

PROSPECTING REPORT

ON THE

EVA 95-97, EVA 98-102 AND RAM 4-17

YC17387-89, YC12178-82 AND YC17390-403

CLINTON CREEK AREA

NTS 116 C-7

64° 23' N. LATITUDE

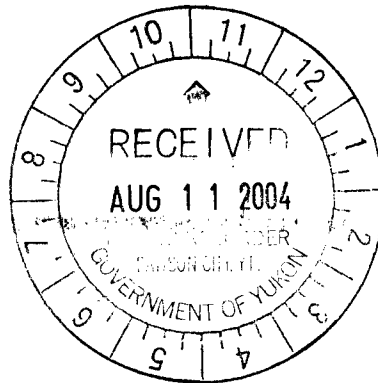
140° 43' W. LONGTUDE

094475

REGISTERED OWNER: EMMA KOROLEW

REPORT BY: BRIAN SAUER

JUNE 10- JUNE 17, 2004



This report has been examined by
the Geological Evaluation Unit
under Section 53 (4) Yukon Quartz
Act and is allowed as
representation work in the amount
of \$ 5400.

M.B.H.
for Regional Manager, Exploration and
Geological Services for Commissioner
of Yukon Territory.

Costs associated with this report have been
approved in the amount of \$ 2,400
for assessment credit under Certificate of
Work No. 20.00518

[Signature]

Jr Mining Recorder
Dawson City Mining District

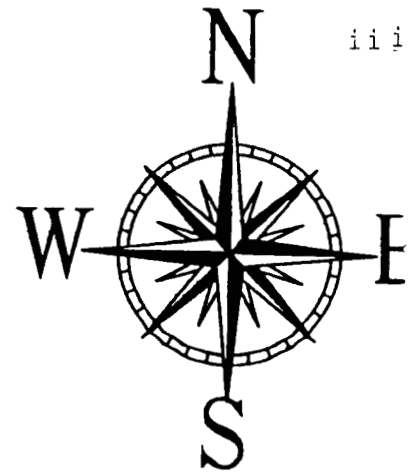
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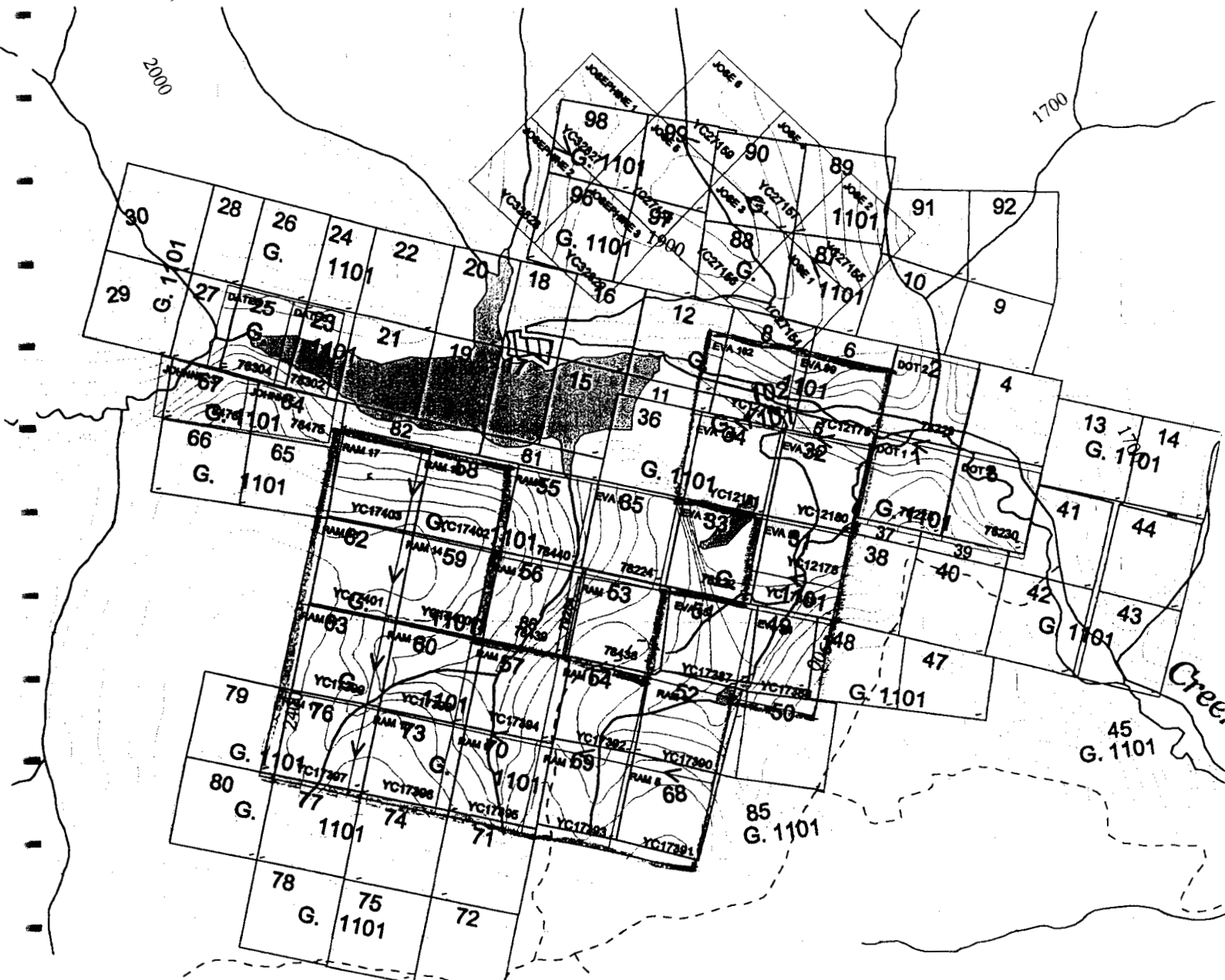
Canada

DAWSON MINING DISTRICT

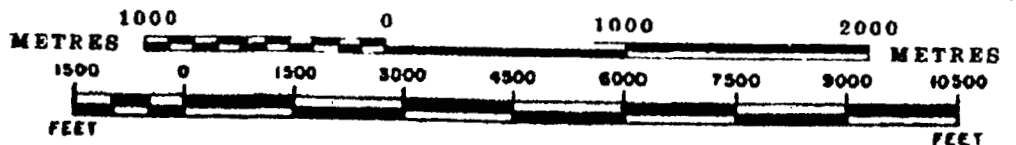
Figure 1 : Eva/Ram Claims



116C-7 QUARTZ



SCALE 1:31,680



LOCATION AND ACCESS

The claims are accessible by 2 wheel drive vehicle from Dawson City, Yukon. THE TOP OF THE WORLD HIGHWAY is taken for 53 kilometers westerly from Dawson City to the northerly trending Clinton Creek Road for a further 42 kilometers.

PHYSIOGRAPHY

The elevations of most ridge tops are between 1,000 and 1,350 meters; outcrops are rare on the property except near the old minesite where past mining activity has exposed a great deal of good exposures.

The Fortymile River area has not been glaciated and was found to have contained Placer gold prior to the great Klondike gold discoveries.

WORK PERFORMED

A prospecting program was conducted on the claims from June 10-June 17, 2004. The EVA 97-102 Claims were looked at with the most intensity due the amount of exposed outcrop on these claims. Quartz-Carbonate mineralization was chosen as the target prospect at this former Asbestos Mine.

GEOLOGY

The following claim area geology is explained in M. HTOONS' 1975 report ' THE CLINTON CREEK ASBESTOS PROJECT, 1975, DEPARTMENT OF GEOLOGICAL SCIENCES, UNIVERSITY OF BRITISH COLUMBIA' he stated...' Country rocks are metamorphic rocks of the Yukon Group, whose age though uncertain is believed to be late PRE-Cambrian and or early Paleozoic. Specific lithologies found include thin bedded limestone, sandstone and shale in the sedimentary category; argillite, marble, slate phyllite, quartz-mica schist, quartzite and quartz-biotite gneiss in the metamorphic group; and diorite, andesite, serpentized ultramafics and serpentines in the igneous groups. Quartz-carbonate rock is found as an alteration product here and there throughout the area adjacent to some serpentinite bodies.

There are four major structural trends in this area that could be delineated only by detailed mapping of individual outcrops. Probably the oldest and most complex trend (300-315° azimuth) is roughly parallel to the direction of the Tintina Trench (a few kilometers north of the claims). The second oldest trend is approximately east-west (080-090° azimuth). The third and fourth structural trends are southwesterly and northerly, but no evidence has yet been found to show the relative ages of these two youngest structural events. North trending structural features are not well preserved within the mapped area.'

**DIAND Waste Management Program - Yukon Territory
Abandoned Clinton Creek Asbestos Mine - Stream Channel Stabilization**

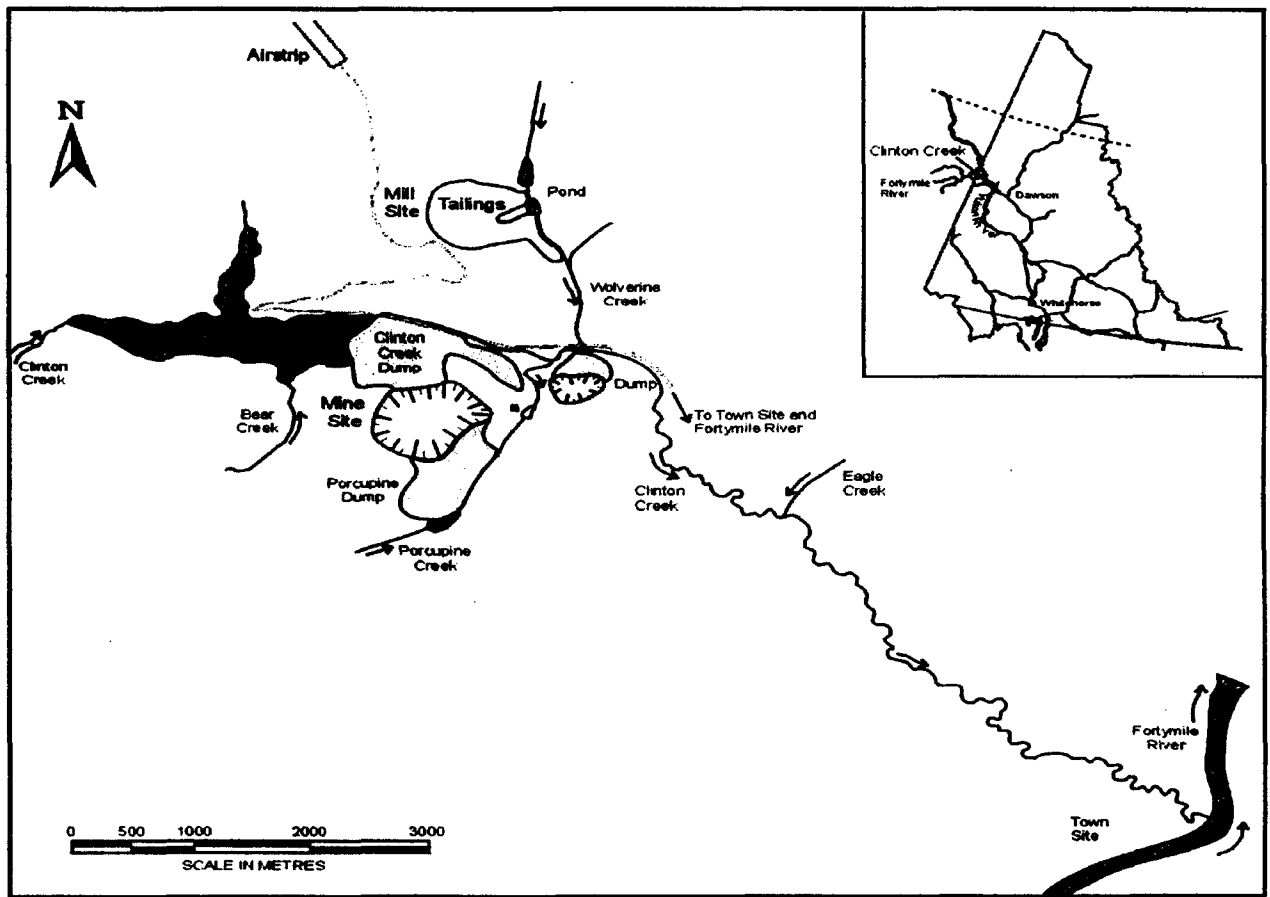


Figure 2: Location Plan (Royal Roads University, 1999)

In their Geological Fieldwork 1989, Paper 1990-1, The Listwanite -Gold Association in British Columbia by C.H. Ash and R.L. Arksey; they state...' Listwanite is a term long used by Soviet geologists working in the Ural goldfields of Russia (Goncharenko 1970; Kuleshevich, 1984) that is now used in Europe and North America. It describes a mineralogical assemblage that results from the carbonatation of serpentized rocks and represents a distinctive alteration suite that is commonly associated with quartz-carbonate lode gold deposits. In British Columbia, as in the California Mother Lode deposits, Listwanites are most commonly recognized within or near major fault zones cutting Paleozoic and Mesozoic oceanic and island arc accretionary terranes that have been affected by tectonism, metamorphism and plutonism.

Listwanite (carbonatized ultramafic rock) is a distinctive assemblage commonly associated with quartz-carbonate lodes that have the potential for high-grade gold mineralization.'

Listwanite alteration is observed in outcrop west of the bridge crossing the Forty Mile River to Clinton Creek (former Homestake claims, 1988). On the Dot 2 claim adjacent to the Eva-Ram claims (owned by the receiver for Cassiar Asbestos) and on the Eva 98,100 and 101 claims; all outcrops are associated with serpentized ultramafics. This type of outcrop poses a potentially gold bearing target and was chosen for evaluation.

ROCK SAMPLES

Shear zones, associated with mariposite; quartz-carbonate, listwanitic alteration zones were chosen for sampling during prospecting of these claims. Twenty-eight rocks were collected of which only two were from coarse float (04-008, 04-022). The remaining twenty-six samples showed a low amount of visible pyrite; however sample 04-022 taken as float/subcrop contained a vuggy milky white chalcedonic quartz vein with pods of chalcopryrite and azurite/malchite staining on fracture faces.

Rock descriptions are as follows:

Number	UTM/Location	Description
04-001	NAD 83 513326E	- Shear zone at the north east end of the Porcupine Pit on the Eva 101 south-central claim area; samples taken from east to west
-04-005	7146751N	
04-001		- 1 meter chip, heavy Fe stain manganese; fault gouge w/minor silicified zones. 290/62N

**DIAND Waste Management Program - Yukon Territory
Abandoned Clinton Creek Asbestos Mine - Stream Channel Stabilization**

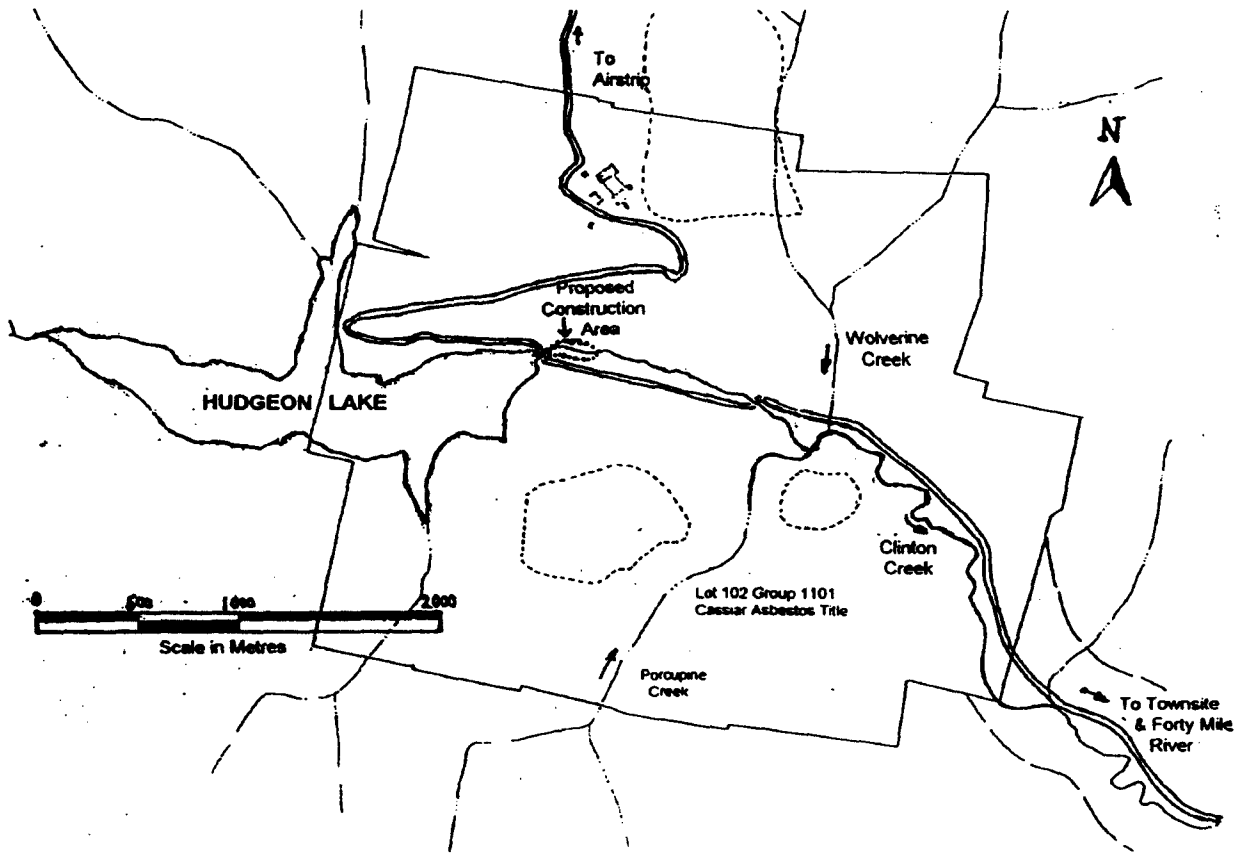


Figure 3: Property line of Lot 102 and location of proposed construction area (DIAND Waste Management, 2002).

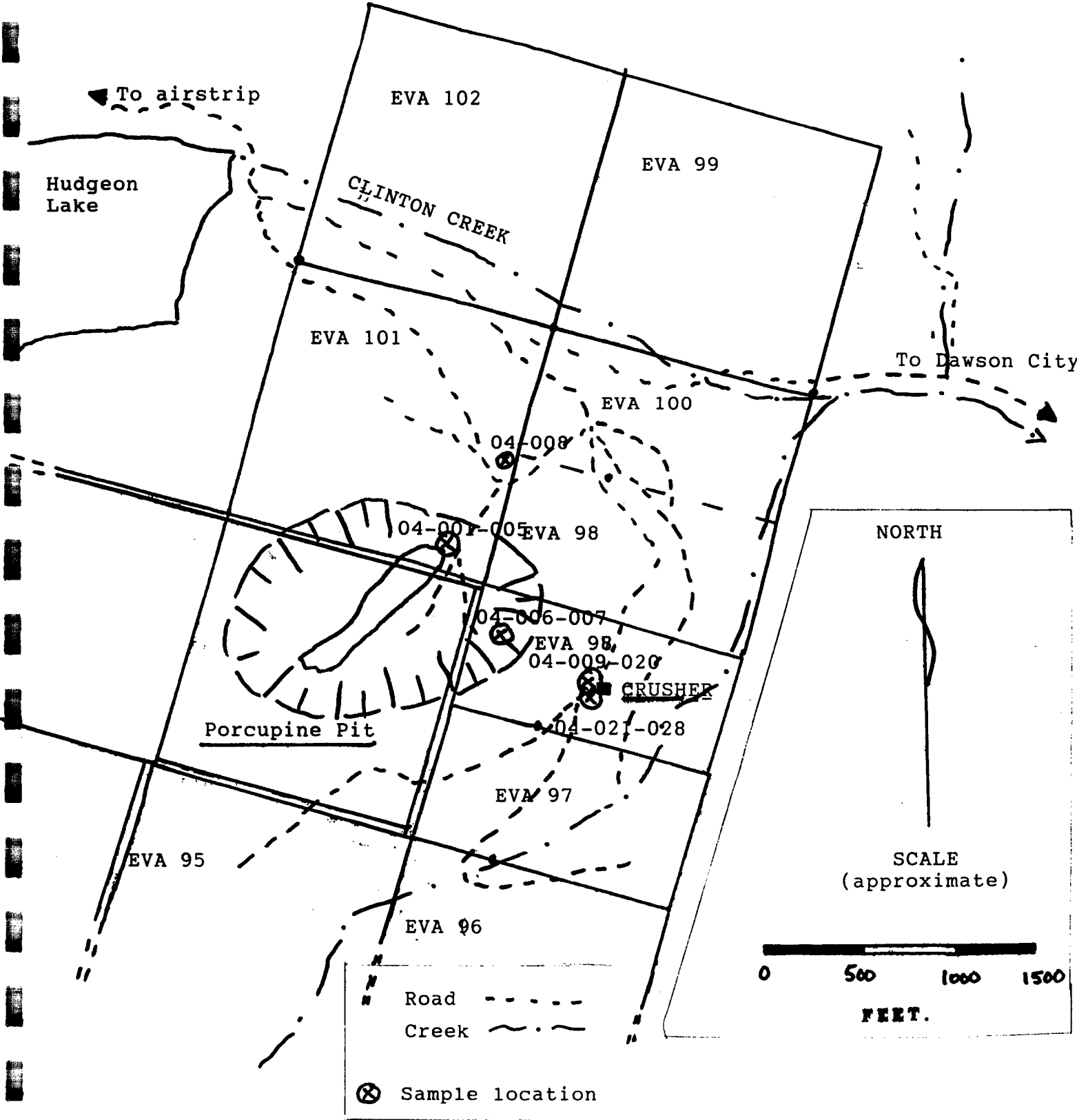
Number	UTM/location	Description
04-002		- 1 meter chip, heavy manganese Fe stain, fault gouge, black gouge + 5cm calcite? white powder on face of gouge, no fizz 10% HCL 290/62N
04-003		= 1 meter chip, fault gouge, rare translucent crystals+2-3cm gypsum? scratch with fingernail, in black graphitic? gouge. Rare pyrite pods +3cm 290/62N
04-004		- 1 meter chip, fault gouge, rare pyrite, calcite? 310/60N
04-005		- Grab from hanging wall of shear zone, consolidated listwanite; mariposite, no visible pyrite.
04-006	0513462E 7146604N	- Grab, above Pit near Eva 98 Post 1; about 100 meters north. Quartz vein +2cm, 290/50N in gossanous cliff face. Heavy Fe, Hematite alteration, calcite? no visible pyrite. Micro stockwork of discontinuous quartz veinlets, clay alteration. Quartz veins in float below to +10cm wide.
04-007	0513576E 7146446N	- Grab 5 meters down slope of 04-006. Highly siliceous chalcidony altered small quartz veins +2cm. Heavy manganese, carbonate alteration, no visible pyrite. Possible magnetite.
04-008	0513410E 7146980N	- Coarse float, dump waste? Quartz vein 10 cm wide; country rock fine grained, crystalline dark grey to black. Minor pyrite in pods in quartz. Minor carbonate alteration.
04-009 -04-020	0513624E 7146677N	- On the border of Eva 100/98. West of grusher 20 meters. A number of samples taken to check for nugget effect.
04-009		- Grab, quartz vein stockwork 10 cm vein, no visible pyrite.
04-010	2 meters S.009	- Chalcedonic alteration, no visible pyrite
04-011	1 meter S. 010	- No visible pyrite, heavy carbonate altered chalcedony and quartz veinlets. 15/65E
04-012	1 meter from 011	- Quartz veinlets 15/65E

116C-7

EVA 95-102/ RAM 4-17

JUNE 10 - 17, 2004

SAMPLE LOCATIONS



Number	UTM/Location	Description
04-013	2 meters S. of 012	- Quartz vein to 10 cm 40/82E
04-014	1 meter from 013	- Quartz vein 2cm; discontinuous. mariposite weathering? to black! 30/75E
04-015	4 meters S. 014	- Series of 1 meter chips from up-slope to down of a zone of sheared listwanitic outcrop.
-04-020		
04-015		- Heavy Fe stain, carbon altered, no visible pyrite. Heavily fractured.
04-016		- Heavy Fe stain, carbonaceous fault gouge. Hematite zones - 3 cm, no visible pyrite.
04-017		- Fault gouge, heavy Fe carbonate. Hematite zone to 5 cm. contact? listwanite/serpentinite? siliceous alteration.
04-018		- Heavily fractured, serpentinized heavy Fe carbonate alteration.
04-019		- Same description as 04-018
04-020	Road base of outcrop	- 20 cm chip (end of 1 meter chips) Clay altered serpentinite, mariposite? possible sedimentary rocks, brecciated?
04-21	0513674E	- South crusher about 100 meters below upper mine road. Zone roughly 310/30E Samples taken from southwest to northeast.
-04-028	7146657	
04-021		- Grab, fault zone 10 cm wide; heavy Fe, carbonate alteration, no visible pyrite. Country rock altered serpentinite (siliceous) with asbestos veinlets - 3 cm
04-022	About 5 meters east of 04-021	- Coarse float/Subcrop, quartz vein 10 cm wide, silicified serpentinite wall rock, minor azurite/malachite on fracture surfaces. possible magnetite. Heavy Fe stain, pod of chalcopyrite - 2 cm, vuggy quartz/chalcedony vein.
04-023	1 meter E. 04-022	- Grab, same rock type as 04-022 no visible azurite/malachite.
04-024	.3 meter S. 04-023	- Grab, clay altered serpentinite minor quartz stringers.
04-025	.1 meter from 04-024	- Heavy Fe, manganese stain, serpentinite with quartz veinlets - 1 cm wide, baked to black/dark green, glassy appearance of outcrop in this area.

Number	UTM/Location	Description
04-026	.3 meter S. of 04-025-	Chalcedony altered serpentinite no visible pyrite. Grab .
04-027	1 meter from 04-026	- Grab, fault gouge, heavily Fe stained, pods of siliceous serpentinite.
04-028	5 meter N. of 04-021	- Grab, silicified serpentinite, chalcedony, heavy Fe, carbonate alteration. No visible pyrite.

ROCK GEOCHEMISTRY

All samples were shipped to Acme Analytical Labs in Vancouver, B.C. and analysed for Au, Pt, Pd plus 30 element ICP.

CONCLUSIONS AND RECOMMENDATIONS

Mr. M. Htoon noted quartz-carbonate alteration zones in his reports for the Clinton Creek Mine (1975, 1979). The Eva-Ram Quartz claims are now staked on or adjacent to four distinct faults which Htoon also mapped near the Porcupine Pit.

The Clinton Creek Mine was operating from 1968-1978; no further known exploration occurred until 1995. In September 1995, J. McDonald and D. Templeman Kluit staked three separate 'Htoons Fault' Quartz claims on the east side of the Pit. These claims were allowed to lapse and B. Sauer staked the Eva 98-102 claims in August of 1998. The Eva 95-97 and Ram 4-17 were added in 1999. These claims are now currently held by Emma Korolew of Edmonton, Alberta (100%).

Previous work by B. Sauer and T. Elliott concentrated on 'Listwanite' gold mineralization with possible PGE potential. Listwanite alteration has shown to be an economic geologic target; ie 'The Mother Lode District of California' as one example. This type of alteration has also been known to have a "nugget effect" when sampling. Of the 24 previous rock samples submitted for assay (1999-2000), 17 ppb has been the highest Au number so far.

The "Crusher" area is of special interest due to a previous random sample which ran .81% Ni (.15-2.0% Ni is the usual background) in serpentinite. This area was sampled much more intensely; having 18 of the 28 targeted samples from June, 2004 taken from this zone. A particular sample of note was 04-022 taken from subcrop in the same area. This sample contained a small pod of chalcopryrite with associated azurite/malachite staining on the fracture surfaces, within a quartz/chalcedony vein. The sample ran 881 ppm Cu which was very encouraging as it was the first sample to date to give encouraging results in copper. The positive results in Gold, Platinum, and Palladium (11/34/27ppm) although low also are possibly indicative of a larger system in this area.

The Eva/Ram claims have seen little detailed geological mapping since Htoons' reports from the 1970's. Listwanite alteration has been identified on the property and "sniffs" of indicator mineralization have been found on this previously mined Asbestos Project. Future recommendations would be for a grid to be established on the Eva block of claims initially. The principal objective of the grid would be to conduct geophysical surveys; with followup geological mapping and sampling to further determine the economic potential of this "grassroots" property.

BIBLIOGRAPHY

- Htoon, Myat Progress Report on the Clinton Creek Asbestos Project. Department of Geological Sciences University of British Columbia, 1975.
- Htoon, Myat Geology of the Clinton Creek Asbestos Deposit Yukon Territory. Master of Science thesis 1979.
- DIAND Circular Project Description for Abandoned Clinton Creek Asbestos Mine Creek Channel Stabilization, August 2002.
- Ash, C.H. and Arksey, R.L. The Listwanite-Lode Gold Association Geological Fieldwork 1989, Paper 1990-1.
- Ash, C.H. and Arksey, R.L. The Atlin Ultramafic Allochthon: Tectonic and Metallogenic Significance (104N/12) Geological Fieldwork 1989, Paper 1990-1.

COST STATEMENT
EVA-RAM CLAIMS
JUNE 10-17, 2004

ASSAYS		711.55
ACCOMMODATION		149.50
CAMP	5 @ \$ 25/day	125.00
FOOD		318.30
FUEL		588.85
GPS	5 @ \$ 10/day	50.00
LABOR	8 @ \$ 300/day	2400.00
MAPS		7.44
REPORT		600.00
RESTAURANT		31.13
SHIPPING		45.58
SUPPLIES		112.56
VEHICLE	8 @ \$ 50/day	400.00

TOTAL

\$ 5539.91

QUALIFICATIONS

I, Brian Sauer of 12611-124 Street, Edmonton, Alberta, T5L0N8 do declare:

1. I have been employed for the past 28 years in the mining exploration business; predominately as a prospector.
2. I have been employed as an employee/contractor for mining exploration companies in Yukon, British Columbia, Alberta, Ontario, N.W.T., and Nunavut.
3. I have taken the Basic Prospecting course offered by the B.C. and Yukon Chamber of Mines 1981.
4. I have taken the Advanced Prospecting course offered by the B.C. Ministry of Mines, 1984.
5. I am presently working as a contractor/employee in the mining exploration business.

Dated at Edmonton, Alberta this 28th day of July, 2004.

Respectfully submitted

A handwritten signature in black ink, appearing to read 'B. Sauer', with a long horizontal line extending to the right.

Brian Sauer

Prospector

APPENDIX A
GEOCHEMICAL RESULTS

(ISO 9002 Accredited Co.)



GEOCHEMICAL ANALYSIS CERTIFICATE

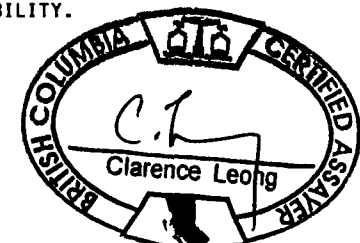


Satter Exploration File # A403426
 12411 - 124 St., Edmonton AB Submitted by: Emma Koralew

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au**	Pt**	Pd**	Sample
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppb	ppb	ppb	kg	
SI	<1	4	<3	1	<.3	1	1	6	.14	4	<8	<2	<2	9	<.5	<3	<3	1	.40	.001	1	5	.01	15	<.01	5	.10	1.62	.04	<2	7	<2	<2	-
04-001	2	11	<3	7	<.3	3707	155	2260	6.46	8	<8	<2	<2	82	<.5	13	<3	6	1.92	.003	<1	1195	13.35	259	<.01	91	.03	.02	<.01	<2	4	2	<2	1.50
04-002	1	4	<3	10	<.3	2114	142	1232	5.20	16	<8	<2	<2	638	<.5	20	<3	6	11.12	.002	<1	1247	10.41	820	<.01	84	.03	.02	<.01	3	3	2	3	2.50
04-003	2	5	<3	7	<.3	5663	300	1511	9.60	420	<8	<2	<2	111	.5	210	<3	7	5.18	.003	<1	809	7.79	73	<.01	30	.01	.01	<.01	<2	3	12	5	1.79
04-004	2	4	<3	12	<.3	3211	170	735	4.40	180	<8	<2	<2	77	<.5	82	<3	6	3.36	.002	<1	784	3.74	104	<.01	13	.02	<.01	<.01	2	4	3	<2	1.89
04-005	2	2	<3	3	<.3	2200	92	1137	4.70	138	<8	<2	<2	227	<.5	68	<3	5	6.89	.003	<1	743	3.55	146	<.01	7	.01	.04	.03	4	2	<2	<2	1.06
04-006	5	4	<3	15	<.3	5978	270	2207	11.26	31	<8	<2	<2	72	<.5	55	<3	12	1.07	.003	<1	950	4.12	274	<.01	44	.05	.01	.01	2	<2	3	<2	.45
04-007	4	5	<3	10	<.3	833	65	428	3.52	42	<8	<2	<2	6	<.5	41	<3	3	.19	.003	<1	521	8.74	65	<.01	17	.03	<.01	<.01	2	2	3	<2	1.00
04-008	2	24	21	10	<.3	33	6	64	1.06	<2	<8	<2	3	28	<.5	<3	<3	5	.30	.023	5	28	.18	355	<.01	8	.59	.02	.20	<2	2	<2	<2	1.50
04-009	2	7	<3	4	<.3	138	24	798	2.32	<2	<8	<2	<2	302	<.5	<3	<3	97	10.93	.002	<1	428	6.84	47	<.01	<3	.09	.02	.01	<2	<2	5	25	1.12
04-010	1	2	<3	6	<.3	244	35	754	2.56	<2	<8	<2	<2	185	<.5	4	<3	31	5.08	.002	<1	265	7.75	97	<.01	<3	.09	.01	.01	2	<2	11	7	.89
04-011	1	1	<3	1	<.3	574	51	536	3.75	6	<8	<2	<2	262	<.5	8	<3	54	7.52	.003	<1	384	10.09	60	<.01	4	.03	.01	<.01	<2	9	<2	<2	.84
04-012	1	2	<3	3	<.3	203	23	622	2.08	2	9	<2	<2	144	<.5	3	<3	34	6.10	.002	<1	227	7.41	109	<.01	5	.06	.01	.01	<2	2	14	10	.62
RE 04-012	<1	2	<3	3	<.3	210	24	647	2.17	<2	<8	<2	<2	149	<.5	3	<3	35	6.28	.002	<1	244	7.62	114	<.01	4	.05	.01	.01	2	<2	15	11	-
04-013	1	2	<3	<1	<.3	366	26	289	1.80	<2	<8	<2	<2	191	<.5	<3	<3	13	2.32	.002	<1	318	5.75	84	<.01	5	.01	.01	<.01	<2	2	<2	<2	.95
04-014	1	10	<3	5	<.3	1276	65	684	4.22	6	8	<2	<2	77	<.5	7	<3	21	3.52	.003	<1	579	14.72	86	<.01	3	.07	.01	.01	<2	5	3	<2	.41
04-015	2	17	<3	5	<.3	1629	102	1035	4.85	19	<8	<2	<2	84	<.5	13	<3	20	4.13	.003	<1	663	11.45	553	<.01	12	.13	.01	.01	2	9	4	2	.85
04-016	1	4	<3	7	<.3	2137	96	1359	6.24	31	<8	<2	<2	160	<.5	21	<3	34	7.78	.003	<1	863	10.58	760	<.01	8	.30	.01	.01	<2	2	<2	<2	1.45
04-017	2	32	<3	10	<.3	2268	102	1629	7.58	29	<8	<2	<2	221	<.5	23	4	37	8.72	.002	<1	1097	8.91	209	<.01	14	.29	.01	<.01	<2	2	6	3	1.56
04-018	1	21	<3	8	<.3	1272	80	550	3.21	39	<8	<2	<2	155	<.5	19	<3	21	5.02	.002	<1	738	3.93	611	<.01	7	.18	.01	.01	2	25	7	2	.93
04-019	1	16	3	196	<.3	1310	71	1037	4.19	40	<8	<2	<2	382	<.5	28	<3	31	12.84	.003	<1	826	7.38	1640	<.01	<3	.26	.01	.01	4	2	5	3	1.69
04-020	1	34	<3	11	<.3	1577	76	2241	9.80	12	<8	<2	<2	343	<.5	9	<3	36	11.38	.002	<1	891	6.93	220	<.01	13	.25	.01	<.01	2	5	6	4	.51
04-021	<1	4	<3	<1	<.3	1671	105	5107	9.23	16	<8	<2	<2	190	<.5	16	<3	22	3.41	.003	<1	292	15.49	173	<.01	16	.13	.01	.01	<2	3	2	<2	1.05
04-022	2	881	4	<1	1.8	343	22	490	1.34	10	<8	<2	<2	41	<.5	123	<3	1	2.62	.001	<1	209	4.22	27	<.01	8	.02	.01	<.01	<2	3	<2	<2	1.68
04-023	1	6	<3	<1	<.3	947	71	3515	3.95	5	<8	<2	<2	34	<.5	13	<3	1	1.69	.002	<1	419	13.59	70	<.01	14	.02	.01	<.01	<2	<2	<2	<2	1.41
04-024	2	10	<3	4	<.3	5850	299	3058	12.76	13	<8	<2	<2	71	<.5	17	<3	18	.17	.003	<1	2312	13.09	145	<.01	76	.15	.01	.01	<2	6	2	2	.72
04-025	1	3	<3	5	<.3	2784	144	1734	9.24	8	<8	<2	<2	53	<.5	13	<3	12	.10	.002	<1	1156	8.90	85	<.01	76	.08	<.01	<.01	2	13	2	2	.73
04-026	<1	4	<3	5	<.3	947	91	727	1.73	4	<8	<2	<2	20	<.5	7	<3	6	.12	.002	<1	914	7.86	35	<.01	21	.06	<.01	<.01	<2	2	<2	<2	.29
04-027	1	4	<3	24	<.3	3400	204	1776	6.75	4	<8	<2	<2	62	<.5	12	<3	20	.85	.003	<1	1413	11.17	52	<.01	60	.29	<.01	<.01	2	11	34	27	1.54
04-028	1	<1	<3	<1	<.3	1727	99	1029	5.46	5	<8	<2	<2	41	<.5	<3	<3	3	.33	.002	<1	599	19.93	75	<.01	51	.03	<.01	<.01	<2	3	2	2	.84
STANDARD DS5/FA-10R	14	144	25	135	.3	26	12	746	3.01	19	<8	<2	3	46	5.6	8	5	60	.75	.092	12	190	.68	135	.10	15	2.00	.04	.15	6	492	489	488	-

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.
 (>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MINERALS MAY BE PARTIALLY ATTACKED. REFRACTORY AND GRAPHITIC SAMPLES CAN LIMIT AU SOLUBILITY.
 ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
 - SAMPLE TYPE: ROCK R150 60C AU** PT** & PD** GROUP 3B BY FIRE ASSAY & ANALYSIS BY ICP-ES. (30 gm)
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data FA DATE RECEIVED: JUL 9 2004 DATE REPORT MAILED: July 26/04.....



The following list shows the map datums available for the GPS 38. Menu page abbreviations are listed first, followed by the corresponding map datum name and area. The default map datum for the GPS 38 is WGS 84.

Adindan	Adindan- Ethiopia, Mali, Senegal, Sudan	Easter Isld 67	Easter Island 1967	Massawa	Massawa- Eritrea (Ethiopia)		
Algooye	Algooye- Somalia	European 1950	European 1950- Austria, Belgium, Denmark, Finland, France, Germany, Gibraltar, Greece, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland	Merchich	Merchich- Morocco		
AIN EL ABD '70	AIN EL ANBD 1970- Bahrain Island, Saudi Arabia	European 1979	European 1979- Austria, Finland, Netherlands, Norway, Spain, Sweden, Switzerland	Midway Ast '61	Midway Astro '61- Midway		
Anna 1 Ast '65	Anna 1 Astro '65- Cocos Isl.	Finland Hayfrd Gandajika Base	Finland Hayford- Finland Gandajika Base- Republic of Maldives	Minna	Minna- Nigeria		
ARC 1950	ARC 1950- Botswana, Lesotho, Malawi, Swaziland, Zaire, Zambia, Zimbabwe	Geod Datm '49	Geodetic Datum '49- New Zealand	NAD27 Alaska	North American 1927- Alaska		
ARC 1960	ARC 1960- Kenya, Tanzania	Guam 1963	Guam 1963- Guam Island	NAD27 Bahamas	North American 1927- Bahamas (excluding San Salvador Island)		
Ascnsn Isld '58	Ascension Island '58- Ascension Island	Gux 1 Astro	Gux 1 Astro- Guadalcanal Island	NAD27 Canada	North American 1927- Canada and Newfoundland		
Astro B4 Sorol	Astro B4 Sorol Atoll- Tern Island	Hjorsey 1955	Hjorsey 1955- Iceland	NAD27 Canal Zone	North Am. 1927- Canal Zone		
Astro Bea "E"	Astro Beacon "E"- Iwo Jima	Hong Kong '63	Hong Kong '63- Hong Kong	NAD27 Caribba	North American 1927- Caribbean (Barbados, Caicos Islands, Cuba, Dom. Rep., Grand Cayman, Jamaica, Leeward and Turks Islands)	Prov S Chln '63	Prov So Chilean '63- S. Chile
Astro Dos 71/4	Astro Dos 71/4- St. Helena	Hu-Tzu-Shan	Hu-Tzu-Shan- Taiwan	NAD27 Central	North American 1927- Central America (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua)	Puerto Rico	Puerto Rico & Virgin Islands
Astr Stn '52	Astronomic Stn '52- Marcus Island	Indian Bngldsh	Indian- Bangladesh, India, Nepal	NAD27 CONUS	North Am. 1927- Mean Value	Qatar National	Qatar National- Qatar
Astrin Geod '66	Australian Geod '66- Australia, Tasmania Island	Indian Thailand	Indian- Thailand, Vietnam	NAD27 Cuba	North American 1927- Cuba	Qornoq	Qornoq- South Greenland
Astrin Geod '84	Australian Geod '84- Australia, Tasmania Island	Indonesia '74	Indonesia 1974- Indonesia	NAD27 Grnland	North American 1927- Greenland (Hayes Peninsula)	Reunion	Reunion- Mascarene Island
Bellevue (IGN)	Elate and Erromango Islands	Ireland 1965	Ireland 1965- Ireland	NAD27 Mexico	N. American 1927- Mexico	Rome 1940	Rome 1940- Sardinia Island
Bermuda 1957	Bermuda 1957- Bermuda Islands	ISTS 073 Astro	ISTS 073 ASTRO '69- Diego Garcia	NAD27 San Sal	North American 1927- San Salvador Island	RT 90	Sweden
Bogata Observ	Bogata Observatry- Colombia	Johnston Island	Johnston Island Kandawala	NAD83	North American 1983- Alaska, Canada, Central America, CONUS, Mexico	Santo (Dos)	Santo (Dos)- Espirito Santo Island
Campo InchaSpe	Campo Inchauspe- Argentina	Kerguelen Isld	Kerguelen Island	Nhrwn Masirah	Nahrwn- Masirah Island (Oman)	Sao Braz	Sao Braz- Sao Miguel, Santa Maria Islands (Azores)
Canton Ast '66	Canton Astro 1966- Phoenix Islands	Kertan 1948	Kertau 1948- West Malaysia, Singapore	Nhrwn Saudi A	Nahrwn- Saudi Arabia	Sapper Hill '43	Sapper Hill 1943- East Falkland Island
Cape	Cape- South Africa	L. C. 5 Astro	Cayman Brac Island	Nhrwn United A	Nahrwn- United Arab Emirates	Schwarzeck	Schwarzeck- Namibia
Cape Canavrl	Cape Canaveral- Florida, Bahama Islands	Luzon 1964	Liberia 1964- Liberia	Naparima BWI	Naparima BWI- Trinidad and Tobago	Sth Amrcn '69	South American '69- Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Venezuela, Trinidad and Tobago
Carthage	Carthage- Tunisia	Luzon Mindanao	Luzon- Mindanao Island	Obsrvtorio '66	Observatorio 1966- Corvo and Flores Islands (Azores)	South Asia	South Asia- Singapore
CH-1903	CH 1903- Switzerland	Luzon Philippine	Luzon- Philippines (excluding Mindanao Island)	Old Egyptian	Old Egyptian- Egypt	SE Base	Southeast Base- Porto Santo and Madeira Islands
Chatham 1971	Chatham 1971- Chatham Island (New Zealand)	Mahe 1971	Mahe 1971- Mahe Island	Old Hawaiian	Old Hawaiian- Mean Value	SW Base	Southwest Base- Faial, Graciosa, Pico, Sao Jorge and Terceira Islands (Azores)
China Astro	China Astro- Paraguay	Marco Astro	Marco Astro- Salvage Island	Oman	Oman- Oman	Timbalai 1948	Timbalai 1948- Brunei and E. Malaysia (Sarawak and Sabah)
Corrego Alegre	Corrego Alegre- Brazil			Ord Srvy GB	Old Survey Grt Britn- England, Isle of Man, Scotland, Shetland Isl., Wales	Tokyo	Tokyo- Japan, Korea, Okinawa
Djakarta	Djakarta (Batavia)- Sumatra Island (Indonesia)			Pico De Las Nv	Pitcairn Astro '67- Pitcairn Isl.	Tristan Ast '68	Tristan Astro 1968- Tristan da Cunha
Dos 1968	Dos 1968- Gizo Island (New Georgia Islands)			Pitcairn Ast '67	Pitcairn Astro '67- Pitcairn Isl.	Viti Levu 1916	Viti Levu 1916- Viti Levu/ Fiji Islands
				Prov S Am '56	Prov So Amrcn '56- Bolivia, Chile, Colombia, Ecuador, Guyana, Peru, Venezuela	Wake-Eniwetok	Wake-Eniwetok- Marshall Isl.
						WGS 72	World Geodetic System 1972
						WGS 84	World Geodetic System 1984
						Zanderlj	Zanderlj- Surinam

The GPS 38 is constructed of high quality materials and should not require user maintenance. Should your unit ever need repair, please take it to an authorized GARMIN service center. The GPS 38 has no user-serviceable parts. Never attempt any repairs yourself. To protect your GPS, keep it in its carrying case when not in use, and never allow gasoline or other solvents to come into contact with the case. Clean the case and lens with a soft cloth and a household window cleaner.

PHYSICAL

- Case: Waterproof, dry nitrogen-filled
- Size: 6.15"H x 2"W x 1.23"D (15.6 x 5.1 x 1.23 cm)
- Weight: Approx 9.5 ounces (269g) w/ batteries
- Temperature Range: 5° to 158°F (-15° to 70°C)

PERFORMANCE

- Receiver: Differential-ready MultiTrac8™
- Acquisition Time: Approx. 20 seconds (warm start)
Approx. 2 minutes (cold start)
Approx. 7.5 minutes (AutoLocate™)
- Update Rate: 1/second, continuous
- Position Accuracy: 5-10 meters (16-33 ft.) with DGPS corrections*
15 meters (49 ft.) RMS**
- Velocity Accuracy: 0.1 knot RMS steady state (93 knots/103 mph max.)
- Dynamics: Performs to specification to 3g's

POWER

- Input: Four 1.5 volt AA batteries or 5-8vDC
- Current Consumption: 0.16 amps max.
- Battery Life: Up to 12 hours (normal mode)
(w/ alk. batt.) Up to 20 hours (battery saver mode)

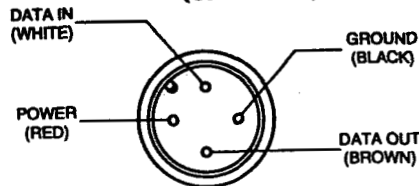
NOTE: Alkaline batteries lose a significant amount of their capacity as temperature decreases. If you're using the GPS 38 in below freezing temperatures, use lithium batteries for longer battery life. Extensive use of screen backlighting will significantly reduce battery life.

Specifications subject to change without notice.

* With optional GARMIN GBR 21 Beacon Receiver Input.

** Subject to accuracy degradation to 100m 2DRMS under the US DOD-imposed Selective Availability Program.

(UNIT VIEW)



Three optional cables are available to connect the GPS 38 to an external power source or interface with another unit or PC:

- Cigarette Lighter Adapter— Allows connection to a 12 volt DC cigarette lighter plug and reduces voltage to 5-8 volts DC.
- Data Cross-Load Cable— Allows data transfer between GPS 38/40/45 units.
- PC Kit Data Cable— PC interface cable with 9-pin 'D' serial data connector.

The following interface formats are supported by the GPS 38 for driving three NMEA devices:

- NMEA 0180 NMEA 0182
- NMEA 0183 version 1.5

Approved sentences:

- GPBWC, GPGLL, GPRMB, GPRMC, GPXTE, GPVTG, GPWPL, GPBOD

Proprietary sentences:

- PGRMM (map datum), PGRMZ (altitude), PSLIB (beacon rec. control)
- NMEA 0183 version 2.0

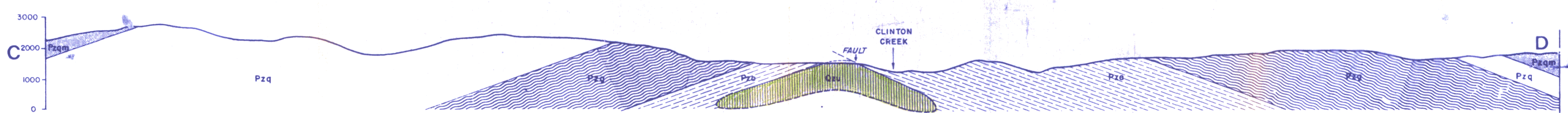
Approved sentences:

- GPGGA, GPGLL, GPGSA, GPGSV, GPRMB, GPRMC, GPRTE, GPWPL, GPBOD

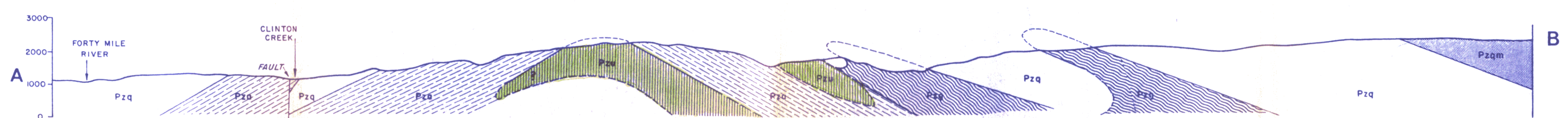
Proprietary sentences:

- PGRME (estimated error), PGRMM (map datum), PGRMZ (altitude), PSLIB (beacon receiver control)

DGPS corrections are accepted on RTCM-104 v. 2.0 format. The GARMIN GBR 21 is the recommended beacon receiver for use with the GPS 38. Other receivers with the correct RTCM format may be used, but may not correctly display status or allow tuning control from the GPS 38.



SCHMATIC CROSS SECTION ALONG C-D



SCHMATIC CROSS SECTION ALONG A-B

GENERAL GEOLOGY OF THE CLINTON CREEK AREA

Figure 2-2

