

YEIP
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Callum 1-8 claims
YMI#00-034
TARGET EVALUATION

YEIP
2000-
034
2000

YUKON MINING INCENTIVES PROGRAM

TARGET EVALUTION PROGRAM

YMIP-034

GEOPHYSICAL SURVEY / SOIL SURVEY

MAYO MINING DISTRICT

FORTY MILE CREEK AREA

CALLUM 1-4 CLAIMS

NTS# 115 P/ 15

AUTHOR OF REPORT SHAWN RYAN

DATE OF WORK AUGUST-SEPTEMBER 2000

DATE OF REPORT JANUARY 2001

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SUMMARY

The Callum 1-8, and Alpine 1-38 claims, grant # YCO1939-YCO1942, YCO -YCO ,YCO1902-YCO1938 registered in the Mayo Mining District to Shawn Ryan will be renewed for 3 years. A magnetometer survey on the Callum 1-4 claims has revealed a pyrrhotite body running along the ridge top Soil sampling along the anomaly have revealed anomalous value in Au, Cu and Bi

INTRODUCTION

A soil survey and two geophysical survey where done on the Callum 1-6 claims. The grid was establish to cover a anomalous gold, copper and bismuth anomaly found in soil and rocks on a ridge top overlooking the Vancouver creek drainage during the summer of 1999

LOCATION

The Callum claims are located 35 miles north west of the community of Mayo The claims cover a ridge top at the head waters of Vancouver creek.

ACCESS

Access is via helicopter from Mayo or from Dawson City. You can also gain access by foot from a placer miner road that comes within 1 mile to the south of the Callum claims The road access starts off the Klondike highway just west of the Mcquesten river bridge You can travel up this dirt road which Leads to placer miner operation on Vancouver creek. The closest location to the Callum claims are at the end of the placer miner road which is located at the head water of Vancouver creek

PROPERTY GEOLOGY

The Callum claims lie in what Don Murphy(YTG geologist) calls the Yusezyu Formation of the Tombstone Strain Zone This rock unit comprise of foliated and lineated muscovite-chlorite phyllite, quartzofeldspathic and micaceous psammite, gritty psammite, rare calc-silicate rock and marble. I talk to Don Murphy personally and he explain that there is a carbonate rich belt within the Yusezyu Formation extends from the Clear Creek map area in the west across Sprague Creek and into Seattle Creek map area This is exactly the horizon that I targeted on the Callum Claims I also noted a Lamprophyre dike running north-south on Callum #7 I noted felsic intrusion dike or sill running north-south on the southern edge of Callum claim #1

WORK METHODS

GRID WORK

I establish a grid with Scott Fleming during the second and third week of August 2000. The grid consist of establishing a base line running north east along the ridge top where most of the showing appear I started the grid line 000 and station 000 at post # 2 of Callum 3/4 The base line ran south west for 600 meters and north east for 200 meters. I place lines going north-west and south-east for 250 meters The lines where put in every 50 meter with station every 50 meter The station where mark with small wired pickets with orange flagging on top The station and line number where mark on flagging with a black waterproof marker A total of 10 2 kilometer of grid was establish

SOIL SURVEY

The soil survey proceeded one's the grid was establish Soil sample where taken every 25 meter. The soil was taken from 6-12 inch below the surface in the B-horizon I also took orientation survey of what different soil horizon may give in gold value This prove very useful as to it pointed out that normal B-horizon sample can give very low gold value and that taking deeper sample such as 4-5 feet below surface increase the gold number 50 fold. I took a normal B-horizon soil on a magnetic anomaly target and it gave me a value of less than 5ppbAu, 18ppmCu, and 2ppm Bi(GAL-TS-01). The soil 5 feet down was in a rusty horizon (GAL-TS-02)and it gave me a value of 50ppb Au, 34 ppm Cu, and 108 ppm Bi. As we can see there a large discrepency. This led me to believe that running all soil taken off the grid would do no help and that selective assaying is much more appropriate I have process certain lines across the known anomalous zones. I have also process line 600 south see if any soil anomalies are leaving the grid area

GEOPHYSICAL SURVEY

MAGNETIC SURVEY

A ground magnetic survey was performed on the Callum 1-6 claims during the first week of September 2000. The instrument used was a proton magnetometer called Scintrex MP4. A mag survey has to take in to account the daily drift which is a product of solar flare so most survey use a second magnetometer and take reading every 30 seconds to watch the drift and correct difference or you can run a base line survey for tie in purpose. The base line survey is the method I used for tie in purpose. Running a base line survey for tie in purpose on the Callum claims consist of starting at line 200 north station 000. I took a reading at this point and this is the reading that the whole grid will be tied into. From this point I took reading every 25 meter down the base line till I reach line 000 station 000. I then proceed back to my first reading and then re-read the station and note time. This give me the magnetic drift across the 200 meter and time. I proceeded back to line 000 and station 000 and continued on doing 200 meter interval and returning for tie in. This way I could tie in the whole base line in to my starting point.

Now that my base line was established I could start the mag survey on the established lines. The lines are run by starting to take a reading at exactly the same reading spot the base line survey was taken. This is the most critical part of this survey since taking a reading even 6 inch from the known base line survey mark would give a different value and potentially throw out your tie in values. For this reason I took great care in the base line survey and also in every tie in spot I would some time take a number of reading in tie in spots just to be confident of the reading.

The lines were run by taking reading every 25 meter but when any anomaly where noticed I would take reading every 12.5 meters.

The survey was originally going to be run with lines every 100 meter but I found numerous pyrrhotite float so I decide to run a tight grid and put in lines every 50 meter. This led to a very detail survey with good resolution.

VLF SURVEY

A VLF survey is very low frequency electro magnetic survey. The VLF instrument pick up signal from various station located around the world. These low frequency are design to help in navigation mostly for submarines. The exploration industry has been working with this technology for the last 30 or so years. This survey helps the exploration business in picking out structures and potential massive sulfide deposits. The only problem with this survey is the location of station, for a good coupling to the conductor or structure, your station has to be along strike. I tried two different station Seattle Washington and Cutler, Maine. Cutler seem to give the best and strongest signal.

The survey read 8.5 kilometer of line. Reading were read every 25 meter. I have provide all reading in the appendix of this report.

INTERPRETATION

SOIL SURVEY

The soil survey pointed out a nice gold, bismuth, copper and silver anomaly. Surprisingly there was also a lead, zinc and arsenic anomaly that still unexplained.

MAGNETIC SURVEY

The magnetic survey has revealed four magnetic anomalies. Anomaly A is centered on L-000, ST-150W. The anomaly is 150 meter long by 100 meter wide. This anomaly ranges from a high of 60785 gammas to a low of 54538 gammas. The nature of such a big difference is from high to low is caused by the pyrrhotite mineralization in surrounding rock.

Anomaly B is centered on L-000 and ST-50E. This anomaly is about 50 meter wide and 300 meter long. It trends north-south. Its high reached 59007 gammas to a low of 56150 gammas. Again this magnetic anomaly follows a pyrrhotite rich rock unit.

Anomaly C is centered on L-350S, ST-100W. This anomaly is about 200 meters by 50 meters. The high reached 58975 gammas to a low of 55404 gammas. This anomaly covered pyrrhotite rich rock unit.

Anomaly D is centered on L-400S, ST-200E. This anomaly is a long and narrow. It's 200 meter by 50 meter and striking in a north-south direction. The high reached 58697 gammas to a low of 56520 gammas. The nature of this anomaly is pyrrhotite rich rock unit.

V.L.F. SURVEY

The VLF survey gave disappointing results. There seem to be no real nice EM anomalies. I feel we should have seen some nice anomalies because of the pyrrhotite magnetic rock. The VLF pattern reflects more the topography with the reading rising in the west and gradually decreasing in the east. The ridge top was centered around the baseline 000.

I think better results would be obtain by using another station. I used Cutler Maine. I tried Seattle, Washington but felt the numbers look better for Cutler. The nature of the mineralization may be that it's lying flat and this would also explain why there no well define anomaly.

RECOMMENDATIONS

The work on the Callum 1-4 claims has revealed a new Au, Cu Bi showing. The nature of the pyrrhotite mineralization makes it a nice magnetic target as was pointed out by the magnetic survey. I feel the property merits further work. I would propose a larger grid with magnetic work. I would also recommended a deep soil survey over any targets found. There still some follow up work that needs to be done on the magnetic targets. A 5 foot pit was dug on Anomaly A and a soil test showed that no detection of Au appeared on surface but 5 feet down 50 ppb Au was detected. This prove that deep soil survey are a must and should be part of the next round of work on the Callum 1-6 claims.

QUALIFICATION

I have 19 years in the exploration business. I have been actively involved in prospecting in the Yukon for the last seven years. I have run geophysical survey such as Magnetic and VLF survey for over 18 years.

I own 100% of the Callum claims. I was the party chief on this job and overseen the whole project.



COST

10.00 Kilometers of Grid lines @ \$350.00 KL	\$3,500.00
10.00 Kilometers of Magnetic Survey @ \$250.00 KL	\$2,500.00
8.50 Kilometers of VLF Survey @ \$250.00 KL	\$2,125.00
Soil Work 6 man days at \$200.00 a day	\$1,200.00
Hand Trenches 4 man days at \$275.00(blaster)	\$1,100.00
Truck Rental \$50.00 a day @ 10 days	\$ 500.00
Food	\$ 350.00
Helicopter	\$ 900.00
Assay Work	\$1,670.00
Soil drying, sorting and shipping	\$ 400.00
Report Preparation	\$1,200.00
Total	\$15,445.00

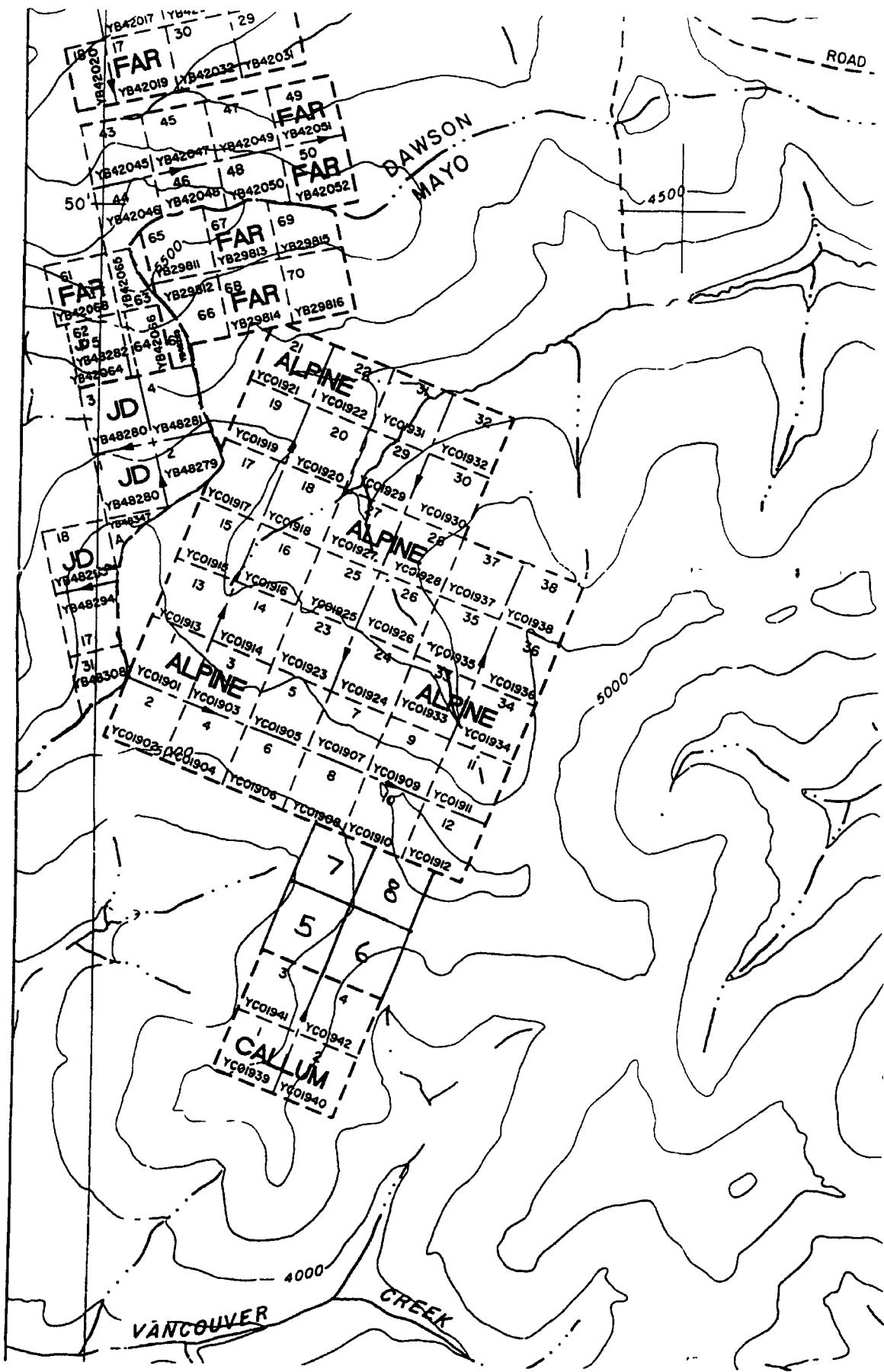
ROCK DESCRIPTION

375100WR03	Float rock, skarn, light green, pyrrhotite
40050WR04	Skarn, outcrop, purple calc-silicate, pyrrhotite
40050WR06	Float, rusty, pyrrhotite
L375 75W R08	Skarn, green/ blue lots of pyrrhotite
L350 75W R09	Skarn, green/ blue, pyrrhotite
L350 25E R10	Skarn, float, green, pyrrhotite.
375 175E R11	Float, dark green, pyrrhotite, rusty.
375 175E R12	Float, green, pyrrhotite, chalcopyrite.
L50S 50E R13	Float, bluish/ green, pyrrhotite
L25S 75E R16	Outcrop, rusty shale, black, hornfels
GAL P.T 2 BTR	Outcrop, rusty, pyrrhotite
L100N-50ER	Float, massive pyrrhotite, chalcopyrite

Callum 1-8
claims

NTs #
115 P/15

NORTH



27/09/2000

Certificate of Analysis

Page 1

Shawn Ryan

WO#00136

Certified by 

Sample #	Au ppb
ss L000-000	22
ss L000-25E	17
ss L000-50E	21
ss L000-100E	23
ss L000-150E	18
ss L000-200E	17
ss L000-250E	18
ss L50N-000	27
ss L50N-25E	22
ss L50N-50E	20
ss L50N-100E	28
ss L50N-150E	22
ss L50N-200E	27
ss L50N-250E	22
ss L100N-00E	41
ss L100N-25	28
ss L100N-50E	28
ss L100N-50EB	37
ss L100N-75E	39
ss L100N-100E	25
ss L100N-125E	34
ss L100N-150E	33
ss L100N-200E	37
ss L100N-250E	31
ss L350-000	19
ss L350-50E	30
ss L350-100E	27
ss L350-150E	35
ss L350-200E	34
ss L350-250E	65

27/09/2000

Certificate of Analysis

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Shawn Ryan

WO#00136

Certified by

Sample #	Au ppb
ss L400S-000	136
ss L400S-25E	65
ss L400S-50E	28
ss L400S-75E	36
ss L400S-100E	21
ss L400S-125E	25
ss L400S-150E	30
ss L400S-175E	171
ss L400S-200E	111
ss L400S-225E	42
ss L400S-250E	80
ss L400S-25W	90
ss L400S-50W	186
ss L400S-75W	43
ss L400S-100W	261
ss L400S-150W	49
ss L400S-200W	47
ss L400S-250W	38
ss L600E-25E	62
ss L600E-50E	47
ss L600E-75E	80
ss L600E-100E	23
ss L600E-125E	54
ss L600E-150E	73
ss L600E-175E	60
ss L600E-200E	37
ss L600E-225E	51
ss L600E-250E	30
ss L600-00W	29
ss L600-25W	21



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Certificate of Analysis

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Shawn Ryan

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Sample #	Au ppb
ss L600-50W	19
ss L600-75W	20
ss L600-100W	37
ss L600-150W	73
ss L600-200W	94
ss L600-250W	20



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Analytical Chemists * Geochemists * Registered Assayers
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CERTIFICATE OF ANALYSIS

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SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Bg ppm	K %	La ppm	Mg %
SC PHY R01	205 226	< 5	0.2	0.61	< 2	< 10	50	< 0.5	< 2	0.89	< 0.5	30	38	104	2.81	< 10	< 1	0.11	< 10	0.35
SC 20 R05	205 226	< 5	< 0.2	0.25	2	< 10	90	< 0.5	< 2	0.20	< 0.5	1	55	4	0.22	< 10	< 1	0.14	< 10	0.03
SC 20 BEODRA	205 226	< 5	< 0.2	1.49	< 2	< 10	10	< 0.5	< 2	1.39	< 0.5	24	38	85	3.11	< 10	< 1	0.11	< 10	1.16
SC 20 R03	205 226	< 5	< 0.2	0.59	< 2	< 10	150	< 0.5	< 2	0.65	< 0.5	55	54	62	1.41	< 10	< 1	0.06	< 10	0.09
SC 20 R04	205 226	< 5	< 0.2	0.49	< 2	< 10	120	< 0.5	< 2	0.13	< 0.5	11	78	21	0.74	< 10	< 1	0.19	< 10	0.13
SC 20 R07	205 226	< 5	< 0.2	0.74	< 2	< 10	10	< 0.5	< 2	0.20	< 0.5	6	29	1	2.08	< 10	< 1	0.07	< 10	0.57
SC 20 R09	205 226	< 5	< 0.2	1.96	< 2	< 10	390	2.5	< 2	1.10	0.5	22	24	31	5.62	< 10	< 1	0.50	20	2.44
SC BLACK DRA	205 226	< 5	< 0.2	1.58	52	< 10	100	1.0	< 2	2.16	0.5	14	20	43	4.28	< 10	< 1	0.14	< 10	1.59
VMS 20 R03	205 226	--	< 0.2	1.88	2	< 10	170	0.5	< 2	0.22	0.5	8	107	48	3.60	< 10	< 1	0.85	20	0.73
CAL SK 11	205 226	10	0.6	5.85	< 2	< 10	< 10	1.5	< 2	3.91	< 0.5	29	54	[513]	3.46	10	< 1	0.03	10	0.08
CAL SK-03	205 226	< 5	1.0	2.82	< 2	< 10	< 10	0.5	< 2	2.12	< 0.5	26	26	518	4.33	< 10	< 1	0.01	< 10	0.05
375 100W R03	205 226	10	< 0.2	3.75	< 2	< 10	10	0.5	(4)	2.85	< 0.5	3	59	-38	0.90	< 10	< 1	0.08	10	0.07
400 50W R04	205 226	5	< 0.2	3.83	6	< 10	130	0.5	< 2	1.23	< 0.5	16	130	(41)	3.02	< 10	< 1	1.27	10	1.34
400 50W R06	205 226	30	0.2	0.93	< 2	< 10	10	< 0.5	< 2	1.01	< 0.5	6	103	[162]	1.82	< 10	< 1	0.04	< 10	0.07
L375 75W R08	205 226	15	0.2	2.11	< 2	< 10	< 10	0.5	2	2.98	< 0.5	6	31	[149]	2.24	< 10	< 1	0.08	< 10	0.07
L375 75W R09	205 226	60	0.6	3.61	4	< 10	< 10	1.5	[22	2.47	< 0.5	13	43	330	4.10	< 10	< 1	0.09	10	0.09
L350 25E R10	205 226	60	0.2	4.60	< 2	< 10	< 10	0.5	46	4.69	< 0.5	6	23	142	2.87	< 10	< 1	0.01	10	0.05
L375 175E R11	205 226	45	0.6	3.00	< 2	< 10	< 10	0.5	[26	2.35	< 0.5	9	21	385	3.70	< 10	< 1	0.05	10	0.04
L375 175E R12	205 226	525	1.6	1.45	8	< 10	< 10	0.5	[324	1.18	< 0.5	17	55	594	5.67	< 10	< 1	0.02	10	0.11
L508 50E R13	205 226	5	< 0.2	0.94	6	< 10	20	< 0.5	< 2	0.30	< 0.5	7	98	-50	2.20	< 10	< 1	0.09	< 10	0.13
L258 75E R16	205 226	< 5	0.2	2.71	< 2	< 10	'60	0.5	< 2	0.89	< 0.5	10	74	37	3.00	10	< 1	0.64	10	0.57
GAL P.T 2 BTR	205 226	< 5	0.6	5.00	< 2	< 10	30	2.0	[6	3.63	< 0.5	8	59	116	1.83	10	< 1	0.04	10	0.73
L100W-50ER	205 226	< 5	2.6	3.86	26	< 10	< 10	1.5	[8	2.32	2.5	21	40	[1815]	13.30	10	< 1	0.01	< 10	0.09
HEM HWY R01	205 226	5	< 0.2	2.62	< 2	< 10	2230	0.5	< 2	1.58	0.5	33	54	716	5.16	10	< 1	0.16	30	3.57
HEM 20 R02	205 226	5	1.8	5.16	20	< 10	40	0.5	< 2	0.07	2.5	48	153	61	13.60	20	< 1	0.10	< 10	4.12
HEM 20 R03	205 226	< 5	2.0	0.58	< 2	< 10	40	< 0.5	< 2	4.12	< 0.5	10	140	9310	3.31	< 10	< 1	0.02	< 10	2.53
HEM 20 R04	205 226	5	0.6	2.92	2	< 10	680	0.5	< 2	0.19	1.5	75	45	824	8.80	10	< 1	0.14	< 10	3.00
HEM 20 R0111	205 226	10	0.6	0.40	96	< 10	310	0.5	< 2	3.22	1.5	96	33	2860	6.88	< 10	< 1	0.10	< 10	2.04
HEM 20 R022	205 226	< 5	0.2	0.28	8	< 10	300	< 0.5	< 2	9.44	< 0.5	23	11	144	1.98	< 10	< 1	0.19	10	5.59
HEM 20 R0333	205 226	5	0.8	0.98	6	< 10	1560	0.5	< 2	0.04	1.0	12	24	1445	11.00	< 10	< 1	0.01	< 10	1.10
JL 20 R01	205 226	< 5	< 0.2	1.23	< 2	< 10	330	< 0.5	< 2	0.10	< 0.5	10	130	34	2.37	< 10	< 1	0.72	< 10	0.54
JL 20 R02	205 226	50	1.8	1.37	10	< 10	10	0.5	< 2	0.53	3.0	102	85	277	> 15.00	10	< 1	0.37	< 10	0.73

Callum Rocks are ^{label} from with STATION Location of Grid Coordinates
 GAL P.T. 2 BTR Rock, Bottom of Soil Pit, Location L 55N / 75W

CERTIFICATION
 NTS # 115 P15

✓
 [Signature]



ALS Chemex

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SAMPLE	PREP CODE		Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
SC PHY R01	205	226	255	1	0.09	16	780	6	1.25	< 2	3	31	0.12	< 10	< 10	20	< 10	30
SC 20 R05	205	226	40	1	0.06	1	10	8	0.03	< 2	< 1	19	< 0.01	< 10	< 10	1	< 10	6
SC 20 BE0DRA	205	226	470	1	0.17	49	1170	2	0.88	< 2	8	17	0.14	< 10	< 10	62	< 10	50
SC 20 R03	205	226	100	14	0.01	46	150	4	0.52	< 2	1	32	0.06	< 10	< 10	11	< 10	28
SC 20 R04	205	226	35	10	0.08	28	150	6	0.21	< 2	< 1	29	0.05	< 10	< 10	9	< 10	24
SC 20 R07	205	226	220	< 1	0.14	1	570	< 2	< 0.01	< 2	5	7	0.06	< 10	< 10	65	< 10	38
SC 20 R09	205	226	1240	< 1	0.10	14	2470	8	< 0.01	< 2	13	76	0.25	< 10	< 10	168	< 10	106
SC BLACK DRA	205	226	615	6	0.01	12	960	14	0.79	< 2	7	120	< 0.01	< 10	< 10	63	< 10	62
VMS 20 R03	205	226	280	< 1	0.01	34	820	10	0.02	< 2	4	18	0.11	< 10	< 10	54	< 10	226
CAL SK 11	205	226	90	< 1	0.25	46	190	8	2.16	< 2	< 1	209	0.06	< 10	< 10	8	10	30
CAL SK-03	205	226	220	< 1	0.09	30	150	2	2.08	< 2	< 1	79	0.04	< 10	< 10	3	80	50
375 100W R03	205	226	105	< 1	0.49	11	180	4	0.24	< 2	1	152	0.06	< 10	< 10	11	< 10	26
400 50W R04	205	226	165	< 1	0.21	40	90	6	0.35	< 2	8	87	0.17	< 10	< 10	56	< 10	46
400 50W R06	205	226	95	< 1	0.11	16	60	2	0.70	< 2	< 1	51	0.03	< 10	< 10	3	< 10	22
L375 75W R08	205	226	235	< 1	0.57	18	500	2	1.01	< 2	< 1	63	0.04	< 10	< 10	3	< 10	42
L375 75W R09	205	226	225	< 1	0.54	27	200	8	2.31	< 2	1	115	0.06	< 10	< 10	9	< 10	56
L350 25E R10	205	226	325	< 1	0.19	7	860	4	1.08	< 2	< 1	209	0.05	< 10	< 10	6	< 10	32
375 175E R11	205	226	230	< 1	0.35	13	880	6	2.09	< 2	< 1	96	0.03	< 10	< 10	3	< 10	64
375 175E R12	205	226	345	< 1	0.12	34	120	4	3.39	< 2	< 1	48	0.04	< 10	< 10	6	< 10	52
L508 50E R13	205	226	75	< 1	0.08	8	70	2	0.40	< 2	1	38	0.03	< 10	< 10	10	< 10	16
L25S 75E R16	205	226	105	< 1	0.19	19	200	8	0.49	< 2	4	85	0.11	< 10	< 10	31	< 10	40
GAL P.T 2 BTR	205	226	130	7	0.47	27	340	14	0.77	< 2	1	188	0.05	< 10	< 10	33	< 10	30
L100N-50ER	205	226	40	1	0.30	9	410	10	> 5.00	< 2	< 1	184	0.02	< 10	< 10	5	< 10	16
HEM HWY R01	205	226	1175	1	0.01	39	580	< 2	0.08	< 2	4	92	0.01	< 10	< 10	54	< 10	44
HEM 20 R02	205	226	350	< 1	< 0.01	94	320	56	3.51	< 2	9	6	0.01	< 10	< 10	155	< 10	140
HEM 20 R03	205	226	2690	4	0.01	12	60	4	0.52	< 2	7	31	< 0.01	< 10	< 10	20	< 10	16
HEM 20 R04	205	226	365	1	< 0.01	45	580	2	0.11	< 2	6	11	0.03	< 10	< 10	164	< 10	44
HEM 20 R0111	205	226	1775	4	< 0.01	24	570	6	0.23	< 2	2	117	0.01	< 10	< 10	17	< 10	12
HEM 20 R022	205	226	3620	< 1	0.01	6	380	< 2	0.05	< 2	3	33	< 0.01	< 10	< 10	5	< 10	6
HEM 20 R0333	205	226	310	< 1	< 0.01	18	80	2	0.09	< 2	6	35	< 0.01	< 10	< 10	78	20	12
JL 20 R01	205	226	85	< 1	0.04	39	160	6	0.51	< 2	6	9	0.15	< 10	< 10	57	< 10	80
JL 20 R02	205	226	145	3	0.08	33	440	14	> 5.00	< 2	3	10	0.08	< 10	< 10	25	10	118

CERTIFICATION



ALS Chemex

Aurora Laboratory Services Ltd

Analytical Chemists * Geochemists * Registered Assayers
 212 Brooksbank Ave., North Vancouver
 British Columbia, Canada V7J 2C1
 PHONE: 604-984-0221 FAX 604-984-0218

To CANADIAN UNITED MINERALS INC

BOX 1260
 DAWSON CITY, YT
 Y0B 1G0

Page Number 1-A
 Total 35 2
 Certificate Date 08-DEC-2000
 Invoice No 10034983
 P O Number
 Account PRP

Project Comments ATTN SHAWN RYAN

Callum claims TEST Soil

CERTIFICATE OF ANALYSIS

A0034983

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
0000-01	201 202	< 5	< 0.2	1.07	2	< 10	390	< 0.5	< 2	0.24	< 0.5	8	19	9	1.73	< 10	< 1	0.04	10	0.39
0000-02	201 202	< 5	< 0.2	0.67	2	< 10	560	< 0.5	< 2	0.29	2.5	9	9	12	2.55	< 10	< 1	0.04	20	0.25
0000-03	201 202	20	< 0.2	0.65	2	< 10	750	< 0.5	< 2	0.33	< 0.5	7	11	11	2.04	< 10	< 1	0.04	20	0.23
0000-04	201 202	< 5	< 0.2	0.58	2	< 10	620	< 0.5	< 2	0.19	< 0.5	4	6	8	1.18	< 10	< 1	0.05	20	0.16
0000-05	201 202	< 5	< 0.2	0.74	2	< 10	470	< 0.5	< 2	0.25	< 0.5	5	9	11	1.90	< 10	< 1	0.06	30	0.19
0000-80 5	201 202	< 5	< 0.2	1.13	8	< 10	120	< 0.5	< 2	0.25	< 0.5	10	27	26	2.27	< 10	< 1	0.08	< 10	0.51
0000-80 6	201 202	< 5	< 0.2	1.18	10	< 10	260	0.5	< 2	0.41	< 0.5	13	25	36	2.44	< 10	< 1	0.14	10	0.57
0000-80 7	201 202	< 5	< 0.2	2.36	< 2	< 10	300	< 0.5	< 2	0.38	< 0.5	17	45	72	3.40	10	< 1	0.66	< 10	1.68
0000-80 8	201 202	< 5	< 0.2	2.30	< 2	< 10	320	< 0.5	< 2	0.50	< 0.5	16	57	64	2.81	10	< 1	0.84	< 10	1.91
0000-80 9	201 202	< 5	< 0.2	2.95	< 2	< 10	430	0.5	< 2	0.57	< 0.5	21	57	74	4.38	10	< 1	0.89	< 10	2.33
0000-80 10	201 202	< 5	< 0.2	1.26	8	< 10	320	< 0.5	< 2	0.87	< 0.5	10	29	35	2.30	< 10	< 1	0.11	10	0.60
0000-80 11	201 202	< 5	< 0.2	2.05	< 2	< 10	240	0.5	< 2	0.68	< 0.5	16	83	42	3.23	< 10	< 1	0.46	< 10	1.82
0000-80 12	201 202	< 5	< 0.2	1.25	2	< 10	150	< 0.5	< 2	0.33	< 0.5	9	31	21	1.96	< 10	< 1	0.06	< 10	0.65
0000-80 13	201 202	< 5	< 0.2	1.62	2	< 10	160	< 0.5	< 2	0.43	< 0.5	12	51	28	2.69	< 10	< 1	0.12	< 10	0.91
0000-80 14	201 202	< 5	< 0.2	1.78	< 2	< 10	290	0.5	< 2	0.55	< 0.5	10	42	31	2.45	< 10	< 1	0.20	< 10	0.70
0000-80 15	201 202	< 5	< 0.2	1.10	6	< 10	380	0.5	< 2	0.59	< 0.5	10	26	32	2.33	< 10	< 1	0.06	< 10	0.55
0000-80 16	201 202	< 5	< 0.2	1.45	6	< 10	320	0.5	< 2	0.45	< 0.5	11	31	22	2.62	< 10	< 1	0.06	10	0.57
0000-80 17	201 202	25	< 0.2	0.91	38	< 10	340	< 0.5	< 2	0.37	< 0.5	13	53	33	2.21	< 10	< 1	0.13	< 10	0.71
2088-01	201 202	< 5	< 0.2	1.75	4	< 10	520	0.5	< 2	0.59	< 0.5	21	71	98	2.33	< 10	< 1	0.14	30	0.74
2088-02	201 202	< 5	< 0.2	1.16	18	< 10	370	0.5	< 2	0.54	< 0.5	12	38	35	2.26	< 10	< 1	0.22	10	0.59
2088-03	201 202	135	< 0.2	0.99	< 2	< 10	180	< 0.5	< 2	0.43	< 0.5	8	26	22	1.74	< 10	< 1	0.09	< 10	0.60
2088-04	201 202	10	< 0.2	0.54	< 2	< 10	80	< 0.5	< 2	0.40	< 0.5	5	16	13	1.50	< 10	< 1	0.05	< 10	0.33
2088-05	201 202	< 5	< 0.2	1.16	< 2	< 10	260	< 0.5	< 2	0.49	< 0.5	8	27	22	1.90	< 10	< 1	0.13	< 10	0.70
2088-06	201 202	< 5	< 0.2	0.98	10	< 10	190	< 0.5	< 2	0.60	< 0.5	10	37	25	2.01	< 10	< 1	0.11	< 10	0.68
2088-07	201 202	< 5	< 0.2	0.89	< 2	< 10	170	< 0.5	< 2	0.58	< 0.5	9	25	26	1.83	< 10	< 1	0.08	< 10	0.57
2088-08	201 202	< 5	< 0.2	0.84	< 2	< 10	160	< 0.5	< 2	0.58	< 0.5	10	26	28	2.06	< 10	< 1	0.09	< 10	0.59
GAI-TS-01	201 202	65	1.4	5.48	46	< 10	90	1.5	136	0.06	< 0.5	8	38	406	10.65	10	< 1	0.37	20	0.51
GAI-TS-02	201 202	50	1.2	4.18	34	< 10	60	2.0	108	0.10	0.5	10	28	418	12.60	10	< 1	0.15	< 10	0.36
GAI-TS-03	201 202	< 5	< 0.2	1.12	18	< 10	70	< 0.5	2	0.06	< 0.5	5	17	33	2.18	< 10	< 1	0.03	< 10	0.16
SS20-01	201 202	< 5	< 0.2	1.59	2	< 10	380	0.5	< 2	0.78	< 0.5	13	29	25	2.81	< 10	< 1	0.25	10	0.92
375 SS 180	201 202	< 5	< 0.2	1.31	< 2	< 10	220	< 0.5	< 2	0.68	< 0.5	12	25	16	2.49	< 10	< 1	0.16	< 10	0.78
400 SS 385	201 202	< 5	< 0.2	1.57	< 2	< 10	300	0.5	< 2	0.74	< 0.5	13	27	22	2.89	< 10	< 1	0.25	10	0.93
750 650 ET	201 202	< 5	< 0.2	1.99	4	< 10	310	1.0	< 2	0.41	< 0.5	14	30	23	4.11	< 10	< 1	0.08	10	0.75
750 650 EB	201 202	< 10	< 0.2	3.28	< 2	< 10	390	2.5	< 2	1.08	< 0.5	29	48	34	6.03	< 10	< 1	0.23	10	2.32
200-150E	201 202	< 5	< 0.2	2.02	2	< 10	350	< 0.5	< 2	0.49	< 0.5	17	54	31	3.37	10	< 1	0.22	< 10	1.39
200-175E	201 202	< 5	< 0.2	1.95	2	< 10	270	0.5	< 2	0.36	< 0.5	16	27	33	3.13	< 10	< 1	0.15	< 10	1.18
200-200E	201 202	< 5	< 0.2	2.50	< 2	< 10	470	0.5	< 2	0.45	< 0.5	23	17	35	3.66	10	< 1	0.33	10	1.94
200-225E	201 202	< 5	< 0.2	2.51	< 2	< 10	420	0.5	< 2	0.63	< 0.5	23	19	27	3.56	10	< 1	0.43	< 10	1.99
200-250E	201 202	< 5	< 0.2	1.71	2	< 10	360	< 0.5	< 2	0.26	< 0.5	12	22	23	2.68	< 10	< 1	0.11	< 10	0.73

GAI-TS-01
 GAI-TS-02
 GAI-TS-03

REO Soil Found 5 ft From Pit
 RED Soil Found 5ft Down IN Pit
 Brown Soil B-HORIZON AT Top of Pit

CERTIFICATION
 Location L-55N/75W

D02

NO.067

NORTHERN ANALYTICAL → 18679936605

09:16

01/12/2001



INTERNATIONAL PLASMA LABORATORY LTD

CERTIFICATE OF ANALYSIS

iPL 06n1544



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Northern Analytical Laboratories

Project : W009167
Shipper : Norm Smith
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Analysis:
ICP(AgR)30

Comment:

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EN RT CC IN FX

05 0703

ICP

ppm

Ag ICP

01 0721

ICP

ppm

Cu ICP

02 0711

ICP

ppm

Pb ICP

03 0714

ICP

ppm

Zn ICP

04 0730

ICP

ppm

As ICP

05 0703

ICP

ppm

Sb ICP

06 0702

ICP

ppm

Hg ICP

07 0732

ICP

ppm

Mo ICP

08 0717

ICP

ppm

Tl ICP (Incomplete Digestion)

09 0747

ICP

ppm

Bi ICP

10 0705

ICP

ppm

Cd ICP

11 0707

ICP

ppm

Co ICP

12 0710

ICP

ppm

Ni ICP

13 0718

ICP

ppm

Ba ICP (Incomplete Digestion)

14 0704

ICP

ppm

W ICP (Incomplete Digestion)

15 0727

ICP

ppm

Tungsten

16 0709

ICP

ppm

Cr ICP (Incomplete Digestion)

17 0729

ICP

ppm

V ICP

18 0716

ICP

ppm

Mn ICP

19 0713

ICP

ppm

La ICP (Incomplete Digestion)

20 0723

ICP

ppm

Sr ICP (Incomplete Digestion)

21 0731

ICP

ppm

Zr ICP

22 0736

ICP

ppm

Sc ICP

23 0726

ICP

x

Tl ICP (Incomplete Digestion)

24 0701

ICP

x

Al ICP (Incomplete Digestion)

25 0708

ICP

x

Ca ICP (Incomplete Digestion)

26 0712

ICP

x

Fe ICP

27 0715

ICP

x

Hg ICP (Incomplete Digestion)

28 0720

ICP

x

K ICP (Incomplete Digestion)

29 0722

ICP

x

Na ICP (Incomplete Digestion)

30 0719

ICP

x

P ICP

36 Samples Out Nov 20, 2000 In Nov 15, 2000

CODE	AMOUNT	TYPE	PREPARATION DESCRIPTION	NS=No Sample	Rep=Replicate	PULP	REJECT
						12M/Dis	00M/Dis
Analytical Summary							
#	Code	Method	Units	Description	Element	Limit Low	Limit High
01	0721	ICP	ppm	Ag ICP	Silver	0.1	99.9
02	0711	ICP	ppm	Cu ICP	Copper	1	20000
03	0714	ICP	ppm	Pb ICP	Lead	2	20000
04	0730	ICP	ppm	Zn ICP	Zinc	1	9999
05	0703	ICP	ppm	As ICP	Arsenic	5	9999
06	0702	ICP	ppm	Sb ICP	Antimony	5	999
07	0732	ICP	ppm	Hg ICP	Mercury	3	9999
08	0717	ICP	ppm	Mo ICP	Molybdenum	1	999
09	0747	ICP	ppm	Tl ICP (Incomplete Digestion)	Thallium	10	999
10	0705	ICP	ppm	Bi ICP	Bismuth	2	9999
11	0707	ICP	ppm	Cd ICP	Cadmium	0.1	99.9
12	0710	ICP	ppm	Co ICP	Cobalt	1	9999
13	0718	ICP	ppm	Ni ICP	Nickel	1	9999
14	0704	ICP	ppm	Ba ICP (Incomplete Digestion)	Barium	2	9999
15	0727	ICP	ppm	W ICP (Incomplete Digestion)	Tungsten	5	999
16	0709	ICP	ppm	Cr ICP (Incomplete Digestion)	Chromium	1	9999
17	0729	ICP	ppm	V ICP	Vanadium	2	9999
18	0716	ICP	ppm	Mn ICP	Manganese	1	9999
19	0713	ICP	ppm	La ICP (Incomplete Digestion)	Lanthanum	2	9999
20	0723	ICP	ppm	Sr ICP (Incomplete Digestion)	Strontium	1	9999
21	0731	ICP	ppm	Zr ICP	Zirconium	1	9999
22	0736	ICP	ppm	Sc ICP	Scandium	1	1.00
23	0726	ICP	x	Tl ICP (Incomplete Digestion)	Titanium	0.01	9.99
24	0701	ICP	x	Al ICP (Incomplete Digestion)	Aluminum	0.01	9.99
25	0708	ICP	x	Ca ICP (Incomplete Digestion)	Calcium	0.01	9.99
26	0712	ICP	x	Fe ICP	Iron	0.01	9.99
27	0715	ICP	x	Hg ICP (Incomplete Digestion)	Magnesium	0.01	9.99
28	0720	ICP	x	K ICP (Incomplete Digestion)	Potassium	0.01	9.99
29	0722	ICP	x	Na ICP (Incomplete Digestion)	Sodium	0.01	5.00
30	0719	ICP	x	P ICP	Phosphorus	0.01	5.00

EN=Envelope # RT=Report Style CC=Copies IN=Invoices Fx=Fax (I=Yes 0=No) Totals I=Copy I=Invoice 0=3½ Disk

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• Our liability is limited solely to the analytical cost of these analyses

BC Certified Assayer: David Chiu



CERTIFICATE OF ANALYSIS

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INTERNATIONAL PLASMA LABORATORY LTD.

Project Northern Analytical Laboratories
WO#00167

36 Samples
36=Pulp

[154415 50 30 00112000]

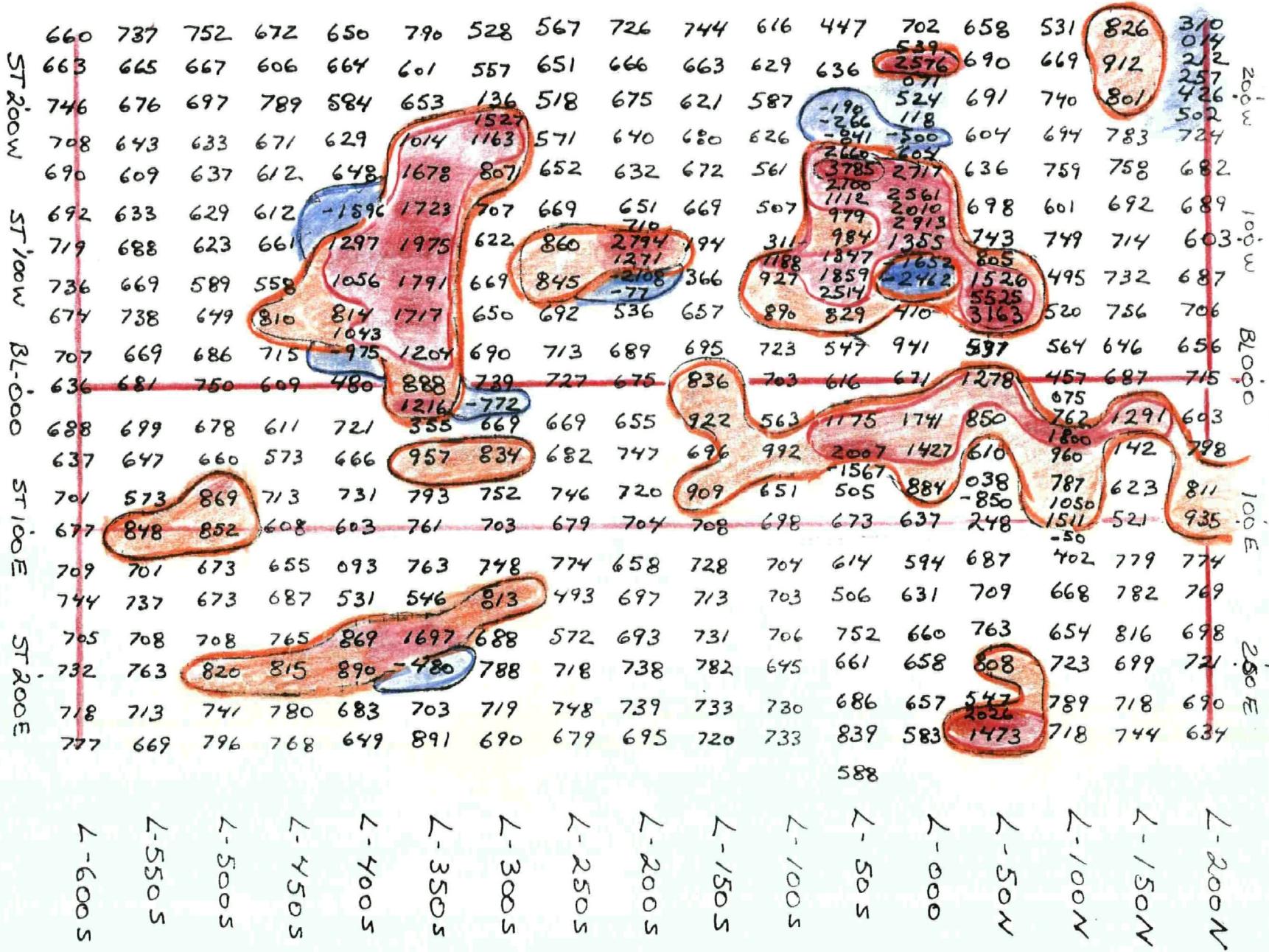
Out Nov 20 2000
In Nov 15 2000

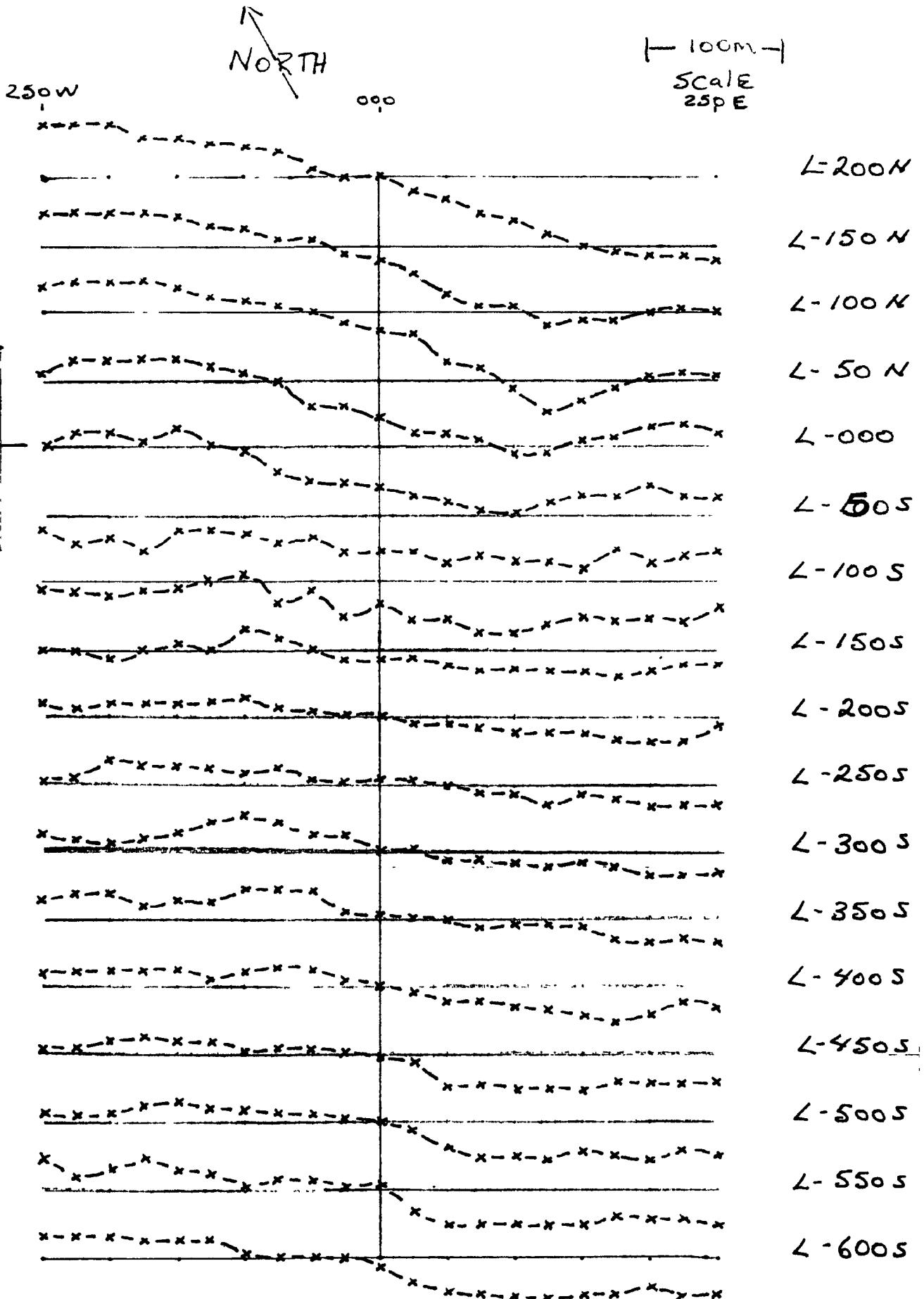
Page 1 of 1
Section 1 of 1

Sample	Name	Ag	Cu	Pb	Zn	As	Sb	Hg	Mo	Tl	Ba	Cd	Co	Ni	Ba	W	Cr	V	Mn	La	Sr	Zr	Sc	Ti	Al	Ca	Fe	Mg	K	Na	P
		dpm	dpm	ppm	dpm	dpm	ppm	ppm	ppm	dpm	dpm	dpm	dpm	dpm	dpm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
L400S 00E	P	2.0	865	32	55	<	<	5	<	75	2	13	14	86	<	40	61	259	9	30	7	4.0	16.2	32.0	0.06	164	0.21	0.12	0.02	0.08	
L400S 25E	P	1.5	259	1053	318	114	<	<	3	<	25	3.0	4	26	185	<	27	42	641	15	21	3	4.0	0.06	1.72	0.24	4.46	0.48	0.10	0.02	0.07
L400S 50E	P	1.8	109	219	353	11	<	<	3	<	11	17.6	7	37	312	<	41	47	1604	29	82	4	7.0	0.03	3.16	0.65	3.98	0.58	0.21	0.03	0.05
L400S 75E	P	3.6	209	5425	537	356	<	<	1	<	20	10.4	9	19	109	<	24	38	733	16	17	1	3.0	0.04	1.47	0.23	2.99	0.43	0.07	0.02	0.09
L400S 100E	P	1.2	74	132	249	<	<	2	<	<	4.3	9	26	176	<	25	40	562	17	16	1	3.0	0.04	1.83	0.20	2.59	0.45	0.07	0.01	0.06	
L400S 125E	P	0.8	60	45	138	<	<	1	<	<	2.6	12	28	170	<	24	41	541	15	18	1	3.0	0.04	1.83	0.21	2.56	0.45	0.06	0.02	0.04	
L400S 150E	P	0.7	49	53	178	<	<	2	<	<	4.3	11	30	208	<	26	44	709	16	17	1	3.0	0.05	1.99	0.19	2.74	0.47	0.07	0.02	0.04	
L400S 175E	P	0.6	126	17	112	<	<	1	<	52	2.5	14	29	201	<	25	39	908	18	22	1	3.0	0.05	2.08	0.28	3.70	0.38	0.05	0.04	0.04	
L400S 200E	P	0.9	132	29	75	<	<	1	<	48	2.2	3	23	196	<	25	42	364	13	26	1	2.0	0.04	2.31	0.19	3.37	0.36	0.05	0.04	0.04	
L400S 225E	P	0.3	140	19	87	<	<	2	<	<	1.6	1	22	195	<	21	37	401	13	32	2	3.0	0.06	1.74	0.24	3.04	0.44	0.15	0.03	0.06	
L400S 250E	P	3.5	253	31	105	<	<	1	<	10	2.6	.8	31	173	7	28	43	489	17	35	1	4.0	0.06	2.39	0.22	3.96	0.48	0.14	0.04	0.05	
L400S 25W	P	1.7	312	29	110	<	<	3	<	96	2.4	27	37	128	<	25	42	774	13	21	2	3.0	0.06	1.99	0.17	5.83	0.44	0.12	0.03	0.06	
L400S 50W	P	2.2	308	31	95	<	<	3	<	185	1.7	12	32	102	<	26	44	359	16	21	1	3.0	0.05	2.01	0.17	5.04	0.46	0.11	0.02	0.07	
L400S 75W	P	0.6	196	47	137	6	<	3	<	10	2.6	19	40	158	<	29	46	591	25	28	1	4.0	0.05	2.04	0.33	3.55	0.52	0.13	0.03	0.08	
L400S 100W	P	2.6	294	310	164	29	<	2	<	70	3.6	16	31	111	<	29	44	799	22	35	1	4.0	0.05	2.12	0.32	4.91	0.44	0.09	0.03	0.07	
L400S 150W	P	0.6	216	54	143	7	<	2	<	20	2.5	22	42	170	<	30	45	848	25	22	1	5.0	0.05	2.24	0.19	4.12	0.49	0.14	0.02	0.07	
L400S 200W	P	0.4	186	197	227	12	<	4	<	15	3.2	22	44	224	<	39	56	1208	38	26	1	4.0	0.04	3.11	0.22	4.39	0.64	0.10	0.02	0.08	
L400S 250W	P	0.8	59	195	129	8	<	3	<	21	10	23	96	<	29	51	522	14	11	1	2.0	0.04	2.05	0.10	3.24	0.38	0.07	0.02	0.07		
L600E 25E	P	0.2	93	16	59	<	<	3	<	<	1.2	7	19	153	5	28	46	170	16	16	1	3.0	0.05	1.74	0.19	2.38	0.42	0.12	0.02	0.07	
L600E 50E	P	0.3	123	65	83	<	<	2	<	<	1.5	17	21	238	<	28	43	523	16	25	2	4.0	0.06	1.50	0.29	2.67	0.49	0.14	0.02	0.07	
L600E 75E	P	0.2	109	155	125	<	<	3	<	<	1.6	13	26	169	5	29	42	340	19	18	2	4.0	0.06	1.57	0.28	2.50	0.52	0.17	0.02	0.08	
L600E 100E	P	<	20	61	54	<	<	3	<	<	1.3	8	21	73	<	26	71	328	11	9	3	2.0	0.07	1.31	0.07	3.61	0.39	0.06	0.01	0.03	
L600E 125E	P	0.4	192	55	122	<	<	2	<	<	0.8	7	47	382	14	81	439	21	24	1	6.0	0.10	3.55	0.25	3.66	1.01	0.33	0.02	0.09		
L600L 150E	P	0.5	145	85	92	<	<	1	<	<	1.5	10	30	184	12	37	50	194	19	18	1	4.0	0.07	2.36	0.20	2.73	0.58	0.16	0.01	0.06	
L600E 175E	P	0.4	121	67	80	<	<	4	<	<	1.2	9	31	161	6	32	49	196	20	16	1	4.0	0.07	2.24	0.17	2.66	0.51	0.13	0.02	0.06	
L600E 200E	P	0.3	95	41	73	<	<	2	<	<	1.2	11	23	145	5	29	47	330	17	18	1	3.0	0.06	1.95	0.19	2.56	0.50	0.10	0.01	0.06	
L600E 225E	P	0.1	38	31	57	5	<	2	<	<	1.3	7	18	94	<	27	54	386	15	12	<	2.0	0.06	1.28	0.08	2.34	0.36	0.11	0.01	0.04	
L600E 250E	P	<	82	31	72	<	<	1	<	<	1.0	12	24	158	<	28	47	293	15	16	1	3.0	0.05	1.73	0.16	2.65	0.47	0.11	0.01	0.05	
L600E 00W	P	<	71	14	62	<	<	2	<	<	1.0	7	22	133	<	25	39	186	15	20	2	3.0	0.06	1.27	0.26	2.12	0.42	0.16	0.01	0.06	
L600E 25W	P	0.4	43	60	103	<	<	2	<	<	1.3	14	29	207	<	34	50	489	18	15	1	5.0	0.05	1.85	0.17	2.82	0.53	0.21	0.01	0.05	
L600E 50W	P	0.3	40	39	90	<	<	2	<	<	1.4	10	27	161	<	32	46	279	19	14	1	4.0	0.06	1.69	0.19	2.52	0.52	0.23	0.01	0.06	
L600E 75W	P	0.5	67	33	89	<	<	2	<	<	1.5	13	30	206	<	38	55	290	17	18	1	5.0	0.07	2.24	0.19	2.92	0.60	0.29	0.01	0.06	
L600E 100W	P	0.3	148	15	69	<	<	2	<	<	1.6	13	31	224	8	32	48	278	19	26	1	4.0	0.07	2.17	0.24	2.78	0.53	0.18	0.02	0.06	
L600E 150W	P	0.4	205	34	82	<	<	2	<	<	1.9	17	39	202	12	32	51	353	17	33	1	4.0	0.07	2.20	0.27	3.44	0.52	0.21	0.02	0.08	
L600E 200W	P	0.7	231	60	123	<	<	2	<	<	2.5	21	44	162	20	35	53	456	19	30	1	4.0	0.06	2.46	0.22	3.46	0.59	0.18	0.02	0.08	
L600E 250W	P	0.3	95	98	160	<	<	2	<	<	3.2	15	30	147	7	33	53	655	19	15	1	2.0	0.03	1.99	0.15	3.31	0.51	0.17	0.02	0.07	

Min Limit Max Reported* Method Sufficient Sample Del=Delay Max=No Estimate Rec=ReCheck In=InLim %Estimate % NS=No Sample P=Pulp

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ST 200SW ST 100W 000 ST 100E ST 200E

Gallum VLF GRID

NORTH

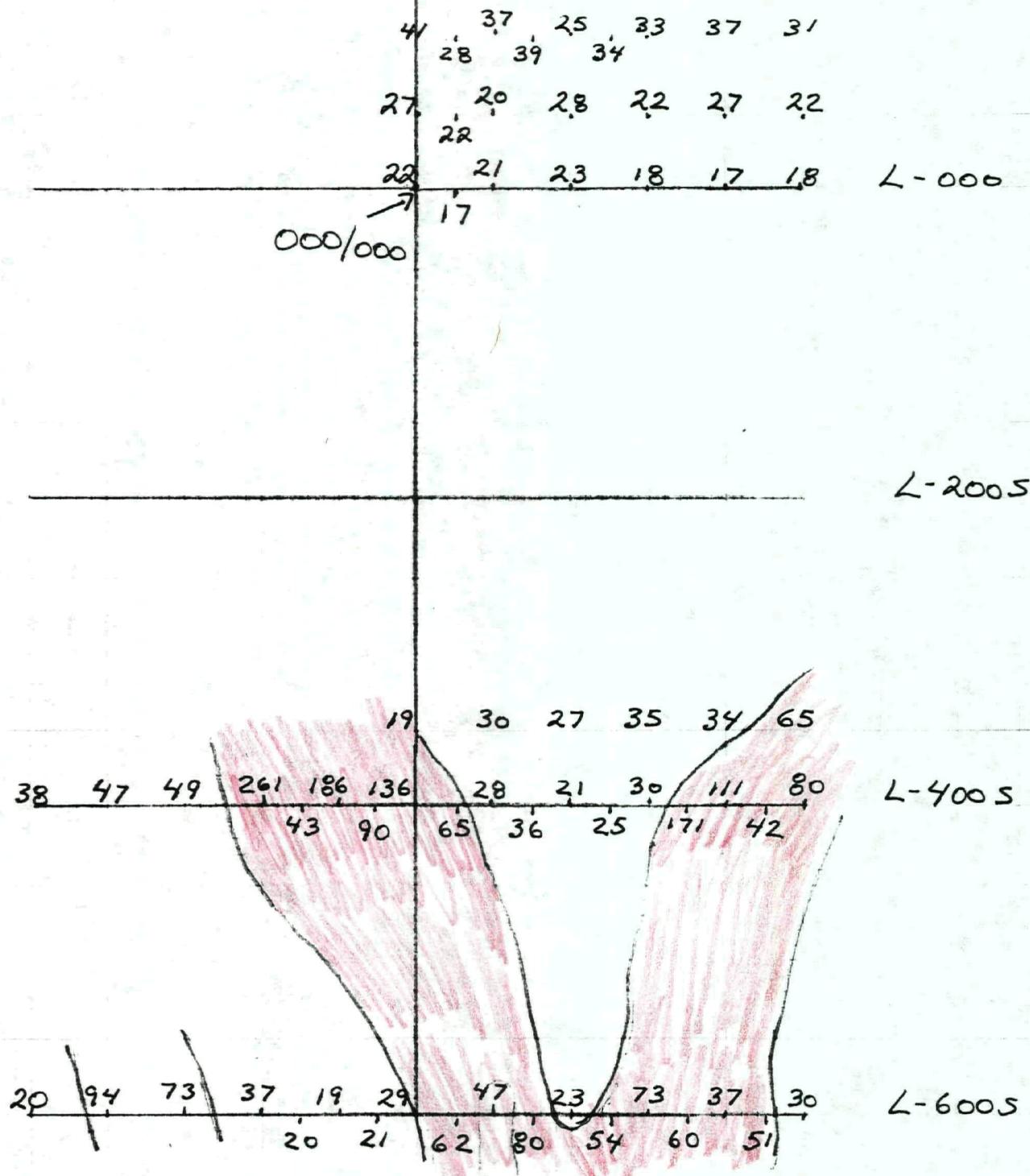
1-100m
Scale

ST-250W

BL-000

ST-250E

L-200N

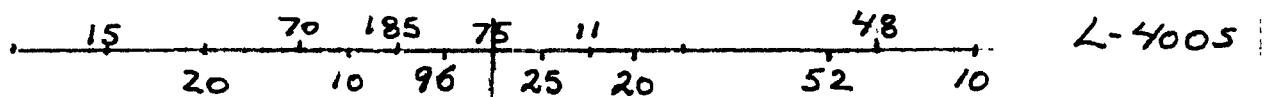


Calum Soil GEOCHEM Au-PPb

~~NORTH~~

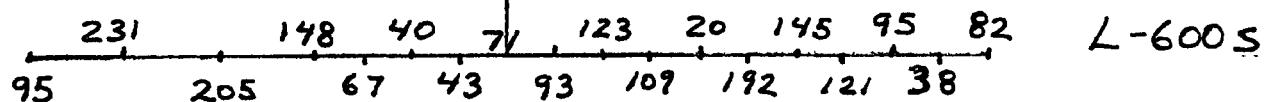
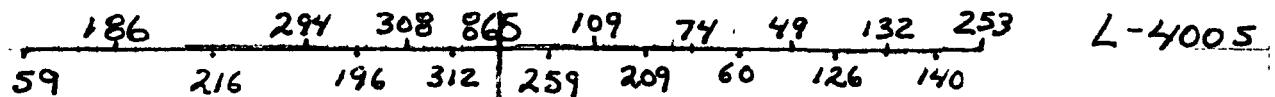
100m
Scale

BISMUTH - PPM



NO BISMUTH DETECTED ... L-600S

COPPER - PPM

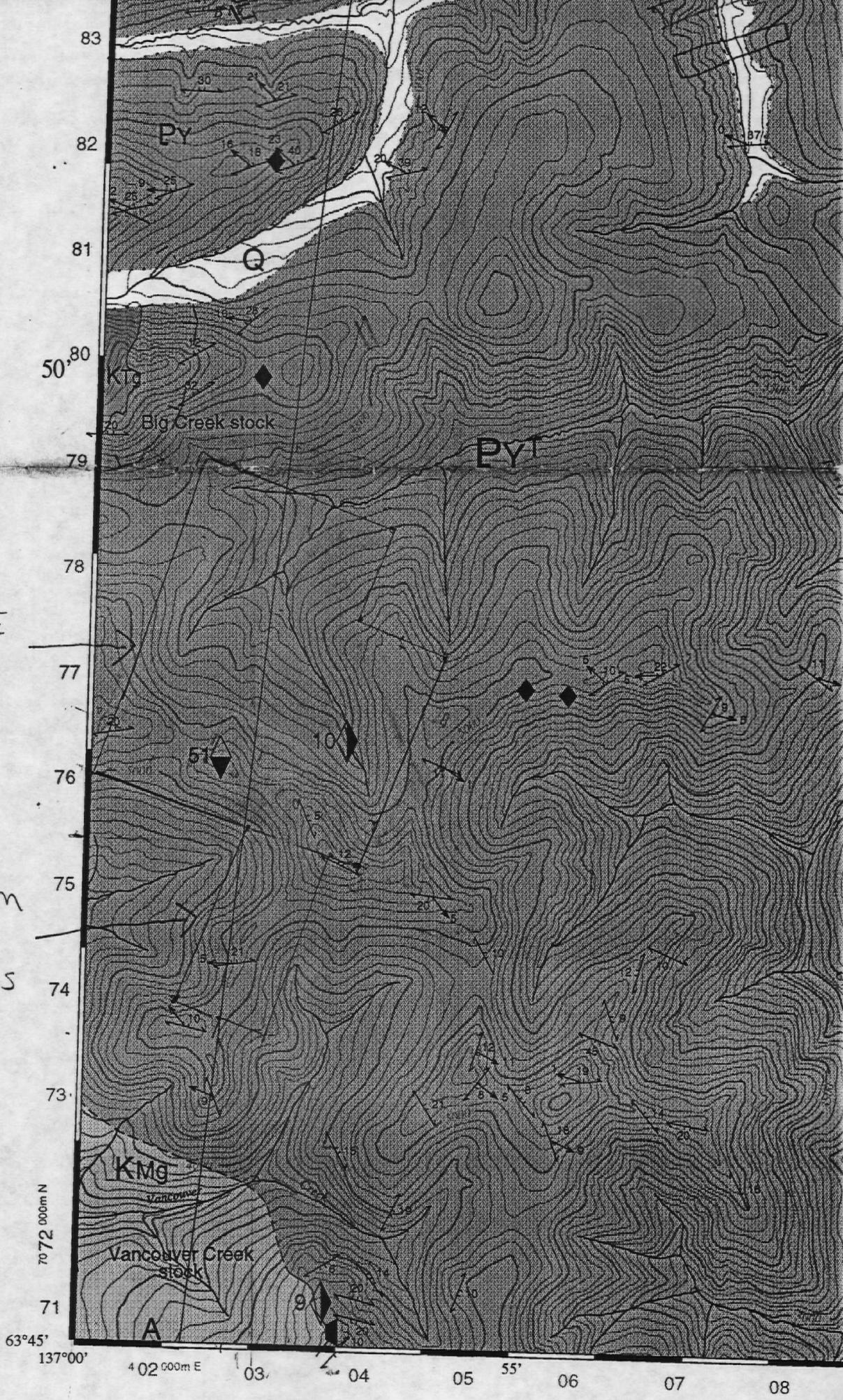


ST-250W

BL-0000

ST-250E

Callum Soil LINES



ORDOVICIAN-SILURIAN

91

ROAD RIVER GROUP

89

55'

88

87

86

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UPPER CAMBRIAN-ORDOVICIAN

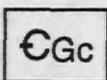


Steel Formation³: beige-orange, massive to well laminated, locally ripple cross-laminated, locally dolomitic siltstone and mudstone; common feeding traces and mottling due to bioturbation



Duo Lake Formation³: grey to black shale and thin-bedded chert

CAMBRIAN



Gull Lake Formation³: Tan- to brown-weathering thinly-bedded calcareous siltstone, sandstone, shale and limestone



Gull Lake Formation³: Greenish-grey phyllite with mm-scale siltstone laminae, uncommon sandstone and pebbly sandstone, and greenish-grey chert



Gull Lake Formation³: Light to dark grey, locally pebbly quartzite (siliceous meta-sandstone) and dark grey phyllite (Eq)



Gull Lake Formation³: Dark green massive to fragmental mafic meta-volcanic and volcanioclastic rocks

UPPER PROTEROZOIC-LOWER CAMBRIAN

HYLAND GROUP^{3,4}



Narchilla Formation³: maroon and green phyllite with cm-scale green-grey siltstone laminations, grey to green meta-sandstone and pebbly meta-sandstone (grit), and sandy limestone



Sandy limestone and limestone-breccia-rich member



Yusezyu Formation^{3,4}: foliated tan to grey meta-sandstone, muscovite-chlorite phyllite, blue-grey quartz and chalky white feldspar pebbly meta-sandstone (grit) pebble meta-conglomerate and uncommon sandy marble (Pcyc). Purplish/maroonish siliceous pelitic hornfels and calcsilicate hornfels near intrusions

TOMBSTONE STRAIN ZONE UPPER BOUNDARY



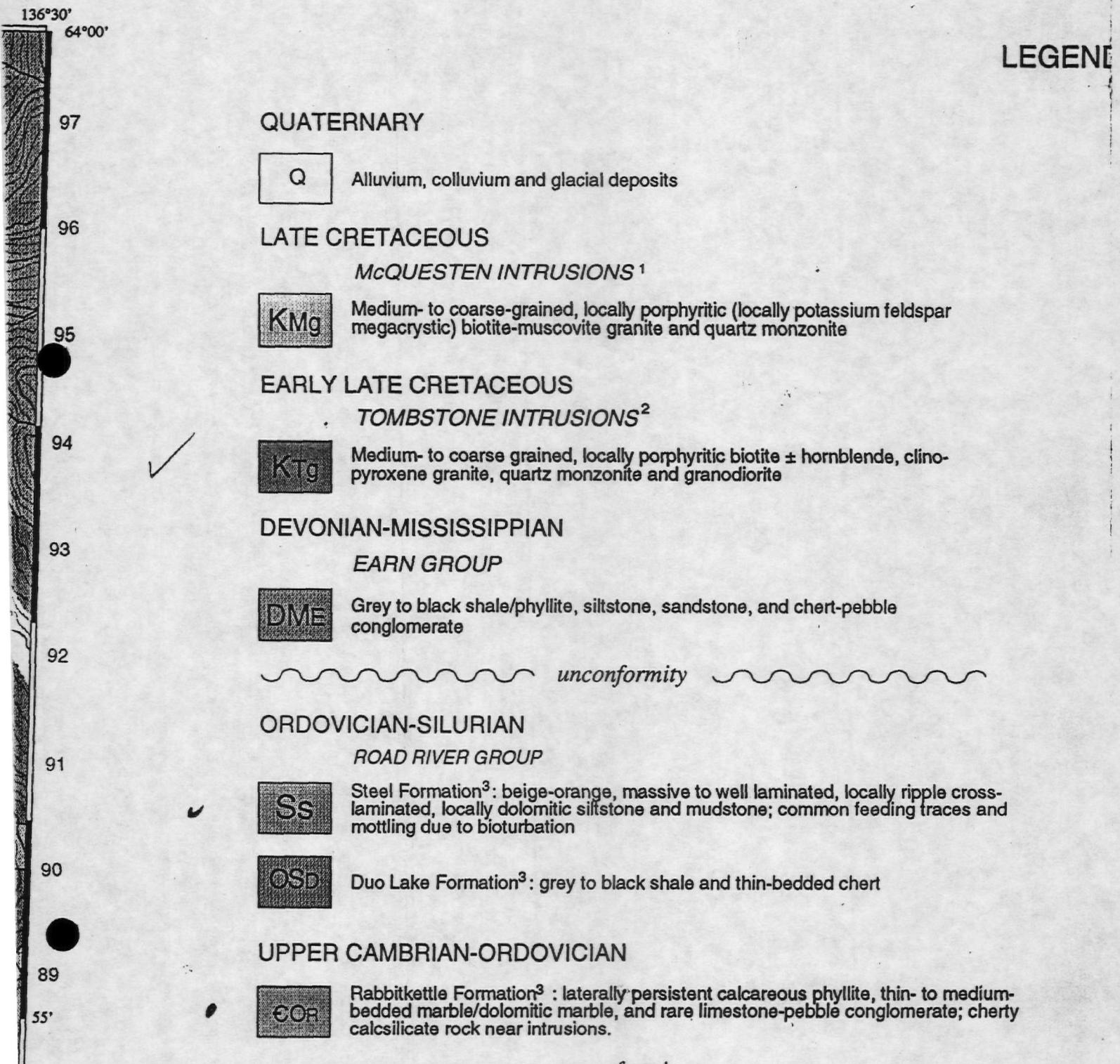
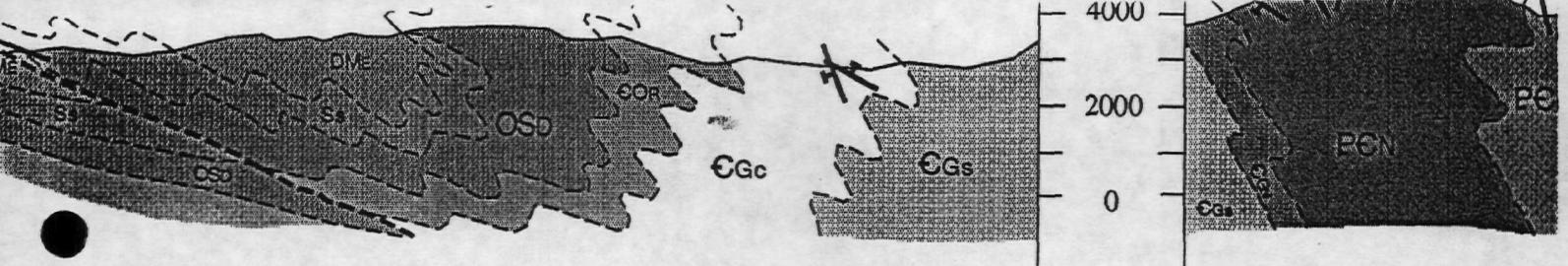
Yusezyu Formation^{3,4} (in Tombstone Strain Zone): prominently foliated and lineated muscovite-chlorite phyllite, quartzofeldspathic and micaceous psammite, gritty psammite, rare calc-silicate rock and marble (PcycT)

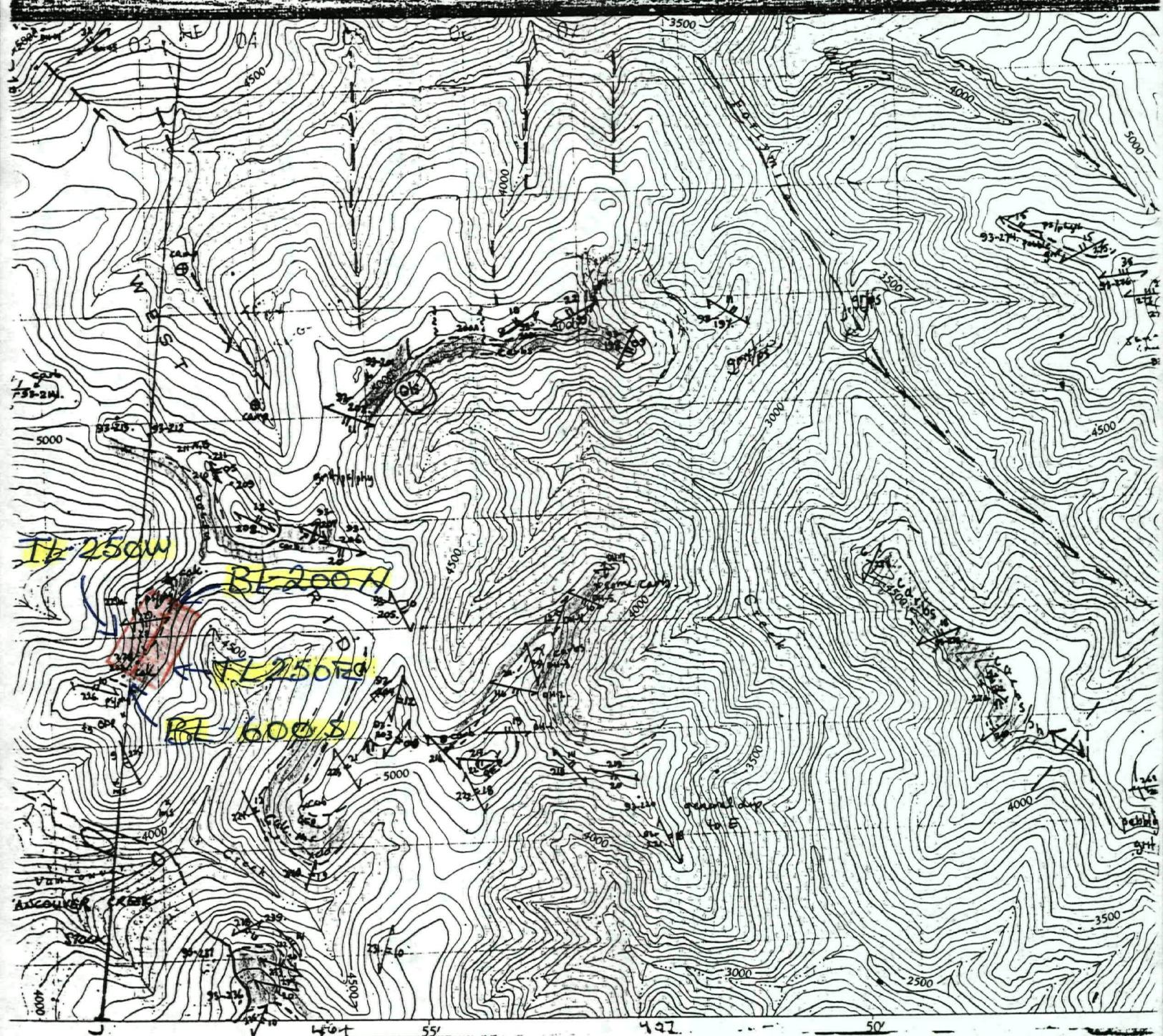
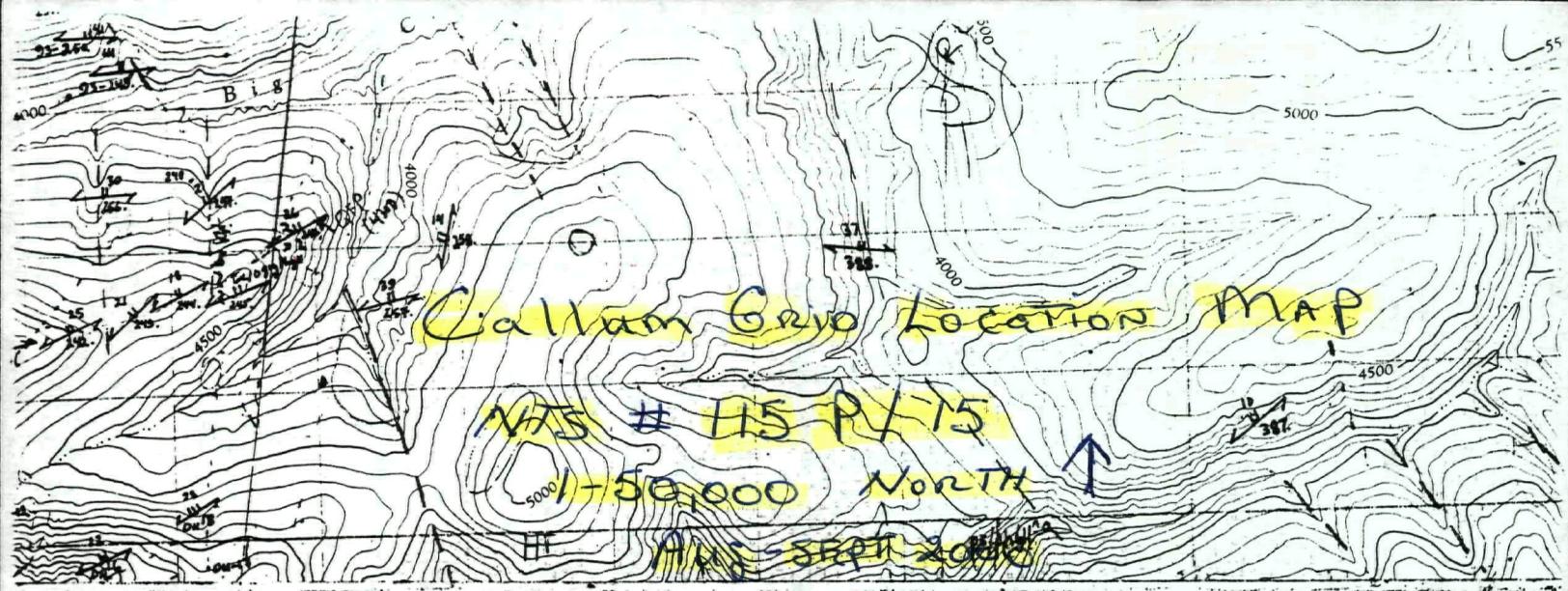
1 64-67 Ma U-Pb zircon and/or monazite age determinations by Jim Mortensen, University of British Columbia

2 91-94 Ma U-Pb zircon and/or titanite age determinations by Jim Mortensen, University of British Columbia

3 Formation names are those defined or used by Gordey and Anderson (1993) for Nahanni map area (105 I)

4 Yusezyu and Narchilla formations are intruded by intermediate to mafic sills and dykes of unknown age that are too small to portray at the scale of mapping







CALLUM CLAIMS
BASE LINE MAGNETIC SURVEY 1970

STATION	TIME	READINGS	DRIFT	CORRECTED
200 N	19	57715	0	57715
		662	0	662
150 N		687	0	687
		570	0	570
100 N		57458	-1	57457
		56868	-1	56867
50 N		58279	-1	58278
		57655	-2	57653
000	25	57673	-2	57671
T1 IN	200 N	57717	-2	57715
	000	679	-8	57671
		493	-8	485
50 S		625	-9	616
		674	-10	664
100 S		714	-11	703
		745	-12	733
150 S		849	-13	836
		753	-14	739
200 S	35	690	-15	57673
T1 IN	000	57686	-15	57671
	200 S	685	-10	57675
		804	-10	794
250 S		737	-10	727
		662	-10	652
300 S		749	-10	739
		836	-11	825
350 S		57899	-11	57888
		58035	-11	58024
T1 IN	400 S	57491	-11	57480
	200 S	57686	-11	57675

Station Time Readings Corrected Draft

08415	S -	88415	Z 01	5005
639	H -	57640	59	6005
694	S -	659	.	.
189	S -	689	.	5505
763	9 -	701	.	.
752	9 -	756	.	5005
669	L -	667	.	.
609	L -	619	.	4505
650	8 -	657	.	.
57480	8 -	57488	SS	5005

L 200 N

STATION	TIME	READING	DRIFT	CONNECTED
000	10.32	57655	+60	57715
		594	+63	656
50 w		642	+64	706
		621	+66	687
100 w		535	+68	603
		619	+70	689
150 w		610	+72	682
		651	+73	724
200 w		428	+74	502
		-352	+74	-426
		182	+75	257
		-137	+75	-212
250 w	10.44	56938	+76	614
		-57234	+76	-310

L 150 N

250 w		57747	+ 79	826
.		832	+ 80	912
200 w		720	+ 81	801
.		700	+ 83	783
150 w		673	+ 85	758
.		606	+ 86	692
100 w		627	+ 87	714
.		644	+ 88	732
50 w		667	+ 89	756
.		556	+ 90	646
000	10.53	596	+ 91	57687

TIME L 200N / 000 10.55 57656 +59 57715

L 100N

STATION	TIME	READING	DRIFT	CONNECTED
000	10.59	57346	+109	57457
		- 56962	+113	57075
		- 57649	+117	57762
		- 58683	+120	58800
		- 57843	+120	57960
		- 57643	+120	763
		- 57667	+120	787
100 E		- 57926	+124	58050
		- 58387	+125	58511
		- 56823	+125	56948
		- 57277	+125	57402
150 E		- 474	+129	603
		- 539	+129	668
		- 523	+133	656
		- 521	+133	654
200 E		587	+136	723
		650	+139	789
		618	+140	758
250 E	11.10	57578	+141	718
			+141	

L 50N

250 E	11.12	- 57584	+141	57725
		- 58332	+145	58473
		- 58881	+145	59026
		- 57402	+145	57547
200 E		- 618	+148	766
		- 660	+148	808
		- 639	+152	791
		- 611	+152	763
150 E		- 553	+155	708
		- 554	+155	709
		- 502	+157	659
		- 530	+157	687
		- 369	+161	530
100 E		- 57087	+161	57248
		- 55991	+165	56156
		- 56873	+165	57038
50 E		- 57426	+168	594
		- 442	+168	610
		- 437	+170	607
000	11.26	- 57686	+170	57850
		- 58689	+174	58863
		- 58104	+174	58278

L 000

STATION	TIME	READING	DRIFT	CORRECTED
000	12.24	57577	+ 94	57671
		847		941
		844		938
50W		- 57316		57410
		55412		55506
		- 54444		54538
		55254		55348
100W		- 58261		58355
		59819		59913
		- 58916		59010
150W		- 59467		59561
		59623		59717
		- 57510		57604
		- 56424		56518
200W		- 57430		57118
		56977		57524
		- 59482		57071
250W	12.35	- 57444	+ 95	59576
		- 57607		57539
		630		57702
				57725

L 50 s

250W	12.37	57351	+ 96	57447
		440		536
		- 540		636
		674		57970
200W		- 56714		56810
		56638		56734
		- 56063		56159
150W		- 59564		59660
		60689		60785
		- 59004		59100
100W		- 58016		58112
		59788		58174
		- 58251		5824
50W		763		57829
		718		5588
		702		547
000	12.49	57587	+ 97	57616
TIN 000/000	12.50	57573	+ 98	57671

L 50°N

STATION	TIME	READINGS	DRIFT	CONNECTED
000	11.28	58091 • 57311 - 57357 • 511	+187 +180	58278 57491 57537 57739
50w	11.54	- 60049 • 62415 - 58446 • 57699 - 637 • 573 - 57596 • 612 - 538 510	* 114 +110 +106 +102 +98 +94	60163 62525 58526 57805 743 675 698 710 636 604
100 w				
150 w				
200 w		601 604	+90 +86	691 690
250w		57576	+82	57658

L 100°N

250 w	12.03	57453 593	+78 +76	57531 669	
200 w		668 637 - 626	+72 +68	740 705 694	
150 w		695 • 678 - 541	+64	759 738	
100 w		• 603 - 691 • 650 - 441 • 451	+60 +58 +54	601 661 749 704 495	
50 w		- 470 • 467 - 519 - 463	+50 +45	501 520 512 564 583	
000	12.12	- 57417	+40	57457	
TIN	50N/000	12.13	58196	+82	58278
	200N/000	12.18	57660	+55	57715

L 100s

STATION	TIME	READINGS	DRIFT	CONNECTED
000	1.27	57653 - 656 - 676 - 738 - 845 - 836 - 884 - 58147 - 57270 - 241 - 468 - 619 - 524 - 480 - 591 - 477 - 554 - 598	+50 +47 +45 +43 +41 +39 +37 +35 +33 +31	57703 703 723 783 890 879 57927 58188 57311 280 507 656 561 515 626 510 587 629
50w				
100w				
150w				
200w				
250w	1.37	57587	+ 29.	616

L 150s

250w	1.39	57722 - 653 - 643 - 610 - 604	+22 +20 +17 +14	744 673 663 627 621
200w		57666		680
150w		661	+11	672
100w		57660 - 648 - 57188 - 57814 - 363	+9 +6 +3	669 654 194 817 366
50w		- 662 - 657 - 698 - 698 - 739 - 842	0 -3 -3 -6	662 657 695 695 733 57836
000	1.51			

T IN 400s/000 1.53 57703 +0 57703

L 50 S

STATION	TIME	READING	DRIFT	CONNECTED
	12.50			
25 E		. 57653	+ 98	57751
		- 58079	+ 96	58175
		. 58967	+ 94	59061
		- 59913	+ 92	60007
		. 55341	+ 90	55433
		- 57413	+ 88	57505
		. 57578	+ 86	57668
100 E		- 57583	+ 84	57673
		. 543	+ 82	631
		526	+ 80	614
		. 453	+ 78	539
150 E		- 57420	+ 76	506
		. 522	+ 74	606
		- 57668	+ 72	752
		. 659	+ 70	742
		- 578	+ 68	661
200 E		. 593	+ 66	674
		- 605	+ 64	686
250 E		. 625	+ 62	704
		- 760	+ 60	839
		. 57212	+ 58	289
		- 57511	+ 56	588
300 E	1.07	. 552	+ 54	627
		- 563	+ 52	57638

L 000

250 E	1.10	57514	+ 69	57583
		. 576	+ 67	643
		- 590	+ 65	657
		. 607	+ 63	672
200 E		- 57593	+ 61	658
		. 610	+ 60	673
		- 597	+ 58	660
150 E		. 611	+ 56	673
		- 569	+ 54	631
		. 550	+ 52	611
		- 533	+ 50	594
100 E		. 546	+ 48	605
		- 57.8	+ 46	637
		. 724	+ 44	781
		- 827	+ 42	884
50 E		. 57789	+ 40	57844
		- 58372	+ 38	58427
		. 58067	+ 36	58120
		- 57688	+ 34	57741
000 E	1.22	. 57707	+ 32	57671
		- 57619	+ 30	759

T IN

L50S/000 1.24 57564 + 52 57616

L 150 S

STATION	TIME	READINGS	DRIFT	CONNECTED
000	1.55	57828	+ 8	57836
.	.	841	+ 7	848
.	.	915	+ 6	922
50 E	.	902	+ 6	908
.	.	690	+ 4	696
.	.	695	+ 4	699
100 E	.	905	+ 4	909
.	.	629	+ 2	631
.	.	706	+ 2	708
.	.	740	0	740
150 E	.	728	- 2	728
.	.	715	- 4	713
200 E	.	735	- 6	731
.	.	788	- 6	782
.	.	740	- 7	733
250 E	2.04	728	- 8	720

L 100 S

250 E	2.06	57747	- 14	733
.	.	746	- 16	730
200 E	.	663	- 18	645
.	.	726	- 20	706
150 E	.	725	- 22	703
.	.	728	- 24	704
100 E	.	724	- 26	698
.	.	57679	- 28	57651
50 E	.	58364	- 32	58336
.	.	58024	- 32	57992
.	.	57500	- 34	466
.	.	597	- 34	563
000	2.18	- 57739	- 36	57703
L 000/000	2.20	57723	- 52	57671
L 200N/000	2.25	57773	- 58	57715

L 200 s

STATION	TIME	READINGS	DRIFT	Corrected
000	4.27	57647 698 660 621 57507 .56894 .54863 .58249 .59765 .57682 .623 .589 .604 .608 612	+29	57675 727 689 650 57536 56923 54892 58271 59794 57710 57651 617 632 640
50w				
100w				
150w			+28	
200w		547 638		675 666
250w	4.40	699	+27	57726

L 250 s

250 w	4.42	57540 624	+27	57567 651
200 w		491 506		518 533
150 w		544 625		571 652
100 w		643 834	+26	669 860
50 w		614 819		640 845
000	4.55	851 666 679 687 701 702	+25	877 692 705 713 726 57727

L250 S

STATION	TIME	READINGS	DRIFT	CORRECTED
.	4.55	57644	+25	57669
50 E		657		682
.		721		746
100 E		654		679
.		749		774
150 E		768		793
.		362		387
200 E		547		572
.		657		682
250 E		693		718
.		772		797
250 E	5.03	723	+24	748
.		687		711
		655		679

L200 S

250 E	5.05	57671	+24	57695
.		715		739
200 E		714		738
.		669		693
150 E		673		697
.		621		645
100 E		634		658
.		680		704
50 E		696		720
000	5.14	723		747
.		725		749
.		631		655
000		703	+23	726
L250s/000		-57652		57675

L250s/000 5.17 57705 +22 57727

LA300S

STATION	TIME	READING	DRIFT	CORRECTION
000	5.20	57722	+171	57739
.	.	673		690
50w	.	633		650
.	.	652		669
100w	.	605		622
.	.	691	+166	707
150w	.	57791		807
.	.	57978		57994
200w	.	-58147		58163
.	.	-58511		58527
.	.	-57120		57136
.	.	379		395
250w	5.30	-541		557
.	.	702		717
.	.	513	+15	57528

LA350S

250w	5.32	57776	+141	577900
.	.	6788		692
200w	.	-5877		602
.	.	-559		573
.	.	-639		653
.	.	399		57413
150w	.	-58000		58014
.	.	612	+13	58625
100w	.	665		58678
.	.	825		838
.	.	710		723
.	.	770		783
50w	.	-58962		58975
.	.	792		804
.	.	779		791
000	5.455	-58192	+12	808
.	.	-57943		717
.	.	877		6166
				58204
				57954
				57888

L 350 s

STATION	TIME	READING	DRIFT	CONNECTED
	5.45			
50 E		• 58205 - 57344 • 861 - 945 • 841 - 781 • 796 - 748 • 814 - 750 • 662 - 532 • 57835 - 58683 • 56368 - 56501 • 57631 - 688 • 724 - 875 - 680	+ 11 + 12 + 13 + 14 + 15 + 16 + 18	58216 57355 873 957 853 793 809 761 827 763 676 546 57849 58697 56383 56516 57646 703 740 891 697 711
100 E				
150 E				
200 E				
250 E				
275 E	5.58	- 693	+ 18	

L 300 s

250 E	6.01	57671 - 697 - 700 - 736 - 768 - 678 - 668 - 704 - 792 - 707 - 727 - 701 - 681 - 706 - 730 - 751 - 811 - 641 - 57645 - 56203 - 57714	+ 19 + 20 + 21 + 22 + 23 + 24 + 25	57690 716 719 756 788 698 688 725 813 728 748 725 703 728 752 774 834 665 57669 56228 57739
200 E				
150 E				
100 E				
50 E				
000	6.12			

TIN	250s/000	6.15	57710	+ 17	57727
	200s/000	6.16	57660	+ 15	57675
	350s/000	6.20	57875	+ 13	57888

L 400 s

STATION	TIME	READINGS	DRIFT	CONNECTED
000	6.23	57460 57412 56005	+ 20	57480 57432 56025
.	.	58023 57794		58043 57814
50w	.	57853 58036		57873 58056
.	.	58136 58277		58156 58297
100w	.	58079 55384		58099 55404
.	.	57106 627		57127 642
150w	.	621 608		629 651
.	.	630 563		584
200w	.	618 643		639 664
.	.	709 628	+ 21	731 57650
250w	6.39		+ 22	

L 450 s

250w	6.41	57649	+ 23	57672
.	.	583		606
200w	.	766		789
.	.	648		671
150w	.	589		612
.	.	599		623
100w	.	588	+ 24	612
.	.	575		599
50w	.	637		661
.	.	601		625
000	6.41	534 718 786 731 651 596 584	+ 25	558 742 810 755 715 621 57609

L 450 s

STATION	TIME	READINGS	DRIFT	CONNECTED
	7.00	775 586 602 548 731 688 516 583 670 630 651 662 517 741	+ 25	57600 611 627 573 756 713 541 608 695 655 676 687 541 765
50 E				
100 E				
150 E				
200 E		791 762 756	+ 24	815 786 780
250 E	7.08	777 744		801 768

L 400 s

250 E	7.10	57625 675 659 603 866 802 846 180 508 387 070 056 580 711 708 695 643 658 668	+ 24	57649 699 683 627 850 825 8869 203 531 410 093 079 603 734 731 718 666 721 721
200 E				
150 E				
100 E				
50 E				
000	7.19	57458	+ 22	57480 ⁵⁵⁷

L 450s/000 7.21 57586 + 23 57609

L 600S

STATION	TIME	READING	DIFF.	CONNECTED
000	7.43	57622	+ 14	57636
		675	+ 13	688
50E		624	+ 12	637
		678	+ 12	690
		689	+ 12	701
100E		677	+ 11	688
		666	+ 11	677
		691	+ 10	701
		699	+ 10	709
150E		705	+ 10	715
		734	+ 10	744
		700	+ 9	709
		696	+ 9	705
200E		724	+ 8	732
		710	+ 8	718
250E	7.51	710	+ ?	727

T, IN

000 7.57 57632 + 4 57636

L 500S

000	7.14	57805	- 55	57750
.		739	- 53	686
50W		701	- 52	649
.		719	- 51	668
		640	- 51	589
100W		651	- 50	601
.		673	- 49	623
		721	- 49	672
150W		678	- 48	629
.		714	- 48	666
		685	- 47	637
		680	- 47	633
200W		743	- 46	697
.		695	- 45	650
		712	- 45	667
250W	7.30	708	- 43	665
		795	- 43	752

L 550 S

STATION	TIME	READING	DRIFT	CONNECTOR
250 w	7.32	57778 - 710 - 705 - 680 - 715 - 676 - 681 - 697 - 696 - 711 - 669	- 41 - 40 - 39 - 38 - 37 - 36	57737 670 665 641 676 638 643 660 609 675 633
200 w				
150w				
100w		723 - 687 - 703 - 697	- 35 - 34 - 33	688 653 669
50w		- 771 - 696 - 701	- 32	664 738 664
000	7.46	- 702 - 712	- 31	669 57681

L 600S

000	7.49	57634 - 689 - 705 - 739 - 672 - 703 - 734 - 689 - 717 - 650 - 690 - 690 - 688 - 657 - 706 - 703 - 744 661	+2	57636 691 707 741 674 705 736 691 719 692 692 680 659 708 705 746 663
50w				
100w				
150w				
200w				
250w	8.00	658		660

TIN 000 8.10 57634 +2

57636

L 400S/000 8.15 57490 -10

57480

L 200N

STATION	TIME	READING	DRIFT	CONNECTED
000	1.14	57724	- 9	57715
.		612		603
50 E		806	- 8	798
.		819		811
100 E		942	- 7	935
.		781		774
150 E		776		769
.		704	- 6	698
200 E		727		721
.		696		690
250 E	1.20	640		634
			- 5	

L 150N

250 E	1.22	57748		57744
.		722		718
200 E		703	- 4	699
.		820		816
150 E		785	- 3	782
.		782		779
100 E		523	- 2	521
.		624	- 1	623
50 E		57142	0	57142
.		58148		58149
		- 58290	+ 1	58291
000	1.34	- 57575	+ 2	57576
		- 57685		57687

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Callum VLF Data

		L200N	L150N	L100N	L50N
ST 250 E	-24	-20	-18	-16	
ST	-22	-19	-17	-14	
ST 200 E	-22	-20	-19	-14	
	-21	-22	-22	-17	
ST 150 E	-20	-22	-26	-18	
	-16	-24	-29	-21	
ST 100 E	-12	-18	-21	-21	
	-10	-18	-16	-18	
ST 50 E	-6	-14	-14	-16	
	-4	-8	-6	-16	
ST 000	0	-4	-5	-11	
	0	-2	-3	-8	
ST 50 w	+2	+2	0	-8	
	+8	+2	+2	0	
ST 100 w	+9	+6	+4	+2	
	+10	+6	+5	+4	
ST 150 w	+12	+10	+8	+7	
	+12	+11	+10	+7	
ST 200 w	+16	+11	+9	+7	
	+16	+10	+9	+7	
ST 250 w	+16	+10	+8	+3	

Callum VLF Data 340 READING

8.5 KB of Data

Callum Ulf Data

	L-000	L-50S	L-100S	L-150S	L-200S	L-250S
ST 250 E.	-14	-11	-7	-4	-2	-5
ST .	-14	-12	-11	-4	-6	-5
ST 200 E	-11	-14	-9	-6	-6	-6
.	-15	-11	-11	-8	-5	-4
ST 150 E	-14	-16	-9	-6	-4	-2
.	-16	-13	-12	-6	-4	-5
ST 100 E	-19	-13	-14	-5	-4	-3
.	-19	-12	-14	-6	-3	-2
ST 50E	-16	-14	-10	-4	-1	0
.	-14	-11	-10	-2	-1	+1
ST 000	-12	-11	-6	-2	0	+2
.	-12	-11	-9	-3	0	+1
ST 50W	-10	-6	-2	0	+2	+2
.	-7	-8	-5	+4	+3	+6
ST 100W	-1	-5	+2	+7	+6	+4
.	0	-4	0	0	+3	+5
ST 150W	+6	-4	-1	+2	+4	+6
.	+1	-10	-2	0	+4	+7
ST 200W	+4	-6	-4	-2	+4	+8
.	+4	-8	-3	0	+3	+2
ST 250W	0	-4	-2	0	+4	+2

Callum VIF Data

	L-300s	L-350s	L-400s	L-450s	L-500s	L-550s
ST 250 E	-5	-7	-6	-8	-9	-10
	-6	-6	-4	-8	-8	-8
ST 200 E	-6	-7	-8	-8	-10	-8
	-4	-6	-10	-8	-9	-8
ST 150 E	-3	-2	-8	-11	-8	-10
	-4	-1	-6	-10	-10	-10
ST 100 E	-3	-1	-5	-10	-9	-10
	-2	-2	-4	-9	-10	-11
ST 50 E	-2	0	-4	-9	-8	-10
	0	0	-1	-2	-1	-6
ST 000	0	+1	0	-1	0	+1
	+6	+3	+2	0	0	0
ST 50 W	+6	+9	+5	+1	+2	+3
	+9	+10	+6	+2	+3	+3
ST 100W	+12	+10	+4	+1	+4	+2
	+9	+6	+2	+4	+4	+5
ST 150W	+6	+7	+5	+4	+6	+6
	+4	+4	+5	+5	+5	+10
ST 200W	+3	+8	+5	+4	+3	+7
	+4	+8	+5	+2	+2	+4
ST 250W	+6	+7	+4	+2	+3	+10

	L-600s	L-600s
ST 250 E	-10	ST 50W
	-10	0
200 E	-8	ST 100W
	-10	+8
150 E	-10	+5
	-11	+5
100 E	-11	+5
	-10	+7
50 E	-9	ST 250W
	-9	+7