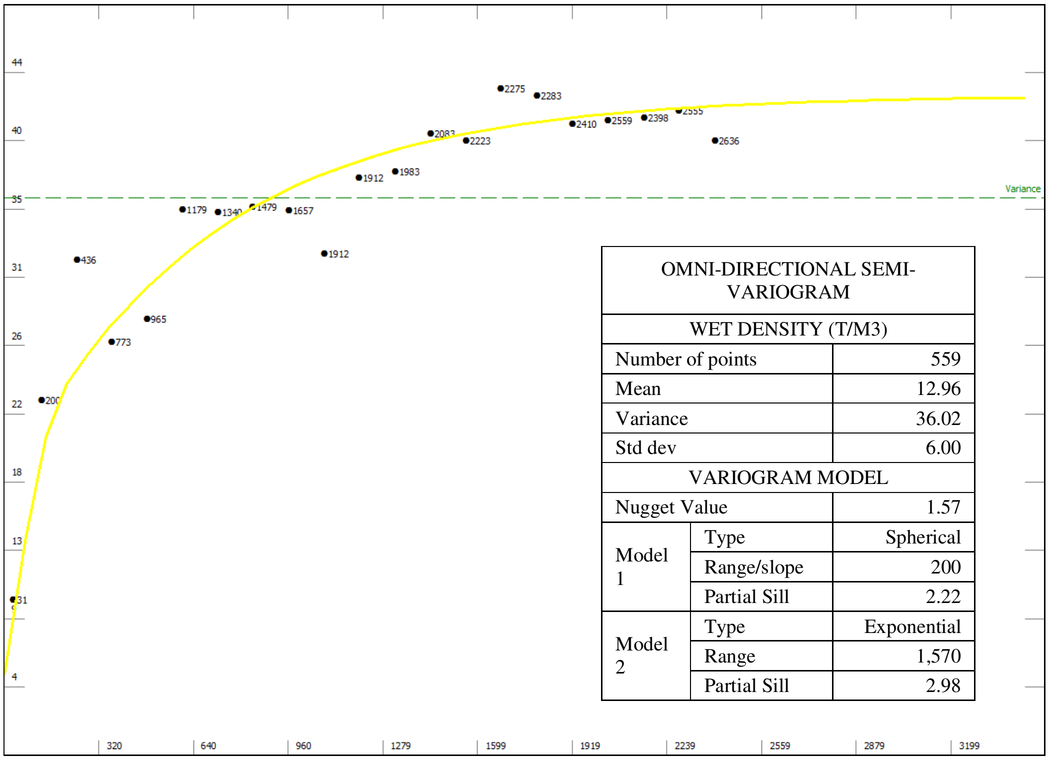
OMNI-DIRECTIONAL SEMI-VARIOGRAM		
THICKNESS ABOVE DOP (M)		
Number of points		559
Mean		6.30
Variance		7.29
Std dev		2.70
VARIOGRAM MODEL		
Nugget Value		0.9
Model 1	Type	Spherical
	Range/slope	188
	Partial Sill	2.1
Model 2	Type	Exponential
	Range	1440
	Partial Sill	3.5

FIGURE 15. OMNI-DIRECTIONAL SEMI-VARIOGRAM FOR THICKNESS (m)



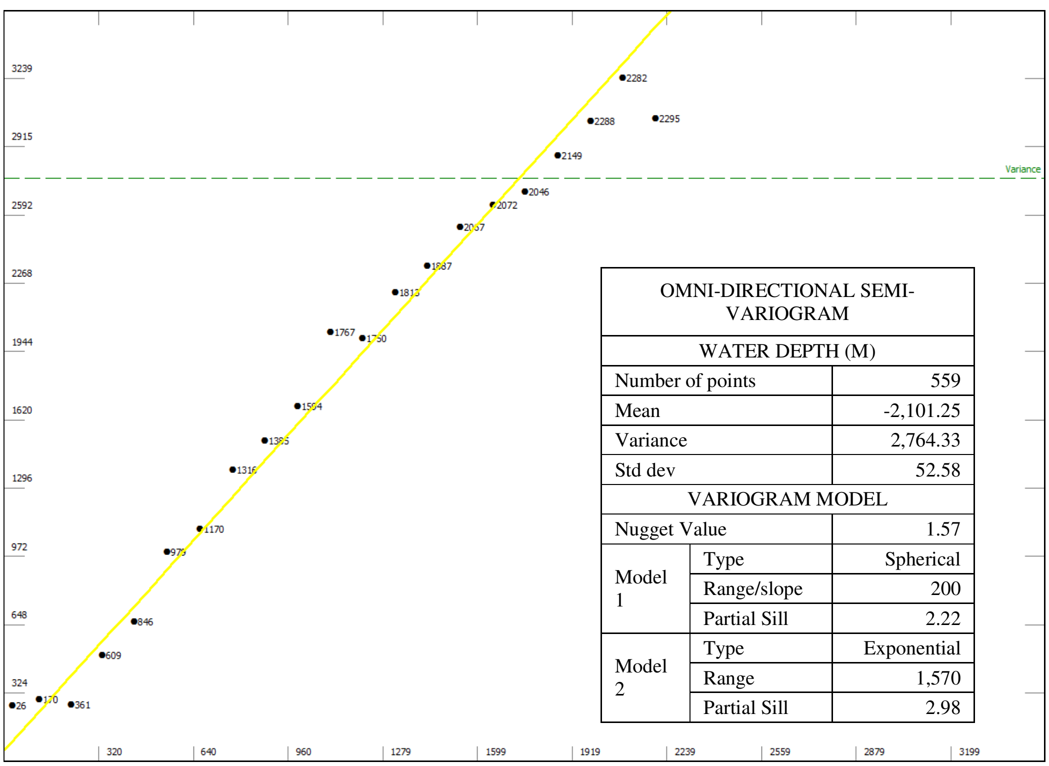
OMNI-DIRECTIONAL SEMI-VARIOGRAM		
DSF %		
Number of points		559
Mean		12.96
Variance		36.02
Std dev		6.00
VARIOGRAM MODEL		
Nugget Value		5
Model 1	Type	Spherical
	Range/slope	200
	Partial Sill	12
Model 2	Type	Exponential
	Range	2000
	Partial Sill	25.6

FIGURE 16. OMNI-DIRECTIONAL SEMI-VARIOGRAM FOR DSF %



OMNI-DIRECTIONAL SEMI-VARIOGRAM		
WET DENSITY (T/M3)		
Number of points		559
Mean		12.96
Variance		36.02
Std dev		6.00
VARIOGRAM MODEL		
Nugget Value		1.57
Model 1	Type	Spherical
	Range/slope	200
	Partial Sill	2.22
Model 2	Type	Exponential
	Range	1,570
	Partial Sill	2.98

FIGURE 17. OMNI-DIRECTIONAL SEMI-VARIOGRAM FOR WET DENSITY (t/m^3)



OMNI-DIRECTIONAL SEMI-VARIOGRAM		
WATER DEPTH (M)		
Number of points		559
Mean		-2,101.25
Variance		2,764.33
Std dev		52.58
VARIOGRAM MODEL		
Nugget Value		1.57
Model 1	Type	Spherical
	Range/slope	200
	Partial Sill	2.22
Model 2	Type	Exponential
	Range	1,570
	Partial Sill	2.98

FIGURE 18. OMNI-DIRECTIONAL SEMI-VARIOGRAM FOR WATER DEPTH (m)

13.8. ERROR CHECKING

Cross validation compares the measured value for a point with that estimated for the same location after the variogram model has been fitted. It is a way of testing the validity of the model prior to use in ordinary kriging estimation. The operation is also known as "jack-knifing".

The difference between the estimated value and the actual value is used to calculate the standard error of the estimate and the error statistic. The standard error is the ratio of the relative error (actual value – estimated value) to the kriging standard deviation.

For the perfect semi-variogram model, the average error statistic should be zero and the standard deviation of the error statistic should be one. Kriging of metal grades is unconstrained by domain and not limited by a minimum or maximum number of stations and some variation is to be expected. The error statistics for each field are presented in the following Table 9.

All metals show mean errors statistics within +/- 0.256 of 0 and standard deviation error statistics of +/- 0. 385 of 1. Silver and manganese have the highest error statistics (1.385 and 1.263). This is due to a more sporadic distribution of high grade samples and a high standard deviation of assay values. Error statistics for each of the fields analysed show that the chosen variograms are suitable for use in kriging and the generation of Inferred resources at the Atlantis II Deep.

Scatter plots of original versus estimated metal volume values for zinc, copper, silver and manganese are shown in Figures 19 to 22. A degree of smoothing down of high grades is evident.

TABLE 9. VARIOGRAM ERROR STATISTICS

		Raw Data	Estimate	Std Error	Error Statistic
Zn Cut	Mean	3.678	3.673	2.303	-0.001
	Std dev.	2.774	1.973	0.224	1.029
Cu Cut	Mean	0.796	0.795	0.484	-0.001
	Std dev.	0.522	0.313	0.034	1.039
Ag Cut	Mean	7.491	7.506	3.496	-0.012
	Std dev.	4.631	3.461	0.564	1.263
Mn Cut	Mean	3.948	4.542	2.596	-0.256
	Std dev.	3.706	2.412	0.315	1.385
Thickness	Mean	6.305	6.349	2.357	-0.007
	Std dev.	2.699	1.616	0.216	1.082
S.G.	Mean	1.270	1.269	0.059	0.010
	Std dev.	0.069	0.040	0.007	1.108
DSF	Mean	12.964	12.772	5.234	0.026
	Std dev.	6.001	3.239	0.656	1.113
Water Depth	Mean	-2101.300	-2102.300	19.955	0.010
	Std dev.	52.577	47.565	4.346	1.079

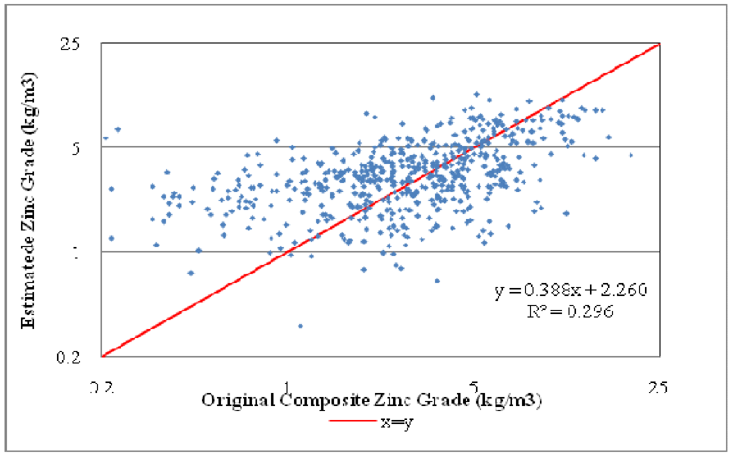


FIGURE 19. ERROR PLOT OF ORIGINAL AND ESTIMATED ZINC VALUES

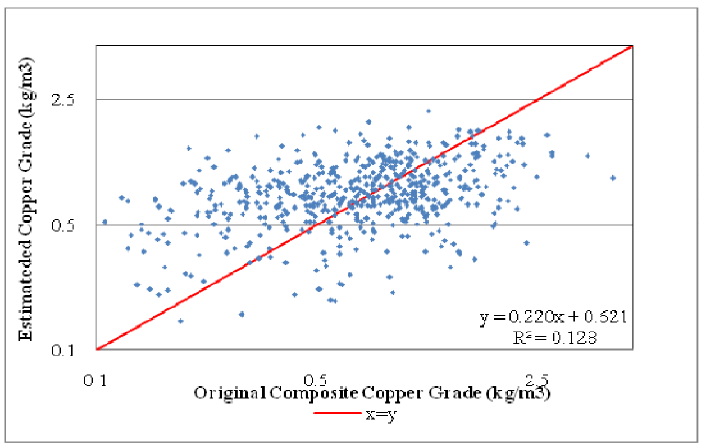


FIGURE 20. ERROR PLOT OF ORIGINAL AND ESTIMATED COPPER VALUES

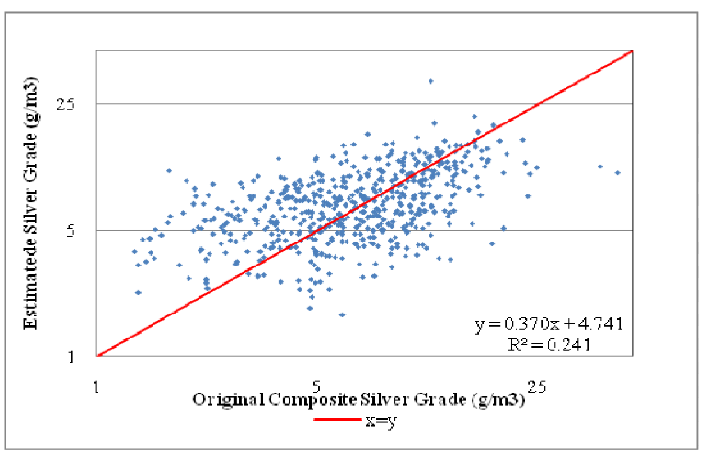


FIGURE 21. ERROR PLOT OF ORIGINAL AND ESTIMATED SILVER VALUES

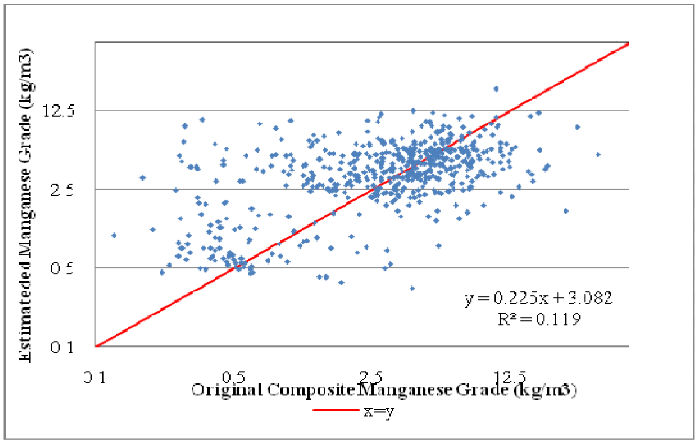


FIGURE 22. ERROR PLOT OF ORIGINAL AND ESTIMATED MANGANESE VALUES

13.9. GRIDDING

Block modelling gridding is undertaken in two stages. Firstly, an empty block model was generated to cover the maximum extents of the Atlantis II Deep deposit. The block models were then constrained to the -1990 m bathymetric contour to create an empty resource block model for the whole deposit.

As in previous studies, resource block size was determined by an evaluation of station spacing and the resolution required to broadly honour the shape of the Atlantis II Deep basin. In accordance with previous studies, 300 m^2 blocks were utilised. The parent block dimensions were chosen to honour the generally accepted rule that parent blocks should be not less than half the general exploration grid, which at the Atlantis II Deep is generally 500 m by 500 m.

When constraining the block model to the -1990 m contour, parent blocks were sub-blocked down to 100 m^2 in order to maintain the resolution of the bathymetric contour so as to accurately honour the extent of the Atlantis II Deep basin.

Block model characteristics for each model are contained in Table 10 below.

TABLE 10. BLOCK MODEL EXTENTS

Model	Dimension	Extent* (m)		Block Size (m)	Maximum sub-blocking (m)	No of blocks
		Min	Max			
A2D Global	Easting	399,500	408,500	300	100	31
	Northing	2,357,000	2,372,600	300	100	53

*Extents are in the UTM WGS84 projection.

13.10. GRADE INTERPOLATION

Metal grades were estimated globally for the entire Atlantis II Deep basin. Geological variables were estimated in a single run using ordinary kriging.

Following the cutting of assay data to the 97.5 percentile and detailed review of the volume grades it is considered that the Atlantis II Deep deposit database is appropriate for the ordinary kriging method.

Ordinary kriging derives a weighted block grade estimate from the grades within a defined search ellipse using the semi-variogram to calculate the weights for the best linear unbiased estimate. It is a parametric estimate in that is assumes a normal distribution for the input grades.

The “parent block estimation” technique was employed during interpolation, i.e. grades were estimated for parent blocks only, with the grade value assigned to all sub-blocks within that parent block.

A degree of grade smoothing will be evident in any resource estimate, regardless of the interpolation method chosen, but conversely, if the blocks to be estimated were too big, grade data would be over-smoothed such that the grade variability throughout any given deposit would be reduced, but the inherent grade variability and potential selectivity would be lost.

An omnidirectional search ellipse of 500 m was determined by the results of variographic analysis and after consideration of the appropriate range of continuity.

To increase the reliability of the estimates, when model blocks were interpolated, a restriction of at least two station data points was applied. Sample data over the deposit are locally clustered. Therefore, the samples must be de-clustered during interpolation to minimise the influence of areas sampled at a high density. If data are not de-clustered, clustered data have an undue overwhelming influence in the grade interpolation of the surrounding area.

Therefore, de-clustering was undertaken using the sector method whereby the search ellipse, regardless of the radii employed, is divided into eight sectors and a constraint used during interpolation, whereby a maximum of four points per sector were allowed. Therefore, the maximum combined number of sample allowable for the interpolation was 32.

The interpolation strategy employed to estimate resource block values is contained in Table 11.

TABLE 11. INTERPOLATION STRATEGY

Interpolation Method	Ordinary Omnidirectional Kriging
Search Radii	500 m
Number of Sections	8
Min No of Samples per Section	0
Max No of Samples per Section	4
Min No Stations per Search	2

Plots showing the Atlantis II Deep resource model coloured by thickness and zinc, copper, silver and manganese content are presented in Figures 23 to 28.

13.11. RESOURCE CLASSIFICATION

The CIM Definition Standards on Mineral Resources and Mineral Reserves, prepared by the CIM Standing Committee on Resource Definitions and adopted by the CIM council, provide standards for the classification of Mineral Resources and Mineral Reserve estimates into various categories. The category to which a resource or reserve estimate is assigned depends on the level of confidence in the geological information available on the mineral deposit, the quality and quantity of data available, the level of detail of the technical and economic information which has been generated about the deposit and the interpretation of that data and information. Under CIM Definition Standards:

- **An "Inferred Mineral Resource" is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological or grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.**

Classification, or assigning a level of confidence to Mineral Resources has been undertaken in strict adherence to the CIM Definition Standards on Mineral Resources and Mineral Reserves referred to above, and follows ACA Howe resource modelling standard procedures.

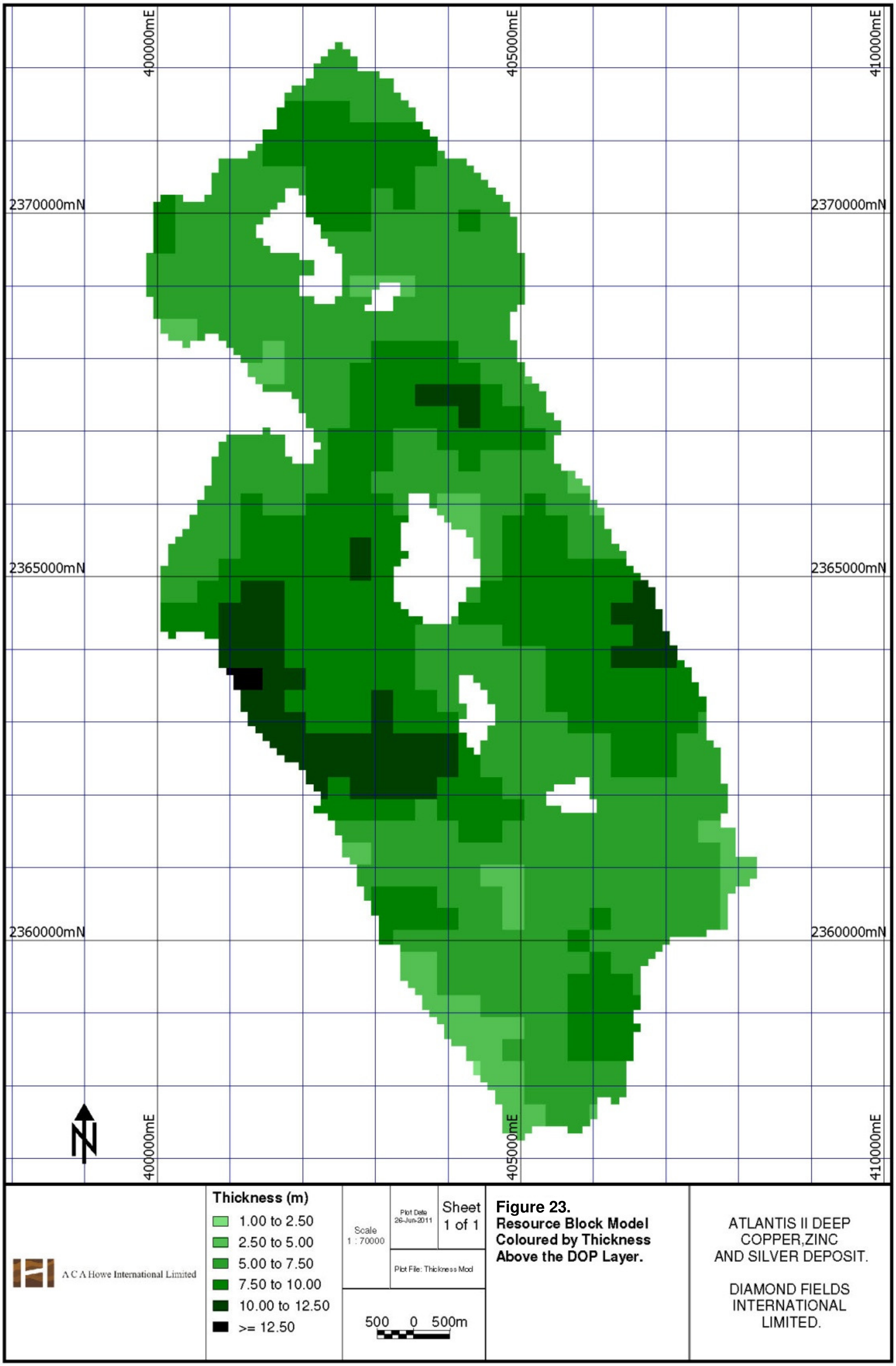
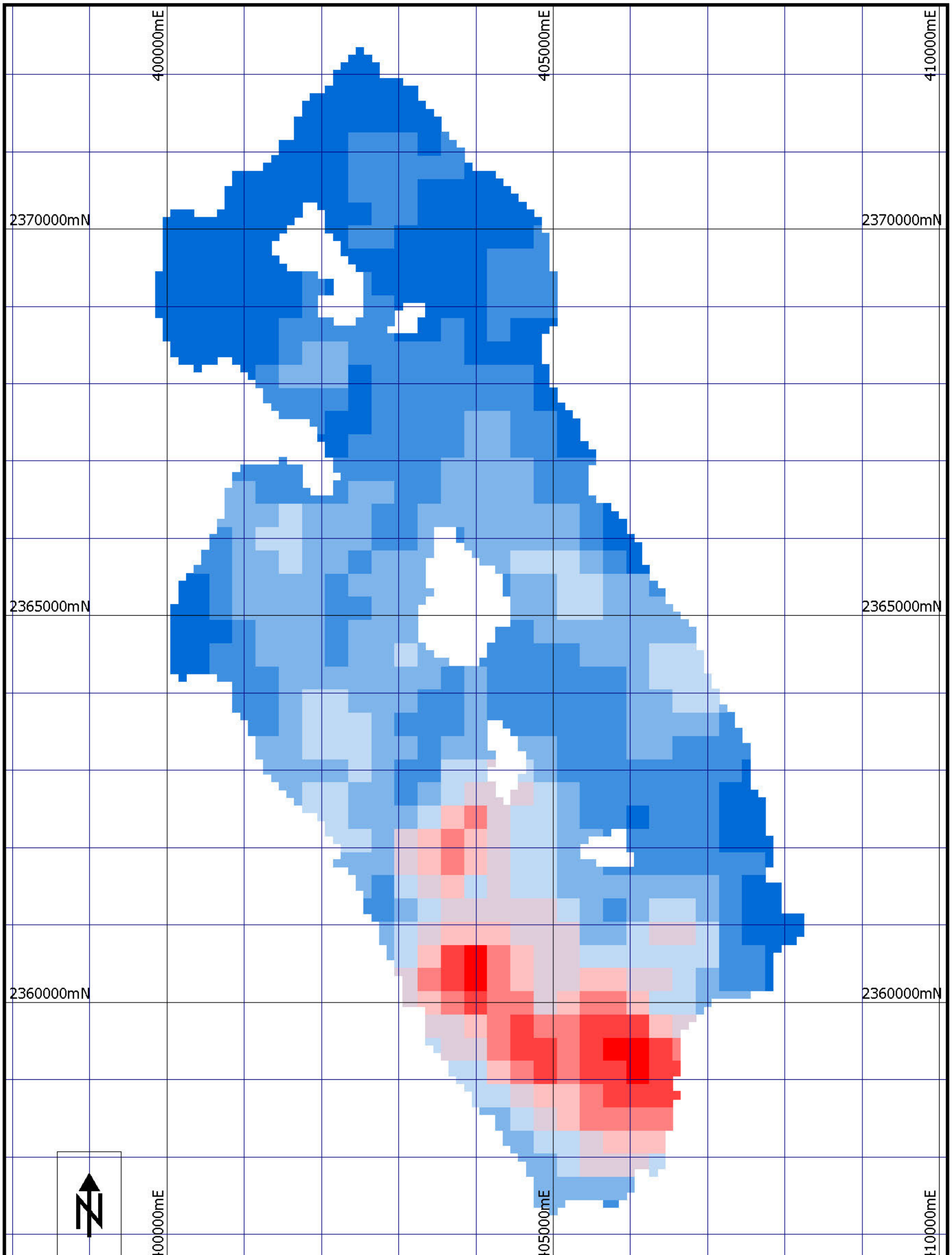


Figure 23.
Resource Block Model Coloured by Thickness Above the DOP Layer.



Zinc (kg/m3)

- < 2.00
- 2.00 to 3.00
- 3.00 to 4.00
- 4.00 to 5.00
- 5.00 to 6.00
- 6.00 to 7.00
- 7.00 to 8.00
- 8.00 to 9.00
- >= 9.00

A C A Howe International Limited

Scale 1 : 70000

Plot Date 26-Jun-2011

Sheet 1 of 1

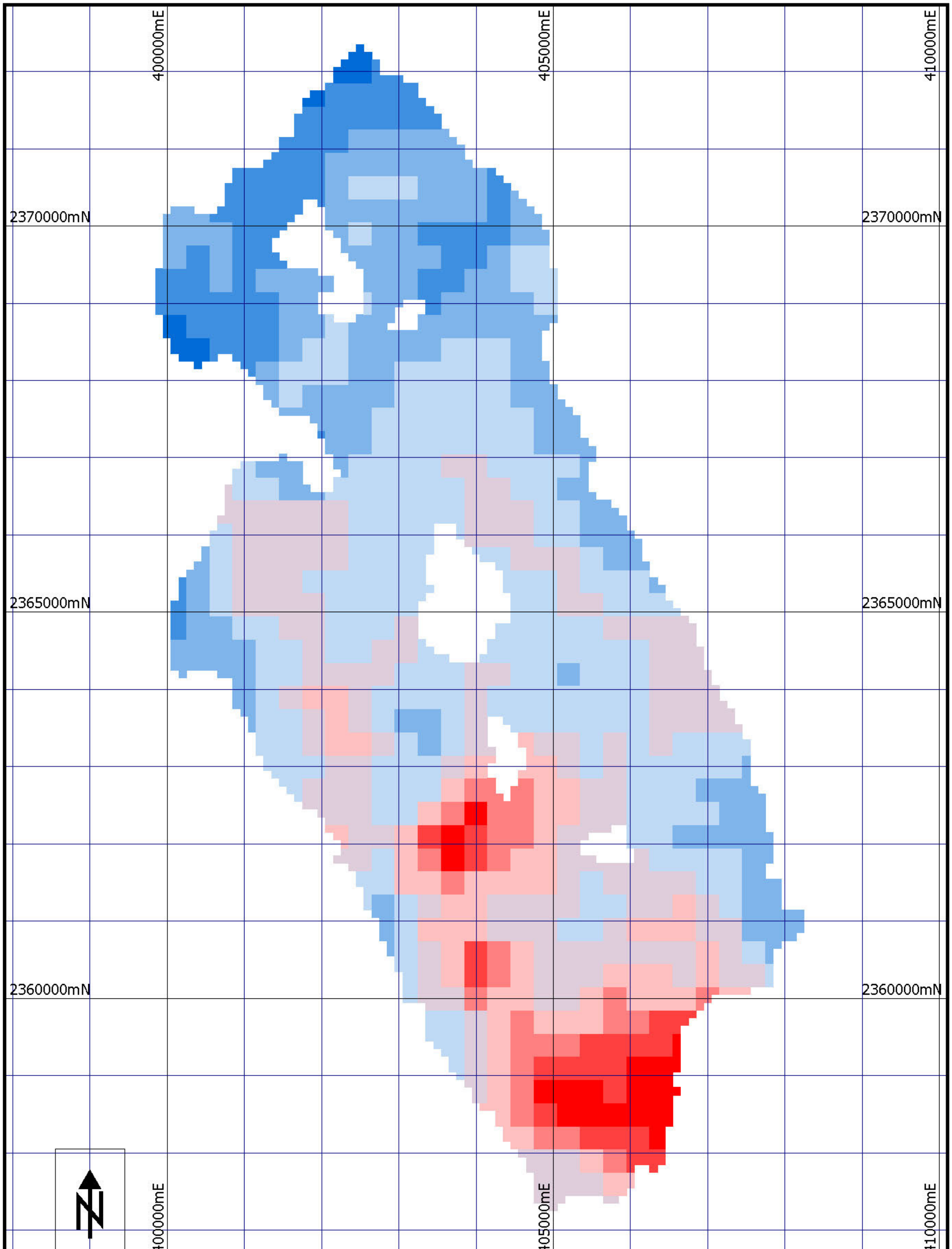
Plot File: Zinc_Mod

500 0 500m

Figure 24.
Resource Block Model Coloured by Zinc (kg/m3)

ATLANTIS II DEEP COPPER,ZINC AND SILVER DEPOSIT.

DIAMOND FIELDS INTERNATIONAL LIMITED.



A C A Howe International Limited

Copper (kg/m3)

- < 0.20
- 0.20 to 0.40
- 0.40 to 0.60
- 0.60 to 0.80
- 0.80 to 1.00
- 1.00 to 1.20
- 1.20 to 1.40
- 1.40 to 1.60
- >= 1.60

Scale 1 : 70000

Plot Date 26-Jun-2011

Sheet 1 of 1

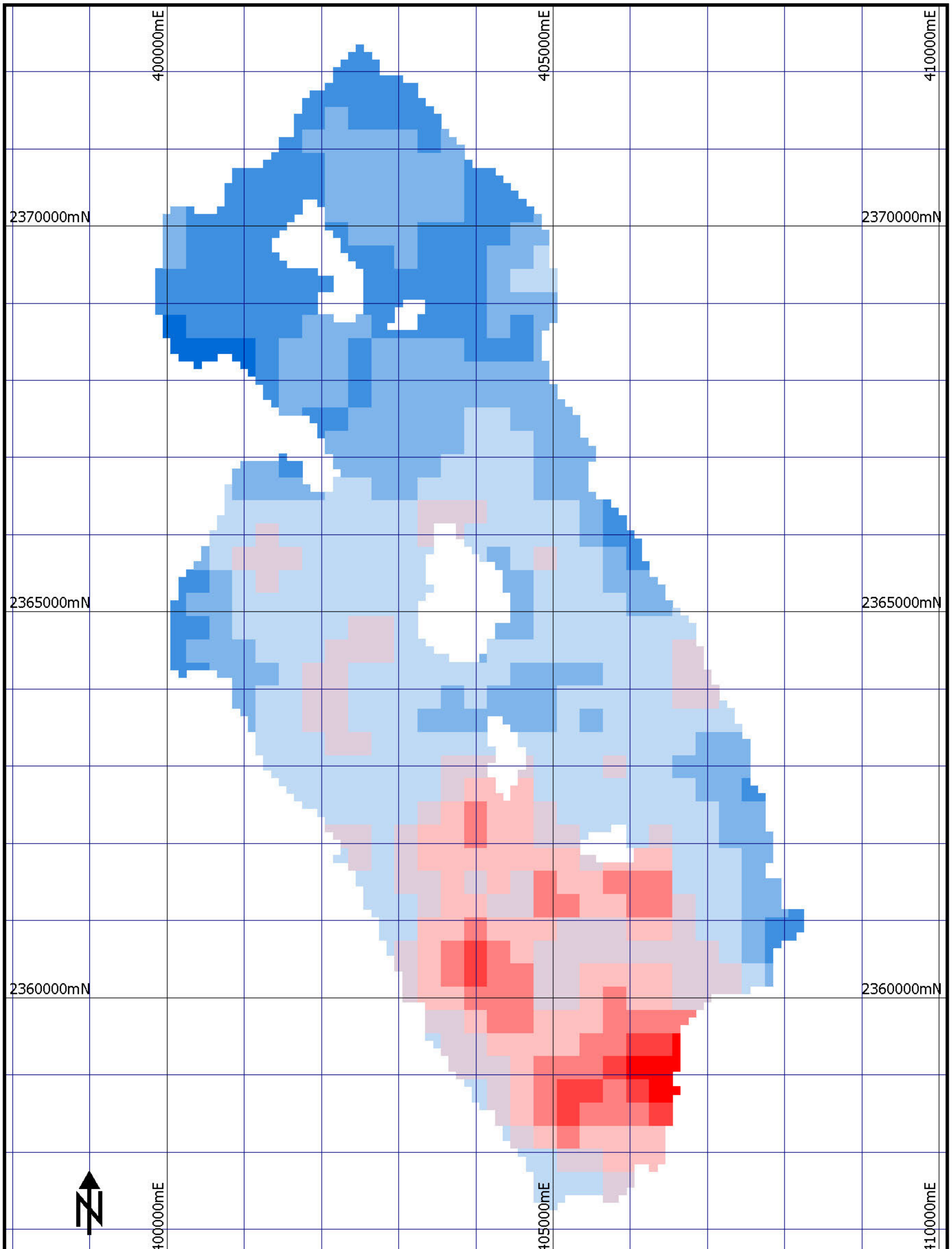
Plot File: Copper_Mod

500 0 500m

Figure 25.
Resource Block Model Coloured by Copper (kg/m3)

ATLANTIS II DEEP COPPER,ZINC AND SILVER DEPOSIT.

DIAMOND FIELDS INTERNATIONAL LIMITED.



Silver (g/m3)
- < 0.20
- 2.00 to 4.00
- 4.00 to 6.00
- 6.00 to 8.00
- 8.00 to 10.00
- 10.00 to 12.00
- 12.00 to 14.00
- 14.00 to 16.00
- >= 16.00

A C A Howe International Limited

Scale 1 : 70000

Plot Date 26-Jun-2011

Sheet 1 of 1

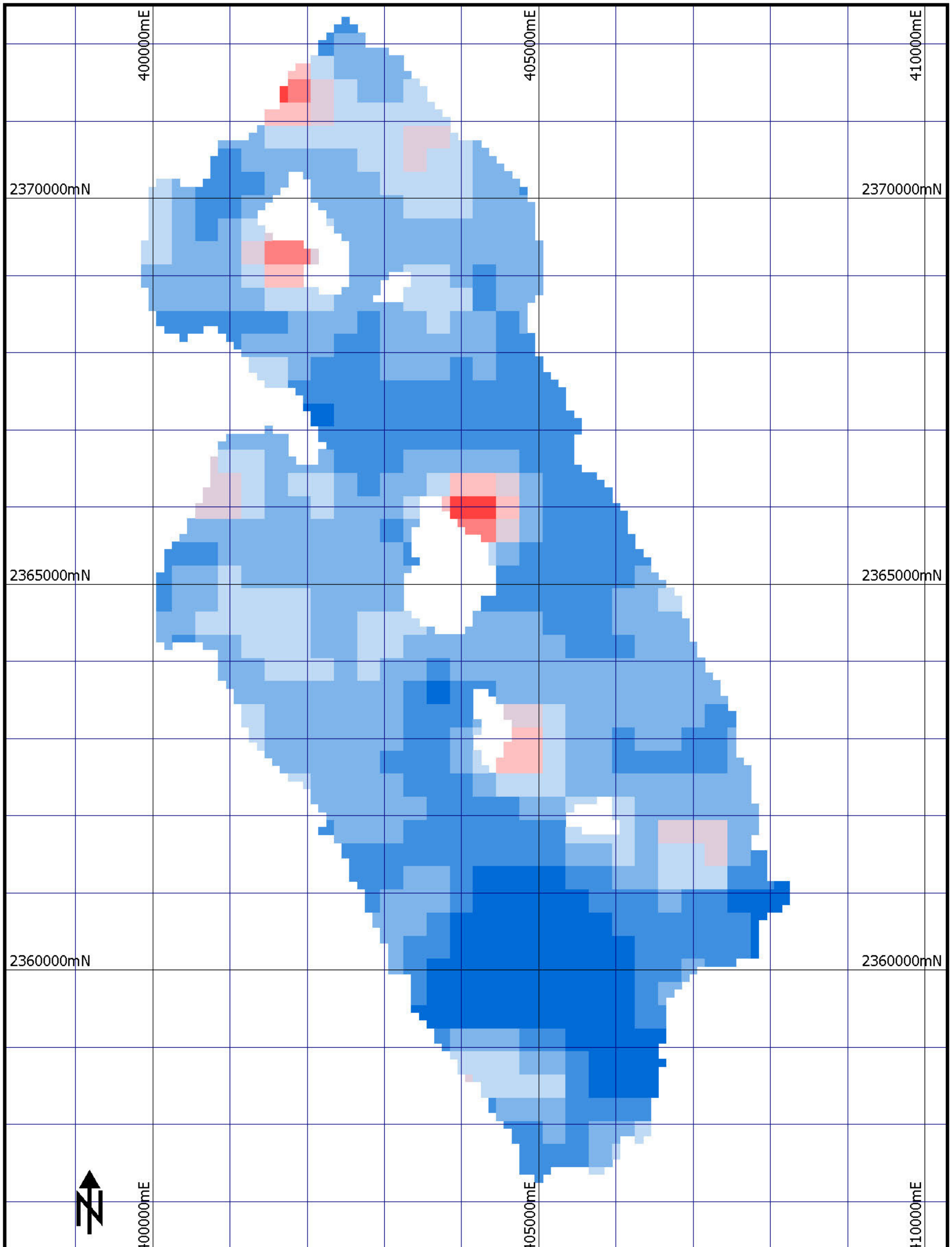
Plot File: Silver_Mod

500 0 500m

Figure 26.
Resource Block Model Coloured by Silver (g/m3)

ATLANTIS II DEEP COPPER,ZINC AND SILVER DEPOSIT.

DIAMOND FIELDS INTERNATIONAL LIMITED.



Manganese (kg/m3)

- < 2.00
- 2.00 to 4.00
- 4.00 to 6.00
- 6.00 to 8.00
- 8.00 to 10.00
- 10.00 to 12.00
- 12.00 to 14.00
- 14.00 to 16.00
- >= 16.00

A C A Howe International Limited

Scale 1 : 70000

Plot Date 28-Oct-2011

Sheet 1 of 1

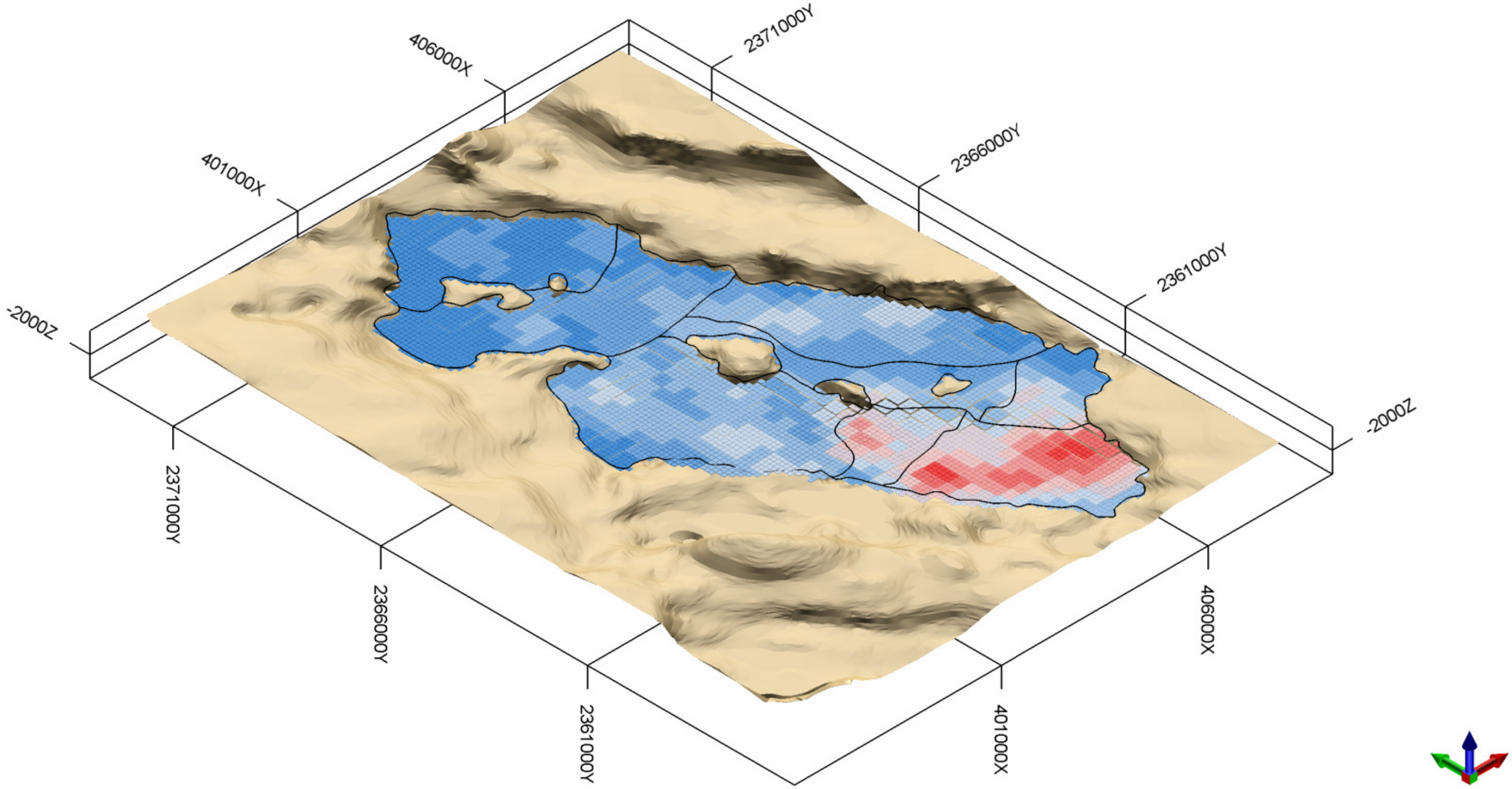
Plot File: Mn

500 0 500m

Figure 27.
Resource Block Model Coloured by Manganese (kg/m3)

ATLANTIS II DEEP COPPER,ZINC AND SILVER DEPOSIT.

DIAMOND FIELDS INTERNATIONAL LIMITED.



A C A Howe International Limited

Zinc (kg/m3)

- < 2.00
- 2.00 to 3.00
- 3.00 to 4.00
- 4.00 to 5.00
- 5.00 to 6.00
- 6.00 to 7.00
- 7.00 to 8.00
- 8.00 to 9.00
- >= 9.00

Scale is Approximate

1000 0 1000m

Plot Date 15-Jul-2011

Sheet 1 of 1

Plot File: Vizex

Figure 28.
Resource Block Model Coloured by Zinc (kg/m3).

Oblique View to the Northeast.

ATLANTIS II DEEP COPPER,ZINC AND SILVER DEPOSIT.

DIAMOND FIELDS INTERNATIONAL LIMITED.

Classification of interpolated blocks is undertaken using the following criteria:

- Interpolation criteria and estimate reliability based on sample density, search and interpolation parameters.
- Assessment of the reliability of geological, sample, survey and bulk density data.
- Assessment of geological/grade continuity over the various domains at each deposit.
- Drilling exploration grid.

The interpolation strategy dictates the classification of blocks to some degree since the parameters of each interpolation run result in a greater level of confidence in assigned block grade during the first interpolation runs, whereas interpolation runs at search radii larger than the defined range, capturing fewer points from fewer holes or channels, results in a lower level of confidence in block grade, even though the block estimates are reliably calculated from available sample points.

13.12. RESOURCE STATEMENT

It is ACA Howe's opinion that resources estimated as part of this study meet with the CIM "Inferred" category. Classifications are based upon consideration of the quality of input data, modelling and estimation methodology, interpolation criteria based on sample density, search and interpolation parameters, understanding and robustness of the geological model.

For the defined and modelled zone that honours the current geological model for the deposit, a total volume of 473.93 million m^3 has been defined at a wet density of 1.29 tonnes per m^3 for 604.21 million tonnes of resource material, with the following metal grades:

- 3.47 kg of zinc per m^3 for a total of 1.64 million tonnes of zinc,
- 0.78 kg of copper per m^3 for a total of 0.37 million tonnes of copper,
- 7.29 g of silver per m^3 for a total of 3.34 thousand tonnes of silver.
- 4.60 kg of manganese per m^3 for a total of 2.18 million tonnes of manganese.

The following table presents a summary of total resources attributable to the Atlantis II Deep deposit.

TABLE 12. SUMMARY OF INFERRED RESOURCES FOR THE ATLANTIS II DEEP DEPOSIT

	Wet Density	Sediment Vol m^3*1 [10^6]	Sediment Tonnage [10^6]	DSF Tonnage*3 [10^6]	Metal Tonnes [10^3]	Metal Volume Grade*2	DSF Metal Grade
Zinc	1.29	473.93	604.21	80.88	1,643	3.47 kg/m^3	2.03 %
Copper	1.29	473.93	604.21	80.88	368	0.78 kg/m^3	0.46 %
Silver	1.29	473.93	604.21	80.88	3.35	7.07 g/m^3	41.14 g/t
Manganese	1.29	473.93	604.21	80.88	2,179	4.60 kg/m^3	2.69%

Notes:
* Omnidirectional Ordinary Kriging (OK) has been used to interpolate resource block values for Zinc, Copper, Silver and Manganese volume grades, Dry Salt Free (DSF) %, thickness of material above the Detrital Oxide Pyrite layer (DOP), Wet density and Water Depth.
*1 Volume is derived from the thickness of sediment above the DOP later in m multiplied by 300 m^2 resource blocks informed by a metal grade. Resource blocks are sub blocked down to 100 m^2 and constrained to the -1990 m bathymetry contour.
*2 Raw assay grades were cut at the 97.5% quantile value equal to 9.70 DSF % Zn, 1.32 DSF % Cu, 0.0223 DSF % Ag and 12.90 DSF% Mn..
*3 The global mean Dry Salt Free (DSF) material percentage of 13.39 % was is used to calculate DSF metal grades.

To the best of ACA Howe's knowledge, the stated mineral resources are not materially affected by any known environmental, permitting, legal title, taxation, socio-economic, marketing, political or other relevant issues.

The mineral estimate, prepared by Leon McGarry, ACA Howe Resource Geologist, is compliant with current standards and definitions required under NI 43-101, and is reportable as a mineral resource by Diamond Fields International Ltd. However, the reader should understand that mineral resources are not mineral reserves and do not have demonstrated economic viability.

13.13. RESOURCES GRADE TONNAGE

For information purposes, zinc, copper, silver and manganese grade and resource tonnage values for the Atlantis II Deep deposit are presented in Tables 13 to 16 and plotted in Figures 29 to 32. Values should be treated as indicative only as the greater potential variability in the low number of blocks at higher grades will decrease the resource confidence. Additionally, such curves do not take block size, block location and block availability for mining into account.

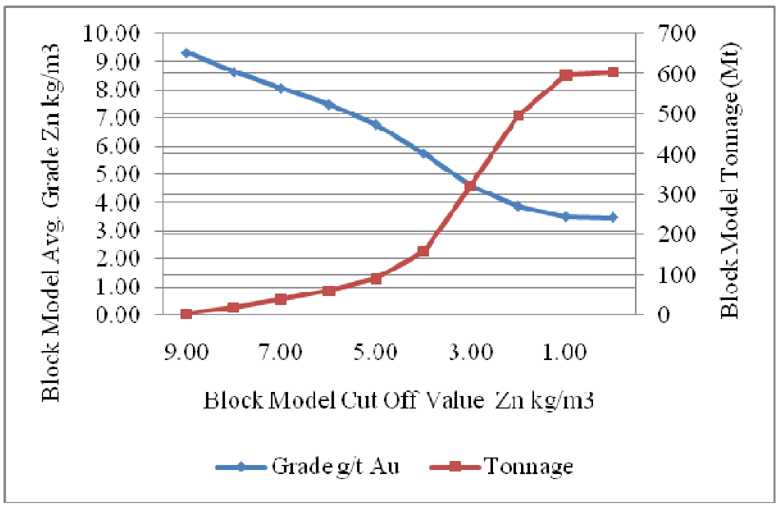


FIGURE 29. ZINC GRADE-TONNAGE CURVE

TABLE 13. ZINC GRADE-TONNAGE TABLE

Block Model Cut Off Value (Zn kg/ m^3)	Block Model Avg. Grade (Zn kg/ m^3)	Block Model Tonnage (Mt)	Contained Tonnes of Zinc
9.00	9.345	4.66	34,000
8.00	8.654	19.82	133,000
7.00	8.075	39.58	247,000
6.00	7.503	61.09	354,000
5.00	6.797	91.01	477,000
4.00	5.761	158.84	708,000
3.00	4.596	321.83	1,152,000
2.00	3.877	496.58	1,507,000
1.00	3.498	596.98	1,638,000
None	3.466	604.21	1,643,000

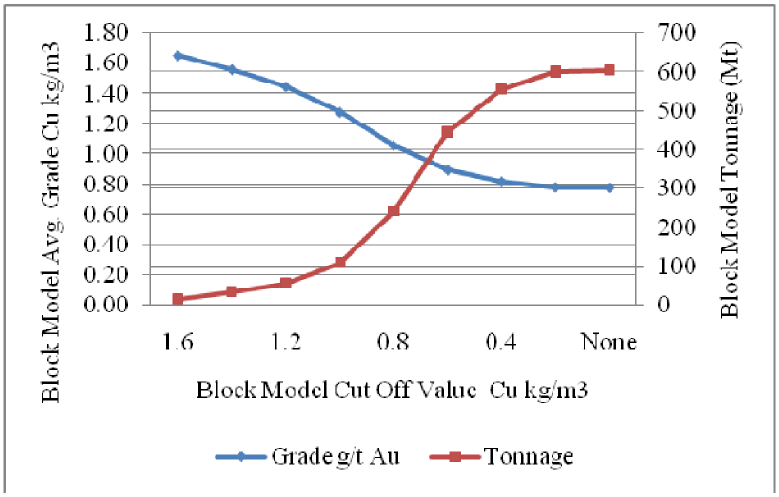


FIGURE 30. COPPER GRADE-TONNAGE CURVE

TABLE 14. COPPER GRADE-TONNAGE TABLE			
Block Model Cut Off Value (Cu kg/ m^3)	Block Model Avg. Grade (Cu kg/ m^3)	Block Model Tonnage (Mt)	Contained Tonnes of Copper
1.60	1.653	15.62	20,000
1.40	1.561	33.23	40,000
1.20	1.447	55.71	62,000
1.00	1.277	107.74	107,000
0.80	1.057	242.36	200,000
0.60	0.896	444.51	312,000
0.40	0.818	555.16	356,000
0.20	0.781	600.46	368,000
None	0.778	604.21	368,000

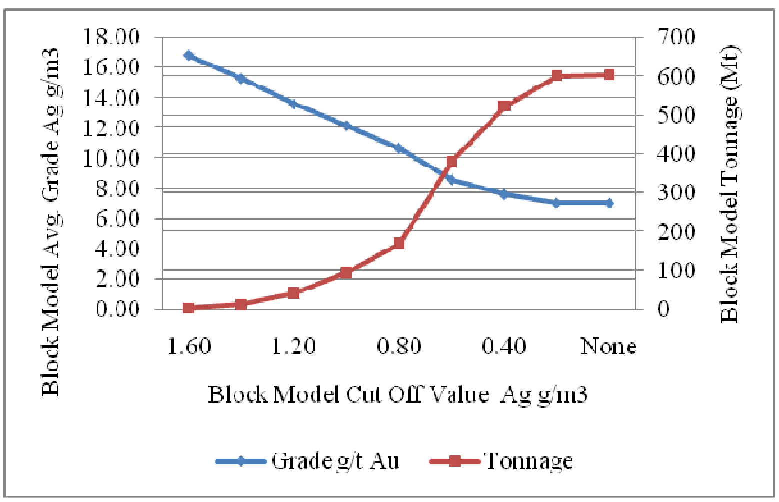


FIGURE 31. SILVER GRADE-TONNAGE CURVE

TABLE 15. SILVER GRADE-TONNAGE TABLE			
Block Model Cut Off Value (Ag g/ m^3)	Block Model Avg. Grade (Ag g/ m^3)	Block Model Tonnage (Mt)	Block Model Cut Off Value (Ag g/ m^3)
1.60	16.832	3.77	49
1.40	15.303	12.58	149
1.20	13.591	42.26	446
1.00	12.195	94.93	895
0.80	10.703	169.99	1,412
0.60	8.617	382.34	2,572
0.40	7.640	523.89	3,134
0.20	7.083	602.44	3,347
None	7.068	604.21	3,350

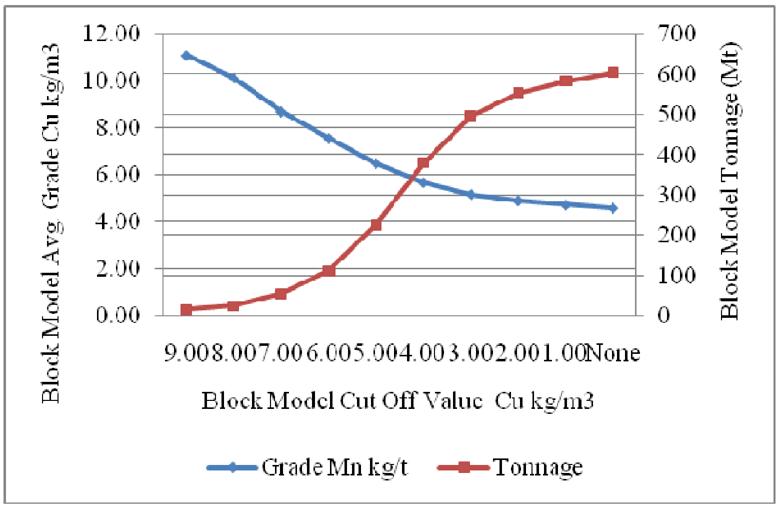


FIGURE 32. MANGANESE GRADE-TONNAGE CURVE

TABLE 16. MANGANESE GRADE-TONNAGE TABLE			
Block Model Cut Off Value (Cu kg/ m^3)	Block Model Avg. Grade (Cu kg/ m^3)	Block Model Tonnage (Mt)	Contained Tonnes of Copper
9.00	11.114	16.80	146,000
8.00	10.163	26.01	207,000
7.00	8.720	55.39	379,000
6.00	7.579	112.65	668,000
5.00	6.510	226.78	1,155,000
4.00	5.694	380.78	1,699,000
3.00	5.188	495.76	2,016,000
2.00	4.918	553.33	2,133,000
1.00	4.739	583.23	2,166,000
None	4.598	604.21	2,179,000

13.14. COMPARISON WITH PREVIOUS RESOURCE ESTIMATES

Details of previous resource estimates are contained in section 7.4 above of this report, *Historic Resource Estimates* and in Guney et al. (1984). At that time, there was no international standard for reserve and resource classification. Guney et al. used the ordinary kriging method of interpolation.

This study has utilised the broadly same input data as the 1984 estimate, with the exception of the Wando River data, which were not included for reasons given above. Detailed scrutiny of the exploration database for the deposit has led to similar conclusions with respect to resource modelling parameters including:

- Use of composited intervals above the DOP layer as defined in the 1984 study,
- A block model grid size of 300 m for parent blocks,
- An interpolation search radius of 500 m separated into 8 sections,
- A minimum of 2 data points per block,
- Limiting of the resource model to the -1990 m bathymetric contour.

Significant differences in the resource estimation include:

- The inclusion of manganese mineralisation.
- The application of top cuts to the raw dry salt free analyses,
- Revised variograms for geological variables used in estimation,
- Sub blocking of the resource model to 100 m^2 blocks to better reflect the extent of the Atlantis II Deep basin,
- The reporting of resources estimated on a global basis as opposed to individual sub-basins.

A comparison of the 1984 and 2011 resource estimate numbers is presented in Table 17 below. Metal volume and DSF grades compare very well for copper, silver and zinc. A 13% decrease in total sediment tonnage is responsible for a corresponding 13% decrease in contained zinc and copper. A corresponding decrease in contained silver is offset by higher grades and totals -11%. No significant historic resource estimates were completed for manganese and no meaningful comparisons can be made.

The decrease in sediment tonnage is attributed to better confinement of resource blocks to the Atlantis II Deep depression, leading to the discounting of material included in the 1984 estimate.

TABLE 17. COMPARISON OF THE 1984 AND 2011 RESOURCE ESTIMATES.

	Guney et al. 1984				ACA Howe 2011				Metal Tonnage Diff %
	Sediment Tonnage [10^6]	Metal Tonnes [10^3]	Metal Volume Grade*[2]	DSF Metal Grade	Sediment Tonnage [10^6]	Metal Tonnes [10^3]	Metal Volume Grade*[2]	DSF Metal Grade	
Zinc	696,33	1,890	3.41 kg/ m^3	2.06 %	604.21	1,643	3.47 kg/m^3	2.03 %	-13%
Copper	696,33	425	0.77 kg/ m^3	0.46 %	604.21	368	0.78 kg/m^3	0.46 %	-13%
Silver	696,33	3.75	6.77 g/ m^3	40.95 g/t	604.21	3.35	7.07g/m^3	41.14g/t	-11%

On the basis of this comparison it is considered that the current and historic resource estimates are robust.

14. ADJACENT PROPERTIES

There are no adjacent properties.

15. OTHER RELEVANT DATA AND INFORMATION

The management team of DFI and its joint venture partner Manafa have established and maintained excellent relationships with the Saudi Sudanese Red Sea Commission, the relevant local authority for the project area.

DFI have significant experience in the exploitation of sub-sea resources. Since 2001, DFI have undertaken mining operations on their marine diamond concessions off the coast of Luderitz Namibia. Production for forecasts generated in 2000 estimated probable reserves of 6.1 million m^3 of sediments. The estimated annual excavation rate was 873,000 m^3.

DFI's operations have necessitated the development and use of airlift riser systems of sediment extraction and the shipboard processing of sediments. In late 2004, DFI acquired its own twin airlift mining vessel, MV DF Discoverer, which began mining on the licence areas in mid-2005.

Whilst there are fundamental differences between DFI's marine diamond project and the Atlantis II Deep deposit, it is considered that DFI is well placed to develop the Atlantis II Deep deposit.

16. INTERPRETATION AND CONCLUSIONS

The principal data sources utilised in the completion of this study are the core logs and chemical analyses generated by Preussag from the Valdivia and Meseda exploration cruises completed between 1975 and 1981 at an average spacing of 500 m. Significant reference is made to the reports prepared for the Saudi-Sudanese Red Sea Commission. ACA Howe has relied upon the accuracy of all information provided by DFI and other sources cited in this report and has no reason to believe that the information is not accurate.

Recent exploration by DFI is limited to a bathymetric survey undertaken in conjunction with IFM Geomar. No new drilling or sampling has been undertaken.

The drilling, sample preparation and analyses methods employed by Preussag are considered to have produced assay data at a sufficient level of accuracy and precision. Recent verification sampling of cores demonstrates that historic Preussag assay data from drilling and sampling programmes implemented during exploration of the Atlantis II Deep, may be regarded as representative of in-situ mineralisation.

For the deposit as a whole, there is a sufficient number of samples to allow an evaluation of the geostatistical characteristics of the deposit. Samples are considered to be of sufficient quality for the generation of Inferred category resources.

ACA Howe has completed a resource estimate for the Atlantis II Deep deposit based on 589 historic core stations. Resources estimated in the 2011 ACA Howe study of the Atlantis II Deep deposit have been categorised as Inferred under CIM guidelines and in accordance with the April 2011 Canadian Securities Administrators (CSA) document, "National Instrument 43-101 Standards of Disclosure for Mineral Projects".

TABLE 18. SUMMARY OF INFERRED RESOURCES FOR THE ATLANTIS II DEEP DEPOSIT

	Wet Density	Sediment Vol m^3*[1] $[10^6]$	Sediment Tonnage $[10^6]$	DSF Tonnage *[3] $[10^6]$	Metal Tonnes $[10^3]$	Metal Volume Grade*[2]	DSF Metal Grade
Zinc	1.29	473.93	604.21	80.88	1,643.00	3.47 kg/m^3	2 %
Copper	1.29	473.93	604.21	80.88	368.00	0.78 kg/m^3	0 %
Silver	1.29	473.93	604.21	80.88	3.35	7.07 g/m^3	41.14 g/t
Manganese	1.29	473.93	604.21	80.88	2.17	4.58 g/m^3	26.84 g/t

Notes:
* Omnidirectional Ordinary Kriging (OK) has been used to interpolate resource block values for Zinc, Copper and Silver volume grades, Dry Salt Free (DSF) %, thickness of material above the Detrital Oxide Pyrite layer (DOP), Wet density and Water Depth.
*[1] Volume is derived from the thickness of sediment above the DOP later in m multiplied by 300 m^2 resource blocks informed by a metal grade. Resource blocks are sub blocked down to 100 m^2 and constrained to the -1990 m bathymetry contour.
*[2] Raw assay grades were cut at the 97.5% quantile value equal to 9.70 DSF % Zn, 1.32 DSF % Cu, 0.0223 DSF % Ag and 12.90 DSF % Mn.
*[3] The global mean Dry Salt Free (DSF) material percentage of 13.39 % was is used to calculate DSF metal grades.

Historic resource drilling at the Atlantis II Deep deposit has identified a hydrothermal sedimentary deposit, typically 11 m thick extending over an area of 60 km^2. It is postulated that the deposit was formed by chemical precipitation from inflowing hot brines and subsequent sedimentation. For zinc, copper and silver the distribution of high block grades shows a strong correlation with the distribution of epigenetic anhydrite veins related to brine venting.

A general association between active venting, mineralisation and the intersection of transform faults (Bignell, 1975; in Zierenberg and Shanks, 1983) is supported in the 2011 resource model. High grade zinc, copper and silver blocks show a linear distribution trending approximately northeast across the central portion of the southwest and western basins.

The current resource estimates compares well with the Guney et al. (1984) resource estimate completed for the RSC for both zinc, copper and silver grades and tonnages. It is considered that the historic and October 2011 resource estimates are robust for those metals.

Modeled manganese distribution exhibits evidence of the depth and oxidation control described by previous authors such as Butuzova et al. (2009). High grade manganese blocks are predominantly located along the central sill, marginal slopes and in shallower west and north basins that host the CO zone. Manganese grades are lowest (<2 % Mn DSF) at the deepest part of the deposit, -2150 m below sea level in the southern basin where zinc, copper and silver are highest.

Although manganese demonstrates an inverse relationship with the other metals studied, the October 2011 manganese resource estimate is also considered robust.

DFI has significant experience in the exploitation of sub-sea resources. Whilst there are fundamental differences between DFI's marine diamond project and the Atlantis II Deep deposit, it is considered that DFI is well placed to develop the Atlantis II Deep deposit.

ACA Howe notes the following items that have the potential to materially affect the resource estimate.

- It is apparent from the chemical analyses of cores, the variogram models and the resulting resource block models, that the distribution of mineralisation in the Atlantis II Deep is not homogeneous. There is a tendency for anisotropic distribution of metal grades. The southwestern sub-basin contains the highest zinc, copper and silver grades. The distribution of high block grades shows a strong correlation with the distribution of epigenetic anhydrite veins related to the current phase of brine venting, which predominantly occurs in the southwest basin.

- There appears to be a linear trend in the distribution of higher block grades for zinc, copper and silver. The trend is approximately northeast across the central portion of the southwest basin and coincides with a transform fault proposed by Bicker et al. (1975) on the basis of detailed bathymetric mapping. This supports the general association of brine with the intersection of transform faults.

- The central sill, marginal slopes and shallower west and north basins contain lower block model grades for zinc, copper and silver grades but higher manganese grades. These areas are associated with the CO sequence that represents the extensive blanket of mineralised sediments precipitated from the brine.

- The base of the resource was taken to be the top of the Detrital Oxide Pyrite material. The historic Preussag study did not consider this material to be economically extractable, despite average grades of 4.68 kg/m^3 zinc, 1.31 kg/m^3 copper and 10.20 g/m^3 silver.

- It should be considered that the deposit is open at depth.

- The estimation of core loss on the basis of stratigraphic comparison is not considered to be sufficiently accurate. This method assumes that core is only lost from the top of the hole, it is not possible to assess the loss that may occur within the core during extraction. This could result in estimation bias if the core loss was preferentially related to low or high grade material.

- At present, the numbers of duplicate assays are limited and are insufficient for a statistically robust assessment of the accuracy of the Preussag assay data.

- Historic estimates contain values for a range of metal including lead, cobalt, cadmium and gold. During historic exploration, no attempt was made to systematically analyse for these metals. Resource estimates have not been recreated for:

  – lead (80,000 tonnes Pb) contained in Bischoff &Manheim 1966,
  – cobalt (58.53 g/t Co for 5,368 tonnes of Co) contained in Guney et al. (1984),
  – cadmium (6,500 tonnes Ca) contained in Preussag 1969,
  – gold (0.512 g/t Au for 47 tonnes Au).

  There is a significant potential to develop resources for a range of metals.

17. RECOMMENDATIONS

ACA Howe recommends that the following work be incorporated into DFI's ongoing project development plans: an analysis of available data including bathymetric and seismic studies, followed by exploration of the Atlantis II Deep basin. These phases are discussed below:

1. Data Review Phase

- Although the original sample methodologies cannot be recreated, it is recommended that DFI continue with the data verification programme to develop a statistically definitive database of duplicate assay values. Problems in the recreation of Dry Salt Free (DSF) % values mean that a comparison of mineral content as a percentage of the total dry mass (including salt) are appropriate. The results from this programme will determine whether resources can be upgraded to the Indicated category.

  This programme will also give DFI an opportunity to better quantify the grades of metals not analysed during the Meseda and Valdivia cruises. These metals may now have an economic significance as co-products, specifically gold.

- The recently obtained high resolution bathymetric survey data should be analysed for the determination of fault offsets and the investigation into a possible structural control on high grade metalliferous sediments. Furthermore, the high resolution bathymetric analysis will enable a better determination of bathymetric highs, sub-basins and sediment traps within the Atlantis II Deep basin which will dictate the extent and continuity of grade domains.

- Deep-tow seismic data obtained by Preussag, indicate that sediments in some parts of the Atlantis II basin may attain a total thickness of up to 160 m. This data should be comprehensively reviewed and modelled in 3D if possible, to augment interpretations of basin structure, bathymetry and sediment thickness.

- Currently, the base of the resource is limited to the top of the Detrital Oxide Pyrite (DOP) material. Nautilus Minerals Inc. successfully operates a remote Seafloor Mining Tool (SMT), used to disaggregate sulphide mineralisation from the seafloor of their Solwara project (Lipton, I., 2008).

  At average grades of 4.68 kg/m^3 zinc, 1.31 kg/m^3 copper and 10.20 g/m^3 silver, it is considered that mineralised material below the DOP layer qualifies for inclusion in future resource estimation studies.

2. Exploration Phase

This phase is not contingent on the results of the Data Review Phase. Historical results warrant further exploration of the Atlantis II Deep deposit.

- It is recommended that DFI should undertake a coring programme in the Atlantis II Deep basin. The initial programme should seek to:
  - validate historic drill data and the current block model,
  - determine the resource potential at depth,
  - identify specific zones of interest in line with DFI's development goals.

  The results from this programme will also determine if resources can be upgraded to the Indicated category.

- The undertaking of a high-resolution seabed seismic and electro magnetic surveys should be investigated for the purposes of:
  - mapping the contact between metalliferous units and the top of the basalt basement,
  - identifying fault structures that may control the distribution of zones of higher metal grade,
  - estimation of metalliferous sediment thicknesses and volumes.

DFI has developed a work programme and a cost estimate totalling US $21,550,000 as shown in Table 19. below. The proposed programme and budget will enable DFI to study available seismic and bathymetric data; undertake exploration for mineral resource development, and progress the project towards a feasibility study.

ACA Howe considers DFI's proposed cost estimate to be reasonable and recommends that the Company proceed with the proposed work programme.

TABLE 19. PROPOSED COST ESTIMATE

Phase	Activity	Estimated Cost US $
1	**Data Review Phase**	
	Historical Sample Verification	$25,000
	Analysis of available bathymetric and seismic data.	$25,000
	Subtotal	$50,000
2	**Exploration Phase**	
	Coring Cruise	$5,500,000
	Sample Preparation	$500,000
	Sample Analysis	$400,000
	Geophysics Cruise	$3,000,000
	Resource Modelling Cost	$100,000
	Subtotal	$9,500,000
	Total	$9,550,000

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19. CERTIFICATES AND CONSENTS OF QUALIFIED PERSONS

In compliance with NI 43-101 of 2011:

(a) I, **John Langlands**, BSc, FGS, FIMMM, CEng, of 5 Fettes Row, Edinburgh, UK, was previously employed until 30 September 2012 as Principal Geologist by ACA Howe International Limited, previously at 254 High Street, Berkhamsted, Hertfordshire HP4 1AQ. After that date, I have worked as a Senior Associate Geologist, at times, for the same company which is now based at Wingbury Courtyard Business Village, Wingrave, Buckinghamshire, HP22 4LW, United Kingdom.

(b) The title and date of the Technical Report to which this certificate applies are as follows:
Title: Updated and Amended Technical Report on the Review of Historic Resource Estimates and New Resource Estimate for the Atlantis II Deep Copper, Zinc, Silver and Manganese Deposit, Red Sea for Diamond Fields International Ltd.
Date: August 22, 2014.

(c) I am a graduate of the University of Edinburgh and hold a B.Sc. Honours degree in Geology (1969) and a Diploma in Resource Management (1980). I have been working as a geologist for 45 years since graduation and with ACA Howe International Limited since 1980. I am a Fellow of the Institute of Materials, Minerals and Mining (formerly the Institution of Mining and Metallurgy), a Fellow of the Geological Society and I am a Chartered Engineer with the Engineering Council. I certify that by reason of my education, Fellowship of the Institute of Materials, Minerals and Mining and relevant work experience including work on sedimentary and volcanic exhalative base metal deposits, I fulfil the requirements to be a Qualified Person for the purposes of NI 43-101.

(d) I have not visited the properties which are the subject of the Technical Report. The deposits are located on the bed of the Red Sea between Saudi Arabia and Sudan, at a depth of about 2,000 metres.

(e) Together with my junior colleagues and co-authors, Leon McGarry and Tom Dowrick who are both Qualified Persons under NI 43-101 and whose work I supervised, I am responsible for the content of the Technical Report.

(f) I am independent of the Issuer since there is no circumstance that could, in my opinion and the opinion of a reasonable person aware of all relevant facts, interfere with my judgment regarding the preparation of the Technical Report. I hold no office with Diamond Fields International Ltd. or its subsidiaries.

(g) I have not had prior involvement with the Issuer or the property that is the subject of the Technical Report, other than as an independent consultant to the Issuer.

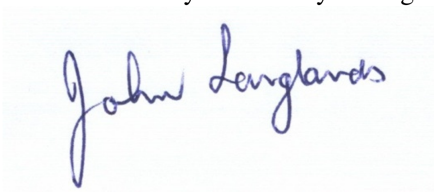
(h) I have read National Instrument 43-101 and Form 43-101F1, and confirm that the Technical Report has been prepared in compliance with that Instrument and Form.

(i) At the effective date of the Technical Report, 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.

With reference to NI 43-101, Part 8 Certificates and Consents of Qualified Persons for Technical Reports, 8.3, (a), I, John Langlands, address the following statement to the securities regulatory authority:

(a) I consent to the public filing of the Technical Report and to written disclosures of extracts, or the summary, of the Technical Report, subject to other conditions of NI 43-101.

Dated this twenty-second day of August, 2014.



John Langlands, BSc, FGS, FIMMM, CEng.

CERTIFICATE of CO-AUTHOR

I, Leon McGarry, B.Sc., P.Geo. (ON), do hereby certify that:

a. I reside at Unit 2909, 375 King Street West, Toronto, Ontario, M5V 1K1.

b. I am employed as a project geologist with the firm of A.C.A. Howe International Limited, Mining and Geological Consultants located at 365 Bay St., Suite 501, Toronto, Ontario, Canada. M5H 2V1.

c. I graduated with a degree in Bachelor of Science Honours, Earth Science, from Brunel University, London, United Kingdom, in 2005.

d. I am a Professional Geoscientist (P.Geo.) registered with the Association of Professional Geoscientists of Ontario (APGO, No. 2348). I am a member of the Prospectors and Developers Association of Canada.

e. I have over 8 years of direct experience with base and precious metal mineral exploration in North America, Europe, Central Asia and Africa including project evaluation and the estimation of polymetalic copper, lead, zinc and silver mineral resources. Additional experience includes the completion of National Instrument 43-101 ("NI 43-101") technical reports for a variety of commodities.

f. I have read the definition of "qualified person" set out in NI 43-101 and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a "qualified person" for the purposes of NI 43-101.

g. I am co-author of the technical report titled: "Updated and Amended Technical Report on the Review of Historic Resource Estimates and New Resource Estimate for the Atlantis II Deep Copper, Zinc, Silver and Manganese Deposit, Red Sea for Diamond Fields International Ltd.", dated August 22, 2014 (the "Technical Report"). I am responsible for Section 13.

h. I have had no prior involvement with the issuer and the property that is the subject of the Technical Report.

i. As of the effective date of the technical report, 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.

j. I am independent of the issuer applying all of the tests in section 1.5 of NI 43-101.

k. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

l. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 22nd Day of August 2014.

{SIGNED AND SEALED}
[Leon McGarry]

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Leon McGarry B.Sc., P. Geo.

CERTIFICATE of CO-AUTHOR

I, Tom Dowrick, B.Sc., FGS, CGeol, do hereby certify that:

a. I reside at 19 Reeve Close, Leighton Buzzard, Bedfordshire, LU7 4RX, United Kingdom.

b. I am employed as a geologist with the firm of A.C.A. Howe International Limited, Mining and Geological Consultants located at Wingbury Courtyard Business Village, Wingrave, Buckinghamshire, HP22 4LW, United Kingdom.

c. I graduated with a degree in Bachelor of Science Honours, Geography and Geology, from University of Leicester, London, United Kingdom, in 2007.

d. I am a Chartered Geologist (CGeol) registered with the Geological Society of London.

e. I have 7 years of exploration experience in Africa, Australia, Central America and South East Asia, including sampling related to copper, gold, manganese, silver and uranium projects and verification sampling for gold and silver deposits.

f. I have read the definition of “qualified person” set out in NI 43-101 and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a “qualified person” for the purposes of NI 43-101.

g. I am co-author of the technical report titled: “Updated and Amended Technical Report on the Review of Historic Resource Estimates and New Resource Estimate for the Atlantis II Deep Copper, Zinc, Silver and Manganese Deposit, Red Sea for Diamond Fields International Limited.”, dated August 22, 2014 (the “Technical Report”). I am responsible for Sections 11.3 and 11.4. I visited the IFM Geomar Institute in Kiel to inspect the Preussag Atlantis II Deep drill cores and collect validation samples between the 16th and 19th of July, 2014.

h. I have had no prior involvement with the issuer and the property that is the subject of the Technical Report.

i. As of the effective date of the technical report, 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.

j. I am independent of the issuer applying all of the tests in section 1.5 of NI 43-101.

k. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

l. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 22nd Day of August 2014.

{SIGNED AND SEALED}
[Tom Dowrick]
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Tom Dowrick B.Sc., FGS, CGeol.