

# GEMCOM CUSTOMER CASE STUDY



## Shore Gold strengthens exploration programme with Gemcom GEMS



**Multifaceted mining software proves valuable for estimating diamond resources**

**Countries:** Canada

**Objective:**

Model and calculate ore body reserves during advanced-stage exploration.

**Approach:**

Employ the Gemcom GEMS software to interpret kimberlite diamond deposits and estimate pre-production reserves.

**IT Improvements:**

- Immediate access to organised, up-to-date mining information
- Data consistency company-wide
- Data consolidation into a central system
- Streamlined data management
- Easy sharing of complex modelling data across groups

**Business Benefits:**

- In-depth analysis of type and composition of kimberlite minerals to determine mining feasibility
- Data integrity and validation for National Instrument 43-101 (NI 43-101) compliance
- Improved decision making
- Time and financial savings resulting from automated user access and model development
- Strong confidence in geological block models
- Attainment of return on investment

*“The GEMS product is integral for constructing 3D models on time and giving us hard numbers that we can publish to comply with NI 43-101. Therefore, we have a great measure of comfort that we are constructing models in line with industry standards.”*

— Pieter Du Plessis, Vice President of Exploration, Shore Gold Inc.



Star Diamond Project, Saskatchewan, Canada

## Exploration from a position of strength

*Shore Gold Inc. (www.shoregold.com), which trades on the Toronto Stock Exchange (TSX) under the SGF stock symbol, acquires, explores and develops mineral properties. Its current endeavours include the advancement of the Star Diamond Project and the Orion South Kimberlite in the Fort a la Corne Kimberlite Cluster in central Saskatchewan, Canada.*

Shore recently conducted several phases of underground bulk sampling on the Star Kimberlite, where the company recovered and valued diamond parcels it will use in the mineral reserve calculation. Shore also sank a shaft to estimate resources for the Orion South Kimberlite, for which it has a 60 percent interest. To advance these projects, the company employs the Gemcom GEMS solution.

Before implementing the GEMS block modelling package, the Shore geologists used Microsoft Excel spreadsheets and a competitor's basic software to visualise the kimberlites. However, that rudimentary software did not help the staff construct industry-standard, in-depth, three-dimensional (3D) models.

“Our geologists could not grasp all of the different data and analyse multiple data sets in 3D simultaneously,” explains Pieter Du Plessis, the company’s Vice President of Exploration. “Consequently, we did not have a certain level of confidence in our geological models and resource estimates. We reached a point in our exploration on the Star Kimberlite where we needed to scale up to professional-level software.”

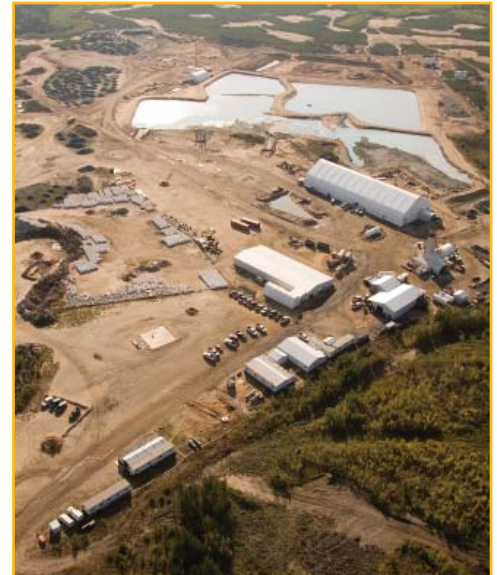
### A comprehensive, long-term solution

Undertaking a major evaluation programme for its properties, Shore needed a sophisticated 3D modelling method – a solution that interacts with existing applications and is built around a central database. This is critical because Shore publicly discloses scientific and technical information about its mineral projects in accordance with the National Instrument 43-101 rule. In fact, the aim of the Star Kimberlite advanced evaluation is to define an NI 43-101 compliant mineral resource followed by a mineral reserve. Therefore, Shore sought powerful software to improve data interpretation and visualisation and help it portray information in the prescribed format.

In their quest for the right solution, Shore management evaluated Vulcan and several other mining products. However, because Gemcom had delivered excellent technical support and training for a South African mining company that Du Plessis had worked with previously and numerous Shore geologists had used the software, GEMS was the clear choice.

“From my past experience, Gemcom always responded quickly to inquiries and requests for assistance. The outstanding service provided by the Gemcom engineers in South Africa made it an easy decision for us to incorporate GEMS here in North America in a different environment,” he says.

Additionally, management realised the software would meet the company’s needs over the long term. GEMS particularly stood out in this area, according to Du Plessis. “GEMS is not only suitable for exploration and drill holes,” he says, “but it is also the type of software that we can continue using to interpret the kimberlites as we progress into diamond mining. We quickly saw that Shore could obtain full value from GEMS.” In addition, GEMS’ modular framework makes it easy for Shore to purchase additional components to



Orion deposit and core shack.



Exploration drilling.



Shore Gold team examining core samples.

“GEMS with SQL Server gives us data integrity and makes it easier and faster to access relevant data. As a result, data access has become a seamless exercise that saves time and money.”

– Pieter Du Plessis, Vice President of Exploration, Shore Gold Inc.



Shore Gold mining crew heads underground.



Underground blast preparation.



Workers traverse an underground tunnel.

aid future diamond mining, production and scheduling.

### GEMS increases confidence in geological model

The Gemcom solution provides compelling value in analysing potential diamond holdings in the Star and Orion South Kimberlites. Using the software’s powerful graphical interface, the geologists create models representing how many carats are contained per tonne of rock. Then, the resource estimate can be converted to a mineral reserve and later used in a feasibility study, assuming the reserve shows economic potential.

“GEMS helps us increase the level of confidence that we can have in the geological model. There is so much data to be considered for the resource estimate. GEMS lets us bring in multiple data sets to obtain a full understanding of all of the data. It is easy to extract good 3D visualisations for use in investor-related presentations,” Du Plessis says.

An independent, third-party company and Shore’s joint venture partner, Newmont Mining Corporation, audit the models. These companies have produced similar tonnage estimates in line with the estimates generated from GEMS. “We have a great measure of comfort that we are constructing models in line with industry standards,” Du Plessis adds.

### Data integrity and speedy access

GEMS comprises scalable architecture built around industry-standard Microsoft SQL Server databases. With the ability to rapidly import and export data to applications such as AutoCAD, GEMS provides information sharing capabilities, reducing the time spent on data management. Shore personnel initially maintained data in numerous Excel spreadsheets. This approach affected data integrity and version control, making it cumbersome to access the latest data. Perhaps the biggest challenge overall was this approach impeded the company’s ability to accurately model kimberlite bodies.

Instead, Shore gained ground by working with Gemcom personnel to deploy a SQL Server database with the GEMS implementation, writing software codes to accommodate Shore’s specific data naming conventions. Along with an audit trail and timeline of all transactions, the solution provides automated role-based privileges to mitigate unauthorized changes.

“This used to be a manual process that required a lot of management time to make sure that the right people accessed the right data. Our transition to GEMS with SQL Server gives us data integrity and makes it easier and faster to access relevant data. Now, data access is a seamless exercise that saves time and money. Gemcom complemented our skills nicely. They assisted us with the initial program code, which helped us reach our objectives,” says Du Plessis.

The company has completed the merging of its remaining spreadsheets into SQL Server and pass the data to an engineering company for auditing and

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conducting a resource estimation. “It will be a major milestone for us as an organisation to declare a resource for the first time on the Star Kimberlite,” Du Plessis notes. “In a few years, we will be able to declare resources on some of our joint venture kimberlites as well.”

## A resource for logging kimberlites

Shore also purchased a customised drill hole logger from Gemcom to help meet the specific requirements of viewing data metre by metre and logging drill hole data onto laptops. Further development of the logger by the Shore experts have added customised project-specific codes, data validation, independent stand-alone capabilities in the field, and real-time networked operations from the field to the head office via satellite link. The logger provides a comprehensive, yet easily customisable solution for the acquisition of high-quality information in the field. Consequently, quality assurance is part of the entire workflow.

“We are using the logger in a quantitative, systematic manner. Without it, we wouldn’t be able to access the central database from the field, and there would be more opportunities for manual errors,” Du Plessis says.

## Convenience, versatility and functionality

When working in the field, Shore geologists use the Pack and Go module of GEMS, a handy feature that allows them to move data back and forth easily in SQL Server and work on it remotely.

“Our geologists use the Pack and Go module when we need to transfer these models in a compact format to independent third-party reviewers for auditing and verification. It is a very convenient tool,” says Du Plessis.

Convenience, versatility and functionality – all are qualities within GEMS that help advance exploration and diamond mining. Although the economic feasibility of Shore’s mining properties has not been determined yet, Du Plessis believes that GEMS has proved its worth thus far.

“If we had not built our block modelling capabilities in-house, we would have needed to pay an outside contractor to do the work for us, and it would have cost us much more. So, we are accomplishing our goals with GEMS,” he affirms.

## Shore Gold Inc. Solutions at a Glance

### Primary Applications:

- Gemcom GEMS
- Microsoft SQL Server
- AutoCAD

### Gemcom Services:

- Customisation
- Custom Logger
- Training
- Technical support



Close-up view of recovered diamond.

For more information email  
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