



# Bisoni McKay Vanadium Property

Developing a pure vanadium property



A close-up  
of vanadium

**S**TINA'S 309 ha Bisoni McKay Vanadium property in northern Nevada, about 240 miles east of Reno is the Company's most advanced project. Stina has sectioned the 37 claim property into three main areas: Northern Section A, Central Section B and Southern Section C. While the bulk of the work on this property to date has occurred in Northern Section A, strong drilling results throughout the property have confirmed Stina's original suspicion: that the Bisoni McKay is host to one of North America's richest vanadium deposits. A 2008 NI-43-101 resource estimate report has shown over 20 M tonnes of indicated and inferred vanadium pentoxide over a 700 X 100 ft. sub section of Northern Section A. The 2,000 ft-long section A is stratabound and strataform in carbonaceous shale, extends to the south and is open to the north. Engineers now estimate a far greater tonnage of vanadium than originally anticipated when exploration started in 2005.

The Bisoni McKay boasts a number of inherent advantages over other vanadium properties. The property is open pitable with vanadium close to surface in primarily sand stone and shale and easy to mine, is potentially leachable, contains strong grades of V<sub>2</sub>O<sub>5</sub> and strong tonnages, contains a well defined ore body on Northern Section A, is easily accessible with utilities nearby, and is located in mining-friendly Nevada. In essence, the Bisoni McKay vanadium property is potentially the most economical vanadium property in the world. Capital costs have been estimated at \$50 million.

## PHASE I E&D

Stina completed Phase I of its Bisoni McKay exploration in 2005/2006, which included five core holes, 12 reverse-circulation (RC) holes on Northern Section A and Central Section B, trench sampling on all three sections, as well as preliminary metallurgical testwork at Hazen Research on an acid/pug leach method.

### Phase I highlights included:

- 75 ft of 0.95% V<sub>2</sub>O<sub>5</sub> contained within 320 ft of 0.46% V<sub>2</sub>O<sub>5</sub>, in DDH-BMK-05-01.
- 76 ft of 0.95% V<sub>2</sub>O<sub>5</sub> contained within 320 ft of 0.46% V<sub>2</sub>O<sub>5</sub>, in DDH-BMK-05-01.
- 131 ft of 0.88% V<sub>2</sub>O<sub>5</sub> contained within 345 ft of 0.53% V<sub>2</sub>O<sub>5</sub> in DDH-BMK-05-02.
- 115 ft of 0.60 V<sub>2</sub>O<sub>5</sub> in DDH-BMK-05-03.
- 300 ft of 0.45% V<sub>2</sub>O<sub>5</sub> in RC BMK-05-01.
- 120 ft of 0.55% V<sub>2</sub>O<sub>5</sub> and 170 feet of 0.47% V<sub>2</sub>O<sub>5</sub> in RC BMK-05-02.

## BISONI MCKAY STRATEGIC ADVANTAGES

- Only known pure-vanadium operation in NA
- NI 43-101 qualified
- Easy logistical access
- Located in mining-friendly Nevada
- Open-pittable - mineralization close to surface
- Host rock is soft and very easy to grind
- Potentially leachable operation
- High levels of tonnage and grade
- Very high levels of potential tonnage

## PHASE II DEVELOPMENTS

### Metallurgy

In 2007 Stina conducted metallurgical testing at Hazen Research in Golden, CO, and saw **recovery rates higher than 90%** on oxidized vanadium pentoxide using an acid pug leach method, and close to 70% on carbonaceous material.

### Resources Estimate

The Company initiated Phase II development by drilling 12 infill RC holes on a sub-section of Northern Section A and conducting an NI 43-101 Compliant Resource Estimate on this sub-section. The Maptek report **indicated resources in the north half of Area A totaling 8.07 million short tons averaging 0.43 per cent V<sub>2</sub>O<sub>5</sub> at the 0.3 per cent grade cut-off zone and 10.6 million short tons averaging 0.39 per cent V<sub>2</sub>O<sub>5</sub> at the 0.2 per cent cut-off.**

The indicated resources calculations table separates reduced and oxide mineralization. About 130 feet to 150 feet of oxidized shale overlies the carbonaceous mineralization, the result of deep weathering of the carbonaceous-

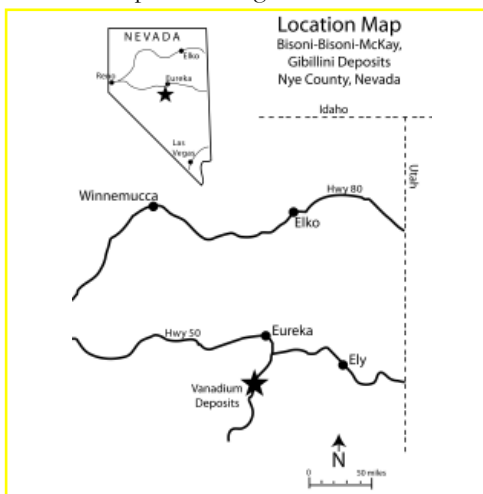
shale host rock. The transition from oxidized to reduced zone is typically abrupt, and in some holes there is supergene vanadium enrichment of vanadium from five feet to 35 feet below the redox horizon with grades that can be 50 per cent to 150 per cent higher than grades in the reduced shale below. Because of geological evidence and good grade and mineralization continuity in Area A-North, an inferred resource estimate was calculated Area A-South using data from three 2005 RC holes, BMK 05-1, 2 and 3 at intervals slightly more than 200 feet apart.

### Phase II Drilling Highlights

- Inclusive section of 350 ft of 0.47% V<sub>2</sub>O<sub>5</sub> on hole RC BMK 07-03
- Inclusive section of 220 ft of 0.40% V<sub>2</sub>O<sub>5</sub> on hole RC BMK 07-04.
- Inclusive section of 120 ft of 0.47% V<sub>2</sub>O<sub>5</sub> on hole RC BMK 07-05.
- Inclusive section of 270 ft of 0.38% V<sub>2</sub>O<sub>5</sub> on hole RC BMK 07-06.
- Inclusive section of 235 ft of 0.38% V<sub>2</sub>O<sub>5</sub> on hole RC BMK 07-07.
- Inclusive section of 240 ft of 0.47% V<sub>2</sub>O<sub>5</sub> on hole RC BMK 07-08.
- Inclusive section of 170 ft of 0.44% V<sub>2</sub>O<sub>5</sub> on hole RC BMK 07-09.
- Inclusive section of 200 ft of 0.57% V<sub>2</sub>O<sub>5</sub> on hole RC BMK 07-10.

### 2010 Exploration

Stina intends to complete Phase II by drilling an additional 24 RC and 8 core holes on Northern Section A, updating it's Resource Estimate to include Proven Resources on this area, furthering it's metallurgy and conducting a scoping study in preparation of approaching pre-feasibility stage. Completion of Phase II is budgeted at approximately \$700,000 to \$800,000 and the Company is negotiating financing with interested parties now.



## CONTACT

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## Positioning Itself for the Future

# Green Technologies

Increasing Vanadium Demand  
Means Big Business for Stina Ahead



Stina's Bisoni McKay Vanadium Property may well play an integral role in the development of the red hot Green Technology Industry. Technologies such as Vanadium batteries, introduced in the late 1990s and now undergoing refinements, and Vanadium Smart Glass, introduced in the latter half of the last decade, will demand large quantities of vanadium. This means increased demand for vanadium from Stina's Bisoni McKay property in the near future.

### Historical Vanadium Demand

Historically, vanadium's principal use has been as an alloying element in steel as the addition of small amounts of vanadium to ordinary carbon steel can significantly increase its strength and improve both its toughness and ductility. Such high-strength low-alloy (HSLA) steels are vital for high rise buildings, bridges, pipelines, aerospace technology, golf clubs and automotive/ truck manufacturing. Due to the inherent weight-saving qualities, HSLA steels are also much in demand by the space and defense programs. Today, about half of the world's steel manufacturing uses vanadium.

Vanadium treated HSLA steels offer significant savings in processing through lower steel rolling temperatures, minimal heat treatment and increased strength-to-weight ratios. Other important uses of vanadium include its use in titanium alloys for high temperature applications such as aircraft components. Typically, V2O5 is smelted into ferrovanadium for steel use.

### The Vanadium Battery

In the late 1990s the Redox Vanadium Battery power storage units were introduced for applications where power supply is likely to be interrupted or service is deliberately intermittent. These applications included back up supply for power grids, power storage for office buildings, and ultimately for vehicles as an alternative to traditional gas powered cars.

Several groups have refined the vanadium battery over the past ten years and new developments have not only reduced battery sizes, they have dramatically improved storage efficiencies. Green Technology Financing is just emerging in North America, making funds for introduction to the marketplace available. Stina intends to be a part of that equation.



### Vanadium Going Green

- Existing Power Grid Backup
- Office Building Power Storage
- Electric Car Battery
- Solar Cell Power Storage
- Wind Farm Power Storage
- Smart Glass Technology

### The New Vanadium Battery

Refinements in the Vanadium Battery have brought new advantages over existing batteries. Vanadium Batteries now employ "Quick-Charge" technology, are scalable to application, are eco-friendly, have unlimited capacity and extended shelf life. Unlike many other rechargeable batteries, vanadium batteries do not lose charge and are ideal for long and short storage periods. These batteries can be installed into existing wind generators or solar panels, offering electrical power at a convenient time such as night time in office buildings. Estimates show that there are now over 60,000 wind generators in the world, and that solar cell use increases by 40 to 50% each year in the US. Vanadium batteries in electric cars are expected to quadruple their range, and

unlike current lithium and acid lead batteries, vanadium batteries charge in minutes. Currently there are 40,000 electric cars on the road in the US. In five years analysts forecast 32.7 million electric cars on the road worldwide. The Obama Administration is currently pledging \$2.3 billion in green tax credits, \$60 billion for green stimulus, and \$100 billion for green job creation. Vanadium applications will be a part of this new Green Technology Industry. Stina will be supplying vanadium to this new industry.



### Smart Glass

Recently introduced in the past few years, Smart Glass is a green alternative for office building windows. Using vanadium as the chief ingredient, Smart Glass reduces harmful UV rays, restricts heat loss and makes buildings more energy efficient. Office buildings currently account for 40% of energy use in the US, and Smart Glass could reduce that power consumption by up to 30%, and ultimately the energy budget by 5%.

### The Bisoni McKay Vanadium Property

Stina has planned Phase II to aggressively attain a clearer picture of the total mineral endowment on Northern Section A of the Bisoni-McKay vanadium property. Phase II will enable Stina to initiate a pre-feasibility study and prepare for production. The most attractive attribute of this company's discovery however, is the potential to mine the vanadium using a very cost effective leaching process that could be located on the property. Stina would potentially use an acid/ pug vat closed-circuit leaching process, posing little threat to the environment. The current milling that vanadium producers in the world contend with is not applicable to Stina, stemming from the fact that traditional Titano-magnetite host in traditional vanadium mines does not exist on the Bisoni McKay. This would make the property's extraction, grinding, and leaching processes comparatively very economical. Preliminary estimations of direct overhead production is estimated at below \$3 dollars per pound, which is very favorable given that current vanadium market prices are \$7 to \$9 dollars per pound. This is significant in that there are few, if any other vanadium suppliers that could match the Bisoni-McKay property's cost per pound, and with the potential tonnages. In other words, there would be no other vanadium producer able to mine, process and ship vanadium in North America at a cheaper price than Stina Resources. The Bisoni McKay property is located about 30 minutes southeast of Eureka, Nevada with good established access roads, so getting the necessary equipment, facilities and staff to the property poses little difficulty. At this time, the cost of taking the Bisoni McKay to production is between approximately \$30M and \$50M dollars, a fraction of capital costs compared to other vanadium producers, or many other current conventional mines for that matter. The current vanadium prices have been very steady for the past few years, with no indications that the market will drop or lose momentum in the future.

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