2012 ASSESSMENT REPORT

Property Comprising the Following Claims:

K80 Group
K79 – K84, K109F and K110F Claims

Located in the:
Keno Hill Area
Mayo Mining District
Yukon Territory, Canada
N.T.S. 105M/14

Latitude: 63.923° N
Longitude: 135.318° W

PREPARED FOR:

Alexco Keno Hill Mining Corp.
Alexco Exploration Canada Corp.

1150-200 Granville Street
Vancouver, B.C. V6C 1S4

and

PREPARED BY:

Al McOnie

Alexco Resource Corp.
1150-200 Granville St.
Vancouver, B.C. V6C 1S4

DATES WORK PERFORMED: July, 2012

DATE OF REPORT: May 28, 2013

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1.0 SUMMARY

During July 2012, drilling was completed from a number of holes sited at the Mackeno Prospect near Christal Lake and one of these holes collared on the adjacent Overtime 2 Lease passed under the K80 claim for a distance of 16.3 metres.

The drilling within the claim encountered the upper part of the Earn Group immediately below the Basal Quartzite Member of the Keno Hill Quartzite that hosts most of the silver – lead – zinc mineral deposits in the Keno Hill district.

2.0 INTRODUCTION

This report summarizes the results of diamond drilling completed on the K80 grouped claim area during July 2012.

Planning, supervision, implementation and reporting of this work were performed by Alexco Resource Corp staff. The drilling was conducted under contract by Boart Longyear Limited.

The area is adjacent to the historic Mackeno prospect where mineralized veining has been historically identified. Mineralized vein intercepts were located by Alexco in drill holes on the adjacent leases during 2012, and one drill hole (K-12-0445) that was designed to followup these results, passed into the K80 claim in the process.

3.0 LOCATION AND ACCESS

The quartz claims within the grouping on which the work was conducted are held under the names of Alexco Keno Hill Mining Corp. and Alexco Exploration Canada Corp. The property is located in the Mayo Mining District, on the lower southwestern flank of Keno Hill northeast of Christal Lake, approximately 350 km north of Whitehorse (Figure 1). The area is covered by NTS map sheet 105M/14. The reference datum used is UTM NAD83 Zone 8, unless otherwise noted.

The property ranges in elevation from 850 – 930 metres within generally open spruce forest.

The property is accessible from the Silver Trail Highway that connects the villages of Mayo and Keno City and it passes through the area.

The base of operations for Alexco is the abandoned company town of Elsa which contains camp and office facilities.

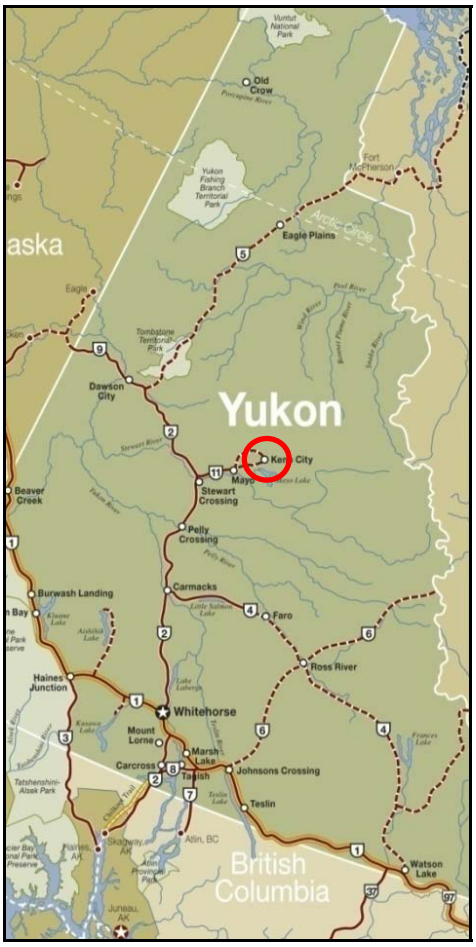

Figure 1 General Location of the Claim Group

4.0 CLAIM STATUS

At the time the work was conducted, plans were in place to convert the K80 claim to mineral lease tenure because of its location along strike of both the newly discovered Flame and Moth deposit and the Mackeno vein system. This process is incomplete.

The claim group comprises eight quartz claims covering an area of approximately 0.77 km^2. The claim on which the work was performed, being the K80, originally staked in 2005, is currently active and prior to the current work had an expiry date in December 2013.

A complete list of the grouped claims pertaining to this assessment report is included in Appendix 1. The location of the quartz claims is shown in Figure 2.

A list of personnel and cost statement related to the application of Certificates of Work are included as Appendices 2 and 3.

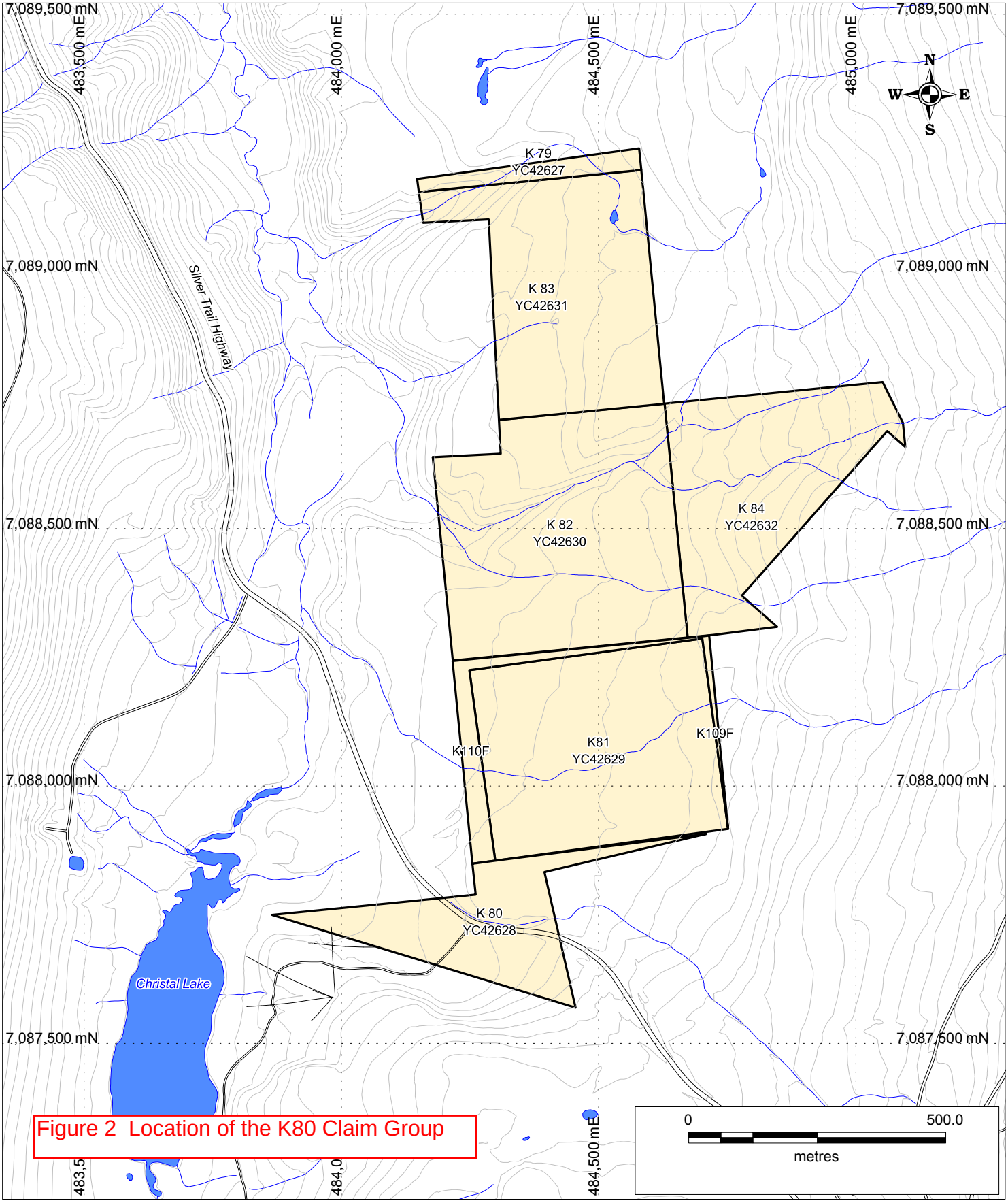

Figure 2 Location of the K80 Claim Group

5.0 REGIONAL GEOLOGY

The property is situated within the western part of the Selwyn Basin in an area dominated by deformed and metamorphosed sediments accumulated at the edge of the Neoproterozoic to Paleozoic continental margin. During the Jurassic and Cretaceous, the area was subjected to compressional tectonic forces producing imbricate thrust sheets and widespread folding. In the mid-Cretaceous, renewed tectonism resulted in extensive brittle deformation and the emplacement of intrusive plutons.

The claim area is predominantly underlain by the Devonian – Mississippian Earn Group that underlies the Keno Hill Quartzite (Mississippian), host to most of the past producing ore bodies in the Keno Hill district (Murphy, 1997).

6.0 PROPERTY GEOLOGY

There is only a minor amount of outcrop within the claim group as the area is covered by a series of Quaternary fluvio-glacial outwash gravel and sand beds, with the only outcrop being one small occurrence of the Basal Quartzite Member of the Keno Hill Quartzite Formation located at the extreme western end of the K80 claim. This is inferred to be close to the upper contact of the underlying Earn Group which is seen in outcrop as silvery chlorite – sericite schist about 200 metres west of the K82 claim. Narrow bands of Triassic greenstone locally occur within both the Basal Quartzite and the Earn Group.

Today, the area has significance in that it lies within about 600 metres along strike north of the newly discovered Alexco resource at the nearby Flame & Moth deposit that is currently estimated to contain 1,378,000 tonnes indicated grading 516 grams per tonne (22.9 Moz) silver, 1.72% lead and 5.70% zinc plus another 107,000 tonnes inferred grading 313 grams per tonne (1.1 Moz) silver, 0.86% lead and 4.21% zinc (Farrow & McOnie, 2013).

The part of drill hole K-12-0445 (between 169.0 and 185.3 metres) within the K80 claim consists predominantly of Earn Group lithology comprising chlorite – sericite schist, with minor graphitic schist and quartzite bands. Significant faults also occur at depths of 168.88m and 174.12m.

The stratigraphic position of the claim block is indicated in Figure 3.

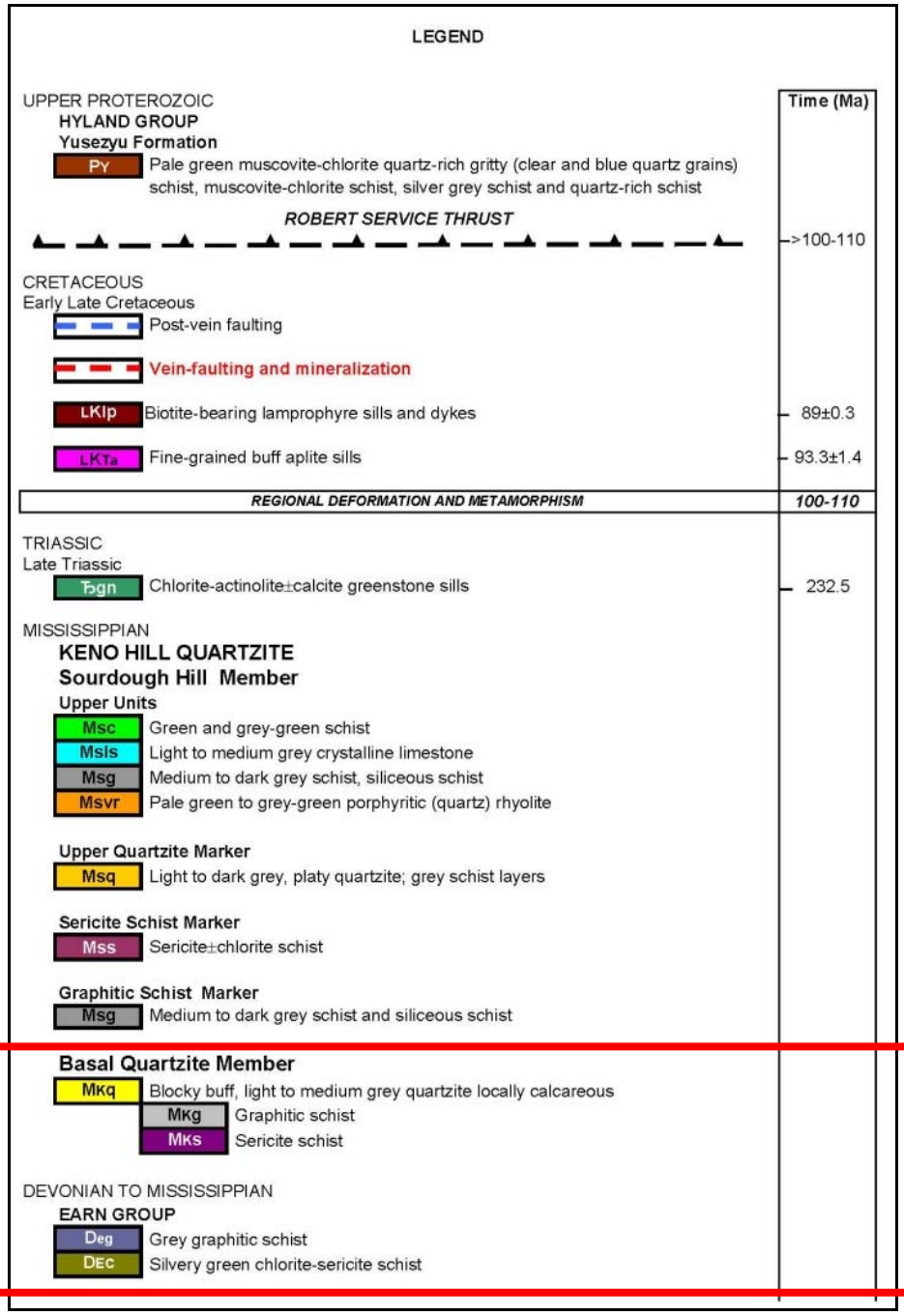

Figure 3 Keno District Stratigraphy showing the position of the K80 claim group (from McOnie and Read, 2009).

7.0 EXPLORATION HISTORY

Previous assessment work by Alexco involving the collection of soil samples was reported by Anderson et al (2009). A few isolated gold, silver and zinc anomalies were recorded, but these were considered to be of minor significance.

8.0 2012 DRILL PROGRAM

Alexco completed a number of diamond drill holes that were collared on the Overtime 2 mineral lease that is adjacent to the K80 claim. One of these drill holes, K-12-0445, entered the K80 claim at a depth of 169.0 metres with a total of 16.3 metres within the claim (Figure 4). The collar details are shown below in Table 1.

HQ core. Drillcore is stored at Elsa.

Hole	East UTM	North UTM	Elevation UTM	Total Depth	Collar Azimuth	Collar Dip
K-12-0445	483987.74	7087592.54	879.20	185.30	355	-45

Table 1 Drill Hole Collar Details

The hole was completed by Boart Longyear Limited over the period 6 July – 9 July 2012. The drill rig was mobilized to the site from the Alexco Christal Lake Road that runs between Silver Trail Highway to the District Mill, and water supply was pumped from Christal Lake.

The purpose of the drilling was to follow up a vein intersection that was obtained in a previous drill hole intersection obtained within the Overtime 2 Lease.

Drill and Sample Procedure

Down hole surveys were taken at approximately 15 – 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 logged at the Elsa facility, directly in digital format into a SQL database with separate tables for:

- Lithology
- Structure
- Mineralization
- Geotechnical

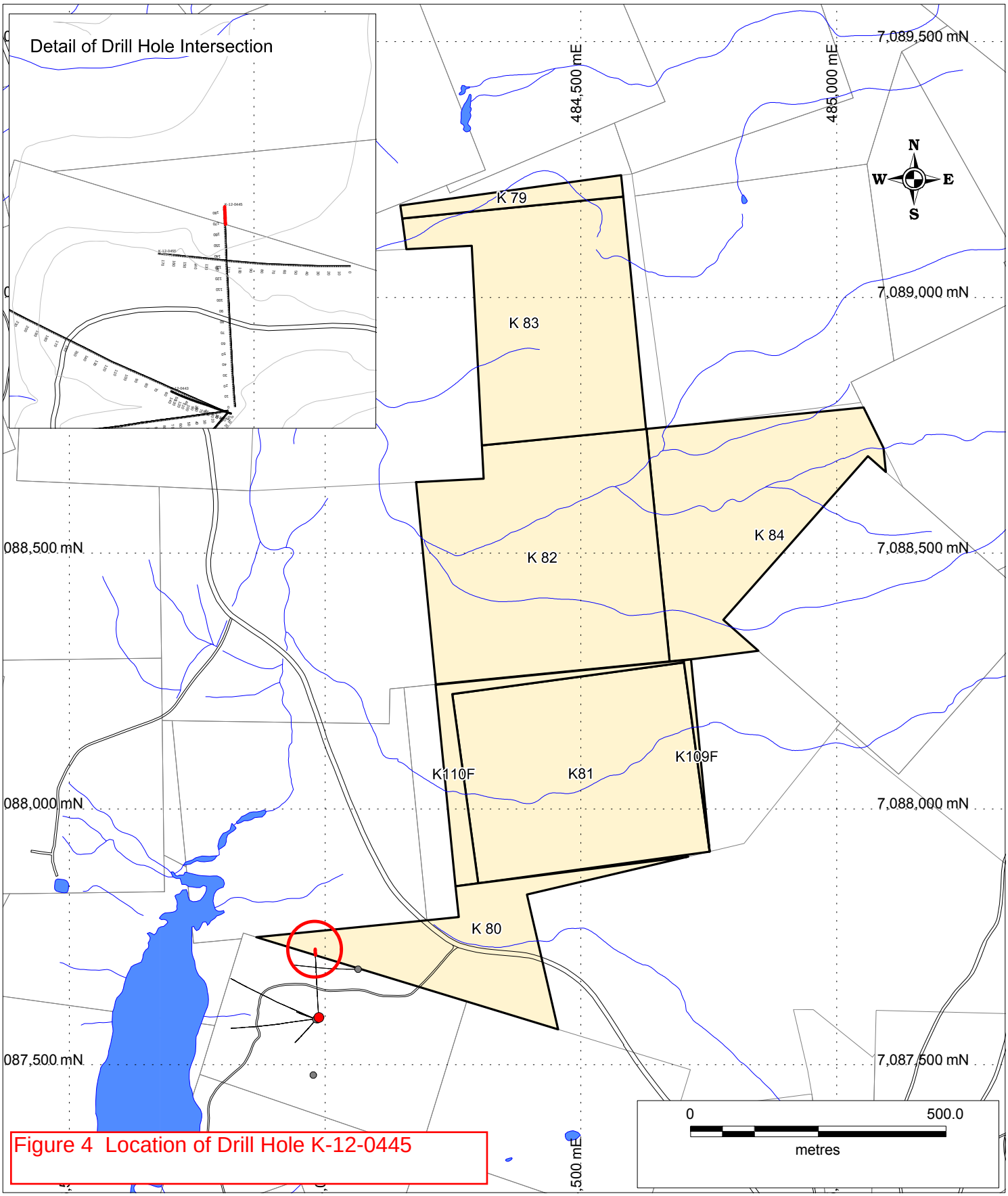

Figure 4 Location of Drill Hole K-12-0445

Lithology is documented by an alphanumeric code with additional modifiers and descriptive remarks also captured. Structural data consists of type of structure, with measurements relative to core axis, and, where possible, the orientation of mineralized veins relative to a reference plane calculated for the area. The Mineral table captures visual percentage veining, sulphide and oxide minerals. The geotechnical table records percentage recovery and rock quality determination for the entire hole and fracture intensity where warranted. Core specific gravity of mineralized material as well as basic rock types is routinely measured, using a balance and measuring the weight of core in air and in water.

For the interval reported here, no assay samples were taken. After logging, the core is digitally photographed.

Drill Results

The drill log showing lithology and main element assays for K-12-0445 is shown in Figure 5, with the relevant section identified in red. This demonstrates that a weakly anomalous vein structure was intersected at a depth of about 90 metres prior to entering the K80 claim, and this may correlate with the intersection veining in other drill holes on the Overtime Lease.

The log demonstrates that the contact between the base of the Keno Hill Quartzite Member and the top of the Earn Group occurs at a depth of about 163 metres.

Two fault zones are also identified in this zone, however the significance of these is not yet known.

Drill log details for this interval are shown in Appendix 4.

Log for K-12-0445

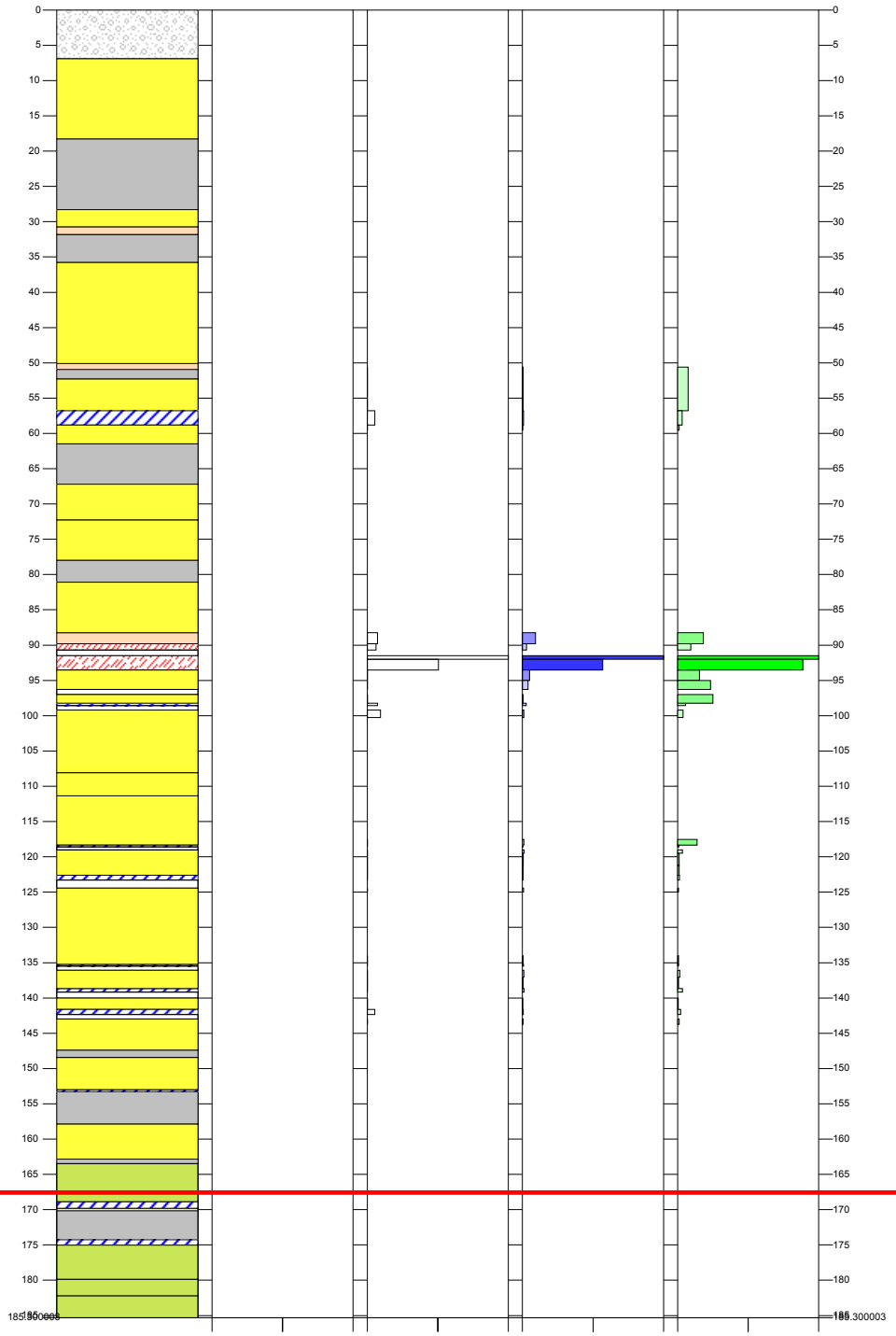

Figure 5 Drill Log K-12-0445

9.0 CONCLUSIONS AND RECOMMENDATIONS

The drilling that was completed in K-12-0445 demonstrates the probable continuity of the Mackeno mineralized vein system towards the K80 claim block.

The stratigraphic base of the Keno Hill Quartzite Member has been identified in the drill hole within the K80 claim.

Further exploration is indicated along the trend of the Mackeno and Flame vein systems.

10.0 LIST OF REFERENCES

Anderson, K., Lippoth, R., and Dodd, S., 2009
Geological, Geochemical and XRF Assessment Report On The Keno Hill Property.
Alexco Resource Corp.

Farrow, D., and McOnie, A., 2013
NI 43-101 Updated Technical Report on the Flame & Moth Deposit, Flame & Moth Property, Keno Hill District, Yukon.
Alexco Resource Corp.

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

APPENDIX 1

LIST OF CLAIMS

Claim	Quartz Claim	Grant Number	*Tenure Status	Owner	Staking Date	Recorded Date	*Expiry Date
K Fr. 110	185243121	YC90501	Pending	Alexco Exploration Canada Corp. - 100%	19/08/2012	10/09/2012	10/09/2013
K Fr. 109	185243122	YC90502	Pending	Alexco Exploration Canada Corp. - 100%	19/08/2012	10/09/2012	10/09/2013
K 82	184949805	YC42630	Active	Alexco Keno Hill Mining Corp. - 100%	02/12/2005	15/12/2005	15/12/2017
K 83	184981791	YC42631	Active	Alexco Keno Hill Mining Corp. - 100%	02/12/2005	15/12/2005	15/12/2017
K 80	185041249	YC42628	Active	Alexco Keno Hill Mining Corp. - 100%	02/12/2005	15/12/2005	15/12/2017
K 84	185171445	YC42632	Active	Alexco Keno Hill Mining Corp. - 100%	02/12/2005	15/12/2005	15/12/2017
K 81	185192206	YC42629	Active	Alexco Keno Hill Mining Corp. - 100%	02/12/2005	15/12/2005	15/12/2017
K 79	185243123	YC42627	Active	Alexco Keno Hill Mining Corp. - 100%	02/12/2005	15/12/2005	15/12/2017

* As shown by YK 13 March 2013

APPENDIX 2

LIST OF PERSONNEL

Al McOnie
694 SH 2, RD1
Katikati
New Zealand
3177

Jared Chipman
P.O. Box 74, South Ohio
Yarmouth Co., Nova Scotia
B0W 3E0

Matthew McMahon
25 Gadsby Ave
Welland
Ontario
L3C 1A8

Annie Greenfield
6906 Lowes Crt SW,
Calgary, AB
T3E 6G7

APPENDIX 3

STATEMENT OF EXPENDITURES

COST STATEMENT - Alexco Resource Corp. October 2012 "K 80F Group" Assessment Filing

Claim	*Grant*	*Owner*	*DRILLING DIRECT COSTS*	*STAFF & REPORTIN G*	*ROOM AND BOARD*	*ANALYTICAL*	*RENTALS / SUPPPORT*	**EST TOTAL**
K 80F	YC42628	Alexco Keno Hill Mining Corp.	$ 4,060.00	$ 495.00	$ 456.00	$ -	$ -	$ 5,011.00
		Diamond Drilling includes 16.3 m in from hole K-12-0445 that started on an adjoining claim and was completed on the K 80 claim Drilling carried out from July 5, 2012 to July 9, 2012.						

APPENDIX 4

DRILL LOG

Lithology Legend

Lithology	Description
NR	No Recovery
OVB	Overburden
FLT	Fault
BX	Hydrothermal Breccia
DM	Disseminated mineralization
SM	Stringer-mineralization
VL	Mineralized Veinlet
VM	Mineralized Vein
VN	Unmineralized Vein
QTZT	Quartzite
TQTZT	Thin Bedded Quartzite (Msq)
ICQS	Interbedded Carbonaceous Quartzite & Schist
CQTZT	Calcareous Quartzite
GSCH	Graphitic Schist
SSCH	Sericite Schist
CHSCH	Chloritic Schist
CSCH	Calcareous Schist
GRIT	Quartz gritty Schist or Meta-felsic volcanic
SCH	Undifferentiated schist
LMST	Limestone
QFP	Quartz Feldspar Porphyry - Felsite or Aplite
GNST	Greenstone

Lith Modifier	Description
a	argillaceous
c	calcareous
chl	chloritic
cty	cherty
g	graphitic
m	massive (quartzite or schist)
mb	Medium bedded 30-120 cm bands of QTZT, GSCH
s	sericitic
tkb	Thick bedded >120 cm bands of QTZT,GSCH
tnb	Thin bedded <30 cm bands of QTZT, GSCH

Mineralization Legend

Mineral	
act	actinolite
agt	argentite
ars	arsenopyrite
bor	bornite
cal	calcite
car	carbonate
cc	chalcocite
cer	cerrusite
chl	chlorite
cp	chalcopyrite
diop	diopside
dol	dolomite
FeOx	iron oxide
fre	freibergite
gar	garnet
gn	galena
goe	goethite
lim	limonite
mal	malachite
mar	marcasite
mng	any manganese oxide
msd	manganese siderite
nag	native silver
nau	native gold
pgy	pyrargyrite
pol	polybasite
py	pyrite
pyh	pyrrhotite
qtz	quartz
sco	scorodite
sd	siderite
sfo	sulphosalts
she	scheelite
sph	sphalerite
tet	tetrahedrite
trm	tourmaline
unkn	unknown mineral
wad	manganese wad

Structure Legend

Structure	Description
AP	axial plane
BD	bedding
BR	breccia
BU	boudin
CT	contact (identify type)
DMB	Disseminated Mineral Banding (replacement style)
FA	fold axis
FCL	fracture cleavage
FLD	fold
FLT	fault
FN	foliation
FR	fracture (open space)
FRZ	fracture zone
FZN	fault zone
JN	joint (parting)
LN	lineation
ME	mineral elongation
MRZ	mechanical rubble zone
PA	phenocrysts alignment
PC	plication
RZ	rubble zone
SH	shear
SHZ	shear zone
STR	stringer/stringer zone (<1cm)
U	unconformity
VB	vein banding
VM	vein - mineralized
VN	vein (>10cm)
VNLT	veinlet (1-10cm)
VNZ	vein zone
VRG	vergence

Geotechnical Legend

Intensity	Description
1	weak
2	moderate
3	strong
4	very strong

IRS Category	Description
S1	Very soft clay: easily penetrated several cm by fist
S2	Soft clay: easily penetrated several cm by thumb
S3	Firm clay: penetratedseveral cm by thumb with mod effort
S4	Stiff clay: indented with thumb, but penetrated with great effort
S5	Very stiff clay: readily indented with thumbnail
S6	Hard clay: Indented with difficulty with thumbnail

Rock Strength	Description
R0	extremely weak; indented by thumbnail
R1	very weak; crumbles under firm blow of geologic hammer; peeled by pocket knife
R2	weak; shallow indentation under firm blow of geology pick
R3	medium strong; fractured with single blow of geologic hammer
R4	strong; requires more than one blow of hammer to fracture
R5	very strong; requires many blows of hammer to fracture
R6	extremely strong; can only be chipped with strong blows of hammer

Down Hole Surveys

Hole	Depth_m	Pull_Back	Code	Raw_Azimuth	Correction_Factor	Corrected_Azimuth	Dip	Mag_Field	Temp	Roll	Date_Surveyed	Company	Operator	Instrument	Comments
K-12-0445	167	6	1	334.30		357.30	-43.10	5822			07/07/2012	BLY		Reflex	
K-12-0445	185	6	1	334.20		357.20	-43.70	5869			07/07/2012	BLY		Reflex	

Geotechnical

Hole	From_m	To_m	Interval_Length	Recovery_m	Recovery_Pct	RQD_m	RQD_Pct	Fabric_Breaks	Joint_Count	Num_Joint_Sets	Joint_Roughness	Joint_Fill	GSI	IRS_Strong	Comments
K-12-0445	167.00	170.00	3.00	2.70	90.00	0.72	24.00						35	R3	Rubble. Cracks not counted.
K-12-0445	170.00	173.00	3.00	3.00	100.00	0.76	25.33	46.00	1.00	1.00	5	10	36	R3	
K-12-0445	173.00	176.00	3.00	2.85	95.00	0.59	19.67						36	R3	Rubble. Cracks not counted.
K-12-0445	176.00	179.00	3.00	2.96	98.67	1.09	36.33						35	R3	Rubble. Cracks not counted.
K-12-0445	179.00	182.00	3.00	2.90	96.67	1.15	38.33	53.00	2.00	1.00	2	10	35	R3	
K-12-0445	182.00	185.00	3.00	2.93	97.67	0.91	30.33	44.00	5.00	1.00	2	3	32	R3	
K-12-0445	185.00	185.30	0.30	0.30	100.00	0.10	33.33	10.00	0.00	0.00			32	R3	

Lithology

Hole	From_m	To_m	Lith1	Lith1_Pct	Lith2	Lith2_Pct	Mod1	Mod2	Mod3	Grain_Size	Colour	Bedding_Thickness	Comments
K-12-0445	168.88	169.82	FLT	60	GSCH	40	g	c			dark grey	Thin	Graphitic gouge fault zone. Zone of gsch retain primary fabric .
K-12-0445	169.82	170.16	QTZT	100							dark grey	Medium	
K-12-0445	170.16	174.25	GSCH	80	QTZT	20	g	c			grey	Thin	Thinly interbedded gsch and qtzt. Horizons of a higher graphitic content. Sericite component? .Calcareous beds. A few thin beds of clsr towards bottom of interval.
K-12-0445	174.25	175.01	FLT	80	GSCH	20	g				black	Thin	Graphitic gouge. Primary fame retained near mqtz.
K-12-0445	175.01	179.85	CLSR	55	GSCH	45	g	chl			grey	Thin	Finely interbedded clsr, gsch, qtzt, and ssch (smaller component?).
K-12-0445	179.85	182.24	CLSR	50	GSCH	50					green-grey	Medium	Alternating horizons of clsr and gsch. Fault zones.
K-12-0445	182.24	185.30	CLSR	95	GSCH	5	chl	s			green-grey	Medium	Light silver green. Chlorite alteration. Calcareous. Graphitic component introduced toward bottom of interval.

Mineralization

Hole	From_m	To_m	Recovery_m	M_Quartz	M_X_Min	M_X_Min_Pct	M_Y_Min	H_Quartz	H_Carbonate	H_Pyrite	D_Pyrite	Comments
K-12-0445	168.88	169.82	0.64	2.00	py	0.00			0.50		0.00	Cal associated with mqtz. Trace disseminated py.
K-12-0445	169.82	170.16	0.34	5.00					1.00			Cal associated with mqtz.
K-12-0445	170.16	174.25	4.09	3.00	py	0.00			1.00		0.00	Cal assonated with mqtz. Matrix calcite primary composition? Trace disseminated Py.
K-12-0445	174.25	175.01	0.50	8.00				24.00	2.00	0.10	0.00	Cal associated with mqtz. Qtz vien (associated py and chlorite alt). Trace disseminated py.
K-12-0445	175.01	179.85	4.74	10.00	py	0.00			2.00		0.01	Cal associated with mqtz. Discreet bands of disseminated Py.
K-12-0445	179.85	182.24	2.34	3.00	py	0.00			1.00		0.00	Cal associated with mqtz. Disseminated py.
K-12-0445	182.24	185.30	3.00	2.00					1.00		0.00	Cal associated with mqtz (minor). Trace disseminated Py. Chlorite alteration (~ 182.94-183.2m).

Structures

Hole	From_m	To_m	Struct_Level	Struct_Code	Struct_Mod1	Struct_Mod2	Struct_Mod3	Struct_Alpha	Struct_Beta	Strike	Dip	Vergence	Comments
K-12-0445	168.88	168.99	1	FLT	gg								
K-12-0445	169.27	169.82	1	FLD	gg								
K-12-0445	170.06	170.07	1	FN				83					
K-12-0445	170.57	170.58	1	FN				75					
K-12-0445	172.11	172.12	1	FLT	gg								
K-12-0445	172.23	172.24	1	FN				66					
K-12-0445	172.24	172.25	1	STR	fc			41	200	280.30	85.5		
K-12-0445	173.01	173.02	1	FN				69					
K-12-0445	173.42	173.43	1	FLT	gg								
K-12-0445	173.53	173.54	1	FN				66					
K-12-0445	174.25	175.01	1	FZN	gg								
K-12-0445	175.14	175.15	1	FN				66					
K-12-0445	176.05	176.07	1	FLT									
K-12-0445	177.80	177.81	1	FN				71					
K-12-0445	179.70	179.71	1	FN				68					
K-12-0445	180.10	180.10	1	FLT									
K-12-0445	181.00	181.01	1	FN				61					
K-12-0445	181.81	181.83	1	FLT	gg								
K-12-0445	182.74	182.75	1	FLT	go								
K-12-0445	184.14	184.15	1	FN				72					
K-12-0445	185.08	185.09	1	FN				68					

Stratigraphy

Hole	From_m	To_m	Strat	Avg_Alpha	True_Thickness	Comments
K-12-0445	168.88	169.82	FLT			
K-12-0445	169.82	170.16	Degu	83	0.34	QTZT part of Earn Grey Schist?
K-12-0445	170.16	174.25	Degu	69	3.82	
K-12-0445	174.25	175.01	FLT			
K-12-0445	175.01	179.85	DEc	68	4.49	
K-12-0445	179.85	182.24	DEc	61	2.09	
K-12-0445	182.24	185.30	DEc	70	2.88	

APPENDIX 5

STATEMENT OF QUALIFICATIONS

Al McOnie

I, Alan McOnie of 694 SH2, RD1, Katikati, New Zealand
DO HEREBY CERTIFY:

THAT, I am a VP Exploration and Qualified Person with Alexco Resource Corp., 1150-200 Granville Street, Vancouver, BC, V6C 1S4.

THAT, I have practiced my profession with various mining companies in Canada, New Zealand, Australia, United States, Mexico, and China for over 36 years.

THAT, I am graduate in geology holding a BSc (Hons) from the University of Otago, New Zealand and a MSc from the University of Toronto, Canada.

THAT, I am a member of the Society of Economic Geologists.

THAT, I am a Fellow of the Australasian Institute of Mining and Metallurgy.

THAT, this report is based on work which I personally managed during the year 2012.

THAT, I have no interest in the property described herein, nor do I expect to receive any such interest.

DATED at Elsa, Yukon this 29th day of May, 2013.

Al McOnie