

# THE MARIPORT GROUP LTD.

## REPRESENTATIVE PROJECTS IN MINE AND PROJECT LOGISTICS

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### **Bougainville Copper Mine (Papua New Guinea)<sup>1</sup>**

Investigated the total inbound logistics for one of the largest open pit copper mines in the world. Analyzed costs and management support at the mine and in Japan, USA, Canada, and Australia. This analysis covered all mine support materials including foodstuffs.

### **Quartz Hill Molybdenum Project (Alaska)<sup>1</sup>**

Analyzed the movement of mine personnel by high speed craft from Ketchikan to the mine site. Reviewed two possible routes and recommended both craft type and route to enable company to overcome problems in mine support by alternative means.

### **Urangessellschaft Uranium Project (North West Territories)<sup>1</sup>**

Undertook a feasibility study on behalf of the company to provide support during mine start up and operation at Lone Gull near Baker Lake (NWT). The analysis included marine, air, winter road, and all season road access. Various marine options were reviewed including direct shipment to a new port and transshipment.

### **Hope Brook Gold Mine (Newfoundland)<sup>1</sup>**

On behalf of the engineering company undertaking the feasibility analysis of the mine, provided a complete assessment for mine support from start up through production. The review took into account start-up operations with very simple equipment, and ongoing activities. Recommended a unique vessel conversion that was eventually adopted by the mine proponents and implemented. Navaid requirements were also identified.

### **Crystal Palace and Prince George Wharf (Nassau)<sup>1</sup>**

On behalf of prime contractor for the above projects, re-analyzed their shipping options in support of the project. Identified opportunities that company could take to significantly reduce their transportation cost bill. Also identified inefficiencies in the system that were delaying material delivery and increasing costs.

### **Metall Canada – Coronation Gulf Concentrate Operation (Northwest Territories)**

Provided support to the Canadian project team relative to Arctic operations, concepts, and costs. Assisted in RFP preparation and identification of qualified bidders for future marine service contracts.

### **Concentrate Shipping Project (Australia)**

Worked with a bidder on a proposed new copper, zinc, lead concentrate project to develop a viable transshipment operation that would overcome significant inshore draft restraints.

### **Voisey's Bay Nickel Mine (Labrador)**

Participated in a multi-disciplinary team that analyzed systems and costs for year-round delivery of concentrates to Canadian and international markets. Input to the report was an analysis of different shipment methods and types of vessel for local movement of nickel concentrate. The most appropriate type of vessel was identified for year-round shipments. Copper concentrate shipment costs and parcel sizes were also determined to international markets.

### **Las Camariocas Nickel Plant, Moa, Cuba**

Carried out part of a “due diligence” analysis relating to shipping costs and port capability to handle cargo quantities involved in completing and the operating the plant.

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<sup>1</sup> Projects conducted by Mariport principals prior to formation of the company.

## **Heavy Oil Development - Madagascar<sup>1</sup>**

Undertook a comprehensive port and logistics scoping exercise for support of heavy oil development at Tsimiroro and Bemolanga. The site is only accessible via the west coast of Madagascar. The evaluation included road, air, marine and air cushion systems for delivery to the site as well as costings for primary supply of logistics materials to Madagascar. Through transportation and delivery costs were developed and a recommendation made as to the appropriate system

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## **EXPERTISE IN MINE AND PROJECT LOGISTICS**

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Mining ventures, whether they are new or existing, have very special transportation needs. These needs relate both to inbound logistics materials to support the mine or project and outbound cargo produced by the venture.

Often there are no established port facilities to draw on in the vicinity, or such facilities that do exist may be small craft oriented, and apparently unsuitable for access by deep draft vessels.

Many mines also require a combination of support services which utilize marine, road and air depending upon the point in a mine's development, or taking into account seasonal restrictions.

Mariport has the practical and market experience to either develop a complete transportation scheme at a project feasibility level, or undertake a re-evaluation of existing activities.

Depending on the marine requirements of the project, we may investigate the utility of:

- Special beaching craft
- Heavy lift
- High-speed catamarans or monohulls
- Conventional ships or barges
- Floating docks
- Extreme shallow draft tugs and barges
- Air cushion platforms
- Offshore transshipment
- Conventional vessels
- Different shipping systems (container, etc.)

If an airlift is needed, this may incorporate an analysis of conventional jet or prop jet aircraft for support in all cargo or cargo/passenger configurations. Alternatively, STOL or helicopter service may be appropriate.

With regard to surface traffic, special vehicles for year-round access or conventional vehicles on seasonal roads may be appropriate.

A multi-modal assessment of options and costs can be prepared taking due account of environmental concerns. Also, by undertaking such investigations at an early stage in the project, opportunities may be uncovered that could materially influence planning action down the road, particularly if the development is in a sensitive area.

Costings for outbound cargo can materially affect a project's competitiveness in international markets. An early assessment can identify strengths, or weaknesses, that can be addressed prior to major funding commitments.

For start up activities, Mariport can take engineering bills of quantity and turn these into shipping volumes. Working with a project's principals, heavy or awkward lifts, prefabricated modules, bulk, containerized, hazmat and regular break bulk can all be identified and effectively scheduled.

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<sup>1</sup> Undertaken jointly with other consultants, or under sub-contract.