## Turning Silver into Growth Building on Established Silver Production

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AURCANA 999 FINE SILVE

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#### **Aurcana Projects**

- Shafter (100% Texas)
- Pure Silver Mine







# Why Silver ?

- Unique Properties Will Increase Demand
  - Best Conductor of Electricity and Heat
  - Most Reflective
  - Natural Biocide-Antibacterial-Antiviral
  - Malleable and Ductile

#### Limited Supply Will Increase Price

- Silver's Scarcity Ratio
- Natural Abundance Ag:Au = 15:1
- Most Gold Still Above Ground
- Only 50% of Silver Consumed

#### 2010 Year of Restocking Depleted Inventories

- When Economy Down: Silver up as Hedge
- When Economy up: Industrial Demand Increases

- Growing Commercial and Industrial Applications
  - 2008 Consumption
    - Industrial 447 M oz (54%), Investment 385 M oz (46%)
  - Silver-zinc batteries safer, greater storage, enviro friendly
  - Solar panels, mirrors, reflective windows, Dow solar shingles
  - Electronics cell phones, computers, LCD & Plasma T.V.s
  - Surgical tools and wound care silver kills dangerous bacteria
  - Radio frequency ID tags for tolls, casino chips, inventory control, etc
  - Water purification and wood preservatives
  - Textiles "anti-stink" clothing

#### Silver as Money

- More functionality than Gold
- Silver as money should equal natural ratio of Ag:Au=15:1



### La Negra – Highlights

- Underground Silver-Copper-Zinc-Lead Mine.
- Purchased from Penoles
- Peñoles Production
- 1970 to 2000- 6.6 million tonnes

36 million oz Silver 161 million lbs Lead 323 million lbs Zinc 70 million lbs Copper

- Increasing throughput from 1,000 tpd to 1,500 tpd to reduce unit costs and improve mine profitability
- 23 ore bodies (Chimney and Manto) outlined historically by Penoles.
  - 4 more added by La Negra Staff
  - All Accessible through over 50 km of underground development on five main levels
  - Regularly replace mined resource
- 2 year mine life, based on 43-101 measured and indicated resources, historic resources 5 years and a mining history of 30 years,





- 23 Skarn chimney and manto deposits by Penoles
- 4 New deposits Identified by La Negra staff
- Most deposits open to depth from 2200 level



Main Haulage at 2,000 Level



#### La Negra – Mine Workings



Multiple mining faces enables targeting higher grade ore & higher priced metals.
Long hole open stope mining and room and pillar mining methods

#### Low Cost Operation:

Current - \$32 / tonne Target - \$26 / tonne





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## La Negra - Mill

Aurcana Production July 2007 – July 2009 Total 600,000 tonnes

Average Mill Head Grades			
Silver	74.0	g/t	
Copper	0.8	%	
Zinc	1.1	%	
Lead	0.3	%	





150 tonne per hour crushing capacity

 (avoids peak power rates)



#### Shafter – A Historic Mine

Presidio Mine from 1883 to 1943 -Produced 35 million oz Silver at 15 oz/ton





#### **Shafter – Presidio Mine**

Movie Location, There will be blood in 2007







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#### Shafter – Presidio Mine

100 miles of old workings





#### Shafter – Presidio Mine



Hand Chute

High Grade Areas





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#### Shafter – Presidio Mine



# Large open stopes

# and small pillars.





### Shafter - Presidio Mine History

Shafter changed hands several times since closure in 1943 (Presidio mine)

Gold Fields Mining Company, surface drilling and developed underground test mine

1982 - doubled Mineral Resource

2008 – Aurcana acquired 100% of Rio Grande Mining Company from Silver Standard

2008 - 43-101 Resource Estimate

2009- Prefeasability study

2010- detailed Engineering and Financing



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#### **Shafter Property Map**



#### Open on Strike Many Adjacent Exploration Showings



#### **Long Section**



Goldfield's Exploration Shaft



Goldfields spent over \$20M from 1977 – 1982 Single compartment 7 ft diameter shaft Bored escape way and capsule



#### **Goldfields Headframe**



Vertical Shaft, Headframe and escape way in place Men, Equipment, and Materials access by Ramp



#### **Goldfields Shaft Hoist**



Hoist Capacity - 80 tons/hr Single drum Unbalanced hoisting





#### **Mineral Resource**

Silver

Ounces / ton

8.5

8.5

8.5

10.5

Contained

**Silver Ounces** 

7.5 million

17.1 million

24.6 million

22.8 million

From NI 43-101 Technical Report – April 2009

# **Key Infrastructure**

Marfa - 40

Shafter, TX

miles

Regional Grid Substation

Tailings

Ramp Portal

Process Plant and Admin

Presidio and Mexico – 20 miles DA Farm Service Agency © 2010 INTEGI

Imagery Date: Jun 28, 2005

© 2010 Google 29 48:57,27" N 104\*18'49:55" W elev 1203 m Interstate 67

**Abundant** 

Groundwater

**Vertical** 

Shafts

Shafter

**Ghost Town** 

Eye alt 5.65 km



#### Shafter Key aspects

- All surface rights secured for mine, mill and tailings.
- Brown fields project
- Dolomite and limestone based, Silver occurs as oxidized argentite, very little sulphides resulting in no acid drainage problems.
- Existing power line and electrical substation.
- Paved highway through property.
- Most major mill components on site.
- Historical workings & shafts will be part of mining plan
- Early production from the new decline during mill construction will stockpile 50,000+ tons @ 8oz/ton ~ 400,000 oz
- Dore bar "Made in Texas Silver"
- Favorable location for hiring work force



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### Shafter long section



Initial access by ramp to Block II & III, above water level Continue ramp down to Goldfields Shaft in Block I Access blocks IV and V by slashing old levels Predictable ore body Good underground conditions



### **Shafter Mine Planning**

Original Feasibility mine plan, mining via exploration shaft not practical.

New mine plan, access by ramp

•Mining rate - 1,500 tons per day

- •Access by Ramp, early cash flow
- •Initial ramp development clean waste for construction
- •Mining commences in Blocks II & III above water table
- •Flooded lower underground workings to provide water supply for mill start up
- •Dewater Block I from shaft, ahead of lower ramp face
- •Ore hoisting by truck, then truck and shaft



### Mining Plan

#### Mechanized room and pillar stoping

•Good ground conditions

•Grade-control, Room & Pillar many working faces allowing time for sample turn around

Higher 1,500 tpd rate, lower 4 oz/ton cut off grade and reduce grade variability for mining

#### Decline, gives early access to old conventional levels for

•Exploration time and underground access for close drilling increasing resources in blocks IV and V.

•Access to old workings for ore recovery and waste rock disposal

•Old stope volume for underground settling ponds



#### Initial stopes & old workings





#### **Ore thickness**





#### Underground Mining equipment



#### **Twin Boom Jumbo**



#### Underground Mining equipment



#### 10 ton LHD and 30 ton Haul Truck



## Metallurgy

Very well understand and reliable Metallurgical Data-Base – 60 years operating history

Recent test work confirms metallurgical recoveries and leach time

Conventional Ball-Mill,

Cyanide Leach in tanks,

Merrill-Crowe (+84% recovery)

#### Metallurgy



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No deleterious elements, history of small Gold contribution Reliable metallurgical data base, 60 years operating history and testing Cyanide Leach in tanks, Merrill-Crowe (+84% recovery) Historical +85%, recent test work confirms recoveries and leach time

Silver Doré produced on site and refined in the US





#### **Process Plant**

Most major components of Process Plant (16:1 mill) already owned by Aurcana

Other components will be purchased used, and refurbished eg

- •Larger Ball mill
- Crushing plant
- •Mobile equipment
- •Plant for parts



### Tailings

Mill tailings filter-washed, cyanide destruct and dewatered filtered, to meet State environmental criteria of under 20ppm NaCN, under 21% moisture

Dry-stacked on mine site in a series of Solid Waste Management Units (SWMU)

Each SWMU covered and vegetated progressively during mine life

Reduces work required on SWMU after closure



#### Human Resources

Labour is available locally in Texas, but physically possible to commute from Mexico

Labour hired at mine-gate, shift bus in from Marfa, and Presidio areas

Key skills and supervisors hired early to train local personnel

Possibly initial equipment training at La Negra

Management - North American



### Permitting

All key permits are issued, based on Silver Standard Feasibility. Permits requiring only minor modification to suit new project configurations, such as;

•Decline access not shaft

•1500 TPD not 1100 TPD

•Dry stack tailings not wet tailings pond

•Higher rate for mine dewatering





	Project Component	Permit/Approval	Agency	Status	
	Underground Operations	Shaft Permit Underground Workings Permit	TCEQ TCEQ	Exemption granted Exemption granted	
	Crushing & Screening	Flexible Air Permit	TCEQ	Permit granted	
ADRCANA 999 FDIE SDIAR 999 FDIE SDIAR	Milling/Silver Recovery	Flexible Air Permit	TCEQ	Permit granted	
	Water Discharge	TPDES Permit	TCEQ	Permit granted, but requires modification	
	Waste Disposal (tailings)	CWA Section 404 Permit Cultural Clearance ESA Compliance Solid Waste Notification	ACOE ACOE/SHPO ACOE/USF&WS TCEQ	Re-application needed Re-application needed Re-application needed Re-application needed	
	Water Supply – Mine Site	Drinking Water Permit	TCEQ	Conceptual engineering complete	
	Water Supply – Town Site	Drinking Water Permit	TCEQ	Conceptual engineering complete	



# **Construction Plan**

EPCM managed and directed by Owner's Team (hire Mill and Mine Superintendents for construction and on to production)

Detailed Engineering by very experienced local firm

Process Plant and Infrastructure construction by very experienced Prime Contractor

18 month mill / infrastructure construction period/ decline development, open up stopes and producing to stockpile



# **Prefeasibility Highlights**

#### INITIAL CAPITAL - US\$ 42 m

Payback - 18 months at US\$15.55 silver

First Year - 3.8 m oz silver at US\$6 net revenue/oz

Revenue - Silver doré sold direct to refinery



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# **Prefeasibility Highlights**

		Units	Base -\$1	Base Case	Base +\$1	Base +\$2
Silver Price	US\$/oz	\$/tr oz	\$12.55	\$13.55	\$14.55	\$15.55
Pre-Tax Net Present Value (NPV)	US\$M	US\$M	\$10	\$23	\$36	\$48
Pre-Tax Internal Rate of Return (IRR)	%	%	15%	25%	35%	44%
Discount Rate	%	%	5%	5%	5%	5%
Peak Capital	US\$M	US\$M	\$40	\$40	\$40	\$40
Minegate Cash Cost	US\$/ton	US\$/ton	\$55	\$55	\$55	\$55
Minegate NSR	US\$/ton	US\$/ton	\$80	\$87	\$93	\$100
Mine Life	yr	yr	4.7	4.7	4.7	4.7
Payback Period	yr	yr	2.39	1.98	1.69	1.48



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# Prefeasibility Highlights (cont.)

Shafter Operating Costs - all currency US\$	Prefeas	
Production Rate (tons per day)	1,500	
Production Rate (tons per year)	525,000	
Cost per ton of ore	\$ 55	
Mineral Reserve (million tons)	2.4	
Mine Life (years) - Measured & Indicated Only	5	
Mine Life (years) - Measured & Indicated and Inferred	9	
Silver Head-Grade (oz/t)	7.8	
Silver Metallurgical Recovery	84%	
Silver Ounces Produced (million ounces)	16.1	
Average Annual Silver Production (million ounces)	\$ 3.40	
Total Cash Costs (US\$/ounce)	\$ 8.51	
Total Cash Costs - Years 1 and 2 (US\$/ounce)	\$ 7.50	



#### **Shafter Capex**

#### Capital Cost [Capex] and Annual Silver Equivalent<sup>1</sup> Production



<sup>1</sup> The conversion from gold to silver equivalent was calculated at 65:1

<sup>2</sup> Ratio of Capex: yearly silver equivalent production



#### If Shafter were in production today •10% of US Silver Production\*



#### If Shafter were in production today •10% of US Silver Production\*

#### • 12<sup>th</sup> largest pure Silver mine in world



the Silver Institute's World Silver Survey 2009 publication

\*If in production today, According to the Silver Institute, 2008, cut off at 4 ounces per ton



#### **Shafter Upside**

- Potential to double mine life through upgrading the inferred resources and open along strike.
- Goldfields bulk sample indicated improvement in grade compared to drill hole results.
- At \$15.55 silver IRR is 44% and payback is 18 months (pre-tax).
- Leverage to the price of silver Unhedged.