

TSX:AXR
NYSE-MKT:AXU



September 2012

ALEXCO

Canada's Only Primary Silver Producer



Forward Looking Statement

This presentation contains forward-looking statements within the meaning of the United States Private Securities Litigation Reform Act of 1995 and forward-looking information within the meaning of applicable Canadian securities laws (together, "forward-looking statements") concerning Alexco's business plans, including but not limited to anticipated results and developments in Alexco's operations in future periods, planned exploration and development of its mineral properties, plans related to its business and other matters that may occur in the future, made as of the date of this presentation. Alexco does not intend, and does not assume any obligation, to update these forward-looking statements, except as required by applicable law.

Forward-looking statements may include, but are not limited to, statements with respect to future remediation and reclamation activities, future mineral exploration, the estimation of mineral reserves and mineral resources, the realization of mineral reserve and mineral resource estimates, future mine construction and development activities, future mine operation and production, the timing of activities, the amount of estimated revenues and expenses, the success of exploration activities, permitting time lines, requirements for additional capital and sources and uses of funds.

Forward-looking statements are subject to a variety of known and unknown risks, uncertainties and other factors which could cause actual events or results to differ from those expressed or implied by the forward-looking statements. Such factors include, but are not limited to, risks related to actual results and timing of exploration and development activities; actual results and timing of mining activities; actual results and timing of environmental services operations; actual results and timing of remediation and reclamation activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; future prices of silver, gold, lead, zinc and other commodities; possible variations in mineable resources, grade or recovery rates; failure of plant, equipment or processes to operate as anticipated; accidents, labour disputes and other risks of the mining industry; First Nation rights and title; continued capitalization and commercial viability; global economic conditions; competition; and delays in obtaining governmental approvals or financing or in the completion of development activities. Furthermore, forward-looking statements are statements about the future and are inherently uncertain, and actual achievements of Alexco or other future events or conditions may differ materially from those reflected in the forward-looking statements due to a variety of risks, uncertainties and other factors, including but not limited to those referred to in the section entitled "Risk Factors" in the MD&A included in Alexco's most recent interim and annual financial reports, its current AIF and U.S. Form 40-F, and various of its other continuous disclosure documents.

Forward-looking statements are based on certain assumptions that management believes are reasonable at the time they are made. In making the forward-looking statements included in this presentation, Alexco has applied several material assumptions, including, but not limited to, the assumption that: (1) the proposed development of its mineral projects will be viable operationally and economically and proceed as planned; (2) market fundamentals will result in sustained silver, gold, lead and zinc demand and prices, and such prices will be materially consistent with or more favourable than those anticipated in the Bellekeno Development Plan, (3) the actual nature, size and grade of its mineral resources are materially consistent with the resource estimates reported in the supporting technical reports; and (4) any additional financing needed will be available on reasonable terms.



WHO is Alexco?

TSX:AXR / NYSE-MKT:AXU
60.4 Million Shares Issued & Outstanding

- ✦ Established in 2005
- ✦ Now Canada's only primary silver producer: 2 million oz silver production in 2011
- ✦ Sole owner of Keno Hill Silver District
- ✦ Developing 2 new mines, 2012
- ✦ Silver resources of 57 million ounces*:
52% Indicated resource increase from 2011
- ✦ Environmental subsidiary



*Including historical, inferred and indicated resources. Please see appendix slide for full mineral resource disclosure.



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WHY Alexco?

- ✦ Safe jurisdiction – Yukon, Canada
- ✦ 100% owner of Keno Hill Silver District
- ✦ Historical Avg Grade: 40 ounces silver/ton
- ✦ Good infrastructure: On the power grid All-weather roads
- ✦ Supportive political climate
- ✦ Experienced management



Healthy Cash Position No Debt

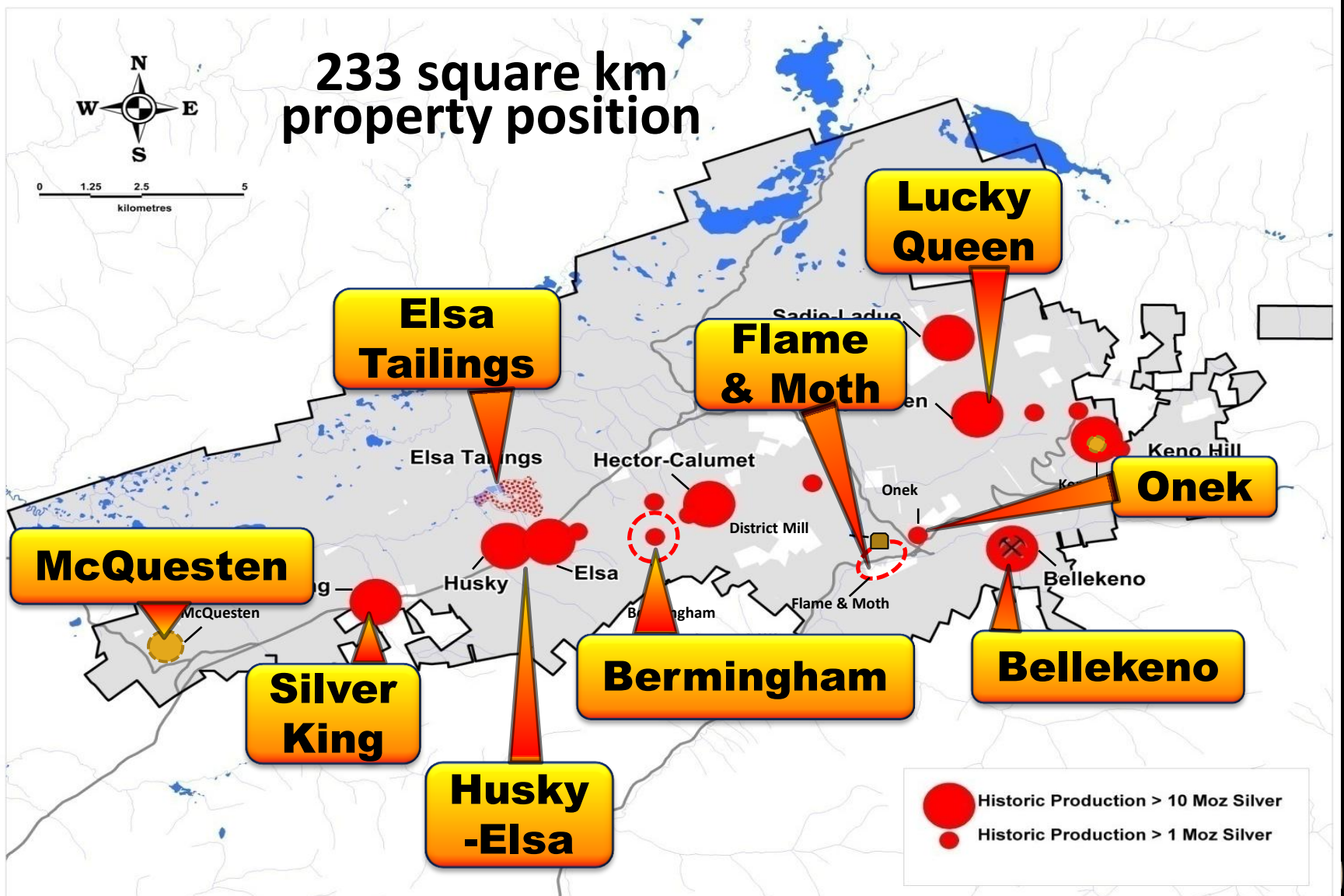
- ◆ Cash at June 30, 2012: \$31.9 million
- ◆ Net Working Capital: \$32.2 million
- ◆ No Long Term Financial Debt
- ◆ 2011 Year Cash from Ops: \$20.3 million
- ◆ 2012 H1 Cash from Ops: \$13.9 million





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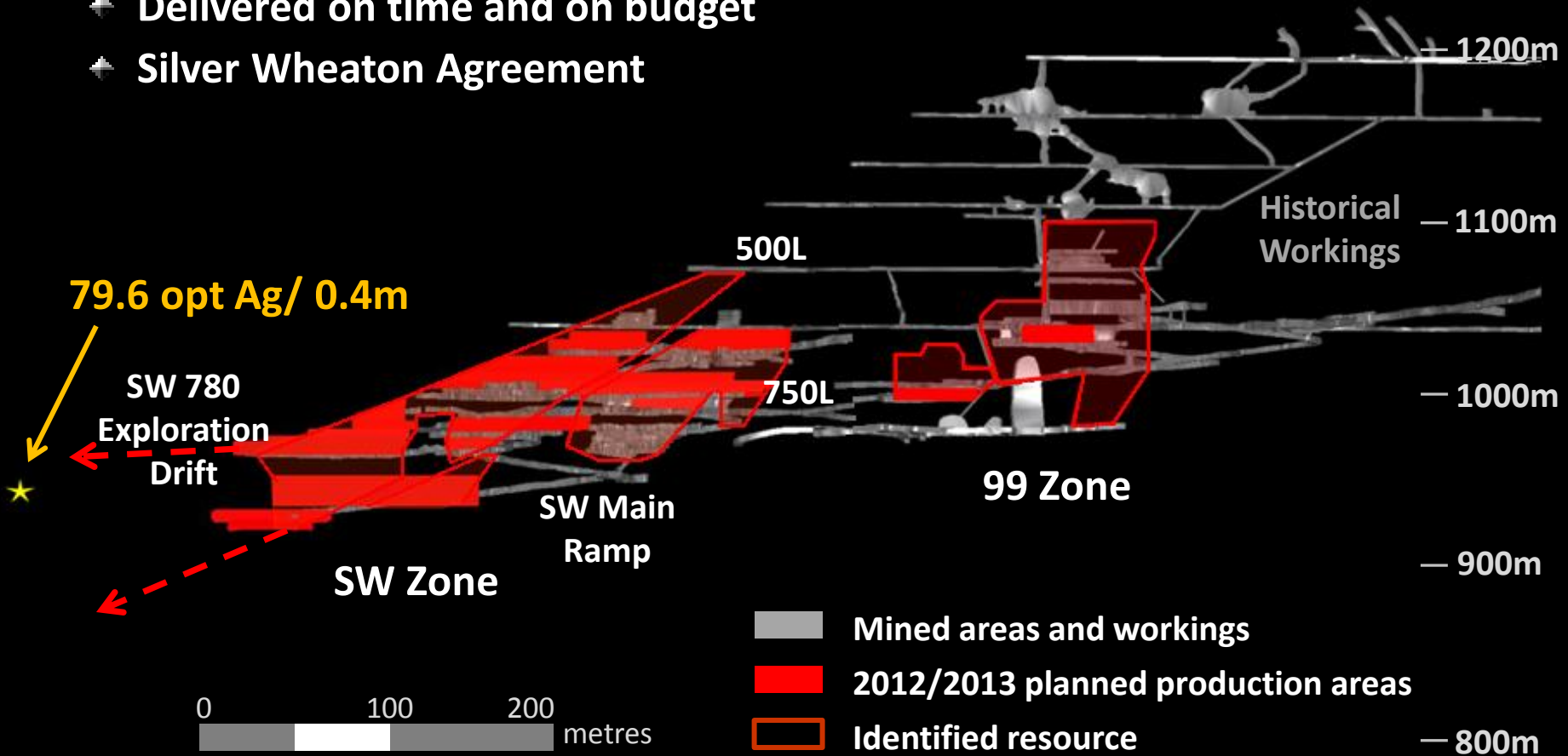
Keno Hill Silver District – A Larger Vision





Bellekeno Mine Long Section

- ✦ AME BC 'Excellence in Mine Development' Award – 2011
- ✦ 3 years discovery to commercial production
- ✦ Delivered on time and on budget
- ✦ Silver Wheaton Agreement

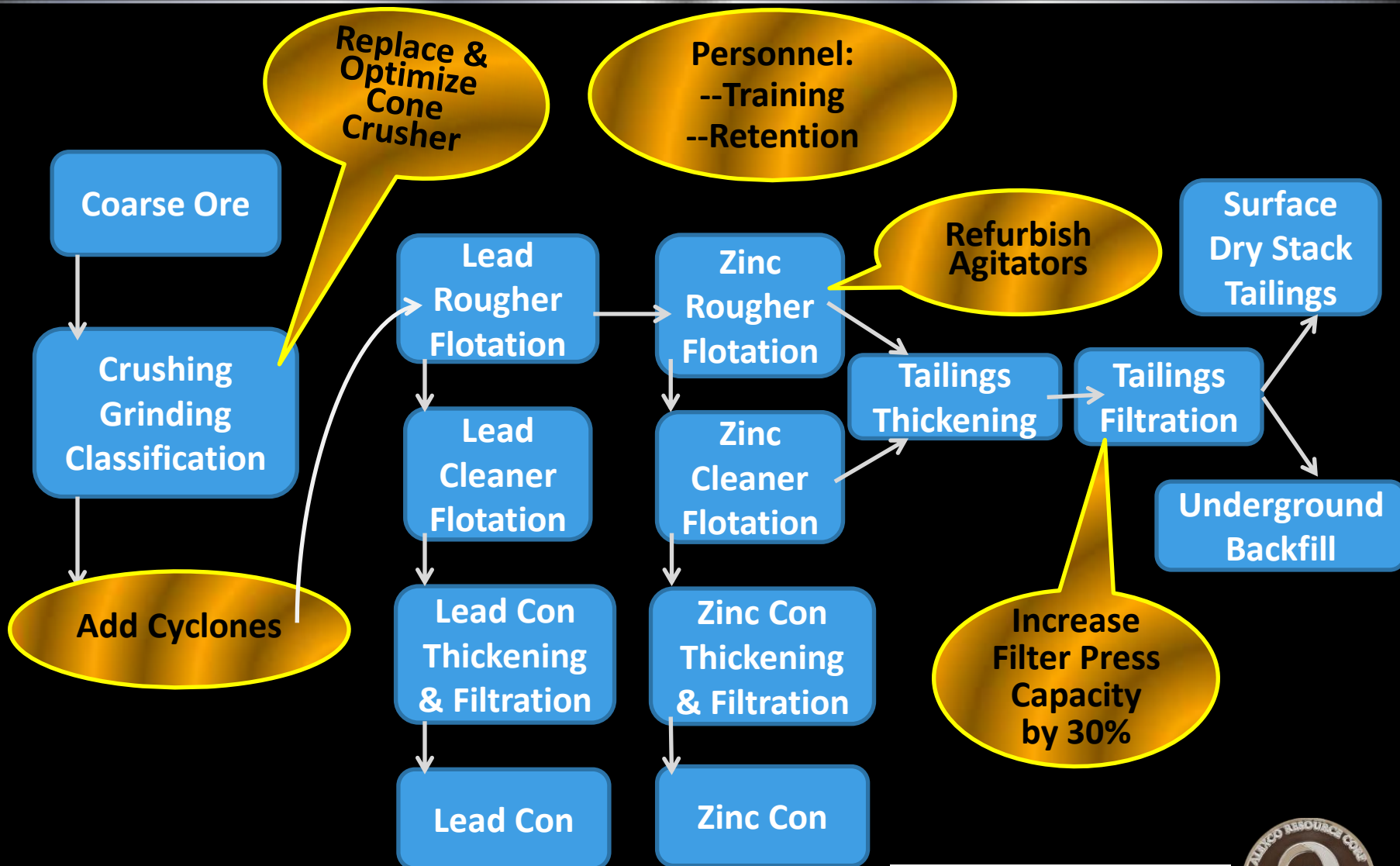


- ◆ 269,700 tonnes @934 gpt – Bellekeno Indicated Resource
- ◆ 4 year LOM – Bellekeno mine, 250 tpd design
(currently recalculating resource)
- ◆ Approx. 2.2 million oz silver 2012 production estimate
- ◆ 2011 full-year cash costs:
\$10.17/oz Ag
- ◆ 2012 H1 cash costs:
\$12.99/oz Ag





Focusing on the Mill



*All water recycled





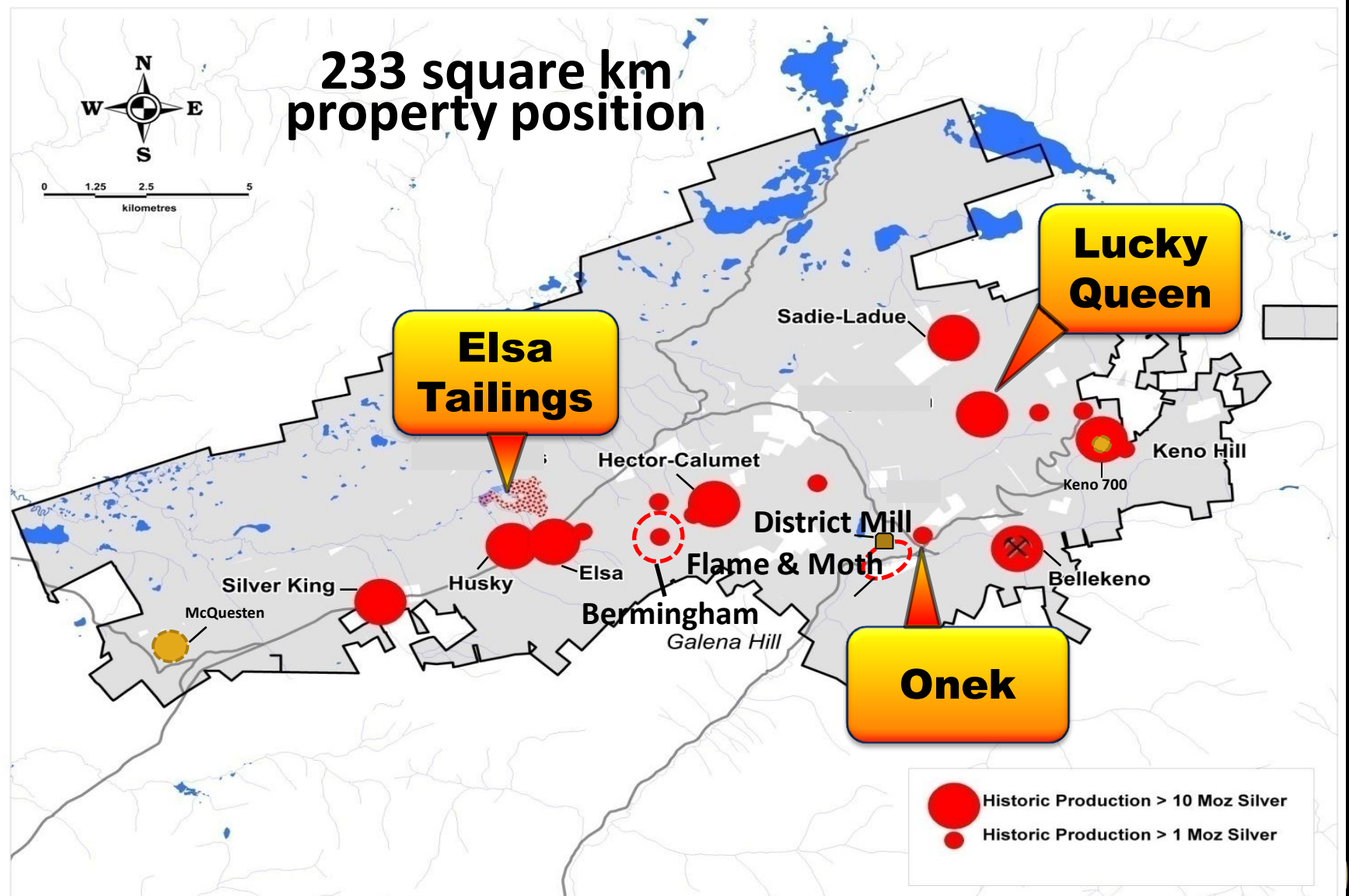
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Under Development: Lucky Queen, Onek, Elsa Tailings

233 square km
property position



0 1.25 2.5 5
kilometres



Lucky Queen Development Project

Current Resource

	Tonnes	Ag (gpt)	Au (gpt)	Pb (%)	Zn (%)	Ag ozs. (000)
Indicated	124,000	1,227	0.2	2.6	1.7	4,891
Inferred	150,000	571	0.2	1.4	0.9	2,753

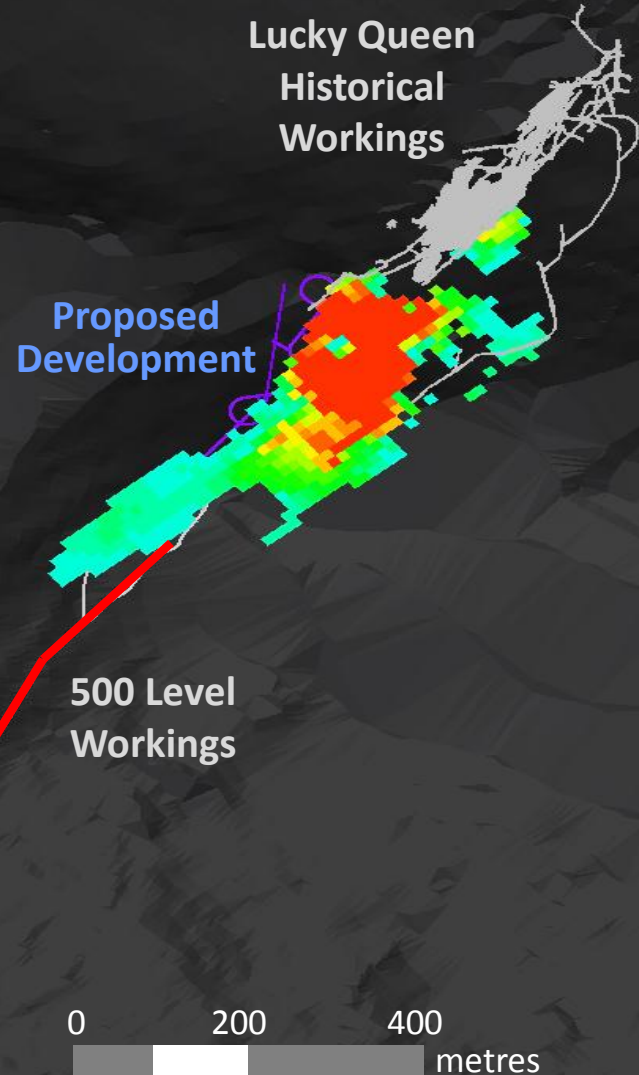
(see appended Summary of Silver Resources slide)

Historical Production:

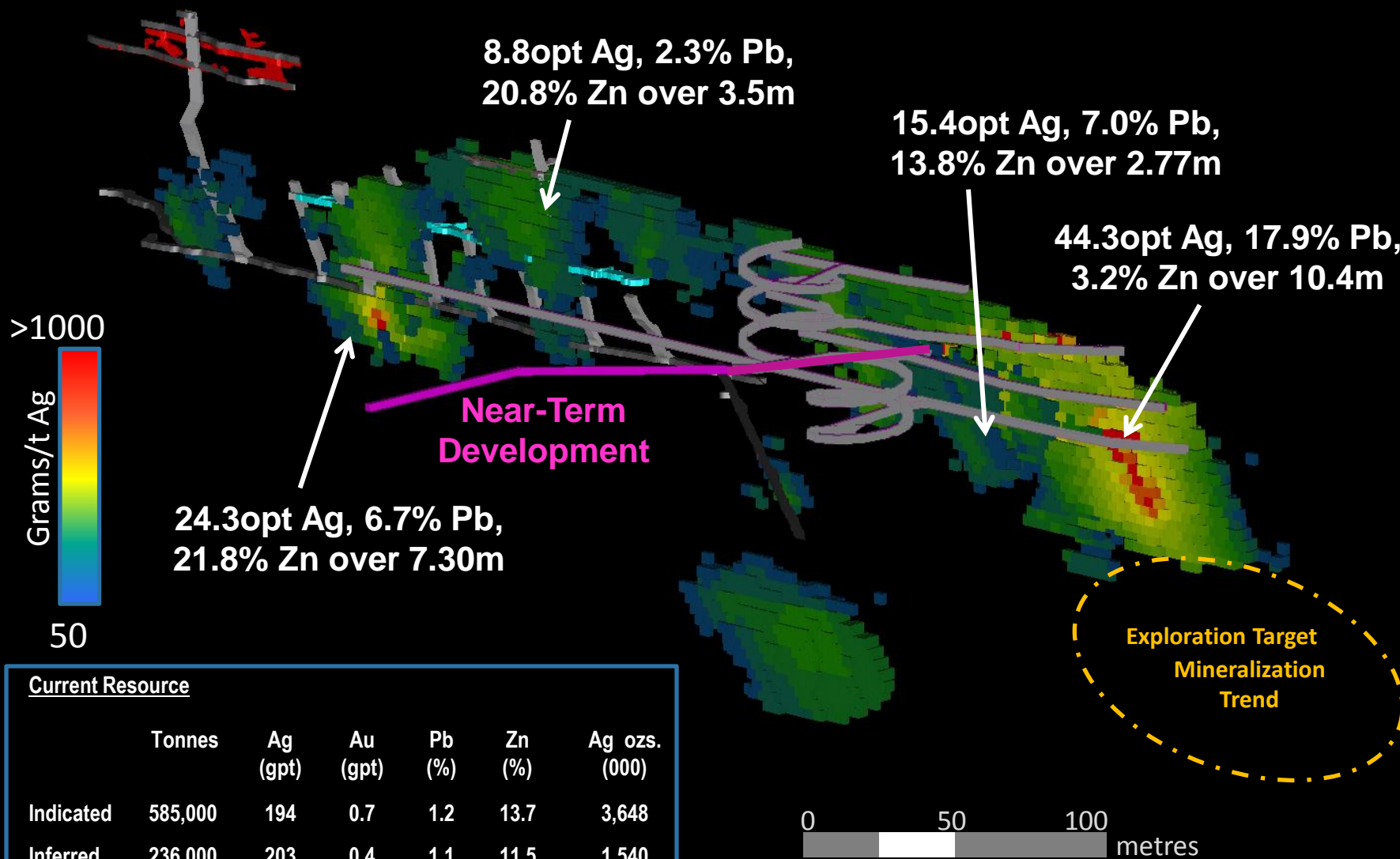
10.96 Moz Ag

123,530 tons @ 88.7opt Ag

**Lucky Queen
Rehabilitation
Essentially
Completed**



Onek Development Project

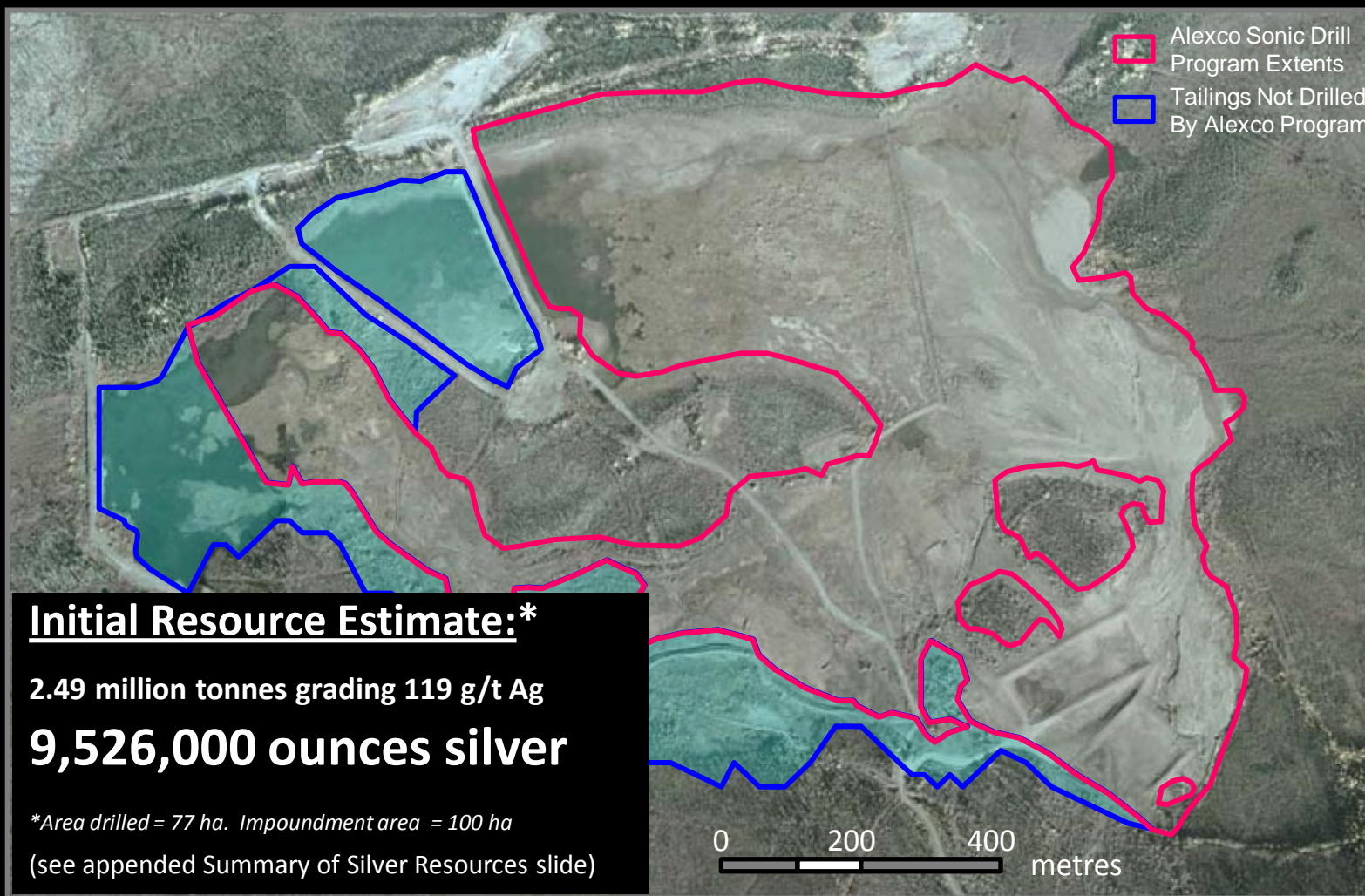


Current Resource

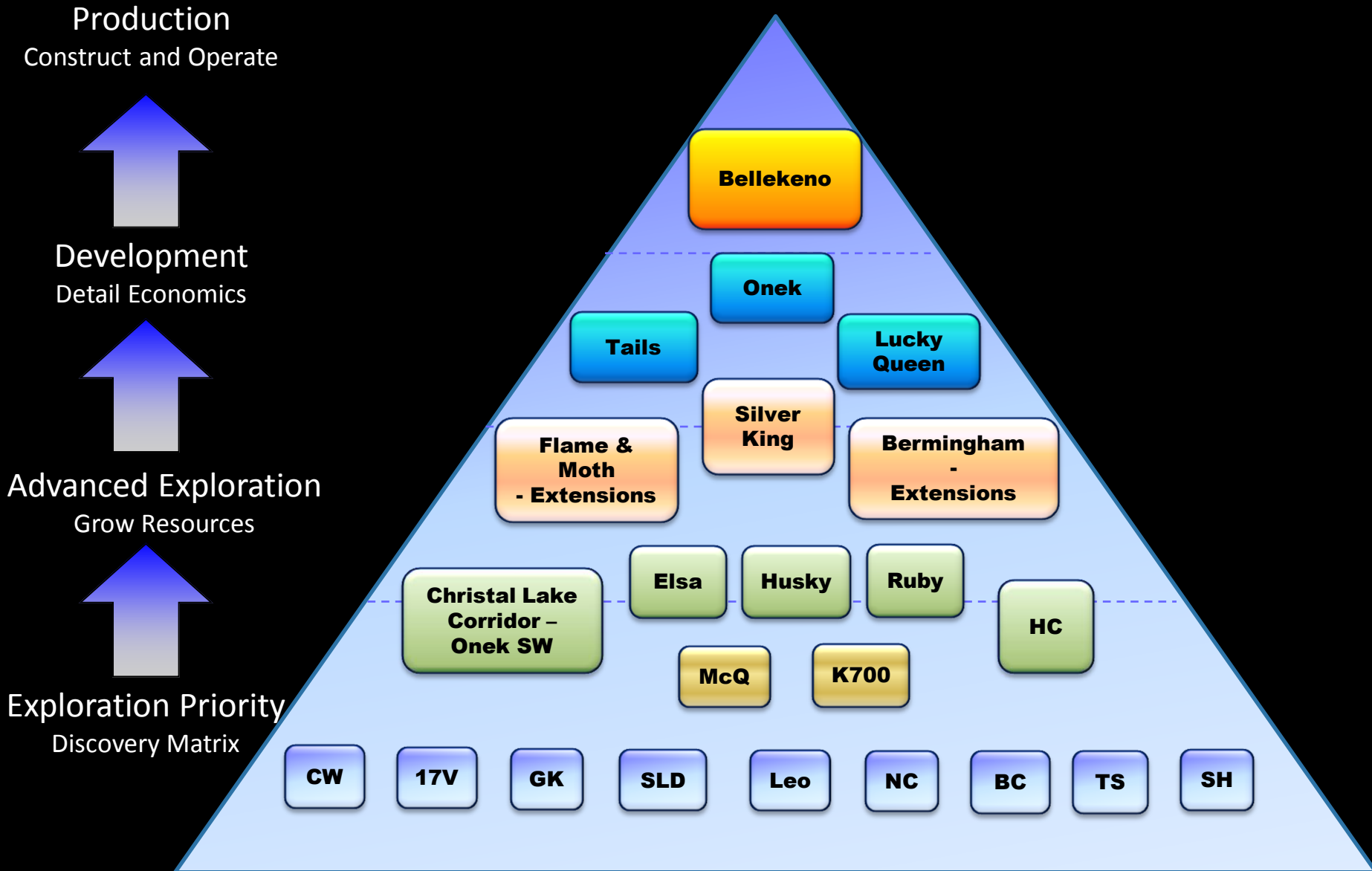
	Tonnes	Ag (gpt)	Au (gpt)	Pb (%)	Zn (%)	Ag ozs. (000)
Indicated	585,000	194	0.7	1.2	13.7	3,648
Inferred	236,000	203	0.4	1.1	11.5	1,540

(see appended Summary of Silver Resources slide)

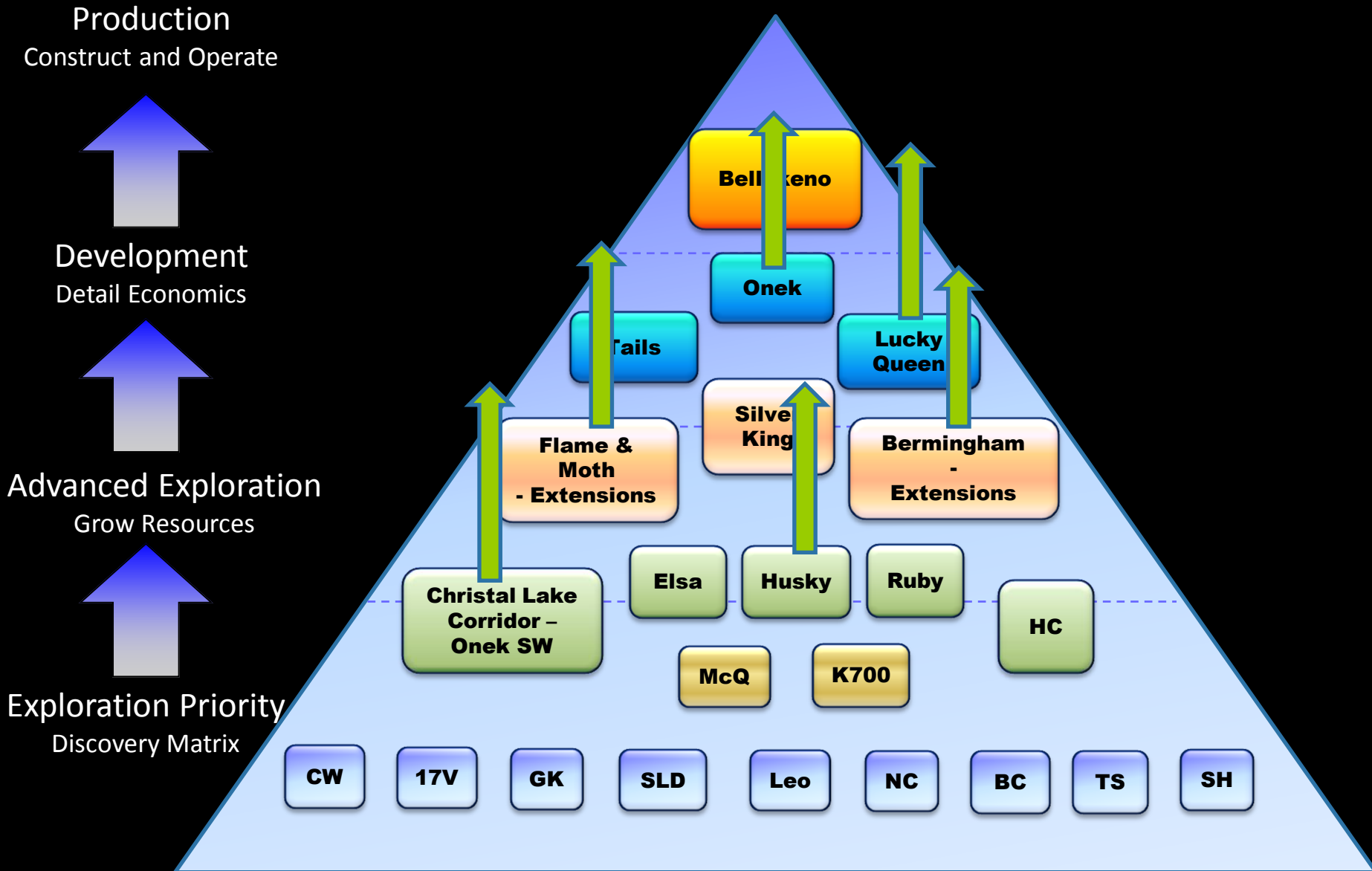
Historical Elsa Tailings



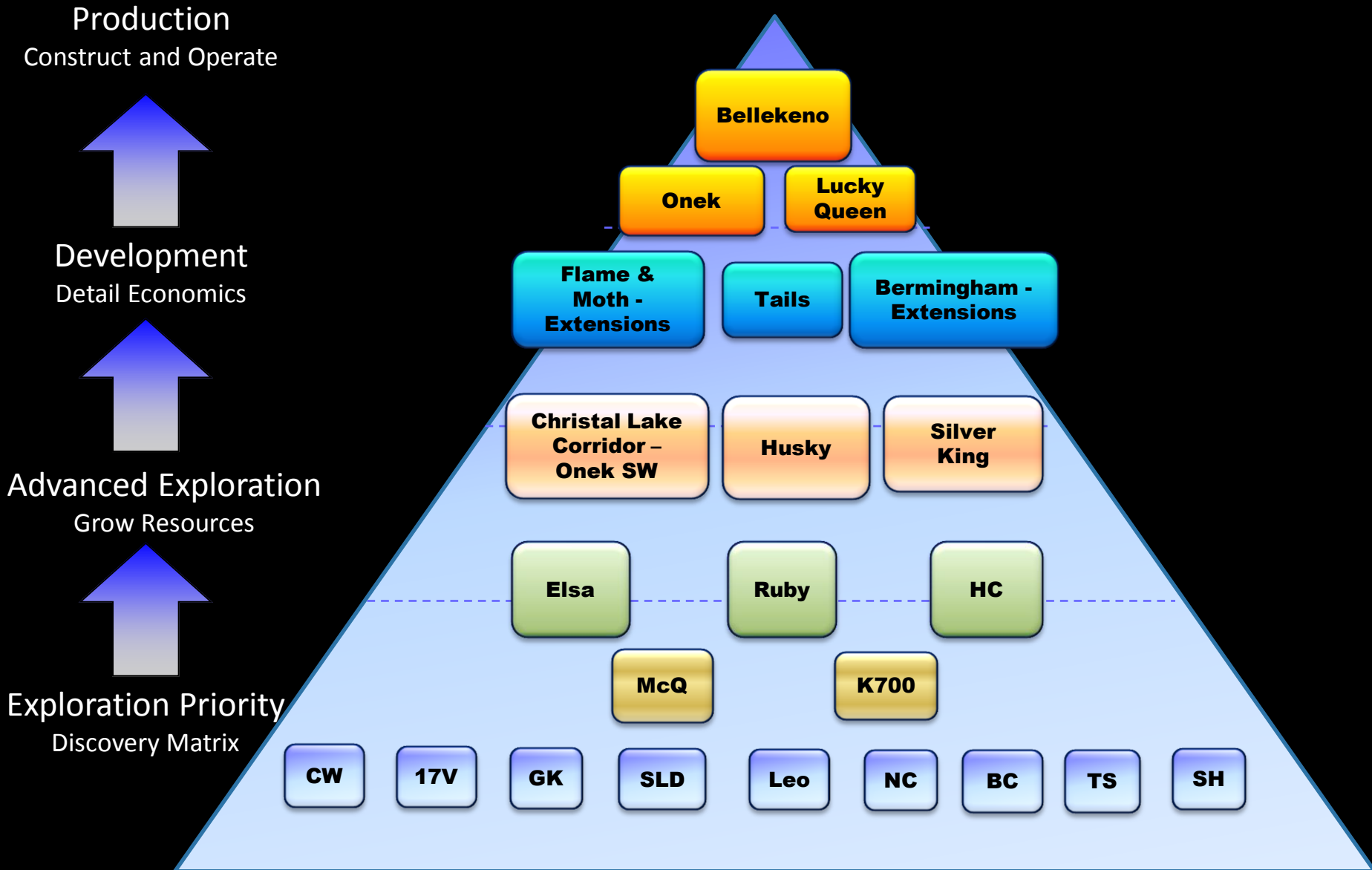
Development and Exploration Project Pipeline



Development and Exploration Project Pipeline

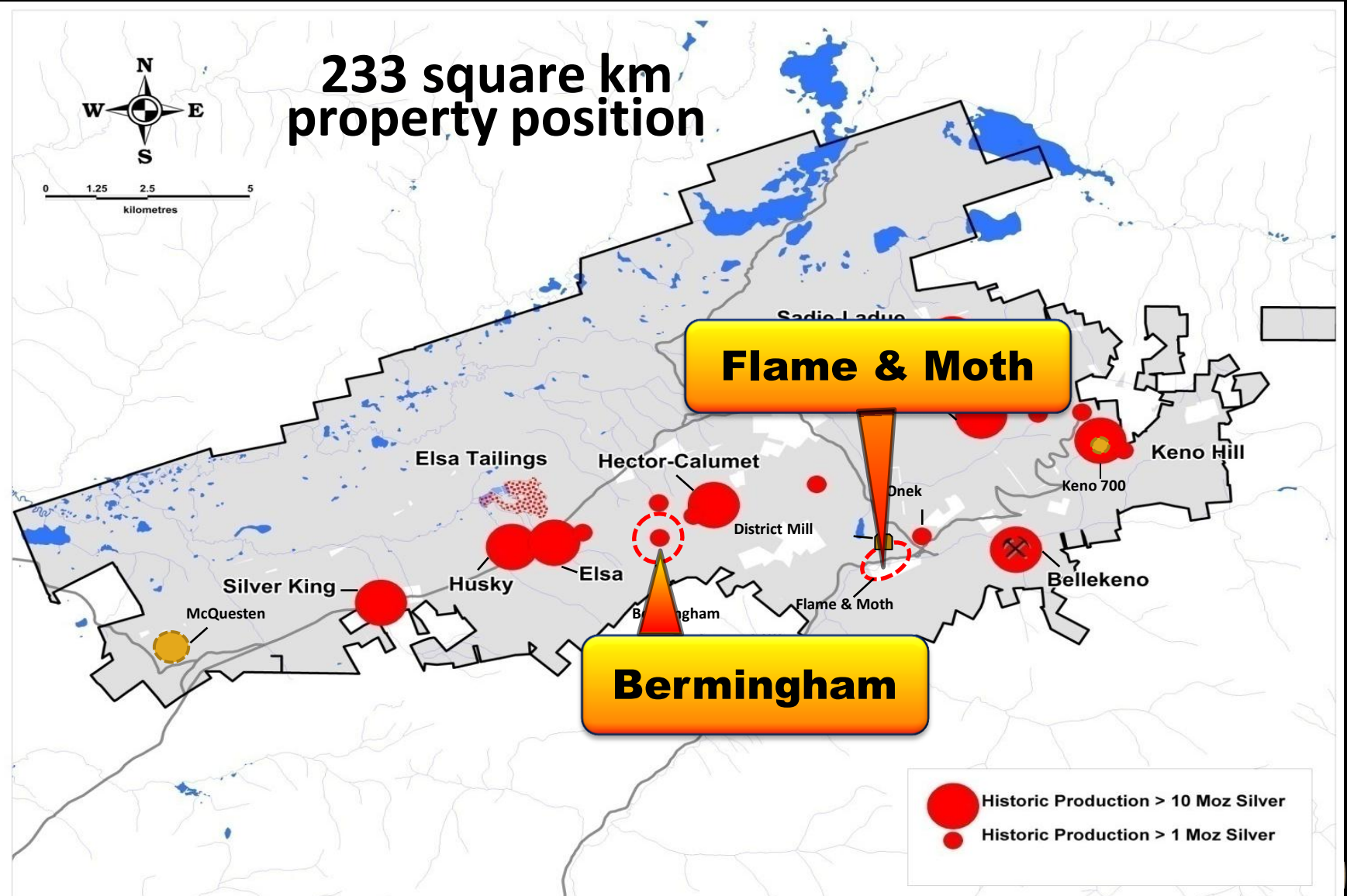


Development and Exploration Project Pipeline





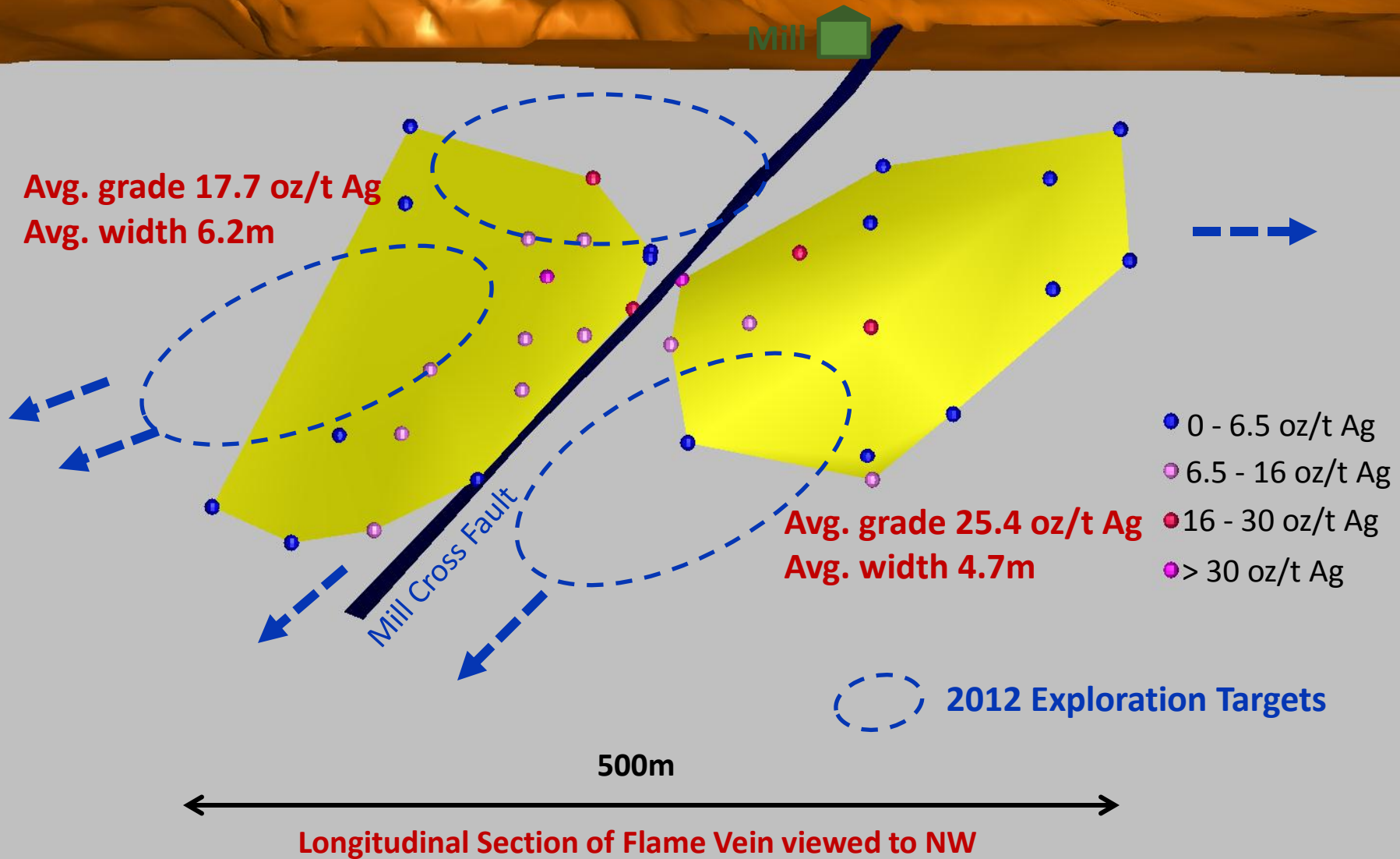
Adding More Resource: Flame & Moth, Birmingham





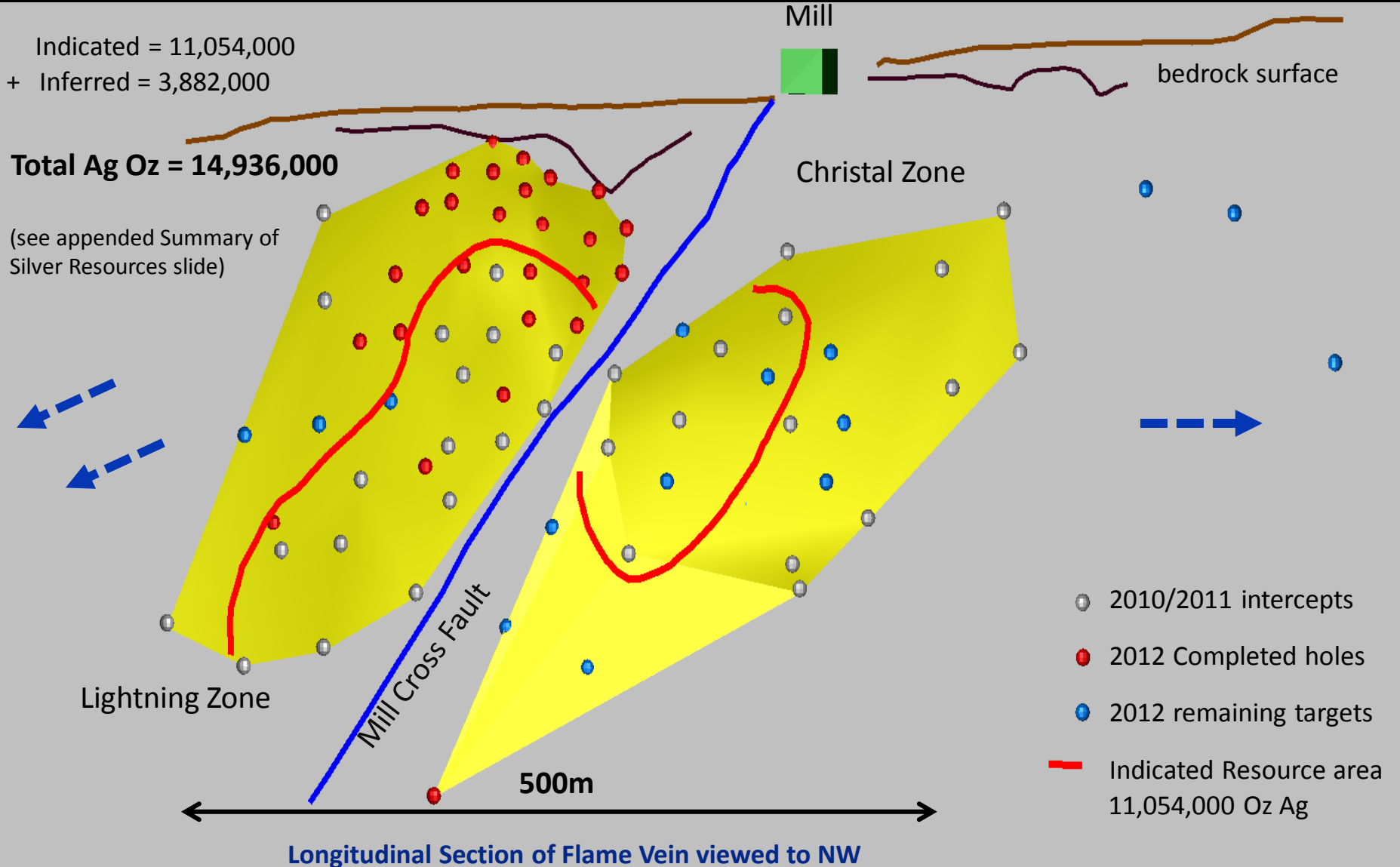
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Flame & Moth Important New Discovery (early 2012)





2012 Flame & Moth Update

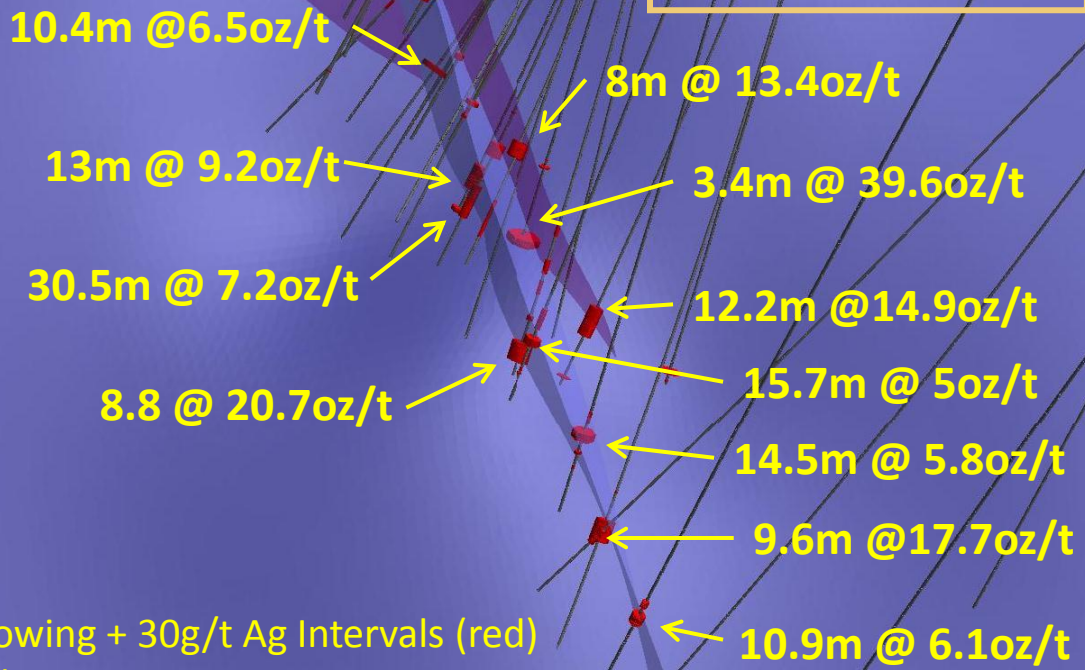


Birmingham Cross-Section

Birmingham Footwall Vein
Avg. 11.7 oz/t Ag
over 7.9m width

Mastiff Fault
 (background)

Birmingham Vein
Avg. 16oz/t Ag
over 7.5m width



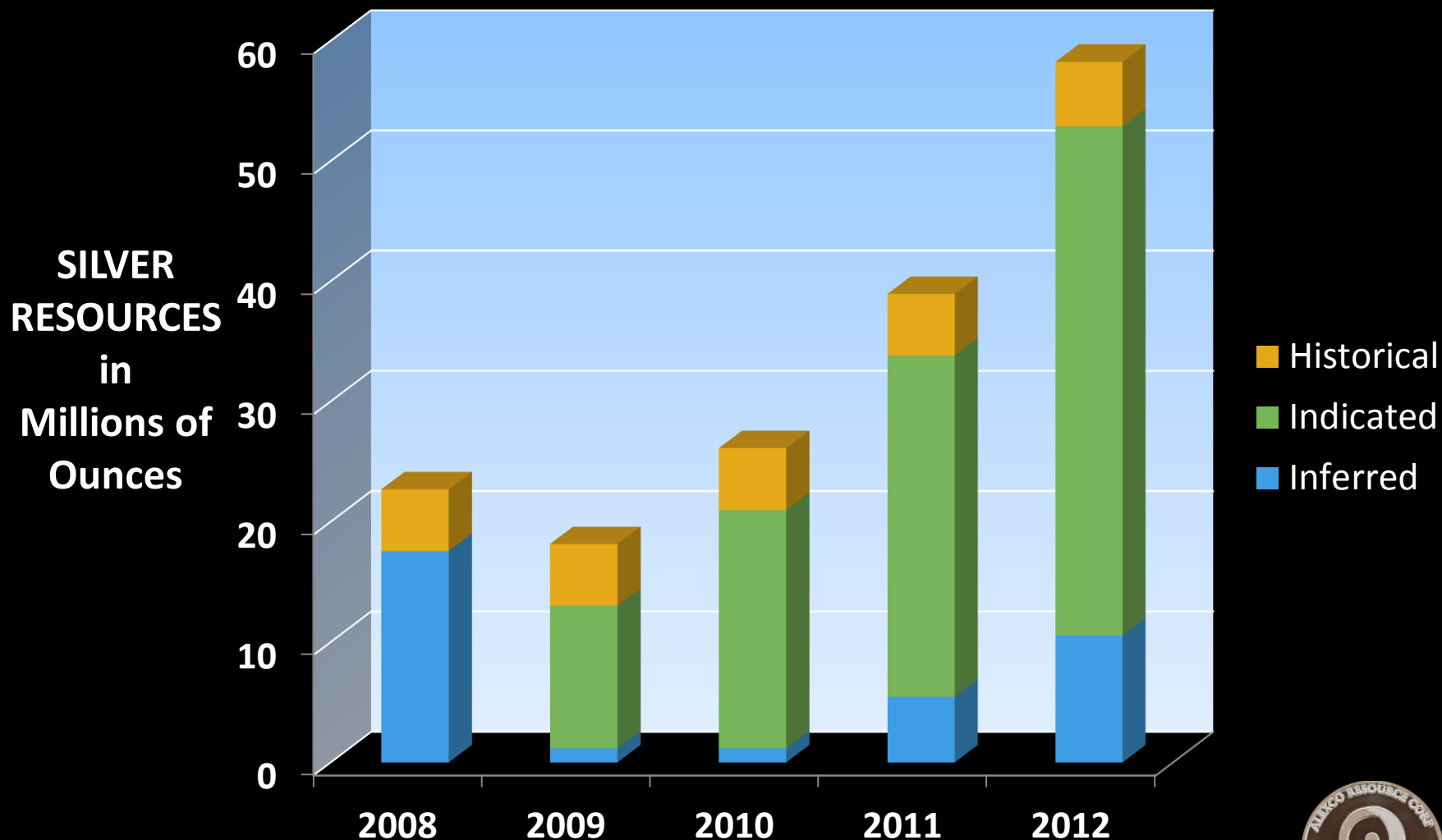
Showing + 30g/t Ag Intervals (red)
 Oblique View to NE

270 meters



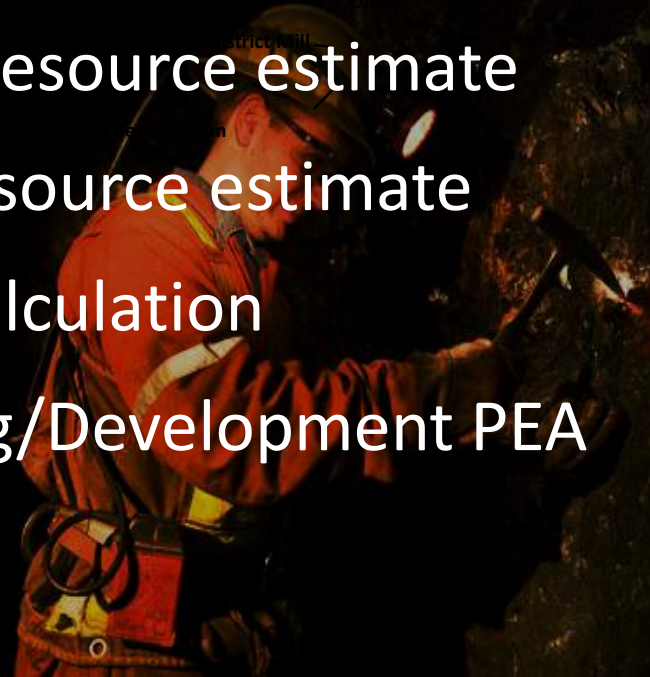
Exploration Success! Resource Growth

Keno Hill Silver District



The Next 12 Months: Events To Watch For

- ◆ Improvement in mill performance
- ◆ Decrease in cash costs
- ◆ Lucky Queen into production
- ◆ Onek into production
- ◆ Update Flame & Moth resource estimate
- ◆ Update Birmingham resource estimate
- ◆ Bellekeno resource recalculation
- ◆ Elsa Tailings Engineering/Development PEA



Alexco Environmental Group

- ✦ Environmental remediation business with mining focus
- ✦ Mine water treatment
- ✦ Strong track record for timely project permitting
- ✦ Major industry and government clients
- ✦ Enables timely redevelopment of mining in historical districts



Alexco – A History of Success

- ✦ **2005** Company Founded
- ✦ **2006** Listed with TSX; symbol AXR
- ✦ **2006** Acquired Keno Hill Silver District, initiated exploration
- ✦ **2007** Listed with NYSE-MKT; symbol AXU
“Discovery” of Bellekeno deposit
- ✦ **2008** Silver Wheaton Agreement - \$50 million and \$3.90/oz for 25% of future silver mined
- ✦ **2009** Bellekeno Construction Begins
- ✦ **2010** Comprehensive Cooperation Agreement with First Nation
- ✦ **2011** Bellekeno Mine Production – Three years discovery to production
- ✦ **2012** 52% Increase in Indicated Silver Resources



Alexco Resource Corp.

APPENDIX SLIDES





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Keno Hill Silver District – A “Win-Win” Partnership

25

- ◆ Alexco – A unique business model combining mine operations/development and environmental remediation expertise
- ◆ A “Win-Win” partnership between Alexco/Canada/Yukon/First Nations through a cooperative District Closure Plan
- ◆ Alexco has contributed \$22M to date to remediate historic environmental liabilities
- ◆ Alexco has reduced zinc release to the environment from the historic Galkeno 300 mine by 99.5% and reduced the concentration of zinc in Christal Creek by 75%
- ◆ Taxpayer liability reduced





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Contributing to the Community

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- ◆ \$53 million contribution to the region via Donations and Business with Yukon-based vendors and suppliers
- ◆ 200+ direct jobs -- over \$22M per year in payroll
- ◆ 50% Yukon employment
- ◆ Comprehensive Cooperation Benefits Agreement - FNNND





Summary of Silver Resources: Keno Hill Silver District

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Category ^{1,2,9}	Property						
Indicated	Bellekeno ³	269,700	934	0.5	8.3%	6.7%	8,091,000
	Lucky Queen ⁴	124,000	1,227	0.2	2.6%	1.7%	4,891,000
	Onek ⁵	585,000	194	0.7	1.2%	13.7%	3,648,000
	Flame & Moth ⁶	759,000	453	0.4	1.7%	7.0%	11,054,000
	Birmingham ⁶	257,000	460	0.1	2.0%	2.1%	3,800,000
	Total Indicated – Sub-Surface Deposits	1,994,700	491	0.4	2.6%	8.0%	31,484,000
	Elsa Tailings ⁷	2,490,000	119	0.1	1.0%	0.7%	9,526,000
	Total Indicated – All Deposits	4,484,700	284	0.3	1.7%	3.9%	41,010,000
	Inferred	Bellekeno ³	111,100	320	0.3	3.1%	17.9%
Lucky Queen ⁴		150,000	571	0.2	1.4%	0.9%	2,753,000
Onek ⁵		236,000	203	0.4	1.1%	11.5%	1,540,000
Flame & Moth ⁶		387,000	312	0.3	1.2%	4.1%	3,882,000
Birmingham ⁶		102,000	372	0.1	1.1%	1.8%	1,220,000
Total Inferred		986,100	332	0.3	1.4%	6.7%	10,538,000
Historical Resources	Silver King ⁸						
	- Proven, probable and indicated	98,998	1,354	<i>n/a</i>	1.6%	0.1%	4,310,000
	- Inferred	22,581	1,456	<i>n/a</i>	0.1%	<i>n/a</i>	1,057,000

Notes:

- All mineral resources are classified following the CIM Definition Standards for Mineral Resources and Mineral Reserves (December 2005), in accordance with the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines and the guidelines of NI 43-101.
- Mineral resources are not mineral reserves and do not have demonstrated economic viability. All numbers have been rounded to reflect the relative accuracy of the estimates.
- The resource estimates for Bellekeno are based on the geologic resource estimate made effective November 9, 2009, supported by the technical report dated December 2, 2009 entitled "Bellekeno Project – Updated Preliminary Economic Assessment Technical Report". The Bellekeno indicated resources are as at June 30, 2012, and reflect the geologic resource less estimated subsequent depletion from mine production.
- The resource estimates for Lucky Queen have an effective date of July 27, 2011, and are supported by disclosure in the news release dated July 27, 2011 entitled "Alexco Announces Initial Resource Estimates for Lucky Queen and Onek" and by a technical report filed on SEDAR dated September 8, 2011 entitled "Technical Report on the Lucky Queen Deposit, Lucky Queen Property, Keno Hill District, Yukon".
- The resource estimates for Onek have an effective date of July 27, 2011, and are supported by disclosure in the news release dated July 27, 2011 entitled "Alexco Announces Initial Resource Estimates for Lucky Queen and Onek" and by a technical report filed on SEDAR dated September 8, 2011 entitled "Technical Report on the Onek Deposit, Onek Property, Keno Hill District, Yukon".
- The resource estimates for Flame & Moth and Birmingham have an effective date of June 27, 2012, and are supported by disclosure in the news release dated June 28, 2012 entitled "Alexco Announces Initial Resource Estimates for Flame & Moth and Birmingham".
- The resource estimate for the Elsa Tailings has an effective date of April 22, 2010, and is supported by the technical report dated June 16, 2010 entitled "Mineral Resource Estimation, Elsa Tailings Project, Yukon, Canada".
- Historical resources for Silver King were estimated by United Keno Hill Mines Limited, as documented in an internal report entitled "Mineral Resources and Mineable Ore Reserves" dated March 9, 1997. The historical resources were estimated based on a combination of surface and underground drill holes and chip samples taken on the vein and calculated using the polygonal (block) method and the 1997 CIM definitions for resource categories. These estimated historical resources include a total of 55,674 tonnes classified as proven and probable reserves and 43,324 tonnes classified as indicated resources, plus an additional 22,581 tonnes classified as inferred resources. Though believed by Alexco management to be relevant and reliable, this estimate of historical resources has not been verified by Alexco, pre-dates NI 43-101 and is not compliant with NI 43-101 resource categories. Verification of the estimate would require new drill holes into a statistically significant number of the historical resource blocks and/or a combination of on-vein sampling. A qualified person has not done sufficient work to classify this estimate of historical resources as current, nor is Alexco treating this historical estimate as a current mineral resource.
- The disclosure regarding the summary of estimated resources for Alexco's mineral properties within the Keno Hill District has been reviewed and approved by Scott Smith, P.Eng., Bellekeno Mine Manager with Alexco and a Qualified Person as defined by NI 43-101.



2012 Additions to Resources

Deposit	Class ^{1,2,3}	Tonnes	Ag (g/t)	Au (g/t)	Pb (%)	Zn (%)	Ag (Troy ounces)
Flame & Moth ⁴	Indicated	759,000	453	0.39	1.73	6.97	11,054,000
	Inferred	387,000	312	0.26	1.18	4.06	3,882,000
Birmingham ⁵	Indicated	257,000	460	0.06	2.00	2.10	3,800,000
	Inferred	102,000	372	0.09	1.12	1.83	1,220,000

Notes:

1. The effective date of these mineral resource estimates is June 27, 2012. See news release dated June 28, 2012 entitled "Alexco Announces Initial Resource Estimates for Flame & Moth and Birmingham".
2. Mineral resources are not mineral reserves and do not have demonstrated economic viability. All numbers have been rounded to reflect the relative accuracy of the estimates.
3. Reported at a contained metal value cut-off grade of CAD \$185.00/t (1 USD = 1 CAD) using consensus long term metal prices and recoveries developed for the nearby Bellekeno deposit (Ag US\$23.00/oz, recovery 96%; Pb US\$0.95/lb, recovery 97%; Zn US\$0.95/lb, recovery 88%; Au US\$1,350/oz, recovery 72%).
4. Ag grades capped at 1,300 g/t; Pb capped at 10%; Zn capped at 18%; Au grades capped at 1.1 g/t.
5. Ag grades capped at 2,500 g/t for the Birmingham Vein and 2,000 g/t for the Birmingham Footwall Vein; Pb and Zn capped at 10% for both veins; Au grades capped at 0.25 g/t for both veins.

(see appended Summary of Silver Resources slide)



First Half 2012 Production Results

	First Half 2012	Calendar Year 2011
Silver Grade Processed (grams per tonne)	800	834
Ore Tonnes Processed	43,460	81,064
Production: Contained Metal		
Silver (ounces)	1,040,257	2,020,644
Lead (pounds)	8,591,724	16,454,334
Zinc (pounds)	2,856,343	7,220,514



First Half 2012 Financial Results

<i>In \$000s, except per share amounts</i>	First Half 2012	Calendar Year 2011
Revenue	44,310	84,231
Gross Profit	8,958	24,059
Income Before Taxes	(8)	10,590
Net Income	(1,326)	5,979
Earnings Per Share – Basic and diluted	(\$0.02)	\$0.11



Fiscal Results

	First Half <u>2012</u>	Calendar Year <u>2011</u>	Six Month Fiscal Year Ended December 31 <u>2011</u>	Twelve Months Ended June 30 <u>2011</u>
<i>In \$000s, except per share amounts</i>				
Revenue	44,310	84,231	42,515	45,102
Gross Profit	8,958	24,059	10,148	14,853
Income Before Taxes	(8)	10,590	4,496	3,309
Net Income	(1,326)	5,979	1,723	3,097
Earnings Per Share – Basic and diluted	(\$0.02)	\$0.11	\$0.03	\$0.05



Strong Investor Support

- ◆ Trading Symbol: TSX:AXR NYSE-MKT:AXU
- ◆ Issued & Outstanding: 60.4 million shares
- ◆ Fully diluted: 65.2 million shares
- ◆ Institutional Ownership: Approximately 60%
- ◆ Major Shareholders:
 - Sprott Inc.
 - Alexco Directors & Officers
 - Columbia Wanger Asset Mgt.
 - Van Eck Associates
- ◆ Share Price Targets:

Canaccord	C\$8.25/share
Cormark	C\$6.00/share
Global Hunter	US\$5.25/share
Beacon Rock	US\$8.75/share



Operating Structure



Bellekeno Operations Flowsheet

Underground Ore Stope



Drill/Blast Ore



Load Ore



Ore Haulage



Flotation



Classification



Grinding



Crushing



Thickening/Filtration



Concentrate Storage



Concentrate Shipment
(Ag, Pb, Zn)



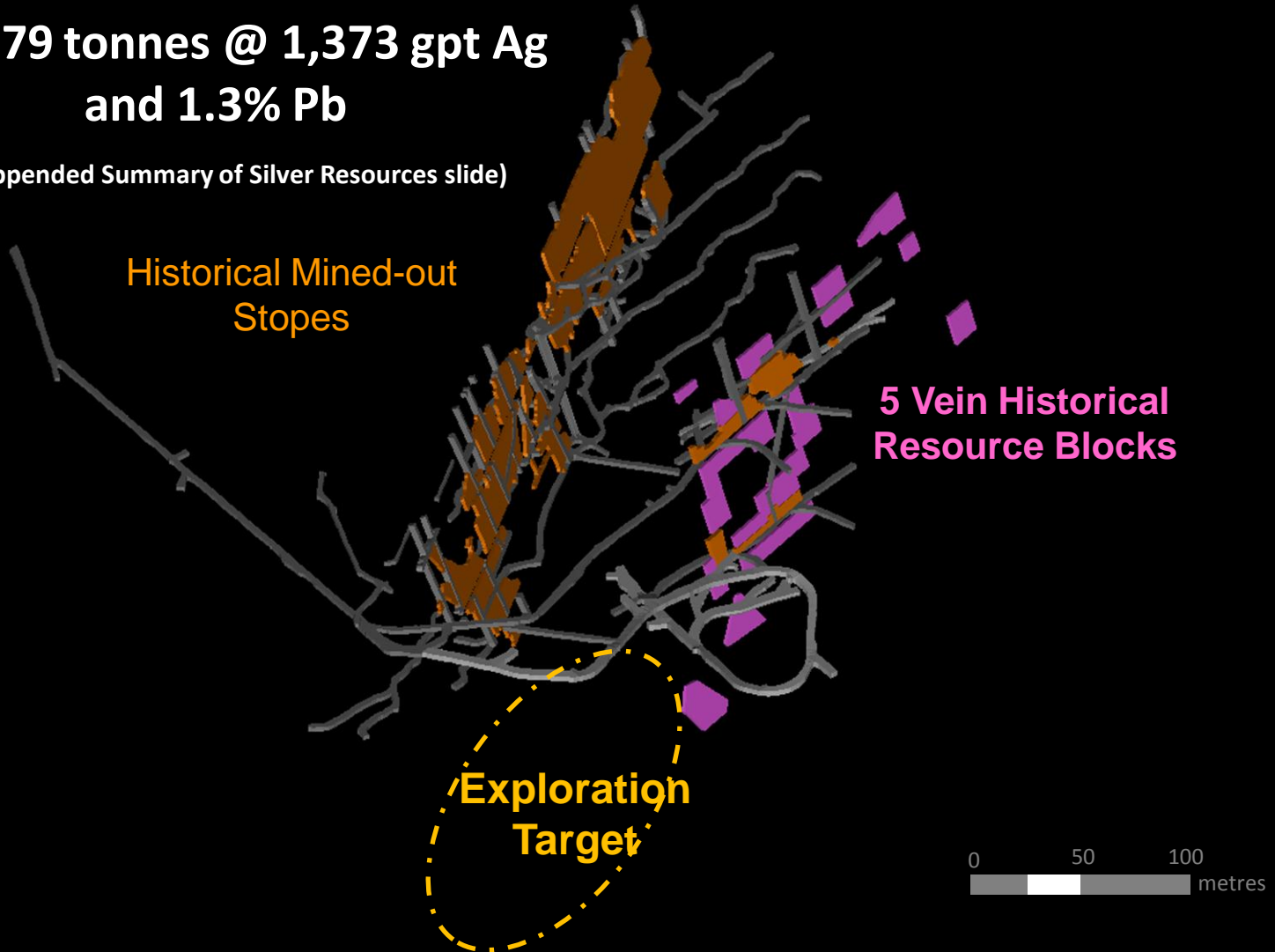
Dry Stack Tailings
Storage



Silver King: Development Planning

**Historical Resource:
121,579 tonnes @ 1,373 gpt Ag
and 1.3% Pb**

(see appended Summary of Silver Resources slide)

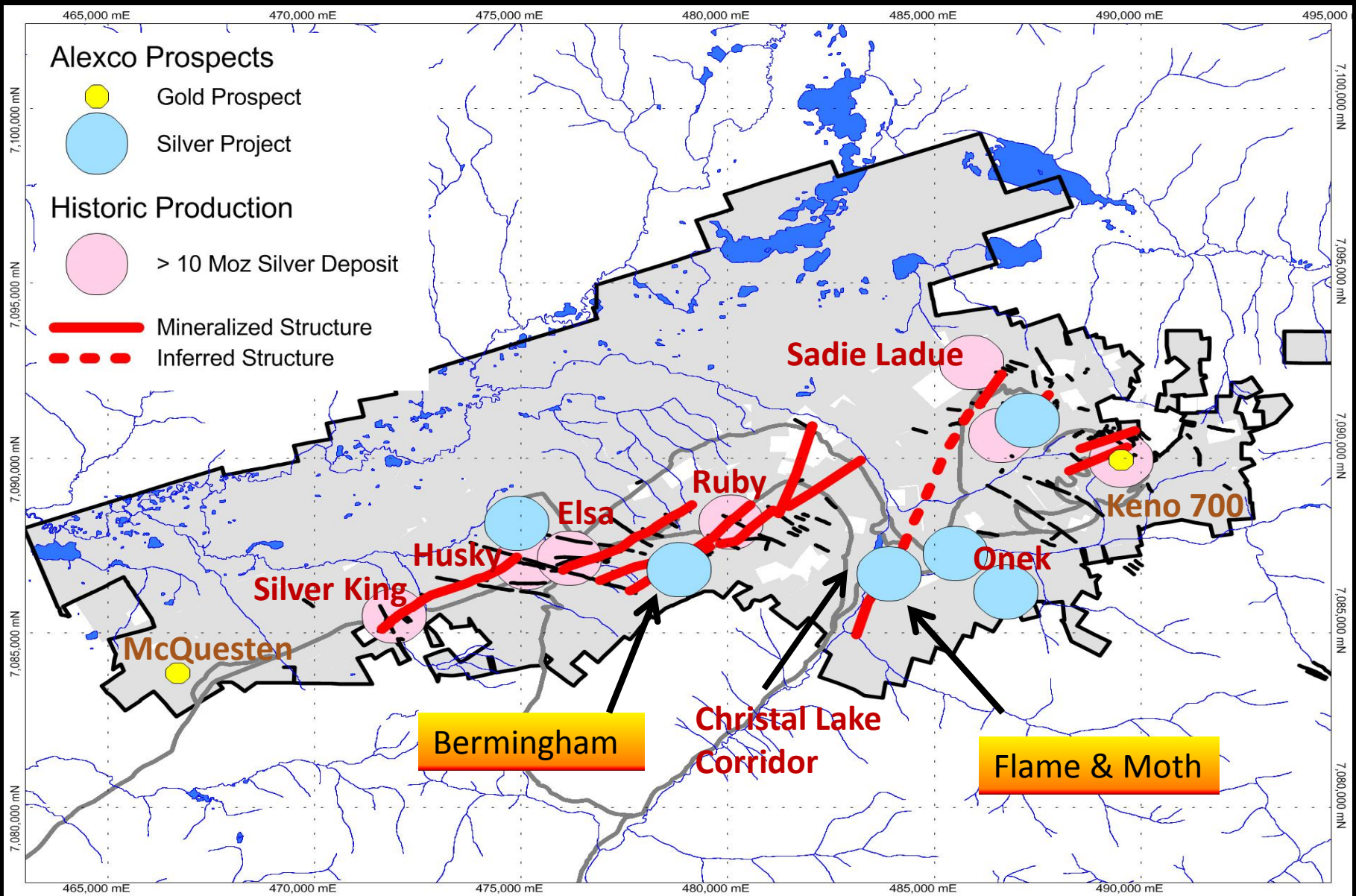




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2012 Surface Exploration Targets

23,000 m Surface Drilling

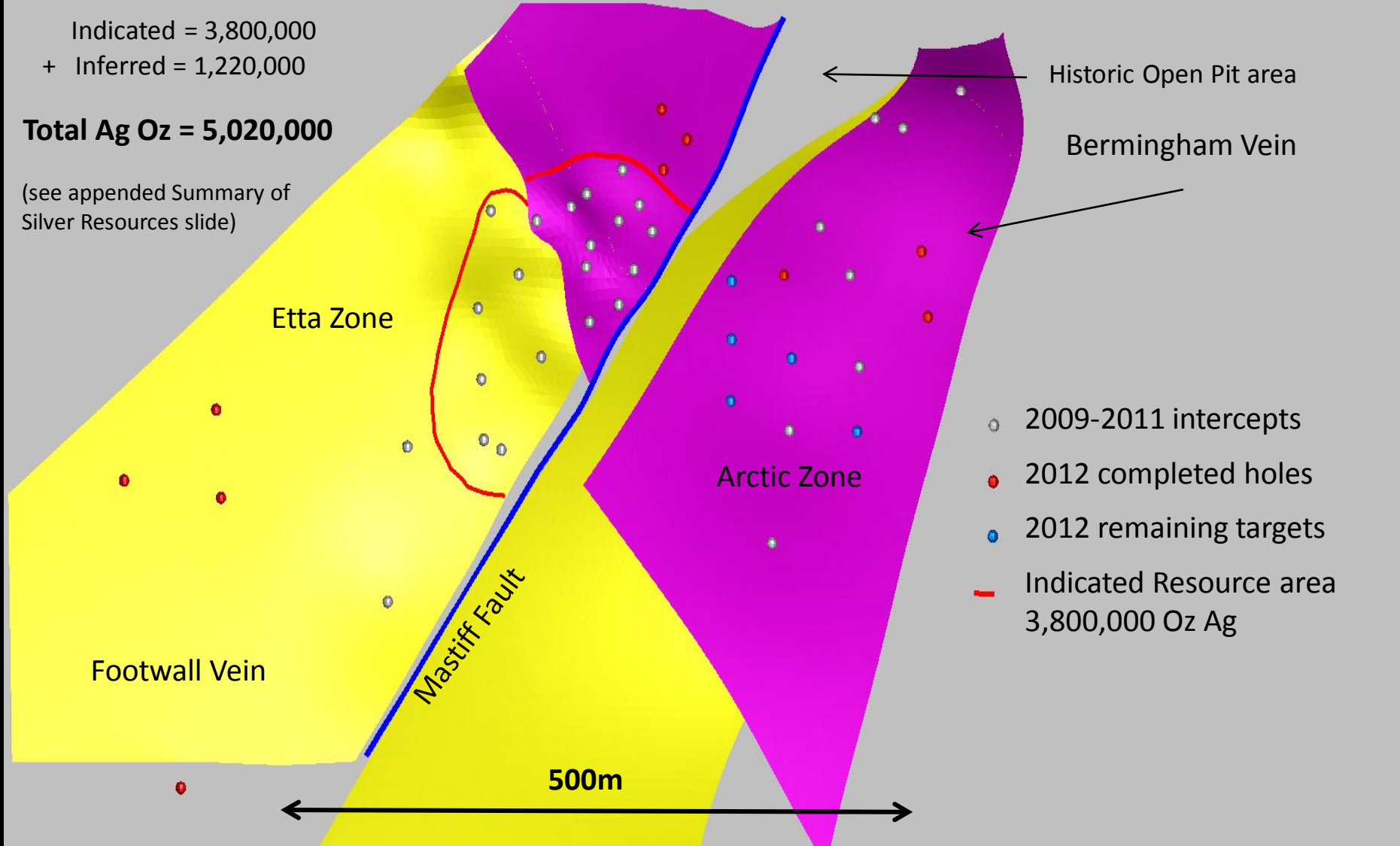




2012 Bermingham update

Longitudinal Section of Bermingham veins viewed to NW

Indicated = 3,800,000
 + Inferred = 1,220,000
Total Ag Oz = 5,020,000
 (see appended Summary of Silver Resources slide)



- 2009-2011 intercepts
- 2012 completed holes
- 2012 remaining targets
- Indicated Resource area 3,800,000 Oz Ag

Management

SENIOR MANAGEMENT

- | | |
|----------------------------------|--|
| Clynton R. Nauman, B.Sc. (Hons.) | - President & CEO |
| Brad A. Thrall, B.Sc., MBA | - Executive Vice President & COO |
| David E. Whittle, C.A. | - Senior Vice President & CFO |
| Al McOnie | - Vice President, Exploration |
| Tim Hall, B.Sc. | - Vice President – General Manager, Keno Hill District |
| Rob McIntyre, RET, CCEP | - Vice President , Corporate Affairs & Communications |
| Jim Harrington, M.Sc. | - President, Alexco Environmental Group |

BOARD OF DIRECTORS

- George Brack, Chairman
- Michael Winn
- David H. Searle, C.M., Q.C.
- Terry Krepiakevich, C.A.
- Rick Van Nieuwenhuysse, M.Sc.
- Rick Zimmer
- Clynton R. Nauman, B.Sc. (Hons.)



Qualified Persons & Cautionary Note

Concerning Reserve & Resources Estimate

Except where specifically indicated otherwise, the disclosure in this presentation of scientific and technical information regarding exploration projects on Alexco's mineral properties has been reviewed and approved by Alan McOnie, FAusIMM, Vice President, Exploration, while that regarding mine development and operations has been approved by Scott Smith, P.Eng., Bellekeno Mine Manager, both of whom are Qualified Persons as defined by National Investment 43-101 - Standards of Disclosure for Mineral Projects ("NI 43-101"). All material technical information included herein has previously been disclosed by Alexco, and the viewer is particularly directed to the company's most recently filed AIF and U.S. Form 40-F and its most recently filed interim and annual financial reports; as well as the remaining filings completing Alexco's continuous disclosure records.

This presentation has been prepared in accordance with the requirements of the securities laws in effect in Canada, which differ from the requirements of U.S. securities laws. Unless otherwise indicated, all resource and reserve estimates included in this presentation have been prepared in accordance with NI 43-101 and the Canadian Institute of Mining and Metallurgy Classification System. NI 43-101 is a rule developed by the Canadian Securities Administrators which establishes standards for all public disclosure an issuer makes of scientific and technical information concerning mineral projects. NI 43-101 permits the disclosure of an historical estimate made prior to the adoption of NI 43-101 that does not otherwise comply with NI 43-101, using the historical terminology, if the disclosure: (a) identifies the source and date of the historical estimate; (b) comments on the relevance and reliability of the historical estimate; (c) to the extent known, provides the key assumptions, parameters and methods used to prepare the historical estimate; (d) states whether the historical estimate uses categories other than those prescribed by NI 43-101 and if so includes an explanation of the differences; (e) includes any more recent estimates or data available to the issuer; (f) comments on what work needs to be done to upgrade or verify the historical estimate as current mineral resources or mineral reserves; and (g) states with equal prominence that a qualified person has not done sufficient work to classify the historical estimate as current mineral resources or mineral reserves and that the issuer is not treating the historical estimate as current mineral resources or mineral reserves.

Canadian standards, including NI 43-101, differ significantly from the requirements of Industry Guide 7 promulgated by the United States Securities and Exchange Commission ("SEC") under the United States Securities Act of 1933, as amended, and resource and reserve information contained herein may not be comparable to similar information disclosed by U.S. companies. In particular, and without limiting the generality of the foregoing, the term "resource" does not equate to the term "reserves". Under U.S. standards, mineralization may not be classified as a "reserve" unless the determination has been made that the mineralization could be economically and legally produced or extracted at the time the reserve determination is made. The SEC's disclosure standards under Industry Guide 7 do not define the terms and normally do not permit the inclusion of information concerning "measured mineral resources", "indicated mineral resources" or "inferred mineral resources" or other descriptions of the amount of mineralization in mineral deposits that do not constitute "reserves" by U.S. standards in documents filed with the SEC. U.S. Investors should also understand that "inferred mineral resources" have a great amount of uncertainty as to their existence and great uncertainty as to their economic and legal feasibility. It cannot be assumed that all or any part of an "inferred mineral resource" will ever be upgraded to a higher category. Under Canadian rules, estimated "inferred mineral resources" may not form the basis of feasibility or pre-feasibility studies except in rare cases. Investors are cautioned not to assume that all or any part of an "inferred mineral resource" exists or is economically or legally mineable.

Disclosure of "contained ounces" in a resource is permitted disclosure under Canadian regulations; however, the SEC normally only permits issuers to report mineralization that does not constitute "reserves" by SEC standards as in place tonnage and grade without reference to unit measures. The requirements of NI 43-101 for identification of "reserves" are also not the same as those of the SEC's Industry Guide 7, and reserves reported by the Corporation in compliance with NI 43-101 may not qualify as "reserves" under Industry Guide 7 standards. Accordingly, information concerning mineral deposits set forth herein may not be comparable with information made public by companies that report in accordance with U.S. standards.



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