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**ASSESSMENT REPORT**

describing

**GEOLOGICAL MAPPING**

at the

**LS PROPERTY**

LS 1-20      YC82804-YC82823

NTS 105E/12

Latitude 61°33'N; Longitude 135°49'W

Whitehorse Mining District  
Yukon Territory

prepared by

Archer, Cathro & Associates (1981) Limited

for

**STRATEGIC METALS LTD.**

by

H. Smith, B.Sc. Geology, GIT

January 2009

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## **INTRODUCTION**

The LS property covers a limestone prospect, which lies 10 km north of Braeburn Lodge in southern Yukon. The claims were staked based on potential to host a low cost industrial grade limestone quarry. The property consists of 20 claims that are owned by Strategic Metals Ltd.

This report describes a one day exploration program that was conducted on September 24, 2008 by Archer, Cathro & Associates (1981) Limited on behalf of Strategic. Work consisted of geological mapping and property orientation including relocation of historical workings. The orientation work was done to assemble information regarding geomorphology, logistics and prior disturbances, which will be required for future YESEB and land use applications. The author participated in the program. See Appendix I for author's Statement of Qualifications.

## **PROPERTY LOCATION, CLAIM DATA AND ACCESS**

The LS property is located in southern Yukon, approximately 10 km north of Braeburn Lodge and airstrip, immediately east of the Klondike Highway. The property is centred at latitude 61°33' north and longitude 135°49' west on NTS map sheet 105E/12 (Figure 1).

The property comprises 20 contiguous mineral claims covering approximately 405 ha. All claims are registered in the name of Archer Cathro, which holds them in trust for Strategic. Claim data are listed below, while the locations of individual claims are shown on Figure 2.

<u>Claim Name</u>	<u>Grant Number</u>	<u>Expiry Date*</u>
LS 1-20	YC82804-YC82823	July 17, 2009

\* Expiry date does not include 2008 work that has been filed for assessment credit but not yet accepted.

In 2008, access to the property was by truck from Whitehorse via the Klondike Highway. The Whitehorse-Faro power transmission line runs adjacent to the highway and through the property. A short (100 m) unmaintained access road connects the Klondike Highway to the power lines on the LS claims. In 1997, a tote trail was constructed using a bulldozer from the access road to the highest ridge on the property. The trail was not used during the 2008 program.

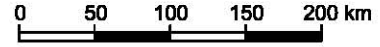
## **HISTORY AND PREVIOUS WORK**

The area of the LS claims was first staked by 14844 Yukon Inc. in 1995 as the Mac and Jeannie claims. The claim block was expanded in 1996 and the entire property was optioned to 145976 Yukon Inc.

In 1997, 145976 Yukon Inc. completed blast trenching, sampling and seven reverse circulation (RC) drill holes totalling 193.55 m. Six of the seven drill holes were logged and sampled. One hundred and nine samples of drill cutting material each, 1.52 m in length, were analyzed for a suite of whole rock oxides and loss on ignition (Doherty, 1999). Figure 3 illustrates locations of

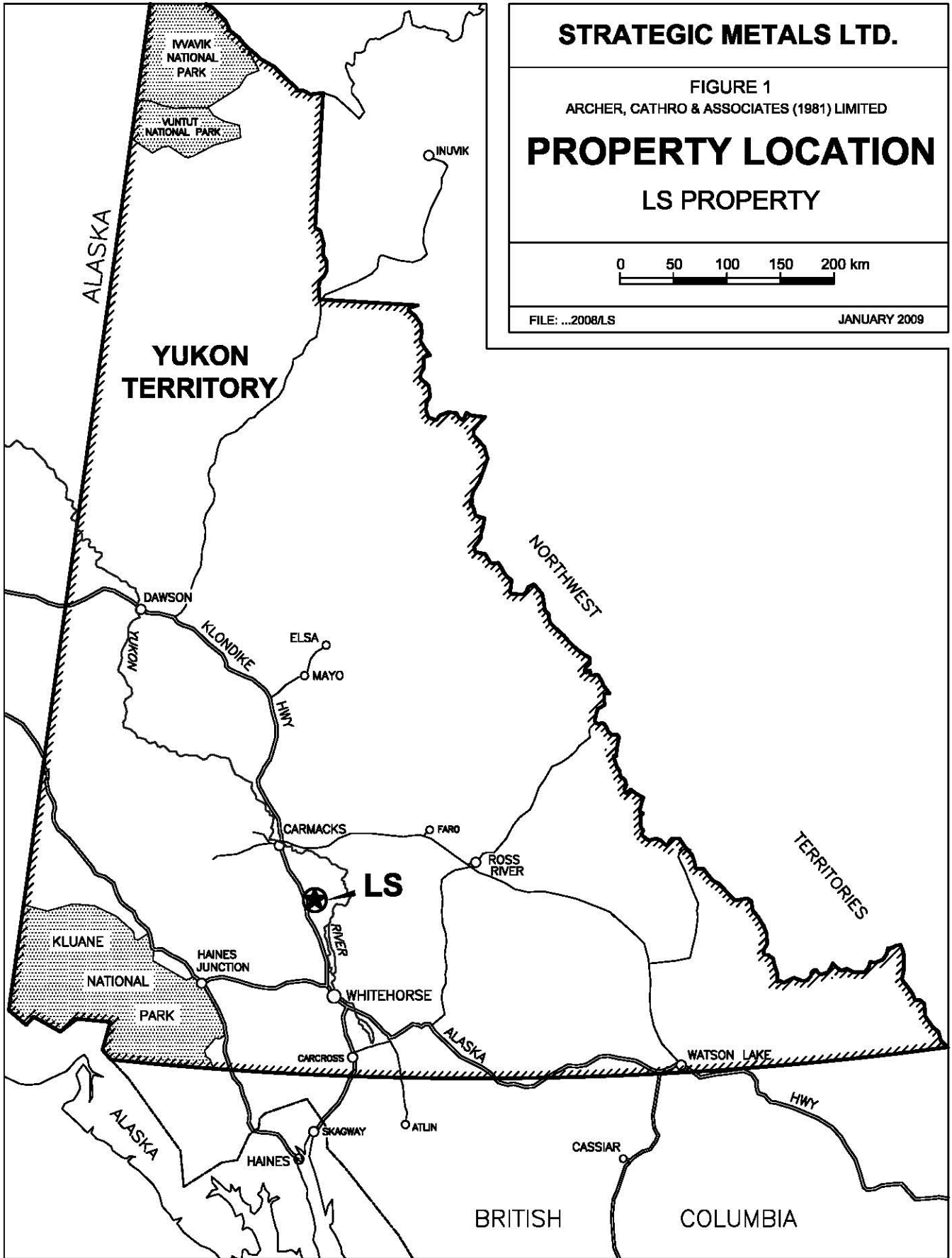
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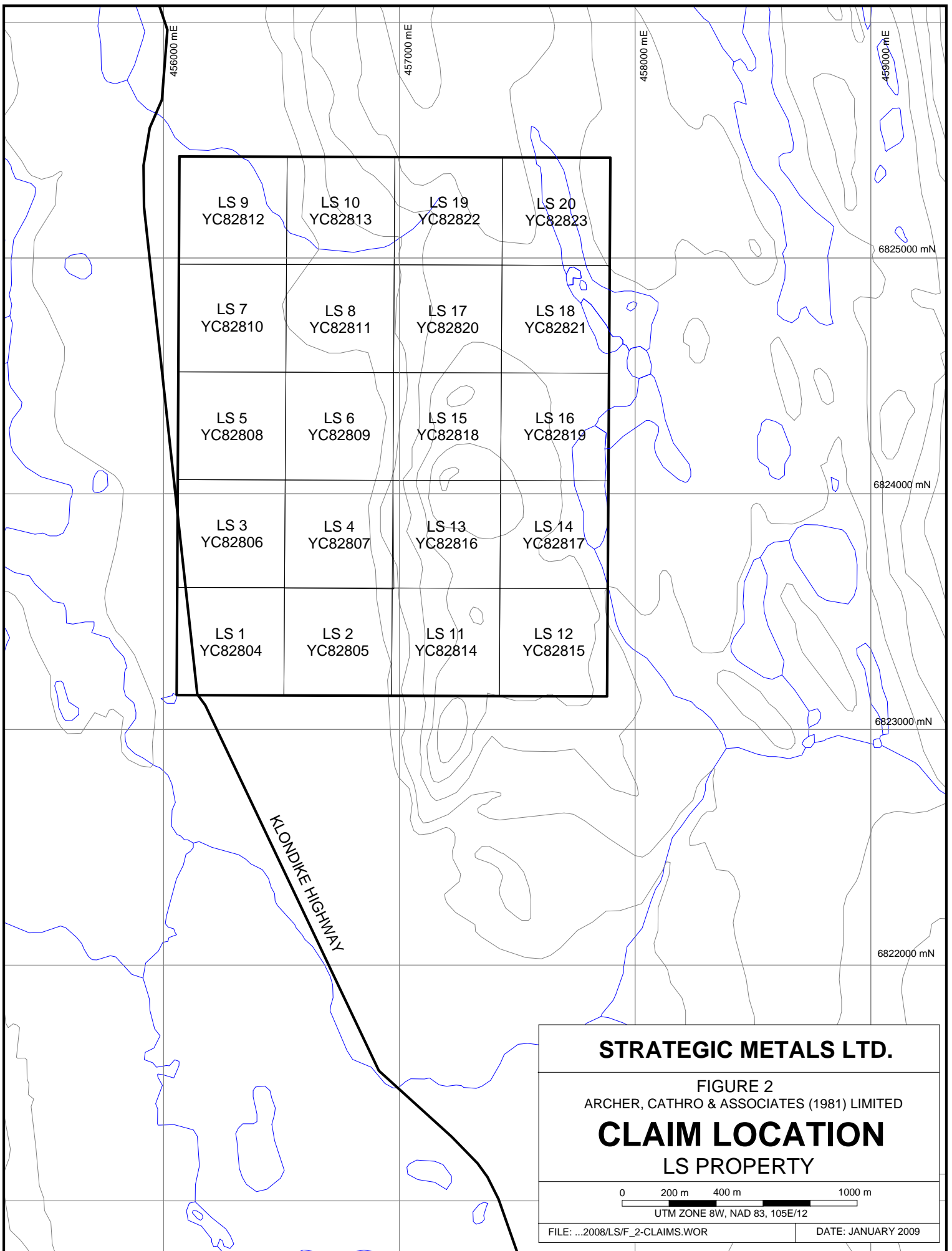
FIGURE 1  
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED  
**PROPERTY LOCATION**  
LS PROPERTY



FILE: ...2008/LS

JANUARY 2009





LS 9 YC82812	LS 10 YC82813	LS 19 YC82822	LS 20 YC82823
LS 7 YC82810	LS 8 YC82811	LS 17 YC82820	LS 18 YC82821
LS 5 YC82808	LS 6 YC82809	LS 15 YC82818	LS 16 YC82819
LS 3 YC82806	LS 4 YC82807	LS 13 YC82816	LS 14 YC82817
LS 1 YC82804	LS 2 YC82805	LS 11 YC82814	LS 12 YC82815

KLONDIKE HIGHWAY

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FIGURE 2  
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

**CLAIM LOCATION**  
LS PROPERTY

0 200 m 400 m 1000 m  
UTM ZONE 8W, NAD 83, 105E/12

FILE: ...2008/LS/F\_2-CLAIMS.WOR      DATE: JANUARY 2009

PROPERTY BOUNDARY

RC97-1  
RC97-2  
RC97-3  
RC97-4  
RC97-5  
RC97-6  
RC97-7

KLONDIKE HIGHWAY

456000 mE

457000 mE

458000 mE






459000 mE

6825000 mN

6824000 mN

6823000 mN

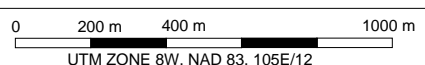
6822000 mN

-  Approximate 1997 RC drill hole based on relative position of relocated drill holes
-  Unreported RC drill hole
-  1997 RC drill hole
-  Four wheel drive access road (1997)
-  Whitehorse-Faro power transmission line

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FIGURE 3  
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**HISTORICAL WORKINGS**  
LS PROPERTY



the RC drill holes and access road. Table II lists weighted average analyses for iron oxide and calcium carbonate for each drill hole. Hole RC97-3 contained the most calcium carbonate and included a cement grade interval that assayed greater than 95% CaCO<sub>3</sub>.

**Table I - 1997 RC Drill Hole Data (Doherty, 1999)**

HOLE	LENGTH (m)	FeO <sub>3</sub> %	CaCO <sub>3</sub> %
RC97-1	21.34	1.78	67.60
RC97-2	30.48	3.66	61.12
RC97-3	36.58	0.25	93.22
including	10.67	0.13	95.23
RC97-4	19.81	4.18	53.23
RC97-5	30.48	1.11	78.74
RC97-6	30.48	1.13	70.26
RC97-7	24.38	NA*	NA*

\* RC97-7 was not logged or sampled due to the 'sooty' nature of the limestone.

### **GEOMORPHOLOGY**

The property is located within the Lewes Plateau physiographic region. Moderate relief and elevations ranging from 670 to 1000 m characterize the area. Only 10% of the property has exposed bedrock, but talus and felsenmeener are common on hillsides. A thick mantle of glacial till and outwash covers valley floors.

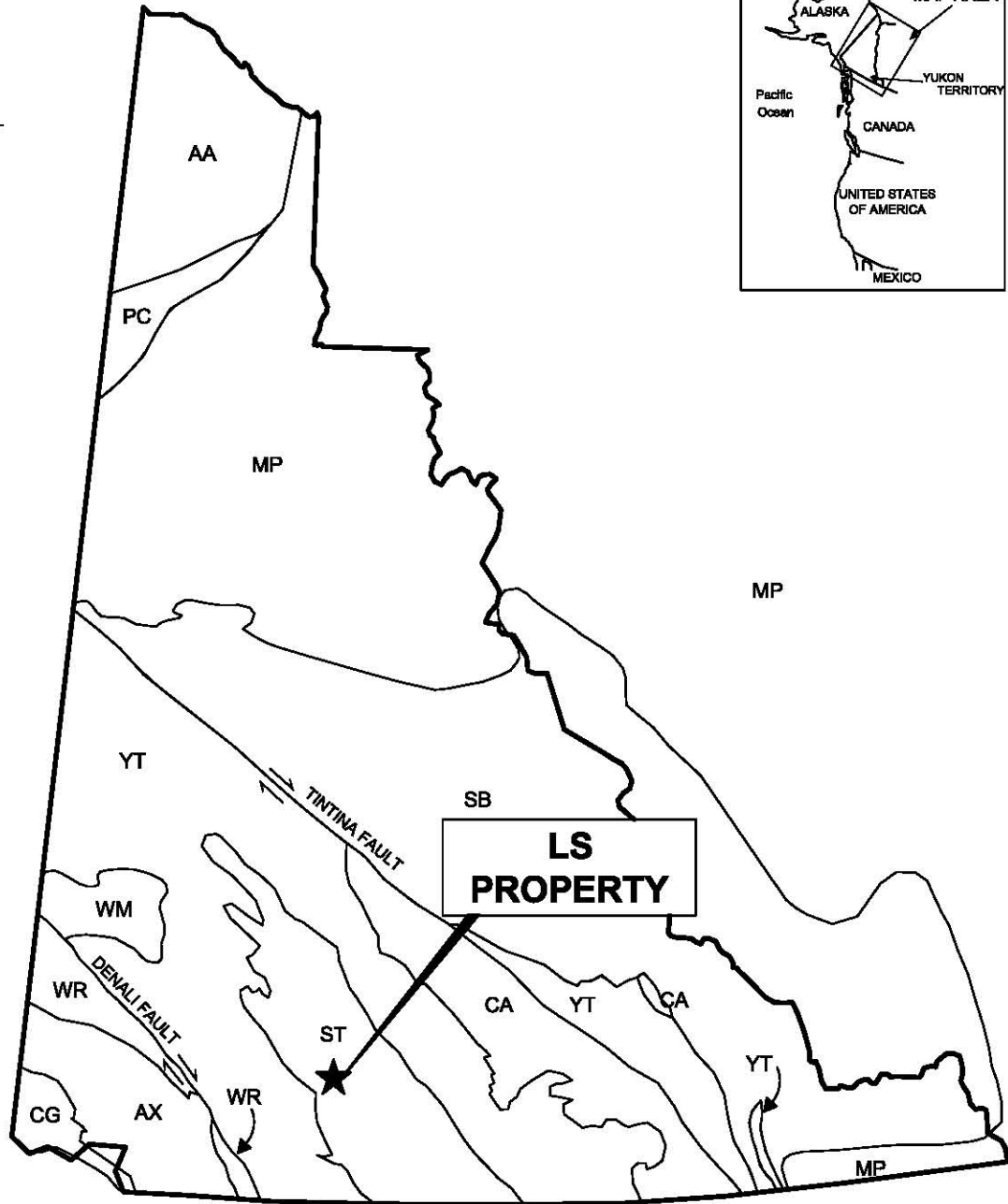
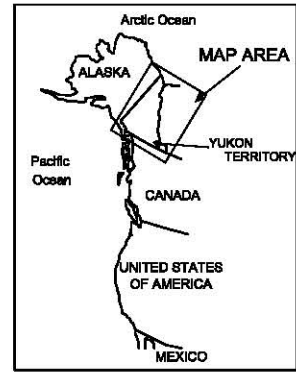
Vegetation consists of white spruce, lodgepole pine and mature aspen trees with sparse willows in creeks. A few small creeks drain the property, all of which belong to the Yukon River watershed.

### **REGIONAL GEOLOGY**

The LS claims lie within Whitehorse Trough, part of Stikine Terrane (Figure 4). Whitehorse Trough is a northwest trending, fore-arc basin comprised of Mesozoic volcanic and sedimentary rocks. Bounded by the Omineca Crystalline Belt to the east and the Coast Plutonic Complex to the west, the Whitehorse Trough constitutes the northern end of the Intermontane Belt of the Canadian Cordillera.

During Late Triassic time, an island arc assemblage consisting of a 7,000 m thick succession of Lewes River Group aphyric to augite-phyric basaltic andesite flows, breccias and tuff, conglomerate, wacke, limestone and shale was deposited within Whitehorse Trough (Long, 2005).

The geology in the vicinity of the property consists of the Aksala Formation of the Lewes River Group, which has two main members (Casca and Hancock). These units are described in Table III.



**ANCESTRAL NORTH AMERICA**

- MP Mackenzie Platform
- SB Selwyn Basin

**TERRANES**  
Displaced Continental Margin

- AA Arctic Alaska
- CA Cassiar
- PC Porcupine

**Pericratonic Terranes**

- YT Yukon-Tanana / Slide Mountain

**ACCRETED TERRANES**

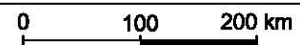
- ST Stikinia / Cache Creek
- AX Alexander
- WR Wrangellia
- CG Chugach
- WM Windy McKinley

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FIGURE 4

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

**TECTONIC SETTING**  
**LS PROPERTY**



DRAWN/REVISED BY: HS

FILE: ...FIG 03 - TECTONIC SETTING

DATE: JANUARY 2009



**Table II - Lithological Units (after Gordey and Makepeace, 1999).**

<b>Unit Name</b>	<b>Map Name</b>	<b>Age</b>	<b>Description</b>
Overburden	Q	Quaternary	Unconsolidated glacial, glaciofluvial and glaciolacustrine deposits; fluvial silt, sand, and gravel, and local volcanic ash, in part with cover of soil and organic deposits.
Lewes River Group-Aksala Formation	Casca Member (uTrAK1)	Upper Triassic, Carnian to Norian	Brown shale, black and minor red siltstone, greenish calcareous greywacke and interbedded bioclastic, argillaceous limestone, igneous or limestone clast pebble conglomerate, laharic debris flows.
	Hancock Member (uTrAK2)		Massive to thickly bedded limestone; minor thin bedded argillaceous and sooty limestone; coarse crystalline, massive dolostone; minor laminated chert; massive to poorly bedded, limestone conglomerate debris flow.

### **PROPERTY GEOLOGY**

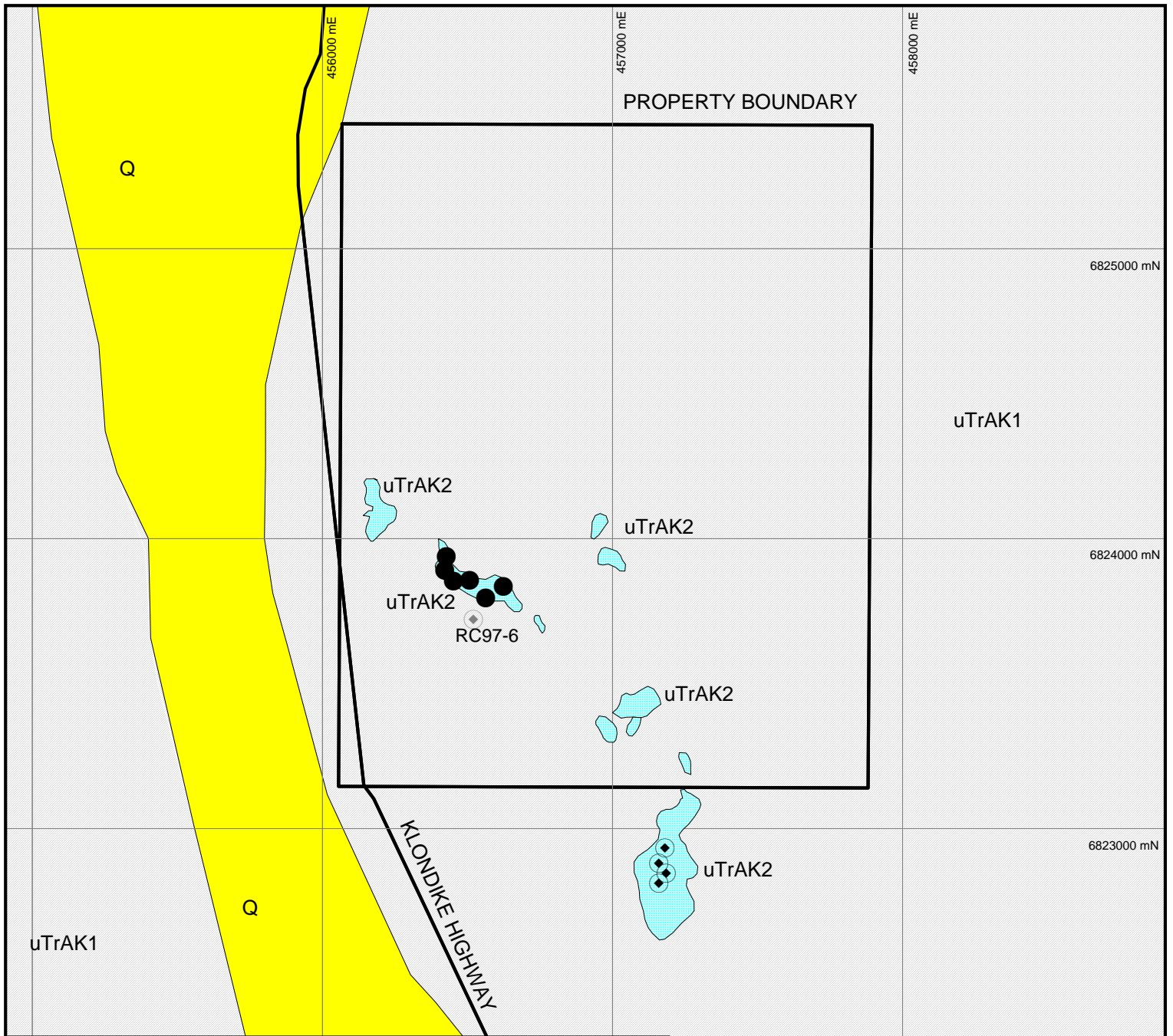
In 2008, property mapping was performed at 1:10,000 scale across the south half of the property. The two rock units that outcrop on the property are the Casca and Hancock members of the Askala Formation. Based on 2008 mapping, the regional geological compilation map by Gordey and Makepeace (1999) has been modified slightly to include additional small exposures of Hancock Member limestone (Figure 5).

Casca Member locally consists of calcareous greywacke and sandstone, interbedded bioclastic limestone and argillaceous limestone, and minor conglomerate and agglomerate. Hancock Member comprises thick limestone reefs and minor argillaceous limestone lenses. The limestone reefs surrounded the dominantly clastic Casca Member and represent quiescent depositional episodes (Yarnell et al., 1998). A Norian age for the Hancock Member is constrained by conodonts and macrofossils (Hart, 1997).

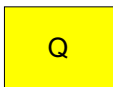
### **DISCUSSION AND CONCLUSIONS**

Test pitting, bulk sampling and reverse circulation drilling of limestone patch reefs on the LS claims by previous operators produced largely negative results for cement grade limestone, which has very specific chemical parameters requiring a purity of greater than 95% CaCO<sub>3</sub>.

Preliminary geological mapping performed in 2008 demonstrates that limestone bodies are more widespread than previously documented. Strategic Metals acquired the property as a potential source of industrial grade limestone, particularly for use in mining applications for pH control of tailings and waste dumps. Appropriate lithogeochemical testing will have to be carried out to fully evaluate this potential. Pending favourable results from those tests, a marketing study of industrial grade limestone should be carried out.



**QUATERNARY OVERBURDEN**



Unconsolidated glacial, glaciofluvial and glaciolacustrine deposits; fluvial silt, sand, and gravel, and local volcanic ash, in part with cover of soil and organic deposits

**UPPER TRIASSIC, CARNIAN TO NORIAN  
LEWES RIVER GROUP  
ASKALA FORMATION**



**CASCA MEMBER**  
Brown shale, black and red minor siltstone, greenish calcareous greywacke and interbedded bioclastic, argillaceous limestone, igneous or limestone clast pebble conglomerate, laharic debris flows



**HANCOCK MEMBER**  
Massive to thickly bedded limestone; minor to thin bedded argillaceous and sooty limestone; coarse crystalline, massive dolostone, minor laminated chert; massive to poorly bedded, limestone conglomerate debris flow

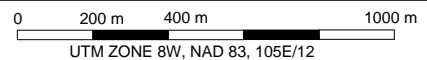
- Unreported RC drill hole
- 1997 RC drill hole
- Approximate site of 1997 RC drill hole

\*After Gordey and Makepeace (1999)

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FIGURE 5  
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**GEOLOGY**  
**LS PROPERTY**



Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

Heather Smith, B.Sc. Geology, GIT

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Long, D.G.F.

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Yarnell, J.M, Stanley, G. and C.J.R. Hart.

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**APPENDIX I**  
**STATEMENT OF QUALIFICATIONS**

## **STATEMENT OF QUALIFICATIONS**

I, Heather Smith, geologist, with business addresses in Vancouver, British Columbia and Whitehorse, Yukon Territory and residential address at #604-175 West 1 Street, North Vancouver, British Columbia, V7M 3N9 do hereby certify that:

1. I graduated from the University of British Columbia in 2006 with a B. Sc in Geological Sciences.
2. From 2004 to present, I have been actively engaged in mineral exploration in the Yukon Territory, British Columbia and Northwest Territories.
3. I am a Geoscientist in Training (GIT) with the Association of Professional Engineers and Geoscientists of British Columbia (Member Number 150000).
4. I have personally participated in the field work reported herein and have interpreted all data resulting from this work.

Heather Smith, B.Sc. Geology, GIT