

NYSE.MKT : AXU

TSX : AXR



ALEXCO

Leverage

September 2016

CAUTIONARY NOTE REGARDING FORWARD-LOOKING INFORMATION

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 the need for and timing of any future offerings, any shelf prospectus supplements that may be filed, planned exploration and development of Alexco’s properties, plans related to its business, anticipated use of proceeds, the silver streaming agreement with Silver Wheaton Corp. (“Silver Purchase Agreement”), its impact on Alexco and the Keno Hill Silver District and the parties’ rights, obligations and conditions thereunder, 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 anticipated timing of making a production decision in the Eastern Keno Hill Silver District including recommencement of production at the Bellekeno mining operation, 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, uses of funds and other matters that may occur in the future, made as of the date of this presentation.

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 regulatory approval of any proposed offering; including any shelf prospectus supplement filings; risks related to Alexco’s ability to raise additional capital; the parties’ performance under the Silver Purchase Agreement; success and timing of regulatory approvals; 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; delays in obtaining governmental approvals or financing or in the completion of development activities; and risk related to the Company’s ability to obtain additional financing needed to fund certain contingent payment obligations or the US\$20 million payment to Silver Wheaton on reasonable terms or at all. 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 20-F, and various of its other continuous disclosure documents filed with the applicable securities regulatory agency.

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) additional financing needed to fund certain contingent payment obligations and the US\$20 million payment to Silver Wheaton will be available on reasonable terms; (2) additional financing needed for the capacity related refund under the Silver Purchase Agreement with Silver Wheaton will be available on reasonable terms; (3) additional financing needed for further exploration and development work on the Corporation’s properties will be available on reasonable terms (4) the proposed development of its mineral projects will be viable operationally and economically and proceed as planned; (5) 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 KHSD PEA, (6) the actual nature, size and grade of its mineral resources are materially consistent with the resource estimates reported in the supporting technical reports; (7) labor and other industry services will be available to the Corporation at prices consistent with internal estimates; (8) the continuances of existing and, in certain circumstances, proposed tax and royalty regimes; (9) that other parties will continue to meet and satisfy their contractual obligations to the Corporation; and (10) that regulatory approval of any shelf prospectus filings or any other offerings will be obtained in a timely fashion. Forward-looking information contained in this presentation about prospective financial performance, financial position or cash flows is based on assumptions about future events, including economic conditions and proposed courses of action, based on management’s assessment of the relevant information currently available. To the extent that such information may constitute a financial outlook within the meaning of applicable securities laws, such information has been approved by management and is provided for the purposes of providing information relating to management and Alexco’s current expectations and plans. Readers are cautioned that any such financial outlook

PRELIMINARY ECONOMIC ASSESSMENT CAUTIONARY STATEMENT

The material scientific and technical information in respect of Alexco’s Keno Hill Silver District Project in the presentation is based upon information contained in the technical report dated December 10, 2014, entitled “Updated Preliminary Economic Assessment for the Keno Hill Silver District Project – Phase 2, Yukon, Canada” (the “PEA”). Readers are encouraged to read the PEA, which is available under the Company’s profile on SEDAR, for detailed information concerning the Keno Hill Silver District.

Readers are cautioned that mineral resources are not mineral reserves and do not have demonstrated economic viability. The PEA is preliminary in nature. While the consolidated mine production under the PEA is derived primarily from indicated mineral resources, approximately 6% is derived from inferred mineral resources. There is no certainty that the PEA will be realized, and it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. Although the PEA contemplates an initial development and construction period beginning in the first quarter of 2015, with startup of commercial production in the third quarter of 2015, commencement of development and construction remains dependent on Alexco making a development decision, which would be dependent on a number of factors, including but not limited to expectations regarding market prices for silver, lead, zinc and gold as well as the US-Canadian dollar exchange rate, and the availability of development capital. Additionally, a production decision which is made without a feasibility study of mineral reserves demonstrating economic and technical viability carries additional potential risks which include, but are not limited to, the risk that additional detailed work may be necessary with respect to mine design and mining schedules, metallurgical flow sheets and process plant designs, and the noted inherent risks pertaining to the inclusion of approximately 6% inferred mineral resources in the mine plan.

Share Price Leverage to Silver – 1 year



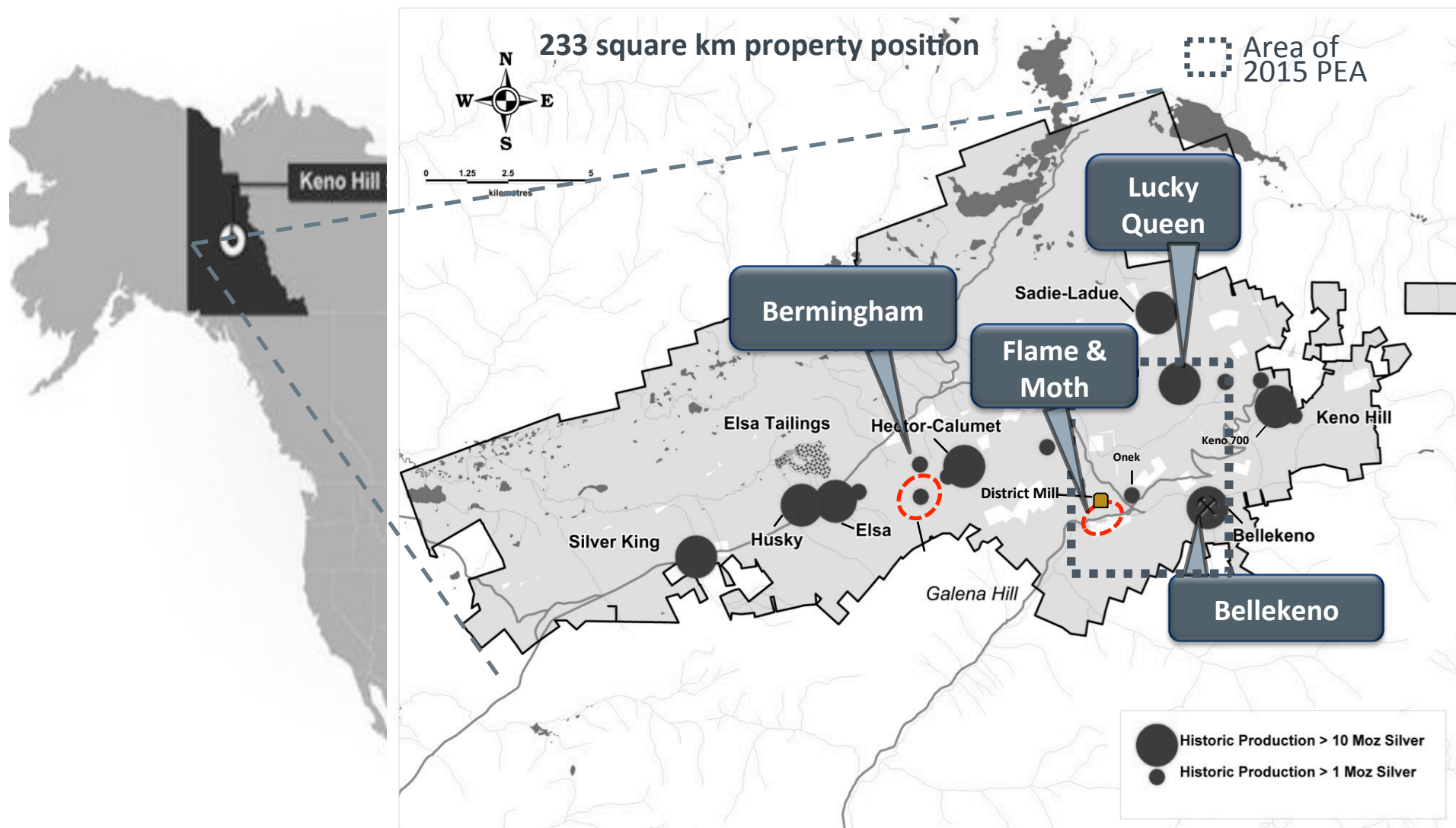
Alexco Fundamentals

- 100% owner of high grade silver district in safe jurisdiction
- Current 6-year, 3 million oz annual silver production mine plan, to be updated in Q4
- Capitalized, built, 7 month runway to production
- Excellent exploration results
 - Material discoveries
 - Ongoing drill program
 - Resource update in Q4 2016
- Strong cash position, no debt
- Profitable environmental services business
- Undervalued, with leverage



Keno Hill Silver District – Yukon, Canada

Large Land Holding



Please see slide #2 for PEA cautionary statement

Keno District – Ready to Resume Production

FACILITIES AND INFRASTRUCTURE ESTABLISHED

Bellekeno, Flame & Moth, Lucky Queen
2015 PEA Tonnes and Grade

Tonnes	Silver (g/t)	Gold (g/t)	Lead (%)	Zinc (%)
812,900	754	0.4	2.71	4.53

Wildcard.....Birmingham?

2015 Preliminary Economic Assessment – 6 year production *(see slide #2)*

- Design capacity – 407 tonnes per day
- 3 million ounces silver production annually
- Silver recovery – 93%
- Lead recovery – 91%
- Silver to lead concentrate – 90%
- Targeted AISC estimated at \$14.50
- Silver Wheaton streaming arrangement under discussion

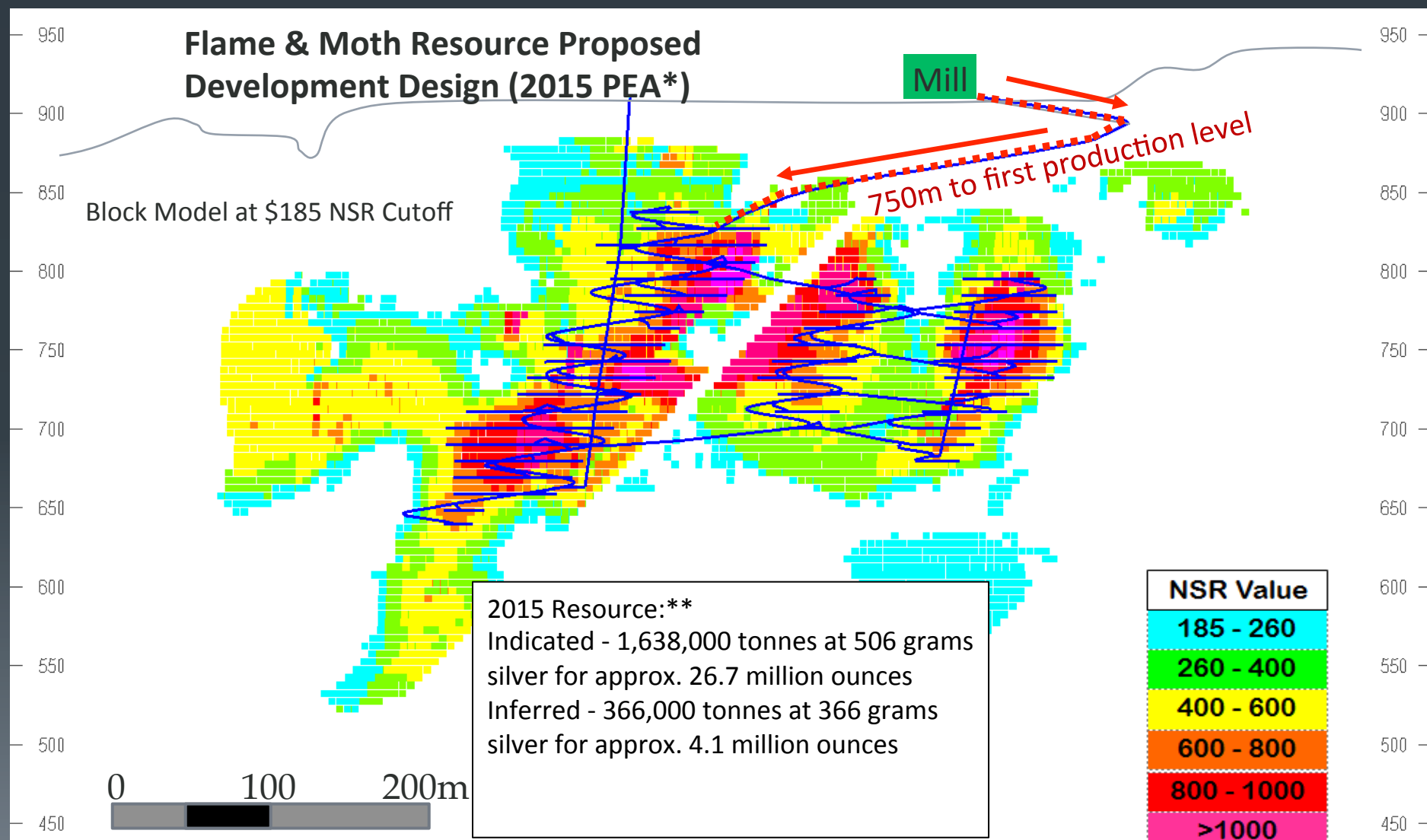
A Cornerstone Asset: Flame & Moth

2016 Work....Ongoing

- Quartz Mining Licence complete
- Portal established
- Immediately adjacent to district mill
- Mill maintenance and upgrades ongoing
- Recommissioning of underground equipment
- Water Use Licence expected in Q4



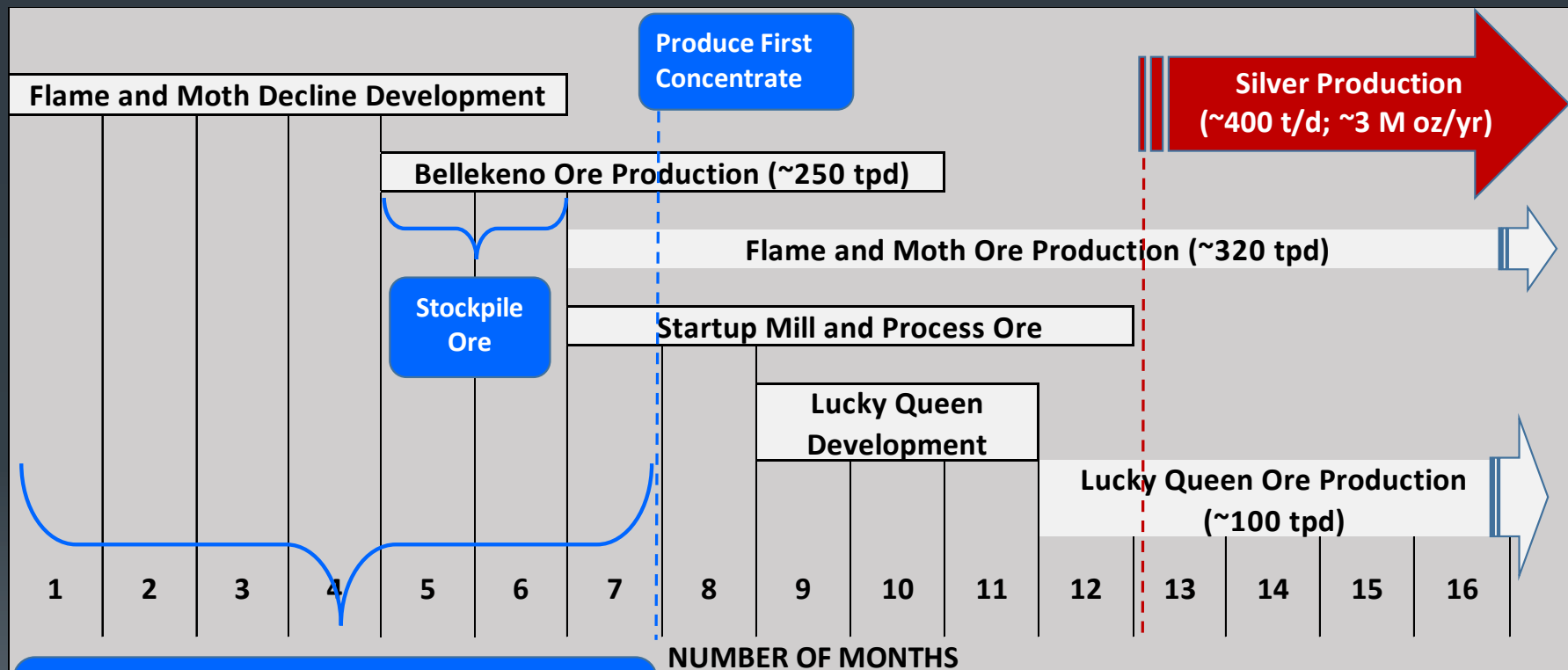
A Cornerstone Asset: Flame & Moth



*Please see slide #3 for PEA cautionary statement

**Please see Mineral Resources on Alexco's website for full mineral resource

Development Timeline



Development Costs and Working Capital *
\$20 million

Wildcard..... BERMINGHAM?

* Please see News Release dated December 23, 2014 entitled "Alexco Updates Positive Preliminary Economic Assessment for Expanded Silver Production from Keno Hill Silver District"

2016 Exploration Update- Bermingham

- Completed 11,800 meters in 36 holes – 15,500 meters planned
- Complete assay results for 18 holes to date

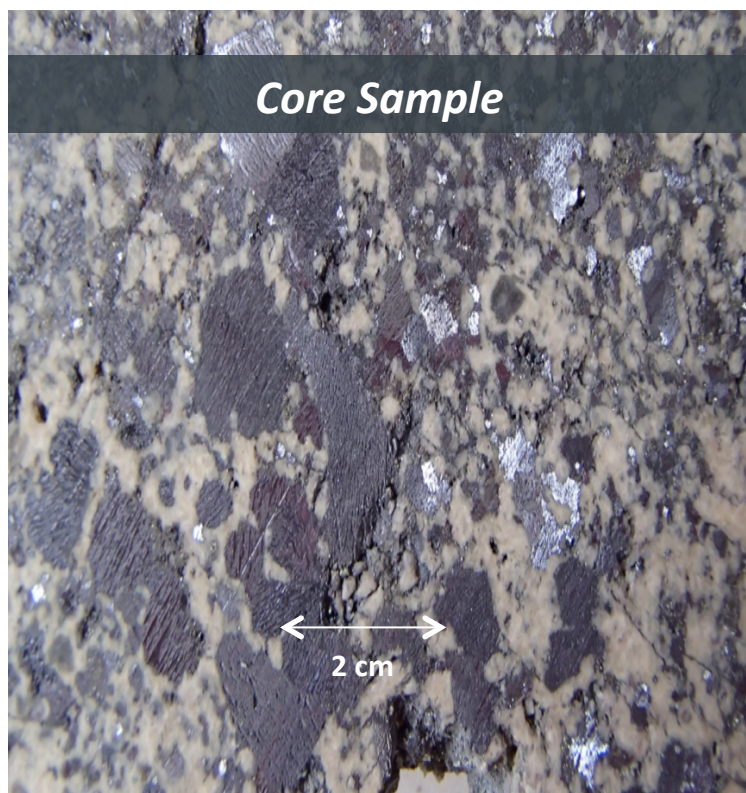
Interim Summary

- **Bermingham high grade Bear Zone (BZ) confirmed and expanded**
 - BZ Extended +100m to 250m down plunge extent, remains open at depth
 - Approximately 40 meters plunge width
 - Averages approx. 4.0m true thickness (range 1.3m - 7.5m true thickness)
- Grade composites over true thicknesses range:
 - 0.5 to > 7.4 **kilograms** silver per tonne and,
 - Up to 10 **kilograms** silver per tonne (over 3.5 meters)
- High grade zone enveloped by mineralized zone containing up to 0.7kg Ag per tonne
- Vein structural geometry similar to Hector Calumet emerging, deeper targets to HC stratigraphy yet to be tested
- Hydrogeological, geotechnical, metallurgical and waste rock characterization underway to support permitting
- Updated mineral resource estimate in Q4 2016

The Bear Zone, Birmingham



Birmingham Assay: 866.6 oz/t Silver
Drill Hole K-15-0580 (307.8m)

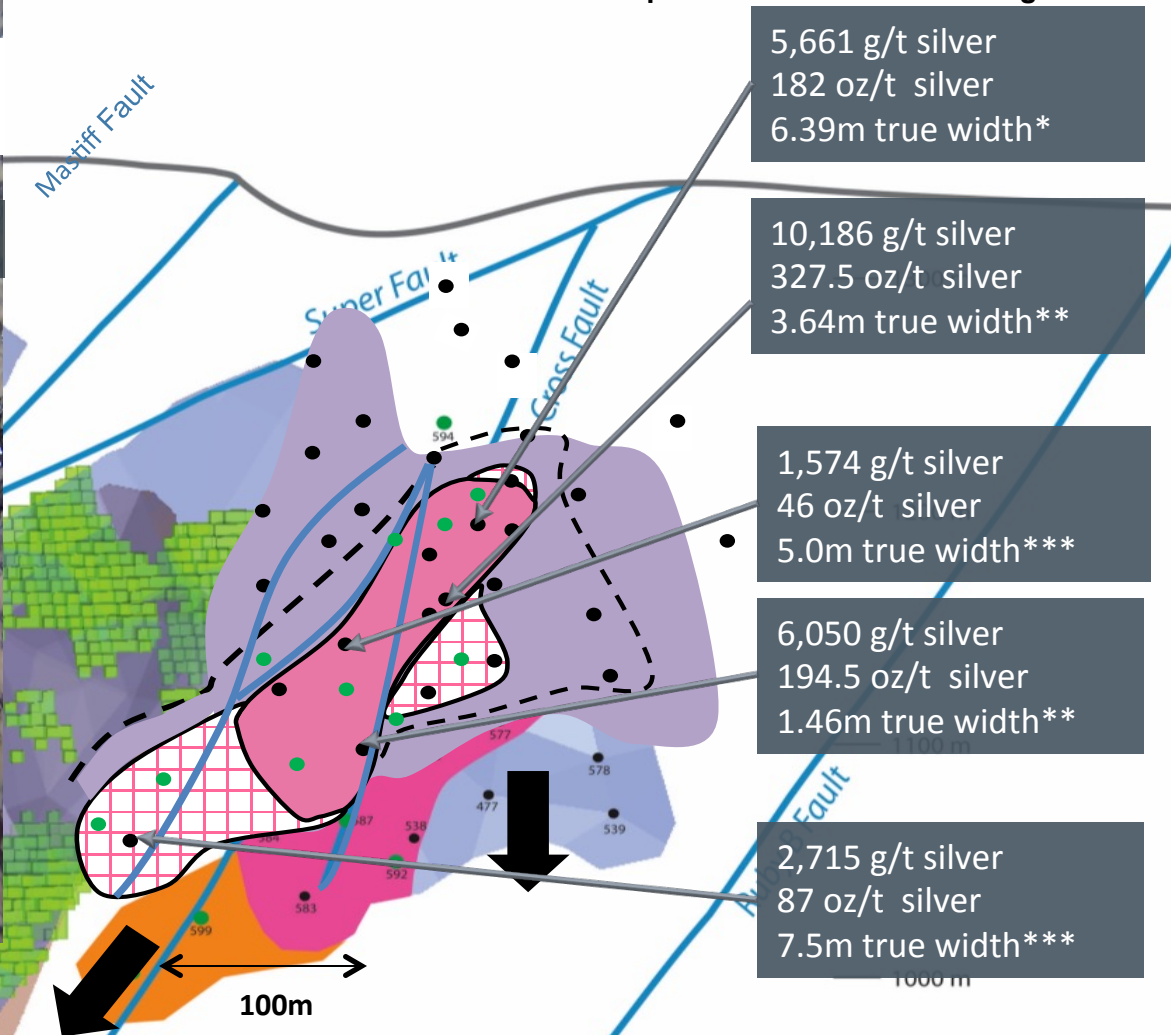


Core Sample

2 cm

● Assays pending

Schematic Oblique Vertical Section Looking NW

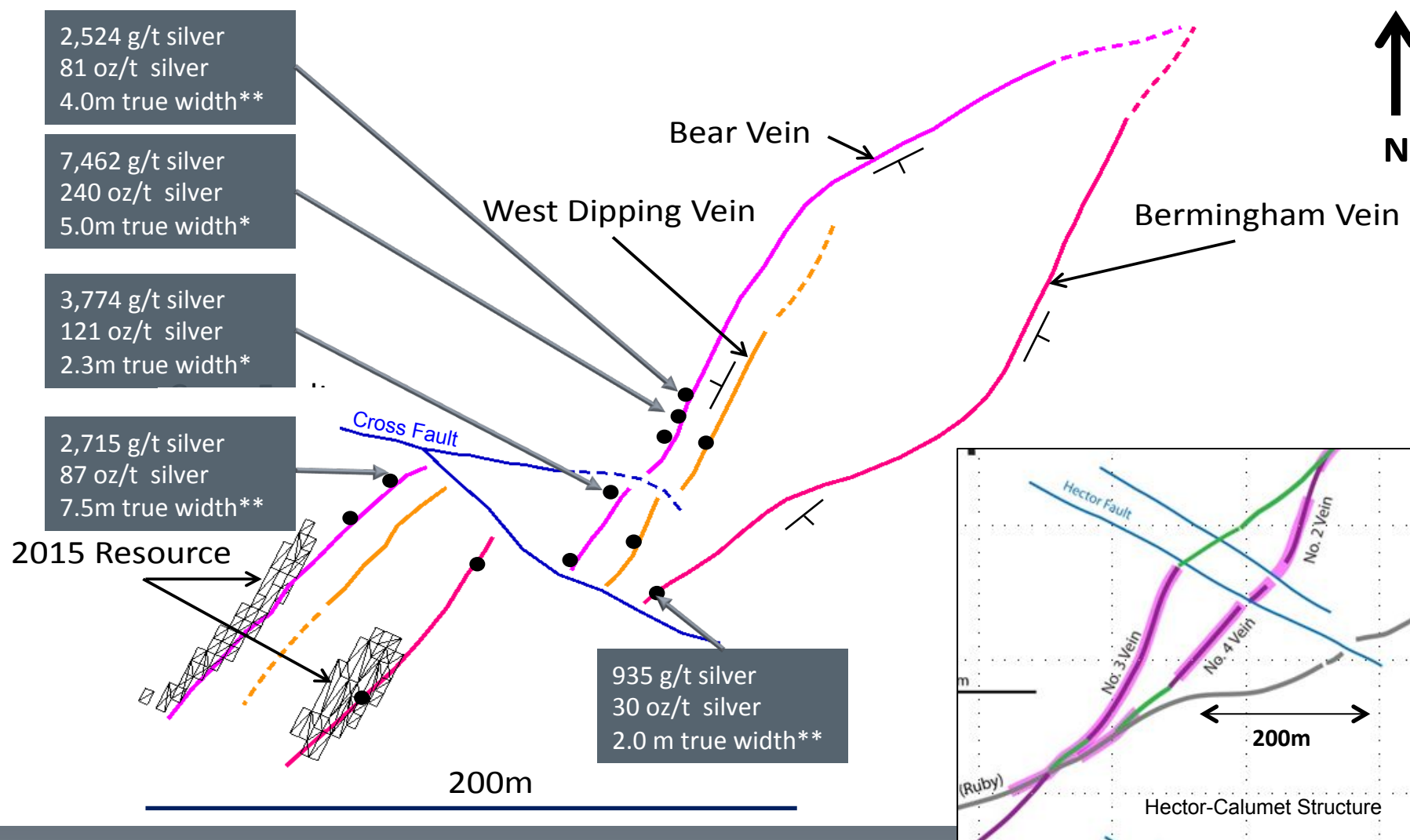


*Please see News Release dated November 5, 2014 titled "Alexco Drills Best Hole Ever: Intersects 5,667 Grams Per Tonne Silver Over 6.39 Meters (true width) at Birmingham; Mineralization Extended and Remains Open"

**Please see News Release dated September 17, 2015 titled "Alexco Drills 5 meters (True Width) of 7,462 grams per tonne Silver (240 ounces per tonne) at Birmingham, Along with Other Significant Silver Intercepts"

***Please see News Release dated September 13, 2016 titled "Alexco Confirms, Expands High Grade Silver Zone at Birmingham Deposit; Drilling Continues"

Birmingham Plan View 1,025m Elevation (schematic)



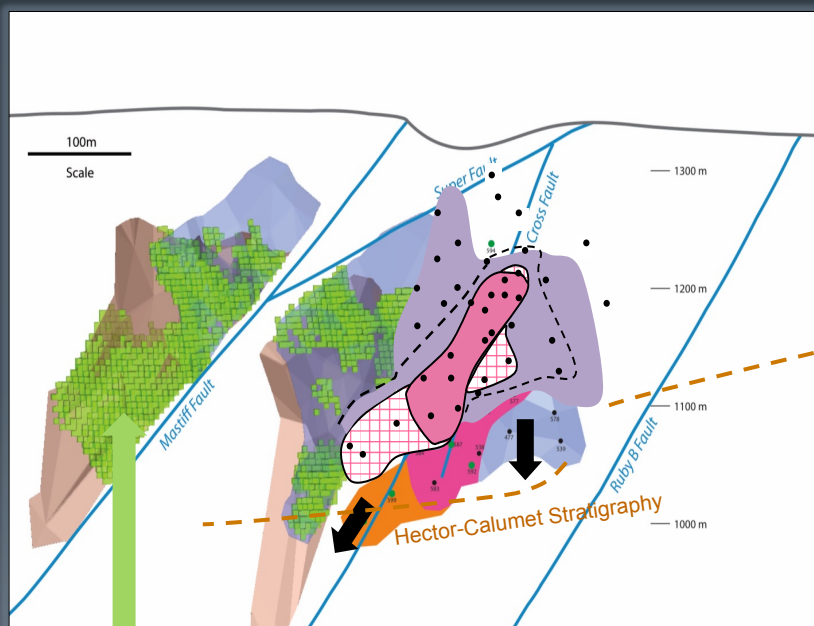
*Please see News Release dated September 17, 2015 titled "Alexco Drills 5 meters (True Width) of 7,462 grams per tonne Silver (240 ounces per tonne) at Birmingham, Along with Other Significant Silver Intercepts"

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Birmingham: In the Right Neighborhood

Birmingham

1 kilometer

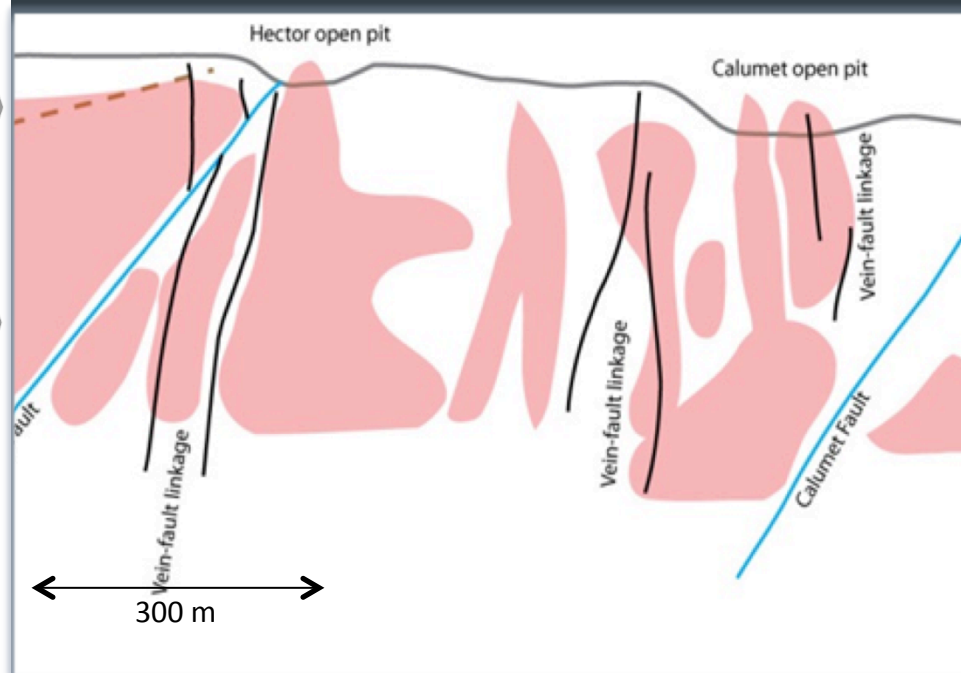


Current Resource
5.2M Indicated Ounces

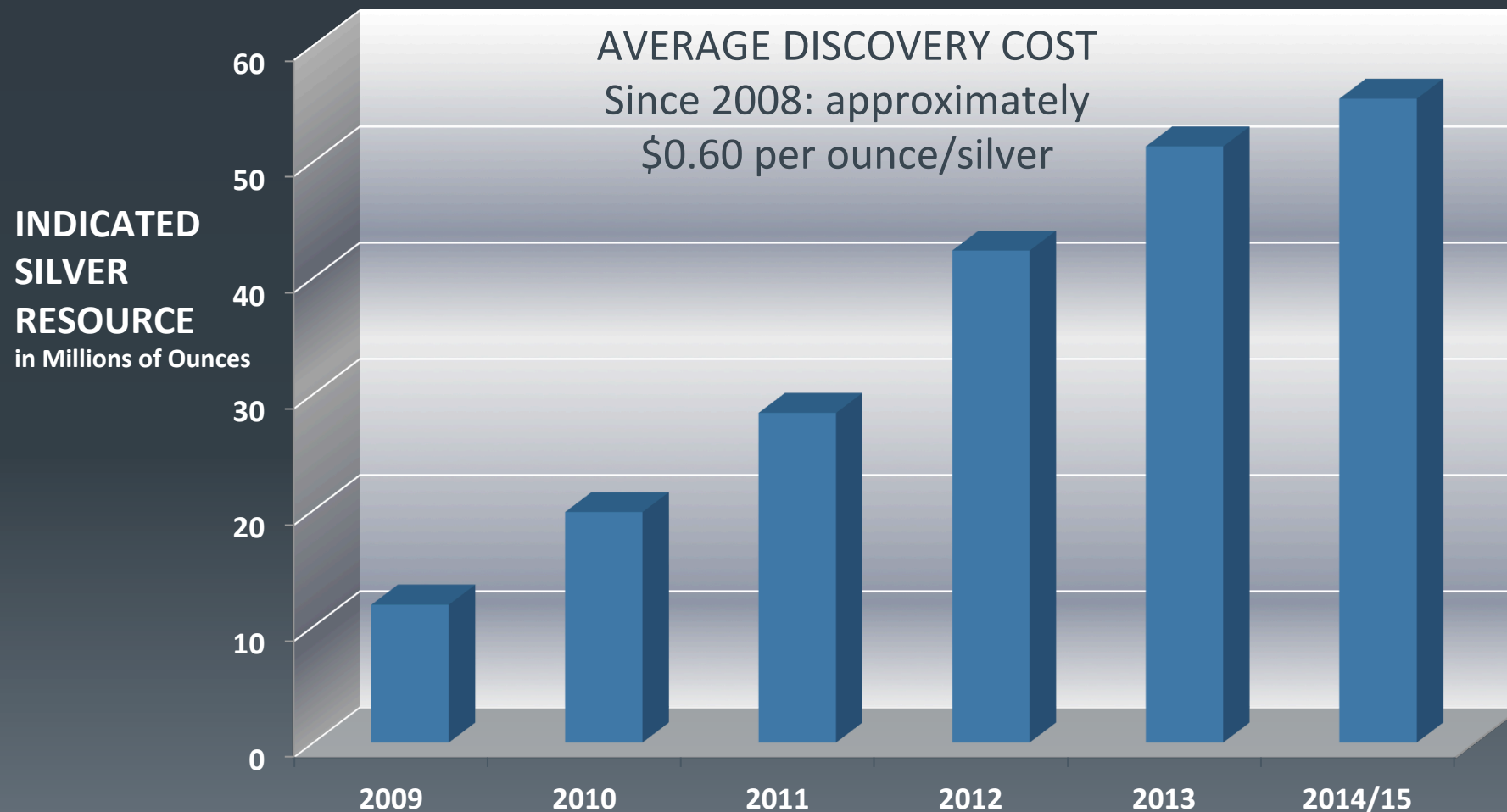
Historical Production
96M Ounces



Hector-Calumet



Building Value Through Exploration



Please see Summary of Silver Resources on Alexco's website for full mineral resource disclosure

Alexco News Flow -- next 6 months

- Continuing assay results from 2016 Bermingham exploration program
- Updated Preliminary Economic Assessment in Q4 2016:
 - Incorporate updated resource estimate for Bermingham and Flame & Moth
 - Optimized multi-mine development and production plan, outlining expected total tonnage and annual silver production
 - Updated CapEx and estimated costs of production
- Decision on initiating development

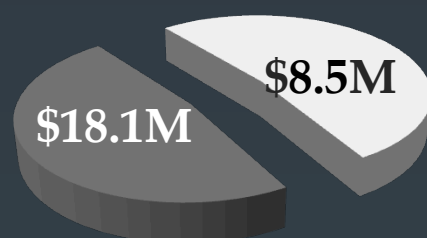


Financial Stability

June 30, 2016

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Cash Position



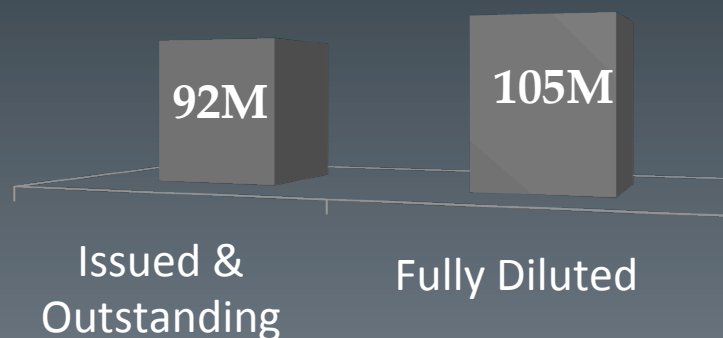
■ Unrestricted Cash ■ Restricted Cash

Unrestricted cash includes \$2.2 million of flow through dollars – 2016 Exploration

Working Capital



Current Share Structure



Alexco Environmental Group (AEG)

Successful Environmental Business

- 2015 revenue - \$14.7 million with a 22% profit margin
- Six months ended June 30, 2016 revenue - \$5.8 million with a 25% profit margin
- Experienced management team
- Patented remediation technologies
- \$100+ million backlog



Gold King Site (CO)
EMERGENCY/INTERIM
WATER TREATMENT FACILITY



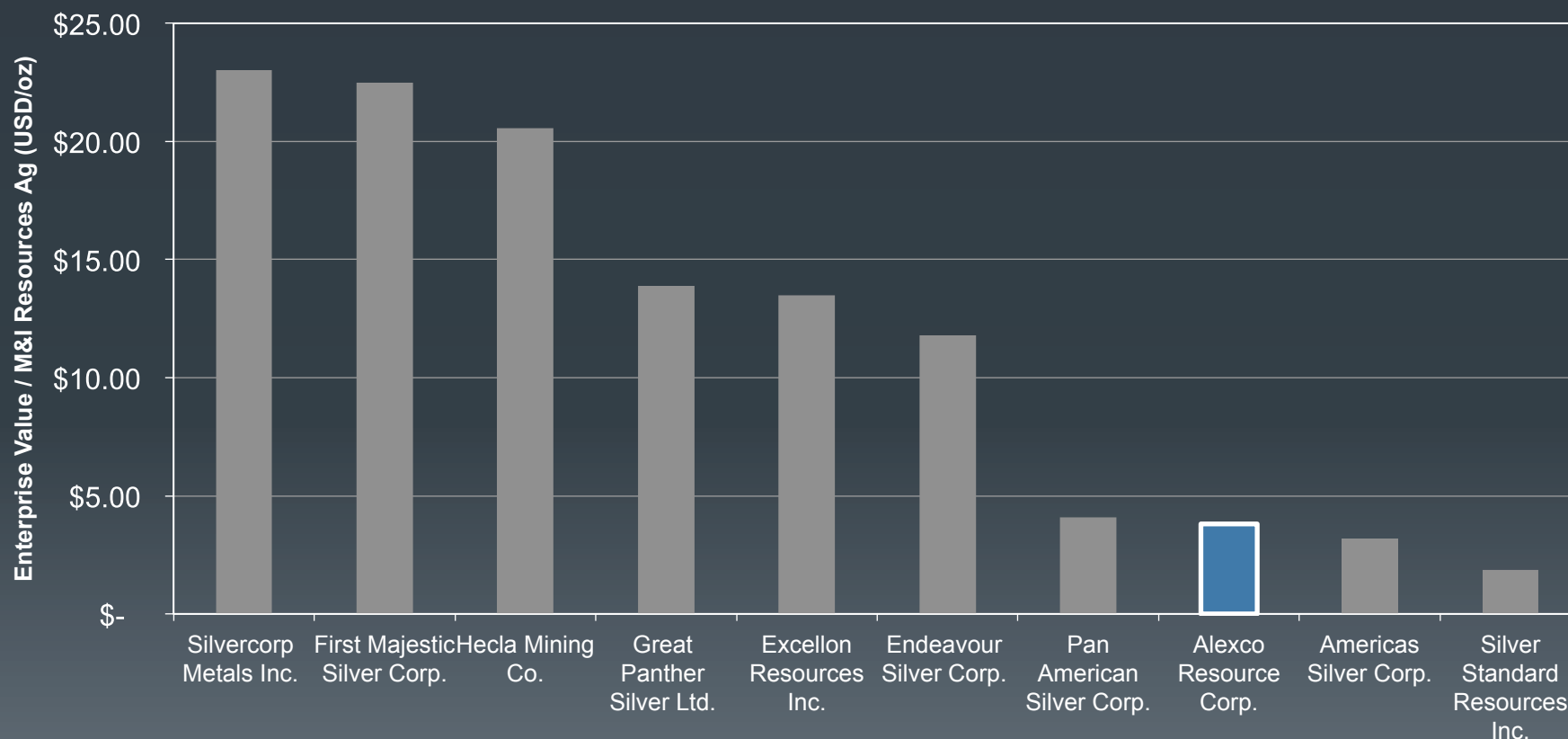
Globeville Smelter (CO)
RESTORING LEGACY
BROWNFIELD LAND TO
NEW USE

Signature Projects:

- Globeville Smelter (CO)
- Gold King (CO)
- Keno Hill (Yukon)

Attractive Valuation: Silver Resource

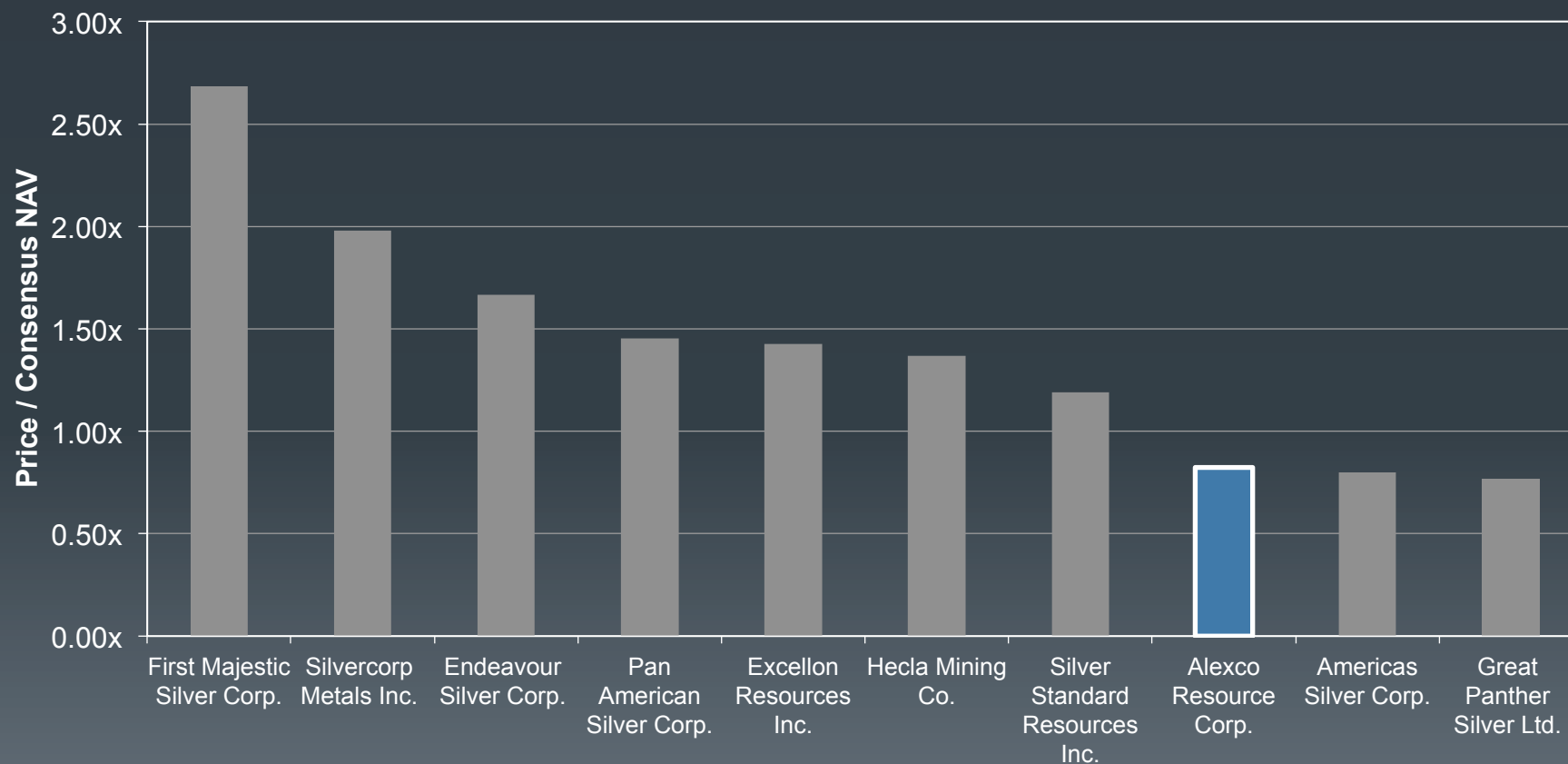
Enterprise Value / M&I Resources Ag (oz)*



*As of September 9, 2016 and based on most recently available public disclosure documents. Market data used in this presentation may be based on independent reports by market research firms, or other published independent sources. Some data is also based on Alexco's good faith estimates that are derived from its review of internal data and information. Although Alexco believes these sources are reliable, Alexco has not independently reviewed the information and cannot guarantee its accuracy or completeness.

Attractive Valuation: NAV per share*

Price / Consensus NAVPS*



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The Alexco Opportunity



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- Current 6-year, 3 million oz annual silver production mine plan, to be updated in Q4
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- Strong cash position, no debt
- Profitable environmental services business
- Undervalued, with leverage

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 at Alexco, while that regarding mine development and operations has been approved by Scott Smith, P.Eng., former Bellekeno Mine Manager, both of whom are Qualified Persons as defined by National Instrument 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 reader 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 record as filed with applicable securities and regulatory agencies.

This presentation has been prepared in accordance with the requirements of applicable securities laws in effect in Canada, which differ from the requirements of U.S. securities laws. Unless otherwise indicated, all mineral resource and mineral 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.

This presentation and the documents incorporated by reference herein have been prepared in accordance with the requirements of the securities laws in effect in Canada, which differ from the requirements of United States securities laws. The terms "mineral reserve", "proven mineral reserve" and "probable mineral reserve" are Canadian mining terms as defined in accordance with Canadian National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and the Canadian Institute of Mining, Metallurgy and Petroleum (the "CIM") – CIM Definition Standards on Mineral Resources and Mineral Reserves, adopted by the CIM Council, as amended. These definitions differ from the definitions in the SEC's Industry Guide 7 under the United States Securities Act of 1933, as amended. Under SEC Industry Guide 7 standards, mineralization cannot be classified as a "reserve" unless the determination has been made that the mineralization could be economically and legally extracted at the time the reserve determination is made. As applied under SEC Industry Guide 7, a "final" or "bankable" feasibility study is required to report reserves, the three-year historical average price is used in any reserve or cash flow analysis to designate reserves, and all necessary permits and government authorizations must be filed with the appropriate governmental authority.

In addition, the terms "mineral resource", "measured mineral resource", "indicated mineral resource" and "inferred mineral resource" are defined in and required to be disclosed by NI 43-101; however, these terms are not defined terms under SEC Industry Guide 7 and are normally not permitted to be used in reports and registration statements filed with the SEC. Investors are cautioned not to assume that all or any part of a mineral deposit in these categories will ever be converted into reserves. "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, estimates of 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 Industry Guide 7 standards as in place tonnage and grade without reference to unit measures.

Accordingly, information concerning mineral deposits contained in this presentation and the documents incorporated by reference herein may not be comparable to similar information made public by U.S. companies subject to the reporting and disclosure requirements under the United States federal securities laws and the rules and regulations thereunder.

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