A.C.A. HOWE INTERNATIONAL LIMITED
Mining and Geological Consultants

TECHNICAL REPORT AND REVISED RESOURCE ESTIMATE

for the

THE STAR – ORION SOUTH DIAMOND PROJECT,
FORT A LA CORNE AREA,
SASKATCHEWAN, CANADA
LATITUDE 53º 15" N
LONGITUDE 104º 48" W

for

SHORE GOLD INC.

Report No. 981

A.C.A. Howe International Limited
Toronto, Ontario, Canada

Mr. Daniel C. Leroux, M.Sc. P.Geo.
Mr. Leon McGarry, B.Sc. P.Geo.
Mr Peter J. Ravenscroft, FAusIMM
Effective Date: November 9, 2015
Signing Date: December 21, 2015

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1. EXECUTIVE SUMMARY

Introduction

Shore Gold Inc. ("Shore") commissioned A.C.A Howe International Ltd. ("Howe") and Burgundy Mining Advisors Ltd. ("Burgundy") to prepare an independent National Instrument 43-101 Technical Report ("the Report") on the revised Mineral Resource Estimate for the Star – Orion South Diamond Project ("the Project") situated in the Fort à la Corne ("FalC") Provincial Forest, Saskatchewan, Canada. In addition, WWW International Diamond Consultants Ltd. ("WWW") of Antwerp, Belgium provided the diamond pricing estimates utilized in the revised Mineral Resource Estimate.

This Report documents the revised Mineral Resource Estimate as of November 9th, 2015 for the Star – Orion South Diamond Project.

The Star Kimberlite deposit straddles a mineral disposition boundary between property that is held 100 % by Shore ("Star Property"), and property that is held by the FalC Joint Venture ("FalC-JV"), between Kensington Resources Ltd. ("Kensington"), a wholly-owned subsidiary of Shore (68 %) and Newmont Canada FN Holdings ULC. ("Newmont") (32 %) ("the Star West Property"). The Orion South Kimberlite deposit is held by the FalC-JV. Both the Star Diamond Project and the Orion South Diamond Project are operated by Shore and are being explored and developed as a single entity as the Star – Orion South Diamond Project. The revised Mineral Resource Estimate is done on a 100 % combined ownership basis and does not separate the resources of the joint venture partners.

The revised Mineral Resource Estimate presented in this Report supersedes all previous estimates.

Location, Access and Infrastructure

The Project is located in the FalC Provincial Forest, situated some 60 km east of Prince Albert, Saskatchewan. Access is provided by paved highways, a grid gravel road system and an extensive network of forestry roads, passable by four-wheel drive and high clearance two-wheel drive vehicles all year round.

The Project is situated on the north side of the Saskatchewan River, which can be crossed by bridge at either Prince Albert, to access the area from the west, or at Wapiti, north of Melfort, to access the area from the east. A 230 kV power line runs 9.6 km south of the area, and a large capacity 230 kV power line is located 21 km to the east. A pool of personnel is available from the many communities in the area.

The climate in this region of Saskatchewan ranges from warm, dry summers with temperatures typically averaging 23°C to cold, dry winters with temperatures averaging -11°C. Precipitation averages 323 mm annually.

Tenure and Surface Rights

The Star Kimberlite deposit and associated infrastructure are located within mineral disposition S-132039 in Section 18 of Township 49, Range 19, west of the 2nd Meridian. Township 49 is located within the Rural Municipality of Torch River. This mineral disposition is part of a larger group of 23 contiguous mineral dispositions totalling 9,280 ha. Shore owns a 100 % working interest in these claims.

Mineral dispositions have been legally surveyed in accordance with the Saskatchewan Mineral Disposition Regulations of 1986, Part IV, Article 30(1)(d), and the boundaries coincide with the boundaries of the land survey system pursuant to the Saskatchewan Land Surveys Act and with the boundaries of existing surveyed land parcels.

Shore holds a 100 % interest in an additional 54 claims in the immediate area, for a total of 77 claims covering 22,289 ha as of November 9th, 2015.

Shore also holds an interest in the FalC-JV, which is partially contiguous with the Star Diamond Project. Two of the mineral dispositions within the FalC-JV are considered to be part of the Star Diamond Project, namely S-127109 and S-127186. The Orion South Diamond Project is situated entirely within FalC-JV claims. The FalC-JV holds 119 claims totaling 22,224 ha as of November 9th, 2015.

General Geology

The Project lies near the northeastern edge of the Phanerozoic Interior Platform, which extends from the Rocky Mountains in the west, to the Precambrian Canadian Shield in the northeast. The Interior Platform sediments exceed 600 m in thickness. The unmetamorphosed sedimentary rocks of the Interior Platform unconformably overlie metamorphosed basement rocks. These Proterozoic basement rocks have been interpreted to form part of the Glennie Domain which has been tectonically emplaced overlying the Archean Sask Craton. In the Star and Orion South area, the Precambrian is estimated to be at a depth of 730 m.

Kimberlite Geology

Based on surface and underground core drilling and underground mapping data, the Star and Orion South Kimberlite deposits contain two distinct types of kimberlite: 1) eruptive kimberlite phases; and, 2) kimberlitic sedimentary rocks.

The eruptive kimberlites of the Star Kimberlite are sub-divided into five main phases: Cantuar Pyroclastic Kimberlite ("CPK"), Pense Pyroclastic Kimberlite ("PPK"), Early Joli Fou Kimberlite ("EJF"), Mid Joli Fou Kimberlite ("MJF") and Late Joli Fou Kimberlite ("LJF"). The eruptive kimberlites of the Orion South Kimberlite are sub-divided into Six main phases: Cantuar Kimberlite ("CPK"), Early Pense Kimberlite ("P3"), Pense Kimberlite ("Pense"), EJF, LJF and Viking Pyroclastic Kimberlite ("VPK").

Each phase has distinct physical and chemical properties that enable their mapping and stratigraphic correlation in three dimensions within each kimberlite. It is important to note, however, that two stratigraphically equivalent kimberlite packages (e.g. Pense Kimberlite on Star and Orion South) do not share a genetic relationship and each has unique diamond grade and carat value characteristics. Some of the stratigraphically equivalent kimberlite units (e.g. EJF on Star and Orion South) do, however, have similarities in mineral constituents, mantle signatures, chemistry and diamond distribution that suggest a genetic relationship.

The Star Kimberlite deposit is dominated by crater facies rocks formed from a central vent, which include both well-defined pyroclastic flows and fall deposits that radiate away from the crater. The sheet-like, inter-sedimentary Cantuar and Pense kimberlites are kimberlites deposited from pyroclastic flows. The EJF is a combination of vent filling pyroclastics and pyroclastic flows away from the crater. The MJF and LJF are dominated by crater facies vent filling pyroclastic kimberlite deposits with lesser thin pyroclastic fall accumulation radiating away from the crater.

Within the Orion South Kimberlite, the phases have cross-cutting relationships near conduits, but are stacked vertically within the volcanic edifice and crater / extra-crater deposits. Several conduits, feeding different units, have been identified on Orion South.

Geological Models

A 3-D geological model for the Star Kimberlite was created from surface and underground drill information. Limited deep drilling restricts the 3-D modelling of the Star Kimberlite to the kimberlite above 0 m asl (altitude above mean sea level). The geological model estimates that the Star Kimberlite (including both the Star and Star West kimberlite) contains a total of approximately 290.2 Mt of kimberlite in the LJF, MJF, EJF, PPK and CPK with a further 100.9 Mt of Upper Resedimented Volcaniclastic Kimberlite ("URVKU"), Juvenile Lapilli Rich Pyroclastic Kimberlite ("JLRPK") and 134 Volcaniclastic Kimberlite ("VK-134").

A 3-D geological model for the Orion South Kimberlite was created from surface and underground drill information. Limited deep drilling restricts the 3-D modelling of the Orion South Kimberlite to the kimberlite above 0 m asl (altitude above mean sea level). The geological model estimates that the Orion South Kimberlite contains a total of approximately 318 Mt of kimberlite in the EJF and Pense with a further 44.3 Mt of Kimberlitic Sediments ("KSST/UKS"), VPK, LJF, P3 and CPK.

Sampling and Sample Processing

Underground Sampling

Shore sank a 250 m shaft at the Star Diamond Project, with a pumping station at 175 m from surface and a working level at 235 m from surface, in order to bulk sample the various kimberlite phases for diamond grade estimation and diamond valuation purposes. Shaft sinking began in January, 2003 and was completed in May, 2004. Underground drifting and bulk sampling was completed in April, 2007.

Upon completion of the underground bulk sampling program on the Star Kimberlite, a combined total of 10,966 carats greater than 0.85 mm were recovered from a total of 75,435.68 dry tonnes of kimberlite material that was processed through Shore's bulk sampling plant ("BSP") from both Shore's 100 % owned Star Kimberlite and the FalC-JV Star West bulk sampling programs. Tonnages include sampling of drift material, underground resource evaluation ("RE") samples, geotechnical test samples and clean-up samples. The largest stone recovered from the Star underground bulk sample was a 49.50 carat stone.

Shaft sinking to 210 m below surface commenced in July, 2007 at Orion South, with lateral drifting at a depth of 186 m below surface completed in February, 2009. After final processing of 75 underground batches (78 samples) from a total of 25,468 dry tonnes of kimberlite in March, 2009, there was a total recovery of 2,346 carats greater than 0.85 mm from the Orion South bulk sample. The largest stone recovered from the Orion South underground bulk sample was a 45.95 carat stone.

All underground openings were geologically mapped and are adequate to support Mineral Resource Estimation.

Large Diameter Drilling

Utilizing the entire Star Kimberlite large diameter drill ("LDD") sampling (103 LDD holes) and processing (96 LDD holes processed, 870 samples) dataset, a total of 1,416.6 carats were recovered from 11,662.8 processed tonnes (8,907.4 m^3 of calculated volume) of kimberlite.

Upon completion of the Pre 2015 LDD drilling program on Orion South, a total 1,039.7 carats were recovered from 9,564.2 processed tonnes (7,354.1 m^3 of calculated volume) of kimberlite from 64 holes (881 samples). These results include both the 1.20 metre diameter LDD holes drilled by the current joint venture and those from twenty-four 0.914 and 0.609 metre diameter

LDD holes completed by the previous joint venture operators prior to 2006. A total of twelve 24 inch LDD-RC holes were completed by Foraco Canada Ltd. of Picture Butte, Alberta with drilling services carried out from May 6th to June 11th, 2015 on the Orion South kimberlite. The LDD-RC program totalled 2,559.90 metres of drilling resulting in the recovery of 97 individual sample lifts between 13.1 and 2.8 metres long from 439 processed tonnes (300.9 m^3 of calculated volume) over a kimberlite intersection of 1,027.48 metres.

The LDD data are acceptable for Mineral Resource Estimation; however, adjustment for diamond breakage and stone loss during sampling is required.

Diamond Recovery

Shore purchased a Bateman Engineering PTY Limited-designed process plant which was commissioned in January, 2004. The process plant consists of a 30 t/h crushing circuit, and a 10 t/h DMS circuit which utilizes a 250 mm diameter separating cyclone, and a recovery section consisting of a Flow Sort® X-Ray diamond-sorting machine and a grease table. All kimberlite was stored in individual batch samples in a dedicated storage facility.

The 2015 LDD-RC samples were shipped by Edge Transport of Saskatoon, Saskatchewan to Rio Tinto Canada Diamond Exploration Inc's. Thunder Bay Mineral Processing Laboratory (ISO9001:2008 Certified). This facility was selected for macrodiamond (+0.85 millimetre square aperture bottom screen size) recovery due to similarities between the sample processing flowsheet which closely replicated the previously operated Shore Gold Inc. on-site bulk sampling plant.

Diamond Valuation

Diamond prices used in this Resource Estimate are based on valuations by WWW using its June 8, 2015 price book to parcels from Star and Orion South.

Sampling of Star and Orion South included underground ("UG") bulk samples (approx. 300 tonne samples) for diamond grade and diamond price estimation and LDD mini-bulk samples (approx 6 to 30 tonne samples) for diamond grade estimation only. The detailed diamond valuation is conducted on the diamond parcels recovered from the UG bulk sampling and the individual parcels for each of the kimberlite units sampled in the UG are documented in the tables below.

The Parcel and Model price details for each of the kimberlite units in the Star Kimberlite are listed in Table 1-1

TABLE 1-1 THE PARCEL AND MODEL PRICE DETAILS FOR THE STAR KIMBERLITES (JUNE 8, 2015 PRICEBOOK)

Star Kimberlite Unit	UG Carats	Parcel Price (US$/carat)	Model Price (US$/carat)	Minimum Price (US$/carat)	High Price (US$/carat)
Cantuar	1,667.60	297	333	272	482
Pense	1,410.11	145	183	144	228
EJF	7,122.40	166	227	189	290
MJF-LJF	91.24	189	195	149	279

The Parcel and Model price details for each of the kimberlite units in the Orion South Kimberlite are listed in the Table 1-2.

TABLE 1-2 THE PARCEL AND MODEL PRICE DETAILS FOR THE ORION SOUTH KIMBERLITES (JUNE 8, 2015 PRICEBOOK)

Orion South Kimberlite Unit	UG Carats	Parcel Price (US$/carat)	Model Price (US$/carat)	Minimum Price (US$/carat)	High Price (US$/carat)
EJF	1,399.59	128	191	131	267
Pense	581.33	82	161	113	221

Mineral Resource Estimate

This Report presents the following revised independent NI 43-101 Mineral Resource Estimate for the Star and Orion South diamond deposits (Table 1-3).

TABLE 1-3 2015 REVISED MINERAL RESOURCE ESTIMATES FOR THE STAR AND ORION SOUTH DEPOSITS

Project	Resource Category	Tonnes x1000	Grade cpht	Carats x1000
Star	Indicated	193,010	15	28,249
	Inferred	56,949	11	6,385
Orion South	Indicated	200,160	14	27,153
	Inferred	72,080	7	5,180

Notes:

1) Canadian Institute of Mining and Metallurgy ("CIM") definitions were followed for classification of mineral resources.
2) Mineral Resources are constrained within a Whittle optimized pit shell.
3) Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimation of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing or other relevant issues.
4) There is no guarantee that all or any part of the Mineral Resource will be converted into a Mineral Reserve.
5) An effective 1 mm lower cut-off for diamond recovery is assumed, and only diamonds larger than +1 DTC diamond sieve are included.
6) Grade values are rounded to nearest whole number.
7) The effective date of the revised Mineral Resources Estimate is November 9, 2015.

Previous Mineral Resource Estimates ("MRE") generated for the projects are described in earlier technical reports for Star (Ewert et al., 2009a) and Orion South (Ewert et al., 2009b). The current MREs presented in this report supersede all past estimates.

MRE for the Star and Orion South Kimberlites are prepared under the supervision of P. Ravenscroft, FAusIMM, owner of Burgundy Mining Advisors Ltd and a Qualified Person for the reporting of Mineral Resources as defined by NI 43-101. Creation of geological domains, block modelling and pit optimization is undertaken by L. McGarry, Howe Senior Project Geologist.

Mineral resource modelling and estimation is carried out using the commercially available Micromine (Version 2014) and SGEMS v2.5 software programs. In this report all units are expressed in the metric system, and diamond grades are given as carats-per-meter cubed ("cpm^{3}"), carats per-metric tonne ("cpt") or carats-per-hundred-metric tonnes ("cpht") values.

Reported Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no guarantee that all, or any part, of a Mineral Resource will be converted into a Mineral Reserve.

The updated mineral resource estimate for the Star Deposit is based on:

- 313 surface diamond core drill holes, completed between 1996 and 2008,
- 213 underground diamond core drill holes completed between 2004 to 2006,
- 105 48" (1219.2 mm) LDD holes completed between 1996 and 2008,
- 321 underground bulk samples.

The updated mineral resource estimate for the Orion South Deposit is based on:

- 238 surface diamond core drill holes, completed between 1993 and 2015,
  - Including 47 diamond drill holes completed between 2010 and 2015,
- 89 LDD holes completed between 1996 and 2010,
  - Including 12 24" (609.6mm) LDD-RC holes completed in 2015, and
- 78 underground bulk samples.

At Star and Orion South geological interpretations are made on a series of east-west and north-south orientated cross sections at 50 m to 100 m line spacings. The basal contact of each lithological unit is modeled in section by digitizing a mesh that defines the basal contact surface of each modeled unit. To generate a 3D geological model, basal contact surfaces are sequentially applied to a block model in stratigraphic order such that cross cutting relationships are honored.

At Star five well mineralized kimberlite units are modeled for resource estimation: the CPK, PPK, EJF, MJF and LJF kimberlite domains.

At Orion South four well mineralized kimberlite units are modeled for resource estimation: the P3, Pense, EJF and LJF kimberlite domains.

At both the Star and Orion South deposits a full block model is created in Micromine to encompass resource kimberlite domains and to accommodate surrounding till, country rock and any resultant pit shell models. The volume and tonnage estimate for each geological unit within a given block is calculated and recorded in the model. The diamond value and diamond grade are then populated for each of the mineralized kimberlite domains.

The approach used for grade estimation is the combination of stone counts per sample and diamond size frequency distributions. This obviates the artificial local bias introduced by the direct use of carats per metre cubed (“cpm^3”) or carats per hundred tonnes (“cpht”), and is common diamond industry practice. Working with the Size Frequency Distribution (“SFD”) curves also allows for the alignment of sampling results from different sampling methods and sampling campaigns to ensure a consistent, robust approach to grade estimation. Alignment of sample SFDs is done in two steps. Firstly, minor adjustment of each individual sample grade is completed to correct the artificial local bias. Secondly, the application of an overall adjustment in each defined lithology is required to account for residual differences with respect to underground bulk sampling results.

Sample data are grouped into lithological domains for statistical analyses of diamond grade and of bulk density measurements. Spatial data analysis is considered prior to block model grade estimation in an attempt to generate a series of semi-variograms that define directions of anisotropy and spatial continuity of diamond grades.

At both Star and Orion South, for each domain, the Simple Kriging ("SK") interpolation technique is used to interpolate block grades in one pass at the full range of the variogram. Only parent block grades are estimated. The search ellipse is divided into eight sectors and a constraint of a maximum of four (4) samples per sector applied, essentially de-clustering the data. For validation, interpolations are also prepared using Ordinary Kriging ("OK"), Inverse Distance Squared Weighting ("IDW^2") and using the Nearest Neighbor ("NN") technique. Prior to reporting block model validation procedures are undertaken to ensure that blocks represent interpreted geology and the input data and that selected interpolation methodologies do not introduce any significant biases.

To ensure that reported resources have a reasonable prospect of economic extraction a conceptual pit shell is developed. Calculated block values and economic parameters provided by Shore Gold are used to generate a Whittle pit shell analysis that incorporates all available blocks. The results from the Whittle pit shell analysis are used solely for the purpose of reporting mineral resources that have reasonable prospects for economic extraction.

Shore and its contractors have undertaken a number of comprehensive bulk density programs on drill hole core. A total of 1,446 bulk density values were reviewed for density determination within the Orion South Kimberlitic units and 1,961 bulk density values were reviewed for density determination within the Star Kimberlitic units for the Mineral Resource Estimate. Howe reviewed the bulk density data and believed it to be suitable for Mineral Resource estimation purposes. The bulk density data analysis carried out by Howe and Shore in 2015 resulted in revised density determinations for Star and Orion South from those used in previous resource estimates.

Classification boundaries are manually defined using modeled polygons that are assigned to model blocks. Resources are reported in adherence to National Instrument 43-101. Standards of Disclosure for Mineral Projects (Canadian Securities Administrators, 2011), and to the CIM

Definition Standards on Minerals Resources and Reserves (CIM Council, 2014).

The following classification criteria are used in the estimation of mineral resources at Star:

- Inferred resources are blocks that are informed by a search ellipse with an X-Y dimension range of 500 m and Z dimension range of 70 m and are captured within the Whittle optimised pit shell and are above an internal cut off of C$5.49/tonne. The extent of CPK Inferred resources are limited to an area south of 5,897,700 mN.

- Indicated resources are defined up to approximately 150 metres from the nearest sample. Blocks assigned the Indicated category should be informed by at least three drill holes. Indicated resources are defined for the LJF, EJF, MJF, PPK and CPK domains. The MJF domain uses the same classification boundaries as the EJF domain.

The following classification criteria are used in the estimation of mineral resources at Orion South:

- Inferred resources are blocks that are informed by a search ellipse with an X-Y dimension range of 250 m and Z dimension range of 50 m and are captured within the Whittle optimised pit shell and are above an internal cut off of C$5.49/tonne. The LJF and P3 domains are limited to the Inferred classification only and use the same Inferred boundaries as the EJF and Pense domains.

- Indicated resources are defined up to approximately 150 metres from the nearest sample. Blocks assigned the Indicated category should be informed by at least three drill holes. Indicated resources are defined for the EJF and Pense domains only.

Star Mineral Resources

Non-diluted Indicated Mineral Resources considered amenable to open pit mining, within a preliminary pit shell at a C$5.49/tonne internal cut off and within the LJF, EJF, MJF, PPK and CPK domains total 193.010 million tonnes with an average diamond grade of 15 cpht for 28.249 million carats.

Non-diluted Inferred Mineral Resources considered amenable to open pit mining, within a preliminary pit shell at a C$5.49/tonne internal cut off and within the LJF, EJF, MJF, PPK and CPK domains total 56.949 million tonnes with an average diamond grade of 11 cpht for 6.385 million carats.

Orion South Mineral Resources

Non-diluted Indicated Mineral Resources considered amenable to open pit mining, within a preliminary pit shell at a C$5.49/tonne internal cut off and within the EJF and Pense domains total 200.160 million tonnes with an average diamond grade of 14 cpht for 27.153 million carats.

Non-diluted Inferred Mineral Resources considered amenable to open pit mining, within a preliminary pit shell at a C$5.49/tonne internal cut off and within the EJF, LJF, Pense and P3 domains total 72.080 million tonnes with an average diamond grade of 7 cpht for 5.180 million carats.

Recommendations

Howe recommends that work be conducted on the Star – Orion South Diamond Project as follows:

1. An Updated Feasibility Study should be undertaken that includes a revised statement of Mineral Reserves for the Project, if warranted, and an economic assessment based thereon.

2. The exploration targets identified in Shore's Targets for Additional Exploration should be tested by core drilling and then if warranted LDD-RC.

   i) At Star, increase the LDD-RC and core drill density in sparsely sampled areas of EJF kimberlite estimate (i.e. NE sector) with the goal of upgrading the Inferred Mineral resources to the Indicated mineral resource category; and,
   ii) At Orion South increase the LDD-RC and core drill density in sparsely sampled areas of EJF kimberlite estimate (i.e. West and NE sector) with the goal of upgrading the Inferred Mineral resources to the Indicated mineral resource category.

In line with Howe's recommendations, Shore has proposed a budget totaling $5,760,000 for exploration work in 2016-17. The proposed work program and budget is to be completed with core drilling & feasibility work in 2016, additional LDD drilling would be contingent on the results of an expanded core drilling program and is not contained in this budget.

The ongoing exploration program will permit Shore to complete 7,500 m of drilling in order to continue upgrading and expanding mineral resources on the Star-Orion South Project and Update the Feasibility Study with the current Mineral Resource Estimate.

Howe considers Shore's proposed budget reasonable and recommends that the Company proceed with the proposed work program.

2. INTRODUCTION

2.1. GENERAL

At the request of Mr. Kenneth MacNeill, President and CEO of Shore Gold Inc. ("Shore"), A.C.A. Howe International Limited ("Howe") has prepared this technical report ("the Report") conforming to the standards dictated by National Instrument 43-101 ("NI 43-101"), companion policy NI 43-101CP and Form 43-101F (Standards of Disclosure for Mineral Projects) in respect to the Star – Orion South Diamond Project ("the Project") located in the Fort à la Corne Forest ("FalC"), Saskatchewan, Canada. The following report presents the details of the revised Mineral Resource Estimate that was announced in a press release dated November 9th, 2015 for the Project. The revised Mineral Resource Estimate has been prepared in compliance with the requirements of Canadian National Instrument (NI) 43-101 and in accordance with guidelines of the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM"), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council May 10, 2014. In addition, WWW International Diamond Consultants Ltd. ("WWW") of Antwerp, Belgium provided the diamond pricing estimates utilized in the revised Mineral Resource Estimate.

Shore is a Saskatoon based company trading on the TSX exchange under the symbol "SGF" with its corporate office at:

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Howe is an international geological and mining consulting firm that was incorporated in the province of Ontario in 1966 and has continuously operated under a "Certificate of Authorization" to practice as Professional Engineers (Ontario) since 1970 and Professional Geoscientists (Ontario) since 2006. Howe provides a wide range of geological and mining consulting services to the international mining industry, including geological evaluation and valuation reports on mineral properties. The firm's services are provided through offices in Toronto and Halifax, Canada, and London, U.K. Howe is not an insider, associate or affiliate of Shore.

Neither Howe nor the author of this report (nor family members or associates) have a business relationship with Shore or associated company, nor with any company mentioned in this report that is likely to materially influence the impartiality or create a perception that the credibility of this Report could be compromised or biased in any way. The views expressed herein are genuinely held and deemed independent of Shore.

Moreover, neither Howe nor the author of this report (nor family members or associates) have any financial interest in the outcome of any transaction involving the Star and Orion South Diamond Project (the "Project") considered in this report other than the payment of normal professional fees for the work undertaken in the preparation of this report (which is based upon hourly charge-out rates and reimbursement of expenses). The payment of such fees is not dependent upon the content or conclusions of either this report or consequences of any proposed transaction.

2.2. TERMS OF REFERENCE

This report presents a revised NI 43-101 compliant Mineral Resource Estimate for the Star – Orion South Diamond Project. The estimated tonnages and grades of the Mineral Resources are to be based on conceptual pit optimization shells. The conceptual pit optimization shells used in the current study are to be selected taking net present value and estimated tonnes of waste rock into consideration.

The effective date of this report is November 9, 2015. Howe understands that the Company will use the Report internally for decision-making purposes and publicly in support of reporting obligations and possible corporate financing activities related to the Project.

This report was prepared and co-authored by Messrs. Daniel C. Leroux, P.Geo., Vice President and Senior Geologist; Leon McGarry, P.Geo., Project Geologist, all with Howe and Qualified Persons ("QP") under the regulations of NI 43-101 and Mr. Peter Ravenscroft, FAusIMM owner of Burgundy Mining Advisors Ltd. ("Burgundy") of Nassau, Bahamas and Qualified Person ("QP") under the regulations of NI 43-101.

Shore has accepted that the qualifications, expertise, experience, competence and professional reputation of Howe's Principles and Associate Geologists are appropriate and relevant for the preparation of this report. Shore has also accepted that Howe's Principles and Associates are members of professional bodies that are appropriate and relevant for the preparation of this report.

This report documents the revised Mineral Resource Estimate as of November 9th, 2015 for the Star – Orion South Diamond Project. The revised Mineral Resource Estimate presented in this report supersedes all previous NI 43-101 compliant mineral resource estimates carried out for the Project.

2.3. SITE INSPECTIONS

During the course of completing the revised Mineral Resource estimation work for the Star – Orion South Diamond Project, the following Howe QPs visited the site to review the status of the Project, conduct audits, and discuss future plans with Shore staff.

Site visits by the QPs for the Report were as follows:

Name:	Company:	Site Visit Dates:
Peter Ravenscroft	Burgundy	Project site visit April 15, 2015
Daniel Leroux	Howe	Sample processing lab – Thunder Bay June 3, 2015 and Project site visit on June 4, 2015
Leon McGarry	Howe	Project site visit September 27, 2015

Shore has accepted that the qualifications, expertise, experience, competence and professional reputation of all of the QPs who have contributed to this report are appropriate and relevant for the preparation of this report and the QPs are members of professional bodies that are appropriate and relevant for the preparation of this report.

The purpose of the Report is to provide a NI 43-101 compliant Technical Report and revised Mineral Resource Estimate on the Star – Orion South Diamond Project. The QPs understand that this report will be used for internal decision making purposes. This report will be filed to conform with the requirements of NI 43-101.

2.4. SOURCES OF INFORMATION

In preparing this report, Howe reviewed geological reports and maps, miscellaneous technical papers, company letters and memoranda, and other public and private information as listed in Section 27 “References” at the conclusion of this report. Howe has assumed that all of the information and technical documents reviewed and listed in the “References” are accurate and complete in all material aspects. While Howe carefully reviewed all of this information, it has not conducted an independent investigation to verify its accuracy and completeness.

In addition, Howe carried out discussions with the local management, consultants and technical personnel of Shore, in particular, George Read P.Geo, – Senior Vice-President of Exploration and Development, and Mark Shimell P.Geo, - Project Manager.

Although copies of the licences, permits and work contracts were reviewed, Howe has not verified the legality of any underlying agreement(s) that may exist concerning the licences or other agreement(s) between third parties. Howe reserves the right, but will not be obligated to revise this Report and conclusions if additional information becomes known to Howe subsequent to the date of this Report.

Shore has accepted that the qualifications, expertise, experience, competence and professional reputation of Howe's Principals and Associate Geologists are appropriate and relevant for the preparation of this report. The Company has also accepted that Howe's Principals and Associates are members of professional bodies that are appropriate and relevant for the preparation of this report.

Shore has warranted that full disclosure of all material information in its possession or control at the time of writing has been made to Howe, and that it is complete, accurate, true and not misleading. The Company has also provided Howe with an indemnity in relation to the information provided by it, since Howe has relied on Shore's information while preparing this report. The Company has agreed that neither it nor its associates or affiliates will make any claim against Howe to recover any loss or damage suffered as a result of Howe's reliance upon that information in the preparation of this report. Shore has also indemnified Howe against any claim arising out of the assignment to prepare this report, except where the claim arises out of any proven willful misconduct or negligence on the part of Howe. This indemnity is also applied to any consequential extension of work through queries, questions, public hearings or additional work required arising out of the engagement.

A portion of the background information and technical data was obtained from the following

Technical Reports previously filed by Shore:

- Ewert, W.D., Brown, F. H., Puritch, E. J., and Leroux, D.C., (2009a): Technical report and Resource Estimate Update on the Star Diamond Project, Fort à la Corne, Saskatchewan, Canada; NI 43-101 technical report, by P&E Mining Consultants Inc, effective date 23 February 2009.
- Ewert, W.D., Brown, F.H., Puritch, E.J. and Leroux, D.C. (2009b): Technical Report and Resource Estimate on the Fort à la Corne Joint Venture, Orion South Diamond Project, Fort à la Corne Area, Saskatchewan, Canada. Report #165. NI 43-101 report prepared by P&E Mining Consultants Inc. for Shore Gold Inc., September 25, 2009.

2.5. UNITS AND CURRENCY

All units of measurement used in this report are SI metric unless otherwise stated. Where third party reports use units other than SI metric, then the original units have been preserved throughout.

Currency is expressed in Canadian Dollars ('C$') or US Dollars ('US$') unless otherwise stated.

2.6. ABBREVIATIONS AND SYMBOLS

Abbreviation	Description
%	Percent
~	Approximately
°	Degree
<	Less than
>	Greater than
3-D	Three Dimensional
AMEC	AMEC Americas Limited
Avg	Average
Bateman	Bateman Engineering PTY Limited
BQ	Drill core with a diameter of 36.4 mm
BSP	Bulk sample plant
Budget	Project's value: accumulation of estimates plus factors and contingencies
C	Celsius
CAD$	Canadian dollar
Cameco	Cameco Corporation
CCTV	Closed circuit television
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
Clifton	Clifton Associates Ltd
cm	Centimetres
cm^3/g	Centimetres cubed per gram
Concentrate	Kimberlite material passing selection criteria that are largely based on specific mineral properties (e.g. high density)
cpht	Carats per hundred tonnes
cpt	Carats per tonne
ct	Carat
CTV	Canadian Television Network
De Beers	De Beers Canada Inc
DMS	Dense media separation
DTC	Diamond Trading Company
EA	Environmental Assessment
EIS	Environmental Impact Statement
EJF	Early Joli Fou Kimberlite
el	Elevation level
EM	Electro-magnetic
Estimate	Predicted value from design guide lines
FalC	Fort à la Corne
FalC-JV	Fort à la Corne Joint Venture
FeSi	Ferro silicon
FS	Feasibility Study
ft	Foot/feet
g	Gram

Abbreviation	Description
G&A	General and administration
g/t	Gram per tonne
Gangue	The valueless rock or mineral aggregated in the kimberlite
Golder	Golder Associates
Gp	Group (Several stratigraphic formations of similar sedimentological properties)
GPS	Global Positioning System
h	Hour
ha	Hectare
HIMS	High intensity magnetic separator
Howe	A.C.A. Howe International Limited
HPRC	High pressure rolls crusher
HQ	Drill core with a diameter of 63.5 mm
IDW^2	Inverse Distance Squared Weighting
IRR	Internal rate of return
ISO/IEC	Main standard used by testing and calibration laboratories
JLRPK	Juvenile lappilli rich pyroclastic kimberlite
k	Kilo (thousand)
K	Hydraulic conductivity
KDF-KSST	Upper Kimberlitic Sediments – Star
Kensington	Kensington Resources Ltd
Kimberlite	The volcanic rock containing the diamonds
km	Kilometre
KSTST-KSST	Kimberlite sediments – Orion South
L	Litre
LDD	Large Diameter Drill
LIMS	Laboratory information management systems
LJF	Late Joli Fou kimberlite
LJFKS	Late Joli Fou kimberlitic Slump
LOM	Life of Mine
Ltd	Limited
M	Mega or Million
m	Metre
m^2	Square metre
m^3	Cubic metre
Ma	Millions of years
masl	Metres above sea level
Mine	The area of the kimberlite deposit that is being excavated through open pit mining methods
Mine Site	The area containing the open pit(s), overburden and reject piles, plant facilities and associated mine infrastructure involved in the mining/processing operation
MJF	Mid Joli Fou kimberlite
mm	Millimetre
MOE	Ministry of Environment
MSC	Mineral Services Canada Inc
Mt	Million tonnes

Abbreviation	Description
Newmont	Newmont Canada FN Holdings ULC (formerly “Newmont Mining Corporation of Canada”) Limited
NI	National Instrument
No	Number
NN	Nearest Neighbour
NPV	Net Present Value
NQ	Drill core with a diameter of 47.6 mm
OK	Ordinary Kriging
Orion South pit	Orion South Kimberlite open pit
OVB	Overburden
P3	Early Pense Kimberlite
P&E	P&E Mining Consultants Inc
PFS	Preliminary feasibility study
PK	Processed Kimberlite
PQ	Drill core with a diameter of 75.0 mm
QA/QC	Quality assurance and quality control
QP	Qualified Person
RC	reverse circulation (drilling)
RE	Resource Evaluation
Rejects	Kimberlite material failing selection criteria that are largely based on specific mineral properties
ROM	Run of Mine, Kimberlite as it is extracted from earth (mine)
RQD	Rock quality designation
RVK	Resedimented volcaniclastic kimberlite
S1	Upper Deltaic Sand
S2	Lower Deltaic Sand
SaskPower	Saskatchewan Power Corporation
SE	Saskatchewan Environment
SEDAR	System for Electronic Document Analysis and Retrieval
SFD	Size frequency distribution
SG	Specific Gravity
SGF	TSX symbol for Shore Gold Inc.
SGS Lakefield	SGS Lakefield Research Limited
SGS Saskatoon	SGS Canada Inc (Saskatoon)
Shore	Shore Gold Inc
SK	Simple Kriging
Sortex	Flow-Sort® X-ray diamond sorting machine
SQL	Sequel database
SRK	SRK Consulting
t	Tonne (metric, 1,000 kg)
t/h	Tonnes per hour
t/wk	Tonnes per week
T10	Drop test samples
Ta	Scrubbability
Tailings	Rejects or PK in a slurry form – typically rejects from the Comminution circuit

Abbreviation	Description
TDS	Total dissolved solids
The Project	Star-Orion South Diamond Project
TSX	Toronto Stock Exchange
UCS	Unconfined compressive strength
UG	Underground drift bulk samples
UKS	Upper Kimberlitic Sediments
US$	US dollar
UTM	Universal Transverse Mercator
wt	Wet tonne
WWW	WWW International Diamond Consultants Ltd
X	Cartesian coordinate X
y	Year
Y	Cartesian coordinate Y
Z	Cartesian coordinate Z

3. RELIANCE ON OTHER EXPERTS

Howe has assumed, and relied on the fact, that all the information and existing technical documents listed in the references section of this report are accurate and complete in all material aspects. While all the available information presented to us has been carefully reviewed, we cannot guarantee its accuracy and completeness. Howe reserves the right, but will not be obligated, to revise our report and conclusions if additional information becomes known to us subsequent to the date of this report.

A draft copy of this report has been reviewed for factual errors by Shore and Howe has relied on Shore's historical and current knowledge of the property in this regard. Any statements and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading at the date of this report.

3.1. MINERAL TENURE

Howe has relied upon the following documents obtained by way of the Government of Saskatchewan mineral dispositions database, the Shore land management expert, and legal opinions obtained by Shore for the information included in Section 4.0 of this report.

- Government of Saskatchewan, 2015: Mineral Disposition Claim data: unpublished Excel spreadsheet downloaded from Ministry of Energy and Resources website, effective November 9, 2015.

3.2. SURFACE RIGHTS, ACCESS AND PERMITTING

Howe has relied on information regarding Surface Rights, Road Access and Permits, including the status of the granting of surface rights by the Canadian and Saskatchewan Governments for land designated for mining, milling, dumps and tailings impoundments. Howe has relied on opinions and data as follows:

- Star-Orion South Diamond Project Proposal – prepared by Shore with assistance from AMEC Earth and Environmental and submitted to the Environmental Assessment Branch of the Saskatchewan Ministry of Environment on November 3, 2008.

3.3. DIAMOND VALUATIONS

Shore retained WWW International Diamond Consultants Ltd. ("WWW") to price diamonds from the Star – Orion South Diamond Project. WWW's June 8, 2015 rough diamond pricing is utilized for the Mineral Resource Estimates in this report. In Howe's opinion, it is reasonable to rely on the opinions and reports of WWW because WWW is recognized as an international leader in the fields of diamond valuation, diamond price forecasting and diamond market outlooks, and whose experts provide the valuations for the Federal Government of Canada for the Canadian diamond mines in the Northwest Territories and for the Province of Ontario for the Victor Mine.

In preparation of this report, Shore utilized the following information from WWW:

- WWW International Diamond Consultants Limited (2015a). Valuation and Modelling of the Average Price of Diamonds from the Star Diamond Project – June 2015.
- WWW International Diamond Consultants Limited (2015b). Valuation and Modelling of the Average Price of Diamonds from the Orion South Diamond Project – June 2015.

3.4. GEOTECHNICAL INVESTIGATIONS

The geotechnical investigations of the overburden and sub-overburden were completed by Clifton Associates Ltd ("Clifton") and SRK Consulting ("SRK"), respectively. The purpose of these investigations was to gather information to complete a slope stability analysis and provide engineering slope design parameters for pit optimisation for the Project. The geotechnical assessments made by Clifton and SRK were relied upon in Section 14 of the Report utilized by the QPs and include:

- Clifton Associates Ltd (2011): Geotechnical and geological feasibility report for the Star and Orion South ore bodies, Fort à la Corne Kimberlite Field, Saskatchewan, dated July 20, 2011 and,
- SRK Consulting (2010): Pit Slope Design for the Orion South and Star Kimberlite Deposits. Dated October 2010.

Clifton and SRK are both geotechnical experts with Clifton having critical geotechnical experience in Saskatchewan overburden units and SRK having critical geotechnical experience in kimberlite deposits worldwide.

4. PROPERTY DESCRIPTION AND LOCATION

The Project is located in the Fort à la Corne (“FalC”) Provincial Forest approximately centred at 53° 15' N latitude and 104° 48' W longitude and situated 60 km east of Prince Albert, Saskatchewan (Figure 4-1). The Project is approximately 220 km northeast of Saskatoon and 60 km east of Prince Albert, Saskatchewan. Highway 55, located to the north of the Project, connects Prince Albert with several towns located directly north of FalC to the town of Nipawin, east of FalC. Highway 6 runs north-south and is located to the east of FalC. The Star – Orion South diamond deposits are the principal exploration targets on the Project.

4.1. CLAIMS, TITLE, AND TENURE

The following sub-sections describe the claims, title and tenure of the Shore and FalC-JV exploration license areas.

4.1.1 SHORE AND FALC-JV EXPLORATION LICENSES

The Star Kimberlite deposit and associated infrastructure are located within mineral disposition S-132039 in Section 18 of Township 49, Range 19, west of the 2nd Meridian. Township 49 is located within the Rural Municipality of Torch River. This mineral disposition is part of a larger group of 23 contiguous mineral dispositions totaling 9,280 ha. Shore owns a 100 % working interest in these claims.

Mineral dispositions have been legally surveyed in accordance with the Saskatchewan Mineral Disposition Regulations of 1986, Part IV, Article 30(1)(d), and the boundaries coincide with the boundaries of the land survey system pursuant to the Saskatchewan Land Surveys Act and with the boundaries of existing surveyed land parcels.

Shore holds a 100 % interest in an additional 54 claims in the immediate area, for a total of 77 claims covering 22,289 ha as of November 9th, 2015 (Figure 4-2).

Shore also holds an interest in the FalC-JV, which is partially contiguous with the Star Diamond Project. Two of the mineral dispositions within the FalC-JV are considered to be part of the Star Diamond Project, namely S-127109 and S-127186. The Orion South Diamond Project is situated entirely within FalC-JV claims. The FalC-JV holds 119 claims totaling 22,224 ha as of November 9th, 2015.

As shown in Tables 4-1 and 4-2, all Shore and FalC-JV dispositions including those that cover the Star – Orion South Diamond Project are in good standing as of November 9th, 2015.

In accordance with Saskatchewan Mineral Disposition Regulations, 1986, Sask. Reg. 30/86 (under the Crown Minerals Act, S.S. 1984-85-86, c-50.2), each claim may be held for two years and, thereafter, from year to year subject to the holder expending the required amounts in exploration operations on the claim lands. There are no charges for the first year of the claim; there is a $15/ha fee for the second to tenth year and a $25/ha fee for every year thereafter. As Saskatchewan Ministry of Energy and Resources accepts assessment work as credit instead of paying the yearly fees, most of the claims have enough assessment credits to keep them in good standing for several years.

FIGURE 4-1: LOCATION MAP OF THE STAR-ORION SOUTH DIAMOND PROJECT

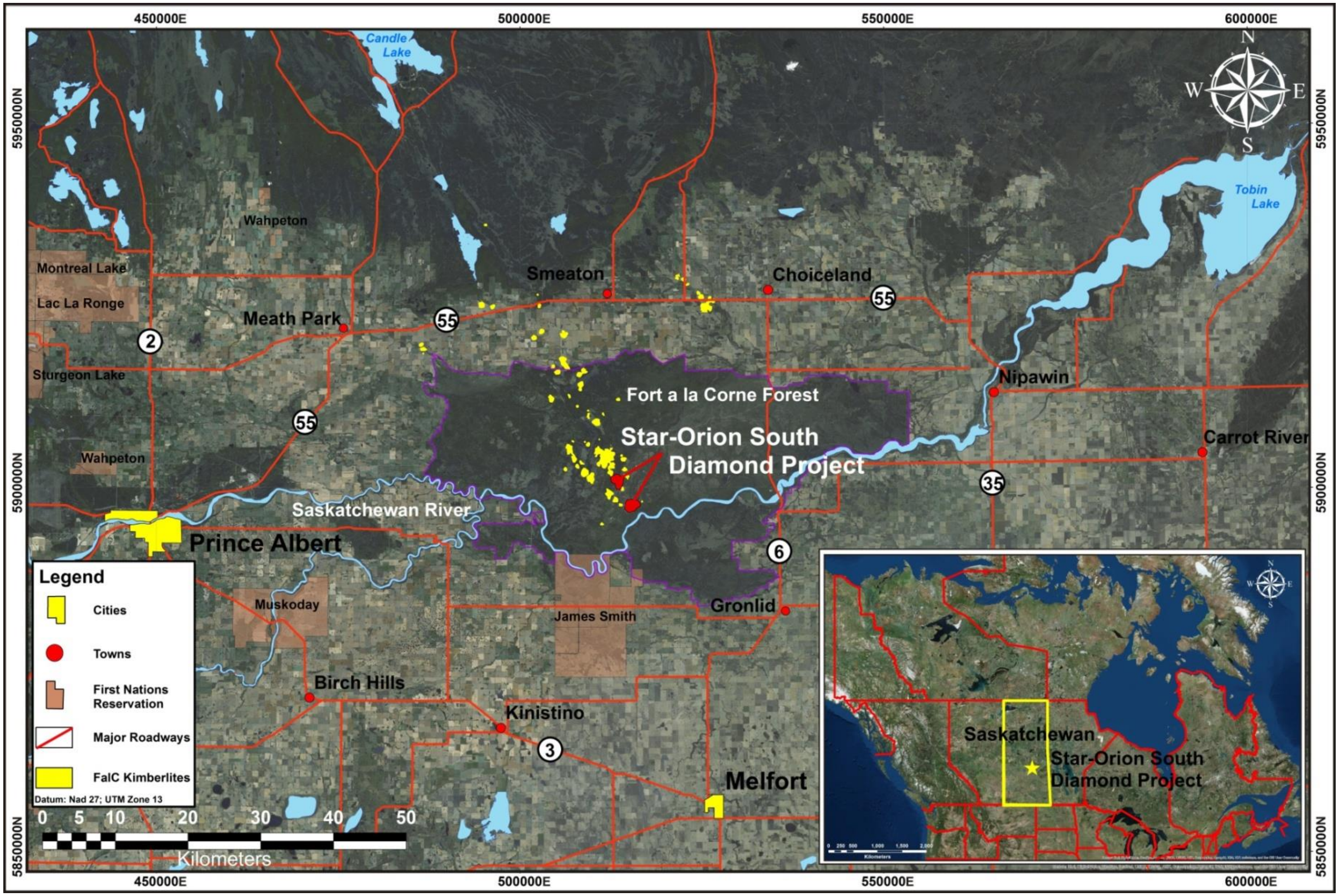


FIGURE 4-2: SHORE AND FALC-JV MINERAL DISPOSITION MAP

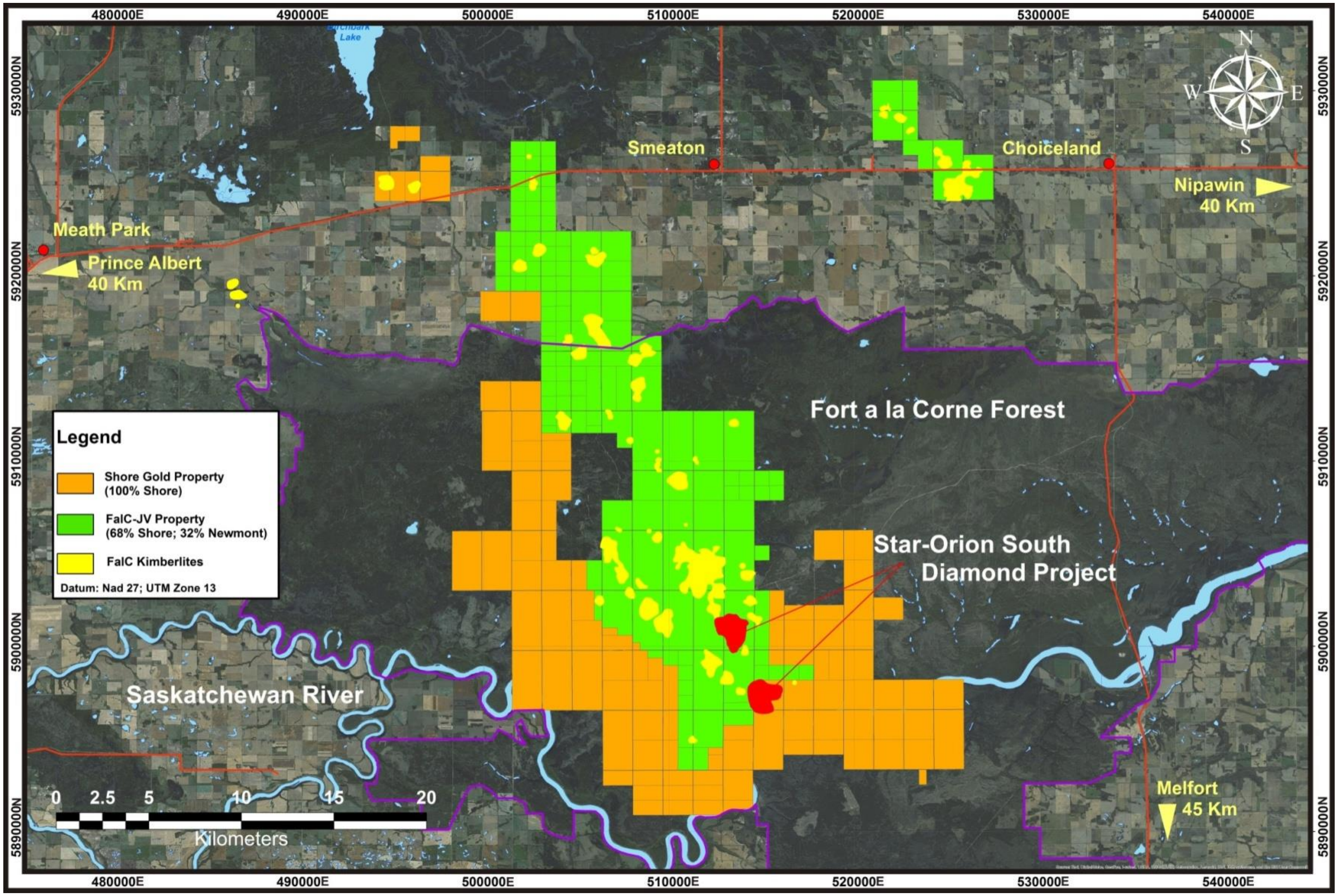


TABLE 4-1 TENURE SUMMARY OF SHORE 100 % HELD PROPERTY, NOVEMBER 9TH, 2015

Disposition (Claim) Number	Area (Ha)	Effective Date	In Good Standing until	Current Status
S-132025	256	12/1/1995	2/28/2032	Active
S-132026	128	12/1/1995	2/28/2032	Active
S-132027	128	12/1/1995	2/28/2033	Active
S-132028	128	12/1/1995	2/28/2030	Active
S-132029	128	12/1/1995	2/28/2028	Active
S-132030	256	12/1/1995	2/28/2033	Active
S-132031	128	12/1/1995	2/28/2028	Active
S-132032	128	12/1/1995	2/28/2033	Active
S-132033	512	12/1/1995	2/28/2033	Active
S-132034	512	12/1/1995	2/28/2028	Active
S-132035	512	12/1/1995	2/28/2028	Active
S-132036	512	12/1/1995	2/28/2028	Active
S-132037	512	12/1/1995	2/28/2028	Active
S-132038	512	12/1/1995	2/28/2032	Active
S-132039	256	12/1/1995	2/28/2026	Active
S-132079	512	1/19/1996	4/18/2027	Active
S-132080	256	1/19/1996	4/18/2027	Active
S-132081	512	1/19/1996	4/18/2027	Active
S-132082	256	1/19/1996	4/18/2027	Active
S-133444	64	2/2/1998	5/2/2027	Active
S-133445	128	2/2/1998	5/2/2027	Active
S-133446	128	2/2/1998	5/2/2033	Active
S-133447	128	2/2/1998	5/2/2027	Active
S-133452	128	2/2/1998	5/1/2032	Active
S-133453	128	2/2/1998	5/1/2032	Active
S-133454	192	2/2/1998	5/2/2034	Active
S-133455	256	2/2/1998	5/1/2032	Active
S-133456	96	2/2/1998	5/2/2027	Active
S-133457	128	2/2/1998	5/2/2027	Active
S-133458	128	2/2/1998	5/2/2027	Active
S-133459	32	2/2/1998	5/2/2027	Active
S-133460	256	2/2/1998	5/2/2027	Active
S-133461	192	2/2/1998	5/2/2027	Active
S-133714	128	6/1/1998	8/29/2027	Active
S-133715	128	6/1/1998	8/29/2031	Active
S-133716	128	6/1/1998	8/29/2031	Active
S-133717	256	6/1/1998	8/29/2027	Active
S-133722	256	6/1/1998	8/29/2031	Active
S-133723	256	6/1/1998	8/29/2031	Active
S-133726	256	6/1/1998	8/29/2027	Active

Disposition (Claim) Number	Area (Ha)	Effective Date	In Good Standing until	Current Status
S-133733	128	8/5/1998	11/2/2033	Active
S-134407	64	9/20/2000	12/18/2031	Active
S-135759	384	7/2/2002	9/29/2016	Active
S-135760	256	7/2/2002	9/29/2016	Active
S-135761	256	7/2/2002	9/29/2021	Active
S-135762	256	7/2/2002	9/29/2021	Active
S-135763	256	7/2/2002	9/29/2018	Active
S-135764	256	7/2/2002	9/29/2016	Active
S-135765	256	7/2/2002	9/29/2016	Active
S-135766	256	7/2/2002	9/29/2016	Active
S-135767	256	7/2/2002	9/29/2016	Active
S-135818	32	9/3/2002	12/1/2027	Active
S-135819	32	9/3/2002	12/1/2027	Active
S-135820	16	9/3/2002	12/1/2027	Active
S-135841	192	2/3/2003	5/2/2016	Active
S-136686	128	11/3/2003	1/31/2029	Active
S-137921	256	1/3/2005	4/1/2016	Active
S-138346	128	5/1/2005	7/29/2016	Active
S-138873	64	12/1/2005	2/28/2031	Active
S-139000	512	1/3/2006	4/2/2030	Active
S-140248	1024	6/19/2006	9/16/2029	Active
S-140253	1024	6/19/2006	9/16/2029	Active
S-140256	512	6/19/2006	9/16/2029	Active
S-140257	1024	6/19/2006	9/16/2029	Active
S-140259	768	6/19/2006	9/16/2029	Active
S-140263	1024	6/19/2006	9/16/2026	Active
S-140264	256	6/19/2006	9/16/2031	Active
S-140265	512	6/19/2006	9/16/2017	Active
S-140271	512	6/19/2006	9/16/2016	Active
S-140529	384	11/16/2006	2/13/2016	Active
S-140530	72	11/16/2006	2/13/2016	Active
S-141420	512	12/20/2006	3/19/2031	Active
S-141427	64	12/20/2006	3/18/2016	Active
S-143355	185	1/28/2010	4/27/2025	Active
S-143356	256	1/28/2010	4/27/2025	Active
S-143846	128	7/19/2012	10/16/2016	Active
S-143847	512	7/19/2012	10/16/2016	Active

TABLE 4-2 TENURE SUMMARY OF THE FALC-JV PROPERTY, EFFECTIVE NOVEMBER 9TH, 2015

Disposition (Claim) Number	Area (Ha)	Effective Date	In Good Standing until	Current Status
S-124553	768	8/12/1988	11/9/2029	Active
S-124554	768	8/12/1988	11/9/2029	Active
S-124555	768	8/12/1988	11/9/2028	Active
S-124556	768	8/12/1988	11/9/2028	Active
S-124557	768	8/12/1988	11/9/2028	Active
S-124561	512	8/12/1988	11/9/2027	Active
S-124562	512	8/12/1988	11/9/2027	Active
S-124563	512	8/12/1988	11/9/2027	Active
S-124568	512	8/12/1988	11/9/2027	Active
S-124573	256	8/12/1988	11/9/2016	Active
S-124574	256	8/12/1988	11/9/2016	Active
S-124639	192	8/16/1988	11/13/2027	Active
S-124640	384	8/16/1988	11/13/2024	Active
S-124641	384	8/16/1988	11/13/2030	Active
S-124646	576	8/16/1988	11/13/2030	Active
S-124647	384	8/16/1988	11/13/2024	Active
S-124649	512	8/16/1988	11/13/2028	Active
S-124651	768	8/16/1988	11/13/2028	Active
S-124652	768	8/16/1988	11/13/2029	Active
S-124653	768	8/16/1988	11/13/2028	Active
S-125981	256	7/20/1989	10/17/2016	Active
S-126003	256	7/20/1989	10/17/2030	Active
S-126004	256	7/20/1989	10/17/2026	Active
S-126007	256	7/20/1989	10/17/2030	Active
S-126008	256	7/20/1989	10/17/2030	Active
S-126009	256	7/20/1989	10/17/2030	Active
S-126010	256	7/20/1989	10/17/2030	Active
S-126038	64	8/18/1989	11/15/2023	Active
S-126039	64	8/18/1989	11/15/2023	Active
S-126040	64	8/18/1989	11/15/2023	Active
S-126041	64	8/18/1989	11/15/2021	Active
S-126042	64	8/18/1989	11/15/2021	Active
S-126043	64	8/18/1989	11/15/2022	Active
S-126044	64	8/18/1989	11/15/2023	Active
S-126045	64	8/18/1989	11/15/2020	Active
S-126046	64	8/18/1989	11/15/2022	Active
S-126047	64	8/18/1989	11/15/2023	Active
S-126048	64	8/18/1989	11/15/2023	Active
S-126049	64	8/18/1989	11/15/2030	Active
S-126095	64	8/28/1989	11/25/2021	Active

Disposition (Claim) Number	Area (Ha)	Effective Date	In Good Standing until	Current Status
S-126096	64	8/28/1989	11/25/2023	Active
S-126097	64	8/28/1989	11/25/2023	Active
S-126098	64	8/28/1989	11/25/2021	Active
S-126099	64	8/28/1989	11/25/2021	Active
S-126100	64	8/28/1989	11/25/2023	Active
S-126101	64	8/28/1989	11/25/2023	Active
S-126102	64	8/28/1989	11/25/2021	Active
S-126103	64	8/28/1989	11/25/2021	Active
S-126104	64	8/28/1989	11/25/2021	Active
S-126105	64	8/28/1989	11/25/2021	Active
S-126106	64	8/28/1989	11/25/2021	Active
S-126112	64	9/6/1989	12/4/2027	Active
S-126113	64	9/6/1989	12/4/2029	Active
S-126114	64	9/6/1989	12/4/2028	Active
S-126115	64	9/6/1989	12/4/2021	Active
S-126116	64	9/6/1989	12/4/2021	Active
S-126117	64	9/6/1989	12/4/2021	Active
S-126118	64	9/6/1989	12/4/2023	Active
S-126119	64	9/6/1989	12/4/2023	Active
S-126120	64	9/6/1989	12/4/2023	Active
S-126121	64	9/6/1989	12/4/2021	Active
S-126122	64	9/6/1989	12/4/2020	Active
S-126123	64	9/6/1989	12/4/2020	Active
S-126124	64	9/6/1989	12/4/2021	Active
S-126221	64	9/13/1989	12/11/2021	Active
S-126257	64	9/21/1989	12/19/2028	Active
S-127085	64	1/2/1991	4/1/2022	Active
S-127086	64	1/2/1991	4/1/2022	Active
S-127087	64	1/2/1991	3/31/2024	Active
S-127088	64	1/2/1991	3/31/2024	Active
S-127089	64	1/2/1991	4/1/2021	Active
S-127090	64	1/2/1991	4/1/2022	Active
S-127091	64	1/2/1991	4/1/2022	Active
S-127092	64	1/2/1991	4/1/2022	Active
S-127093	64	1/2/1991	4/1/2022	Active
S-127094	64	1/2/1991	4/1/2022	Active
S-127095	64	1/2/1991	4/1/2022	Active
S-127096	64	1/2/1991	4/1/2022	Active
S-127097	32	1/2/1991	4/1/2022	Active
S-127098	64	1/2/1991	3/31/2024	Active
S-127099	64	1/2/1991	3/31/2024	Active
S-127100	64	1/2/1991	4/1/2022	Active
S-127101	64	1/2/1991	4/1/2022	Active

Disposition (Claim) Number	Area (Ha)	Effective Date	In Good Standing until	Current Status
S-127102	64	1/2/1991	4/1/2022	Active
S-127103	64	1/2/1991	4/1/2022	Active
S-127104	64	1/2/1991	3/31/2032	Active
S-127105	64	1/2/1991	3/31/2028	Active
S-127106	64	1/2/1991	3/31/2028	Active
S-127107	64	1/2/1991	3/31/2028	Active
S-127108	64	1/2/1991	4/1/2027	Active
S-127109	64	1/2/1991	4/1/2027	Active
S-127110	64	1/2/1991	4/1/2034	Active
S-127111	64	1/2/1991	4/1/2027	Active
S-127112	32	1/2/1991	4/1/2027	Active
S-127113	64	1/2/1991	4/1/2027	Active
S-127114	64	1/2/1991	4/1/2027	Active
S-127115	64	1/2/1991	4/1/2034	Active
S-127116	64	1/2/1991	4/1/2034	Active
S-127117	64	1/2/1991	4/1/2027	Active
S-127118	64	1/2/1991	4/1/2027	Active
S-127145	64	2/20/1991	5/19/2028	Active
S-127146	64	2/20/1991	5/19/2028	Active
S-127147	64	2/20/1991	5/19/2028	Active
S-127148	64	2/20/1991	5/19/2028	Active
S-127183	352	8/12/1988	11/9/2029	Active
S-127184	496	8/12/1988	11/9/2027	Active
S-127185	256	8/12/1988	11/9/2027	Active
S-127186	448	8/12/1988	11/9/2033	Active
S-127187	192	8/16/1988	11/13/2021	Active
S-127188	256	8/16/1988	11/13/2030	Active
S-127189	256	8/16/1988	11/13/2021	Active
S-127190	192	8/16/1988	11/13/2029	Active
S-127191	480	8/16/1988	11/13/2027	Active
S-127192	768	9/13/1988	12/11/2016	Active
S-127193	128	7/20/1989	10/17/2017	Active
S-127194	192	7/20/1989	10/17/2016	Active
S-127195	32	9/6/1989	12/4/2021	Active
S-127275	192	5/5/1992	8/2/2027	Active
S-127341	192	6/12/1992	9/9/2027	Active

4.1.2 SURFACE RIGHTS AND LEASES

As the mineral dispositions are located on Crown lands, the Crown retains all surface rights in the area of the Star and Orion South kimberlites mineral dispositions. Surface access for exploration purposes is obtained through the issuance of exploration permits from the

Saskatchewan Ministry of Environment ("MOE"). To date, nine site-specific surface leases have been granted to Shore and the FalC-JV, covering a total area of 86.16 ha (Table 4-3).

TABLE 4-3 SUMMARY OF SURFACE LEASES GRANTED TO SHORE AND THE FALC-JV

Location	Property	Area (Ha)	Lease No.	Expiry Date
Main Camp	Shore	4.06	355000	3/31/2019
Star Mine Site	Shore	51.79	355001	3/31/2018
Star Mine Site	FalC-JV	3.38	355002	3/31/2018
Star West Pump Test Site	FalC-JV	7.1	355003	3/31/2018
Division Road Pump Test Site	FalC-JV	3.34	355004	3/31/2018
Sewage Lagoon	FalC-JV	1.05	355005	3/31/2018
Test Grow Plots	FalC-JV	1.42	355006	3/31/2018
Orion South Shaft Site	FalC-JV	5.55	355007	3/31/2018
Core Shack and Laydown Area	FalC-JV	8.46	355008	3/31/2018
TOTAL		**86.16**		

4.1.3 OWNERSHIP AND VARIOUS JOINT VENTURES

The Star Kimberlite deposit straddles a mineral disposition boundary between property that is held 100 % by Shore (Star Property), and property that is held by the FalC-JV, between Kensington, a wholly-owned subsidiary of Shore (68 %) and Newmont (32 %) (the Star West Property). The Orion South Kimberlite deposit is held by the FalC-JV. Both the Star Diamond Project and the Orion South Diamond Project are operated by Shore and are being explored and developed as a single entity as the Star – Orion South Diamond Project. The Mineral Resource is done on a 100 % combined ownership basis and does not separate the resources of the joint venture partners.

4.1.4 PERMITS AND APPROVALS

The following permits, effective January 1, 2015 expire on June 30, 2016:

- Forest Products Permit #'s 0925I (FALC JV) and 0926I (Shore Gold), and Aquatic Habitat Protection Permit #'s JV2015-2016, (FALC JV) and Star2015-2016 (Shore Gold); and,
- Approval to Operate Pollutant Control Facilities #'s IO-235 (Shore Gold) and IO-236 (OSS Project).

These permits are issued to Shore Gold and the FalC JV by the MOE and pertain to exploration activities at the Star-Orion South Diamond Project, located in the Fort a la Corne Provincial Forest, 60 kilometers ("km") east of the City of Prince Albert, Saskatchewan. The site is located at approximately, North American Datum 1927 ("NAD 27") Universal Transverse Mercator ("UTM") coordinates Zone 13, 515000 Easting ("E") 5897000 Northing ("N").

4.2. ENVIRONMENTAL AND OTHER LIABILITIES

Shore is not aware of any environmental liabilities, to which the mineral claims or property which would be part of the Project, are subject. To conduct the work proposed for the property, in addition to obtaining environmental approval from the Saskatchewan Ministry of Environment and federal authorities, a variety of leases, permits and authorizations would be required from ministries and agencies of Saskatchewan and Canada. These would include mineral leases, surface leases, permits to construct and/or operate plant and other facilities, equipment and related infrastructure including overburden or other piles, and permits related to operational issues, water issues and aquatic habitat. As well, a municipal development permit would be required. There are no known factors or risks that may affect access, title, or the right or ability to perform work on the property. Various First Nations and Métis communities assert that the area of the Project lies within their traditional territory, i.e. territory within which they historically or presently pursue Aboriginal rights to hunt, fish, trap or gather berries, other food or medicine on unoccupied Crown land. This situation is not unique to Shore, the Project or Saskatchewan, given that all mineral development or other projects on unoccupied Crown land in Canada occur within the traditional territory of some Aboriginal party or parties. All such development, therefore, gives rise to the duty of the Crown as represented by provincial or federal governments to consult with Aboriginal parties when issuing permits.

On December 3th 2014 the Canadian Environment Assessment Agency ("CEAA") announced an Environmental Assessment Decision for Shore Gold Inc.'s Star - Orion South Diamond Project. The Honourable Leona Aglukkaq, Environment Minister, announced that the Project "is not likely to cause significant adverse environmental effects when the mitigation measures described in the Comprehensive Study Report are taken into account". Full text of the announcement can be found at http://www.ceaa-acee.gc.ca/.

All EIS technical information has been delivered to and accepted by the Province. Shore is currently awaiting a decision from the Provincial Ministry of Environment.

5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1. ACCESSIBILITY

The Project is located in the FalC Provincial Forest approximately centred at 53° 15' N latitude and 104° 48' W longitude and situated 60 km east of Prince Albert, Saskatchewan (see Figure 4-1). Highway 55, located to the north of the Project, connects Prince Albert with several towns located directly north of FalC to the town of Nipawin, east of FalC. Highway 6 runs north-south and is located to the east of FalC.

The Project is accessible by paved highways, a grid gravel road system and an extensive network of forestry roads, passable to four-wheel drive and high-clearance two-wheel drive vehicles all year round.

5.2. PHYSIOGRAPHY AND CLIMATE

The Star and Orion South Kimberlites are situated on the north side of the Saskatchewan River. The Saskatchewan River is located approximately 1.5 km south of the underground and surface workings of the Star Diamond Project.

The Project area comprises rolling glacial topography that is drained by numerous small tributaries running south towards the Saskatchewan River. Elevation varies from 360 to 450 m above sea level. Much of the land surrounding the FalC Provincial Forest has been cleared for agriculture; the forest consists of jack pine, aspen, white and black spruce, poplar, white birch and tamarack.

The climate of the FalC area can be characterized by long, cold winters with mean January temperature of -19.1ºC and short, hot summers with a mean July temperature of 17.5ºC. Precipitation is limited to periodic showers and snowfall and averages 323 mm annually. A weather station, erected at the project site in 2006 and removed in the fall of 2008, was utilized for the collection of daily meteorological data used for baseline environmental studies.

The local climate is conducive to year-round operations and would not be expected to impact mining activities.

5.3. LOCAL AND REGIONAL INFRASTRUCTURE

Prince Albert is the main centre for a pool of skilled and unskilled mining personnel, with additional personnel available from the City of Melfort and the many towns in the area, which have traditionally supplied miners to the Saskatchewan potash industry as well as to the gold and uranium mines in Northern Saskatchewan.

Current and future water supplies have been, and will continue to be, supplied by underground source.

A 230 kV powerline runs approximately 9.6 km south of the area and a larger capacity 230 kV powerline is approximately 21 km to the east of the Project from the Nipawin Hydroelectric and E.B. Campbell Hydroelectric stations. In addition, a SaskPower powerline connection from the main power grid is also available from the town of Smeaton.

Telecommunications within the FalC forest are currently available through a cell phone tower located 5 km south of the area.

The site of Shore Gold Inc's (Shore) main exploration camp, located within claim blocks S-135767 and S-135765, and is located approximately 12 km northeast of the Star site and 8 km northeast of the Orion South site.

Electricity to the main exploration camp was provided by two diesel power generators (a 125 kVa and a 300 kVa). Utility water was pumped from local wells near the main exploration camp, and drinking water was trucked in.

All diesel fuel utilized at both the project site and at the main exploration camp was purchased in the Prince Albert area and transported by fuel trucks.

5.3.1 STAR PROPERTY DESCRIPTION

The Star Kimberlite deposit comprises Shore's Star Diamond Project and straddles a mineral disposition boundary between ground that is held 100 % by Shore, and ground that is held by the FalC-JV, between Kensington (68 %) and Newmont (32 %). The Star Diamond Project is operated by Shore, and is being explored and developed as a single entity. For convenience, that portion of the Star Kimberlite deposit which falls on the FalC-JV mineral dispositions is referred to as Star West, and, unless otherwise specified, the Star Kimberlite deposit refers to kimberlite on both the Star and Star West properties.

The Star Kimberlite deposit has a surface area totaling some 460 ha.

5.3.2 ORION SOUTH PROPERTY DESCRIPTION

The Orion South Kimberlite deposit comprises the FalC-JV's Orion South Diamond Project and is on ground held by the FalC-JV. The Orion South Diamond Project is operated by Shore, and is being explored and developed as a single entity.

The Orion South Kimberlite deposit has a surface area totaling some 310 ha.

6. HISTORY

As early as 1940, diamonds were being reported to occur in the Prince Albert, Saskatchewan area. It was only when regional airborne geophysical surveys were completed in the 1960's, however, that possible diamond exploration targets were identified in the FalC area. A follow-up rotary drilling program of these targets in 1989 led to the first discovery of kimberlite in the area by Uranerz Exploration and Mining Ltd.

The major part of the FalC kimberlite province has been under investigation since the early 1990's by a consortium of companies including Cameco Corporation ("Cameco"), De Beers Canada Inc. ("De Beers") and Kensington. In October 2006, the previous FalC-JV changed ownership through the merger of Shore and Kensington and by the purchase of the De Beers/Cameco interest by Shore and the subsequent joining of Newmont to form the current FalC-JV.

Much of the FalC-JV work from the 1990's through to 2005 involved drilling exploration and preliminary delineation core holes on the numerous airborne geophysical anomalies located in the FalC area. More recent work (2006-present) has been focused on the Orion cluster of kimberlites (Orion South, Orion Central and Orion North), Star West and the Taurus cluster (situated 2 km west of the Orion cluster). Work has included grid-pattern core drilling on a 100 m grid spacing that focused on the thicker portions of Star West, Orion South and North and on a 200 m line spacing on the thinner portions of those kimberlites and all of Taurus and Orion Centre Kimberlites. In order to recover appreciable quantities of diamonds for grade and value estimation, large-scale underground bulk sampling was completed on both Star West and Orion South. Underground bulk sampling, via a vertical shaft and lateral drifting, was completed on the Star West kimberlite between 2006 and 2007 and later on the Orion South Kimberlite between 2007 and 2009. LDD mini-bulk sampling was also completed on Orion South, Orion North, Star West and Taurus. More recent exploration core drilling and microdiamond work has been completed between 2012 and 2015 drilling has been undertaken on the Snowdon cluster of the FalC JV to better define and understand these kimberlites.

On the properties held 100 % by Shore, exploration commenced in 1996 by flying a low-altitude helicopter-borne magnetic survey. Several magnetic anomalies were identified and subsequent follow-up with ground magnetic surveys confirmed the presence of shallow, closed anomalies that indicated potential kimberlite. Four anomalies in the northwest corner of the survey area were selected for initial drill testing. Subsequent drilling confirmed the presence of kimberlite (the Star Kimberlite). Between 1996 and 2008 several core drilling programs resulted in the development of a robust kimberlite model. Mini-bulk sampling, via LDD, was completed between 2005 and 2008. Large-scale underground bulk sampling, via a vertical shaft and lateral drifting, was completed on the Star Kimberlite between 2003 and 2007.

From 2008 to 2009, Shore conducted three separate NI 43-101 compliant mineral resource estimates on the Star and Orion South Kimberlite deposits by AMEC Americas Limited (Star deposit only) and P&E Mining Consultants (Star and Orion South) respectively.

Positive MRE results facilitated the need for further study and on August 17, 2009, P&E Mining Consultants completed a preliminary feasibility study ("PFS") on the Star Project (Orava et al. 2009). The PFS comprised of a conceptual design for an open pit mine plan, mine schedule, diamond process plant with capital and operating cost estimates, geotechnical and hydrogeology studies, as well as environmental and permitting studies completed by P&E. The PFS study was based upon the 2009 Star Kimberlite Mineral Resource Estimate technical report prepared by P&E.

Amalgamation of two volumetrically significant kimberlite bodies occurred on January 31, 2010, when P&E completed an updated preliminary feasibility study (updated "PFS") on the Star and Orion South Project (Orava et al. 2010). The updated PFS incorporated the Orion South kimberlite into the current Star Diamond Project and contained conceptual open pit mine plans, mine schedule, process plant designs with capital and operating cost estimates, additional geotechnical and hydrogeology studies as well as environmental and permitting studies. The PFS study was based upon both the March 26, 2009 Star Kimberlite Mineral Resource Estimate technical report and the September 25, 2009 Orion South Kimberlite Mineral Resource Estimate technical report prepared by P&E.

On August 25, 2011 Shore completed a Feasibility Study ("FS") on the Star – Orion South Diamond Project which produced Probable Mineral Reserves of 279 million diluted tonnes at a weighted average grade of 12.3 carats per hundred tonnes ("cpht") containing 34.4 million carats at a weighted average price of US$242 per carat over the 20 year Life of Mine ("LOM"). The Base Case FS had a Net Present Value ("NPV") of $2.1 billion (using a 7 percent discount rate) for an Internal Rate of Return ("IRR") of 16 percent before taxes and royalties and an after-taxes and royalties NPV of $1.3 billion with an IRR of 14 percent. The Pre-production capital cost was $1.9 billion with a total capital cost of $2.5 billion (including direct, indirect costs and contingency) over the LOM and an initial capital cost payback period of 5.3 years. The FS was based upon the January 31, 2010 updated PFS technical report prepared by P&E.

The 2011 feasibility study and all prior feasibility studies are historical. The study reports, mineral resources and economic assessment previously disclosed by the Company are no longer current and should no longer be relied upon.

On March 6th 2014 Shore announced an estimate of the Target For Further Exploration

("TFFE", formerly known as "Potential Mineral Deposit") for five partially evaluated kimberlites and the portions of the Star and Orion South Kimberlites, which fell outside the Indicated and Inferred Resources previously estimated (see SGF News Release July 14, 2011). These seven Fort à la Corne kimberlites fall within the 100 percent Shore owned Star Diamond Project and the adjacent FalC-JV. The TFFE was conceptual in nature and is not a Mineral Resource and it is uncertain whether further exploration work will result in the TFFE being delineated as a Mineral Resource.

The TFFE for these seven Fort à la Corne Kimberlites is estimated to include between 983 million and 1.17 billion tonnes of kimberlite containing between 52 and 90 million carats of diamonds. The details of the TFFE estimates for the individual kimberlites are listed in Table 6-1.

TABLE 6-1 TFFE SUMMARY TABLE BY KIMBERLITE BODY

Kimberlite Body and Lithologic Units	Range of Tonnes[1] (000's)	Range of Grade[2] (cpht, DTC+1)	Range of Carats[3] (000's, DTC+1)
Star EJF& PENSE4	19,935 – 26,010	2.61 – 13.13	1,094 – 2,379
Orion South (K140, K141) EJF5	81,530 – 99,986	4.41 – 9.87	4,000 – 8,955
Orion North (K120) EJF	170,749 – 198,723	5.27 – 10.94	9,732 – 20,209
Orion North (K147, K148, K220) EJF 3 & 4	340,421 – 410,302	2.75 – 8.37	15,740 – 30,241
Taurus (K118) EJF 2 & 3	95,879 – 108,538	2.95 – 10.95	6,504 – 7,778
Taurus (K122) EJF	117,413 – 136,012	4.41 – 14.68	5,738 – 8,768
Taurus (K150) EJF 1 & 2	156,783 – 189,236	4.30 – 7.22	9,052 – 12,310
Total	982,710 – 1,168,807		51,860 – 90,640

Notes:
1. The range of tonnes is based on the standard deviation of the specific gravity measurements for each kimberlite body and lithologic unit
2. Range of grades reflects the lowest and highest grades from all the lithologic units within each kimberlite body
3. Kimberlite carat ranges are a summation of the low and high ranges of carats for all the lithologic units in each kimberlite body
4 & 5. Star & Orion South Kimberlite TFFE lies outside of defined Mineral Resources

The TFFE numbers for Star and Orion South are no longer relevant as the models and Mineral resources for both kimberlites have been revised in this report and should not be relied upon.

In addition to the TFFE documented above in Table 6-1, geological models, based on detailed core drilling and logging, have been prepared for the six Fort à la Corne kimberlites listed in

Table 6-2. Microdiamond results presently available for these kimberlites are currently considered insufficient to support estimates of macrodiamond content, and these kimberlites are accordingly not included in the current TFFE estimate. These Geological Models are conceptual in nature and are not Mineral Resources, as they lack diamond grade data, and it is uncertain whether further exploration work will result in these Geological Models being delineated as a Mineral Resources.

TABLE 6-2 KIMBERLITES NOT INCLUDED IN THE TFFE FOR WHICH GEOLOGICAL MODELS HAVE BEEN PREPARED

Kimberlite Body	Range of Tonnes[1]
Orion North (K147, K148, K220) LJF, EJF 1 & 2	65,493 – 78,629
Orion Centre (K145, K219)	163,626 – 200,766
Falc (K121, K221)	53,602 – 62,973
Falc (K123, K223)	42,398 – 50,516
Falc (K152)	27,639 – 31,958
Falc (K158) OLRVK2	51,878 – 59,528
Total	404,638 – 484,373

Notes:
1. The range of tonnes is based on the standard deviation of the specific gravity measurements for each kimberlite body and lithologic unit

Further details of the exploration work conducted in the FalC area by Shore and FalC-JV on Star and Orion South are summarized in Sections 9, 10 and 11.

7. GEOLOGICAL SETTING AND MINERALIZATION

The Project area lies near the northeastern edge of the Phanerozoic Interior Platform, which extends from the Rocky Mountains in the west, to the Precambrian Canadian Shield in the northeast. The Interior Platform sediments exceed 600 m in thickness (Figure 7-1). The unmetamorphosed sedimentary rocks of the Interior Platform unconformably overlie metamorphosed basement rocks. These Proterozoic basement rocks have been interpreted to form part of the Glennie Domain which has been tectonically emplaced overtop of the Archean Sask Craton (Chiarenzelli et al., 1997). In the Star and Orion South area, the Precambrian basement rocks are estimated to be at a depth of 730 m (Table 7-1).

TABLE 7-1 AVERAGE DEPTH (AND ELEVATION) TO MAJOR STRATIGRAPHIC UNITS

	STAR		ORION SOUTH	
	Depth (m)	Elevation (masl)	Depth (m)	Elevation (masl)
Avg. Ground Level (Top of OVB)	0	421	0	444
Avg. Top of Colorado Gp (Base of OVB)	92	329	105	339
Avg. Top of Mannville Gp (Base of Colorado Gp)	170	251	191	253
Avg. Top of Paleozoic Carb (Base of Mann Gp)	340	81	347	97
Avg. Top of Precambrian (Base of Paleozoic)*	730	-309	730	-286

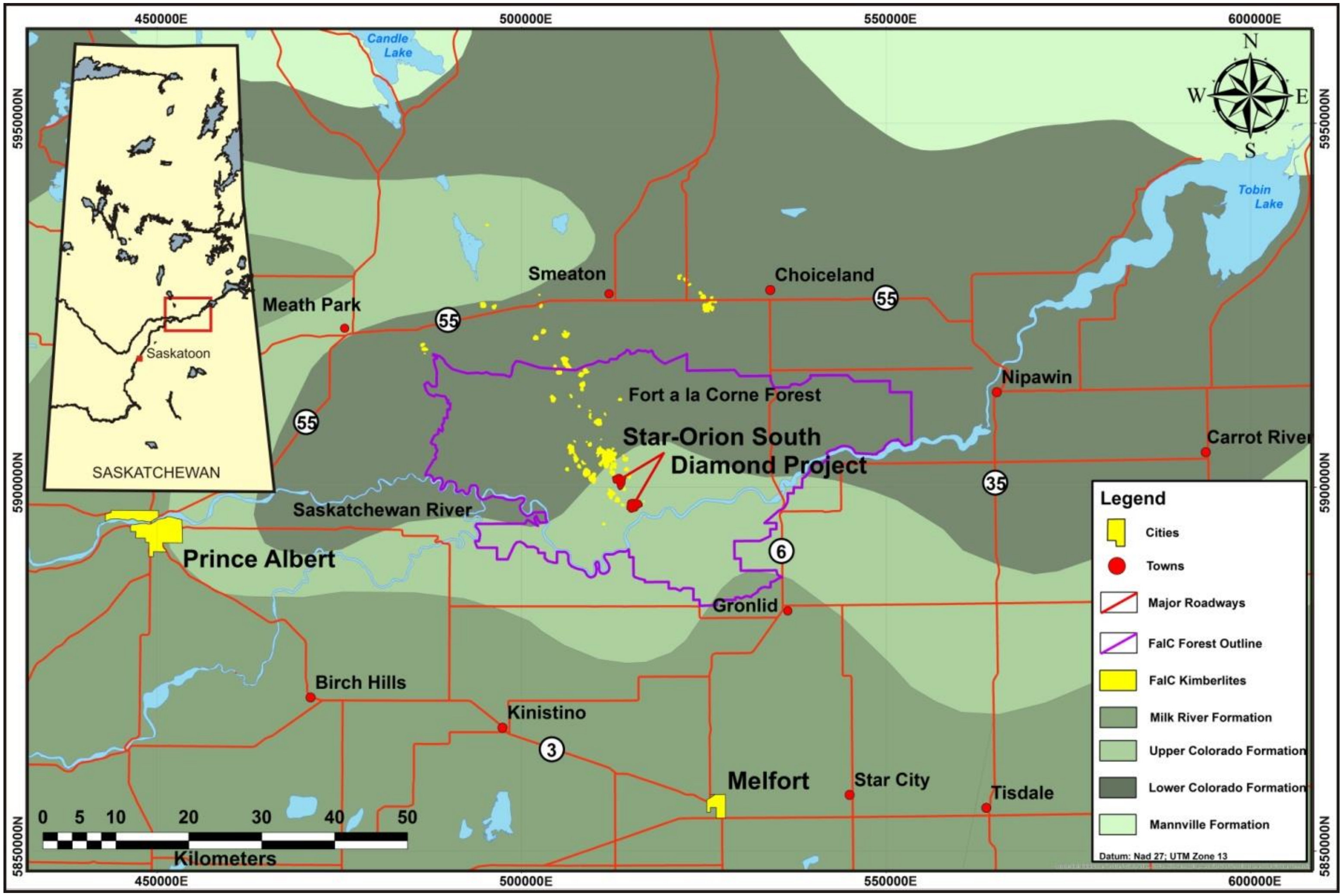
* top of Precambrian is based on very limited oil and exploration work 16 km NE and 30 km SW of Star and Orion

TABLE 7-2 AVERAGE THICKNESS OF MAJOR STRATIGRAPHIC UNITS

	STAR	ORION SOUTH
	Thickness (m)	Thickness (m)
Avg. Overburden Thickness	92	105
Avg. Colorado Group Thickness	78	86
Avg. Mannville Group Thickness	170	156
Avg. Paleozoic Carbonate Thickness*	390	383

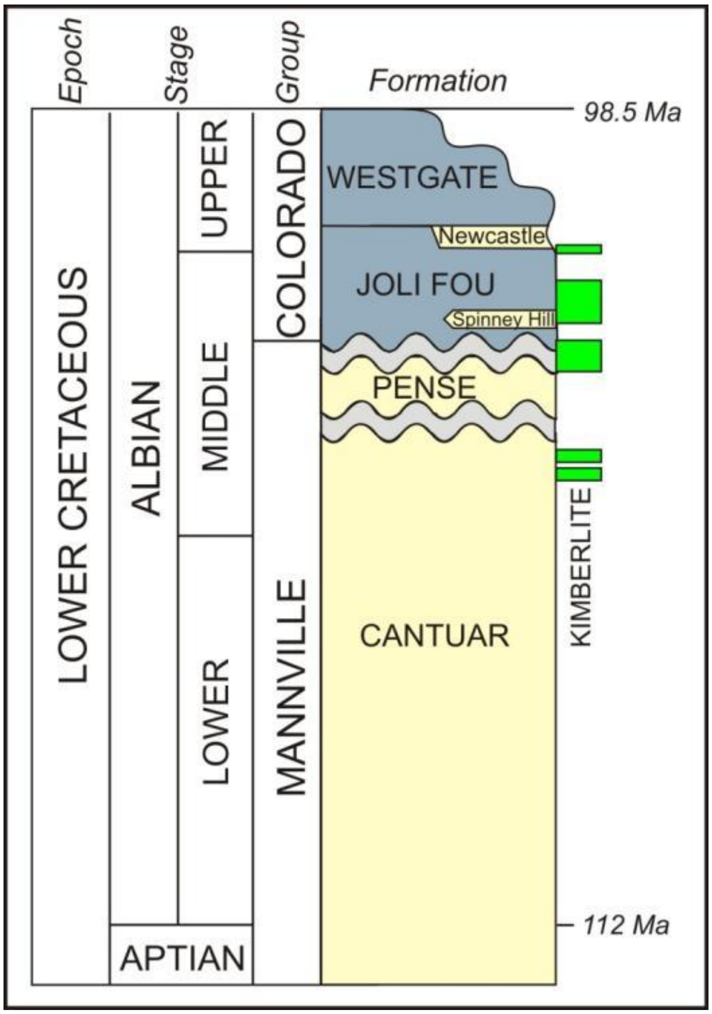
* top of Precambrian is based on very limited oil and exploration work 16 km NE and 30 km SW of Star and Orion South.

FIGURE 7-1 REGIONAL GEOLOGY OF THE FALC AREA WITH THE MAGNETIC OUTLINES OF THE FALC KIMBERLITES



The Phanerozoic cover sequence consists of a 390 m thick Cambro-Devonian basal unit of dolomitic carbonate and clastic sedimentary rocks overlain by 150-180 m of Cretaceous Mannville siltstone and sandstone and 70-90 m of Cretaceous Colorado Group shale (Tables 7-1 and 7-2) and siltstone (Figures 7-1 and 7-2). The sedimentary formations dip gently to the south-southwest bringing progressively younger strata into contact with the Quaternary glacial till towards the southwest. In the vicinity of the Project, the area is overlain by Quaternary glacial deposits ranging from 90 to 130 m in thickness. These consist of lower till deposits with discontinuous intra-till gravel and sand deposits and an upper layered sequence of clay and fine-grained sand deposits.

FIGURE 7-2 CRETACEOUS STRATIGRAPHIC COLUMN OF THE STAR – ORION SOUTH AREA



7.1. PROPERTY GEOLOGY - FALC AREA

A northwest-trending kimberlite province covering a 50 km by 30 km area has been identified in the FalC area (Figure 7-1). These kimberlites have clearly defined airborne and ground magnetic anomaly signatures within a quiet background. A total of 69 kimberlitic bodies have been drilled and identified to date within the FalC Kimberlite Province, with the majority of discovered kimberlite bodies occurring within the extensive NW-SE FalC Main Trend.

The 'classical champagne-glass' shaped morphologies typically associated with FalC kimberlite bodies represent the explosive emplacement of kimberlite material within sequences of poorly consolidated sediments (Scott Smith et al., 1994). Geophysical modelling suggests that the areal extent of the individual kimberlitic bodies in the FalC kimberlite province range from 2.7 ha to over 400 ha. The kimberlite bodies themselves typically occur as stacked, subhorizontal lenses or shallow zones of crater facies kimberlite with footprints ranging up to 2,000 m wide and occur at depths ranging from 100 m to greater than 700 m. Limited deep drilling precludes interpretation of the shape of the kimberlites below about 350 m. At depth, FalC kimberlites may resemble the idealized South African kimberlite model. While both hypabyssal and volcaniclastic kimberlitic facies have been intersected by drilling, their inter-relationship is not well known. It is possible that the former represent either late stage pulses or even xenolithic blocks.

The more important kimberlite occurrences discovered to date in the FalC Kimberlite Province comprise crater facies volcaniclastic kimberlite emplaced into Cretaceous marine, lacustrine and terrestrial siliciclastic deposits laid down in, or along, a shallow epicontinental sea. Importantly, individual kimberlite phases (or units) may be distinguished according to grain size, style of emplacement, xenoliths and xenoliths types and abundances, alteration and the abundance of olivine macrocrysts.

In general, the main volcaniclastic kimberlite deposits were preceded by smaller kimberlite bodies comprising conformable, graded beds of pyroclastic debris as much as 40 m thick, indicative of subaerial eruption onto Albian (Middle Cretaceous) floodplains, intertidal zones, or lakes. Subsequently, larger, shallow craters were excavated in poorly-consolidated marine to marginal-marine shale under subaerial to shallow marine conditions and backfilled with pyroclastic sediments forming multiple-graded kimberlitic beds. Kimberlitic pyroclastic flows, erupted at the time of crater excavation, produced stacked kimberlite deposits and are preserved as aprons around the craters that can extend several hundred metres from the crater edge. Contact angles of the kimberlite with the surrounding country rock can range from 90° to 0° depending on whether the contact is in the pipe or in the outflow pyroclastic deposits.

Continued Cretaceous sedimentation buried the kimberlites in marine sediments. These cover rocks were largely removed by glaciation, essentially to the level of kimberlite. The majority of bodies drilled to date by both the FalC-JV and Shore are positioned just below the till / bedrock interface. In contrast, kimberlites discovered by De Beers in 1988, and later by Corona Corporation at Sturgeon Lake, 30 km northwest of Prince Albert, are regarded as rootless, ice-thrust rafts or erratics of kimberlite, indicating erosion of a possibly younger suite of kimberlites.

Kimberlitic phases are well constrained within the Cretaceous stratigraphy in which they were deposited. For example, those kimberlites deposited during Cantuar Formation time (part of the Mannville Group) are considered to be Cantuar age-equivalent kimberlite and are termed Cantuar Kimberlite ("Cantuar"). Similarly, kimberlite deposited during Early Joli Fou Formation time (part of the lower Colorado Group) is Early Joli Fou age-equivalent kimberlite and is termed Early Joli Fou Kimberlite ("EJF"). It is important to note that two stratigraphically equivalent kimberlite packages (e.g. Pense Kimberlite on Star and Orion South) do not share a genetic relationship and each has unique diamond grade and carat value characteristics. Some of the stratigraphically equivalent kimberlite units (e.g. EJF on Star and Orion South) do, however, have similarities in mineral constituents, mantle signatures, chemistry and diamond distribution that suggest a genetic relationship.

7.2. STAR KIMBERLITE GEOLOGY AND MINERALIZATION

The Star Kimberlite was deposited within the Cretaceous sedimentary rocks of the lower Colorado and Mannville groups, which unconformably overlie Paleozoic limestones and dolomites. The glacial overburden thickness ranges from 90 to 130 m with an average of 92 m (Table 7-2). Portions of the Star Kimberlite have been emplaced contemporaneously with the deposition of the Mannville and lower Colorado sediments. However, the majority of the Star Kimberlite is interpreted to have erupted through the Mannville and into the early parts of the lower Colorado Group sediments (Joli Fou Formation time). The local lower Colorado and Mannville interface is situated approximately 170 m. The Mannville Group and Paleozoic interface lies approximately 340 m, as interpreted from Shore core drill holes.

The Star Kimberlite consists of two distinct types of kimberlite: dominant eruptive kimberlite and subordinate kimberlitic sediments. The eruptive kimberlite deposits at the Star Kimberlite are sub-divided into five main kimberlite phases emanating from a single vent, each with distinctive physical and chemical properties, which enable mapping and stratigraphic correlation of units as seen in Figure 7.3 (Harvey et al., 2006 and Harvey, 2009a):

1. Cantuar Kimberlite
2. Pense Kimberlite
3. Early Joli Fou Kimberlite (“EJF”)
4. Mid Joli Fou Kimberlite (“MJF”)
5. Late Joli Fou Kimberlite (“LJF”)

All the major kimberlite phases of the Star Kimberlite have been proven to contain macrodiamonds.

7.2.1 CANTUAR KIMBERLITE ("CPK")

The oldest kimberlite phase within the Star Kimberlite is the Cantuar Kimberlite, which is hosted by sandstone, siltstone and mudstone units of the Cantuar Formation (Figure 7-3). These Cantuar Kimberlite deposits are typically restricted to thin sheet-like deposits that generally vary in width from 20 to 40 m. There are two end-member types of Cantuar Kimberlite: matrix-supported pyroclastic kimberlite, which primarily occurs to the north; and a clast-supported pyroclastic kimberlite and kimberlite breccia that occurs to the south (Figure 7-4). The Cantuar Kimberlite is typified by the ubiquitous presence of small (1-4 mm) clinopyroxene xenocrysts and relatively common mantle xenoliths. The kimberlite is variably fine to medium grained and is normally graded at the 1 to 5 m scale, although more massive beds do occur. Rare fine-grained reworked equivalents are present and locally display cross-bedding.

FIGURE 7-3 CROSS-SECTION ACROSS THE WESTERN PORTION OF THE STAR KIMBERLITE (VIEW TOWARDS THE WEST)

(This Figure illustrates the host Cretaceous sedimentary rocks and the relationship with distinct kimberlite eruptive phases, reworked equivalents and relatively young marine reworked kimberlitic sediments).

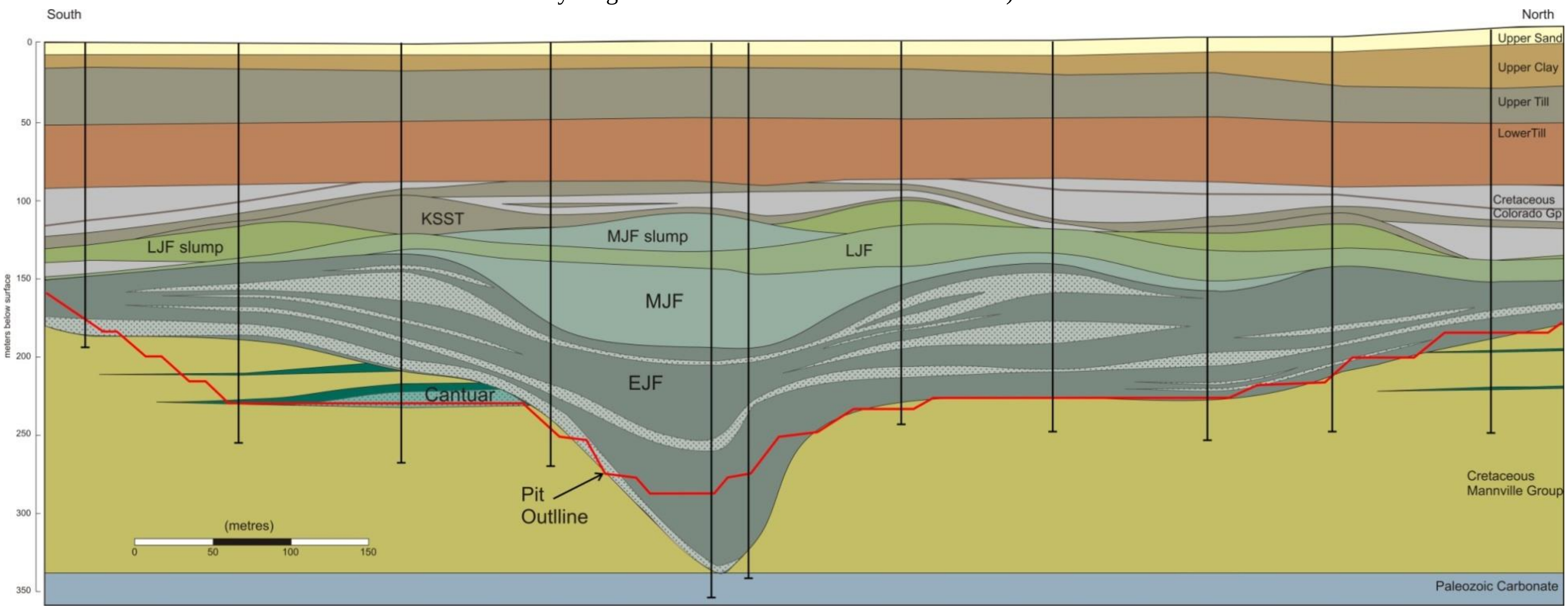
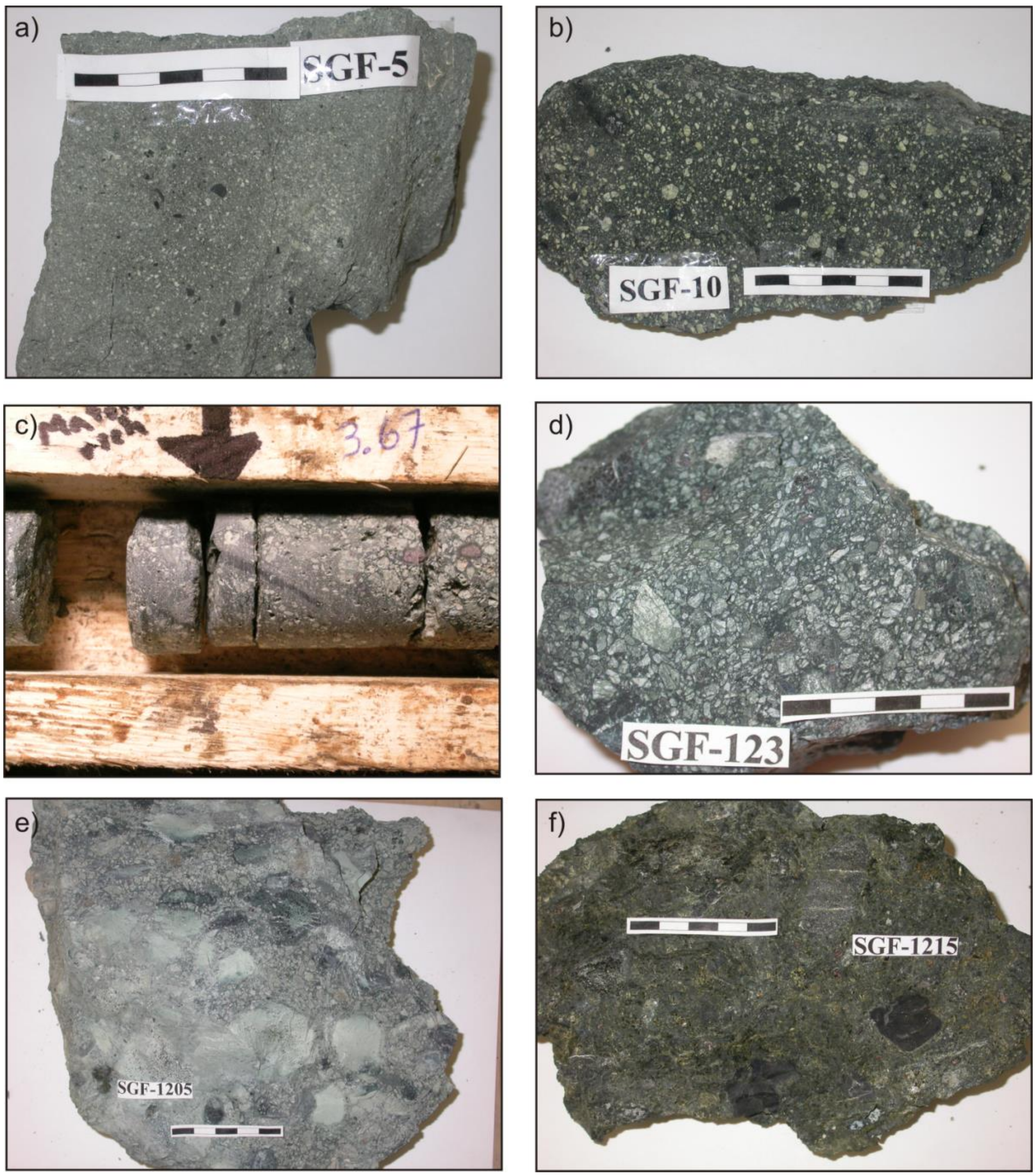


FIGURE 7-4 PHOTOGRAPHS OF UNDERGROUND HAND SAMPLES AND CORE FROM THE STAR KIMBERLITE

(a) Ash-rich LJF sample with small (1-5 mm) shale clasts; b) Matrix-rich MJF sample with 5-20 mm shale clasts; c) Underground sub-horizontal core sample delineating the contact between olivine-rich EJF (right) and matrix-rich MJF (left) (36.5 mm diameter core); d) Olivine macrocryst-rich, clast-supported EJF pyroclastic kimberlite; e) Precambrian basement-dominated xenolithic EJF kimberlite breccia; f) Dark green, matrix-supported, olivine- and xenolith-rich pyroclastic Cantuar kimberlite).



The Cantuar Kimberlite is restricted to the north and west-central portion of the kimberlite complex. The thickest intersections are on the western portion of the kimberlite near the EJF crater edge (Figure 7.3) with central Cantuar Kimberlite deposits likely having been removed by the main EJF eruptive event. Restricted to the southern part of the Star Kimberlite is a younger, juvenile pyroclast-rich pyroclastic kimberlite, known as JLRPK. It occurs as two spatially restricted feeder vents which have shapes similar to the classic South African model carrot-shaped pipes and is cross-cut by older Cantuar.

7.2.2 PENSE KIMBERLITE ("PPK")

The Pense Kimberlite ("PPK") is restricted to the central and northeastern portions of the Star Kimberlite. In the northeast, Pense Kimberlite is deposited directly on the Pense sandstone and mudstone (Zonneveld et al., 2004). Towards the thicker central zone, the Pense appears to sit directly on the Cantuar Formation sediments, indicating either scouring into the older Cantuar sediments and/or previous erosion / denudation of the Pense sandstone. The Pense Kimberlite is clast-supported, and in the coarser-grained varieties, characterized by the relative abundance of ilmenite megacrysts and sub-equal abundance of armoured juvenile pyroclasts (typically cored by olivine macrocrysts) and 0.5 to 2 cm sized olivine macrocrysts. The large olivine macrocrysts commonly contain small garnet intergrowths and are thus interpreted to be microperidotite xenoliths. The Pense Kimberlite generally occurs as well bedded, fine to very coarse grained pyroclastic kimberlite with very rare breccia units with an average thickness of 15m. Cross bedded, well-sorted, fine- to medium-grained olivine enriched kimberlite sandstone is locally observed.

7.2.3 EARLY JOLI FOU KIMBERLITE ("EJF")

The widespread EJF is volumetrically the most important eruptive phase of the Star Kimberlite. Distal deposits of the kimberlite sit directly on Lower Joli Fou shale and are interpreted as Joli Fou-age equivalent. The EJF also sits directly on older Pense and Cantuar phases. The kimberlite is in contact with the Cantuar Formation in the vicinity of the crater/vent area in the west (Figure 7-3). The kimberlite is clast-supported and dominated by olivine crystals with rare juvenile pyroclasts (Figure 7-4). Mantle-derived xenocrysts and xenoliths are relatively common in this unit. Fining-up beds dominate and commonly occur as 1 to 5 m (rarely up to 15 m) thick, lithic-rich breccia (≥15 wt. % xenolithic clasts) basal units overlain by a xenoliths poor tuffaceous kimberlite.

Three zones have been identified in the EJF pyroclastic deposits: a central vent / crater; a positive relief tephra ring (cinder cone); and an extra-crater (tephra ring distal) zone (Figure 7-5). Kimberlite deposits largely confined to the inner crater / vent area and the positive relief tephra ring are referred to as EJF 'inner' area deposits and those confined to the distal, extra-crater areas are referred to as EJF 'outer' area deposits.

FIGURE 7-5 TOPOGRAPHIC ELEVATION MAP (LOWS ARE BLUE; HIGHS ARE MAGENTA) OF THE TOP CONTACT OF THE OLIVINE-RICH EJF

(In Figure 7.5 three distinct zones are distinguished: 1. a west-central zone of low relief (Crater zone); 2. an arcuate high surrounding the low (Tuff ring zone); and 3. a distal relative low (Distal zone). Approximation of kimberlite outline based on electro-magnetic (EM) signature. Note the underground workings at the center of the body).

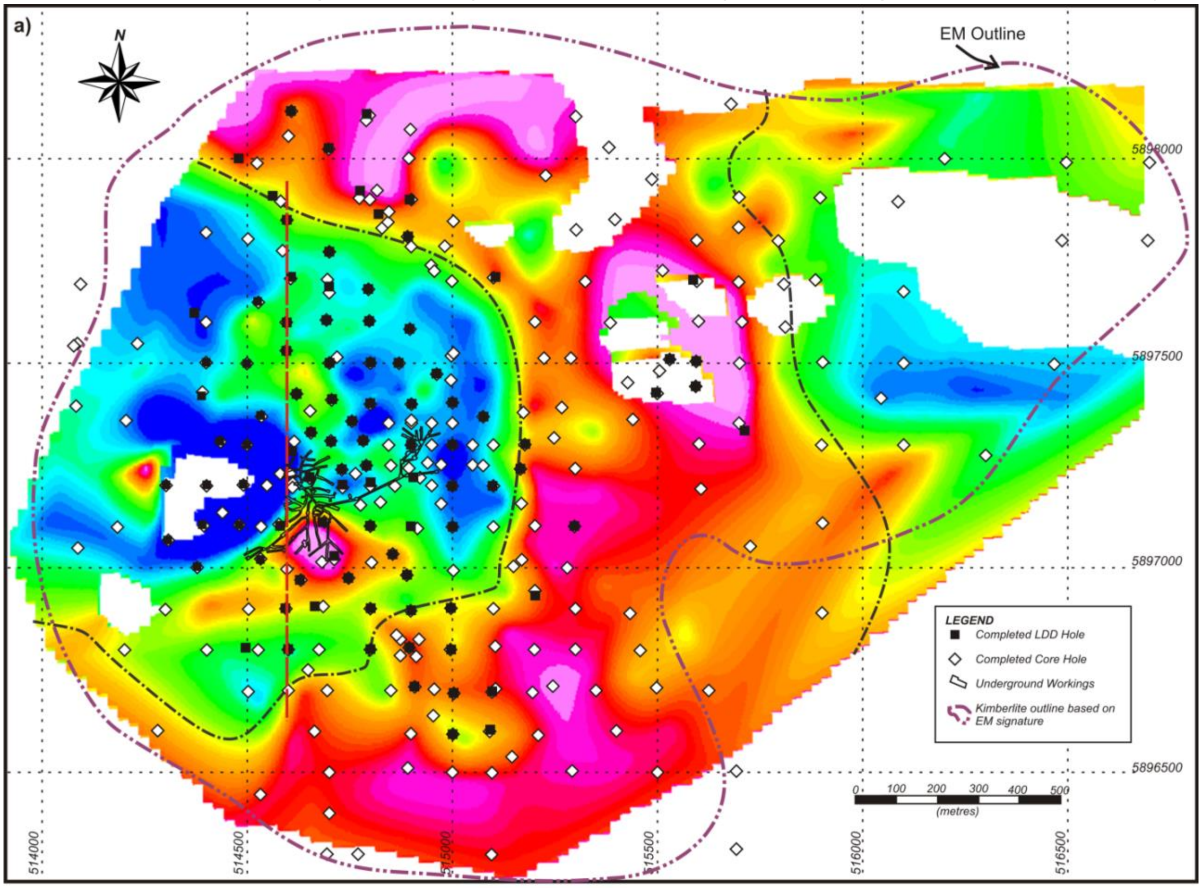
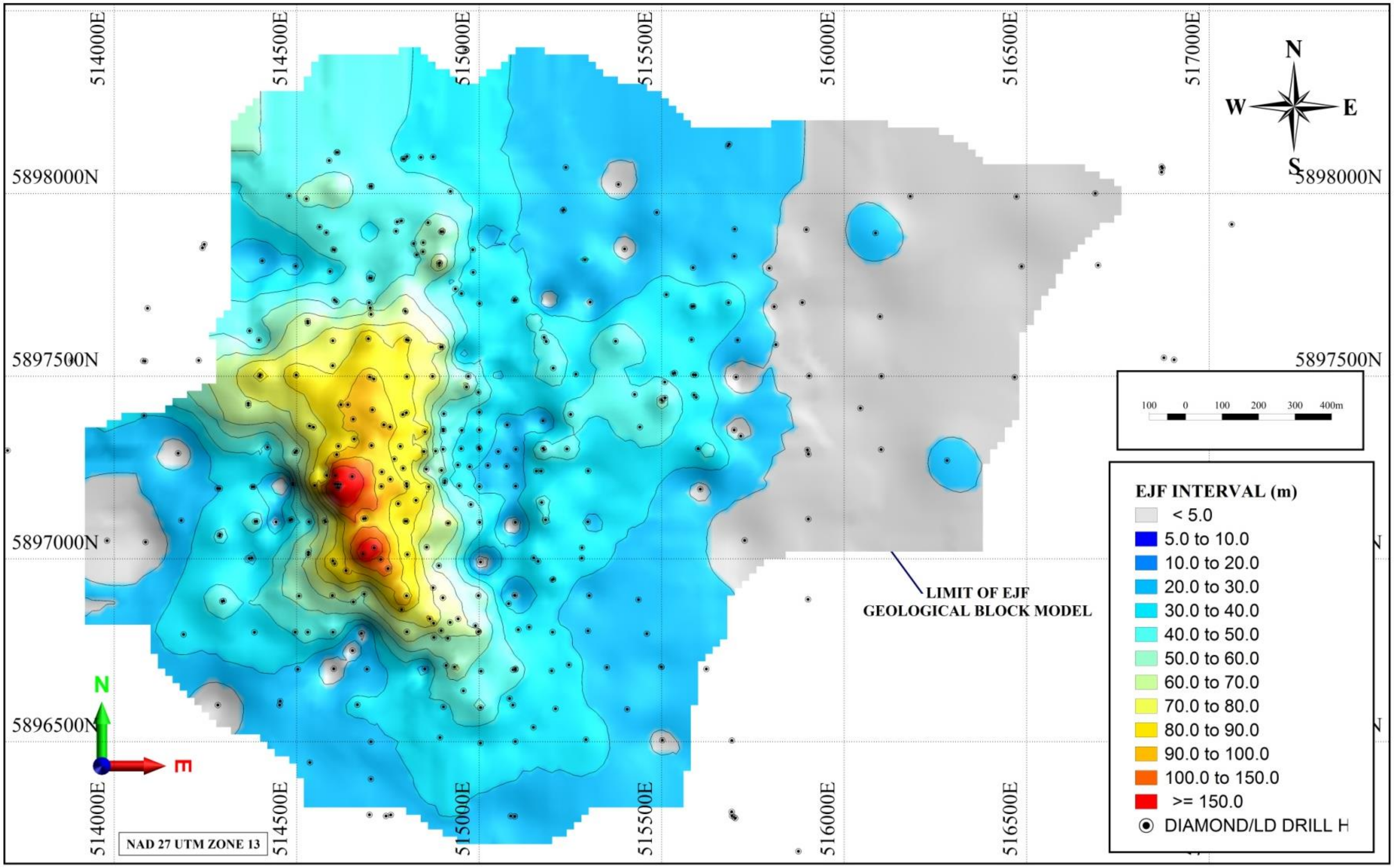


Figure 7-6 shows the EJF isopach map and highlights the thick deposits dominantly confined to the crater area of the kimberlite complex and attaining thicknesses in excess of 100 metres. Distal deposits occurring outside the crater are generally less than 30 metres in thickness.

FIGURE 7-6 ISOPACH MAP OF THE EJF KIMBERLITE INTERSECTIONS (CONTOUR INTERVAL: 10 M)



7.2.4 MID JOLI FOU KIMBERLITE ("MJF")

The MJF, a younger cross-cutting kimberlite eruptive phase, is aerially restricted to the western portion of the Star Kimberlite and appears to be infilling the remnant EJF crater area (Figure 7-3). This phase has erupted through the older EJF, as evidenced by rarely preserved autoliths of EJF within the MJF kimberlite. The MJF kimberlite has many similarities to the EJF, but has a distinct matrix-supported texture (Figure 7-4), fewer indicator minerals, is very poorly sorted and is generally massive to weakly normally graded.

7.2.5 LATE JOLI FOU KIMBERLITE ("LJF")

The LJF, the youngest kimberlite eruptive event, is confined to the northern and northeastern portion of the Star Kimberlite and generally forms a thin veneer (generally < 20 metres thick) deposited on older EJF and MJF (Figure 7-3). The LJF has many similarities to the MJF but is generally finer grained, more massive and has the ubiquitous presence of small (0.5 to 50 mm) shale clasts (Figure 7-4). The relationship between the MJF and LJF remains ambiguous; however, the LJF may represent a finer grained remobilized version of the MJF, which slumped or flowed into the marginal marine sedimentary environment incorporating poorly consolidated mudstone material. A sub-unit of the LJF, known as the LJF Slump, is identified based on the distinct increase in the shale clast content and the weak development of sub-horizontal bedding planes.

7.2.6 UPPER KIMBERLITIC SEDIMENTS/REWORKED VOLCANICLASTIC UNITS ("UKS/UKRVU")

Sitting directly on the Late Joli Fou-aged kimberlite, or locally within the overlying shale sequence, are two main kimberlitic sedimentary units (Figure 7-3) that mantle the central core of EJF and MJF kimberlite. Directly above the LJF, there is the typical development of kimberlitic sandstone/debris flows ("KDF"), with common to abundant shale blocks. In general, the shale blocks appear to be massive and in sharp contact with the host KDF. A distinct fining-up sequence of kimberlitic sandstone that grades into kimberlitic siltstone and finally a calcareous light grey to white siltstone rests directly on the KDF and is more rarely separated by 2 to 10 m thick beds of shale. Situated 6 to 8 m above the fining-up unit is another fine grained kimberlite sandstone horizon, which acts as a distinct marker horizon over most of the kimberlite. This surface is a close approximation to the Newcastle (Viking)-Westgate contact. A 1 to 3 cm heavy mineral lag is present in many core holes, 2 to 4 m below this bed, which may represent a transgressive surface of erosion (Zonneveld et al., 2004).

7.3. ORION SOUTH KIMBERLITE GEOLOGY AND MINERALIZATION

Like the Star Kimberlite, the Orion South Kimberlite was deposited within the Cretaceous sedimentary rocks of the lower Colorado and Mannville groups, which unconformably overlie Paleozoic limestones and dolomites. The glacial overburden thickness ranges from 97 to 121 m with an average of 105 m (Table 7-2). Portions of the Orion South Kimberlite have been emplaced contemporaneously with the deposition of the Mannville and lower Colorado sediments as seen in Figure 7-7. However, the majority of the Orion South Kimberlite is interpreted to have erupted through the Mannville and into the early parts of the lower Colorado Group sediments (Joli Fou Formation time). The local lower Colorado and Mannville interface is situated approximately 191 m below surface. The Mannville Group and Paleozoic interface lies approximately 347 m, as interpreted from drill holes. The Orion South Kimberlite is comprised of multiple eruptive units (or phases), each of which is texturally, mineralogically, physically and chemically distinct. Within the kimberlite, the units have cross-cutting relationships near conduits, but are stacked vertically within the volcanic edifice and crater / extra-crater deposits (Figure 7-7). Several conduits, feeding different units, have been identified on Orion South.

During Cantuar (Mannville Group) deposition, thought to be a time of continental fluvial-deltaic deposition (Zonneveld et al., 2004), kimberlite was deposited and reworked. Drilling indicates that the Cantuar-aged kimberlite deposits are generally thin (< 30 m thick) sheets occurring at multiple horizons within the Cantuar sediments. The bulk of the kimberlite deposits are confined within the marginal marine to marine sedimentary strata (Zonneveld et al., 2004) of the Upper Mannville Group (Pense Formation) and the lower Colorado Group (Joli Fou Formation). These kimberlite deposits are associated with the main crater excavation and crater fill. Proximal to the conduits and in close proximity to the base of the Mannville Group sandstone, the conduits flare (Scott-Smith et al., 1994) at a steep angle giving way to shallow angles near the margin of the craters.

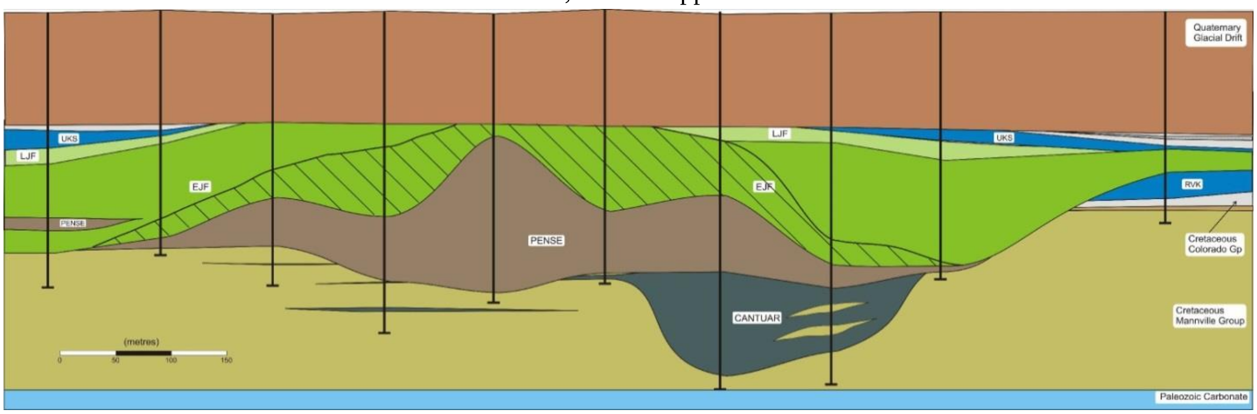
The Orion South Kimberlite consists of two distinct types of kimberlite: dominant eruptive kimberlite and subordinate kimberlitic sediments. The eruptive kimberlite deposits at the Orion South Kimberlite are sub-divided into six main kimberlite phases, each with distinctive physical and chemical properties which enable mapping and stratigraphic correlation of units as seen in Figure 7.7 (Harvey et al., 2009a & b):

1. Cantuar Kimberlite ("CPK")
2. Early Pense ("P3")
3. Pense Kimberlite ("Pense")
4. Early Joli Fou Kimberlite ("EJF")
5. Late Joli Fou Kimberlite ("LJF")

6. Viking Pyroclastic Kimberlite ("VPK")

FIGURE 7-7 ORION SOUTH KIMBERLITE WEST TO EAST CROSS-SECTION ALONG UTM LINE 5,900,600N

(Note: Breccia-Dominated (Xenoliths-Rich) Zone Demarcated By Cross-Hatching. Note: RVK = Resedimented Volcaniclastic Kimberlite; UKS = Upper Kimberlitic Sediment



7.3.1 CANTUAR KIMBERLITE ("CPK")

The earliest kimberlite deposit in Orion South, the Cantuar Kimberlite ("CPK"), consists of fine- to coarse-grained, massive to weakly normally graded, poorly sorted, matrix- to clast-supported, mixed olivine plus juvenile pyroclast-bearing lapilli tuff (Kjarsgaard et al., 2006 and 2009). These deposits are commonly pervasively carbonate cemented and are generally thin (0.5 to 5 m thick), although an intersection of 90 m has been drilled. Amoeboid juvenile pyroclasts, which locally display moulded boundaries, are common in the unit and rarely contain up to 10 % vesicles. U-Pb dating on perovskite gave an age of ca. 106 Ma for the Cantuar Kimberlite on Orion South (Kjarsgaard et al., 2006 and 2009).

7.3.2 EARLY PENSE ("P3") KIMBERLITE

The P3 or Early Pense is a newly identified but volumetrically insignificant pyroclastic and reworked volcanoclastic kimberlite unit that underlies the Pense kimberlite in the South Western part of Orion South. This unit consists of a normally graded, poorly sorted, olivine enriched, clast supported succession of 1-5m beds with coarse grained bases and fine to very fine grained often reworked tops. The olivine texture of the P3 has a bimodal distribution including both phenocrysts and macrocrysts which are more prevalent in the fine grained tops and coarse bases respectively. This unit closely resembles bedding and olivine concentrations observed within the Early Joli Fou pyroclastic kimberlite but contains more abundant juvenile pyroclasts which occur chiefly as round or amoeboid magma clasts but is also observed as thin selvages encompassing (armoured) or partially encompassing (curvilinear) both crustal xenoliths and mantle xenocrysts. Kimberlite breccia beds are observable within the P3 kimberlite adjacent to the basal stratigraphic contact, but distinct correlative beds have not been identified. This unit is constrained to the south west region of the Orion South kimberlite and underlies the Pense Volcaniclastic Kimberlite and additional drilling is required to identify the units sub lateral extent and relationships to surrounding kimberlite and sedimentary units. This unit appears to be a precursor to the major Pense eruptive sequence but further drilling in the south-west area of the Orion South Kimberlite is required to fully understand its significance and possible source.

7.3.3 PENSE KIMBERLITE ("PENSE")

The first major eruptive event on Orion South resulted in kimberlite being deposited onto Pense Formation sediments. The crater base is cut into the pre-eruptive paleosurface and cuts into Mannville Group sediments. The Pense Kimberlite is a fine to locally medium-grained, matrix-rich, very poorly sorted, massive to weakly-bedded volcaniclastic tuff (Figure 7-8) that is remarkably consistent both laterally and vertically. Xenoliths and juvenile pyroclasts are very rare within the Pense kimberlite. Locally, distal deposits exhibit thin (0.1 to 0.5 m) planar bedding. The upper surface exhibits considerable and variable relief relative to the Pense paleosurface defining a distinct mound-like morphology that may represent the remnant of a Pense pyroclastic cone and surrounding tephra ring (Figure 7-9). The thickest core drill interval intersected 220 m of Pense kimberlite while it thins to near 0 m over a distance of 700 m laterally.

FIGURE 7-8 EXAMPLE OF TYPICAL MATRIX-RICH PENSE KIMBERLITE WITH A MORE ALTERED (LIGHTER) DOMAIN AND A LESS ALTERED (DARKER) DOMAIN (FROM 141-06-071C: 273.55 M) (FROM HARVEY, 2011)

7.3.4 EARLY JOLI FOU KIMBERLITE ("EJF")

Distal deposits of the volumetrically dominant EJF were laid down directly on Joli Fou Formation sediments (Figure 7-7). Proximal deposits were deposited on Pense and Mannville Group sediments, due to erosion down cutting of the pre-eruptive paleosurface during initiation of the EJF eruptive cycle. There are two centres of thick EJF accumulation in the northwest and the southeast sections of the Orion South Kimberlite (Figure 7-10). The depocentre in the southeast section of the Orion South Kimberlite is coincident with a spatially restricted feeder vent that cross-cuts the older Pense, while in the northwest there is a considerable thickening of kimberlite and a deepening of the basal contact, which suggests a postulated eruptive vent. In the centre of the Orion South body, the EJF thins to 0 metres and is coincident with the central Pense Kimberlite high.

The EJF is fine- to coarse-grained, olivine-rich, poorly- to moderately-sorted, volcaniclastic tuff to tuff breccias (Figure 7-11). The EJF kimberlite consists of multiple normally graded beds with coarser bases and finer grained tops that collectively form a fining upwards sequence. Individual beds are generally 0.5 to 5 m thick.

FIGURE 7-9 PENSE KIMBERLITE ISOPACH MAP (CONTOUR INTERVAL: 10 M)

(Note the central thick accumulation area associated with both a broad shallow crater and a positive relief mound).

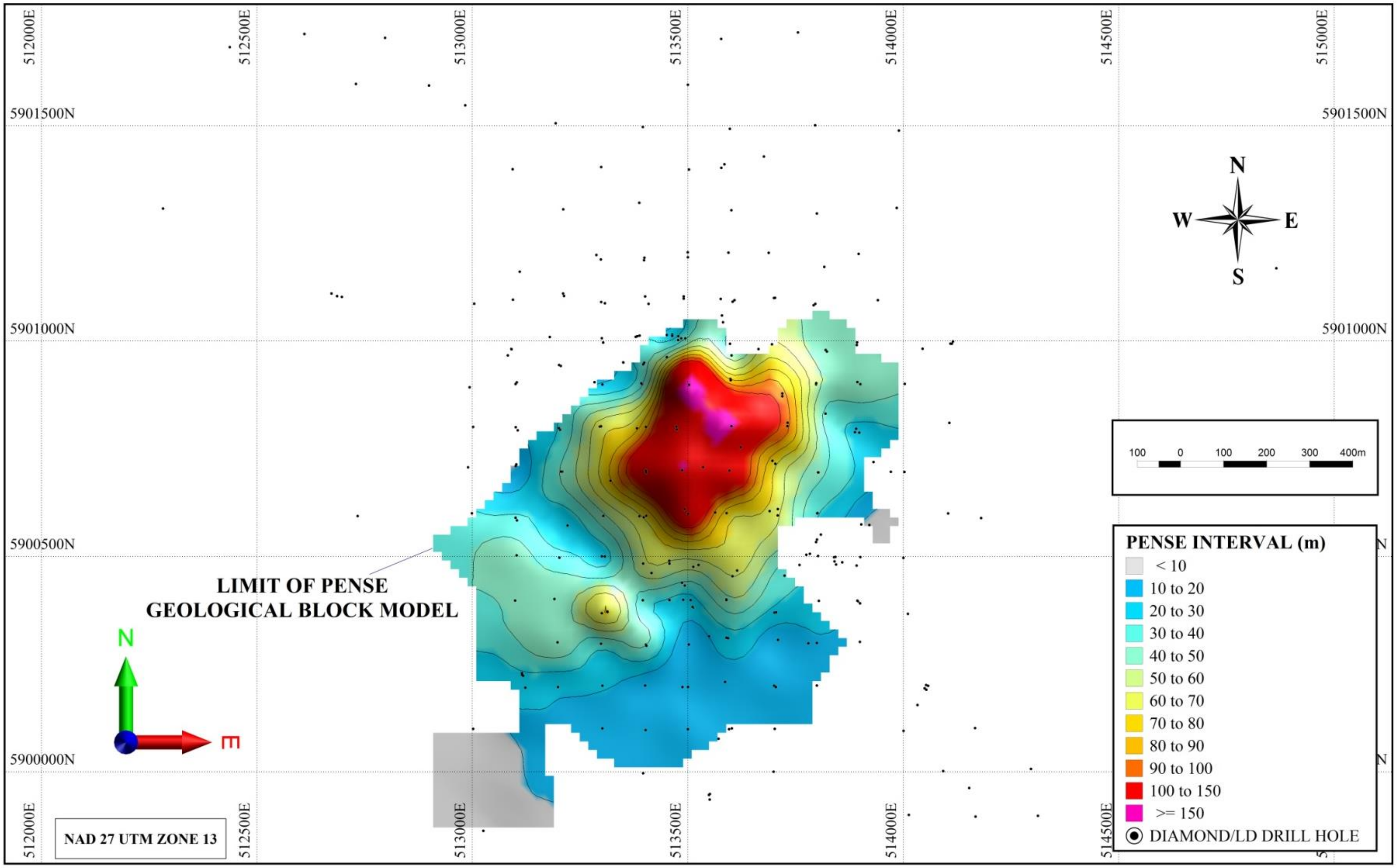


FIGURE 7-10 EJF KIMBERLITE ISOPACH MAP (CONTOUR INTERVAL 10M)

(Note the thick EJF deposits mantling the central Pense mound and the southeast and northwest depocentres).

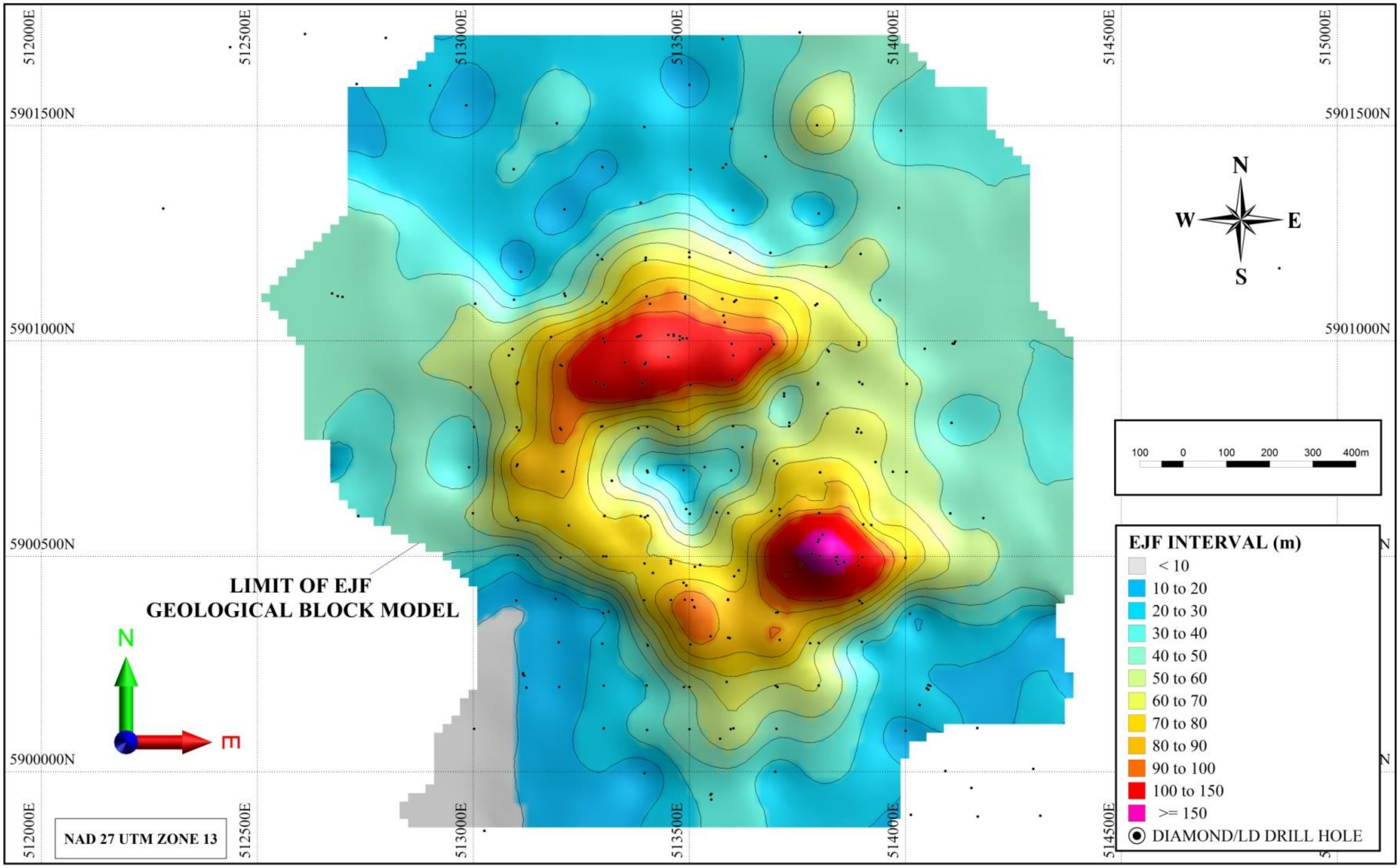


FIGURE 7-11 EXAMPLE OF A NORMALLY GRADED EJF BED WITH A COARSER XENOLITH-RICH BASE FINING-UP TO A VERY FINE-GRAINED XENOLITH-POOR TOP (FROM 140-06-058C: FROM 132.01 TO 136.79 M) (FROM HARVEY, 2011)

Xenolith-rich tuff breccias are common in the EJF and are found in two distinct geometric forms within the volcaniclastics. The first is a basal xenoliths-rich kimberlite up to 60 m thick that is thickest along the periphery of the Pense central mound and exhibits a higher abundance of Precambrian basement xenoliths relative to Paleozoic carbonate xenoliths. Pense autoliths are relatively common near the base of the xenoliths-rich series (Figure 7-12). The second type consists of 0.5 to 10 m thick xenoliths-rich horizons, which form the base of normally graded beds that fine upwards into olivine-rich volcaniclastic tuff (Figure 7-11). These xenolith-rich basal horizons are more common in the lower part of the EJF sequence. Towards the top of the EJF sequence, and in distal areas, kimberlite deposits are normally graded and typically do not have these xenoliths-rich basal horizons (Kjarsgaard et al., 2006, 2009).

FIGURE 7-12 EXAMPLE OF PENSE AUTOLITHS IN THE LOWER EJF

(Photo (close to the Pense-EJF contact) has common Pense autoliths with variably diffuse contacts within the EJF matrix (from 140-06-065 147.75 m) (from Harvey, 2011)).

In contrast to the Cantuar and Pense units, the EJF juvenile pyroclast population is dominated by cored juvenile pyroclasts, which are generally round to ovoid in shape. The pyroclasts are mostly cored with olivine macrocrysts, and more rarely, with country rock xenoliths and mantle-derived xenocrysts. Multi-rimmed juvenile pyroclasts are common within this unit. A U-Pb age of 99.4 Ma has been generated for the EJF at Orion South (Kjarsgaard et al., 2006, 2009).

7.3.5 LATE JOLI FOU KIMBERLITE ("LJF")

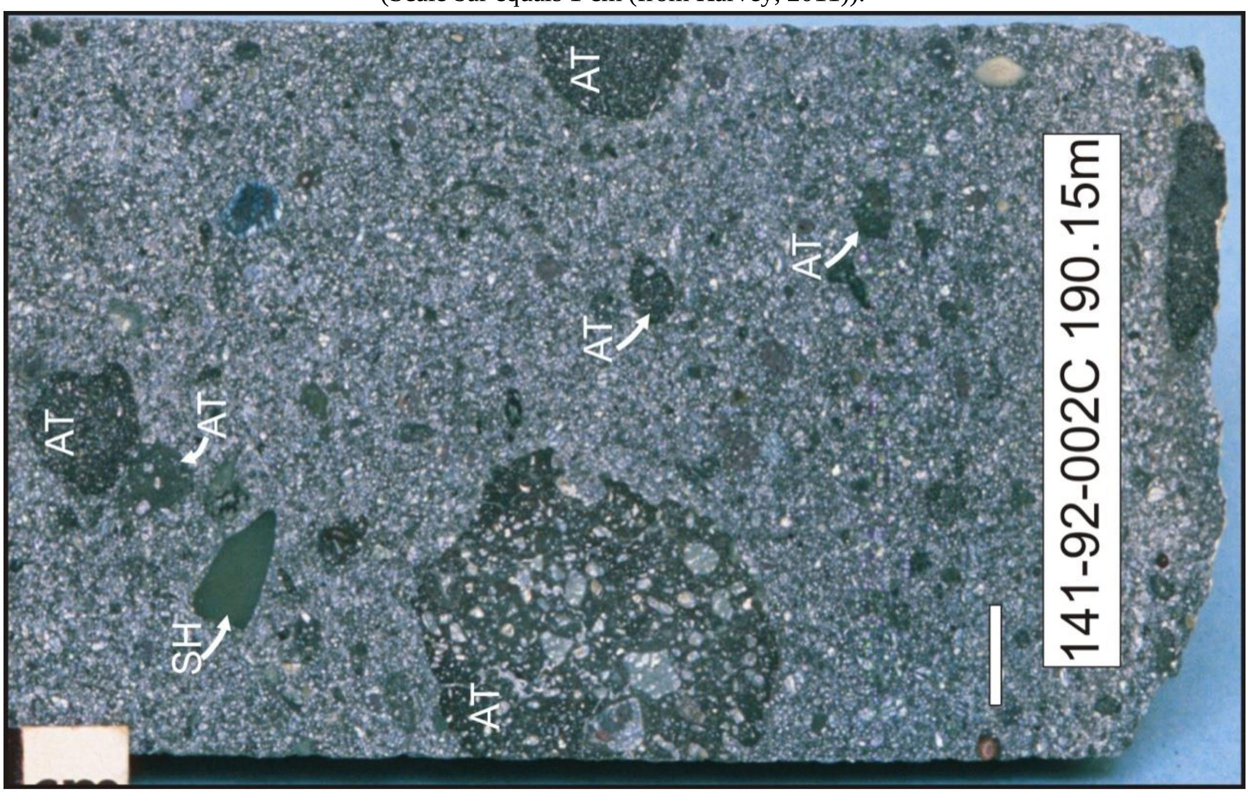
The LJF is a very fine- to fine-grained, moderately sorted, massive to weakly planar bedded, olivine-rich volcaniclastic kimberlite that cross-cuts previously emplaced kimberlite units and directly overlies EJF deposits. The LJF tuffs are olivine macrocryst-poor and phenocryst-rich, while juvenile pyroclasts are rare to absent. Proximal LJF deposits are thick, but they thin over a short lateral distance. Similar to the LJF on the Star Kimberlite, the country rock xenolith population is Joli Fou Formation shale clast-dominated relative to basement and carbonate clasts. Thin (1 to 20 cm) shale clast-enriched beds are common. Fluid escape structures have also been identified in the LJF.

7.3.6 VIKING KIMBERLITE ("VPK")

The Viking Kimberlite ("VPK") is the youngest primary kimberlite unit deposited on Orion South, and is age-equivalent to the Newcastle (Viking) Formation siltstone locally deposited between the Joli Fou and Westgate Formation shale deposits. The Viking Kimberlite unit is restricted to the southeast and northwest parts of the Orion South Kimberlite as fine- to medium-grained, poorly to moderately sorted, moderate to well bedded volcaniclastic kimberlite. The Viking kimberlitic tuffs are relatively juvenile pyroclast-rich, are basement xenolith-poor and relatively EJF autolith-rich (Figure 7-13). The unit commonly has carbonate cement giving it a diagnostic texture.

FIGURE 7-13 VARIABLY SIZED EJF AUTOLITHS WITHIN VIKING KIMBERLITE FROM HOLE 141-92-002C AT A DEPTH OF 190.15 M

(Scale bar equals 1 cm (from Harvey, 2011)).



7.3.7 UPPER KIMBERLITIC SEDIMENTS ("UKS/KSST")

Minor volumes of kimberlite deposited as epiclastic sediment and known as the Upper

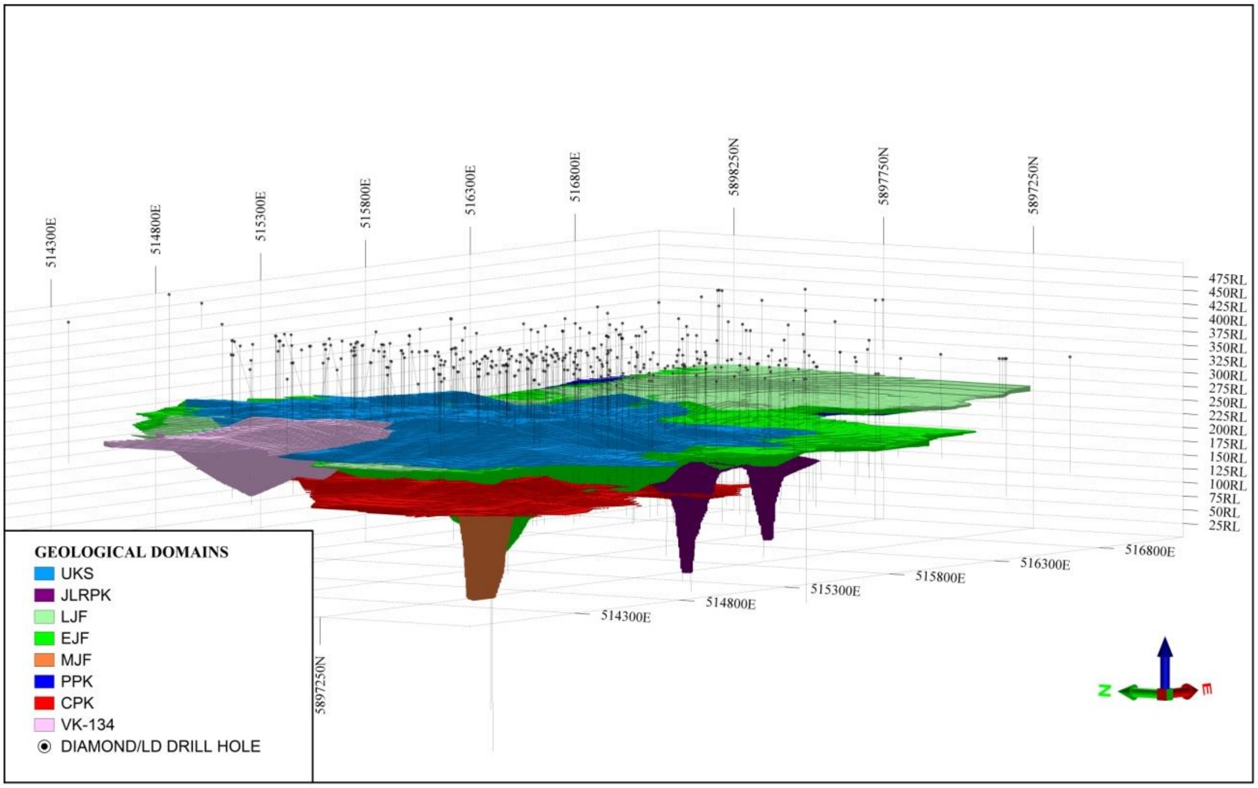
Kimberlitic Sediments ("UKS") or Kimberlitic Silt/Sandstones ("KSST") are present on the upper periphery of the Orion South Kimberlite deposit (Figure 7-7). Thicker UKS and KSST deposits occur on the margins of the Orion South Kimberlite complex but thin towards the centre of the body. These deposits vary from olivine-rich kimberlitic sandstone through to weakly kimberlitic, very fine-grained siltstones that are commonly interbedded with Joli Fou Formation shale. The thickest portions of these kimberlite deposits are on the northwest margin of the Orion South complex where they attain thicknesses up to 20 m but are generally limited to 2 to 9 m in thickness. Cross-bedding, shell fragments, ripples and wood fragments were identified in core holes and occur locally within these kimberlitic units.

7.4. GEOLOGICAL MODEL

7.4.1 STAR GEOLOGICAL MODEL

A 3-D geological model for the Star Kimberlite was created from surface and underground drill information (Figure 7-14). Limited deep core drilling restricts the 3-D modelling of the Star Kimberlite to the kimberlite above 0 masl. The 3-D geological model estimates that the Star Kimberlite (including both the Star and Star West kimberlite) contains a total of approximately 290.2 Mt of kimberlite in the LJF, MJF, EJF, PPK and CPK with a further 100.9 Mt of UKS, JLRPK and VK-134.

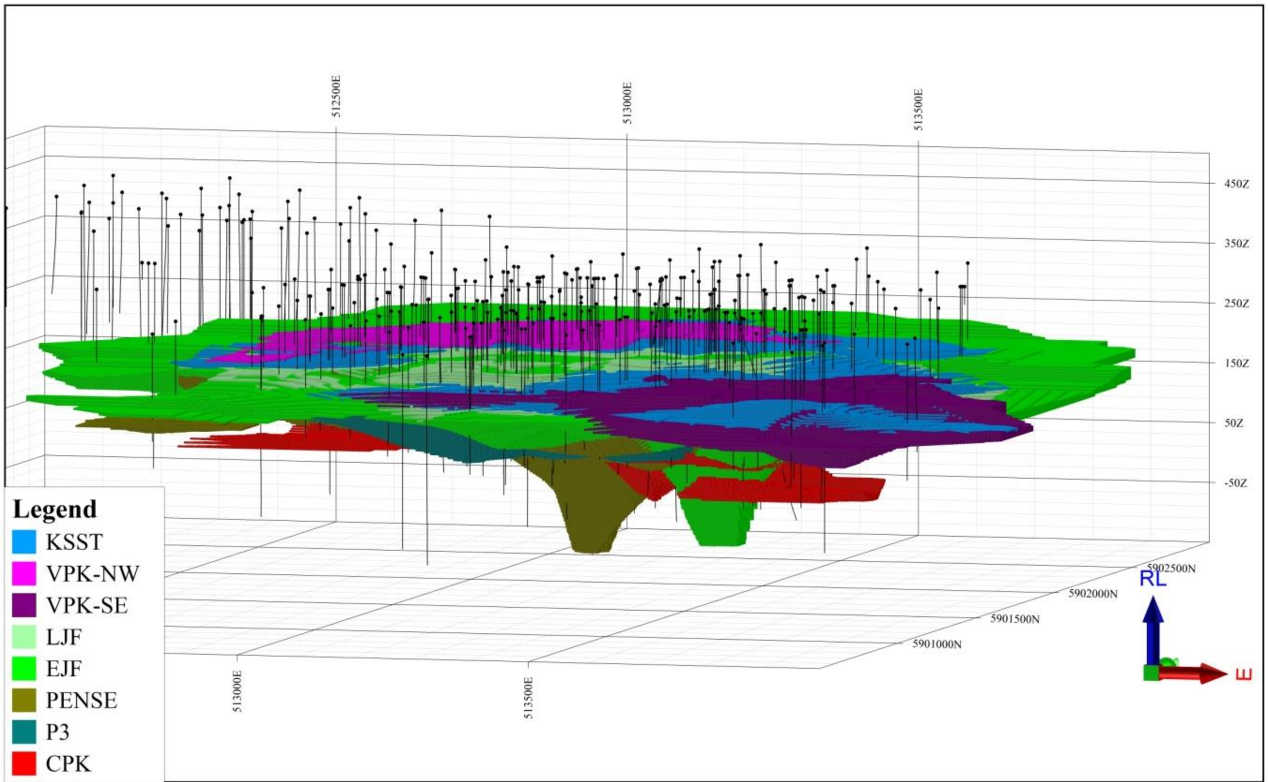
FIGURE 7-14 STAR KIMBERLITE 3-D GEOLOGICAL MODEL (LOOKING NORTH EAST)



7.4.2 ORION SOUTH GEOLOGICAL MODEL

A 3-D geological model for the Orion South Kimberlite was created from surface and underground drill information (Figure 7-15). Limited deep core drilling restricts the 3-D modelling of the Orion South Kimberlite to the kimberlite above 0 masl. The 3-D geological model estimates that the Orion South Kimberlite contains a total of approximately 318 Mt of kimberlite in the EJF and Pense with a further 44.3 Mt of KSST, VPK, LJF, P3 and CPK.

FIGURE 7-15 3D VIEW OF THE ORION SOUTH KIMBERLITE GEOLOGICAL MODEL LOOKING NORTH WEST



8. DEPOSIT TYPES

8.1. KIMBERLITE HOSTED DIAMOND DEPOSITS

Primary diamond deposits such as kimberlites and lamproites have produced over 50 % of the world's diamonds, whereas the remaining 50 % are derived from recent to ancient placer deposits that have formed from the erosion of kimberlite and / or lamproite. Notably, it has been established by the scientific community that diamonds are not genetically related to kimberlite or lamproite but that kimberlite, lamproite and other deeply derived magmas serve as a transport mechanism for bringing diamonds to surface. The diamonds form at the same level as, or shallower than, the kimberlite magmas within the mantle and as the kimberlite magma ascends towards the surface they incorporate foreign fragments (termed mantle xenoliths) of the material they pass through. Those xenoliths commonly disaggregate into individual mineral constituents (termed xenocrysts). These xenocrysts include diamonds.

Clifford (1966) and Janse (1994) have stated that a majority of economic diamondiferous kimberlites occur in stable Archaean age cratonic rocks that have not undergone thermal events or deformation since 2.5 Ga. Such Archaean-aged cratons include the Kaapvaal, Congo and West African Cratons in Africa, Superior and Slave Provinces in Canada, East European Craton (Russia, Finland, etc.), and the West, North and South Australia Cratons. The only exceptions, to date, are the Argyle and Ellendale lamproite mines of Australia, which occur in Proterozoic aged remobilized cratonic zones.

To date, over 6,000 known kimberlite and lamproite occurrences have been discovered in the world, of which over 1,000 are diamondiferous. Economic diamond-bearing kimberlite and / or lamproite pipes range from less than 0.4 ha to 146 ha in footprint size, with the maximum size being greater than 200 ha (i.e. Catoca, Angola). Economic kimberlite diamond grades can range from 1.3 cpht to 600 cpht.

Kimberlite remains the principal source of primary diamond despite the discovery of high grade deposits in lamproite. Mineralogical and Nd-Sr isotopic studies have shown that two varieties of kimberlite exist (Mitchell, 1986):

- **Group 1:** or olivine-rich monticellite-serpentine-calcite kimberlites; and
- **Group 2:** or micaceous kimberlites (which predominantly occur in southern Africa).

With a few exceptions, such as the Finsch Kimberlite Mine in South Africa and the Dokolwayo Kimberlite Mine in Swaziland, most of the well known diamondiferous kimberlites in southern Africa and elsewhere are Group 1 kimberlites, including those in Canada and, in particular, FalC.

In contrast, Group 2 kimberlites are confined to southern Africa.

Currently, three textural-genetic groups of kimberlite are recognized in Group 1 kimberlites, each being associated with a particular style of magmatic activity (Mitchell, 1986). These are:

- crater facies
- diatreme facies
- hypabyssal facies.

Rocks belonging to each facies differ in their petrology and primary mineralogy, but may contain similar xenocrystal and megacrystal assemblages (Mitchell, 1986).

8.2. FORT À LA CORNE KIMBERLITE MODEL

Unlike the idealized South African kimberlite model (Hawthorne, 1975), the majority of the FalC kimberlites are mainly shallow bowl-shaped kimberlites which have kimberlite footprints ranging up to 2,000 m wide and extending to depths ranging from approximately 100 m to greater than 700 m.

The limited deep drilling, however, precludes any interpretation of the shape of the kimberlites below about 450 m. Therefore, at depth, the FalC kimberlites may, in fact, resemble the idealized South African model.

FalC kimberlites were emplaced into poorly consolidated Cretaceous-aged clastic and marine sedimentary rocks. They are generally interpreted to be in the form of stacked, sub-horizontal lenses or shallow zones of crater facies material with associated pyroclastic flow and fall deposits of large lateral extent. The kimberlite phases are classified entirely as crater-facies pyroclastic kimberlite, although a number of kimberlite units may be distinguished according to their grain size, style of emplacement, primary and chemical alteration and the abundance and presence of olivine macrocrysts.

9. EXPLORATION

9.1. STAR KIMBERLITE EXPLORATION

An extensive overview of the exploration activities on the Star Diamond Project is given in Ewert et al. (2009a), Eggleston et al. (2008) and Leroux (2008a) and is summarized in Table 9-1.

TABLE 9-1 SUMMARY OF EXPLORATION ACTIVITIES ON THE STAR KIMBERLITE DEPOSIT, 1996-2010

Year	Exploration Activity
1996–1998	-Aeromagnetic surveys -Diamond drilling (11 holes) -Microdiamond analysis
2000	-Diamond drilling (16 holes) -Microdiamond analysis
2000–2001	-Diamond drilling (7 holes) -Microdiamond analysis -Airborne geophysics re-interpretation
2001	-Petrographic studies -Diamond drilling (7 holes) -Microdiamond analysis -Large diameter (24 inch) reverse circulation (RC) drill program (Star 31 RC) -Sample processing (split sample: De Beers Canada's Grande Prairie Processing Facility; Lakefield Research)
2002–2003	-Bulk rock and multi-element lithogeochemistry work (Targeted Geoscience Initiative or TGI) -2-D and 3-D seismic surveys -TGI borehole geophysics survey -TGI geochronology -Petrographic studies -Borehole collar surveying -Detailed core logging and re-interpretation studies -Initial bulk sampling work program (permitting, pilot hole drilling, etc.)
2003–2004	-Regional airborne GeoTEM survey -Diamond drilling (8 holes)
2003–2005	-Underground bulk sampling program - site set-up - Process Plant construction and commissioning - shaft sinking, lateral drift developments 175 m and 235 m levels - underground geological mapping and surveying - 16,000 m underground diamond drilling and sample processing between 2003-2006 -Bulk sampling results of Phase 1 program -Diamond valuation of 3,050 carat parcel

Year	Exploration Activity
1996–1998	-Aeromagnetic surveys -Diamond drilling (11 holes) -Microdiamond analysis
2000	-Diamond drilling (16 holes) -Microdiamond analysis
2005– 2007	-Underground bulk sampling program - lateral drift development 235 m and 215 m levels - underground geological mapping and surveying - 16,000 m underground diamond drilling and sample processing between 2003-2006 -Bulk sampling results of Phase 2 and 3 programs -Diamond valuation of 5,950 ct parcel -Airborne geophysical and laser surveys -233 exploration, geotechnical and hydrogeological core holes and 95 Large-diameter mini-bulk sample holes -45,000 m of surface core drilling
2008-2010	-Completion of 8 LDD holes -Geotechnical investigation utilizing cone penetrometer

9.2. Orion South Kimberlite Exploration

A summary of the 1988-2010 exploration work completed on the Orion South Kimberlite deposit is shown in Table 9-2. An extensive overview of the exploration activities on the Orion South Diamond Project is given in Ewert et al. (2009b) and Leroux (2008b).

Table 9-2 Summary of Exploration Activities on the Orion South Kimberlite Deposit, 1988-2010

Year	Exploration Activity
1988-1999	-Various geophysical surveys (aeromagnetic- ground surveys) -Core and rotary drilling -Microdiamond analysis
2000	-Geophysical surveys (aeromagnetic- ground surveys) -Core and LDD drilling -Microdiamond analysis
2001	-Core drilling -LDD and mini-bulk sampling -Macrodiamond and microdiamond recovery and analysis -Microdiamond breakage study

2002	-Geophysical surveys -Core drilling -LDD and mini-bulk sampling -Macrodiamond and microdiamond recovery and analysis -Grade forecasts, revenue models
2003	-Airborne and ground gravity geophysical surveys -Core drilling -Geological modelling -Microdiamond sampling and analysis
2004	-Geological modelling and grade forecasts -Core drilling
2005	-Geological modelling and grade forecasts -Core drilling -LDD and mini-bulk sampling
2006	-Regional Light Detection and Ranging System (LIDAR) survey completed over FalC area -Geological modelling -Core drilling
2007	-Geological modelling -Core drilling -LDD and mini-bulk sampling -Initiation of Orion South Underground Bulk Sample Program
2008-2009	-Geological modelling -Core drilling -LDD and mini-bulk sampling -Orion South Underground Bulk Sample Program
2010	-Core drilling, Mud rotary drilling -Cone penetrometer testing -Prototype dewatering well test

9.3. ORION CENTRE, ORION NORTH AND TAURUS KIMBERLITE CLUSTERS

A summary of the exploration work completed on the Orion Centre, Orion North and Taurus Kimberlite Clusters is shown in Table 9-3 along with the other kimberlite bodies drilled to date. An extensive overview of the exploration activities on the Orion Centre, Orion North and Taurus Kimberlite Clusters is given in Harvey (2009).

TABLE 9-3 SUMMARY OF EXPLORATION OF REMAINDER OF FALC JV

Kimberlite Body	Project Year	Number of Holes	Hole Type	Meters Drilled
Taurus Kimberlite Cluster				
118	1991	2	RCA	401.00
118	2008	5	LDD	1158.06
122	1992-2004	19	HQ	4156.20

122	1989-1995	6	RCA	1320.60
122	2000	3	LDD 24	732.71
122	2004	5	LDD 36	927.99
122	2008	5	LDD 47.2	1060.49
150	1992-2004	17	PQ/HQ/NQ	3556.00
150	2005	1	HYDRO	249.00
150	1991-1994	3	RCA	741.00
150	2001	1	LDD 24	262.03
150	2008	5	LDD 48	1059.33
Orion North Kimberlite Cluster				
120	1991-2006	49	PQ/HQ	12235.60
120	2006	1	HYDRO	109.55
120	1990-1993	16	RCA	3678.30
120	2007-2008	16	LDD	3762.54
147	2004-2006	80	PQ/HQ/NQ	16966.89
147	1991-1995	3	RCA	633.00
147	1999	2	LDD 12	463.20
147	2006	6	LDD 48	1295.08
148	1991-2006	84	PQ/HQ/NQ	18798.28
148	2006	1	HYDRO	95.35
148	1991-1993	7	RCA	1522.50
148	2006-2007	9	LDD 48	1956.27
220	1996-1999	4	RCA	804.45
220	2006	11	PQ	2539.45
Orion Centre				
144	1996	1	RCA	322.17
145	1992-2006	42	PQ/HQ	9385.79
145	1994-1996	3	RCA	811.53
219	1992-2006	33	PQ/HQ	7451.68
219	1989-1994	3	RCA	672.40
Other Kimberlites				
101	1992-2005	7	PQ/HQ	1645.70
116	1995-2005	5	PQ/HQ	1167.00
116	1995	1	RCA	262.00
119	1992-2005	7	HQ	1486.90
119	1989-1992	2	RCA	411.50
118	1992-2005	13	HQ	2980.00
121	1992-2004	8	PQ/HQ	1890.50
121	1989-1992	5	RCA	1094.00

123	1993-2005	11	HQ	2258.00
123	1993-1996	2	RCA	380.11
126	1995	1	RCA	301.00
133	2005	9	HQ	2014.35
133	1995	1	RCA	351.50
134	2005	5	HQ	1134.00
134	1996	1	RCA	210.16
135	2005	6	HQ	1581.40
135	1996	1	RCA	261.82
151	1991	1	RCA	228.00
152	1993-2005	7	HQ	1551.00
154	1996	1	RCA	244.14
155	1996	1	RCA	267.31
156	1996	1	RCA	303.89
157	1996	1	RCA	303.89
158	2005	11	HQ	2642.00
158	1991-19996	2	RCA	458.45
159	1996	1	RCA	259.08
160	1996	1	RCA	294.13
161	1996	1	RCA	259.69
162	1993	1	HQ	215.00
162	1993	1	RCA	213.40
163	2005	5	HQ	1194.00
163	1995	1	RCA	307.00
164	1996	1	RCA	227.68
165	1996	1	RCA	245.36
166	1996	1	RCA	210.46
167	1993	1	HQ	215.00
167	1993	1	RCA	201.20
168	1994	1	RCA	291.00
169	1990-1993	9	RCA	2047.50
169	1992-1993	4	PQ/HQ	972.50
170	1996	1	RCA	284.68
174	1992-1993	3	HQ	658.50
174	1993	3	RCA	704.00
175	1993	1	HQ	250.00
175	1993	1	RCA	212.80
176	1997	1	HQ	300.00
176	1996	1	RCA	306.00

177	1996	1	RCA	234.00
216	2005	13	HQ	2910.00
216	1990	2	RCA	398.00
218	2005	6	HQ	1605.00
218	1994	1	RCA	256.00
221	2004	3	HQ	678.00
221	1996	1	RCA	299.01
223	2005	3	HQ/NQ	585.00
223	1996	1	RCA	209.70
226	1993	1	HQ	275.00
226	1993	1	RCA	231.70
265	1996	1	RCA	175.87
269	1996	1	RCA	144.00
284	2004	1	HQ	162.00
285	2004	1	HQ	195.00
291	2004	1	HQ	160.00
300	2004	1	HQ	162.00
326	1994	1	RCA	252.00
426	1990	3	RCA	750.00
Snowdon Kimberlite Cluster				
601	1996-2012	2	HQ/NQ	370.53
601	1989	1	RCA	128.00
602	1992-2012	2	HQ/NQ	432.45
603	1994	1	RCA	300.00
604	1993	1	HQ	200.00
605	1997	1	HQ	234.10
606	1992-2015	2	HQ/NQ	481.26
611	1990	1	RCA	198.00
612	1997	1	HQ	164.60
613	1996	1	HQ	120.00
613	1989	1	RCA	121.00
614	1994-1996	2	RCA	664.00
614	2015	1	NQ	261.21

Additional summaries on further exploration work (such as geophysics/microdiamond analysis and other geological studies) conducted on the remained of the FalC JV can be found in:

- Jellicoe, B. (2005) Summary of Exploration and Evaluation of the Fort à la Corne Kimberlite Field, East-Central Saskatchewan report prepared by Brent C. Jellicoe Ltd.

for Shore Gold, effective date 9 November 2005.

- Leroux, D, (2008b): Technical Report on the Fort a la Corne Joint Venture Diamond Exploration Project, Fort a la Corne Area Saskatchewan, Canada; report prepared by A.C.A. Howe International Ltd. for Kensington Resources Ltd., effective date 20 March 2008.

- Harvey, S. (2009b): Technical Report on the Fort à la Corne Joint Venture Diamond Exploration Project, Fort à la Corne Area, Saskatchewan, Canada. NI 43-101 report prepared by Shore Gold Inc. for Kensington Resources Ltd., March 19, 2009.

- Shore Gold Inc., (2009a): News Release May 19 2009: Fort à la Corne Joint Venture: Orion North K120 Kimberlite Large Diameter Drilling Diamond Grade Results.

- Shore Gold Inc., (2009b) News Release June 16, 2009: Fort à la Corne Joint Venture: Orion North K147 and K148 Large Diameter Drilling Diamond Grade Results.

10. DRILLING

10.1. STAR KIMBERLITE DRILLING

Between 1996 and 2010, 637 surface and underground diamond drill holes, reverse circulation ("RC") and LDD-RC holes totalling 108,306 m were drilled on the Star Kimberlite deposit. Table 10-1 outlines the drill programs for all years. In terms of geological data acquisition, variably-sized core drilling programs resulted in the completion of 321 surface core holes totalling 70,659 metres. Drilling was largely completed on a 100 metre grid on the thicker (approximately 50 metres of kimberlite) portion of the complex and a 200 metre grid on the thinner periphery (Figure 10-1).

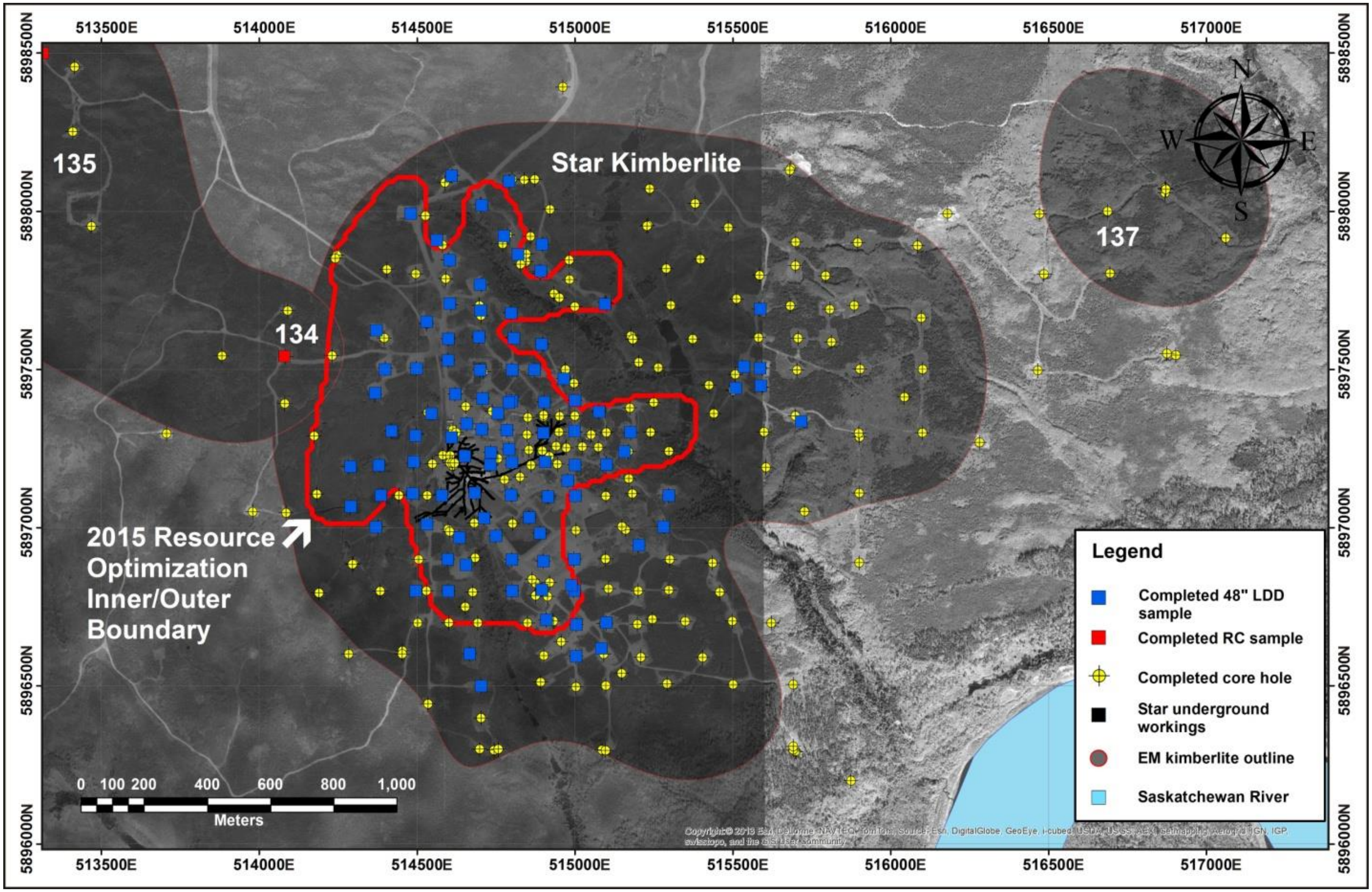
TABLE 10-1 SUMMARY OF SURFACE AND UNDERGROUND DRILLING ON THE STAR KIMBERLITE DEPOSIT 1995-2010

Year	No. Of Drill Holes	Metres	Drill Type	Location	Drilling Program
1996	1	210.2	RCA	Surface	RCA hole completed on 134 anomaly.
1996	5	1,518.0	NQ-HQ	Surface	Three NQ vertical drill holes drilled on the Star Kimberlite deposit totalling 812 m drilled to test four magnetic anomalies (FalC 96-2 to FalC 96-4). Two holes completed on anomaly 137.
1997	2	450.6	PQ	Surface	Two vertical drill holes drilled, totalling 450.60 m, close to FalC 96-3 to confirm presence of four stacked kimberlitic zones.
2000	25	5,686.1	NQ/PQ	Surface	Star 1 to 24 drilled, consisting of 24 vertical NQ drill holes (one abandoned) and one vertical PQ drill hole. Drilled to test lateral extent off kimberlite, locate feeder zone and clarify geological interpretation.
2001	8	2,140.5	NQ/PQ	Surface	Star 24 to 30 drilled, 7 vertical NQ drill holes, totalling 1,900.17 m and intersecting 859.6 m of kimberlitic material. Drilled for exploration as well as delineating pipe geometry and clarification of geological interpretation. PQ-sized Star 32 drilled as pilot hole for bulk sample shaft.
2001	1	295.6	LDD	Surface	24-inch Large diameter RC hole Star 31RC drilled as a mini-bulk sample, totalling 295.55 m.
2002	9	432.5	Auger	Surface	9 geotechnical holes in the shaft location.
2003	1	221.4	NQ	Surface	Drilled to test magnetic anomalies and further delineate geometry.
2003	1	121.9	BQ	Underground	Star 33 was a shaft extension drill hole to test kimberlite at depth of shaft.
2004	7	1,517.8	NQ	Surface	Drilled to test magnetic anomalies and further delineate geometry.
2004	8	449.26	BQ	Underground	Drilled to test kimberlite in proposed lateral drifts and delineate kimberlite morphology.
2005	5	1,134.0	HQ	Surface	5 holes drilled to define 134 kimberlite.
2005	124	29,343.8	PQ	Surface	SPF-series core hole drilled on a grid system to define the Star Kimberlite geologically, geotechnically and hydrologically.
2005	13	3,362.0	HQ/NQ	Surface	STR-series core hole drilled to define the Star West Kimberlite geologically, geotechnically and hydrologically.

Year	No. Of Drill Holes	Metres	Drill Type	Location	Drilling Program
2005	9	1,831.2	LDD	Surface	LDD (1.2 m diameter) holes drilled to obtain geological, diamond grade and diamond valuation information on the various kimberlite facies previously identified.
2005	55	3,762.1	BQ/NQ	Underground	Drilled to test kimberlite in proposed lateral drifts and delineate kimberlite morphology.
2006	30	7,677.2	PQ	Surface	SPF-series core hole drilled on a grid system to define the Star Kimberlite through geological, geotechnical and hydrological analysis.
2006	38	7,153.0	NQ/HQ	Surface	SND-series core holes completed to gather geotechnical information on glacial overburden and angle-drilled to access areas below the East Ravine.
2006	18	4,557.3	PQ	Surface	STR-series core hole drilled to define the Star West Kimberlite through geological, geotechnical and hydrological analysis
2006	10	56.6	Auger	Surface	Geohydrological holes for piezometer installation.
2006	37	7,073.4	LDD	Surface	LDD (1.2 m diameter) holes drilled to obtain geological, diamond grade and diamond valuation information on the various kimberlite facies previously identified.
2006	149	12,547.4	BQ/NQ	Underground	Drilled to test kimberlite in proposed lateral drifts and delineate kimberlite morphology.
2007	6	1,600.8	PQ	Surface	SPF-series core hole drilled on a grid system to define the Star Kimberlite through geological, geotechnical and hydrological analysis.
2007	2	521.9	PQ	Surface	STR-series core hole drilled to define the Star West Kimberlite through geological, geotechnical and hydrological analysis.
2007	49	10,493.3	LDD	Surface	LDD (1.2 m diameter) holes drilled on Star East and Star West to obtain geological, diamond grade and valuation information on the various kimberlite facies previously identified
2008	1	268.4	PQ	Surface	Core completed for acid-base analysis test work.
2008	14	2,477.8	HQ	Surface	Vertical and angled core holes for hydrology and geotechnical analysis on and around Star.
2008	8	1,368.8	LDD	Surface	LDD (1.2 m diameter) holes drilled on Star East and Star West to obtain geological, diamond grade and diamond valuation information on the various kimberlite facies previously identified.

Year	No. Of Drill Holes	Metres	Drill Type	Location	Drilling Program
2010	1	33.4	Cone Penetrometer	Surface	Cone penetrometer hole to test the upper stratified drift horizons over the Star Kimberlite.
TOTAL	**637**	**108,306**			

FIGURE 10-1 SURFACE DRILL HOLE LOCATIONS FOR THE STAR KIMBERLITE



10.2. ORION SOUTH DRILLING

10.2.1 PRE 2015 DRILLING

Between 1992 and 2010, 253 surface drill holes totalling 58,209 m were drilled on the Orion South Kimberlite deposit. Table 10-2 outlines the drill programs for all years. In terms of core drilling, there have been 174 holes completed on Orion South resulting in a total drilling length of 39,732 metres. It is this material that is used for qualitative and quantitative data acquisition used for geological modelling and resource definition. Drilling was largely completed on a 100 metre grid on the thicker (approximately 50 metres of kimberlite) portion of the Orion South complex and a 200 metre grid on the thinner periphery (Figure 10-2).

TABLE 10-2 SUMMARY OF DRILLING ON THE ORION SOUTH KIMBERLITE DEPOSIT, 1992-2010

Year	No. Of Drill Holes	Metres	Core Size	Location	Drilling Program
1992	6	1,503.7	PQ	Surface	Six PQ core holes were drilled in the magnetic highs on anomalies 140 and 141
1993	1	323.0	HQ	Surface	One HQ core hole was drilled on a postulated deepening zone on the 140 anomaly based on 1992 drilling
1993	1	204.0	Rotary (6.25-inch)	Surface	One rotary test hole was completed between the 140 and 141 anomalies and intersected 102 m of weakly magnetic kimberlite
1994	2	520.0	RCA (12-inch)	Surface	Two RCA holes were drilled into the 140 and 141 anomalies to test for diamond content
1995	2	705.5	RCA (12-inch)	Surface	One RCA hole was drilled into the 133 anomaly to test for kimberlite and diamond content. Another was drilled on the 140 anomaly.
2000	2	520.8	LDD (24-inch)	Surface	Two LDD holes were completed on the north-west portion of the 141 anomaly to recover appreciable diamond quantities
2001	14	3,757.2	NQ	Surface	Fourteen vertical NQ core holes were drilled to delineate the kimberlite body and develop geological models for the kimberlite

Year	No. Of Drill Holes	Metres	Core Size	Location	Drilling Program
2001	10	2,202.6	LDD (24-inch)	Surface	LDD drilling was completed to test the diamond distribution across a larger portion of the kimberlite
2002	25	6,030.0	NQ, HQ, PQ	Surface	An aggressive 25 hole program was developed to test the geological continuity across a larger area of the kimberlite
2002	8	2,143.9	LDD (24- and 36-inch)	Surface	Eight LDD holes were drilled to test potentially higher grade areas of the kimberlite to recover appreciable diamond quantities to initiate estimates of diamond prices
2003	10	2,219.2	NQ, HQ	Surface	Nine core holes were drilled to test the southern extent of the 140 anomaly and one hole was completed west of the 141 anomaly to test a gravity high
2004	5	1,154.0	NQ, HQ	Surface	Five core holes were drilled to better model thick kimberlite breccia horizon(s) in the 140 portion of the kimberlite
2004	7	1,085.6	LDD (36-inch)	Surface	LDD drilling was focused on testing kimberlite breccia-rich zones on the south-central portion of the kimberlite
2005	10	1,713.1	HQ	Surface	Six holes were drilled to gather a geological model for the 133 anomaly; Four holes (351 metres) of geotechnical drilling were also completed on Orion South
2006	54	12,872.6	PQ	Surface	A rigorous grid drilling program was completed to test the continuity, shape and thickness of various kimberlite units and to provide additional geological, geotechnical, geophysical and geotechnical data for a robust geological model
2007	1	241.2	PQ	Surface	One PQ core hole was completed to 241.21 metres to act as the pilot hole for shaft sinking
2007	4	1,017.2	LDD (47.2-inch)	Surface	Four LDD holes were completed to recover appreciable diamond quantities for grade estimation on the Pense unit
2008	22	6,356.1	PQ	Surface	The core drilling program was completed to in-fill any gaps within the grid drilling pattern and act as pilot holes to subsequent LDD holes

Year	No. Of Drill Holes	Metres	Core Size	Location	Drilling Program
2008	36	8,350.8	LDD (47.2-inch)	Surface	An aggressive grid-drilling LDD program was completed to garner grade information across the breadth of the kimberlite and to assist in diamond pricing.
2010	4	59.4	Auger	Surface	Shallow auger drilling testing overburden material
2010	1	34.7	Cone Penetrometer	Surface	Shallow cone penetrometers hole to detail the upper stratified drift material
2010	13	3,561.8	HQ	Surface	Geotechnical core holes along the proposed pit perimeter.
2010	2	429.0	Reverse Circulation	Surface	One prototype dewatering test hole (and one failure)
2010	13	1,203.4	Mud Rotary	Surface	Geotechnical mud rotary holes along the proposed pit perimeter.
TOTAL	**253**	**58,209**			

10.2.2 2015 Drill Program

In 2015, a combination of NQ coring and 24" LDD-RC drilling was undertaken in areas where the drill spacing was wide (i.e. > 100m) in order to expand and convert a substantial amount of the Inferred mineral resources identified in the 2009 Mineral Resource Estimate to the Indicated mineral resource category on Orion South.

2015 Core Drilling

From April 6th to June 11th, 2015, 18 vertical NQ diameter core holes (Figure 10.2) totalling 3617.22 metres was carried out by Newmac Industries ("Newmac") of Prince Albert Saskatchewan (Table 10-3). Drilling was carried out using a Longyear model LY-38 skid mounted drilling rig. The core drilling program resulted in the recovery of 1,742.72 meters of diamond drill core which intersected 1,208.10 meters of EJF and Pense kimberlite lithologies on both the western and southern flanks of the Orion South Kimberlite. The significant new intersections of EJF and Pense kimberlite successfully extended the geological continuity of these kimberlite units on Orion South. In addition, two of the 18 core holes (140-15-092C & 140-15-102C) were used as pilot holes for two 2105 24 inch LDD-RC holes due to thick intersections of both Pense and Early Joli Fou lithologies on the outer apron of the Orion South kimberlite.

TABLE 10-3 2015 FALC-JV CORE DRILLING STATISTICS

	Core Hole Identification	Total Drilled (metres)	Major Kimberlite Intersection (metres)
1	140-15-091C	200.25	91.10
2	140-15-092C	209.40	71.80
3	140-15-093C	200.25	54.00
4	140-15-094C	185.01	66.00
5	140-15-095C	209.40	97.70
6	140-15-096C	191.11	55.40
7	140-15-097C	194.16	80.80
8	140-15-098C	188.06	78.20
9	140-15-099C	188.06	62.30
10	140-15-100C	206.35	100.50
11	140-15-101C	191.16	14.6
12	140-15-102C	224.70	91.10
13	140-15-103C	230.79	112.00
14	140-15-104C	197.50	22.00
15	141-15-098C	209.40	56.90
16	141-15-099C	191.11	26.50
17	141-15-100C	203.30	59.80
18	141-15-101C	197.21	67.50
	Total	**3617.22**	**1208.10**

Site Preparation and Rig Set-Up

The Orion South surface core holes were first planned on section plan maps generated by Micromine computer software and were then manually pegged by Meridian Surveys of Melfort, Saskatchewan with the use of a Trimble 4800 differential GPS unit with accompanying base station instrument. After completion of the coring program, Meridian Surveys returned to the project area and resurveyed all 18 drill collar locations to ensure that the pegs had not moved during pad construction and rig set up.

Previous work with respect to heritage and rare plants in the Orion South area were assessed by the Saskatchewan Ministry of Environment (“SME”) and it was determined that the coring locations would not pose any negative effects. Shore's environmental and geological staff inspected the sites in order to assess the drill pad requirements with regards to drill rig and ancillary equipment set-up (i.e. mudplant, road access, sump location, etc.). Once the drill pad layout had been designed, K & T Enterprises of Choiceland, Saskatchewan would then remove vegetation from the drilling area, level the site and dig a sump for the collection of drilling fluid. The core drilling rig was then moved into the surveyed drill collar position and drilling commenced.

The initial 90+ metres of glacial till were typically tricone-drilled and cased to an elevation so that the till-kimberlite interface could be logged by Shore geologists. Once the tricone bit had reached the till-kimberlite contact, casing was installed and the tricone drill bit was changed to a diamond drill bit. Core drilling continued until the core hole intersected the Mannville Formation sediments at which time the hole was stopped by Shore geological staff. Upon completion of the core hole a downhole survey was completed.

Surface Core Hole Downhole Surveying

Downhole surveying was completed using a Reflex EZ-Shot wireless surveying tool. The Reflex EZ-Shot surveying tool was utilized to collect measurements below the kimberlite (in non-magnetic sediments) as well as along the length of the core hole. The Reflex EZ-Shot downhole survey tool is a totally self-contained, single shot instrument that is controlled by an integrated key pad with information available immediately on an LCD display once the surveying tool has been recovered from the core hole. The Reflex EZ-Shot displays seven parameters for each survey including information on borehole direction (i.e. azimuth and inclination), temperature and magnetic measurements. When the survey tool reaches surface, the information from the Reflex EZ-Shot is recorded in a booklet and relayed to Shore's geological staff.

All of the downhole survey data was digitally acquired and recorded as Microsoft® Excel files on a bi-weekly to monthly basis by Shore personnel. Shore personnel would review the raw downhole survey data and incorporate it into Shore’s project database.

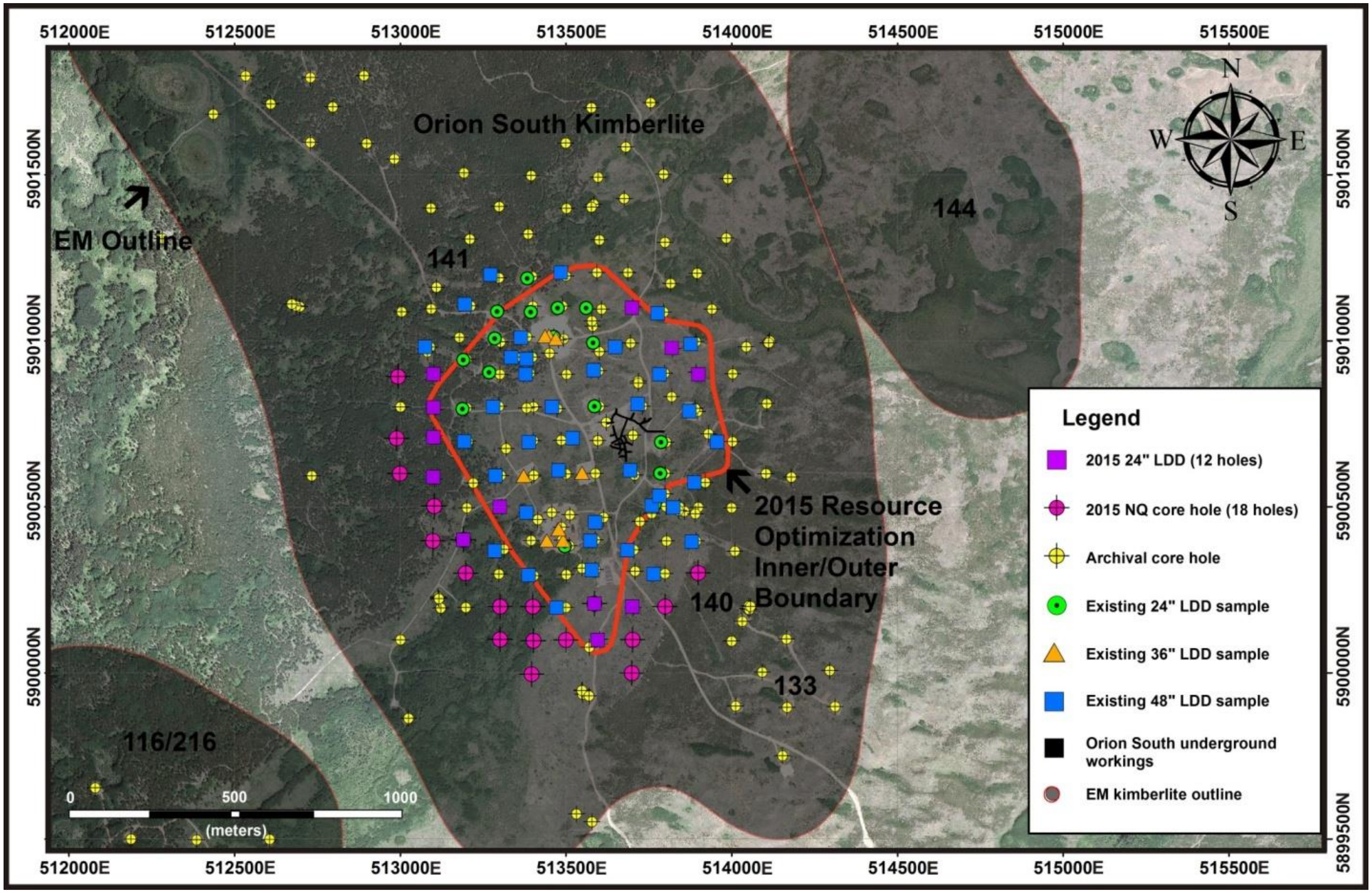
2015 LDD Drilling

A total of twelve 24 inch LDD-RC holes were completed by Foraco Canada Ltd. of Picture Butte, Alberta (Figure 10-2) with drilling services carried out from May 6th to June 11th, 2015 on the Orion South kimberlite. The LDD-RC program totalled 2,559.90 metres of drilling resulting in the recovery of 97 individual LDD-RC sample lifts (i.e. sample intervals) between 13.1 and 2.8 metres long from 439 processed tonnes (7,354.1 m3 of theoretical volume) over a kimberlite intersection of 1,027.48 metres (Table 10-4). The LDD-RC samples were shipped by Edge Transport of Saskatoon, Saskatchewan to Rio Tinto Canada Diamond Exploration Inc’s. Thunder Bay Mineral Processing Laboratory (ISO9001:2008 Certified). This facility was selected by Shore for macrodiamond (+0.85 millimetre square aperture bottom screen size) recovery due to similarities between the sample processing flowsheet which closely replicated Shore's on-site diamond bulk sampling plant which was not in operation for this program.

TABLE 10-4 2015 FALC-JV LDD DRILLING STATISTICS

	LDD Hole Identification	Depth (metres)	Kimberlite Sampled (metres)	Kimberlite Samples (#)
1	LDD-140-15-022	204.90	102.55	9
2	LDD-140-15-023	197.75	65.75	7
3	LDD-140-15-024	221.00	81.00	7
4	LDD-140-15-025	199.00	99.30	10
5	LDD-140-15-026	194.00	86.70	9
6	LDD-140-15-027	220.00	89.50	8
7	LDD-141-15-019	234.85	87.30	8
8	LDD-141-15-020	221.10	95.08	9
9	LDD-141-15-021	204.40	67.60	6
10	LDD-141-15-022	227.00	99.50	9
11	LDD-141-15-023	213.90	70.80	7
12	LDD-141-15-024	222.00	82.40	8
	Total	**2,559.90**	**1,027.48**	**97**

FIGURE 10-2 DRILLING MAP FOR THE ORION SOUTH KIMBERLITE DEPOSIT INCLUDING CORE, MUD ROTARY AND LARGE-DIAMETER DRILLING



11. SAMPLE PREPARATION ANALYSIS AND SECURITY

11.1. DIAMOND DRILLING – LOGGING AND SAMPLING PROCEDURES

Throughout the various core drilling programs, the geotechnical and geological core logging was carried out at Shore's main exploration core logging facility located at the Star Kimberlite project site. Once a core hole was logged, all of the drill core boxes were sealed and transported to Saskatoon for storage at a separate warehouse off site.

All geotechnical logging and photographic records were undertaken before the core was marked and cut for detailed core logging and sampling.

During the detailed logging process, all geological descriptions were entered into a SQL-based logging program. For the majority of the core holes, the following samples and testwork were carried out for each major kimberlite facies / lithological break:

- bulk density sampling;
- whole rock geochemistry sampling; and,
- ore dressing – communition sampling: drop test sampling (T10), scrubbability (Ta) sampling and unconfined compressive strength (“UCS”) sampling.

All core was digitally photographed on a hole by hole basis. The photographs included wooden depth markers denoting the driller’s runs and a marker board denoting the hole number, date, wet or dry state of the core, box numbers and interval. The photographs were incorporated into Shore's Project database.

During the geological core logging process, the following information / data collection was recorded:

- main lithological units and sub-units;
  - pyroclastic kimberlite
  - volcaniclastic kimberlite
  - kimberlite breccia
  - resedimented volcaniclastic kimberlite
  - other (shale, limestone, etc.)
- proportion of constituents (quantitatively captured);
- grain size (quantitatively captured);
- support (matrix or clast supported);
- sorting (poorly or well sorted);

- fabric (bedded, massive or granular);
- country rock dilution percentages (crustal xenolith size, shape, alteration, percentage that is quantitatively captured);
- kimberlitic indicator minerals (type, size, percentage that is quantitatively captured);

All drilling, sampling, analysis and logging data has been stored in an SQL-based database.

11.1.1 Bulk Density Determination

Shore have undertaken a number of comprehensive bulk density programs on diamond drill hole core.

Shore, SRK and Clifton have undertaken a number of comprehensive bulk density programs on diamond drill hole core from both Star and Orion South to obtain densities for the kimberlitic and country rock units (Table 11-1).

Table 11-1 Density Database Star and Orion South

	Number of Measurements by Water Displacement Method (raw database)	Number of Measurements by Water Displacement Method Retained*	Number of Measurements by Caliper/Volume Method*
Star Kimberlite	3271	2640	651
134	52	45	
Orion South Kimberlite	1778	1458	347
133	82	68	

*Includes country rock samples

Density measurements by Shore and the JV were determined utilizing a water displacement method. The sample was weighed as received, wrapped in thin plastic wrap, weighed in water, the plastic wrap is then removed, and the sample is then dried at 230 degrees Fahrenheit (110 degrees Celsius) and weighed. The density is then calculated wet (wet density is then the wet mass divided by the difference between the wet mass and the wet mass of the sample suspended in water) and the moisture content is applied to produced an accompanying dry density. A number of laboratory testwork programs were conducted for the geotechnical studies carried out by Shore, Clifton and SRK which utilised the volume/caliper method (as a check) where the core is accurately measured for volume and then weighed wet for wet density and then an average moisture content of 7.5% was applied (based on an average of the available core and underground moisture contents, as destructive tests on the in-situ rock prevented dry weights being obtained for the most part).

A total of 1446 bulk density values were reviewed for density determination of the Orion South Kimberlitic units and 1961 bulk density values were reviewed for density determination of the Star Kimberlitic units for the Mineral Resource Estimate (of which 963 were chosen to be used dominantly from the laboratory testwork results). The remainder of the density measurements were from country rock units. A number of measurements were removed from the final database as they were densities that had been replaced by alternate calculations as part of the QA/QC process conducted by Shore and the JV. The densities used for the country rocks were developed from testwork and analysis performed by SRK and Clifton as part of the comprehensive geotechnical studies conducted on the Star and Orion South Kimberlites. It was noted that early water displacement insitu/wet density measurements from the Shore database were considerably lower than those of the caliper/volume method and it was determined that for the EJF at Star the caliper volume method measurements and JV measurements on Star West would be applied as they were consistent with Shore and JV database measurements taken later in the Star West JV program. Density measurements for Orion South were consistent with both methods. Howe reviewed the bulk density data and believed it to be suitable for Mineral Resource estimation purposes. The bulk density data analysis carried out by Howe and Shore in 2015 resulted in revised density determinations for Star and Orion South from those used in previous resource estimates as detailed in Tables 14-14 and 14-15.

11.2. UNDERGROUND SAMPLING PROCEDURES AND SAMPLE SECURITY

Sampling methods and procedures were designed to optimize the precision and accuracy of the sample results in order to quantify the representative diamond grade within the sampled interval area. Efforts to reduce sample contamination during the underground mucking process were monitored by Shore's on-site geologists.

The following is a description of the sampling method(s) used and procedures applied during both the Star and Orion South underground bulk sampling programs.

11.2.1 SHAFT AND LATERAL DRIFT SAMPLING

In both shaft sinking phases, the shaft was drilled, blasted and mucked out on a bench by bench basis. Benches varied between 1.2 and 1.8 m in depth depending on ground conditions. The sample material was hauled to the surface and transported to a fenced, secure area by front-end loader under the control of Shore security personnel.

In the lateral drifts, each drift round (1.2 to 2.4 m in length with variable width and height) was drilled, blasted and transported to a cement lined underground storage bay. The kimberlite material was then hauled to surface where it was stored as individual batch sample piles within the dedicated storage facility area adjacent to Shore on-site diamond bulk sample processing facility. Each batch sample was identified with a sign denoting the drift it was from and the batch number. All batch samples were then recorded by mapping of the pile locations. The kimberlite sample was piled on top of a packed sand / clay rich base while it awaited processing.

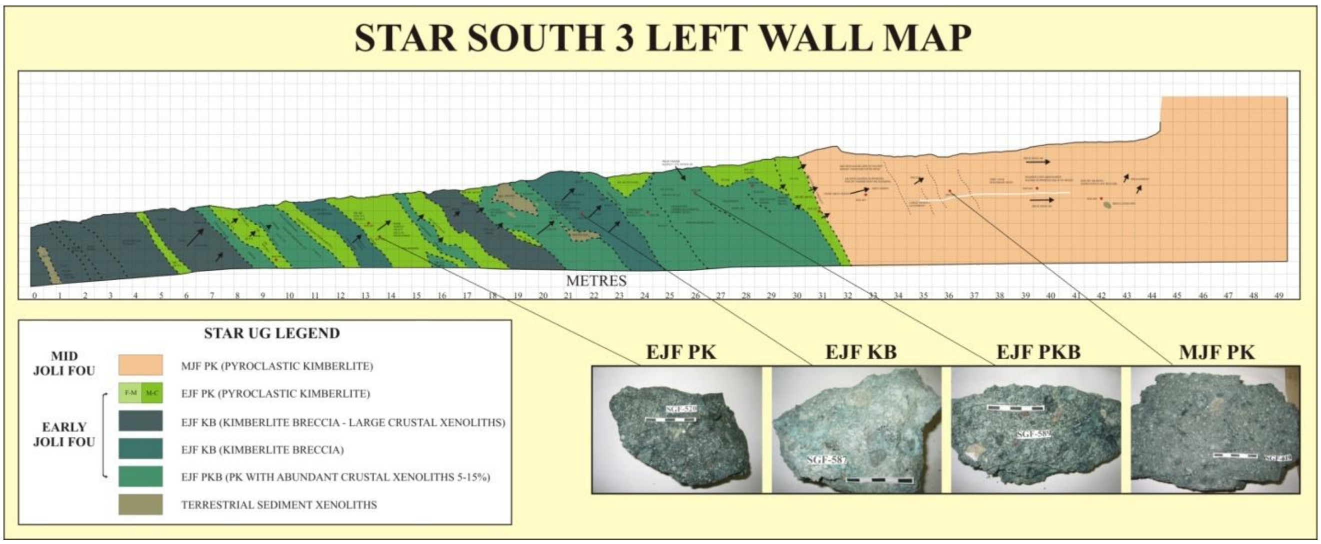
Geological control of the sampling enabled the various kimberlite units to be individually sampled with very little contamination by other kimberlite types, the results of which provide important diamond content data to model variations in diamond quality and abundance throughout the different kimberlitic phases / units of the Star and Orion South Kimberlite deposits.

11.2.2 UNDERGROUND BULK SAMPLING PROTOCOLS

Individual batches were designed to provide representative samples of the different kimberlitic units encountered, while keeping individual sample batches similar in size where possible. Individual batch sample intervals were determined to reflect major geological breaks / contacts with very little contamination by other kimberlite types, while keeping individual batch sample sizes to 250-350 dry tonnes.

Underground geological mapping on all drift walls and drift faces was conducted on a daily basis. Shore's geologists were also able to identify and map, in detail, many distinctive kimberlite units following individual kimberlitic pyroclastic flow units and geologically distinct kimberlite phases, both massive and layered in extent (Figure 11-1). In accordance with the information obtained from underground mapping, Shore's geologists continuously refined the sample separation process. Sample batches thus changed from the optimum planned size, and some of the larger batches were subdivided into smaller batches for processing in the plant.

FIGURE 11-1 EXAMPLE OF AN UNDERGROUND WALL MAP SHOWING THE CONTACT BETWEEN THE BEDDED EJF (SHADES OF GREEN) KIMBERLITE AND THE MORE MASSIVE MJF KIMBERLITE (PEACH)



The following quality assurance and quality control (QA/QC) protocols were conducted and adhered to by Shore and its contractors during the underground bulk sampling programs:

- Geologists verified that all sample material for each sample interval was removed from the drift face and transported to a vacant cement lined storage bay where it awaited to be skipped to surface.
- Geologists verified that the kimberlite for each batch hoisted to surface was transported to its specified location.
- To avoid sample spillage, all loader operators were given specific instructions not to overload their buckets when transporting kimberlite.

- To maintain sample integrity and security of all extracted kimberlite from the underground workings, a Shore security officer was present at all times during the movement of kimberlite samples from the head frame to the storage facility: and,
- At Orion South, material was directly transported to the Star site for storage prior to processing, all monitored by Shore's security personnel.

11.3. LDD (RC Drilling) Sample Recovery

11.3.1 Pre 2015 Program

The Bauer BG-36 LDD-RC drilling rigs utilized on both the Star and Orion South kimberlites were designed to carry out air-assisted fluid flush RC drilling, utilizing a drill string consisting of 6 metre-long dual walled drill rods, heavy weights (which provide downward pressure on the bit), stabilizers and a rotating drill bit assembly.

The LDD-RC drilling was assisted through the introduction of compressed air, which was forced down through the outer annulus of the dual walled drill rods so as to assist the drill cuttings (product) and the mud in returning to the surface through the inner tube of the drill rods. The product then reported to the decelerating cyclone, which was located within a separate, adjacent desander plant. After the sample exited from the decelerating cyclone it was discharged onto a coarse shaker screen for initial sizing at 3 mm. The +3 mm size fraction and drill muds reported to twin densifying cyclones and dewatering screens (nominal 0.85 mm aperture) to separate the drill solids from the drilling mud/fluid. The drill solids (+0.85 mm) were then washed and reported for sample collection while the drill muds (-0.85 mm) were reinstated into the mud mix tank and then returned downhole for recycling.

Sample material was collected in one cubic metre dual-walled, woven polypropylene bags, which were labelled, securely sealed with pre-determined security cinch straps, and then loaded onto a trailer for shipment to the secure storage area adjacent to the process plant. The material was then processed through Shore's on-site process plant.

LDD Downhole Caliper Measurements

A downhole caliper survey to measure the diameter of the drill hole along its length was used to calculate the volume (in cubic metres) of material removed from each of the LDD-RC holes. The data was presented as a graphic 3-D downhole log and a downhole Excel spreadsheet. This calculated volume, coupled with diamond recovery data, was then used for estimating the recovered grade for each of the LDD samples. Where the caliper failed or was not used the theoretical volume was used. Where the caliper volume was less than the theoretical volume the theoretical volume was also used.

11.3.2 2015 PROGRAM

LDD RC Drilling and Sample Recovery Description

Foraco's BF-800 drilling rig is designed to carry out air assisted RC drilling, utilizing a drill string consisting of 6 meter-long dual walled drill rods, heavy weight drill collars (which provide downward pressure on the bit), and a rotating drill bit assembly. The RC drilling is assisted through the introduction of compressed air which is forced down the outer annulus of dual walled drill rods so as to assist the cuttings ("product") and the mud in returning to surface through the inner tube of the drilling rods.

The product then reports to a decelerating cyclone located directly above the screening deck of the solids control unit. The solids control unit comprises a 30 cubic meter fluid tank with a DFTS high frequency shaker equipped with a 1.2 x 2.3 meter shaker bed and water jet capability. Impact of the sample chips is minimized by using 90 degree sweeps and a non-metallic lining at the impact point in the cyclone. The undersized material passes through the screen deck into an agitated holding tank and this material is pumped through a hydro cyclone bank of six 5 inch de-silters to remove all the cuttings above 35 microns. The material above 35 microns is discharged into a sump while the under balance is re-circulated back into the main holding tank where it is recycled into the hole. The top size material (+0.85mm) is washed by two separate spray bars as it passes over the screens and is discharged into a one cubic meter, dual walled, woven polypropylene sample bag which is labeled, securely sealed, weighed and then loaded and securely tarped onto a flat bed tractor trailer for shipment to Rio Tinto's certified DMS processing facility.

LDD Site Preparation, Rig Set-Up and Drilling Methods

The planning and site preparation of the LDD-RC program was carried out by Shore's geological team. Actual LDD-RC hole locations were established in the field, based on the geological core logging and interpretation of the quantitative data capture information obtained from the core holes. Collar co-ordinates were manually pegged in the field at a distance of approximately 2.0-5.0 m from the drill hole collar. Once the location of the LDD sites were confirmed and inspected, the LDD-RC drill rig and ancillary equipment was moved into place.

The BF-800 RC drilling rig was designed to carry out two methods/modes of drilling:

- Setting Casing; and
- Air assisted fluid flush reverse circulation ("RC") drilling.

Initially, a 28 inch diameter casing is set into the upper portion of the Floral Formation (~40m in depth) using a casing advancing system. Each piece of casing is carefully beveled on site in order to ensure a proper fit. Once the casing has been dry-fitted each section is welded as it is advanced downhole in order to prevent sloughing of the cavity walls in unconsolidated sediments during drilling fluid circulation. The casing is advanced by a downhole hammer ("DHD") bit while simultaneously evacuating sand and clay cuttings.

Once the casing has been set the rig is converted to RC mode, the DHD bit is removed and the bottom hole assembly ("BHA") is constructed and the drill head is changed to a tungsten carbide insert ("TCI") button bit accompanied by 7 heavy weight drill collars. Dual walled pipe is added after the BHA is assembled and the hole progresses in depth until the kimberlite interface is reached. At this time the entire drill string, collars and bit are brought to surface and a mill tooth bit replaces the TCI button bit. The drill string is rebuilt to the depth of the kimberlite and sampling commences with dual walled piped being added as the hole advances to completion.

LDD-RC Downhole Caliper Surveying

A downhole caliper survey was completed on each of the LDD-RC holes by Century Wireline Services of Red Deer Alberta. The LDD caliper surveys measure the diameter of the drill hole along its length and use those measurements to calculate the volume (in cubic meters) of material removed from the LDD hole. This calculation, coupled with diamond recovery data, is then used for estimating the recovered sample grade for each of the LDD-RC sample lifts (intervals). The data were presented as a graphic 3-D downhole log with accompanying Excel spreadsheet.

Actual sample weights of material recovered from the drilling cannot be used for grade estimates because the material is screened after it exits the hole and fine material smaller than 0.85 mm is not collected. There is also loss of material to downhole fractures and joints. Therefore, this necessitates a theoretical estimation of sample volume using the caliper data. Where the caliper failed or was not used the theoretical volume was used. Where the caliper volume was less than the theoretical volume the theoretical volume was also used.

Howe found the sampling methods, sample storage, and security to be acceptable and was of the opinion that diamond grade and quality data generated from the underground and LDD samples is adequate for Mineral Resource Estimation.

11.4. SAMPLE PREPARATION, ANALYSES AND SECURITY PRE 2015

The following section is taken from previous technical reports on the Star Diamond Project (Orava et al., 2009) and the Orion South Diamond Project (Ewert et al., 2009b).

11.4.1 INTRODUCTION - MINERAL PROCESSING AND DIAMOND RECOVERY

In order to process a significant amount of kimberlite, Shore purchased and commissioned a batch sampling process plant to treat the bulk samples and recover diamonds. The process plant was designed to simulate a commercial kimberlite ore treatment plant. Shore's process plant (Bateman Reference Number M7007) was designed and constructed by Bateman Engineering PTY Limited ("Bateman") of South Africa and consists of the following circuits:

- a 30 t/h crushing circuit;
- a 10 t/h Dense Media Separation ("DMS") circuit which consists of a 250 mm DMS cyclone; and
- a recovery circuit consisting of a Flow-Sort® X-Ray diamond sorting machine and a grease table.

A description of Shore's processing and diamond recovery circuits is briefly described below.

11.4.2 PROCESS PLANT – CRUSHING AND SCRUBBING CIRCUIT

The kimberlite material (stored as individual batches or piles on surface) was delivered from the storage facility area to the primary static feed bin where, after being screened to 250 mm, it was fed at a constant rate onto the run-of-mine ("ROM") conveyor belt to be weighed (by a belt weightometer) and recorded (Figure 11-2). This weightometer was calibrated daily and was responsible for the accurate determination of the weight of the underground samples. The kimberlite was then crushed, cleaned and sized so that the final resultant size fraction reported to the DMS circuit was +1.0 mm to -20 mm (at 80% passing on the 22 mm square aperture screen).

11.4.3 PROCESS PLANT DMS CIRCUIT

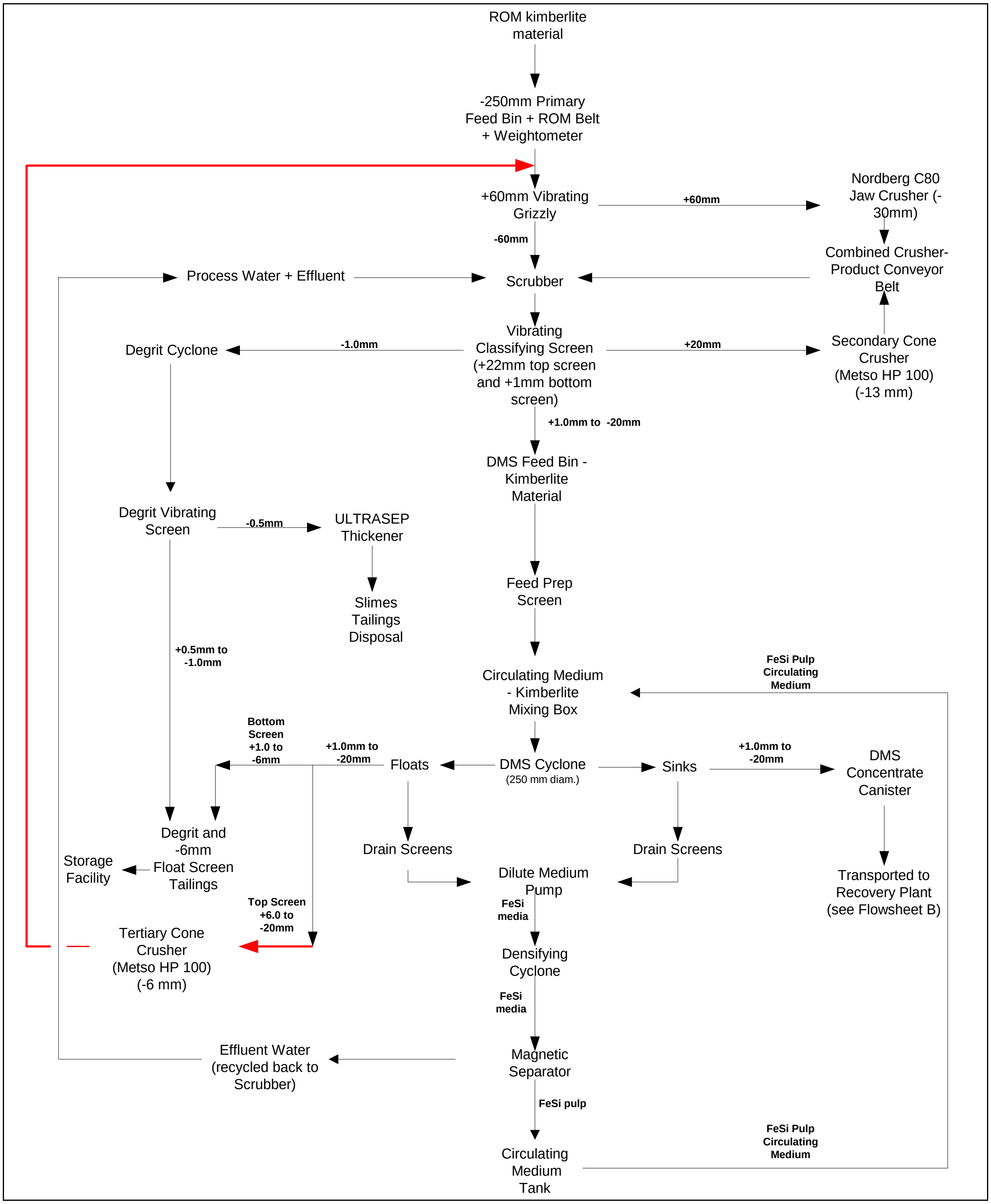
The +1.0 mm to -20 mm sized kimberlite material from the primary double deck vibrating classifying screen was pumped from the transfer pump box, dewatered and then stored into a 5 t capacity DMS surge bin for product separation into light and heavy mineral fractions. The material was then fed in a wet state to the DMS circuit by the combined vibrating pan feeder and DMS feed pump and dewatered once again. The kimberlite material was then mixed with a dense circulating medium consisting of ferrosilicon powder ("FeSi") and water. Separation of the heavy and light particles (i.e. product) was achieved on the basis of the specific gravity ("SG") of the minerals.

Both the heavy (sinks) and light (floats) products exiting the cyclone were screened and then washed to recover the FeSi for recycling.

The +1.0 mm to -20 mm heavy mineral concentrate (DMS concentrate) that reported to the sinks screen was collected in 40 L stainless steel canisters. When the steel canister was full, the canister was locked, then transported and escorted to the recovery plant for particle sizing and diamond recovery by the plant Lead Hand and Shore security personnel (prior to January, 2007 this process was completed by Howe personnel and two Shore security personnel). The +1.0 mm to -6 mm light fraction product ('coarse reject kimberlite') was disposed outside of the process plant via conveyor belt. A front-end loader was used to transport the coarse reject kimberlite to a dedicated storage area and stockpiled on a per batch basis.

The SG of the circulating medium was monitored electronically, in real time with a dense medium controller system, and manually with a densitometer scale. Density tracer tests were carried out daily with the use of cube-shaped epoxy tracers, with SGs ranging from 2.70 to 3.53 and sizes from 2 mm, 4 mm and 8 mm, to monitor the separating effectiveness of the DMS cyclone. The density tracers that reported to the floats or sinks screen were counted separately and a Tromp curve was plotted in order to obtain the percentage of density tracers versus particle SG. An estimate of the effective separation of light and heavy fractions, including diamond, was determined from the shape and slope of the Tromp curve. The separating SG (or cut point) was determined as the point where the curve has a value of 50 %.

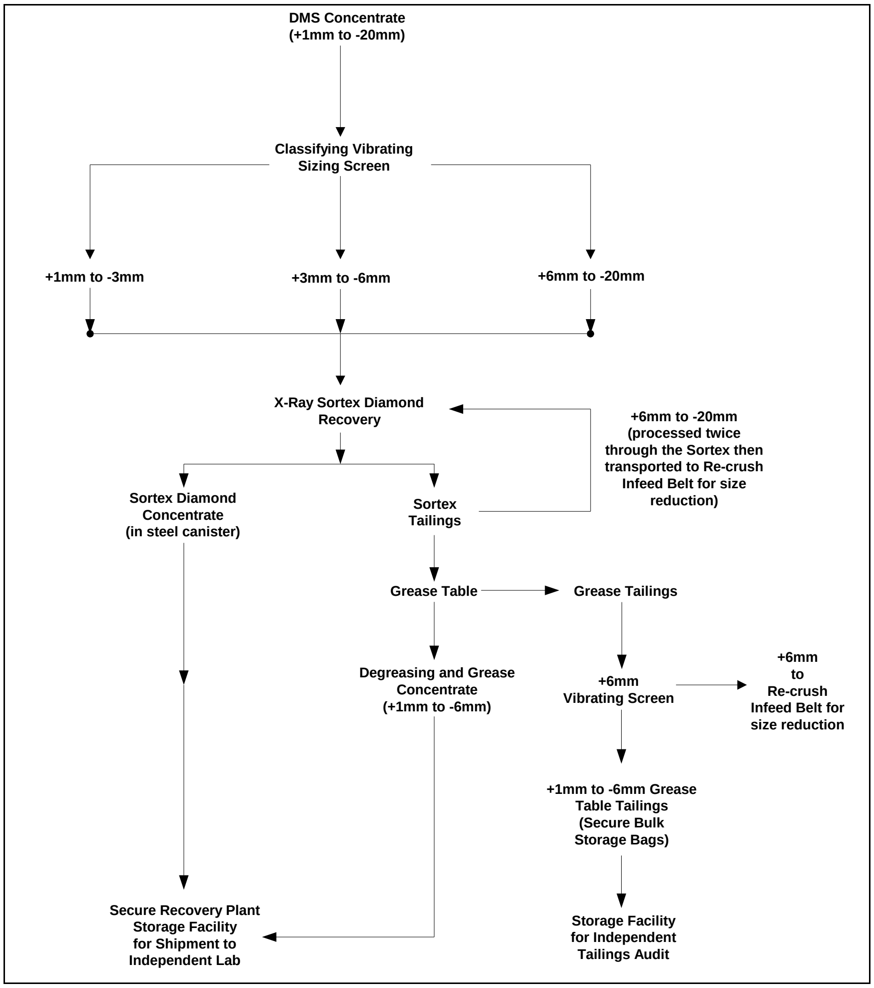
FIGURE 11-2 PROCESS PLANT FLOWSHEET - PRIMARY KIMBERLITE PROCESSING



11.4.4 DIAMOND RECOVERY PLANT SAMPLE HANDLING AND PROCESSING PROCEDURES

Once a full canister of DMS concentrate arrived in the recovery plant, the gross weight (wet) and arrival time was taken and recorded by security personnel. The DMS concentrate canister was then loaded into a steel cradle and the contents emptied into the recovery plant hopper (Figure 11-3). The DMS concentrate was separated into three particle size fractions (+1 to -3 mm, +3 to -6 mm and +6 to -20 mm respectively) by a vibrating classifying screen deck unit beneath the recovery plant hopper. During the sizing process, the respective size fractions were collected in individual 40 L stainless steel canisters located below the vibrating classifying screen deck. Once the particle sizing was completed, each sized canister was left to dewater as much as possible. The gross weight (wet) of each sized canister was weighed and recorded by recovery personnel and readied for diamond processing.

FIGURE 11-3 RECOVERY PLANT FLOWSHEET



11.4.5 X-RAY DIAMOND SORTER

All of the wet DMS concentrate size fractions were processed separately and wet via an x-ray Flowsort ® X-Ray diamond sorter unit (model XR 2/19 DW) ("x-ray sorter"). All three individual sized fractions were manually fed to the x-ray sorter receiving hopper for processing, with only the +6 to –20 mm sized fraction processed twice through the x-ray unit.

The x-ray sorter unit was designed on the principle of diamonds fluorescing / luminescing when bombarded by x-rays. The wet diamond bearing concentrates slide past photomultiplier tubes that detect fluorescent material (i.e. particles emitting light) which have been irradiated by x-rays. Excitation of the photomultiplier tubes triggers the ejector gate doors to open, forcing the diamond (and other fluorescent material plus surrounding gangue material) into a separate stainless steel canister. The x-ray tailings were collected in a 40 L steel canister to be reprocessed by the grease table.

Each size fraction was processed individually; however, the diamonds ejected for each size fraction were collected in a single stainless steel canister that was locked in place below the x-ray sorter unit. Once a batch sample was processed, the stainless steel canister was removed, locked, and stored in Shore's secure safe-house facility located within the recovery plant by Shore's security personnel and kept under video surveillance until shipped to SGS Lakefield Research Limited ("SGS Lakefield"), SGS Canada Inc., Saskatoon ("SGS Saskatoon") and / or Mineral Services Canada Inc. ("MSC") for diamond sorting. After January 2007, the sample handling procedures were carried out by Shore personnel with no third party involvement, although Howe acted as an external QA/QC provider and made periodic audits of the Shore processing plant (prior to January 2007, the recovery room was operated under Howe supervision).

11.4.6 GREASE TABLE DIAMOND RECOVERY

A two-stepped (1 m wide) grease table was employed to concentrate the +3 to -6 mm and +1 to -3 mm x-ray tailings. The +6 mm to -20 mm size fraction was not processed through the grease table, but processed twice through the x-ray sorter. Most diamonds are hydrophobic (i.e. non-wettable) and thus will adhere to grease specially formulated for diamond recovery. The diamonds adhere to the grease on first contact and the flow of concentrate over the adhering diamonds causes them to be pushed further into the grease.

All non-adhering (i.e. hydrophilic) material reported to the grease table tailings belt for storage in 1.0 m^3 canvas bulk sample storage bags.

The removal and application of fresh grease was dependent upon the amount of grease adherent material in the concentrate. More particles adhering to the grease reduces the effective surface area for diamonds to adhere. When the effective surface area was < 50 %, the grease and grease concentrates were scraped off the grease table and placed into pre-numbered, sealed plastic buckets and shipped to SGS Lakefield, SGS Saskatoon and / or MSC for diamond recovery.

11.4.7 CHAIN OF CUSTODY AND SECURITY PROTOCOLS

During the processing plant commissioning period of the bulk sampling program in 2004, Shore and Howe representatives developed security protocols that were designed to enhance the chain of custody and maintain the integrity of the sampling program, as a whole, from the extraction of kimberlite from underground to the shipment of diamond concentrate to SGS

Lakefield, SGS Saskatoon and MSC for final diamond picking. Shore's chain of custody and security protocols were designed around a three-lock system, requiring three individuals be present at the removal, transport and escort of concentrate at all times. A video surveillance camera system was designed and installed in the process plant to follow the movement and processing of DMS concentrate from the DMS to the fenced-in recovery plant area. The video surveillance system was continuously monitored by Shore's security personnel. All security images were backed up for potential security reviews by a third party security auditor.

Howe and Shore also developed security and chain of custody protocols for both surface core and LDD drilling and sample processing programs.

In October, 2006, a number of security system enhancements were implemented to augment the overall site and process/recovery plant security measures. The enhancements to the security systems included the building of a security entrance building on the north side of the process/recovery plant, allowing for the monitoring of persons entering the process/recovery plant and a more effective search capability for those persons leaving the plant. The plant security building also included male and female changing facilities. All plant employees and authorized visitors were required to change into designated pocket less coveralls before entering the process/recovery facilities. The plant security entrance also housed the security control area, which allowed for a more secure environment for the security officers to monitor all high risk areas, utilizing the digital video ("CCTV") and door accesses recorded on the security management system.

In addition, a new main site access security building and security gate were constructed and placed in a location to afford tighter monitoring, recording and control of persons and vehicles accessing the main site. All vehicle parking was placed outside of the designated high security area, and only authorized vehicles were allowed entrance. All vehicles and persons leaving the designated high security areas were searched before being allowed to exit.

Enhanced security protocols were also implemented within the process/recovery plant operations area.

11.4.8 DIAMOND PICKING AND SORTING PROCEDURES

Since the commencement of the underground bulk sampling program and LDD mini-bulk sampling program in 2004 and September, 2005 respectively, diamond concentrate samples (X-ray, and grease table concentrates) were shipped to SGS Lakefield, SGS Saskatoon and / or MSC. SGS Lakefield is accredited to the ISO/IEC 17025 standard by the Standards Council of Canada, while SGS Saskatoon has followed the same quality protocols in preparation for accreditation. MSC is not currently accredited to the ISO/IEC 17025 standard by the Standards Council of Canada as a testing laboratory for specific tests; however, the MSC facility, process and quality assurance procedures have been audited and ratified by an independent industry expert (Harry Ryans, Process Specialist of AMEC Americas Limited ("AMEC"); see Ryans, 2006). Once all of the security checks were completed, the applicable laboratory carried out the following laboratory test work:

- processing and sorting of the x-ray concentrate; and,
- processing and sorting of the grease concentrate.

All of the sample information was entered into SGS's electronic Laboratory Information Management System ("LIMS") or MSC's Laboratory Data Management System. The QPs are of the opinion that the sample preparation, security and analytical procedures for the Star – Orion South Diamond Project are adequate for Mineral Resource estimation purposes.

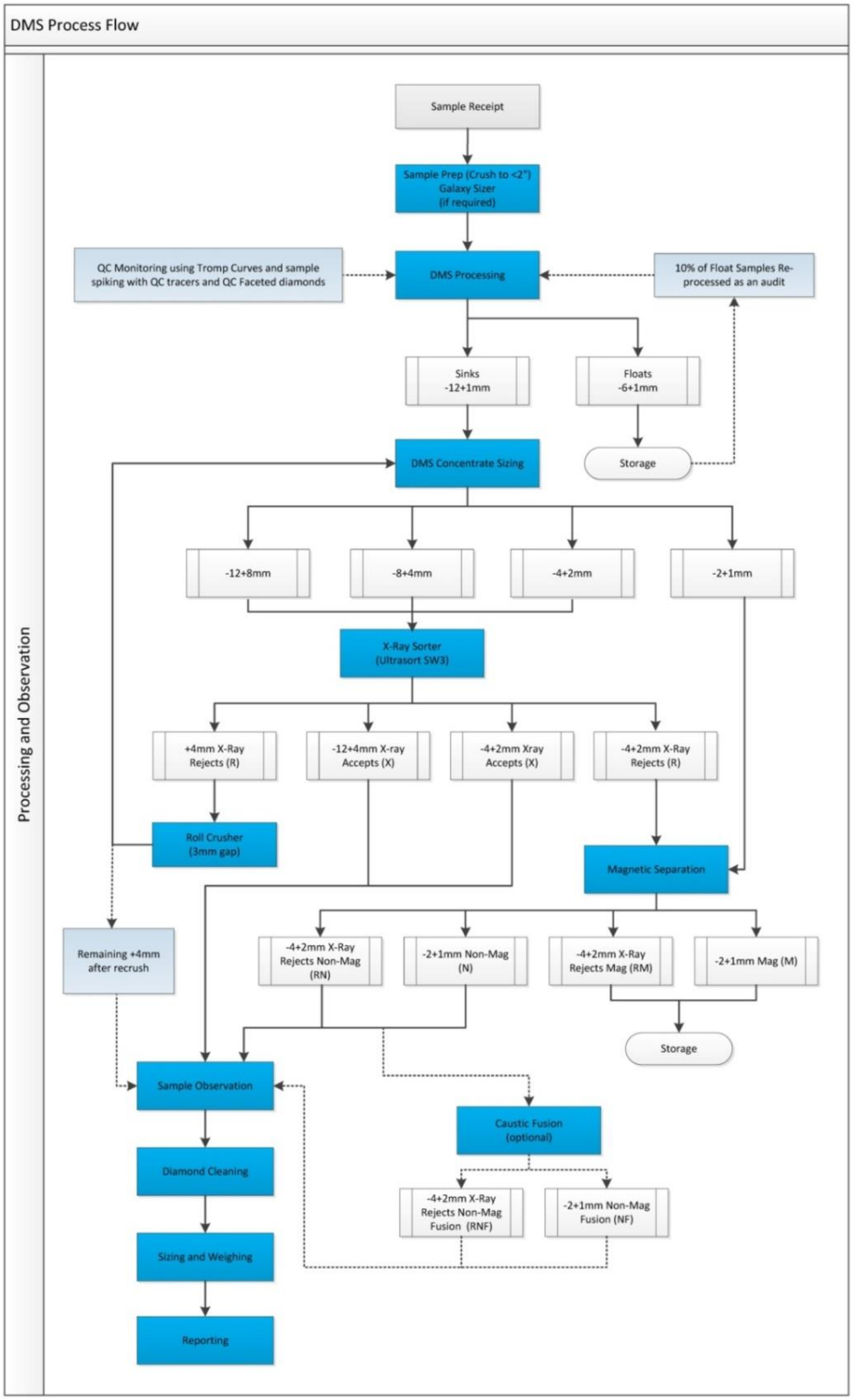
11.5. SAMPLE PREPARATION, ANALYSES AND SECURITY 2015 LDD PROGRAM

Kimberlite samples generated from the 2015 LDD program were shipped by truck in secure bulk bags with numbered seals and delivered to Rio Tinto Canada Diamond Exploration Inc's. Thunder Bay Mineral Processing Laboratory (ISO 9001: 2008 Certified) in loads of approximately 20 tonnes. This laboratory was chosen for the macrodiamond (+0.85 millimetre square mesh) recovery from the LDD kimberlite samples as its sample processing flow-sheet closely replicates that used in the past by the Shore on-site bulk sampling plant.

11.5.1 THUNDER BAY PROCESS PLANT – CRUSHING, SCRUBBING & RECOVERY CIRCUIT

The diamond recovery process at the Thunder Bay Mineral Processing Laboratory begins with on-site processing at its process plant in Stanley, Ontario. The bulk sample plant has a rated throughput of 10 tonnes per hour and includes an ore preparation circuit to scrub and size sample material. The processed sample is subsequently run through a Dense Media Separator ("DMS") cyclone to generate the high density "Sinks" material, which is collected and labeled as "Concentrate" for further processing through the Recovery circuit (Figure 11-4). The process plant also has a high pressure rolls crusher ("HPRC", set to 6 mm gap, not shown on Figure 11.4)) re-crush circuit to re-process all lighter +6 mm "Float" material. The Recovery circuit consists of an Ultrasort® SW-3 X-ray sorter to produce a final "Accepts" concentrate from which any diamonds are subsequently removed by hand during the final Observation phase in secure facilities at Thunder Bay Mineral Processing Laboratory.

FIGURE 11-4 THUNDER BAY PROCESS FLOWSHEET.



11.5.2 CHAIN OF CUSTODY AND SECURITY PROTOCOLS

All of the Orion South LDD-RC mini-bulk sample bags were shipped directly from the project site via transport truck to Rio Tinto's Thunder Bay DMS Processing Facility for diamond processing. Upon arrival, Rio Tinto's senior plant personnel would verify that all of the LDD mini-bulk sample bags arrived intact and that the security cinch tags for each LDD sample bag was checked and catalogued accordingly.

The storage and processing of all Orion South LDD mini bulk samples was undertaken in a secured, control accessed and CCTV monitored areas within and outside of the process plant facility.

11.5.3 DIAMOND PICKING AND SORTING PROCEDURES

The processing of the Ultrasort® x-ray diamond concentrates was undertaken in a secured, controlled access, CCTV monitored areas at Rio Tinto Canada Diamond Exploration Inc's. Thunder Bay Mineral Processing Laboratory. An independent, external and bonded security firm was engaged by Rio Tinto to monitor the CCTV equipment and provided personnel to supervise the movement of diamond bearing concentrates arriving from the DMS facility to the main lab as well provide security monitoring of the day to day diamond picking of the X-ray concentrates by Rio Tinto diamond picking staff. The independent security personnel also recorded both routine activities and any abnormal incidents (sample spillage, etc.) during the diamond picking / extraction program. The security personnel also checked sample seals, sample weights and provided key control services for dual-locked storage areas, concentrate canisters and restricted areas. Diamond picking personnel were subject to random searches at various times.

The Rio Tinto's Thunder Bay Mineral Processing Laboratory facility, process and quality assurance procedures have been audited and ratified by Howe in 2015.

Once all of the security checks were completed from the transport of Ultrasort concentrates from the DMS facility to the lab, the laboratory carried out the following laboratory test work:

- processing and sorting of the x-ray concentrate.
- diamond picking, weighing, characterisation, etc.

All of the sample information was entered into Rio Tinto's Laboratory Data Management System.

Howe is of the opinion that the sample preparation, security and analytical procedures for the Star – Orion South Diamond Project are adequate for Mineral Resource estimation purposes.

11.6. DIAMOND VALUATION

Diamond prices used in this Mineral Resource Estimate are derived from the valuation of diamond parcels collected by Shore from the Star and Orion South deposits. Valuation is undertaken by WWW using their June 8, 2015 diamond price book.

Sampling of Star and Orion South included underground ("UG") bulk samples (approx. 300 tonne samples) for diamond grade and diamond price estimation and large diameter drill ("LDD") mini-bulk samples (approx. 6-30 tonne samples) for diamond grade estimation only. The detailed diamond valuation is conducted on the diamond parcels recovered from the UG bulk sampling and the individual parcels for each of the kimberlite units sampled in the UG are documented in the tables below.

The Parcel and Model price details for each of the kimberlite units in the Star Kimberlite are listed in Table 11-2 and 11-3.

TABLE 11.2 THE PARCEL AND MODEL PRICE DETAILS FOR EACH OF THE KIMBERLITE UNITS IN THE STAR KIMBERLITES (JUNE 8, 2015 PRICEBOOK)

Kimberlite Unit	UG Carats	Parcel Price (US$/carat)	Model Price (US$/carat)			Model Price (Cnd$/ct)*		
			Model	Minimum	High	Model	Minimum	High
Cantuar	1,667.60	297	333	272	482	417	340	603
Pense	1,410.11	145	183	144	228	229	180	285
EJF	7,122.40	166	227	189	290	284	237	363
MJF-LJF	91.24	189	195	149	279	244	186	349

* Exchange Rate is USD$1.00 =Cnd$1.25.

TABLE 11.3 THE PARCEL AND MODEL PRICE DETAILS FOR EACH OF THE KIMBERLITE UNITS IN THE ORION SOUTH KIMBERLITE ARE LISTED IN THE TABLE BELOW.

Kimberlite Unit	UG Carats	Parcel Price (US$/carat)	Model Price (US$/carat)			Model Price (Cnd$/ct)*		
			Model	Minimum	High	Model	Minimum	High
EJF	1,399.59	128	191	131	267	239	164	334
Pense	581.33	82	161	113	221	201	141	276

* Exchange Rate is USD$1.00 =Cnd$1.25.

The 2015 model diamond prices for the Star Deposit have increased in value relative to the last diamond valuation for the Star Deposit and Orion South Deposits completed by WWW in 2008.

At Star the Parcel Prices show an increase for the EJF Domain of 44% from US$/115 to US$/227; for the MJF and LJF Domain of 125% from US$/84 to US$/149; for the Pense Domain of 84% from US$/79 to US$/144; and for the Cantuar Kimberlite Domain of 54% from US$/193 to US$/333. At Orion South, the Parcel Prices show an increase for the EJF Domain of 31% from US$/98 to US$/191; and for the Pense Domain of 44% from US$/57 to US$/161

12. DATA VERIFICATION

The following section for pre-2015 work is summarised from previous technical reports on the Star Diamond Project (Orava et al., 2009) and the Orion South Diamond Project (Ewert et al., 2009b).

12.1. INTRODUCTION

The database management of underground shaft and drift sampling of the underground bulk sampling, LDD mini-bulk sampling, and diamond processing programs were administered and monitored on a number of levels throughout the sampling programs.

From January 2003 to January 2007, Howe provided third party supervisory and monitoring services to Shore in the sample processing, chain of custody and sample integrity of the underground bulk sample program and LDD mini-bulk sampling program. Since January 2007, Shore personnel conducted all supervision and monitoring services while Howe acted as a third party auditor. In 2015 Howe renewed third party supervisory and monitoring services to Shore in the sample processing, chain of custody and sample integrity of the 2015 LDD-RC mini-bulk sampling program.

Howe believes that the quality of the diamond processing data is reliable and that the sample preparation, analysis and security for the 2015 LDD-RC, pre-2015 LDD mini-bulk and bulk sample processing programs were carried out in accordance with exploration best practices and industry standards.

Shore and Howe developed operating QA/QC protocols to monitor and quantify the efficiency and recovery of its on-site process plant; these are discussed in detail in Eggleston et al. (2008) and briefly summarized below along with details of the 2015 data verification programs.

12.2. QA/QC AUDITS

12.2.1 QA/QC AUDITS PRE 2015

The following QA/QC operating protocols were established by Shore and Howe for the efficient operation of the DMS and recovery circuits.

- **DMS QA/QC Operating Protocols:** During the operation of the DMS circuit, the operating parameters were strictly monitored by Shore and Howe in order to achieve proper kimberlite material separation:

- The SG of the circulating medium was measured manually every 15 minutes with a densitometer and in real time with a DebTech® dense medium controller system. Since the commissioning of the DMS circuit, the operating range of the DMS circuit, determined by numerous density tracer tests over several SG values was between SG 2.30 and SG 2.50.
- Circulating medium SG readings of both the DMS cyclone overflow and underflow were collected periodically.
- The operating range of the cyclone inlet velocity pressure was maintained at a constant pressure (i.e. no surging).
- It was ensured that the volumetric ratio between kimberlite material feed and circulating medium fed to the mixing box was such that the loss of diamonds to the floats screen (due to the overfeeding of material through the cyclone) was negligible.
- Periodic wet screening checks of the circulating medium for fines from the kimberlitic material were carried out in order to verify the presence, quantity and size of non-magnetic contaminants that could increase the viscosity of the circulating medium.
- Periodic dry screening checks of the circulating medium particle size analysis were carried out in order to determine the coarsening of the circulating medium due to a reduction of fine FeSi particles.
- Periodic checks of the +1 to -6 mm float material exiting the process plant for any > 1 mm sized, high SG kimberlitic indicator minerals such as pyrope garnet (SG 3.50), eclogitic garnet (SG 3.50) and Cr-diopside (SG 3.20).
- Density tracer tests were carried out daily to monitor the separating effectiveness of the DMS cyclone.

- **X-ray Sorter QA/QC Operating Protocols:** In order for the x-ray sorter to maintain operating efficiency, the unit was calibrated weekly by conducting marble tracer tests. As well, a regular preventive maintenance schedule for the x-ray sorter unit was strictly followed.

- **Process Plant - Sample Contamination:** Contamination of samples by diamonds from previously run samples can adversely affect sample results and subsequent economic decisions. Therefore, strict guidelines were followed by Shore to prevent batch sample cross-contamination.

- **Process Plant - Diamond Recovery Efficiency and QA/QC Audits:** Audits of grease and coarse reject kimberlite table tailings have been regularly undertaken since 2004.

Both AMEC and Howe concluded that audit results for the recovery plant tailings were good, and tailings data were accepted with no problems (Ryans 2006 and Eggleston et al. 2008). Results obtained to October, 2007 from Mineral Services Canada ("MSC") indicate that low diamond recoveries from the audited samples confirm the integrity of the process and recovery plants.

- **Grease Table Tailings Audit Program:** In order to confirm the efficiency of the recovery plant circuit at Shore's process plant facility, grease table tailings bulk sample bags from both the underground sampling and the LDD mini-bulk sampling programs were shipped to MSC for tailings audits with recovered diamonds being added to the Shore diamond database.

  Four independent tests achieved 100 % recovery of spike diamonds in the size range +2 to -4 mm. The diamond summary reports provided by MSC conform to the CIM guidelines for the reporting of diamond exploration results (CIM, 2003).

  Results from the grease table tailings audits of 16 underground batches and 356 LDD batches completed by MSC indicate that the carats recovered in the audit process from underground batches on the Star Kimberlite deposit added 1.4 % to the total carat weight of the batches audited. Carats recovered in the audit process from LDD batches added 4.6 % of the total carat weight.

  Any diamonds recovered at this audit stage were reported separately by MSC. The diamond counts and total carat weight for each batch sample, however, have been incorporated into a merged diamond results database containing the results from MSC for final diamond grade reporting.

  The processing method has been demonstrated to be effective and reliable in the recovery of diamonds through a series of tests run using natural diamond spikes on test sample material provided by Shore.

- **X-Ray Concentrate Audit Program:** To evaluate the final picking of x-ray concentrate by SGS Lakefield and SGS Saskatoon, final concentrate audits were completed by MSC on both underground (111 batches) and LDD (792 batches) sample batches from the Star Kimberlite. Carats recovered in the audit process from underground batches on the Star Kimberlite added approximately 2.3 % to the total carat weight. Carats recovered in the audit process from LDD batches added 1.2 % of the total carat weight for Star LDD samples. On Orion South, 18 underground batches and 230 LDD batch audits resulted in a total carat increase of 1.2 % and less than 1 % respectively.

Any diamonds recovered at this audit stage were reported separately by MSC and SGS Lakefield and SGS Saskatoon. The diamond counts and total carat weight for each batch sample, however, have been incorporated into a merged diamond results database containing the results for final diamond grade reporting.

- **Independent Laboratory Audits:** Howe conducted a laboratory audit of SGS Lakefield on November 4, 2005. AMEC carried out a laboratory audit of MSC in November, 2007. Details of these earlier audits are presented in Eggleston et al. (2008).

  From July, 2008 to December, 2008, Howe conducted an audit of the MSC and SGS Saskatoon laboratories in order to:

  - review and audit the SGS Saskatoon facility;
  - review and audit the grease table tailings audit program (MSC); and,
  - review and audit MSC's processing facility for final diamond recovery from x-ray and grease concentrates.

  During the audits, the chain of custody, handling, sorting, and security protocols were reviewed by Howe and were determined to provide reasonable assurance of the adequacy of the quality of operations at each facility. No material deficiencies were identified.

- **Site Audits:** During the advanced exploration program phase, AMEC carried out several site visits to review the operation of the process plant, examine the kimberlite material, review all aspects of the technical work and QA/QC being carried out on the Project (i.e. LDD and underground sampling and processing, geological core logging, etc.) and to undertake data verification reviews.

  Howe also carried out several site visits to review the operation of Shore's process plant and examine the kimberlite material. Howe conducted regular visits in order to review all aspects of the technical work and QA/QC being carried out on the Project (i.e. LDD and underground sampling and processing, geological core logging, etc.) and to complete data verification reviews. Howe determined that the Company had a well operated and documented operation of the treatment of bulk samples and that there were no issues of sample integrity (Coopersmith, 2009).

- **AMEC Bulk Sample Processing Audit (2006):** A processing audit utilizing random periodic spiking (which can substitute for continuous spiking), was performed in March, 2006 (Coopersmith, 2006). Twenty natural diamond tracers were placed in mini-bulk samples from the Star LDD hole LDD-011. The tracer diamonds were natural diamond crystals with at least one polished face with the tracer number and weight in carats laser-etched onto the polished face. The tracers had known luminosity properties for x-ray recovery, and were of a variety of weights and shapes similar to what might be expected to occur naturally in a bulk sample. The tracers were placed at random intervals into the raw sample feed just as it exited from the feed hopper and before it dropped onto the primary feed belt.

All diamond tracers placed in sample LDD-011-03 were recovered from the x-ray concentrate by Shore's on site Bulk Sampling Plant.

- **Howe Bulk Sample Processing Audit (2008):** A second processing audit utilizing random periodic spiking was performed in September and December, 2008 at Shore's plant. These audits were completed while Orion South Kimberlite was in the processing stream. Two samples (one LDD, and one underground) were chosen by Howe for auditing and securely shipped to SGS Saskatoon (LDD sample) and MSC (underground sample). Four natural and 14 synthetic diamond tracers were placed in the LDD sample and 16 natural and 99 synthetic diamond tracers were added to the underground bulk sample. SGS Saskatoon routinely performs all x-ray and grease concentrate processing and diamond sorting (selection) of LDD samples, audit samples, and in the past had treated underground samples. MSC had been routinely treating the underground samples and audit samples. The procedures at each of the above laboratories were largely similar.

  Howe was present for the diamond sorting of the two audited samples at their respective laboratories. Procedures, operations, security and documentation were reviewed and observed. No issues were noted by Howe.

  All natural diamond tracers placed in the samples were recovered by Shore's bulk sample plant, and all from the x-ray concentrate. The synthetic tracers were mostly recovered, with the loss of three 2 mm and one 4 mm tracers. The three 2 mm tracers were recovered on the grease table. In the opinion of Howe, this shows acceptably good recovery efficiency.

  According to Howe, the audit exercise revealed a well-operated and documented operation of the treatment of bulk samples. There were no issues of sample integrity. Audit results indicated a high efficiency of diamond recovery. The bulk sampling plant facility established and operated by Shore conformed to industry standards. The audit results for the recovery plant tailings were good, as expected, and tailings data were accepted with no problems. Based on the review of the historical density tracer tests of the DMS cyclone as well as results obtained by Howe during its audit, Howe was satisfied with the DMS circuit efficiency.

Howe is of the opinion that the sampling and processing procedures and QA/QC program for the underground bulk sampling, LDD mini-bulk sampling and diamond processing program has been well documented by Shore, and meets industry standards. For the current Mineral Resource estimation work, the QPs have reviewed all the relevant reports and data and concur with previous assessments that the QA/QC programs and results are adequate for Mineral Resource Estimation work.

12.3. QA/QC AUDITS 2015 LDD PROGRAM

The following QA/QC operating protocols were established at Rio Tinto Canada Diamond Exploration Inc's. Thunder Bay Mineral Processing Laboratory:

As part of observation, X-ray reject materials are scanned to ensure full recovery. The QA-QC program for this sample processing program included regular epoxy density tracer tests to confirm DMS cyclone separation density efficiency as well as spiking every sample with density tracers or faceted natural diamonds of varying sizes to ensure complete recoveries and audits of sample reject material. All 97 samples from the OS LDD drilling program processed at the Thunder Bay Laboratory were spiked using either distinct, facetted natural diamonds or synthetic tracers for QA/QC purposes. The laboratory achieved a 100 percent recovery rate for all spikes and tracers. A total of 16 Float audits were conducted. The Floats include +0.85-6.0 mm size fraction that is rejected by the DMS and does not pass through the diamond recovery process. Five stones with a combined carat weight of 0.1140 carats were recovered. In addition, 16 samples of the 1.0-2.0 mm magnetic fraction were audited. The magnetic fraction includes material that does not pass through the final diamond recovery process. Ten stones with a carat weight of 0.2365 carats were recovered. In Howe's opinion, these audit results are not significant and are well within recovery tolerances acceptable for Mineral Resource estimation purposes.

12.4. DATABASE VERIFICATION

Howe imported all collar, survey, density, geology and LDD/Underground sample data into Micromine. LDD batch sample intervals were then back-tagged against the geological wireframes created by Shore and Howe and compared to the Shore geology logs. A small number of discrepancies were noted by Howe. The database had a very low rate of error overall and those discrepancies noted by Howe were resolved by Shore. Having reviewed the Project database, Howe believed it to be suitable for Mineral Resource estimation purposes.

13. MINERAL PROCESSING AND METALLURGICAL TESTING

13.1. STAR UNDERGROUND BULK SAMPLING PROGRAM

Upon completion of the underground bulk sampling program on the Star Kimberlite, a combined total of 10,966 carats of diamonds greater than 0.85 mm were recovered from a total of 75,435.68 dry tonnes of kimberlite material (Figure 13-1) that was processed through Shore's batch sampling process plant from both Shore's 100 % owned Star Kimberlite and the FalC-JV Star West bulk sampling programs. Tonnages include sampling of drift material, underground resource evaluation ("RE") samples, geotechnical test samples and clean-up samples. Carat totals include 101.23 carats recovered from grease tailings and picked concentrate audits and 3.59 carats from float tailings audits. Total production and sampling results are summarized in Table 13-1 and presented in detail by batch in Eggleston et al. (2008). Underground bulk sample batch results were converted to cpm^3 for the 2015 Mineral Resource Estimate from density data derived from tonnage/volume reconciliation of the underground sampling program 3D laser survey completed in 2007.

FIGURE 13-1 STAR KIMBERLITE UNDERGROUND BATCH AND GEOLOGY MAP

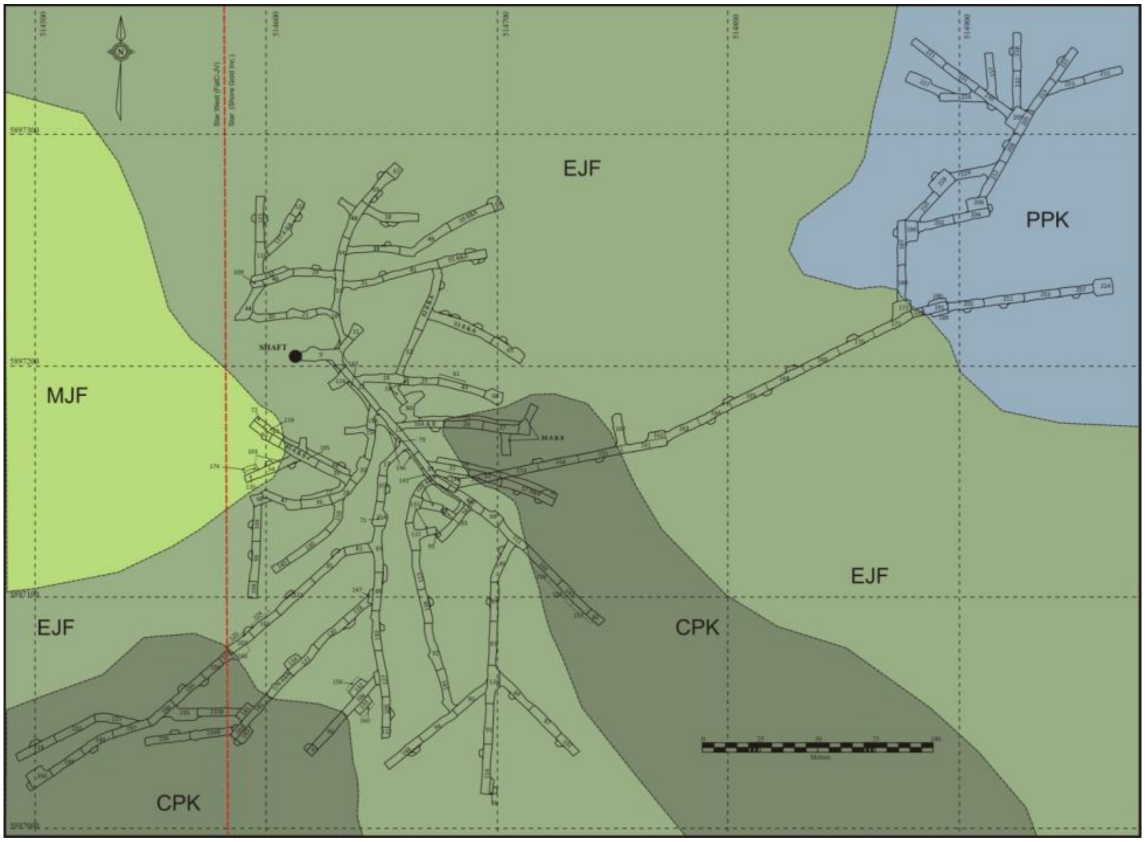


TABLE 13-1 SUMMARY OF COMBINED PRODUCTION AND SAMPLE RESULTS (UNDERGROUND, RE, GEOTECH AND CLEAN-UP) FOR STAR KIMBERLITE (INCLUDING STAR WEST)

Sample Type	Property	No. of Batches	Metric Tonnes (dry) processed	Total Stones	Total Carats*	Grade (cpht)
Drift	Star	252	60,714.68	76,428	9,557.98	15.74
Drift	Star West	15	4,173.74	3,440	747.40	17.91
RE	Star	53	1,471.88	1,455	224.47	15.25
RE	Star West	6	161.10	91	14.51	9.01
Geotech	Star	4	23.69	21	3.51	14.83
Clean-up	combined	12	8,890.59	2,776	418.13	4.70
TOTAL		**342**	**75,435.68**	**84,211**	**10,966.00**	**14.54**

* includes carats from grease tailings and picked concentrate audits (101.23 carats) and 3.59 carats from float tailings audits.

Utilizing all underground batch sample results, the average run-of-mine ("ROM") grade obtained from the processed batches from the Star Kimberlite was 14.54 cpht; however, if the clean-up data is removed, the ROM grade is 15.85 cpht. The average ROM grade of the various Star Kimberlite units is presented in Table 13-2.

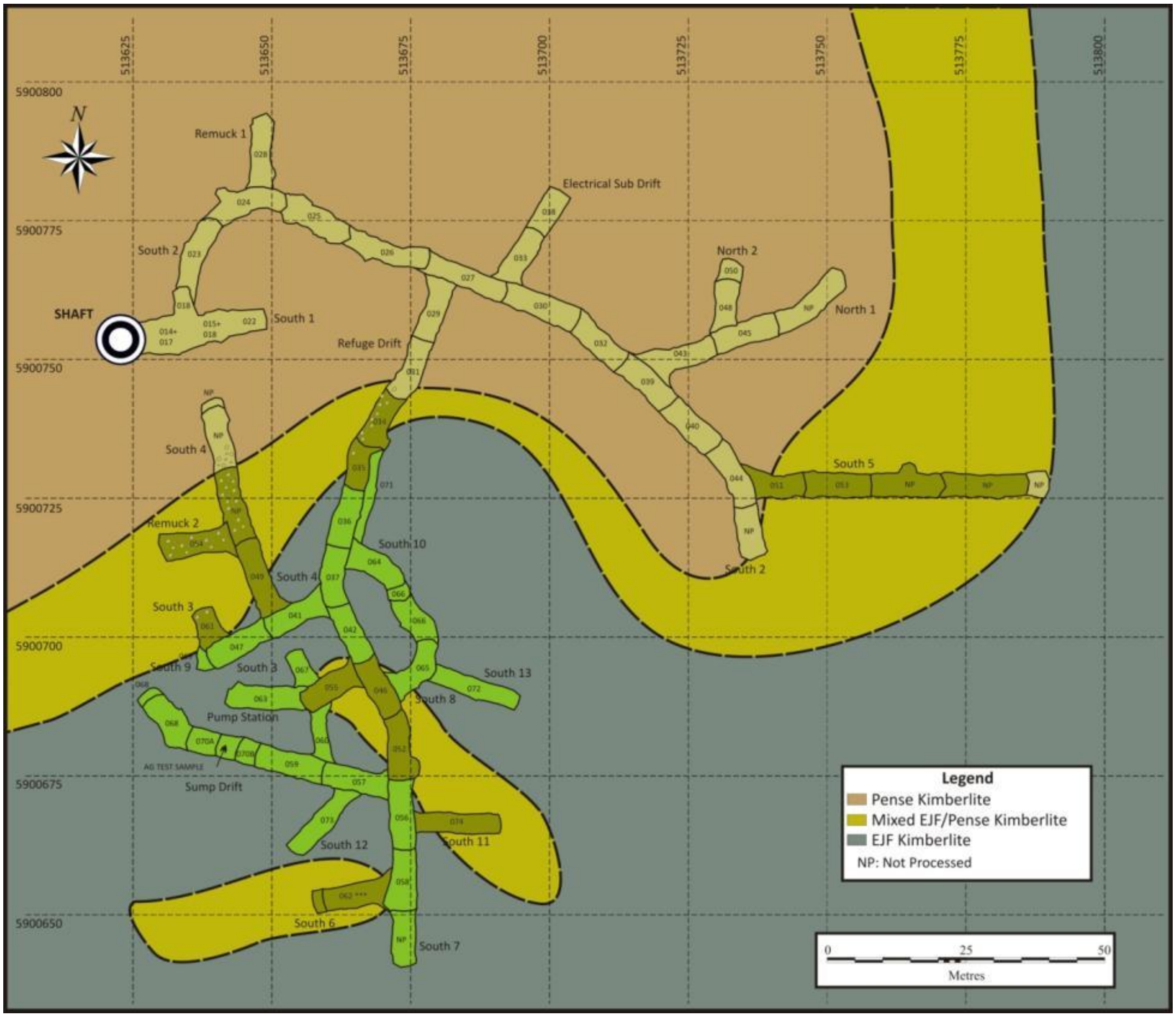
TABLE 13-2 SUMMARY OF UNDERGROUND ROM DIAMOND GRADES FROM THE VARIOUS STAR KIMBERLITE UNITS

Kimberlite Phase	Grade (cpht)
LJF	2
MJF	7
EJF	18
Pense	13
Cantuar	18

13.2. ORION SOUTH UNDERGROUND BULK SAMPLING PROGRAM

A total of 75 underground batches (78 samples) from 25,468 dry tonnes of kimberlite (Figure 13-2) was completed in March, 2009, whereby a total of 2,346 carats of diamond was recovered from the Orion South bulk sample. The largest stone recovered was a 45.95 carat stone.

FIGURE 13-2 GEOLOGICAL MAP OF THE UNDERGROUND DRIFTS ON ORION SOUTH



The final Orion South underground bulk sample results, on a per unit basis, are listed in Table 13-3.

TABLE 13-3 UNDERGROUND BULK SAMPLING RESULTS ON A PER KIMBERLITE UNIT BASIS – FALC-JV ORION SOUTH KIMBERLITE

Kimberlite Unit	Dry Tonnes	Number of Stones	Total (carats)	Grade (cpht)	Largest Stone (carats)
LJF	115.8	90	6.96	6.01	0.38
EJF	8,040.9	7,794	1,414.00	17.59	32.96
Mixed Pense/EJF	3,154.8	2,218	334.85	10.61	3.61
Pense	12,046.8	5,116	586.32	4.87	45.95
Clean-up	109.7	30	4.14	3.78	1.19
Total	23,468.0	15,248	2,346.27	10.00	

As with the Star Kimberlite, the EJF is the dominant kimberlite unit within the Orion South kimberlite complex in terms of volume and grade. The EJF diamond grade, as determined from the underground bulk samples from Orion South, is approximately 18 cpht. For purposes of modelling and resource estimation the transition zone (mixed Pense/EJF) was assigned to either the Pense of EJF based on the percentage of dilution.

13.3. LDD SAMPLING PROGRAMS

13.3.1 STAR LDD PROGRAM

Utilizing the entire LDD-RC sampling (103 LDD-RC holes) (Figure 10-1) and processing (96 LDD-RC holes processed) dataset a total of 1,416.6 carats were recovered from 11,662.8 processed tonnes (from 8,907.4 m^3 of calculated volume,) of kimberlite. Table 13-4 shows the tonnages and carats recovered from the LDD-RC processing on a kimberlite unit basis.

TABLE 13-4 SUMMARY OF STAR KIMBERLITE LDD PROCESSING AND TOTAL CARAT RECOVERY ON A PER KIMBERLITE UNIT BASIS

Kimberlite Unit	Number of Sample Batches	Processed Dry Tonnes	Calculated Volume[1]	Total Stones	Total Carats[2]	Grade (cpm^3) unadjusted
UKS/URVKU	43	730.08	454.93	29	1.41	0.003
LJF	97	1,028.671	969.23	233	11.49	0.01
MJF	97	1411.42	1000.84	1,080	68.54	0.07
EJF	528	7,106.26	5405.36	12928	1,140.09	0.21
PPK	42	583.34	433.55	990	87.87	0.20
JLRPK	9	91.75	78.33	113	10.96	0.14
CPK	39	527.97	382.19	565	92.16	0.24
Other[3]	15	115.44	183.33	47	4.13	n/a
Total	**870**	**11,662.8**		**15,985**	**1,416.6**	

Notes:
1. Theoretical tonnes and grades are historical; this revised Mineral Resource Estimate utilises cpm^3
2. Includes carats recovered from audit process
Includes kimberlitic sediments and country rock intersections that are not in the resource model

13.3.2 ORION SOUTH LDD PROGRAM

PRE 2015

Upon completion of the LDD-RC drilling program on Orion South in 2009 (Figure 10-2), 881 samples totalling 1,039.7 carats were recovered from 9,564.2 processed tonnes (from 8,907.4 m^3 of calculated volume) of kimberlite. The results for each principal kimberlite unit sampled by the LDD-RC mini-bulk sampling are shown in Table 13-5. These results include both the 1.20 m diameter LDD-RC holes drilled by the current joint venture and those from twenty-four 0.914 and 0.609 metre diameter LDD-RC holes completed by the previous joint venture operators prior to 2006.

TABLE 13-5 DIAMOND RESULTS FROM ORION SOUTH LDD MINI-BULK SAMPLES ON A PER UNIT BASIS PRE 2015

Kimberlite Unit	Number of Sample Batches	Processed Dry Tonnes	Calculated Volume[1]	Total Stones	Total Carats[2]	Grade (cpm^3) unadjusted
VPK	24	233.95	179.95	127	7.98	0.04
LJF	105	1,105.76	866.99	109	8.48	0.01
EJF	509	5348.09	4,193.45	8030	820.60	0.20
Pense	194	2424.33	1,793.83	1,853.0	182.17	0.10
P3	12	154.09	108.30	212	18.23	0.17
CPK	14	154.43	107.09	18	1.51	0.01
Other[3]	23	143.55	104.48	9	0.74	n/a
Total	**881**	**9,549.2**	**16,213.2**	**10,358.**	**1,039.7**	

Notes:

1. Theoretical tonnes and grades are historical; this revised Mineral Resource Estimate utilises cpm^3

2. Includes carats recovered from audit process

Includes kimberlitic sediments and country rock intersections that are not in the resource model

2015 LDD Program

Upon completion of the LDD drilling program on Orion South in 2015 (Figure 10-2), 56.75 carats were recovered from 439 processed tonnes (300.9 m^3 of theoretical volume) of kimberlite from 97 samples. The results for each principal kimberlite unit sampled by the LDD-RC mini-bulk sampling are shown in Table 13-6.

TABLE 13-6 2015 LDD PROGRAM

Hole #	LDD Hole #	Kimberlite Type[1]	Drill Intercept (metres)	Calculated volume (m^3) [2]	Carats (+1 DTC)[3]	Grade (cpm^3)[4] unadjusted	Stones (+1 DTC)[3]	Largest Stone (ct)
EJF Intersections								
1	141-15-019	EJF	171.55 - 227.95	16.46	5.49	0.33	98	1.15
2	140-15-022	EJF	102.35 - 153.20	14.85	2.69	0.18	76	0.24
3	141-15-020	EJF	137.02 - 180.00	12.56	2.99	0.24	38	1.04
4	141-15-021	EJF	136.80 - 191.40	15.98	4.27	0.27	109	0.27
5	141-15-022	EJF	150.00-217.60	19.86	4.35	0.22	106	0.35
6	141-15-023	EJF	163.00-213.90	14.89	3.88	0.26	96	0.75
7	141-15-024	EJF	160.19-179.60	5.71	2.28	0.40	32	0.76
7	141-15-024	EJF	188.90-222.00	9.72	1.74	0.18	24	1.09
8	140-15-023	EJF	132.00-183.00	14.88	6.38	0.43	67	3.25
9	140-15-024	EJF	162.10-194.80	9.64	1.01	0.10	23	0.21
10	140-15-025	EJF	99.70-192.00	26.94	7.79	0.29	123	0.82
11	140-15-026	EJF	107.30-113.00	1.66	0.17	0.10	7	0.05
12	140-15-027	EJF	130.05-194.00	18.66	4.60	0.25	86	0.78
Totals and Averages		EJF		**183.86**	**48.6**	**0.26**[5]	**899**	**3.25**
12	140-15-027	(P3 reclassified)	207.10-220.00	3.76	0.85	0.23	20	0.12
Pense Intersections								
2	140-15-022	Pense	153.20-204.90	15.03	1.49	0.10	44	0.13
3	141-15-020	Pense	180.00-221.10	11.94	1.64	0.14	27	0.25
9	140-15-024	Pense	194.80-221.00	7.64	0.53	0.07	19	0.09
10**	140-15-025	Pense	192.00-199.00	2.04	0.95	0.46	14	0.26
11	140-15-026	Pense	113.00-191.20	22.75	1.46	0.06	48	0.23
12	140-15-027	Pense	194.00-207.10	3.83	0.40	0.10	12	0.03
Totals and Averages		**Pense**		**61.19**	**5.52**	**0.09**[5]	**150**	**0.25**
Other Intersections								
1	141-15-019	FG VK	147.55-171.55	7.00	0.14	0.02	9	0.02
1	141-15-019	RVK	227.95-234.85	2.01	0.02	0.01	1	0.02
3	141-15-020	FG VK	126.02-137.02	3.21	0.01	0.003	1	0.01
4	141-15-021	FG VK	191.40-204.40	3.79	0.10	0.03	4	0.04
5	141-15-022	FG VK	127.50-150.00	6.63	0.41	0.06	19	0.04
5	141-15-022	RVK	217.60-227.60	2.92	0.14	0.05	5	0.06
6	141-15-023	FG VK	143.10-163.00	5.86	0.26	0.04	15	0.05
7	141-15-024	FG VK	139.60-160.19	6.06	0.47	0.08	19	0.08
7	141-15-024	SAK	179.60-188.90	2.97	0.01	0.003	1	0.01
8	140-15-023	FG VK	183.00-197.75	4.35	0.02	0.005	1	0.02
9	140-15-024	FG VK	140.00-162.10	6.50	0.18	0.03	13	0.02
11	140-15-026	P1*	191.20-194.00	0.81	0.02	0.03	1	0.02
Totals and Averages				**52.11**	**1.78**	**0.03**[5]	**89**	**0.08**

Notes: *revised Mineral Resource Estimate utilises cpm^3
*P1 Minor unit not modeled in this resource estimate
**Reclassified after news release

8) Kimberlite Types: EJF: Early Joli Fou Kimberlite; Pense: Pense Kimberlite; RVK: Reworked Volcaniclastic Kimberlite,
   FG VK: Fine Grained Volcaniclastic Kimberlite, P3: Early Pense Kimberlite
9) Calculated Volumes are calculated using the calipered drill hole volumes or theoretical volumes where caliper is not available
10) Commercial diamonds are defined as diamonds that will not pass through a +1 DTC screen, which has round apertures of 1.09 millimetres.
11) Cpm^3: diamond grade in carats per metre cubed.
12) Weighted average values.

14. MINERAL RESOURCE ESTIMATES

14.1. INTRODUCTION

During the period October 2015 to November 2015, Burgundy Mining Advisors Ltd. and ACA Howe International Ltd. ("Howe") carried out a revised Mineral Resource Estimate ("MRE") study for both the Star and Orion South deposits. This section of the report presents MRE update methodologies, results and validations for each deposit.

In the opinion of the Authors, the resource evaluation reported herein is a reasonable representation of the global diamond mineral resources at the Star and Orion South diamond deposits based on the current level of sampling. The updated MREs have an effective date of November 9th, 2015 and are reported in accordance with the Canadian Securities Administrators' National Instrument 43-101. MRE are generated in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserves Best Practice Guidelines" (CIM Council, 2003) including the "Guidelines for Reporting of Diamond Exploration Results".

MRE for the Star and Orion South deposits are prepared under the supervision of P. Ravenscroft, FAusIMM, owner of Burgundy Mining Advisors Ltd and a Qualified Person for the reporting of Mineral Resources as defined by NI 43-101. Creation of geological domains, block modelling and pit optimization is undertaken by L. McGarry, Howe Senior Project Geologist. Mr. Ravenscroft visited the Star and Orion South project site on April 15 2015 to review the geology and observe the 2015 core drilling process. Mr. McGarry visited the Star and Orion South project sites on September 27 2015 to review diamond drill core and confirm the location of drill collars. Mr. Leroux visited the project on June 3, 2015 to review the LDD-RC drilling process and confirm the location of the LDD-RC holes.

Mineral resource modelling and estimation is carried out using the commercially available Micromine (Version 2014) and SGEMS v2.5 software programs. In this report all units are expressed in the metric system, and diamond grades are given as carats per-meter cubed ("cpm^3"), carats per-metric tonne ("cpt") or carats-per-hundred-metric tonnes ("cpht") values.

Reported Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no guarantee that all, or any part, of a Mineral Resource will be converted into a Mineral Reserve.

Previous MREs generated for the projects are described in earlier technical reports for Star (Ewert et al., 2009a) and Orion South (Ewert et al., 2009b). The current MREs presented in this report supersede all past estimates and benefit from the changes that are summarized in Section 14.13 '*Comparison With Previous Resource Estimate'*.

14.2. DATA SUMMARY

The Authors have reviewed sample collection methodologies adopted by the Company and previous operators and are satisfied that data collection methodologies are of a standard to allow the estimation of resources under CIM guidelines and that mineral resource databases for the Star and Orion South deposits fairly represent the primary information.

Prior to constructing a mineral resource database for each deposit, files are interrogated via Micromine validation functions to cross reference collar, survey, assay and geology files in order to confirm drill hole depths, inconsistent or missing sample or logging intervals, and downhole survey data.

The Star and Orion deposit geometries are dominantly isotropic in plan and drilling comprises vertical holes on a north-south, east-west orientated grid. Accordingly, coordinates collected in the UTM NAD 27 Zone 13 projection system are not converted to a local grid.

14.2.1 STAR

Howe relied on the following drill and underground bulk sample data provided by Shore in the form of a data compilation CD containing a series of Microsoft Excel tables and Micromine database files delivered to Howe during October, 2015.

- 313 surface diamond core drill holes, completed between 1996 and 2008;
  - 11 diamond drill holes completed before 2000,
  - 273 diamond drill holes 2000 to 2007 at Star and the 134 Kimberlite,
  - 29 geotechnical/hydrological holes between 2006 and 2010.
- 213 underground diamond core drill holes completed between 2004 and 2006.
- 105 LDD holes completed between 1996 and 2008;
  - 2 LDD holes completed in 1996 and 2001, for which no sampling data is used. (134-96-001RC and STAR-31RC).
  - 103 holes completed between 2005 and 2008, of which 96 LDD holes reported diamond sampling data. Seven holes did not sample kimberlite due to drilling difficulties (e.g. hole collapse or deviation).
- 321 underground bulk sample batches.

A mineral resource database for the deposits is created in Micromine that incorporates the files contained in Table 14-1.

14.2.1.1 Data Editing

Upon review, a number of samples were removed from the underground bulk sample database. These 'clean up' or 'slash' samples were collected after extraction of in situ rock and comprised small tonnages of mixed material that are deemed to be unrepresentative of the assigned lithologies. These samples are as follows. STAR_UGB_073, 74, 78, 149, 150, 151, 173, 226.

TABLE 14-1 STAR MICROMINE INPUT DATA FILES

MM Data Type	Number of Records	Number of Holes	Metres	Comments
MM Database				
Collar				
DDH	313	313	70,630	
UG	213	213	21,272	
LDD	105	105	16,881	Of which, 7 failed, 97 were logged and 96 were sampled.
Bulk Sample	321	321		
Down Hole Survey				
DDH	1,017	313		
UG	1,071	213		
LDD	105	105		
Geology				
DDH	3,719	291	6,7421	
UG	2,362	212	1,6870	
LDD	990	97	8,817	Of which 870 intervals were processed.
Bulk Samples				
LDD Samples	870	96	7,702	Samples equal 11,663 processed tonnes
Underground Samples	317	317		
Additional Input Data				
Various geological cross sections and plan maps showing EM survey data.				
Star_DEM_Sand.dxf				
Star UG.dxf				

14.2.2 ORION SOUTH

Howe relied on the following drill data and underground bulk sample data provided by Shore in the form of a data compilation CD containing a series of Microsoft Excel tables and Micromine database files delivered to Howe during September, 2015.

- 238 surface diamond core drill holes, completed between 1993 and 2015;
  - 11 diamond drill holes completed before 2000,
  - 180 diamond drill holes completed between 2001 and 2009,
  - 47 diamond drill holes completed between 2010 and 2015.
- 89 LDD holes completed between 1996 and 2010 of which 76 LDD holes reported diamond sampling data;
  - 14 LDD holes completed between 2010 and 2015, of which 12 intersected kimberlite,
  - 75 LDD holes completed prior to 2009, of which 64 intersected kimberlite and are sampled. Five (5) holes failed due to drilling difficulties. Samples from eight (8) pre 2000 six (6) inch holes are not used in this study. Three (3) LDD holes were completed for geotechnical purposes.
- 78 underground bulk samples (from 75 batches).

A mineral resource database for the deposit is created in Micromine that incorporates the files contained in Table 14 2.

14.2.2.1 Data Editing

Clean up sample OS_UGB_OS-016 of small tonnage and mixed material was removed from the underground bulk sample database.

The geological log for diamond drill hole 140-02-015C conflicted with hole LDD-140-08-013. Hole 140-02-015C was completed in 2002 and the collar surveyed by handheld GPS, following a review of satellite imagery and after consideration of the orientation of the EJF and Pense contact, the hole collar was moved 20 m to the west-northwest.

TABLE 14-2 ORION SOUTH MICROMINE INPUT DATA FILES

MM Data Type	Number of Records	Number of Holes	Metres	Comments
MM Database				
Collar				
DDH	238	238	54,074	
LDD	89	89	20,716	
Down Hole Survey				
DDH	614	238		
UG	77	77		
LDD	89	89		
Geology				
DDH	1,832	172	33,119	
LDD	978	74	9,431	
Bulk Sample				
LDD Samples	978	76	9,431	
Bulk Samples	76	74		
Additional Input Data				
Various geological cross sections and plan maps showing EM survey data.				
Star_DEM_Sand.dxf				
Star UG.dxf				

14.3. GEOLOGICAL MODELS

At Star and Orion South, multiple eruptive kimberlite units are identified, of which well mineralized units that have been the focus of ongoing exploration are modeled for inclusion in the MRE. Overlying till, country rock and kimberlite domains that do not form part of the mineral resource are also modeled to improve the economic assessment of the deposits.

Geological interpretations are made on a series of east-west and north-south orientated cross sections at 50 m to 100 m line spacings. The basal contact of each lithological unit is modeled in section by digitizing a polyline that is snapped to logged lithological intervals. Polylines create a mesh that defines the basal contact surface of modeled units. Where constrained by drill hole or underground mapping data, the polyline extrapolation distance is taken to be half the distance to the constraining drill hole or underground development. Where not defined by drilling, the distal limit to kimberlite units is defined by electromagnetic ("EM") signatures (See Section 7, Figure 7.5). Polylines are interpreted to a maximum length of 300 m laterally.

The lower limit to the kimberlite model is based on the deepest drill hole (RC or core) intersection. Outer limits to country rock and till lithologies are defined by the overall geological model extent, which is large enough to ensure that any Whittle pit shell is completely filled with blocks representing either kimberlite, till or country rock. To generate a 3D geological model, basal contact surfaces are sequentially applied to a small cell (5m x 5m x 1.5) block model in stratigraphic order such that geological cross cutting relationships are honored.

Where differences in logged kimberlite lithology are seen between proximal LDD-RC and core drill hole intervals, the logged LDD-RC lithology is used to ensure that bulk samples are correctly assigned to the dominant rock type recorded in the sample log.

14.3.1 STAR

At Star five well mineralized kimberlite units are modeled for resource estimation and are listed below. The Star EJF kimberlite unit is subdivided into Inner (vent proximal) and Outer (vent distal) domains that are associated with the formation of a cinder cone (Figure 10-1). Shore geologists undertook further subdivision of kimberlite units to differentiate kimberlite breccias and pyroclastic kimberlite sub-units. However, due to the discontinuous and interfingering nature, modelling of these sub-units is impractical at the scale of the deposit.

Resource Kimberlites:

- Late Joli Fou Kimberlite (LJF)
- Mid Joli Fou Kimberlite (MJF)
- Early Joli Fou Kimberlite (EJF)
- Pense Kimberlite (PPK)
- Cantuar Kimberlite (CPK)

Till, Country Rock and Non Resource Kimberlites:

- Till (TILL)
- Westgate Formation (WF)
- Upper Resedimented. Volcaniclastic Kimberlite Unit (URVKU)
- Juvenile Lapilli Rich Pyroclastic Kimberlite (JLRPK)
- Lower Colorado Formation (LOCO)
- Cantuar Formation (CF)
- 134 Volcaniclastic Kimberlite (VK-134)

Lithology model domains are listed in Table 14-3 with dimensions and approximate drill holes spacing. Kimberlite model domains are shown in 3-D in Figure 7-14 in Section 7.4.1. An example section through kimberlite, till and country rock domains is shown in Figure 14-1.

Within mineralized kimberlite domains, there are discrete zones of low grade material that are not sufficiently defined to be modeled separately. There zones may be the result of waste kimberlite slumps, xenoliths or horizons of interstitial mud, shale and Cantuar units. The thickness of these units is typically less than 5 m and at the current drill spacing it is necessary to incorporate these units as internal dilution zones. Within the LJF domain, a slump of older MJF material is modeled as a thin and discontinuous unit. The uncertainty in the slump dimensions and its relationship with the underlying MJF unit precludes the inclusion of the MJF slump into resource model. On the outer flanks of the MJF cinder cone, LOCO and URVKU units become interbedded. Within the URVKU sequence, transgressive LOCO strata range from 5m to 30m. To simplify modelling these strata are incorporated into the URVKU domain. Within the till domain sand and clay sequences are combined.

As shown in Figure 14-1, to the east of the EJF and MJF vents the CPK unit has a thickness of up to 40 m that rapidly pinches out into series of thin and discontinuous horizons. The difficulty of modelling the continuity of the CPK to the north of the deposit limits the inclusion of this unit above the 5,897,700 mN into the resource model.

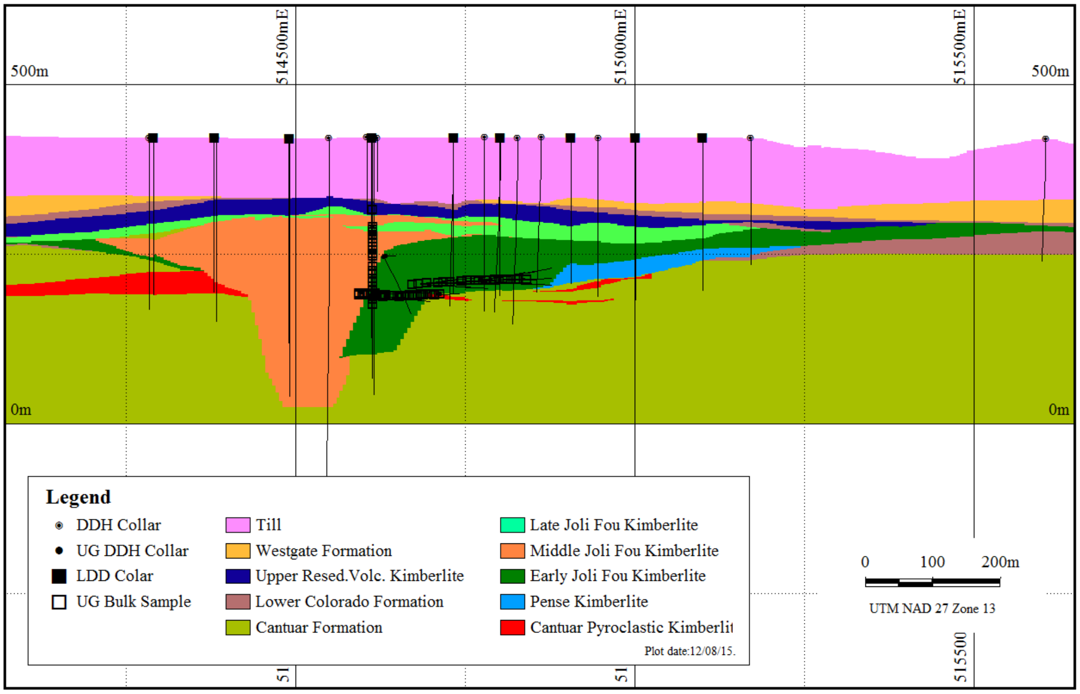
TABLE 14-3 STAR LITHOLOGY MODEL DOMAIN DETAILS

Code	Type*	Modeled Area (km2)	Average Thick-ness (m)	Vol. (million m^3)	Depth Extent (m)	DDH Density (m^2)	LDD Density (m)	n LDD and (UG) Samples
TILL	TL	17.00	94	1,610.96	310.5	50 to 300	-	0
WF	CR	17.00	29	489.64	271.5	50 to 300	50 to 300	0
URVKU	CR	2.15	14	30.16	265.5	50 to 100	50 to 200	43
JLRPK	KM	0.08	19	1.59	43.5	50 to 100	100	9
LOCO	CR	17.00	39	667.70	239.5	50 to 300	100 to 600	7
CF	CR	17.00	250	4,285.00	0	100 to 300	100 to 300	7
VK-134	KM	0.46	39	17.88	192	200	300	1
LJF	KR	2.74	8	21.93	255	50 to 200	50 to 300	97 (3)
MJF	KR	0.29	38	10.91	0	50 to 100	50 to 100	97(11)
EJF	KR	3.89	21	81.61	78	20 to 300	50 to 300	528 (209)
PPK	KR	1.49	9	13.42	190.5	20 to 200	50 to 300	42 (44)
CPK	KR	1.43	9	12.83	165	20 to 300	50 to 300	39 (50)

*TL= Till, CR= Country Rock, KM=Kimberlite, KR= Resource Kimberlite

.

FIGURE 14-1 STAR LITHOLOGY DOMAINS SECTION 5,897,220N



14.3.2 ORION SOUTH

At Orion South four well mineralized kimberlite units are modeled for resource estimation and are listed below. The Orion South EJF kimberlite unit is subdivided into Inner (vent proximal) and Outer (vent distal) domains that are associated with the formation of a cinder cone (Figure 10-2). As at Star, kimberlite units are differentiated into kimberlite breccias and pyroclastic kimberlite sub-units. However, due to the discontinuous and interfingering nature, modelling of these sub-units is impractical at the scale of the deposit.

Resource Kimberlites:

- Late Joli Fou Kimberlite (LJF)
- Early Joli Fou Kimberlite (EJF)
- Pense Kimberlite (PENSE)
- Early Pense Kimberlite (P3)

Till, Country Rock and Non Resource Kimberlites:

- Till (TILL)
- Kimberlitic Sandstone (KSST)
- Colorado Formation (CRCOL)
- Mannville Formation (CRMANN)
- Viking Pyroclastic Kimberlite-SE (VPK-SE)
- Viking Pyroclastic Kimberlite-NW (VPK-NW)
- Cantuar Pyroclastic Kimberlite (CPK)

Lithology model domains are listed in Table 14-4 with dimensions and approximate sample spacing. Kimberlite model domains are shown in 3-D in Figure 7-15 in Section 7.4.2. An example section through kimberlite, till and country rock domains, is shown in Figure 14-2.

TABLE 14-4 ORION SOUTH LITHOLOGY MODEL DOMAIN DETAILS

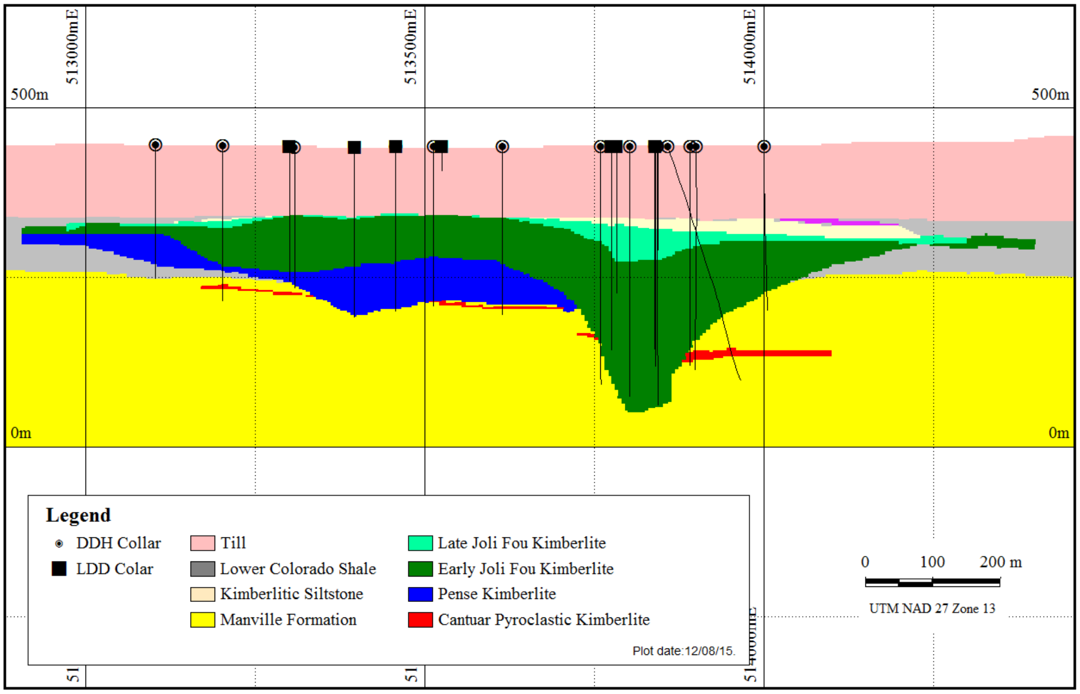
Code	Type*	Modeled Area (km^2)	Average Thick-ness (m)	Vol. (million m^3)	Depth Extent (m)	DDH Density (m^2)	LDD Density (m)	n LDD and (UG) Samples
TILL	TL	10.5	113	1187.31	120	50 to 500	-	0
KSST	CR	1.21	7	8.45	445	50 to 200	50 to 200	18
CRCOL	CR	10.09	65	655.71	155	10 to 500	100 to 500	5
CRMANN	KM	10.50	250	2636.81	445	50 to 500	-	1
VPK-SE	CR	0.96	11	10.59	220	100 to 150	-	0
VPK-NW	CR	0.21	18	3.84	445	50 to 150	50 to 200	24
CPK	KM	0.29	11	3.15	205	100	100 to 300	14
LJF	KR	1.29	12	15.42	315	50 to 200	50 to 150	105
EJF	KR	3.12	38	118.52	330	50 to 500	50 to 150	584 (37)
PENSE	KR	0.84	41	34.58	230	50 to 300	50 to 150	214 (29)
P3	KR	0.16	18	2.84	395	100	100 to 200	13

*TL= Till, CR= Country Rock, KM=Kimberlite, KR= Resource Kimberlite

The limited amount of core drilling available to define the CPK and VPK units, and the small number of LDD-RC samples collected from these domains precludes their use in resource estimation. The P2 unit is now referred to as the Pense domain. Contiguous with the Pense unit, recent drilling has sufficiently delineated the P3 unit to allow its inclusion in the resource model.

Within mineralized kimberlite domains, there are discrete zones of low grade material that are not sufficiently defined to be modeled separately. The thickness of these units is typically less than 5 m, however within the EJF domain the Sediment and Kimberlite (SAK) unit (an inter crater sedimentary unit,) can reach a thickness of 10m. At the current drill spacing the discontinuity of identified waste units necessitates their incorporation as internal dilution zones.

FIGURE 14-2 ORION SOUTH LITHOLOGY DOMAINS SECTION 5,900,500N



14.4. BLOCK MODELS

At both the Star and Orion South deposits a full block model is created in Micromine to encompass resource kimberlite domains and to accommodate surrounding till, country rock and any resultant pit shell models.

Within the full block model, large blocks are assigned the proportion of each lithology that the block encompasses, as defined by the small cell geological model. The volume and tonnage estimate for each geological unit within the block is calculated and recorded in the model. For each mineralized kimberlite fields to contain the diamond value and diamond grade are added.

14.4.1 STAR

A block model size of 50 mE x 50 mN x 15 mRL is selected for modelling at Star, corresponding to a distance not less than one third of the LDD bulk sample grid, which is typically 50 to 150m. Block height is limited to the maximum permissible bench height. Each block represents 37,500 m^3 or approximately 2 days of mining based on a nominal density of 2.0 t/m^3 and an extraction rate of 45,000 tpd envisioned in the 2009 pre-feasibility study report (Orava 2009a). Star block model definitions are presented in Table 14-5.

TABLE 14-5 STAR BLOCK MODEL DEFINITIONS

	Min Extent	Max Extent	Block Size	Number of blocks
East	512,500	517,000	50	90
North	5,895,500	5,899,300	50	76
RL	0	495	15	33

14.4.2 ORION SOUTH

A block model size of 50 mE x 50 mN x 15 mRL is selected for modelling Orion South, corresponding to a distance not less than one third of the LDD bulk sample grid, which is typically 50 to 150m. Block height is limited to the maximum permissible bench height. Orion South model definitions are presented in Table 14-6.

TABLE 14-6 ORION SOUTH MODEL DEFINITIONS

	Min Extent	Max Extent	Block Size	Number of blocks
East	512,000	515,000	50	60
North	5,899,000	5,902,500	50	70
RL	0	480	15	32

14.5. ALIGNMENT OF LDD GRADE DATA

The approach used for grade estimation is the combination of the stone counts per sample in with diamond size frequency distributions. This obviates the artificial local bias introduced by the direct use of carats per metre cubed (“cpm^3”) or carats per hundred tonnes (“cpht”), and is common diamond industry practice. Working with the size frequency distribution (“SFD”) curves also allows for the alignment of sampling results from different sampling methods and sampling campaigns to ensure a consistent, robust approach to grade estimation.

14.5.1 THE NEED FOR SAMPLE GRADE ALIGNMENT

In preparing sample data for grade estimation, a number of features of the sampling of the Star-Orion South deposits need to be considered:

- Sample size effect: use of relatively small samples from low grade diamond deposits introduces significant local variability, primarily due to the irregular occurrence of larger stones.
- Geological impacts on sample grades: sample grades from coarser vs finer material (i.e. the KB vs PK rock types in the EJF) are impacted differently.
- Known limitations of drilling procedures: there were difficulties in the implementation of large diameter reverse flood drilling, including the use of aggressive LDD-RC drilling techniques in the 48 inch holes which lead to demonstrated diamond breakage and loss.
- Variety of different sampling campaigns at Orion South: this pipe was sampled over five separate campaigns, each one using different drill hole sizes (24, 36 and 48 inch LDD), different process plants and different flowsheets (lower cut-off size, recrush, etc.).
- Discrepancies between LDD results and Underground Bulk Sampling: consistently higher grades were reported from underground bulk samples than from nearby LDD samples in the same lithology, and there were consistent differences in SFD between the two sampling techniques.

The methodology used to remove or reduce the above effects is discussed below.

14.5.2 GRADE ALIGNMENT PROCESS

Alignment of sample SFDs is done in two steps, with the first step resulting in minor adjustment of each individual sample grade to allow for the first four of the issues identified above, and the second step applying an overall adjustment in each defined lithology to account for residual differences with respect to underground bulk sampling results.

14.5.2.1 Step 1

This step effectively removes the sample size effect and "fills out" the sample SFD to match the underlying reference curve. Separate reference curves are used for each lithology, and for the PK/KB rock types in the EJF. For Orion South, the reference curve in each lithology is based on the LDD-RC 48 inch drilling results to enable the automatic adjustment of effects of different plant flowsheets used for 24 and 36 inch LDD-RC drilling campaigns.

14.5.2.2 Step 2

This step results in an adjustment of the grades to reflect the SFD seen in underground bulk samples, and to account for stone breakage/loss in LDD-RC sampling. It is applied as a single overall adjustment within each lithology.

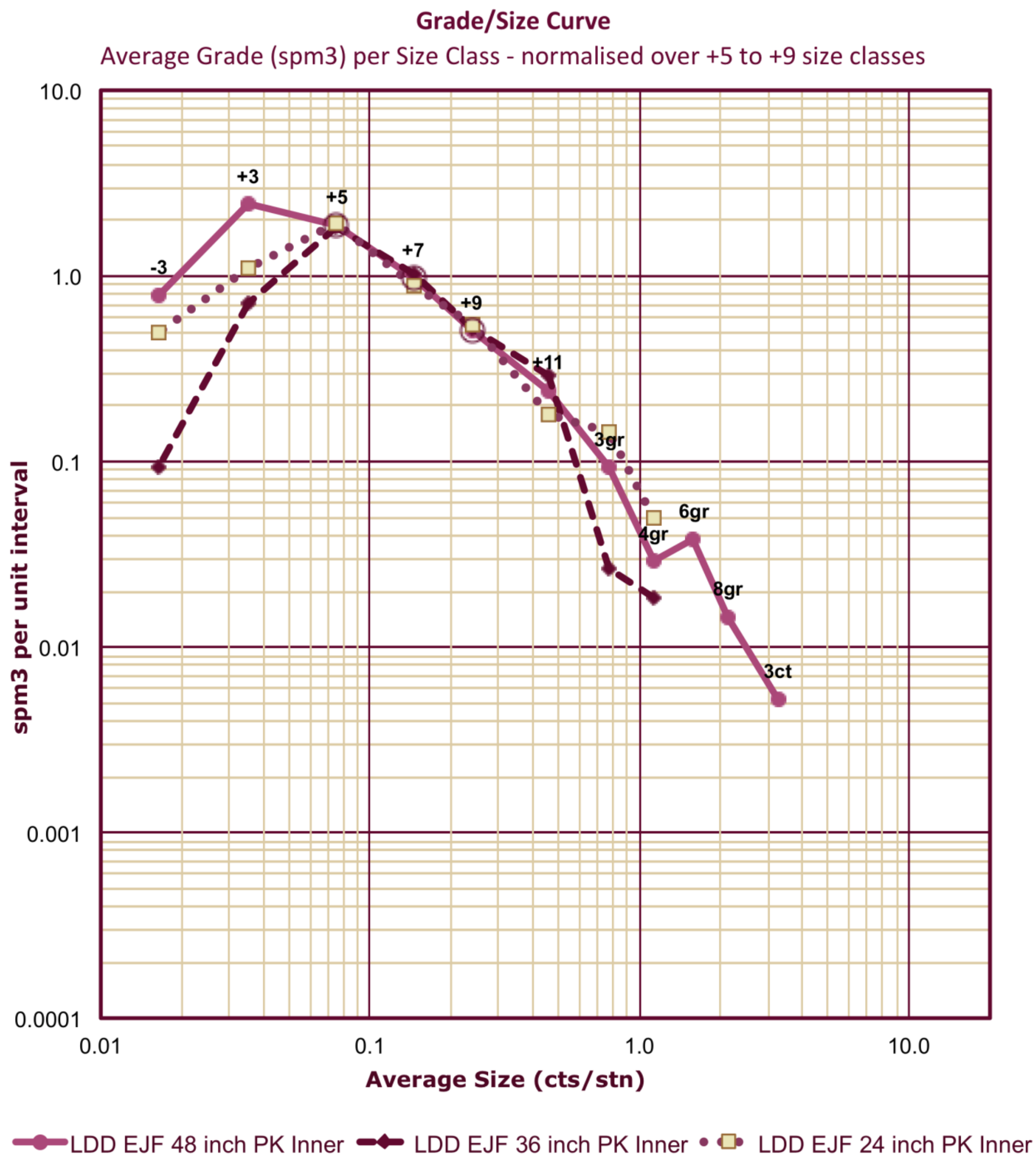
14.5.3 GRADE ALIGNMENT IMPLEMENTATION

As an example of the Step 1 alignment process, the grade/size SFD curves for the EJF PK Inner domain at Orion South are shown in Figure 14-3 below. They compare results for the 48, 36 and 24 inch drilling, and the curves are "normalised" over the size classes +5 to +9 DTC to remove any local grade differences. It is seen that there is excellent correspondence between the curves for size classes +5 DTC and larger, but that for smaller size classes differences in process plant recovery are evident. In effect, the 48 inch drilling was completed with a 1.0 mm bottom cut-off size, while the 36 inch drilling was done with a 1.6 mm bottom cut-off and no recrush, while the 24 inch drilling used a mix of bottom cut-off sizes from 0.85 mm to 1.6 mm.

In order to rationalise all sample grades to a consistent basis, the 48 inch LDD-RC SFD was selected as being the representative SFD (this was the largest program conducted at Orion South, and also results in consistency with the Star results). For each individual LDD-RC sample the representative SFD curve was fitted through the sample SFD to best honour the actual sample grade whilst introducing the effect of recovering stones across the entire size distribution in the same proportions as the representative SFD. This effectively "fills out" the sample SFD to reproduce the entire curve, and also removes the effect of incomplete recovery of smaller stones or erratic recovery of larger stones in a small sample.

This process is implemented for all samples, with the reference curve in each case being defined by the sample lithology or rock type, at both Star and Orion South.

FIGURE 14-3 COMPARATIVE SFDS FOR ORION SOUTH LDD

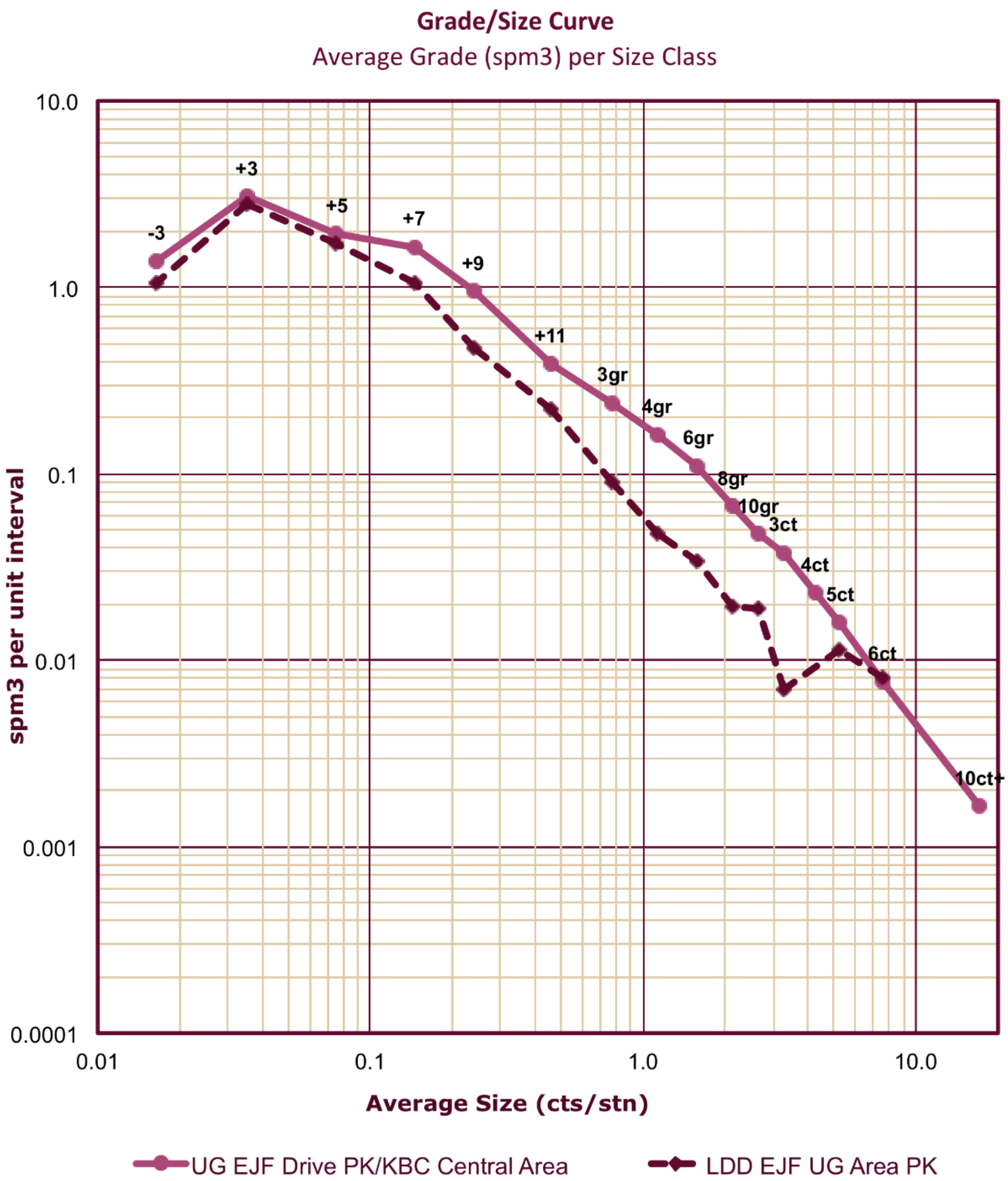


	Tonnes	Carats	Ave cpht	Volume	# stones	Total spm3	spm3 +5 to +9	MSS
LDD EJF 48 inch PK In	3,174	275	8.7	1,441	3,034	2.10	1.03	0.091
LDD EJF 36 inch PK In	429	42	9.7	194	379	1.95	1.47	0.110
LDD EJF 24 inch PK In	362	31	8.5	164	338	2.06	1.32	0.091

The Step 2 alignment process is also best illustrated by an example, this time taken from the EJF PK rock type at Star. Using the central area of the underground bulk sampling and comparing results against LDD sampling within a 100m distance of this area, comparative SFDs are shown in Figure 14-4. Here it is seen that the UG results show a similar grade to the LDDs in the small size classes (-3, +3, +5 DTC) but that the LDD curve shows a consistently increasing shortfall in stones recovered across all size classes from +7 DTC upwards. This is attributed to the effect of diamond breakage and loss in the aggressive 48 inch LDD-RC drilling undertaken at Star, and results in average sampled grades in this comparative area of 9.6 cpht in the LDDs vs 18.1 cpht from the UG samples. Similar results are seen in other lithologies at Star, although it is noted that the example given here is the most extreme case, and the differences are less marked in units where drilling was easier and less diamond breakage and loss occurred.

In order to account for these differences, the LDD-RC reference curves used for each lithology in the Step 1 alignment were themselves aligned with the appropriate curve derived from UG sampling, resulting in a second overall adjustment of sample grades.

FIGURE 14-4 COMPARATIVE SFDS FOR LDD VS UGBS STAR EJF



	Tonnes	Carats	Ave cpht	Volume	# stones	Total spm3	spm3 +3/-3gr	MSS
UG EJF Drive PK/KBC	30,544	5,526	18.1	13,752	39,675	2.88	2.26	0.139
LDD EJF UG Area PK	2,407	231	9.6	1,083	2,437	2.25	1.81	0.095

14.5.4 GRADE ALIGNMENT RESULTS

Although grade alignment was completed on a sample by sample basis, the overall results on sample grade in each lithology are summarised by the average alignment factors shown in Table 14-7. These are compared in the table with the "LDD Factors" used in the previous 2009 Star and Orion South resource estimates. It should be noted that the 2009 LDD Factors did not take into account the full effect of the SFD resulting from small samples, nor did they make any adjustments for under-recovery of small stones in some of the Orion South drilling campaigns.

TABLE 14-7 AVERAGE LDD GRADE ALIGNMENT FACTORS

	Average Alignment Factor			
Unit	**Step 1**	**Step 2**	**Total**	**2009 LDD Factor**
Star				
Cantuar	1.05	1.63	1.71	1.62
EJF PK Inner	0.97	1.88	1.83	1.62
EJF PK Outer	0.99	1.88	1.86	1.62
EJF KB	1.03	1.47	1.52	1.62
Pense	1.02	1.46	1.49	1.62
MJF/LJF	0.97	1.88	1.83	1.62
Other	0.97	1.88	1.83	1.62
Orion South				
EJF PK Inner	1.10	1.89	2.09	1.74
EJF PK Outer	0.92	1.89	1.75	1.74
EJF KB	1.37	1.47	2.01	1.74
Pense	0.94	1.03	1.03	1.41
Other	1.25	1.00	1.25	-

The application of the grade alignment process described in this section has resulted in a consistent set of LDD sample grades expressed in carats per meter cubed ("cpm^3") at an effective 1.0 mm bottom cut-off. All reference to LDD sample grades in the remainder of this document is to these adjusted grades. They are used along with underground bulk sample grades in cpm^3 for exploratory data analysis and grade interpolation.

14.6. EXPLORATORY DATA ANALYSIS

Sample data is grouped into lithological domains for statistical analyses of diamond grade and bulk density. Spatial data analysis is considered prior to block model grade estimation in an attempt to generate a series of semi-variograms that define directions of anisotropy and spatial continuity of diamond grades. Underground samples are excluded from variographic analysis to prevent clustered samples, in a small portion of the deposit, from introducing short range variability that is not representative of the domain as a whole. Boundary analysis is undertaken to identify the relationship of diamond grades across modeled contacts.

Sample grades derived and described in Section 14.5 do not contain extreme values. Accordingly, it is not considered necessary to apply capping or outlier restrictions to processed samples.

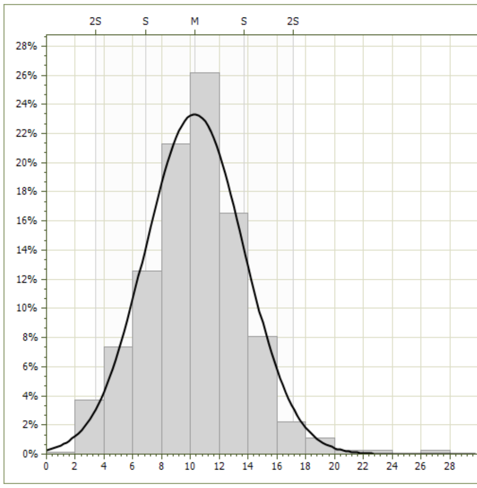
14.6.1 STAR

The Star Kimberlite resource database contains diamond data from LDD batch samples and bulk samples collected from underground development shafts and drifts. LDD sampling of the Star deposit comprises 103 LDD holes, of which 96 LDD holes reported diamond sampling data comprising 11,662.87 processed tonnes (8,907.4 m^3 of calculated volume) from which 1,416.69 carats are recovered. Underground drift bulk sampling of the Star deposit comprises 66,545.09 tonnes from which 10,547.87 carats were recovered.

Compositing of LDD samples

Sample volumes for LDD drilling are derived from caliper logs of the LDD drill holes. For the 803 LDD samples collected from mineralized kimberlite domains identified in Table 14-8 the average sample volume is 10 m^3 (Figure 14-5). Because of the large sample volumes and mass, the authors chose not to composite the samples for the Mineral Resource estimation.

FIGURE 14-5 STAR LLD SAMPLE VOLUMES



Minimum value	1.71
Maximum value	27.60
2nd highest	26.86
3rd highest	23.80
4th highest	22.43
N	803
Mean	10.28
Variance	11.71
Standard deviation	3.42
Coeff. of variation	0.33
Median	10.42
Ln mean	2.27
Ln std deviation	0.38
Geometric mean	9.65
Geometric std dev	1.46
Sichel's estimator	10.37
Sichel's V	0.14
Sichel's gamma	1.07
Chi-Square Test	336.04
Degrees of freedom	9

Simple Statistics

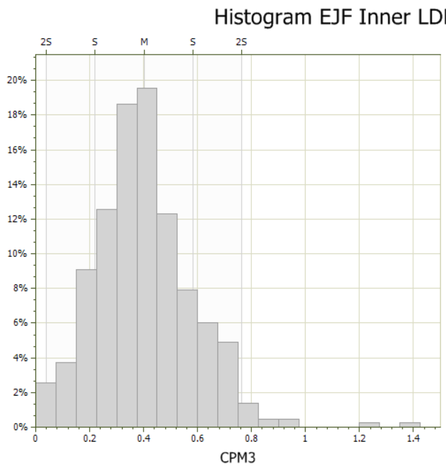
Univariate statistics for diamond grades in cpm^3 collected from each mineralized kimberlite domain are presented in Table 14-8. Histograms are presented in Figure 14-6. The following features are observed:

- The EJF domain shows a reasonably symmetric diamond grade distribution in both the Inner and Outer domains. For LDD samples, the mean EJF Inner domain grade of 0.401 cpm^3, is 48% higher than the outer domain grade of 0.271 cpm^3 indicating a change of mineralization intensity.
- The sparsely sampled LJF domain has a significantly lower mean grade of 0.030 cpm^3 with a high coefficient of variance resulting from a single 0.388 cpm^3 sample.
- The Pense domain shows a possible bimodal population with a break in the grade distribution at approximately 0.3 cpm^3, below which a group of lower grade samples may be diluted by a shale horizon logged within the Pense unit and encountered in underground drilling. This Pense shale feature was also recognized and logged in hole LDD-STM-07-058.
- The CPK domain also shows a possible bimodal population with a break in the grade distribution at approximately 0.3 cpm^3. The majority of LDD samples below 0.01 cpm^3, are at the periphery of the modeled Cantuar Kimberlite domain where LLD samples may have become diluted by Cantuar Formation sediments.

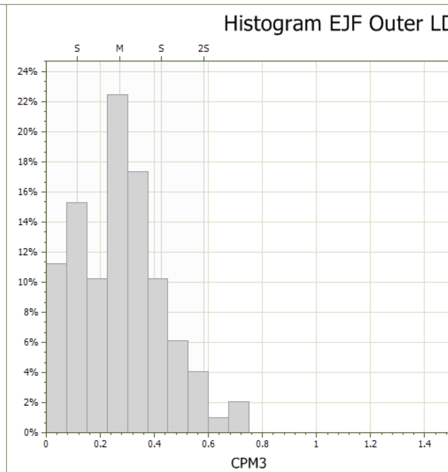
TABLE 14-8 SIMPLE STATISTICS FOR STAR RESOURCE KIMBERLITE DOMAINS

Row Labels	LJF	MJF	EJF	EJF Inner	EJF Outer	PPK	CPK
LDD							
Count	97	97	528	430	98	42	39
Average	0.030	0.113	0.377	0.401	0.271	0.298	0.355
Min	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Max	0.388	0.350	1.401	1.401	0.712	0.714	1.212
StdDevp	0.050	0.070	0.184	0.181	0.156	0.202	0.250
Coeff. Var.	1.667	0.619	0.488	0.451	0.576	0.678	0.704
UG							
Count	5	10	210	210		44	48
Average	0.055	0.141	0.382	0.382		0.280	0.34
Min	0.021	0.036	0.037	0.037		0.064	0.059
Max	0.093	0.491	1.607	1.607		0.697	1.154
StdDevp	0.024	0.125	0.166	0.166		0.127	0.186
Coeff. Var.	0.436	0.887	0.435	0.435		0.454	0.547
Total All							
Count	102	107	738	640	98	86	87
Average	0.031	0.116	0.379	0.395	0.271	0.289	0.347
Min	0.000	0.000	0.000	0.000	0.000	0.000	0
Max	0.388	0.491	1.607	1.607	0.712	0.714	1.212
StdDevp	0.049	0.077	0.179	0.176	0.156	0.168	0.217
Coeff. Var.	1.581	0.664	0.472	0.446		0.581	0.625

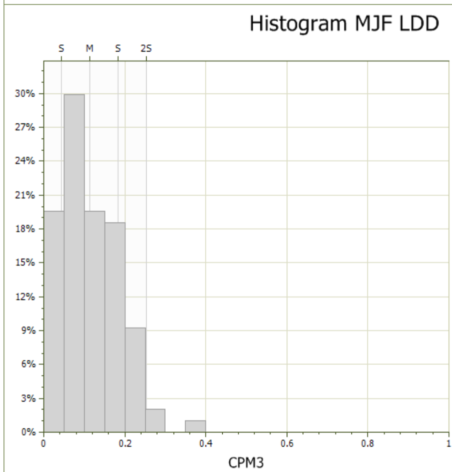
FIGURE 14-6 HISTOGRAMS FOR STAR RESOURCE KIMBERLITE DOMAINS



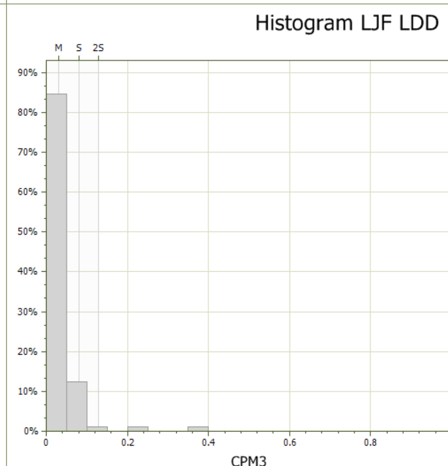
Minimum value	0.000
Maximum value	1.401
2nd highest	1.240
3rd highest	0.935
4th highest	0.922
N	430
Mean	0.401
Variance	0.033
Standard deviation	0.181
Coeff. of variation	0.450
Median	0.387
Ln mean	-1.003
Ln std deviation	0.495
Geometric mean	0.367
Geometric std dev	1.640
Sichel's estimator	0.414
Sichel's V	0.245
Sichel's gamma	1.130
Chi-Square Test	120.677
Degrees of freedom	11



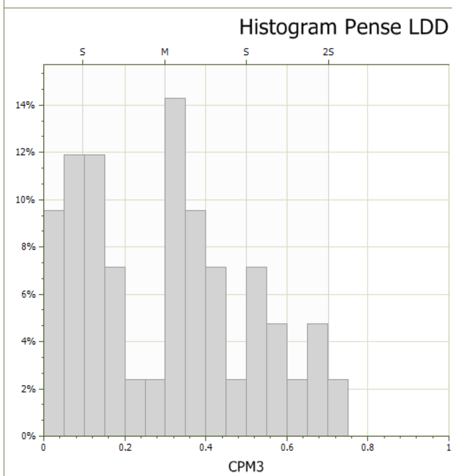
Minimum value	0.000
Maximum value	0.712
2nd highest	0.707
3rd highest	0.647
4th highest	0.569
N	98
Mean	0.271
Variance	0.024
Standard deviation	0.156
Coeff. of variation	0.578
Median	0.260
Ln mean	-1.469
Ln std deviation	0.700
Geometric mean	0.230
Geometric std dev	2.013
Sichel's estimator	0.294
Sichel's V	0.489
Sichel's gamma	1.276
Chi-Square Test	27.672
Degrees of freedom	7



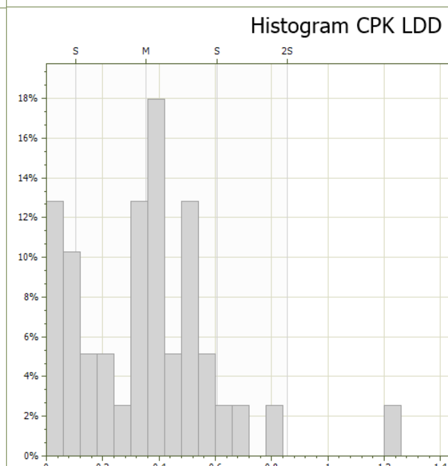
Minimum value	0.000
Maximum value	0.350
2nd highest	0.271
3rd highest	0.250
4th highest	0.242
N	97
Mean	0.113
Variance	0.005
Standard deviation	0.070
Coeff. of variation	0.620
Median	0.102
Ln mean	-2.325
Ln std deviation	0.700
Geometric mean	0.098
Geometric std dev	2.014
Sichel's estimator	0.125
Sichel's V	0.490
Sichel's gamma	1.277
Chi-Square Test	49.955
Degrees of freedom	4



Minimum value	0.000
Maximum value	0.388
2nd highest	0.224
3rd highest	0.138
4th highest	0.097
N	97
Mean	0.030
Variance	0.002
Standard deviation	0.050
Coeff. of variation	1.658
Median	0.018
Ln mean	-3.410
Ln std deviation	0.740
Geometric mean	0.033
Geometric std dev	2.096
Sichel's estimator	0.043
Sichel's V	0.548
Sichel's gamma	1.313
Chi-Square Test	133.726
Degrees of freedom	2



Minimum value	0.000
Maximum value	0.714
2nd highest	0.695
3rd highest	0.660
4th highest	0.607
N	42
Mean	0.298
Variance	0.041
Standard deviation	0.202
Coeff. of variation	0.678
Median	0.314
Ln mean	-1.443
Ln std deviation	0.857
Geometric mean	0.236
Geometric std dev	2.356
Sichel's estimator	0.340
Sichel's V	0.734
Sichel's gamma	1.439
Chi-Square Test	14.681
Degrees of freedom	7



Minimum value	0.000
Maximum value	1.212
2nd highest	0.836
3rd highest	0.705
4th highest	0.643
N	39
Mean	0.355
Variance	0.063
Standard deviation	0.250
Coeff. of variation	0.705
Median	0.388
Ln mean	-1.149
Ln std deviation	0.767
Geometric mean	0.317
Geometric std dev	2.153
Sichel's estimator	0.424
Sichel's V	0.588
Sichel's gamma	1.339
Chi-Square Test	9.013
Degrees of freedom	6

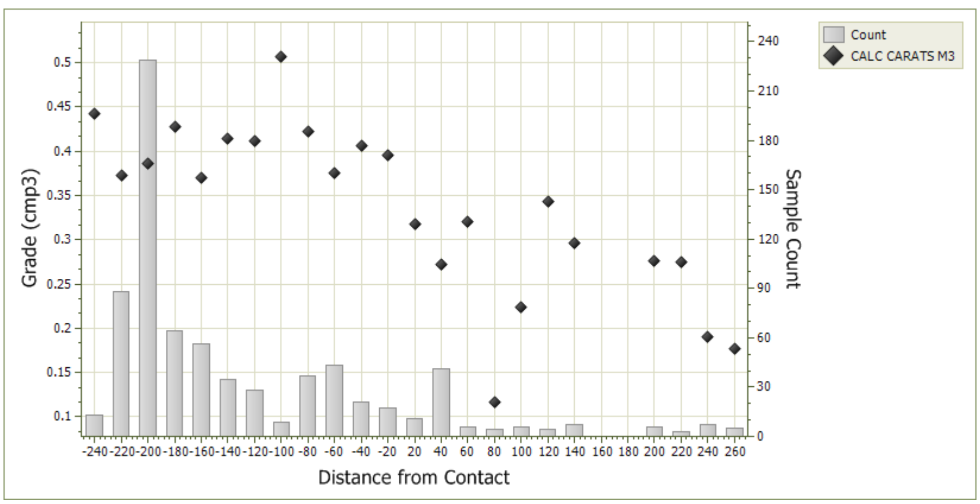
Boundary Analysis

Geological contacts separate distinct depositional units and are therefore hard boundaries for geostatistical analysis and grade interpolation, such that diamond grades in one domain are not related to grades in another.

The Star, EJF Inner and Outer domain boundary represents a gradual change from vent proximal, inner crater deposits to vent distal outer crater kimberlite facies. Despite the grouping of higher grade material (typically above 0.5 cpm^3) into the EJF Inner domain, the change in mean diamond grades at the boundary is not distinct enough to warrant the use of a hard boundary.

At the domain scale, the change in average diamond grades identified in Figure 14-7 remains somewhat consistent when moving from the Inner domain (negative distance from contact) across the Outer domain (positive distance from contact). The EJF Inner and Outer boundary is a soft boundary for geostatistical analysis and grade interpolation, such that sample grades in one lithological domain may inform the block grade in another lithological domain.

FIGURE 14-7 STAR EJF INNER DOMAIN BOUNDARY ANALYSIS



Geostatistics

At Star, underground samples are excluded from analysis to prevent samples clustered in a small portion of the deposit from introducing a short range variability that is inappropriate for the rest of the domain.

Only the EJF domain has a sufficient number of LDD samples to generate meaningful semi-variograms. The soft boundary between EJF Inner and Outer domains allows the use of both sets of samples for geostatistical analysis of the EJF domain. To improve variography, EJF samples are limited to <=1 cpm^3, no bottom limit is applied. Variography is undertaken using cpm^3 values and resulting semi-variograms shown in Figure 14-8 are not normalized.

- A downhole semi-variogram is generated using a selected lag value of 15m. A nugget value of 0.018 is identified that represents 63% of the total sill variance of 0.286. A downhole semi-variogram range of 70 m is identified: and,

- An omnidirectional semi-variogram is generated using a selected lag value of 50 m, representing the minimum LLD exploration grid spacing. Using the downhole model to define the nugget effect and short-range structure, an omnidirectional semi-variogram range of 500 m in the second structure is identified.

The Star deposit comprises predominantly flat lying beds; accordingly, a simple thin but laterally extensive search ellipse is favored. The downhole variogram, derived from vertical LDD holes, defines the Z dimension anisotropy. The omnidirectional variogram is selected to define lateral X and Y dimensions. EJF semi-variograms are sufficiently well behaved to allow meaningful kriging calculations at the resource model scale. The EJF model is utilized for all resource kimberlite domains and is defined in Table 14-9.

FIGURE 14-8 STAR EJF VARIOGRAPHY

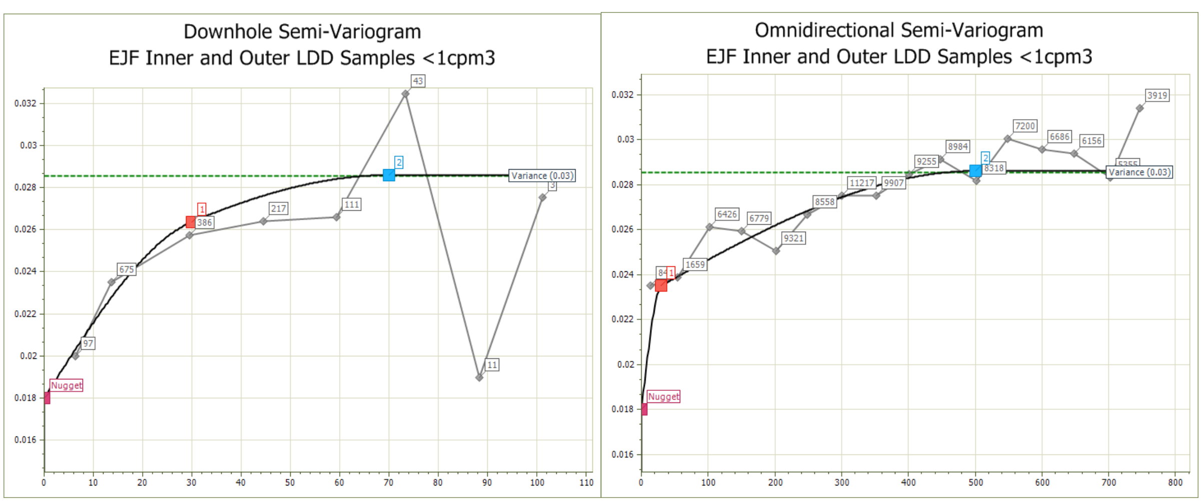


TABLE 14-9 MODELED SEMI-VARIOGRAM PARAMETERS FOR STAR GRADE INTERPOLATION

Ellipse Rotation*			Nugget	Structure	P Sill	Range (m)		
z	y	x	(Co)			Major	Semi-Major	Minor
90	0	0	0.018 (63%)	1. Sph	0.005	30	30	30
				2. Sph	0.0056	500	500	70

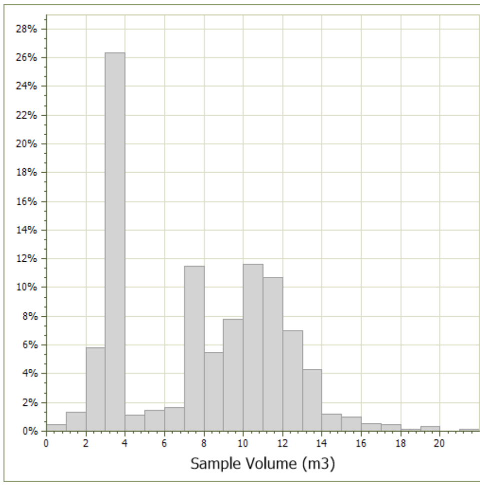
14.6.2 ORION SOUTH

The Orion South resource database contains diamond data from LDD batch samples and bulk samples collected from underground development shafts and drifts. LDD sampling of the Orion South deposit comprises 89 LDD holes, of which 76 LDD holes reported diamond sampling data. Pre 2015 LDD holes recovered 1,039.7 carats from 9,579.6 processed tonnes (7,354.1 m^3 of calculated volume) of kimberlite from 64 holes. 2015 LDD holes resulted in the recovery of 97 individual sample lifts from 439 processed tonnes (300.9 m^3 of theoretical volume). Underground bulk sampling of the Orion South Mineral Resource comprised 23,468 tonnes from which 2,335.06 carats from 15,074 stones were recovered.

Compositing of LDD samples

For the 915 LDD samples collected from the mineralized kimberlite domains identified in Table 14-10, the average sample volume is 8 m^3 (Figure 14-9). It is seen that different drill hole sizes used in the multiple LDD programs at Orion South result in a multi-modal distribution. The grade alignment process described earlier has already taken into account this difference in sample size, and no compositing of samples is considered necessary.

FIGURE 14-9 ORION SOUTH LLD SAMPLE VOLUMES



Minimum value	0.295
Maximum value	21.647
2nd highest	19.817
3rd highest	19.385
4th highest	19.260
N	915
Mean	7.911
Variance	15.397
Standard deviation	3.924
Coeff. of variation	0.496
Median	8.098
Ln mean	1.914
Ln std deviation	0.597
Geometric mean	6.779
Geometric std dev	1.817
Sichel's estimator	8.102
Sichel's V	0.357
Sichel's gamma	1.195
Chi-Square Test	861.551
Degrees of freedom	18

Simple Statistics

Univariate statistics for diamond grades in cpm^3 collected from each mineralized kimberlite domain are presented in Table 14-10. Histograms are presented in Figure 14-10. The following features are observed:

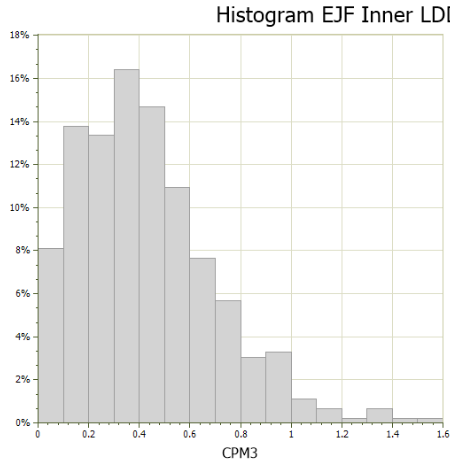
- The EJF domain shows an asymmetric diamond grade distribution toward lower grades in the both Inner and Outer domains. For LDD-RC samples, the mean EJF Inner domain grade of 0.419 cpm^3, is 69% higher than the outer domain grade of 0.242 demonstrating a change in mineralization intensity.
- The Pense domain has an asymmetric diamond grade distribution toward lower grades with a mean LDD-RC grade of 0.105 cpm^3.
- As at Star, the sparsely sampled LJF domain has a low mean grade of 0.021 cpm^3 with occasional higher grade LDD-RC samples, up to 0.220 cpm^3, that result in a high coefficient of variance; and,
- The P3 domain has a mean grade of 0.198 cpm^3 with a grade distribution of that is not clearly defined.

Insufficient sample data are available to define a sample distribution for the LJF, and P3 units (Figure 14-10), therefore these units are restricted to the Inferred level of classification.

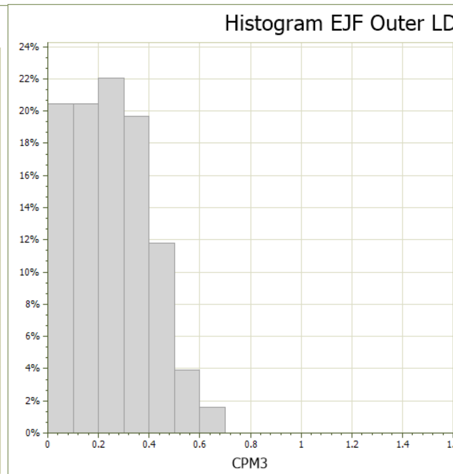
TABLE 14-10 SIMPLE STATISTICS FOR ORION SOUTH RESOURCE KIMBERLITE DOMAINS

Row Labels	LJF	EJF	EJF Inner	EJF Outer	PENSE	P3
LDD						
Count	105	584	457	127	214	13
Average	0.021	0.384	0.419	0.242	0.105	0.198
Min	0.000	0.000	0.000	0.000	0.000	0.060
Max	0.220	1.570	1.570	0.680	0.740	0.490
StdDevp	0.045	0.262	0.272	0.157	0.086	0.121
Coeff. Var.	2.190	0.682	0.646	0.647	0.818	0.611
UG						
Count		42	42		34	
Average		0.286	0.286		0.098	
Min		0.000	0.000		0.000	
Max		0.523	0.523		0.335	
StdDevp		0.097	0.097		0.054	
Coeff. Var		0.338	0.338		0.552	
ALL						
Count	105	626	499	127	248	13
Average	0.021	0.374	0.408	0.242	0.104	0.198
Min	0.000	0.000	0.000	0.000	0.000	0.060
Max	0.220	1.570	1.570	0.680	0.740	0.490
StdDevp	0.045	0.256	0.265	0.157	0.082	0.121
Coeff. Var.	2.190	0.684	0.703	0.647	0.791	0.611

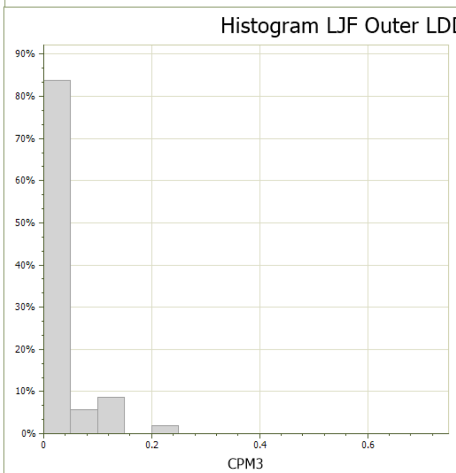
FIGURE 14-10 HISTOGRAMS FOR ORION SOUTH RESOURCE KIMBERLITE DOMAINS



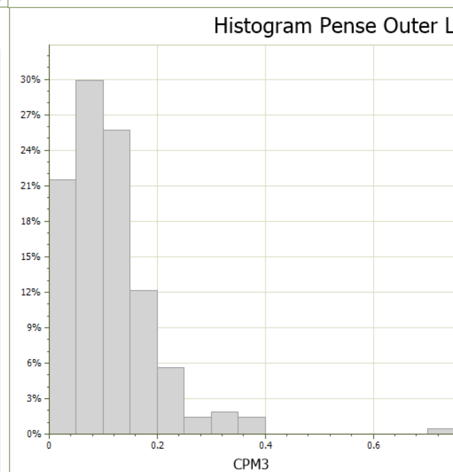
Minimum value	0.0000
Maximum value	1.5700
2nd highest	1.4300
3rd highest	1.3900
4th highest	1.3100
N	457
Mean	0.4193
Variance	0.0744
Standard deviation	0.2727
Coeff. of variation	0.6505
Median	0.3800
Ln mean	-1.0548
Ln std deviation	0.7238
Geometric mean	0.3483
Geometric std dev	2.0623
Sichel's estimator	0.4525
Sichel's V	0.5239
Sichel's gamma	1.2993
Chi-Square Test	73.7277
Degrees of freedom	10



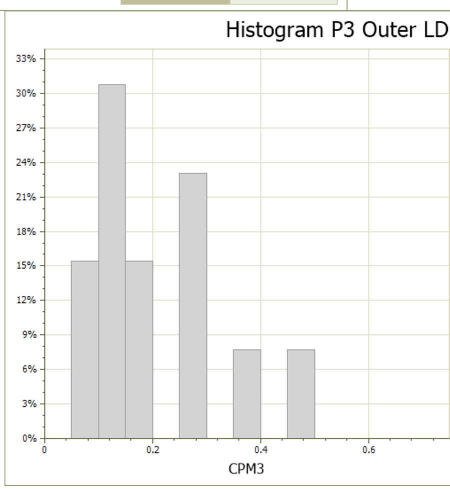
Minimum value	0.0000
Maximum value	0.6800
2nd highest	0.6000
3rd highest	0.5900
4th highest	0.5800
N	127
Mean	0.2419
Variance	0.0245
Standard deviation	0.1566
Coeff. of variation	0.6474
Median	0.2400
Ln mean	-1.5085
Ln std deviation	0.6897
Geometric mean	0.2212
Geometric std dev	1.9931
Sichel's estimator	0.2805
Sichel's V	0.4757
Sichel's gamma	1.2679
Chi-Square Test	54.0513
Degrees of freedom	5



Minimum value	0.0000
Maximum value	0.2200
2nd highest	0.2100
3rd highest	0.1400
4th highest	0.1400
N	105
Mean	0.0208
Variance	0.0020
Standard deviation	0.0452
Coeff. of variation	2.1772
Median	0.0000
Ln mean	-2.6280
Ln std deviation	0.6299
Geometric mean	0.0722
Geometric std dev	1.8775
Sichel's estimator	0.0879
Sichel's V	0.3968
Sichel's gamma	1.2177
Chi-Square Test	1246.9442
Degrees of freedom	2



Minimum value	0.0000
Maximum value	0.7400
2nd highest	0.3900
3rd highest	0.3900
4th highest	0.3500
N	214
Mean	0.1051
Variance	0.0074
Standard deviation	0.0860
Coeff. of variation	0.8182
Median	0.0900
Ln mean	-2.3702
Ln std deviation	0.6608
Geometric mean	0.0935
Geometric std dev	1.9364
Sichel's estimator	0.1162
Sichel's V	0.4367
Sichel's gamma	1.2437
Chi-Square Test	50.6381
Degrees of freedom	5



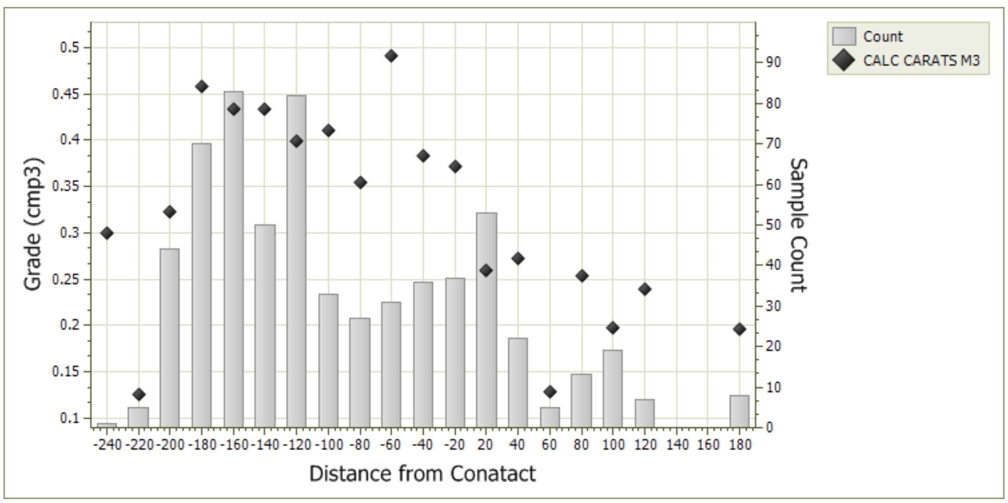
Minimum value	0.0600
Maximum value	0.4900
2nd highest	0.3600
3rd highest	0.2700
4th highest	0.2700
N	13
Mean	0.1977
Variance	0.0147
Standard deviation	0.1214
Coeff. of variation	0.6141
Median	0.1600
Ln mean	-1.8019
Ln std deviation	0.6027
Geometric mean	0.1650
Geometric std dev	1.8270
Sichel's estimator	0.1974
Sichel's V	0.3632
Sichel's gamma	1.1964
Chi-Square Test	0.4407
Degrees of freedom	2

Boundary Analysis

Geological contacts separate distinct depositional units and are therefore hard boundaries for geostatistical analysis and grade interpolation, such that diamond grades in one domain are not related to grades in another.

The Orion South, EJF Inner and Outer domain boundary represents a gradual change from vent proximal to vent distil kimberlite facies. As at Star, the change in average diamond grades identified in Figure 14-11 remains somewhat consistent when moving from the Inner domain (negative distance from contact) across the Outer domain (positive distance from contact). The EJF Inner and Outer boundary is a soft boundary for geostatistical analysis and grade interpolation, such that samples grades in one domain may inform the block grade in another.

FIGURE 14-11 ORION SOUTH EJF INNER DOMAIN BOUNDARY ANALYSIS



Geostatistics

At Orion South, underground samples are excluded from analysis to prevent samples clustered in a small portion of the deposit from introducing a short range variability that is inappropriate for the rest of the domain.

As at Star, only the Orion South EJF domain has a sufficient number of LDD-RC samples to generate meaningful semi-variograms. Geostatistical analysis of the EJF domain includes both Inner and Outer samples, limited to <=1 cpm^3 with no bottom limit. Variography is undertaken using cpm^3 values and resulting semi-variograms shown in Figure 14-12 are not normalized.

- A downhole semi-variogram is generated using a selected lag value of 15m. A nugget value of 0.0248 is identified, representing 45% of the total sill variance of 0.0548. A downhole semi-variogram range of 50m is identified; and,
- An omnidirectional semi-variogram is generated using a selected lag value of 50 m, representing the minimum LLD-RC exploration grid spacing. Again using the downhole model for the nugget effect and short range structure, a second structure omnidirectional semi-variogram range of 250m is identified.

The Orion South deposit comprises predominantly flat lying beds; accordingly a simple thin but laterally extensive search ellipse is favored. The downhole variogram, derived from vertical LDD-RC holes, defines the Z dimension anisotropy. The omnidirectional variogram is selected to define lateral X and Y dimensions. EJF semi-variograms are sufficiently well behaved to allow meaningful Kriging calculations at the resource model scale. The EJF model is utilized for all resource kimberlite domains and is defined in Table 14-11.

FIGURE 14-12 ORION SOUTH EJF VARIOGRAPHY

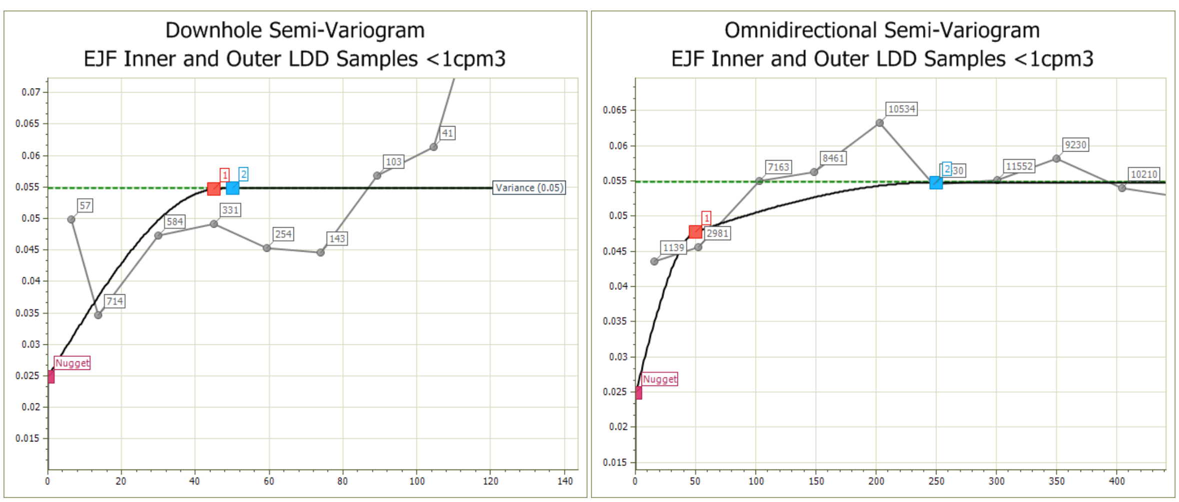


TABLE 14-11 MODELED SEMI-VARIOGRAM PARAMETERS FOR ORION SOUTH GRADE INTERPOLATION

Ellipse Rotation*			Nugget	Structure	P Sill	Range (m)		
x	y	z	(Co)			Major	Semi-Major	Minor
0	0	90	0.0248 (45%)	1. Sph	0.02	50	50	45
				2. Sph	0.01	250	250	50

14.7. GRADE INTERPOLATION

Kriging is considered to be an appropriate method for estimating mineralized kimberlite block grades at Star and Orion South. The Kriging interpolation method is a linear geostatistical method that uses the measured anisotropy of the deposit to weight composite assay values in the three orientation axes of mineralization within the deposit. The Simple Kriging ("SK") process uses a mean grade for each domain as a weighting factor in the Kriging process. In contrast, Ordinary Kriging ("OK") utilizes a local mean within the search neighborhood.

At both Star and Orion South, strict stationarity is assumed due to the relatively continuous nature of diamond mineralization and the close relationship of the domain mean grade and variance to the domain as a whole. In this scenario the SK method is preferred as the technique will honor observed anisotropic grade distribution, as well as preventing locally erratic grades from having undue influence in sparsely sampled areas and allowing the incorporation of a soft EJF Inner/Outer boundary that honors the gradual transition from higher vent proximal grades to lower vent distal grades.

Data used to interpolate grade into the Star block model contains locally clustered LDD-RC and underground samples that may unduly influence or bias interpolated block grades. To address this issue, a restriction is applied that limits the maximum number of samples used to estimate block grades.

Search ellipse parameters for each run are determined through the evaluation of the geological model, exploration data spacing and analysis of the variogram parameters described in Section 14.6. Search ellipses are aligned to the directions of diamond grade continuity determined by the variography.

At both Star and Orion South, for each domain, the SK interpolation technique is used to interpolate block grades in one pass at the full range of the variogram. Blocks are discretized five times in each dimension resulting in a matrix of nodes spaced at 10 mE x 10 mN x 3 mRL within each block. Only parent block grades are estimated. The search ellipse is divided into eight sectors and a constraint of a maximum of four (4) samples per sector applied, essentially de-clustering the data

For validation purposes, interpolations are also prepared using OK, Inverse Distance Squared Weighting (IDW^2) and using the Nearest Neighbor (NN) technique.

At both deposits lithological contacts are hard boundaries for grade interpolation, such that diamond grades in one domain cannot inform blocks in another. The EJF Inner and Outer boundary is a soft boundary for grade interpolation, such that diamond grades in one domain can inform blocks in another.

14.7.1 STAR

At Star, grade interpolation is carried out using the parameters presented in Table 14 12. Mineralized kimberlite domain statistical means used in SK are derived from LDD sample data contained in Table 14-8.

Interpolations are also undertaken using the OK, IDW^2 and NN techniques. The OK interpolation utilizes the variogram model contained in Table 14-9, and the search ellipse and sample constraint parameters detailed in Table 14 12.

The IDW^2 interpolation uses the same search ellipse and sample constraint parameters as the OK interpolation. The nearest neighbor interpolation uses the same search ellipse dimensions as other interpolation methods.

TABLE 14-12 STAR ESTIMATION PARAMETERS

Parameter	Value
Model Range (m)	
- Major Direction (Az 0°, Dip 0°)	500
- Semi-Major Direction (Az 90°, Dip 0°)	500
- 3rd Direction (Az 180°, Dip -90°)	70
Search Ellipse Sectors	8
Minimum Number of Samples	1
Maximum Number of Samples per Sector	4
Maximum Number of Samples in Total	32
Search Ellipse Sectors	8
Discretisation	5*5*5
Domain	**SK Mean**
LJF	0.030
MJF	0.113
EJF Inner	0.401
EJF Outer	0.271
PENSE	0.298
CPK	0.355

14.7.2 ORION SOUTH

At Orion South, the grade interpolation process was carried out using the parameters presented in Table 14-13. Mineralized kimberlite domain statistical means used in SK are derived from LDD sample data contained in Table 14-10.

Interpolations are also undertaken using the OK, IDW^2 and NN techniques. The OK interpolation utilizes the variogram model contained in Table 14-11, and the search ellipse and sample constraint parameters detailed in Table 14-13.

The IDW^2 interpolation uses the same search ellipse and sample constraint parameters as the OK interpolation. The nearest neighbor interpolation uses the same search ellipse dimensions as other interpolation methods.

TABLE 14-13 ORION SOUTH ESTIMATION PARAMETERS

Parameter	Value
Model Range (m)	
- Major Direction (Az 0°, Dip 0°)	250
- Semi-Major Direction (Az 90°, Dip 0°)	250
- 3rd Direction (Az 180°, Dip -90°)	50
Search Ellipse Sectors	8
Minimum Number of Samples	1
Maximum Number of Samples per Sector	4
Maximum Number of Samples in Total	32
Search Ellipse Sectors	8
Discretisation	5*5*5
Domain	**SK Mean**
LJF	0.021
EJF Inner	0.419
EJF Outer	0.241
Pense	0.105
P3	0.198

14.8. BULK DENSITY

The methods used for bulk density determination are described in Section 11.1.1. Howe has reviewed the bulk density data and considers it suitable for use in mineral resource estimation.

Dry bulk density in t/m^3 is estimated into the block model. On a block-by-block basis, grade in carats per tonne was calculated by dividing the block cpm^3 grade by the block dry bulk density value.

14.8.1 STAR

A total of 963 bulk density values are available for the Orion South Mineral Resource Estimate. The average bulk density values contained in Table 14-15 are assigned to the mineral resource model according to lithological domain

TABLE 14-14 DENSITY VALUES USED IN 2015 RESOURCE ESTIMATE FOR THE STAR KIMBERLITE

Domain	Density g/cm^3	Type	Number	Min	Max	Std. Deviation
Till	2.10	Wet	Clifton Associates Limited (2011):			
Lower Colorado & Westgate Formation	2.10	Wet	SRK Consulting (2010)			
Cantuar Formation	2.10	Wet	SRK Consulting (2010)			
URVKU	1.9*	Dry	50	1.54	2.30	0.19
LJF	1.9*	Dry	89	1.61	2.49	0.13
MJF	1.9*	Dry	83	1.61	2.30	0.14
EJF	2.1*	Dry	455	1.40	2.69	0.17
PPK	2.2*	Dry	65	1.80	2.63	0.14
CPK	2.1*	Dry	118	1.44	2.71	0.27
JLRPK	2.1*	Dry	58	1.59	2.51	0.27
VK-134	2.25	Dry	45	1.56	2.72	0.23

*Densities rounded up to 1 decimal place

14.8.2 ORION SOUTH

A total of 1,446 bulk density values are available for the Orion South Mineral Resource Estimate. The average bulk density values contained in Table 14-15 are assigned to the mineral resource model according to lithological domain.

TABLE 14-15 DENSITY VALUES USED IN 2015 RESOURCE ESTIMATE FOR THE ORION SOUTH KIMBERLITE

Domain	Density g/cm^3	Type	Number	Min	Max	Std. Deviation
Till	2.10	Wet	Clifton Associates Limited (2011):			
Lower Colorado & Westgate Formation	2.10	Wet	SRK Consulting (2010)			
Cantuar Formation	2.10	Wet	SRK Consulting (2010)			
UKS	1.82	Dry	67	1.17	2.57	0.24
LJF	1.94	Dry	129	1.21	2.66	0.21
EJF	2.10	Dry	857	1.42	2.65	0.17
PENSE	2.00	Dry	262	1.55	2.58	0.17
P-1	2.05	Dry	24	1.84	2.64	0.20
P-3 *based on limited data	2.20*	Dry	3			
CPK	2.28	Dry	21	1.89	2.57	0.17
VPK	2.04	Dry	32	1.45	2.48	0.21
133-VK	2.08	Dry	51	1.64	2.84	0.23

14.9. Block Model Validation

Block model validation procedures are undertaken to ensure that blocks represent interpreted geology and the input data and that selected interpolation methodologies do not introduce any significant biases.

The block model is displayed in 2D Slices along with sample point data in order to assess whether block grades honor the general sense of sample grades, that is to say that high grade blocks are located around high sample grades, and vice versa.

A global statistical comparison of the global means of all estimations method is undertaken. In well informed domains the difference between global means for each interpolation technique should not exceed 10%.

Using sectional validation or swath plots, the mean bulk sample grade and the mean grade of blocks from each interpolation model are reported at 50 m slices in the easting and northing directions. For each slice, mean bulk sample and block grades for the SK, OK, IDW^2 and NN models are compared.

14.9.1 Star

Local Validation

A degree of smoothing is apparent and on the whole, block grades correlate very well with input sample grades. An example section at 5,897,520N through the EJF domain is shown in Figure 14-13 and through the MJF domain in Figure 14-14.

Figure 14-13 Star EJF Block Model Section 5,897,520N

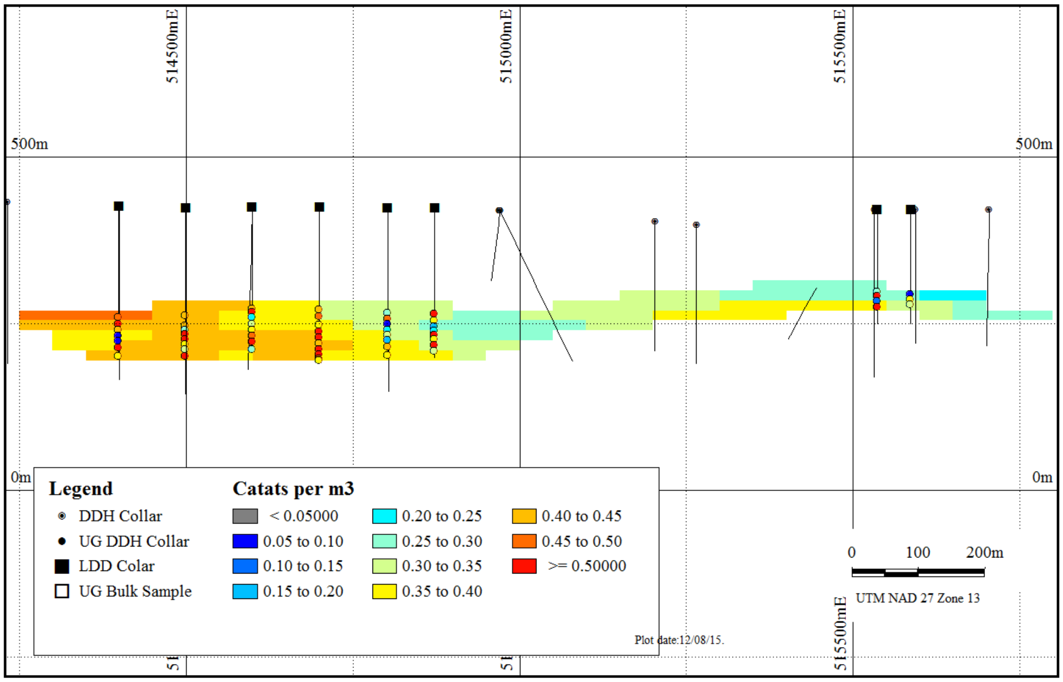
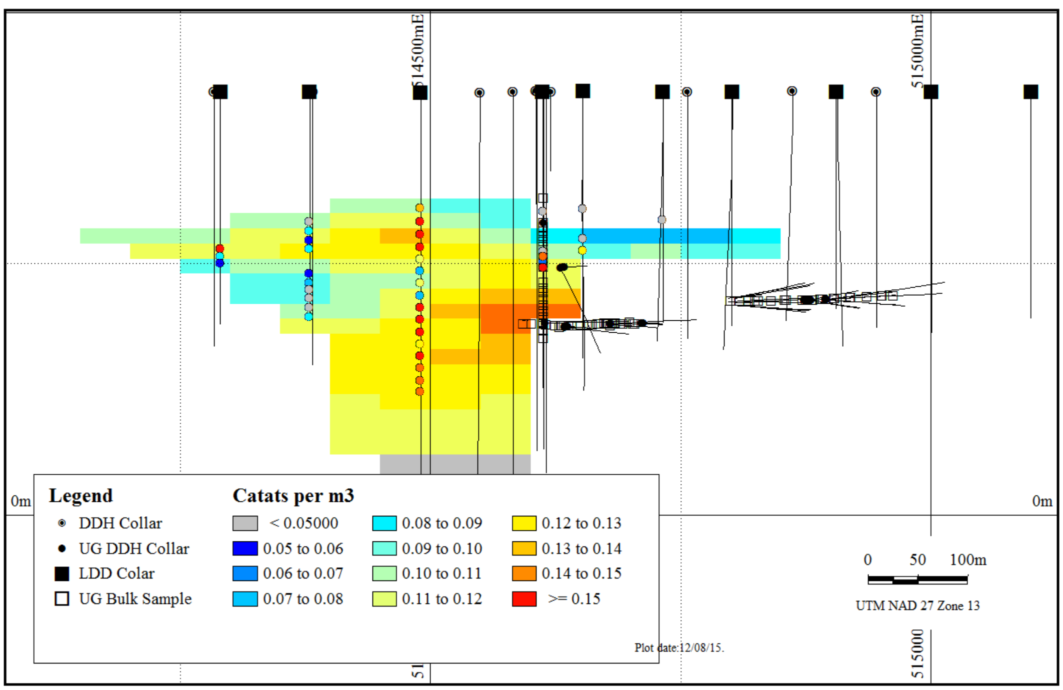


Figure 14-14 Star MJF Block Model Section 5,897,220N



Alternative interpolation techniques

The result of each model interpolation technique is presented in Table 14-16. There is good agreement between overall mean grades for SK, IDW^2 and NN techniques with differences within 3% for the EJF domain and within 13% for the Pense, MJF and CPK domains. The OK method shows no significant difference to the SK method in the well informed EJF Inner Domain, however in the outer domain the OK technique returns a grade 12% higher. This is to be expected and demonstrates that the use of SK prevents undue deviation from the mean grade of the domain due to a low sample density, were unconstrained samples can over influence blocks over large distances. The high coefficient of variance in the LJF domain results in poor correlation across all methods.

TABLE 14-16 STAR INTERPOLATION TECHNIQUE COMPARISON

Domain	Density	Value	SK	OK	IDW2	NN
STR EJF Inner	2.1	Tonnes (Mt)	84.583	83.051	84.583	84.583
		Grade (cpm^3)	0.393	0.394	0.395	0.405
STR EJF Outer	2.1	Tonnes (Mt)	81.174	82.706	81.283	81.283
		Grade (cpm^3)	0.291	0.325	0.301	0.296
STR LJF	1.9	Tonnes (Mt)	28.336	28.229	28.717	28.717
		Grade (cpm^3)	0.031	0.054	0.026	0.024
STR MJF	1.9	Tonnes (Mt)	19.807	19.807	20.354	20.354
		Grade (cpm^3)	0.119	0.127	0.126	0.116
STR Pense	2.2	Tonnes (Mt)	24.297	24.297	24.355	24.355
		Grade (cpm^3)	0.301	0.323	0.306	0.269
STR CPK	2.1	Tonnes (Mt)	25.19	25.01	25.59	25.59
		Grade (cpm^3)	0.368	0.397	0.325	0.345

Sectional Validation Plots

The EJF Inner domain has the highest sample density and is selected for the sectional validation plot analysis shown in Figure 14-15 for eastings and Figure 14-16 for northings. Block grades have smoother profiles relative to input samples. Where there are more samples, good agreement is seen between the input samples and block grades estimated by each technique. The SK profile is smoothest and honours the input samples well.

FIGURE 14-15 STAR EJF DOMAIN BULK SAMPLE VS. BLOCK MODEL GRADE VARIATION ALONG EASTING

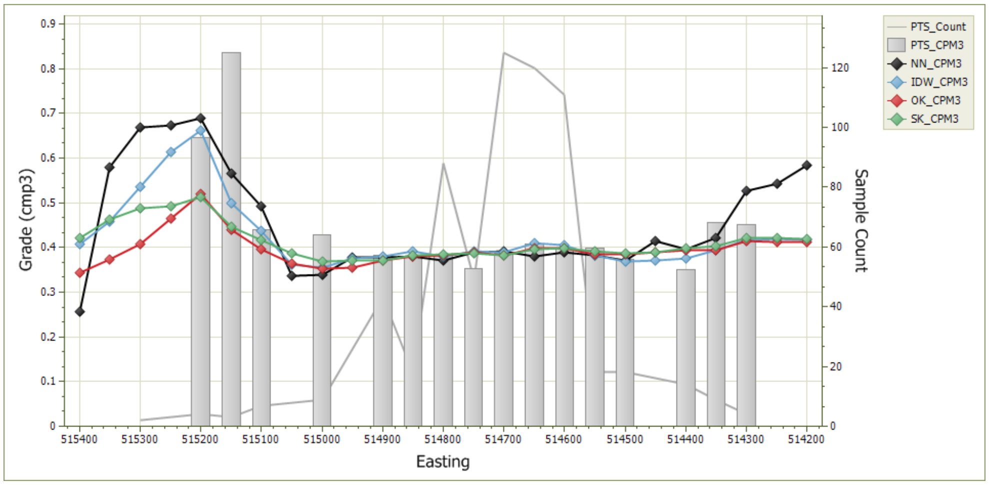
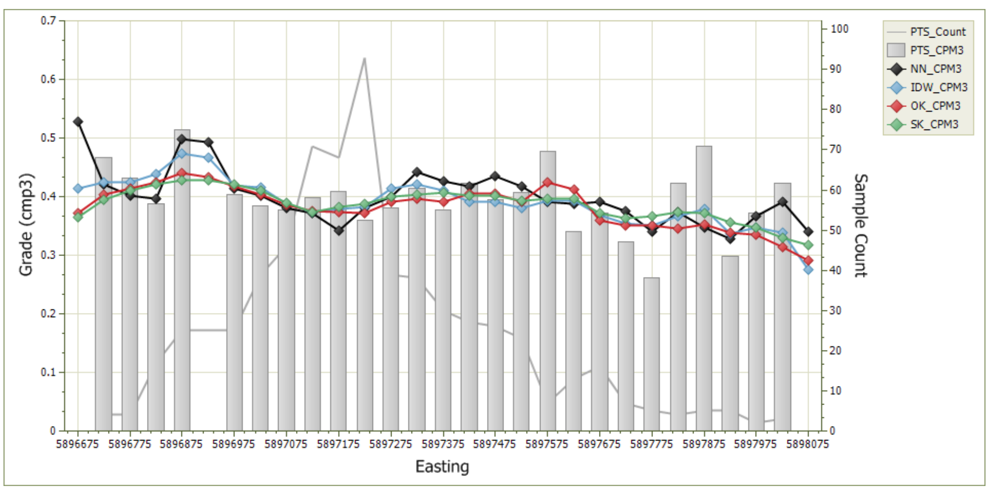


FIGURE 14-16 STAR EJF DOMAIN BULK SAMPLE VS. BLOCK MODEL GRADE VARIATION ALONG NORTHING



14.9.2 ORION SOUTH

Local Validation

A degree of smoothing is apparent and on the whole, block grades correlate very well with input composite sample grades. An example section at 5,900,710N through the EJF domain is shown in Figure 14-13 and through the Pense domain in Figure 14-13.

FIGURE 14-17 ORION SOUTH EJF BLOCK MODEL SECTION 5,900,710N

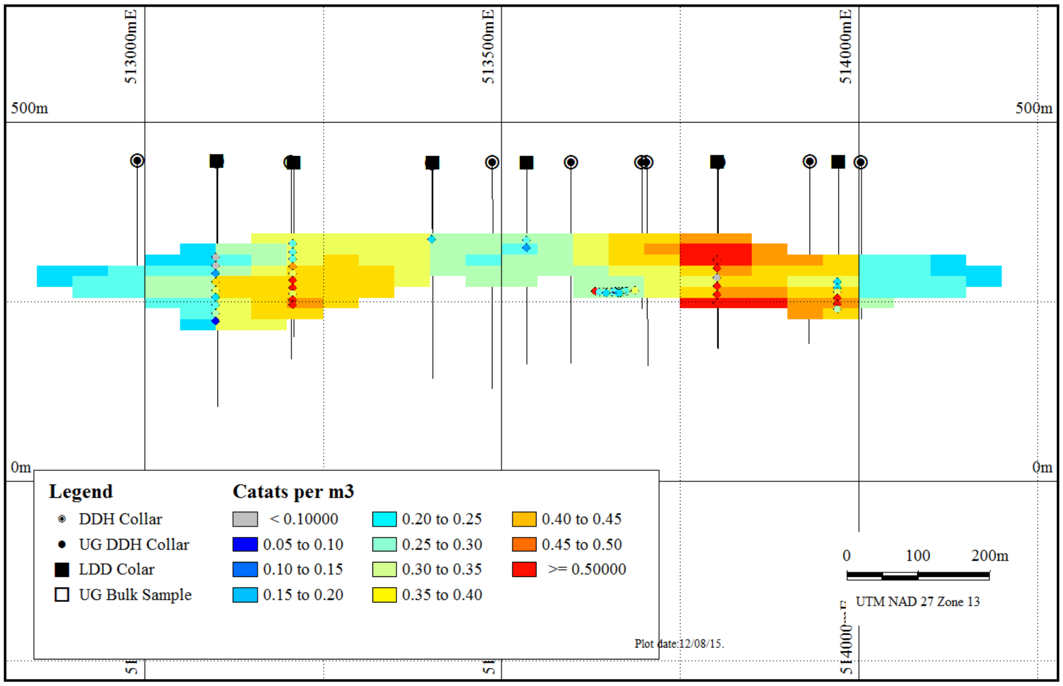
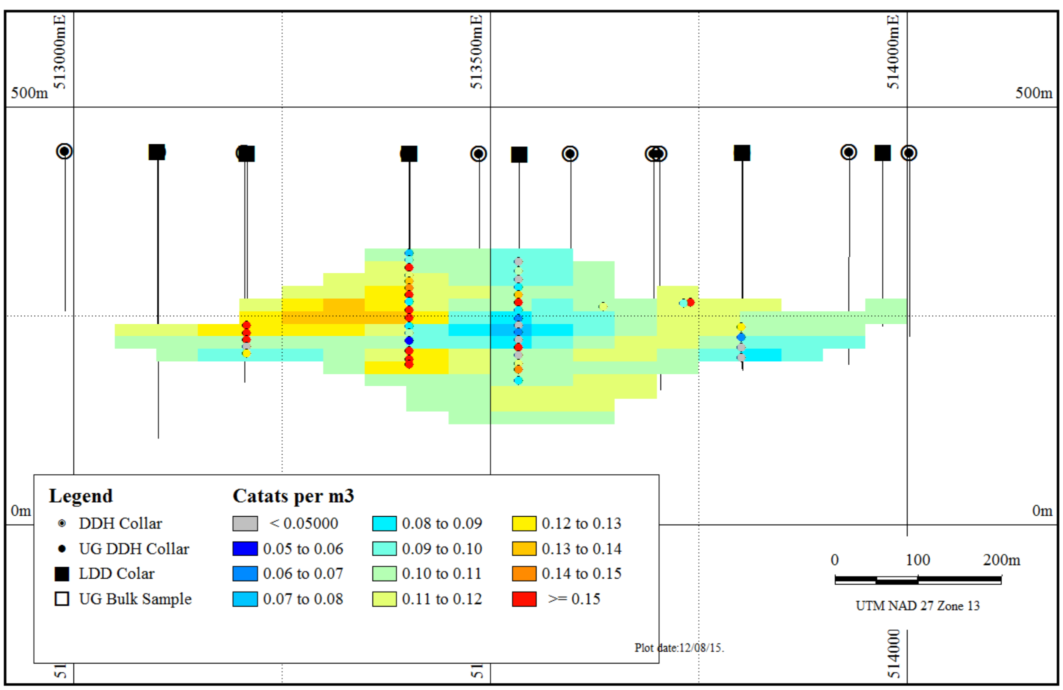


FIGURE 14-18 ORION SOUTH PENSE BLOCK MODEL SECTION 5,900,710N



Alternative interpolation techniques

The result of each model interpolation technique is presented in Table 14-16. There is positive correlation agreement between overall mean grades for SK, OK, IDW^2 and NN with differences within 6% for the EJF Inner domain and 10% for the Pense and P3 domains. In the EJF outer domain where samples are sparse the other methods return average grades that are up to 20% higher. As at Star, the high coefficient of variance in the LJF domain results in poor correlation across all methods.

TABLE 14-17 ORION SOUTH INTERPOLATION TECHNIQUE COMPARISON

Domain	Density	Value	SK	OK	IDW2	NN
OS EJF Inner	2.1	Tonnes (Mt)	96.444	96.444	96.444	96.444
		Grade (cpm^3)	0.400	0.376	0.384	0.393
OS EJF Outer	2.1	Tonnes (Mt)	82.965	82.965	82.965	82.965
		Grade (cpm^3)	0.259	0.303	0.308	0.285
OS LJF	1.9	Tonnes (Mt)	27.836	27.836	27.836	27.836
		Grade (cpm^3)	0.014	0.020	0.019	0.026
OS Pense	1.9	Tonnes (Mt)	66.934	66.934	66.934	66.934
		Grade (cpm^3)	0.107	0.106	0.103	0.114
OS P3	2.2	Tonnes (Mt)	5.710	5.710	5.710	5.710
		Grade (cpm^3)	0.198	0.216	0.213	0.212

Sectional Validation Plots

The EJF Inner domain has the highest sample density and is selected for the sectional validation plot analysis shown in Figure 14-19 for eastings and Figure 14-20 for northings. Block grades have smoother profiles relative to input samples. There is reasonable agreement seen between block grades estimated by each technique and the input samples.

FIGURE 14-19 ORION SOUTH EJF DOMAIN BULK SAMPLE VS. BLOCK MODEL GRADE VARIATION ALONG EASTING

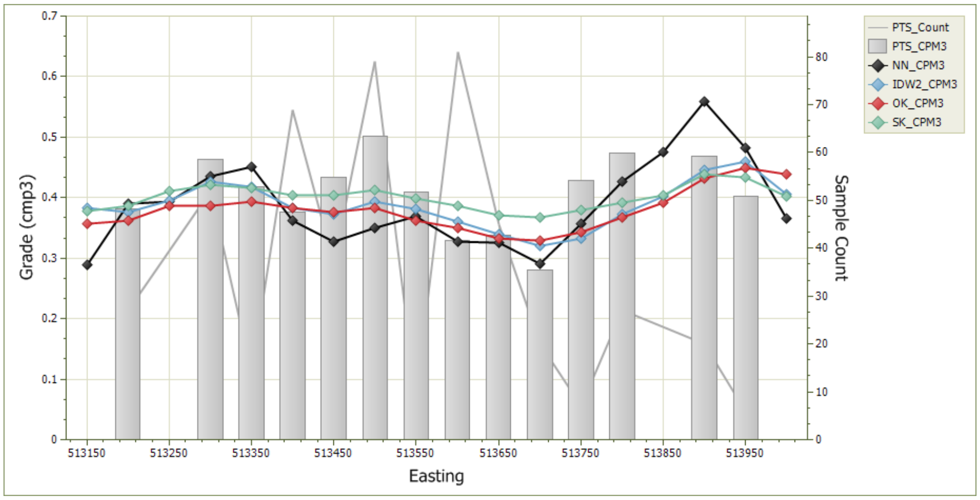
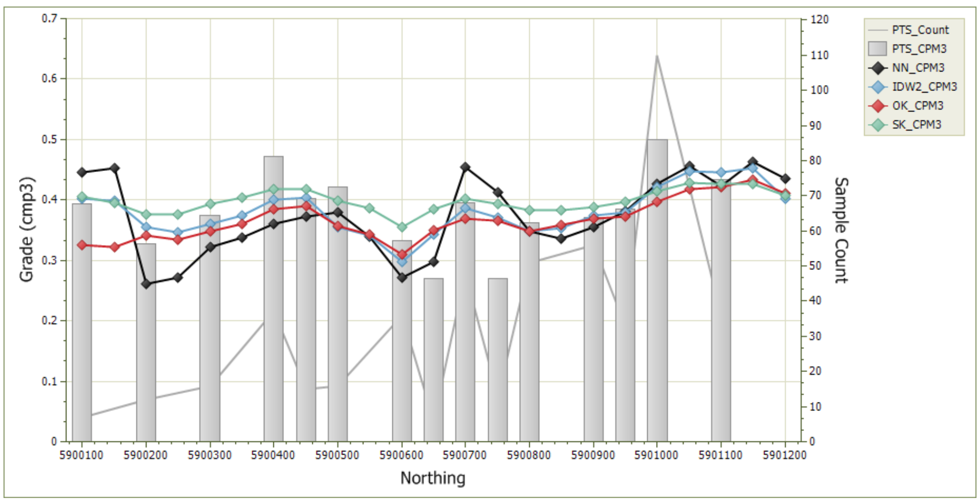


FIGURE 14-20 ORION SOUTH EJF DOMAIN BULK SAMPLE VS. BLOCK MODEL GRADE VARIATION ALONG NORTHING



14.10. MINERAL RESOURCE REPORTING

The Star and Orion South Mineral Resource Estimates are prepared in accordance with CIM Definition Standards- For Mineral Resources and Mineral Reserves, adopted by the CIM Council on May 10, 2014 where:

- An Inferred Mineral Resource as defined by the CIM Standing Committee is *"An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity.*

  An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration."

- An Indicated Mineral Resource has a higher level of confidence than that applying to an Inferred Mineral Resource. It may be converted to a Probable Mineral Reserve. An Indicated Mineral Resource as defined by the CIM Standing Committee is "*is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.*

  Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve." And,

- A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve. A Measured Mineral Resource, as defined by the CIM Standing Committee is *"A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.*

Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.

A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve."

Only mineral resources are identified in this report. No economic work that would enable the identification of mineral reserves is carried out and no mineral reserves are defined. Mineral resources that are not mineral reserves do not account for mineability, selectivity, mining loss and dilution and do not have demonstrated economic viability. These Mineral Resource Estimates include Inferred mineral resources that are normally considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as mineral reserves. There is also no certainty that these Inferred and Indicated mineral resources will be converted to the Indicated and Measured categories through further drilling, or into mineral reserves, once economic considerations are applied.

Classification, or assigning a level of confidence to Mineral Resources, is undertaken in strict adherence to the CIM Definition Standards for Mineral Resources and Mineral Reserves (CIM Council, 2014).

Mineral Resource Estimates for the Star and Orion South deposits are prepared under the supervision of P. Ravenscroft, FAusIMM, owner of Burgundy Mining Advisors Ltd. and Qualified Person for the reporting of Mineral Resources as defined by NI 43-101. Mr. Ravenscroft graduated from the University of Cape Town in 1979 with a Bachelor of Science degree in Mathematical Statistics, and from the Ecole des Mines de Paris in 1985 with the equivalent of a Masters degree in Geostatistics. Mr. Ravenscroft has practiced his profession for 35 years and has been directly involved in resource and reserve estimation, mine planning and project evaluation for a wide range of commodities, including over ten diamond properties in Africa, Australia and Canada. Mr. Ravenscroft visited the Star and Orion South project site between on April 15 2015 to review the geology and observe the 2015 drilling program.

Creation of geological domains and block mode interpolation was undertaken by L. McGarry, ACA Howe Senior Project Geologist. Mr. Leon McGarry and Qualified Person. Mr. McGarry is a registered Professional Geoscientist (P.Geo.) in good standing registered in the Province of Saskatchewan (APEGS no. 34929). He graduated from Brunel University with a Bachelor of Science degree in Earth Science (2005). Mr. McGarry has practised his profession for over

9 years, of which he has a total of 2 years of direct experience with diamond projects located in Canada and Lesotho, including supervision of bulk sampling programs and deposit modelling. Additional experience includes over 7 years of direct experience in the preparation of geological models, mineral resource estimates and National Instrument 43-101 ("NI 43-101") technical reports for precious and base metal projects.

Howe is unaware of any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant issues that may materially affect the Star and Orion South Mineral Resource Estimate.

14.10.1 Reasonable Prospects of Economic Extraction

CIM Definition Standards- For Mineral Resources and Mineral Reserves, adopted by the CIM Council on May 10, 2014 require that resources have "reasonable prospects for economic extraction". This generally implies that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at an appropriate cut-off grade taking into account possible extraction scenarios and processing recoveries.

To ensure that reported resources have a reasonable prospect of economic extraction a conceptual pit shell is developed. Calculated block values and economic parameters provided by Shore Gold (Table 14-18) are used to generate a Whittle pit shell analysis that incorporates all available blocks. The results from the Whittle pit shell analysis are used solely for the purpose of reporting mineral resources that have reasonable prospects for economic extraction.

The Whittle optimization uses the June 2015 High modeled carat price in Canadian dollars determined by WWW International Diamond Consultants Ltd described in Section 11.6. The value of each kimberlite in the block is calculated for each mineralized kimberlite (37,500 m^3 x density x block factor x high price). Results are summed to give an overall block value.

Block tonnages are estimated using a weighted block density that is calculated by summing the result of each block factor multiplied by the corresponding density for each lithology identified in Tables 11-1 and 11-2 in Section 11.

For each block, a weighted mining cost is calculated by summing the result of ore, waste, and till block factors multiplied by the corresponding mining cost value.

A variable slope angle is assigned to each block, based on the dominant rock type within that block. Slope angles used in optimization are based on a geotechnical study at the Star deposit conducted during the 2011 feasibility study, that suggests that a maximum pit slope of 16° Till, 23° in the Country Rock, and 45° in the Kimberlite is achievable.

TABLE 14-18 STAR AND ORION SOUTH WHITTLE PIT SHELL PARAMETERS

Item	Value
Exchange Rate	Cdn$1.00 = US$0.80
Till Stripping Cost	Cdn$1.01/tonne
Ore Mining Cost	Cdn$1.75/tonne
Waste Mining Cost	Cdn$1.66/tonne
Processing Cost	Cdn$3.01/tonne
General & Administration Cost	Cdn$2.48/tonne
Pit Slope Angle : Till/ Country Rock/ Kimberlite	16°/ 23°/ 45°
Internal Cut-off	C$5.49/tonne

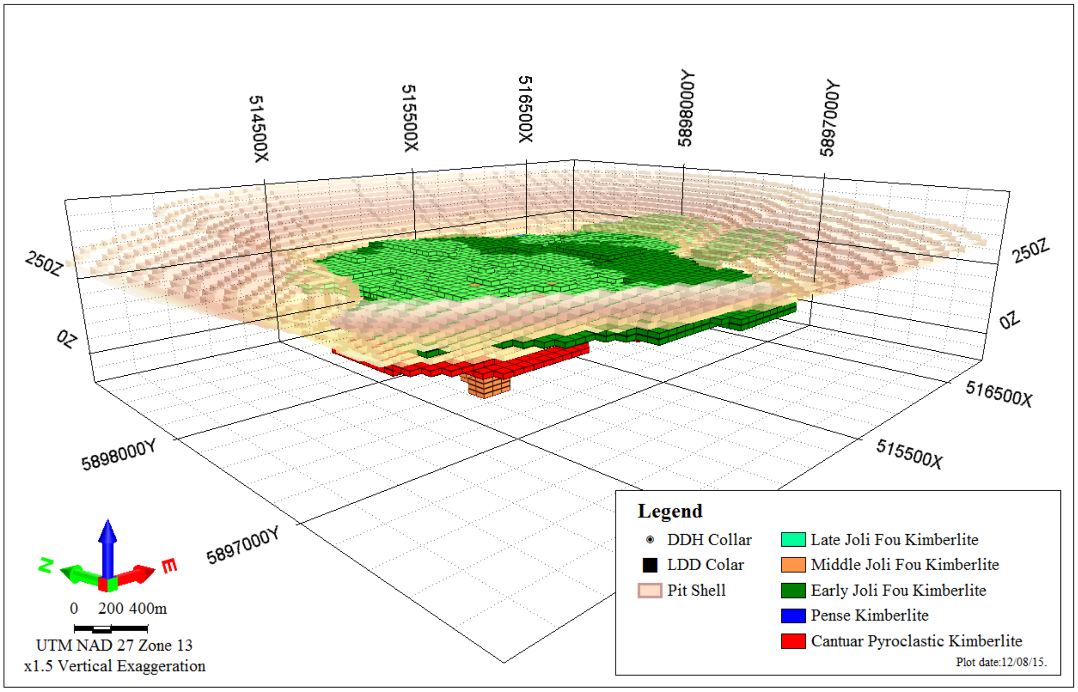
Estimated grades are based on the recovery of diamonds from bulk sample pilot plant processing of Star Kimberlite, and therefore diamond recovery was assumed to be 100%.

14.10.1.1 Star

At Star, the pit is constrained by a buffer zone set back 200m from the Saskatchewan River bank crest. The resultant pit shell has a volume of 0.524 km^3 and captures 89% of the modeled kimberlite that has received an estimated grade and is used for mineral resource estimation (Figure 14-21).

For the determination of block value in pit optimization, diamond prices are available for EJF, MJF, PPK and CPK stones. The MJF valuation is applied to LJF domain. Densities for the Star domain are contained in Table 14-14.

FIGURE 14-21 STAR RESOURCE CONSTRAINING PIT

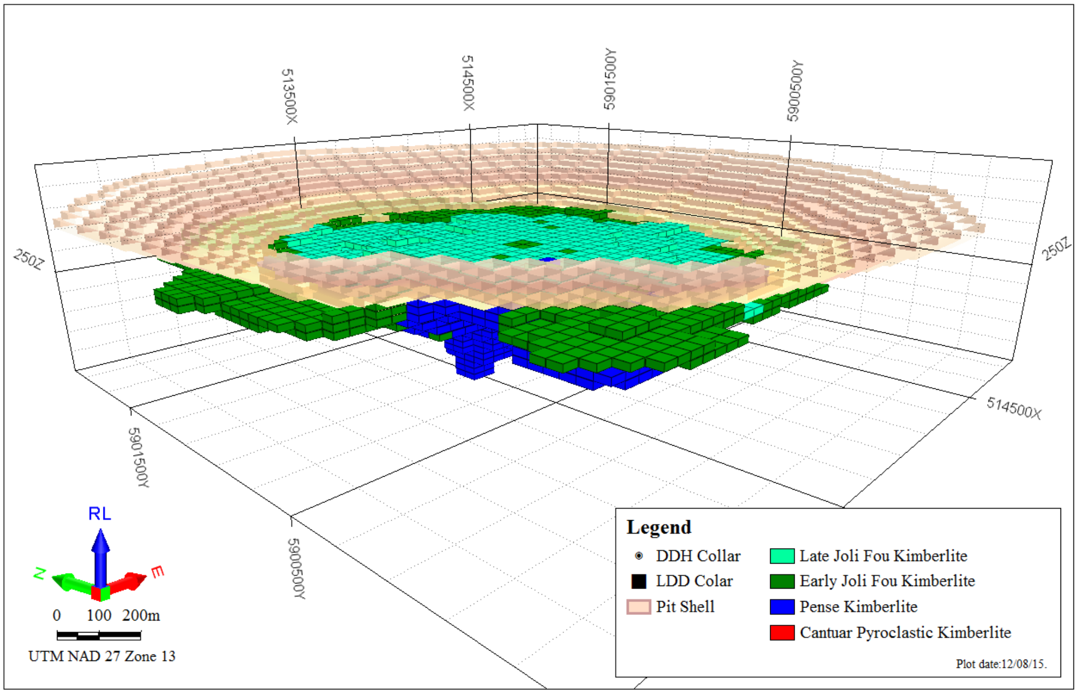


14.10.1.2 Orion South

The Orion South pit shell has a volume of 0.887 km^3 and captures 97% of the modeled kimberlite that has received an estimated grade and is used for mineral resource estimation (Figure 14-22).

For the determination of block value in pit optimization, diamond prices are available for EJF and Pense stones. The EJF valuation is applied to LJF and P3 domain. Densities for the Orion South domain are contained in Table 14-15.

FIGURE 14-22 ORION SOUTH RESOURCE CONSTRAINING PIT



14.10.2 RESOURCE CLASSIFICATION PARAMETERS

Resource classification parameters are based on the validity and robustness of input data and the author's judgment with respect to the proximity of resource blocks to sample locations and the Kriging variance recorded during grade estimation.

Classification boundaries are manually defined using modeled polygons that are assigned to model blocks. Resources are reported in adherence to National Instrument 43-101. Standards of Disclosure for Mineral Projects (Canadian Securities Administrators, 2011), and to the CIM Definition Standards on Minerals Resources and Reserves (CIM Council, 2014).

At both deposits sampling is recent, predominantly undertaken by the Company, and is considered to be of high quality. The Authors are confident that bulk samples and the diamonds collected from the deposits are representative of the material drilled and can be used in resource estimation studies. Sampling practices are considered to be industry standard and a review of all QA/QC drilling and underground sampling procedures suggest that assay data used in resource estimation is robust for this purpose.

14.10.2.1 Star

The following is taken into account when classifying resources at the Star deposit.

- Digital lithology files have sufficient information to enable broad interpretations of geology. However there are a number of internal dilution zones that are not yet properly defined.
- There is good survey control on data point locations.
- Lithology domain and diamond grade continuity is well established where drill density is greater than 100 x 100 meters, however there remains significant portions of the deposit where sample density is insufficient to establish continuity beyond an Inferred level, specifically:
  - The discontinuous LJF domain has a small number of samples and these samples have a limited number of stones with no diamond valuation (MJF values are assumed as there is a genetic relationship between the LJF and MJF at Star).
  - The CPK unit becomes thin and discontinuous more than 100 m from the MJF/EJF vent complex. To the north of 5897700 mN, the CPK comprises multiple horizons that are not sufficiently defined for incorporation into the resource.
- The estimation and modelling technique is considered robust.

The following classification criteria are used in the estimation of mineral resources at Star:

- <u>Inferred</u> resources are blocks that are informed by a search ellipse with an X-Y dimension range of 500 m and Z dimension range of 70 m are captured within the Whittle optimised pit shell and are above an internal cut off of C$5.49/tonne. The extent of CPK Inferred resources are limited to an area south of 5,897,700 mN (See Figure 14-23)

- <u>Indicated</u> resources are defined up to approximately 150 metres from the nearest sample. Blocks assigned the Indicated category should be informed by at least three drill holes; and,

- Indicated resources are defined for the EJF, LJF, MJF, PPK and CPK domains only. The MJF domain uses the same classification boundaries as the EJF domain shown in Figure 14-23.

Measured resources are not defined.

14.10.2.2 Orion South

The following is taken into account when classifying resources at the Orion South deposit:

- Digital lithology files have sufficient information to enable broad interpretations of geology. However there are a number of internal dilution zones that are not yet properly defined.
- There is adequate survey control on data point locations.
- Lithology domain and diamond grade continuity is well established where drill density is greater than 100 x 100 meters, however there remains significant portions of the deposit where sample density is insufficient to establish continuity beyond an Inferred level, specifically:
  - The discontinuous LJF domain has a small number of samples and stones with no diamond valuation.
  - The small P3 domain has small number of samples and stones with no diamond valuation.
- The estimation and modelling technique is considered generally robust.

The following classification criteria are used in the estimation of mineral resources at Orion South:

- <u>Inferred</u> resources are blocks that are informed by a search ellipse with an X-Y dimension range of 250 m and Z dimension range of 50 m and are captured within the Whittle optimised pit shell and are above an internal cut off of C$5.49/tonne (See Figure 14-24).

  The LJF and P3 domains are limited to the Inferred classification only and use the same Inferred boundaries as the EJF and Pense domains shown in Figure 14-24**Error! Reference source not found.**.

- <u>Indicated</u> resources are defined up to approximately 150 metres from the nearest sample. Blocks assigned the Indicated category should be informed by at least three drill holes; and,

- Indicated resources are defined for the EJF and Pense domains only.

Figure 14-23 Star Resource Classification Boundaries

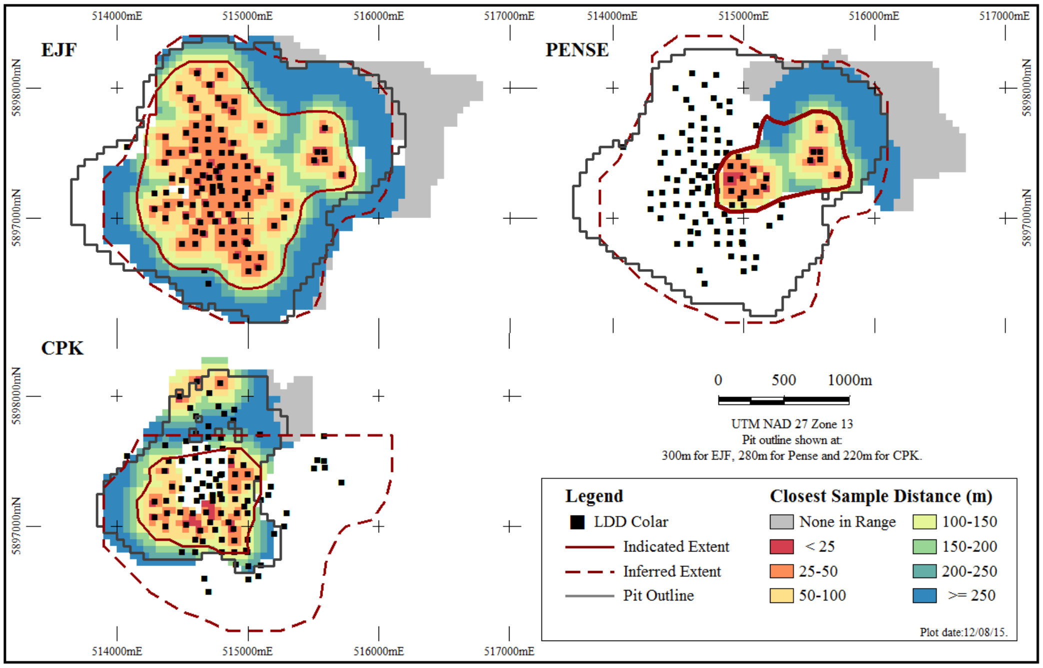
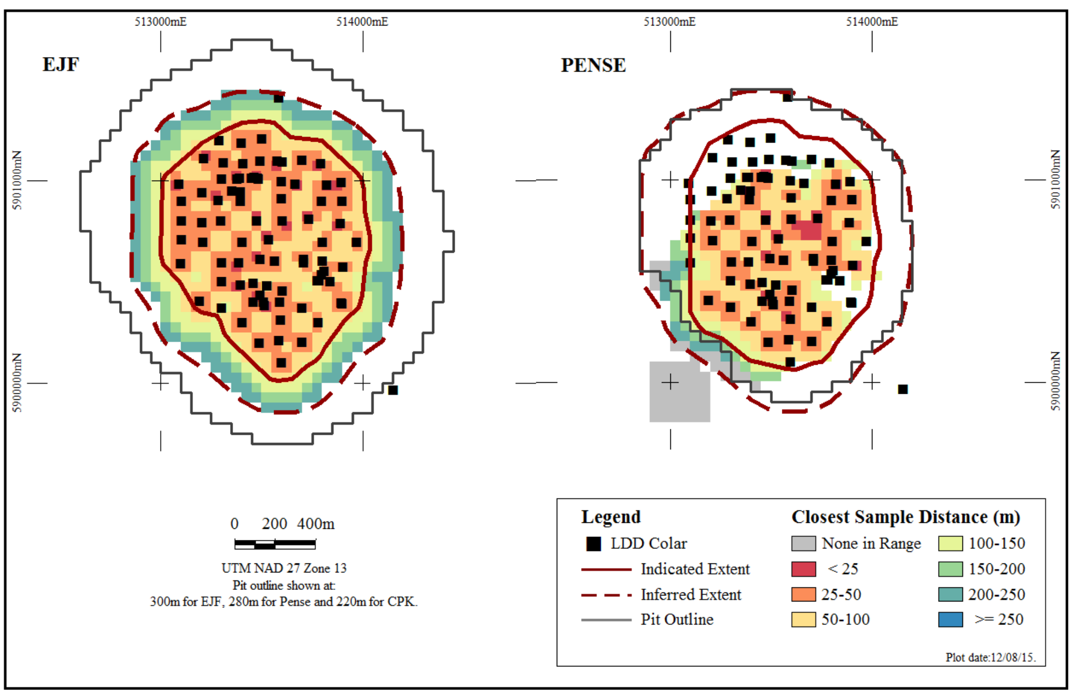


Figure 14-24 Orion South Resource Classification Boundaries



14.11. MINERAL RESOURCE STATEMENT

The 2015 non-diluted Mineral Resource Estimate for the Star and Orion South deposits are presented in Table 14-19 and Table 14-20. Diamond grades are reported in carats per one hundred tonnes, derived by dividing the cpm^3 grade by the domain density and multiplying the result by one hundred. This Revised Mineral Resource Estimate uses a 1.0 millimetre bottom cut-off size, including only stones recovered larger than +1 DTC diamond sieve, and considers all kimberlite above 90 metres above mean sea level or to a depth of 330 metres below surface in Star and 360 metres below surface in Orion South.

Star Mineral Resources

Non-diluted Indicated Mineral Resources considered amenable to open pit mining, within a preliminary pit shell at a C$5.49/tonne internal cut off and within the EJF, MJF, LJF, PPK and CPK domains total 193.010 million tonnes with an average diamond grade of 15 cpht for 28.249 million carats.

Non-diluted Inferred Mineral Resources considered amenable to open pit mining, within a preliminary pit shell at a C$5.49/tonne internal cut off and within the EJF, LJF, MJF, PPK and CPK domains total 56.949 million tonnes with an average diamond grade of 11 cpht for 6.385 million carats.

Orion South Mineral Resources

Non-diluted Indicated Mineral Resources considered amenable to open pit mining, within a preliminary pit shell at a C$5.49/tonne internal cut off and within the EJF and Pense domains total 200.160 million tonnes with an average diamond grade of 14 cpht for 27.153 million carats.

Non-diluted Inferred Mineral Resources considered amenable to open pit mining, within a preliminary pit shell at a C$5.49/tonne internal cut off and within the EJF, LJF, Pense and P3 domains total 72.080 million tonnes with an average diamond grade of 7 cpht for 5.180 million carats.

TABLE 14-19 MINERAL RESOURCE ESTIMATE FOR THE STAR KIMBERLITE

Star Kimberlite Revised Mineral Resource Estimate				
Resource Category	**Kimberlite Unit**	**Tonnes x1000**	**Grade cpht**	**Carats x1000**
Indicated	LJF	15,986	2	277
Indicated	MJF	18,906	6	1,183
Indicated	EJF Outer	47,152	15	6,847
Indicated	EJF Inner	84,444	19	15,807
Indicated	Pense (PPK)	13,822	14	1,906
Indicated	Cantuar (CPK)	12,700	18	2,229
Indicated	**TOTAL**	**193,010**	**15**	**28,249**
Inferred	LJF	11,500	2	175
Inferred	EJF Outer	30,286	13	3,926
Inferred	Pense (PPK)	8,828	14	1,196
Inferred	Cantuar (CPK)	6,335	17	1,088
Inferred	**TOTAL**	**56,949**	**11**	**6,385**

TABLE 14-20 MINERAL RESOURCE ESTIMATE FOR THE ORION SOUTH KIMBERLITES

Orion South Kimberlite Revised Mineral Resource Estimate				
Resource Category	**Kimberlite Unit**	**Tonnes x1000**	**Grade cpht**	**Carats x1000**
Indicated	EJF Outer	44,570	13	5,626
Indicated	EJF Inner	96,317	19	18,348
Indicated	Pense	59,273	5	3,179
Indicated	**TOTAL**	**200,160**	**14**	**27,153**
Inferred	LJF	27,836	1	198
Inferred	EJF Outer	36,188	12	4,361
Inferred	Pense	2,754	5	144
Inferred	P3	5,302	9	477
Inferred	**TOTAL**	**72,080**	**7**	**5,180**

Table Notes apply to Tables Table 14-19 and Table 14-20.

1) Canadian Institute of Mining and Metallurgy (“CIM”) definitions were followed for classification of mineral resources.
2) Star Kimberlite Units: Cantuar CPK, Pense PPK, Early Joli Fou (“EJF”), Mid Joli Fou (“MJF”) and Late Joli Fou (“LJF”)
3) Orion South Kimberlite Units: P3, Pense, EJF and LJF
4) Mineral Resources are constrained within a Whittle optimized pit shell.

5) Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimation of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing or other relevant issues.
6) There is no guarantee that all or any part of the Mineral Resource will be converted into a Mineral Reserve.
7) An effective 1 mm lower cut-off for diamond recovery is assumed, and only diamonds larger than +1 DTC diamond sieve are included.
8) Grade values are rounded to nearest whole number.
9) The effective date of the Revised Mineral Resource Estimate is November 9th, 2015.
10) The EJF Inner and Outer kimberlite units for both deposits are based on detailed kimberlite geology recorded from the core logging of the pattern drilling program. The EJF Inner represents coarser grained EJF kimberlite that occurs within the volcanic crater and the EJF Outer includes finer grained EJF kimberlite that lies on and outside the crater rim. This Revised Mineral Resource Estimate acknowledges that the transition from Inner to Outer is geologically gradational.

14.12. FACTORS THAT MAY AFFECT THE MINERAL RESOURCE ESTIMATES

Factors which may affect the Mineral Resource estimates include:

- Diamond price and valuation assumptions;
- Changes to the assumptions used to estimate diamond carat content (e.g. bulk density estimation, grade model methodology);
- Geological interpretation (internal kimberlite domains and/or pipe contacts);
- Changes to design parameter assumptions that pertain to open pit design;
- Changes to geotechnical, mining assumptions;
- Changes to process plant recovery estimates if the diamond size in certain domains is finer or coarser than currently assumed;
- The effect of different sample-support sizes between RC drilling and underground sampling or other larger-scale sampling programs; and,
- Diamond parcel sizes for the deposits with estimates that are not in production or planned for production.

14.13. COMPARISON WITH PREVIOUS RESOURCE ESTIMATE

Previous MREs generated for the projects are described in earlier technical reports for Star (Ewert et al., 2009a) and Orion South (Ewert et al., 2009b). A change to the mineral resource estimation approach used in those studies is applied to the current estimate.

New grade alignment factors are used at both deposits (see Section 14.5). Simple Kriging is used in place of ordinary Kriging. Block Sizes have increased from 30 m x 30 m x 15 m to 50 m x 50 m x 15 m.

At both deposits the EJF Inner and Outer boundary is now soft, such that EJF Inner samples can inform Outer blocks. This has resulted in a significant increase in resource tonnes and carats in the EJF Outer domain for both deposits.

At both deposits, changes to pit optimization parameters are described in Section 14.10.1, and include: The use of a variable pit slope for till, kimberlites and country rock that results in a shallower overall pit; an increase in mining costs; a revision to the diamond valuation and the Canadian US exchange rate since 2009.

Higher modelled diamond prices discussed in Section 11.6, make a greater number of blocks economic and the pit shells larger in size as, even when accounting for an increased internal cut off associated with higher processing and G&A costs

14.13.1 STAR

The 2009 Star Mineral Resource Estimate completed by P&E Mining, was derived from the drill data used in the current estimate and listed in the Star data summary in Section 14.2.1. In addition to the change in the mineral resource estimation approach identified above, specific changes that affect the current Star Mineral Resource Estimate study include:

Revised variography at Star supports the use of a 500m search ellipse instead of a 340m ellipse, the greater search ellipse collects a larger number of blocks at the periphery of the EJF Outer domain. The areal extent of Indicated resources has increased from 1.42 km^2 to 1.92 km^2.

The Indicated Mineral Resource for Star has increased 38 percent to 28.2 million carats and the grade has increased 11 percent to 15 cpht. The Inferred Mineral Resource for Star has increased 109 percent to 6.4 million carats and the grade has decreased 6 percent to 11 cpht.

The increase in Indicated resource tonnes is primarily attributed to the use of a larger Indicated classification extent. Increases in Inferred category tonnes are primarily attributed to the use of a larger search ellipse range.

14.13.2 ORION SOUTH

The Orion South Mineral Resource Estimate was completed by P&E Mining. Since that estimate, 47 new diamond drill holes and 12 LDD holes were completed for an additional 97 bulk samples.

Remodelling of the Orion South deposit incorporates new drilling and country rock domains. As a result a new P3 domain is defined and the EJF and Pense domains are extended to the southwest by up to 400 m. Variography at Orion South supports a 250m search ellipse, comparable the maximum ellipse size of 240m used in 2009 to define Inferred category blocks.

Indicated Mineral Resource on Orion South has increased 134 percent to 27.1 million carats and the grade has increased 1 percent to 14 cpht. The Inferred Mineral Resource for Orion South has decreased 59 percent to 5.18 million carats and the grade has decreased 45 percent to 7 cpht.

The total resource tonnage at Orion South has increased with a decrease in the proportion of Inferred resources resulting from a larger Indicated boundary extent due to additional core and LDD-RC drilling in 2015.

14.14. TARGETS FOR ADDITIONAL EXPLORATION

14.14.1 STAR

At Star, the EJF domain is open to the north, where additional diamond drilling may develop further Mineral Resources. The PPK, LJF and MJF domains are closed off by diamond drilling. Exploration should focus on increasing the LDD-RC drill density in sparsely sampled areas of EJF domain with the goal of upgrading Inferred resources to the Indicated category.

The contact of the VK-134 and EJF kimberlites should be better defined by diamond drilling along easting 514,200mE and 514,300mE. LDD-RC holes should be drilled to the west of LDD-STW-07-002 to develop high grade >0.5cpm^3 EJF mineralization encountered in that hole.

The CPK domain at Star warrants further definition drilling along easting 514,300 mE and a series of holes is required to better define the continuity and lateral extent of this kimberlite.

14.14.2 ORION SOUTH

At Orion South, the EJF domain is open to the north, east, south and west. The Pense and P3 domains are open to the southwest. Exploration should focus on upgrading the mineral resource classification category of kimberlite in the EJF Outer domain.

LDD-RC drilling should be undertaken to further develop EJF and Pense kimberlite material encountered in drill hole LDD-140-15-023 for EJF, and for Pense in holes LDD-140-07-002, and LDD-140-15-026. LDD-RC holes could be centered on diamond drill holes along sections 5,900,100 mN to 5,900,300 mN. On these sections additional diamond drilling maybe required to further resolve the P3, Pense and EJF stratigraphy in the SW of the deposit.

On the western flank of the deposit, LDD-RC drilling could be undertaken to develop EJF kimberlite material encountered in LDD-RC holes LDD-141-15-021 and 141-15-023. LDD holes should be centered on diamond drill holes at several locations on section 513,000mE.

Towards the east, diamond drilling and LDD-RC drilling could be undertaken at several locations on section 514,000mE to develop EJF mineralization encountered in LDD-140-08-017.

15. MINERAL RESERVE ESTIMATES

This section is not applicable to this report.

16. MINING METHODS

This section is not applicable to this report.

17. RECOVERY METHODS

This section is not applicable to this report.

18. PROJECT INFRASTRUCTURE

This section is not applicable to this report.

19. MARKET STUDIES AND CONTRACTS

This section is not applicable to this report.

20. ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

This section is not applicable to this report. However, previous environmental studies are summarised in section 4.2.

21. CAPITAL AND OPERATING COSTS

This section is not applicable to this report.

22. ECONOMIC ANALYSIS

This section is not applicable to this report.

23. ADJACENT PROPERTIES

Howe is unaware of any significant exploration results on immediately adjacent mineral properties.

The Star Orion South Diamond Project is located within the 50 kilometres long by 30 kilometres wide Fort à la Corne kimberlite province. At least 69 kimberlitic bodies have been drilled to date in the province, but there is no current production from any of the kimberlites.

24. OTHER RELEVANT DATA AND INFORMATION

With the completion of Revised Mineral Resource Estimates, the 2011 feasibility study on the Star and Orion South deposits becomes historical. The feasibility and pre-feasibility study reports, mineral resources and economic assessment previously disclosed by the Company are no longer current and should no longer be relied upon.

There is no other relevant information known to Howe that would make this report more understandable or if undisclosed would make this report misleading.

25. INTERPRETATION AND CONCLUSIONS

Howe has reviewed the Star and Orion South Deposit data provided by Shore including the core drilling and LDD-RC drilling databases; has visited the project site; and has reviewed sampling procedures and security. Howe believes that the data presented by the Company are an accurate and reasonable representation of the Star Deposit and Orion South Deposit mineralisation styles. Howe concludes that the database for the Star Deposit and Orion South is of sufficient quality for Resource Estimation.

Work by Shore at the Star Deposit and Orion South Deposit have developed the kimberlite deposit models outlined in previous technical reports, provided further detail on the nature of diamond mineralization, and has permitted the completion of an NI 43-101 compliant Revised Mineral Resource Estimate for each deposit.

At Star the geology is well understood by Shore's geologists. Lithological interpretations used in the 2009 Mineral Resource Estimate are retained in the current study. Five well mineralized kimberlite units are modeled for mineral resource estimation. The geological model estimates that the Star Kimberlite contains a total of approximately 290.2 Mt of kimberlite in the LJF, MJF, EJF, PPK and CPK with a further 100.9 Mt of UKS, JLRPK and VK-134.

On the Orion South kimberlite Shore completed a total of twelve 24 inch LDD-RC holes in 2015. The LDD-RC program totalled 2,559.90 metres of drilling. The core drilling program resulted in the discovery of significant new intersections of EJF and Pense kimberlite and successfully extended the geological continuity of these kimberlite units on Orion South. As a result a new P3 domain has been defined and the EJF and Pense domains are extended to the southwest by up to 400 m. The geological model estimates for the Orion South Kimberlite contains a total of approximately 318 Mt of kimberlite of EJF and Pense with a further 44.3 MT of KSST, VPK, LJF, P3 and CPK units.

Since 2007, Howe carried out several site visits in order to undertake an extensive review of the geoscientific data being collected by Shore. Howe found the sampling methods, sample storage, and security undertaken in line with accepted industry practice. Howe considers that sample analysis and the diamond grade and quality data generated from Shore’s exploration programs is of sufficient quality to allow further analysis. It is recognized that diamond breakage associated with LDD-RC drilling has the potential to introduce biases that are described in Section 14. Howe and the Authors of this report are of the opinion that sufficient diamond data were generated from the underground sample program to allow the alignment of LDD-RC samples for use in the Mineral Resource Estimate. Overall, the Howe and 2015 audit exercise revealed a well-operated and documented process for the treatment of all bulk and mini-bulk samples. There were no issues of sample integrity and the audit results indicated a high efficiency of diamond recovery.

Shore commissioned WWW to undertake a valuation of its Star and Orion South diamond parcels using their June 8, 2015 diamond price book. The Parcel Prices show increases between 31 and 125 percent above the March 2008 prices. Model Prices ranging between US$161 and US$333 per carat have been determined for the diamond populations of the two major kimberlite units that make up the Star and Orion South Kimberlites.

Alignment of sample diamond size frequency distributions is undertaken to allow the development of unbiased grade estimates that take into account the effects of using necessarily small samples in a diamond deposit with relatively low grade but coarse stone size. At Orion South, it has also provided a means of resolving sampling results from several sampling campaigns with different drilling methodologies, sample support, and different bulk sample plant flowsheets with varying bottom and top cut off screen sizes. The application of the grade alignment process has resulted in a consistent set of LDD sample grades expressed in carats per meter cubed ("cpm^3") at an effective 1.0 mm bottom cut-off.

The revised Mineral Resource estimation methodologies incorporate a better understanding of kimberlite diamond grades and diamond distribution. At both deposits, the boundary between the Inner and Outer portions of the EJF domain was found to be a gradual transition allowing the use of a soft boundary for grade interpolation. At both deposits, Simple kriging is used in place of ordinary kriging (Star) and IDW (Orion South). Variography at Star now supports a 500m search ellipse whereas the variography at Orion South supports a 250m search ellipse.

To comply with the CIM requirement that reported Mineral Resources have reasonable prospects for eventual economic extraction, the Mineral Resource models for Star and Orion South are constrained using a Whittle pit optimization. The Mineral Resources reported in this study comprise the kimberlite that is constrained within the optimized Whittle pit shell and exceeds the economic cut-offs as determined. Diamond values for this mineral resource statement are based on the June 2015 High modeled prices.

Star Mineral Resources

Non-diluted Indicated Mineral Resources within a preliminary pit shell at a C$5.49/tonne internal cut off and within the EJF, MJF, LJF, PPK and CPK domains total 193.010 million tonnes with an average diamond grade of 15 cpht for 28.249 million carats. Non-diluted Inferred Mineral Resources within a preliminary pit shell at a C$5.49/tonne internal cut off and within the EJF, LJF, MJF, PPK and CPK domains total 56.949 million tonnes with an average diamond grade of 11 cpht for 6.385 million carats.

Orion South Mineral Resources

Non-diluted Indicated Mineral Resources within a preliminary pit shell at a C$5.49/tonne internal cut off and within the EJF and Pense domains total 200.160 million tonnes with an average diamond grade of 14 cpht for 27.153 million carats. Non-diluted Inferred Mineral Resources within a preliminary pit shell at a C$5.49/tonne internal cut off and within the EJF, LJF, Pense and P3 domains total 72.080 million tonnes with an average diamond grade of 7 cpht for 5.180 million carats.

Howe concludes that the Revised Mineral Resource estimates for the Star Kimberlite and Orion South Kimberlite warrant incorporation into a revised Feasibility Study.

26. RECOMMENDATIONS

Howe recommends that work be conducted on the Star – Orion South Diamond Project as follows:

1. An Updated Feasibility Study should be undertaken that includes a revised statement of Mineral Reserves for the Project, if warranted, and an economic assessment based thereon.

2. The exploration targets identified in Section 14.14- Targets for Additional Exploration should be tested by core drilling and then if warranted LDD-RC.

    i) At Star, increase the LDD-RC and core drill density in sparsely sampled areas of EJF kimberlite estimate (i.e. NE sector) with the goal of upgrading the Inferred Mineral resources to the Indicated mineral resource category; and,
    ii) At Orion South increase the LDD-RC and core drill density in sparsely sampled areas of EJF kimberlite estimate (i.e. West and NE sector) with the goal of upgrading the Inferred Mineral resources to the Indicated mineral resource category.

26.1. BUDGET

In line with Howe's recommendations, Shore has proposed a budget totaling $5,760,000 for exploration work in 2016-17. The proposed work program and budget as shown overleaf in Table 26-1 is to be completed with core drilling & feasibility work in 2016, additional LDD drilling would be contingent on the results of an expanded core drilling program and is not contained in this budget.

The ongoing exploration program will permit Shore to complete 7,500 m of drilling in order to continue upgrading and expanding mineral resources on the Star-Orion South Project and Update the Feasibility Study with the current Mineral Resource Estimate.

Howe considers Shore’s proposed budget reasonable and recommends that the Company proceed with the proposed work program.

TABLE 26-1 SHORE STAR-ORION SOUTH PROJECT DEVELOPMENT PROGRAM AND BUDGET

Recommendation	Item	Units	Cost
Feasibility Study	Mine Engineering Design and Update		$ 1,450,000
	Geotechnical / hydrogeology Update		$ 325,000
	Power / Gas / Infrastructure		$ 550,000
	Process Plant Update		$ 1,650,000
	Costing and Reporting Update		$ 785,000
	Total Feasibility Study		$ 4,760,000
Exploration Drilling all inclusive (drill, support, assays, personnel and operating costs)	Drilling at Star	3,500 m	$500,000
	Drilling at Orion South	3,750 m	$500,000
	Total Diamond Drilling	7,500 m	$1,000,000
			$5,760,000

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28. CERTIFICATES

CERTIFICATE OF AUTHOR: DANIEL C. LEROUX, M.SC., P.GEO

I, Daniel C. Leroux, M.Sc., P.Geo. (ON, SASK), do hereby certify that:

1) I am the Vice President and Senior Geologist with the firm of A.C.A. Howe International Limited, Mining and Geological Consultants ("Howe") located at 365 Bay St., Suite 501, Toronto, Ontario, Canada, M5H 2V1. This certificate applies to the technical report entitled "Technical Report and Revised Mineral Resource Estimate on The Star and Orion South Diamond Project, Fort à la Corne Area, Saskatchewan, Canada, NI 43-101 Technical Report" (the "Technical Report") dated November 9, 2015." (the "Technical Report") with an effective date of November 9, 2015 and a signing date of December 21, 2015.
2) I graduated with a Bachelor of Science, Geology degree from Laurentian University in 1993 and a Master of Science degree in Mineral Exploration in 2013 from Laurentian University and have practiced the profession of geoscience since my Bachelor of Science graduation. I have been employed with Howe since 1993; since 2007 as Vice President, from 2005 to 2007 as a Senior Consulting Geologist, from 1999 to 2004 as an associate consulting geologist and from 1993 to 1999 as Project Geologist. I have a total of 24 years' experience in the mining industry including a background in international mineral exploration, evaluation and valuation studies for precious metals, base metals, diamonds and industrial minerals projects. Additional experience includes the completion of various National Policy 2A and NI 43-101 technical reports for both primary and alluvial diamond projects located worldwide.
3) I am a Professional Geoscientist (P. Geo.) registered with the Association of Professional Geoscientists of Saskatchewan (APEGS, No. 10475) and with the Association of Professional Geoscientists of Ontario (APGO, No. 742).
4) I have read the definition of "qualified person" set out in National Instrument 43-101 ("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 fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5) I have completed four site visits to both the Star and Orion South Diamond Project; from February 9-10, 2007, from December 14-15, 2007, July 14-16, 2008 and June-5, 2015 respectively.
6) I am a co-author of the technical report entitled "Technical Report and Revised Mineral Resource Estimate on The Star and Orion South Diamond Project, Fort à la Corne Area, Saskatchewan, Canada, NI 43-101 Technical Report" for Shore Gold Inc. I am responsible for the Summary and Sections 1.0 to 13.0, and from Sections 15 to 26 of the Technical Report.
7) I am independent of issuer applying all of the tests in section 1.5 of National Instrument 43-101.
8) I have worked on the Star Diamond Project from January 5, 2004 to December 31, 2007, as an independent consulting geologist for A.C.A. Howe International Limited, to act as the Independent Qualified Person and to assist Howe contractors and Shore staff in the day to day operation and supervision of both the underground mapping and sampling program and the process plant, review the data entry, data validation and monitor the QA-QC of the bulk sampling program with Shore's staff. I was on site for over 60% of the duration of the Phase 1 to 3 bulk sampling programs. The information and data used in this report are public and were obtained from the references cited and data collected by Shore during their previous exploration programs.
9) Other than as indicated, I have had no prior involvement with Shore Gold Inc. nor with the properties that is the subject of this report. I have read NI 43-101 and Form 43-101F1 and the Report has been prepared in compliance therewith.
10) As of the effective date of this 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.

11) 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.

Effective Date: November 9, 2015
Signed Date: December 21, 2015

[SIGNED AND SEALED]
{Daniel C. Leroux}

____

Daniel C. Leroux, M.Sc., P. Geo.

CERTIFICATE OF AUTHOR: LEON MCGARRY B.SC., P.GEO

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

1) I am employed as a senior project geologist with the firm of A.C.A. Howe International Limited, Mining and Geological Consultants ("Howe") located at 365 Bay St., Suite 501, Toronto, Ontario, Canada, M5H 2V1. This certificate applies to the technical report entitled "Technical Report and Revised Mineral Resource Estimate on The Star and Orion South Diamond Project, Fort à la Corne Area, Saskatchewan, Canada, NI 43-101 Technical Report" (the "Technical Report") dated November 9, 2015." (the "Technical Report") with an effective date of November 9, 2015 and a signing date of December 21, 2015.
2) I graduated with a degree in Bachelor of Science Honours, Earth Science, from Brunel University, London, United Kingdom, in 2005 and have practiced the profession of geoscience since my Bachelor of Science graduation. I have been employed with Howe since 2007). I have practised my profession for over 9 years, of which he has a total of 2 years of direct experience with diamond projects located in Canada and Lesotho, including supervision of bulk sampling programs and deposit modelling. Additional experience includes the completion of various National Policy 2A and NI 43-101 technical reports for reports for precious and base metal projects located worldwide.
3) I am a Professional Geoscientist (P. Geo.) registered with the Association of Professional Geoscientists of Saskatchewan (APEGS, No. 34929) and with the Association of Professional Geoscientists of Ontario (APGO, No. 2348).
4) I have read the definition of "qualified person" set out in National Instrument 43-101 ("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 fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5) I have completed a site visit to both the Star and Orion South Diamond Projects on September 27, 2015.
6) I am a co-author of the technical report entitled "Technical Report and Revised Mineral Resource Estimate on The Star and Orion South Diamond Project, Fort à la Corne Area, Saskatchewan, Canada, NI 43-101 Technical Report" for Shore Gold Inc. I am responsible for Sections 14.1 to 14.4, and from Section 14.6 to Section 14.9 and from Section 14.12 to Section 14.14.
7) I am independent of issuer applying all of the tests in section 1.5 of National Instrument 43-101.
8) Other than as indicated, I have had no prior involvement with Shore Gold Inc. nor with the properties that are the subject of this report. I have read NI 43-101 and Form 43-101F1 and the Report has been prepared in compliance therewith.
9) As of the effective date of this 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.
10) 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.

Effective Date: November 9, 2015
Signed Date: December 21, 2015

[SIGNED AND SEALED]
{Leon McGarry}

Leon McGarry, B.Sc., P. Geo.

CERTIFICATE OF AUTHOR: PETER J RAVENSCROFT, FAUSIMM

I, Peter John Ravenscroft, FAusIMM, do hereby certify that:

1) I am the owner of Burgundy Mining Advisors Limited, whose office address is Marron House, Virginia & Augusta Streets, P.O. Box N-8326, Nassau, Bahamas. This certificate applies to the technical report entitled "Technical Report and Revised Mineral Resource Estimate on The Star and Orion South Diamond Project, Fort à la Corne Area, Saskatchewan, Canada, NI 43-101 Technical Report" (the "Technical Report") dated November 9, 2015." (the "Technical Report") with an effective date of November 9, 2015 and a signing date of December 21, 2015.
2) I graduated from the University of Cape Town in 1979 with a Bachelor of Science degree in Mathematical Statistics, and from the Ecole des Mines de Paris in 1985 with the equivalent of a Masters degree in Geostatistics. I have practiced my profession for 36 years. I have been directly involved in resource and reserve estimation, mine planning and project evaluation for a wide range of commodities, including over ten diamond properties in Africa, Australia and Canada.
3) I am a Fellow of the Australasian Institute of Mining and Metallurgy (membership number 205218).
4) I have read the definition of "qualified person" set out in National Instrument 43-101 ("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 fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5) I completed a site visit to both the Star and Orion South Diamond Projects on 15 April 2015.
6) I am a co-author of the technical report entitled "Technical Report and Revised Mineral Resource Estimate on The Star and Orion South Diamond Project, Fort à la Corne Area, Saskatchewan, Canada, NI 43-101 Technical Report" for Shore Gold Inc. I am responsible for Sections 14.5, 14.10 and 14.11 of the Technical Report.
7) I am independent of issuer applying all of the tests in section 1.5 of National Instrument 43-101.
8) In addition to involvement in the current Technical Report I provided independent advice to one of the participants in the FalC Joint Venture over the period June 2007 to July 2007.
9) Other than as indicated, I have had no prior involvement with Shore Gold Inc. nor with the properties that is the subject of this report. I have read NI 43-101 and Form 43-101F1 and the Report has been prepared in compliance therewith.
10) As of the effective date of this 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.
11) 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.

Effective Date: November 9, 2015
Signed Date: December 21, 2015

[SIGNED AND SEALED]
{Peter J Ravenscroft}

Peter J Ravenscroft, FAusIMM