Technical Report on the Bermingham Deposit, Bermingham Property, Keno Hill District, Yukon

Report Prepared for

Alexco Resource Corp.

Report Prepared by

SRK Consulting (Canada) Inc.
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Technical Report on the Bermingham Deposit, Bermingham Property, Keno Hill, Yukon

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Cover: Photo of Bermingham Open Pit looking west.

Important Notice

This report was prepared as a National Instrument 43-101 Technical Report for Alexco Resource Corp. (Alexco) by SRK Consulting (Canada) Inc. (SRK). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in SRK's services, based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use by Alexco subject to the terms and conditions of its contract with SRK and relevant securities legislation. The contract permits Alexco to file this report as a Technical Report with Canadian securities regulatory authorities pursuant to National Instrument 43-101, Standards of Disclosure for Mineral Projects. Except for the purposes legislated under provincial securities law, any other uses of this report by any third party is at that party's sole risk. The responsibility for this disclosure remains with Alexco. The user of this document should ensure that this is the most recent Technical Report for the property as it is not valid if a new Technical Report has been issued.

Executive Summary

The Bermingham prospect is a silver deposit in the historic Keno Hill silver-lead district located near Mayo, Yukon Territory. While successfully mined in the past to a shallow depth, renewed exploration by Alexco Resource Corp (Alexco) has outlined a new area of silver-lead-zinc mineralization with sufficient confidence to produce a geological interpretation and vein wireframes for a resource estimate. SRK Consulting (Canada) Inc. (SRK) constructed a mineral resource model during the second quarter of 2012 using a geostatistical block modeling approach. Mineral resources are classified as Indicated and Inferred, following the Canadian Institute of Mining & Metallurgy (CIM) Definition Standards for Mineral Resources and Mineral Reserves (December 2005) guidelines.

This technical report documents the mineral resource estimate for the Bermingham prospect. It was prepared following the guidelines of the Canadian Securities Administrators National Instrument 43-101 and Form 43-101F1, and in conformity with generally accepted CIM “Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines”.

Property Description, Location, Access, and Physiography

The Bermingham property is located in the Mayo Mining District, approximately 350 kilometres (km) north of Whitehorse, Yukon Territory, within the Keno Hill mining district. Mayo is accessible from Whitehorse via a 460 km all weather road and by air via the Mayo airport. A gravel road connects Mayo to the project area. Alexco currently maintains a land position at the Bermingham property comprising of 42 surveyed quartz mining leases. Mineral exploration at Keno Hill is permitted under the terms and conditions set out by the Yukon Government in the Class IV Quartz Mining Land Use Permit – LQ00240, issued on June 17, 2008 and valid until June 16, 2018. The mineral resources for the Bermingham prospect reported herein are located on the Atlantic, Arctic, Etta, and Mastiff quartz mining leases.

Central Yukon is characterized by a sub-arctic continental climate with cold winters and warm summers. Average temperatures in the winter are between –15 and –20 degrees Celsius (°C) while summer temperatures average around 15°C. Exploration is limited to the summer months although mining work can be carried out year-round. The landscape around the Bermingham Project area is characterized by rolling hills with a relief of up to 1,425 metres (m).

History

The first claims in the Bermingham area were staked in 1921, within a decade of commercial production starting in the Keno Hill district. Shallow underground workings were initiated in 1923 with the discovery of vein float and limited production of high grade silver and lead from the Bermingham Vein ensued. The Treadwell Yukon Company optioned the ground in 1928, and completed additional underground workings and identified a fault offset vein portion, but dropped the lease in 1930 due to low silver prices and a lack of ore grade material. United Keno Hill Mines (UKHM) purchased the property as part of the district consolidation, and between 1948 and 1951 drove an adit and drift about 30 foot (ft) below the Treadwell workings where considerable milling ore appeared available. In 1952, many of the old Treadwell workings were surveyed and sampled, but the adit level was subsequently abandoned in 1954 after very little ore grade material was realized. During this time, UKHM milled 5165 ton of ore at 47.3 oz/ton (opt) Ag, 8% Pb, and 1.3% Zn, of which all but 60 ton was recovered from the old dumps.

Between 1965 and 1982, 874 overburden drill-holes totalling 65,390 ft (19,931 m), and 27 core holes totalling 7898 ft (2407 m) were drilled in the Bermingham area, a small portion of which occurred in the present resource area. Poor ground conditions prevented many of these holes from adequately penetrating the vein zone, however they outlined an open pit resource and stripping began in 1977. The mine produced 91,104 ton at 16.7 opt Ag.

The southwest extension of the Bermingham Vein, as offset by the Mastiff Fault, was tested by several historic shafts sunk by the Treadwell Yukon Company Ltd. The vein was reported to be 8 ft (2.44 m) wide and to consist mainly of siderite with small bunches of galena, although no mineable ore was encountered. A small open pit was operated on this segment of the vein by UKHM in the mid-1980s. A further 150 m along strike to the southwest, an intended second pit with an estimate resource of 274,000 oz silver was stripped to bedrock in 1983. The historical mineral resource estimate does not use mineral resource categories stipulated by NI43-101. SRK is not aware of the parameters and assumptions used in preparing this estimate. The historical estimate should not be relied upon; it is only stated here for historical completeness. Although drilling indicated shallow mineralization exists, the exposed veins appeared weak and unmineralised, and the pit was never initiated. In total, the Bermingham property produced 186,266 ton at 20.3 opt Ag, 4.2% Pb, and 0.6% zinc, or, 3,777,932 oz of silver (Cathro, 2006).

UKHM operations closed permanently in 1989. In June 2005, Alexco was selected as the preferred purchaser of the assets of UKHM by PricewaterhouseCoopers Inc., the court-appointed interim receiver and receiver-manager of Keno Hill. In February 2006, Alexco's purchase of UKHM's assets through a wholly owned subsidiary, Elsa Reclamation & Development Company Ltd. (ERDC), was approved. Under the Keno Hill Subsidiary Agreement, ERDC is indemnified against all historical liability, has property access for exploration and future development, and is not required to post security against pre-existing liabilities. ERDC received a water license from the Yukon territorial government in November 2007, giving Alexco free and clear title to surface and subsurface claims, leases, free-hold land, buildings, and equipment at Keno Hill. Alexco embarked on an aggressive surface exploration program in 2006 with continued yearly exploration programs through 2012.

Regional and Local Geological Setting

The Keno Hill mining camp is located in the northwestern part of the Selwyn Basin in an area where the northwest-trending Robert Service Thrust Sheet and the Tombstone Thrust Sheet overlap. The area is underlain by Upper Proterozoic to Mississippian rocks that were deposited in a shelf environment during the formation of the northern Cordilleran continental margin and underwent regional compressive tectonic stresses during the Jurassic and the Cretaceous, producing thrusts, folds, and penetrative fabrics of various scales.

The Robert Service Thrust Sheet in the south is composed of Late Proterozoic to Devonian clastic sandstone, minor limestone, siltstone, argillite, chert, and conglomerate. The Tombstone Thrust Sheet to the north consists of Devonian phyllite, felsic meta-tuffs, and metaclastic rocks, overlain by Carboniferous quartzite, that are the main host for the silver mineralization in the Keno Hill camp. Four suites of igneous rock intrude the sedimentary sequence:

- Late Triassic gabbro to diorite sills;
- Early Cretaceous Tombstone granite to granodiorite;

- Upper Cretaceous peraluminous porphyritic granite; and
- Late Cretaceous diabase dikes and sills.

The local (Bermingham) geology is characterized by the upper part of the Mississippian Keno Hill Quartzite, where the thick Basal Quartzite Member is overlain by the Sourdough Hill Member. The sequence was metamorphosed to greenschist facies assemblages during the Cretaceous. The Basal Quartzite is up to 700 m thick and comprises quartzite interbedded with minor graphitic phyllite, and is intruded by Triassic greenstone sills. The Basal Quartzite is the dominant host to the silver mineralization in the Keno Hill district. The overlying Sourdough Hill Member comprises graphitic and sericitic phyllite, chloritic quartz augen phyllite, and thin limestone. To the south, the Robert Service Thrust Fault separates the Keno Hill Quartzite from the overthrust Upper Proterozoic Hyland Group comprising predominantly meta-sedimentary chlorite and quartz rich schist. The Keno Hill Quartzite is intruded by quartz-feldspar aplite sills or dykes that are correlated with the early Cretaceous intrusive suite found elsewhere in the district.

Three phases of folding are identified in the district. The two earliest phases consist of isoclinal folding with sub-horizontal, easterly or westerly trending fold axes. The latter phase consists of a sub-vertical axial plane, and moderate southeasterly trending and plunging fold axis. In the Keno Hill district the first phases of folding formed three structurally dismembered isoclinal folds of which the Basal Quartzite Member outlines two synforms at Monument and Caribou Hills, while the Bermingham Prospect is located on the third dismembered syncline on Galena Hill.

Within the district up to four periods of faulting are recognized. The oldest fault set consists of south dipping foliation-parallel structures that developed contemporaneously with the first phase folding. The Robert Service Thrust Fault truncates the top of the Keno Hill Quartzite and sets the Precambrian schist of the Yusezyu Formation of the Hyland Group above the Mississippian Sourdough Hill Member of the Keno Hill Quartzite. The mineralization in the Keno Hill district is hosted by a series of northeast trending pre- and syn- mineral “vein faults” that display apparent left lateral normal displacement. These are commonly offset by high angle cross faults, low angle faults, and bedding faults. Most commonly these comprise northwest striking cross faults that show apparent right-lateral displacement.

Deposit Types and Mineralization

The Keno Hill District is a polymetallic silver-lead-zinc vein district with characteristics analogous to: Kokanee Range (Slocan), British Columbia; Coeur d’Alene, Idaho; Freiberg and the Harz Mountains, Germany; and Príbram, Czech Republic. Common characteristics include the proximity to crustal-scale faults affecting thick sequences of clastic metasedimentary rocks intruded by felsic rocks that may have acted as a heat source driving the hydrothermal system. At Keno Hill, the largest accumulation of silver, lead, and zinc minerals occurred in structurally prepared competent rocks, such as the Basal Quartzite Member.

In general, gangue minerals include (manganiferous) siderite, minor calcite, and quartz. Silver most commonly occurs in argentiferous galena and argentiferous tetrahedrite. In supergene assemblages, silver can be native or in polybasite, stephanite, and pyrargyrite. Lead occurs in galena and zinc in iron-rich sphalerite. Other sulphides include minor pyrite, arsenopyrite, and chalcopyrite.

At the district scale, the mineral system exhibits sharp lateral mineralogical changes equivocally associated with temperature gradients around magmatic rocks. The hydrothermal veins also appear to exhibit sharp vertical mineralogical zoning, historically interpreted to be lead rich at the top, to more zinc rich at depth. The Bermingham prospect is composed of three intersecting veins with differing mineralogical characteristics, either a quartz dominant vein with minor sulphides (in descending order of abundance - arsenopyrite, pyrite, galena, and sphalerite), or carbonate dominant veins (dolomite, ankerite, and siderite) with quartz, calcite gangue, and sulphides; sphalerite, galena, pyrite, and arsenopyrite, with accessory, chalcopyrite, argentian tetrahedrite, jamesonite, ruby silver, and native silver.

Exploration

Most past exploration work in the Keno Hill district was conducted as support to the mining activities until the mines closed in 1989. This historical work involved surface and underground drilling designed to explore areas surrounding the main underground working areas.

The current exploration conducted by Alexco is the first comprehensive exploration effort in the district since 1997. The first holes were drilled in the Bermingham area in 2009, targeting the Bermingham Vein at depth in the hangingwall of the Mastiff Fault below an area with a historic shallow open pit resource. Results of this drilling were sufficiently encouraging to continue exploration in 2010 and 2011.

Alexco drilled two core holes in 2009, for a total of 523 m followed by eight core holes totalling 2588 m drilled in 2010 and an expanded 2011 drill program of 25 holes for a total of 6889 m. Of the 36 holes drilled in the area, 23 are used in the resource estimate, for a total of 6442 m.

Sampling Method, Approach and Analyses

Alexco implemented industry best practice procedures for all aspects of the drilling, collar and down hole surveying, core description and sampling, sample preparation and assaying, and database management. Assay samples were collected from half core sawed lengthwise with sampling intervals honouring geological boundaries. Sample intervals vary from 0.1 to 1 m in visibly mineralized core with up to 2 m lengths used away from obviously mineralized material.

Alexco used industry best practices assaying protocols including the use of commercial certified control samples, sample blanks, and duplicates at an adequate frequency to monitor the accuracy of laboratories: ALS in North Vancouver, BC, Eco Tech Labs of Kamloops, BC and AGAT Laboratory of Mississauga, ON, all of which are accredited under ISO-170025 by the Standards Council of Canada. Assay samples were dispatched for preparation and assaying using adequate security protocols. All samples were prepared using standard preparation protocols. Each sample was assayed for gold by fire assay and atomic absorption spectrometry on 30 g sub-samples, and for a suite of between 27 and 48 elements (including silver, lead, and zinc) by four acid digestions and either inductively coupled plasma atomic emission spectroscopy or mass spectroscopy on 0.5 g sub-samples. Elements exceeding concentration limits were re-assayed using methods suitable for high concentrations.

Data Verifications

SRK reviewed the analytical quality control data produced by Alexco for the 2009 to 2011 core drilling at Bermingham and concluded that Alexco personnel used diligence in monitoring quality control data, investigating potential failures, and taking appropriate corrective measures when required for the collected data. The quality control data collected by Alexco between 2009 and 2011 are comprehensive and the final, in some cases replicated, assaying results delivered by Eco Tech, ALS, and AGAT Laboratories are generally reliable for the purpose of resource estimation.

Mineral Processing and Metallurgical Testing

No metallurgical testing was performed on the Bermingham deposit; however, SRK has assumed that the mineralization found within the deposit will have similar metallurgical characteristics to the Bellekeno deposit now being mined by Alexco.

Alexco's Keno Hill district mill located near Keno City currently processes output from the Bellekeno mine, and may in the future process output from other District mine sources as well. It is not currently determinable if resources mined from Bermingham would or even could be processed through the District Mill. Until metallurgical testing has been carried out, it is not determinable if the existing District Mill would be suitable for processing resources from Bermingham. Furthermore, until mining plans have been developed for Bermingham it is also not determinable if the District Mill will have sufficient capacity to process Bermingham mine output.

Mineral Resource Estimates

The Bermingham resources were estimated using Gemcom's GEMS™ (GEMS) 3D block modeling software in multiple passes in 5 by 3 by 5 m blocks by inverse distance squared. Grade estimates were based on capped 1 m composited assay data. Capping levels for silver were set to 1,500 g/t for the Bermingham Main Vein and 1,000 g/t for the Bermingham Footwall Vein. Lead and zinc were capped at 10% for both veins. Gold grades were capped at 0.20 g/t for both veins. Blocks were classified as Indicated mineral resources if at least two drill holes and four composites were found within a 40 by 40 m search ellipse for the Bermingham Vein and a 40 by 60 m search ellipse for the Bermingham Footwall Vein. All other interpolated blocks were classified as Inferred mineral resource.

Table i below summarises the mineral resources estimated by SRK for the Bermingham deposit as of June 27, 2012.

Table i: Mineral Resource Statement* for the Bermingham Deposit, June 27 2012

Class	Tonne	Ag (g/t)	Au (g/t)	Pb (%)	Zn (%)
Indicated**	257,000	460	0.06	2.00	2.10
Inferred**	102,000	372	0.09	1.12	1.83

* Mineral resources are not mineral reserves and do not have demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates.

** Reported at an NSR cut-off of $185 (1 USD = 1 CAD)/t using consensus long-term metal prices (US$) 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%). For the Bermingham Vein, Ag grades capped at 1,500 g/t and at 1,000 g/t for the Bermingham Footwall Vein; Pb and Zn capped at 10%; Au grades capped at 0.2 g/t for both veins.

Conclusion and Recommendations

Between 2009 and 2011, Alexco completed three drilling programs on its Bermingham property in the Keno Hill district, located in Central Yukon Territory. The drilling on the Bermingham deposit was successful in confirming the extension of significant silver mineralization beyond historically mined zones in this area

SRK recommends that Alexco continues exploration on the Bermingham deposit along strike to the southwest and at depth on the Etta Zone to expand the current resource, acquire extended geotechnical data, and obtain additional understanding of the mineralized structures to assist in possible mine planning. Metallurgical studies should be initiated to better understand the nature of the mineralization.

SRK also recommends that Alexco continue exploration in the Arctic Zone, in the footwall of the Mastiff fault, where preliminary drilling has identified the offset portion of the Bermingham Veins.

Baseline environmental studies should also be initiated in anticipation of preliminary economic assessment and permitting requirements. The total cost for the recommended exploration and development program is estimated at $1.58M.

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Disclaimer

The opinions expressed in this report have been based on the information supplied to SRK Consulting (Canada) Inc. (SRK) by Alexco Resources Corp. (Alexco). These opinions are provided in response to a specific request from Alexco to do so, and are subject to the contractual terms between SRK and Alexco. SRK has exercised all due care in reviewing the supplied information. Whilst SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. Opinions presented in this report apply to the site conditions and features, as they existed at the time of SRK's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this report.

List of Abbreviations

Unit or Term	Abbreviation
Canadian Institute of Mining & Metallurgy	**CIM**
centimetres	**cm**
day	**d**
degrees Celsius	**^{o}C**
Dollars (Canadian)	**$ or C$**
Dollars (US)	**US$**
foot	**ft**
grams	**g**
grams per tonne	**g/t**
kilograms per tonne	**kg/t**
kilometres	**km**
metres	**m**
micron	**µ**
millimetres	**mm**
Million / mega (10^6)	**M**
Million years	**My**
National Instrument 43-101	**NI 43-101**
National Topographic Service	**NTS**
Net Smelter Return	**NSR**
North American datum	**NAD**
Ounce per ton	**opt**
specific gravity	**SG**
ton (2000 lbs)	**ton**
tonne (1000 kg)	**t**
tonne per day	**tpd**
Universal Transverse Mercator coordinate system	**UTM**

1 Introduction

This technical report summarizes a mineral resource estimate produced for Alexco Resource Corp. (Alexco) for the Bermingham deposit located on the Bermingham property, one of several polymetallic silver-lead-zinc deposits occurring in the historic Keno Hill silver-lead district, near Mayo, Yukon Territory.

During the first half of 2012, SRK Consulting (Canada) Inc. (SRK) constructed mineral resource models from drilling information acquired by Alexco during the years of 2009 to 2011. Mineral resources were classified as Indicated and Inferred mineral resources following the CIM Definition Standards for Mineral Resources and Mineral Reserves (December 2005) guidelines. The report was prepared following the guidelines of the Canadian Securities Administrators National Instrument 43-101 and Form 43-101F1, and in conformity with generally accepted CIM "Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines".

The report was compiled by Dr. Gilles Arseneau, P. Geo., and Darrell Farrow, M.Sc., Pr. Sci. Nat. with assistance from Melanie Roberts and Al McOnie of Alexco. The information contained in this report was provided by Alexco. Dr. Arseneau carried out a visit to the Bermingham project on May 7 and 8, 2012 to examine drill core, core logging and sampling procedures, and visit the drill sites. Mineral resources were estimated by Darrell Farrow, M.Sc., Pr.Sci.Nat, under the supervision of Dr. Arseneau.

2 Reliance on other Experts

In preparing this report, SRK has relied on information provided by Alexco for matters pertaining to environmental, socioeconomic, and permitting issues. SRK did not carry out a title search for the property. Instead, SRK has relied on an opinion of title provided by Alexco.

3 Property Description and Location

The Bermingham property is located in the Mayo Mining District approximately 350 km north of Whitehorse, Yukon Territory, within the Keno Hill mining district (Figure 3.1). Mayo is accessible from Whitehorse via a 460 km all weather road and by air via the Mayo airport. A gravel road connects Mayo to the project area. The area is covered by National Topographic Service (NTS) map sheet 105M/14. Alexco currently maintains a land position at the Bermingham property (Figure 3.2) comprising of 42 surveyed quartz mining leases (Figure 3.3).

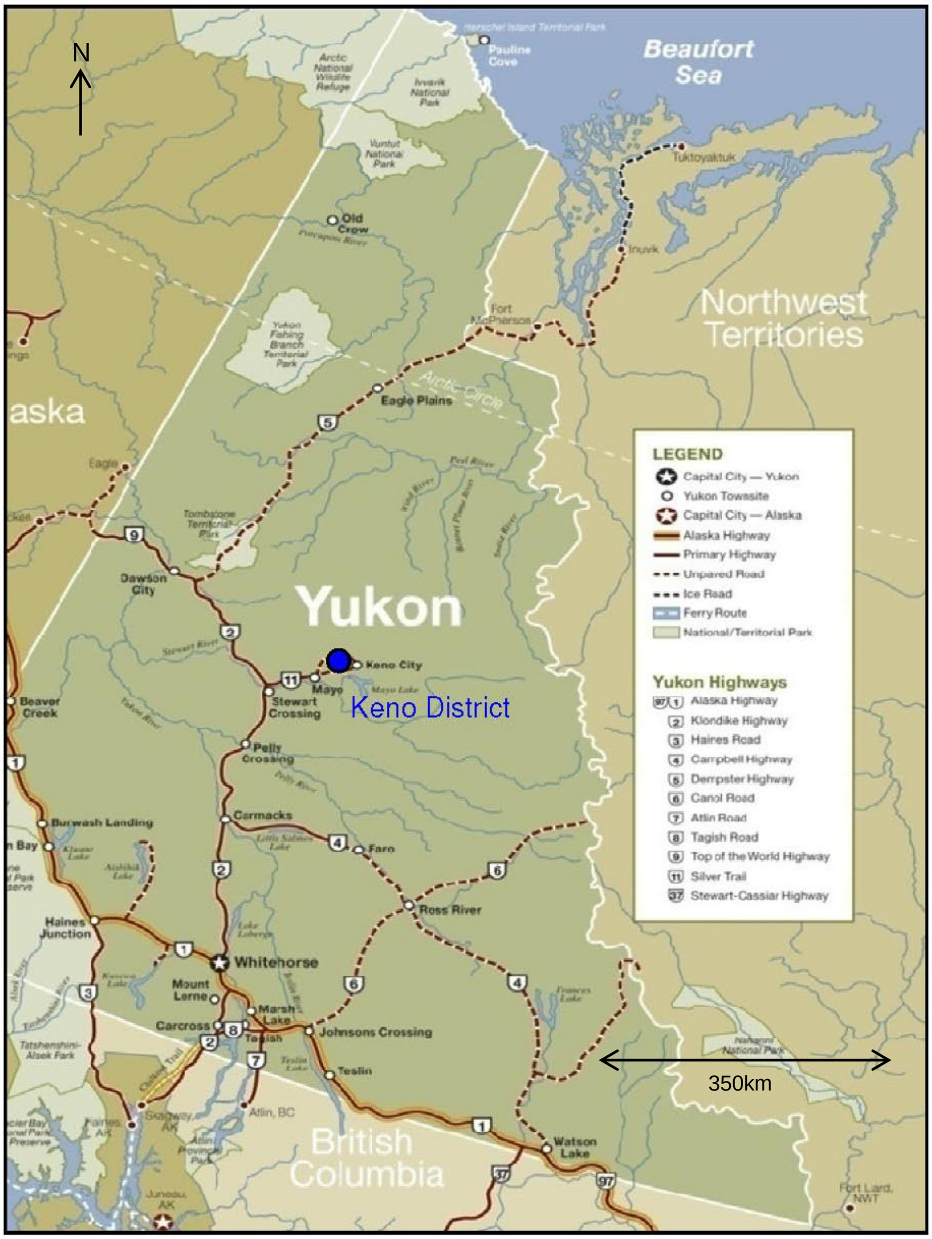


Figure 3.1: Keno District location map (from Alexco, 2012)

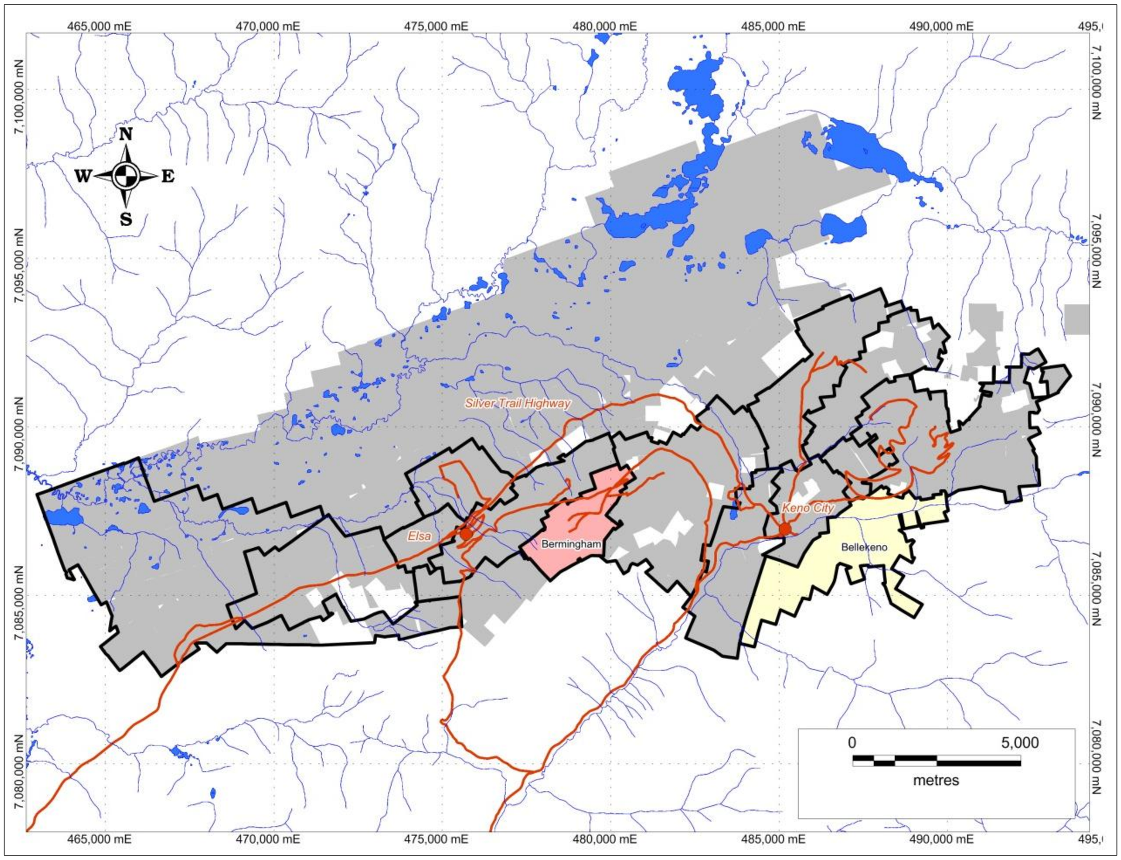


Figure 3.2: Bermingham Property location map (from Alexco, 2012)

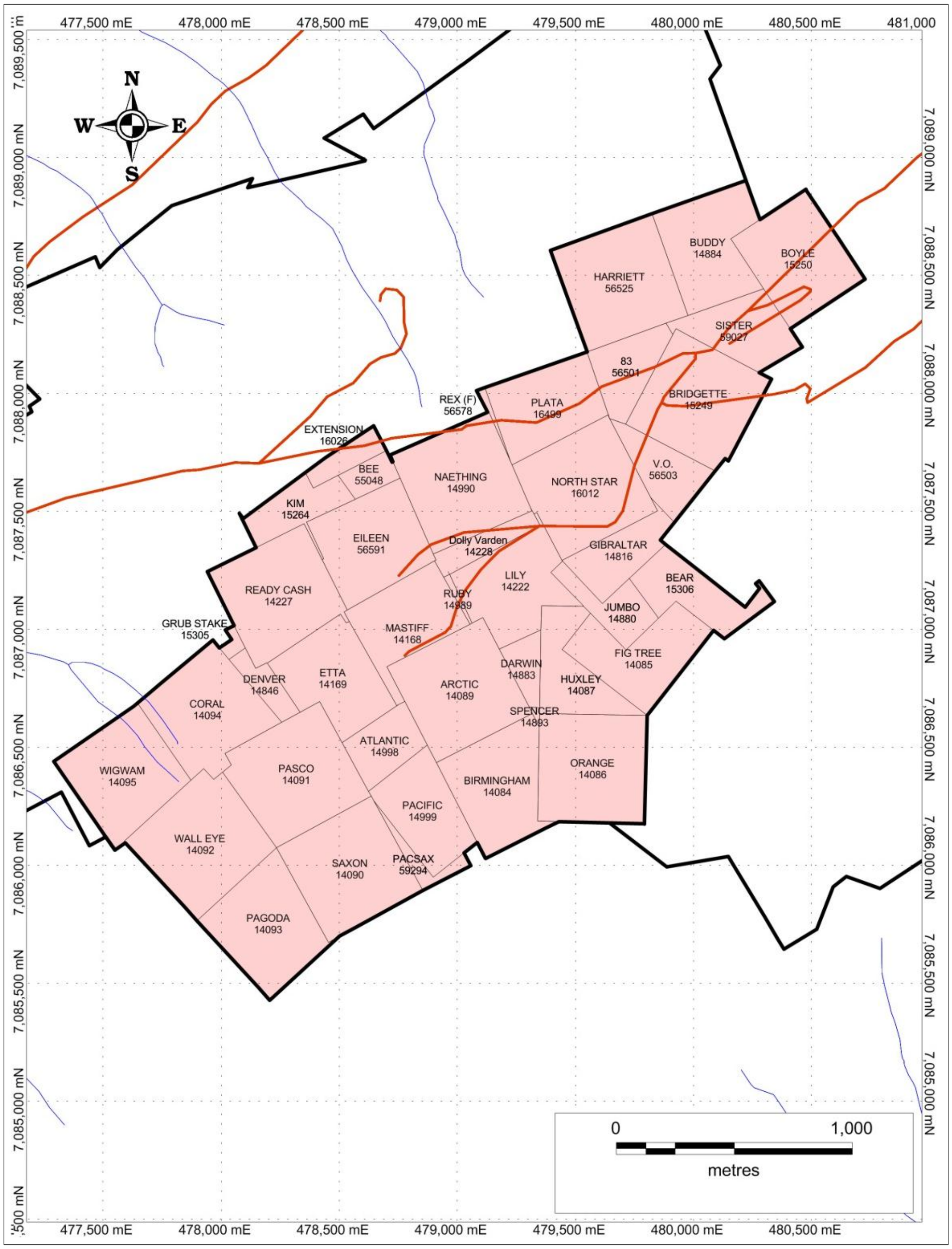


Figure 3.3: Bermingham Property claim map (from Alexco, 2012)

The Bermingham deposit is centred at Latitude 63.908° N, Longitude 135.434° W. The mineral resources for the Bermingham prospect reported herein are located on the Atlantic, Arctic, Etta, and Mastiff quartz mining leases.

Mineral exploration in the Keno Hill district was initially permitted under the terms and conditions set out by the Yukon Government in the Class III Quartz Mining Land Use Permit – LQ00186, issued on July 5, 2006 and valid until July 4, 2011. Alexco subsequently obtained a Class IV Quartz Mining Land Use Permit – LQ00240 on June 17, 2008. The two permits were amalgamated on December 8, 2008 under #LQ00240, which is valid until June 16, 2018.

The mineral resources for the Bermingham deposit reported herein are located on the Bermingham property comprising the Quartz mining leases listed in Table 3.1.

Table 3.1: Bermingham Property Leases

Claim Label	Quartz Claim	Grant Number	Lease Number	Owner Name	Expiry Date (YYYYMMDD)
83	97138366	56501	NM00059	Elsa Reclamation & Development Company Ltd. - 100%	20210724
V.O.	97138367	56503	NM00352	Elsa Reclamation & Development Company Ltd. - 100%	20250330
HARRIETT	97138371	56525	NM00353	Elsa Reclamation & Development Company Ltd. - 100%	20250330
REX (F)	97138685	56578	NM00354	Elsa Reclamation & Development Company Ltd. - 100%	20250330
EILEEN	97138690	56591	NM00355	Elsa Reclamation & Development Company Ltd. - 100%	20250330
JUMBO	97139803	14880	NM00107	Elsa Reclamation & Development Company Ltd. - 100%	20210826
DARWIN	97139804	14883	4091	Elsa Reclamation & Development Company Ltd. - 100%	20150128
SPENCER	97139806	14893	4093	Elsa Reclamation & Development Company Ltd. - 100%	20150127
NAETHING	97139810	14990	NM00359	Elsa Reclamation & Development Company Ltd. - 100%	20250412
ATLANTIC	97139811	14998	4094	Elsa Reclamation & Development Company Ltd. - 100%	20150129
PACIFIC	97139812	14999	4095	Elsa Reclamation & Development Company Ltd. - 100%	20150129
KIM	97139841	15264	NM00346	Elsa Reclamation & Development Company Ltd. - 100%	20250330
GRUB STAKE	97139842	15305	NM00086	Elsa Reclamation & Development Company Ltd. - 100%	20210820
PLATA	97139053	16499	NM00349	Elsa Reclamation & Development Company Ltd. - 100%	20250330
SISTER	97139079	59027	NM00068	Elsa Reclamation & Development Company Ltd. - 100%	20210724
PASCO	97139108	14091	NM00362	Elsa Reclamation & Development Company Ltd. - 100%	20250430
WALL EYE	97139109	14092	NM00081	Elsa Reclamation & Development Company Ltd. - 100%	20210808
CORAL	97139110	14094	NM00363	Elsa Reclamation & Development Company Ltd. - 100%	20250430
MASTIFF	97139111	14168	4087	Elsa Reclamation & Development Company Ltd. - 100%	20141114
ETTA	97139112	14169	4089	Elsa Reclamation & Development Company Ltd. - 100%	20141219
LILY	97139114	14222	NM00501	Elsa Reclamation & Development Company Ltd. - 100%	20260331
PACSAX	97139126	59294	NM00178	Elsa Reclamation & Development Company Ltd. - 100%	20221229
PAGODA	97226350	14093	NM00089	Elsa Reclamation & Development Company Ltd. - 100%	20210820
BOYLE	97250655	15250	NM00063	Elsa Reclamation & Development Company Ltd. - 100%	20210724
BUDDY	97248134	14884	NM00065	Elsa Reclamation & Development Company Ltd. - 100%	20210724
BEE	97255164	55048	NM00109	Elsa Reclamation & Development Company Ltd. - 100%	20210828
FIG TREE	97269509	14085	4098	Elsa Reclamation & Development Company Ltd. - 100%	20150108

Claim Label	Quartz Claim	Grant Number	Lease Number	Owner Name	Expiry Date (YYYYMMDD)
BEAR	97272576	15306	NM00097	Elsa Reclamation & Development Company Ltd. - 100%	20210826
WIGWAM	97282245	14095	NM00082	Elsa Reclamation & Development Company Ltd. - 100%	20210808
ARCTIC	97286202	14089	4088	Elsa Reclamation & Development Company Ltd. - 100%	20141219
SAXON	97301012	14090	NM00091	Elsa Reclamation & Development Company Ltd. - 100%	20210820
NORTH STAR	97324993	16012	NM00347	Elsa Reclamation & Development Company Ltd. - 100%	20250330
GIBRALTAR	97328136	14816	NM00106	Elsa Reclamation & Development Company Ltd. - 100%	20210826
DENVER	97328137	14846	4086	Elsa Reclamation & Development Company Ltd. - 100%	20141014
Dolly Varden	97341005	14228	4254	Elsa Reclamation & Development Company Ltd. - 100%	20170215
ORANGE	97337771	14086	4092	Elsa Reclamation & Development Company Ltd. - 100%	20150121
EXTENSION	97347884	16026	NM00348	Elsa Reclamation & Development Company Ltd. - 100%	20250330
READY CASH	97343346	14227	NM00090	Elsa Reclamation & Development Company Ltd. - 100%	20210820
BRIDGETTE	97356307	15249	NM00242	Elsa Reclamation & Development Company Ltd. - 100%	20240228
HUXLEY	97356328	14087	4097	Elsa Reclamation & Development Company Ltd. - 100%	20150120
RUBY	97363460	14989	3525	Elsa Reclamation & Development Company Ltd. - 100%	20121124
BIRMINGHAM	97380445	14084	4096	Elsa Reclamation & Development Company Ltd. - 100%	20150115

4 Accessibility, Climate, Local Resources, Infrastructure, and Physiography

The Bermingham deposit is included within the historic Keno Hill mining camp, located in central Yukon Territory (Figure 3.1). The closest town is Mayo, located on the Steward River, approximately 45 km to the south. Mayo is accessible from Whitehorse via a 460 km all weather road and is also serviced by Mayo airport. A gravel road leads from Mayo to the project area. Historically, the mining camp was linked by river route to the outside world. The main link since 1950 is the all-weather highway, which was also used for transporting the ore.

The central Yukon Territory is characterized by a sub-arctic continental climate with cold winters and warm summers. Average temperatures in the winter are between –15 and –20°C but can reach –60°C. The summers are moderately warm with average temperatures in July around 15°C. Exploration is generally limited to the summer months although mining work can be carried out year-round.

Because of its northern latitude, winter days are short; north-facing slopes experience ten weeks without direct sunlight around the winter solstice. Conversely, summer days are very long, especially in early summer around the summer solstice. Annual precipitation averages 28 cm; half of this amount falls as snow, which starts to accumulate in October, and remains into May or June.

Three-phase power is available in many parts of the district as well as telephone service. A large number of roads constructed for past mining operations are still serviceable. The old company town of Elsa, located toward the western end of the district, comprises several buildings that are currently being used for storage, maintenance work, housing, and offices. The main camp and kitchen are located at Flat Creek, just west of Elsa.

The landscape around the Bermingham deposit is characterized by gently rolling hills with a relief of up to 1,425 m (Figure 4.1) on Galena Hill.

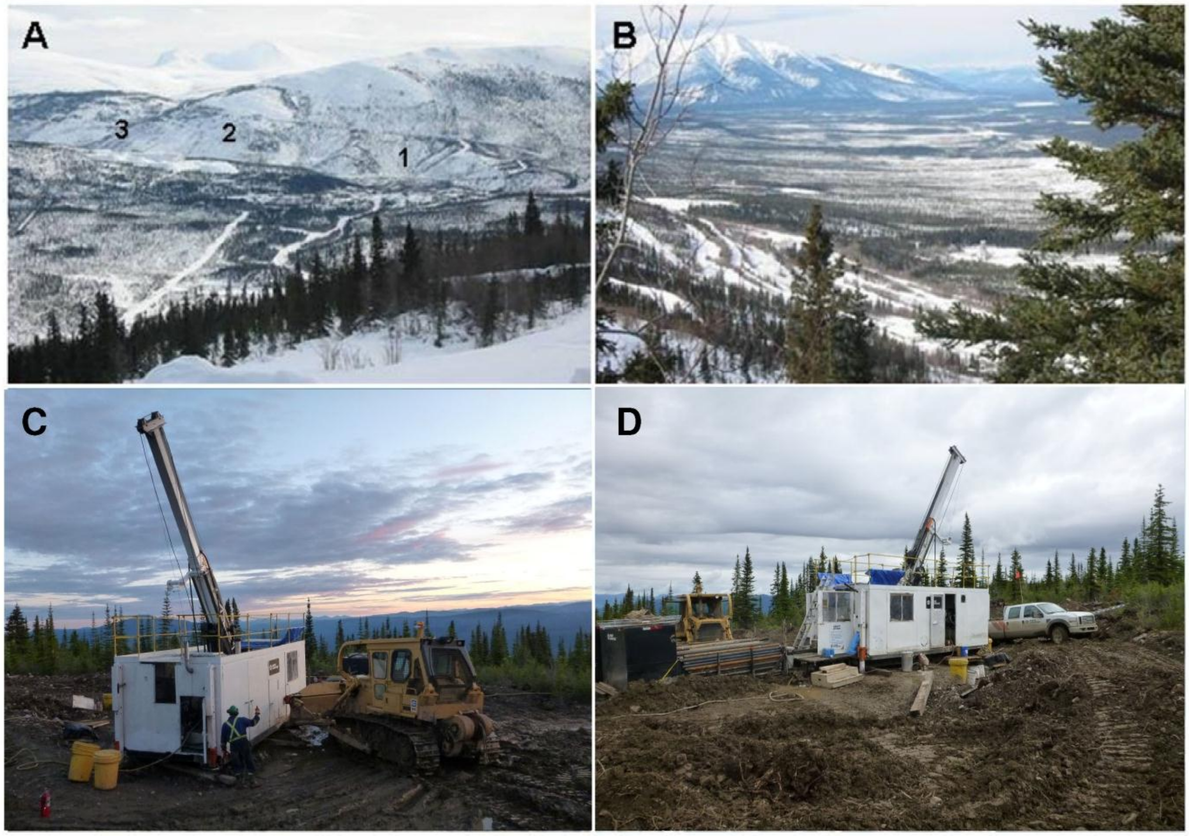


Figure 4.1: Typical landscape in the Keno Hill District

Photo A: Taken from Galkeno 300, looking southeast at (1) Keno City, (2) Lightning Creek Valley, (3) Bellekeno 600 adit is just out of sight from this view angle; Photo B: View from road above Elsa, looking northwest; Photo C: Bermingham drill site looking northwest; and Photo D: Bermingham drill site looking northeast.

5 History

The history of the Keno Hill mining camp is described in Cathro (2006); the information presented in this section draws heavily from that source.

The Keno Hill mining camp area has a rich history of exploration and mining dating back to the beginning of the 1900s. Earliest prospectors had been working the area around Mayo for gold, especially after the Klondike gold rush of 1898. The first silver was found in 1901. However, interest was low due to the prospector's interest in gold alone despite an assay from 1905 yielding more than 10 kg/t silver. Small-scale mining finally commenced in 1913 with an initial shipment of 55 ton of ore from the Silver King deposit to a smelter in San Francisco. Due to the shallow depth of the deposit and the First World War, interest in the area had dwindled by 1917.

The end of the First World War and high silver prices led to renewed and ultimately successful exploration activity in the area with the Yukon Gold Company and later Keno Hill Limited as the first truly commercial operators. Success at the Keno Mine led to a staking rush, resulting in the discovery of a number of rich deposits.

The first claims in the Bermingham area, Arctic and Mastiff mineral claims, were staked by C. H. Bermingham and C. R. Settlemier in 1921, but no underground exploration was conducted until 1923 when vein float was discovered. When the Treadwell Yukon Company Ltd (Treadwell) optioned the Mastiff claim group in 1928, a 100 ft shaft and 730 ft of drifting had been completed on three separate levels and 2088 ton at 144.6 opt Ag, 55.50% Pb, 0.6% Zn, had been extracted from the Bermingham Vein. The underground workings showed a structure with a maximum width of 55 ft at the 100 ft level that contained multiple bands of ore with interstitial waste that was cut off at its southwest extent by the strong Mastiff fault.

Trenching and prospect shafts identified the offset vein about 300 feet to the west-northwest, where Treadwell sank the No. 1 shaft and completed 72 ft of drifting. Below the location of the future main Bermingham pit were an oxidized siderite-pyrite vein with some galena, but no ore, was reported, 417 ft of drifting was completed on the 200 level. Treadwell relinquished the lease in 1930 due to low silver prices and the absence of ore grade material. A variety of individual workers extracted another 745 ton at 230 opt Ag and 70% Pb between 1930 and 1940, however, this work was poorly documented but is known to include considerable trenching, shafting and drifting during 1930, 1932 to 1937, and 1939 to 1940.

United Keno Hill Mines (UKHM) subsequently purchased the property as part of the district consolidation, and during 1948 to 1951 drove an adit and drift about 30 ft below the bottom of the Treadwell workings. Lacking a good understanding of the complexity of the structure and geology, UKHM decided to drift into the footwall and raise up into the older workings where considerable milling ore appeared available. In 1952, many of the old Treadwell workings were surveyed and sampled, but the adit level was subsequently abandoned after very little ore grade material was realized, although almost 5,000 ton of ore was salvaged from dumps between 1952 and 1954. In total, UKHM milled 5,165 ton of ore at 47.3 opt Ag, 8% Pb, and 1.3% Zn of which all but 60 ton was recovered from the old mine dumps.

Between 1955 and 1960, trenching and soil sampling traced the vein from the Bleiler shaft to the North Star Mineral Claim. In 1956 three diamond drill holes were attempted on the western edge of the Lily Claim to investigate a geochemical anomaly but all were abandoned due to poor ground conditions. From 1965 to 1982, 874 overburden drill holes totalling 65,390 ft (19,931 m) were drilled in the Bermingham area, as well as 27 core holes totalling 7898 ft (2407 m). Poor ground conditions prevented many of these holes from adequately penetrating the vein zone however the work essentially outlined an open pit resource above the underground workings.

Stripping began on the main Bermingham pit in 1977, and until 1983 produced 91,104 ton at 16.7 opt Ag. Overburden drilling and open pit mining led to a much better understanding of the geology. The feasibility of deepening the Bermingham pit was evaluated during 1980 to 82 with several percussion drill holes testing the vein below the pit and two diamond drill holes testing the Bleiler extension to the northeast. The drill holes indicated a narrowing of the vein to 10 to 15 ft wide and did not encounter ore grade. A resource was constructed by extrapolating chip assays taken at the bottom of the pit to a depth of 20 ft. A potential resource of 16,664 ton at 13.9 opt Ag was calculated but not deemed economic and the pit was not extended.

To the southwest of the open pit and in the hangingwall of the Mastiff Fault, several historic shafts had tested the offset extension of the Bermingham Vein. These included the No. 3 shaft, sunk by Treadwell, which included 72 ft of drifting on the 45 ft level. The vein was reported to be 8 ft wide and to mainly consist of siderite with small bunches of galena, however no ore was encountered. A small open pit did operate on this segment of the vein in the mid-1980s, and an intended second pit located 150 m to the southwest was stripped to bedrock in 1983. However, the veins exposed there appeared weak and un-mineralised. Mining was never initiated although drilling indicated shallow ore containing a resource of 274,000 oz silver to exist below this elevation. The historical mineral resource estimate does not use mineral resource categories stipulated by NI43-101. SRK is not aware of the parameters and assumptions used in preparing this estimate. The historical estimate should not be relied upon; it is only stated here for historical completeness.

In total, the Bermingham property produced 3,777,932 oz of silver from 186,266 ton (Table 5.1) (Cathro, 2006).

Table 5.1: Past production records for Bermingham property.

Mine	Imperial (ton)	Ag (opt)	Pb (%)	Zn (%)	Ag (oz)	Pb (lb)	Zn (lb)
Bermingham	186,266	20.3	4.2	0.6	3,777,932	15,575,525	2,157,714

UKHM permanently closed operations in 1989. After acquiring 32% interest in UKHM The Dominion Mineral Resources and Sterling Frontier Properties Company of Canada Limited (Dominion), carried out extensive reclamation, remediation, and exploration work at the Bellekeno, Husky Southwest and Silver King mines between 1990 and 1998, in an effort to reopen the operations. Lack of financing forced Dominion to abandon its rights, in effect reverting the rights back to UKHM. Environmental liabilities and site maintenance costs eventually drove UKHM into bankruptcy and the Federal Government inherited the assets.

In June 2005, PricewaterhouseCoopers Inc., the court-appointed interim receiver and receiver-manager of Keno Hill, selected Alexco as the preferred purchaser of the assets of UKHM. In February 2006, following lengthy negotiations with the Federal and Territory Governments, the Supreme Court of the Yukon Territory approved Alexco's purchase of UKHM's assets through Alexco's wholly owned subsidiary ERDC.

Interim closing of the Keno Hill transaction was completed on April 18, 2006, and an agreement governing management and future reclamation of the Keno Hill district was signed. Under the Keno Hill Subsidiary Agreement, ERDC is indemnified against all historical liability, has property access for exploration and future development, and is not required to post security against pre-existing liabilities. ERDC will also be reimbursed for its future environmental reclamation activities, estimated at more than C$50M, while itself contributing C$10M to the cleanup of the Keno Hill district. ERDC has also assumed responsibility for ongoing environmental care and maintenance of the site under contract to the Yukon Territory Government, and is actively conducting a baseline environmental assessment and site characterization program.

To finalize the Keno Hill acquisition, ERDC applied for and received a water license in November 2007. Upon receipt of the license, ERDC received clear title to surface and subsurface claims, leases, freehold land, buildings, and equipment at Keno Hill.

During 2006, Alexco embarked on an aggressive exploration program in the Keno Hill district and as a result the Bellekeno Mine was placed into production in 2011. Drilling by Alexco in the Bermingham prospect area totalled two surface core drill holes (523 m) in 2009, nine surface core drill holes (3046 m) in 2010, and 25 surface core holes (6888 m) in 2011.

6 Geological Setting and Mineralization

6.1 Regional Geology

The Keno Hill mining camp is located in the northwestern part of the Selwyn Basin in an area characterized by the Robert Service Thrust Sheet and the Tombstone Thrust Sheet; these thrust sheets are overlapping and trend northwesterly. The area is underlain by Upper Proterozoic to Mississippian rocks that were deposited in a shelf environment during the formation of the northern Cordilleran continental margin (Figure 6.1). A compressional regime that possibly existed during the Jurassic, but certainly during the Cretaceous, produced thrusts, folds, and penetrative fabrics of various scales. Early large-scale deformation (D_1) produced recumbent folds, resulting in local structural thickening of strata. A second (D_2) and possibly third (D_3) deformational event produced gentle southwesterly plunging syn- and antiform pairs (Roots, 1997). The dominant structural fabric (foliation) is essentially axial planar to the D_1 recumbent folds.

The Robert Service Thrust Sheet lying to the south of the district is composed of Late Proterozoic to Cambrian sandstone, locally with interbedded limestone and argillite, a Cambrian to Middle Devonian succession of siltsone, limestone and chert, and unconformably overlying Upper Devonian argillite, chert, and chert pebble conglomerate.

The Tombstone Thrust Sheet to the north consists of Devonian phyllite, felsic meta-tuffs and metaclastic rocks, overlain by Carboniferous quartzite. This latter rock unit is locally thickened due to folding and/or thrusting and hosts the mineralization of the Keno Hill camp.

Intrusive rocks formed during four episodes of plutonism. During the Late Triassic, gabbro to diorite formed sills of various sizes in the Devonian and Mississippian rocks of the Tombstone Thrust Sheet. A second phase of plutonism took place around 92 million years (My) ago in the early Cretaceous and resulted in widespread and voluminous Tombstone intrusions of commonly granitic to granodioritic composition. Cretaceous fine-grained lamprophyre dated at 89 My occurs as metre-scale dykes and sills. The youngest intrusions are the McQuesten suite that occurred around 65 My ago in the Upper Cretaceous, and resulted in the formation of peraluminous megacrystic potassium feldspar granite.

In addition to the Keno Hill silver mining camp where polymetallic veins were exploited, the area hosts a number of other occurrences and showings of tungsten, copper, gold, lead, zinc, antimony, and barite.

Tin, tungsten, and molybdenite occurrences are possibly related to the suite of Cretaceous intrusions, whereas lead, zinc, and barite occur in stratiform calcareous sedimentary rocks of early to mid-Paleozoic age typical of sediment-hosted deposits.

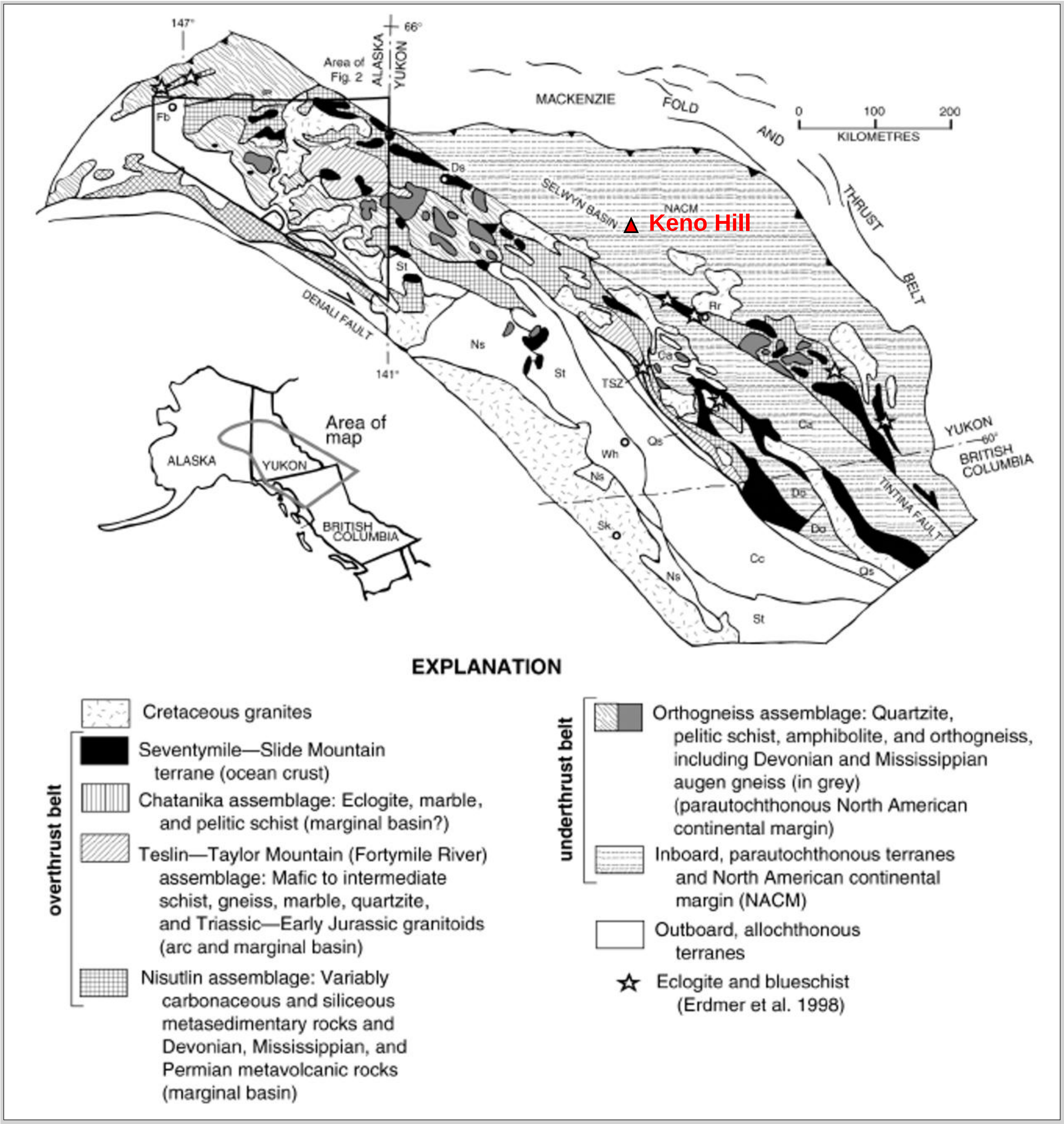
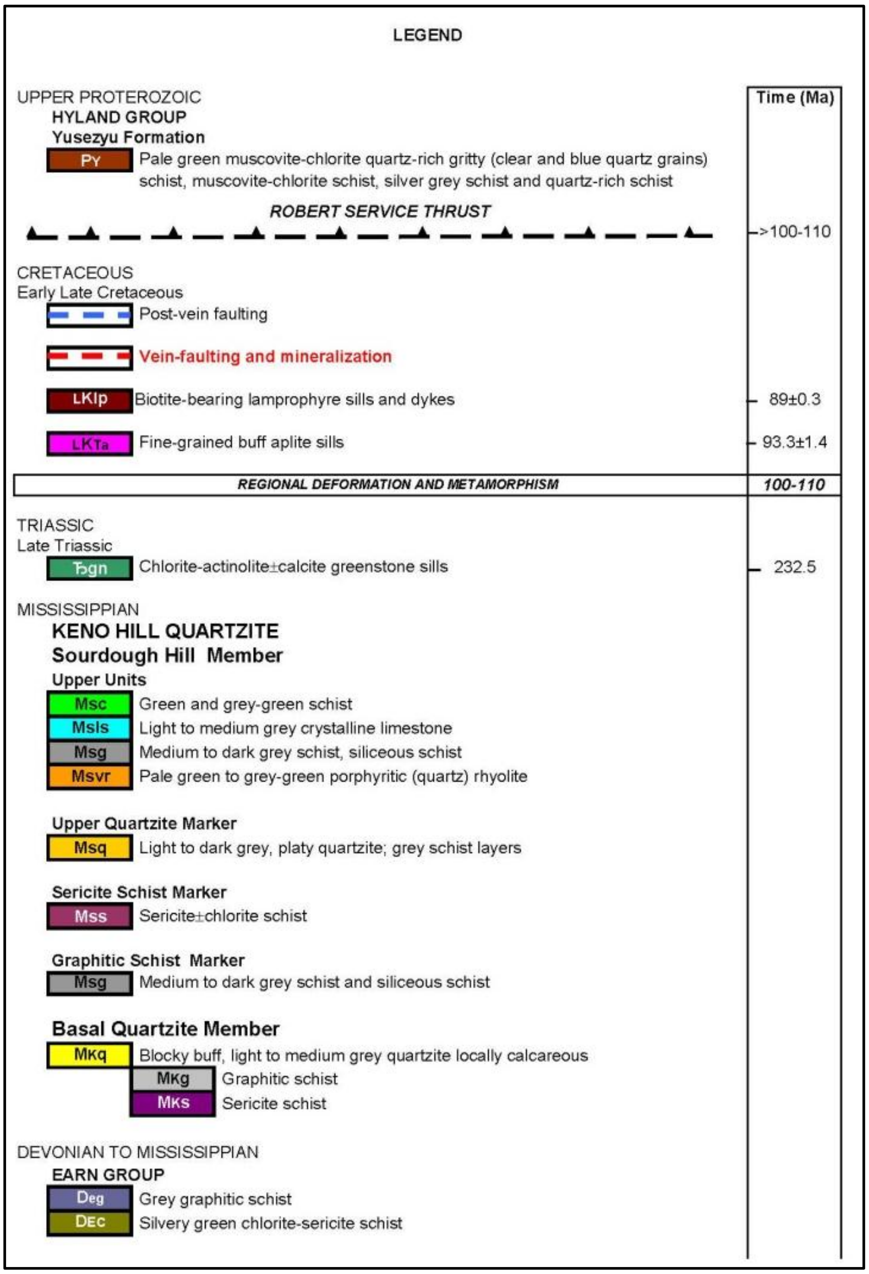


Figure 6.1: General Geology of the Selwyn Basin Area. (from Dusel-Bacon et al., 2002)

6.2 District Geology

The district geology is dominated by the Mississippian Keno Hill Quartzite. This is composed of the Basal Quartzite Member and conformably overlying Sourdough Hill Member. The unit is overthrust in the south by the Upper Proterozoic Hyland Group, and underlain in the north by the Devonian Earn Group (McOnie and Read, 2009) as shown in Table 6.1.

Table 6.1: Keno Hill district stratigraphy



The Yusezyu Formation of the Precambrian Hyland Group is separated by the Robert Service Thrust Fault and, as seen in the Duncan Creek area, comprises greenish quartz-rich chlorite-muscovite schist with locally clear and blue quartz-grain gritty schist.

The Earn Group formerly mapped as the “lower schist formation” (Boyle, 1965) is typically composed of recessive weathering grey graphitic schist and green chlorite-sericite schist with an upper siliceous graphitic schist found locally.

Within the Keno Hill Quartzite, the Basal Quartzite Member is up to 1,100 m thick and comprises thick to thin bedded quartzite and graphitic phyllite (schist). This is the dominant host to the silver mineralization in the Keno Hill district. The overlying Sourdough Hill Member, formerly mapped as the “upper schist formation” (Boyle, 1965) is up to approximately 1,050 m in thickness and comprises predominantly graphitic and sericitic phyllite, chloritic quartz augen phyllite, and minor thin limestone.

The Earn Group and Keno Hill Quartzite are locally intruded by Middle Triassic greenstone sills.

The sequence is intruded by quartz-feldspar aplite sills or dykes that are correlated with the 92 My Tombstone intrusive suite found elsewhere in the district.

The sequence was metamorphosed to greenschist facies assemblages during the Cretaceous regional deformation.

Three phases of folding are identified in the district. The two earliest phases consist of isoclinal folding with sub-horizontal, easterly or westerly trending fold axes with the later phase having a sub-vertical axial plane and moderate southeasterly trending and plunging fold axis. In the Keno Hill district the first phases of folding formed three structurally dismembered isoclinal folds of which the Basal Quartzite Member outlines two synforms at Monument and Caribou Hills, while the Bermingham Prospect is located on the third dismembered syncline on Galena Hill.

Within the district up to four main periods of faulting are recognized. The oldest fault set consists of south dipping foliation-parallel structures that developed contemporaneously with the first phase folding. The Robert Service Thrust Fault truncates the top of the Keno Hill Quartzite and sets the Precambrian schist of the Yusezyu Formation above the Mississippian Sourdough Hill Member.

The mineralization in the Keno Hill district is hosted by a series of northeasterly trending pre- and syn-mineral “vein faults” that display apparent left lateral normal displacement locally referred to as “longitudinal” veins which depending on the competency of the host rock, can be up to 30 m wide with an anastomosing system of sub-veins. A related set of faults known, as “transverse faults” that strike north-northeast and dip moderately to the southeast, can reach up to five metres in thickness.

High angle cross faults, low angle faults, and bedding faults offset veins and comprise post-mineralization faults. Most commonly these comprise northwest striking cross faults recognized by offset veins that show apparent right-lateral displacement.

6.3 Bermingham Deposit Geology

The Main Bermingham pit and past productive Settlemier workings occur within the upper stratigraphic levels of the Basal Quartzite Member (Figure 6.2 and Figure 6.3). The base of the Sericite Schist Marker was observed in the hangingwall of the Bermingham Vein in the historic Settlemier workings and is now exposed on the southern side of the open pit. Quartzites with interspersed graphitic schists, belonging to the Basal Quartzite Member, are exposed in the base of the pit and in the vein footwall.

The southwestern extension of the Bermingham Vein from the open pit, in the section offset in the hangingwall of the Mastiff Fault and the focus of the 2011 drilling programme, occupies a similar stratigraphic position, although mineralization is not observed in the Sericite Schist Marker as in the

Settlemier workings. In this area, the top 200 m of the Basal Quartzite unit is represented by drill core from the hangingwall of the Bermingham Vein and other veins now recognised such as the Bermingham Footwall Vein and Aho Vein. It is composed of grey quartzite beds up to several metres thick with interbedded dark graphitic schist up to one metre in thickness. Narrow greenstones up to 2 m in thickness are common and some of greater thicknesses are also observed.

In the small Southwest Bermingham open pit, also located in the hangingwall of the Mastiff Fault, the vein hangingwall stratigraphy comprises platey quartzite of the Upper Quartzite Marker with the footwall rocks belonging to the Basal Quartzite Member.

At Bermingham, the estimated minimum offset of the stratigraphy on the vein fault is 110 m dip slip and 42 m strike slip.

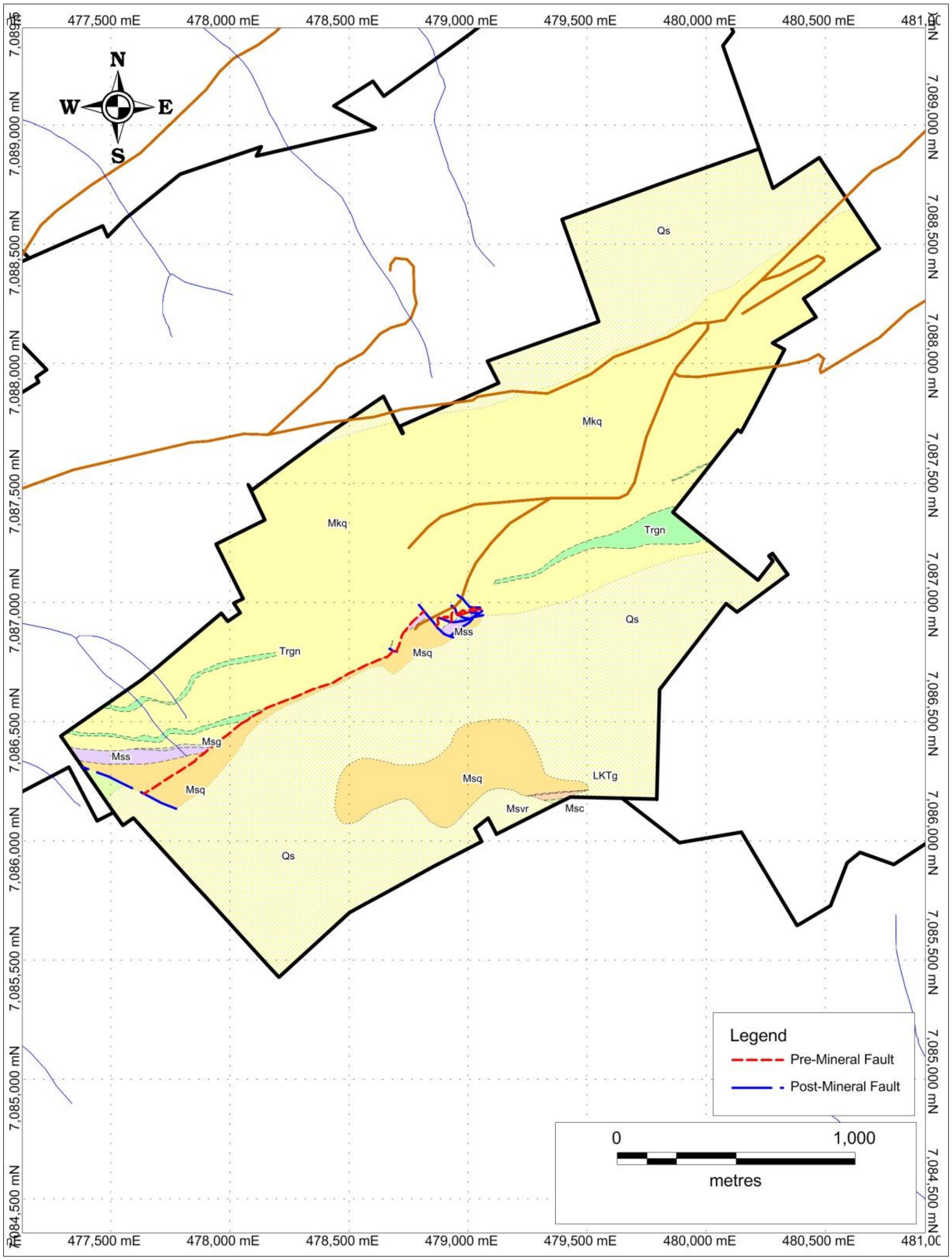


Figure 6.2: Geology of the Bermingham Property (stratigraphy detailed in Table 6.1). From Alexco, 2012

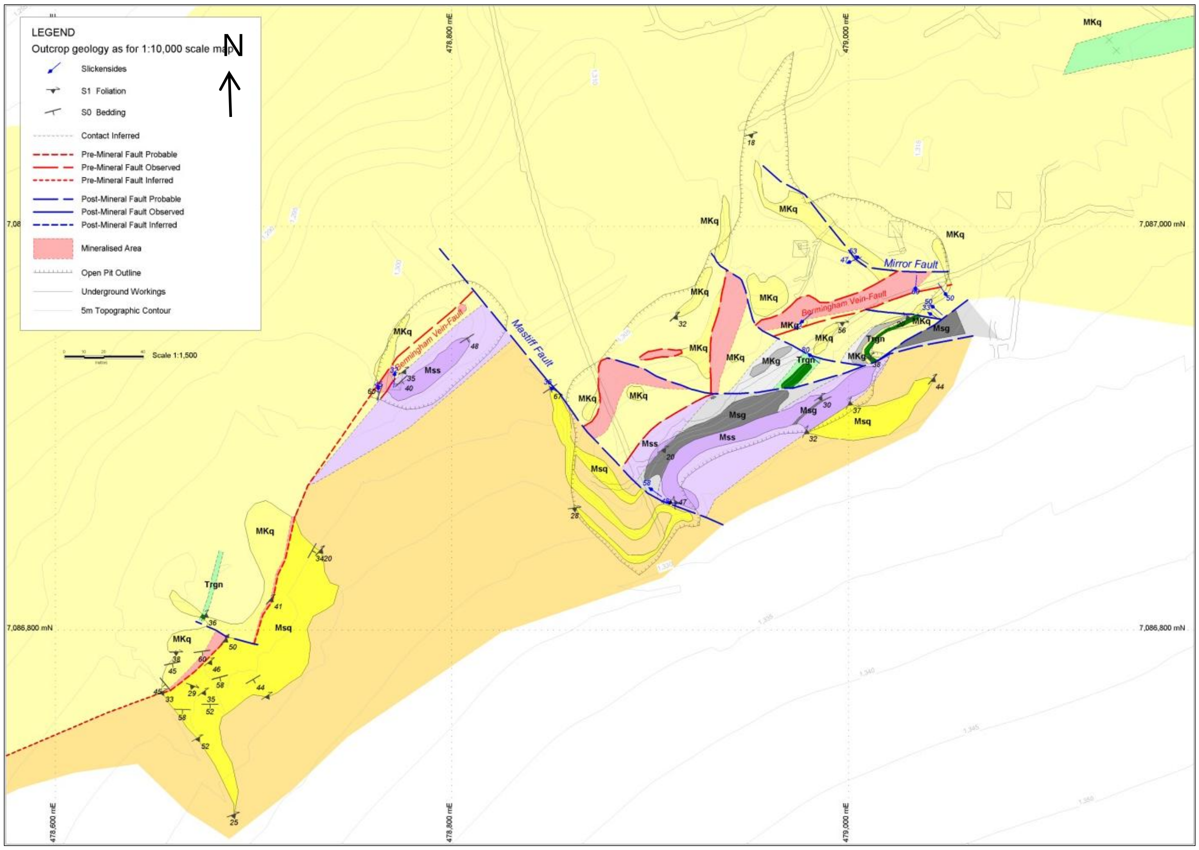


Figure 6.3: Detailed Geology of the Bermingham Pit and resource area (stratigraphy detailed in Table 6.1). From Alexco, 2012.

The Bermingham area is characterized by a complex network of fault and vein structures, see Table 6.2 for the major structures. The attitudes of faults that are predominantly non-mineralized appear bi-modal, with one set striking between 280° and 293°, and the other at 314° to 317°, although they may represent end members of a single fault set. These northwest trending structures cut and displace all mineralized veins, and although they are typically non-mineralized, mineralization is sometimes observed where they cut mineralized veins. This is generally considered to represent the post-mineral transport of vein material drawn into the fault rather than primary mineralization.

Table 6.2: Orientation of Major Structures at Bermingham

Major Structures	Strike	Dip
Mastiff Fault	137°	51° SW
Bermingham Vein	029° to 042°	57° to 64° SE
Bermingham Footwall Vein	050° to 059°	63° to 69° SE
Aho Vein	67°	72° SE

Mastiff Fault -The Mastiff Fault strikes at 137°, dips 51° to the southwest, and displaces the Bermingham Vein by an estimated 77 m of oblique, right lateral normal displacement. The location of the Mastiff Fault is well constrained by drilling and exposure in the main pit. When discussing the Bermingham, Bermingham Footwall Vein, and Aho Veins in this report, the vein zones located across the Mastiff Fault are referred to as the "Arctic" Zone in its footwall and "Etta" Zone in the hangingwall.

Bermingham Vein - The Bermingham Vein has a strike between 029° and 042° and dips between 57° and 64° to the southeast. In the Etta Zone, the Bermingham Vein at its most southwestern extent, is observed to converge with the Aho Vein structure, while to the northeast, it converges with the Bermingham Footwall Vein. Further drilling is required to determine if the Bermingham Vein and Bermingham Footwall Vein display a cross-cutting relationship or if they are splays of the same structure. The maximum strike length of the Bermingham Vein in the Etta Zone is 240 m at surface, tapering to a point about 215 m down-dip from surface.

Bermingham Footwall Vein - Diamond drilling in 2011 targeting the Bermingham and Aho Veins in the Etta Zone intercepted a third mineralised structure referred to as the Bermingham Footwall Vein located close to the footwall of the Bermingham Vein. The Bermingham Footwall Vein has a strike of between 050° and 059°, and dip between 63° and 69° to the southeast. Displacement on the Bermingham Vein fault and Bermingham Footwall Vein fault is unknown, but the stratigraphy supports a combined dip-slip separation of at least 50 m.

In the Etta Zone, the Bermingham Footwall Vein appears to join or terminate against the Bermingham Vein up-dip and to the northeast; however, the nature of this intersection is poorly understood. To the northeast and down-dip, the Bermingham Footwall Vein is offset by the Mastiff fault. To the southwest, the Bermingham Footwall Vein structure is open and may intersect the Aho Vein.

Aho Vein- Geologic interpretation of drilling results on the down-dip extension of the Bermingham Vein in the Etta Zone identified a previously unrecognised mineralized structure in the hangingwall section. The new structure was named the Aho Vein and its northeast extension was subsequently located in the Arctic Zone. The Aho Vein has a strike of 067° and dip of 72° south. The Sericite Schist Marker shows approximately 100 m of dip-slip separation on this structure.

6.4 Mineralization

Summaries of the mineralogy of the Keno Hill District silver-lead-zinc mineralization can be found in Boyle (1965), Cathro (2006), Murphy (1997), and Roots (1997). Mineralization in the Keno Hill camp is of the polymetallic silver-lead-zinc vein type that typically exhibits a succession of hydrothermally precipitated minerals from the vein wall towards the vein center. However at Keno Hill, multiple pulses of hydrothermal fluids, probably related to repeated reactivation and breccia formation along the host fault structures, have formed a series of vein stages with differing mineral assemblages and textures. Supergene alteration may have further changed the nature of the mineralogy in the veins near surface area, however due to glacial erosion, much of the supergene zone may have been removed.

In general, common gangue minerals include (manganiferous) siderite, and to a lesser extent, quartz and calcite. Silver predominantly occurs in argentiferous galena and argentiferous tetrahedrite (freibergite). In some assemblages, silver is also found as native silver, in polybasite, stephanite, and pyrargyrite. Lead occurs in galena and zinc in sphalerite, which at Keno Hill can be either an iron-rich or iron-poor variety. Other sulphides include pyrite, arsenopyrite (locally gold bearing), and chalcopyrite.

Cathro (2006) suggested that the mineralized veins may exhibit a vertical zonation in mineralogy with a typical oreshoot displaying a vertical zoning from lead rich at the top to zinc rich at the bottom. He reported mineralogical changes to the mineralization with increasing depth from galena to galena-freibergite, to galena-freibergite-sphalerite-siderite, to sphalerite-freibergite-galena-siderite, to sphalerite-siderite, to siderite-pyrite-sphalerite that have been historically interpreted to indicate a silver-poor sphalerite-rich base to the economic mineralization. Historically, it was also believed that economic mineralization in the Keno Hill camp was restricted to a shallow zone of about 120 m thickness however the 370 m depth of production from the Hector-Calumet mine demonstrates that silver-rich veins may exist over much greater vertical intervals and that known veins exhibit exploration depth potential.

6.5 Bermingham Mineralization

In the area of interest for the current resource estimate, three mineralized veins have been identified - the Aho, Bermingham, and Bermingham Footwall veins.

The Aho Vein comprises predominantly quartz, and occurs over several metres width within a wide halo of structurally damaged rocks. Sulphides are present but constitute only a small proportion of the vein, usually less than about 2%, of which arsenopyrite and pyrite are the most abundant, followed by galena and sphalerite. While milky white quartz is the predominant gangue mineral and constitutes the majority of the vein, calcite is also observed with siderite as masses less than a centimetre in diameter. The Aho Vein intercepts proximal to the Bermingham Vein and Bermingham Footwall Vein can host more abundant iron-rich carbonates, likely due to later overprinting by hydrothermal fluids related to these veins. Silver, lead, and zinc values are anomalous within the Aho Vein but are uneconomic, typically returning values of a few tens of grams per tonne of silver. The gold/silver ratio in the Aho Vein is higher than observed in the other Bermingham veins, and the gold is likely associated with arsenopyrite. Pressure solution features (stylolites) are noticeable within the Aho Vein.

The Bermingham Vein and Bermingham Footwall Vein typically exist within a wide 5 to 10 m wide structurally damaged zone containing numerous stringers, veinlets, breccias, and gouge. In most cases, a discrete vein 0.5 to 2.5 m wide, exists within this zone consisting predominantly of carbonate (dolomite, ankerite, and siderite), quartz and calcite gangue, and sulphides: sphalerite, galena, pyrite, and arsenopyrite, with accessory, chalcopyrite, argentian tetrahedrite (freibergite), jamesonite, ruby silver, and native silver. High silver values are common within the vein and in stringers, and veinlets within the wider and lower grade damage zone.

7 Deposit Types

The Keno Hill Mining camp has long been recognized as a polymetallic silver-lead-zinc vein district with characteristics possibly similar to other well-known mining districts in the world. Examples of this type of mineralization include the Kokanee Range (Slocan), British Columbia; Coeur d'Alene, Idaho; Freiberg and the Harz Mountains, Germany; and Príbram, Czech Republic.

The common characteristics of these locales are their proximity to crustal-scale faults and the occurrence in a package of monotonous clastic metasedimentary rocks that have been intruded by plutons. Even though the mineralization may not be related to the intrusions, they may have acted as a heat source for hydrothermal circulation. Mineral precipitation occurred where metal-laden hydrothermal fluids, with a temperature of 250 to 300°C, traveled through open fractures caused by a local tensional stress regime in an otherwise compressional environment and precipitated metals as pressure and temperature gradients changed.

The metals were likely leached from crustal rocks by hot circulating fluids and it is inferred that mineral deposition occurred at an average depth of about 6 km. Fluid mixing of hydrothermal fluid with meteoric fluid is common, as is boiling. Multiple fluid pulses may have resulted in a repetition of the mineral deposition sequence as well as recrystallization and modification of the existing mineral assemblage.

At Keno Hill, the largest accumulation of silver-lead-zinc mineralization occurred in structurally prepared competent rocks, such as the Basal Quartzite Member that could break with open spaces developed. Incompetent rocks such as phyllites would deform, and produce fewer and smaller (if any) open spaces, limiting fluid flow and resulting mineral precipitation.

8 Exploration

Most past exploration work in the Keno Hill district was conducted as support to the mining activities until the mines closed in 1989. A good summary of the early exploration work is provided by Cathro (2006). This historical work involved surface and underground drilling designed to explore areas surrounding the main underground working areas. While it is beyond the scope of this report to describe all the historical exploration work completed in the Keno Hill district, the work relating to Bermingham is described in Section 5.

The exploration conducted by Alexco is the first comprehensive exploration effort in the district since 1997. During the initial phase of Alexco's involvement at Keno Hill, a program of geologic data compilation, aerial geophysical surveying (conducted by McPhar Geophysics), and surface diamond drilling was completed.

Past operator UKHM accumulated a large number of paper maps and documents relating to nearly 70 years of district mining, but the documentation and data were never assembled into a coherent database that could be used to decipher the geology on a district scale. Beginning in late 2005 and continuing through 2008, Alexco has converted this historical data to digital format by scanning and data entry for use in 3D geologic modelling software.

During 2006, Alexco embarked on an aggressive exploration program in the Keno Hill district. The first targets generated in the Bermingham area were drilled by Alexco in 2009, targeting the Bermingham Vein at depth in the hangingwall of the Mastiff Fault below an area with an historic shallow open pit resource outlined. Results of this drilling were sufficiently encouraging to continue exploration in 2010 and 2011.

A district-wide surface geological mapping and structural study, started in 2007, was continued through the 2011 field season. The findings were used in conjunction with the drill results to resolve the stratigraphy and structural complications at Bermingham to further refine vein targeting.

In 2010, a soil-gas survey was conducted along the Bermingham trend. This survey was completed over a 2200 m long, by 175 m wide corridor stretching from Coral-Wigwam, over the Bermingham pit area, to the Townsite mine. An induced polarity and resistivity geophysical survey was conducted over the same area. As a result of these surveys some anomalies were identified on the Bermingham trend along strike southwest of the open pit workings that remain as future drilling targets.

9 Drilling

9.1 Historical Drilling

Historical core drilling at Bermingham in the resource estimation area is limited to 16 core drill holes dating from 1969. The holes were drilled at an average azimuth of 323° and did not include down hole surveys. The average hole length was approximately 80 m with several holes ranging up to 146 m. Drill recovery was generally poor, particularly in mineralized zones, and core assays were restricted to well mineralized zones.

A small portion of the 874 shallow, open-hole, surface percussion drill holes completed historically in the Bermingham area were focussed on the present resource area, first as vertical holes in a grid pattern on approximately 30 m centers followed later by a definition drill program of inclined holes along strike of the vein to define an open pit target.

Due to recovery issues for the core holes, lack of careful sampling techniques, and the open-hole nature of the percussion drilling, drilling data from these programs was not deemed reliable for use in the resource calculation. The data were used in construction of mineralization/geologic models, where applicable.

9.2 2009 to 2011 Alexco Drilling

Alexco conducted surface diamond drilling programs at Bermingham in 2009, 2010, and 2011 with 36 core holes totalling 10,456 m drilled (Figure 9.1). The drilling was designed to test along strike and down plunge of historic near surface reserve/resource blocks, open pit workings, and around the historic underground mine workings. Drilling was successful in outlining an area of silver-lead-zinc mineralization developed in the hangingwall of the Mastiff Fault such that a new resource estimate could be completed in keeping with current standards. Of the 36 holes drilled in the area, 23 totalling 6,442 m are used in the resource estimate.

Alexco drilled two core holes in 2009, for a total of 523 m, which were designed to test the Bermingham Vein at depth in the hangingwall of the Mastiff Fault. Silver-lead-zinc mineralization encountered in both holes was deemed significant enough to warrant follow-up drilling the next year. Thus, in 2010 eight core holes totalling 2,588 m were completed, of which six intercepted the Bermingham Vein, one was abandoned due to bad ground and one missed the target due to unforeseen structural complexity. Re-interpretation of the data at this time led to the recognition of a subparallel second vein, referred to as the Aho Vein located in the hangingwall of the Bermingham Vein. Encouraging assays led to an expanded 2011 drill program with 25 holes completed for a total of 6,889 m. Of this, 3,217 m (13 holes) drilled in the hangingwall of the Mastiff Fault were largely used to explore and infill in the vicinity of the 2009 and 2010 drilling. The additional data obtained from this drilling necessitated interpretation of a third vein structure developed in the footwall of the Bermingham Vein that is referred to as the Bermingham Footwall Vein.

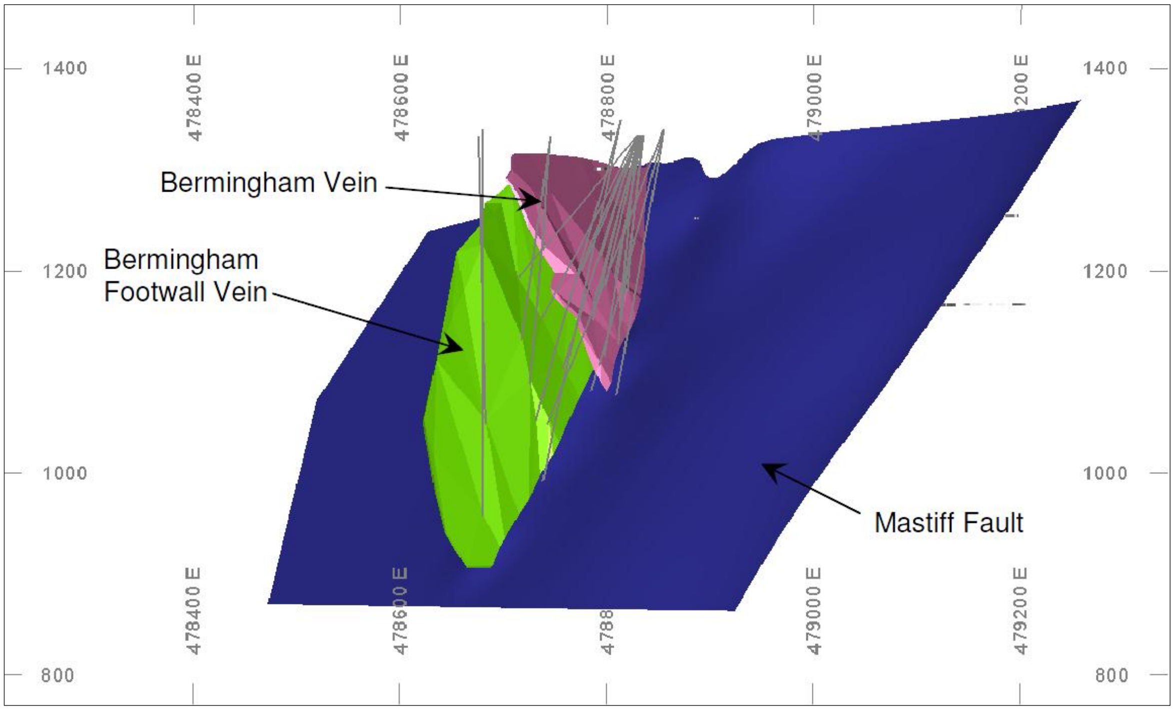


Figure 9.1: Location of Surface Drilling from 2009 to 2011 at Bermingham. Section is looking north

In 2009, drilling was completed by Kluane Drilling of Whitehorse, Yukon. In 2010 it was split amongst two contractors, Cabo Drilling based in Surrey, BC and Kluane Drilling of Whitehorse, Yukon. In 2011, drilling was completed by Boart Longyear, based in Saskatoon, Saskatchewan. Drilling was conducted by the wireline method using H-size equipment (HQ). For all campaigns the drilling was well supervised, the drill sites were clean and safe, and the work was efficiently completed. Diamond drill operational safety inspections were conducted on each drill rig at various times throughout the drilling programs.

Proposed drill hole collars were initially located using a Garmin hand held GPS, while the final collars were surveyed with either an Ashtech GPS utilizing post-processing software or a Sokkia GRX1 RTK GPS. All coordinates were recorded in the Universal Transverse Mercator NAD83 Zone 8 (UTM NAD83Z8) map projection.

Surface drill holes in the resource area that were drilled to target depth ranged in length from 203 to 469 m. Most holes were drilled on a northwesterly azimuth with a declination of between 50° and 80°. In most cases, the drill holes were designed to intercept the mineralized zones perpendicular to the strike direction to give as close as possible a true thickness to the mineralized interval. Down hole surveys were taken at approximately 15 to 20 m intervals using a Reflex survey tool.

Standard logging and sampling conventions were used to capture information from the drill core. The core was initially logged in detail using paper forms or directly in digital format as from 2011. The data was entered into a SQL database and was captured in separate tables for:

- Lithology;
- Stratigraphy;
- Structure;
- Mineralization;
- Alteration;
- Geotechnical; and
- Specific Gravity.

Lithology was documented by an alphanumeric code with additional modifiers and descriptive remarks. Structural data consisted of the type of structure with measurements relative to the core axis, and, where possible, the orientation of mineralized veins relative to a reference plane calculated for the area. The Mineral table captured the visual percentage veining (by type), sulphide (galena, sphalerite, pyrite, arsenopyrite, stibnite, chalcopyrite, freibergite, and native silver), and oxide (limonite, sulphosalts, and manganese wad). Specific alteration features including silica, carbonate, and iron oxide (FeOx) alteration were also captured using a qualitative weak to strong scale. The geotechnical table recorded percentage recovery and rock quality determination for the entire hole and fracture intensity where warranted.

Alexco systematically measured core specific gravity (CSG) of the mineralized material as well as the basic rock types. Specific gravity was measured using a balance to measure the weight of the core in air and in water. The core was not covered by wax or a plastic film before weighing in water. Alexco collected approximately 202 core specific gravity measurements from the resource area during the 2009 to 2011 drilling programs at Bermingham. Pulp specific gravity (PSG) measurements were obtained by pycnometry on select assay intervals of mineralized zones for Alexco drilling by ALS Laboratories.

10 Sampling Method and Approach

10.1 Historical Sampling

Information regarding historical (pre-Alexco) sampling approach and methodology is limited. No historical information was used in the resource estimation at Bermingham.

10.2 2009 to 2011 Alexco Sampling

The sampling protocol used for the 2009 to 2011 Alexco surface drill programs were the same. Sample intervals were broken at lithological contacts and at significant mineralization changes. The logging geologist marked sample intervals within the major rock types outside of the vein zones which were typically 2 m in length. Sample intervals within the mineralized zones ranged from 0.10 to 1.0 m, based on consistency of mineralization. Select drill holes were sampled top to bottom to develop geochemical profiles, while other holes were sampled only around the vein zones or areas of interest.

After logging, the core was digitally photographed and cut in half lengthwise with a diamond saw, with attention paid to the vein orientation. One half was returned to the core box for storage at the site and the other bagged for sample shipment. No further on-site processing was performed.

11 Sample Preparation, Analyses, and Security

11.1 Historical Samples

Historical sample results were not used in the production of the resource estimate summarized in this report.

11.2 2009 to 2011 Alexco Exploration Programs

Some minor modification in the sample shipment procedure has occurred over time, primarily in response to changing laboratory locations and the logistics surrounding available commercial transport. In all cases, approximately four to five individual samples were placed in rice bags (grain sacks), sealed with a numbered security tag, placed on pallets, and wrapped for shipping. In 2009, samples were transported to the Canadian Freightways facility in Whitehorse, Yukon and shipped forward to the Eco Tech Laboratory facility in Kamloops, BC for analysis. In 2010, samples were shipped via Manitoulin Transport to Whitehorse, Yukon, where they were couriered to the sample preparation facilities of either AGAT Labs or ALS in Whitehorse, after which pulverized sub-sample splits were then sent to the AGAT Labs facility in Mississauga, Ontario or the ALS facility in North Vancouver, British Columbia for analysis. Samples were shipped to ALS Whitehorse for the 2011 drill program.

Eco Tech, ALS, and AGAT Laboratories are all accredited to ISO 17025 by Standards Council of Canada for a number of specific test procedures, including fire assay for gold and silver with atomic absorption and gravimetric finish; multi-element inductively coupled plasma optical emission spectroscopy; and atomic absorption assays for silver, copper, lead and zinc. ALS also participates in a number of international proficiency tests, such as those managed by CANMET and Geostats.

Sample preparation and analysis techniques were consistent for the 2009 to 2011 Alexco programs for all labs. Sample preparation consisted of initial fine crushing of the sample to better than 70% passing 2 mm. A nominal 250 g split of this material was then pulverized to greater than 85% passing 75 µ for analyses. Duplicate samples were prepared, when indicated by the client, at the preparation facility by collecting a second 250 g split from the 2 mm crushed material.

Samples were analyzed for gold by fire assay and atomic absorption spectrometry on 30 g sub-samples and for a suite of 27 to 48 elements by four acid digestion and either inductively coupled plasma atomic emission spectroscopy (ICP-AES) or induced coupled plasma mass spectroscopy (ICP-MS) on 0.5 g sub-samples. Elements exceeding concentration limits of ICP-AES or ICP-MS were re-assayed by single element four acid digestion and atomic emission spectroscopy. Silver results exceeding ICP-AES limits were re-assayed by fire assay and gravimetric finish on 30 g sub-samples. Lead and zinc results exceeding concentration limits were analyzed by volumetric titration.

Alexco implemented standard assay quality control procedures for all Keno Hill drill campaigns. Each batch of 20 samples sent for assaying included three control samples: a commercial Standard Reference Material (SRM), a blank, and a duplicate. The locations of control samples (SRM, blank, and duplicate) in the sample stream were defined by the logging geologist and control samples were inserted when the core was cut. The SRM was processed to a pulp and was inserted in ~50 to 100 g amounts. The blank was commercially purchased dolomitic “landscape rock” and approximately 0.35 to 1.5 kg of the material was inserted into the sample stream. An empty sample bag was inserted at the location of the duplicate, which was prepared during sample preparation at the laboratory preparation facility and consisted of a coarse reject split of the preceding sample.

The quality control program developed by Alexco is considered mature and overseen by appropriately qualified geologists. The data collected by Alexco on the Bermingham project was acquired using adequate quality control procedures that generally meet or exceed industry best practices for a resource delineation stage exploration property.

12 Data Verification

12.1 Historical Data Verification

During almost 100 years of exploration and mining in the Keno Hill area, a large amount of data and documents were produced, and much of this material is accessible to Alexco. Historical data available for the Bermingham area include diamond drill logs, overburden drill logs, and underground and surface mapping.

12.1.1 Diamond Drill Data

All accessible diamond drill hole logs were transcribed onto standardized spreadsheets as close to verbatim as possible; the original logs were scanned, and file names and numbers were recorded in the new spreadsheets, that were then inspected by geologists for consistency. The next step was to normalize the original transcribed data in order to match current nomenclature and to verify the data. Collar information, and survey, assay, and recovery data were verified by a person other than the original data entry person. The final step was to amalgamate separate spreadsheets into one global database.

12.2 Alexco Data Verification

Alexco maintains an SQL database of all Keno District drill and sample data. Each property was assigned an identifier to extract property specific subsets from the master database. All data were entered or imported into the database using Datashed, a database management software program. The Bermingham data was exported from the SQL database by scripted routines to comma delimited (csv) files, which were imported into Minesight and MapInfo software programs. The following drill hole files were generated: collar, survey, drill hole assay, lithology, mineralization, structure, stratigraphy, alteration, and geotechnical. During the 2009 to 2011 drilling programs, Alexco personnel conducted routine visual verifications to ensure the accuracy of the drilling data, including a 100% check of the collar and survey tables, and a minimum 10% verification of the remaining exported tables. The process uncovered a low level of data entry errors, which were corrected accordingly.

12.3 Analytical Quality Assurance and Quality Control Programs

Quality control measures were typically set in place to ensure the reliability and trustworthiness of the exploration data. This included written field procedures and independent verification of aspects such as drilling, surveying, sampling and assaying, data management, and database integrity. Appropriate documentation of quality control measures and regular analysis of quality control data are important as a safeguard for project data, and form the basis for the quality assurance program implemented during exploration.

Internal and external laboratory control measures were implemented to monitor the precision and accuracy of the sampling, preparation, and assaying. They are also important to prevent sample mix-up, and monitor the voluntary or inadvertent contamination of samples. Assaying protocols typically involve regular duplicate and replicate assays and insertion of quality control samples to monitor the reliability of assaying results throughout the sampling and assaying process.

12.3.1 Historical Exploration

Historical assays were not used in the calculation of mineral resources summarized in this report.

12.3.2 Alexco 2009 to 2011 Exploration Programs

During the 2009 to 2011 drill programs, three control samples (i.e., standard, blank, and duplicate) were included in each batch of 20 samples sent for assaying. Alexco used one of seven Standard Reference Materials (SRM) purchased from WCM Sales Limited of Burnaby, British Columbia: one polymetallic copper, lead, zinc, and silver reference material (PB 131) and six silver reference materials (PM 1117, PM 1123, PM 1127, PM 1128, PM 1130, and PM 1133) for inclusion with each twenty sample batch (Table 12.1).

Table 12.1: Commercial SRM Used by Alexco for the 2009 to 2011 Drilling Programs

SRM	Pb (%)	S.D.	Zn (%)	S.D.	Ag (g/t)	S.D.	Au (g/t)	S.D.
PB131	1.04	0.04	1.89	0.06	262	11	–	–
PM1117	–	–	–	–	386	16	–	–
PM1123	–	–	–	–	31	1.3	1.42	0.04
PM1127	–	–	–	–	1580	36	–	–
PM1128	–	–	–	–	592	12	–	–
PM1130	–	–	–	–	101	3.0	3.74	0.19
PM1133	–	–	–	–	757	19	–	–

Assay results for quality control samples were monitored on an ongoing basis during all drill programs (2009 to 2011). Each potential quality control failure was investigated and appropriate remedial action was taken, including the re-assaying of batches containing abnormal quality control results. In some instances, the potential failures occurred in batches of samples outside potentially mineralized areas. In such cases, no remedial actions were taken.

The 2009 to 2011 external analytical quality control data produced by Alexco is summarized in Table 12.2.

Table 12.2: Quality Control Data Produced by Alexco in 2009 to 2011 for the Bermingham Resource Area

Quality Control Type	Count	Percentage
Core Samples	1,427	–
Blanks	84	1:16 (5.9%)
Standard Reference Material	84	1:16 (5.9%)
Coarse Reject Duplicate	84	1:16 (5.9%)

During 2010 and 2011 a number of standard reference material samples returned values greater than three standard deviations from the expected value. Batches containing these failed standards were resubmitted to ALS for analysis and the new assays were used for the resource estimates.

Analyses of assays from coarse reject duplicate samples suggest that silver, lead, and zinc grades can be reasonably reproduced from the coarse reject split of the original samples with no apparent bias.

12.4 SRK Data Verification

SRK carried out a site visit on May 7 and 8, 2012, to examine drill core, core logging and sampling procedures, and visit the drill sites. Drill site locations were verified with hand-help GPS and were found to agree with the digital database of drill hole locations. In April 2012, SRK completed an audit of the Alexco analytical and quality control data acquired during the sampling of the Bermingham deposit; this audit was conducted and completed by SRK Associate, Darrell Farrow. SRK conducted routine verifications to ascertain the reliability of the electronic drill hole database provided by Alexco. All assays in the current database were verified against independently sourced sample certificates from ALS, Echo-Tech, and AGAT Laboratories. The silver, lead, zinc, and gold values in the assay table were found to match the laboratory certificates with a few exceptions where samples had been re-assayed and the database had not been updated with the re-assay certificate number. Alexco corrected this and the samples values were found to match the re-assay certificates.

After the review, SRK is of the opinion that the Bermingham drilling database is sufficiently reliable for resource estimation.

12.4.1 Quality Control Results

Alexco made available to SRK the assay results for analytical quality control data accumulated for the Bermingham deposit from 2009 to 2011. SRK aggregated the assay results from the external quality control samples for further analysis. Sample blanks and certified reference materials data were summarized on time series plots to highlight any potential failure. Field duplicate paired assay data were analysed using scatterplots and ranked absolute relative difference charts.

Field blanks are used to monitor contamination introduced during sample preparation and to monitor analytical accuracy of the lab. True blanks should not have any of the elements of interest much higher than the detection levels of the instrument being used. SRK consider batch samples that contain a blank sample with more than 5 times of detection limit as problematic batches. In general, gold (Figure 12.1) and silver (Figure 12.2) returned good results, while zinc (Figure 12.3) consistently returned values that were too high, and lead (Figure 12.4) returned a number of values that were also too high. In general, the high zinc and lead values can be attributed to the fact that Alexco is using commercially purchased landscape rock dolomite as their source of blank material. It is again recommended that in the future Alexco source a more appropriate material for blank samples. Some of the higher lead and zinc values can be attributed to samples treated after high value samples which points to possible contamination of samples in the laboratory. It is recommended that Alexco follow this up with the relevant laboratory.

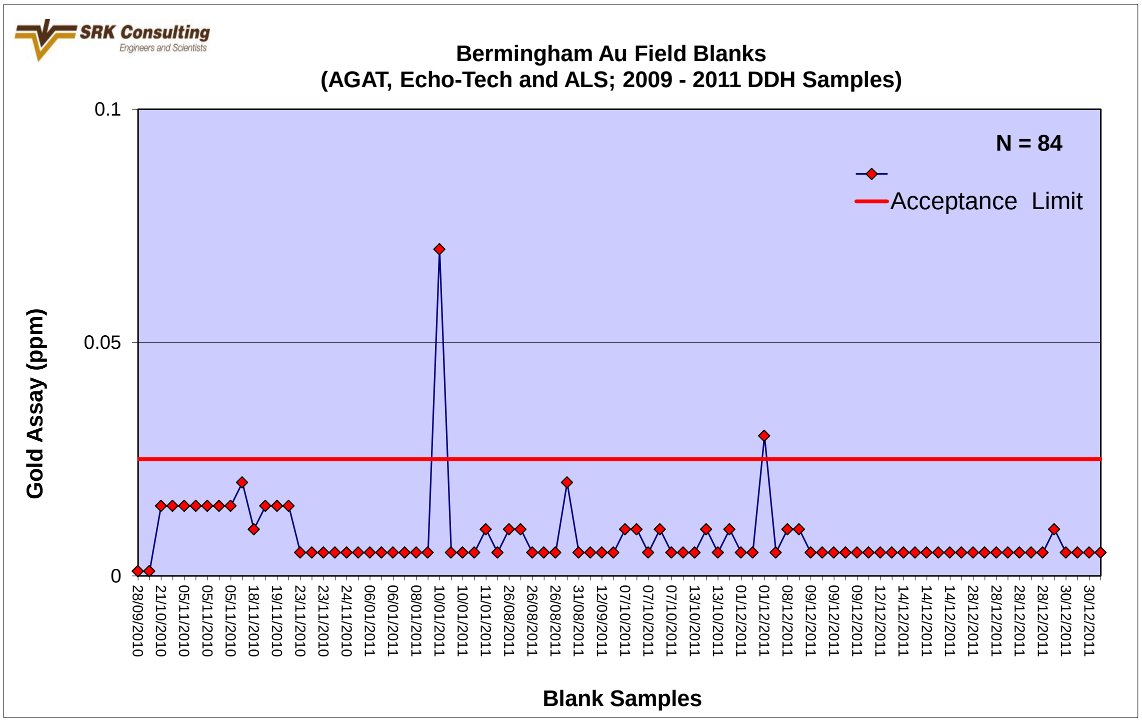


Figure 12.1: Blank analytical results for gold over time for commercially purchased landscape rock submitted with Bermingham deposit samples

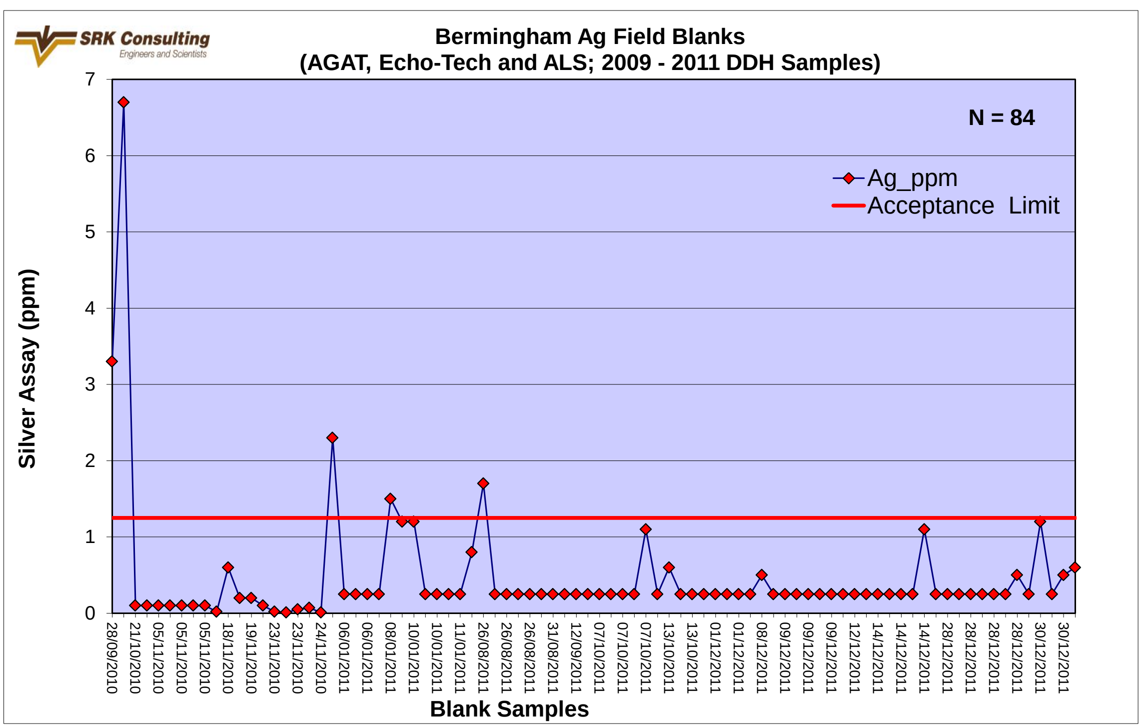


Figure 12.2: Blank analytical results for silver over time for commercially purchased landscape rock submitted with Bermingham deposit samples

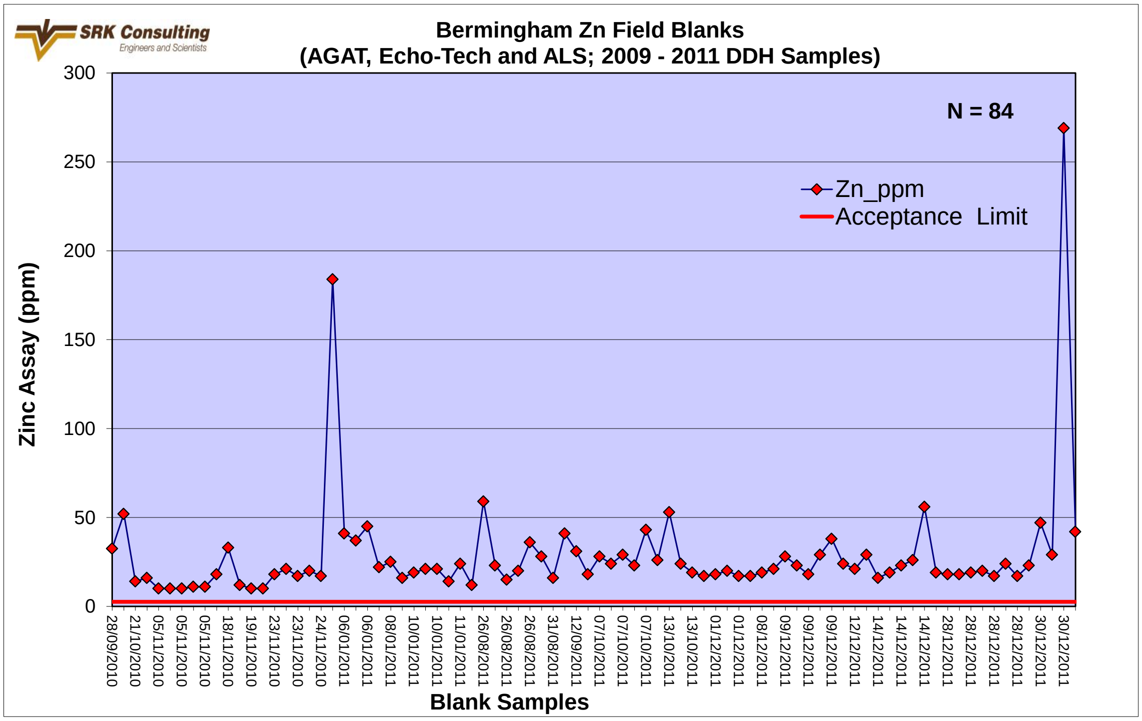


Figure 12.3: Blank analytical results for zinc over time for commercially purchased landscape rock submitted with Bermingham deposit samples

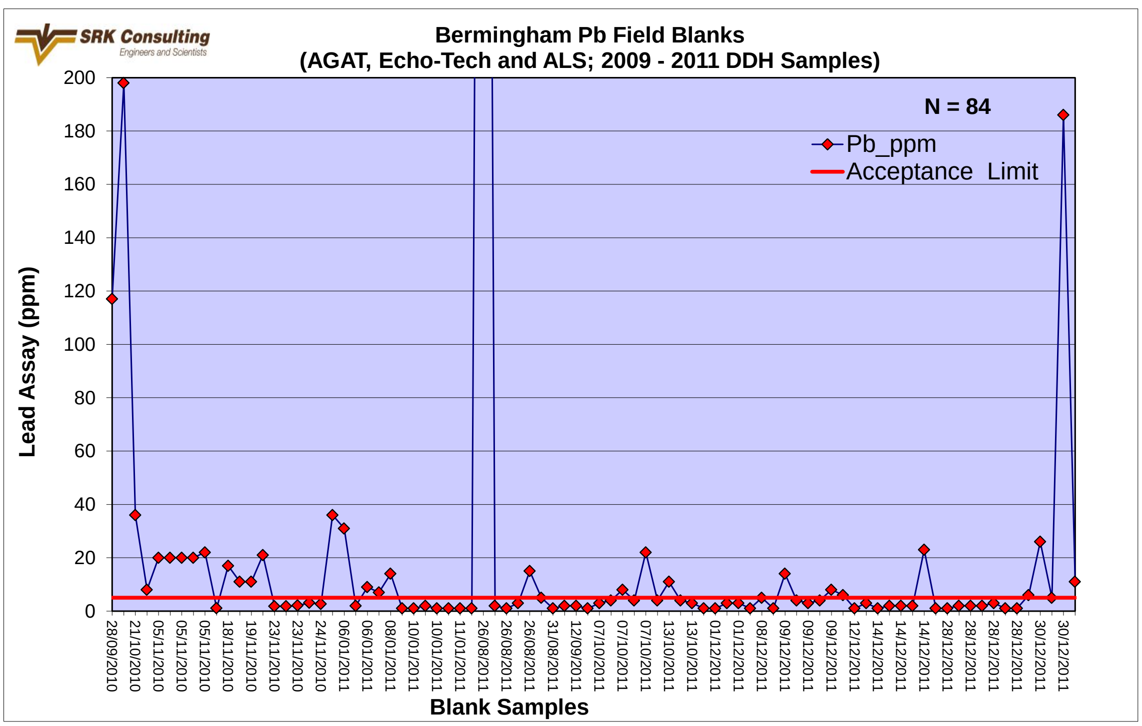


Figure 12.4: Blank analytical results for lead over time for commercially purchased landscape rock submitted with Bermingham deposit samples

Scatter plots and percentile rank charts for coarse reject split duplicate gold, silver, zinc, and lead data are presented in Figure 12.5 to Figure 12.8 respectively. Good correlation is seen between coarse reject splits for silver, lead, and zinc with 89%, 95%, and 83%, respectively, of duplicate pairs having a half absolute relative difference of less than 10%. Gold values for coarse reject splits were relatively well correlated with 70% of duplicate pairs having a half absolute relative difference of less than 10%.

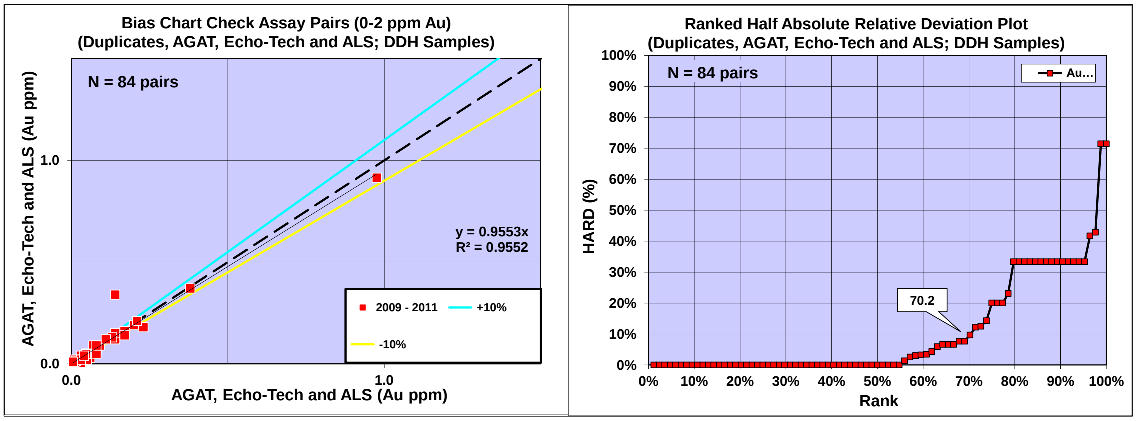


Figure 12.5: Scatter plot and Ranked Half Absolute Relative Deviation plot of gold data for coarse reject duplicate Bermingham samples

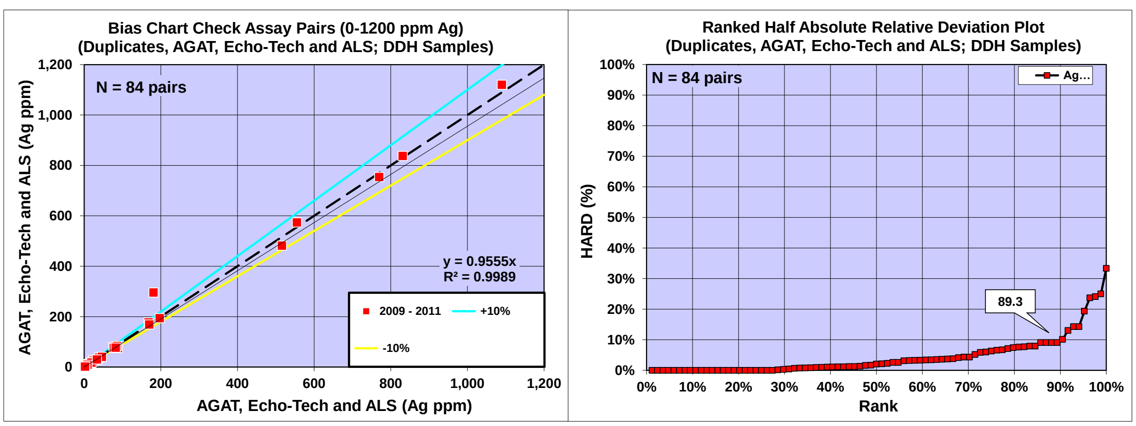


Figure 12.6: Scatter plot and Ranked Half Absolute Relative Deviation plot of silver data for coarse reject duplicate Bermingham samples

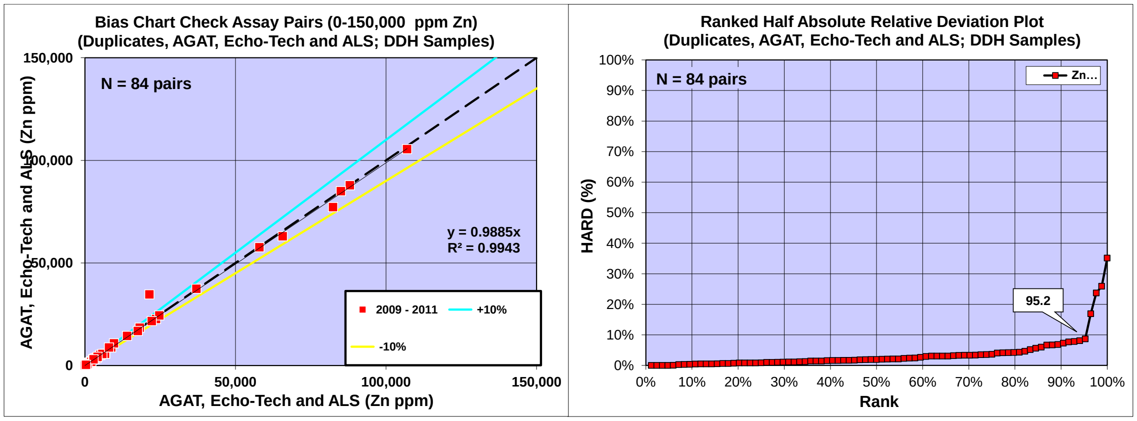


Figure 12.7: Scatter plot and Ranked Half Absolute Relative Deviation plot of zinc data for coarse reject duplicate Bermingham samples

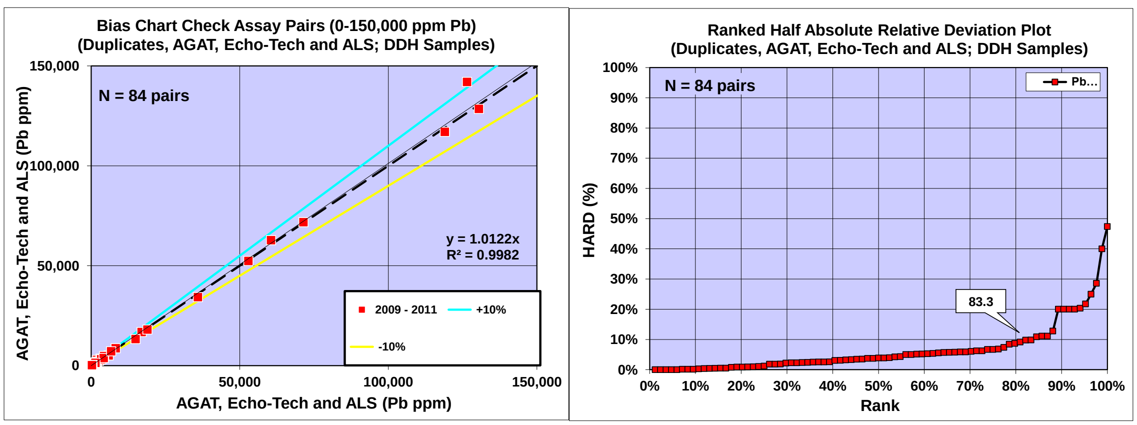


Figure 12.8: Scatter plot and Ranked Half Absolute Relative Deviation plot of lead data for coarse reject duplicate Bermingham samples

Time series plots for standard reference materials, PB131, PM1117, PM1123, PM1127, PM1128, PM1130, and PM1133 can be found in Appendix A, Figures A1-A10. Batches containing standards that returned values greater than three standard deviations from the expected value were resubmitted for analysis at ALS. The new assays were then used for the resource estimates.

The review of analytical quality control data produced by ALS, Echo-Tech, AGAT, and Alexco, suggest that silver, gold, lead, and zinc grades can be reasonably reproduced, suggesting that the final, and in some cases replicated, assay results reported by ALS, Echo-Tech and AGAT are generally reliable for the purpose of resource estimation.

13 Adjacent Properties

There are no adjacent properties considered relevant to this technical report.

14 Mineral Processing and Metallurgical Testing

No metallurgical test work was conducted for the Bermingham deposit. For the purpose of this study, SRK assumed that the deposit would have similar metallurgical properties to those of the Bellekeno deposit. Three separate metallurgical tests were carried out on the mineralization at Bellekeno.

Test results from three testing programs indicate that the mineralization of the Bellekeno deposit responds well to a lead and zinc differential flotation process using a cyanide-free zinc mineral suppression regime. Silver minerals are intimately associated with lead minerals and are recovered as a silver-lead concentrate. A separate zinc concentrate is also produced from the Bellekeno operation.

Metallurgical performance estimated from the test work and used for this report is based on test work completed by SGS Lakefield Research Ltd. in 2007, and by Process Research Associates Ltd. in 1996 and 2008 to 2009. Table 14.1 lists the average projected metallurgical performance.

Table 14.1: Summary of projected metallurgical recoveries

Product	Mass %	Grade				Recovery			
		Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)
Head	100	0.42	871	9.47	5.6	100	100	100	100
Pb-Ag Con	13.1	1.5	6,185	70.3	2.3	47.7	92.7	96.9	5.4
Zn Conc	9.1	1.1	300	0.52	54.4	23.9	3.1	0.5	88.4

15 Mineral Resource Estimates

15.1 Introduction

SRK was engaged in April 2012, by the Alexco Resource Corporation to provide a mineral resource estimate for the Bermingham deposit.

Historical production attributed to the Bermingham deposit is 186,266 ton at 20.3 opt Ag, 4.2% Pb, and 0.6% zinc, or, 3,777,932 oz of silver (Cathro, 2006).

The mineral resources presented in this report represent the first disclosure of mineral resource for the Bermingham deposit by Alexco.

15.2 Wireframe Construction

Wireframes were constructed for three mineralized vein structures in the geological model for the Bermingham prospect: the Bermingham, Bermingham Footwall and Aho veins in the Etta Zone. Two of these vein structures, Bermingham and Bermingham Footwall veins, were used for resource estimation. SRK reviewed and validated the wireframes before resource estimation. SRK concluded that the wireframes of the Bermingham deposit were fair representations of the mineralized veins and acceptable for resource estimation. The wireframes for resource modelling were constructed using Mintec's MineSight 3D software. For the most part, potentially economic mineralisation was confined within a halo of structurally damaged rocks surrounding the vein. The damage zone has fairly discrete and identifiable limits for each vein, often terminating in a minor fault or breccia zone. Therefore, the wireframe geometries were based upon these structural-geological contacts. In addition to Alexco geological mapping and drill hole data, historical drill hole data and historic geological mapping conducted by UKHM were used to constrain the geometries of the main Bermingham and Bermingham Footwall Vein structures.

The area comprises of a structurally complex zone of vein – fault splays, and it is not yet clear as to which of the veins might be the master vein structure or to what extent they might merge or extend to the southwest of the resource area.

Within the area of interest, the Bermingham Vein has a strike of between 029° and 042° and dips between 57° and 64° to the southeast. At its most southwestern extent, it converges with the Aho structure, while to the northeast, it converges with the Bermingham Footwall Vein and terminates on the Mastiff Fault. The maximum strike length of the Bermingham Vein segment between the Mastiff Fault hangingwall and the Aho Vein is 240 m at surface, tapering to a point about 215 m down-dip from surface (Figure 15.1Figure 15.2).

The Bermingham Footwall Vein has a strike between 050° and 059° and dips between 63° and 69° to the southeast. It appears to join or terminate against the Bermingham Vein up-dip and to the northeast, and is offset by the Mastiff Fault. To the southwest, the Bermingham Footwall Vein structure is projected to intersect or merge with the Aho Vein, giving a strike length of at least 340 m.

The Aho Vein has a strike of 067° and dips 72° to the south.

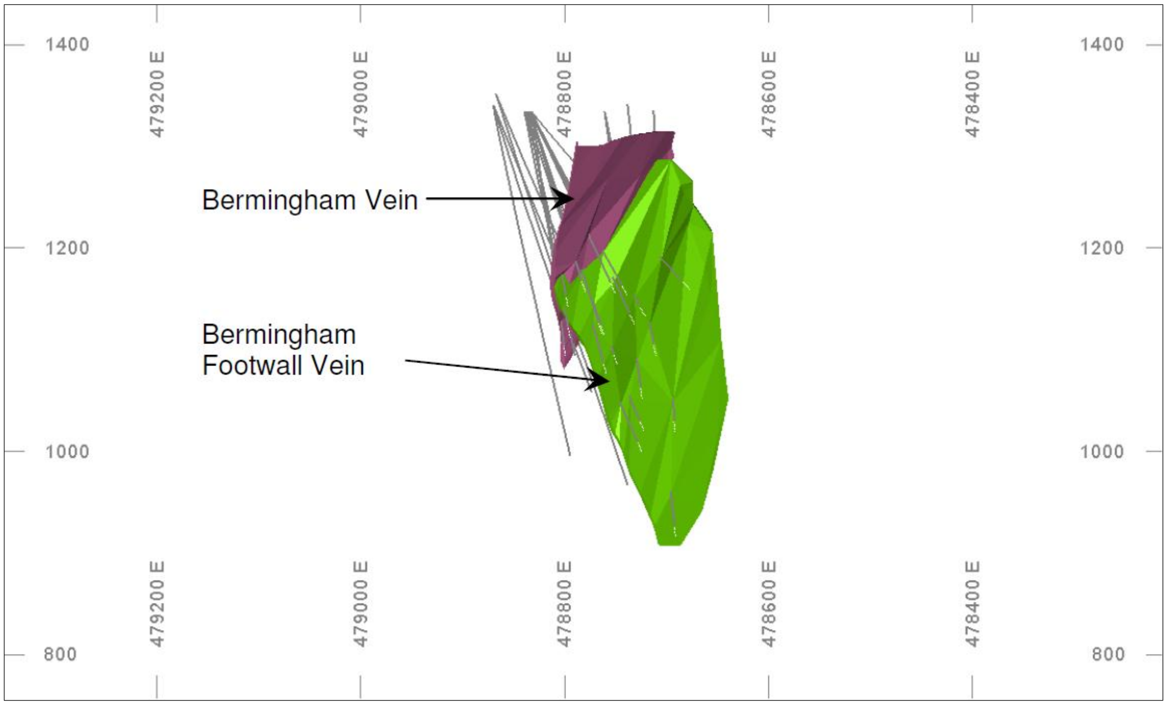


Figure 15.1: Long section of Bermingham wireframes looking south

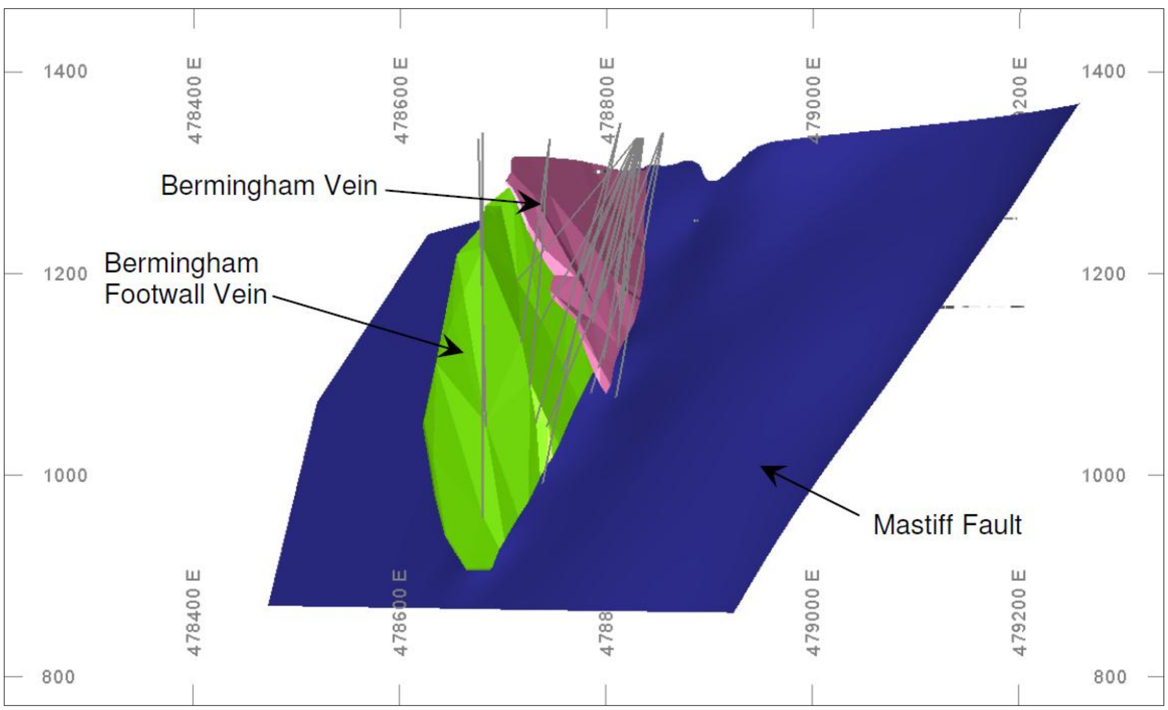


Figure 15.2: Long section of Bermingham wireframes looking north

15.3 Database

The Bermingham drill hole database comprises descriptive information and assay grades from exploration drilling carried out by Alexco from 2009 through 2011. The database was provided to SRK as an Excel format spreadsheet and contained 23 diamond drill holes (Table 15.1) used in the resource estimation (Table 15.2).

Table 15.1: Bermingham deposit sample database

Drill Hole			Number
Type	**Number**	**Length (m)**	**Samples**
DDH	23	6442	1427

Table 15.2: Bermingham deposit diamond drill hole vein intercepts

	Drill Hole		Number
Vein	**Number**	**Length (m)**	**Samples**
Bermingham	13	80	116
Bermingham Footwall	12	62	82
Aho	18	67	83
TOTAL	43	209	281

The supplied mineral resource database was imported into a GEMS Access database, and validated by checking for inconsistencies in naming conventions, analytical units, duplicate entries, length, distance values, or sample intervals less than or equal to zero, blank or zero-value assays, out-of-sequence intervals, intervals or distances greater than the reported drill hole length, inappropriate collar locations, and missing interval and coordinate fields. A few minor inconsistencies were noted and corrected by Alexco. No other significant validation errors were noted in the supplied database. Assay intervals marked as below detection limit were assigned nominal grades as per Table 15.3 prior to importing into GEMS.

Table 15.3: Grades assigned to Bermingham sample assays below detection limit

Metal	Detection Limit	Assigned Value
Au ppm	–0.01	0.005
Au ppm	–0.03	0.015
Ag ppm	–0.5	0.25
Ag ppm	–0.2	0.10
Pb ppm	–2	1
Zn ppm	–2	1

15.4 Specific Gravity

The data supplied by Alexco for Bermingham included a total of 202 specific gravity (SG) measurements on core samples and 1083 pulp specific gravity measurements. A total of 59 of the former and 163 of the latter fall within the modelled vein solids (Table 15.4). Specific gravity was measured on core samples by Alexco using a laboratory scale, and the mass of the drill hole core pieces were measured in air and in water. Drill core was not covered by wax or plastic film prior to immersion. Pulp specific gravity measurements were measured by pycnometer at ALS in Vancouver. No strong correlation between specific gravity measurements and lead or zinc assay results was noted.

A linear regression of the core versus pulp specific gravity measurements for samples was calculated, where:

Core Specific Gravity = Pulp Specific Gravity/1.0287

Core specific gravity measurements were used where available for interpolation of specific gravity into blocks. Because pulp specific gravity measurements often over estimate specific gravity, pulp specific gravity measurements were corrected using the above equation for those samples with no core specific gravity measurements and the corrected specific gravity measurements were used for interpolation of specific gravity into blocks.

Table 15.4: Bermingham Specific gravity measurements

Vein	Type SG Measurement	Total Samples	Minimum Specific Gravity (g/cm^3)	Maximum Specific Gravity (g/cm^3)	Average Specific Gravity (g/cm^3)	Median Specific Gravity (g/cm^3)
Bermingham	Pulp	106	2.64	4.31	3.11	3.05
	Core	34	2.67	4.42	3.14	3.04
Bermingham Footwall	Pulp	57	2.61	3.82	3.00	2.92
	Core	25	2.60	3.61	2.93	2.86
All Samples	Pulp	163	2.61	4.31	3.07	3.00
	Core	59	2.60	4.42	3.05	2.98

15.5 Compositing

Alexco identified a total of 198 diamond drill hole assay intervals as vein intercepts. These assay intervals were imported into GEMS, and assays were then composited to one metre length weighted intervals within the defined vein wireframes. Histograms of sample length for the Bermingham and Bermingham Footwall veins are presented in Figure 15.3 and Figure 15.4 respectively.

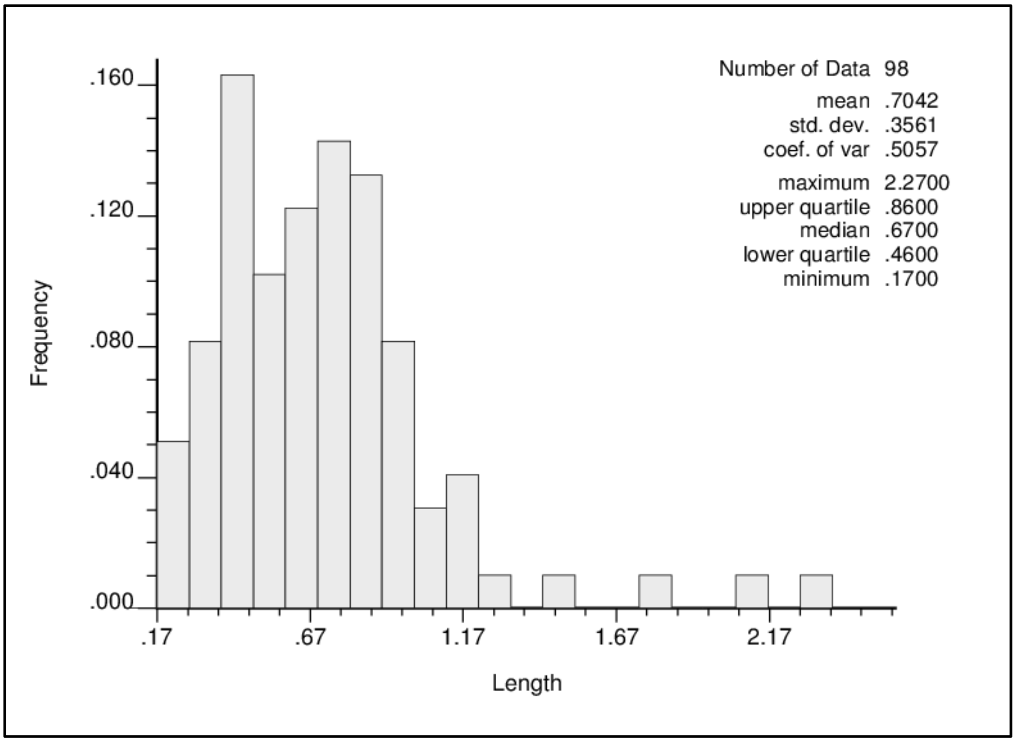


Figure 15.3: Histogram of Sample Length for the Bermingham Vein.

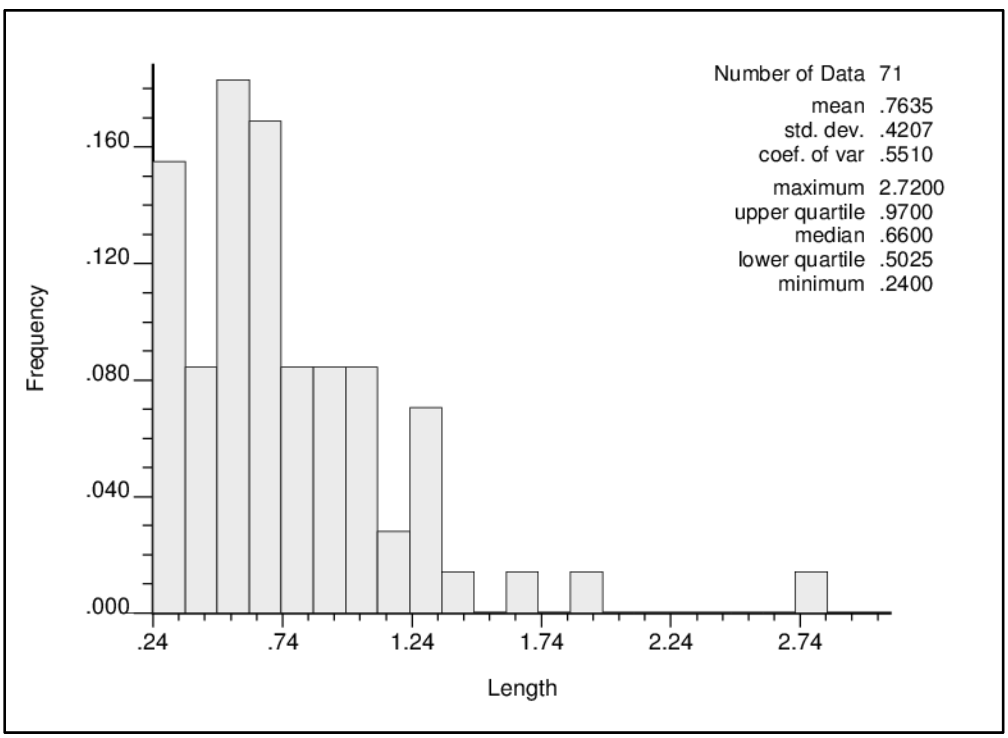


Figure 15.4: Histogram of Sample Length for the Bermingham Footwall Vein

15.6 Capping

Grade capping analysis was conducted on the domain-coded sample assay and composited assay data in order to limit the influence of extreme assay values during estimation. The assays from the Bermingham and Bermingham Footwall veins were examined using histograms, and cumulative frequency plots. Capping threshold values were selected that minimize changes in the sample distribution, and composited values were capped to these values prior to estimation (Table 15.5).

Table 15.5: Sample capping levels for Bermingham

Vein	Commodity	Maximum Value	Cap Value	Number Capped	Average	Average Capped	Lost Metal*
Bermingham	Au ppm	0.408	0.2	2	0.065	0.060	6.94%
	Ag ppm	4059	1500	4	436	371	14.93%
	Pb %	11.18	10	2	1.78	1.76	1.13%
	Zn %	10.2	10	1	1.74	1.73	0.14%
Bermingham Footwall	Au ppm	0.245	0.2	1	399	315	1.13%
	Ag ppm	2640	1000	6	0.063	0.062	20.9%
	Pb %	13.93	10	1	1.07	1.01	5.75%
	Zn %	13.28	10	1	1.67	1.62	3.07%

*Lost metal is (Average – Averaged Capped)/Average * 100 where Average is the average grade of the assays before capping and Average Capped is the average grade of the assays after capping.

15.7 Data Statistics

Summary statistics were compiled for the composite data for the Bermingham and Bermingham Footwall veins (Table 15.6). A total of 82 composites were derived for the Bermingham Vein and 64 composites for the Bermingham Footwall Vein. Correlation analysis between commodities indicates some correlation between silver and lead, and between silver and gold, with correlation coefficients of 0.75.

Table 15.6: Composite data summary statistics for Bermingham

Type	Statistic	Ag g/t	AgCap g/t	Au g/t	AuCap g/t	Pb %	PbCap %	Zn %	ZnCap %
Total Composites	Number of Samples	146	146	146	146	146	146	146	146
	Average	419	346	0.064	0.061	1.47	1.43	1.71	1.68
	Minimum	3	3	0.005	0.005	0.01	0.01	0.02	0.02
	Maximum	4059	1500	0.408	0.200	13.93	10.00	13.28	10.00
	St Dev.	653	425	0.061	0.050	2.39	2.23	2.00	1.88
	CV	1.56	1.23	0.962	0.821	1.63	1.56	1.17	1.12
Bermingham Vein	Number of Samples	82	82	82	82	82	82	82	82
	Average	436	371	0.065	0.060	1.78	1.76	1.73	1.73
	Minimum	3	3	0.005	0.005	0.02	0.02	0.06	0.06
	Maximum	4059	1500	0.408	0.200	11.18	10.00	10.20	10.00
	St Dev.	721	490	0.068	0.050	2.61	2.54	1.91	1.89
	CV	1.65	1.32	1.0458	0.8302	1.46	1.44	1.10	1.09
Bermingham Footwall Vein	Number of Samples	64	64	64	64	64	64	64	64
	Average	399	315	0.063	0.062	1.07	1.01	1.67	1.62
	Minimum	3	3	0.005	0.005	0.01	0.01	0.02	0.02
	Maximum	2640	1000	0.245	0.200	13.93	10.00	13.28	10.00
	St Dev.	554	321	0.052	0.050	2.02	1.66	2.12	1.86
	CV	1.39	1.02	0.834	0.808	1.89	1.65	1.27	1.15

15.8 Block Model

A rotated block model was constructed to cover the entire extent of the mineralized veins as defined by Alexco. The block model includes separate sub-models for silver, lead, zinc, and gold grade estimates, as well as estimated specific gravity, classification criteria, validation estimates, and a calculated block NSR value. A block percentage model was used to accurately determine volume and tonnage values based on the supplied Alexco vein wireframes. The geometrical parameters of the block model are summarized in Table 15.7.

Table 15.7: Block model location and setup

Description	Easting (X)	Northing (Y)	Elevation (Z)
Block Model Origin NAD 83	478550	7086570	1340
Block Dimensions (m)	3	5	5
Number of Blocks	65	115	90
Rotation (degree)	25° clockwise		

15.9 Variography

Due to the limited number of samples in each of the Bermingham and Bermingham Footwall veins, experimental semi-variograms could not be generated for silver, lead, zinc, or gold from composite grade data for these veins.

15.10 Grade Interpolation

Grades were interpolated into blocks using the inverse distance squared (ID2) method and search ellipses were set up to parallel the strike and dip of the veins. For silver, lead, zinc, and gold, a two-pass series of expanding search ellipsoids was used for sample selection and estimation.

Composite data used for estimation was restricted to samples located in the respective veins. Individual block grades were used to calculate a NSR block model. Estimation criteria for both veins are summarized in Table 15.8. Blocks within the Bermingham Vein were classified as Indicated mineral resources if at least two drill holes and four composites were found within a 40 by 40 m search ellipse. Within the Bermingham Footwall Vein, blocks were classified as Indicated mineral resources if at least two drill holes and four composites were found within a 40 by 60 m search ellipse. All other interpolated blocks were classified as Inferred mineral resource.

Table 15.8: Search ellipse parameters for Bermingham

Vein	Commodity	Search Pass	Gemcom Rotations			Range			Number of Composites		Max. Samples per DDH
			Principal Azimuth	Principal Dip	Intermed. Azimuth	X-Rot	Y-Rot	Z-Rot	Min.	Max.	
Bermingham	Ag, Pb, Zn, Au, Density	1	45	–35	0	40	40	3	4	8	3
		2	45	–35	0	80	80	40	4	8	3
Bermingham Footwall	Ag, Pb, Zn, Au, Density	1	50	–15	0	40	60	6	4	8	3
		2	50	–15	0	80	100	40	4	8	3

15.11 Block Model Validation

The block model was validated visually by the inspection of successive section lines in order to confirm that the block model correctly reflects the distribution of high-grade and low-grade samples. Zoning of silver, lead, and zinc grades across the Bermingham and Bermingham Footwall veins is seen in the assay data. The average composite sample grades for all blocks containing composite samples (informed blocks) were compared to the ID2 estimates using scatter plots. Both inferred and indicated blocks were plotted for both zones due to the small number of informed blocks. The scatter plots for silver, lead, zinc, and gold for blocks in both the Bermingham and Bermingham Footwall veins are displayed in Figure 15.5 and show fair correlation between informed and estimated blocks.

Average sample grades for the informed blocks are compared against the average grade of the ID2 estimates for silver, lead, zinc, and gold in Table 15.9.

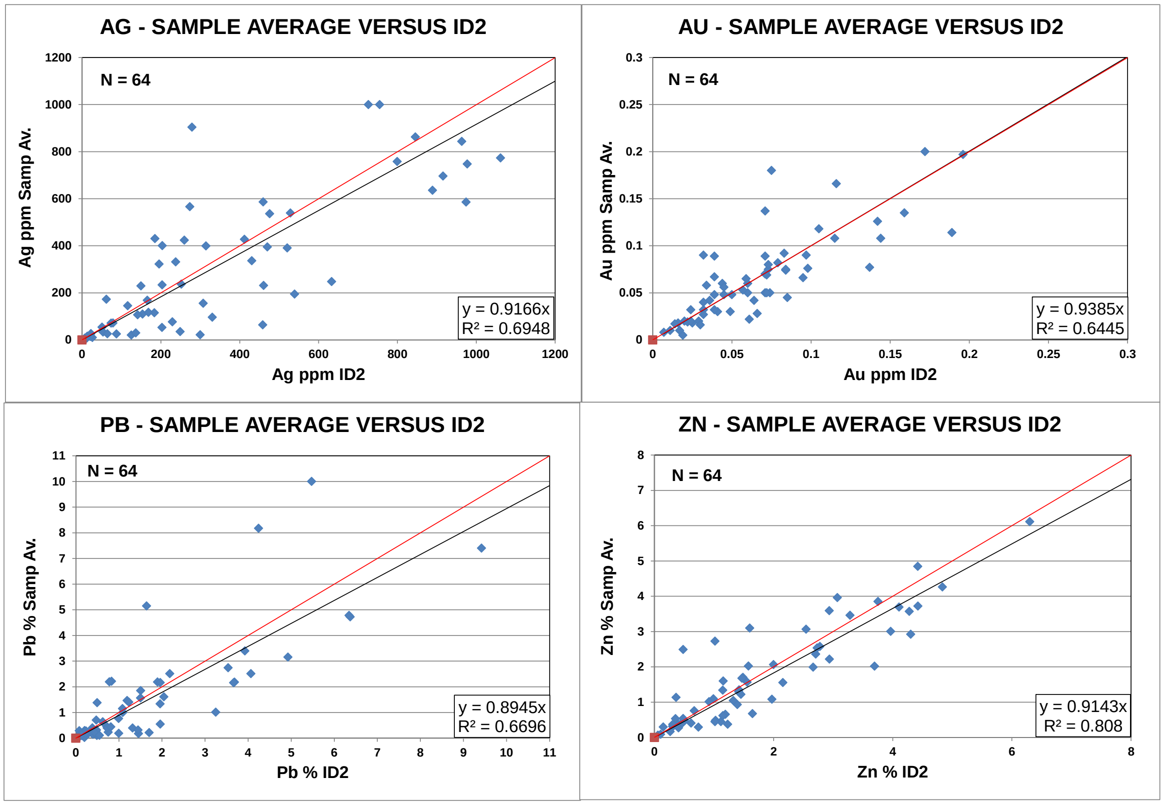


Figure 15.5: Comparison of ID2 an Average sample grades

Table 15.9: Comparison of ID2 and Average samples grades for informed blocks.

	Indicated			Inferred		
	NO. BLOCKS	ID2	SAMPLE AVERAGE	NO. BLOCKS	ID2	SAMPLE AVERAGE
Ag (g/t)	59	362	338	5	235	226
Pb (%)	59	1.68	1.53	5	0.21	0.20
Zn (%)	59	1.76	1.64	5	1.69	1.83
Au (g/t)	59	0.063	0.061	5	0.103	0.102

15.12 Block Model Sensitivity Analysis

Table 15.10 tabulates global quantities and grade estimates at different cutoff grades for the Bermingham deposit. Figure 15.6 presents the effects of increasing cut-offs on the tonnage and grade of the deposit. The reader is cautioned that these figures should not be misconstrued as a mineral resource. The reported quantities and grades are only presented as a sensitivity of the resource model to the selection of the cutoff grades.

Table 15.10: Bermingham inferred and indicated block model quantity and grade estimates* at various NSR cut-off values**

NSR Cut-Off C$	Indicated		Inferred	
	Tonnes	Ag (g/t)	Tonnes	Ag (g/t)
C$ 200	246,822	470	94,995	383
C$ 185	**257,079**	**460**	**101,782**	**372**
C$ 150	282,428	434	136,748	321
C$ 125	296,729	421	157,163	298
C$ 100	310,637	407	167,643	287

** The reader is cautioned that the figures presented in this table should not be misconstrued as a mineral resource statement. The reported quantities and grades are only presented to show the sensitivity of the resource model to the selection of cut-off grade.*
*** C$ values calculated at 1C$ = 1US$*

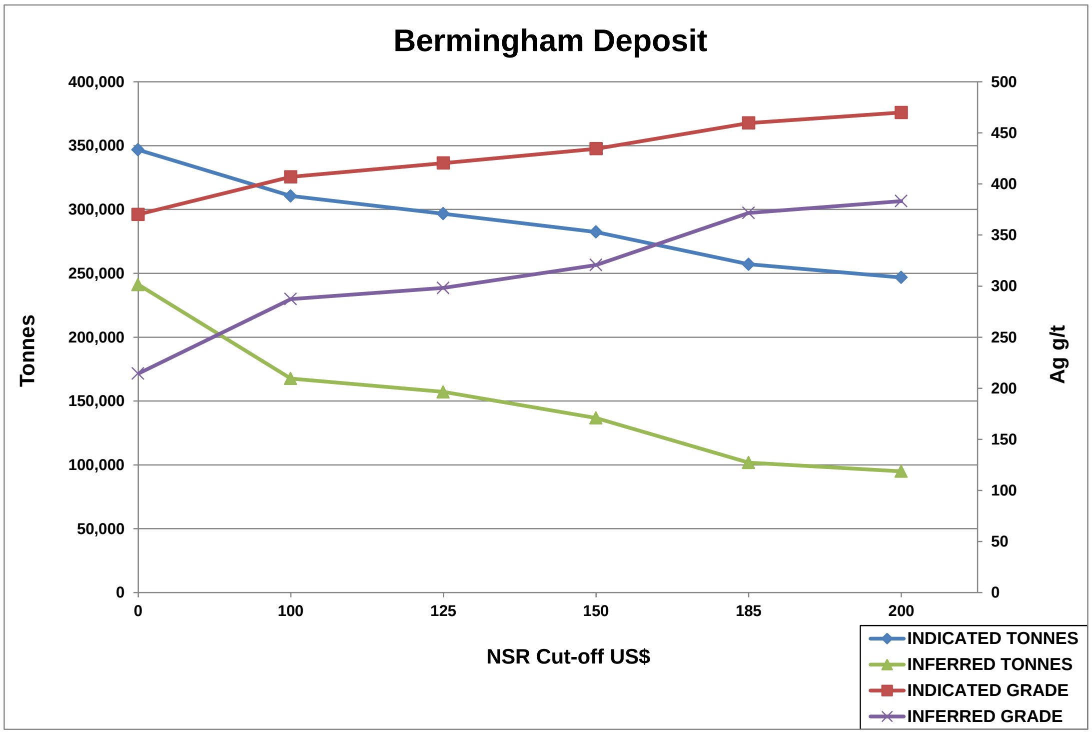


Figure 15.6: Grade tonnage curve for Bermingham

15.13 Mineral Resource Classification

Mineral resources were estimated in conformity with generally accepted CIM “Estimation of Mineral Resource and Mineral Reserve Best Practices” guidelines. Mineral resources may be affected by further infill and exploration drilling that may result in increases or decreases in subsequent resource estimates. Mineral resources may also be affected by subsequent assessments of mining, environmental, processing, permitting, taxation, socio-economic and other factors.

Mineral reserves can only be estimated based on the results of an economic evaluation as part of a preliminary feasibility study or feasibility study. As such, no mineral reserves have been estimated by SRK as part of the present assignment. There is no certainty that all or any part of the Mineral Resources will be converted into a mineral reserve. Confidence in the estimate of Inferred mineral resources is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure.

Mineral resources for the Bermingham project have been estimated and classified according to the "CIM Standards on Mineral Resources and Reserves: Definition and Guidelines" (December, 2005) by DJ Farrow, Pr.Sci.Nat., under the supervision of Dr. Gilles Arseneau P.Geo., an "Independent Qualified Person" as defined by National Instrument 43-101. The commercial Gemcom GEMS software program was used for mineral resource modeling.

SRK considers that the quality of the exploration data (confidence in the location and reliability of assaying results) acquired by Alexco is good and therefore is not a factor that would impact resource classification. The confidence in the underlying datasets support the classification of Indicated and Inferred mineral resources within the meaning of the CIM Definition Standards. However, there is insufficient information to confirm both the geological and grade continuity with the current level of sampling to support a Measured mineral resource classification within the meaning of the CIM Definition Standards.

Blocks were classified as Indicated mineral resources if at least two drill holes and four composite were found within a 40 by 40 m search ellipse for the Bermingham Vein and within a 40 by 60 m search radius within the Bermingham Footwall Vein. All other interpolated blocks were classified as inferred mineral resource.

15.14 Mineral Resource Statement

CIM Definition Standards for Mineral Resources and Mineral Reserves (December 2005) define a mineral resource as:

"A concentration or occurrence of diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge".

The "reasonable prospects for economic extraction" requirement generally implies that the quantity and grade estimates meet certain economic thresholds, and that the mineral resources are reported at an appropriate cut-off grade taking into account extraction scenarios and processing recoveries. SRK considers that the silver mineralization evaluated in the Bermingham deposit is amenable for underground extraction.

Commodity prices were provided to SRK by Alexco as representative of their long term strategic forecast. Economic parameters are summarized in Table 15.11.

Table 15.11: Dollar equivalent (NSR) calculation parameters

Commodity	Price	Recovery
Ag	US$ 23.00/oz.	96%
Pb	US$0.95/lb.	97%
Zn	US$0.95/lb.	88%
Au	US$1,350.00/oz.	72%

Mineral resources for the Bermingham deposit defined relative to a NSR cut-off of $185/t, using metallurgical recoveries as proposed in the Preliminary Economic Assessment for the Bellekeno project at Keno Hill (Wardrop, 2009) are listed in Table 15.12 below.

Table 15.12: Mineral resource statement*, Bermingham deposit, Bermingham Property, SRK Consulting (Canada) Inc., June 27, 2012

ZONE	Class	Tonnes	Ag	Pb	Zn	Au
			g/t	%	%	g/t
Bermingham Vein	Indicated	114,000	500	2.50	2.14	0.07
	Inferred	27,000	423	2.04	1.27	0.09
Bermingham Footwall Vein	Indicated	143,000	428	1.60	2.07	0.06
	Inferred	75,000	353	0.79	2.04	0.09
TOTAL	**Indicated**	**257,000**	**460**	**2.00**	**2.10**	**0.06**
	Inferred	**102,000**	**372**	**1.12**	**1.83**	**0.09**

* *Reported at a NSR cut-off grade of C$185.00/t* using metal prices (USD) and recoveries of 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%.
All numbers have been rounded to reflect the relative accuracy of the estimates. Mineral resources are not mineral reserves and do not have demonstrated economic viability. Confidence in the estimate of Inferred mineral resources is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure.

16 Other Relevant Data and Information

The Bermingham deposit is situated on the Bermingham property on the northern flank of Galena Hill in the Keno Hill district. The prospect is accessible from Keno City and Elsa via gravel roads and is approximately 5 km from Alexco's Keno Hill district mill located near Keno City.

Commissioning of the Alexco conventional flotation plant and Bellekeno underground mine, initiated in late September, 2010, was completed at the end of December with both the mine and mill achieving an average throughput of 250 tonnes per day of ore for 30 days. The stated nameplate capacity of the District Mill as constructed is 407 tonnes per day. Alexco commenced commercial production at the Bellekeno mine on January 1, 2011.

In early December, 2010, Alexco announced the execution of lead and zinc off-take agreements for Bellekeno concentrate with Glencore Ltd., Stamford ("Glencore"); a branch of a wholly owned subsidiary of the Swiss-based international natural resources group Glencore International AG.

Total annual production from Bellekeno in 2011 came to 2.02 Moz Ag, 16.45 million lb of lead and 7.22 million lb of zinc from 81,064 tonnes of ore processed.

The District Mill currently processes output from the Bellekeno mine, and may in the future process output from other District mine sources as well. It is not currently determinable if resources mined from Bermingham would or even could be processed through the District Mill. Until metallurgical testing has been carried out, it is not determinable if the existing District Mill would be suitable for processing resources from Bermingham. Furthermore, until mining plans have been developed for Bermingham it is also not determinable if the District Mill will have sufficient capacity to process Bermingham mine output.

17 Interpretation and Conclusions

Between 2009 and 2011, Alexco completed three drilling programs on its Bermingham property, in the Keno Hill district, located in Central Yukon Territory. The drilling on the Bermingham deposit was successful in confirming the extension of significant silver mineralization beyond historically mined zones in this area.

Surface geological mapping during this time throughout the district resulted in an increased understanding of the structure and stratigraphy, and their controls on mineralization. This has allowed for the construction of high quality geological models used in producing the mineral estimates for the Bermingham deposit.

The Bermingham vein system comprises at least three individual vein faults occurring within a broadly northeast striking, southeast dipping structural zone. Two of the vein structures were modeled for the Bermingham deposit with the dominant vein-fault structure (Bermingham) extending over 240 m in length and up to 230 m in depth. SRK considers the modeled wireframes constructed by Alexco to be fair representations of the mineralized veins and acceptable for resource estimation.

The Alexco drilling information was acquired using procedures that meet or exceed industry best practices. Alexco personnel used diligence in monitoring quality control assaying results, investigating potential failures, and taking appropriate corrective measures when required. The quality control data collected by Alexco from 2009 to 2011 is considered comprehensive, and the final, in some cases replicated, assay results delivered by the assay laboratories to be generally reliable for the purpose of resource estimation.

The mineral resources presented in this report represent the first time disclosure of mineral resource for the Bermingham deposit by Alexco.

The mineral resource for the Bermingham deposit, at a NSR cut-off of $185/t includes 257,000 t at an average grade of 460 g/t silver classified as Indicated mineral resources and 102,000 t at an average grade of 372 g/t silver classified as Inferred mineral resources.

18 Recommendations

SRK recommends that Alexco continues exploration on the Bermingham deposit along strike to the southwest and at depth on the Etta Zone to expand the current resource, acquire extended geotechnical data, and obtain additional understanding of the mineralized structures to assist in possible mine planning. Metallurgical studies should be initiated to better understand the nature of the mineralization.

SRK also recommends that Alexco continue exploration in the Arctic Zone in the footwall of the Mastiff fault, where preliminary drilling has identified the offset portion of the Bermingham veins.

Baseline environmental studies should also be initiated in anticipation of preliminary economic assessment and permitting requirements.

A detailed budget for the recommended exploration and development program is listed below (Table 18.1) with a total cost of $1.58M.

Table 18.1: Budget for recommended exploration and development program

Activity	Quantity	Unit	Cost Estimate (CDN$)
Etta Zone Exploration			
Diamond Drilling and Assaying	3000	m	$750,000
Metallurgical Test work			$30,000
Geotechnical analysis to be used in detailed mine design and economic analysis			$25,000
Etta Zone Total			**$805,000**
Arctic Zone Exploration			
Diamond Drilling and Assaying	3000	m	$750,000
Arctic Zone Total			**$750,000**
Baseline Environment Monitoring			$25,000
TOTAL			**$1,580,000**

19 Date and Signature Page

This technical report was written by the following "Qualified Persons" and contributing authors. The effective date of this technical report is June 15, 2012.

Qualified Person	Signature	Date
Dr. Gilles Arseneau, P.Geo	"original signed"	August 8, 2012

Authored by

"original signed"

Dr. Gilles Arseneau. P. Geo

Associate Consultant (Resource Geology)

Reviewed by

"original signed"

Marek Nowak, P.Eng

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

20 References

Boyle, RW (1965). Geology, Geochemistry and Origin of the Lead-Zinc-Silver Deposits of the Keno Hill – Galena Hill Area, Yukon Territory. Geological Survey of Canada Bulletin 111.

Cathro, R.J. (2006) The History and Geology of the Keno Hill Silver Camp, Yukon Territory, Geoscience Canada, v. 33, No. 3, 103 – 134

Dusel-Bacon, C., Lanphere, M.A., Sharp, W.D., Layer, P.W., and Hansen, V.L. (2002) Mesozoic thermal history and timing of structural events for the Yukon–Tanana Upland, east-central Alaska: 40Ar/39Ar data from metamorphic and plutonic rocks, Can. J. Earth Sci. 39: 1013 – 1051

McOnie, A and Read, P.B., (2009). Stratigraphy, Structure and Exploration Opportunities Sourdough, Galena and part of Keno Hills, Keno Hill Mining Camp, Central Yukon. Internal Report Alexco Resource Corp.

Murphy, D. C. (1997) Geology of the McQueston River Region, Northern McQueston and Mayo Map Areas, Yukon Territory (115P/14, 15, 16l 105M/13, 14), Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Bulletin 6, 122 p.

Roots, C.F. (1997) Geology of the Mayo Map Area, Yukon Territory (105M), Geological Survey of Canada, Bulletin 7, 82 p.

Wardrop 2009. Bellekeno Project - Updated Preliminary Economic Assessment Technical Report, Independent technical report prepared for Alexco Resource Corporation and filed on SEDAR (www.sedar.com), 363 pages

APPENDIX A

Time Series Plots for Certified Reference Materials

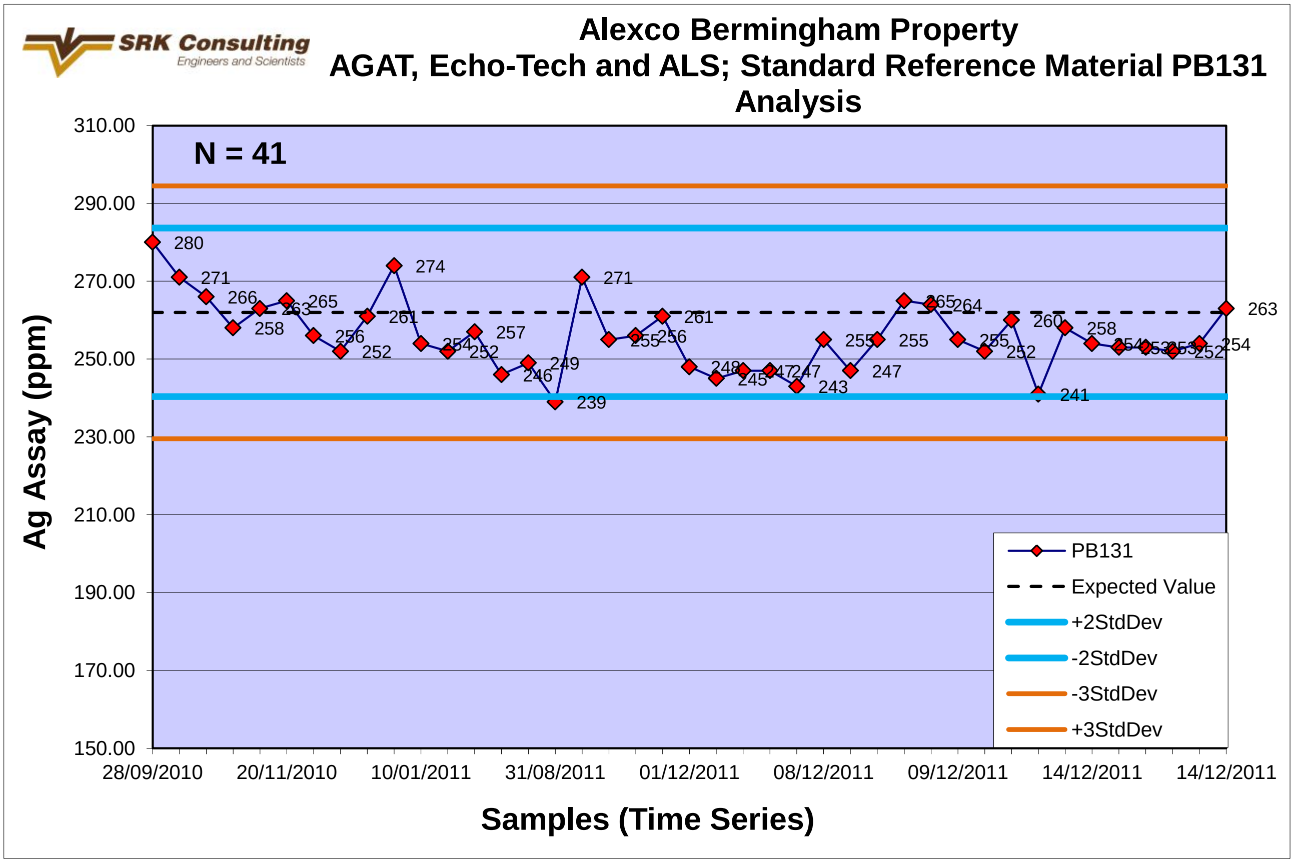


Figure A1: Analytical results for silver over time for standard reference material PB 131 submitted with Bermingham deposit samples

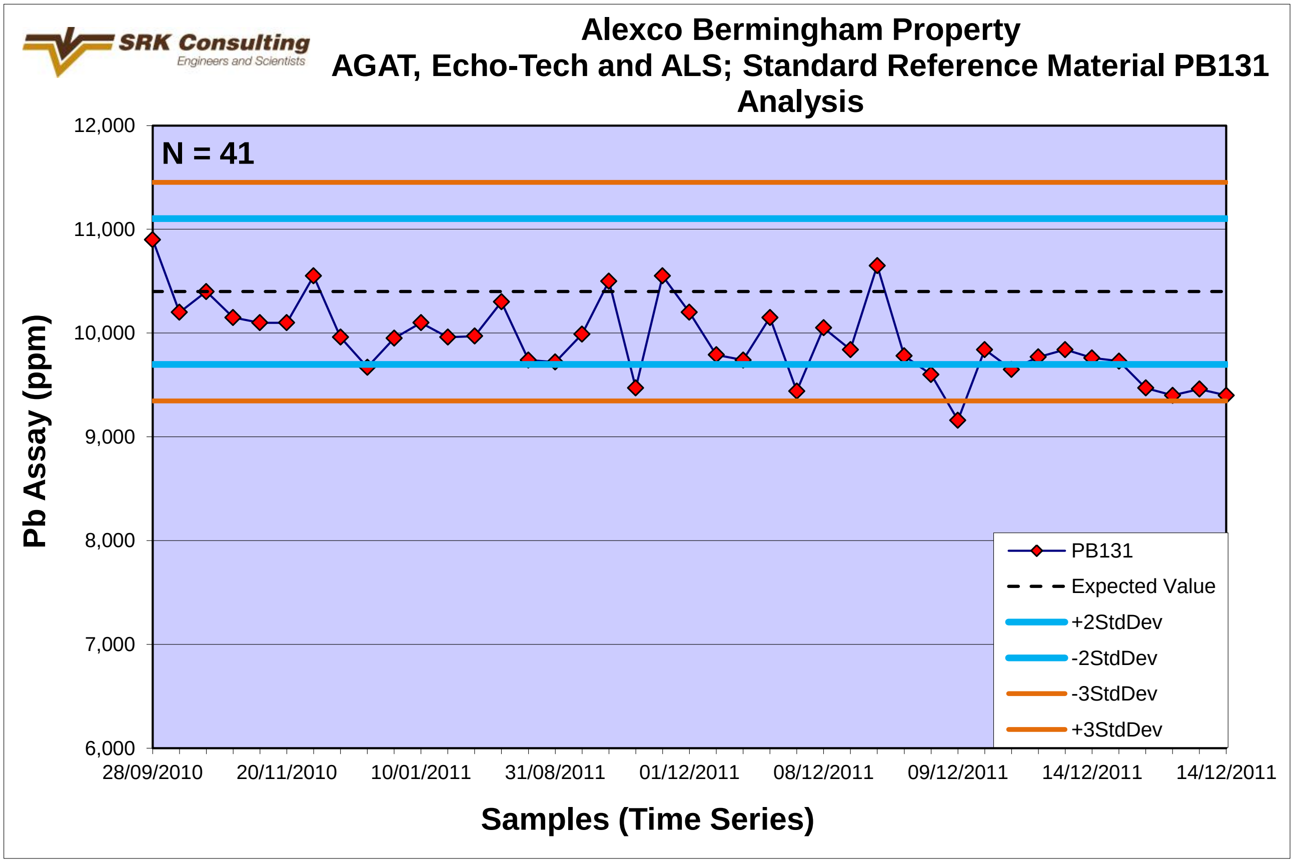


Figure A2: Analytical results for lead over time for standard reference material PB131 submitted with Bermingham deposit samples

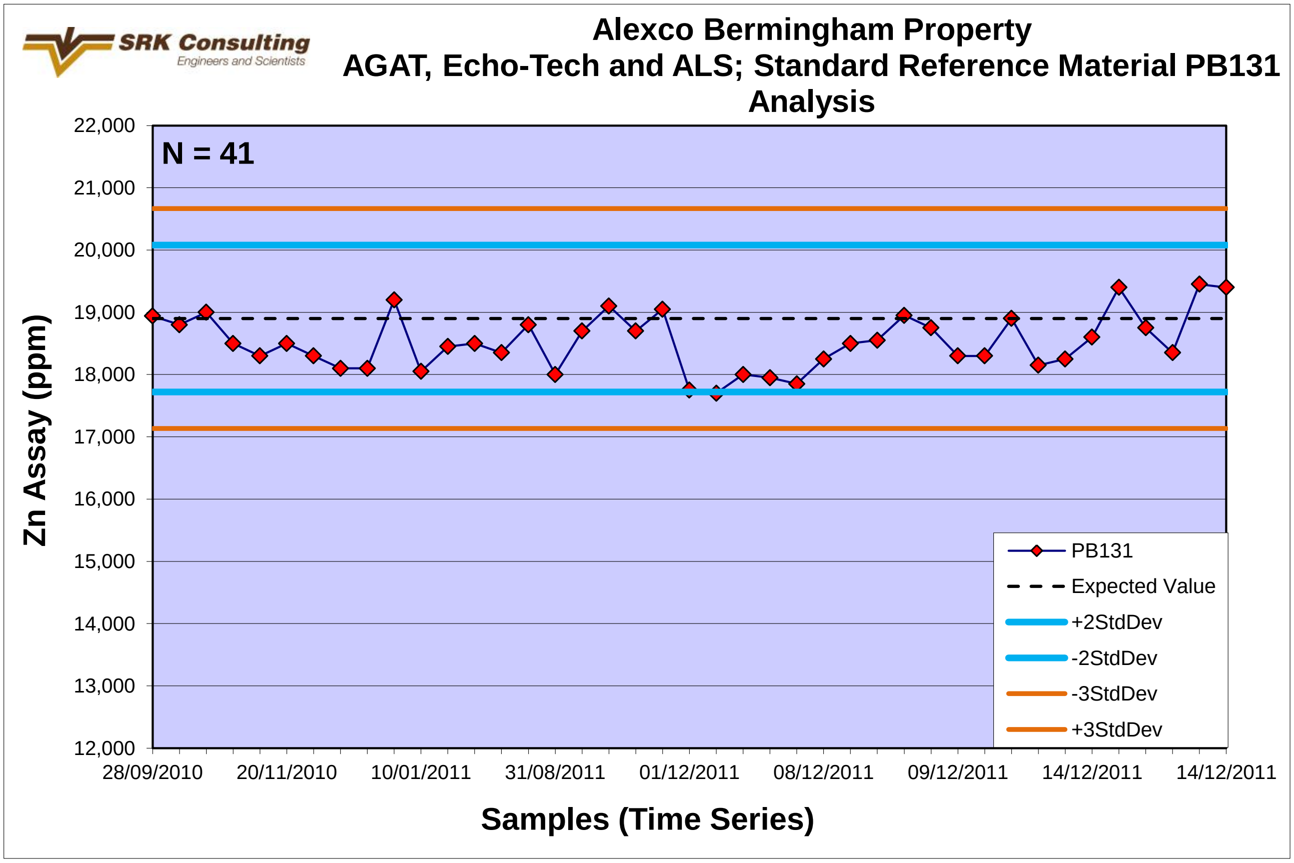


Figure A3: Analytical results for zinc over time for standard reference material PB131 submitted with Bermingham deposit samples

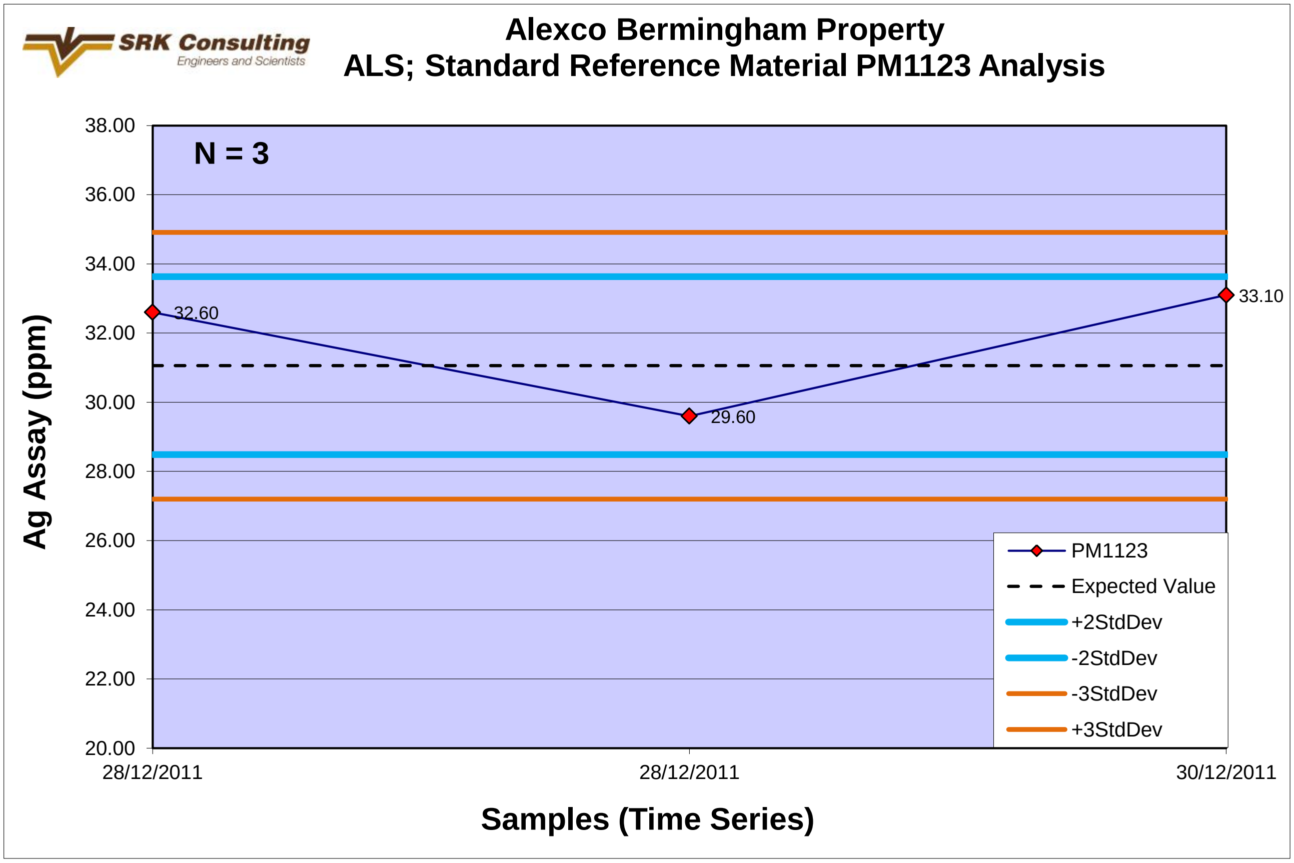


Figure A4: Analytical results for silver over time for standard reference material PM1123 submitted with Bermingham deposit samples

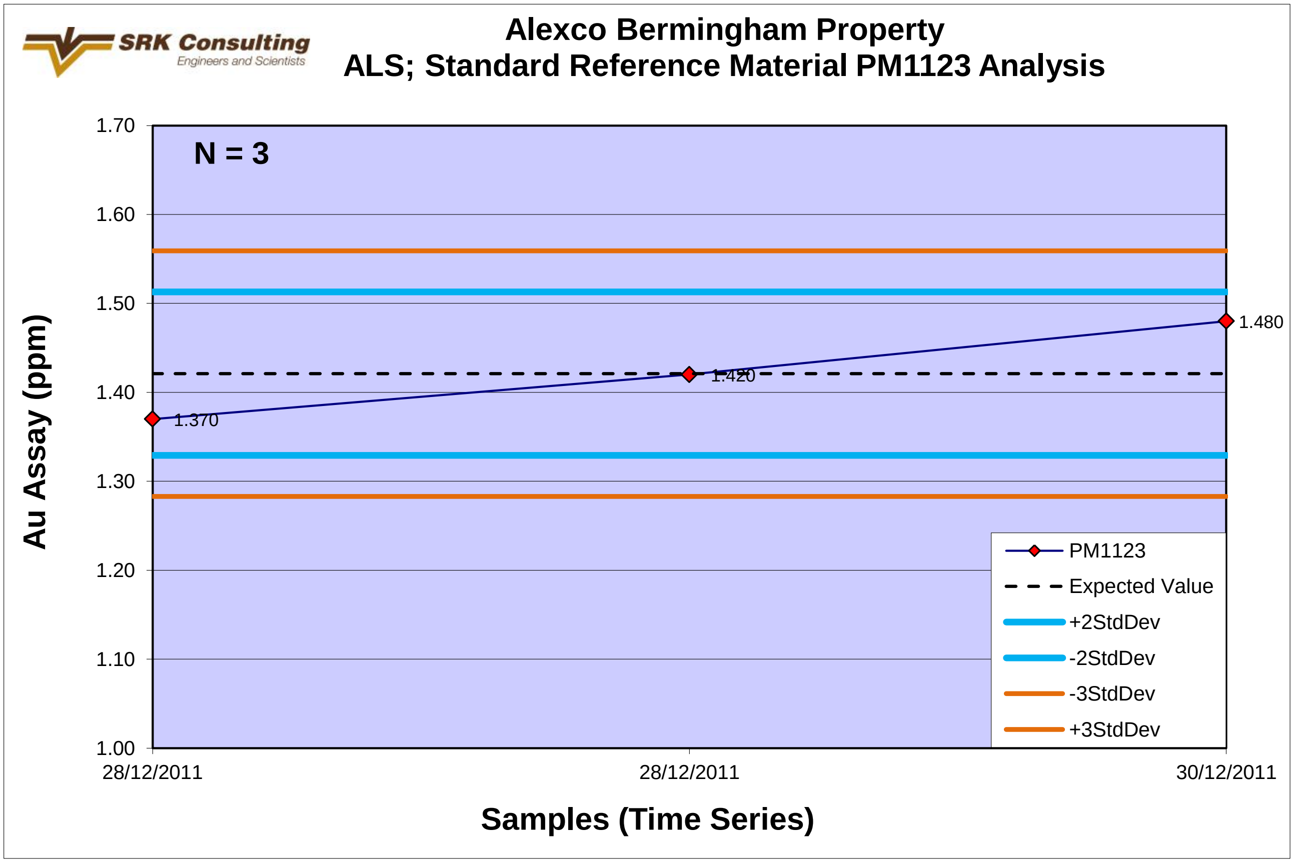


Figure A5: Analytical results for gold over time for standard reference material PM1123 submitted with Bermingham deposit samples

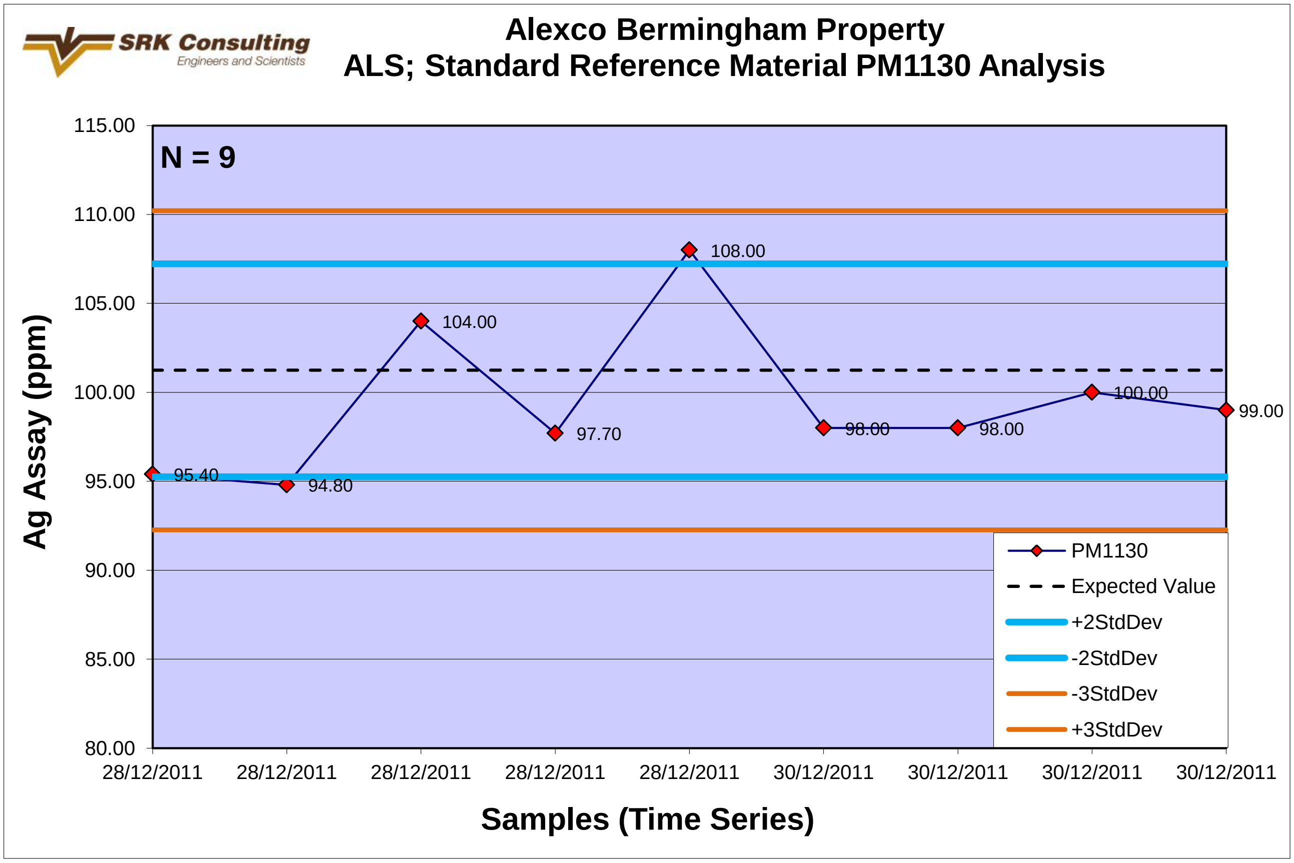


Figure A6: Analytical results for silver over time for standard reference material PM1130 submitted with Bermingham deposit samples

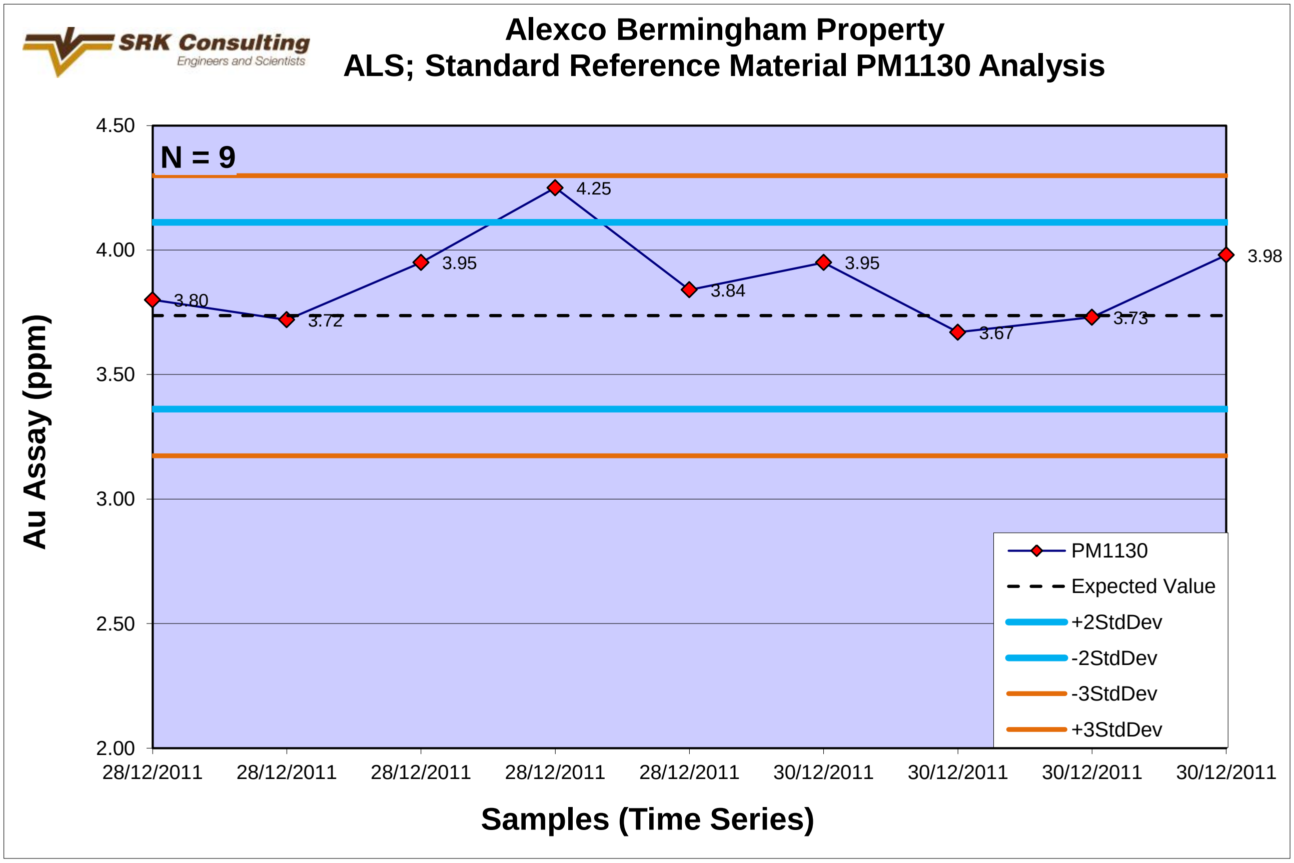


Figure A7: Analytical results for gold over time for standard reference material PM1130 submitted with Bermingham deposit samples

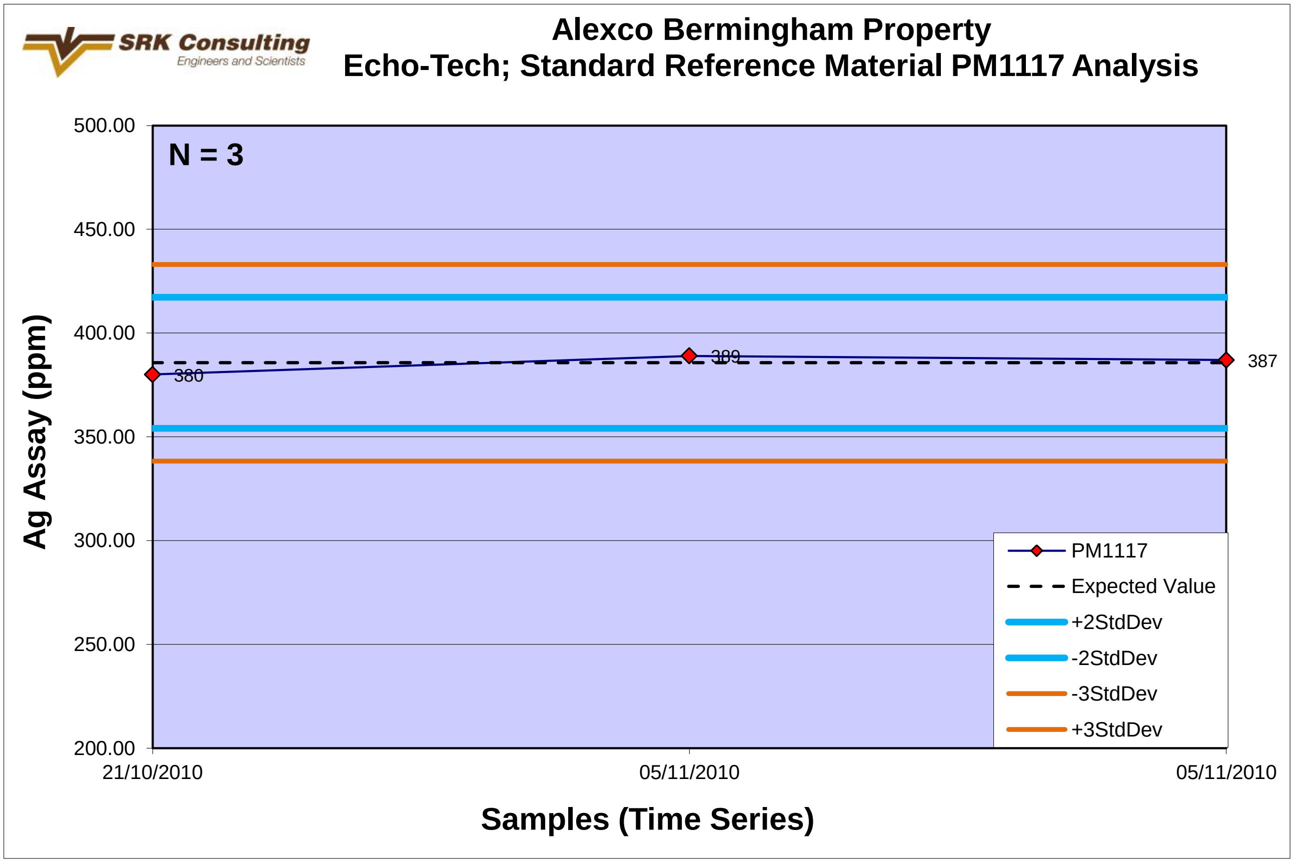


Figure A8: Analytical results for silver over time for standard reference material PM1117 submitted with Bermingham deposit samples

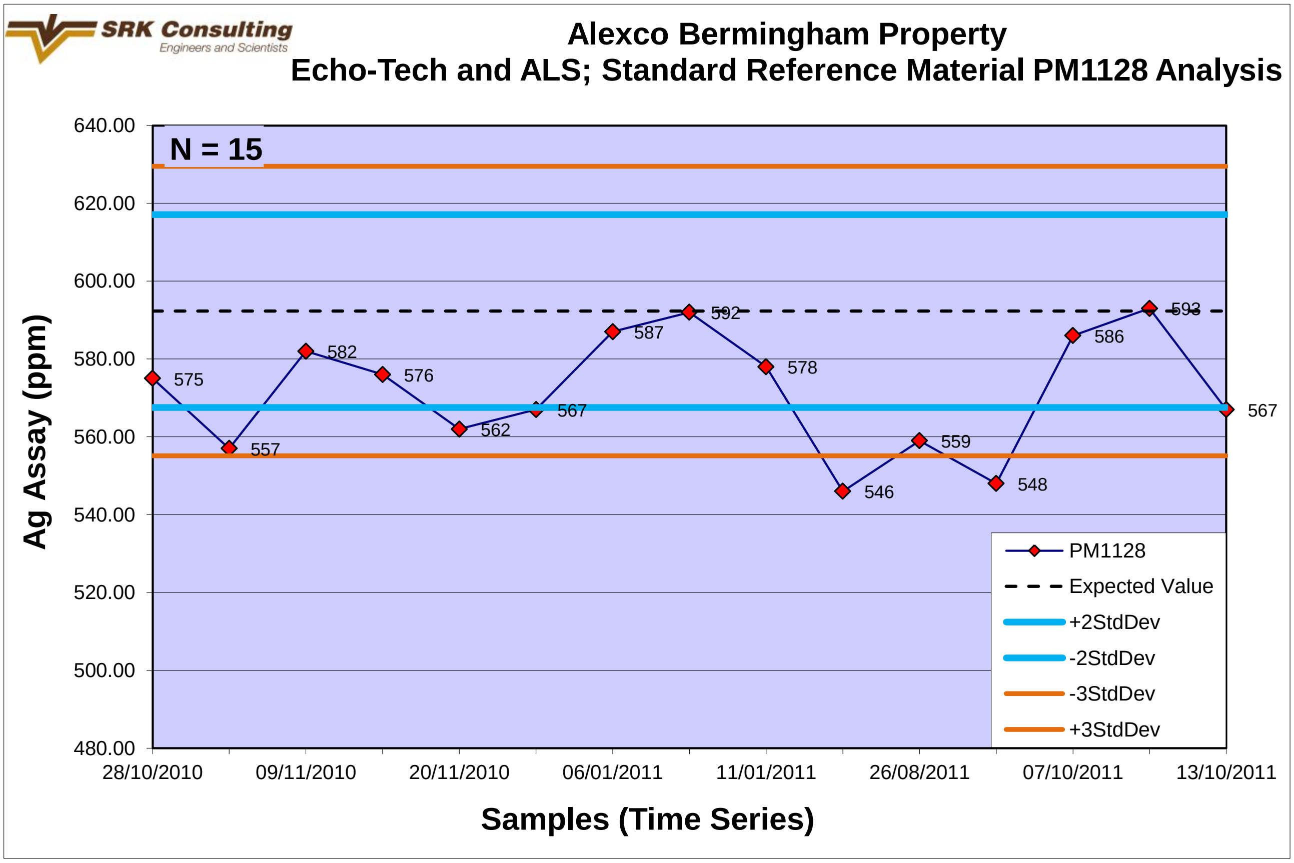


Figure A9: Analytical results for silver over time for standard reference material PM1129 submitted with Bermingham deposit samples

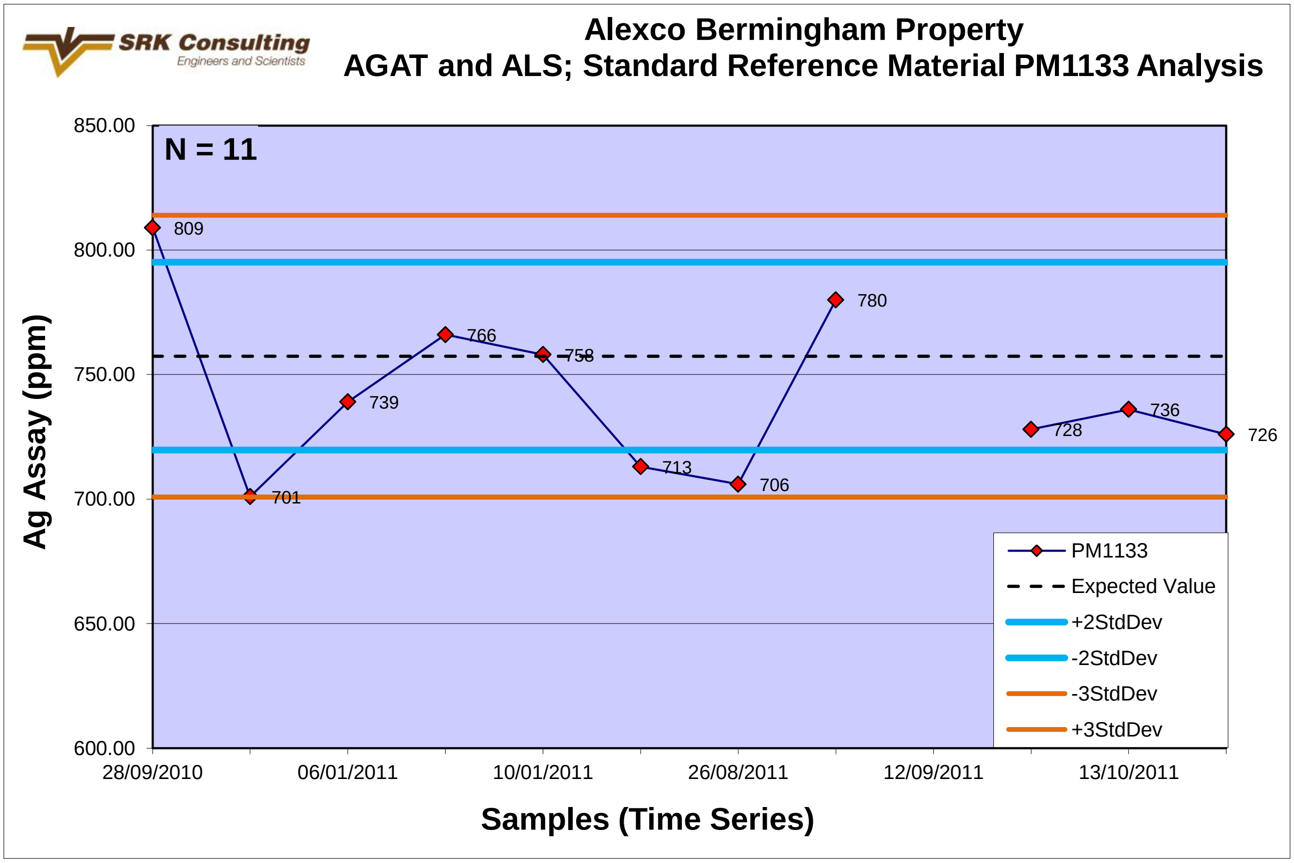


Figure A10: Analytical results for silver over time for standard reference material PM1133 submitted with Bermingham deposit samples