

## **Nautilus Minerals**

Precious Metals Summit Hong Kong

- late

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- This Presentation may contain forward-looking statements within the meaning of the United States Securities Exchange Act of 1934 and forward-looking information within the meaning of applicable Canadian securities law.
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- Notes Regarding Technical Disclosure
  - Resource information for the Solwara project is derived from a technical report titled "Mineral Resource Estimate, Solwara Project, Bismarck Sea, PNG" dated and filed on SEDAR on March 23, 2012, and summarized in a news release dated November 25, 2011. Indicated resources of 74,000 tonnes of copper is based on 1.03 million tonnes at an average grade of 7.2%.
  - Resource information for the CCZ Project is derived from the technical report titled "Updated NI 43-101 Technical Report, Clarion-Clipperton Zone Project, Pacific Ocean" dated March 20, 2013 and filed on SEDAR on March 21, 2013, and summarized in a news release dated September 18, 2012, unless otherwise stated
  - Jonathan Lowe, a qualified person under National Instrument 43-101 Standards of Disclosure for Mineral Projects, has reviewed and approved the technical
    information in this presentation, unless otherwise stated.

### Who is Nautilus Minerals?



- TSX listed
- Trading on OTCQX
- Seafloor resource exploration and development company
- Advancing Bismarck Sea projects in PNG and the Pacific
- Project office in Brisbane, Australia

Capitalization	(as at May 18 , 2014)
Ticker	NUS (TSX) NUSMF (OTCQX)
Current Share price	C\$0.54
52 Week High/Low	C\$0.79 / C\$0.20
Basic Shares Outstanding	440 million
Shares O/S Fully Diluted	444 million

# Major Industry ShareholdersImage: State of the st

### What are SMS Deposits

- Seafloor Massive Sulphide ("SMS") deposits form on the ocean floor
- Contain appreciable concentrations of copper, zinc, gold, silver and other trace metals
- Are the modern-day equivalents of ancient 'land-based' Volcanogenic Massive Sulphide ("VMS")
- The SMS deposits at Solwara 1 are associated with high grade polymetallic sulphide systems, which are particularly rich in copper and gold







### Why Go to the Sea?





- World's demand for metals continues to rise
- Land resources are stretched; declining grades
- Every human activity impacts on the environment we (as society) need to choose options with less impacts

### **Increasing Demand for Metal Continue to Rise**



- Population Growth
- Emerging economies transitioning to industrialised and urbanised societies
- Land resources are stretched; declining grade
- Demand for copper nearly doubles over 15 years



### **Copper Grades on Land are Falling**





### Land-Based Projects compared to Solwara 1



### Average Reserve Grade (%) of Land-Based Copper Projects



Source: Source: Brook Hunt, a Wood Mackenzie Company

### Solwara Resource Update

Classification	Class	Tonnes	Cu (%)	Au (g/t)	Ag (g/t)	Zn (%)	Contained Cu (t)	Contained Au (Koz)
Solwara 1	Indicated	1,030,000	7.2	5.0	23	0.4	74,160	165.6
@2.6% Cu eq cut-off	Inferred	1,540,000	8.1	6.4	34	0.9	124,740	316.9
Solwara 12								
@2.6% Cu eq cut-off	Inferred	230,000	7.3	3.6	56	3.6	16,790	26.6

Resource Estimate prepared by Ian Lipton, BSc (Hons), FAusIMM, Principal Geologist, Golder Associates Pty Ltd. Effective Date: 25 Nov 2011 Source: April 2012 Solwara Project, Bismarck Sea, PNG NI 43-101 Technical Report

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### **Known Seafloor Massive Sulphides**





Figure after Baker et al., 1995; German and Von Damm, 2004; Hannington et al., 2005; Koschinsky et al., 2006

- >300 sites of hydrothermal activity and seafloor mineralisation are known, including 100 with polymetallic sulphide deposits
- Potentially more than three times that many systems located around the world
- Deep ocean contains massive resources of copper, nickel;, cobalt and manganese as nodule deposits

### **Advantages of Seafloor Mining**



- Seafloor Massive Sulphide (SMS) deposits HIGH GRADES of copper, gold, zinc & silver
  - 1. No tailings
  - 2. No people need to be moved
  - 3. No land clearance to get to the deposit
  - 4. High grades, very little waste
  - 5. Increased worker safety (all ops are done remotely)
  - 6. Reusable equipment







### Solwara 1 Project





- Located in the Bismarck Sea, PNG, at 1600m water depth
- NI 43-101 Resource established
- Environmental permit granted Dec 2009
- Mining lease granted Jan 2011
- 30 km from nearest coast
- Small extraction area: 0.11 km<sup>2</sup>

# Agreement signed with Independent State of Papua New Guinea (the "State")

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- The Government of PNG has approved the State's participation in the Solwara 1 Project
- Under the Agreement, the State shall take an initial 15% interest in the Project
- The State has paid Nautilus a nonrefundable deposit for its initial 15% interest of US\$7,000,000
- The remaining funds of US \$113,000,000 have also been paid by the State and have been placed in escrow
- Option to take up to a further 15% interest in the Project





### **Seafloor Production System**



#### Seafloor Production System



Using existing technology from the offshore oil and gas sector, combined with rock cutting and materials handling technologies used in land-based operations



### **Current Status of Seafloor Equipment Build**



- Assembly of the Bulk Cutter was completed in April 2014
- Assembly work on the Auxiliary Cutter and Collecting Machine is due to commence in Q2 2014
- Riser system: >50% complete. Delivery expected by Q1 2015
- Pump: full scale loop testing to commence Q2 2014 with delivery expected by mid 2016
- Vessel remains the critical path for the Project
- Looking at securing a suitable vessel arrangement by Q4, 2014





# Bulk Cutter (BC) Assembly Completed





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### Control Room for the SPTs





### Auxiliary Cutter (AC) Being Assembled





# Collecting Machine (CM) Being Assembled











### Seafloor Production Tool A-frames & Winches Completed











# Riser and Lifting System (RALS) > 50% Complete

- Subsea Slurry Lift Pump (SSLP)
- 3-Pipe Rigid Riser
- Riser pipe handling equipment off the shelf - used in oil and gas drilling industry











### Subsea Slurry Lift Pump (SSLP) Build











# Production Support Vessel (PSV)





# **Production Support Vessel – Current Status**



### Principal Particulars:

•	Length	227m
•	Breadth	40m
•	Depth	18.2m
•	Ore Storage Capacity	45,000
•	Power Generation	31MW
•	Complement	180
•	Dynamic Positioning	DP 2

ABS Class Approved Basic Design







### Ore Sales Agreement – Tong Ling Still in Place



- Tong Ling Largest importer of copper concentrates into China
- Ore Sales agreement
  - 1.1mtpa (+- 20%) for 3 years
  - Nested copper concentrate and SMS-tolling pricing arrangement
  - Prompt payment 90% provisional payment on loading in PNG
  - International benchmark terms
  - 20% copper grade concentrate maximise gold recovery TC/RC premium
  - Gold value in pyrite value shared equally
- No tailings maximum utilization of resource, minimum waste



### What's Been Done Before?



- Already mine offshore for:
  - Diamonds
  - Aggregates
  - Mineral Sands
- SPTs based on what is used already used in offshore diamond mining, dredging, trenching, onshore mining
- Pump and riser from oil and gas industry
- Ship typical of other DP ships
- SMS = modern day analogues use off the coast of Namibia of land-based VMS deposits



Second generation 200 ton offshore diamond mining machine, DeBeers, Namibia. Image courtesy Marine Minerals Pty



**De Beers Seafloor Diamond Mining Vessel in** 



Mud lift Pump Built by GE Oil and Gas for Chevron for deep water drilling applications

### What's Different?

- Water depth of the minerals
- Combining technologies
- Different risk profile to oil and gas
- Compared to land-based counterparts:
  - ✓ Higher grades
  - $\checkmark$  Occur on the surface
  - ✓ Smaller physical footprint
  - ✓ No direct impact to landowners
  - ✓ No tailings
  - ✓ Minimal Waste





Bulk cutting trial



Image showing a biomass-dominant species at Solwara 1: *Ifremeria nautilei* (aka the "black snail")

### **Prospectivity - South West Pacific Focus**



 Total of ~ 500,000 km<sup>2</sup> of tenements in multiple jurisdictions <sup>(1)</sup>



(1) Total tenements include those which have been granted and those under application. Includes 75,000 km<sup>2</sup> in Clarion-Clipperton Zone in Eastern Pacific

### Exploration Success – lots of them



#### **Bismarck Sea Exploration**



- 19 prospects identified in Bismarck Sea, PNG
- 19 prospects identified in Tonga

### **Kingdom of Tonga Exploration**



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### Polymetallic Nodules - Massive Resource



- 15 other countries are interested in nodules
- Significant money invested in nodules over the years (today's figures around US\$3 billion)
- Largest Cu/Ni/Co resource in the world

- Are rock concretions on seafloor at depths starting at 4,500 metres
- Rich in copper, nickel, manganese and cobalt
- Clarion Clipperton Zone has the largest known deposits found at depths over 4,000 metres
- ISA suggests potential 670 million tonnes of Cu @1% Cu #
- Nautilus has an NI 43-101 resource

410 million tonnes @ 1.2% Ni, 1.1% Cu, 0.24% Co, and 26.9% Mn\*

- Sponsored by Tongan Government
- ISA working towards establishing regulations for exploitation by 2016

•Resource prepared by Matthew Nimmo, Principal Geologist, Golder Associates Pty Ltd, a member of the Australian Institute of Geoscientists and a qualified Person under NI 43-101 •# ISA, A geological model of polymetallic nodule deposits in the CCZ, Technical Study No 6

### **Forward Plan**

- Satisfy Nautilus' Conditions Precedent
- Move forward with the Solwara 1 Project
  - Accelerate equipment build
  - Secure vessel solution
  - Ensure continued government and community support
- Maintain licences and permits
- Accelerate development of additional assets



### Case for the Future



- SOCIALLY AND ENVIRONMENTALLY RESPONSIBLE small environmental footprint, minimal community impact
- ✓ UPSIDE 38 systems identified to date along 5-10% of prospective geological strike
  - 410mt nodule resource > 1% Cu
- FIRST FOLLOWER proven technologies and exploration (PNG and Solwara 1
- HIGH GRADE SMS up 7% copper and 20g/t gold
  - Nodules: >4% Cu eq<sup>1</sup>
- AGGREGATED mobile production vessels provide platform for longer term production potential

### ✓ BUILDING LONG TERM VALUE FOR STAKEHOLDERS

<sup>&</sup>lt;sup>1</sup> \$ price per lb - Cu@\$2.75, Ni@\$6.50 Co@\$10.00



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