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AURORA GEOSCIENCES LTD.  
GEOLOGICAL AND GEOPHYSICAL CONSULTANTS  
YELLOWKNIEE, NT, CANADA  
WHITEHORSE, YT, CANADA

2001-054

**2001 EXPLORATION PROGRAM  
on the  
HYLAND RIVER PROJECT,  
WATSON LAKE AREA,  
YUKON TERRITORY**

**60° 19' Lat, 128° 04' Long**

**NTS 105A-08**

**Watson Lake Mining District**

**Mineral Claims**

**ZAP 1 to 20, YB93334 to YB93353  
ZAP 23 to 44, YB93354 to YB93375**

**YUKON ENERGY MINES  
& RESOURCES LIBRARY  
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Aurora Geosciences Ltd  
January, 2002**

## SUMMARY

In the summer of 2001 Aurora Geosciences Ltd conducted a program involving prospecting, soil sampling, trenching, stream sediment sampling and claim staking in the Hyland River area, 55 km northeast of Watson Lake, Yukon. The program targeted Selwyn Basin rocks prospective for sedimentary exhalative (SEDEX) lead-zinc-silver mineralization. The area was identified as prospective through research of the Geological Survey of Canada Regional Geochemical Survey (RGS) database, which identifies a large region of anomalous lead, zinc, cadmium, barium and silver in stream sediment samples. As well, the Yukon Minfile and assessment reports identified a number of SEDEX mineral occurrences in the area.

The program targeted an area on the southern margin of the anomalous RGS data, where previous workers identified anomalous lead, zinc, cadmium and silver in soil. Detailed soil sample surveys identified areas anomalous for the suite of SEDEX indicator elements. The anomalies occur in drainage basins at roughly the same elevation around the mountain indicating that the streams are cutting down through a mineral enriched horizon which is believed to dip gently to the west.

Trenches were dug on two of the stronger lead-in-soil anomalies to determine the source of the lead. The trenching program was not able to expose the source of the mineralization, however, soil profiles in the trenches identified the Pb and Zn anomalies occurring in progressively lower soil horizons as the trenches continue up slope. Thus, the source of the Pb-Zn-Cd-Ba-Ag is believed to be a short distance further up slope and further trenching may expose the source.

Detailed stream sediment sampling was conducted down stream of the trenches and soil anomalies to determine the dispersion pattern to aid in follow-up on other drainages in the area.

Recommendations for future work on the property are to extend the existing trenches up slope to identify the source of the soil geochemical anomalies and to follow-up other soil geochemical anomalies on the property with detailed soil sampling and trenching. If the source of the Pb-Zn-Cd-Ba-Ag mineralization is a buried SEDEX horizon, a gravity survey across the mountain may help to define its size and location. As well, there remain numerous RGS anomalies in the region which should be followed-up with stream sediment sampling and prospecting.

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## **1 INTRODUCTION**

The Hyland River Pb-Zn-Ag Prospect is a sedimentary exhalative exploration target located 50 km northeast of Watson Lake, on the east side of the Hyland River, Yukon Territory. The prospect was identified while researching the Geological Survey of Canada Regional Geochemical Survey (RGS) data, the Yukon Minfile and assessment reports for southeastern Yukon Territory. The prospect area stood out for its highly anomalous barium, zinc, cadmium, lead and silver values in stream sediments over a sizable area (up to 15 by 40 km).

Significant Zn-Pb-Ag mineralization is known to occur in the area at the Quartz Lake (McMillan) deposit, which is located on the northeastern margin of the stream sediment geochemical anomaly. Quartz Lake hosts 1.5 million tonnes grading roughly 11% combined lead-zinc and 62 g/t silver.

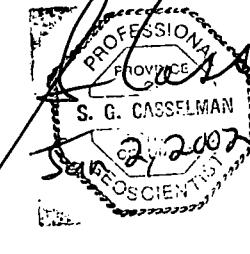
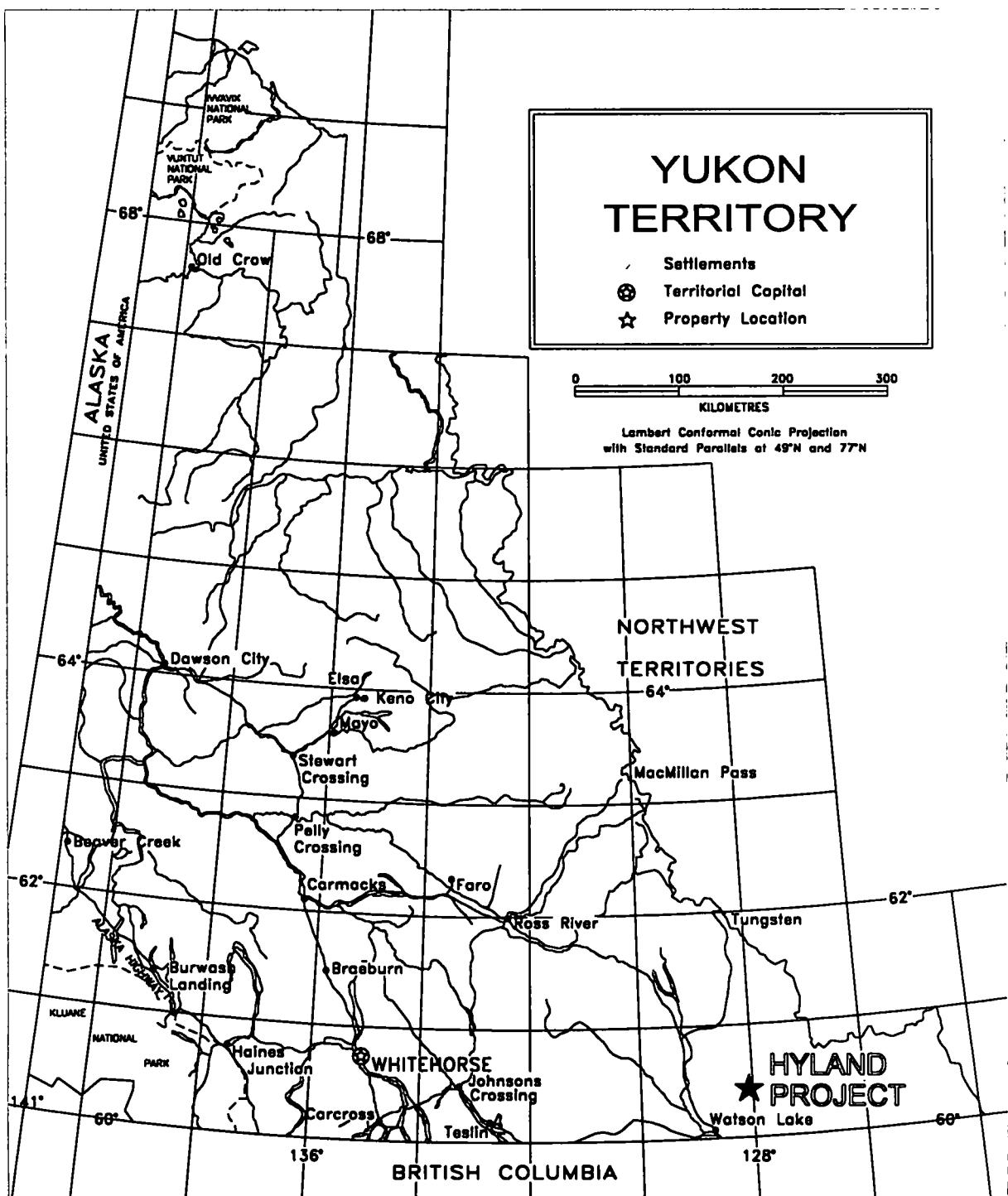
The 2001 exploration program targeted an area on the southern margin of the anomalous RGS data, where previous workers identified anomalous lead, zinc, cadmium and silver in soils and numerous anomalous rock samples (Pawliuk, 1996). The program involved following-up the soil and rock anomalies with additional soil sampling, stream sediment sampling, trenching and prospecting. As the program progressed, 42 mineral claims were staked in the core of the soil geochemical anomaly to protect the prospect.

The field work was conducted in two phases; the first phase was from July 12 to July 30 (19 days) and involved some trenching, soil sampling, prospecting and claim staking. The second phase was conducted from August 31 to September 10 (11 days) and involved trenching, stream sediment sampling and prospecting. The crew consisted of a project manager (Scott Casselman) and assistant (Peter Malacarne).

## **2 LOCATION AND ACCESS**

The Hyland River Prospect is located 50 km northeast of the community of Watson Lake, in the Watson Lake Mining District, on NTS map sheets 105A-08 (Figure 1). The prospect is centered at 60° 19' North Latitude, 128° 04' West Longitude.

Access to the prospect for the 2001 program was by helicopter from Watson Lake. Gravel logging roads come to within 30 km of the prospect area. A winter cat trail from the Coal River Logging Road may provide access to the eastern part of the prospect area.



AURORA GEOSCIENCES LTD.	HYLAND RIVER PROJECT	
PROPERTY LOCATION		MINING DISTRICT: WATSON LAKE
NTS: 105 A18		SCALE 1: 6 000 000
DRAWN BY: HDS		
DATE: 2001.12.19		FIGURE: 1
Aurora Geosciences Ltd.		

### **3 LAND STATUS**

The Hyland River Prospect area has seen a fair amount of exploration activity in the past, however at present there are very few active claims. The Quartz Lake (McMillan) Deposit is still staked and owned by Noranda. Immediately to the east is the Hyland Gold Property of Archer, Cathro and Associates (1981) Ltd and Hemlo Gold Mines Ltd. The area has a large native land claim on the west side of the Hyland River, however this claim is outside of the anomalous RGS area.

During the program, 42 Quartz Claims were staked to cover the core of the prospective area. The claims were recorded in the name of Aurora Geosciences Ltd. on July 30, 2001 in Watson Lake. Claim information is as follows:

<b>Claim Name</b>	<b>Grant #</b>	<b>Expiry Date*</b>
ZAP 1 to 20	YB93334 to YB93353	July 30, 2002
ZAP 23 to 44	YB93354 to YB93375	July 30, 2002

\* not including assessment work filed from this program

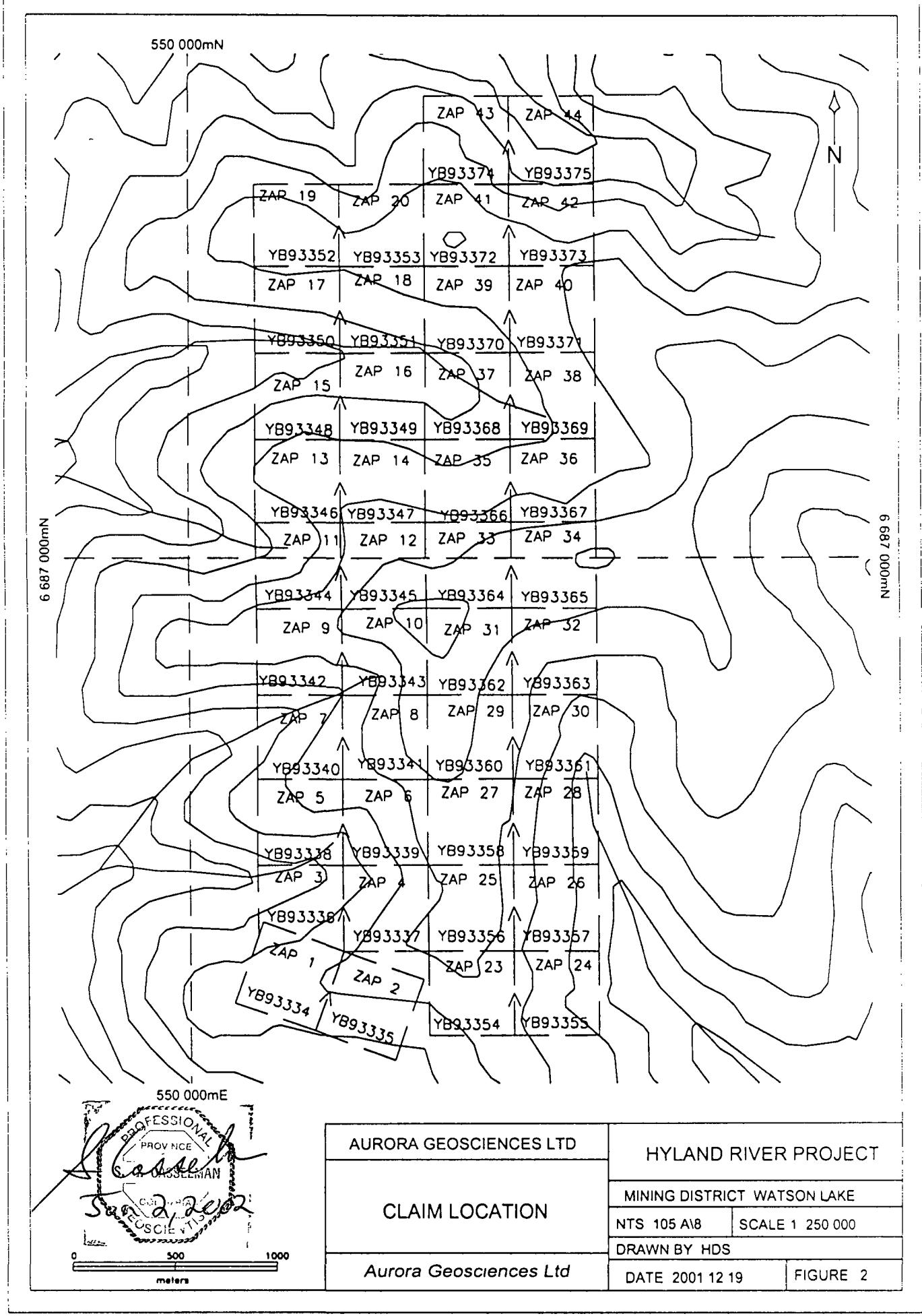
### **4 EXPLORATION HISTORY**

The Hyland River area has been explored intermittently since 1949. The main focus of the exploration activity has been the Quartz Lake (McMillan) Pb-Zn-Ag deposit and the Hyland Gold Deposit. Both of these properties are immediately east of the Hyland Pb-Zn-Ag Prospect area.

The showing at Quartz Lake (Minfile # 095D 006) was discovered in 1892 and staked in 1930. The property had been explored extensively from 1949 to 1981, during which time 16,597 m of drilling was completed in 190 holes. The drilling defined two ore zones, the McMillan deposit and the South Zone (300 m south of McMillan). The last documented work on the property was bulldozer trenching and soil sampling in 1990 and reclamation work in 1993.

The Hyland Gold Deposit (Minfile # 095D 011) is a low-grade oxide gold deposit with open-pit potential. A reserve estimate of 6.75 million tonnes grading 2.0 g/t Au has been published for the deposit, however it is based mainly on trench results. The property has undergone 5,283 m of diamond and rotary drilling in 56 holes from 1954 to 1995. Archer, Cathro complete some work on the property in 1999, however details of that work are not known.

In the area of the Hyland Pb-Zn-Ag Prospect there has been some scattered exploration activity for Pb-Zn-Ag and for gold. In 1978, prospectors found zinc-rich black shale in an unnamed creek in the northern prospect area (Minfile # 105A 027). This lead to the staking of the GUM claims by Hudson Bay Exploration and Development. Hudson Bay conducted soil sample surveys on three small grids in 1978 and 1979 and some hand trenching in 1979. The soil surveys identified four anomalous areas, which received limited follow-up and the claims were later allowed to lapse.



In the center of the Prospect area is the Aurum gold occurrence (Minfile # 105A 039) The showing was originally discovered in 1973, but not staked until 1981 by Kidd Creek Mines Ltd It hosts disseminated tetrahedrite, enargite and sphalerite in quartz-chlorite veins up to 20 cm wide which cut black silty to sandy limestone of the Hyland Group Archer, Cathro conducted mapping and soil sampling surveys for Kidd Creek in 1982 The property was later dropped

At the southern extent of the anomalous RGS area is the Balon Showing (Minfile # 105A 018) Render Resources Ltd staked the HY claims over the showing in 1978 and carried out mapping and soil sampling in 1979 In 1980, a joint venture between Cyprus Anvil Mining Corp and Hudson's Bay Oil and Gas optioned the HY claims and surrounded them with the SF and GS claims The joint venture conducted mapping, line cutting, soil sampling and a magnetic survey on a large widely spaced grid in 1981 The soil sampling defined some highly anomalous Pb and Zn zones These results were not followed-up and the claims were later allowed to lapse In 1994, Archer, Cathro and Westmin Resources Ltd re-staked the area as the SPK claims and carried out airborne magnetic and radiometric surveys, geological mapping, line cutting, rock, soil and stream sediment sampling This work corroborated the anomalous soil results from the Cyprus Anvil/Hudson Bay work and identified a number of anomalous barite values in rock samples throughout the area These claims were allowed to lapse on March 16, 2000 It is in this area that Aurora focused its exploration program in 2001

## 5 REGIONAL GEOLOGY

The Hyland River area in southeastern Yukon is at the southern limit of the Selwyn Basin, just north of the Kechika Basin The southern part of the Selwyn Basin is underlain from bottom to top by Upper Proterozoic to Cambrian Hyland Group, Upper Proterozoic to Paleozoic Gog Assemblage, Upper Cambrian Rabbitkettle Formation of the Rocky Mountain Assemblage, and Devonian to Mississippian Earn Assemblage

The Hyland Group is divided into two formations the lower Yusezyu Formation and the upper, Narchilla Formation The Yusezyu Formation is up to 3,000 m thick and is dominated by coarse-grained clastic rocks with interbedded shale and minor limestone The upper part of formation is variably calcareous and in many places is capped by a fine grained, light to dark gray limestone member

The Narchilla Formation conformably overlies the Yusezyu Formation and has been divided into three members The lowest member is up to 300 m thick and consists of blue-gray to green weathering slate, commonly laminated The middle member is thin to thick bedded, fine-grained quartz sandstone and siltstone about 70 m thick The upper member is more than 400 m thick and consists mainly of blue-gray slate, which, in its upper part, weathers to apple green The strata of the Hyland Group can be traced southward into the northern Rocky Mountains as far as the Gataga River area

The base of the Gog Assemblage is marked by carbonate rocks of the Risky Formation This formation occurs a short distance below the base of the Cambrian and is tentatively correlated with the carbonate at the top of the Yusezyu Formation (Gabrielse, et al, 1992) In the Hyland River area, the Risky Formation is overlain by the Vampire Formation, also of the Gog Assemblage The Vampire Formation is comprised of dark gray siltstone and shale

interbedded with light brown, very fine grained quartzite Abundant slump folds suggest a slope environment

The Rabbitkettle Formation is up to 1200 m thick and is comprised of craton-derived, dark gray and black, non-calcareous argillite, slate and phyllite, buff and gray calcareous, phyllitic limestone, phyllite and slate and minor wavy-banded silty limestone

The capping rocks of the Selwyn Basin in southeast Yukon are of the Earn Group They are thin bedded, laminated slate with thin to thickly interbedded fine to medium grained chert-quartz arenite and wacke, thick members of chert pebble conglomerate, black siliceous siltstone, nodular and bedded barite and rare limestone

The rocks exhibit low-grade regional metamorphism The strata are generally flat lying to shallowly dipping with local undulations due to gentle folding Faulting in the area is dominated by two structures, a low angle fault on the east side of the prospect (the Green River Fault), dipping to the west, and a normal fault to the west with west side down

Intrusive rocks in the Hyland River area occur mainly to the north and west They are Mid Cretaceous quartz monzonite, granodiorite, quartz-diorite and syenite of the Mt Billins Batholith

## 6 HYLAND RIVER PROSPECT GEOLOGY

Much of the bedrock in the area is overlain by unconsolidated glacial and glacio-alluvial deposits, which can be up to 50 m in the Hyland River valley floor The glacial cover decreases up slope Outcrops are scarce on mountain slopes, however on the mountain tops the cover is much thinner and outcrop is more evident Hence, the detailed geology of the area is poorly understood Most local mapping has been confined to canyon walls in deeply incised creek valleys and on mountain tops

The area is underlain by Hyland Group sediments consisting of green and purplish, gray to maroon phyllite, coarse quartz and feldspar grit, shale and limestone, probably of the Narchilla Formation These rocks have been subject to low grade regional metamorphism and have been intruded by numerous, randomly oriented, quartz feldspar porphyry dykes of probable Cretaceous age

## **7 2001 WORK PROGRAM**

The 2001 work program on the Hyland Prospect consisted of following-up anomalous rock and soil results from Westmin's 1995 work in the area to determine the source of the anomalies. The program was completed in 2 phases, the first phase consisted of prospecting, soil sampling, trenching at Trench #1 and staking of 42 quartz claims, the second phase consisted of prospecting, trenching at Trench #2 and stream sediment sampling.

In most instances, the follow-up of the 1995 anomalies was hampered by the inability to find old sample flags and the lack of outcrop. It was decided to follow-up the anomalies with detailed soil sampling to better define the anomaly and to allow for a more focused trenching program.

Detailed soil lines were run over four anomalous soil areas from the 1995 survey. The samples were collected at 10 or 20 m intervals. Soil sample lines are shown on Figure 6 with lines from the 1995 survey. The 2001 soil results were combined with Westmin's 1995 soil data to generate plots for lead, zinc, cadmium and silver (Figures 7 to 10).

Two trenches were dug on lead soil anomalies to determine the source of the lead in soils. The trenching involved digging a series of pits approximately 1 m wide, by 2 to 3 m long along the slope and up to 3 m deep to expose bedrock. At Trench #1, 3 pits were dug (Figure 4), at Trench #2, 4 pits were dug (Figure 5). Two rock samples were collected from the pits at Trench #1 (ZAP01-001, 002) and one sample of clayey overburden (ZAP01-003). From the pits at Trench #2 soil profile samples were collected from each of the different soil horizons (generally 4 samples per pit) and a sample of bedrock at the bottom of each pit (ZAP01-005 to ZAP01-008). Rock and trench sample descriptions are included in Appendix II.

Stream sediment samples were collected at 200 m intervals on the stream draining the area of the two trenches (Figure 3) to determine the down-stream dispersion pattern of the base and precious metals.

All soil, stream sediment and rock samples were air dried in camp prior to shipping to Acme Analytical Labs in Vancouver for processing. The sample processing for soil and stream sediment samples consisted of further drying at the lab and sieving to -80 mesh. One gram of -80 mesh material was then analyzed for 35 elements (including gold and silver) by aqua regia digestion and Inductively Coupled Plasma emission spectroscopy (ICP). The sample processing for rock samples involved crushing to 70% at -10 mesh and pulverizing 100 gm to -230 mesh. A 1 gm sample of the pulverized material was then analyzed by aqua regia and ICP analysis as for the soil and stream sediment samples. The geochemical analytical certificates are included in Appendix III.

## **8 RESULTS**

The detailed soil sample program corroborated the anomalous Pb-Zn-Cd and Ag zones on the property and helped define the anomalous pattern. An interesting feature of the anomalous pattern is that the highly anomalous areas occur in deeply incised creek valleys at roughly the same elevation, between 3,600 and 4,200 feet (see Figures 7 to 10). This anomalous pattern indicates two features: first, where the creeks cut through the overburden they expose a Pb,

Zn, Cd, Ag-rich horizon, second, because the anomalies are occurring at roughly the same elevation around the mountain, this horizon is probably relatively flat lying

The trenches were dug to test one of these anomalies on the west side of line 250 S. Trench #1 reached broken shale bedrock, but failed to identify the source of the anomalous Pb-Zn-Cd-Ag in soil. Trench #2 was dug 50 m east of Trench #1. It encountered similar broken shale and also failed to identify the source of the soil anomalies. However, soil profiles from the four pits at Trench #2 identified anomalous Pb and Zn values in progressively lower soil horizons in the pits dug up slope. Thus, the source of the Pb-Zn-Cd-Ag anomaly is believed to be a short distance further up slope.

The stream sediment sampling program returned anomalous Pb-Zn-Cd-Ag-Ba results down stream of the soil anomaly on line 250 S. The anomalies for all elements, with the exception of barium, generally decrease at a fairly regular interval down stream. This pattern corroborates the source of the anomaly to be near the area of trenching.

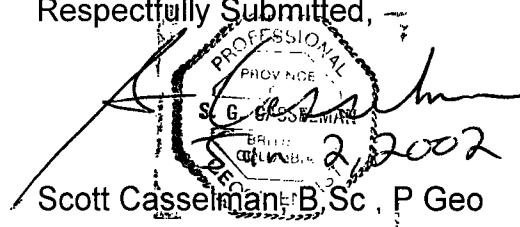
## 9 CONCLUSIONS AND RECOMMENDATIONS

The soil sampling, stream sediment sampling and trenching program on the Hyland River Project confirmed the anomalous Pb-Zn-Cd-Ag-Ba values in the area and helped to better define soil anomalies from previous work. The trenches, however failed to locate the source of the anomalous Pb-Zn-Cd-Ag mineralization.

Recommendations for future work on the property are to conduct

- 1) More detailed soil sampling across the slope in other drainages to test the theory of a mineralized horizon being cut by creeks
- 2) Extending the trenches up slope to look for the source of the anomalous values
- 3) A gravity survey across the mountain to determine if there is a buried SEDEX horizon which may not be readily exposed by trenching

Respectfully Submitted,



A handwritten signature of "Scott G. Casselman" is written over a circular professional seal. The seal contains the text "PROFESSIONAL", "PROV NCE", "S.G. CASSELMAN", "BRITISH COLUMBIA", and "2002".

Scott Casselman, B.Sc., P Geo

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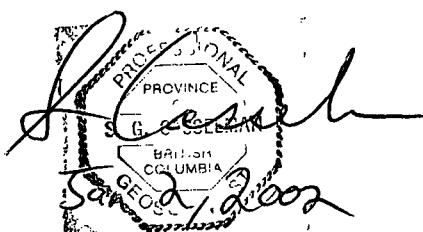
## 11 STATEMENT OF EXPENDITURES

### Phase 1 (costs incurred before recording of claims)

Wages	S Casselman	6,650 00
	P Malacarne	2,850 00
	B Stirling	175 00
Helicopter Charter (4 8 hrs @ \$ 1013 18)		4,863 27
Camp equipment rental (19 days @ \$50/day)		950 00
Vehicle rental (3 days @ \$75/day)		225 00
Fuel		238 73
Supplies		4 82
Groceries		857 30
Maps/Publications/Photocopies		132 21
Communication		<u>393 45</u>
Total Phase 1		<u>18,754 78</u> 17,804 78

### Phase 2 (costs incurred after recording of claims)

Wages	S Casselman (11 days @ \$350)	3,850 00
	P Malacarne (11 days @ \$150)	1,650 00
Helicopter Charter (4 8 hrs @ \$ 1013 18)		1,823 73
Camp equipment rental (11 days @ \$50/day)		550 00
Vehicle rental (2 days @ \$75/day)		150 00
Fuel		150 80
Supplies		32 95
Groceries		431 66
Maps/Publications/Photocopies		143 74
Communication		120 00
Freight		171 73
Analytical costs		2,848 55
Expediting		40 00
Report Writing and reproduction costs		<u>2,500 00</u>
Total Phase 1		<u>15,013 16</u> 14,463 16
Project Total		<u>32,267 94</u>

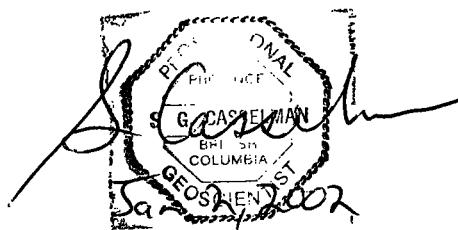


## **STATEMENT OF QUALIFICATIONS**

I, Scott Casselman, residing at 33 Firth Road, Whitehorse, Yukon Territory, Y1A 4R5, certify that

- 1) I graduated from Carleton University, Ottawa, Ontario, with a Bachelor of Science Degree in Geology in 1985
- 2) I have practised the profession of geology since graduation and that I am currently employed by Aurora Geosciences Ltd
- 3) I am a member of the Association of Professional Engineers and Geoscientists of British Columbia, Registration No 20032
- 4) I conducted the field program on the Hyland River Property described in this report

Dated this 2<sup>nd</sup> day of January, 2002, at Whitehorse, Yukon Territory



Scott G. Casselman, B.Sc., P.Geo

**APPENDIX I**

**DAILY LOG**

## Hyland River Project

### Field Log (2001)

- Crew      Project Geologist - Scott Casselman  
            Field Assistant - Peter Malacarne
- July 9     Organize, prepare and pack field gear at warehouse
- July 10    Organize maps in office, purchase food and necessary gear from Whitchorse
- July 11    Pick-up old reports from library, load gear for departure next morning
- July 12    Travel to Watson Lake, purchase groceries, Helicopter to site and set-up camp Clear and warm in evening
- July 13    Sunny throughout day Complete camp set-up in am Organize field equip and maps and do local traverse
- July 14    Clear in am, starts raining at 2 30 pm, rains through night Prospecting traverse west of camp to look for anomalous sample #95DPR374 from 1995 Westmin program Locate 1995 soil survey lines (station marking generally legible), unable to locate old sample
- July 15    Pouring rain in am, slows by 1 00 pm Prospecting traverse on 1995 soil grid to check out anomalous soil results on Line 1000 S and 750 S Re-establish lines by flagging and re-marking station tags Minor outcrop observed – mainly dark gray shale with abundant quartz veining Unable to determine cause of soil anomalies
- July 16    Overcast in am, clearing in pm Decide to dig test pits at site of highly anomalous Pb in soils at L250 S / 2350 W (700 ppm Pb) Dig 3 pits, Pit 1 at 7 m below sample site, pit 2 at sample site and pit 3 at approx 10 m above sample site Encounter dark gray, fissile shale at depth of 2 0 m in pit 1 and pit 2 – no sulphides evident
- July 17    Overcast in am, raining in pm Continue digging on pit 3 at L250 S / 2350 W At depth of 0 7 m encounter very hard-packed, partially frozen clay layer with shale fragments – very difficult digging Wet clay oozes down slope and begins burying lower pits
- July 18    Rains off and on throughout day Continue to work on pit 3 – not much success in wet weather Clay continues to ooze into pits 1 and 2 Decide to abort pitting and sample material that's exposed Sample shale at bottom of pits 1 and 2, and clay at top of pit 3

- July 19 Overcast in am, clearing through day Lay out detailed soil sample program (10 to 20 m sample spacing) to delineate anomalies from 1995 program Soil sample Line 2500 W from 200S to 740 S and L 2300 W from 200S to 400S
- July 20 Clear and sunny through day Prospect southwest of camp (L1000 S) Stake claims in SW corner of 1995 grid along old claim line Stake ZAP 1 and 2 claims
- July 21 Clear, sunny and very hot Peter continues staking and prospecting along SW line Stakes ZAP 3, 4, 5 and 6 Scott looks for claim line 914 m east of Peters line and stakes ZAP 23, 24, 25, 26
- July 22 Clear and warm Camp day, organize samples to send out Helicopter in with groceries at 10 30 am, samples out Helicopter in again at 4 30 pm for visit while in area
- July 23 Clear and warm through day Continue staking and prospecting to north Peter stakes ZAP 7 to 12, Scott stakes ZAP 27 to 40 Locate a number of cut and blazed lines running roughly E-W
- July 24 Clear in am, clouding over in pm Finish staking – Peter does ZAP 13 to 20, Scott does ZAP 41 to 44
- July 25 Partially overcast in am, clears through day Write-up claim forms in am Continue soil sampling on L 2300 W from 750 S to 600 S, L 600 S from 2300 W to 2700 W and L 2100 W from 200 S to 350 S
- July 26 Clear in am, partially cloudy in pm Soil sample line 2500 W from 750 S to 1200 S and L 2300 W from 750 S to 1100 S
- July 27 Clear sunny and hot Soil sampling in SE part of 1995 grid Run lines 900 S and 1100 S from 800 W to 1500 W
- July 28 Clear and sunny Peter runs soil line 700 S from 800 W to 1500 W, Scott prospects and locates baseline and GPS coordinates for 0 W / 1000 S, 0 W / 0 N and 0 S / 1500 W
- July 29 Overcast through day Soil sample to northwest on lines 2100 W from 800 N to 300 N and L 2300 W from 860 N to 300 N
- July 30 Clear and warm Demob to Watson Lake and drive to Whitehorse for break Ship samples for analysis Leave camp in for return and follow-up in late August
- July 31 to August 30 – On break

- Aug 31 Peter and Scott drive to Watson Lake and mobilize to Hyland camp Set-up camp in evening and prepare for fieldwork next day
- Sept 1 Clear in am, clouds over through day Go to site of anomalous soils at L 2300 W , 240 to 270 S Dig pits to locate source of anomaly
- Sept 2 Partially cloudy through day Continue digging pits at L 2300 W / 270 S Pit 4 at 265 S, Pit 5 at 270 S Hit bedrock in Pit 4 at 3 0 m and Pit 5 at 2 5 m
- Sept 3 Partially cloudy and cool Continue pitting on pits 4 and 5
- Sept 4 Rainy in am, clears through day Sample pits 4 and 5 with 1 rock sample each and 4 soil samples each at each different horizon Start on Pits 6 and 7 at 275 and 280 S, respectively
- Sept 5 Partially cloudy minor showers through day Continue digging on pits 6 and 7
- Sept 6 Partially cloudy, windy and cool Prospect and survey in old grid points to coordinate old soil data with new data
- Sept 7 Overcast and cool Organize and pack dried samples Generator break down in am – attempt to fix with no luck
- Sept 8 Overcast and cool, minor rain Finish pitting on pit 6 and 7 Sample pits with one rock sample at base of each pit and 9 soil samples of various horizons No sulphide mineralization found in any of pits 4 through 7 Highly anomalous Pb in soils not explained
- Sept 9 Overcast and cool with showers in afternoon Traverse west of camp down creek to 2500 ft elevation Stream sediment sample up creek at 200 m sample intervals (10 samples) Lots of outcrop evident at lower elevations along creek – mainly dark gray shale with qtz veins
- Sept 10 High overcast in am with ice on standing water Helicopter arrives at 12 30 Demob all gear to Watson Lake and drive to Whitehorse

End of Field Program

**APPENDIX II**

**SAMPLE DESCRIPTIONS**

# Rock Sample Descriptions

Sample #	Grid N	Grid E	UTM E (NAD 27)	UTM N (NAD 27)	Comments
ZAP01-001	-250	-2350	550416	6686166	Sample from bottom of pit (3 m) in Trench #1 Fissile black shale from crumbly subcrop with grey clay beds Has 3 cm qtz vein with minor FeOx on fractures
ZAP01-002	-253	-2350	550416	6686163	Sample from bottom of pit in Trench #1, 3 m upslope from ZAP01-001 Fissile black shale from crumbly outcrop
ZAP01-003	-258	-2350	550416	6686158	Sample of clayey-shaly layer (50 cm deep) from Trench #1, 3 m upslope from ZAP01-002 Grey clay soil with shale fragments (not outcrop) Hard packed clay with up to 40% dark grey to black shale fragments Some felsic dyke fragments and quartz pebbles in clay
ZAP01-004	-900	-840	552090 4	6686118 9	From soil sample hole Grey sandstone/siltstone with up to 3% very fine-grained disseminated pyrrhotite Slightly magnetic, very dense May be slightly silicified
ZAP01-005	-270	-2300	550467 6	6686189	Sample from bottom of pit in Trench # 2 Rubby black shale outcrop with micaceous mineral partings Very hard and siliceous, minor quartz veins cross cutting bedding with white clay mineral in occasional vein Very fissile with minor FeOx on fractures No sulphides evident Bedding strikes 160, dips 14 west
ZAP01-006	-265	-2300	550468	6686194	Sample from bottom of pit in Trench # 2, 5 m north of ZAP01-005 Dark grey, slightly crenulated shale with steeply dipping quartz veins striking 60 deg and dipping to south Very platy and fissile Much softer with very fine grained micaceous minerals and not as siliceous as ZAP01-005 Bedding strikes 220 and dips 24 to NW
ZAP01-007	-280	-2300	550467	6686179	Sample from bottom of pit in Trench # 2, 10 m south of ZAP01-005 Dark grey, slightly crenulated shale
ZAP01-008	-285	-2300	550467	6686174	Sample from bottom of pit in Trench # 2, 5 m south of ZAP01-007 Dark grey, slightly crenulated shale
ZAP01-009					

# Trench Sample Descriptions

Sample #	Grid N	Grid E	UTM E (NAD 27)	UTM N (NAD 27)	Depth [m]	Comments
TR-001	-270	-2300	550467 6	6686189	20 to 50 cm	Re-sample of "B-horizon" material Orange, sandy, bouldery clay with clasts of shale and shale with quartz veins (with FeOx) and rare, rounded cobbles of granitic rock
TR-002	-270	-2300	550467 6	6686189	50 to 120 cm	Light grey clay layer with up to 30% clasts (5 to 60 mm) of shale, quartz and occassional granitic clast
TR-003	-270	-2300	550467 6	6686189	120 to 190 cm	Mixed, interbedded fine shale fragment layers and clay layers Shale layers to 7 cm thick, clay layers to 10 cm thick
TR-004	-270	-2300	550467 6	6686189	190 to 260 cm	Tan to grey clay layer with 70% clay and 30% shale clasts (to 5 mm) Rare to no granitic clasts
TR-005	-265	-2300	550468	6686194	20 to 50 cm	"B-horizon" material
TR-006	-265	-2300	550468	6686194	50 to 150 cm	Grey clay layer with up to 30% clasts of shale (5 to 60 mm), quartz and occassional granitic clast
TR-007	-265	-2300	550468	6686194	150 to 250 cm	Mixed, interbedded fine shale fragment layers and clay layers Shale layers to 7 cm thick, clay layers to 10 cm thick
TR-008	-265	-2300	550468	6686194	250 to 350 cm	Tan to grey clay layer with 70% clay and 30% shale clasts (to 5 mm) Rare to no granitic clasts
TR-009	-280	-2300	550467	6686179	20 to 50 cm	"B-horizon" material
TR-010	-280	-2300	550467	6686179	50 to 120 cm	Grey clay layer with up to 30% clasts of shale (5 to 60 mm), quartz and occassional granitic clast
TR-011	-280	-2300	550467	6686179	120 to 190 cm	Mixed, interbedded fine shale fragment layers and clay layers Shale layers to 7 cm thick, clay layers to 10 cm thick
TR-012	-280	-2300	550467	6686179	190 to 240 cm	Tan to grey clay layer with 70% clay and 30% shale clasts (to 5 mm) Rare to no granitic clasts
TR-013	-280	-2300	550467	6686179	240 to 290 cm	Predominantly shale layer with lesser clay
TR-014	-285	-2300	550467	6686174	20 to 50 cm	"B-horizon" material
TR-015	-285	-2300	550467	6686174	50 to 120 cm	Grey clay layer with up to 30% clasts (5 to 60 mm) of shale, quartz and occassional granitic clast
TR-016	-285	-2300	550467	6686174	120 to 190 cm	Mixed, interbedded fine shale fragment layers and clay layers Shale layers to 7 cm thick, clay layers to 10 cm thick
TR-017	-285	-2300	550467	6686174	190 to 240 cm	Predominantly shale layer with lesser clay

# Silt Sample Locations

<b>Sample #</b>	<b>UTM E (NAD 27)</b>	<b>UTM N (NAD 27)</b>	<b>Elevation (ft)</b>
SLT01-001	548768	6685320	2890
SLT01-002	548964	6685297	2948
SLT01-003	549161	6685329	2990
SLT01-004	549355	6685330	3033
SLT01-005	549501	6685447	3096
SLT01-006	549640	6685570	3162
SLT01-007	549747	6685710	3279
SLT01-008	549743	6685705	3387
SLT01-009	549990	6686004	3444
SLT01-010	550166	6686074	3528

**APPENDIX III**

**GEOCHEMICAL ANALYTICAL CERTIFICATES**







A ██████████ ANALYSTS  
██████████ BORATEES  
(ISO 9002 Accredited Co.)

## GEOCHEMICAL ANALYSIS CERTIFICATE

**GEOCHEMICAL ANALYSIS CERTIFICATE**

**Aurora Geosciences Ltd.** PROJECT Hyland R. File # A103176  
P O Box 31097, 11 & 12 - , Whitehorse YT Y1A 5P7 Submitted by Scott Casselman

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Aurora Geosciences Ltd. PROJECT Hyland R. File # A103176  
P.O. Box 31097, 1118 12<sup>th</sup> Street, Whitehorse YT V1A 5P7 Submitted by Scott Casselman

THE JOURNAL OF CLIMATE

**ICP-ES**  
1DX - 0 50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCl-HNO<sub>3</sub>-H<sub>2</sub>O AT 95 DEG C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES  
**UPPER LIMITS** - AG, AU, HG, W = 100 ppm, MO, CO, CD, SB, BI, TH, U & B = 2,000 ppm, CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 ppm  
**SAMPLE TYPE:** SILT SS80 60C  
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns

DATE RECEIVED - SEP 17 2001 DATE REPORT MAILED: *Sept 28/01* SIGNED BY C. [Signature] D. TOYE, C LEONG, J WANG, CERTIFIED B C ASSAYERS

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## Aurora Geosciences Ltd. PROJECT Hyland R FILE # A102663

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SAMPLE #	ACME ANALYTICAL											
	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
2300W 720N	12.9	58	188	462	1.3	60	5	327	2.69	51	5 <2	5.72
2300W 700N	13.1	68	122	383	8	52	6	292	2.58	55	5 <2	6.68
2300W 680N	12.1	61	144	383	6	51	6	294	2.41	53	5 <2	6.67
2300W 660N	12.2	67	145	417	1.1	57	8	407	2.42	52	5 <2	5.74
2300W 640N	11.9	66	142	439	1.2	58	8	422	2.54	53	5 <2	6.69
2300W 620N	10.6	68	142	475	1.2	60	9	478	2.42	48	5 <2	4.65
2300W 600N	13.0	90	182	563	1.2	70	11	598	3.01	59	6 <2	4.70
2300W 580N	10.9	103	163	1202	1.3	108	8	348	2.58	42	8 <2	8.99
2300W 560N	11.8	77	156	707	7	81	7	356	2.33	60	6 <2	5.88
2300W 540N	11.9	67	228	649	4	72	9	493	2.36	54	6 <2	7.88
2300W 520N	13.7	154	312	1314	1.5	124	7	571	2.47	63	9 <2	5.109
2300W 500N	14.7	71	412	605	8	64	11	937	2.75	67	6 <2	6.77
2300W 480N	17.8	103	130	747	1.4	82	10	491	2.75	56	9 <2	6.104
2300W 460N	18.8	91	139	787	1.8	90	10	432	2.67	66	8 <2	8.108
2300W 440N	12.8	36	116	307	2.8	44	5	208	3.36	47	3 <2	7.46
2300W 420N	14.7	36	89	277	1.1	38	4	183	2.70	41	3 <2	4.53
2300W 400N	9.6	32	84	238	1.0	29	4	152	2.32	33	3 <2	6.30
RE 2300W 400N	10.1	32	84	240	1.0	29	4	146	2.26	34	3 <2	6.30
2300W 380N	7.4	49	93	499	1.9	56	6	265	2.46	35	3 <2	6.35
2300W 360N	6.9	20	78	225	1.1	33	5	201	3.06	31	2 <2	5.17
2300W 340N	7.3	16	41	144	2.0	24	3	137	3.45	27	1 <2	5.16
2300W 320N	4.2	14	38	124	1.0	20	3	120	2.43	21	1 <2	4.14
2300W 300N	4.0	7	67	113	1.4	11	4	227	2.99	9	1 <2	9.8
2300W 280S	18.2	62	155	316	2.2	41	3	202	2.09	29	6 <2	2.59
2300W 210S	21.6	43	160	206	2.2	23	1	81	1.67	24	5 <2	2.69
2300W 220S	23.1	79	182	416	1.4	48	4	250	3.19	56	7 <2	7.117
2300W 230S	17.1	76	195	294	1.5	35	3	193	2.11	28	7 <2	3.61
2300W 240S	24.3	75	1352	610	1.4	83	6	982	2.74	44	7 <2	5.147
2300W 250S	44.9	96	3181	798	1.0	95	6	982	2.63	52	8 <2	6.202
2300W 260S	37.7	106	2313	917	2.8	127	6	938	2.80	54	12 <2	7.163
STANDARD G-2	1.7	3	3	48	< 1	8	5	493	2.00	1	2 <2	5.75

Sample type SOIL SS600 600C Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

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Sample type SOIL Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns

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SAMPLE #		No	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	B1	V	Ca	P	La	Cr	Mg	Ba	Tl	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	% ppm		
		Ppm	Ppm	Ppm	Ppm	Ppm	Ppm	Ppm	Ppm	Ppm	Ppm	Ppm	Ppm	Ppm	Ppm	Ppm	Ppm	Ppm	Ppm	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%			
2300W	1060S	6.6	22	25	144	4	1	25	5	153	2	26	16	2	<2	4	10	1	0	2	0	<5	158	05	100	16	43	30	344	031	1 1 59	003	05	<1	1 2 0	<1	03	4	
2300W	1080S	3.0	17	16	65	4	3	13	3	97	1	98	11	1	<2	5	5	7	5	1	1	<5	93	04	134	19	33	20	179	034	1 1 29	003	04	<1	1 2 2	<1	02	5	
2300W	1100S	17.7	38	27	191	5	7	38	3	136	3	36	30	3	<2	6	19	1.0	5	8	<5	289	09	317	19	58	.30	427	054	3 2 02	002	07	<1	1 2 3	<1	02	6		
2100W	800N	3.2	16	59	387	4	27	7	316	2	45	18	1	<2	3	27	44	1	3	<5	145	21	130	17	39	45	381	059	3 1 39	004	09	<1	1 1 9	<1	02	6			
2100W	780N	6.4	40	96	349	7	45	6	528	1	94	23	3	<2	2	44	2	6	2	3	<5	246	30	097	18	42	39	683	061	4 1 12	003	09	1	<1	2.0	<1	05	4	
2100W	760N	13.0	60	222	620	1	0	74	9	886	2	38	56	6	<2	5	85	51	5	1	<5	622	50	182	24	73	43	1902	091	4 1 26	006	13	1	<1	3 1	<1	10	5	
2100W	740N	12.7	65	128	313	2	9	42	3	182	2	06	32	5	<2	1	46	3	4	2	9	<5	393	15	111	20	47	29	1451	055	1 1 31	005	09	<1	1 1 9	<1	07	5	
2100W	720N	13.5	41	115	248	1	1	31	3	128	1	96	34	3	<2	1	43	2	1	3	2	<5	352	13	097	19	37	19	1160	061	2 1 06	004	08	1	<1	1 5	<1	08	6
2100W	700N	20.1	75	207	673	1	1	78	8	496	2	97	52	6	<2	5	93	2	9	3	5	7	596	29	224	18	60	41	1606	082	3 1 55	008	13	4	<1	2 5	<1	14	5
2100W	680N	16.2	97	249	934	1	6	113	9	838	2	68	65	7	<2	6	85	6.7	4	7	6	820	39	178	23	82	54	3515	104	2 1 66	007	13	1	<1	3 6	<1	07	6	
2100W	660N	8.2	65	142	416	1	8	57	4	283	1	86	31	5	<2	3	37	3	5	2	9	<5	449	17	091	23	50	33	1222	055	2 1 18	008	09	1	<1	2 9	<1	04	4
2100W	640N	15.1	67	558	1016	1	153	13	2370	2	37	50	7	<2	6	93	9	9	4	0	1	1	1058	57	167	28	83	69	2233	113	6 1 49	006	12	3	<1	3 6	1	07	6
2100W	620N	9.5	42	251	328	1	4	45	5	471	2	16	32	4	<2	2	31	2	9	2	3	<5	455	18	123	27	52	.28	766	051	2 1 26	005	07	1	<1	2 2	<1	03	6
2100W	600N	14.2	58	605	785	9	102	8	1138	2	75	50	5	<2	7	63	4	6	3	8	8	789	37	200	22	85	.58	1153	094	6 1 94	005	11	1	<1	3 2	<1	06	7	
RE	2100W 600N	14.9	60	624	812	9	104	8	1085	2	85	50	6	<2	7	64	4	6	3	8	7	790	38	212	23	85	.56	1274	097	5 1.97	004	11	1	<1	3.2	<1	05	7	
2100W	580N	10.0	59	198	437	1	5	62	8	500	2	59	36	4	<2	4	41	3	9	2	6	<5	628	22	168	22	65	39	1704	054	4 1 68	004	08	<1	<1	2 9	<1	03	6
2100W	560N	2.6	89	212	662	1	4	90	15	800	3	01	51	7	<2	5	84	3	8	4	4	5	764	32	181	22	71	49	2929	104	5 1 64	007	15	<1	<1	3	<1	08	6
2100W	540N	13.8	59	205	428	1	5	62	11	679	2	37	51	5	<2	6	84	3	1	5	1	<5	666	40	166	22	57	41	1881	094	3 1 19	005	.10	2	<1	2 5	<1	09	4
2100W	520N	10.6	57	210	726	6	83	7	966	2	14	46	5	<2	6	84	6	1	4	5	<5	608	50	168	22	73	.42	1981	.090	6 1 14	005	9	1	<1	3 0	<1	08	4	
2100W	500N	11.6	37	206	477	8	54	4	381	2	34	47	4	<2	5	49	2	1	3	7	5	611	25	135	22	67	.29	758	.080	2 1 29	.003	.10	<1	<1	2 6	<1	.05	6	
2100W	480N	12.3	59	310	879	8	84	7	1108	2	38	51	6	<2	5	84	5	8	5	3	<5	782	51	180	25	78	.39	1781	.095	4 1 25	006	11	1	<1	2 9	<1	07	5	
2100W	460N	9.8	36	181	411	7	46	4	421	2	02	37	4	<2	1	51	2	9	4	1	<5	622	22	083	21	58	.21	968	.047	5 1 08	003	09	<1	<1	3	<1	08	5	
2100W	440N	11.1	55	298	632	6	81	7	964	2	46	60	5	<2	6	81	5	6	6	3	<5	610	61	150	24	78	.42	1970	.099	4 1 24	006	.11	<1	<1	3	<1	07	4	
2100W	420N	5.0	40	103	175	2	22	3	333	1	33	23	2	<2	3	31	1	3	2	3	<5	210	17	071	20	33	13	487	063	2 84	004	.06	<1	<1	2	<1	.03	5	
2100W	400N	9.9	56	142	442	7	65	11	503	2	60	55	5	<2	6	59	1	9	4	8	<5	365	29	150	22	71	33	811	078	3 1 69	005	.09	<1	<1	2 5	<1	08	4	
2100W	380N	7.5	29	112	465	5	46	4	479	2	41	35	3	<2	3	46	1	4	3	0	<5	372	26	140	17	54	.27	543	.065	5 1 02	005	06	<1	<1	6	<1	05	5	
2100W	360N	4.3	18	78	241	8	31	5	300	2	31	21	2	<2	2	18	1	2	1	5	<5	246	13	102	19	42	.31	377	.035	1 1 23	002	06	<1	<1	5	<1	02	6	
2100W	340N	7.8	42	266	544	1	3	69	4	462	2	76	45	4	<2	4	63	2	1	3	6	<7	498	45	248	18	84	.40	805	.082	5 1 35	006	.09	1	<1	2.7	<1	08	6
2100W	320N	3.7	18	57	131	9	21	4	206	3	06	19	2	<2	4	10	8	1	1	5	195	07	128	19	42	.32	258	.059	2 1 55	.003	.06	<1	<1	2	<1	.02	7		
2100W	300N	3.0	12	67	146	5	20	2	151	1	34	13	1	<2	4	24	5	1	1	1	<5	150	12	081	18	31	.22	236	.070	2 87	.002	.05	<1	<1	7	<1	02	6	
2100W	200S	15.2	68	231	479	1	7	62	6	662	2	11	33	7	<2	2	69	4	2	3	3	7	459	42	155	21	66	.31	2049	.057	3 1 35	.007	10	1	<1	2 3	<1	07	5
2100W	210S	16.9	75	405	492	1	9	68	7	830	2	65	43	5	<2	2	64	2	9	2	9	<5	511	31	.203	21	76	.30	1028	.055	4 1 44	006	.09	2	<1	1 9	<1	.07	6
2100W	220S	15.8	113	225	397	4	32	52	4	346	1	83	29	10	<2	1	54	3	7	3	1	<5	431	20	151	25	65	.19	1761	.039	1 1 26	008	10	1	<1	1 6	<1	10	5
2100W	230S	13.7	49	269	268	9	34	3	346	1	95	31	5	<2	4	52	1	6	2	6	9	428	22	150	21	55	.19	736	.070	2 1 18	004	8	2	<1	2 0	<1	06	6	
STANDARD	C3	26.2	62	38	159	5	4	37	12	832	3	26	57	20	<2	21	28	224	15	0	24	0	85	52	095	18	184	61	144	093	221	85	027	17	15	14	1	03	7
STANDARD	G-2	1.6	3	2	42	<1	9	4	571	1	84	2	2	<2	4	66	<2	4	66	<5	<5	43	57	098	7	85	220	131	5	91	046	51	2	<1	1 8	<1	02	4	

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FILE # A102663

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SAMPLE #	ANALYTICAL																		CHEMICAL																	
	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	B1	V	Ca	P	La	Cr	Mg	Ba	Tl	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	% ppm
700S 820W	3.0	35	80	243	6	38	6	325	1.79	17	2	<2	4	54	1.5	1.4	<5	123	56	118	18	39	66	800	101	21	150	011	13	1	<1	2.8	<1	07	4	
700S 800W	3.2	36	80	258	7	35	5	305	1.73	13	2	<2	2	48	2.2	1.2	<5	135	49	113	19	39	60	886	079	31	150	007	12	1	<1	2.3	<1	07	5	
900S 1500W	6.8	43	135	378	2.9	53	3	240	2.46	24	3	<2	5	39	1.4	2.6	<5	366	24	249	19	63	55	699	062	21	163	003	06	1	<1	2.2	<1	02	5	
900S 1480W	7.4	34	77	258	1.7	40	4	210	2.31	20	3	<2	5	28	9	2.6	<5	276	16	197	18	54	45	451	049	31	148	003	06	1	<1	2.1	<1	03	5	
900S 1460W	4.0	18	49	155	1.5	20	3	139	1.80	13	2	<2	5	14	7	1.2	<5	198	09	154	18	38	23	349	042	21	120	003	04	1	<1	1.9	<1	02	5	
900S 1440W	7.3	30	81	283	1.7	41	4	229	2.35	20	2	<2	5	27	1.1	2.4	<5	271	17	190	20	49	48	528	057	21	154	003	06	1	<1	2.5	<1	02	5	
900S 1420W	3.9	22	46	232	3.9	26	5	171	2.63	18	2	<2	4	13	1.9	1.4	<5	209	11	219	17	44	37	416	048	11	152	003	06	1	<1	2.3	<1	02	5	
900S 1400W	5.6	24	67	174	1.2	25	2	111	1.48	14	2	<2	3	21	9	1.7	<5	240	14	185	19	41	24	595	051	11	110	003	06	1	<1	1.6	<1	02	5	
900S 1380W	5.7	37	83	226	5.2	32	5	237	2.04	19	3	<2	4	23	1.8	1.8	<5	249	14	167	19	42	.31	824	043	21	132	004	07	1	<1	2.1	<1	03	5	
900S 1360W	5.5	21	95	153	2.2	20	2	100	1.45	14	2	<2	3	22	1	1.4	<5	245	12	124	20	35	.22	647	046	1	1.03	003	06	1	<1	1.6	<1	02	5	
900S 1340W	10.6	54	233	313	7	48	2	186	1.58	27	4	<2	4	61	1.7	3.9	<5	498	34	207	22	60	36	1283	076	3	1.17	003	09	1	<1	2.2	<1	03	4	
900S 1320W	9.2	48	143	330	2.1	45	3	207	1.73	20	3	<2	3	37	1.5	2.8	<5	412	17	126	21	57	45	937	071	3	1.34	003	10	1	<1	2.0	<1	02	6	
900S 1300W	10.9	65	205	412	2.6	67	4	287	2.05	36	5	<2	6	66	2.1	4.5	<5	604	47	294	24	76	62	1367	076	4	1.60	003	13	1	<1	2.7	<1	03	5	
RE 900S 1300W	11.3	66	210	416	2.6	68	4	278	2.14	36	5	<2	5	69	2.2	4.4	<5	592	43	279	23	77	61	1352	076	4	1.52	004	13	1	<1	2.7	<1	02	5	
900S 1280W	14.0	94	250	430	1.6	74	4	548	1.57	38	7	<2	4	116	3	6.5	<5	728	64	287	25	74	.48	2831	080	5	1.09	.005	16	1	<1	2.7	<1	05	4	
900S 1260W	11.4	66	220	369	2.2	59	3	279	1.59	26	5	<2	1	64	2.8	4.6	<5	586	37	202	23	81	48	1711	059	5	1.25	003	14	1	<1	1.7	<1	03	5	
900S 1240W	11.9	82	203	483	1.6	75	4	461	1.83	36	6	<2	3	87	3.1	4.8	<5	615	54	270	25	77	69	1960	082	5	1.44	005	16	1	<1	2.6	<1	04	5	
900S 1220W	11.8	75	215	387	1.5	58	3	187	1.97	34	6	<2	4	63	2.6	4.5	<5	489	39	326	22	62	41	1843	062	2	1.47	004	11	2	<1	2.9	<1	03	5	
900S 1200W	8.9	69	137	248	1.9	40	2	109	1.30	19	5	<2	1	45	3.2	3.6	<5	321	17	142	18	46	21	1590	025	2	.89	008	07	1	<1	.7	<1	04	3	
900S 1180W	10.6	47	131	329	1.3	51	3	197	2.34	27	3	<2	3	54	2.2	4.3	<5	409	32	302	20	54	44	1056	059	3	1.28	004	09	1	<1	2.0	<1	04	5	
900S 1160W	13.0	76	137	435	1.2	70	7	608	1.67	47	5	<2	4	104	3.5	6.3	<5	552	58	274	24	72	66	2082	090	6	1.25	006	16	1	<1	2.5	<1	05	3	
900S 1140W	12.1	53	235	314	1.7	49	2	186	1.58	28	5	<2	2	91	2.0	5.1	<5	504	50	307	22	60	.32	1496	065	3	1.07	004	11	1	<1	1.8	<1	05	4	
900S 1120W	8.1	96	85	538	5.6	80	8	371	2.96	28	5	<2	8	29	3	1.33	<5	425	23	208	22	74	71	1208	086	3	2.15	006	13	1	<1	3.6	<1	02	7	
900S 1080W	4.7	17	66	98	9	13	1	50	71	8	2	<2	1	22	8	1.4	<5	150	08	661	20	26	10	524	042	1	.61	002	06	1	<1	8	<1	03	4	
900S 1060W	11.2	83	247	439	2.2	67	3	285	1.46	27	6	<2	2	91	2.7	4.4	<5	505	53	252	23	63	.49	2161	070	3	1.11	005	12	1	<1	2.3	<1	06	4	
900S 1040W	11.8	81	266	541	1.7	74	7	743	1.71	31	6	<2	3	114	4.1	4.9	<5	528	65	263	24	64	55	2578	073	5	1.17	006	13	1	<1	2.5	<1	04	4	
900S 1020W	4.2	52	60	213	2.2	40	4	153	1.82	14	3	<2	1	35	1.1	1.1	<5	141	21	134	16	42	84	756	046	2	2.05	006	12	1	<1	1.5	<1	06	6	
900S 1000W	3.4	73	115	313	9	65	15	598	2.26	15	2	<2	4	43	1.2	6	6	131	34	145	15	48	13	565	109	2	2.78	004	20	1	<1	3.0	<1	04	9	
900S 980W	4.4	99	171	421	8	71	29	1078	2.86	17	3	<2	6	48	2.0	6	9	134	41	153	18	51	1	636	126	2	3.18	006	38	1	<1	4.3	<1	05	9	
900S 960W	3.4	52	60	233	4	42	11	454	2.10	13	2	<2	5	36	1.1	1.2	<5	116	24	096	19	38	91	597	096	3	1.87	006	14	1	<1	2.6	<1	04	6	
900S 940W	4.1	41	52	199	3	40	6	258	2.18	13	2	<2	4	37	9	1.4	<5	133	22	109	20	41	62	548	085	3	1.61	007	11	1	<1	2.2	<1	06	5	
900S 920W	3.4	76	150	323	3	56	14	721	2.69	14	2	<2	7	42	1.2	9	5	131	31	126	19	45	1	38	533	129	3	2.39	007	11	1	<1	3.3	<1	06	8
900S 900W	6.4	123	94	328	7	55	13	671	2.88	20	5	<2	6	149	1.5	1.2	5	241	17	629	18	52	1	34	741	087	2	2.56	007	31	1	<1	3.8	<1	09	8
900S 880W	5.4	40	60	194	7	32	6	626	2.91	19	2	<2	3	36	1.0	1.6	<5	141	13	113	19	42	56	557	070	3	1.62	008	13	1	<1	2.0	<1	09	5	
STANDARD C3	26.7	63	41	161	5.5	35	12	800	3.27	57	21	<2	21	30	22	0	13.3	24.1	83	53	094	19	165	62	165	091	16	1.79	.028	18	14	1	4.3	1	02	7
STANDARD G-2	1.7	3	2	45	< 1	9	4	565	1.97	1	2	<2	4	78	< 2	< 5	< 5	44	63	102	8	82	65	263	134	1	1.02	062	52	2	<1	2.6	<1	02	5	

Sample type SOIL SS80 60C Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns

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Data A FA



Aurora Geosciences Ltd. PROJECT Hwy 1 and B. FILE # A102663

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ACM SIGART ANALYTICAL

ALUMINUM		IRON		MANGANESE		CHROMIUM		BARIUM		LANTHANUM		CERIUM		NEODYMIUM		PRASEODIUM		THULIUM		GADOLINIUM			
SAMPLE #	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm			
9005 860W	3.2	20	32	75	1.0	16	3	74	2.01	10	2	<2	2	30	1.7	8	<5	68	0.094	16	348	0.066	
9005 840W	6.2	50	35	164	1.2	40	7	221	5.68	21	5	<2	8	146	9.6	1.2	<5	110	12	210	18	61	39
9005 820W	5.6	35	79	153	4	30	6	233	3.23	25	3	<2	5	65	1.0	1.9	<5	131	17	157	19	39	31
9005 800W	6.3	35	118	285	1.3	46	6	211	2.84	22	3	<2	6	47	1.5	1.9	8	146	24	165	19	49	480
1100S 1500W	5.8	24	26	179	4.2	22	4	122	2.44	13	2	<2	4	14	1.2	2.0	<5	148	0.7	179	18	46	24
1100S 1480W	6.0	24	35	144	3.9	24	4	114	2.52	18	3	<2	5	17	9	2.3	<5	249	11	278	18	48	25
1100S 1460W	10.5	105	124	608	1.7	90	5	406	2.13	34	6	<2	5	59	3.2	4.2	<5	628	38	183	24	105	66
1100S 1440W	20.9	113	158	478	3.1	80	5	211	1.83	47	7	<2	5	128	2.4	9.5	<5	471	58	333	23	64	32
1100S 1420W	13.2	41	90	296	1.6	47	3	147	2.24	29	3	<2	5	47	1.1	4.9	<5	383	25	.314	19	58	37
1100S 1400W	16.2	111	479	455	1.0	76	3	421	1.55	39	9	<2	6	147	3.7	6.4	<5	831	.86	430	27	92	38
1100S 1380W	19.0	108	269	626	2.6	100	5	423	2.31	45	8	<2	5	100	2.7	6.8	<5	796	52	.329	25	106	62
1100S 1360W	16.6	95	324	587	1.7	96	4	340	2.04	37	7	<2	4	83	3.1	5.9	<5	795	.49	.303	26	111	61
1100S 1340W	16.0	116	409	586	1.9	93	7	1025	1.66	41	8	<2	5	123	5.1	7.3	<5	805	.68	.317	27	88	55
1100S 1320W	8.6	37	70	268	2.9	37	5	228	3.13	26	3	<2	6	34	2.1	3.2	<5	338	22	.448	19	54	32
1100S 1300W	10.5	34	58	274	1.6	38	4	176	2.58	32	3	<2	5	33	2.4	3.8	<5	322	19	311	18	50	37
1100S 1280W	15.7	46	78	268	2.1	49	3	126	2.09	36	4	<2	4	61	1.5	5.6	<5	387	36	.293	20	53	39
1100S 1260W	9.1	34	45	222	2.6	38	5	169	2.77	27	2	<2	6	28	1.3	3.4	<5	240	19	.230	20	51	43
1100S 1240W	11.2	44	62	249	2.5	46	5	179	2.99	33	2	<2	5	30	1.3	4.2	<.5	270	.14	.192	19	45	49
1100S 1220W	13.1	79	74	464	2.8	78	10	368	2.16	38	4	<2	5	63	3.4	5.5	<5	318	.40	.213	22	51	64
1100S 1200W	12.5	66	119	441	1.6	67	5	265	1.96	36	4	<2	4	67	2.4	4.9	<5	360	.43	.217	20	57	70
RE 1100S 1200W	12.2	65	117	438	1.6	68	5	261	2.08	37	4	<2	4	68	2.2	5.1	<5	352	.44	.233	20	55	71
1100S 1180W	9.5	47	68	262	2.3	44	3	138	1.76	27	3	<2	1	46	2.3	3.7	<5	245	.33	.144	19	41	42
1100S 1160W	11.1	59	99	322	1.8	85	6	328	1.8	32	3	<2	3	44	1.8	4.4	<5	333	.24	.169	21	49	53
1100S 1140W	11.5	50	124	274	1.7	46	3	195	1.46	27	3	<2	3	72	1.8	5.1	<5	305	.44	.228	21	44	43
1100S 1120W	10.9	87	153	640	1.9	89	5	336	2.00	32	6	<2	4	114	6.0	5.0	<5	441	.80	.248	21	78	73
1100S 1100W	13.7	127	169	664	2.6	96	6	532	2.17	39	7	<2	2	88	5.7	5.4	5	582	.48	.232	25	87	82
1100S 1080W	3.7	47	108	342	5	50	18	588	2.93	13	3	<2	6	51	1.8	1.3	1	113	22	118	19	42	395
1100S 1060W	4.2	46	75	264	1.8	35	5	212	2.19	12	2	<2	1	32	1.9	1.4	6	134	17	.059	42	43	381
1100S 1040W	4.6	41	100	386	1.3	50	7	263	2.52	15	2	<2	2	28	1.4	1.7	5	135	10	.043	16	41	54
1100S 1020W	3.9	22	88	298	1.0	31	6	246	2.98	17	1	<2	4	19	1.7	1.7	5	128	14	.105	18	47	70
1100S 1000W	3.4	22	80	258	1.1	27	4	203	2.50	12	1	<2	3	21	1.5	1.2	6	129	13	.079	17	36	40
1100S 980W	1.9	17	59	284	6	25	5	218	2.28	8	1	<2	2	15	1.3	8	<5	84	15	.109	15	34	56
1100S 960W	1.1	12	43	171	1.7	12	3	98	1.29	3	1	<2	1	11	2.0	<5	53	10	.043	16	21	23	
1100S 940W	2.1	18	84	336	1.5	28	6	244	2.90	12	1	<2	5	16	1.9	9	<5	96	17	.098	15	39	57
STANDARD C3	26.8	65	37	165	5.4	38	13	815	3.23	58	21	<2	21	28	22	2.13	6	24.7	85	.54	.099	18	173
STANDARD G-2	1.6	3	2	47	< 1	9	5	556	1.99	1	1	<2	5	72	< 2	< 5	< 5	46	61	107	8	81	59
																				226	131	2	
																				.92	.74	53	
																				222	131	2	
																				<1	<1	02	

Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns

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ACME ANALYTICAL

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Aurora Geosciences Ltd. PROJECT Hyland R FILE # A102663

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Sample type SOIL SS80 60C Samples beginning 'RE' are Reruns and 'RR' are Reject Reruns

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Date

**APPENDIX IV**

**GRID GPS COORDINATES**

## 2001 GPS SURVEY POINTS

Property Grid		GPS reading (UTM - NAD 27)		Comments
Northing	Easting	Easting	Northing	
1500	0	551989	6688615	
1500	-1400	550620	6688127	in dense trees (on cut line bearing 70 deg )
1250	-1650	550707	6687818	
1000	0	552156	6688155	
800	0	552236	6687959	
800	-1450	550851	6687423	
800	-1700	550608	6687322	
800	-2100	550222	6687181	
800	-2300	550035	6687108	
500	0	552330	6687699	
500	-1500	550977	6687125	
300	-2300	550174	6686659	
0	0	552485	6687283	
0	-1400	551166	6686735	
0	-1500	551076	6686690	
-200	-2500	550257	6686174	
-250	-1500	551250	6686444	
-250	-2450	550318	6686134	
-250	-2750	550016	6686035	
-440	-2500	550369	6685959	coincides with 1995 grid point L500S/2380W
-500	-1600	551160	6686185	
-500	-2300	550423	6685985	
-500	-2500	550234	6685903	
-740	-2500	550319	6685704	2001 grid survey point
-750	-1650	551269	6686077	
-750	-3000	550012	6685591	elev = 3460'
-900	-800	552127	6686128	
-900	-1040	551826	6685822	
-900	-1500	551487	6685969	
-1000	0	552912	6686320	
-1000	-800	552159	6686030	
-1000	-1750	551220	6685754	
-1000	-2200	550818	6685601	
-1000	-2550	550513	6685500	
-1100	-800	552193	6685932	

Note negative Property Grid Northing numbers are South and negative Easting numbers are West

323

A B C D E

# OVERSIZE

5 maps

Plastic sleeve #1

323

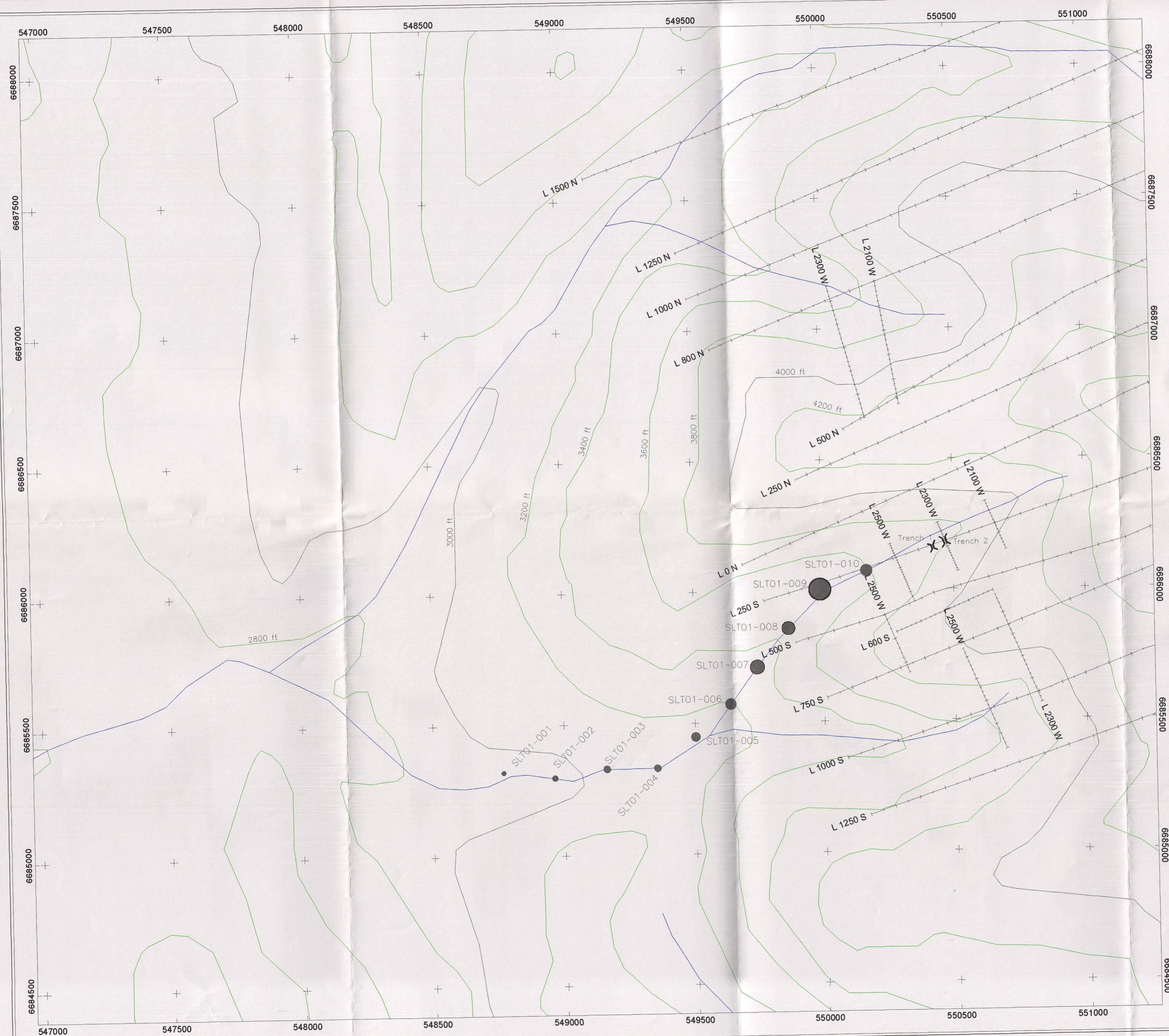
324 ABC

# OVERSIZE

3 maps

Plastic sleeve #2

324



Pb in Stream Sediment (50 ppm / mm)

Distance (km)	Pb Concentration (ppm)
0	400
2	300
4	200
6	100

## Trench Location

**YUKON ENERGY, MINES  
& RESOURCES LIBRARY**  
PO BOX 2703  
WHITEHORSE, YUKON Y1A 2C6

Scale 1:10000

0      200      400      600

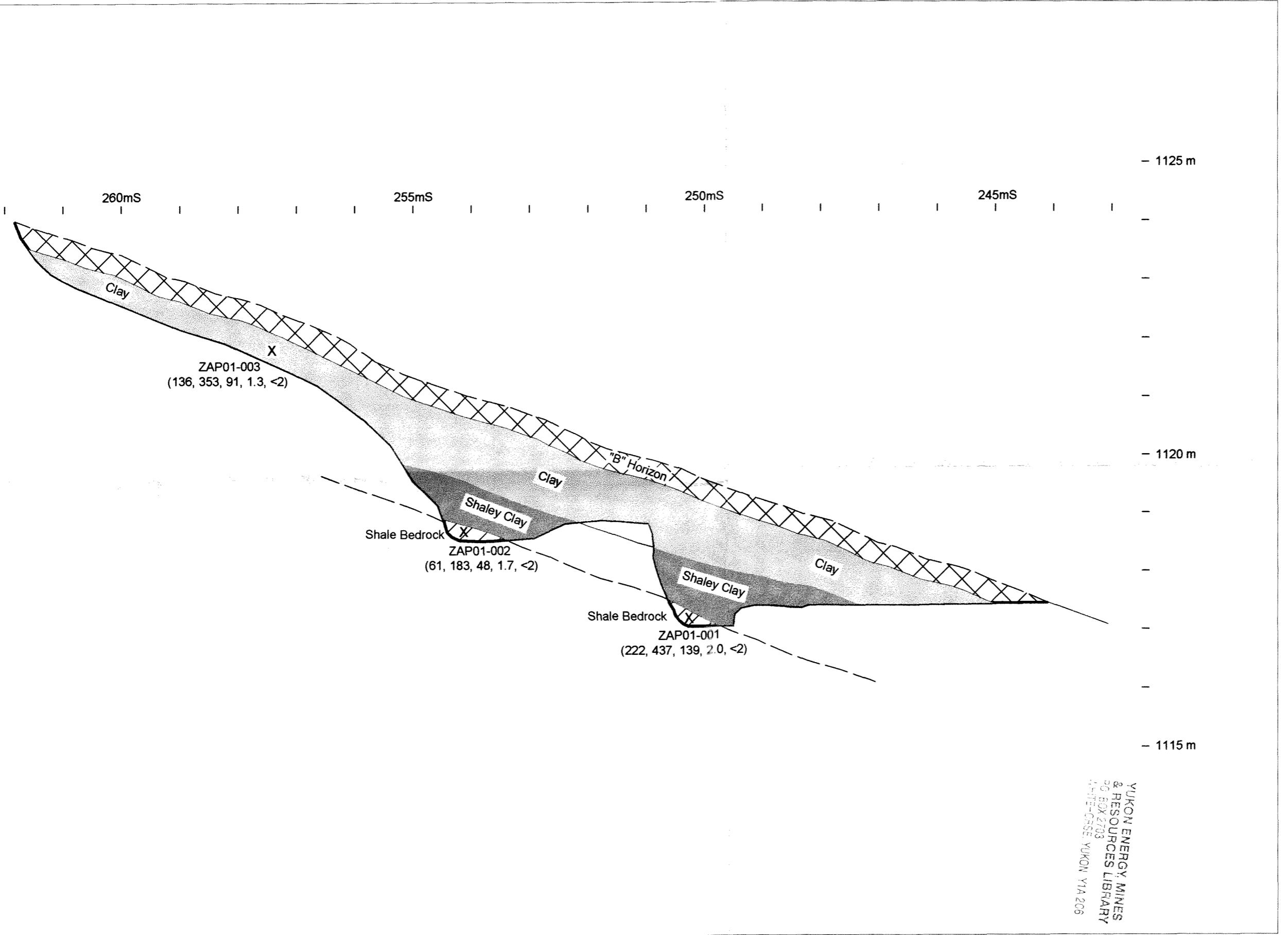
metres

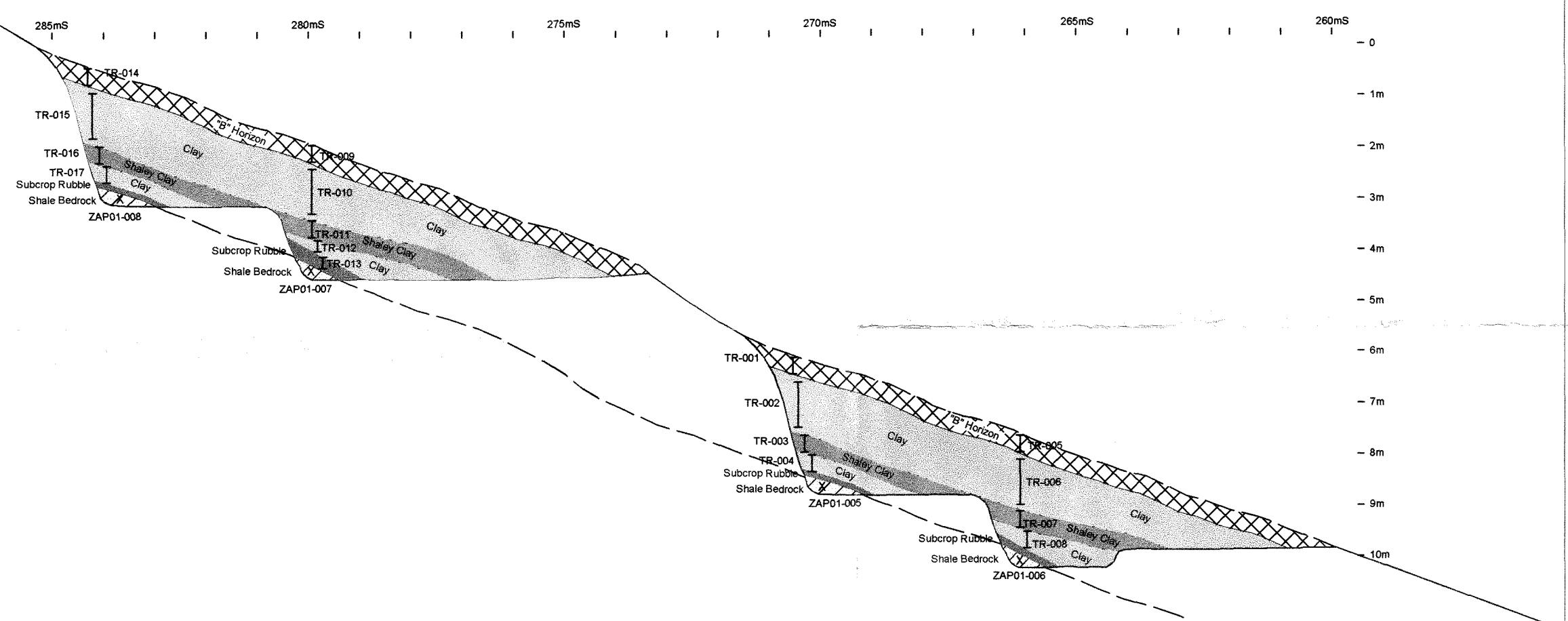
\*NAD27 / UTM Coordinates

**HYLAND RIVER PROJECT**  
**ZAP PROPERTY**  
**SEDIMENT SAMPLE and TRENCH LOCATION MAP**

NTS: 105A/08 Datum: NAD 27, UTM Zone 9  
Division: Watson Lake Date: November, 2001 Figure 3

AURORA GEOSCIENCES LTD





Sample #	Pb ppm	Zn ppm	Cu ppm	Ag ppb	Au ppb
TR-001	1939	1023	120	2.0	<2
TR-002	1916	1069	152	2.4	<2
TR-003	510	885	170	2.6	<2
TR-004	295	705	151	1.7	<2
TR-005	1892	967	103	1.7	<2
TR-006	323	684	145	1.5	<2
TR-007	223	789	151	1.6	<2
TR-008	301	834	168	1.8	<2
TR-009	277	372	60	0.7	<2
TR-010	2663	956	117	1.8	<2
TR-011	2312	1944	153	1.2	<2
TR-012	1008	1471	214	1.2	<2
TR-013	366	504	83	1.5	<2
TR-014	210	476	90	1.7	<2
TR-015	114	260	55	1.8	<2
TR-016	5108	1637	217	1.4	<2
TR-017	2419	1987	155	1.1	<2

*S. Casselman*  
S. C. CASSELMAN  
BRITISH COLUMBIA  
GEOLOGICAL SURVEY  
Jan 2002

0 5m  
metres  
Scale: 1:100

YUKON ENERGY MINES LTD.  
HYLAND RIVER PROSPECT  
MAY 2003

## HYLAND RIVER PROSPECT

### HAND TRENCH #2 LINE 2300 W

NTS: 105 A/8 FIGURE 5.

Mining District: Watson Lake

Job: AGL-28-YT Date: 15 Dec 01

AURORA GEOSCIENCES LTD.

