

CAMPBELL RESOURCES

ASSESSMENT REPORT
1981 DIAMOND DRILLING LOGS
(Hole 81-13, 81-20)
EPD Claims 1-84

115-P-15

63°46'N, 136°31'W

091015

Mayo Area

Yukon Territories

Daniel Rota

March 29, 1982

FROM Mining Recorder of Mayo

TO Supervising Mining Recorder at Whitehorse, Y.T.

FOR ACTION ARE:

NEW APPL'N for PLACER LEASE to PROSPECT: Name:

RENEWAL APPL'N PLACER LEASE to PROSPECT: Name:

Lease No.

AFFIDAVIT of EXPENDITURE on PLACER LEASE. Name:

Lease No.

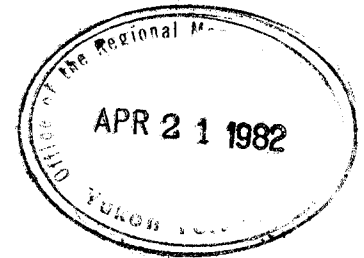
ASSIGNMENT of PLACER LEASE No.

From:

To:

GROUPING APPL'N UNDER SEC. 52(2) PLACER MINING ACT.

Owner:



DIAMOND DRILL LOGS:

Claims: EPD 1-84

Claim sheet no. 115-P-15

QUARTZ ASSESSMENT REPORT

Claims:

Claim sheet no.

Type of report:

Submitted by: BILLITON CANADA LTD
(FOR CH MINERALS LTD.)

Cls. work performed on:

EPD 19, 23, 37, 39

\$ Req. for ren. application

\$33600⁰⁰

8 HOLES

1525.3 METRES

[Signature]
Signature

REPLY ACTION

CC: GEO.

Date Ret.

091015

Signature

CAMPBELL RESOURCES INC.
DIAMOND DRILL LOG

VENTURE CORTIN
PROJECT
PROPERTY EPD

LOCATION

TESTS

GRID

TROPARI

ACID

Location	<u>19+30N</u>	Depth	<u>30.48</u>	Mag Brg	<u> </u>	Corr Brg	<u> </u>	Dip	<u> </u>	Dip ^t	<u>65°</u>
Section	<u>49+50E</u>		<u>213.36</u>		<u> </u>		<u> </u>		<u> </u>		<u>63.5°</u>
Bearing	<u>350°</u>		<u>240.79</u>		<u> </u>		<u> </u>		<u> </u>		<u>62°</u>
Dip	<u>-65°</u>		<u> </u>		<u> </u>		<u> </u>		<u> </u>		<u> </u>
Length	<u>246.3</u>		<u> </u>		<u> </u>		<u> </u>		<u> </u>		<u> </u>

SURVEY

PHYSICAL DATA

Latitude	<u>19+29N</u>	Core Size	<u>HQ</u>	to	<u>166.4m,</u>	<u>NQ</u>	to	<u>246.3m</u>
Departure	<u>49+58E</u>	Date Started	<u>June 2, 1981</u>					
Elevation	<u>814.22</u>	Date Completed	<u>June 9, 1981</u>					
Bearing	<u>350°</u>	Casing Pulled	<u>No</u>					
Dip	<u>-65°</u>	Core Recovery	<u>99%</u>					
		Cemented	<u>No</u>					
		Core storage	<u>Oliver Creek Campsite 115-P-15</u>					

Logged by D. Kennedy & B. Paul
Contractor Caron Diamond Drilling

NOTES: 1) Give reference - Magnetic, Grid, True
2) Corrected dip.

From	To	Rock Name	Description	CA	From	To	Sample No.
0	3.60	Casing					
3.60	8.67	Biotite Chlorite Schist	<p>Grey-green, contains some more quartzitic sections, core highly broken up. Schistosity at 70° to 80° to C.A. Numerous fractures with dark Mn? and limonite staining. Numerous quartz sweats and narrow stringers up to 5mm generally parallel to schistosity.</p> <p>4.59- 4.62: Quartz stringer at 80° to C.A. contains minor chlorite</p> <p>4.70- 5.15: Estimate 25% quartz as narrow stringers up to 1 cm</p> <p>5.30- 5.60: Quartz vein? highly broken up Quartz contains estimated 12% chlorite. Some yellow cream colored alteration present. Contacts lost in broken core.</p> <p>5.75- 6.40: More schistose character than before. Dark grey schistosity at 80° to C.A., contains some thin limonite stained bands.</p> <p>6.25 : Fold hinge?</p> <p>6.28- 6.31: Quartz stringer at 70° to C.A.</p> <p>6.40- 8.67: Grey-green as before, mostly schist with a few narrow quartz bands, contains a number of quartz sweats. Some have limonite staining up to 1 cm.</p> <p>6.90- 7.01: Quartz stringer at 75° to C.A. contains 25% chlorite.</p> <p>7.13- 7.22: Quartz patch, contains minor chlorite</p> <p>7.40 : Open seam at 10° to C.A. showing quartz crystal growth</p> <p>7.51- 7.57: Quartz stringer at 80° to C.A., contains minor chlorite</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
8.67	16.01	Quartzite	<p>slightly rusty.</p> <p>7.71 - 8.00: Quartzite band</p> <p>8.12 - 8.13: Quartz stringer at 80° to C.A. slightly rusty.</p> <p>8.20 - 8.67: Mn staining on fractures at 20° to C.A.</p> <p>Medium grey with numerous chlorite biotite partings. Vague schistosity at 80° to C.A. There are occasional narrow Mn stained fractures generally at 10° to 20° to C.A.</p> <p>9.00- 9.32: Occasional quartz stringers up to 3 cm at 80° to C.A.</p> <p>9.70 - 9.95: Slightly more schistose, good foliation at 75° to C.A.</p> <p>10.82 - 10.85: Quartz stringer, contains minor chlorite. Contacts lost in broken core.</p> <p>10.92 - 11.00: Quartz stringer at 80° to C.A. contains minor chlorite</p> <p>11.20 - 11.24: Quartz stringer, contacts lost in broken core.</p> <p>11.72 - 11.75: Quartz patch, minor rusting</p> <p>15.14 - 15.35: Schistose band, core highly broken up.</p> <p>15.35 - 15.50: Black-brown Mn? staining</p> <p>15.57 - 15.63: Irregular quartz sweats, contains minor chlorite.</p>				
6.01	31.66	Biotite Chlorite Schist	<p>Medium grey with some darker patches. Schistosity at 75° to C.A. Minor limonite staining.</p> <p>16.22 - 16.26: Quartz stringer at 70° to C.A. slightly rusty. Contains occasional vugs.</p> <p>16.70 - 17.20: Fractures with heavy limonite</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
			staining at 60° to core angle(fractures)				
17.60 - 18.00:			Abundant Mn stain, mostly in fractures at 40 to 70° to C.A.				
18.00 - 18.03:			Quartz stringer at 75° to C.A. Minor limonite, Mn stain.				
19.00 - 19.80:			Core highly broken.				
19.99 - 20.00:			Quartz stringer 80° to C.A.				
20.57 - 20.58:			Quartz stringer 70° to C.A. Some Fe staining				
20.70 - 22.28:			Quartzose band, light grey, with same schistosity as above Occasional limonite stain				
24.20 - 27.00:			Quartzose band, similar to above section (Sulphide: 24.52 to 24.70 Chlorite filled fracturing containing 1-2% pyrite two directions of fracturing 20° and 80° to C.A.)				
24.71 - 24.77:			Quartz stringer at 80° to C.A. contains 5% chlorite, minor Fe staining.				
25.19 - 25.30:			Quartz stringer at 80° to C.A. with 10% chlorite, trace limonite				
25.71 - 25.76:			Quartz stringer at 80° to C.A. minor limonite, perhaps 5% chlorite→fracture set at 25° to C.A., coated with limonite, Mn.				
25.91 - 25.95:			Quartz stringer at 80° to C.A. about 2 or 3% chlorite, minor limonite.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			27.00 : back into good schistose material: schistosity 75°-80° to C.A. 27.22 - 27.24: Quartz stringer 85° to C.A., minor chlorite 29.27 - 29.29: Quartz stringer 70° to C.A. trace limonite, chlorite 29.40 - 29.41: Quartz stringer, 80° to C.A. minor limonite 30.10 - 30.50: Quartz patches, lensoid to spheroid to 2 cm 30.84 - 30.85: Quartz stringer 80° to C.A. trace chlorite. 31.24 - 31.26; Quartz stringer 80° to C.A., 7% chlorite.				
31.66	34.26	Quartzite	Light grey, more or less massive, and very hard A number of chlorite partings at 80° to C.A. Fracture sets (Mn stained) at 20° and 75° to C.A., with limonite in places. 33.02-33.39: Quartz vein, abundant limonite Fractures at 30° to C.A. ———> limonite, minor Mn and chlorite 33.90-34.20: Limonite stain after sulphide(?) 34.50-34.52: Quartz stringer 80° to C.A., minor limonite Small acicular cream crystals to 2mm x-cutting schistosity, abundant to 35.06 cf. andalusite 1980 logs.				
34.86	35.06	Biotite Chlorite Schist	34.80-34.81: Quartz stringer 80° to C.A., 5% chlorite, minor limonite stain. 34.82-34.83: Quartz stringer 80° to C.A., 5% chlorite, minor limonite.				

From	To	Rock Name	Description	CA	From	To	Sample No.
35.06	36.10	Quartzose Schist	Medium grey-green, schistosity 80° to C.A. 35.30- 35.90: Heavy limonite stain, black flecks, (probably biotite)				
36.10	37.87	Biotite Chlorite Schist	Dark green to black in color. 36.27- 36.58: Estimate 20% sulphide, pyrrhotite with minor pyrite, trace chalcopyrite, sphalerite(?) 36.65- 37.63: Fracturing sub-parallel to core axis. 15% sulphide associated with large fracture, as well as small cross-cutting fractures. Dominantly pyrite, traces sphalerite. Fracture contains much calcite, as well as dark chlorite selvage		35.00 36.00 37.00	36.00 37.00 37.87	DH 13 - 001 DH 13 - 002 DH 13 - 003
37.87	38.04	Chlorite Breccia Vein	Quartzite fragments surrounded by bluish-green chlorite matrix 20° to C.A.(veinlet contains altered pyrite clot)		37.87	38.04	DH 13 - 004
38.04	40.48	Biotite Chlorite Schist	Dark green to black in color. Schistosity approximately 75° or 80° to C.A. Occasional limonite staining 38.04- 39.35: 15% sulphide, mainly pyrite, perhaps 3-4% pyrrhotite ± 1% chalcopyrite. Sulphides associated with thin fractures Fractures 30° to C.A., sub-parallel to C.A. 38.98- 38.80: Heavy sulphide with quartz patch(approximately 40%) 40.15- 40.16: Quartz lens - heavily rusted, vuggy		38.04 39.00 40.00	39.00 40.00 41.00	DH 13 - 005 DH 13 - 006 DH 13 - 007

From	To	Rock Name	Description	CA	From	To	Sample No.
40.48	42.80	Quartzite	Light grey, massive, with micaceous partings at 70°-30° to C.A. Tuffaceous in character, pink-brown stretched fragments(?). Fractures at 15° and 30° to C.A., carbonate filled (less than 1mm) Occasional Mn stained fractures 42.08- 42.11: Quartz lens with 25% chlorite		41.00 42.00	42.00 43.00	DH 13 - 008 DH 13 - 009
42.80	45.80	Quartz Schist	Gradational from above, schistosity 75° to C.A. Light grey with dark micaceous bands, a few fractures with Mn/limonite stain, occasional quartz stringers to 5mm in width, parallel to schistosity 43.84- 43.89: Quartz patch with 5% chlorite and limonite stain 43.96- 43.97: Quartz stringer at 80° to C.A., trace chlorite 44.00- 44.02: Quartz patch, light Fe stain 44.65- 44.68: Quartz stringer at 60° to C.A., with 3% chlorite, trace pyrrhotite 45.00- 45.03: Quartz stringer at 75° to C.A., with 5% chlorite 45.10- 45.18: Turned (mangled) core 45.18- 45.24: Quartz stringer, 5% chlorite, contact lost in broken core 45.60- 45.64: Gouge zone, grey clayey material recovered		43.00	44.00	DH 13 - 010
45.80	47.10	Quartzite	Light grey, massive, occasional hairline fracture with carbonate at 10° to C.A. 47.00- 47.12: Broad zone of quartz (stringer) at 65° to C.A., with about 20% chlorite, vuggy in part, minor Mn stain				
47.10	49.75	Quartzose Schist	Vague schistosity at approximately 80° to C.A. 47.32- 47.35: Quartz stringer at 80° to C.A., minor limonite				

From	To	Rock Name	Description	CA	From	To	Sample No.
			47.66- 47.69: Quartz stringer at 85° to C.A., with approximately 10% chlorite				
			48.68- 48.76: Quartz stringer at 75° to C.A., with approximately 10% chlorite, minor limonite				
49.75	50.87	Quartzite	Light grey, massive, hairline fracture at 25° to C.A., also Mn stained fractures at 25° to C.A.				
			50.30 : Small vug with traces pyrite/ chalcopyrite				
50.87	54.76	Quartzose Schist	Medium grey, schistosity moderately well developed at approximately 80° to C.A. Occasional fractures filled with carbonate, and generally parallel to schistosity				
			52.00- 52.14: Quartz stringer at 50° to C.A., with approximately 15% chlorite				
			53.23- 53.28: Quartz stringer at 55° to C.A., with approximately 20% chlorite, traces limonite stain				
			53.30- 53.32: Quartz stringer at 65° to C.A., with approximately 15% chlorite, traces limonite				
			53.43- 53.48: Quartz stringer at 70° to C.A., with approximately 10% chlorite				
			54.24- 54.28: Quartz stringer at 75° to C.A., with approximately 20% chlorite				
54.76	55.95	Biotite Chlorite Schist	Medium green, well-developed schistosity at 60° to C.A.				
55.95	56.75	Quartzite	Hard and massive, occasional limonite staining and several carbonate filled fractures at 20° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
56.75	59.46	Quartzose Schist	<p>57.00- 57.14: Quartz stringer at 70° to C.A., with 5% chlorite. A number of fractures at 10° to C.A., with Mn stain</p> <p>57.34- 57.36: Quartz stringer at 80° to C.A.</p> <p>57.47- 57.48: Quartz lens, mildly rusted</p> <p>57.50- 57.53: Quartz stringer at 70° to C.A., with traces chlorite, minor limonite</p> <p>58.04- 58.06: Quartz stringer at 65° to C.A.</p> <p>58.34- 58.49: Quartz stringer with 7% chlorite</p> <p>58.73- 58.75: Quartz stringer at 60° to C.A., small flecks of blackish sulphide (sphalerite)? and associated Fe stain. Schist somewhat tuffaceous with small gritty fragments to 1 mm</p> <p>59.03- 59.13: Quartz rich section, as described above</p> <p>59.23- 59.30: Small section of biotite/chlorite schist with patches of Fe stained quartz</p>		59.00	59.46	DH 13 - 011
59.46	59.55	Breccia Vein	<p>Angular fragments of quartzose sediment in black fine-grained matrix</p> <p>Vein is coincident with schistosity in underlying sediment(65° to C.A.) and is probably related to greenstone unit immediately below. Matrix chloritic, may contain some tourmaline</p>		59.46	59.55	DH 13 - 012
59.55	59.81	Quartz Chlorite Schist	<p>Dark black-green, somewhat gritty, schist horizon. Iron stained hairline fracture at 15° to C.A. Contact schist on hanging wall of greenstone unit. Quite siliceous, despite dark coloration.</p>		59.55	59.81	DH 13 - 013
59.81	61.06	Greenstone	<p>Dark greenish-black greenstone sill(?), very hard. Chlorite and actinolite bearing, and relatively</p>		59.81	60.00	DH 13 - 014

From	To	Rock Name	Description	CA	From	To	Sample No.
			<p>fine-grained, somewhat schistose, best defined by sulphide layers which run at 45° to C.A., cross-cuts sedimentary fabric at shallow angles Abundant sulphide, estimate 5 to 10% average, reaching 50% in individual horizons, also appreciable calcite; dominantly pyrrhotite, with perhaps 1% chalcopyrite, minor pyrite Cross-cut by occasional carbonate-filled fractures (50° to C.A.) and late chlorite veinlets (90° to sulphide layering)</p> <p>60.90- 60.93: Quartz-sericite horizon within greenstone</p>		60.00	60.50	DH 13 - 015
					60.50	60.90	DH 13 - 016
					60.90	61.06	DH 13 - 017
61.06	64.40	Quartzite	<p>Light grey, massive, several chlorite-biotite seams at 70° to C.A.</p> <p>61.07- 61.30: 30% quartz as veins and patches with minor chlorite</p> <p>61.63- 61.79: Quartz stringer at 60° to C.A., 5% chlorite, minor limonite staining</p> <p>61.88- 61.91: Quartz stringer at 65° to C.A., as above</p> <p>62.44- 62.50: Quartz patch, minor chlorite</p> <p>62.82- 63.00: Quartz-rich section, heavy limonite stain</p> <p>63.00- 63.14: Numerous biotite/chlorite partings at 75° to C.A.</p> <p>63.14- 63.32: Heavy limonite stain</p> <p>63.43- 63.65: Fracture 15° to C.A., with heavy limonite stain</p> <p>63.96- 64.40: Numerous biotite/chlorite partings at 60° to C.A.</p>		61.06	62.00	DH 13 - 018

From	To	Rock Name	Description	CA	From	To	Sample No.
64.40	64.41	Mud Seam	Grey mud seam		64.40	65.78	DH 13 - 123
64.41	64.46	Breccia	Quartzite fragments to 5mm in a light greyish-yellow sandy matrix				
64.46	65.78	Badly Broken Core	Sand/core chips recovered, probably breccia as described above(64.46-64.70) 64.70- 65.78: Mainly quartzite chips, some biotite/chlorite schist chips, poor recovery				
65.78	66.40	Ground Core					
66.40	67.30	Biotite/ Chlorite Schist	Biotite/chlorite schist fragments only. Some sandy seams, poor recovery		66.40	67.30	DH 13 - 124
67.30	68.30	Ground Core	<u>N.B.</u> Drillers report rod drop of 2 feet				
68.30	68.46	Quartzite	Quartzite fragments and some coarse sand recovered		68.30	68.96	DH 13 - 125
68.46	68.55	Mud Seam	Light grey, very soft				
68.55	68.96	Quartzose Schist	Chips only recovered, some coarse sand, poor recovery				
68.96	69.20	Ground Core					
69.20	70.37	Quartzose Schist	Light grey, with a number of chloritic partings at 55° to C.A. 69.34- 69.42: Quartz stringer at 45° to C.A., with 3% chlorite mainly in fractures at right angles to quartz stringer				

From	To	Rock Name	Description	CA	From	To	Sample No.
70.37	76.20	Biotite Chlorite Schist	<p>69.60- 69.68: Quartz stringer at 70° to C.A., with 5% chlorite, also a number of hairline, carbonate filled fractures at 40° to C.A.</p> <p>69.71- 69.74: Quartz stringer at 60° to C.A., with 5% chlorite and a few hairline carbonate filled fractures at right angles to quartz vein</p> <p>69.76- 69.85: Quartz stringer at 60° to C.A., as above</p> <p>70.00- 70.24: Several carbonate filled fractures at 40° to C.A.</p> <p>Dark greenish-grey, well developed schistosity at 60° to C.A., numerous thin limonite stained bands. Occasional narrow quartz-rich bands</p> <p>70.96- 70.98: Mud seam, dark grey at 65° to C.A.</p> <p>71.75- 71.77: Quartz stringer at 75° to C.A., with 5% chlorite, and limonite stained.</p> <p>72.21- 72.41: Quartz rich section with 7-8% chlorite</p> <p>72.50- 72.81: A number of discontinuous quartz lenses at 55-65° to C.A. up to 1 cm in width</p> <p>74.60- 74.92: A number of creamy lath-like crystals(andalusite?)</p> <p>74.92- 75.18: Quartz stringer at 55° to C.A., with minor chlorite Contains 10% yellow unknown; minor limonite stain</p> <p>75.65- 75.68: Quartz stringer at 70° to C.A., with minor limonite stain</p> <p>75.86- 75.97: Quartz rich section, minor chlorite, light limonite stain</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
76.20	81.12	Quartzose Schist	Contact gradational, medium grey, with a number of dark micaceous partings at 70° - 75° to C.A., occasional limonite and Mn-stained fractures (70°-75° to C.A.) Occasional hairline carbonate filled fractures (55° to C.A.) 78.10- 78.13: Quartz stringer at 45° to C.A., heavy limonite stain and vuggy 78.48- 78.80: Mn stained fracture parallel to C.A. 79.99- 80.20: Quartz stringer at 60° to C.A., with 5% chlorite 80.07 : Trace pyrite in fracture at 70° to C.A. 80.54 : Trace pyrite as thin seams parallel to schistosity 80.46- 81.12: Biotite/chlorite rich section, well developed schistosity at 75° to C.A.		76.50	77.50	DH 13 - 019
81.12	84.11	Quartzite	Light grey, fine-grained, fairly massive. 81.12- 81.66: Highly fractured at 50° to C.A. Chlorite, minor limonite in fractures 81.40- 81.55: Estimated 1% pyrite in fracture with chlorite 82.02 : Trace pyrite in chlorite filled fracture 82.41- 82.42: Quartz stringer at 80° to C.A. 82.54- 82.88: Estimate 2% pyrite in chlorite filled fractures 82.89- 83.25: A number of thin biotite-chlorite schist bands 83.25- 83.28: Quartz stringer at 80° to C.A., with 3% chlorite, minor limonite 84.09 : Trace pyrite		80.00	81.00	DH 13 - 126
					81.00	82.00	DH 13 - 020
					82.00	83.00	DH 13 - 021
					83.00	84.00	DH 13 - 127

From	To	Rock Name	Description	CA	From	To	Sample No.
84.11	84.90	Quartzose Schist	Medium grey, schistosity poorly developed with occasional biotite/chlorite partings at 70° to C.A. Several limonite stained fractures at 30°-40° to C.A. 84.60- 84.69: 5mm chlorite seam at 20° to C.A. with heavy limonite stain 84.74- 84.84: Chlorite patch with perhaps 5% pyrite and dark weathered sulphide		84.00	85.00	DH 13 - 128
84.90	89.48	Quartzite	Light grey, massive. Contact gradational with above unit. Numerous chlorite filled fractures at 40° and 10° to C.A. Occasional fracture with Mn, limonite stain 84.55- 85.00: Core badly broken, abundant Mn/Fe stain Some thin chlorite filled fractures 86.00 : Open fracture at 40° to C.A. with Mn coated quartz crystals 86.55 : Narrow fracture at 15° to C.A. Mn coated quartz crystals 86.65- 87.00: Estimated 1% pyrite in chlorite-filled fractures 87.80- 87.87: Trace pyrite with chlorite filled fractures 86.00- 87.80: 2.54m of core!! 88.80- 88.86: Irregular quartz patch with 5% chlorite, trace pyrite 89.01- 89.03: Quartz stringer at 75° to C.A. 89.20- 89.22: Quartz stringer at 75° to C.A., trace limonite		85.00	85.50	DH 13 - 129
					85.50	86.50	DH 13 - 130
					86.50	87.50	DH 13 - 022
					87.50	88.50	DH 13 - 131
					88.50	89.50	DH 13 - 132
89.48	92.23	Chlorite Biotite Schist	Dark green-grey, well developed schistosity at 70° - 80° to C.A. Occasional narrow quartzite bands		89.50	90.50	DH 13 - 023

From	To	Rock Name	Description	CA	From	To	Sample No.
			89.82 : Fracture 45° to C.A., heavy limonite stain		90.50	91.50	DH 13 - 133
			89.82- 90.02: Quartz stringer containing 15% tourmaline(?) and 1% pyrite. Tourmaline as stringers at 40° to C.A., minor chlorite/limonite		91.50	92.50	DH 13 - 134
			<u>N.B.</u> Upper contact is limonite stained fracture/ minor fault(?)				
			90.10- 90.17: Quartz stringer at 80° to C.A., minor limonite stain				
			90.57- 90.61: Quartz stringer at 65° to C.A., with 5% chlorite, minor limonite				
			91.17- 91.98: Numerous quartz lenses/patches, occasional light limonite stain				
92.23	92.82	Quartzite	Medium grained, light grey, fairly massive, trace disseminated pyrite, minor limonite		92.50	93.50	DH 13 - 135
92.82	94.69	Biotite Chlorite Schist	Schistosity irregular, 65-70° on average. A few thin bands of quartzite				
			93.15- 93.26: Quartz stringer at 75° to C.A., minor pyrite				
			93.26- 93.41: Dark tourmaline(?) rich section with 25% quartz fragments(?)				
			94.07- 94.52: Occasional quartz lenses to 1 cm in width		93.50	94.00	DH 13 - 136
			Several chlorite filled fractures, trace pyrite				
94.69	96.90	Quartzose Schist	Several biotite chlorite schist bands generally less than 2 cm		94.00	95.00	DH 13 - 137
			Several quartz lenses and patches, often with minor chlorite, microfaulting relatively common.		95.00	96.00	DH 13 - 024
					96.00	97.00	DH 13 - 138
			95.42 : Trace pyrrhotite in chlorite filled fracture				
			95.78- 95.85: Vug filled with quartz crystals, minor chlorite				

From	To	Rock Name	Description	CA	From	To	Sample No.
96.90	98.40	Biotite Chlorite Schist	<p>95.91- 95.95: Quartz stringer at 80° to C.A., with minor chlorite</p> <p>96.32- 96.53: Abundant quartz as stringers/ lenses</p> <p>96.50- 96.60: Dark micaceous band</p> <p>Typical dark greyish-green schistose unit with occasional white quartz lens or stringer parallel to schistosity. Schistosity approximately 65° to C.A. Sigmoidal folding of quartz stringers in spots</p> <p>98.17- 98.42: Unit disrupted by several quartz ladder veins, quartz veins approximately parallel to schistosity, and cross-cut by abundant, thin chlorite/pyrite filled fractures</p> <p>Visible pyrite throughout the section (approximately 1%)</p>				
98.40	101.52	Quartz Schist	<p>Light grey to greyish-green, interbedded with darker micaceous bands in places. Schistosity still well developed at about 75° to C.A.</p> <p>98.57- 98.63: Several limonite stained bands parallel to schistosity</p> <p>98.80- 98.90: A number of thin carbonate fractures at 05° to 25° to C.A. (cross-cut schistosity)</p> <p>99.13- 99.20: Quartz band, with much included sediment cross-cut by thin (up to 1mm) dark green chlorite/pyrite filled fractures which are approximately parallel to C.A.</p> <p>99.29- 99.31: 2cm wide quartz band parallel to schistosity bordered by, and containing a few small wisps of dark green chlorite, traces pyrite</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
			100.48-101.52: Section becomes increasingly micaceous with numerous dark bands of chloritic sediments. Quartz relatively abundant as small patches and bands, usually containing cross-fractures and wispy pieces of dark chlorite (with pyrite). Last 7cm contain about 50% quartz as discontinuous lenses parallel to schistosity.				
101.52	103.00	Breccia Fault Gouge	Includes quartz breccia and unconsolidated dark grey micaceous material		101.00 102.00	102.00 103.00	DH 13 - 139 DH 13 - 140
			101.52-101.71: Soft, dark grey chlorite schist = MUD SEAM				
			101.71-101.99: Quartz breccia angular to sub-rounded quartz fragments in soft dark grey rock flour matrix. Vuggy in some sections.				
			101.99-103.00: Dark grey chloritic schist, 2 cm quartz band at 102.40. First portion of section soft and unconsolidated as above. Last 25cm hard chlorite schist, with increased quartz content, some carbonate veining.				
103.00	103.21	Biotite Chlorite Schist	Small section of biotite/chlorite schist, quartz band parallel to schistosity, which is at 65° to C.A. Cross-fractures and lenses of soft bluish-green TALC.		103.00 104.00	104.00 105.00	DH 13 - 025 DH 13 - 141
103.21	104.91	Quartz Schist	Grey, moderately well foliated quartz schist, grading into massive quartzite in places. Entire section well fractured and broken, abundant hairline quartz/carbonate fracture veinlets with Fe/Mn stain. Chlorite schist increasingly abundant in last 40cm of section.				

From	To	Rock Name	Description	CA	From	To	Sample No.
104.91	105.50	Biotite Chlorite Schist	<p>104.00-104.15: Massive grey quartzite cut by thin, dark green chlorite fractures at 20° to C.A.</p> <p>104.15-104.37: Quartz vein parallel to schistosity(?), lightly Fe stained, with 10% wispy green chlorite.</p> <p>Dark greyish-green schist unit, gradational into overlying quartz schist. Schistosity at approximately 80° to C.A. Cut off abruptly at 105.50 by 10 cm wide quartz vein (55° to C.A.)</p>				
105.50	111.50	Quartz Schist	<p>Typical light grey, and uniform in appearance. Bands of biotite/chlorite schist become more common towards end of section. Schistosity approximately 80° to C.A.</p> <p>106.25-106.60: A number of quartz bands, generally parallel to sub-parallel to schistosity.</p> <p>107.18-107.66: Soft micaceous section abundant quartz veining, sub-parallel to schistosity. Cross-cutting 1-2mm carbonate veinlets at 45° to C.A.</p> <p>Veinlets/lenses of soft bluish-green talc.</p> <p>107.74-108.88: Generally micaceous section with dark greyish green biotite/chlorite schist prevalent. Quartz bands/veinlets generally sub-parallel to schistosity and abundant (10% in this section).</p> <p>108.88-109.10: Hairline to several mm quartz/carbonate veinlets cutting grey quartzose sections at 10-50° to C.A.</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
111.50	114.62	Chlorite Tuff	<p><u>N.B.</u> BOX 25 ends at 109.10: BOXES 26 and 27 were partially spilled. 26 looks okay, but 27 is missing considerable core.</p> <p>109.10-111.50: Dark grey-green schists inter-bedded quartz schist, and darker colored softer biotite/chlorite schists. Schistosity 80-85° to core angle.</p> <p>Thin gashes/veinlets of quartz/carbonate moderately abundant. Various orientations, but late and cross-cutting schistosity.</p> <p>Fine-grained, dark green schistose rock with considerable chlorite content. Unit is generally quite competent. Schistosity 75°-90° to C.A., cut throughout section by quartz/carbonate veinlets, quartz ladder veins and pyrite/sphalerite/carbonate veinlets to be noted separately.</p> <p><u>N.B.</u> Pyrrhotite/chalcopyrite present as well</p> <p>In some respects, resembles <u>greenstone</u>, but quite a different unit in fact.</p> <p>111.60-111.75: Carbonate veinlets forming ladder vein system at 10° and 15° to C.A. 1 cm wide sphalerite (deep brownish-red), pyrite carbonate vein at 70° to C.A. + chalcopyrite.</p> <p>111.80 : Pyrite/sphalerite/quartz vein (several mm in width) at 35° to C.A.</p> <p>112.30-112.55: Abundant stretched fragments(?) very small (less than 1mm), cream colored. Unit appears more tuffaceous.</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
114.62	124.72	Quartz Schist	<p>112.60 : Carbonate/sphalerite veinlet at 40° to C.A.(several mm in width)</p> <p>113.35-113.55: Carbonate ladder vein system at 15° and 30° to C.A.</p> <p>113.20-113.65: Quartz ladder vein at 0° and 90° to C.A., minor pyrite/sphalerite.</p> <p>114.00-114.10: Quartz vein roughly sub-parallel to schistosity.</p> <p>114.10-114.53: Soft, dark grey chlorite schist.</p> <p>114.53-114.62: Chlorite tuff with minor pyrite/chalcopyrite/red sphalerite paralleling schistosity.</p> <p>Rather extensive unit of quartz schist grading into massive quartzite in sections, but logged as one unit nevertheless.</p> <p>114.76-114.81: Quartz veinlets(less than 1 cm) at 30° to C.A.</p> <p>115.00-116.70: Amount of shaly sediment increases, much quartz as veinlets generally sub-parallel to schistosity. Core well broken in this section. Schistosity at about 75° to C.A.</p> <p>116.70-117.25: Grey, gritty quartzite appears almost massive with schistosity at 85° to C.A. Quartz carbonate veinlets cross-cut schistosity in a number of orientations.</p> <p>117.25 : Broken core.</p> <p>117.25-117.43: Gashes/fissure veinlets of bluish talc in chlorite schist section.</p> <p>117.70-117.90: Several narrow(less than 1cm) and irregular quartz breccia veinlets at 30° to C.A.</p> <p>118.23-118.43: Quartz gash veinlets(less than 2mm) at 10° to C.A.</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
			118.79-119.87: Core moderately broken throughout the section with quartz patches common. Abundant soft, white carbonate coating thin(1mm) fracture veinlets.				
			119.87-122.00: MASSIVE GREY QUARTZITE with the occasional black shaly parting. Carbonate(and chlorite) filled thin fracture veinlets present throughout section, near parallel to C.A.				
			121.00-121.40: Hairline chlorite-filled fractures in quartzite at approximately 25° to C.A.				
			121.50-121.77: Core broken, many carbonate coated fractures.				
			122.00-124.73: Quartz schist with fairly abundant interlamines of black biotite/chlorite schist.				
			122.00-122.90: Core moderately broken, several soft schist sections, especially 122.02-122.13.				
			123.00 : Schistosity at 70° to C.A.				
124.72	131.70	Quartzite or Quartz Breccia	Host originally a grey quartz schist/quartzite. Has been intensely shattered/fractured. Excellent brecciation textures in many sections. Very little matrix, most is yellowish clay and rock flour with little obvious alteration. Some green chlorite along tear fracture with Cu staining. Largely unconsolidated, but excellent core recovery nevertheless.				
			124.84-124.30: Soft grey schist/mud seam.		123.50	124.84	DH 13 - 142
			125.60-126.23: Probably a schist section - dark brown, broken quartzite mixed with dark green chloritic sediment quartz veining at 50° to C.A.		124.84	125.60	DH 13 - 026
					125.60	126.23	DH 13 - 027
					126.23	127.00	DH 13 - 028

From	To	Rock Name	Description	CA	From	To	Sample No.
			127.00 : Intensely fractured quartzite, dominant fractures at 35° to C.A.				
			127.30-128.20: Badly broken core, quartzite breccia with traces SECONDARY Cu STAINING		127.00	127.50	DH 13 - 029
			128.40 : Thin chlorite-filled tear gashes at 80° to C.A.(dominant fracture direction)		127.50	128.50	DH 13 - 030
			129.20-131.60: Section of massive, but intensely fractured quartzite, included as part of breccia unit. Numerous thin carbonate/Mn filled fractures, where abundant core tends to be broken.		128.50	129.50	DH 13 - 031
					129.50	130.00	DH 13 - 032
					130.00	131.00	DH 13 - 033
					131.00	131.60	DH 13 - 034
					131.60	132.10	DH 13 - 035
					132.10	132.70	DH 13 - 036
			Cu oxides present in small amounts, true breccia sections rare.				
			129.30 : Small band of chlorite schist.				
			130.60-130.80: Intensely broken core.				
			131.40-131.60: Broken core, much carbonate on fractures.				
131.70	132.10	Chlorite Tuff?	Dark green, chlorite rich rock similar to section from 111.50 to 114.62. Small amount of red sphalerite/chalcopyrite in indistinct shears near parallel to C.A.(remobilized probably). Schistosity irregular, approximately 70° to C.A.				
132.10	135.65	Breccia	132.10-132.30: Breccia 132.30-132.60: Mud seam/brecciated quartzite 132.60-132.70: Quartzite breccia with much quartz flooding. Rock flour/white quartz in matrix. Quartzite fragments, probably chloritic tuff fragments as well (quartz vein at 35° to C.A.) Quartzite breccia- intensely fractured, good breccia throughout.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			Bluish-grey quartzite fragments in yellowish rock flour matrix (75% fragments/25% matrix). Not much apparent alteration. Abundant white carbonate veining in places, 0-10° to C.A.		132.70	133.50	DH 13 - 037
			133.33-133.44: MUD SEAM				
			134.35 : BROKEN CORE				
			134.40-135.65: Dark grey quartzite with a few bands of soft biotite/chlorite schist.		133.50	134.50	DH 13 - 038
			Brecciation less intense, generally confined to veinlet systems near parallel to C.A.		134.50	135.00	DH 13 - 039
					135.00	136.00	DH 13 - 040
135.65	137.70	Biotite Chlorite Schist	Biotite/chlorite schist, black in color and quite hard. Possibly altered (tourmaline?). Fractured, but not truly brecciated. Thin quartz/carbonate/chlorite veins in a variety of orientations.		136.00	137.00	DH 13 - 041
			136.42-136.57: Similar to 125.60-126.23. Fractured quartzite with what appear to be brownish quartzite fragments (SnO ₂ ??). Generally fine-grained with pyrite, chalcopyrite, galena and red sphalerite. Hairline chlorite fracture at 30° to C.A.				
			136.57-137.20: Dark grey section, mainly quartzite with some schistose material. Fairly well fractured.				
			137.00 : Carbonate veinlet at 60° to C.A.		137.00	138.00	DH 13 - 042
			136.70 : Chlorite veinlets at 45° to C.A.				
			137.20-137.70: Dark grey section, as above, but more intensely fractured. Small amount of Fe sulphide.				

From	To	Rock Name	Description	CA	From	To	Sample No.
137.70	138.00	Quartzite Breccia	Quartzite breccia, dark grey with white quartzite fragments in dark greyish-green matrix.				
138.00	139.15	Biotite Chlorite Schist	This section not appreciably brecciated. Schistosity at 45° to C.A., but variable. Some quartzose bands in this section. 138.52 : Chlorite band at 90° to C.A. Abundant pink-brown cassiterite.		138.00	139.00	DH 13 - 043
139.15	140.90	Quartzite	Medium grey quartzite horizon, still schistose with fairly high chlorite content. Chlorite/pyrite/carbonate filled fracture veinlets throughout section (generally 20-30° to C.A., but near parallel as well). (Increase in intensity towards lower part of section). 140.50-140.90: 1 cm wide breccia veinlets near parallel to C.A. Much coarse-grained carbonate.		139.00 140.00	140.00 141.00	DH 13 - 044 DH 13 - 045
140.90	143.40	Quartz Schist	Fine-grained, very dark grey, competent quartz schist. Very hard, a good quartzite in some sections, patchy quartz and chlorite. Entire section may be mildly altered. 141.10 : Hairline carbonate/chlorite veinlets at 15 and 35° to C.A. 143.08-143.18: Quartz/biotite schist. Chlorite fracture veinlets moderately abundant throughout section. 142.50-143.00: Core somewhat broken, with a small 1cm wide mud seam at 142.50. Quartz schist may be getting slightly lighter colored down hole.		141.00 142.00	142.00 143.00	DH 13 - 046 DH 13 - 047
143.40	144.30	Quartzite	Fairly massive, grades into QUARTZ SCHIST over last 28 cm.		143.00	144.00	DH 13 - 048

From	To	Rock Name	Description	CA	From	To	Sample No.
			143.40-144.00: Abundant dark green chlorite veins, generally less than 1cm in width, containing blebs of red sphalerite and pyrite 30-50° to C.A., also near parallel to C.A.				
			144.30 : 4 cm wide quartz band with minor chlorite.				
144.30	147.08	Quartz Schist	Typical medium grey quartz schist, fairly high mica content. First 20 cm of this section is soft black chlorite schist with abundant quartz as bands parallel to schistosity.		144.00	145.00	DH 13 - 049
			144.80 : 5 cm quartz band parallel to schistosity. Schistosity near normal to C.A., but variable.		145.00	146.00	DH 13 - 143
			145.26-145.28: Quartz vein at 70° to C.A., small amount chlorite.				
			146.00 : Schistosity 60° to C.A.				
			147.05-147.08: Quartz vein with minor chlorite at 55° to C.A.				
147.08	147.78	Biotite Chlorite Schist	Dark greenish-grey and soft. Abundant carbonate pods and veinlets. Veinlets at 40° to C.A.				
147.78	148.70	Quartz Eye Crystal Tuff	Medium grey, schistose, with dark quartz eyes to 2x3mm in size. Cut throughout by thin chlorite/carbonate filled veinlets at 25° and 55° to C.A., also parallel to C.A. Veinlets up to 7mm in width at 60° to C.A. carrying chlorite/carbonate/coarse pyrite and dark red-brown sphalerite(slight possibility of SnO ₂) up to 6mm in diameter.				
148.70	149.20	Quartz (Mica) Schist	Abrupt contact with above. Grey quartz/mica schist with well developed fabric at 60° to C.A. First 10 cm carry coarse red sphalerite in carbonate veinlets as above.				

From	To	Rock Name	Description	CA	From	To	Sample No.
149.20	149.46	Quartzite	Grey quartzite cut by a number of small(1-3mm) chlorite and sphalerite(?) bearing veinlets at 30° and normal to C.A.				
149.46	149.93	Quartz Schist	Numerous thin, shaly partings. 149.55-149.67: Broken core 149.90-149.93: Quartz band at 50° to C.A., with minor chlorite.				
149.93	150.60	Biotite Chlorite Schist	Dark greenish-black, and schistose, with some quartzose horizons. Schistosity generally 50° to C.A. 150.30-150.39: Pyrite and reddish-brown sphalerite in chlorite veinlets cross-cutting schistosity. 150.45-150.60: Broken black schist, trace Cu stain.				
150.60	151.90	Quartz Schist	150.60-151.00: Quartzite, dark grey, massive, cut by numerous thin(hairline to several mm) carbonate/limonite fractures at 25° to C.A., containing small amounts malachite. A few cross-cutting chlorite-filled fractures as well. Becomes more micaceous down section. Fracturing/Cu staining throughout section.				
151.90	152.77	Biotite Chlorite Schist	Dark grey-green biotite/chlorite schist with some quartzose horizons. 151.80-152.10: Particularly impressive fractures to 4mm at 35 and 20° to C.A. (cross-cutting), with chlorite/pyrite/galena(minor), and limonite fracturing continuous from above section.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			152.22-152.31: Cross-cutting chlorite-filled fractures, plus sulphide, as above set.				
			152.45-152.54: Small section of black chlorite schist. Intensely fractured (almost brecciated). Fracture infilled with white carbonate.				
			152.54-152.77: Biotite/chlorite schist, Cu stained, limonite coated fractures still abundant.				
152.77	153.40	Quartzite	Massive, grey quartzite. Limonite and chlorite-filled fractures still present.				
			152.84-153.07: Chlorite breccia vein carrying accessory pyrite less than 1 cm in width.				
			153.00-153.40: Highly fractured quartzite with micaceous partings and much quartz. INCIPIENT BRECCIATION, thin cross-cutting carbonate-filled fractures at 05° and 25° to C.A.				
153.40	153.70	Quartz Schist	Dark grey, cut by thin hairline carbonate-filled fractures throughout.				
153.70	153.90	Biotite Chlorite Schist	Soft, dark greenish-black chlorite schist. Core completely broken, brecciated in part.				
153.90	155.11	Greenstone	Dark greenish-grey, fine-grained rock with some quartzose sections. Greenstone(?) very hard, trace disseminated pyrite.				
			154.22-154.43: Quartz rich section bounded on uphole side by 2-3mm sulphide (pyrite) filled fracture trending 10° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
155.11	157.38	Quartzose Tuff	<p>154.66-154.71: Quartz band trends 45° to C.A. 154.86-154.95: Quartz rich section, trend 45° to C.A.</p> <p>Sharp gradation from upper unit into a rather siliceous tuff horizon. No obvious fragments, but mottled appearance and tuffaceous "look". Well foliated at 30-60° to C.A., quite variable. Still quite chloritic in some sections. Rather abundant carbonate veining.</p> <p>155.67 : Begin picking up sulphide in carbonate veinlets. Cross-cutting normal, and 55-60° to C.A. Hairline to 3 or 4mm in width. Dark brown horizons in many sections, some bounded by carbonate veinlets. Fine-grained, biotite, probably into <u>HORNFELS</u> here.</p>				
157.38	158.20	Quartzose Schist	<p>Grey quartzose schist. Flooded with quartz and more schistose beyond 157.72(carbonate veining).</p> <p>157.44-157.46: Quartz band at 55° to C.A., cross-cutting chloritic fracture normal to C.A.</p> <p>158.20-158.30: Quartz band with minor chlorite/sphalerite bounded on uphole side by limonite-stained fracture.</p>		156.70 157.70 158.50	157.70 158.50 159.50	DH 13 - 144 DH 13 - 050 DH 13 - 145
158.30	158.55	Chlorite Tuff(?)	Dark greenish-brown chloritic tuff, coarse SnO ₂ aggregates(?). Purplish brown. Downhole half of section quartz-rich and gradational into next unit.				
158.55	162.50	Quartzite	Rather wide and varied zone, but very distinctive grey, massive quartzite in upper portions, grading into biotite/chlorite schist and quartzose schist. A lot of microfaulting and veinlet brecciation.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			Abundant quartz as irregular veins, bands and lenses sub-parallel to foliation. Carbonate fractures very abundant, carry sphalerite/galena and pyrite in most instances. GIVES ENTIRE SECTION DISTINCTIVE FRACTURED APPEARANCE. Entire section may contain 1-2% sulphide, mainly reddish sphalerite 80° and 40° to C.A., common for carbonate fractures. Carbonate fractures commonly soft/decomposed. Minor quartz/chlorite veining as well. Essentially a network of late carbonate/sulphide veinlets grading into veinlet breccias in some sections. Postdate quartz bands in sediment.				
			159.50 : Green fluorite(?), with calcite in fracture. Some green chlorite veining in this section as well.		161.50	162.50	DH 13 - 146
162.50	164.00	Biotite Chlorite Schist	162.50-162.85: Dark greenish-grey biotite/chlorite schist. Schistosity 70° to C.A.				
			162.50-162.54: Quartz vein(minor chlorite) at 60° to C.A., sub-parallel to schistosity.		162.50	163.50	DH 13 - 051
			162.85-163.10: Biotite/chlorite schist, somewhat disrupted, brown in color, possibly a biotite hornfels.		163.50	164.50	DH 13 - 147
			163.10-163.30: Moderately broken core, minor malachite/limonite coating fracture systems.				
			163.10-164.00: Dark grey biotite/chlorite schist. Limonite and Cu stained fractures throughout at 40°-50° to C.A.				
			163.60-163.70: Broken core, quartz and limonite-filled fractures to 2mm in depth				
			163.81-163.90: Several sulphide veinlets at 45° to C.A., also carbonate veinlet. Sphalerite in cores of veinlets with rims of pyrite, occasionally galena.				

From	To	Rock Name	Description	CA	From	To	Sample No.
164.50	194.50	Banded Biotite & Chlorite Schist (Hornfels?)	<p>164.00 : Limonite coated fracture at 60° to C.A.</p> <p>Very mafic in some sections. Banded brownish schist, typical of biotite hornfels. Schistosity irregular, approximately 30°-90° to C.A.</p> <p>164.80-164.82: Quartz band at 70° to C.A., cross-cut by chlorite veinlets at 15° to C.A.</p> <p>Dark greenish-grey with abundant dark banding, probably hornfelsed Yukon schist and very hard, despite chlorite content. Dark brownish-black bands are probably biotite. Uniform in appearance.</p> <p><u>N.B.</u> HQ ends at 166.4m, NO begins.</p> <p>166.47 : 2mm carbonate vein at 30° to C.A. banding at 70° to C.A.</p> <p>166.94 : 2mm carbonate vein with reddish sphalerite on one margin at 35° to C.A.</p> <p>167.24 : 10-12mm carbonate vein at 60° to C.A.</p> <p>167.61-167.91: Soft, fine-grained, and dark green section chlorite-rich CHLORITE SCHIST.</p> <p>168.00-168.94: Traces light brown sphalerite, usually associated with wispy carbonate veinlets, also disseminated.</p> <p>168.86-168.94: 4mm carbonate veinlet at 25° to C.A., small amounts brown sphalerite on margins.</p> <p>170.88 : Hairline carbonate fracture at 35° to C.A.</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
			171.19 : Carbonate veinlet at 65° to C.A.				
			172.00 : Banding/schistosity at 75° to C.A.				
			172.20 : 1 cm carbonate vein at 55° to C.A.				
			172.33 : 1.5 cm carbonate vein at approximately 20° to C.A.				
			172.55 : 2 cm carbonate vein at approximately 60° to C.A.				
			SPORADIC WHITE CARBONATE VEINING THROUGHOUT THIS SECTION TO 176m.				
			175.00 : Banding/quartz veining at 55° to C.A.				
			<u>N.B.</u> Carbonate veining late, as it cross-cuts quartz bands in schist, which are generally sub-parallel to schistosity.				
			176.40-176.97: Fine-grained, dark green chlorite rich section CHLORITE SCHIST. Thin carbonate veinlets in this section at 55° to C.A., some carrying pyrite/red sphalerite.				
			177.90-177.98: 1 cm wide quartz vein at 35° to C.A., with approximately 50% pyrrhotite, minor pyrite.				
			178.43 : Carbonate vein several mm in width at 40° to C.A.				
			AGAIN, SMALL AMOUNTS DISSEMINATED LIGHT BROWN SPHALERITE VISIBLE IN THIS SECTION, MOST ASSOCIATED WITH CARBONATE VEINING.				
			180.10-180.70: Thin carbonate-filled fractures sub-parallel to C.A.				
			182.00 : Banding/schistosity at 60° to C.A.				
			185.00 : Schistosity 65° to C.A., 1 mm carbonate veinlet with trace sphalerite at 10° to C.A.				
			185.80-185.90: 3mm yellowish quartz/epidote (?) veinlet at 25° to C.A.				
			186.40 : 2cm quartz band sub-parallel to schistosity at 70° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			188.78 : Hairline carbonate veinlet at 55° to C.A.				
			189.08-189.32: Large irregular carbonate veinlet up to 3 cm in width at 20° to C.A. Banding at 70° to C.A.				
			190.22-190.32: Quartz band with minor chlorite.				
			191.08-191.12: Quartz band sub-parallel to schistosity at 60° to C.A.				
			191.80-191.83: Quartz band - minor chlorite. Some pyrite/pyrrhotite on down-hole side of band.				
			192.16-192.29: Several carbonate veinlets at 30° to C.A. Abundant coarse red sphalerite/chalcopyrite over several cm between veinlets.		192.00	192.50	DH 13 - 148
			193.43-193.50: Quartz band with abundant bluish-green chlorite sub-parallel to banding at 65° to C.A.				
			194.30-194.40: Core mildly broken- carbonate veining at 75° to C.A. cross-cuts banding, trace sphalerite.				
194.50	196.87	Biotite Chlorite Schist	Resembles biotite/chlorite schists from further up hole. Black to green-black and quite schistose. Quartz banding parallel to schistosity common, minor carbonate and chlorite veining.				
			194.71 : 2mm carbonate veinlet at 45° to C.A., schistosity approximately 70° to C.A.				
			(PYRITE AND PYRRHOTITE COMMON ACCESSORIES IN THIS SECTION AS DISSEMINATIONS, AND REMOBILIZED IN SMALL IRREGULAR QUARTZ VEINLETS, ALSO IN STREAKS, PARALLEL TO SCHISTOSITY).				
			196.36-196.43: Quartz band sub-parallel to schistosity at 70°-80° to C.A. Abundant bluish-green chlorite and pyrrhotite.				

From	To	Rock Name	Description	CA	From	To	Sample No.
196.87	210.23	"Spotted Schist" Biotite Andalusite	<p>Small amounts pyrite and dark brown cassiterite(?). 196.43-196.53: 2-3mm carbonate/chlorite/pyrrhotite veinlet at 30° to C.A.</p> <p>Interbedded bluish quartz/chlorite bands, and brownish/black pelitic bands. Pelitic bands contain abundant black andalusite as spots to 2 x 4 mm (rectangular) well into hornfels/thermal aureole. Minor pyrrhotite/chlorite in veinlets.</p> <p>198.00-198.50: A number of small bluish crystals reminiscent of cordierite/corundum</p> <p>198.15 : Chlorite/quartz veinlets at 25° to C.A.</p> <p>199.50 : Originally a quartz-eye tuff quartz eyes here.</p> <p>200.00 : Banding at 75° to C.A.</p> <p>200.55 : Small blebs disseminated pyrite, also as smears parallel to banding, fairly common throughout entire spotted schist sequence.</p> <p>200.74 : 1cm wide quartz veinlet with minor pyrite at 70° to C.A.</p> <p>201.65 : Hairline fracture filled with soft bluish-green unknown at 35° to C.A. Andalusite exhibits bluish-grey cores, black rims in this vicinity.</p> <p>202.20-203.10: 1 metre; andalusite porphyroblasts are light green in color with dark bluish-grey cores. <u>N.B.</u> Individual porphyroblasts now up to 7 or 8 mm square on occasion.</p> <p>203.15-203.60: Several percent disseminated to streaky pyrrhotite.</p> <p>204.00-204.10: Soft bluish-green mineral seen earlier in veinlets, and as rims on andalusite, fairly abundant</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
			in this section; recurs downhole in numerous places.				
			206.08 : small(less than 1mm) white porphyroblasts begin to appear in core.				
			1 cm mud seam at 85° to C.A.				
			207.10 : 1 cm quartz/chloritic/+ pyrite veinlet at 45° to C.A.				
			208.43 : Chlorite/carbonate veinlet(3mm wide) at 50° to C.A.				
			208.43-210.23: Black pelitic section(andalusite still present), with several % coarse pyrrhotite.				
			Lenses and layers, occasionally of light grey, slightly more quartzose material.				
210.23	210.87	Biotite Chlorite Schist	Green-grey, fairly soft, but with some quartzose bands. Schistosity at 85° to 90° to C.A.				
			210.66 : 2mm quartz/carbonate veinlet at 50° to C.A.				
210.87	211.70	Biotite Andalusite Schist	Black pelitic schist similar to 208.43-210.28. Schistosity at 75° to C.A.				
			211.27-211.30: Rounded fragment(?) of more quartzose material.				
			211.56-211.70: 2-3mm carbonate veinlet at 5° to C.A.				
211.70	214.20	Biotite Chlorite Schist	Black pelitic schist, very similar to preceding section. Interlaminated with slightly more quartzose horizons on very fine scale(mm). Abundant pyrrhotite (1%) as disseminations and streaks parallel to schistosity. Andalusite porphyroblasts rare to absent. Becomes more quartzose down section, with odd quartz band parallel to schistosity. Schistosity approximately 5° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
214.20	215.57	Quartz Schist	Grey quartz schist, with some darker pelitic sections. 214.30-214.46: 2-3mm quartz/carbonate veinlet at 10° to C.A. 214.54-214.55: Quartz band sub-parallel to schistosity at 80° to C.A. 215.50 : Hairline quartz carbonate fractures at 20° to C.A.				
215.57	215.73	Quartz Breccia	Angular fragments of quartz schist in vuggy quartz veinlet matrix.				
215.73	215.90	Quartz Schist	As above.				
215.90	216.21	Quartz Breccia	Schist more pelitic here, and well-fractured. Quartz flooding, developing into quartz breccia veins in sections.				
216.21	216.76	Quartz Schist	Nondescript quartz schist, pelitic in part. 216.59 : 5 cm shear, breccia vein at 50° to C.A.				
216.76	217.46	Biotite Chlorite Schist	Black pelitic schist with quartz/chlorite bands sub-parallel to foliation in sections. Abundant small (less than 1mm) acicular brown unknowns.				
217.46	217.80	Quartz Schist	217.56-217.58: Quartz band sub-parallel to schistosity at 80° to C.A. 217.64-217.80: Quartz rich section crosscut by hairline chlorite-filled fractures at 55° to C.A. Trace pyrite				
217.80	218.40	Quartz-Eye Crystal Tuff	Mottled greenish-grey quartzose sediment, probably tuffaceous(?). 2 mm wide carbonate veinlets in first 10cm at about 15° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
218.40	234.52	Quartz Schist	<p>Minor coarse(to several mm) pyrite in crystal aggregates.</p> <p>Non-descript grey quartz schist with considerable pelitic component. Schistosity at about 75° to C.A.</p> <p>218.67-219.14: Quartz-rich section. Hairline carbonate veinlets at 10° to C.A. Hairline chlorite veinlets at 50° to C.A.</p> <p>Still quartz schist, dark grey, becoming very pelitic in some sections, but logged as one unit.</p> <p>220.44-220.59: 1mm quartz/chlorite veinlets with accessory red sphalerite at 0.5° to C.A.</p> <p>220.74-220.82: Quartz bands roughly parallel to schistosity at 70° to C.A. Cross-cut by carbonate veinlets with trace chlorite and minor red sphalerite at near parallel to C.A.</p> <p>221.00 : 7mm of mildly broken core centered on 221.00 with carbonate veinlets.</p> <p>221.17-221.31: Quartz vein at approximately 45° to C.A. Small amount of coarse pyrite, pyrrhotite. Cross-cut by hairline chlorite/carbonate/pyrite veinlets at 20° to C.A.</p> <p>221.65-221.70: Quartz vein at about 50° to C.A., minor chlorite.</p> <p>221.90-222.35: Pelitic section/chlorite schist.</p> <p>222.82 : Carbonate veinlet parallel to schistosity at 80° to C.A.</p> <p>223.06-223.14: Microfaulting, carbonate veinlets at 20° to C.A.</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
			223.35-223.50: 1-2mm wide quartz/carbonate/ chlorite/pyrite veinlet at 15° to C.A.				
			223.50-223.60: Pelitic schist core mildly broken, some quartz/carbonate veining.				
			223.85-223.98: Quartz vein with minor chlorite at near normal to C.A.				
			224.24-224.44: Quartz-rich section, late cross- cutting carbonate veinlets at 40° to C.A.				
			225.00 : Schistosity at 90° to C.A.				
			226.00-226.81: Quartz-rich section, late cross- cutting carbonate veinlets at 40° to C.A.				
			227.06-227.10: Soft, shaly band, schistosity at 80° to C.A.				
			227.20-227.90: Andalusite ghosts.				
			227.90-228.00: Quartz-rich section, some minor chlorite, cross-cutting carbonate in narrow fractures at 15° to C.A.				
			228.10-228.20: Schistosity highly contorted.				
			229.60-229.83: Quartz stringer at 60° to C.A., contains several cross-cutting carbonate-filled fractures.				
			229.95-230.64: Quartz-rich section, contains abundant chlorite, traces pyrrhotite, late cross-cutting carbonate-filled fractures at 20-30° to C.A.				
			230.94-230.96: Quartz stringer at 60° to C.A.				
			231.00-231.60: Andalusite ghosts.				
			231.80-232.02: Quartz-rich section, contains less than 1% disseminated pyrrhotite.				
			233.32-233.90: Fractures to 2mm filled with carbonate as cross-cutting veinlets at 10-15° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
234.52	238.75	Biotite Andalusite Schist	Dark grey to black, well developed schistosity at 75-80° to C.A. Several cross-cutting quartz carbonate-filled fractures at 20° to C.A. Occasional quartz sweats. 234.61-234.69: Quartz stringer at 85° to C.A. contains 10% chlorite. 236.60-236.72: Quartz-rich section, contains 5% chlorite, several cross-cutting carbonate-filled fractures at 30° to C.A. Traces pyrrhotite, pyrite. 237.72-238.22: Quartz-rich section, contains 5% chlorite, traces carbonate. 238.50-238.75: Core badly broken up.		238.00	239.00	DH 13 - 149
238.75	242.55	Quartz Schist	Medium grey, fine-grained, contains numerous shaley partings at 75-80° to C.A. Rare traces disseminated pyrite, a few chlorite-filled fractures. 239.00-239.40: Core badly broken. 239.40-239.56: Quartz stringer, contains 10% chlorite, slightly vuggy. 239.90-240.10: Quartz stringer at 40° to C.A., cross-cutting chlorite-filled fractures at 40° to C.A. 240.20-240.90: Somewhat pelitic section, schistosity at 75° to C.A. 241.14-241.16: Quartz stringer at 85° to C.A., carbonate-filled fractures at 30° to C.A., contains 2% pyrrhotite. 241.81-242.15: Several turned core ends, some loss evident. 242.51-242.52: Quartz stringer at 80° to C.A., contains 5% pyrrhotite.		239.00 240.00	240.00 241.00	DH 13 - 052 DH 13 - 150

From	To	Rock Name	Description	CA	From	To	Sample No.
242.55	246.30	Biotite Andalusite Schist	Dark grey to black, generally fairly schistose at 75° to C.A. A few quartz schist bands generally less than 5 cm. 245.02-245.17: Quartz-rich section, contains 3% chlorite, minor carbonate as small patches. 245.76-246.30: Estimated 1% sulphides, mostly pyrrhotite with traces pyrite as disseminations, and small platelets parallel to schistosity.		243.00	244.00	DH 13 - 151
246.30			E N D O F H O L E				

CORTIN JOINT VENTURE

HOLE: EPD - 81 - 13

EPD CLAIMS - RESULTS OF 1981 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (In p.p.m.)											
					Sn	W	Cu	Pb.	Zn	Ag	Mo					
DH13-019	76.50	77.50	1.00		85		68	12	307	0.4						
126	80.00	81.00	1.00		25		60	6	560	0.3						
020	81.00	82.00	1.00		190		85	24	445	1.3						
021	82.00	83.00	1.00		660		107	83	795	1.5						
127	83.00	84.00	1.00		15		72	20	720	0.4						
128	84.00	85.00	1.00		16		104	48	860	0.6						
129	85.00	85.50	0.50		5		24	32	320	0.6						
130	85.50	86.50	1.00		L5		12	16	520	0.4						
022	86.50	87.50	1.00		275		95	16	160	0.8						
131	87.50	88.50	1.00		95		40	6	150	0.4						
132	88.50	89.50	1.00		10		120	14	410	0.5						
023	89.50	90.50	1.00		620		140	15	385	2.0						
133	90.50	91.50	1.00		L5		34	8	240	0.2						
134	91.50	92.50	1.00		7		64	8	510	0.2						
135	92.50	93.50	1.00		740		78	6	560	0.4						
136	93.50	94.00	0.50		21		100	10	720	0.5						
137	94.00	95.00	1.00		15		38	8	280	0.3						
024	95.00	96.00	1.00		280		40	8	400	0.2						
138	96.00	97.00	1.00		23		30	8	130	0.2						
139	101.00	102.00	1.00		5		72	16	310	0.6						
140	102.00	103.00	1.00		5		44	28	230	0.5						
025	103.00	104.00	1.00		60		36	40	830	0.7						
141	104.00	105.00	1.00		72		145	96	780	2.4						

CORTIN JOINT VENTURE

HOLE: EPD - 81 - 13

EPD CLAIMS - RESULTS OF 1981 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (In p.p.m.)										
					Sn	W	Cu	Pb.	Zn	Ag	Mo				
DH13-142	123.50	124.84	1.34		L5			86	12	435	0.4				
026	124.84	125.60	0.76		220			235	69	535	2.5				
027	125.60	126.23	0.63	1.32	G2000			510	410	3520	13.3				
028	126.23	127.00	0.77	.21	G2000			265	355	605	14.8				
029	127.00	127.50	0.50		538			405	264	530	13.5				
030	127.50	128.50	1.00	.63	G2000			340	149	265	6.2				
031	128.50	129.50	1.00		640			375	88	690	2.6				
032	129.50	130.00	0.50		95			830	108	375	4.7				
033	130.00	131.00	1.00		565			590	730	275	35.0				
034	131.00	131.60	0.60		125			45	69	146	3.3				
035	131.60	132.10	0.50		380			750	286	3760	7.5				
036	132.10	132.70	0.60		350			290	216	1440	3.4				
037	132.70	133.50	0.80		825			38	480	220	19.5				
038	133.50	134.50	1.00		550			35	150	120	8.4				
039	134.50	135.00	0.50	.28	G2000			48	210	280	8.1				
040	135.00	136.00	1.00		900			20	44	175	1.4				
041	136.00	137.00	1.00	.35	G2000			950	920	730	G50				
042	137.00	138.00	1.00		95			70	115	220	4.5				
043	138.00	139.00	1.00	.35	G2000			155	19	530	1.5				
044	139.00	140.00	1.00		330			38	5	130	0.5				
045	140.00	141.00	1.00		175			41	10	150	0.6				
046	141.00	142.00	1.00		40			59	14	450	0.4				
047	142.00	143.00	1.00		70			21	6	200	0.1				
048	143.00	144.00	1.00	.12	1250			960	120	2600	6.0				
049	144.00	145.00	1.00		67			140	58	370	2.7				

CAMPBELL RESOURCES INC.
DIAMOND DRILL LOG

VENTURE CORTIN
PROJECT
PROPERTY EPD

LOCATION

TESTS

<u>GRID</u>	<u>TROPARI</u>	<u>ACID</u>			
Location <u>18+80N</u>	Depth	Mag Brg	Corr Brg	Dip	Dip ²
Section <u>46+75E</u>	<u>60.96</u>	<u> </u>	<u> </u>	<u> </u>	<u>44°</u>
Bearing <u>330° (Grid N)</u>	<u>121.92</u>	<u> </u>	<u> </u>	<u> </u>	<u>50°</u>
Dip <u>-45°</u>	<u>182.88</u>	<u> </u>	<u> </u>	<u> </u>	<u>50°</u>
Length <u>215.2</u>	<u>215.20</u>	<u> </u>	<u> </u>	<u> </u>	<u>46°</u>

SURVEY

PHYSICAL DATA

Latitude <u>18+95N</u>	Core Size <u>HQ</u> to <u>100.3m</u> , <u>NQ</u> to <u>215.2m</u>
Departure <u>46+78E</u>	Date Started <u>June 11, 1981</u>
Elevation <u>928.77</u>	Date Completed <u>June 18, 1981</u>
Bearing <u>330°</u>	Casing Pulled <u>No</u>
Dip <u>-45°</u>	Core Recovery <u>99%</u>
	Cemented <u>No</u>

Core storage Oliver Creek Campsite 115-P-15

Logged by D. Kennedy
Contractor Caron Diamond Drilling

NOTES: 1) Give reference - Magnetic, Grid, True
2) Corrected dip.

From	To	Rock Name	Description	CA	From	To	Sample No.
0.00	16.70	Casing	Through overburden, numerous small boulders encountered, mostly quartzite or quartzose schist with some micaceous schists				
16.70	18.90	Quartzose Schist	Light grey, hard, vague schistosity at 65-70° to C.A., contains a number of cross-cutting carbonate filled fractures at 40° to C.A., occasional limonite staining 17.37-17.66: Band chlorite/biotite schist with some quartz schist inter-bands - medium green-grey, limonite stained 18.45-18.90: Several quartz stringers at 65-70° to C.A., contains 3% chlorite, erratic limonite staining				
18.90	19.60	Biotite Chlorite Schist	Dark grey to black, fairly hard, more siliceous than most sections, contains numerous quartz veins, some with minor chlorite Schistosity at 60° to C.A.		18.60	18.80	DH 14 - 158
19.60	23.23	Quartzose Schist	Light green-grey, vaguely schistose at 55-60° to C.A., contains several bands and patches light green stained quartz - cherty appearance Occasional traces disseminated pyrite - occasional carbonate filled cross-cutting fractures at 40° to C.A. 20.45-20.60: Several bands and patches hard, pale green unknown(epidote?) 21.21-21.22: Quartz stringer at 65° to C.A. 21.30-21.90: Spotted appearance due to presence of andalusite crystals				

From	To	Rock Name	Description	CA	From	To	Sample No.
			21.42-21.45: Cross-cutting quartz carbonate stringer at 60° to C.A., contains minor chlorite				
			22.06-22.29: Band fairly massive pale green unknown; hard				
			22.43-22.69: Band nearly massive pale green, hard, unknown Contacts sharp at 60° to C.A., contains minor disseminated pyrite(tuff band?)				
23.23	24.76	Quartzite Breccia	60% light grey quartzite fragments, 15% quartz, 10% biotite chlorite schist fragments in rock flour matrix; very dry looking, very little secondary chlorite, a few late carbonate filled fractures at 15° to C.A. NB. upper contact appears conformable with section above, lower contact cross-cuts schistosity		22.23 23.23 24.23	23.23 24.23 24.76	DH 14 - 053 DH 14 - 054 DH 14 - 055
24.76	24.88	Quartzose Schist	As above, schistosity at 40° to C.A., contact with breccia above at 45° to C.A., but almost right angles to breccia		24.76	25.24	DH 14 - 056
24.88	25.24	Tourmaline Breccia	Estimate 15% dark brown/black tourmaline in breccia, composed of biotite, chlorite schist and quartzose schist fragment; matrix is light colored rock flour				
25.24	26.35	Quartzose Schist	Light grey, hard, contains a number of micaceous partings at 80° to C.A. - numerous cross-cutting carbonate filled fractures at 15-30° to C.A. 26.10-26.33: Several instances micro-faulting		25.24	26.35	DH 14 - 057

From	To	Rock Name	Description	CA	From	To	Sample No.
26.35	27.23	Biotite Chlorite Schist	Medium grey-green, limonite stained in places, highly altered, contains numerous cross-cutting carbonate filled fractures at 10-40° to C.A. Limonite staining abundant.		26.35	27.23	DH 14 - 058
27.23	30.27	Greenstone	Andesitic composition, numerous pale green siliceous bands at 65° to C.A., contains a number of cross-cutting carbonate filled fractures at 30° to C.A. Some actinolite rosettes present. 27.95-28.44: Estimated 1-2% pyrrhotite, traces pyrite 28.44-30.27: Estimated 15% pyrrhotite, 5% pyrite, rare traces chalcopyrite and galena.		27.23 28.23 29.23	28.23 29.23 30.27	DH 14 - 059 DH 14 - 060 DH 14 - 061
30.27	36.05	Chlorite Biotite Schist	Medium grey to grey-green, schistosity well developed at 55 to 65° to C.A., contains a number of narrow quartzose schist bands and numerous quartz sweats, some contain minor chlorite, occasional limonite-stained fractures, generally parallel to schistosity 31.96-32.18: Estimated ½-1% sulphides, mostly pyrite with some pyrrhotite and traces chalcopyrite 35.95-36.05: Tourmaline veinlet at 75° to C.A., visible cassiterite		30.27 31.00 32.00 33.00 34.00 35.00	31.00 32.00 33.00 34.00 35.00 36.05	DH 14 - 062 DH 14 - 063 DH 14 - 064 DH 14 - 065 DH 14 - 066 DH 14 - 067
36.05	37.54	Quartzose Schist	Light grey, vague schistosity at 60° to C.A., numerous chloritic partings. Occasional cross-cutting carbonate filled fractures at 20° to C.A. 37.00-37.20: Quartz stringer at 70° to C.A., contains 10% chlorite and biotite. 37.30-37.33: Quartz stringer at 60° to C.A. contains 5% chlorite. 37.51-37.53: Quartz stringer at 65° to C.A., minor limonite staining.		36.05 37.00	37.00 38.00	DH 14 - 068 DH 14 - 069

From	To	Rock Name	Description	CA	From	To	Sample No.
37.54	38.48	Biotite Chlorite Schist	Medium to dark grey, well developed schistosity at 65° to C.A., occasional limonite stained fractures parallel to schistosity 38.06-38.09: Mud seam, soft grey mud (Fault gouge)				
38.48	46.40	Quartzose Schist	Similar to above sections, contains a few narrow biotite chlorite schist bands 39.24-39.25: Quartz stringer at 55° to C.A. 39.33-39.38: Irregular quartz patch 39.46-39.60: Pelitic section 39.61-39.65: Quartz stringer at 55° to C.A. contains 5% chlorite 40.09-40.33: Fracture at 15° to C.A. coated with limonite and Mn stain 40.83-41.19: Lightly limonite stained 41.05 : Fracture at 40° to C.A. coated with Mn stain, minor limonite 41.23-41.65: Several biotite chlorite schist bands 42.00-43.20: Fairly massive section, contains numerous irregular quartz patches, often with minor chlorite 42.40-42.84: Several fractures at 45° to C.A. heavy limonite staining, some Mn staining, somewhat vuggy 44.36-46.54: Several quartz stringers and irregular patches, often containing minor chlorite, occasionally vuggy				

From	To	Rock Name	Description	CA	From	To	Sample No.
46.40	51.50	Sericite Chlorite Schist	Contact gradational with above, contains a number of quartzose schist bands. Medium grey color, some sericite present. Well developed schistosity at 65° to 70° to C.A. contains a number of quartz sweats, generally parallel to schistosity 47.55-48.02: Chlorite rich section 47.73 : Narrow veinlet, pink brown material, cassiterite? at 60° to C.A. 47.95-47.97: Possible visible cassiterite 50.43-50.47: Quartz stringer at 75° to C.A., contains minor chlorite		46.40	47.40	DH 14 - 070
					47.40	48.40	DH 14 - 071
					48.40	49.40	DH 14 - 072
					49.40	50.40	DH 14 - 073
					50.40	51.50	DH 14 - 074
51.50	54.40	Quartzose Schist	Grey, contains a number of biotite chlorite partings at 65° to C.A., occasional limonite stained fractures, generally parallel to schistosity 51.55-52.00: Limonite staining 52.02-52.07: Irregular quartz patches 53.22 : Minor pyrrhotite in fracture at 20° to C.A.		51.50	52.50	DH 14 - 075
					52.50	53.50	DH 14 - 076
					53.50	54.40	DH 14 - 077
					54.40	55.40	DH 14 - 078
54.40	62.70	Chlorite Sericite Schist	Contains a number of quartzose schist bands. It is a medium grey-green. Some biotite present. Occasional quartz sweats and veinlets, generally parallel to schistosity at 65° to 70° to C.A., occasional bands quartzose schist 55.60-55.97: Irregular Mn stained fracture nearly parallel to C.A. 56.64-56.72: Irregular quartz patch, minor limonite staining 59.07-59.46: Several irregular quartz patches, several narrow cross-cutting chlorite filled fractures at 55° to C.A. 60.20-60.50: A few fractures at 25° to C.A.		55.40	56.40	DH 14 - 079
					56.40	57.40	DH 14 - 080
					57.40	58.40	DH 14 - 081
					58.40	59.40	DH 14 - 082
					59.40	60.40	DH 14 - 083
					60.40	61.40	DH 14 - 084
					61.40	62.40	DH 14 - 085
					62.40	62.70	DH 14 - 086

From	To	Rock Name	Description	CA	From	To	Sample No.
62.70	66.40	Quartzose Schist	60.50-61.35: Fairly heavy limonite staining				
			61.35-61.92: Section with fairly abundant biotite, darker grey color				
			Light grey, fairly hard, contains numerous micaceous partings at 70°-75° to C.A.		62.70	63.70	DH 14 - 087
			62.70-64.00: Core badly broken up, but recovery good, numerous fractures coated with limonite and Mn staining		63.70	64.70	DH 14 - 088
			63.22-63.28: Soft mud seam with schist chips				
			64.00-64.80: Several open fractures showing quartz crystal growth generally at 20° to C.A., limonite stained				
			64.80-66.40: Several bands biotite chlorite schist, occasional limonite stained fractures at 20° and 50° to C.A.				
66.40	67.30	Biotite Chlorite Schist	Dark grey, highly schistose at 65° to C.A., fairly soft, but recovery good				
			66.40-66.50: Quartz stringer at 80° to C.A., contains 5% chlorite, quite broken up				
			66.57-66.61: Grey mud seam at 70° to C.A. (fault gouge?)				
			67.00-67.04: Quartz stringer at 75° to C.A.				
			67.19-67.30: Quartz stringer at 75° to C.A., fractured at 10° to C.A.				
67.30	69.80	Interbanded Quartzose Schist & Biotite Chlorite Schist	Light grey, hard, contains numerous micaceous partings at 60° to C.A. Core somewhat broken up		67.80	68.80	DH 14 - 089
			occasional limonite stained fractures at 10° to C.A.		68.80	69.80	DH 14 - 090

From	To	Rock Name	Description	CA	From	To	Sample No.
69.80	70.08	Fault Breccia?	Large Biotite Chlorite Schist pieces up to 3 cm in soft grey mud		69.80	70.08	DH 14 - 091
70.08	71.00	Chlorite Breccia	Dark green, some quartzose schist chips in chlorite matrix - chlorite + 60% some minor limonite staining 70.50-70.75: Visible cassiterite		70.08 70.50 70.75	70.50 70.75 71.00	DH 14 - 092 DH 14 - 093 DH 14 - 094
71.00	71.50	Quartzose Schist	Light grey, hard, contains a number of micaceous partings at 70° to C.A.		71.00	71.50	DH 14 - 095
71.50	72.72	Quartzite Breccia	Quartzose schist fragments in slightly chloritic rock flour matrix, core highly fractured, and highly broken up, but recovery good. Minor limonite staining		71.50 72.20	72.20 72.72	DH 14 - 096 DH 14 - 097
72.72	73.63	Chlorite Breccia	Dark green quartz to quartzose schist fragments in dark chloritic matrix, contains + 1% sphalerite and clots pink brown cassiterite. Cassiterite also in narrow fractures at 10° to C.A. Upper contact gradational with above, lower contact sharp at 65° to C.A. 73.02-73.15: Quartz rich section, several instances micro faulting		72.72 73.20 73.40	73.20 73.40 73.63	DH 14 - 098 DH 14 - 099 DH 14 - 100
73.63	73.80	Quartzite Breccia	Light cream color, fairly soft, contains quartzose schist fragments in rock flour matrix, minor chlorite		73.63	73.80	DH 14 - 101
73.80	75.10	Gouge Zone	Grey to black, very soft, highly micaceous, in part, grey mud 73.90-74.00: Quartz stringer at 80° to C.A., highly fractured at 25 and 50° to C.A., fractures contain minor chlorite		73.80 74.80	74.80 75.10	DH 14 - 102 DH 14 - 103

From	To	Rock Name	Description	CA	From	To	Sample No.
75.10	75.45	Quartzite Breccia	As above, minor limonite staining		75.10	75.45	DH 14 - 104
75.45	75.90	Quartzose Schist	Light grey, fairly hard, several micaceous partings at 70° to C.A., numerous carbonate filled cross-cutting fractures generally at 30-40° to C.A.		75.45	76.00	DH 14 - 105
75.90	76.00	Mud Seam	Grey brown with numerous small chips quartzose schist (Gouge Zone?)				
76.00	80.20	Quartzose Schist	Light grey, hard, schistosity at 75° to C.A., somewhat vague 77.46-77.65: Several narrow tourmaline filled fractures at 25-30° to C.A., traces pyrite 77.56 : 5mm cross-cutting quartz stringer at 35° to C.A. 77.74-77.81: Quartz stringer at 70° to C.A., contains minor chlorite 80.87-80.91: Quartz stringer at 50° to C.A., traces pyrite				
80.20	81.08	"Greenstone"	Dark green, very hard, extremely fine-grained, schistose character at 65° to C.A., contains a few narrow carbonate filled fractures at 10° to C.A. Traces pyrite and pyrrhotite				
81.08	84.40	Quartzose Schist	Light grey, very hard, nearly massive, occasional micaceous partings at 60° to C.A. 82.30-82.80: Several tourmaline filled fractures at 45° to C.A., traces pyrite 82.50-82.80: Heavy limonite staining 83.00 : 2mm pyrrhotite stringer at 65° to C.A., terminates 1 cm quartz stringer on upper side 83.70-84.40: Heavy limonite staining		82.00	83.00	DH 14 - 152

From	To	Rock Name	Description	CA	From	To	Sample No.
84.40	85.70	Biotite Chlorite Schist	Biotite chlorite schist. Dark grey to black, highly schistose at 65-70° to C.A., several hairline fractures filled with quartz carbonate at random angles to C.A. 84.40-84.75: Core badly broken up				
85.70	88.50	Interbanded Biotite Chlorite Schist & Quartzose- Schist	Similar to above sections, contains a number of cross-cutting carbonate filled fractures at 30° to C.A. 86.39-86.40: Grey mud seam at 75° to C.A. 87.85-87.89: Quartz stringer at 70° to C.A. contains 5% chlorite, traces pyrite				
88.50	92.30	Quartzose Schist	Light grey, fine-grained, fairly massive, a few micaceous partings at 70° to C.A., contains several tourmaline filled fractures at 30° to C.A., pyrite and minor pyrrhotite associated with tourmaline				
92.30	95.10	Crackle Breccia	Massive quartzite, highly shattered and infilled by tourmaline, contains est. 1% pyrite and traces pyrrhotite and chalcopyrite 93.10-93.20: Rounded quartzite fragments in tourmaline matrix 93.85-94.18: Massive quartzite, not fractured 94.40-95.10: Core badly broken up, lightly limonite stained		92.50	93.50	DH 14 - 153
95.10	97.40	Interbanded Biotite Chlorite Schist and Quartzose Schist	Similar to above sections, contains numerous hairline cross-cutting carbonate filled fractures at 15-20° to C.A. Quartzose schist bands are more massive than normal, schistosity at 70° to C.A. 95.95-96.30: Quartz rich section,				

From	To	Rock Name	Description	CA	From	To	Sample No.
			core highly broken up				
97.40	97.88	Greenstone	Hard, dark green, very fine grained, contains traces disseminated pyrite, rare traces pyrrhotite, a few hairline fractures at 10° and 35° to C.A. filled with carbonate		97.40	97.88	DH 14 - 154
97.88	99.85	Interbanded Biotite Chlorite Schist & Quartzose Schist	As above, schistosity at 65-70° to C.A., occasional narrow quartz sweats 98.70-98.77: Irregular quartz patch, contains 10% chlorite, traces pyrrhotite and pyrite associated with chlorite 99.76-99.80: Quartz stringer at 75° to C.A.		97.88	98.80	DH 14 - 155
					98.80	99.85	DH 14 - 156
99.85	100.20	Greenstone	Similar to above, contains est. 3% sulphides, about equal quantities of pyrite and pyrrhotite occurring as disseminations. Several turned core ends 99.40-100.30 Recovery good <u>N.B.</u> HOLE REDUCED TO NQ AT 100.3m		99.85	100.20	DH 14 - 157
100.20	101.00	Biotite Chlorite Schist	Dark grey to black, highly schistose at 70-80° to C.A., contains a number of carbonate filled fractures at 40° to C.A. 100.37-100.41: Quartz stringer at 65° to C.A., contains 3% chlorite 100.60-101.00: Est. 2-3% sulphides, mostly pyrrhotite with traces pyrite and chalcopyrite, associated with carbonate-filled fractures		100.50	101.00	DH 14 - 106
101.00	102.80	Quartzite	Light grey, fine-grained, massive, occasional vague schistosity at 65° to C.A., occasional quartz patches. Occasional cross-cutting hairline fractures at 20° to C.A. 101.00-101.33: Several quartz patches with				

From	To	Rock Name	Description	CA	From	To	Sample No.
			occasional quartzite fragments. Core badly broken.				
			101.33-101.38: Grey mud seam(fault gouge?), contacts destroyed.				
			101.38-101.60: Several chlorite filled fractures at 75° to C.A.				
102.80	106.74	Chlorite Biotite Schist	Medium to dark grey, fairly schistose at 75° to C.A., contains a few quartz sweats and numerous cross-cutting carbonate stringers at 20° and 35° to C.A. Occasional narrow quartzose schist bands.		102.00 103.00 104.00	103.00 104.00 105.00	DH 14 - 107 DH 14 - 108 DH 14 - 109
			102.70-102.76: Quartz stringer at 65° to C.A.				
			105.48-105.80: Quartzite band, fairly massive, contains a few carbonate filled fractures and traces disseminated pyrite.				
106.74	109.22	Interbanded Biotite Chlorite Schist and Quartzose Schist	Biotite chlorite schist bands are dark grey-black, quartzose schist bands are light to medium grey, often with chloritic partings. Occasional quartz sweats generally parallel to schistosity. Several hairwidth carbonate filled fractures cross-cut schistosity, generally at 25° to C.A.				
			107.12 : Traces sphalerite in carbonate filled fractures				
			107.70-108.00: Limonite stained section				
			108.78-108.80: Soft grey mud seam(gouge?)				
			109.03-109.05: Soft grey mud seam(gouge?)				
109.22	114.90	Quartzose Schist	Light to medium grey, schistosity at 75° to C.A. Occasional carbonate filled fractures at 10° to C.A.		114.00	114.90	DH 14 - 110
			109.85-109.70: Quartz stringer at 75° to C.A.				
			112.40-112.60: Core highly broken up, several limonite stained fractures at 30° to C.A.				
			114.23-114.90: Possibly tuffaceous, up to 1mm crystals, white unknown core has pitted surface, no fluorescence when lamped, core badly broken up.				

From	To	Rock Name	Description	CA	From	To	Sample No.
114.90	115.20	Quartzite Breccia	Quartzose schist fragments in rock flour matrix, lightly limonite stained. Core very badly broken up		114.90	115.55	DH 14 - 111
115.20	115.55	Fault Gouge?	Chips of Biotite Chlorite schist in soft grey mud				
115.55	115.80	Ground Core					
115.80	116.23	Fault Gouge	Chips biotite chlorite schist in soft grey mud		115.80	116.23	DH 14 - 112
116.23	116.80	Greenstone	Highly contorted, very little schistosity visible, highly chloritized, contains est. 2% sulphides, mostly pyrrhotite with some pyrite		116.23	116.80	DH 14 - 113
116.80	118.61	Biotite Chlorite Schist	Medium to dark grey green, schistosity at 65° to C.A. contains a number of carbonate filled hairline fractures at 30° to C.A.		116.80	117.80	DH 14 - 114
					117.80	118.61	DH 14 - 115
118.61	119.20	Greenstone	Dark green, fine-grained, contains traces disseminated pyrite, pyrrhotite		118.61	119.20	DH 14 - 116
119.20	121.90	Quartzose Schist	Light to medium grey, lightly schistose at 65° to C.A. contains a few narrow biotite chlorite schist bands scattered through section. These bands often have tiny dark (andalusite?) crystals scattered through them				
121.90	124.80	Biotite Chlorite Schist	Similar to above sections, core very badly broken up; in part only chips recovered. Schistosity 75° to C.A.				
124.80	125.00	Ground Core					

From	To	Rock Name	Description	CA	From	To	Sample No.
125.00	126.38	Biotite Chlorite Schist	As above section 125.81-125.96: Contains 5% dark(andalusite?) crystals up to 1mm				
126.38	126.66	Greenstone	Dark green, fine-grained, fairly hard, chloritic; contains a few carbonate filled fractures at 10-15° to C.A. 126.57 : 2mm stringer filled with carbonate, pyrite, pyrrhotite at 25° to C.A.				
126.66	127.53	Biotite Chlorite Schist with Quartzite Interbands	Biotite chlorite schist medium to dark green, with hard, massive pale green quartzite interbands Schistosity at 75° to C.A.				
127.53	128.52	Quartzite	Pale grey-green, massive. Contains a few fractures at 20° to C.A., containing traces pyrrhotite				
128.52	134.40	Biotite Chlorite Schist	Medium to dark green grey, schistosity at 80° to C.A., contains est. 3% dark(andalusite?) crystals up to 1mm, a few quartz sweats present, rare traces pyrrhotite and pyrite - disseminated. 129.34-129.58: Grey mud seam with small chips biotite chlorite schist 131.09-131.50: Several traces pyrrhotite associated with quartz sweats and chlorite patches 132.50-134.40: Core highly broken up, fairly soft 133.80-133.89: Soft grey mud seam, lower contact 30° to C.A., upper contact obscured in broken core.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			134.05-134.32: Several narrow mud seams containing biotite chlorite schist chips				
134.40	134.73	Quartzose Schist	Light grey, hard, quite massive, vague schistosity suggests recumbent folding. Contains traces disseminated pyrite				
134.73	135.20	Biotite Chlorite Schist	As above 134.84-134.87: Quartz stringer at 80° to C.A. contains 3% chlorite 135.00-135.16: Soft, light grey mud seam, contains biotite chlorite schist fragments				
135.20	135.45	Quartzite Breccia	Quartzose schist and quartz fragments in grey brown rock flour matrix - fairly hard				
135.45	135.49	Mud Seam	Grey brown, contains quartzose schist chips up to 5mm, contacts 80° to C.A.				
135.49	136.30	Quartzose Schist	Light grey, hard, contains considerable sericite, rare traces disseminated pyrrhotite. A few limonite stained fractures at 10° to C.A.				
136.30	136.43	Greenstone?	Dark green, fine-grained, fairly hard, though considerable chlorite present contains a few hairwidth fractures containing pyrrhotite and minor chalcopyrite at random angles to C.A. Contacts 85° to C.A.				
136.43	138.76	Quartzose Schist	Light grey, hard, fairly massive, weak schistosity at 85° to C.A., contains a few narrow bands biotite chlorite schist, occasional chlorite or carbonate filled fractures at 10° to C.A. 136.77-136.97: Biotite chlorite schist band,				

From	To	Rock Name	Description	CA	From	To	Sample No.
			Schistosity at 80-85° to C.A.				
138.76	141.65	Biotite Chlorite Schist	Similar to above sections, but well cored. Contains a number of quartz sweats, generally parallel to schistosity 140.13-140.17: Grey brown mud seam contains chips biotite chlorite schist 140.00-141.65: Est. 7-8% dark grey-black (andalusite?) crystals up to 1mm 141.10-141.65: Several cross-cutting carbonate filled fractures at 15° to C.A.				
141.65	142.63	Quartzose Schist	Pale green grey, contains several chloritic partings at 75° to C.A.				
142.63	143.07	Greenstone	Dark green, fine-grained, fairly massive looking, contains 1% pyrrhotite, traces chalcopyrite as disseminations and discontinuous stringers at random angles to C.A.				
143.07	145.13	Quartzose Schist	Light green grey, contains a number of chloritic partings at 75° to C.A., occasional blue grey quartz eyes up to 2mm				
145.13	148.76	Biotite Chlorite Schist with Quartzose Schist Interbands	Medium grey green to black, well developed schistosity at 75° to C.A. Section becomes dominantly quartzose schist after 147.30 147.30-148.40: Several fractures at 40° to C.A., filled with chlorite and occasionally tourmaline 148.45-148.55: Soft grey mud seam(gouge?) 148.45-148.76: Core very badly broken up.				
148.76	149.10	"Quartzite Breccia"	Heavy limonite staining, quartzose schist chips in rock flour matrix. Core badly broken up				
149.10	149.30	Ground Core					

From	To	Rock Name	Description	CA	From	To	Sample No.
149.30	149.60	Quartzite Breccia	Similar to above, but without limonite staining				
149.60	150.40	Quartzose Schist	Pale green grey, fine-grained, contains occasional blue grey quartz eyes up to 2mm, fairly massive, core badly broken up 149.95-149.99: Narrow "quartzite breccia" seam, contacts 70° to C.A. 150.00-150.40: Several fractures at 60° to C.A., chlorite filled				
150.40	150.90	Ground Core					
150.90	153.80	Biotite Chlorite Schist with Quartzose Schist Interbands	More altered looking section than normal, contains fairly abundant limonite staining, core very badly broken up; contains a number of narrow cross-cutting carbonate filled fractures, generally at 65-70° to C.A. 152.25-152.60: Some Mn staining 152.94-153.00: Quartz stringer at 65° to C.A. several limonite stained fractures at 35° to C.A.				
153.80	153.90	Ground Core					
153.90	154.38	Biotite Chlorite Schist with Quartzose Schist Interbands	As above				
154.38	154.80	Breccia Zone	Quartzose schist and biotite chlorite schist chips in rock flour matrix 154.56-154.80: Extremely soft, chips in grey mud recovered				

From	To	Rock Name	Description	CA	From	To	Sample No.
154.80	155.30	Biotite Chlorite Schist	Dark grey, schistosity highly contorted				
155.30	162.97	Quartzose Schist with Biotite Chlorite Schist Interbands	Light grey, fairly hard, weak schistosity at 65° to C.A., contains a number of cross-cutting carbonate filled, fractures at 25° to C.A., a few are limonite stained. Occasional quartz veins generally parallel to schistosity 155.80-156.00: Odd traces malachite stain 156.00-161.00: Fairly broken up, recovery good 157.60-158.05: Gouge zone, soft grey mud and chips quartzose schist recovered 161.48-161.59: Spotted schist, contains 10% andalusite crystals up to 2mm 162.69-162.74: Quartz stringer at 75° to C.A., traces pyrite and chalcopyrite				
162.97	163.85	Biotite Chlorite Schist	Dark grey black, schistosity highly contorted, core highly broken up 163.20-163.24: Soft grey mud (gouge) 163.24-163.26: Quartz stringer with <u>±</u> 1% pyrite 163.32-163.39: Soft grey mud (gouge) 163.61-163.64: Quartz patch with 5% pyrite		162.97	163.85	DH 14 - 117
163.85	164.00	Ground Core					
164.00	164.20	Gouge Zone	Chips biotite chlorite schist in soft grey mud		164.00	164.20	DH 14 - 118

From	To	Rock Name	Description	CA	From	To	Sample No.
164.20	171.35	Quartzose Schist	<p>Light grey, hard, fairly massive, weak schistosity at 75° to C.A. Occasional chlorite filled fractures at 15° to C.A., traces pyrite & pyrrhotite</p> <p>164.34-164.43: Quartz stringer at 60° to C.A., contains 3% pyrrhotite, traces chalcopyrite</p> <p>168.73-168.82: Several chlorite filled fractures at 30° to C.A., traces pyrrhotite and pyrite</p> <p>169.50-170.50: Several chlorite filled fractures at 5° and 20° to C.A. contains pyrrhotite and traces pyrite</p>		164.20	165.20	DH 14 - 119
171.35	174.72	Biotite Chlorite Schist	<p>Medium grey to dark grey, schistosity at 65-70° to C.A. A few (andalusite?) crystals up to 2mm, becoming more numerous down section. Occasional quartz sweats</p> <p>172.56-173.05: Has tuffaceous "look", but no real fragments present, core fairly soft</p> <p>174.20-174.72: Gradually becoming more quartzose</p>				
174.72	180.71	Quartzose Schist with Biotite Chlorite Schist Interbands	<p>Quartzose schist, light grey, fairly massive, weak schistosity at 75° to C.A. Biotite chlorite schist sections often have dark "spots"(andalusite?) up to 3mm. A few quartz sweats</p> <p>176.50-176.70: Quartz patch, contains 3% chlorite</p> <p>177.10-177.30: Two carbonate filled fractures at 10 and 20° to C.A.</p> <p>178.92-178.96: Quartz patch, contains 3% chlorite</p> <p>180.21-180.22: Quartz stringer at 85° to C.A.</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
180.71	182.28	Quartzose Schist	Light grey, fairly massive, weak schistosity at 75-80° to C.A. Occasional chloritic partings, occasional carbonate filled fractures at 10° to C.A. 181.50-181.53: Quartz stringer at 65° to C.A., contains 1-2% chlorite				
182.28	182.65	Biotite Chlorite Schist	Dark grey-black biotite chlorite schist with a few narrow (up to 5mm) quartzose schist bands. Schistosity at 80° to C.A.				
182.65	185.55	Quartzose Schist	Light grey, slightly more gritty than previous sections, contains a few narrow bands biotite chlorite schist. Occasional fractures at 10-20° to C.A., filled with chlorite and occasionally tourmaline. Occasional traces pyrite and pyrrhotite as disseminated grains and in chlorite tourmaline filled fractures				
185.55	188.87	Chlorite Sericite Schist	Medium grey green, highly schistose at 70° to C.A., contains some biotite rich bands, occasional narrow quartzose bands, several quartz sweats, a few limonite stained fractures at 65° to C.A.				
188.87	189.38	Quartzose Schist	As in previous section, schistosity at 65° to C.A.				
189.38	191.84	Biotite Chlorite Schist	Dark green grey to black, contains numerous quartz sweats, occasional cross-cutting carbonate filled fractures at 40° to C.A. 190.20-190.22: Quartz stringer at 65° to C.A. 190.47-190.55: Quartz patch 190.60-190.66: Quartz patch				
191.84	199.38	Quartzite	Medium grey, fine-grained, massive. Contains a few hairline fractures at 20-30° to C.A., filled with carbonate. Traces disseminated pyrite				

From	To	Rock Name	Description	CA	From	To	Sample No.
			scattered through section				
			197.50-197.69: Est. 1% pyrite in chlorite filled fracture nearly parallel to C.A.		193.50	194.50	DH 14 - 120
			198.82-198.84: Quartz stringer at 85° to C.A.		194.50	195.30	DH 14 - 121
			198.91-199.00: Quartz stringer at 75° to C.A., contains 1-2% pyrrhotite, 1% pyrite		195.50	196.50	DH 14 - 122
199.38	204.61	Quartzose Schist	No real break with above unit, but becomes more schistose, schistosity at 60° to C.A., contains a few hairline fractures at 5-15° to C.A., filled with carbonate				
			200.55-201.20: Core highly broken up				
			201.50-201.80: Core highly broken up				
			202.15-203.45: 85% quartz with quartzose schist fragments, contains 2-3% chlorite				
204.61	206.30	Biotite Chlorite Schist with Quartzose Schist Interbands	Dark grey to black, biotite rich bands contain a number of dark (andalusite?) spots. Schistosity at 70° to C.A.				
			205.40-206.13: Contains a number of quartz sweats as stringers, some with minor chlorite				
206.30	215.20	Quartzose Schist	Medium grey, weakly schistose at 80° to C.A. No real fragments present, but rock has "tuffaceous" look. Contains a number of cross-cutting, carbonate filled fractures at 15° to C.A.				
			207.30-207.38: Possible fragments				
			207.90-208.10: Possible fragments				
			211.90-212.12: 1.5 cm quartz carbonate stringer at 20° to C.A., contains minor chlorite				
			212.84-213.13: Quartz carbonate stringer nearly				

CAMPBELL RESOURCES INC. - DIAMOND DRILL LOG

From	To	Rock Name	Description	CA	From	To	Sample No.
215.20			parallel to C.A., contains 3% pyrite, traces pyrrhotite E N D O F H O L E				

CORTIN JOINT VENTURE

HOLE: EPD-81 - 14

EPD CLAIMS - RESULTS OF 19 81 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (In p.p.m.)									
					Sn	W	Cu	Pb	Zn	Ag	Mo			
DH14-158	18.60	18.80	0.20		16		28	L2	110	1.0				
053	22.23	23.23	1.00		35		37	6	370	0.4				
054	23.23	24.23	1.00		25		38	370	720	0.4				
055	24.23	24.76	0.53		25		31	180	610	0.4				
056	24.76	25.24	0.48		60		315	97	2880	3.0				
057	25.24	26.35	1.11		35		16	35	690	0.3				
058	26.35	27.23	0.88		190		80	365	3320	1.2				
059	27.23	28.23	1.00		700		140	93	700	1.9				
060	28.23	29.23	1.00	0.16	1100		1600	59	290	4.3				
061	29.23	30.27	1.04	0.91	G2000		1800	8	150	1.0				
062	30.27	31.00	0.73		130		85	11	85	0.1				
063	31.00	32.00	1.00	0.15	G2000		340	9	84	0.6				
064	32.00	33.00	1.00		175		180	11	520	0.6				
065	33.00	34.00	1.00		25		60	45	850	0.1				
066	34.00	35.00	1.00		155		56	13	340	0.2				
067	35.00	36.05	1.05		130		58	31	480	0.4				
068	36.05	37.00	0.95	0.16	1800		64	220	1070	1.1				
069	37.00	38.00	1.00		10		39	38	340	0.1				
070	46.40	47.40	1.00		40		68	66	515	1.0				
071	47.40	48.40	1.00	0.20	G2000		41	17	490	0.2				
072	48.40	49.40	1.00		110		29	8	260	0.1				
073	49.40	50.40	1.00		L5		32	5	730	0.6				
074	50.40	51.50	1.10		L5		28	18	570	0.5				
075	51.50	52.50	1.00		360		260	345	3350	17.0				

CORTIN JOINT VENTURE

HOLE: EPD- 81- 14

EPD CLAIMS - RESULTS OF 1981 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (In p.p.m.)									
					Sn	W	Cu	Pb.	Zn	Ag	Mo			
DH14-076	52.50	53.50	1.00		530		199	75	3050	2.8				
077	53.50	54.40	0.90		980		143	105	1300	1.6				
078	54.40	55.40	1.00		66		70	62	620	1.4				
079	55.40	56.40	1.00		130		64	70	370	1.5				
080	56.40	57.40	1.00		15		68	93	1300	0.5				
081	57.40	58.40	1.00		15		44	100	880	0.7				
082	58.40	59.40	1.00		77		42	55	470	0.3				
083	59.40	60.40	1.00	0.11	1275		62	78	290	0.4				
084	60.40	61.40	1.00		6		210	130	850	1.6				
085	61.40	62.40	1.00		15		88	13	290	0.2				
086	62.40	62.70	0.30		15		73	74	280	0.3				
087	62.70	63.70	1.00		66		73	88	230	0.4				
088	63.70	64.70	1.00		400		215	160	370	2.0				
089	67.80	68.80	1.00		7		69	54	180	0.2				
090	68.80	69.80	1.00		16		72	100	170	1.0				
091	69.80	70.08	0.28		26		195	250	1400	0.9				
092	70.08	70.50	0.42	0.38	4250		620	300	900	27.0				
093	70.50	70.75	0.25	2.42	G2000		560	64	1300	3.1				
094	70.75	71.00	0.25	2.42	G2000		275	38	1150	2.1				
095	71.00	71.50	0.50		300		150	19	620	1.2				
096	71.50	72.20	0.70		155		290	115	4300	3.1				
097	72.20	72.72	0.52		240		142	145	8000	2.4				
098	72.72	73.20	0.48		880		113	100	16000	4.3				
099	73.20	73.40	0.20	2.46	G2000		149	84	G20000	7.7				
100	73.40	73.63	0.23	0.16	1650		86	44	15500	3.0				

CORTIN JOINT VENTURE

HOLE: EPD - 81 - 14

EPD CLAIMS - RESULTS OF 19₈₁ DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (In p.p.m.)									
					Sn	W	Cu	Pb	Zn	Ag	Mo			
101	73.63	73.80	0.17		740		54	22	1250	0.6				
102	73.80	74.80	1.00		130		440	190	3350	3.4				
103	74.80	75.10	0.30		30		48	44	7600	0.9				
104	75.10	75.45	0.35		42		129	110	2200	0.7				
105	75.45	76.00	0.55		470		20	23	1350	0.5				
152	82.00	83.00	1.00		15		100	13	280	0.5				
153	92.50	93.50	1.00		15		725	55	325	7.0				
154	97.40	97.88	0.48		9		145	11	50	0.5				
155	97.88	98.80	0.92		8		53	12	70	0.2				
156	98.80	99.85	1.05		100		49	14	75	0.6				
157	99.85	100.20	0.35		32		285	19	110	1.0				
106	100.50	101.00	0.50		71		265	80	230	1.0				
107	102.00	103.00	1.00		23		53	44	140	0.8				
108	103.00	104.00	1.00		160		82	78	240	1.7				
109	104.00	105.00	1.00		15		79	25	95	0.5				
110	114.00	114.90	0.90		440		67	34	220	0.8				
111	114.90	115.55	0.65		23		26	12	430	0.2				
GC	115.55	115.80	0.25											
112	115.80	116.23	0.43		22		46	23	120	0.4				
113	116.23	116.80	0.57		830		660	42	150	3.4				

CAMPBELL RESOURCES INC.
DIAMOND DRILL LOG

VENTURE CORTIN
PROJECT
PROPERTY EPD

LOCATION

TESTS

GRID

TROPARI

ACID

Location 19+00N
Section 45+00E
Bearing 330° (Grid N)
Dip -45°
Length 159.7

Depth	Mag Brg	Corr Brg	Dip	Dip'
<u>60.96</u>	<u> </u>	<u> </u>	<u> </u>	<u>44°</u>
<u>121.92</u>	<u> </u>	<u> </u>	<u> </u>	<u>46.5°</u>
<u>159.7</u>	<u> </u>	<u> </u>	<u> </u>	<u>51°</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

SURVEY

PHYSICAL DATA

Latitude 19+01N
Departure 44+97E
Elevation 982.64
Bearing 330°
Dip -45°

Core Size HQ to 98.8 , NQ to 159.7
Date Started June 19, 1981
Date Completed June 27, 1981
Casing Pulled No
Core Recovery 92%
Cemented No

Logged by D. Kennedy
Contractor Caron Diamond Drilling

NOTES: 1) Give reference - Magnetic, Grid, True
2) Corrected dip.

From	To	Rock Name	Description	CA	From	To	Sample No.
0.00	5.20	Casing					
5.20	6.30	Chlorite Biotite Schist	Dark green grey, highly schistose at 30° to C.A., contains several quartz sweats. Core very badly broken up, looks very weathered				
6.30	6.70	Ground Core					
6.70	7.60	Chlorite Biotite Schist	As above, but contains a few narrow quartzose schist bands. Core very badly broken up				
7.60	7.90	Ground Core					
7.90	8.50	Quartzose Schist	Light grey, hard, very weak schistosity at 55° to C.A.				
8.50	9.40	Ground Core					
9.40	11.10	Chlorite Biotite Schist	Dark green grey, highly schistose at 25-30° to C.A. contains numerous quartz sweats, very minor limonite staining 10.60-10.95: Est. 30% quartz as narrow stringers at 30° to C.A., some possible drag folding				
11.10	11.30	Ground Core					
11.30	12.70	Quartzose Schist	No abrupt change from section above, but decrease in quantity of mica, increase in quartz content Good schistosity at 25-30° to C.A., hard; core badly broken up				
12.70	12.80	Ground Core					

From	To	Rock Name	Description	CA	From	To	Sample No.
12.80	16.90	Quartzose Schist	As in above section - core highly broken up 13.05-13.70: Several limonite stained fractures at 35-40° to C.A.				
16.90	17.10	Ground Core					
17.10	18.52	Chlorite Schist	Grey green, essentially a chlorite rich variety of quartzose schist, contains a number of irregular quartz sweats. Core badly broken, schistosity at 40° to C.A.				
18.52	18.57	Mud Seam	Soft, light grey gouge with lmm rock chips				
18.57	19.30	Quartzose Schist	As above, core badly broken. Weak schistosity at 50-55° to C.A.				
19.30	21.68	Chlorite Schist	As in above section, fairly well cored, well developed schistosity at 50-55° to C.A.				
21.68	22.90	Quartzose Schist	As above, fairly well developed schistosity at 55° to C.A., core somewhat broken up				
22.90	23.20	Ground Core					
23.20	25.00	Quartzose Schist	Similar to above sections, but contains a number of quartz stringers and sweats parallel to schistosity, usually with minor chlorite; core fairly broken up. 23.70-24.05: Est. 50% quartz as stringers up to 3 cm at 55° to C.A.				
25.00	25.30	Ground Core					
25.30	27.20	Quartzose Schist	As in above section, weak schistosity at 45-50° to C.A. Core highly broken up				

From	To	Rock Name	Description	CA	From	To	Sample No.
27.20	27.40	Ground Core					
27.40	28.50	Chlorite Biotite Schist	Dark green grey, highly schistose at 35° to C.A. 27.90- : 3mm mud seam at 35° to C.A. 28.04 : 2mm mud seam at 35° to C.A. 28.70-28.41: mud seam, grey mud with chlorite biotite schist chips. Contacts lost in broken core				
28.50	35.30	Quartzose Schist	Similar to above sections, schistosity at 40° to C.A. fairly well cored, with some broken sections. Occasional fractures at 0-20° to C.A., with light Mn or limonite staining 29.70-29.80: Chlorite rich bands 30.20-30.40: Highly fractured 30.30 : 1 cm mud seam at 45° to C.A. 30.80-31.70: Core highly broken up. Several quartz chips present 31.70-31.80: Several fractures at 40° to C.A., filled with carbonate 32.25-32.26: Massive quartzite seam at 45° to C.A., contains traces pyrite 32.44-32.50: Quartz stringer at 35° to C.A., contains 5% chlorite, slightly rusty 32.50-32.90: Very badly broken, section of chlorite rich schist 33.40-34.30: Core very badly broken, some quartz patches present				
34.30	35.40	Ground Core					
35.40	36.00	Gouge Zone	Soft grey mud with chlorite chips recovered. Probably most loss occurs in this section.				

From	To	Rock Name	Description	CA	From	To	Sample No.
36.00	36.60	Quartzose Schist	As above, very highly broken up, schistosity at 30° to C.A.				
36.60	37.80	Ground Core					
37.80	38.20	Chlorite Schist	Dark green, highly schistose at 45° to C.A. 37.90-37.98: Soft grey mud seam with chips chlorite schist 38.10-38.20: Soft grey mud recovered				
38.20	39.00	Ground Core					
39.00	40.80	Quartzose Schist	Light grey, with numerous chloritic partings. Schistosity at 30-35° to C.A., contains several carbonate filled cross-cutting fractures at 60-65° to C.A. 40.40-40.80: Very badly broken up				
40.80	41.10	Ground Core					
41.10	42.10	Chlorite Schist	As in previous sections, highly schistose at 50° to C.A., numerous narrow quartz sweats 41.40-41.42: Soft grey mud seam at 40° to C.A.				
42.10	42.40	Ground Core					
42.40	43.80	Chlorite Schist	As above, schistosity at 25-35° to C.A.				
43.80	44.60	Quartzose Schist	Light grey with weak schistosity at 25° to C.A. Heavy Mn staining 44.20 : 1 cm quartz stringer at 35° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
44.60	44.88	Chlorite Biotite Schist	Dark green to black, well-developed schistosity at 35° to C.A. Contains a few quartz sweats				
44.88	48.52	Quartzose Schist	Light grey, weak schistosity at 40° to C.A., contains a number of narrow chlorite schist bands, several quartz stringers up to 2 cm present. A few cross-cutting carbonate filled fractures present at 75° to C.A. 47.15-47.22: Mud seam at 35° to C.A. 47.90-48.05: Quartz stringer at 35° to C.A., contains 5% chlorite 48.46-48.52: Mud seam at 55° to C.A.				
48.52	48.85	Quartzite	Light grey, fine-grained, hard, massive occasional chloritic partings at 40° to C.A., minor limonite staining, a few cross-cutting carbonate filled fractures at 75° to C.A.				
48.85	54.30	Quartzose Schist	Light grey, schistosity well developed at 40° to C.A., contains a number of cross-cutting carbonate filled fractures at 75-80° to C.A. 53.18-53.42: Limonite stained fracture at 10° to C.A. 54.00-54.30: Core very badly broken				
54.30	54.60	Chlorite Biotite Schist	Dark grey green, highly schistose at 35° to C.A., contains occasional quartz sweats or patches, often with minor chlorite. Core very badly broken				
54.60	54.90	Ground Core					
54.90	55.97	Chlorite Biotite Schist	As above 55.00-55.70: Core very badly broken				

From	To	Rock Name	Description	CA	From	To	Sample No.
55.97	56.17	Gouge Zone	Rusty colored clay with fragments chlorite biotite schist and quartzose schist				
56.17	60.06	Quartzose Schist	Similar to above sections, but highly broken up, contains numerous limonite stained fractures, schistosity at 35°-40° to C.A. 56.17-58.05: Core badly broken 58.32-58.44: Chips and coarse sand recovered 58.76-59,35: A number of Mn stained fractures at 5° - 15° to C.A.				
60.66	61.90	Chlorite Biotite Schist	Dark green-grey, schistosity at 55° to C.A., very soft, does not core well. Occasional quartz patches and sweats. 60.05-60.10: Soft tan colored mud seam. 60.25-60.40: Soft, light grey mud seam. 60.40-60.60: Chlorite biotite schist chips in soft grey mud recovered. 60.94-61.15: Quartzite fragments up to 1 cm in soft grey mud; recovery probably poor- possible area of core loss reported as 61.90-62.60. 61.40 : Schistosity locally at 60° to C.A. 61.56-61.57: Quartz stringer at 70° to C.A., contains 5% yellow-brown unknown (siderite?) 61.76-61.81: Vuggy quartz stringer at 65° to C.A.				
61.90	62.60	Ground Core					
62.60	66.00	Chlorite Biotite Schist	Dark grey-green, fairly soft, highly broken up. Some limonite staining, contains a number of cross-cutting carbonate stringers at 50° to C.A. Schistosity at 55-65° to C.A., a few narrow quartzose schist bands. 63.14-63.16: Quartz stringer at 75° to C.A. 63.60-64.20: Peculiar reddish-brown coloration (hornfels?). More micaceous.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			sections most affected. 64.60-64.67: Reddish-brown coloration as above 64.67-64.72: Mud seam containing biotite chlorite schist chips 64.80-65.33: Core very badly broken up 65.70-66.00: Reddish-brown coloration				
66.00	66.40	Ground Core					
66.40	67.33	Chlorite Biotite Schist	Similar to above section, possibly slightly more biotite present. Schistosity at 65° to C.A.		66.40	67.33	DH 15 - 159
67.33	67.76	Gouge Zone	Very soft grey mud containing schist chips . Recovery probably poor, core loss reported 68.30-68.60, probably this section		67.33	67.76	DH 15 - 160
67.76	68.30	Chlorite Schist	Green grey, highly schistose at 35° to C.A. 68.18-68.22: Quartz stringer at 45° to C.A. 68.22-68.45: Mud seam at 55° to C.A.		67.76	68.30	DH 15 - 161
68.30	68.60	Ground Core					
68.60	69.20	Chlorite Schist	As above, schistosity at 45° to C.A.		68.60	69.20	DH 15 - 162
69.20	69.60	Ground Core					
69.60	69.82	Chlorite Schist	As above		69.60	69.82	DH 15 - 162
69.82	71.70	Quartzose Schist/ Incipient Breccia	Light grey, 90% quartzose schist fragments in rock flour matrix 70.30-70.52: Red-pink staining present as irregular patches		69.82 70.80	70.80 71.70	DH 15 - 164 DH 15 - 165

From	To	Rock Name	Description	CA	From	To	Sample No.
71.70	72.18	Chlorite Schist	Dark green, highly schistose at 65° to C.A., contains several quartz sweets		71.70	72.20	DH 15 - 166
72.18	72.20	Mud Seam	Soft grey mud at 65° to C.A.				
72.20	74.20	Quartzose Schist	Very lightly schistose at 65° to C.A., several patches with considerable secondary chlorite, contains a few fractures with heavy Mn staining		72.20	73.20	DH 15 - 167
					73.20	74.20	DH 15 - 168
74.20	74.40	Ground Core					
74.40	75.20	Quartzose Schist/ Chlorite Breccia?	Mostly quartzose schist with some secondary chlorite as bands and patches (large block breccia?) Some quartz as irregular patches		74.40	75.20	DH 15 - 169
75.20	75.46	Chloritite	Dark green, soft, contains odd quartz fragments 75.43-75.46: contains numerous quartz fragments		75.20	75.46	DH 15 - 170
75.46	77.18	Quartzite Breccia	Hard grey, fairly massive, fractured at 25° to C.A. fractures filled with limonite, minor carbonate contains 15% pinkish quartzite fragments, usually somewhat rounded. Matrix very siliceous, some minor chlorite present 76.50 : Traces malachite		75.46	76.50	DH 15 - 171
					76.50	77.18	DH 15 - 172
77.18	78.30	Chlorite Breccia	Quartzite fragments (40% in chloritic matrix, number of fragments decreases down section. Several limonite stained fractures generally at 55-60° to C.A. 78.80 : 5mm quartz stringer at 70° to C.A. 78.84 : 2mm quartz stringer at 70° to C.A.		77.18	78.30	DH 15 - 173

From	To	Rock Name	Description	CA	From	To	Sample No.
78.30	78.56	Gouge Zone	Soft grey mud with abundant quartzite and schist chips		78.30	78.56	DH 15 - 174
78.56	78.90	Quartzite	Light grey, fairly massive, contains 3% chlorite 78.66-78.73: Mud seam, soft grey mud with quartzite chips up to 2 mm		78.56	78.90	DH 15 - 175
78.90	83.93	Biotite Chlorite Schist	Dark grey to black, well developed schistosity at 70° to C.A., some light limonite staining, occasional quartz sweats and patches 79.00-79.20: Core very badly broken 79.49-79.53: Irregular, slightly rusty quartz patch 80.16-80.30: Mud seam, biotite chlorite schist chips in soft grey mud 80.40-80.45: Soft grey mud seam with biotite chlorite schist chips 83.82-82.60: Two narrow quartzite bands at 50° to C.A.		78.90 80.00	80.00 81.00	DH 15 - 176 DH 15 - 177
83.93	84.80	Quartzite	Light grey, hard, massive, contains a few limonite and Mn stained fractures at 30° to C.A. 84.60-84.77: Quartz rich section, some chlorite present				
84.80	86.97	Sericite Chlorite Schist	Light grey to pale green, soft, well developed schistosity at 45° to C.A., contains a number of quartz sweats and a number of limonite stained cross-cutting fractures at 55° to C.A. Occasional Mn staining 85.40-85.74: Quartz rich section, several stringers up to 4 cm at 50° to C.A., contains minor chlorite 85.86-86.00: Contains 10%, 1mm dark green crystals, often with lighter colored centre (andalusite?)				

From	To	Rock Name	Description	CA	From	To	Sample No.
86.97	87.80	Quartzose Schist	Light to medium grey, weak schistosity at 65° to C.A. A few slightly rusty quartz patches. 87.70-87.75: Biotite chlorite schist band				
87.80	88.40	Biotite Chlorite Schist	Dark grey to black, highly schistose at 50-55° to C.A.				
88.40	97.20	Quartzose Schist	Light grey, fairly hard, contains numerous chloritic partings at 50° to C.A. 88.45-88.75: Quartz rich section, contains several quartz stringers and lenses generally oriented at 45° to C.A., slightly rusty 90.06-90.13: Irregular quartz patch with 10% chlorite 90.10 : 2mm vuggy quartz stringer cutting quartz patch at 35° to C.A. Some Mn staining adjacent to stringer 90.20-90.21: 1 cm quartz stringer at 45° to C.A. 90.90-97.20: A number of Mn stained fractures generally at 65° to C.A. 93.50-93.73: Quartz rich section - irregular quartz patches and stringers containing minor chlorite, slightly rusty 95.30-95.90: Fairly extensive Mn staining, seems to permeate rock, most extensive adjacent to Mn filled fractures 96.50-97.20: Gritty section				
97.20	97.52	Chlorite Biotite Schist	Dark grey green, well developed schistosity at 65° to C.A. contains several quartz stringers or sweats				

From	To	Rock Name	Description	CA	From	To	Sample No.
97.52	98.80	Quartzose Schist	generally parallel to schistosity. Some carbonate with the quartz Medium grey, similar to above section. 97.64-97.90: Core very badly broken - chips only recovered 98.04-98.05: Quartz stringer at 55° to C.A. 98.17-98.27: Quartz stringer at 60° to C.A., contains 2% chlorite HOLE REDUCED FROM HQ TO NQ AT 98.8m				
98.80	100.35	Chlorite Biotite Schist	Dark green grey, highly schistose at 60° to C.A., occasional quartz sweats parallel to schistosity 99.05-99.07: Quartz stringer at 55° to C.A. 99.24-99.36: Quartz stringer at 55° to C.A. contains 5% chlorite				
100.35	104.60	Chlorite Biotite Schist with Quartzose Schist Interbands	Similar to above section, but quartzose schist bands up to 10 cm present a few carbonate filled fractures cross-cut at 25-35° to C.A., gradually more quartzose schist down section 100.88-100.98: Several quartz stringers at 55° to C.A., contains some chlorite, slightly rusty.				
104.60	104.90	Ground Core					
104.90	106.00	Quartzose Schist	Light grey, contains numerous narrow biotite chlorite schist bands, some minor limonite staining schistosity at 65° to C.A.				
106.00	107.30	Ground Core					

From	To	Rock Name	Description	CA	From	To	Sample No.
107.30	108.75	Quartzose Schist	Similar to above section, but fewer biotite chlorite schist interbands, schistosity at 55° to C.A.				
108.75	109.00	Andalusite Schist	Light grey, hard, schistosity at 60° to C.A., contains 15% green/black (andalusite?) crystals up to 2mm, spotted appearance				
109.00	109.40	Ground Core					
109.40	110.35	Andalusite Schist	As above				
110.35	114.04	Quartzose Schist	Medium grey, hard, weakly schistose at 70° to C.A. cross-cut by narrow carbonate filled fractures at 20° to C.A., minor limonite staining on fractures 113.30-113.85: Dark cherty band, contains 1% pyrite 113.64 : 3mm quartz stringer at 55° to C.A., contains 10% pyrite				
114.04	115.10	Chlorite Sericite Schist	Light to medium grey with a few darker biotite rich bands, schistosity at 55° to C.A. Minor limonite staining, a few quartz sweats, some quartzose schist sections				
115.10	115.20	Ground Core					
115.20	116.05	Sericite Chlorite Schist	Similar to above, core fairly broken, both Mn and limonite staining 115.62-115.68: Quartzite band with two 5 mm pyrite bands at 55° to C.A. 115.98-116.00: Quartz seam showing quartz crystal growth from both walls Mn stained, at 60° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
116.05	116.10	Mud Seam	Soft rusty brown mud, containing a few rock chips				
116.10	116.30	Ground Core					
116.30	124.81	Biotite Chlorite Schist with Quartzose Schist Interbands	Grey to black, highly schistose at 55-65° to C.A. contains numerous quartz sweats and patches, occasional cross-cutting carbonate filled fractures 116.59-116.62: Quartz stringer at 80° to C.A. 117.25-117.30: Quartz stringer at 75° to C.A. 119.98-120.01: Quartz stringer at 75° to C.A. 119.75-120.15: Large quartzose schist inter- band, contacts 60° to C.A. 123.85-124.81: Fairly heavy limonite staining				
124.81	124.93	Mud Seam	Rusty brown, contains schist chips and rusty quartz chips				
124.93	129.78	Quartzite	Medium grey, hard, fairly massive, occasional limonite stained fractures, occasional hairwidth carbonate filled fractures at random angles to C.A. Core badly broken 124.95-125.00: Quartz stringer at 70° to C.A., contains 10% chlorite as fracture fillings 125.17-125.23: Quartz stringer at 75° to C.A., highly fractured, fractures filled with Mn and limonite stain 128.65-128.72: Soft dark brown mud seam				
129.78	131.20	Biotite Chlorite Schist	Dark grey green, schistosity at 65° to C.A., core very badly broken up. Some limonite staining 130.30-130.33: Soft grey mud seam at 55° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
131.20	131.40	Ground Core					
132.10	132.30	Biotite Chlorite Schist	As above 131.90-131.94: Quartz stringer at 50° to C.A. 132.04-132.07: Quartz stringer at 75° to C.A. 132.17-132.22: Soft grey mud seam 132.22-132.30: Quartz stringer at 70° to C.A.				
132.30	132.86	Quartzite	Light grey, fine-grained, massive 132.30-132.65: Band biotite chlorite schist				
132.86	133.05	Biotite Chlorite Schist	As above. Schistosity at 60° to C.A.				
133.05	133.20	Gouge Zone	Soft grey mud with schist chips				
133.20	136.20	Quartzite	As above. Highly broken up, several turned ends to 133.80; core tube failed to lock. 133.80-134.00: Several chips with Mn stained quartz crystals 134.65-134.69: Soft grey mud seam at 70° to C.A. 135.63-135.75: Biotite chlorite schist band at 70° to C.A.				
136.20	136.60	Ground Core					
136.60	137.50	Quartzose Schist with Biotite Chlorite Schist Interbands	Core very badly broken, chips and pieces of quartzose schist, biotite chlorite schist and mud seams recovered 136.60-137.00: Heavy Mn staining 137.00-137.08: Soft grey mud recovered 137.18-137.36: Soft grey mud with large quartzose schist chips and smaller biotite chlorite schist chips - very soft				
137.50	138.40	Ground Core					

From	To	Rock Name	Description	CA	From	To	Sample No.
138.40	139.00	Quartzose Schist	Medium grey, schistosity at 50° to C.A., contains several quartz patches and sweats. Both limonite and Mn staining				
139.00	139.13	Quartzite Breccia	Quartzite fragments in chlorite/rock flour matrix				
139.13	139.18	Gouge Zone	Soft grey brown mud containing quartzite chips up to 3mm				
139.18	141.45	Quartzose Schist	Light grey, weak schistosity at 35° to C.A. contains several Mn coated fractures at 35° to C.A. 139.85-140.03: Quartz rich section, est. 70% quartz as irregular patches surrounded by chlorite rims. 140.45 : Open cavity lined with Mn stained quartz crystals				
141.45	141.70	Gouge Zone	Soft grey, brown mud containing quartzose schist chips				
141.70	142.86	Quartzose Schist	Medium grey, weak schistosity at 40° to C.A. 141.70-141.98: Core badly broken, several Mn stained chips 142.47-142.70: Biotite chlorite schist band, contains a few quartz sweats				
142.86	145.25	Quartzite	Light blue grey, fine-grained, quite massive occasional carbonate filled fractures mostly at 40° to C.A. 143.10-143.42: Quartz /chlorite rich zone. Several tension gashes partly filled with carbonate at 40° to C.A.				
145.25	145.40	Gouge Zone	70% quartzite chips up to 5mm in soft grey brown rock flour matrix				

From	To	Rock Name	Description	CA	From	To	Sample No.
145.40	148.90	Quartzose Schist	Light green grey, weak schistosity at 40° to C.A., contains several quartz veins and occasional irregular patches. Core fairly broken up, several Mn stained fractures generally parallel to schistosity				
148.90	156.03	Quartzite	Light blue grey, fairly massive, limonite stained sections scattered throughout section. A number of fractures predominantly at 35° to C.A. 149.28-149.32: Several narrow tourmaline filled fractures at 35° to C.A. 150.68-150.75: Biotite chlorite schist band at 55° to C.A. 155.67-156.03: Several irregular quartz patches with minor chlorite 155.70 : Cross-cutting 1mm pyrrhotite seam at 20° to C.A.				
156.03	156.90	Biotite Chlorite Schist	Dark grey to black, well developed schistosity at 65° to C.A., several quartz veins and occasional irregular patches. A few cross-cutting carbonate filled fractures at 10° to C.A.				
156.90	157.29	Quartzite	Light grey to rusty brown, fine-grained, massive, rusty brown color due to limonite staining				
157.29	159.70	Biotite Chlorite Schist	Dark grey to black, schistosity well developed at 65° to C.A., contains a few narrow quartzose schist bands 157.43-157.46: Quartz stringer at 70° to C.A. 157.46-157.56: Several disseminated pyrite cubes 157.69-157.76: A few discontinuous pyrite stringers generally at 55° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
159.70			157.76-158.00: Section with heavy sericite 158.74-158.82: Softer, highly micaceous section slightly brown E N D O F H O L E				

CAMPBELL RESOURCES INC.
DIAMOND DRILL LOG

VENTURE CORTIN
PROJECT _____
PROPERTY EPD

LOCATION

TESTS

GRID

TROPARI

ACID

Location <u>19+00N</u>	Depth	Mag Brg	Corr Brg	Dip	Dip ¹
Section <u>43+00E</u>	<u>60.96</u>	_____	_____	_____	<u>45°</u>
Bearing <u>330° (Grid N)</u>	<u>148.70</u>	_____	_____	_____	<u>45°</u>
Dip <u>-45°</u>	_____	_____	_____	_____	_____
Length <u>148.7m</u>	_____	_____	_____	_____	_____

SURVEY

PHYSICAL DATA

Latitude <u>19+09N</u>	Core Size <u>HQ</u> to <u>148.70</u> , _____ to _____
Departure <u>43+00E</u>	Date Started <u>June 28, 1981</u>
Elevation <u>1014.96</u>	Date Completed <u>July 3, 1981</u>
Bearing <u>330°</u>	Casing Pulled <u>No</u>
Dip <u>-45°</u>	Core Recovery <u>94%</u>
	Cemented <u>No</u>

Core storage Oliver Creek Campsite 115-P-15

Logged by D. Kennedy & B. Paul
Contractor Caron Diamond Drilling

NOTES: 1) Give reference - Magnetic, Grid, True
2) Corrected dip.

From	To	Rock Name	Description	CA	From	To	Sample No.
0.00	3.00	Casing	Through overburden, many boulders, mostly chloritic schists often with quartz patches				
3.00	5.80	Chlorite Biotite Schist	Dark green grey, well developed schistosity at 35-45° to C.A., contains several quartz sweats and narrow stringers up to 1cm generally parallel to schistosity. Core very highly broken up, recovery mostly chips with a few core sections up to 20 cm. Occasional hairline width cross-cutting carbonate filled fractures at 65 to C.A., minor Mn + limonite staining 3.46- 3.50: Quartz stringer at 80° to C.A. traces chlorite 3.80- 3.82: Quartz stringer at 60° to C.A.				
5.80	6.40	Ground Core					
6.40	8.80	Chlorite Biotite Schist	As above, core less broken Schistosity at 50-60° to C.A. 6.85- 7.28: Numerous quartz sweats with minor chlorite, often slightly rusty 7.52- 7.53: Soft grey mud seam in badly broken core 8.50- 8.53: Soft light grey mud seam at 60° to C.A.				
8.80	9.40	Ground Core					
9.40	9.90	Chlorite Biotite Schist	As above, schistosity at 50° to C.A.				
9.90	10.65	Quartzose Schist	Light green grey, hard, weak schistosity at 40-45° to C.A., contains odd cross-cutting carbonate stringers at 70-75° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			10.22 : 5mm quartz sweat parallel to schistosity				
10.65	10.80	Chlorite Biotite Schist	As above, core highly broken up				
10.80	11.10	Ground Core					
11.10	12.85	Chlorite Biotite Schist	As above, schistosity at 50-55° to C.A. 11.83- 12.15: Numerous quartz sweats, est. 25% quartz 12.82- 12.85: Soft grey mud with chips chlorite biotite schist				
12.85	13.00	Ground Core					
13.00	13.30	Chlorite Biotite Schist	As above, core highly broken up				
13.30	15.20	Quartzite	Light grey, fine-grained, massive, contains a few Mn stained fractures at 25° to C.A. 13.47- 13.52: Quartz stringer at 55° to C.A. 13.53- 13.70: Soft grey mud seam with quartzite chips 14.05- 14.80: Soft grey mud seam with quartzite chips				
15.20	16.35	Quartzite with Chlorite Biotite Schist Interbands	Light grey with dark green to black schistose bands, typically less than 1 cm 15.49- 15.52: Quartz stringer at 40° to C.A. contains minor chlorite				
16.35	17.00	Quartzite	Light grey, fine-grained, contains a few chloritic partings at 55° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			16.66- 16.67: Quartz stringer at 50° to C.A. slightly rusty, cross-cut by narrow carbonate stringers at 85° to C.A.				
17.00	17.20	Ground Core					
17.20	19.30	Quartzite	As above 17.90- 18.35: Core very badly broken 18.78- 18.81: Quartz stringer at 55° to C.A. 19.10- 19.30: Core very badly broken				
19.30	19.50	Ground Core					
19.50	20.60	Chlorite Biotite Schist	Dark green-grey, schistosity at 45° to 50° to C.A. Contains a number of quartz sweats and patches, core highly broken up 19.93- 20.00: Soft grey mud seam 20.08- 20.60: Estimate 50% quartz as irregular patches and sweats Up to 5% chlorite present				
20.60	21.80	Quartzose Schist	Light to medium grey, fairly hard, weak schistosity at 45° to 50° to C.A. 21.30- 21.34: Large quartz chips in broken core 21.38- 21.41: Quartz stringer at 50° to C.A. slightly rusty 21.50- 21.54: Quartz stringer at 60° to C.A. slightly rusty				
21.80	22.20	Quartzite Breccia	Light grey quartzite fragments up to 5mm in rock-flour matrix		21.80	22.35	DH 16 - 178
22.20	22.35	Gouge Zone	Soft grey mud containing quartzite fragments up to 2 cm				

From	To	Rock Name	Description	CA	From	To	Sample No.
22.35	22.65	Chlorite Biotite Schist	As above, estimate 15% quartz as irregular sweats and patches. Schistosity at 50° to C.A., contains a few cross-cutting carbonate filled fractures at 65° to C.A.				
22.65	23.10	Quartzose Schist	Light grey, fairly hard, contains a few narrow bands of chlorite biotite schist. A few Mn stained fractures at 30° to C.A. 22.74- 22.81: Dark brown limonite stained patch				
23.10	24.10	Chlorite Biotite Schist	Similar to above, 23.16- 23.40: Estimate 40% quartz as narrow stringers, predominantly at 40° to C.A.				
24.10	26.26	Quartzose Schist with Chlorite Biotite Schist Interbands	Light grey, weak schistosity at 60° to C.A. contains several narrow chlorite biotite schist interbands, several lmm cross-cutting carbonate veinlets at 50° to C.A. 24.60- 24.75: Rusty quartz patch with irregular chlorite patch, est. 1% pyrrhotite 24.93- 24.98: Quartz patch, minor chlorite 25.66- 25.72: Highly carbonated band at 60° to C.A.				
26.26	27.88	Quartzite	Light grey, fine-grained, hard, massive. A few carbonate filled fractures at 30-45° to C.A. 26.60- 26.70: Lightly carbonated section, carbonate flakes occur as narrow bands at 50° to C.A.				
27.88	29.65	Chlorite Schist	Dark green, schistosity at 40° to C.A., contains several cross-cutting carbonate veinlets, mostly at 80° to C.A., some are discontinuous across core				

From	To	Rock Name	Description	CA	From	To	Sample No.
			28.52- 28.62: Soft grey mud seam, contains broken core pieces up to 2 cm				
			28.71- 28.77: Chips only recovered				
			28.80- 29.65: Highly carbonated section				
			29.10- 29.19: Blue grey band, very highly carbonated				
			29.35- 29.37: Carbonate stringer at 40° to C.A.				
			29.50- 29.65: Highly contorted heavily carbonated, possible dragfolding, some limonite staining				
29.65	29.90	Ground Core					
29.90	30.80	Chlorite Schist	As above, core highly broken up.				
			30.05- 30.15: Soft grey, brown mud surrounding larger core chips				
30.80	31.10	Ground Core					
31.10	32.60	Chlorite Schist	Dark green grey, well developed schistosity at 50° to C.A., contains + 2 % fine dark(andalusite?) crystals up to 1mm				
			32.20- 32.30: Several dark brown alteration bands(hornfels?)				
32.60	33.10	Quartzite	Light grey, fine-grained massive; contains a few hairwidth carbonate stringers at 45-55° to C.A.				
33.10	33.20	Ground Core					
33.20	33.60	Quartzose Schist	Light grey, fairly hard, weak schistosity at 65° to C.A.				
			33.50- 33.56: Dark band biotite chlorite schist				
33.60	34.10	Ground Core					

From	To	Rock Name	Description	CA	From	To	Sample No.
34.10	34.60	Gouge Zone	Extremely soft, light green-grey mud containing fragments of quartz, quartzose schist and chloritic schist. It is surprising that this material was not washed away in the drilling process				
34.60	34.90	Quartzose Schist	As above, core very badly broken up				
34.90	35.90	Ground Core	<u>N.B.</u> probably loss reported here is actually in Gouge Zone				
35.90	36.85	Quartzose Schist	Light green-grey, weak to medium schistosity at 45° to C.A., contains several narrow cross-cutting carbonate filled fractures at 65° to C.A.				
36.85	40.00	Biotite Chlorite Schist	Dark grey-green, quite schistose, with several thin quartzose horizons White quartz lensing sub-parallel to schistosity 36.90-37.30 : Core is broken, probably a small <u>fault gouge</u> a quartzose section in schist 37.40 : Schistosity approx. 45° to C.A. 37.80-38.00 : Lightly rusted, broken quartzite (quartz schist) 38.00-39.50 : Core is broken, lost core indicated from 38.30 to 39.50 A quartzose section in schist, probably a small <u>fault gouge</u>				
40.00	42.20	Quartzite	Med. grey quartzite, grading into quartzose schist in some sections, occasional white quartz band sub-parallel to schistosity, small number of hairline carbonate veinlets cross-cutting schistosity 40.90-41.05 : Broken core, probably a small <u>fault gouge</u>				

From	To	Rock Name	Description	CA	From	To	Sample No.
			41.80- 42.10 : Lost core indicated 42.10- 42.20 : White quartz-rich section with micaceous interbands				
42.20	43.30	Biotite Chlorite Schist	Dark grey to grey-green, very coarse mica in places, quite schistose - some quartz banding sub-parallel to schistosity at 25-30° to C.A. 43.20- : Several small <u>galena</u> crystals in small CO ₃ veinlet cross-cutting schistosity				
43.30	45.00	Quartzite	Med. grey, grading into quartzose schist in sections, last 40 cm contains much quartz veining sub-parallel to schistosity and dark micaceous interbands giving rock distinctive banded appearance Minor folding, as well as a number of thin carbonate filled fractures cross-cutting schistosity				
45.00	45.55	Biotite Chlorite Schist	Dark greenish-grey and quite schistose, with much interbedded quartzose material, some quartz bands parallel to schistosity				
45.55	47.30	Quartzose Schist	Medium grey, schistose, with thin micaceous interbands Fairly well fractured, with numerous hairline rusty carbonate veinlets cross-cutting schistosity 46.50 : Schistosity at approx. 50° to C.A.				
47.30	48.00	Broken Core Fault Gouge	Core badly broken with probable core loss from 47.70 to 48.00 Large fragments of biotite/chlorite schist, and fractured quartzite Probably a small fault gouge				

From	To	Rock Name	Description	CA	From	To	Sample No.
48.00	52.50	Quartzose Schist	<p>Medium grey, quite variable in composition, from good quartzite through darker colored material with much mica Fair amount of quartz banding sub-parallel to schistosity</p> <p>48.50-48.85 : Small section of Biotite Chlorite schist - much irregular quartz veining, most containing bright green, secondary(?) chlorite</p> <p>49.12 : Quartz band parallel to schistosity at 25° to C.A.</p> <p>49.80 : Several quartz bands paralleling schistosity at 30° to C.A. Offset by microfaulting, which is near parallel to C.A.</p> <p>50.40-50.50 : 10 cm wide quartz rich band in schist</p> <p>50.80-51.00 : 20 cm wide schist band, well broken</p>				
52.50	52.70	Fault Gouge/ Quartzite Breccia	20 cm band, only partially brecciated, some quartz veining, but schistosity intact Probably a small fault gouge				
52.70	53.55	Biotite Chlorite Schist	<p>Greyish green, quite schistose, but with considerable quartz content Some quartz banding sub-parallel to schistosity</p> <p>53.00 : Schistosity at approx. 30° to C.A.</p>				
53.55	55.35	Quartzose Schist	<p>Medium grey and reasonably schistose, fairly uniform in appearance Mildly broken in some sections, with hairline quartz/carbonate veining</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
55.35	55.80	Quartzite Breccia	Quartzite and schist, angular fragments in a drill mud matrix, 1st 5 cm is broken schist, as is last 10 cm of section				
55.80	57.80	Quartzose Schist	<p>Very inhomogeneous section interlaminated quartzose schists and biotite chlorite schists</p> <p><u>Core generally broken</u></p> <p>56.14 : 1 cm wide breccia veinlet at 45° to C.A.</p> <p>56.40-56.50 : approx. Appears to be small rusty zone sub-parallel to schistosity at 45° to C.A. Core broken; probably a small fault gouge</p> <p>56.50-56.90 : Good quartzose schist, but core much broken</p> <p>57.00 : Schistosity at 35° to C.A.</p> <p>57.15-57.30 : Core broken, and probably brecciated in part A small 15 cm <u>fault gouge</u></p> <p>57.50-57.80 : Dark grey biotite/chlorite schist schistosity at 40° to C.A.</p>				
57.80	60.70	Quartzose Schist	<p>Medium grey in color good quartzose schist, unlike preceding section. Mildly tuffaceous(?) in some places, with some micaceous horizons</p> <p>A few irregular quartz bands sub-parallel to schistosity</p> <p>Thin, rusty quartz carbonate veinlets fairly abundant throughout section, cross-cutting schistosity</p> <p>58.10-58.15 : Several 2mm wide carbonate veinlets cross-cutting quartzose schist at 85° to C.A.</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
			60.10 : Several 2-3mm wide vuggy quartz veinlets with thin chloritic selvages at 75° to C.A.				
60.70	60.78	Breccia/ Fault Gouge	Soft, broken section, probably brecciated Fragments mainly dark grey schist Small fault gouge				
60.78	61.47	Biotite Chlorite Schist	Black biotite chlorite schist Soft, quite schistose/fissile Some quartz bands sub-parallel to schistosity		60.78	61.47	DH 16 - 179
61.47	63.05	Quartzite Breccia	Good anistropic quartzite breccia containing several interbands of fractured quartzite Small, abundant, angular fragments of quartzose schist in rock flour matrix Little apparent alteration/mineralization		61.47	62.00	DH 16 - 180
			63.20-63.38 : Small island of well-fractured quartzite Dominant shear direction at 30° to C.A. Also smaller cross-cutting fractures at 70° to C.A.		62.00	63.05	DH 16 - 181
			63.46-63.54 : Fractured quartzite with thin schist band at 35° to C.A.				
63.05	64.60	Quartzose Schist	Light grey, and schistose a good example of this particular rock type Cut by several late, cross-cutting quartz veinlets		63.05	63.50	DH 16 - 182
			63.50 : Schistosity at approx. 25° to C.A.				
			64.05-64.07 : Thin quartz vein/quartz breccia vein a bit of Fe/Mn stain		63.50	64.50	DH 16 - 183

From	To	Rock Name	Description	CA	From	To	Sample No.
64.60	70.74	Quartzite	<p>64.11-64.12 : Rusty breccia vein as above at 85-90° to C.A.</p> <p>Gradational(!) contact from overlying quartzose schist</p> <p>True quartzite probably begins about 64.18</p> <p>Light grey, generally quite massive, but with some schistose sections</p> <p>65.80-65.95 : Several cross-cutting vuggy quartz veinlets at approx. 65° to C.A., minor brecciation</p> <p>66.00 : 2mm quartz veinlet with chlorite selvage at 85° to C.A.</p> <p>Possible tiny brown unknowns</p> <p>68.00 : Schistosity at 20° to C.A.</p> <p>68.20 : 1 cm wide(max.) vuggy quartz vein at 55° to C.A.</p> <p>68.55-68.61 : Quartz band containing minor chlorite sub-parallel to schistosity at 40-45° to C.A.</p> <p>Entire section cut by appreciable number of hair-line fractures containing quartz/carbonate/Fe oxide and occasionally chlorite</p> <p>69.50 : Fracture-filling brownish carbonate(siderite) and quartz (Intersecting fracture veinlets)</p> <p>69.62 : Several hairline chlorite/carbonate veinlets near perpendicular to C.A.</p> <p>69.86-69.90 : 4 cm wide breccia veinlet perpendicular to C.A. quartz/carbonate/chlorite</p>				
					70.00	70.74	DH 16 - 184

From	To	Rock Name	Description	CA	From	To	Sample No.
70.74	70.80	Quartzite Breccia/ Fault Gouge	Soft, broken core		70.74	70.80	DH 16 - 185
70.80	70.95	Biotite Chlorite Schist	With some quartzite as well				
70.95	71.70	Quartzite	Core completely broken, quartzite with minor quartz veining		70.80	71.70	DH 16 - 186
71.70	71.95	Breccia/ Fault Gouge	Soft, broken core, with some dark schist remainders Probably a small fault gouge		71.70	71.95	DH 16 - 187
71.95	75.00	Chloritite/ Chlorite Breccia	Rather inhomogeneous section characterized by pervasive chloritic alteration Brecciated in some sections, and heavily veined by quartz/calcite/siderite Sporadic pyrite disseminations in spots, traces chalcopyrite <u>Grades into unaltered grey quartzite in sections, but mapped as one unit nevertheless</u> 72.20-72.30 : Good quartzite fragments in chloritic matrix with several % pyrite 72.91-73.08 : Cm wide quartz/calcite/siderite(?) veinlets at 40° to C.A. 74.17-74.22 : Quartz rich section 74.60 : Vuggy quartz veinlet at approx. 40° to C.A. 74.91-75.00 : Chlorite veining in grey quartzite at 55° to C.A.		71.95	73.00	DH 16 - 188
					73.00	74.00	DH 16 - 189
					74.00	75.00	DH 16 - 190
75.00	76.40	Lost Core	One and one-half metres				

From	To	Rock Name	Description	CA	From	To	Sample No.
76.40	76.50	Ground Core	Probably grey quartzite				
76.50	76.70	Quartzite	Well broken, grey quartzite		76.50	76.70	DH 16 - 191
76.70	77.00	Chloritite	Actually chlorite veining in grey quartzite, but similar to preceding section and mapped as such		76.70	77.00	DH 16 - 192
77.00	77.10	Quartzite	Grey, core broken.		77.00	78.00	DH 16 - 193
77.10	79.88	Quartzose Schist	Gradational into grey quartzite in some sections, but generally quite micaceous				
			78.36-78.45 : Ground and broken core, probably brecciated		78.00	79.00	DH 16 - 194
			Small fault gouge		79.00	79.88	DH 16 - 195
			78.80-79.10 : Quartz rich band				
			79.20 : 2 cm quartz band at approx. 25° to C.A.				
			79.84-79.88 : Soft, broken core, probably brecciated				
			Small fault gouge				
79.88	80.73	Biotite Chlorite Schist	Medium grey, with coarse mica, some quartz bands sub-parallel to schistosity		79.88	80.73	DH 16 - 196
			80.05-80.12 : Massive Chloritite, grades at both edges into biotite chlorite schist				
			80.44-80.73 : Broken core, biotite chlorite schist				
			80.73-80.82 : Broken, brecciated biotite chlorite schist				
			Probably a small fault gouge				
80.73	81.13	Chloritite	Fine-grained, massive and dark green - vuggy in part		80.73	81.13	DH 16 - 197

From	To	Rock Name	Description	CA	From	To	Sample No.
81.13	81.87	Biotite Chlorite Schist	Much broken throughout section, with minor brecciation Soft, friable		81.13	81.87	DH 16 - 198
81.87	82.02	Chloritite	As above section		81.87	82.02	DH 16 - 199
82.02	82.12	Breccia/ Fault Gouge	Small angular fragments(schist) in rock flour/ drill mud matrix		82.02	82.12	DH 16 - 200
82.12	82.74	Broken Core	Appears to be mainly grey quartzose schists - Mn staining, quartz veining towards bottom of section		82.12	82.74	DH 16 - 201
82.74	83.38	Quartzose Schist	Well broken throughout section, with numerous micaceous bands		82.74	83.38	DH 16 - 202
83.38	84.40	Broken Core/ Fault Grouge	Core completely broken throughout section, with minor core loss Both quartzite and biotite chlorite schist Appears to be fair amount of brecciation Fault gouge?		83.38	84.40	DH 16 - 203
84.40	84.75	Quartzite	Grey, fairly massive, but well-fractured and broken Chlorite veinlets at 30° to C.A., cross-cutting white carbonate veinlets at 75° to C.A.		84.40	84.75	DH 16 - 204
84.75	85.88	Biotite Chlorite Schist	Dark grey-green schist, <u>well-broken throughout section</u> , possibly minor brecciation		84.75	85.88	DH 16 - 205
85.88	86.75	Quartzite/ Quartzite Breccia	Extremely fractured/broken grey quartzite, core completely ground in some sections Downhole portion of section is silic breccia(schist fragments in white vuggy quartz matrix) Minor Mn/Fe stain on fracture surfaces		85.88	86.75	DH 16 - 206

From	To	Rock Name	Description	CA	From	To	Sample No.
			Minor white carbonate fracture veining				
86.75	87.55	Biotite Chlorite Schist	Dark grey-green schist with minor quartz lensing parallel to schistosity First 5-10cm of section brecciated (quartzite fragments), remainder completely broken, ground up		86.75	87.55	DH 16 - 207
87.55	87.70	Quartz Vein	Vuggy in part, cutting biotite chlorite schist				
87.70	88.00	Biotite Chlorite Schist	Core highly broken, cut by several small vuggy quartz veins (N.B. probably some core loss in interval 87.00-88.10)		87.55 87.70	87.70 88.00	DH 16 - 208 DH 16 - 209
88.00	88.80	Quartzite	100% recovery, but greyish quartzite is intensely fractured in a number of orientations Some dark green micaceous interbands in first portion of section Most fractures are thin, rusty quartz or quartz-chlorite filled Many with secondary Cu oxides (crysocolla) Trace Fe sulphide in spots 88.50 : Schistosity at 65° to C.A. Quartz veinlets at 60° and 15-20° to C.A.		88.00	88.80	DH 16 - 210
88.80	91.10	Quartzite Breccia	Gradational from overlying quartzite unit Rather inhomogeneous section containing a number of rock types Mainly quartzite breccia Trace Cu/Mn stain throughout section coating fracture surfaces 89.20-89.80 : A number of vuggy quartz veins and quartz breccia veins cutting quartzite large angular fragments of quartzite, trace pyrite		88.80 89.00 90.00	89.00 90.00 91.10	DH 16 - 211 DH 16 - 212 DH 16 - 213

From	To	Rock Name	Description	CA	From	To	Sample No.
			90.46-90.63 : Dark greenish-grey Biotite Chlorite Schist containing broken/fragmented laminae of quartzite 1st cm of section is thin quartz breccia vein				
			90.67-90.84 : Black chlorite(?) schist with small quartzite breccia fragments, may be graphitic in part Possibly a shear loci				
91.10	92.00	Quartzose Schist/ Biotite Chlorite Schist	Medium to dark grey interlaminated unit, schistosity at 65° to C.A. 91.35-91.70 : Core quartzitic, mildly broken		91.10	92.00	DH 16 - 214
92.00	93.44	Quartzose Schist	Some thin quartzitic interbands 92.36-93.39: Broken core, becoming more micaceous down section. Mn/Fe staining rather abundant, coating fractures in quartzite.				
93.44	93.79	Biotite Chlorite Schist	Much broken in some sections.				
93.79	94.44	Quartzose Schist	Grey quartzose schist, fairly competent, becoming slightly more schistose down section				
94.44	94.94	Interlaminated Biotite Chlorite and Quartzose Schists	About 50% biotite/chlorite schist Thin cm wide gouge zones at either end of section				

From	To	Rock Name	Description	CA	From	To	Sample No.
94.94	98.45	Quartzite	<p>Trace amounts bluish-green carbonate/talc Schistosity at 85 to 90° to C.A.</p> <p>Medium grey, with fairly abundant sericitic interlaminae, especially at beginning of section Cross-cut by a very few thin quartz/carbonate filled fractures a uniform, homogeneous section 96.60 : Schistosity at 65° to C.A. 97.25-97.66 : Greyish-green quartz chlorite schist, schistosity cross-cut by a few hairline carbonate-filled fractures at 40-45° to C.A. Schistosity approx. 70° to C.A. 97.95-98.45 : Core mildly broken, some quartz veining Mn/Fe coated fracture surfaces fairly abundant Brecciation in some sections dark fine-grained (tourmaliniferous) matrix containing small angular clasts of white quartzite</p>				
98.45	99.77	Biotite Chlorite Schist	<p>Dark greyish-green rock, quite schistose, with fairly abundant quartz banding sub-parallel to schistosity Becomes more quartzose towards bottom of section, quartz veining more abundant and core mildly broken (small amounts bluish-green talc/carbonate associated with quartz veining)</p>				
99.77	101.50	Quartzite	<p>Medium grey, fairly massive, with a small number of thin chloritic interbands 99.77-100.20 : Core mildly broken, Fe/Mn stain coating fractures</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
101.50	104.22	Chloritic Quartzite	<p>100.37-100.56 : Small zone of rusty quartzite breccia and concomitant fracturing in adjacent quartzite</p> <p>101.30-101.50 : Core moderately well-broken, minor Fe/Mn staining</p> <p>Medium to dark grey and variable in composition Good biotite chlorite schist in sections, good quartzite in others, but generally quite micaceous Quartz bands/lenses sub-parallel to foliation</p> <p>103.00 : Schistosity at approx. 60° to C.A.</p> <p>103.20-103.30 : Set of vuggy Fe stained and quartz-filled fractures at 55° to C.A.</p>				
104.22	110.37	Quartzose Schist	<p>Medium grey, fairly schistose, with abundant quartz banding sub-parallel to foliation Uniform, fairly homogeneous section</p> <p>104.25 : 2mm vuggy quartz veinlet at 50° to C.A. Schistosity 75° to C.A.</p> <p>104.50-104.58 : Quartz rich section as bands parallel to schistosity</p> <p>104.81-105.00 : Quartz rich section banding sub-parallel to schistosity with fairly abundant bluish-green talc-carbonate</p> <p>105.00-105.29 : Quartzose schist cut by a number of vuggy quartz veinlets, many at 40° to C.A.</p> <p>106.00 : Schistosity at 45° to C.A.</p> <p>107.65-108.28 : Quartz rich section, mainly bands sub-parallel to schistosity, but cross-cutting veinlets as well</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
			Section fairly micaceous on whole Thin 1 mm cross-cutting chlorite fractures at approx. 50° to C.A. 108.78 : Quartz vein at 45° to C.A., schistosity 55° to C.A. 109.05-109.80 : Numerous rusty quartz veinlets, all with dark brownish-black core (tourmaline?) Hairline to 5mm in width, all at approx. 30-35° to C.A. 110.25-110.37 : Quartz band				
110.37	111.00	Quartzite	Greenish quartzite, much fractured Cross-cutting vuggy quartz veinlets at 80-85° to C.A. 110.88-111.00 : 1 cm wide fault gouge/breccia at 15° to C.A. Dominant shear direction in preceding quartzite unit				
111.00	111.70	Biotite Chlorite Schist (Hornfels)	Biotite Chlorite schist, mottled dark brown color due to development of secondary biotite contact schist overlying greenstone Core mildly fractured/broken over last 30 cm		111.00	111.70	DH 16 - 215
111.70	112.13	Chloritic Schist	Uniform section of dark green chloritic schist, with minor brown biotite Some quartz banding parallel to schistosity, also several thin cross-cutting quartz veinlets Contact schist(competent) on hanging wall of greenstone		111.70	112.13	DH 16 - 216
112.13	113.83	"Greenstone"	Dark greenish-black, fine-grained chlorite amphibolite Sulphide rich section, perhaps 25-35% total rock, dominantly fine-grained pyrrhotite disseminated parallel to foliation(lamped, no CaWO ₄)		112.13 113.00	113.00 113.83	DH 16 - 217 DH 16 - 218

From	To	Rock Name	Description	CA	From	To	Sample No.
113.83	115.60	Biotite Chlorite Schist (Hornfels)	<p>Also, patchy pyrite(remobilized), trace chalcopyrite Pyrite also appears in late cross-cutting veinlets (all at 55 to 60° to C.A., with dark green chloritic selvages) Two 10mm wide white calcite veinlets, containing red sphalerite and galena cut section in several places, being particularly abundant from 113.50 to 113.95 (0 to 20° to C.A.)</p> <p>Mottled greenish-brown color, fairly uniform section Quite schistose probably a contact schist/hornfels on footwall of greenstone 114.80-114.88 : 5 mm wide quartz/carbonate veinlet at 10-15° to C.A. Schistosity at approx. 70° to C.A. 114.65-114.74 : 3mm quartz-carbonate veinlet at 35° to C.A. 115.00-115.10 : 2mm rusty quartz veinlet at 25° to C.A.</p>		113.83 114.60	114.60 115.60	DH 16 - 219 DH 16 - 220
115.60	116.10	Biotite Chlorite Schist	<p>Gradational contact with overlying unit Dark greyish-green, has lost brownish biotite 115.60-115.90 : 1 cm quartz vein at near parallel to core axis, carrying small amounts of galena Last 20 cm of section mildly broken</p>		115.60	116.10	DH 16 - 221
116.10	116.69	Chloritite	<p>Soft, fine-grained greyish-green section, highly chloritic Trace disseminated reddish sphalerite, and chalcopyrite 116.16-116.33 : Irregular rusty breccia veinlets at 15 to 20° to C.A. 116.42 : 1 cm quartz veinlet at 60° to C.A.</p>		116.10	116.69	DH 16 - 222

From	To	Rock Name	Description	CA	From	To	Sample No.
116.69	117.25	Chloritic Quartzite	Greyish-green competent, chloritic quartzite Gradational into underlying units Accessory bluish-green talc-carbonate Cross-cut by thin quartz veinlets in several places		116.69	117.25	DH 16 - 223
117.25	118.30	Quartzite	Quite inhomogeneous section, with alot of diffuse irregular quartz veining(silicification) Quartz veins occasionally with trace galena-red sphalerite , especially 117.86 to 118.10 Core moderately broken 118.20-118.30		117.25	118.30	DH 16 - 224
118.30	118.60	Quartz Vein/ Chlorite	Not really a vein, but quartz/chlorite rich section in schist with trace disseminated to clotty pyrite(+chalcopyrite and sphalerite) Some Mn coated fractures in more chloritic sections		118.30	118.60	DH 16 - 225
118.60	120.05	Quartzite/ Quartzose Schist	Grey quartzite/quartzose schist Much silicified quartz veined in sections with accessory bluish-green talc/carbonate Contacts between overlying and underlying units gradational (119.00) small amounts disseminated sphalerite/galena veinlets 119.45- : Quartz vein sub-parallel to schistosity at 45° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
120.05	121.32	Chlorite Schist	Competent dark greyish-green rock, quite schistose Cut by occasional thin, irregular quartz veinlet Schistosity approximately 35° to C.A. (121.00-121.16): Quartz-rich section, also contains abundant bluish-green talc(?does not react and trace red				
121.32	122.15	Quartzose Schist	Medium grey, quite schistose and broken in some sections with fairly abundant quartz lensing sub-parallel to schistosity Cut by a number of late quartz/carbonate/chlorite veinlets, most of which contain small amounts of red sphalerite Measured at 35/55 and parallel to C.A. Trace as well Section becomes slightly more chloritic downhole towards contact with greenstone 122.15 : 3mm-8mm wide quartz vein with small amounts of and at approx. 40° to C.A.				
122.15	124.50	"Greenstone"	Fine-grained medium dark brownish-green rock Competent and quite homogeneous Mottled texture due to development of secondary brown biotite, otherwise very chloritic, with fairly high amphibole content suspect quartz high as well Cut by a number of small(less than 2mm) white calcite veinlets		122.15 123.00 124.00	123.00 124.00 124.50	DH 16 - 226 DH 16 - 227 DH 16 - 228

From	To	Rock Name	Description	CA	From	To	Sample No.
			123.82-124.50 : Sulphide-rich section (several % Fe sulphide) clotty <u>Pyrite/Pyrrhotite</u> strung out along foliation planes and concentrated in a few small (less than 4mm) cross-cutting quartz/carbonate veinlets Foliation at 55° to C.A.				
124.50	127.12	Chloritic Schist	Fairly sharp break after sulphide section in greenstone Quartz chlorite/biotite, probably very little amphibole Rock still very hard, competent and fine-grained (good fabric) Cut by occasional thin (less than 2mm) carbonate veinlets Contact schist (hornfelsed) adjacent to greenstone sill(?)		124.50	125.50	DH 16 - 229
					125.50	126.50	DH 16 - 230
					126.50	127.12	DH 16 - 231
			125.04-125.05 : Quartz vein at 70° to C.A. 125.36 : 2mm wide carbonate vein at 25° to C.A. 125.98 : 2mm with carbonate vein at 55° to C.A. Schistosity 85° to C.A.				
			126.55-126.57 : Quartz/chlorite vein near normal to C.A.				
			126.80-127.00 : Thin carbonate veinlets at 10-15° and normal to C.A.				
127.12	133.90	Quartzose Schist	Medium grey, fairly quartzose, with some quartz banding sub-parallel to foliation Cut by occasional thin carbonate-filled fractures 127.12-127.35 : Quartz rich section with a number of micaceous inter-bands				

From	To	Rock Name	Description	CA	From	To	Sample No.
			128.50-128.63 : Vuggy quartz breccia vein, with angular schist fragments (intersection of fractures)				
			129.55-129.60 : Several % disseminated pyrite/pyrrhotite				
			132.38-132.76 : Thin horizon of interbedded black biotite/chlorite schist and quartzose schist Schistosity 35-40° to C.A.				
			132.76-132.90 : Quartz vein				
			133.45-133.90 : Est. 35% quartz as irregular patches				
133.90	135.80	Biotite Chlorite Schist	Dark grey to black, good schistosity at 65° to C.A. fairly competent, gradually becomes more quartzose down section				
			134.00-134.58: + ½% pyrite as narrow discontinuous stringers parallel to schistosity				
			135.10-135.15: Quartz sweats sub-parallel to schistosity				
			135.15-135.60: Several limonite stained fractures				
135.80	137.30	Quartzose Schist	Medium grey, fine-grained with numerous thin micaceous laminae, schistosity at 55-60° to C.A. Several cross-cutting carbonate stringers at 70° to C.A.				
			136.06-136.08: 5% pyrite in chloritic section				
			136.08 : 1 cm quartz stringer at 60° to C.A.				
137.30	139.30	Lost Core	Core dropped in bottom of hole when core springs failed. Re-drilling resulted in recovery of 0.30m quartzose schist with badly turned ends .				

From	To	Rock Name	Description	CA	From	To	Sample No.
139.30	143.78	Biotite Chlorite Schist	<p>One piece 1.3 cm long contains est. 2% sphalerite</p> <p>Dark grey, schistosity at 60-65° to C.A. Several narrow bands quartzose material, occasional limonite stained fractures and a few cross-cutting carbonate filled fractures at 30° to C.A.</p> <p>140.15-140.19: Est. 10% pyrite in quartzose band at 60° to C.A.</p> <p>140.40-140.67: Quartz vein, contact at 60° to C.A., contains 5% chlorite</p> <p>141.66-142.20: Several irregular quartz patches, estimated 15% quartz.</p>				
143.78	145.53	Quartzite	<p>Light grey, fine-grained, fairly massive. Contains a number of quartz stringers at 30° to C.A., often showing quartz crystal growth</p> <p>144.70 : Open cavity lined with quartz crystals up to 5mm; light Mn staining</p> <p>145.10 : Core pieces severed with quartz crystals up to 3mm</p>				
145.53	146.90	Biotite Chlorite Schist	<p>Dark grey, schistosity at 55° to C.A., contains a few narrow quartzose schist bands, occasional quartz stringers at 40° to C.A., some show quartz crystal growth, minor limonite staining</p> <p>Occasional carbonate filled fractures cross-cutting at 35° to C.A.</p>				
146.90	148.70	Lost Core	Core left in bottom of hole when core springs failed				
	148.70		E N D O F H O L E				

CORTIN JOINT VENTURE

HOLE: EPD - 81- 16

EPD CLAIMS - RESULTS OF 1981 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (in p.p.m.)									
					Sn	W	Cu	Pb	Zn	Ag	Mo			
DH16-178	21.80	22.35	0.55		8		20	115	145	0.5				
179	60.78	61.47	0.69		L5		30	8	240	0.5				
180	61.47	62.00	0.53		18		27	39	1100	.7				
181	62.00	63.05	1.05		L5		30	120	1750	.7				
182	63.05	63.50	0.45		9		44	145	990	2.0				
183	63.50	64.50	1.00		71		60	800	1000	10.0				
184	70.00	70.74	0.74		10		10	67	815	0.5				
185	70.74	70.80	0.06		20		35	255	1280	1.7				
186	70.80	71.70	0.90		L5		9	52	1040	.5				
187	71.70	71.95	0.25		L5		90	90	1390	1.0				
188	71.95	73.00	1.05		L5		17	20	1080	0.5				
189	73.00	74.00	1.00		L5		100	95	4870	1.5				
190	74.00	75.00	1.00		8		335	120	G20000	4.2				
GC														
191	76.50	76.70	0.20		35		600	73	G20000	12.0				
192	76.70	77.00	0.30		58		480	180	13800	7.0				
193	77.00	78.00	1.00		17		150	45	4050	2.5				
194	78.00	79.00	1.00		12		100	48	1430	0.7				
195	79.00	79.88	0.88		10		140	51	1400	1.0				
196	79.88	80.73	0.85		40		355	142	9600	1.0				
197	80.73	81.13	0.40		38		400	165	9600	4.0				
198	81.13	81.87	0.74		43		260	76	14400	1.5				
199	81.89	82.02	0.15		L5		250	105	4330	4.8				
200	82.02	82.12	0.10		L5		350	78	3700	2.5				

CORTIN JOINT VENTURE

HOLE: EPD - 81 - 16

EPD CLAIMS - RESULTS OF 1981 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (In p.p.m.)									
					Sn	W	Cu	Pb	Zn	Ag	Mo			
DH16-201	82.12	82.74	0.62		45		730	295	1600	60				
202	82.74	83.38	0.64		15		390	305	700	5.0				
203	83.38	84.40	1.02		15		500	435	930	8.5				
204	84.40	84.75	0.35		44		720	240	1450	50.0				
205	84.75	85.88	1.13		35		380	110	780	9.0				
206	85.88	86.75	0.87		10		140	98	285	9.0				
207	86.75	87.55	0.80		25		430	80	760	2.0				
208	87.55	87.70	0.15		10		240	30	215	1.0				
209	87.70	88.00	0.30		51		385	99	500	2.5				
210	88.00	88.80	0.80		80		1000	2030	615	30.0				
211	88.80	89.00	0.20		12		670	550	580	12.0				
212	89.00	90.00	1.00		70		695	290	485	9.0				
213	90.00	91.10	1.10		680		1010	750	1290	15.0				
214	91.10	92.00	0.90		8		1000	170	1160	2.0				
215	111.00	111.70	0.70		65		115	210	3220	17.5				
216	111.70	112.13	0.43		400		125	49	325	2.0				
217	112.13	113.00	0.87	1.03	G2000		1230	15	150	3.0				
218	113.00	113.83	0.83	0.79	G2000		1640	30	315	5.0				
219	113.83	114.60	0.77		250		250	875	2300	2.0				
220	114.60	115.60	1.00		45		62	1200	4950	1.0				
221	115.60	116.10	0.50		1000		445	2800	4950	12.0				
222	116.10	116.69	0.59		1050		1135	3500	7150	30.0				
223	116.69	117.25	0.56		1350		115	385	4000	0.7				
224	117.25	118.30	1.05		690		350	555	3840	3.0				
225	118.30	118.60	0.30		20		245	605	2850	2.5				

CAMPBELL RESOURCES INC.
DIAMOND DRILL LOG

VENTURE CORTIN
PROJECT
PROPERTY EPD

LOCATION

TESTS

GRID

TROPARI

ACID

Location	<u>19+00N</u>	Depth	<u>60.96</u>	Mag Brg	<u> </u>	Corr Brg	<u> </u>	Dip	<u> </u>	Dip ¹	<u>60°</u>
Section	<u>38+00E</u>		<u>121.92</u>		<u> </u>		<u> </u>		<u> </u>		<u>59°</u>
Bearing	<u>330° (Grid N)</u>		<u>171.30</u>		<u> </u>		<u> </u>		<u> </u>		<u>60°</u>
Dip	<u>-55°</u>		<u> </u>		<u> </u>		<u> </u>		<u> </u>		<u> </u>
Length	<u>182.1m</u>		<u> </u>		<u> </u>		<u> </u>		<u> </u>		<u> </u>

SURVEY

PHYSICAL DATA

Latitude	<u>19+06N</u>	Core Size	<u>HQ</u>	to	<u>42.10</u>	,	<u>NQ</u>	to	<u>182.10</u>
Departure	<u>38+00E</u>	Date Started	<u>July 4, 1981</u>						
Elevation	<u>953.46</u>	Date Completed	<u>July 10, 1981</u>						
Bearing	<u>330°</u>	Casing Pulled	<u>HQ left in hole</u>						
Dip	<u>-55°</u>	Core Recovery	<u>91%</u>						
		Cemented	<u>No</u>						

Core storage Oliver Creek Campsite 115-P-15

Logged by D. Kennedy
Contractor Caron Diamond Drilling

NOTES: 1) Give reference - Magnetic, Grid, True
2) Corrected dip.

CAMPBELL RESOURCES INC. - DIAMOND DRILL LOG

From	To	Rock Name	Description	CA	From	To	Sample No
0.00	6.30	Casing					
6.30	9.40	Quartzite	Light grey, fine-grained, fairly massive. Contains occasional carbonate stringers up to 2mm at 50° to C.A. Core quite broken; in part only, chips recovered. 7.72- 7.77: Narrow gouge zone, biotite chlorite schist chips in rock flour/drill mud matrix, chips to 5mm. Lower contact at 45° to C.A.				
9.40	9.90	Biotite Chlorite Schist	Dark grey to black, schistosity at 50° to C.A., core very broken, mostly chips recovered. 9.54- 9.59: Quartz stringer at 65° to C.A., contains 5% chlorite. 9.59- 9.67: Band quartzite				
9.90	10.40	Quartzite	As above.				
10.40	10.90	Biotite Chlorite Schist	Only chips recovered.				
10.90	11.00	Ground Core					
11.00	12.10	Quartzite	As above. Occasional limonite-stained fractures.				
12.10	12.20	Ground Core					
12.20	13.70	Quartzite	Light blue-grey, fine-grained, massive. 12.20- 12.38: Estimated 30% quartz as stringers and sweats, generally at 70° to C.A. 12.54- 12.55: Quartz stringer at 65° to C.A. 12.60- 13.00: Lightly carbonated, carbonate flakes aligned at 55° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
13.70	21.30	Perma Frost	Ice only recovered.				
21.30	21.80	Gouge Zone	Soft grey mud with quartz and quartzite chips, generally less than 5mm				
21.80	21.90	Ground Core					
21.90	22.90	Quartzite	Light grey, contains a number of Mn stained fractures, core very badly broken up. 22.05- 22.08: Mud seam, grey mud containing quartzite. Quartz and biotite chlorite schist rock chips in clay-like rock flow matrix.				
22.90	23.50	Ground Core					
23.50	23.70	Quartzite	As above.				
23.70	24.40	Gouge Zone	Mostly quartzite and quartz chips in rock flour/drill mud matrix.				
24.40	24.70	Ground Core					
24.70	27.10	Quartzite	As above, core badly broken. 24.75- 24.77: Narrow grey mud seam at 75° to C.A. 24.87- 24.94: Band biotite chlorite schist. Schistosity at 60° to C.A. 25.42- 25.48: Soft grey mud with quartzite and quartz chips. 25.97- 26.00: Quartz stringer at 55° to C.A. 26.45- 26.64: Estimated 30% quartz as irregular patches. 26.80- 26.90: Mud seam, quartzite chips in grey brown rock flour/drill mud matrix.				

From	To	Rock Name	Description	CA	From	To	Sample No.
27.10	29.80	Quartzite Biotite Chlorite Schist Interband	Only chips recovered, a number of quartz stringers or patches indicated by large pieces quartz recovered, often with up to 5% chlorite.		27.10	28.10	DH 17 - 235
29.80	30.10	Quartzite	As above				
30.10	30.50	Ground Core					
30.50	31.60	Quartzite	As above. 31.13- 31.24: Chlorite schist band, Schistosity at 55° to C.A.				
31.60	32.00	Ground Core					
32.00	32.40	Biotite Chlorite Schist	Only chips recovered, fairly soft.				
32.40	33.30	Quartzite	As above, a few Mn stained fractures. Core less broken than before.				
33.30	33.50	Ground Core					
33.50	35.60	Quartzite	As above. 33.70- 33.80: Very heavy Mn staining. 35.30- 35.60: Limonite staining on fracture nearly parallel to C.A.				
35.60	36.00	Ground Core					
36.00	40.55	Sericite Chlorite Schist	Light to medium grey, highly schistose at 65° to C.A. Some narrow, fairly quartzose bands. 36.00- 36.20: Mostly quartz chips recovered. 37.17- 37.40: Dark biotite-rich section.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			37.40- 37.42: Narrow mud seam at 50° to C.A. 38.38- 38.41: Quartz stringer at 65° to C.A. 38.66- 38.71: Mud seam at 60° to C.A. 38.83- 38.86: Quartz stringer at 55° to C.A. 38.90- 38.93: Quartz stringer at 55° to C.A. 39.40- 39.64: Quartz vein, contains minor chlorite. Mn stained fractures at 25° and 55° to C.A.				
40.55	42.10	Quartzite	Light grey, fine-grained, fairly massive, contains a few narrow chloritic bands at 40° to C.A. Occasional quartz stringers up to 1.5cm in chloritic sections. Becomes more chloritic down section. <u>HOLE REDUCED TO NQ AT 42.10</u>				
42.10	43.20	Chloritic Schist	Grey-green, fairly soft, light schistosity at 50°-55° to C.A. Several quartz sweats and patches.		42.10	43.20	DH 17 - 232
43.20	43.40	Ground Core					
43.40	43.70	Broken Core	Chips, mostly chlorite schist recovered.		43.40	43.70	DH 17 - 233
43.70	45.10	Ground Core	<u>N.B.</u> HQ reamed to 45.10 before drilled with NQ - sand in hole.				
45.10	46.30	Quartzite	Light grey, fine-grained, massive. Core very badly broken. 45.92 : 4mm mud seam at 80° to C.A.		45.10	46.30	DH 17 - 234
46.30	47.50	Ground Core					
47.50	59.60	Quartzose Schist	Light green-grey, slightly schistose at 50° to C.A., several limonite stained fractures at random angles to C.A., occasional quartz stringers and patches, often with minor chlorite. Generally fairly competent, with a few badly broken sections. Occasional chloritic bands.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			49.36- 49.40: Mud seam, soft, yellow-brown mud seam containing highly Mn-stained rock fragments.				
			49.50- 49.98: Several quartz patches and stringers. Estimated 15% quartz present.				
			51.12- 51.16: Soft mud seam with quartzose schist chips at 70° to C.A.				
			51.57- 51.60: Soft, rusty mud seam at 70° to C.A.				
			51.60- 51.70: Rusty chloritic band with several quartz patches up to 1 cm.				
			53.42- 53.48: Quartz stringer at 55° to C.A.				
			53.58- 53.60: Soft, narrow mud seam at 55° to C.A.				
			53.80- 53.90: Heavy limonite staining.				
			54.24- 54.28: Grey mud seam with quartz and quartzose schist chips.				
			54.80- 54.82: Quartz stringer at 65° to C.A.				
			55.18- 55.21: Quartz stringer at 70° to C.A., some Mn stained quartz crystals.				
			57.30 : Limonite stained carbonate seam at 35° to C.A.				
			58.76- 58.80: Quartz stringer at 50° to C.A.				
			59.06- 59.15: Soft grey mud seam with chips quartzose schist.				
59.60	60.47	Chlorite Schist	Green-grey, softer, more schistose, more chloritic section. Schistosity at 35° to C.A., numerous quartz sweats and discontinuous quartz stringers.		59.60	60.47	DH 17 - 236
60.47	65.70	Quartzose Schist	Similar to section above. Schistosity at 35° to C.A.				
			62.93- 63.08: Quartz stringer at 50° to C.A.				
			63.95 : Open fracture at 75° to C.A., shows quartz crystal growth.				
			64.20- 64.33: Band biotite chlorite schist. Schistosity at 35° to C.A.				
			64.70- 64.84: Highly broken up, some biotite chlorite schist.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			65.30- 65.32: Quartz matrix breccia, angular fragments quartzose schist.				
65.70	66.20	Gouge Zone Fault Breccia?	Chips quartzose schist and biotite chlorite schist in grey clay/drill mud matrix.		65.70	66.20	DH 17 - 237
66.20	66.30	Ground Core					
66.30	67.90	Gouge Zone	As above, chips up to 5mm in rock flour/drill mud matrix		66.30	67.00	DH 17 - 238
			66.90- 67.40: Highly rusty section. 67.50- 67.90: Several large quartz and quartzose schist chips.		67.00	67.90	DH 17 - 239
67.90	68.00	Ground Core					
68.00	68.70	Quartzose Schist	As above.				
68.70	70.40	Chlorite Breccia	Grey-green, estimated 60% quartz in chloritic matrix. Core badly broken, many limonite stained fractures at random angles to C.A.		68.70	69.50	DH 17 - 241
			70.30- 70.35: Several traces malachite associated with rusty fracture at 25° to C.A.		69.50	70.40	DH 17 - 242
70.40	70.90	Gouge Zone	Highly oxidized, red to rusty brown, mostly rock chips in drill mud. Rare trace malachite.		70.40	70.90	DH 17 - 243
70.90	71.90	Ground Core					
71.90	72.20	Quartzite	Light grey, hard, massive. Only chips recovered.		71.90	72.20	DH 17 - 244
72.20	72.40	Gouge Zone	Grey mud with dark grey (Mn rich?) bands, very soft.		72.20	72.40	DH 17 - 245
72.40	72.80	Ground Core					

From	To	Rock Name	Description	CA	From	To	Sample No.
72.80	73.20	Biotite Chlorite Schist	Dark grey to black, schistosity at 35° - 40° to C.A.		72.80	73.20	DH 17 - 246
73.20	75.90	Quartzite	Light grey, highly fractured at random angles to C.A. Fractures filled with cream colored carbonate, often some Mn staining, core generally highly broken up. Traces malachite scattered through section, mostly on fracture faces.		73.20 74.00 75.00	74.00 75.00 75.90	DH 17 - 247 DH 17 - 248 DH 17 - 249
75.90	76.50	Ground Core					
76.50	76.77	Quartzite	As above.		76.50	76.77	DH 17 - 250
76.77	77.30	Gouge Zone	Rock chips, mostly quartzite in soft grey rock flour/ drill mud matrix.		76.77	77.30	DH 17 - 251
77.30	80.60	Quartzite	As above, several traces malachite and fairly heavy Mn staining associated with fractures.		77.30 78.00 79.00 80.00	78.00 79.00 80.00 80.60	DH 17 - 252 DH 17 - 253 DH 17 - 254 DH 17 - 255
80.60	81.35	Quartzite Breccia	Light grey, quartzite fragments in rock flour matrix. Occasional Mn-stained sections.		80.60	81.35	DH 17 - 256
81.35	81.77	Quartzose Schist	As above.		81.35	81.77	DH 17 - 257
81.77	82.25	Quartzite Breccia	Similar to above, contains several traces malachite, occasional heavy Mn staining.		81.77	82.25	DH 17 - 258
82.25	86.97	Quartzose Schist	Light grey, weak schistosity at 75° to C.A. Highly fractured at random angles to C.A., fractures filled with cream colored carbonate, abundant Mn staining, numerous traces malachite, most abundant on fracture faces.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			83.08- 83.14: Heavy Mn staining.				
			83.14- 83.30: Soft, grey mud seam with quartzose schist rock chips.				
			83.70 : 5mm soft, grey mud seam at 80° to C.A.				
			83.73 : 3mm soft, grey mud seam at 80° to C.A.				
			84.42-84.83: Irregular quartz patch, about one-half core is quartz with traces malachite.				
			85.00 : 1 cm soft, black mud seam, completely oxidized sulphide?				
			86.14- 86.50: Quartz stringers at 35° to C.A., minor chlorite, a few traces malachite present.				
86.97	87.25	Biotite Chlorite Schist	Dark grey, black, well developed schistosity at 70° to C.A. Contains several irregular quartz veins more or less parallel to schistosity and quartz stringers sub-parallel to C.A.				
87.25	88.30	Quartzite	Light grey, fine-grained, massive. Contains several quartz stringers up to 1 cm at random angles to C.A. Occasional malachite stain in quartz stringers and on fracture faces.				
88.30	88.60	Biotite Chlorite Schist	Dark grey-green, well developed schistosity at 75° to C.A.				
			88.34- 88.36: Dark green heavy chlorite band.				
88.60	88.76	Gouge Zone	Rock chips in grey rock flour/drill mud matrix.		88.60	88.76	DH 17 - 259
88.76	89.90	Quartzite Breccia	90% quartzite fragments in quartz and chlorite matrix, contains several fractures at random angles to C.A. Coated with Mn staining, several traces malachite scattered through section.		88.76	89.90	DH 17 - 260

From	To	Rock Name	Description	CA	From	To	Sample No.
89.90	92.44	Quartzite	As in previous section. Mn coated fractures at random angles to C.A., numerous occurrences malachite, most prevalent on fractures.				
92.44	92.80	Crystal Tuff	Blue-grey, fine-grained, extremely hard, well layered at 70° to C.A., includes blue quartz crystals and light colored rounded fragments.				
92.80	95.40	Quartzite	Light grey, hard, massive, cut by numerous quartz stringers. Generally less than 1 cm, predominantly at 55° to C.A. 94.70- 94.71: Rusty quartz stringer at 45° to C.A.				
95.40	96.50	Crystal Tuff	Similar to above, several Mn stained fractures with traces malachite. 95.40- 95.78: Several cream colored fragments up to 7mm. 96.25- 96.50: Estimated 15% blue quartz crystals up to 4mm.				
96.50	97.85	Quartzose Schist	Light grey, weak schistosity at 60° - 70° to C.A. Occasional carbonate filled fractures cross-cut at 25° to C.A., very minor Mn and limonite staining - fairly competent rock.				
97.85	98.30	Ground Core					
98.30	98.35	Quartzose Schist	As above.				
98.35	100.86	Biotite Chlorite Schist	Dark grey to black, schistosity at 50°-55° to C.A. Several quartz sweats, often slightly rusty. 99.24- 99.26: Grey mud seam at 75° to C.A. 99.42- 99.43: Grey mud seam at 75° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
100.86	101.55	Quartzite	Light grey, fine-grained, fairly massive. Contains a few biotite chlorite schist bands up to 2 cm. Several irregular quartz and a few carbonate patches present.				
101.55	102.61	Quartzite Breccia	80% quartzite fragments in rock flour matrix		101.55	102.61	DH 17 - 261
102.61	103.25	Quartzite	As above				
103.25	103.60	Biotite Chlorite Schist	As above. Schistosity at 75° to C.A.		102.61 103.25	103.25 103.60	DH 17 - 262 DH 17 - 263
103.60	105.70	Breccia/Gouge Zone	Biotite Chlorite Schist, highly brecciated in soft, grey mud matrix. Several mud seams up to 4 cm scattered through section.		103.60 104.60	104.60 105.70	DH 17 - 264 DH 17 - 265
105.70	105.80	Ground Core					
105.80	106.15	Breccia	Quartzite and Chlorite Schist rock chips to 5 cm in carbonate and rock flour matrix. Estimated 2% sphalerite, 1% galena present.		105.80	106.15	DH 17 - 266
106.15	106.42	Quartzite	As above.				
106.42	106.67	Breccia/Gouge Zone	Biotite Chlorite Schist fragments in matrix of soft grey mud.		106.15 106.42	106.42 106.67	DH 17 - 267 DH 17 - 268
106.67	110.05	Biotite Chlorite Schist with Quartzose Schist Interbeds	Dark grey with medium to light grey quartzose schist interbands, schistosity at 75° to C.A. Several quartz stringers and sweats generally parallel to schistosity. Occasional narrow mud seams. 109.30-109.35: Several dark green andalusite crystals up to 5mm. 109.98-110.05: Brecciated band, biotite chlorite schist chips in rock flour matrix.		106.67 107.50	107.50 108.50	DH 17 - 269 DH 17 - 270

From	To	Rock Name	Description	CA	From	To	Sample No.
110.05	115.45	Quartzose Schist	Medium grey, fine-grained, weakly schistose at 80° to C.A. Contains a number of hairwidth carbonate filled fractures at 20° and 45° to C.A., contains several narrow biotite rich bands, typically less than 5mm thick. Occasional quartz carbonate stringers up to 1 cm generally at 25° to C.A. 115.27-115.30: Quartz stringer at 80° to C.A.				
115.45	116.50	Sericite Chlorite Schist	Medium green-grey, well developed schistosity at 60° to C.A., numerous quartz sweats and stringers generally parallel to schistosity. 115.82-116.05: Core very badly broken up, in part mud seam. 116.42-116.50: Mud seam containing schist chips at 80° to C.A.				
116.50	118.40	Quartzite	Light grey, fine-grained, massive. Contains a number of narrow carbonate filled fractures, generally at 50° to C.A. Several traces malachite, mostly in fractures.				
118.40	118.80	Gouge Zone	Chips quartzite in clay-like mud matrix.		118.46	118.80	DH 17 - 271
118.80	118.90	Ground Core					
118.90	119.40	Quartzose Schist	Light grey, weakly schistose at 75° to C.A., contains a number of carbonate filled fractures sub-parallel to C.A.				
119.40	120.42	Biotite Chlorite Schist	Dark grey to black, highly schistose at 70° to C.A., contains numerous quartz sweats and irregular patches. 119.76-119.79: Mud seam at 75° to C.A.				
120.42	121.61	Quartzite	Light grey, fine-grained, massive, fractured. Fractures filled with carbonate, often traces malachite.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			120.75-120.82: Breccia; angular quartzite fragments in tourmaline-rich matrix.				
			121.50-121.60: Several chlorite veinlets, mostly at 15°-20° to C.A.				
			121.57 : Malachite-stained fracture at 80° to C.A.				
121.61	126.94	Biotite Chlorite Schist	Dark grey to black, well developed schistosity at 70° to C.A. Contains numerous quartz stringers and sweats parallel to schistosity, occasional malachite staining on fracture faces at random angles to C.A. A few sections are spotted with andalusite crystals up to 2 mm.				
			121.84-121.95: Quartz patch, several traces malachite, botryoidal structure.				
			123.10-123.14: Quartz stringer at 75° to C.A.				
126.94	127.30	Quartzose Schist	Light grey, weakly schistose at 75° to C.A. Occasional carbonate filled fractures at 15° to C.A.				
127.30	128.41	Biotite Chlorite Schist	Dark green to black, well developed schistosity at 75° - 80° to C.A., contains numerous irregular quartz patches, usually with minor chlorite. A few discontinuous carbonate filled fractures, generally at 15° to C.A.				
			128.10-128.30: Several traces disseminated sphalerite.				
128.41	131.87	Quartzite	Light grey, fine-grained, massive, contains a few biotite rich bands, typically less than 3 cm. Several 1mm carbonate filled stringers at 25°-35° to C.A.				
			128.48 : Traces disseminated pyrite in chloritic patch.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			128.97-129.13: Incipient breccia, angular quartzite fragments up to 2.5 cm (85%) in tourmaline?/chlorite matrix.				
			130.92-130.95: Several disseminated sphalerite grains in carbonated section.				
131.87	133.24	Biotite Chlorite Schist	Dark green to black, well developed schistosity at 60°-70° to C.A. Occasional narrow quartzite bands generally less than 1 cm, contains several cross-cutting stringers, generally at 60° to C.A.				
			131.98-132.15: Quartz stringer at 60° to C.A., contains estimated 15% dark green chlorite, 1 cm band dark brown, soft unknown mineral.				
			132.64-132.70: Brown(hornfels?) biotite.				
133.24	134.10	Quartzite	Light grey, coarser grained than before, gritty. Contains several cream colored carbonate stringers at 20° to C.A. Some are sub-parallel to C.A.				
134.10	134.43	Biotite Chlorite Schist	As above. Schistosity at 60° to C.A.				
134.43	139.25	Quartzose Schist with Biotite Chlorite Schist Interbands	Medium green with dark chlorite biotite schist bands scattered through section. Schistosity at 60° to C.A., a few quartz veins parallel to schistosity. A few narrow carbonate stringers sub-parallel to C.A.				
			135.74-135.80: Slightly rusty quartz stringer at 65° to C.A.				
			135.87-135.90: Quartz stringer at 70° to C.A.				
			136.20-136.60: Several quartz stringers at 70° to C.A.				
			136.65-136.80: Mud seam at 65° to C.A.				
			137.75-138.10: Carbonate patch - cream colored.				
			138.45-138.90: Core highly broken up.				

From	To	Rock Name	Description	CA	From	To	Sample No.
139.25	139.90	Biotite Chlorite Schist	Dark grey-green, well developed schistosity at 75° to C.A. Contains a few carbonate stringers sub-parallel to C.A. 139.58-139.63: Quartz stringer at 60° to C.A., contains patches secondary chlorite.				
139.90	140.56	Quartzite Breccia	Angular grey quartzite fragments in cream colored rock flour/carbonate matrix.		139.90	140.56	DH 17 - 272
140.56	148.15	Quartzite	Light grey, fine-grained, contains a few slightly gritty sections, occasional narrow bands biotite chlorite schist. 141.35-141.94: Several irregular quartz patches often containing soft brown unknown mineral. Section slightly more gritty than before. 142.56-142.76: Several irregular quartz patches, slightly rusty. 142.85 : Limonite stained fracture at 15° to C.A. 143.04-143.08: Quartz stringer at 80° to C.A., contains minor chlorite, 5% brown, soft unknown. 143.61-143.68: Quartz stringer at 80° to C.A. 143.89-143.92: Quartz stringer at 60° to C.A. 144.16-144.60: Carbonate stringers up to 4mm sub-parallel to C.A. 144.73-144.78: Quartz stringer at 75° to C.A. 146.15-146.21: Quartz stringer at 75° to C.A. 147.93-147.96: Quartz stringer at 75° to C.A.				
148.15	148.79	Biotite Chlorite Schist	Dark grey to black, schistosity well developed at 70° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
148.79	149.36	Quartzose Schist	Medium grey, weak schistosity at 70° to C.A., a few slightly chloritic bands.				
149.36	150.20	Chloritic Schist	Medium green-grey, fairly soft. Schistosity at 70° to C.A.				
150.20	154.00	Quartzite	Light grey, fine-grained, massive. Contains a number of carbonate stringers at random angles to C.A., but predominantly at 45° to C.A.				
154.00	155.14	Biotite Chlorite Schist	Dark grey to black, schistosity well developed at 65° to C.A. Some of the biotite has brown coloration (hornfels?), contains a few lmm carbonate stringers at 60° to C.A. 154.25-154.27: Quartz stringer at 80° to C.A. 154.48-154.49: Quartz stringer at 85° to C.A.				
155.14	155.82	Quartzite	Light grey, fine-grained, massive. 155.14-155.40: Slightly rusty.				
155.82	167.50	Chlorite Sericite Schist with Quartzite Bands	Estimated 75% chlorite sericite schist, occasional biotite rich sections, contains several quartz sweets and stringers parallel to schistosity at 70° to C.A. 157.44-157.74: Spotted section, contains 30% andalusite? crystals. 159.10-159.22: Brecciated quartz fragments in chloritic matrix, contains traces sphalerite, minor pyrite. <u>N.B.</u> Box 28(159.9-165.5) upset in drill shock; all measurements suspect. 160.22-160.29: Quartz stringer with estimated 30% chlorite at 70° to C.A. 161.19-161.23: Quartz stringer at 80° to C.A., minor chlorite.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			161.54-161.73: Shattered quartz stringer at 75° to C.A., interstitial spaces filled with chlorite.				
			162.60-163.25: Biotite rich section, some andalusite present.				
			166.12-166.20: Quartz stringer at 70° to C.A.				
167.50	170.36	Quartzite with Biotite Chlorite Schist Interbands	No real break with above section, but quartzite becomes predominant rock type. Biotite largely replaces sericite. 169.65-170.18: Several bands with abundant andalusite crystals.				
170.36	173.30	Quartzite	Light grey, fine-grained, massive. Contains a number of fractures at 50° to C.A., often containing chlorite. 170.36-170.56: Several quartz stringers at 60°-65° to C.A., some contain minor chlorite, occasionally slightly rusty. 170.85 : Limonite stained fracture at 10° to C.A. 171.42-171.52: Soft band biotite chlorite schist. 171.55-171.74: Several quartz stringers at 70° to C.A. 172.00-173.30: Several limonite stained fractures predominantly at 30° to C.A.				
173.30	174.70	Biotite Chlorite Schist	Dark green to black, schistosity at 70° to C.A. Contains a few spotted sections with up to 10% andalusite crystals.				
174.70	175.85	Quartzose Schist	Light grey, fine-grained, has weak schistosity at 75° to C.A. Contains a few cross-cutting carbonate stringers up to 2mm at 30° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
175.85	176.36	Biotite Chlorite Schist	As above. Schistosity at 70° to C.A.				
176.36	182.10	Quartzite with Biotite Schist Interbands	Light grey, massive, with dark schist interbands. Contains several carbonate stringers at 20° to C.A. and sub-parallel to C.A. Occasional quartz sweats and stringers at 60° - 70° to C.A. 179.40-181.30: Rusty quartz stringer at 20° to C.A. Contains angular quartzite fragments. 181.30-181.73: Quartz rich section, several quartz stringers at 35° to C.A.				
182.10	E N D O F H O L E						

CORTIN JOINT VENTURE

HOLE: EPD-81 - 17

EPD CLAIMS - RESULTS OF 19 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (In p.p.m.)									
					Sn	W	Cu	Pb	Zn	Ag	Mo	oz/T Ag	Zn%	
PH17-235	27.10	28.10	1.00		38		60	96	1100	2.3				
232	42.10	43.20	1.10		33		350	24	1600	0.5				
GC	43.20	43.40	0.20											
233	43.40	43.70	0.30	0.12	1150		1100	1650	620,000	10.6			2.45	
GC	43.70	45.10	1.40											
234	45.10	46.30	1.20		70		125	64	950	6.6				
236	59.60	60.47	0.87		13		115	14	610	0.4				
237	65.70	66.20	0.50		12		200	56	720	1.0				
GC	66.20	66.30	0.10											
238	66.30	67.00	0.70		10		440	140	960	1.6				
239	67.00	67.90	0.90		20		710	260	1900	3.3				
GC	67.90	68.00	0.10											
240	68.00	68.70	0.70		35		190	48	290	2.4				
241	68.70	69.50	0.80		30		350	114	740	3.6				
242	69.50	70.40	0.90		105		1124	210	520	10.6				
243	70.40	70.90	0.50		800		2200	840	1700	10.0				
GC	70.90	71.90	1.00											
244	71.90	72.20	1.00	0.18	2000		600	330	340	9.0				
245	72.20	72.40	1.20		200		1640	350	14000	7.8				
GC	72.40	72.80	0.40											
246	72.80	73.20	0.40		22		1280	1900	620,000	15.0			1.50	
247	73.20	74.00	0.80		8		640	560	3840	9.8				
248	74.00	75.00	1.00		15		410	550	8000	2.0				

CORTIN JOINT VENTURE

HOLE: EPD - 81 - 17

EPD CLAIMS - RESULTS OF 1981 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (In p.p.m.)									
					Sn	W	Cu	Pb	Zn	Ag	Mo	oz/T. Ag	Zn %	
DL17-249	75.00	75.90	0.90		23		360	740	5000	2.4				
GC	75.90	76.50	0.60											
250	76.50	76.77	0.27		30		273	325	1000	2.9				
251	76.77	77.30	0.53		40		500	590	1900	5.4				
252	77.30	78.00	0.70		7		560	410	6500	3.0				
253	78.00	79.00	1.00		7		900	630	3000	6.5				
254	79.00	80.00	1.00		10		900	250	3000	3.0				
255	80.00	80.60	0.60		86		1320	340	820	3.7				
256	80.60	81.35	0.75		9		1100	860	G20,000	12.8			2.80	
257	81.35	81.77	0.42		6		600	1360	2600	6.3				
258	81.77	82.25	0.48		5		1100	310	240	2.5				
259	88.60	88.76	0.16		10		2240	410	G20,000	4.0			3.95	
260	88.76	89.90	1.14		13		1360	570	1400	3.0				
261	101.55	102.61	1.06		15		82	52	410	1.0				
262	102.61	103.25	0.64		5		50	24	240	0.4				
263	103.25	103.60	0.35		7		68	26	270	0.4				
264	103.60	104.60	1.00		7		66	64	750	0.5				
265	104.60	105.70	1.10		8		118	365	2800	8.4				
GC	105.70	105.80	1.10											
266	105.80	106.15	0.35		33		440	1600	G20,000	G50		2.27	5.95	
267	106.15	106.42	0.27		6		210	1190	2800	10.0				
268	106.42	106.67	0.25		15		155	1080	1000	14.0				
269	106.67	107.50	0.83		5		65	108	650	0.8				
270	107.50	108.50	1.00		8		80	88	400	1.8				

CAMPBELL RESOURCES INC.
DIAMOND DRILL LOG

VENTURE CORTIN
PROJECT
PROPERTY EPD

LOCATION

TESTS

GRID

TROPARI

ACID

Location 19+60N
Section 50+25E
Bearing 330° Grid N
Dip -45°
Length 98.1m

Depth	Mag Brg	Corr Brg	Dip	Dip ²
<u>74.4</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>49°</u>
<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>
<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>
<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>

SURVEY

PHYSICAL DATA

Latitude 19 55N
Departure 50+28E
Elevation 778.16
Bearing 330°
Dip -45°

Core Size NQ to 98.1 , _____ to _____
Date Started July 11, 1981
Date Completed July 14, 1981
Casing Pulled No
Core Recovery 96%
Cemented No

Core storage Oliver Creek Campsite 115-P-15

Logged by D. Kennedy
Contractor Caron Diamond Drilling

NOTES: 1) Give reference - Magnetic, Grid, True
2) Corrected dip.

From	To	Rock Name	Description	CA	From	To	Sample No.
0.0	4.30	Casing					
4.30	6.90	Quartzite with Biotite Chlorite Schist Interbands	Chips only recovered, mostly quartzite, but often with biotite chlorite schist on ends of quartzite fragments(softer schist washed out?). Recovery 60% limonite staining on several pieces, some obvious cave in section		5.00	6.00	DH 18 - 273
6.90	7.70	Quartzite	Light grey to yellow-brown where limonite-stained core broken up, but contains a few larger pieces; occasional fractures at 20° to C.A., with heavy limonite staining				
7.70	8.00	Ground Core					
8.00	8.15	Biotite Chlorite Schist	Dark green-grey, with some limonite stained partings; schistosity at 75° to C.A.				
8.15	9.70	Quartzite	Light grey, fine-grained, massive; core fairly broken up, but recovery good 9.00- 9.70: Less massive, core very highly broken up, chips generally coated with limonite stain				
9.70	10.10	Ground Core					
10.10	10.70	Quartzite	Grey to grey-brown, a few narrow schist bands present. Core very badly broken up, limonite stain prevalent				
10.70	11.20	Biotite Chlorite Schist	Soft grey-green with several limonite stained chips and pieces 10.90- 11.10: Chips only recovered				

From	To	Rock Name	Description	CA	From	To	Sample No.
11.20	11.90	Quartzite	Light grey, fine-grained, massive; some limonite minor Mn staining, only chips and pieces recovered, est. 70% recovery.				
11.90	12.50	Ground Core					
12.50	13.50	Biotite Chlorite Schist	Medium grey-green, well developed schistosity at 55° to C.A., contains a few narrow (up to 3mm) quartz stringers and sweats parallel to schistosity 13.30- 13.33: Quartz stringer at 50° to C.A., slightly rusty				
13.50	13.70	Ground Core					
13.70	13.80	Quartz Vein	Large pieces quartz recovered				
13.80	14.00	Gouge Zone	Soft biotite chlorite schist cemented by talcy rock flour/drill mud matrix				
14.00	15.30	Quartzose Schist	Light grey, hard, weak schistosity at 50° to C.A. Contains several narrow (less than 5 cm) bands biotite chlorite schist, occasional quartz sweats, mostly in biotite chlorite schist bands, several limonite stained fractures, generally parallel to schistosity				
15.30	15.50	Ground Core					
15.50	18.67	Biotite Chlorite Schist with Quartzose Schist Interbands	Dark grey to black, well developed schistosity at 70° to C.A. Quartzose schist bands are generally 1-2 cm, light grey, hard. Several quartz sweats scattered through section. 18.45- 18.48: Quartz stringer at 60° to C.A.				
18.67	22.90	Quartzite	Light grey, fine-grained, mostly massive, a few				

From	To	Rock Name	Description	CA	From	To	Sample No.
			sections have a number of chloritic partings. Several fractures at 55° to C.A., with limonite and Mn staining. Occasional narrow biotite chlorite schist bands		19.50	20.50	DH 18 - 274
			20.25- 20.90: Quartzose schist?, weak schistosity at 50-60° to C.A.		20.50	21.50	DH 18 - 275
			21.20- 21.23: Quartz stringer at 60° to C.A., slightly rusty		21.50	22.50	DH 18 - 276
			22.20- 22.50: Quartzose schist, weak schistosity at 65° to C.A.		22.50	23.50	DH 18 - 277
22.90	23.70	Biotite Chlorite Schist	Dark grey, well-developed schistosity at 65 to 70° to C.A., contains occasional quartz sweats, some limonite stained sections				
23.70	24.70	Quartzose Schist	Light grey, hard, weak schistosity at 65° to C.A., core highly broken up, but recovery good Occasional limonite-stained fractures at 10-15° to C.A., minor Mn staining				
24.70	26.35	Chlorite Schist	Green-grey, well developed schistosity at 45-50° to C.A., contains a number of quartz sweats and several large Mn stained cavities and fractures. Fractures near parallel to C.A.				
26.35	28.69	Interbanded Quartzite and Biotite Chlorite Schist	Medium grey with dark grey biotite chlorite schist interbands, contains several quartz patches and sweats, often rusty. Several Mn coated fractures, mostly at 50° to C.A. 27.45- 27.70: Core highly broken up 28.20- 28.31: Quartz patch in chloritic section, contains 3 cm chloritic patch. Tension gashes in quartz at 50° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
28.69	30.95	Quartzose Schist	Light grey, hard, weak schistosity at 55° to C.A., occasional irregular quartz sweats 29.41- 29.42: Quartz stringer at 60° to C.A., slightly rusty 29.50- 29.90: Several chlorite filled fractures sub-parallel to C.A.				
30.95	34.40	Quartzose Schist, Biotite Chlorite Schist Interbands	Light grey with dark grey-black biotite chlorite schist interbands, typically 1-3 cm. Contains a number of quartz sweats generally parallel to schistosity at 50-55° to C.A. Contains a number of Mn stained fractures sub-parallel to C.A. 31.40- 32.30: Core highly broken up, chips only recovered 32.48- 32.50: Irregular quartz patch, slightly rusty, vuggy 34.00- 34.30: Quartz stringer at 65° to C.A., a number of tension gashes at nearly right angles to quartz stringer				
34.40	35.45	Quartzose Schist	Light grey, fine to medium-grained, schistosity at 45° to C.A. Locally contorted.				
35.45	35.54	Biotite Chlorite Schist	Dark green-grey, well developed schistosity at 60° to C.A., contains 40% quartz as irregular patches				
35.54	36.43	Quartzose Schist	Light grey to rusty brown, fine to medium-grained, hard, contains several irregular quartz stringers and patches, stained rusty brown.				
36.43	36.95	Biotite Chlorite Schist	Dark green-grey, schistosity at 55° to C.A., locally contorted, contains a number of rusty quartz sweats and patches and several limonite filled fractures at 40° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
36.95	40.85	Quartzite	Light grey, fine-grained, hard, massive - almost cherty in appearance		37.00	38.00	DH 18 - 278
			36.95- 37.16: Several rusty quartz patches and stringers generally at 60° to C.A., several limonite-filled fractures at 60-65° to C.A., a few Mn stained fractures at 15° to C.A.		38.00	39.00	DH 18 - 279
					39.00	40.00	DH 18 - 280
					40.00	41.00	DH 18 - 281
40.85	41.86	Chlorite Schist	38.40- 38.90: Heavy brown staining (limonite?) fractures nearly parallel to C.A., filled with chlorite and quartz				
			39.13- 39.54: Quartz vein at 55° to C.A., contains a number of chlorite filled fractures parallel to C.A., cross-cutting limonite filled fractures at 70° to C.A.				
			39.76- 39.86: Quartz stringer at 40° to C.A.				
			40.00- 40.20: Several 1-2 cm quartz stringers at 45° to C.A.				
41.86	42.70	Quartzite	Green-grey to yellow-brown where heavily limonite stained. Schistosity at 55° to C.A., contains several irregular rusty quartz patches, several Mn stained fractures, generally at 55-65° to C.A.				
			41.41- 41.55: Brecciated section, rusty quartz fragments to 5mm in chloritic matrix		41.00	42.00	DH 18 - 282
			41.81- 41.82: Quartz sweat at 60° to C.A., rusty, fractured, parallel to C.A.				
41.86	42.70	Quartzite	Light grey to rusty brown, fine-grained, hard, massive, limonite-filled fractures at 10° and 50° to C.A., a few Mn stained fractures at random angles to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
42.70	46.74	Biotite Chlorite Schist	Dark grey-green to black, well developed at 70° to C.A., often locally contorted, contains numerous quartz sweets and patches, numerous limonite-stained fractures, mostly parallel to schistosity 44.20- 44.25: Est. 30% rusty quartz, slightly rusty 44.33- 44.60: Quartzite band				
46.74	50.15	Quartzite	Light grey to slightly rusty brown, massive, contains several chlorite filled fractures at 30° to C.A., several cross-cutting limonite filled fractures sub-parallel to C.A. 47.70- 47.75: Biotite chlorite schist band at 70° to C.A. 47.85- 48.35: Rusty brown section; fractured, numerous chlorite filled fractures at random angles to C.A. 48.80- 48.86: Biotite chlorite schist band at 80° to C.A.				
50.15	53.85	Interbedded Biotite Chlorite Schist and Quartzite	Biotite chlorite schist, dark grey to black, well developed schistosity at 60-70° to C.A. Contains numerous limonite filled fractures at 55-80° to C.A., occasional irregular quartz sweets and patches, a few Mn stained fractures at random angles to C.A. Quartzite sections are light grey, fine to medium-grained, occasional fractures filled with chlorite, predominantly at 20 and 50° to C.A., a few limonite stained fractures in quartzite sections				
53.85	55.83	Quartzite	Light grey, fine to medium-grained, contains a few narrow biotite chlorite schist interbands, occasional limonite stained fractures at random angles to C.A., occasional Mn stained fractures				

From	To	Rock Name	Description	CA	From	To	Sample No.
			54.42- 54.45: Quartz stringer at 80° to C.A.				
55.83	60.45	Biotite Chlorite Schist	Dark grey to black, well developed schistosity at 55° to C.A., contains numerous small (typically less than 1cm) quartzite interbands, several limonite stained fractures, mostly parallel to schistosity, occasional Mn staining		58.50	59.45	DH 18 - 283
			59.45- 59.83: Section with very heavy chlorite (primary?), several irregular quartz patches and lenses		59.45	60.45	DH 18 - 284
60.45	61.21	Quartzite (shattered)	Light blue-grey, fine-grained, hard, shattered fractures at 15 and 55° to C.A., filled with creamy colored (rock flour?) material		60.45	61.21	DH 18 - 285
61.21	61.56	Chlorite Breccia	Dark green, 15% rounded quartz fragments in chloritic matrix		61.21	61.75	DH 18 - 286
61.56	61.75	Gouge Zone	Dark grey to black, soft, fragments of biotite chlorite schist in rock flour/drill mud matrix				
61.75	62.05	Quartzite (shattered)	As above		61.75	62.05	DH 18 - 287
62.05	62.20	Ground Core					
62.20	62.35	Quartzite (shattered)	As above		62.20	62.72	DH 18 - 288
62.35	62.72	Biotite Chlorite Schist	Dark grey to black, very soft, schistosity at 70° to C.A.				

CAMPBELL RESOURCES INC. - DIAMOND DRILL LOG

From	To	Rock Name	Description	CA	From	To	Sample No.
62.72	63.13	Chloritite	Dark green, fairly massive, very sharp contact with section above at 60° to C.A.		62.72	63.13	DH 18 - 289
63.13	63.80	Quartz Vein	White quartz, only chips recovered, contains some chlorite 63.54- 63.66: Black biotite chlorite schist		63.13	63.80	DH 18 - 290
63.80	64.00	Ground Core					
64.00	64.90	Biotite Chlorite Schist	Dark grey to black, highly schistose at 60° to C.A., very soft, contains a few mud seams and quartz sweats; a few narrow quartzite seams parallel to schistosity		64.00	64.90	DH 18 - 291
64.90	65.20	Ground Core					
65.20	66.83	Quartzite	Light grey to pale green, highly fractured at random angles to C.A., and fractures filled with chlorite. Contains a few carbonate filled fractures at 65° to C.A., a few traces malachite		65.20	66.00	DH 18 - 292
					66.00	66.83	DH 18 - 293
66.83	69.00	Quartzose Schist	Light grey, fine-grained, weakly developed schistosity at 55° to C.A., contains numerous traces malachite scattered through section 69.56 : 3mm carbonate stringer cross-cutting at 45° to C.A. 66.63 : 4mm carbonate stringer cross-cutting at 65° to C.A.		66.83	68.00	DH 18 - 294
					68.00	69.00	DH 18 - 295
69.00	69.50	Ground Core					
69.50	69.76	Quartzose Schist	As above		69.50	69.76	DH 18 - 296
69.76	71.55	Chlorite Schist	Grey-green, fairly soft, weakly developed schistosity at 60° to C.A.		69.76	70.50	DH 18 - 297
					70.50	71.55	DH 18 - 298

From	To	Rock Name	Description	CA	From	To	Sample No.
71.55	71.73	Quartzose Schist	As above		71.55	71.73	DH 18 - 299
71.73	72.10	Biotite Chlorite Schist	Dark green to black, well developed schistosity at 55° to C.A. 71.89- 71.91: Mud seam at 60° to C.A.		71.73	72.10	DH 18 - 300
72.10	72.50	Ground Core					
72.50	74.20	Biotite Chlorite Schist with Quartzite Interbands	As above sections, core very badly broken up, a number of mud seams present 74.63- 74.90: Gouge zone; mud and rock chips recovered		72.50 73.50	73.50 74.20	DH 18 - 301 DH 18 - 302
74.20	74.40	Ground Core					
74.40	76.77	Quartzite with Schist Interbands	Light grey, hard, with dark bands biotite chlorite schist. Section very badly broken up, a number of carbonate filled fractures at random angles to C.A.		74.40 75.50	75.50 76.77	DH 18 - 303 DH 18 - 304
76.77	77.67	Biotite Chlorite Schist	Dark grey-black, well developed schistosity at 70° to C.A.		76.77	77.67	DH 18 - 305
77.67	78.00	Quartzose Schist	As above				
78.00	78.20	Mud Seam	Rock chips in grey mud/rock flour matrix		77.67	78.20	DH 18 - 306
78.20	78.60	Quartzite	As above		78.20	78.60	DH 18 - 307
78.60	81.65	Quartzite Breccia	Angular quartzite fragments in chloritic matrix 79.36- 79.80: Dark brown(tourmaline?) rich section		78.60 79.36 79.80 80.05	79.36 79.80 80.05 80.50	DH 18 - 308 DH 18 - 309 DH 18 - 310 DH 18 - 311

From	To	Rock Name	Description	CA	From	To	Sample No.
			81.10- 81.30: Heavy chlorite rich section, visible cassiterite as pink-brown grains		80.50	81.00	DH 18 - 312
					81.00	81.35	DH 18 - 313
					81.35	81.65	DH 18 - 314
81.65	82.00	Ground Core					
82.00	84.22	Quartzite Breccia (Chlorite Matrix)	As above		82.00	82.50	DH 18 - 315
			83.37- 83.50: Mud seam, rock chips in rock flour drill mud matrix		82.50	83.50	DH 18 - 316
			83.73- 83.90: Very soft biotite chlorite schist bands, in part held together by drill mud		83.50	84.22	DH 18 - 317
84.22	85.40	Quartzite Breccia	Light grey chips of quartzose schist in white rock flour matrix		84.22	85.00	DH 18 - 318
			85.05- 85.23: Quartz stringer at 70° to C.A. Brecciated, white rock flour matrix		85.00	85.40	DH 18 - 319
85.40	85.60	Ground Core					
85.60	85.75	Quartzite Breccia	As above		85.60	85.75	DH 18 - 320
85.75	86.70	Quartzite	Light grey, fine-grained, massive, contains numerous fractures at 10-15° to C.A., filled with light grey (rock flour?) material, minor chlorite		85.75	86.70	DH 18 - 321
86.70	91.35	Quartzose Schist	Light grey, fine-grained with numerous chloritic schistosity planes at 50° to C.A., occasional chloritic fractures at 45-70° to C.A.				
			88.20- 88.27: Several traces malachite staining in irregular fractures				
			88.58- 88.80: Slightly rusty				
			89.85- 89.95: Chloritic section, contains several irregular quartz				

From	To	Rock Name	Description	CA	From	To	Sample No.
			fragments or patches				
			90.16- 90.30: Several disseminated blebs chalcopyrite				
			90.50- 91.35: Several dark grey biotite- rich schistosity planes		90.50	91.35	DH 18 - 322
			90.70- 91.35: Core badly broken up				
91.35	91.70	Ground Core					
91.70	98.10	Quartzose Schist	As above, 91.86- 91.95: Chips in rock flour/drill mud matrix recovered				
			92.80- : Trace disseminated chalcopyrite				
			94.42- 94.69: Biotite chlorite schist band, dark grey to black, soft				
			95.70- 96.05: Several carbonate filled fractures at 15-20° to C.A.				
			96.96- : 1mm sphalerite seam at 70° to C.A.				
			97.30- 97.50: Quartz-rich section, a few chlorite filled fractures				
	98.10	E N D O F H O L E					

CORTIN JOINT VENTURE

HOLE: EPD- 81 - 18

EPD CLAIMS - RESULTS OF 1981 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (in p.p.m.)												
					Sn	W	Cu	Pb	Zn	Ag	Mo						
DH18-273	5.00	6.00	1.00		17		2100	22	1700	0.8							
274	19.50	20.50	1.00		80		60	68	990	1.4							
275	20.50	21.50	1.00		36		104	40	310	0.7							
(276)	21.50	22.50	1.00		25		860	16	220	1.0	(Combined in error at lab.)						
(277)	22.50	23.50	1.00														
278	37.00	38.00	1.00		15		60	12	110	0.4							
279	38.00	39.00	1.00		20		670	24	540	5.0							
280	39.00	40.00	1.00		5		235	30	280	6.0							
281	40.00	41.00	1.00		19		96	14	160	0.8							
282	41.00	42.00	1.00		15		540	28	1050	1.2							
283	58.50	59.45	0.95		26		92	16	230	0.3							
284	59.45	60.45	1.00		160		210	28	990	0.9							
285	60.45	61.21	0.76		8		172	52	280	3.8							
286	61.21	61.75	0.54		300		1130	84	1240	7.0							
287	61.75	62.05	0.30		72		390	16	820	0.8							
GC	62.05	62.20	0.15														
288	62.20	62.72	0.52		42		80	12	210	0.2							
289	62.72	63.13	0.41		57		148	36	150	4.4							
290	63.13	63.80	0.67		450		100	10	130	0.6							
GC	63.80	64.00	0.20														
291	64.00	64.90	0.90		94		132	20	1400	0.5							
GC	64.90	65.20	0.30														
292	65.20	66.00	0.80		430		92	16	800	1.0							

CORTIN JOINT VENTURE

HOLE: EPD - 81 - 18

EPD CLAIMS - RESULTS OF 1981 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (In p.p.m.)									
					Sn	W	Cu	Pb	Zn	Ag	Mo			
DH18-293	66.00	66.83	0.83		80		360	200	1060	3.9				
294	66.83	68.00	1.17		15		120	32	830	0.4				
295	68.00	69.00	1.00		7		400	24	400	0.3				
296	69.50	60.76	0.26		5		80	52	560	1.2				
297	69.76	70.50	0.74		25		28	96	500	1.0				
298	70.50	71.55	1.05		46		80	76	1200	1.7				
299	71.55	71.73	0.18		17		132	92	1420	1.2				
300	71.73	72.10	0.37		450		400	155	2600	4.5				
301	72.50	73.50	1.00		28		1700	120	1150	5.0				
302	73.50	74.20	0.70		5		40	32	240	0.5				
303	74.40	75.50	1.10		15		34	26	580	0.4				
304	75.50	76.77	1.27		25		22	155	580	0.9				
305	76.77	77.67	0.90		9		66	20	240	0.4				
306	77.67	78.20	0.53		90		68	60	240	1.0				
307	78.20	78.60	0.40		25		720	16	990	0.1				
308	78.60	79.36	0.76	0.31	G2000		620	58	1150	2.0				
309	79.36	79.80	0.44		700		1000	60	1400	1.2				
310	79.80	80.05	0.25	1.31	G2000		6100	1120	12,200	32.0				
311	80.05	80.50	0.45		140		2500	800	2400	25.0				
312	80.50	81.00	0.50		73		3700	52	4000	10.0				
313	81.00	81.35	0.35	7.41	G2000		3200	120	6400	12.0				
314	81.35	81.65	0.30	0.14	1200		370	88	2000	7.5				
GC	81.65	82.00	0.35											
315	82.00	82.50	0.50	0.29	G2000		148	36	1900	2.2				

CAMPBELL RESOURCES INC.
DIAMOND DRILL LOG

VENTURE CORTIN
PROJECT
PROPERTY EPD

LOCATION

TESTS

GRID

TROPARI

ACID

Location <u>19+25N</u>	Depth	Mag Brg	Corr Brg	Dip	Dip ^t
Section <u>51+00E</u>	<u>60.96</u>	<u> </u>	<u> </u>	<u> </u>	<u>45°</u>
Bearing <u>330° (Grid N)</u>	<u>167.03</u>	<u> </u>	<u> </u>	<u> </u>	<u>46°</u>
Dip <u>-45°</u>	<u>197.50</u>	<u> </u>	<u> </u>	<u> </u>	<u>46°</u>
Length <u>197.50m</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

SURVEY

PHYSICAL DATA

Latitude <u>19+25N</u>	Core Size <u>HQ</u> to <u>99.40</u> , <u>NQ</u> to <u>197.50</u>
Departure <u>51+00E</u>	Date Started <u>July 16, 1981</u>
Elevation <u>-45°</u>	Date Completed <u>July 22, 1981</u>
Bearing <u>330°</u>	Casing Pulled <u>No</u>
Dip <u>-45°</u>	Core Recovery <u>96%</u>
	Cemented <u>No</u>
	Core storage Oliver Creek campsite 115-P-15

Logged by D. Kennedy
Contractor Caron Diamond Drilling

NOTES: 1) Give reference - Magnetic, Grid, True
2) Corrected dip.

From	To	Rock Name	Description	CA	From	To	Sample No.
0.00	6.20	Casing	(left in place)				
6.20	7.81	Quartzite (possible boulders)	Light green-grey, fine-grained, hard, massive, contains a few chloritic partings at 50° to C.A., core very badly broken, mostly chips recovered				
7.81	7.90	Mud Seam	Soft dark-grey clay with occasional quartz chips				
7.90	8.25	Quartzite	As above, only chips recovered 7.90-7.94: Several large quartz chips with minor chlorite				
8.25	10.70	Ground Core					
10.70	13.60	Quartzite	Light grey to lightly brown-stained, hard, extremely fine-grained, quite massive Contains a number of hairline fractures at 25° to C.A., occasional vuggy sections 11.60-11.75: Limonite-stained to yellow- brown 12.49-12.50: Quartz lens, slightly rusty 13.45-13.55: Quartz stringer, slightly rusty, highly broken up				
13.60	16.88	Biotite Chlorite Schist	Dark grey to black, soft, well developed schistosity at 60° to C.A., contains numerous quartz sweats usually slightly rusty, several limonite-stained fractures, usually parallel to schistosity 15.60-16.88: Several narrow bands quartzite scattered through section				
16.88	18.00	Quartzite	Light grey, very fine-grained, massive, contains numerous hairwidth fractures filled with chlorite at 10-15° to C.A. Occasional quartz patches				

From	To	Rock Name	Description	CA	From	To	Sample No.
18.00	19.60	Biotite Chlorite Schist	Dark green-grey to black, well developed schistosity at 70° to C.A., contains a number of limonite-stained fractures sub-parallel to schistosity, occasional quartz sweats and stringers, often slightly rusty.				
19.60	24.30	Quartzite Biotite Chlorite Schist Inter- bands	Light grey, quartzite(80%), fine-grained, massive, with numerous narrow dark grey bands biotite chlorite schist at 70° to C.A., some sections with minor limonite and rare Mn-staining, a few chlorite-filled fractures at 5-10° to C.A.				
24.30	25.43	Biotite Chlorite Schist	As above, schistosity at 70° to C.A., contains a few narrow quartzite bands parallel to schistosity 24.90-24.92: Quartz stringer at 30° to C.A., contains minor chlorite				
25.43	25.58	Quartzite	As above, very light limonite-staining				
25.58	26.50	Biotite Chlorite Schist	As above, schistosity at 70° to C.A., contains a few narrow quartz sweats 26.08-26.22: Quartzite band				
26.50	27.95	Quartzite	As above 26.77-27.30: Section with heavy Mn staining 27.41-27.52: Band biotite chlorite schist 27.52-27.70: Core highly broken up, heavy limonite-staining				
27.95	31.70	Biotite Chlorite Schist	Medium to dark grey, occasionally black, well developed schistosity at 70-75° to C.A. Medium limonite-staining, mostly in fractures parallel to schistosity, numerous slightly rusty quartz sweats parallel to schistosity, contains occasional narrow quartzite bands				

From	To	Rock Name	Description	CA	From	To	Sample No.
31.70	32.50	Biotite Dacite Porphyry Dyke	Light blue-grey, fine-grained, with biotite phenocrysts up to 2mm, extremely hard. Upper contact at 75° to C.A., shows chilled margin, lower contact at 80° to C.A., chilled margin less obvious				
32.50	36.10	Biotite Chlorite Schist	As in previous section, schistosity at 60° to C.A., occasional narrow quartzite bands 33.62-33.69: Slightly rusty quartz stringer at 65° to C.A. 34.60-34.90: Abundant quartz in badly broken core, in part breccia? rounded quartz fragments in chloritic schist		34.00	35.00	DH 19 - 323
36.10	40.10	Quartzite with Biotite Chlorite Schist Interbands	Quartzite is light grey, fine-grained, massive, interbanded with 30% biotite chlorite schist. As above, bands up to 0.2m, schistosity at 55° to C.A. 37.80-38.00: Quartz stringer at 60° to C.A. 38.40-38.45: Slightly rusty quartz stringer at 60° to C.A. 38.75-38.82: Slightly rusty, quartz stringers at 45° to C.A.				
40.10	42.00	Biotite Chlorite with Quartzite Interbands	Biotite chlorite schist (70%) dark grey to black, well developed schistosity at 65° to C.A., contains several light grey, fine-grained, massive quartzite interbands 40.16-40.24: Slightly rusty quartz patch				
42.00	42.10	Ground Core	Turned ends in quartzite section				
42.10	44.50	Biotite Chlorite Schist with Quartzite Interbands	As above, 42.60-43.00: Several fractures at 15° to C.A. showing Mn staining 43.50-43.90: Mn staining on fractures at 50° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
44.50	51.25	Quartzite with Biotite Chlorite Schist Interbands	<p>44.35-44.50: Core badly broken up</p> <p>Similar to section 36.10 to 40.10, some fractures with heavy Mn staining. Occasional quartz stringers at random angles to C.A.</p> <p>47.67-47.71: Mud seam, dark biotite chlorite schist chips in dark grey rock flour /drill mud matrix</p> <p>48.12-48.20: Quartz stringer at 70° to C.A., contains 5% chlorite</p> <p>48.20-48.50: Fairly heavy Mn staining</p> <p>49.27-49.38: Irregular quartz patch with minor chlorite</p> <p>49.80-50.60: Several stringers and patches quartz, generally oriented with schistosity in biotite chlorite band at 60° to C.A.</p> <p>50.30-50.70: Several tight chevron type fold hinges, highly contorted</p>				
51.25	55.51	Quartzose Schist	Light blue-grey, fine-grained, hard, weakly developed schistosity at 70° to C.A., occasional limonite and/or Mn-stained fractures at 10° and 45° to C.A., occasional quartz stringers up to 1 cm parallel to schistosity		54.50	55.51	DH 19 - 324
55.51	61.07	Quartzose Schist with Biotite Chlorite Schist Interbands	<p>Quartzose schist is green-grey, weakly schistose; biotite-chlorite schist is dark grey to black, with well developed schistosity at 80° to C.A.</p> <p>56.85-57.04: Several fractures at 20 and 45° to C.A., filled with dark brown-black (tourmaline?) material</p> <p>57.04-57.15: Chloritic section, vuggy</p> <p>58.20-58.30: Quartz stringer at 40° to C.A.</p> <p>58.90-60.40: Quartzose schist section, occasional narrow quartz stringers</p>		55.51	56.50	DH 19 - 325
					56.50	57.50	DH 19 - 326
					57.50	58.50	DH 19 - 327
					58.50	59.50	DH 19 - 328

From	To	Rock Name	Description	CA	From	To	Sample No.
			60.40-61.07: Wide biotite chlorite schist section				
61.07	67.27	Quartzite/ Quartzose Schist	Light grey, fine-grained, massive, hard, some sections have weak schistosity at 70-80° to C.A., contains several Mn-stained fractures sub-parallel to C.A., core fairly broken up 65.14-65.80: Several quartz stringers up to 2 cm at 70° to C.A., often slightly rusty 66.33-66.73: Quartz-rich section, some chloritic sections in quartz 66.73-67.00: Highly contorted				
67.27	69.49	Biotite Chlorite Schist	Dark green to black, well developed schistosity at 75° to C.A., several bands limonite, generally parallel to schistosity, contains occasional quartzose schist bands at 70° to C.A., minor quartz sweats scattered through section 68.34-68.39: Quartz stringer at 65° to C.A., slightly rusty 69.36-69.38: Black mud seam at 70° to C.A.		68.50	69.49	DH 19 - 329
69.49	70.20	Quartzite Breccia (Shatter Breccia)	Quartzite fragments(90%) in chlorite/rock flour matrix, very angular fragments which fit with adjacent fragments		69.49	70.32	DH 19 - 330
70.20	70.32	Gouge Zone	Very soft, light cream to grey mud seams at 65° to C.A.				
70.32	70.77	Biotite Chlorite Schist	As above, schistosity at 75° to C.A.		70.32	71.00	DH 19 - 331
70.77	72.70	Quartzose Schist	Green-grey to brown where limonite stained, hard weakly developed schistosity at 70° to C.A., occasional limonite-stained fractures at 70 & 20° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			Occasional narrow biotite-chlorite schist bands 70.43-70.45: Quartz stringer at 70° to C.A. 71.20-71.23: Quartz stringer at 70° to C.A. 71.50-71.55: Quartz stringer at 75° to C.A. 72.20-72.34: Quartz vein at 85° to C.A., several Mn stained fractures at 30 and 60° to C.A.				
72.70	74.40	Biotite Porphyry	Medium to dark green, medium to fine-grained, softer, coarser-grained than typical greenstone sections, contains some carbonate as white clots, biotite as coarse flecks. Probably andesite-dacite composition 73.78-73.79: Quartz carbonate stringer at 80° to C.A.				
74.40	76.58	Greenstone	Dark green, very fine-grained, hard, typical greenstone, occasional discontinuous biotite bands, generally 1-2mm of 75° to C.A., contains several hairwidth carbonate stringers at 40° to C.A. 74.73-74.77: Several narrow pyrrhotite stringers at 65° to C.A. 75.22-75.38: Highly contorted section, small scale folding evident in more siliceous section				
76.58	76.81	Biotite Chlorite Schist	Dark grey to black, somewhat contorted, but generally schistosity at 65° to C.A.				
76.81	78.20	Quartzite	Light grey to slightly green, hard, massive, contains several fractures with heavy Mn staining, several quartz stringers and patches, often slightly rusty, some limonite staining, mostly toward bottom of section. 76.10 : 2mm pyrite/galena stringer at 45° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			76.20 : Several traces pyrite in quartz stringer at 35° to C.A.				
78.20	79.62	Chlorite Schist	Green-grey, fairly soft, well developed schistosity at 75° to C.A., very heavy limonite staining associated with fractures at 55° to C.A.		78.20 79.00	79.00 79.62	DH 19 - 332 DH 19 - 333
79.62	80.06	Quartzite	Light grey, hard, massive, contains heavy Mn staining associated with fractures at 10° to C.A., heavy limonite stained bands present. A few narrow schist bands present				
80.06	84.80	Chlorite Biotite Schist with Quartzite Interbands	Green-grey with dark biotite-rich sections, contains a number of narrow quartzite sections typically fractured and Mn-stained, occasional hairwidth carbonate stringers at 20 and 55° to C.A. Some sections with heavy limonite staining		82.00 83.00 84.00	83.00 84.00 84.80	DH 19 - 334 DH 19 - 335 DH 19 - 336
84.80	90.85	Quartzite	Grey to rusty-brown where limonite-stained, numerous fractures of 15 and 45° to C.A., often with heavy Mn staining, a few fractures filled with chlorite 90.41-90.46: Biotite chlorite schist band at 75° to C.A.				
90.85	99.00	"Greenstone"	Medium to dark green, fine-grained at contacts, becoming coarse-grained about 0.5m from contacts Contacts very sharp at 75° to C.A., occasional carbonated sections and a few narrow carbonate stringers sub-parallel to C.A. Traces disseminated pyrite & pyrrhotite. 96.59-96.72: Est. 7% pyrrhotite, 2% pyrite in irregular patches		91.00 92.00 93.00 94.00 95.00 96.00 97.00 98.00	92.00 93.00 94.00 95.00 96.00 97.00 98.00	DH 19 - 337 DH 19 - 338 DH 19 - 339 DH 19 - 340 DH 19 - 341 DH 19 - 342 DH 19 - 343 DH 19 - 344
99.00	99.10	Ground Core	<u>N.B. Hole reduced to NQ at 99.40</u>				

From	To	Rock Name	Description	CA	From	To	Sample No.
99.10	99.75	Gouge Zone	Several seams soft brown mud recovered, some bands biotite chlorite schist		99.10 100.00	100.00 101.00	DH 19 - 345 DH 19 - 346
99.75	100.23	Biotite Chlorite Schist	Dark grey to black, well-developed schistosity at 70° to C.A., fairly soft, cross-cut by hairwidth carbonate stringer at 40° to C.A. 100.04-100.15: Biotite medium-brown color (hornfels?)				
100.23	100.78	Quartzose Schist	Light grey, fairly hard, weak schistosity at 70° to C.A., cross-cut by several carbonate stringers at 25-30° to C.A. 100.50-100.58: Quartz stringer, slightly rusty, upper contact 80° to C.A., lower contact 55° to C.A. 100.75-100.78: Slightly rusty quartz stringer at 65° to C.A.				
100.78	101.00	Gouge Zone	Grey mud with quartzose schist chips recovered, very soft				
101.00	101.50	Ground Core					
101.50	102.08	Gouge Zone	Grey mud with quartzose schist chips and occasional biotite-chlorite schist in soft grey mud matrix, very soft		101.50	102.08	DH 19 - 347
102.08	103.00	Quartzite Breccia (shatter breccia)	Grey quartzite/quartzose schist angular fragments surrounded by white carbonated rock matrix (10%) very little movement evident, a few soft mud seams present, generally less than 2 cm, a few traces malachite 102.95-103.00: Mud seam, medium-grey, very soft		102.08	103.00	DH 19 - 348
103.00	105.70	Quartzose Schist	Light grey, weak schistosity at 65° to C.A., contains a number of carbonate filled fractures at 20-30° and				

From	To	Rock Name	Description	CA	From	To	Sample No.
			at 65° to C.A. 104.20-104.54: Two 1 cm carbonate stringers at 30° to C.A. 105.06-105.27: Lightly brecciated section, white carbonate rich matrix				
105.70	106.10	Ground Core					
106.10	107.00	Quartzose Schist	Light grey, weak schistosity at 65° to C.A., contains a number of quartz sweats and patches, a few mud seams. Core fairly broken up				
107.00	107.30	Ground Core					
107.30	109.17	Quartzose Schist	As above 108.80-108.86: Mud seam, contains chips of quartz and quartzose schist 109.08-109.10: Mud seam, contains chips of quartzose schist in soft, dark grey matrix				
109.17	111.00	Biotite Chlorite Schist	Dark grey to black, well developed schistosity at 65-70° to C.A., contains several quartz sweats parallel to schistosity, several narrow very soft mud seams scattered through section. Occasional irregular quartz patches often with minor chlorite				
111.00	111.30	Ground Core					
111.30	112.10	Biotite Chlorite Schist	As above 111.46-111.48: Quartz stringer at 75° to C.A. 111.80-112.00: Light limonite staining		111.30	112.10	DH 19 - 349

From	To	Rock Name	Description	CA	From	To	Sample No.
112.10	112.47	Quartzite Breccia	Quartzite fragments(90%) angular to sub-rounded in chlorite matrix 112.33-112.45: Irregular carbonate patch		112.10	112.47	DH 19 - 350
112.47	118.70	Quartzose Schist with Biotite Chlorite Schist Interbands	Quartzose schist is light grey, hard, weak schistosity at 65° to C.A. Biotite chlorite schist is dark grey to black, soft, schistosity well developed at 60-65° to C.A. A number of quartz stringers parallel to schistosity scattered through section;several hairwidth carbonate filled fractures cross-cutting at 15 and 40° to C.A. 113.90-114.30: Several malachite stained fractures at 20-30° to C.A.		112.47 113.50	113.50 114.50	DH 19 - 351 DH 19 - 352
118.70	118.90	Ground Core					
118.90	120.62	Quartzose Schist with Biotite Chlorite Schist Interbands	Green-grey, somewhat gritty, with dark grey-black interbands biotite chlorite schist at 70° to C.A. contains a number of quartz sweats parallel to schistosity at 70° to C.A., numerous cross-cutting hairwidth carbonate filled fractures sub-parallel to C.A.		119.50	120.50	DH 19 - 353
120.62	120.77	Chloritite	Dark green, contains several quartz patches in discontinuous stringers at 65° to C.A. Rare traces visible cassiterite		120.50 121.00 122.00	121.00 122.00 123.00	DH 19 - 354 DH 19 - 355 DH 19 - 356
120.77	123.45	Quartzose Schist with Biotite Chlorite Schist Interbands	As above. 122.12-122.24: Quartzose schist, shattered, chlorite surrounds quartzose schist grains		123.00	123.90	DH 19 - 357
123.45	123.90	Gouge Zone	Several bands very soft mud, containing rock chips, occasional band fairly massive quartzite				

From	To	Rock Name	Description	CA	From	To	Sample No.
123.90	124.30	Ground Core					
124.30	125.70	Gouge Zone	As above 124.50-124.91: Quartz stringer, highly broken up, contains several carbonate filled fractures at 45° to C.A., lower contact at 45° to C.A.		124.30	125.70	DH 19 - 358
125.70	125.90	Ground Core					
125.90	126.87	Quartzose Schist Biotite Chlorite Schist Interbands	As above, several quartz stringers present, core fairly broken up		125.90	126.87	DH 19 - 359
126.87	129.00	Quartzose Schist Shatter Breccia	95% quartzose schist, shattered but movement minimal, cross-cut by several carbonate stringers at 10° to C.A. 128.00-128.09: Quartz stringer at 65° to C.A. contains 15% chlorite, 1% sphalerite, traces chalcopyrite		126.87 128.00	128.00 129.00	DH 19 - 360 DH 19 - 361
129.00	131.10	Quartzose Schist	Light grey, hard, weakly developed schistosity at 75° to C.A., occasional hairwidth carbonate filled fractures at 10° to C.A.		129.00 130.00	130.00 131.10	DH 19 - 362 DH 19 - 363
131.10	132.20	Quartzite	Light grey, fine-grained, massive, contains occasional carbonate filled fractures at 25° to C.A., a few chlorite filled fractures at 60° to C.A.		131.10 132.30 133.00	132.20 133.00 134.00	DH 19 - 364 DH 19 - 365 DH 19 - 366
132.20	132.30	Ground Core			134.00 135.00 136.00	135.00 136.00 137.00	DH 19 - 367 DH 19 - 368 DH 19 - 369
132.30	138.13	Quartzite	As before 136.36-136.60: Biotite chlorite schist band, dark grey, schistosity 65° to C.A.		137.00	138.13	DH 19 - 370

From	To	Rock Name	Description	CA	From	To	Sample No.
138.13	139.40	Chlorite Biotite Schist with Quartzose Schist Interbands	Light grey, 70% chlorite biotite schist, well developed schistosity at 65° to C.A., with several light grey, hard quartzose schist interbands. 138.13-138.35: Very soft, in part, chlorite biotite schist in clay-like mud matrix		138.13	139.40	DH 19 - 371
139.40	139.60	Ground Core					
139.60	139.67	Biotite Chlorite Schist	Dark grey, well developed schistosity at 85° to C.A., contains traces pyrite		139.60	140.50	DH 19 - 372
139.67	143.20	Quartzose Schist	Light grey, fine-grained, hard, weak schistosity at 75° to C.A., contains a number of carbonate filled fractures at 30° to C.A.		140.50 141.50	141.50 142.50	DH 19 - 373 DH 19 - 374
143.20	144.25	Quartzite Breccia	80% angular quartzite fragments in chloritic matrix, contains several large splashes chalcopyrite. Contacts at 10° to C.A. 143.30-143.60: Est. 10% chalcopyrite		142.50 143.20	143.20 144.25	DH 19 - 375 DH 19 - 376
144.25	145.50	Chlorite Breccia	25% quartzite fragments in chloritic matrix, contains est. 2% chalcopyrite, 2% sphalerite, lower contact nearly parallel to C.A.		144.25	145.50	DH 19 - 377
145.50	147.85	Quartzite Breccia	As in section above, est. 1% sphalerite present as small disseminated grains		145.50 146.50	146.50 147.85	DH 19 - 378 DH 19 - 379
147.85	148.10	Quartzite	Light grey to white, hard, massive, contains a few fractures with minor chlorite		147.85	148.52	DH 19 - 380
148.10	148.52	Chlorite Schist	Grey-green, well developed schistosity at 70° to C.A., a few traces sphalerite present 148.26-148.30: Quartz carbonate stringer at 55° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
148.52	158.40	Quartzose Schist	Light grey, fine-grained, very weak schistosity at 65-75° to C.A., contains a few fractures filled with chlorite and occasional fractures filled with carbonate 149.44-149.90: Several narrow carbonate filled fractures at 60° to C.A. 156.80-157.80: Numerous carbonate filled cross-cutting fractures at 50° to C.A. 157.46-157.80: Core very badly broken up.		148.52	149.50	DH 19 - 381
					149.50	150.50	DH 19 - 382
					150.50	151.50	DH 19 - 383
					151.50	152.50	DH 19 - 384
					152.50	153.50	DH 19 - 385
					153.50	154.50	DH 19 - 386
158.40	158.50	Ground Core					
158.50	159.10	Quartzose Schist with Biotite Chlorite Schist Interbands	Medium to grey, softer than above section, contains a few narrow cross-cutting carbonate stringers at 40° to C.A.		154.50	155.50	DH 19 - 387
					155.50	156.50	DH 19 - 388
					156.50	157.50	DH 19 - 389
					157.50	158.40	DH 19 - 390
					158.50	159.10	DH 19 - 391
159.10	159.60	Quartzite Breccia	70% angular quartzite fragments in dark green chloritic matrix, contains 5% carbonate as irregular patches and filling interstitial spaces.		159.10	159.60	DH 19 - 392
159.60	162.35	Quartzose Schist with Biotite Chlorite Schist Interbands	As above, schistosity at 65° to C.A., contains a number of quartz sweats.		159.60	160.50	DH 19 - 393
					160.50	161.50	DH 19 - 394
					161.50	162.35	DH 19 - 395
162.35	162.50	Tourmaline Breccia	20% small quartz fragments in dark brown-black tourmaline rich matrix. Traces pyrite and pyrrhotite as hairwidth stringers sub-parallel to C.A.		162.35	162.50	DH 19 - 396

From	To	Rock Name	Description	CA	From	To	Sample No.
162.50	163.35	Quartzite Breccia	Quartzite fragments 85%, surrounded by dark green chloritic matrix; brecciation more intense at centre of section		162.50	163.35	DH 19 - 397
163.35	166.48	Biotite Chlorite Schist	Dark grey to black, well developed schistosity at 75° to C.A., contains several quartz stringers and sweats parallel to schistosity, several cross-cutting carbonate stringers at 15° to C.A.		163.35	164.50	DH 19 - 398
					164.50	165.50	DH 19 - 399
					165.50	166.48	DH 19 - 400
166.48	168.20	Quartzose Schist	Medium grey, hard, weak schistosity at 50° to C.A. <u>N.B.</u> Several turned ends in run 167.00-169.20- core tube failed to lock		166.48	167.50	DH 19 - 401
					167.50	168.20	DH 19 - 402
168.20	169.20	Ground Core					
169.20	170.20	Quartzose Schist Biotite Chlorite Schist Interbands	Medium grey, biotite chlorite schist bands typically less than 1 cm at 40-50° to C.A., several quartz sweats and patches present		169.20	170.20	DH 19 - 403
170.20	170.40	Ground Core					
170.40	171.60	Biotite Chlorite Schist	Dark grey to black, very soft, looks graphitic, but probably isn't; contains a number of quartz sweats and irregular stringers generally parallel to C.A.				
171.60	171.90	Ground Core					
171.90	172.50	Biotite Chlorite Schist with Quartzose Schist Interbands	Dark grey with lighter quartzose schist interbands, biotite chlorite schist, a few cross-cutting carbonate filled fractures at 15° to C.A., occasionally parallel to schistosity at 60° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
172.50	174.00	Quartzose Schist	Medium grey, contains occasional narrow biotite chlorite schist bands, several carbonate stringers up to 4mm cross-cutting at 30° to C.A., occasional quartz sweats 173.76-173.81: Mud seam at 80° to C.A. 173.96-174.00: Mud seam only, soft grey mud recovered				
174.00	174.30	Ground Core					
174.30	174.84	Andalusite Schist	Soft grey chloritic schist with 20% andalusite crystals up to 3mm				
174.84	175.00	Quartzose Schist	As above				
175.00	175.75	Andalusite Schist	As above				
175.75	176.40	Quartzose Schist	Light grey, fine-grained, contains several quartz stringers parallel to weak schistosity at 70° to C.A.				
176.40	176.50	Ground Core					
176.50	177.40	Andalusite Schist	As above, schistosity at 60° to C.A.				
177.40	177.78	Biotite Chlorite Schist	Dark grey to black, highly contorted section, schistosity generally at 70° to C.A. 177.46-177.72: Well carbonated section contains 3% pyrrhotite associated with irregular carbonate stringers				

From	To	Rock Name	Description	CA	From	To	Sample No.
177.78	178.50	Chlorite Schist with Quartzite Bands	Light grey, chloritic, fairly soft, schistosity at 65° to C.A., contains 10% andalusite crystals - often stretched and ghostlike in appearance, several quartz stringers parallel to schistosity. Several short sections quartzite scattered through section				
178.50	178.60	Ground Core					
178.60	182.20	Chlorite Schist with Quartzite Bands	As above, 181.64-181.69: Quartz stringer at 75° to C.A., contains 2% chalcopyrite, trace sphalerite				
182.20	182.30	Ground Core					
182.30	182.48	Chlorite Schist	As in above section, ghostlike andalusite crystals up to 3mm				
182.48	187.81	Quartzite Biotite Chlorite Schist Interbands	Light grey, fine-grained, fairly massive, contains several narrow bands biotite chlorite schist. often with andalusite crystals up to 3mm, traces disseminated sphalerite, rare traces chalcopyrite 182.60-182.62: Quartz stringer at 45° to C.A., contains 2% sphalerite, traces chalcopyrite 185.17-185.20: Quartz patch, contains 5% pyrite as irregular clots				
187.81	191.27	Biotite (Chlorite Schist	Dark grey to black, soft, well developed schistosity at 60° to C.A., contains several quartz patches and sweats, generally parallel to C.A. Section contains 2% disseminated pyrrhotite. several traces disseminated pyrite, a few cross-cutting carbonate stringers at 15° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
191.27	194.31	Quartzose Schist	Light grey, fine-grained, fairly hard, weak schistosity at 70° to C.A., several hairwidth carbonate filled fractures at 30-45° to C.A. Rare traces disseminated pyrrhotite				
194.31	194.68	Biotite Chlorite Schist	As above				
194.68	195.48	Quartzite	Light grey, fine-grained, fairly massive, several quartz stringers and irregular blocks quartz 195.39-195.41: Narrow tourmaline breccia seam at 70° to C.A.				
195.48	197.50	Biotite Chlorite Schist with Quartzose Schist Interbands	Dark grey to black biotite chlorite schist, fairly soft, well developed schistosity at 75° to C.A., several narrow quartzose schist bands at 60-75° to C.A. 196.10-196.21: Irregular quartz patches, minor chlorite present 196.40-196.49: Quartz stringer at 60° to C.A. 197.84-197.22: Several quartz stringers up to 3 cm at 70° to C.A.				
	197.50	E N D O F H O L E					

CORTIN JOINT VENTURE

HOLE: EPD - 81- 19

EPD CLAIMS - RESULTS OF 1981 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (In p.p.m.)										
					Sn	W	Cu	Pb	Zn	Ag	Mo				
DH19-323	34.00	35.00	1.00		42		61	13	232	0.4					
324	54.50	55.51	1.05		23		122	51	1200	1.3					
325	55.51	56.50	0.99		1425		162	53	710	1.8					
326	56.50	57.50	1.00		345		83	38	320	2.0					
327	57.50	58.50	1.00		5		130	32	615	0.5					
328	58.50	59.50	1.00		L5		49	20	624	0.3					
329	68.50	69.49	0.99		15		126	23	480	0.9					
330	69.49	70.32	0.83		22		89	102	305	2.3					
331	70.32	71.00	0.68		L5		49	13	535	0.2					
332	78.20	79.00	0.80		L5		46	88	330	0.3					
333	79.00	79.62	0.62		7		102	116	625	0.7					
334	82.00	83.00	1.00		L5		77	46	1195	0.4					
335	83.00	84.00	1.00		40		375	30	6800	3.3					
336	84.00	84.80	0.80		L5		97	42	1710	0.3					
337	91.00	92.00	1.00		L5		50	19	220	0.2					
338	92.00	93.00	1.00		L5		51	4	140	0.2					
339	93.00	94.00	1.00		5		61	4	65	0.3					
340	94.00	95.00	1.00		10		176	6	80	0.5					
341	95.00	96.00	1.00		10		103	24	280	0.9					
342	96.00	97.00	1.00		105		293	22	124	0.9					
343	97.00	98.00	1.00		L5		39	4	518	0.1					

CORTIN JOINT VENTURE

HOLE: EPD- 81-19

EPD CLAIMS - RESULTS OF 19₈₁ DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (in p.p.m.)										
					Sn	W	Cu	Pb	Zn	Ag	Mo				
344	98.00	99.00	1.00		L5		76	4	1210	0.3					
G.C.	99.00	99.10	0.10												
345	99.10	100.00	0.90		L5		47	12	1690	0.6					
346	100.00	101.00	1.00		L5		50	8	750	0.5					
G.C.	101.00	101.50	0.50												
347	101.50	102.08	0.58		23		240	84	1120	1.7					
348	102.08	103.00	0.92		10		430	42	4150	2.9					
349	111.30	112.10	0.80		825		70	11	240	0.6					
350	112.10	112.47	0.37		40		76	35	180	2.7					
351	112.47	113.50	1.03		35		43	8	150	0.4					
352	113.50	114.50	1.00		14		495	22	185	1.3					
353	119.50	120.50	1.00		L5		37	9	145	0.2					
354	120.50	121.00	0.50		L5		34	25	280	0.7					
355	121.00	122.00	1.00		5		39	62	280	1.3					
356	122.00	123.00	1.00		L5		140	88	725	2.2					
357	123.00	123.90	0.90		7		66	17	145	1.1					
G.C.	123.90	124.30	0.40												
358	124.30	125.70	1.40		675		45	11	485	0.8					
359	125.90	126.87	0.97		6		60	42	100	0.7					
360	126.87	128.00	1.13		L5		180	44	2200	1.7					
361	128.00	129.00	1.00		525		117	31	1210	1.6					
362	129.00	130.00	1.00		175		155	12	118	0.7					
363	130.00	131.10	1.10		9		67	19	305	0.6					
364	131.10	132.20	1.10		5		285	102	1060	2.2					

CORTIN JOINT VENTURE

HOLE: EPD - 81 - 19

EPD CLAIMS - RESULTS OF 1981 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (In p.p.m.)									
					Sn	W	Cu	Pb	Zn	Ag	Mo			
DH19-365	132.20	133.00	0.80		L5		365	116	675	3.3				
366	133.00	134.00	1.00		1050		600	271	1960	9.2				
367	134.00	135.00	1.00		6		150	66	730	1.6				
368	135.00	136.00	1.00		30		71	22	140	2.0				
369	136.00	137.00	1.00		25		162	39	330	2.6				
370	137.00	138.13	1.13		13		61	12	300	1.2				
371	138.13	139.40	1.27		8		74	13	60	0.7				
G.C.	139.40	139.60	0.20											
372	139.60	140.50	0.90		5		44	7	60	0.4				
373	140.50	141.50	1.00		5		11	8	110	0.2				
374	141.50	142.50	1.00		5		38	35	260	0.6				
375	142.50	143.20	0.70		67		480	30	290	4.7				
376	143.20	144.25	1.05		10		258	23	250	1.4				
377	144.25	145.40	1.25		7		950	32	2200	4.8				
378	145.40	146.50	1.00		10		1190	64	5200	7.6				
379	146.50	147.85	1.35	0.28	G2000		117	21	2000	1.2				
380	147.85	148.52	0.67		150		24	6	500	0.4				
381	148.52	149.50	0.98		14		22	6	730	0.6				
382	149.50	150.50	1.00		8		500	41	975	4.2				
383	150.50	151.50	1.00		L5		8	9	100	0.4				
384	151.50	152.50	1.00		L5		9	24	60	0.8				
385	152.50	153.50	1.00		L5		15	8	300	0.4				
386	153.50	154.50	1.00		L5		34	15	730	0.5				
387	154.50	155.50	1.00		9		36	12	660	0.4				
388	155.50	156.50	1.00		32		49	9	300	0.4				
389	156.50	157.50	1.00		20		5	3	350	0.2				

CAMPBELL RESOURCES INC.
DIAMOND DRILL LOG

VENTURE CORTIN
PROJECT
PROPERTY EPD

LOCATION

TESTS

GRID

TROPARI

ACID

Location	<u>19+25N</u>	Depth	<u>60.96</u>	Mag Brg	<u> </u>	Corr Brg	<u> </u>	Dip	<u> </u>	Dip ²	<u>59°</u>
Section	<u>51+90E</u>		<u>121.92</u>		<u> </u>		<u> </u>		<u> </u>		<u>59°</u>
Bearing	<u>330° (Grid N)</u>		<u>182.88</u>		<u> </u>		<u> </u>		<u> </u>		<u>Broken</u>
Dip	<u>-65°</u>		<u>274.32</u>		<u> </u>		<u> </u>		<u> </u>		<u>61°</u>
Length	<u>277.70m</u>				<u> </u>		<u> </u>		<u> </u>		

SURVEY

PHYSICAL DATA

Latitude	<u>19+22N</u>	Core Size	<u>HQ</u>	to	<u>76.80</u>	,	<u>NQ</u>	to	<u>277.70</u>
Departure	<u>51+90E</u>	Date Started	<u>July 23, 1981</u>						
Elevation	<u>688.66</u>	Date Completed	<u>July 31, 1981</u>						
Bearing	<u>330°</u>	Casing Pulled	<u>No</u>						
Dip	<u>-65°</u>	Core Recovery	<u>99%</u>						
		Cemented	<u>No</u>						

Core storage Oliver Creek camp 115-P-15

Logged by D. Kennedy
Contractor Caron Diamond Drilling

NOTES: 1) Give reference - Magnetic, Grid, True
2) Corrected dip.

From	To	Rock Name	Description	CA	From	To	Sample No.
0.00	2.80	Casing	Through overburden				
2.80	3.13	Greenstone	Dark green, very hard, fine-grained. Core badly broken up				
3.13	3.60	Biotite Chlorite Schist	Dark grey to black, well developed schistosity at 80° to C.A., core badly broken up				
3.60	5.75	Quartzite	Light grey, extremely fine-grained, quite massive; contains several chloritic fractures at 40° to C.A., occasional irregular quartz stringers and patches, a few narrow carbonate stringers at 20° to C.A., minor limonite staining throughout. Core fairly badly broken 4.75- 4.78: Quartz stringer at 80° to C.A., contains several open (tension?) gashes at 40° to C.A.				
5.75	6.75	Greenstone	Dark green, very hard, fine-grained, massive looking. Contains a few traces disseminated pyrrhotite				
6.75	7.13	Chlorite Schist	Grey-green, well developed schistosity at 60° to C.A.				
7.13	7.60	Quartzite	Light grey, extremely fine-grained, massive Contains several Mn stained fractures at random angles to C.A., several quartz patches present; some sections have vague schistosity at 70° to C.A. 7.12- 7.50: Quartz patch, contains 5% chlorite				
7.60	7.90	Ground Core					

From	To	Rock Name	Description	CA	From	To	Sample No.
7.90	9.10	Quartzite	As above				
9.10	9.38	Biotite Chlorite Schist	As above, schistosity at 75° to C.A.				
9.38	10.70	Quartzite	Light grey to rusty brown, medium-grained, some grains up to 3mm very hard, massive. Heavy limonite staining in some sections				
10.70	11.18	Biotite Chlorite Schist	As above, schistosity at 70° to C.A., fairly contorted locally				
11.18	14.14	Quartzose Schist	Light green-grey, hard, weak schistosity at 70° to C.A., occasional Mn stained fractures, a few quartz sweats and stringer parallel to schistosity				
14.14	19.22	Greenstone	Medium to dark green, fine-grained on margins, becoming coarser-grained near centre of section 15.14- 15.18: Quartz stringer at 65° to C.A., contains 15% chlorite 15.77- 16.23: Limonite stained section 16.30- 16.58: Several quartz stringers at 70° to C.A. 17.10- 17.17: Granitic inclusion?		18.00	19.00	DH 20 - 404
19.22	29.45	Quartzose Schist with Biotite Chlorite Schist Interbands	Quartzose schist(70%), light grey, some rusty brown sections due to limonite staining, hard, weak schistosity at 70° to C.A. Several Mn stained fractures at random angles to C.A. Biotite chlorite schist sections are medium grey-green to almost black, fairly soft, well developed schistosity at 70° to C.A. Occasional, quartz sweats and irregular patches				

From	To	Rock Name	Description	CA	From	To	Sample No.	
29.45	35.42	Greenstone	25.73- 25.87: Several irregular chlorite filled fractures.					
			29.25- 29.35: Several carbonate stringers at 50° to C.A.					
			Dark green, medium-grained, very fine-grained on margins. Upper contact lost in broken core, lower contact at 55° to C.A., occasional fractures with heavy limonite staining at random angles to C.A.			29.45	30.50	DH 20 - 405
						30.50	31.50	DH 20 - 406
						31.50	32.50	DH 20 - 407
						32.50	33.50	DH 20 - 408
35.42	39.30	Interbanded Quartzose Schist and Biotite Chlorite Schist	33.50- 33.92: Estimated 5% pyrite as disseminated grains, traces chalcopyrite.					
			33.92- 35.42: Estimated 1-2% disseminated pyrite.					
			34.15 : 1.5cm weathered sulphide stringers at 15° to C.A.			33.50	34.50	DH 20 - 409
						34.50	35.42	DH 20 - 410
			About equal quantities, light grey quartzose schist with weak schistosity and dark grey to black biotite chlorite schist with well developed schistosity at 70-75° to C.A. Several quartz sweats and irregular patches, individual sections of quartzose schist are typically less than 30 cm. Numerous limonite stained fractures, mostly parallel to schistosity.					
			36.35- 36.72: Red-brown stained quartzose schist section.					
39.30	50.90	Quartzose Schist	37.77- 37.79: Soft, light grey mud seam at 70° to C.A.					
			38.22- 38.70: Several chlorite filled fractures at 20° to C.A.					
			Medium green-grey to light grey, hard, weak schistosity at 70° to C.A., contains occasional quartz stringers and sweats, generally parallel to schistosity, occasional carbonate stringers generally at 30° to C.A.; occasional narrow bands biotite chlorite schist, typically less than 10 cm. Several Mn stained fractures.					
			42.11- 42.19: Quartz stringer at 75° to C.A.,					

From	To	Rock Name	Description	CA	From	To	Sample No.
			contains several tension gashes at 15 - 20° to C.A.				
			45.15- 45.32: Quartz patch, light pink to brown staining, limonite coated fractures at 10° to C.A.				
			47.81- 47.90: Estimated 7% pyrite, traces chalcopyrite as fine disseminated grains in quartzose schist.				
			50.34- 50.46: Scattered traces malachite.				
			50.46- 50.55: Soft, dark brown mud seam.				
50.90	52.85	Biotite Chlorite Schist	Green-grey to almost black, fairly soft, schistosity well developed at 65 - 70° to C.A. Contains several quartz sweats and stringers parallel to schistosity.		50.90 52.00	52.00 52.85	DH 20 - 411 DH 20 - 412
			51.25- 51.46: Several rusty brown quartz stringers and sweats at 70° to C.A.				
			52.55- 52.59: Quartz stringer at 50° to C.A., contains 2-3% chlorite in hair-line fractures.				
52.85	54.90	Quartzose Schist	Light grey, fine-grained, hard, weak schistosity at 70° to C.A., contains several quartz sweats and stringers parallel to schistosity. Occasional cross-cutting carbonate stringers at 20° to C.A.				
54.90	56.17	"Quartz Eye Quartzite"	Blue-grey, hard, with 10-15% dark 1-2mm quartz eyes, vague schistosity at 70° to C.A., several short carbonate filled tension gashes at 55° to C.A.				
56.17	59.56	Quartzose Schist	As above, schistosity at 70° to C.A.				
			56.40- 56.69: Several narrow 1-2mm tourmaline stringers at 45° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
			56.91- 57.00: Quartz stringer at 75° to C.A. 57.23- 57.35: Irregular quartz patch				
59.56	59.83	"Quartz Eye Quartzite"	As at 54.90-56.17, a few limonite stained sections				
59.83	60.29	Biotite Chlorite Schist	As above, schistosity at 70° to C.A.				
60.29	63.87	Quartzose Schist	Light grey, fine-grained, hard, weak schistosity at 70° to C.A., contains a few narrow biotite chlorite schist bands. Occasional narrow quartz sweats scattered through section 60.50- 61.50: Est. 35% quartz as stringers and irregular patches, contains minor chlorite, rare traces pyrrhotite 62.37- 62.58: Quartz stringer at 50° to C.A., contains several fractures at 30° to C.A. Contains minor chlorite, rare traces pyrite 62.70- 62.90: Quartz stringer, upper contact at 40° to C.A., lower contact 70° to C.A.				
					62.00	63.00	DH 20 - 413
					63.00	63.87	DH 20 - 414
63.87	64.95	Quartz Vein	White bull quartz, contains a few limonite or Mn stained fractures 64.50 : Quartzose schist inclusion		63.87	64.95	DH 20 - 415
64.95	65.12	Chlorite	Dark green heavy chlorite band at 40° to C.A., contains several traces sphalerite		64.95	65.27	DH 20 - 416
65.12	65.27	Quartzite Breccia	80% quartz and quartzose schist fragments in chlorite and rock flour matrix; several traces				

From	To	Rock Name	Description	CA	From	To	Sample No.
			sphalerite in dark green chloritic matrix.				
65.27	70.20	Quartzose Schist	Light green-grey, fine-grained, hard, weak schistosity at 65-70° to C.A., contains several quartz stringers and sweats generally parallel to schistosity. Several hairwidth cross-cutting carbonate stringers at 25° to C.A. 69.00- 69.50: Narrow chloritic seam sub-parallel to C.A.		65.27 66.00 67.00 68.00 69.00	66.00 67.00 68.00 69.00 70.20	DH 20 - 417 DH 20 - 418 DH 20 - 419 DH 20 - 420 DH 20 - 421
70.20	71.50	Biotite Chlorite Schist	Grey-green to almost black, schistosity at 65-70° to C.A., contains a number of quartz sweats and irregular patches. 70.20- 70.30: Extremely soft, mostly chips biotite chlorite schist in grey mud matrix.		70.20	71.50	DH 20 - 422
71.50	72.81	Quartzose Schist	As above, schistosity at 65° to C.A.		71.50	72.81	DH 20 - 423
72.81	73.93	Biotite Chlorite Schist	As above, schistosity at 65° to C.A., a few limonite stained fractures parallel to schistosity.		72.81	73.93	DH 20 - 424
73.93	74.63	Quartzose Schist	Grey-green, hard, weak schistosity at 70° to C.A., contains several chlorite filled fractures at 20-40° to C.A. 74.40- 74.50: Estimated 1% chalcopryrite as disseminated grains.		73.93	74.63	DH 20 - 425
74.63	74.93	Tourmaline Breccia	20% rounded quartz grains in dark brown tourmaline rich matrix. Contains + 1% sphalerite. Upper contact 35° to C.A., lower contact 20° to C.A.		74.63	74.93	DH 20 - 426
74.93	78.36	Quartzose Schist	As before, schistosity at 70 - 75° to C.A.		74.93 76.00	76.00 76.80	DH 20 - 427 DH 20 - 428

From	To	Rock Name	Description	CA	From	To	Sample No.
			74.93- 75.20: A number of chlorite/tourmaline filled fractures at 30-45° to C.A., several traces disseminated sphalerite		76.80	77.80	DH 20 - 429
			76.80 : Hole reduced from HQ to NQ		77.80	78.36	DH 20 - 430
			76.40- 76.80: Several splashes sphalerite				
78.36	78.58	Biotite Chlorite Schist	Dark green, almost black, well developed schistosity at 65° to C.A.				
78.58	79.20	Quartzose Schist	As above, weak schistosity at 70° to C.A.				
79.20	81.45	Biotite Chlorite Schist	Dark green, almost black, fairly soft, schistosity well developed at 55-65° to C.A. Several quartz sweats and stringers parallel to schistosity.				
			79.77- 79.90: Quartz patch, contains 5% chlorite, traces sphalerite				
81.45	82.91	Quartzose Schist	As above, weak schistosity at 60° to C.A., rare traces sphalerite				
82.91	83.65	Biotite Chlorite Schist	Dark green with a few almost black bands, schistosity at 65-70° to C.A.				
83.65	83.71	Quartz Vein	White bull quartz vein at 70° to C.A., contains a few carbonate filled tension gashes at 10° to C.A., some chlorite in fractures and splashes sphalerite				
83.71	84.43	Quartzite Breccia	90% quartzite, with chloritic matrix, a few limonite stained fractures at 10-15° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
84.43	89.98	Quartzose Schist	<p>Light grey, fine-grained, weak schistosity at 70° to C.A.</p> <p>84.70- 85.00: Several rock flour filled fractures at 60-70° to C.A.</p> <p><u>N.B.</u> 3.8m core recovered between 84.70 and 87.70m markers; core highly broken up between 85.00-85.50</p> <p>86.30- 86.57: Mn-stained fracture sub-parallel to C.A.</p> <p>88.57- 88.63: White quartz stringer at 80° to C.A.</p> <p>89.80- 89.98: Quartz stringer at 70° to C.A. contains 5% chlorite, occasional fragments quartzose schist</p>				
89.98	91.90	Biotite Chlorite Schist with Quartzose Schist Interbands	<p>Grey to dark grey to black, schistosity at 70° to C.A.; Quartzose schist bands are light grey, typically less than 10 cm, contains occasional quartz stringers and sweats parallel to schistosity. Contains occasional cross-cutting hairwidth stringers generally at 50° to C.A.</p> <p>91.44- 91.51: Quartz stringer at 75° to C.A. Contains 5% chlorite, 1% pyrrhotite</p>				
91.90	98.31	Quartzose Schist	<p>Light grey, fine-grained weak schistosity at 70° to C.A. Contains numerous narrow, typically less than 1 cm biotite chlorite schist bands, their number gradually decreasing down section</p> <p>94.50- 94.64: Quartz stringer at 75° to C.A., contains minor chlorite</p> <p>96.80- 96.91: Quartz patch, contains minor chlorite</p> <p>96.90-97.30: Biotite chlorite schist band, contains less than 1% pyrrhotite and pyrite as</p>				

From	To	Rock Name	Description	CA	From	To	Sample No.
			hairwidth seams parallel to schistosity				
98.31	100.35	Chlorite Biotite Schist	Medium grey with several black, biotite rich bands, well developed schistosity at 75° to C. A. Occasional quartz sweats and hairwidth cross-cutting carbonate stringers as before				
100.35	101.65	Quartz Eye Quartzite	Light grey, dark quartz eyes up to 2mm, in very fine-grained hard quartzite, somewhat tuffaceous looking 100.80-101.14: Several chlorite biotite schist bands at 70° to C.A. 101.14-101.16: Soft grey mud seam at 70° to C.A. 101.18-101.40: Several carbonate filled fractures at random angles to C.A.				
101.65	102.83	Quartzose Schist	As above				
102.83	104.20	Biotite Chlorite Schist with Quartzose Schist Interbands	Medium grey with dark bands biotite-rich schist, schistosity at 65° to C.A., contains several cross-cutting carbonate stringers at 35° to C.A. 104.03-104.08: Soft mud seam with abundant biotite chlorite schist chips				
104.20	106.97	Quartzose Schist	Light grey, fine-grained, weak schistosity at 85° to C.A., contains occasional quartz stringers and several hairwidth carbonate stringers at 60° to C.A.		104.00 105.00 106.00	105.00 106.00 106.97	DH 20 - 431 DH 20 - 432 DH 20 - 433
106.97	107.84	Shatter Breccia	Quartzite, shattered, fragments surrounded by chloritic material, several quartz carbonate stringers at 30° to C.A. Traces disseminated pyrite		106.97	107.84	DH 20 - 434

From	To	Rock Name	Description	CA	From	To	Sample No.
			107.30 : Vis. cassiterite				
107.84	136.38	Quartzose Schist	Light grey, fine-grained, hard, weak schistosity at 65° to C.A. Several 1-2mm quartz stringers parallel to schistosity, a few cross-cutting carbonate stringers at 25-35° to C.A.		107.84	109.00	DH 20 - 435
					109.00	110.00	DH 20 - 436
					110.00	111.00	DH 20 - 437
					111.00	112.00	DH 20 - 438
			108.15-108.28: Lightly brecciated, quartz carbonate matrix surrounding large (2cm) quartzose schist fragments				
			109.98-110.07: Quartz stringer at 40° to C.A.				
			110.90-112.33: Slightly coarser-grained section, contains a few quartz eyes, lighter grey color				
			119.92-119.94: Quartz stringer at 25° to C.A. contains 3% pyrrhotite as irregular patches		118.00	119.00	DH 20 - 439
					119.00	120.00	DH 20 - 440
					120.00	121.00	DH 20 - 441
			120.15-120.25: Irregular quartz stringer at 75° to C.A., contains 3% pyrrhotite as large clots up to 7mm		121.00	122.00	DH 20 - 442
					122.00	123.00	DH 20 - 443
					123.00	124.00	DH 20 - 444
					124.00	125.00	DH 20 - 445
			120.38-120.45: Quartz patch, contains 3% pyrrhotite		125.00	126.00	DH 20 - 446
					126.00	127.00	DH 20 - 447
			124.55-126.40: Coarse-grained section, some 1mm quartz eyes present, a few traces disseminated pyrrhotite				
			127.10-127.40: Est. 30% quartz as narrow stringers and patches parallel to schistosity				
			129.70-130.10: Core highly broken up				
			130.10-132.00: Slightly darker grey				
			134.40-134.50: Irregular quartz patch, contains 10% dark brown/black tourmaline		134.00	135.00	DH 20 - 448
					135.00	136.00	DH 20 - 449
					136.00	136.73	DH 20 - 450

From	To	Rock Name	Description	CA	From	To	Sample No.
136.38	136.73	Biotite Chlorite Schist	Dark grey to black, well developed schistosity at 70° to C.A., contains a few carbonate filled fractures at random angles to C.A.				
136.73	137.09	Quartzite Breccia	80% quartzite fragments in dark green chloritic and cream colored carbonated rock flour matrix		136.73	137.09	DH 20 - 451
137.09	138.78	Quartzose Schist	Light grey, fine-grained, weak schistosity at 70° to C.A.		137.09	138.00	DH 20 - 452
			137.70 : Chlorite filled fracture at 15° to C.A., contains several traces sphalerite		138.00	138.78	DH 20 - 453
			138.47-138.50: Tourmaline rich seam at 25° to C.A., contains ± 1% sphalerite				
			138.50-138.78: Several carbonate stringers at random angles to C.A.				
138.78	139.30	Quartzite Breccia	65% quartzite fragments, generally less than 5mm in dark green chloritic matrix contains ± 1% sphalerite		138.78	139.30	DH 20 - 454
139.30	143.57	Quartzose Schist with Biotite Chlorite Schist Interbands	Quartzose schist sections light grey, fine-grained, hard. Biotite Chlorite schist dark green to black, schistosity at 55-65° to C.A., contains numerous cross-cutting carbonate stringers at 40° to C.A.		139.30	140.30	DH 20 - 455
			141.22-141.31: Grey mud seam containing quartzose schist and biotite chlorite schist chips		140.30	141.30	DH 20 - 456
			141.38-141.44: Grey mud seam, containing biotite chlorite schist and quartzose schist chips		141.30	142.30	DH 20 - 457
			142.82-142.84: Quartz stringer at 75° to C.A.		142.30	143.57	DH 20 - 458
			143.00-143.57: Section contains numerous pale green carbonated bands				

From	To	Rock Name	Description	CA	From	To	Sample No.
			parallel to schistosity				
143.57	143.85	Chlorite Breccia	20% quartz fragments in dark green chloritic matrix		143.57	143.85	DH 20 - 459
143.85	146.62	Quartzose Schist with Biotite Chlorite Schist Interbands	Similar to section above, several pale green lightly carbonated bands parallel to schistosity at 60° to C.A. Numerous carbonate stringers at random angles to C.A. 145.48 : 1cm mud seam at 20° to C.A. 146.07 : 1cm carbonate stringer at 25° to C.A. 146.07-146.62: Est. 5% carbonate stringers at random angles to C.A.		143.85 145.00 146.00	145.00 146.00 147.00	DH 20 - 460 DH 20 - 461 DH 20 - 462
146.62	151.80	Biotite Chlorite Schist	Dark green to black, well developed schistosity at 70° to C.A., contains a few narrow quartzose schist bands. Contains + 1% highly magnetic pyrrhotite generally as discontinuous stringers up to 3mm parallel to schistosity 146.62-146.83: Very soft, dark grey mud recovered 147.80-147.91: Quartz stringer at 70° to C.A., contains 7% chlorite, a few cross-cutting hair-width carbonate stringers at 40° to C.A. 147.91-148.14: Quartzose schist band 151.30-151.80: Several carbonate filled fractures at 5 and 35° to C.A. 151.53-151.70: Several irregular quartz patches, 5mm quartz carbonate stringer at 10° to C.A., contains 2% chalcopyrite, 1% pyrrhotite		151.00	152.00	DH 20 - 463

From	To	Rock Name	Description	CA	From	To	Sample No.
151.80	153.95	Quartzose Schist with Biotite Chlorite Schist Interbands	Medium green-grey with numerous darker bands biotite chlorite schist; schistosity at 60° to C.A., contains a few quartz stringers and sweats generally parallel to schistosity Several lmm cross-cutting carbonate stringers at 15° to C.A. 153.76-153.93: Several irregular quartz patches, contains minor chlorite, traces pyrrhotite		152.00 153.00	153.00 154.00	DH 20 - 464 DH 20 - 465
153.95	155.10	Andalusite Schist	Spotted with 15% dark green andalusite crystals. Andalusite crystals in biotite chlorite schist bands with several narrow quartzose schist bands scattered through section. Contains a few quartz sweats and stringers generally parallel to schistosity at 50° to C.A.				
155.10	156.10	Biotite Chlorite Schist	Dark grey to black, well-developed schistosity at 55° to C.A., contains a few narrow quartzose schist bands. Several narrow quartz stringers and sweats parallel to schistosity 155.57-155.67: Est. 2% pyrite, traces pyrrhotite in narrow quartz stringers				
156.10	156.40	Ground Core					
156.40	157.80	Biotite Chlorite Schist	Dark grey to black, very soft, did not core well. Mostly chips recovered - graphitic looking				
157.80	157.90	Ground Core					
157.90	158.13	Biotite Chlorite Schist	Very soft, mostly biotite chlorite mud recovered, traces pyrite				

From	To	Rock Name	Description	CA	From	To	Sample No.
158.13	159.55	Quartzose Schist	Light grey, fine-grained, weak schistosity at 70° to C.A., contains several quartz stringers and sweats parallel to schistosity and a few irregular patches. Occasional carbonate stringers at 40° to C.A.				
159.55	160.00	Biotite Chlorite Schist	Dark grey, almost black, well-developed schistosity at 70° to C.A., a few quartz stringers up to 5mm parallel to schistosity. Contains 1-2% pyrrhotite as narrow stringers parallel to schistosity				
160.00	163.80	Quartzose Schist, a few Biotite Chlorite Schist Interbands	Light grey, fine-grained, fairly hard, weak schistosity at 70° to C.A. contains a few quartz sweats and stringers generally parallel to schistosity; occasional carbonate stringers generally at less than 30° to C.A. contains occasional narrow biotite chlorite schist interbands, generally less than 15 cm wide 161.69-161.80: Quartz stringer at 80° to C.A. contains 1-2% pyrrhotite as 2mm discontinuous stringers at 80° to C.A. 162.03-162.15: Quartz patch, contains 3% dark green chlorite 162.30-163.08: Several carbonate filled fractures at 30° to C.A. 163.73-163.78: Quartz stringer at 60° to C.A., contains 3% pyrrhotite				
163.80	164.00	Ground Core					
164.00	178.90	Quartzose Schist, a few Biotite Chlorite Schist Interbands	As above 166.52-166.88: Several quartz stringers, generally at 60° to C.A., contains less than 1% pyrrhotite, traces pyrite 167.24-167.25: Quartz stringer at 65° to C.A., splashes pyrrhotite		164.00	165.00	DH 20 - 466

From	To	Rock Name	Description	CA	From	To	Sample No.
			168.20-168.95: Several quartz stringers up to 2cm generally parallel to schistosity, often with traces pyrrhotite				
			170.05-170.08: Quartz patch, contains 15% chlorite, traces pyrrhotite				
			171.18-171.25: Biotite chlorite schist band, contains 1-2% pyrrhotite as narrow stringers parallel to schistosity		171.00	172.00	DH 20 - 467
178.90	181.85	Biotite Chlorite Schist	Dark grey to almost black, fairly soft, well-developed schistosity at 65° to C.A., occasional narrow bands quartzose schist, a few short sections with up to 10% dark green andalusite crystals, a few quartz patches and stringers. Occasional carbonate stringers cross-cutting at 55° to C.A.				
181.85	191.90	Andalusite Schist	Dark green to black, fairly soft schistosity well developed at 55-65° to C.A., contains 20-25% dark green andalusite crystals. Several quartz sweats and patches, occasional cross-cutting carbonate stringers at 45° to C.A. Scattered traces pyrrhotite.				
			182.47-182.58: Est. 2% pyrrhotite as discontinuous stringers parallel to schistosity				
			183.85-183.96: Quartz stringer at 65° to C.A.				
			185.37-186.20: Section with very few andalusite crystals, more quartzose than remainder of section				
			185.40-185.60: Est. 1-2% pyrrhotite as hairwidth stringers parallel to schistosity and as irregular splashes				

From	To	Rock Name	Description	CA	From	To	Sample No.
			186.50-187.33: +1% pyrrhotite, mostly as disseminated patches				
			187.33-187.66: Several light grey quartzose schist bands; no andalusite crystals				
			186.66-191.60: Less than 1% pyrrhotite as disseminations				
191.90	194.55	Quartzose Schist	Light grey, fine-grained, weak schistosity at 65° to C.A., contains a few chlorite filled fractures at random angles to C.A.		192.50	193.50	DH 20 - 468
			192.76-192.92: Irregular quartz patch		193.50	194.50	DH 20 - 469
			193.00-193.01: Quartz stringer at 55° to C.A.				
194.55	197.05	Quartzite	Light grey, extremely fine-grained, massive, very hard, fractured. Fractures filled with dark brown tourmaline-rich material		194.55	195.50	DH 20 - 470
			194.75-194.82: Quartz stringer at 45° to C.A.		195.50	196.50	DH 20 - 471
			194.82-195.30: Tourmaline-rich section, more banded than brecciated		196.50	197.05	DH 20 - 472
			195.20-195.30: Shatter breccia, 90% quartzite fragments in tourmaline-rich matrix				
			195.94-195.95: Pyrrhotite seam at 80° to C.A.				
			196.13-196.15: Quartz stringer at 60° to C.A. traces chlorite				
			196.40-196.48: Est. 15% tourmaline as band at 70° to C.A.				
			196.70-196.85: Est. 1-2% pyrrhotite, traces pyrite in tourmaline-rich section				
197.05	197.27	Quartzite Breccia	60% quartzite fragments, both angular and rounded in dark brown tourmaline-rich matrix; section contains est. 5% pyrrhotite and 2% pyrite in matrix		197.05	197.27	DH 20 - 473

From	To	Rock Name	Description	CA	From	To	Sample No.
197.27	199.70	Quartzite	Light grey, fine-grained, fairly massive, hard. Contains several tourmaline-filled fractures at random angles to C.A., est. 1-2% pyrrhotite		197.27	198.00	DH 20 - 474
			197.70-197.83: Est. 15% pyrite, 2-3% pyrrhotite, traces chalcopyrite		198.00	199.00	DH 20 - 475
			198.00-198.26: Est. 3-5% pyrrhotite in irregular fractures, traces pyrite		199.00	199.70	DH 20 - 476
			198.50-198.75: Tourmaline-rich section, contains est. 7% pyrrhotite, traces pyrite, chalcopyrite				
			199.20 : 5mm chlorite seam at 40° to C.A.				
			199.43-199.50: Chlorite seams with heavy pyrrhotite and pyrite at 60° to C.A.				
199.70	202.50	Quartzose Schist	Light grey, hard, very fine-grained, weak schistosity at 55° to C.A., several quartz sweats and stringers parallel to schistosity		199.70	200.50	DH 20 - 477
			201.56-201.92: Several tourmaline-rich bands and seams, est. 2% pyrrhotite		200.50	201.50	DH 20 - 478
202.50	204.87	Biotite Chlorite Schist	Medium to dark grey-green to almost black, fairly soft, well developed schistosity at 60° to C.A. Contains several quartz sweats and stringers parallel to schistosity, often with minor chlorite, a few cross-cutting hairwidth carbonate stringers at 40° to C.A.				
204.87	205.38	Quartzite	Light grey, medium to fine-grained, hard; fractured, at 20 and 45° to C.A. Any fracture filling now washed out				
205.38	205.76	Biotite Chlorite Schist	As above, schistosity at 70° to C.A.		204.00	205.00	DH 20 - 479
					205.00	206.00	DH 20 - 480

From	To	Rock Name	Description	CA	From	To	Sample No.
205.76	206.50	Quartzose Schist	Light grey, fine-grained, hard, weak schistosity at 75° to C.A., contains several quartz stringers parallel to schistosity, some contain minor chlorite		206.00	206.50	DH 20 - 481
206.50	206.70	Ground Core					
206.70	211.57	Quartzose Schist	Light grey, fine-grained, hard, weak schistosity at 55° to C.A., contains numerous quartz stringers and sweats up to 2cm generally parallel to schistosity, minor chlorite in quartz, a few narrow bands biotite chlorite schist scattered through section		206.70	207.50	DH 20 - 482
					207.50	208.50	DH 20 - 483
					208.50	209.50	DH 20 - 484
					209.50	210.50	DH 20 - 485
					210.50	211.57	DH 20 - 486
211.57	214.82	Biotite Chlorite Schist	Medium green-grey to almost black, fairly soft, schistosity well developed at 65° to C.A., contains a few bands light colored quartzose schist, several narrow quartz sweats Occasional carbonate stringers at 45° to C.A. 214.35-214.82: Very soft, in part grey mud; schistosity highly contorted		211.57	212.50	DH 20 - 487
					212.50	213.50	DH 20 - 488
214.82	233.70	Andalusite Schist	"Spotted" biotite chlorite schist containing 15-20% dark green andalusite crystals. Schistosity at 60-70° to C.A., contains several narrow (typically 1 cm) bands quartzose schist, occasional quartz stringers and sweats parallel to schistosity 218.08-218.25: Quartzose schist band 220.00-220.04: Irregular quartz patch 220.17-220.21: Quartz stringer at 70° to C.A. 220.76-221.15: Quartzose schist band 221.15-221.18: Soft grey mud seam at 45° to C.A. 223.25-224.48: Very few andalusite crystals present 225.17-225.48: Several narrow quartzose schist bands				

From	To	Rock Name	Description	CA	From	To	Sample No.
			226.00-226.17: Quartzose schist band 227.80-228.00: Quartzose schist band 228.45-228.52: Tourmaline-rich seam at 70° to C.A. 228.69-228.76: Tourmaline stringer at 55° to C.A. 229.81-229.91: Irregular quartz patch 231.49-231.91: Quartzose schist band		228.00	229.00	DH 20 - 489
233.70	246.05	Andalusite Schist with Quartzose Schist Interband	Andalusite schist (70%) as above, quartzose schist bands becoming more frequent. vary from a few cm to almost 1m, all are light grey, fine-grained, have weak schistosity at 45-55° to C.A., occasional quartz sweats and stringers, very monotonous section 233.72-233.78: Quartz chlorite stringer at 55° to C.A. 240.75-240.85: Quartz stringer at 60° to C.A., contains traces chlorite 241.70-241.90: A few splashes pyrrhotite				
246.05	247.00	Quartzite	Light grey, fine-grained, hard, massive; a few hairwidth carbonate filled fractures at 40° to C.A.				
247.00	249.30	Andalusite Schist	Spotted, est. 20% dark green, somewhat altered andalusite crystals in chlorite schist. Contains several bands hard fine-grained quartzose schist without andalusite crystals. Edges of andalusite crystals are indistinct, some digestion probable, chlorite schist contains some brownish(hornfels?) biotite 249.11-249.15: Quartz stringer at 70° to C.A.				

From	To	Rock Name	Description	CA	From	To	Sample No.
249.30	249.88	Quartzose Schist	Light grey, fine-grained, hard, weak schistosity at 75° to C.A., occasional narrow bands chlorite schist with andalusite crystals		248.00	249.00	DH 20 - 490
					249.00	249.88	DH 20 - 491
					249.88	250.40	DH 20 - 492
249.88	250.40	Quartzite/ Tourmaline Breccia	70% Quartzite/Quartzose Schist fragments in brownish tourmaline-rich matrix				
250.40	252.04	Quartzose Schist	As above, contains rare traces disseminated pyrite, sphalerite		250.40	251.50	DH 20 - 493
			251.20-251.37: Quartzite band, fractured; fractures filled with chlorite/ tourmaline		251.50	252.04	DH 20 - 494
			251.81-251.86: Quartz stringer at 60° to C.A. contains+ 1% pyrite, traces chalcopyrite				
252.04	252.31	Quartzite Tourmaline Breccia	Shattered quartzite(80%) in brown tourmaline matrix. Preferred orientation of tourmaline-filled fractures is 25° to C.A.		252.04	252.31	DH 20 - 495
252.31	254.00	Quartzose Schist	Light grey, fine-grained, fairly massive, weak schistosity at 75° to C.A.		252.31	253.00	DH 20 - 496
					253.00	254.00	DH 20 - 497
254.00	254.30	Tourmaline Breccia	Dark brown, contains 30% quartz and quartzite fragments in tourmaline-rich matrix		254.00	254.30	DH 20 - 498
254.30	256.64	Quartzose Schist	Light grey, fairly hard, schistosity at 60° to C.A., contains 30% quartz as stringers and irregular patches, often with minor chlorite		254.30	255.50	DH 20 - 499
					255.50	256.64	DH 20 - 500
256.64	258.00	Chlorite Schist	Medium grey, well developed schistosity at 60° to C.A., contains occasional quartz sweats and patches, traces pyrite and sphalerite in discontinuous stringers parallel to schistosity		256.64	257.00	DH 20 - 501
					257.00	258.00	DH 20 - 502

From	To	Rock Name	Description	CA	From	To	Sample No.
258.00	261.31	Quartzose Schist	Similar to above, vague schistosity at 60° to C.A.		258.00	259.00	DH 20 - 503
			258.00-258.16: 1mm pyrrhotite-filled fracture sub-parallel to C.A.		259.00	260.00	DH 20 - 504
			259.23-259.50: Several discontinuous pyrite/pyrrhotite seams at 45° to C.A.		260.00	261.31	DH 20 - 505
			259.32-259.36: Quartz stringer at 65° to C.A., contains 3% chlorite				
261.31	261.83	Biotite Chlorite Schist	Medium-grey to black, fairly soft, well-developed schistosity at 70° to C.A.		261.31	261.83	DH 20 - 506
			261.31-261.37: Quartz patch, fractured ; fractures filled with dark green chlorite				
			261.51-261.59: Quartz patch, fractures filled with dark green chlorite, contains traces pyrrhotite				
261.83	262.41	Quartz-eye Quartzite	Light grey, hard, has weak schistosity at 65° to C.A., contains 15% light blue 1-2mm quartz eyes		261.83	262.41	DH 20 - 507
262.41	263.92	Quartzose Schist	Light grey-green, fairly hard, weak schistosity at 65° to C.A., contains several carbonate-filled fractures at 10, 25 and 40° to C.A. 263.62-263.64: Mud seam at 70° to C.A.		262.41	263.92	DH 20 - 508
263.92	265.06	Quartzose Schist with Biotite Chlorite Schist Interbands	Light grey, with dark bands biotite chlorite schist. Schistosity at 65° to C.A.		263.92	265.06	DH 20 - 509
265.06	268.82	Biotite Chlorite Schist	Dark green to black, well developed schistosity at 60° to C.A., contains several narrow quartz stringers and sweats parallel to schistosity		265.06	266.00	DH 20 - 510
					266.00	267.00	DH 20 - 511
					267.00	268.00	DH 20 - 512
					268.00	268.82	DH 20 - 513

From	To	Rock Name	Description	CA	From	To	Sample No.
268.82	274.87	Quartzose Schist	<p>Several very minor faults at 25° to C.A., off-sets appear minimal, traces pyrite and pyrrhotite in fractures and as disseminations</p> <p>268.12-268.23: Light grey, massive quartzite band at 65° to C.A.</p> <p>268.23-268.30: Quartz stringer at 65° to C.A., contains minor chlorite</p> <p>Light grey, extremely fine-grained, weak schistosity at 50° to C.A.</p> <p>270.25-270.34: Several chlorite-filled fractures at 45° to C.A.</p> <p>271.10 : 1.2cm chloritic stringer at 20° to C.A.</p> <p>273.02-273.10: Pyrrhotite-rich seam at 60° to C.A., contains 40% pyrrhotite, traces galena, chalcopyrite</p>				
274.87	276.30	Biotite Chlorite Schist	Medium grey to black, well developed schistosity at 60° to C.A., contains several narrow quartz veins and stringers generally parallel to schistosity				
276.30	276.60	Ground Core					
276.60	277.70	Biotite Chlorite Schist	As above				
	277.70	E N D O F H O L E					

CORTIN JOINT VENTURE

HOLE: EPD - 81 - 20

EPD CLAIMS - RESULTS OF 1981 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (In p.p.m.)									
					Sn	W	Cu	Pb	Zn	Ag	Mo			
DH20-404	18.00	19.00	1.00		51		132	495	400	25.5				
405	29.45	30.50	1.05		49		160	95	340	5.0				
406	30.50	31.50	1.00		27		156	42	330	2.8				
407	31.50	32.50	1.00		33		44	41	310	2.0				
408	32.50	33.50	1.00	0.30	G2000		136	35	290	2.0				
409	33.50	34.50	1.00		1300		400	16	390	1.5				
410	34.50	35.42	0.92		680		180	283	355	3.5				
411	50.90	52.00	1.10		32		128	22	480	1.6				
412	52.00	52.85	0.85		23		72	22	505	2.0				
413	62.00	63.00	1.00		47		40	31	700	1.7				
414	63.00	63.87	0.87		780		92	23	340	1.5				
415	63.87	64.95	1.08		110		96	90	580	3.0				
416	64.95	65.27	0.32		51		264	770	8600	11.0				
417	65.27	66.00	0.73		14		32	136	2300	1.8				
418	66.00	67.00	1.00		29		40	48	915	1.4				
419	67.00	68.00	1.00		22		24	28	490	1.5				
420	68.00	69.00	1.00		13		52	47	1600	1.4				
421	69.00	70.20	1.20		42		28	68	900	2.0				
422	70.20	71.50	1.30		13		36	29	1250	0.9				
423	71.50	72.81	0.31		10		56	22	490	0.9				
424	72.81	73.93	1.12		8		100	12	760	0.8				
425	73.93	74.63	0.70		15		1000	60	1250	10.0				
426	74.63	74.93	0.30		11		380	64	5500	6.5				

CORTIN JOINT VENTURE

HOLE: EPD - 81 - 20

EPD CLAIMS - RESULTS OF 1981 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (In p.p.m.)									
					Sn	W	Cu	Pb	Zn	Ag	Mo			
DH20-427	74.93	76.00	1.07		13		196	16	3000	1.9				
428	76.00	76.80	0.80		12		330	18	5000	2.6				
429	76.80	77.80	1.00		8		120	272	2750	7.5				
430	77.80	78.36	0.56		7		72	155	1400	1.6				
431	104.00	105.00	1.00		8		54	40	290	1.8				
432	105.00	106.00	1.00		27		36	18	90	0.6				
433	106.00	106.97	0.97		L5		28	48	135	1.2				
434	106.97	107.84	0.87		25		136	255	650	4.5				
435	107.84	109.00	1.16		7		30	68	150	1.6				
436	109.00	110.00	1.00		L5		34	114	360	1.5				
437	110.00	111.00	1.00		6		68	17	150	0.6				
438	111.00	112.00	1.00		27		186	420	570	6.6				
439	118.00	119.00	1.00		6		12	34	110	0.6				
440	119.00	120.00	1.00		8		24	62	125	0.9				
441	120.00	121.00	1.00		L5		24	12	55	0.3				
442	121.00	122.00	1.00		L5		28	22	80	0.5				
443	122.00	123.00	1.00		5		26	20	70	0.4				
444	123.00	124.00	1.00		L5		26	24	220	0.5				
445	124.00	125.00	1.00		5		12	12	50	0.4				
446	125.00	126.00	1.00		23		32	12	30	0.5				
447	126.00	127.00	1.00		12		38	17	50	0.8				
448	134.00	135.00	1.00		8		60	60	760	4.0				
449	135.00	136.00	1.00		10		56	21	1600	1.0				

CORTIN JOINT VENTURE

HOLE: EPD- 81 - 20

EPD CLAIMS - RESULTS OF 19 81 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (In p.p.m.)									
					Sn	W	Cu	Pb	Zn	Ag	Mo			
DH20-450	136.00	136.73	0.73		14		108	51	1400	1.7				
451	136.73	137.09	0.36		17		28	40	1400	1.1				
452	137.09	138.00	0.91		24		30	17	3000	0.6				
453	138.00	138.73	0.73		27		12	32	1100	0.7				
454	138.73	139.30	0.57		41		16	65	13200	1.1				
455	139.30	140.30	1.00		8		16	44	1400	1.1				
456	140.30	141.30	1.00		15		16	22	410	0.5				
457	141.30	142.30	1.00		6		24	110	310	1.0				
458	142.30	143.57	1.27		10		70	85	1800	1.4				
459	143.57	143.85	0.28		280		26	23	170	1.3				
460	143.85	145.00	1.15		40		22	124	540	1.4				
461	145.00	146.00	1.00		17		12	36	140	0.8				
467	146.00	147.00	1.00		21		62	147	340	1.6				
463	151.00	152.00	1.00		18		500	15	100	1.7				
464	152.00	153.00	1.00		61		44	33	145	0.8				
465	153.00	154.00	1.00		13		32	5	130	0.5				
466	164.00	165.00	1.00		9		54	7	70	0.4				
467	171.00	172.00	1.00		15		60	17	130	0.6				
468	192.50	193.50	1.00		5		22	10	40	0.3				
469	193.50	194.55	1.05		7		84	15	140	1.2				
470	194.55	195.50	0.95	2.45	G2000		350	8	50	2.1				
471	195.50	196.50	1.00		305		206	8	85	1.3				

CORTIN JOINT VENTURE

HOLE: EPD- 81 - 20

EPD CLAIMS - RESULTS OF 19 81 DRILLING

Sample No.	From m.	To m.	Width m.	Sn% assay	GEOCHEMICAL VALUES (in p.p.m.)									
					Sn	W	Cu	Pb.	Zn	Ag	Mo			
DH20-472	196.50	197.05	0.55		140		400	10	60	1.9				
473	197.05	197.27	0.22		50		825	18	45	4.0				
474	197.27	198.00	0.73		1850		1525	12	80	5.0				
475	198.00	199.00	1.00		980		910	9	50	3.0				
476	199.00	199.70	0.70		105		104	12	60	0.6				
477	199.70	200.50	0.80		46		400	5	30	0.7				
478	200.50	201.50	1.00		34		44	5	40	0.3				
479	204.00	205.00	1.00		18		20	8	50	0.3				
480	205.00	206.00	1.00		340		120	16	1100	1.2				
481	206.00	206.50	0.50		29		48	5	370	0.7				
GC	206.50	206.70	0.20											
482	206.70	207.50	0.80		12		68	12	40	0.7				
483	207.50	208.50	1.00		18		48	5	30	0.4				
484	208.50	209.50	1.00		8		86	5	30	0.4				
485	209.50	210.50	1.00	0.17	G2000		220	5	30	0.6				
486	210.50	211.59	1.07		410		475	10	40	1.5				
487	211.57	212.50	0.93		24		54	4	90	0.5				
488	212.50	213.50	1.00		13		22	8	90	0.4				
489	228.00	229.00	1.00		24		156	10	80	0.8				
490	248.00	249.00	1.00		18		68	5	60	0.5				
491	249.00	249.88	0.88		14		32	17	90	0.5				
492	249.88	250.40	0.52		80		400	10	300	2.3				
493	250.40	251.50	1.10		36		64	22	310	1.0				

APPENDIX II

TRENCHING

R. Wilson

APPENDIX II

TRENCH CONSTRUCTION

Trench T81-2, the initial Trench of 1981, originated at Trench #2(1979) and ran perpendicular to the strike of anomalous soil geochemistry across the Discovery Zone. Subsequent trenches were located parallel to, and at 200m intervals from Trench T81-2. Where more information was required, extra trenches at closer spacings were completed.

Preliminary ground checks were made to ensure that slopes did not exceed the heavy equipment's capabilities and trench locations, and access routes were flagged in.

Access and trench roads were constructed by either International TD-25, or Caterpillar D-7 bulldozers, both equipped with rippers. These machines produced roads of approximately 5m width. If, during the road construction, a rock face was exposed along the entire length of the planned trench location, no further heavy equipment work was necessary. Such was the case for Trench T81-25. If, however, bedrock was not exposed, or sloughing banks made sampling impossible, then further digging was required.

Trenches were dug with a Cat-235 Excavator(Hoe) equipped with a 1m wide frost bucket and rippers. These trenches were dug down the middle of the pre-constructed trench 'roads', leaving a berm to contain dangerously sloughing road banks. Side casting was to the downhill side of the road.

The trenches average 1 to 3m in depth in order to expose a minimum of 1m of bedrock. For safety reasons, any trench deeper than 2m was either terraced or widened to a minimum 2m width.

TRENCH SAMPLING

As previously mentioned in Trench Construction, a team of 7 people was required to keep pace with the Hoe and trench slough in areas where the Hoe's digging proceeded without obstruction. Due to shortages in student power, teams of only 5 were usually available for trench sampling, hence, 10-hour workdays were frequently required to keep the sampling up to date. In addition, an extra 2 hours work daily had to be found to keep the Hoe operator working 12-hour shifts without producing more trench, which would be sloughed by the next day. (Good Hoe operators will not stay on a job where the shifts are less than 12 hours).

Sampling Procedure

Starting at an arbitrary point nearest the beginning of the trench where reasonable exposure of bedrock existed, sample markers were sprayed vertically from trench bottom to trench top at 1 metre intervals. Initially the geology was ignored when the students were placing sample markers. The geology was subsequently checked, and additional samples were taken within the confines of the geology, which required additional sampling.

Chip channel samples were taken by geopick along lines perpendicular to the foliation. Several such lines were sampled between the sample markers. Plastic sample bags were 1/2 to 2/3 filled with rock chips of 3 cm maximum diameter. Lack of available manpower for both sampling and crushing/pulverizing prevented samples of larger size being taken. Soil samples were taken in conjunction with rock samples. Soils were taken at the bedrock-overburden interfaces from a single location in the middle of the sample interval. If possible, samples were taken on the uphill side of the trench.

Responsibilities

Samplers were responsible for labelling sample bags; ensuring sample numbers matched with sample interval numbers; collection of samples and placing of sample bags in locations where they would not be buried by trench slough; transporting of samples to camp, and arranging samples in sequence on the drying table.

The 'Trench Boss', a geology student, was responsible for ensuring that all supplies and equipment necessary for sampling was obtained prior to leaving camp; ensuring that bags were correctly labelled and located opposite correct sample locations; delegation of sample intervals to samplers when necessary; collection of data in regard to physical mapping, both in plan view and in cross section; assisting geologist, if needed, with geological mapping or completing brief geological notes on the trench rocks in the geologist's absence; ensuring sample bags were in correct order on the drying tables in camp; and draughting of trench plans and cross sections.

The geologist was responsible for overall trench supervision; delegation of responsibility; liaison with the Hoe driver; direction of trench location, depth, length, abandonment, safety construction, suitability for sampling and sample size; geological mapping; direction of extra sampling required; supervision of sample collection and storage; length of working day; direction of work for Hoe past students' working hours; supervision of sample unpacking for drying, prior to analysis; liaison with Project Manager and core logging geologists.

Trenching in Grit Division rocks proceeded with varying degrees of speed, depending on the amount of rock fracturing present. Trenching in areas where the rock was not fractured, or in areas of permafrost cemented slide debris was virtually impossible. The Hoe was only able to penetrate at a rate of approximately 5-10 cm per hour in areas of frozen landslide debris, eg. trenches 2D, 21, 22, 29, 30 and 33. Blasting was successfully attempted in one area of non-fractured greenstone, but was not tried in zones of ice-rich slide debris. In areas of difficult digging, the D-7 was employed to pre-rip the central section of the road. Repeated ripping and ploughing produced a well broken bedrock surface, with only minor overburden removal necessary.

The Hoe produced a clean rock face, with only minor rock face cleaning necessary. The trench banks, however, began to slough over with mud within 15 minutes of digging, and the trench was no longer sample worthy after approximately 2 hours without cleanup of the trench walls by the Hoe. Geology was similarly obscured after 1 day in general, depending on the amount of water present (i.e. snow melt and rain). During the latter part of the summer when groundwater was not as prevalent, the trenches remained open for longer periods of time. The compressor was not used to clean trench walls, due to the amount of mud and a problem of moving the compressor within the trenches.

The problem of trench slough necessitates certain requirements:

1. A geologist must be on site at the time of digging. If a particular rock feature is encountered which needs extra digging, the Hoe may not be able to return to that spot at a later time, due to unstable sloughing trench banks.

2. Depending on the trenching speed of the Hoe, a team of at least 5 samplers, a sampler supervisor and a geologist is required, to keep pace with the Hoe and, thus, the bank slough.

3. Bank caving occurs frequently, hence, utmost caution must be maintained while personnel are in the trench. This includes a) mandatory wearing of hardhats and protective eye gear; b) scaling of bank walls of any loose rocks and debris; c) samplers spaced at a minimum of 5 metres apart; d) samplers no closer than 10 metres from the Hoe while it is trenching; e) shut down of the Hoe in areas of extreme bank slough where working closer than 10 metres of the Hoe is required; f) continual checking of the trench banks for movement, both in your sample area and that of the samplers next to you. The latter was found to occur only once the sampling crew began to function as a team.

The speed of trench construction depended on depth of overburden, degree of permafrost, and amount of fracturing in the rock. In very difficult ground, only 30 metres of trench a day was achieved, whereas in good ground, up to 200 metres of trench could be dug in a single day. On an average, 125 metres of trench was dug in a 9-hour day, with 2 extra hours of site preparation and 1 hour of machine servicing required daily. Long travel times between camp and the trenches, and a shortage in samplers were the main retardants to longer daily trench averages.

TRENCH T81-2

Trench T81-2 was completed in four stages. For reference sake, the trench is referred to as T81-2A, T81-2B (old Trench 2), T81-2C(south extension) and T81-2D(T81-2B redone). The sample number sequence corresponding to the above stages are T81-2, 001 to 026; T81-2, 027 to 040; T81-2, 041 to 189; and T81-2, 190 to 223. Soil samples, beginning at 041 are numbered as the rock samples suffixed by the letter S.

This trench is located from old Trench No. 2(1979) at 20+13N, 49+70E, south through DDH80-11 along a southerly bearing for 125m to 18+18N, 47+85E. The total length of the trench is 237m. Four half-days and three full days were required to map and sample this trench, for a total of 16 man-days. 181 soil samples and 222 rock samples were taken, for an average of 13.9 samples per person per day. Note that this also includes those people who were not sampling at all, but were mapping, physically and geologically. Also note that this includes any and all daily delays due to difficult ground and slow digging by the Hoe.

T81-2 was designed to test the Enigma Zone, the Discovery Zone and, to retest Trench 2(1979), which was anomalous in silver, but which did not reach bedrock.

The southernmost end of the Trench(T81-2 south extension) is 65m beyond the southern edge of the Enigma Zone. The southern boundary of the Enigma Zone geochemistry as plotted on 704-23(1980) begins at sample T81-2-105. The northern edge of the zone ends at sample T81-2-149.

The rocks within the Enigma Zone are mainly biotite-quartz-chlorite schists and biotite-chlorite-manganese schists with minor biotite quartzite interbeds. The geochemical values in this zone are generally low, with very few values over 50 ppm. Only on the southernmost and northernmost edges do values reach anomalous levels. .16% Sn marks the southern boundary, and 360, 390 and 750 ppm Sn mark the northern boundary. A non-anomalous sheared zone appears to correspond with some high values, as seen on 704-23(1980). No apparently anomalous features in the geology were noted, except T81-2, 141-147 on the northern boundary, where a well-fractured biotite quartzite with cross-cutting quartz chlorite veins, returned values of 360, 390 and 750 ppm Sn. In this area, three fracture directions are present. An estimate of the average directions are $015^{\circ}/75^{\circ}$ NW, $040^{\circ}/70^{\circ}$ SE and $153^{\circ}/72^{\circ}$ NE. Any fracture fill mineralization should follow one of these three directions.

The Enigma Zone soil anomaly still exists in soil samples taken within the trench. The direction of the Enigma Zone Geochemistry is 066° ; the fall-line direction is approximately 073° . If the Enigma Zone soil geochemical anomaly is due to fracture-fill mineralization, the dip of the fracture would shift the direction of the geochemical anomaly. If this were the case, one would expect the soil geochemistry to shift in an arcuate pattern, which is not seen. Thus, the bedrock geology does not explain the Enigma Zone.

T81-2A north of DDH 80-11 consists of biotite quartzite with minor biotite schist interbeds.

Only one value of 2000 ppm Sn was obtained in this section of the trench, but was not re-examinable due to the trench being buried by further trenching, prior to receiving the geochemical results. This value, however, is in the middle of a zone mapped as limonitic quartzite with pyrite and some manganese staining.

T81-2B(old Trench #2) and T81-2D(T81-2B redone) also situated north of DDH 80-11, are parallel and north of a rock bluff which consists of biotite-chlorite-manganese schists and quartzite. The northern side of the bluff drops off sharply, due to a recessive weathering fault gouge which is situated next to the bluff.

Along the vertical wall of the bluff at the southernmost end of T81-2D, the schist is seen to grade into chlorite schist, to massive chlorite and to quartz-chlorite breccia which lacks any fabric("chloritite"). No major structural breaks separate the massive chlorite and the chloritite. A minor appearing and irregular fault or joint, forms the approximate boundary between the rock types, but due to its irregularity it is impossible to say precisely whether the fault is indeed the plane of contact. This "fault" has a plunge of $236^{\circ}/24^{\circ}$ and a rake of 33° (from C.A.K. measurement).

Adjacent to the chloritite, which is 1 metre wide at this point, is a south dipping 2.2 to 3 metre wide fault gouge. The direction of the hanging wall is $038^{\circ}/48^{\circ}$ SE and the footwall is $040^{\circ}/46^{\circ}$ SE to $056^{\circ}/48^{\circ}$ SE. The hanging wall was not well defined against the sheer face of the bluff.

The fault gouge consisted of bluey-grey to grey-green colored clay, and sheared biotite-schist and brecciated "sandy" material. There are some green colored quartzite blocks within the gouge up to 30 cm across that are frequently tan-colored and have manganese dots and malachite staining present. One small patch of galena observed within these quartzites is a possible source of the silver anomaly in old Trench #2(1979).

Below the footwall of the fault is a strongly iron-stained chloritic biotite-quartzite with manganese dots, tan coloration, and malachite staining similar to fragments in the fault gouge. Next to the quartzite and 3m(stratigraphic) from the footwall of the fault is a 4m (true width) wide greenstone sill, seen to be conformable to the schistosity(foliation) of the biotite quartzites. Below the sill is a banded quartzite?, which, over a section of .7m is seen to be hydrothermally altered to clay.

The northern end of the trench was ended by the presence of an ice-cemented slide rubble zone through which the Hoe could not penetrate. The trench was not refilled, and was sloughed at season's end.

TRENCH T81-20

Trench T81-20 is a bulldozer road-cut on the access road to DDH 81-13, and is located from 19+90N, 49+53E to 20+07N, 49+55E. It is a short trench of only 15 samples, and was sampled in half a day, for a total of 1.5 man-days work. This trench was sampled because of its good exposure and proximity to the baseline. No soil samples were taken.

The rocks consist of quartz-biotite-muscovite-chlorite schists, with increased chlorite content near the baseline.

At the north end of the trench the outcrop drops off into the overburden. A recessive fault gouge present in T81-2B and D is thought to be continuous downhill to T81-20, occurring where the outcrop in T81-20 drops off. No further trenching at this location was carried out, as the trench was situated on the main access route to the diamond drill secondary pump station.

Some samples are mildly anomalous in the centre of the trench. No samples are anomalous next to the baseline in the chlorites.

The road-cut had not sloughed by season's end.

TRENCH T81-21

Trench T81-21 was completed in two stages. A total of 10 days was required to dig the trench, which is 602 samples and 621m long. A total of 50 man-days were spent sampling and mapping this trench. The rock and soil sample number sequence for this trench is T81-21, 001 to 602, and T81-21, 001S to 602S.

The trench is located along 50+75E from 14+79N to 21+00N. The average trench direction is 350°. The southernmost end of the trench begins 65 metres south of the Dummer Zone geochemistry, and the northernmost end is 100 metres beyond the baseline(Discovery Zone).

This trench was designed to test all known and any hidden geochemical anomalies between the Dummer Zone and the Discovery Zone. The trench was moderately successful in answering questions it was designed to test. A possible source for the Dummer Zone geochemistry was found; the source of rock sample EPD-79-99 was found; the source for the Enigma Zone geochemistry was determined to lie uphill from this trench; bedrock could not be reached at the suspected location of the Discovery Zone; an anticipated greenstone unit was not found at the northern end of the trench.

Immediately above the finger-like Dummer Zone geochemistry the trench intersected a 1.55 metre wide fault gouge. A central gossanous, siliceous zone was seen bounded by grey, highly sheared claylike fault gouge. Neither this zone, nor the surrounding area was geochemically anomalous either in soils or in rocks. The negative response in trench soils indicates that the anomaly is not uphill from the trench.

The Dummer Zone geochemistry then is likely related to the fault zone immediately uphill in Trench T81-21 or the banded quartzite on the footwall side of fault. Any mineralization present would likely be sporadic.

A major slide which occurred during a 1979 torrential rainstorm created a rock and debris talus slope down to, and across Oliver Creek (Plate 22). This talus slope was prospected in late 1979 with the discovery of cassiterite bearing quartzite float, being sample EPD 79-99.

Trench T81-21 cut across the top of the slide and exposed a wet, fault and shear zone. This zone acted as a water channel to lubricate the overburden, and caused the slide to occur. Ten metres north of the slide, a fractured biotite-quartzite unit assayed .13 and 1.58% Sn across concurrent 1 metre samples (Plate 20). Subsequent prospecting revealed a fracture filled chlorite-cassiterite bedrock source similar in appearance to sample EPD 79-99 (Plate 21). Projections of fracture planes do cross-cut the slide zone, hence this mineralized zone is thought to be the source for sample EPD 79-99.

Unfortunately, this zone has limited width, and was not examined further. Trench soil anomalies displaced slightly to the south from the bedrock mineralization indicates a second source of mineralization along a fracture direction other than that measured.

The Enigma Zone was located in trench soils over a distance of 30 metres, with geochemical values from 105 to 2780 ppm Sn.

Interbedded quartzite and schist, with only mild iron and manganese staining are the rocks present in the trench through the Enigma Zone. Only two mildly anomalous rock geochemical values were obtained in this zone, both with values less than that obtained in soils. Anomalous soil results and negative rock results indicate an uphill source for the Enigma Zone geochemistry.

The Discovery Zone was expected to be found between samples T81-21, #495-515, however, at sample T81-21, #489, the outcrop dips below the trench floor and does not re-emerge until sample #549. Over this distance, a zone of permafrost cemented slide debris was found. At sample #513 to 526, a lens of frozen moss was unearthed at a depth of 3m below the upper bank. Further digging below this level was not possible, as the Hoe could not effectively penetrate the frozen ground, and trenching in this area was abandoned.

Samples of chlorite rich slide debris in the permafrost zone assayed from .15 to .24% Sn. This slide debris is thought to be related to the Discovery Zone.

A greenstone unit theorized to exist north of the baseline was not intersected in T81-21, and the trench was terminated 100 metres north of the baseline.

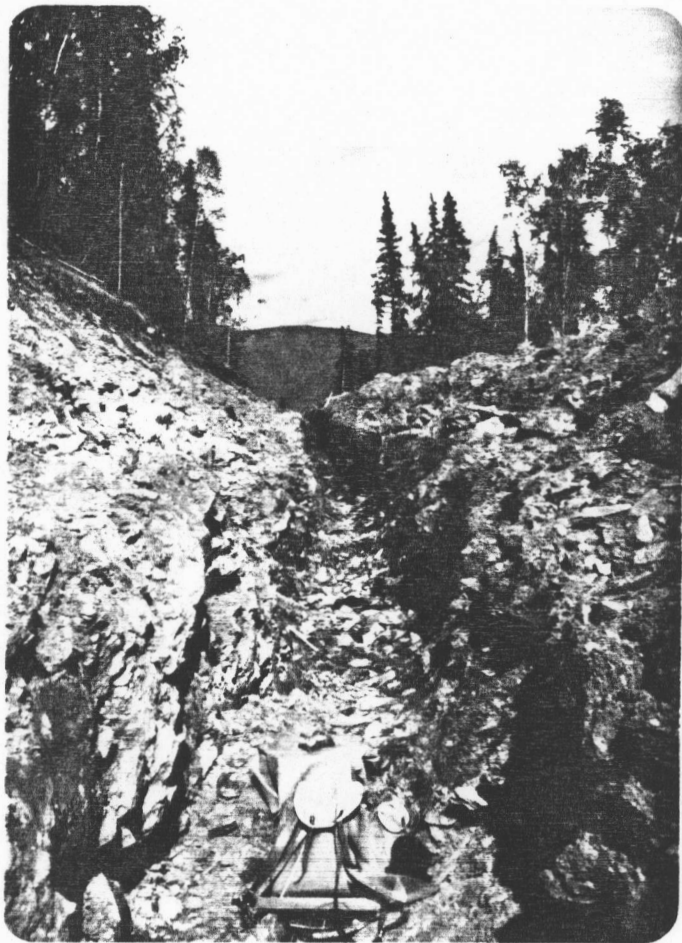


Plate 20: Trench T81-21, Sample #243 and #244. Assays of .13 and 1.58% Sn were obtained from rock samples at this location.

(Photo by B. Paul)



.Plate 21: Rock sample from the slide showing. Chlorite and Cassiterite fracture filling in a Biotite Quartzite from sample T81-21, #244.

(Photo by B. Paul)

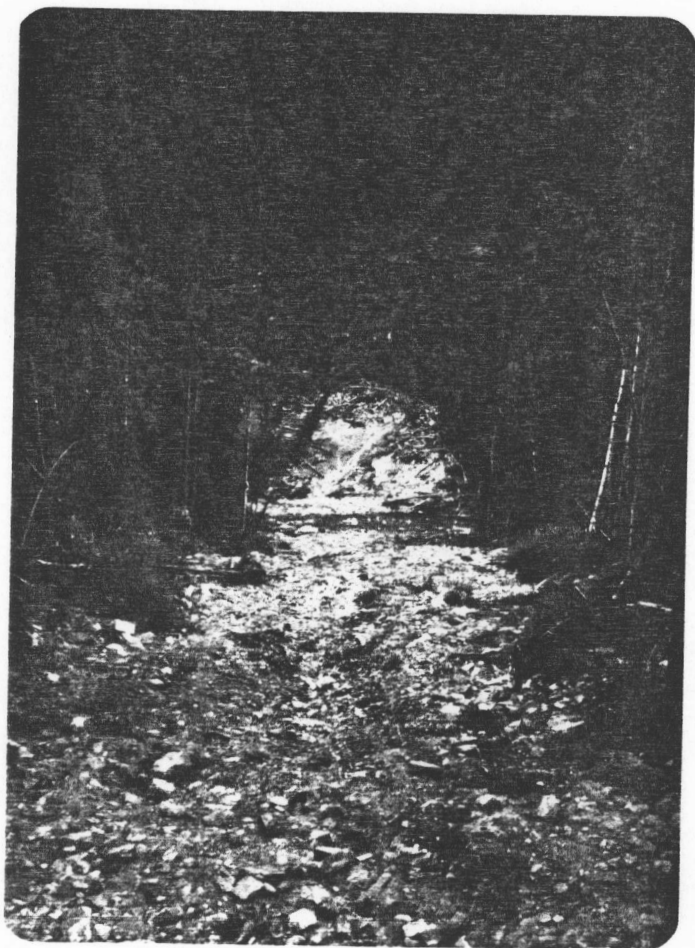


Plate 22: Slide which occurred during 1979 rainstorm. Rock sample EPD 79-99 was found within slide rubble. The creek is Oliver Creek and the road is the access road to the Fewmet Zone.

TRENCH T81-22

Trench T81-22 was completed in two stages, over virtually the same ground. The initial trench T81-22A failed to reach bedrock, due to permafrosted slide material present in the trench area. The repeated trench T81-22B, which is longer in length, managed to reach bedrock along only a small section.

The number sequences for the two trenches are T81-22, 001 to 026 and T81-22, 027 to 095. A total of 1 day and 2 extra hours were required to dig these trenches. Five man-days were spent mapping and sampling these trenches, located from 19+72N, 48+38E to 20+27N, 47+92E. The trenches are approximately 25 metres above Trench T81-2A.

T81-22A failed to reach bedrock, due to permafrost within a slide zone. Samples taken within the slide material returned anomalous values over an area where the Discovery Zone fault gouge is projected to occur. Values of G2000, 1700, and 700 ppm Sn were recorded.

T81-22B reached bedrock along one-half its length. The rocks were mainly schists with minor quartzites. A small zone of chloritic rock, somewhat gossanous, was noted at the start of the permafrost zone. The trench sloughed, and filled with water too quickly to permit a detailed examination of this zone.

These trenches, designed to test the Discovery Zone chloritic breccia and gault gouge, were not successful.

TRENCH T81-23

Trench T81-23 is located approximately along 46+75E, from 20+40N to 18+95N. The collar for DDH 81-14 is 10m SE from sample T81-23, #001.

The trench is 150.5 metres long, was trenched in one day and mapped and sampled in a total of eight man-days. The sample number sequence for this trench is T81-23, 001 to 147. The trench was dug after the completion of DDH 81-14.

Trench T81-23 initially was a 200-metre step-out trench along the Discovery Zone. A previously unknown major gossan within the overburden and bedrock was uncovered during drill pad construction for DDH 81-14 (Plate 23). The subsequent purpose for construction of T81-23 was to test this major gossan.

Deep overburden was encountered for the first 10 metres of this trench, and bedrock was not reached. The gossan within the overburden and bedrock begins at sample #030 and continues to the end of the trench, but dies out in intensity between samples #085 and 100.

The majority of the trench is comprised of chloritic schist, with considerable chlorite and actinolite intimately intermixed. Bedding within the schist has a general southerly dip, but is not consistent with much folding and crunching being present. Interbanded chloritic quartzite is present, and is as disrupted as the schist. Within the bedrock gossan several discontinuous greenstone pods were noted.



Plate 23: Trench T81-23, gossan uncovered during DDH 81-14 Drill Pad Construction. The drill hole was stepped back and this area was trenched by T81-23, 35 and 36.

(Photo by B. Paul)

The gossan itself varies from brilliant orange and red to dull yellow and brown. The gossan is pervasive, extending into the overburden to within 1 metre of the original ground surface. The gossan contact within the overburden is sharp and regular.

Geochemically the trench is highly anomalous, both in soils and in rock chip samples. These best rock chip sample results are from sample numbers 042 to 047, where an average grade of .25% Sn across 6 sample metres, and from 054 to 064, where an average grade of .23% Sn across 10 sample metres was obtained. Other samples within the gossanous area have elevated geochemical values from 200 to 1900 ppm Sn. Samples 045, 046, 056, 064 and 079 analyzed greater than 1 oz/ton Ag.

Soil samples within the gossan are very highly anomalous, with a grade of greater than 2.74% Sn across eight metres being obtained above sample numbers 067 to 075. These results then are displaced slightly to the north, updip from the highest bedrock assays.

Concentration of Sn in the soil was likely due to in situ weathering of paleobedrock, producing soil and placering of the cassiterite near the bedrock-overburden interface.

The cause of the gossan is not known, but is theorized to be due to weathering of the greenstone, which is ubiquitous. Several shear faults are seen south of the baseline, consistent with other trenches. Anomalous soil values are noticeably absent above these shear faults.

In order to test the extent of the gossan, two additional trenches were dug 25 metres on either side of Trench T81-23, and are numbered T81-35 and T81-36.

Trench T81-23 had remarkably stable trench walls which underwent minimal slough. This trench was not refilled at summer's end, and will likely not slough next spring.

TRENCH T81-24

Trench T81-24 is located along 44+75E from 18+66N to 21+35N, and was dug as part of the 200m trench step-outs from the Discovery Zone. This trench is east of the Upper Mayo road by 40m at the closest point of approach.

Trench T81-24 is 287 metres long, took 7 days to dig, and was mapped and sampled in 32 man-days. 269 samples were taken, which have the number sequence T81-24, 001 to 269. Extra trenching time was required to dig in stages through up to 15m of overburden, to reach the theoretical location of the Discovery Zone.

This trench consists of biotite-manganese-sericite-quartz schists and biotite-quartzites, the former being more abundant for the first two-thirds of the trench, while the latter is present over the last third.

Between sample number 017 to 022 the geology is anomalous in that the top .9m of outcrop is grey quartzite, below which is high gossanous and Mn-stained altered quartzite. The quartzite is weathered to sand. Near the bottom of the trench is a highly porous, dark grey to black manganese-stained rock of unknown composition. Minor galena was noted at sample 004 and 070.

At sample 142 the rock changes gradationally from biotite-chlorite schist to quartzite. At sample 145.5 the rock becomes iron-stained and chloritic, but still contains a fabric. Iron staining increases in intensity from #145.5 to #148.8. At #140.8 a chlorite quartzite breccia is noted to start, and extends to #150.8.

At #148.8 the zone attains maximum iron, malachite and azurite staining. This zone extends from #148.8 to #150.8. A second zone containing lesser stain extends from #150.8 to #152.8, and is composed of biotite-chlorite quartzite, containing a very slight fabric. #152.8 to #154 is a grey quartzite.

At #154 the bedrock surface drops off notably into a steep-sided, buried river channel. The depth of this channel was 6.25m. An inverted triangular section of lacustrine clay occurs centrally within this channel. The width of the top of the clay filling is 3.0m. A slightly rusty river pebble deposit outlines the bottom of the clay zone.

The zone, which is 13m S of the baseline, to 38m N of the baseline, required 4 days of Hoe digging and 3 days of D-7 time to move an immense amount of dirt. Total depth of the trench was 15m (10m average), across a necessary safety width of 11m, for a distance of 55m.

A sample of bedrock material from the deepest part of this trench ran .58% Sn. It was a sample from the bucket of the Hoe, but represented 1.5m of trench length.

Beyond the deep river channel the outcrop rises steeply, 14m above the channel. This rock is biotite-manganese-chlorite-quartz schists for 55m, manganese-biotite-chlorite-quartzites for 41m, and finally, back to schists as before to the trench end, approximately 15m.

A 15 cm quartz-chlorite breccia vein occurs at sample #179, and ran .107% Sn. This vein occurs within the schists. Several other thin chloritic veinlets also occur within the schists, up to 90m N of the baseline. From 80m to 122m N of the baseline is a zone of rust, brown, burgundy and grey staining, probably from pyrite, hematite and manganese.

TRENCH T81-25

Fewmet Zone

Trench T81-25, located on the Fewmet Zone, was designed to test the downhill extension of the Fewmet Zone geochemistry. It approximately parallels and is 40 metres downhill from T81-26. Trench #4(1980) runs diagonally between T81-25 and T81-26.

Trench T81-25 is 86.4m long, with 85 rock and soil samples being taken. The trench was dug in one day, and took a total of 4 man-days to map and sample. Rock chip samples from this trench are designated T81-25, 001 to 085, and soil samples are designated T81-25, 001S to 985S.

The rocks in this trench are mainly biotite-sericite-chlorite schists, with minor biotite-chlorite quartzites(Plate 24). Sample numbers 029 and 030 are gossanous quartz schist and breccia, with minor chlorite. Sample numbers 043 and 048 are slightly gossanous and silica-rich. Two of these three anomalous zones of rock had slightly anomalous geochemical responses from 155 to 2300 ppm Sn, but are not as anomalous as those in T81-26.

Soil samples nearest the beginning of the trench are very anomalous, with geochemical values from 120 to 1100 ppm Sn being obtained. No explanation for these results was recognized in this trench.

Trench T81-25 was not manually refilled at project's end, but had one-half filled with bank slough.



Plate 24: Trench T81-25, during construction.

TRENCH T81-26

Fewmet Zone

Trench T81-26 is located on the Fewmet Zone, and was designed to test the Fewmet Zone geochemistry. It was located just east of Trench #6(1980), starting 15 metres north of DDH 80-12.

Trench T81-26 was constructed by Cat D-7 in one day, and is actually a road cut. The trench is 105m in length, with 105 rock samples being taken, and was mapped and sampled in 6 man-days. The samples are designated T81-26, 001 to 105. No soil samples were taken in this trench. Overburden only was encountered for the southern 10m of the trench, and much groundwater and rubbly outcrop was found over the northernmost 10m of the trench. Between these two points, fair to good bedrock exposure was encountered.

Quartz-biotite schists were the main rocks exposed by this trench. Minor biotite-quartzites were found interbanded with the schists. Occasional chloritic schists were noted, along with iron and manganese staining.

Samples 031 and 032 were noted to be anomalous, due to a very deep burgundy pyrrhotite-like staining. These rocks were cut and revealed a crackled quartzite surrounded by a totally oxidized sulphide vein of unknown original composition. Bondar-Clegg assays of these rocks returned values of .38% Sn over 1m(#031), and .76% Sn over 1m(#032). No structure was discernible on this zone, and it is not known what the strike of this zone may be.

There are no major structures within this trench, and four sections of iron staining which, except for the above noted area, produce no anomalous results. One area that has an increased amount of chlorite has a Bondar-Clegg assay of .27% Sn. No other anomalous areas were noted.

By season's end the trench had 70% to 80% sloughed.

TRENCH T81-27

Trench T81-27 was dug as part of the 200m trench step-out exploration program. It is located on 40+75E, from 19+65N to 20+75N, and crosses the West Zone access road. The trench across and below this access road was refilled to enable the Hoe to exit from the trench.

This trench was dug in 2 days and was mapped and sampled in a total of 13 man-days. 132 rock and soil samples were taken over a distance of 137.0m. The samples are designated T81-27, 001 to 132 and T81-23, 001S to 132S.

Interbanded biotite-chlorite schists and quartzites are seen in equal abundances within the trench. Schistosity dips shallowly to the south, while shearing dips steeply to the south. Two chloritic quartzite breccia zones were noted south of the baseline and are equated to be Discovery Zone type rocks.

Shearing is very evident around the baseline, especially from 19+23 to 20+05N. This shearing is similar to nature to that in Trench T81-28, that is to say shallow to moderate dip to the south; totally sheared biotite, clay zones and crumpled siliceous zones; Mn and Fe staining; interspaced, relatively unaltered rock. The individual shears however, are not correlatable to T81-28.

Rock chip samples from this trench are geochemically anomalous in only two areas, one of which is a quartz chlorite breccia. Only a few soil samples responded weakly to PIF analysis, and do not correlate with geology or anomalous rock samples.

Trench T81-27 was not refilled and underwent very minor slough. Although the trench was dug with relative ease, the slope of the trench road which was between 15° and 20° , was the maximum slope upon which the excavator could safely operate.

TRENCH T81-28

Trench T81-28 is located approximately along 42+75E, from 19+55N to 20+40N and is NW of the Upper Mayo road. The trench is 99 metres long, and is comprised of 94 samples, both rock and soil. The sample number sequences are T81-28, 001 to 094 and T81-28, 001S to 094S. The trench was dug in 2/3 of a day and was mapped and sampled in 7 man-days. The trench was dug as part of the 200 metre step-out trenches to test the Discovery Zone.

The trench is mainly comprised of chlorite-actinolite-biotite-muscovite schists. Actinolite is more prevalent over the southernmost 50 metres of the trench, and chlorite is commonly seen throughout the whole trench. Two zones of quartz-chlorite breccias, one containing chloritite and malachite-azurite staining are seen near the baseline, and are equated to be Discovery Zone type rocks.

Starting at sample number 030, continuing past sample number 050(baseline) to sample 055, and from sample 075 to sample 086 are two series of shear zones. The shear zones are irregular, semi-continuous and have a generalized southerly dip. The rocks within the shear zones are moderately to well sheared, but, in general the rock types can be determined.

No anomalous rock or soil PIF values were obtained for samples from this trench, hence no samples were sent from this trench for geochemical analysis.

At season's end this trench was not refilled, but was 1/2 sloughed.

TRENCH T81-29

West Zone

Trench T81-29 is located roughly parallel to the baseline between L37+00E and L38+00E. The trench is 350m long, and is comprised of 94 samples of rock and 42 trench soil samples. The sample number sequences are T81-29, 001 to 094 and T81-29, 001S to 032S, 040S to 046S and 091S to 094S. The trench was dug in 2 days, and was mapped and sampled in 10 man-days. Difficulty was experienced both in trenching and sampling, due to a permafrost cemented slide zone and an underground spring occurring within this trench. The trench was dug to test the bedrock source of the West Zone chlorite breccia float, a single piece of which, found in 1979, assayed 11.6% Sn.

The trench is comprised of interbedded chlorite biotite schists and quartzites, which do not show any anomalous features. The area where 'West Zone' float was encountered was a permafrost cemented rubble slide zone. Rubble that was examined within this slide zone was quartzites, chloritic quartzites and chloritic breccias, similar to that originally found within the West Zone. Samples from this rubble were found to be mildly geochemically anomalous in Sn. Bedrock was not reached in this area, but it is thought that the source of the chloritic rubble lies uphill from this trench.

Outcrop immediately north of the slide zone is mainly a quartzite which is highly malachite stained. Fault gouge and sheared rocks adjoin this quartzite, and is, in turn bounded by more quartzite. The malachite rich quartzite and fault gouge lie directly on the baseline, and are thought to be the expression of Discovery Zone rocks in this area.

An explanation for zone type structure being present in this trench, while the source of the chloritic breccias appearing to lie uphill from this trench, was not found.

Other than the chloritic rubble, no other anomalous rock or soil samples were found in this trench. Trench T81-29 is mainly a rock face on the side of the access road, and had partially sloughed at season's end.

TRENCH T81-30

West Zone

Trench T81-30 is located along 20+25N from L38+00E to 37+20E and then along a line from 37+20E to L37+00E, from 20+25N to 19+70N. This trench is just downhill and approximately parallel to Trench T81-29. Trench T81-30 is 137 metres long and is comprised of 154 rock samples. No soil samples were taken in this trench. The sample number sequence is T81-30, 001 to 154. The trench was dug in one day and was mapped and sampled in 12 man-days. The trench was dug to test any possible downhill extension of the West Zone, and to attempt to trench through the slide rubble encountered in T81-29, uphill from T81-30.

This trench, as T81-29, is comprised of inter-bedded chlorite-biotite schists and quartzites. Also, as T81-29, no anomalous rocks were encountered, and the Hoe was not able to penetrate through the permafrost cemented rubble slide zone. Discovery Zone type rocks are absent where the trench crosses the baseline, and were not seen elsewhere within this trench. Chlorite breccia float present in slide rubble in T81-29, was not seen in T81-30. No anomalous PIF values were obtained from rock samples from this trench.

Trench T81-30 is a rock face, and was 3/4 sloughed by season's end.

TRENCH T81-31

Trench T81-31 is located at 20+00N, 40+00E and is 2 open-cuts into the bank of the West Zone access road. The open-cuts are 10 metres apart and are 3.5 metres into the bank. Seven rock chip samples were taken from the two open-cuts and have the sample number sequence T81-31, 001 to 007. No soil samples were taken. The open-cuts were dug in 1/2 day and were mapped and sampled in 2 man-days. The open-cuts were to test an apparent chlorite breccia occurrence and an adjacent shear/fault zone.

The open-cuts and the adjacent rock faces are quartzites, chloritic quartzites, chlorite and quartz-chlorite breccias, and quartzite breccias. A south dipping, siliceous, gossanous shear/fault zone roughly parallel to the road, has displaced rocks above and below it. Movement appears to be left lateral, with 5 to 10 metres of displacement. Rocks in this trench are Discovery Zone-West Zone type rocks, but no anomalous PIF values were obtained for samples from the open-cuts.

The roadway rock face and the open-cuts had partially sloughed at season's end.

TRENCH T81-32

Trench T81-32 is located approximately along 49+40E from 18+45N to 19+05N, and is a continuation of the access road past DDH 81-13. The trench is 60 metres long and is comprised of 60 samples, both rock and soil. The sample number sequences are T81-32, 001 to 060, and T81-32, 001S to 060S. The trench was dug in 1/2 day and was mapped and sampled in 3 man-days. The trench was dug to test a possible source of the Enigma Zone.

The trench rocks are biotite quartzites and schists, and biotite dacites. Minor shear zones and iron staining is present, but is not extensive. Evidence of a rubble slide zone was obliterated by rapidly sloughing banks. Minor specs of chalcopyrite, pyrite, pyrrhotite and sphalerite were noted near the south end of the trench. No other anomalous rocks were seen in this trench. No anomalous PIF values were obtained for soil samples taken from within the trenches, or for soil samples taken before trenching from undisturbed ground along the trace of the trench. Soil samples taken in 1980 from 5 x 5m grid coverage in this area yielded anomalous, but spotty results. Rock chip sample results from T81-32 were low, with only a spot high being obtained from a rubble (possible slide) zone.

Rock chip and soil results in this area indicate that unless major sliding not apparent in T81-32 has taken place, the source of the high soil geochemistry within the Enigma Zone near trenches 7, 8 and 9(1980), lies downhill from Trench T81-32. Also indicated is that the source for the spotty soil geochemistry in the 1980, 5 x 5m grid lies uphill from T81-32, possibly originating from Trench T81-23, the gossanous trench.

At season's end, this trench was 1/2 filled with slough.

TRENCH T81-33

West Zone

Trench T81-33 is located from 19+36N, 37+25E to 19+15N, 37+65E. The trench is a rock face along the West Zone access road and is 48.4 metres long. Forty-nine rock chip and soil samples were taken, which have the sample number sequences T81-33, 001 to 049 and T81-33, 001S to 049S. The trench was dug in 1/2 day, and was mapped and sampled in 4 man-days. The trench was dug to test possible uphill extensions of the West Zone, and to test a gossan uncovered during the construction of the West Zone access road.

The rocks are mainly chlorite-biotite-muscovite schists, with intimately associated greenstones from sample #027 to 049. The trench rocks are gossanous and occasional specs of malachite stain are seen (Plate 25). A slide zone, beginning at sample 040 and continuing past the end of the trench, is the same as that intersected in T81-29 and 30.

Chloritic quartzite present in the slide material indicates that the source for this material, seen also in T81-29, is still further uphill.

Rock chip samples 028 to 049 have mildly anomalous geochemical results from 125 to 2700 ppm Sn. Soil samples 018 to 040 have geochemically anomalous values from 190 to 3920 ppm Sn. Thus, trench rocks in T81-33 appear to be the source, or on the edge of the source for the anomalous soil samples. The presence of greenstone in this trench suggests it may be another Sn occurrence similar to that uncovered by Trench T81-23.

Attempts to build another road for a trench/drill pad above T81-33 were unsuccessful due to the inability of the equipment on hand to dig through the permafrost cemented slide zone on the steep hillslope.

The rock face, which is T81-33, had partially sloughed by season's end.



Plate 25: Trench T81-33, as viewed from the west, looking east. Drillhole DDH 81-17 is in the background.

TRENCH T81-34

Trench T81-34 is located from L44+00E, 20+75N to 44+09E, 20+88N on the Upper Mayo road near its join with the West Zone access road. The trench is 16m long, from which 16 rock samples were taken. No soil samples were collected. The sample number sequence for this trench is T81-34, 001 to 016. The trench was dug in two hours, and was mapped and sampled in one man-day. The trench was dug to test a gossan which was exposed during construction of the Upper Mayo road.

The trench is nearly all weathered greenstone and schist, and is all very highly gossanous. A layer of gossanous overburden overlies the weathered bedrock and is in turn overlain by non-gossanous overburden and cover. The limits of the gossan was not found, but it is thought that the greenstone is podlike, as in Trench T81-23.

Geochemically this trench is high anomalous, with values of 720 to 2900 ppm Sn being obtained. The geochemical anomaly is open at the trench ends, although the gossanous overburden and bedrock appear to be pinching at trench ends.

Trench T81-34 was almost entirely sloughed at season's end.

TRENCH T81-35

Trench T81-35 is located along a line from 19+00N, 46+70E to 19+97N, 46+45E, paralleling and 25 metres uphill from Trench T81-23. The trench is 100.9m long, from which 92 rock and soil samples were taken. The sample number sequences are T81-35, 001 to 092, and T81-35, 001S to 092S. The trench was dug in one day, and was mapped and sampled in five man-days. The trench was dug to test the extent of the gossan exposed in Trench T81-23.

The trench is mainly chlorite-biotite schists and chloritic quartzites. A deep section of river gravel overburden at mid-trench was not penetrated. Near the baseline a 6 metre section of quartz-chlorite breccia was found to be unfractured and untrenchable. A fault zone occurring over the last 6 metres of the trench, together with the quartz-chlorite breccia are equated to be discovery zone type rocks. These rocks are anomalous in Sn, with geochemical values of 4700 to 6000 ppm(est.) Sn obtained.

The gossan in Trench T81-23 does not extend to Trench T81-35, except for very small, remote pockets, indicating a very rapid pinching of the gossan. It is not known whether the gossan underlaid the 18 metres of river gravels found at mid-trench.

Trench T81-35 was 1/2 sloughed at season's end.

TRENCH T81-36

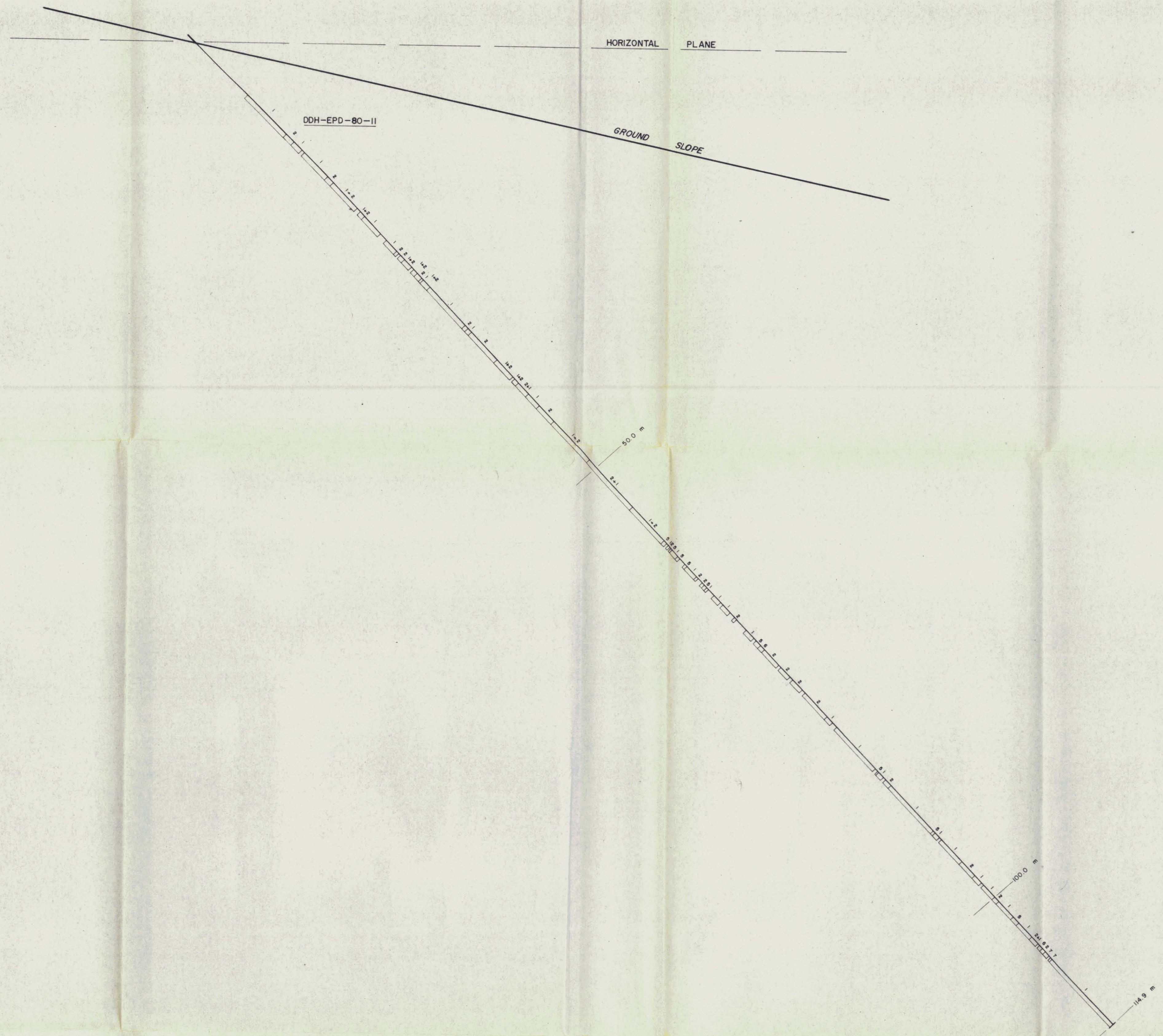
Trench T81-36 is located along 47+10E from 20+00N to 19+00N, and is 35 metres east of Trench T81-23. The trench is 104.3 metres in length, from which 100 rock chip and soil samples were taken. These samples have the number sequence T81-36, 001 to 100 and T81-36, 001S to 100S. The trench was dug in one day and was mapped and sampled in 6 man-days. The trench was dug to test the eastern extent of the gossan exposed in Trench T81-23.

The trench rocks are interbanded biotite-chlorite schists and quartzites. Gossanous material, similar to, but not as intense as that found in Trench T81-23, starts at sample number 019, and terminates against a 2 metre wide shear zone at sample 038. Possible Discovery Zone type rocks are seen between samples 077 and 086, as a slightly brecciated chlorite quartzite. At sample 097 a permafrost cemented rubble slide zone occurs through to the trench end at sample 100.

Four bedrock zones within this trench had anomalous Sn geochemistry. Values from 115 to 2300 ppm Sn were obtained. The gossanous section of the trench is only mildly anomalous, with geochemical values from 115 to 1800 ppm Sn. Trench soil samples are anomalous in Sn from sample 023 to the end of the trench. Values up to 2900 ppm Sn were obtained.

Continuous anomalous soil samples above intermittently anomalous bedrock indicates an uphill source, being T81-23, for the Sn in the soil. Sn, previously thought to be an immobile element appears to travel easily within the soil transport system.

Trench T81-36, an easily dug and relatively stable trench, remained open at season's end.



LEGEND

VALUES

<input type="checkbox"/>	>1.00 %
<input type="checkbox"/>	>0.80 %
<input type="checkbox"/>	>0.10 %

Sn

GEOLOGY

1	QUARTZITE
2	SCHIST
3	CHLORITIC QUARTZITE
4	CHLORITIC SCHIST
5	QUARTZITE BRECCIA
6	CHLORITE BRECCIA
7	QUARTZ VEIN
8	GOUGE ZONE
9	? "GREENSTONE"
10	CHLORITITE
11	? TUFF
12	MUD SEAM
13	? DIORITE

CORE LOSS

1.42 % Sn VALUES IN % SHOWN ABOVE LENGTH OF INTERSECTION
 1.50 IN METRES SHOWN BELOW

CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.
 115 - P- 15
 EPD GROUP
DDH SECTION 103 + 38 W Sn
(LOOKING WEST)

SCALE 1 : 200 DRAWN BY DFN DATE NOV 12, 1980 PLAN NO
 FIELD YEAR 1980 REVISION BY DATE 704-16

CJV-EPD
922-(704-16)



LEGEND

VALUES

- > 1.00 %
- > 0.80 %
- > 0.10 %

Sn

GEOLOGY

- QUARTZITE
- SCHIST
- CHLORITIC QUARTZITE
- CHLORITIC SCHIST
- QUARTZITE BRECCIA
- CHLORITE BRECCIA
- QUARTZ VEIN
- GOUGE ZONE
- "GREENSTONE"
- CHLORITITE
- TUFF
- MUD SEAM
- DIORITE

CORE LOSS

1.47 % Sn VALUES (ppm or %) SHOWN ABOVE LENGTH OF INTERSECTION
 2.80 IN METRES SHOWN BELOW

+ ; 0 BACKWALL MUCK SAMPLES (HIGHER; LOWER)

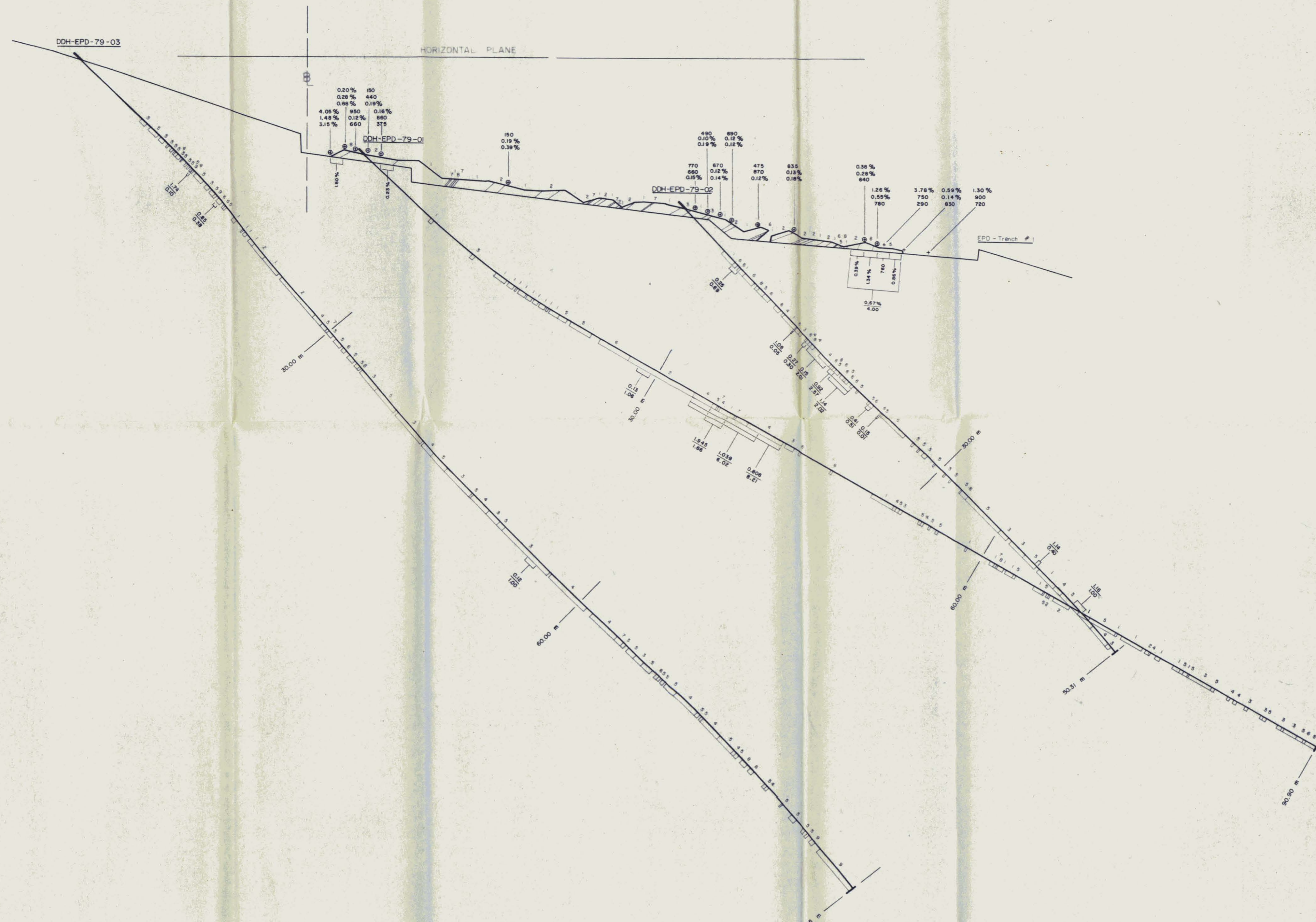
1.89 %
 700
 580 = +10
 -10 +40 FRACTIONS
 -60

**CORTIN JOINT VENTURE
 CAMPBELL RESOURCES INC.**
 115 - P - 15
 EPD GROUP

**DDH SECTION - FEWMET
 (LOOKING WEST)** **Sn**

SCALE 1:200 DRAWN BY DFN DATE NOV. 13, 1980 PLAN NO.
 FIELD YEAR 1980 REVISED BY DATE 704-17

CJV - EPD
 922 - (704-17)



LEGEND

ASSAY VALUES

Sn

- >1.0 %
- >0.6 %
- >0.1 %

BACKWALL MUCK SAMPLES +10 -40 FRACTIONS
 BACKWALL MUCK SAMPLES +10 -80 FRACTIONS

TRENCH SAMPLES

NB - ALL VALUES IN ppm or % Sn.

GEOLOGY

- QUARTZITE
- SCHIST
- CHLORITIC QUARTZITE
- CHLORITIC SCHIST
- QUARTZ BRECCIA
- CHLORITE BRECCIA
- QUARTZ VEN
- GOUGE ZONE
- ? "GREENSTONE"

CORE LOSS

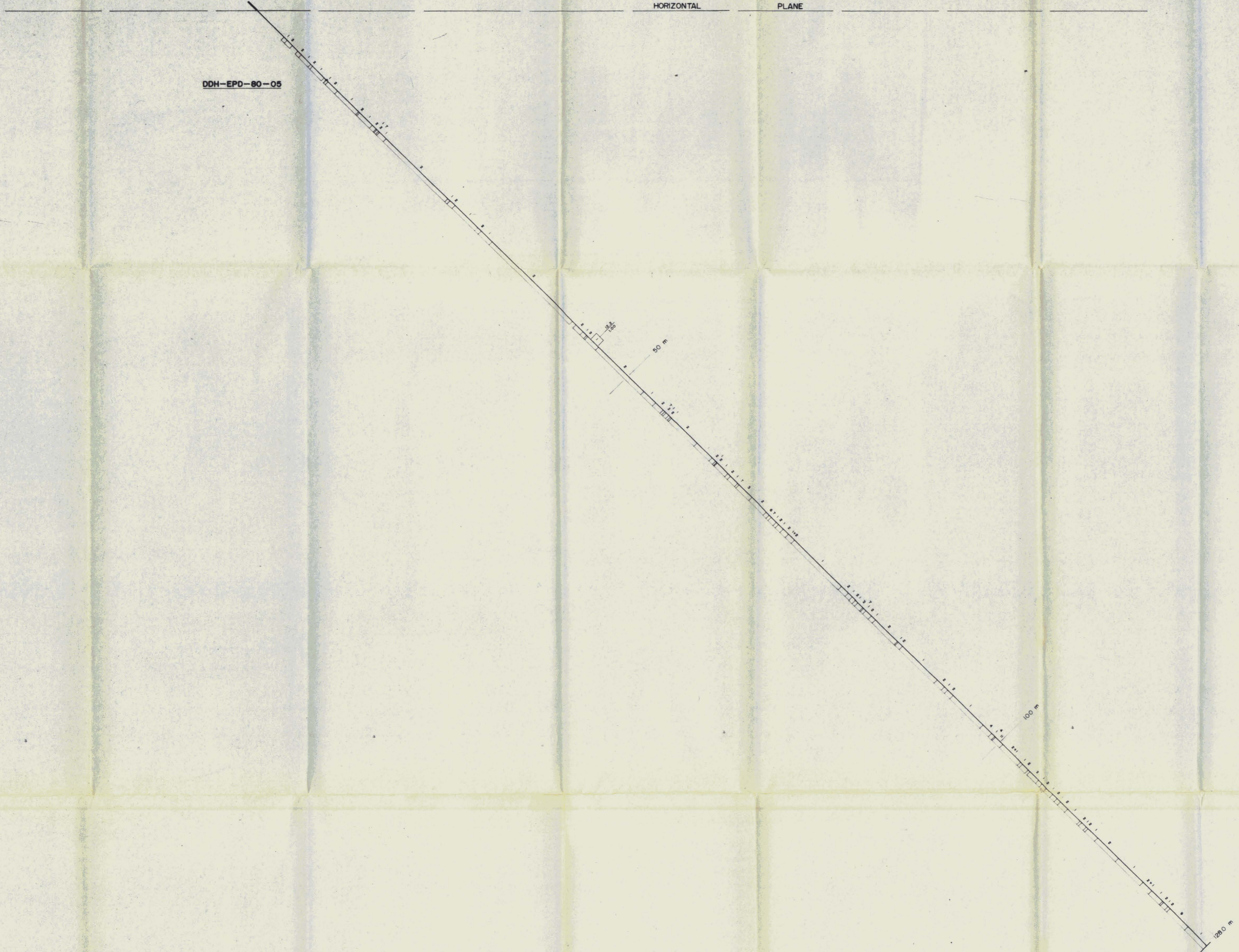
**CORTIN JOINT VENTURE
CCH RESOURCES LTD.**

15 P. 15

EPD GROUP

DIAMOND DRILLING
SECTION 102+19 W (LOOKING WEST)

DRAWN BY DFN DATE SEPT. 21, '80 FIELD YEAR '79, '80 PLAN NO.
 REVISED BY DFN DATE JAN. 30, 1981 SCALE 1:200 **704-20**

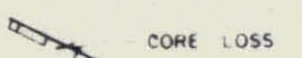


LEGEND

VALUES:
Ag >10 ppm Ag
Sn >0.1 % Sn
 NB - NO Sn VALUES.

GEOLOGY:

- QUARTZITE
- SCHIST
- CHLORITIC QUARTZITE
- CHLORITIC SCHIST
- QUARTZITE BRECCIA
- CHLORITE BRECCIA
- QUARTZ VEN
- GONGE ZONE
- GREENSTONE
- CHLORITE
- TUFF
- MUD SEAM
- DIORITE

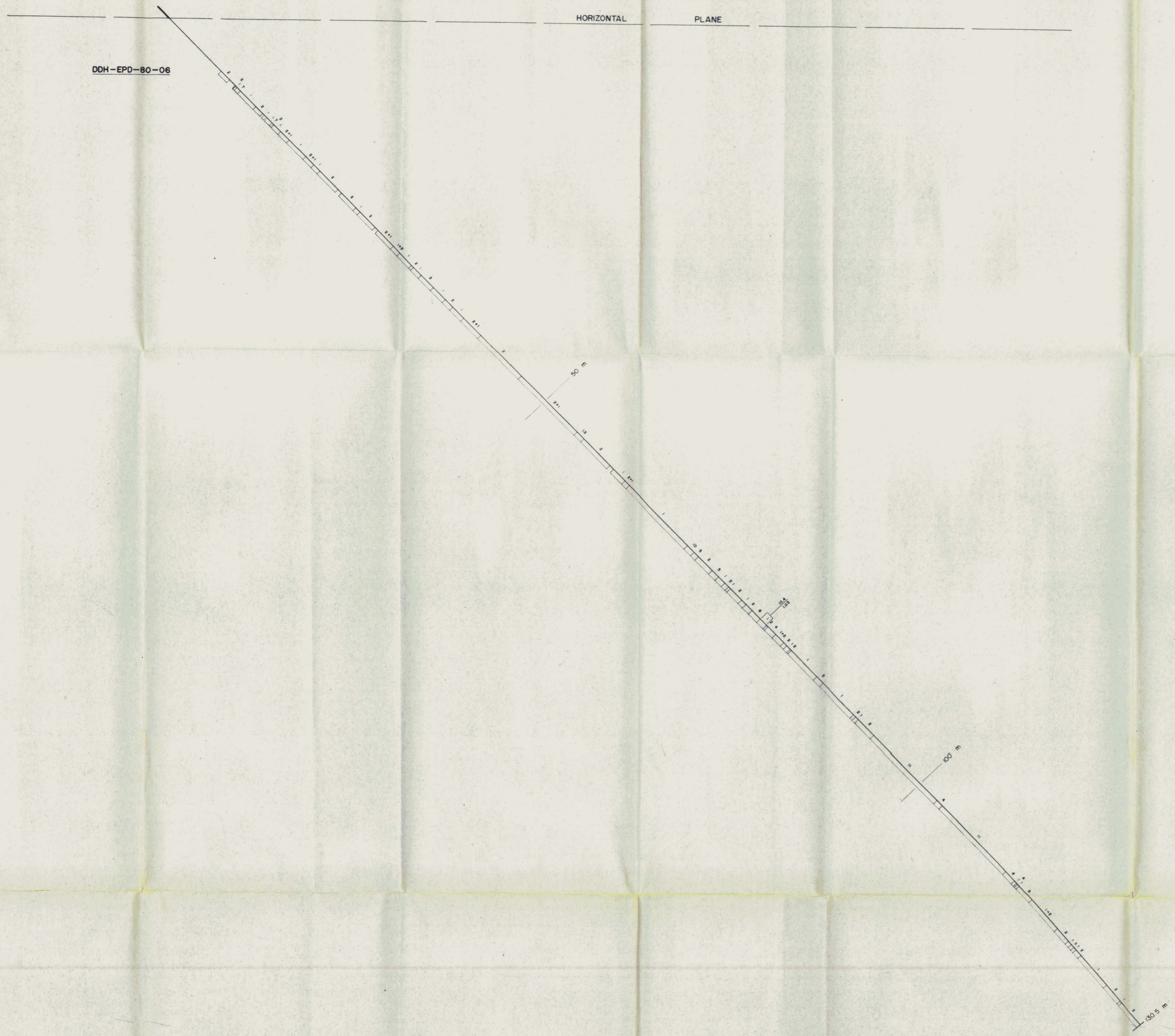
 CORE LOSS

Ag VALUES IN ppm SHOWN ABOVE LENGTH OF INTERSECTION
 IN METRES SHOWN BELOW

CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.
 115 - P-15
 EPD GROUP

DDH SECTION 100+99 W
(LOOKING WEST) Ag/Sn

SCALE 1:200	DRAWN BY DFN	DATE MAR. 20, 1991	PLAN NO. 704-47
FIELD YEAR 1990	REVISED BY	DATE	



DDH-EPD-80-06

HORIZONTAL PLANE

50 m

50 m

30.5 m

LEGEND

VALUES

Ag > 10 ppm Ag
Sn > 1% Sn

N.B. - NO Sn VALUES.

GEOLOGY

- QUARTZITE
- SCHIST
- CHLORITIC QUARTZITE
- CHLORITIC SCHIST
- QUARTZITE BRECCIA
- CHLORITE BRECCIA
- QUARTZ VEIN
- GOUGE ZONE
- "GREENSTONE"
- CHLORITITE
- TUFF
- MUD SEAM
- DIGRITITE

CORE LOSS

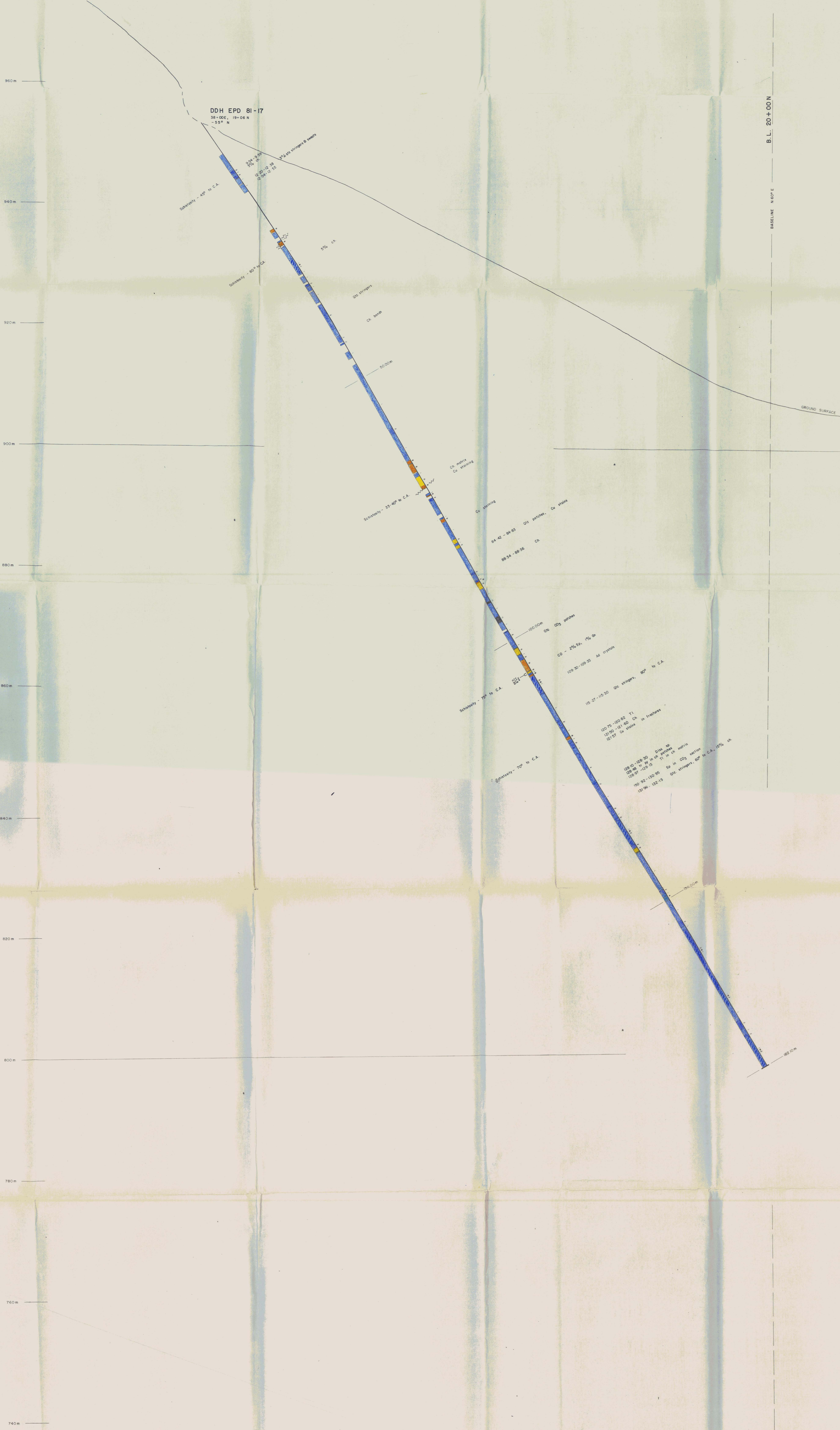
1.47% Ag VALUES IN 100m SHOWN ABOVE LENGTH OF INTERSECTION
2.80 IN METRES SHOWN BELOW

CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.
 115 - P - 15
 EPD GROUP

DDH SECTION 100 + 75 W
(LOOKING WEST) Ag/Sn

SCALE 1:200 DRAWN BY DFN DATE MAR. 20, 1981 PLAN NO.
 FIELD YEAR 1980 REVISION BY DATE 704-48

CIV-EPD
922-(704-48)



LEGEND

Ad Andalusite	Co Carbonate
Ga Galena	Tl Tourmaline
Sp Sphalerite	Ch Chlorite
Cu Copper	St Staining

GEOLOGY

	QUARTZITE
	SCHIST
	CHLORITIC QUARTZITE
	CHLORITIC SCHIST
	QUARTZITE BRECCIA
	CHLORITIC BRECCIA
	QUARTZ VEIN
	SOUSE ZONE
	? "GREENSTONE"
	CHLORITITE
	? TUFF
	MUD SEAM
	? DIORITE
	ANDALUSITE SCHIST
	TOURMALINE BRECCIA
	DACITE PORPHYRY

CORE LOSS

0.89 7% Si
1.50 97.7 Ag
1.12

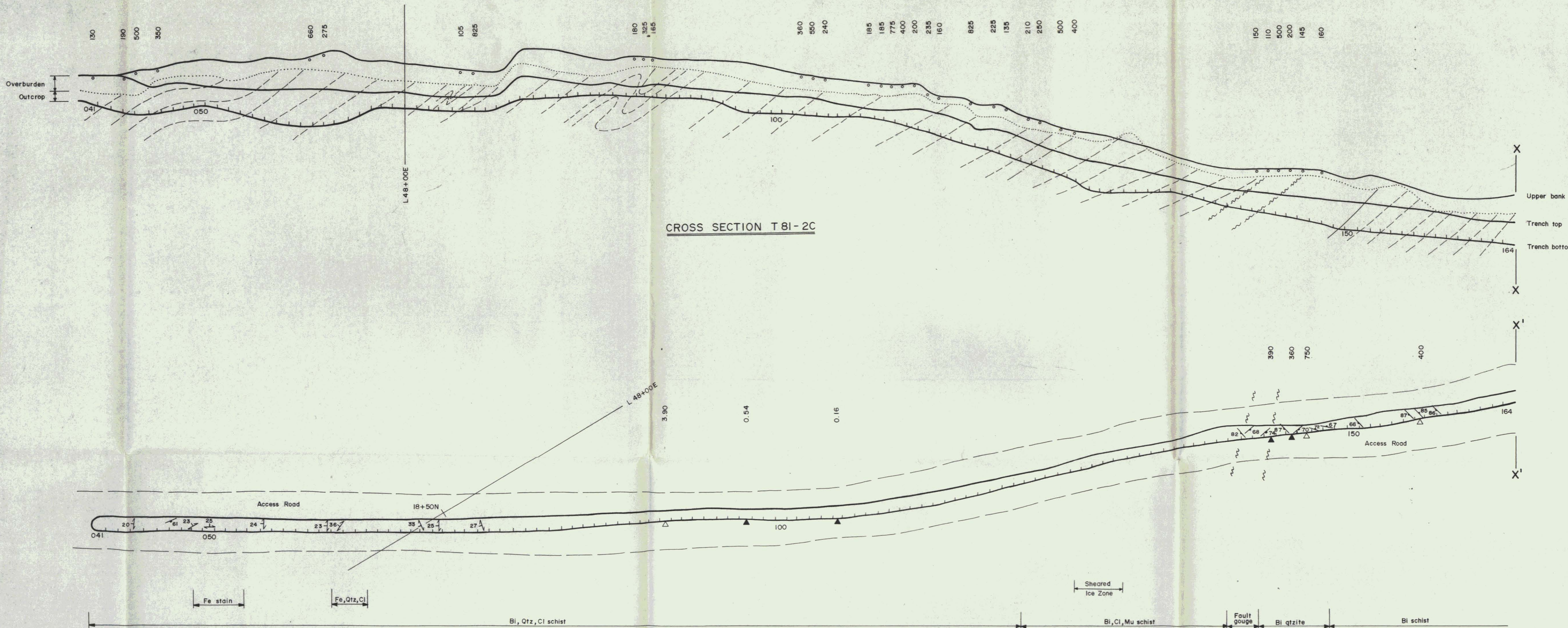
091015

**CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.**

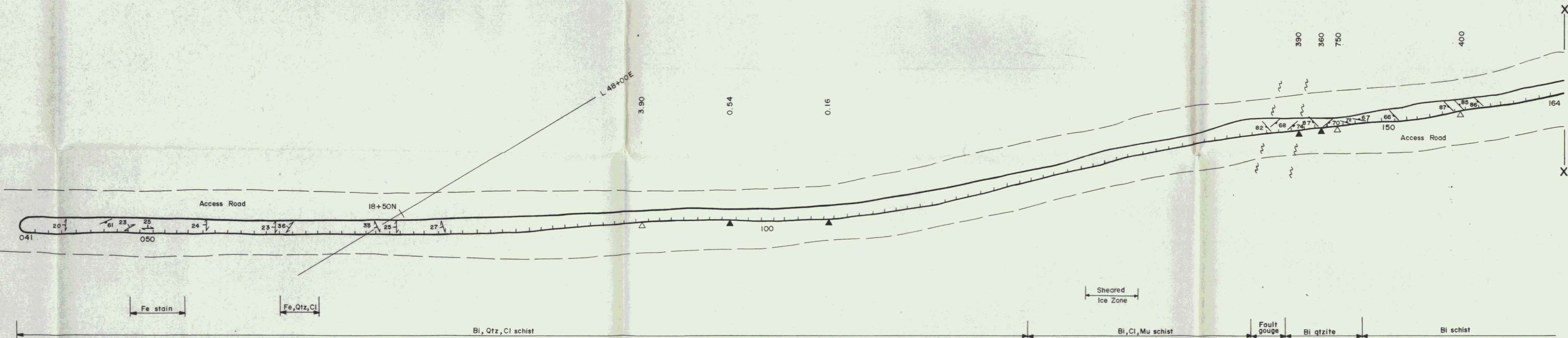
EPD GROUP
DDH 81-17
SECTION 38+00E
(LOOKING WEST)

Scale: 1:200 Date: Oct 22, 1988
Author: JMB
Field No: 198

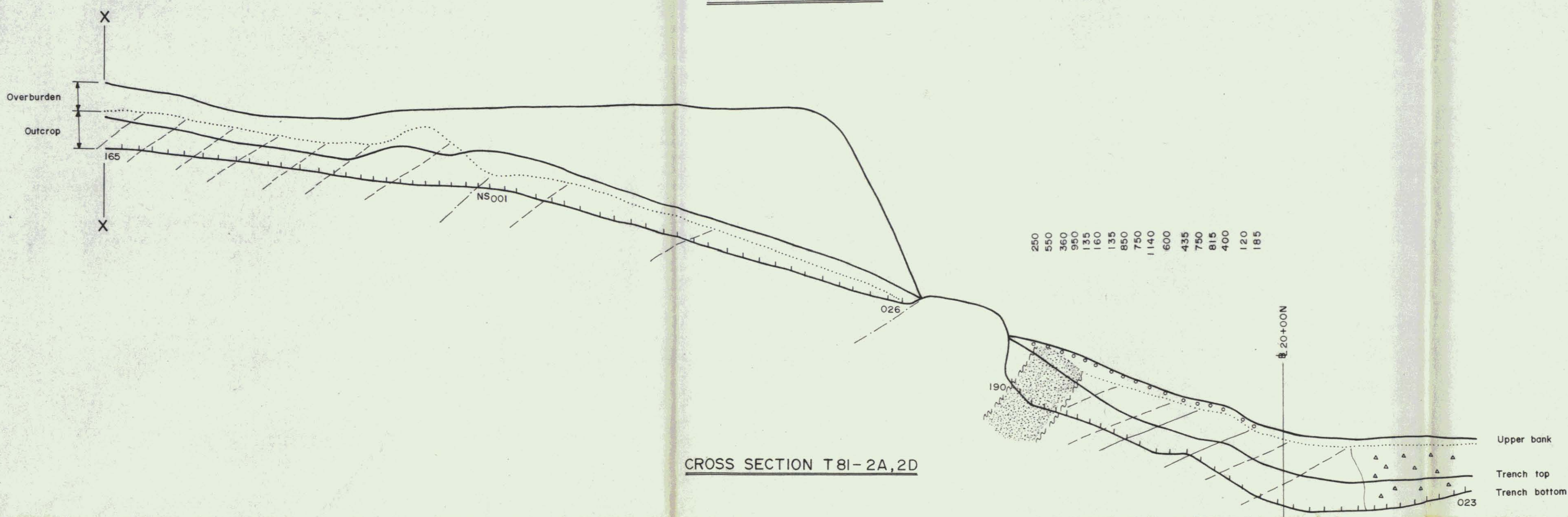
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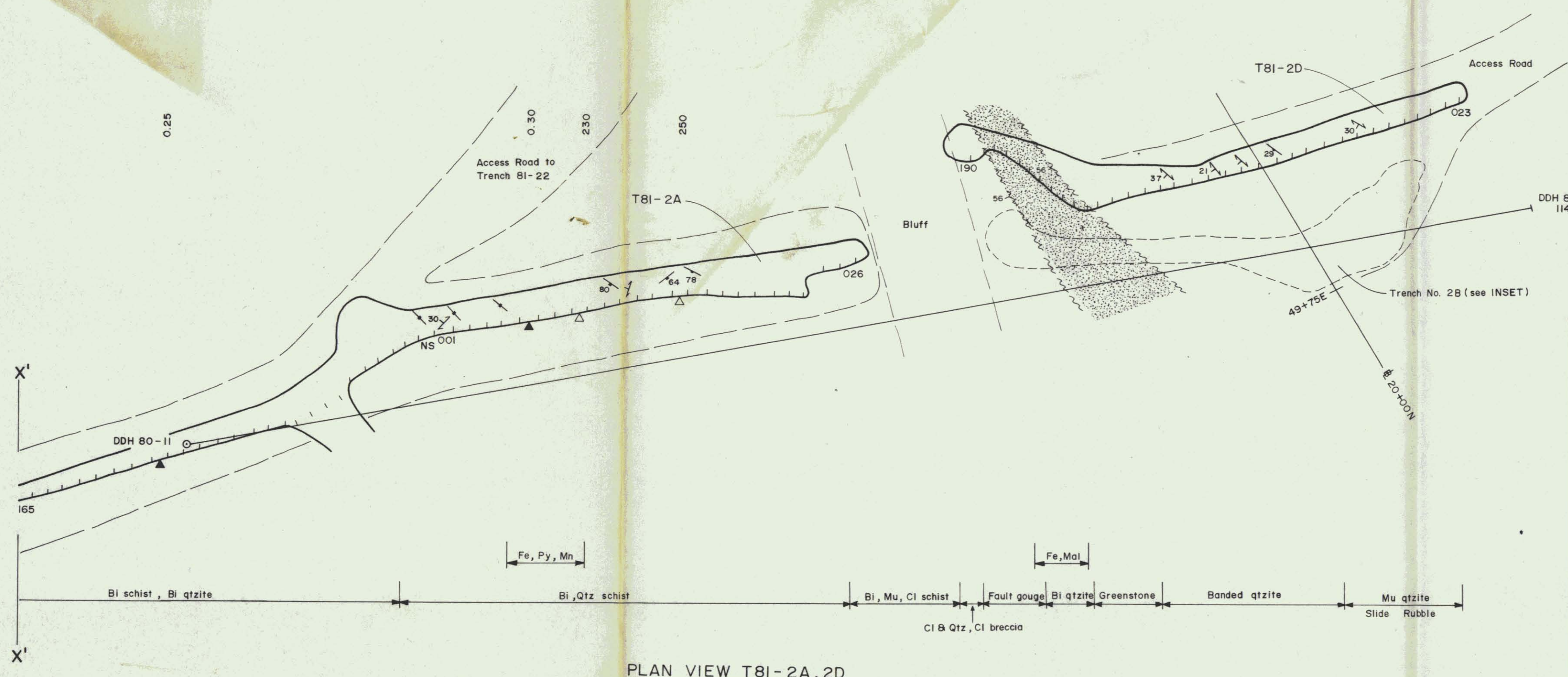
CROSS SECTION T81-2C



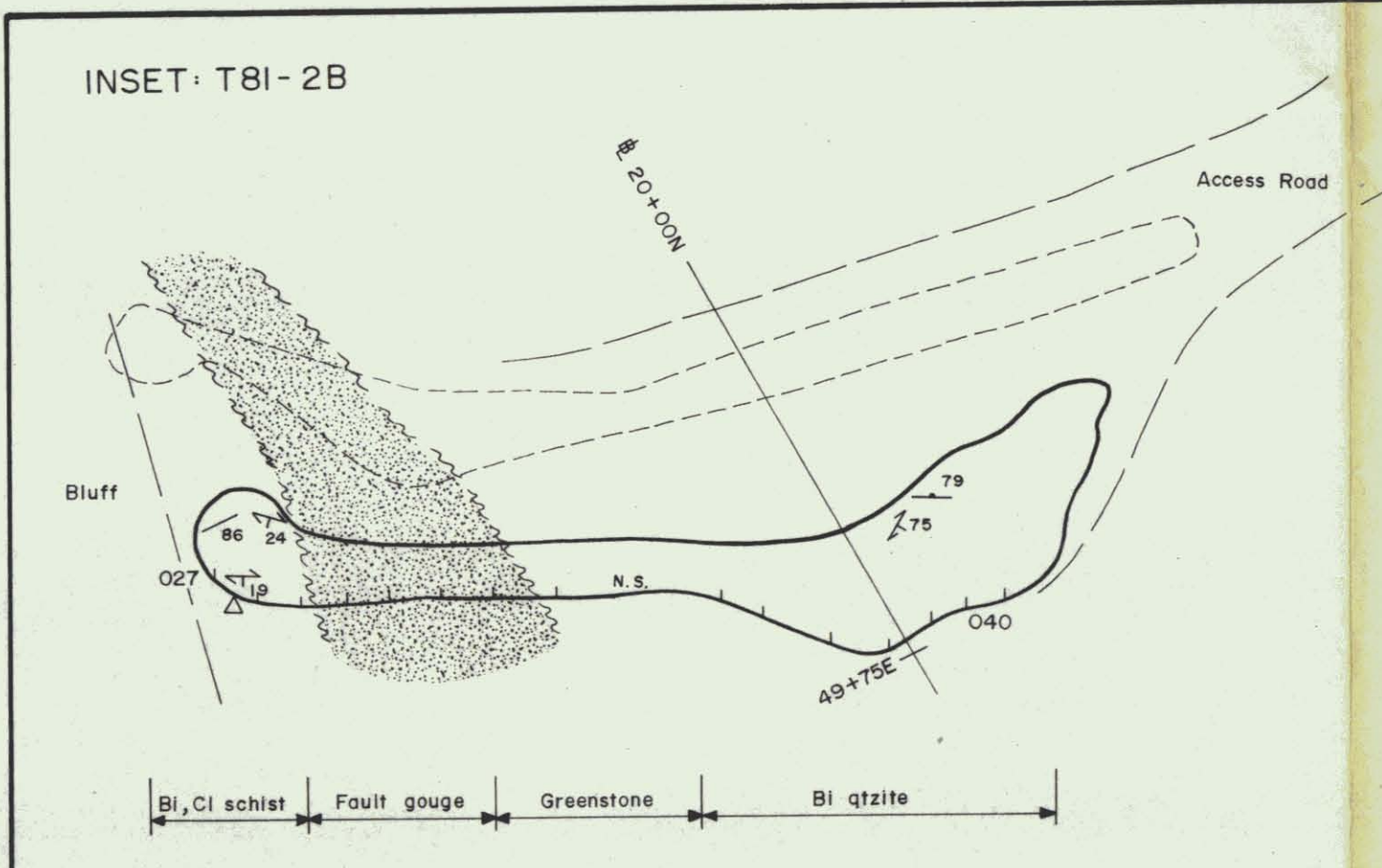
PLAN VIEW T81-2C



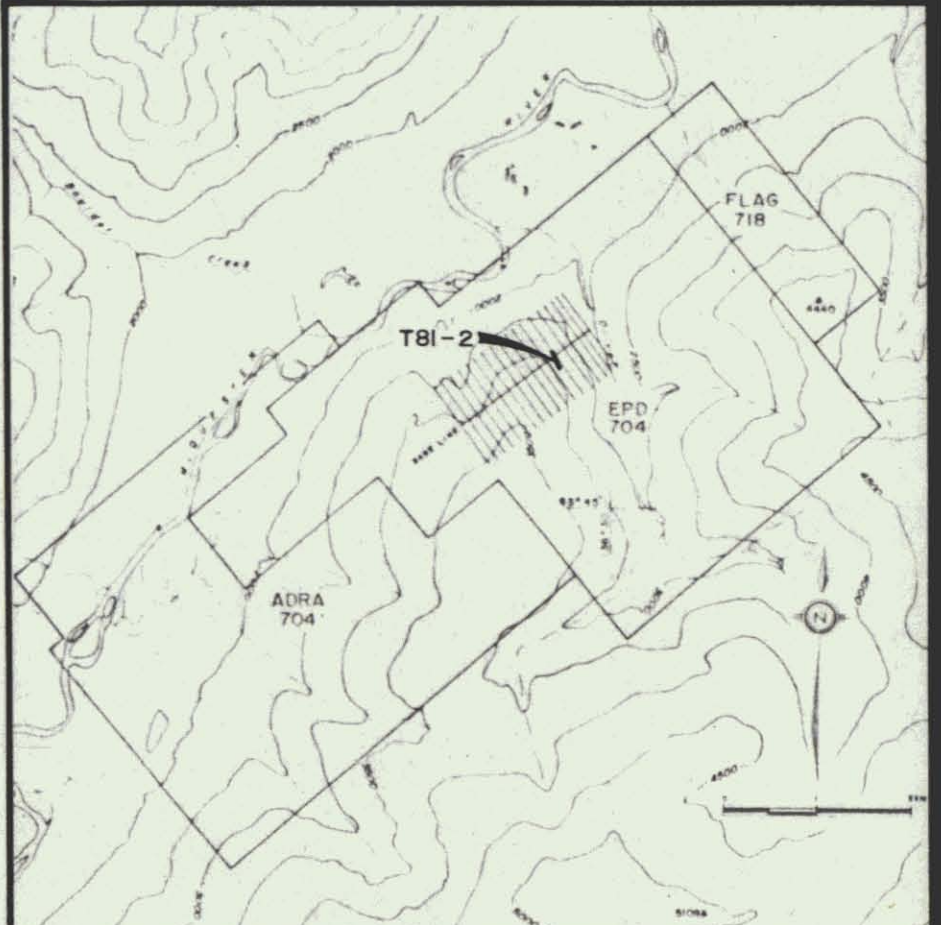
CROSS SECTION T81-2A,2D



PLAN VIEW T81-2A,2D



INSET T81-2B



LEGEND

PRECAMBRIAN AND/OR CAMBRIAN
"BRIT" DIVISION (Formerly YUKON GROUP)

Bluff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, greenstone, siltstone

Contact; Sharp, Gradational
Form Lines

Strike and Dip of Schistosity
Strike and Dip of Fractures
Strike and Dip of vein Structures

Fault Zone
Shear Zone

sch	Schist	Py	Pyrite
Qtzite	Quartzite	Cp	Chalcopyrite
Bl	Biotite	Aspy	Arsenopyrite
Mu	Muscovite	Gn	Galena
Cl	Chlorite	Sp	Sphalerite
Ser	Sericite	Fe	Goethite
Act	Actinolite	Mn	Manganosiderite
Mal	Malachite	Az	Azurite

Sample Intervals and Number
Rock Geochemical Value (ppm Sn)
Rock Assay Value (% Sn)
Soil Geochemical Value (ppm Sn)
NS No Sample Taken

DDH 80-11
Diamond Drill Hole Collar and Direction

Except where shown, only rock chip and soil samples responding to PIF testing were analyzed by geochemical methods.
Except where noted, all displayed soil geochemical results are -10,+42 mesh.
Except where limited by sample size, all geochemical results <2000 ppm Sn were assayed for Sn.

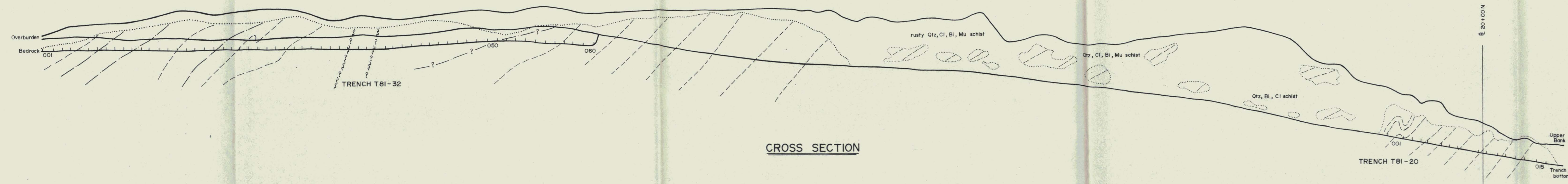
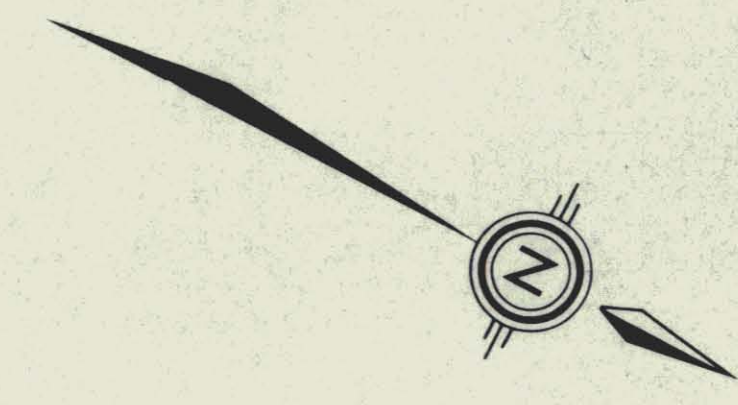
**CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.**

N.T.S. 115 P / 15
EPD GROUP

TRENCH T81-2

SCALE 1:200
DRAWN BY WJS / JRE
DATE JULY 1981
FIELD YEAR 1981
REVISED BY ROW / SG
DATE SEPT 1981
PLAN NO. 704-59

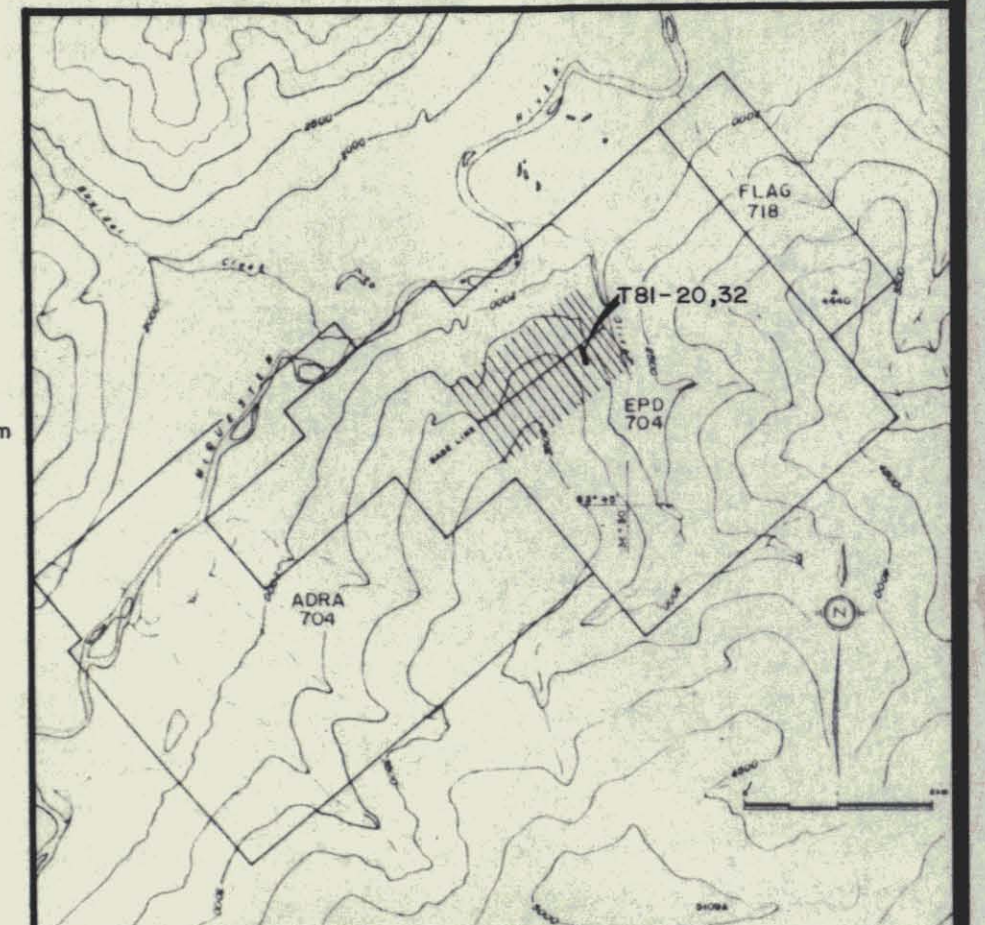
CJV - EPD
922 (704-59)



CROSS SECTION



PLAN VIEW



LEGEND

- PRECAMBRIAN AND/OR CAMBRIAN "BIRCH" DIVISION (Formerly YUKON GROUP)
- Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, greenstone, siltstone
 - Contact, Sharp, Gradational
 - Form Lines
 - Strike and Dip of Schistosity
 - Strike and Dip of Fractures
 - Strike and Dip of Vein Structures
 - Fault Zone
 - Shear Zone
- | | | |
|--------|------|--------------|
| Schist | Py | Pyrite |
| Qtzite | Cp | Chalcopyrite |
| Bi | Aspy | Arsenopyrite |
| Mu | Gal | Galena |
| Cl | Sp | Sphalerite |
| Ser | Fe | Goethite |
| Act | Mn | Manganese |
| Mol | Az | Azurite |
- Sample Intervals and Number
- Rock Geochemical Value (ppm Sn)
 - Rock Assay Value (% Sn)
 - Soil Geochemical Value (ppm Sn)
 - NS No Sample Taken
- DCH 80-7,8 Diamond Drill Hole Color and Direction
- Except where shown, only rock chip and soil samples responding to PIF testing were analyzed by geochemical methods.
- Except where noted, all displayed soil geochemical results are -10, +40 mesh.
- Except where limited by sample size, all geochemical results < 2000 ppm Sn were assayed for Sn.

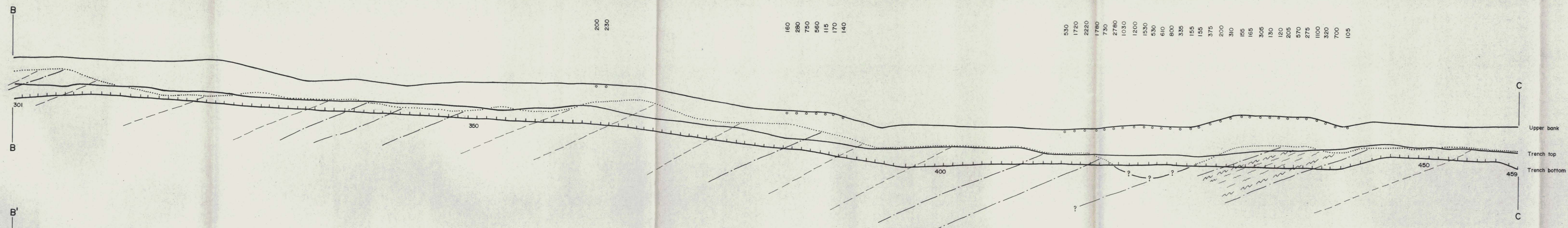
**CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.**

N.T.S. 115 P / 15
EPD GROUP

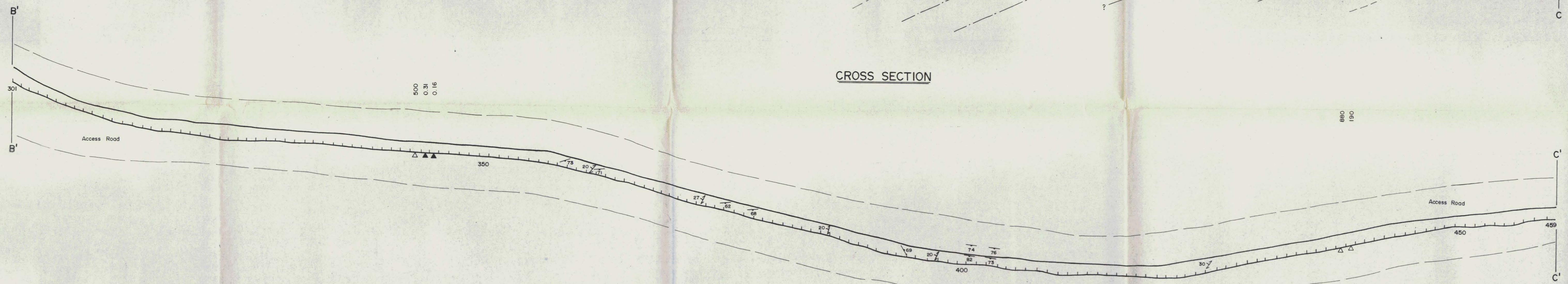
TRENCH T81- 20, 32

SCALE 1:200	DRAWN BY WS	DATE SEPT 1981	PLAN NO.
FIELD YEAR 1981	REVISED BY RW/SO	DATE	704-60

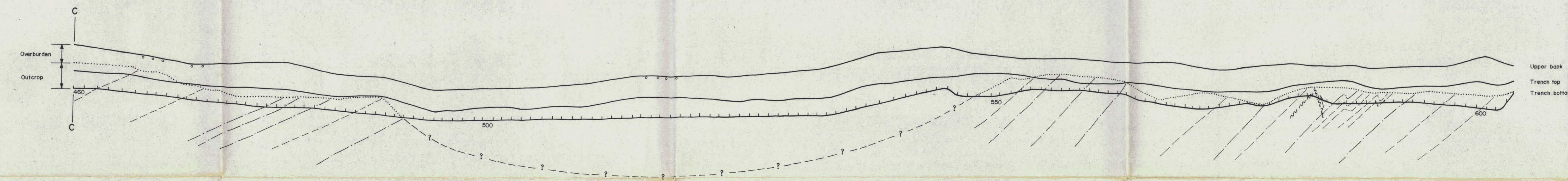
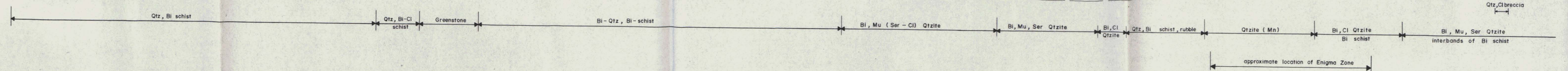
CJV-EPD
922-(704-60)



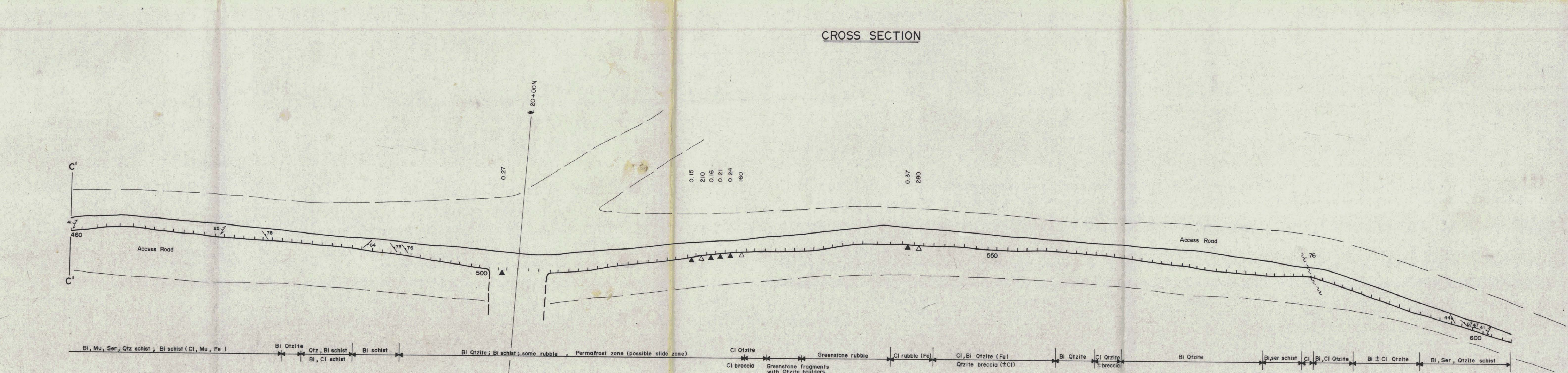
CROSS SECTION



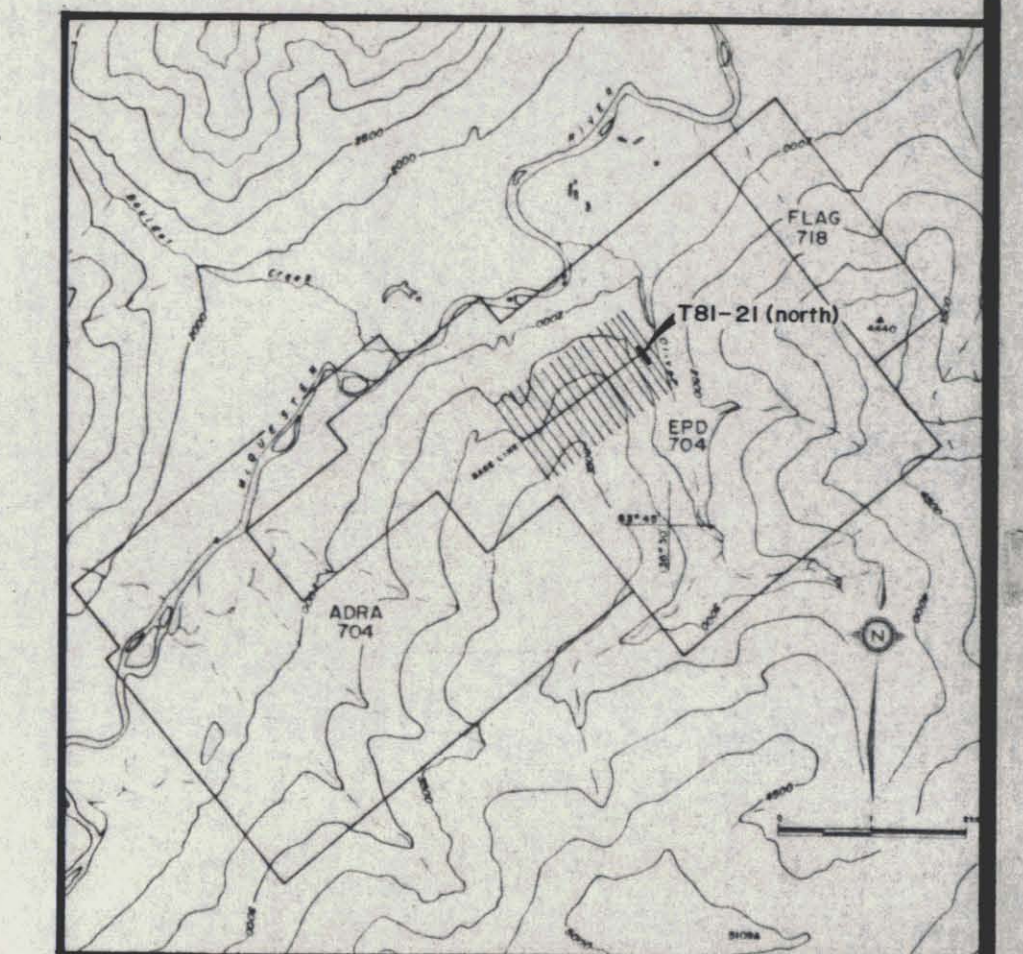
PLAN VIEW



CROSS SECTION



PLAN VIEW



LEGEND

PRECAMBRIAN AND/OR CAMBRIAN "GRIT" DIVISION (Formerly YUKON GROUP)

Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, greenstone, siltstone

Contact; Sharp, Gradational
Form Lines

Strike and Dip of Schistosity
Strike and Dip of Fractures
Strike and Dip of Vein Structures

Fault Zone Shear Zone

schist Schist	Py Pyrite
Qtzite Quartzite	Cp Chalcopyrite
Bl Biotite	Aspy Arsenopyrite
Mu Muscovite	Sn Sphalerite
Cl Chlorite	Sp Sphalerite
Ser Sericite	Fe Goethite ± Limonite
Act Actinolite	Mn Manganese
Mal Malachite	Az Azurite

Sample Intervals and Number
Rock Geochemical Value (ppm Sn)
Rock Assay Value (% Sn)
Soil Geochemical Value (ppm Sn)
NS No Sample Taken
Diamond Drill Hole Collar and Direction

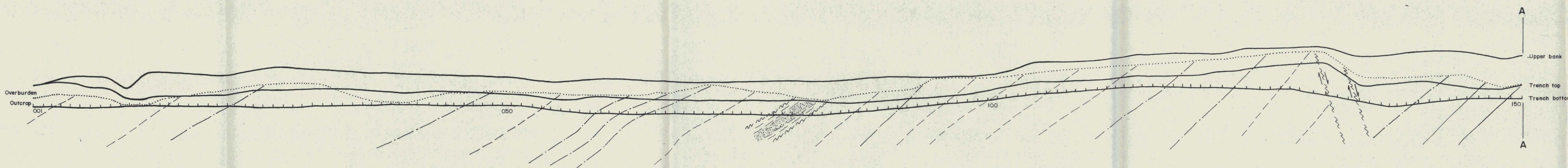
Except where shown, only rock chip and soil samples responding to PLF testing were analyzed by geochemical methods.
Except where noted, all displayed soil geochemical results are -10,+40 mesh.
Except where limited by sample size, all geochemical results <2000 ppm Sn were assayed for Sn.

CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.
N.T.S. 115 P / 15
EPD GROUP

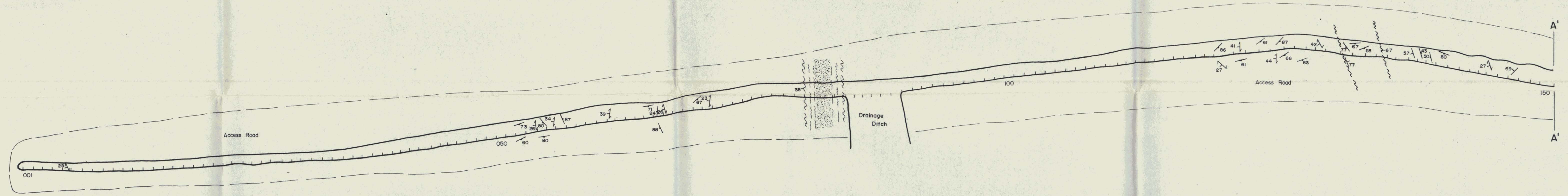
TRENCH T81-21
(NORTH PORTION)

SCALE: 1:200 DRAWN: WJS/JRE DATE: JULY 1981 PLAN NO.: 704-61
FIELD YEAR: 1981 BY: HIRSH/RGW/SB DATE: SEPT 1981

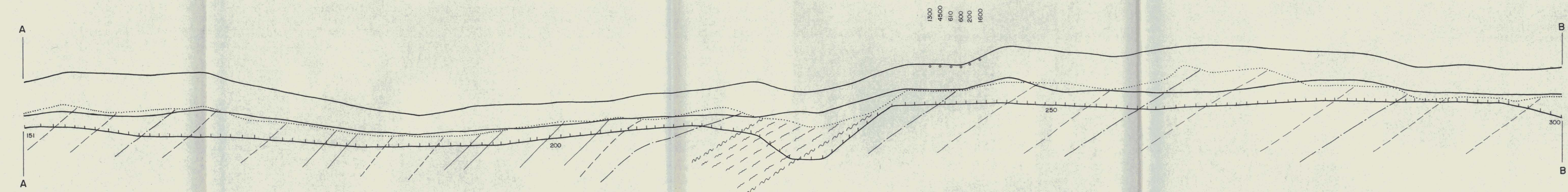
CJV-EPD
922-(704-61)



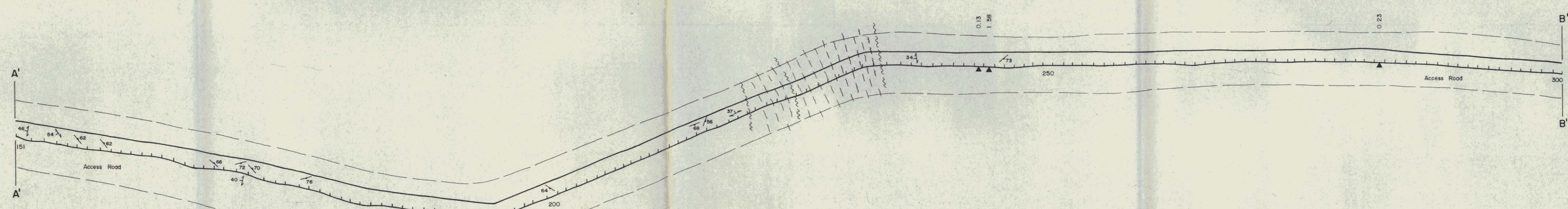
CROSS SECTION



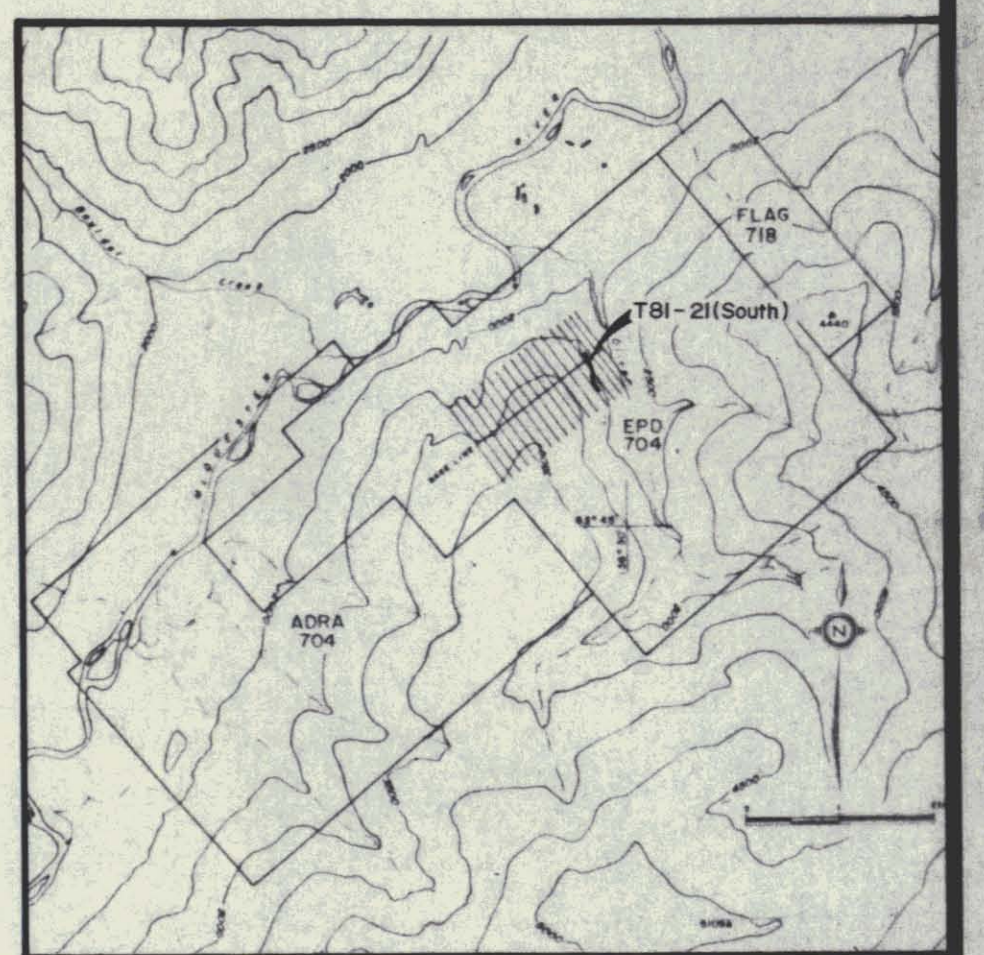
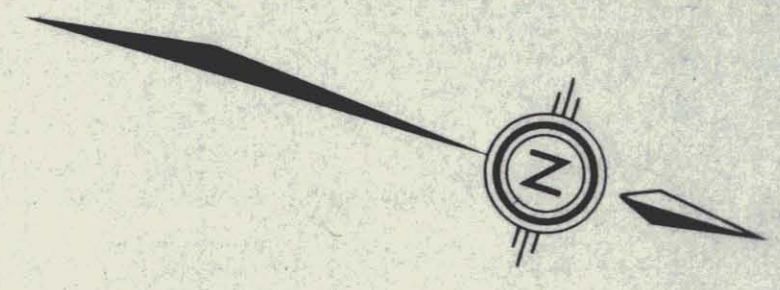
PLAN VIEW



CROSS SECTION



PLAN VIEW



LEGEND

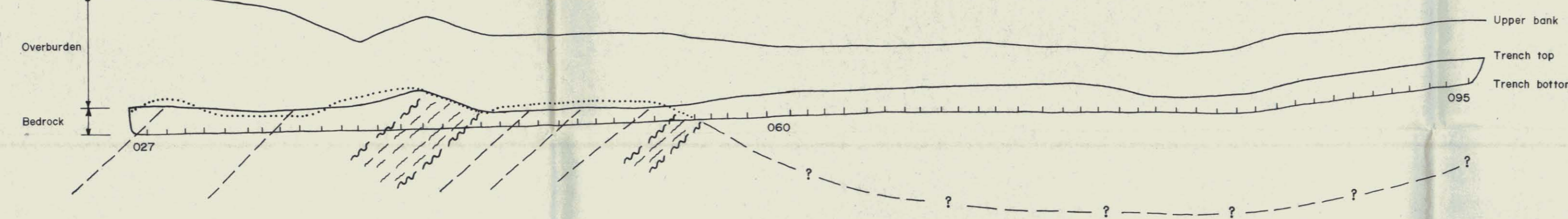
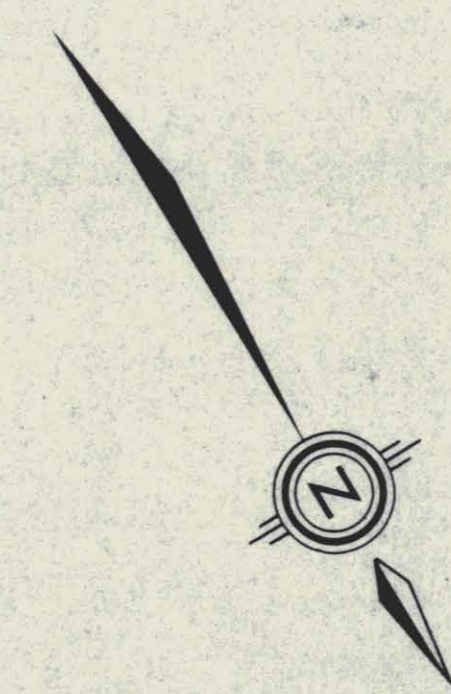
- PRECAMBRIAN AND/OR CAMBRIAN
"DIRT" DIVISION (Formerly YUKON GROUP)
- Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, greenstone, siltstone
 - Contact; Sharp, Gradational
 - Form Lines
 - Strike and Dip of Substrata
 - Strike and Dip of Fractures
 - Strike and Dip of Vein Structures
 - Fault Zone
 - Shear Zone
- | | |
|----------------|------------------------|
| Schist | Pyrite |
| Qtzite | Cp Chalcopyrite |
| Bi Biotite | Aspy Arsenopyrite |
| Mu Muscovite | Gn Galena |
| Cl Chlorite | Sl Sphalerite |
| Ser Sericite | Fe Gosauite ± Limonite |
| Act actinolite | Mn Manganoes |
| Mol Malachite | Azur Azurite |
- 100 Sample Interval and Number
 - Rock Geochemical Value (ppm Sn)
 - Rock Assay Value (% Sn)
 - Soil Geochemical Value (ppm Sn)
 - NS No Sample Taken
 - DDH 81-14 Diamond Drill Hole Collar and Direction
- Except where shown, only rock chip and soil samples responding to PIF testing were analyzed by geochemical methods.
- Except where noted, all displayed soil geochemical results are -10, +40 mesh.
- Except where limited by sample size, all geochemical results < 2000 ppm Sn were assayed for Sn.

CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.
N.T.S. 115 P / 15
EPD GROUP

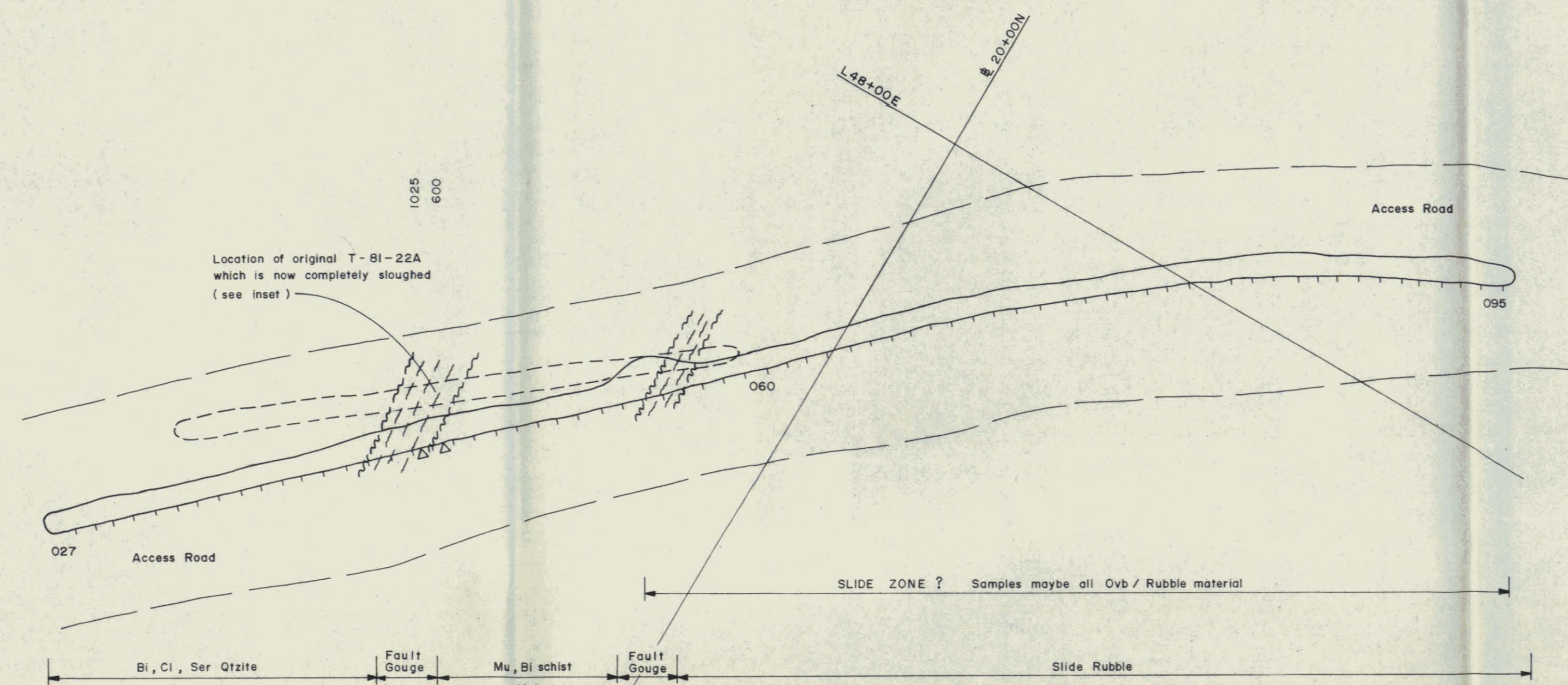
TRENCH T81-21
(SOUTH PORTION)

SCALE 1:200	DRAWN JRE	DATE JULY 1981	PLAN NO.
FIELD YEAR 1981	REVISED BY RWG/SG	DATE SEPT 1981	704-62

CJV-EPD
922-(704-62)



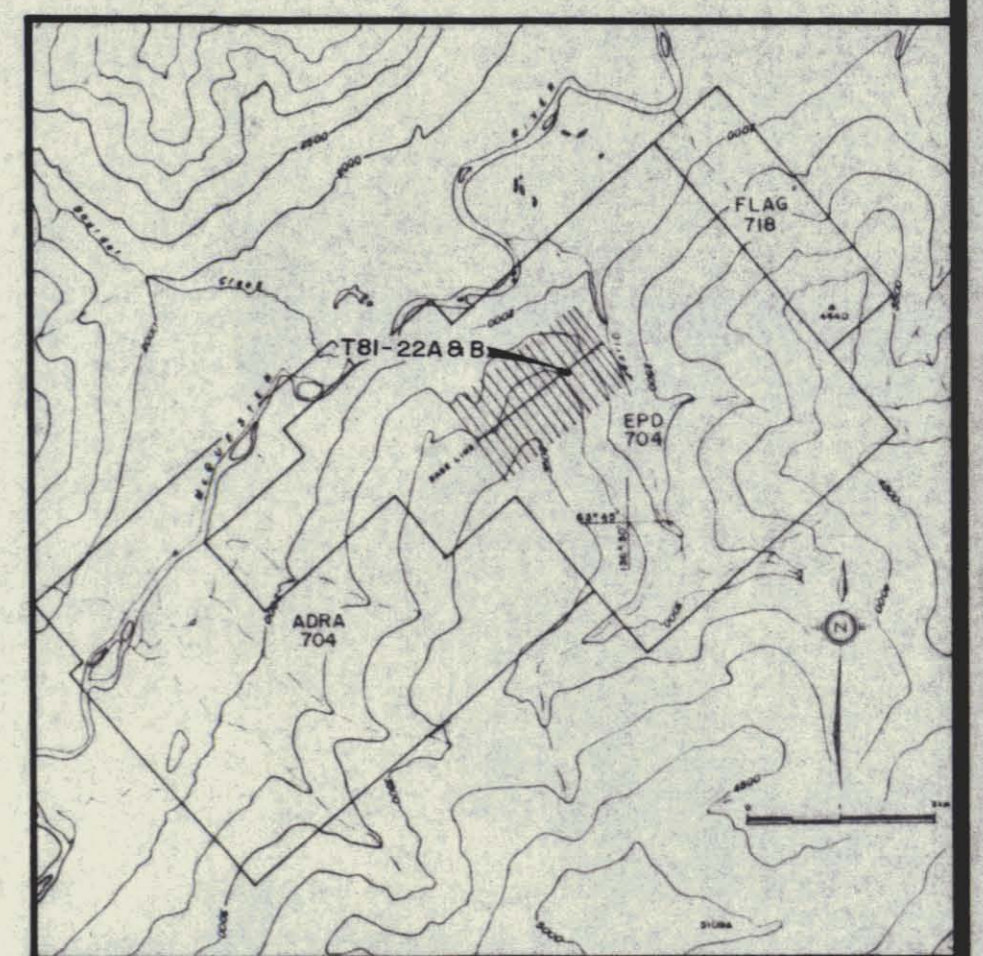
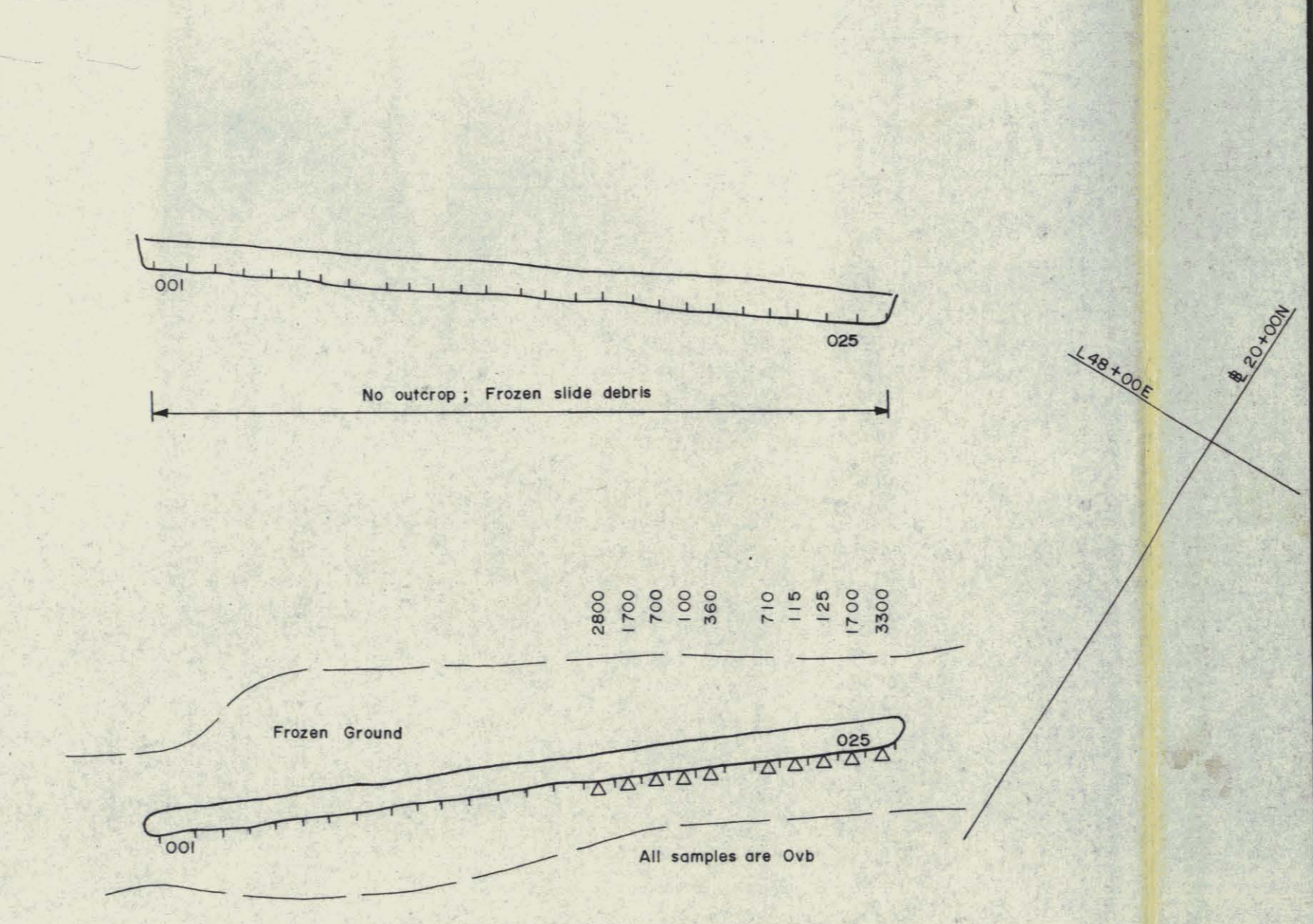
CROSS SECTION



PLAN VIEW

SAMPLE NO.	WIDTH (meters)	Sn ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppm	Ni ppm
001	1.1	18	101	56	480	0.6	—	—
002	1.0	12	70	23	516	0.2	—	—
003	1.0	21	69	47	596	0.3	—	—
004	1.0	17	70	38	590	0.2	—	—
005	1.0	25	59	30	360	0.3	—	—
006	0.9	28	68	34	440	0.4	—	—
007	1.05	42	101	57	618	0.4	—	—
008	1.25	33	74	53	345	0.4	—	—
009	0.75	67	82	60	406	1.4	—	—
010	1.0	69	178	59	486	5.1	—	—
011	1.0	79	58	40	252	0.6	—	—
012	1.05	76	74	70	382	1.0	—	—
013	1.05	38	47	68	285	0.9	—	—
014	0.95	46	130	124	276	3.1	—	—
015	1.1	58	86	128	308	2.0	—	—
016	1.0	>2000	218	116	516	2.6	—	—
017	1.0	1700	124	88	424	2.3	—	—
018	1.05	700	182	192	624	5.9	—	—
019	1.0	100	74	62	408	0.6	—	—
020	1.0	360	174	94	656	2.2	—	—
021	1.0	71	150	80	588	5.0	—	—
022	1.0	710	88	64	450	4.9	—	—
023	1.0	115	138	82	438	1.7	—	—
024	1.0	125	178	68	410	1.9	—	—
025	1.0	1700	1038	570	760	23.8	—	—
026	1.0	330	496	680	750	45.0	—	—
043	1.0	80	1150	155	540	28.5	<5	13
044	1.0	1025	7600	380	1500	49.0	10	36
045	1.0	600	4500	930	1150	>50	<5	28

INSET : T-81-22A

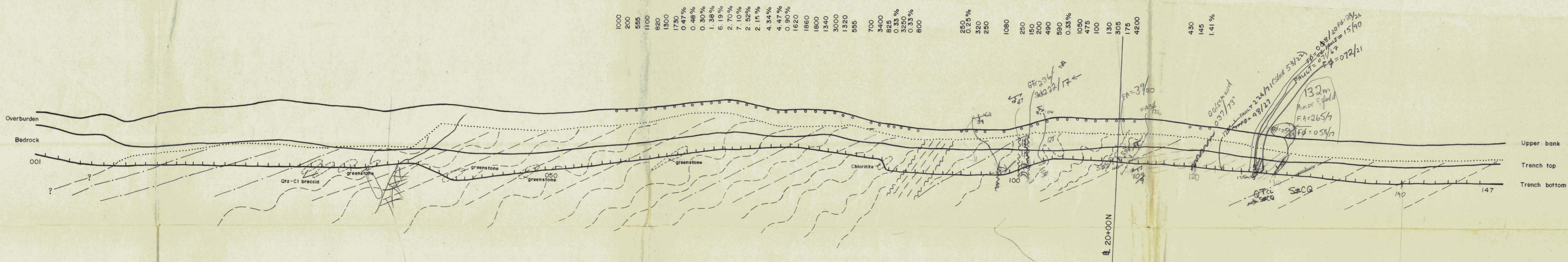
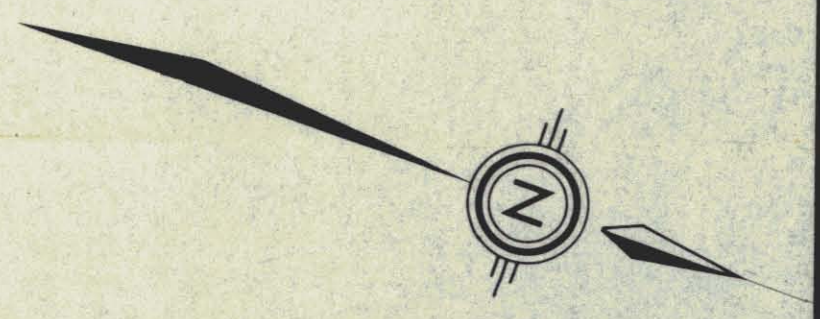


- LEGEND**
- PRECAMBRIAN AND/OR CAMBRIAN "GRIT" DIVISION (Formerly YUKON GROUP)
- Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, greenstone, siltstone
 - Contact; Sharp, Gradational
 - Farm Lines
 - 20° Strikes and Dip of Schistosity
 - 45° Strikes and Dip of Fractures
 - 80° Strikes and Dip of Vein Structures
 - Fault Zone Shear Zone
 - SchT Schist Py Pyrite
 - Qrtz Quartzite Cp Chertopyrite
 - Blt Biotite Asp Arsenopyrite
 - Mu Muscovite Gn Galena
 - Cl Chlorite Sl Sphalerite
 - Ser Sericite Fe Ferruginous ± Limonite
 - Act Actinolite Mn Manganese
 - Mal Malachite Azur Azurite
 - 100 Sample Intervals and Number
 - Rock Geochemical Value (ppm Sn)
 - Rock Assay Value (% Sn)
 - Soil Geochemical Value (ppm Sn)
 - NS No Sample Taken
 - ØH-14 Diamond Drill Hole Color and Direction
- Except where shown, only rock chip and soil samples responding to PLF testing were analyzed by geochemical methods
- Except where noted, all displayed soil geochemical results are -10,+40 mesh
- Except where limited by sample size, all geochemical results <2000 ppm Sn were assayed for Sn

CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.
 N.T.S. 115 P / 15
 EPD GROUP
TRENCH T81-22A & B

SCALE 1:200 DRAWN BY JRW DATE JULY 1982 PLAN NO. 704-63
 FIELD YEAR 1981 REVISION BY RGW/SG DATE SEPT. 1981

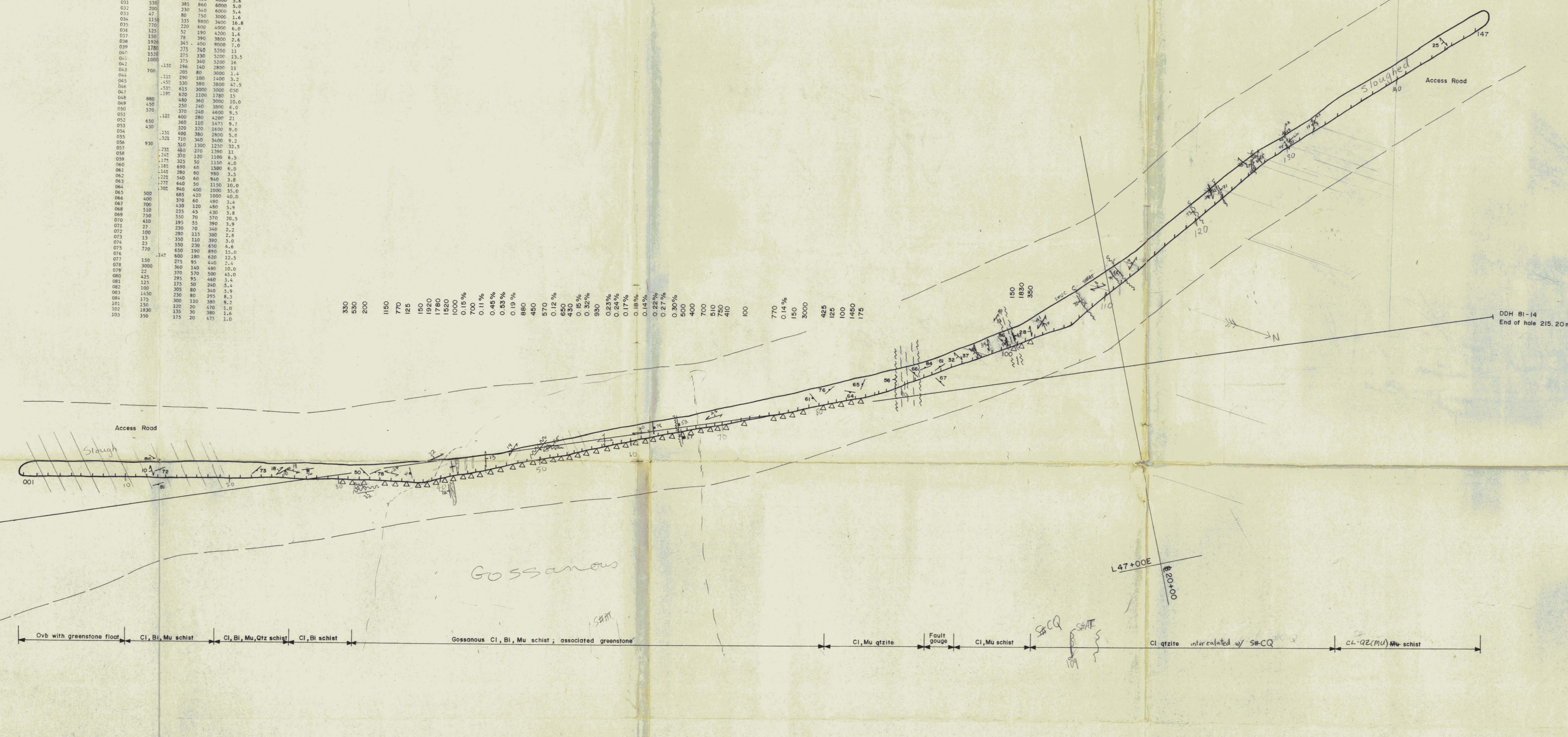
CJV-EPD
922-(704-63)



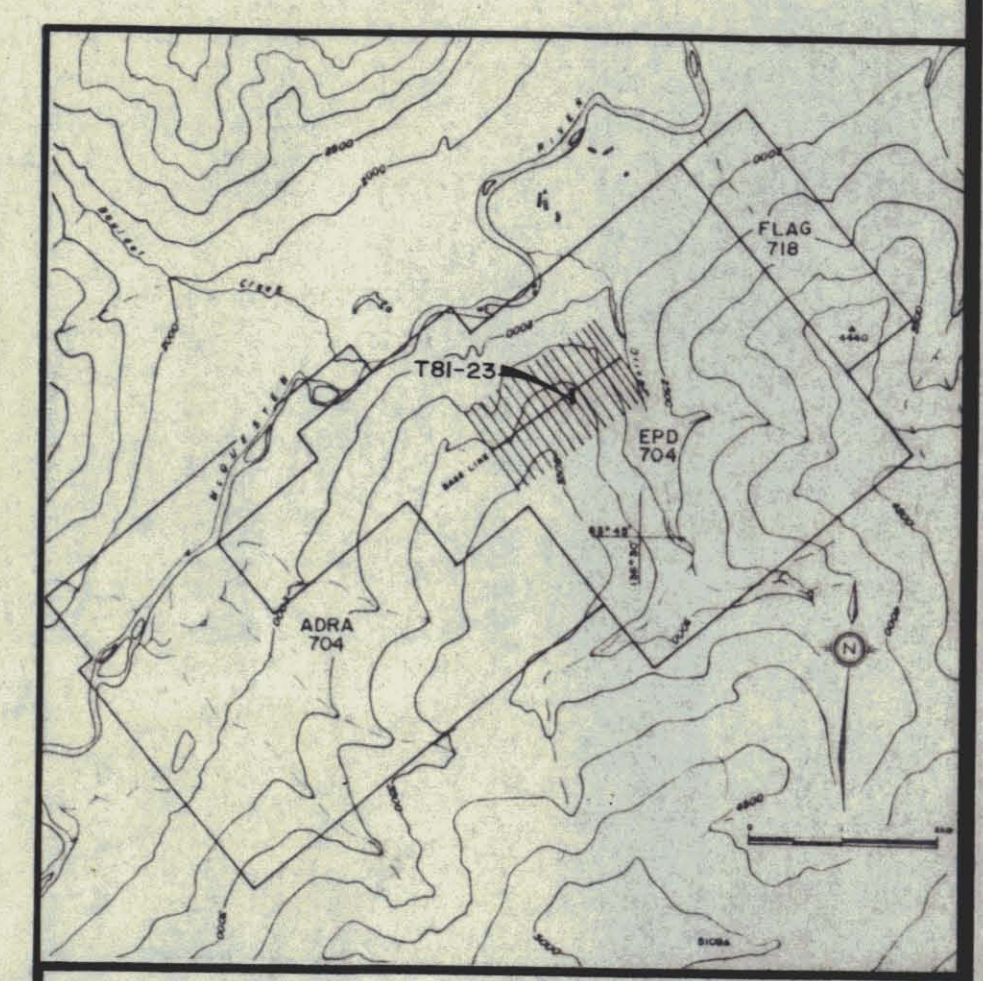
CROSS SECTION

SAMPLE NO.	SP	IN	Gr	Si	Al	Fe	Mn	Pb	Zn
029	431	22	480	2800	2.8				
030	310	25	410	6000	3.4				
031	200	25	250	510	8000	5.0			
032	413	80	700	3000	3.4				
034	3118	335	9800	3400	14.8				
035	700	220	600	1800	4.8				
036	323	52	280	4200	1.4				
038	1200	78	380	3800	2.8				
039	1926	345	450	9000	7.0				
040	1200	275	540	4200	2.8				
041	1000	375	330	3200	13.5				
042	1117	375	340	3200	2.8				
043	700	205	240	2800	13				
044	1117	375	340	3200	2.8				
045	1117	375	340	3200	2.8				
046	1117	375	340	3200	2.8				
047	1117	375	340	3200	2.8				
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061	1117	375	340	3200	2.8				
062	1117	375	340	3200	2.8				
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096	1117	375	340	3200	2.8				
097	1117	375	340	3200	2.8				
098	1117	375	340	3200	2.8				
099	1117	375	340	3200	2.8				
100	1117	375	340	3200	2.8				

330	530	200	770	1180	185	180	1960	1820	1000	700	0.45%	0.35%	0.11%	0.12%	0.15%	0.23%	0.24%	0.14%	0.22%	0.25%	0.50%	400	700	700	720	410	100	770	0.14%	150	3000	425	125	100	100	150	175
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PLAN VIEW



LEGEND

PRECAMBRIAN AND/OR CAMBRIAN "GRIT" DIVISION (Formerly YUKON GROUP)

Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, greenstone, skarn

Contact; Sharp, Gradational
Form Lines

Strike and Dip of Schistosity
Strike and Dip of Fractures
Strike and Dip of Vein Structures

Fault Zone Shear Zone

Schist Schist Py Pyrite
Qtzite Quartzite Cp Chalcopyrite
B Biotite Anpy Anarsopyrite
Mu Muscovite Ga Galena
Cl Chlorite Sp Sphalerite
Ser Sericite Fe Gossanous ± Limonite
Act Actinolite Mn Manganese
Mal Malachite Azur Azurite

Sample Intervals and Number
Rock Geochemical Value (ppm Sn)
Rock Assay Value (% Sn)
Soil Geochemical Value (ppm Sn)
NS No Sample Taken

DDH B1-14
Diamond Drill Hole Collar and Direction

Except where shown, only rock chip and soil samples responding to RLE testing were analyzed by geochemical methods

Except where noted, all displayed soil geochemical results are -10,+40 mesh

Except where limited by sample size, all geochemical results <2000 ppm Sn were analyzed for Sn

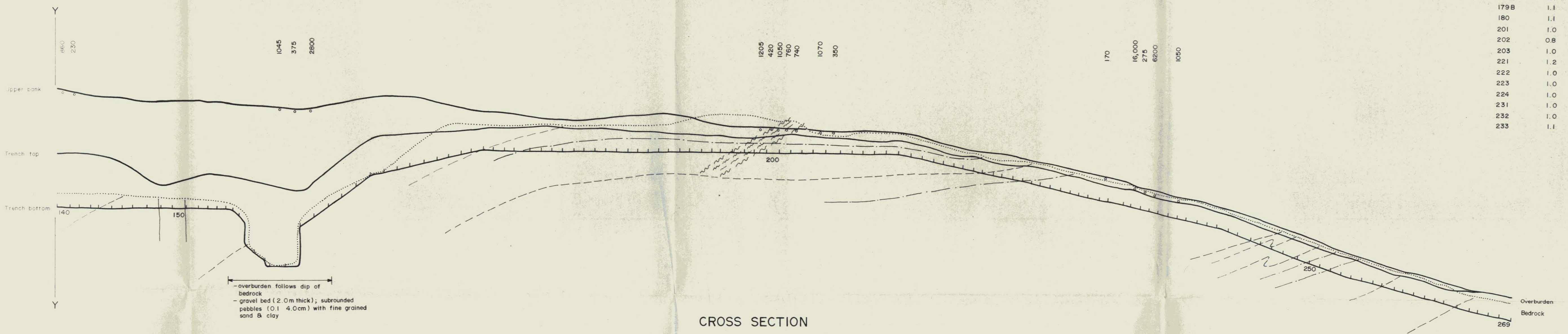
CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.
N.T.S. 115 P / 15
EPD GROUP

TRENCH T81-23

SCALE 1/200
FIELD YEAR 1981
DATE JULY 1981
REVISED ROW / SG
DATE SEPT 1981
PLAN NO. 704-64

CJV - EPD
922 - (704-64)

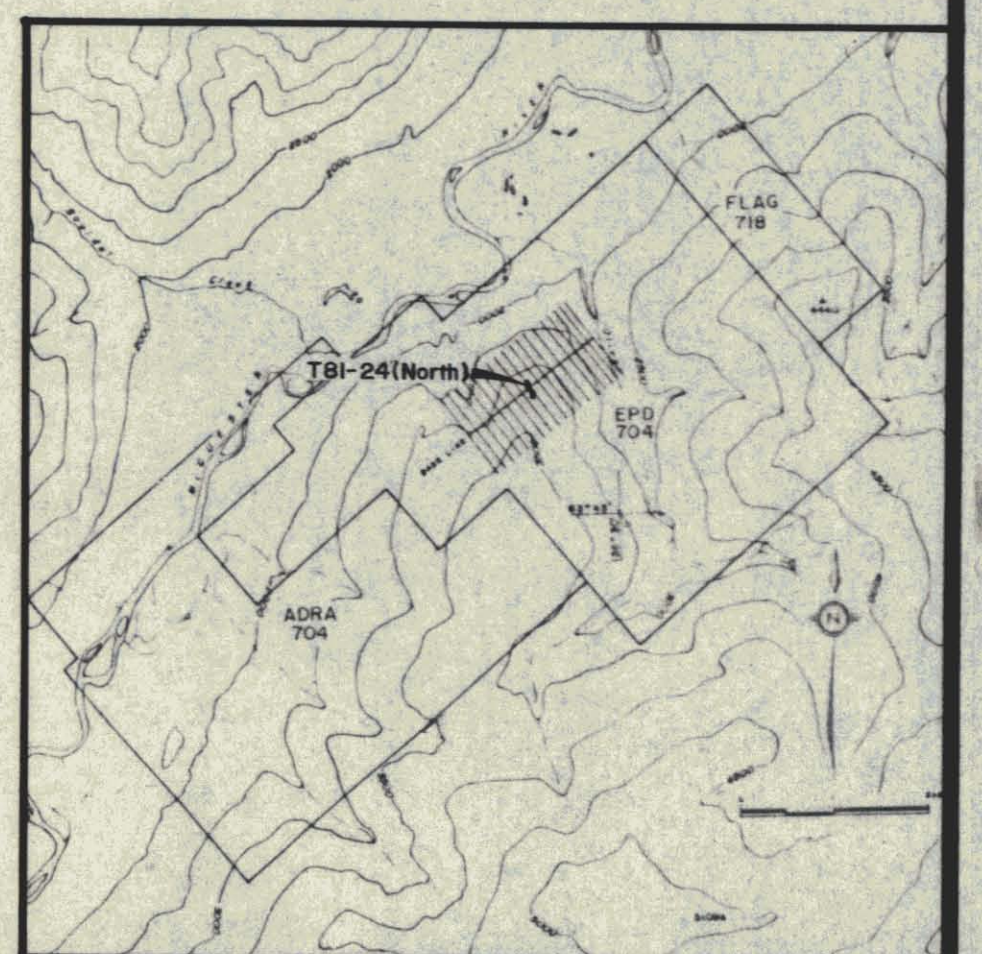
SAMPLE NO.	WIDTH (metres)	PIF	Sn ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm
148	1.1	0.0077	300	215	140	500	2.0
149	1.1	0.2284	>2000	2300	485	1930	18.0
150	1.1	(-)	150	1300	495	1250	9.2
157	1.0	(-)	180	850	490	1400	16.0
156A	1.7	0.1057	1030	1200	460	3000	7.7
156B	1.7	0.5836	2000	140	65	840	1.7
159	3.4	(-)	67	42	70	580	0.6
178	1.1	(-)	<5	-	-	-	-
179A	1.1	0.0279	750	-	-	-	-
179B	1.1	0.1092	>2000	-	500	2600	24.0
180	1.1	(-)	110	250	170	650	3.6
201	1.0	(-)	15	175	32	155	6.0
202	0.8	0.0616	265	220	58	175	1.8
203	1.0	0.0078	15	215	56	240	1.3
221	1.2	(-)	<5	58	22	120	0.2
222	1.0	0.0626	900	93	41	180	0.4
223	1.0	0.0132	65	115	48	195	0.8
224	1.0	0.0104	120	120	33	130	1.1
231	1.0	(-)	10	76	24	230	0.6
232	1.0	0.0517	700	110	28	140	1.2
233	1.1	(-)	750	18	12	590	1.1



CROSS SECTION



PLAN VIEW



LEGEND

PRECAMBRIAN AND/OR CAMBRIAN
"DRIT" DIVISION (Formerly YUKON GROUP)

Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, ? greenstone, siltstone

Contact; Sharp, Gradational
Form Lines

20° Strike and Dip of Schistosity
45° Strike and Dip of Fractures
60° Strike and Dip of Vein Structures

Fault Zone Shear Zone

Schist Pyrite
Quartzite Calcite
Biotite Aspy Arsenopyrite
Mu. Muscovite Gn Galena
Cl Chlorite Sl Sphalerite
Ser Sericite Fe Oxidation ± Limonite
Act Actinolite Mn Manganese
Mal Malachite Azur Azurite

100 Sample Intervals and Number
Rock Geochemical Value (ppm Sn)
Rock Assay Value (% Sn)
Soil Geochemical Value (ppm Sn)
NS No Sample Taken

2008-14 Diamond Drill Hole Collar and Direction

Except where stated, only rock chip and soil samples responding to PIF testing were analyzed by geochemical methods

Except where noted, all displayed soil geochemical results are -10+40 mesh

Except where limited by sample size, all geochemical results <2000 ppm Sn were assayed for Sn

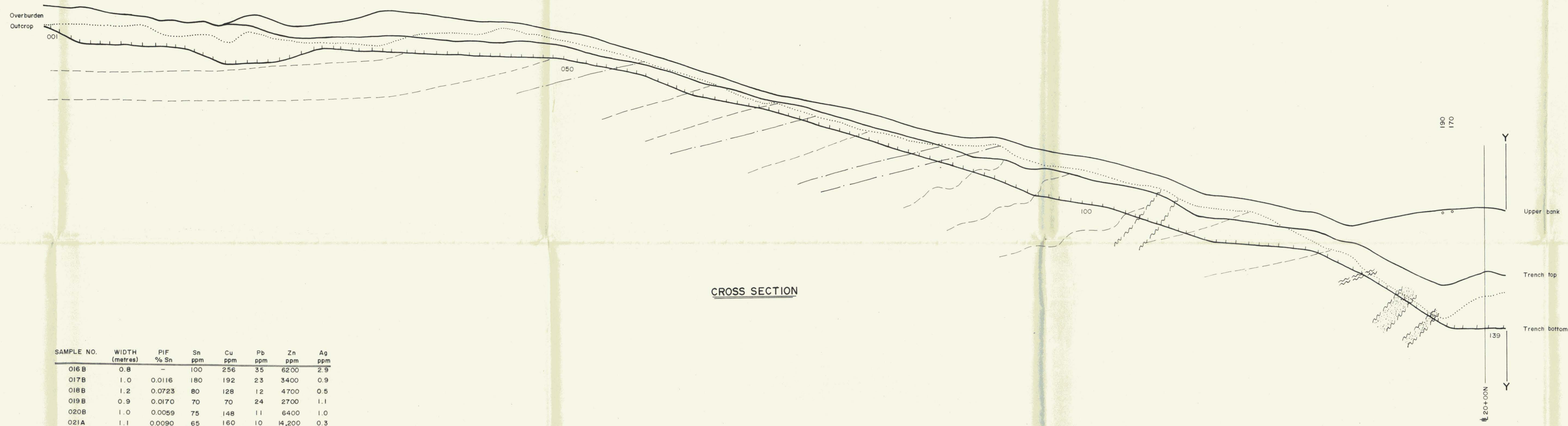
**CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.**

N.T.S. 115 P / 15
EPD GROUP

**TRENCH T81-24
(NORTH PORTION)**

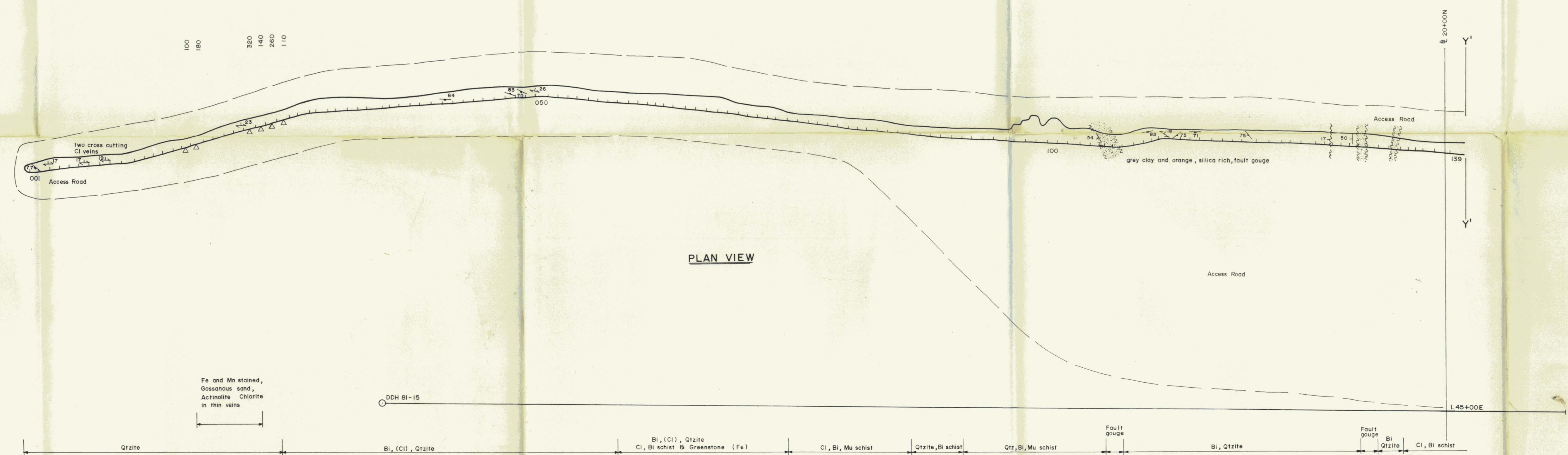
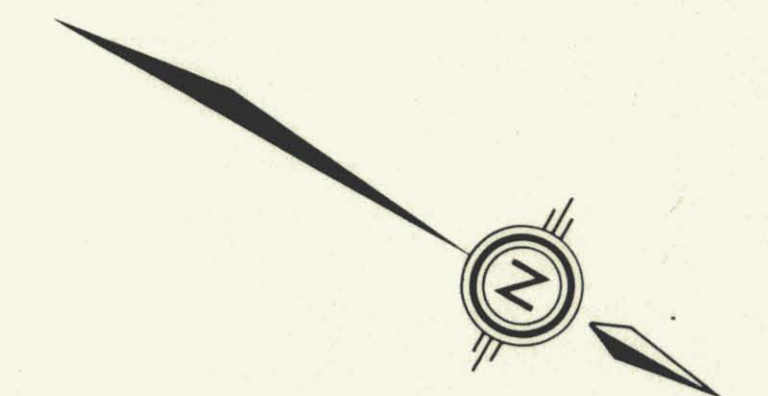
SCALE 1:200 DRAWN BY JRE DATE JULY 1981 PLAN NO. 704-65
FIELD YEAR 1981 REVISION ROW/SO DATE SEPT 1981

CJV-EPD
922-(704-65)

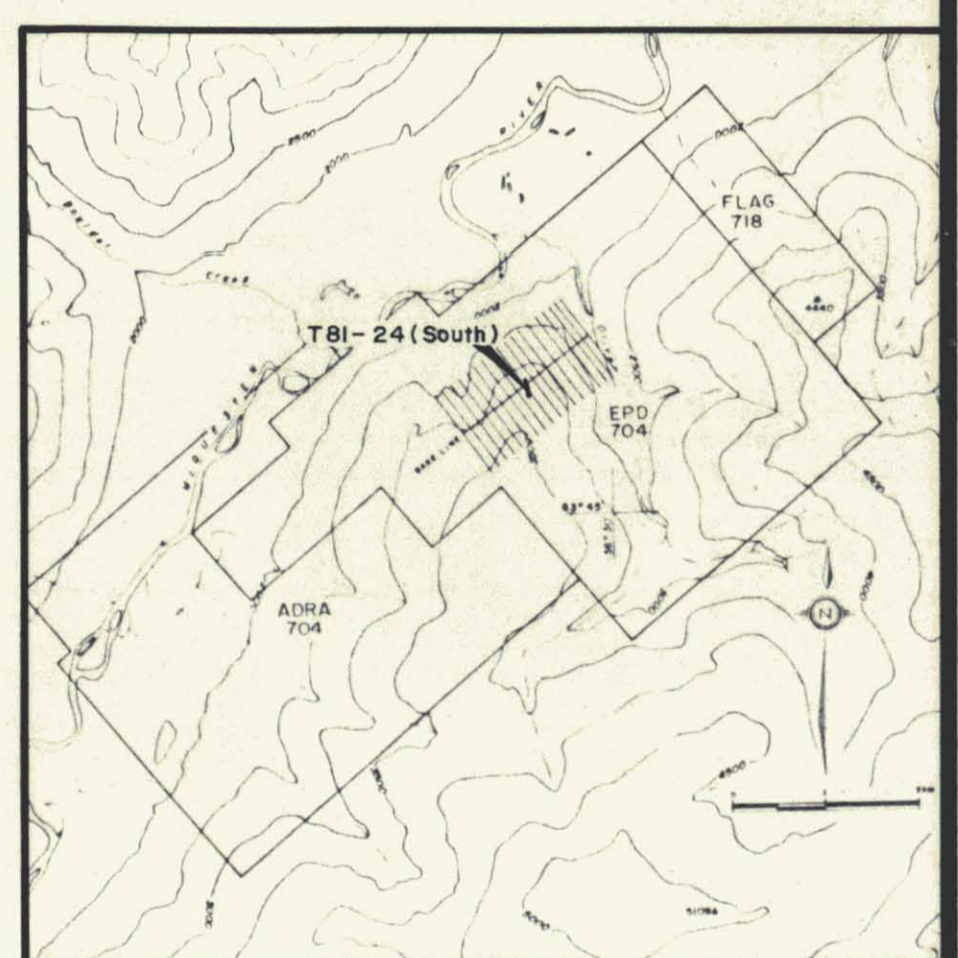


CROSS SECTION

SAMPLE NO.	WIDTH (metres)	PIF % Sn	Sn ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm
016 B	0.8	-	100	256	35	6200	2.9
017 B	1.0	0.0116	180	192	23	3400	0.9
018 B	1.2	0.0723	80	128	12	4700	0.5
019 B	0.9	0.0170	70	70	24	2700	1.1
020 B	1.0	0.0059	75	148	11	6400	1.0
021 A	1.1	0.0090	65	160	10	4,200	0.3
021 B	1.1	-	50	290	27	1700	5.4
022 A	0.9	0.0980	320	300	14	6000	2.0
022 B	0.9	-	80	294	39	1500	15.0
023	1.0	0.0058	140	340	21	5600	2.9
024	1.1	0.0504	260	528	128	5200	6.5
025	1.0	-	110	230	170	1700	2.3



PLAN VIEW



LEGEND

PRECAMBRIAN AND/OR CAMBRIAN
"GRIT" DIVISION (Formerly YUKON GROUP)

Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, greenstone, siltstone

Contact; Sharp, Gradational
Form Lines

20 Strike and Dip of Schistosity
65 Strike and Dip of Fractures
80 Strike and Dip of Vein Structures

Fault Zone Shear Zone

scht	Schist	Py	Pyrite
Qtzite	Quartzite	Cp	Chalcopyrite
Bl	Biotite	Aspy	Anatopyrite
Mz	Muscovite	Gn	Galena
Cl	Chlorite	Sp	Sphalerite
Ser	Sericite	Fe	Gossanous Limonite
Act	Actinolite	Mn	Manganese
Mal	Malachite	Az	Azurite

Sample Intervals and Number

Rock Geochemical Value (ppm Sn)

Rock Assay Value (% Sn)

Soil Geochemical Value (ppm Sn)

NS No Sample Taken

DDH BI-15 Diamond Drill Hole Collar and Direction

Except where shown, only rock chip and soil samples responding to PIF testing were analyzed by geochemical methods

Except where noted, all displayed soil geochemical results are -10,+40 mesh

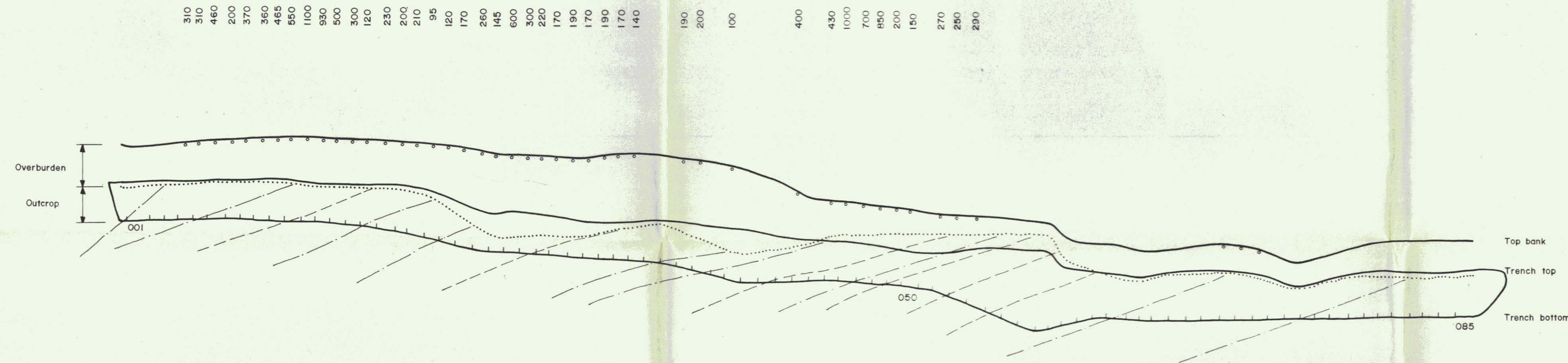
Except where limited by sample size, all geochemical results <2000 ppm Sn were assayed for Sn

**CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.**

N.T.S. 115 P / 15
EPD GROUP

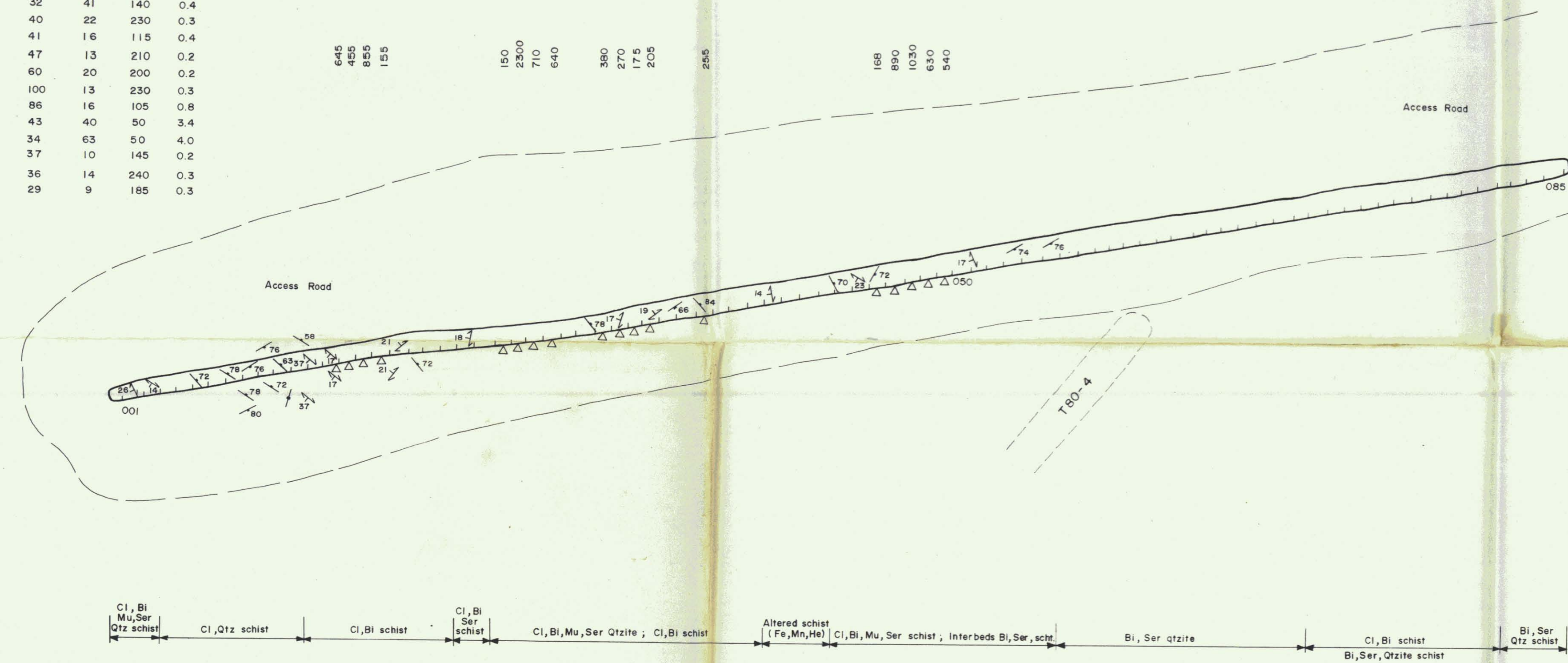
**TRENCH T81-24
(SOUTH PORTION)**

SCALE 1:200	DRAWN BY JRE	DATE JULY 1991	PLAN NO. 704-66
FIELD YEAR 1991	REVISED BY ROW / SG	DATE SEPT 1991	

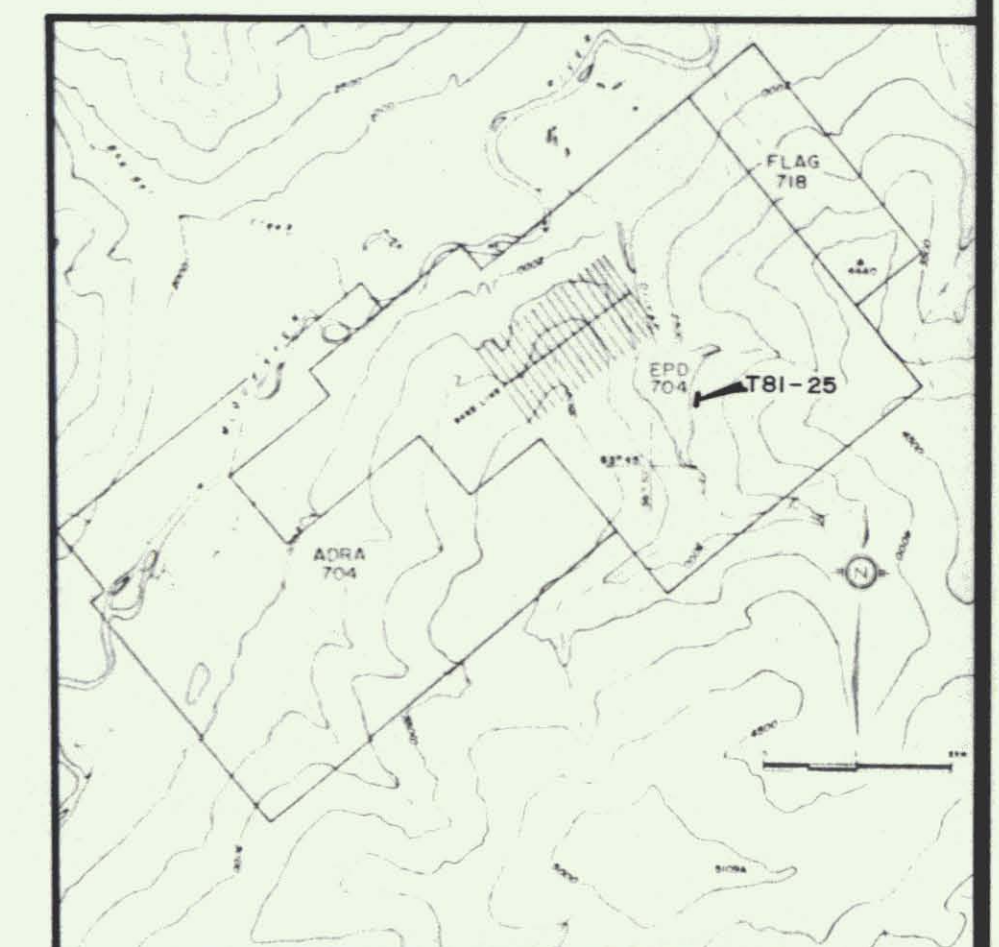


SAMPLE NO.	WIDTH (metres)	PIF %Sn	Sn ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm
012	0.9	-	64	40	270	205	0.7
013	1.0	0.0362	645	32	80	140	0.4
014	1.0	0.0278	455	32	50	100	0.3
015	1.0	0.0356	855	52	30	70	0.2
016	1.0	-	175	38	42	100	0.4
023	1.0	0.0082	150	56	44	175	0.4
024	0.9	0.0933	2000	70	49	155	1.0
025	1.0	0.0800	710	54	50	80	0.6
026	1.1	0.0400	640	68	26	150	0.5
027	1.1	-	30	63	20	120	0.1
028	1.1	0.0050	62	37	26	130	0.2
029	1.1	0.0449	380	60	400	155	2.5
030	1.0	0.0147	270	48	245	155	2.4
031	0.9	0.0130	175	80	25	100	2.1
032	1.0	-	205	50	19	125	0.4
033	1.0	-	78	32	41	140	0.4
034	1.1	-	32	40	22	230	0.3
035	1.1	0.0343	255	41	16	115	0.4
036	1.0	-	55	47	13	210	0.2
045	1.0	-	168	80	20	200	0.2
046	1.1	0.0839	890	100	13	230	0.3
047	0.9	0.0200	1030	86	16	105	0.8
048	1.0	0.0308	630	43	40	50	3.4
049	1.0	0.0493	540	34	63	50	4.0
050	1.0	-	56	37	10	145	0.2
051	1.0	0.0117	97	36	14	240	0.3
052	1.1	-	50	28	9	185	0.3

CROSS SECTION



PLAN VIEW



LEGEND

- PRECAMBRIAN AND/OR CAMBRIAN "GRIT" DIVISION (Formerly YUKON GROUP)
- Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, gneiss, etc.
 - Contact; Sharp, Gradational Form Lines
 - Strike and Dip of Schistosity
 - Strike and Dip of Fractures
 - Strike and Dip of Vein Structures
 - Fault Zone
 - Shear Zone
 - Schist Schist
 - Py Pyrite
 - Qtzite Quartzite
 - Cp Chalcopyrite
 - Bl Biotite
 - Aspy Arsenopyrite
 - Mu Muscovite
 - Gn Galena
 - Cl Chlorite
 - Sp Sphalerite
 - Ser Sericite
 - Fa Gersdorffite ± Limonite
 - Act Actinolite
 - Mn Mongonite
 - Mal Malachite
 - Azur Azurite
- 100 Sample Interval and Number
- Rock Geochemical Value (ppm Sn)
- Rock Assay Value (% Sn)
- Soil Geochemical Value (ppm Sn)
- NS No Sample Taken
- DDH-14 Diamond Drill Hole Collar and Direction

Except where shown, only rock chip and soil samples responding to PIF testing were analyzed by geochemical methods.

Except where noted, all displayed soil geochemical results are - 10, +40 mesh.

Except where limited by sample size, all geochemical results < 2000 ppm Sn were assayed for Sn.

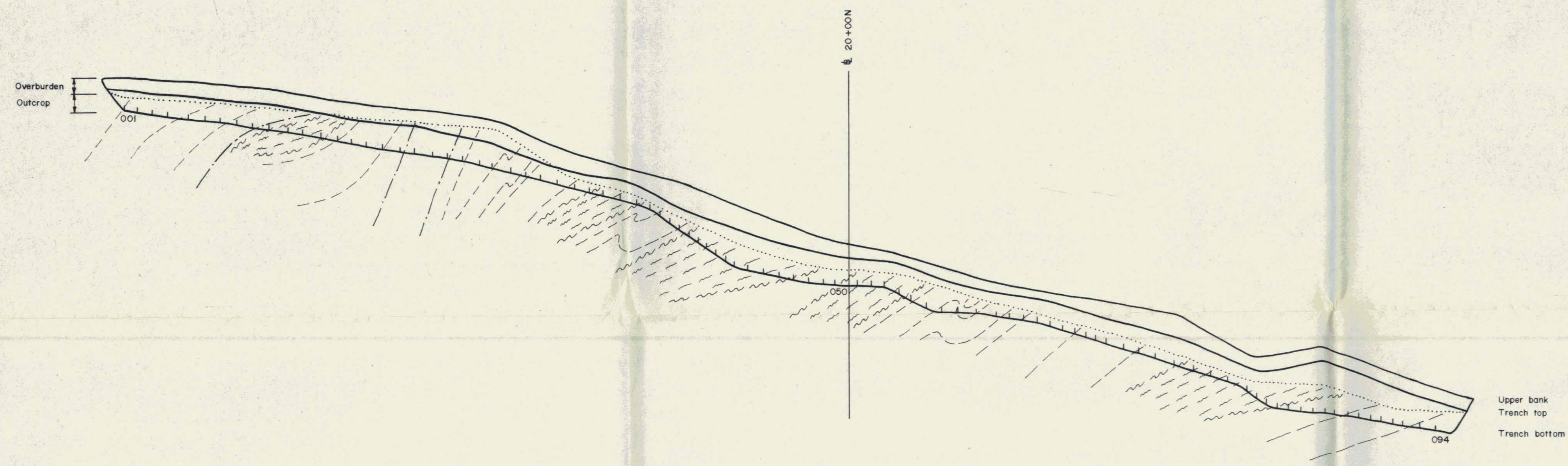
CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.

N.T.S. 115 P / 15
E.P.D. GROUP

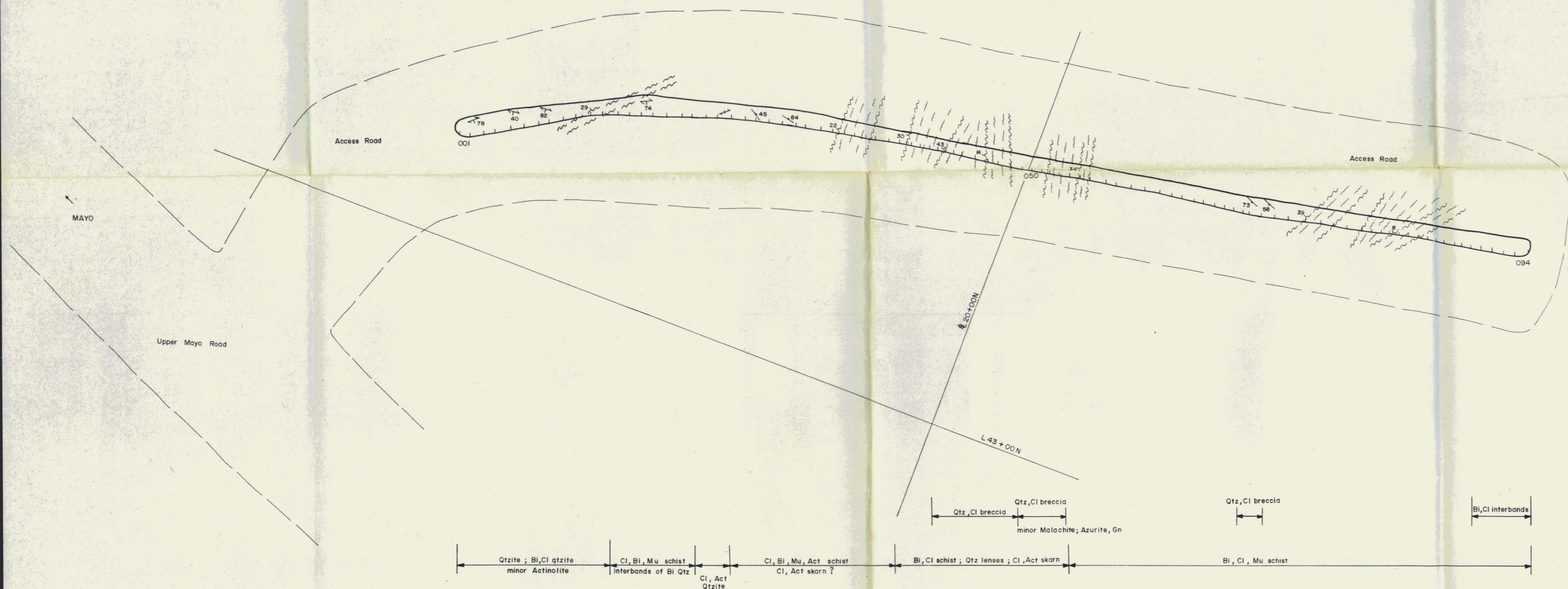
TRENCH T81-25

SCALE 1:200 DRAWN BY JRE DATE JULY 1981 PLAN NO. 704-67
FIELD YEAR 1981 REVISED ROW / SG DATE SEPT 1981

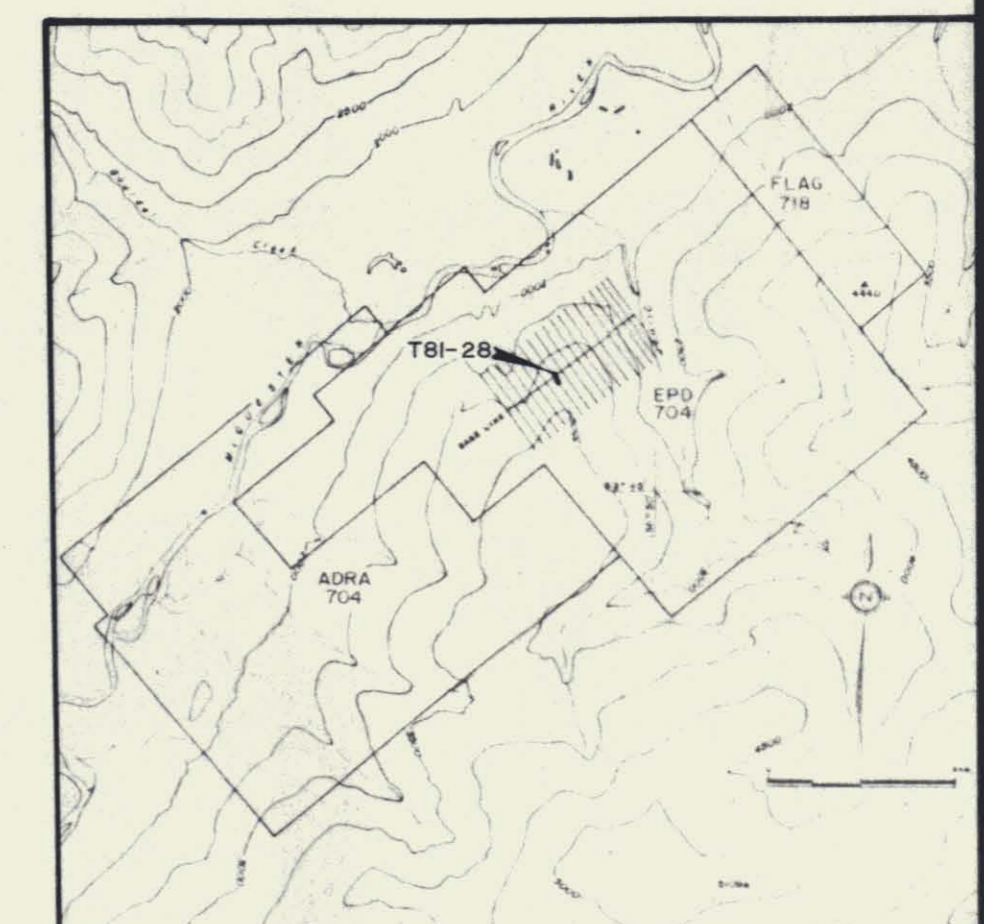
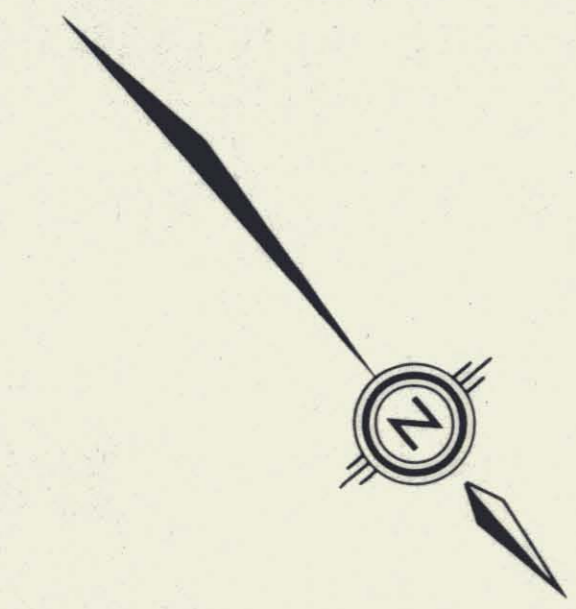
CIV - EPD
922-(704-67)



CROSS SECTION



PLAN VIEW



LEGEND

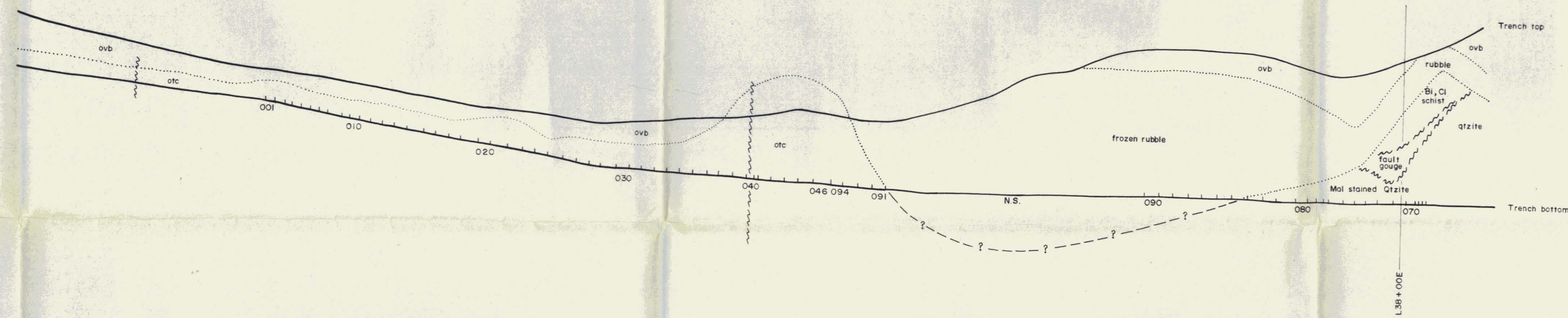
- PRECAMBRIAN AND/OR CAMBRIAN
DRIFT DIVISION (Formerly YUKON GROUP)
- Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, greenstone, siltstone
 - Contact; Sharp, Gradational
 - Form Lines
 - Strike and Dip of Schistosity
 - Strike and Dip of Fractures
 - Strike and Dip of Vein Structures
 - Fault Zone
 - Shear Zone
 - Schist Schist
 - Py Pyrite
 - Qtzite Quartzite
 - Cp Chalcopyrite
 - Bi Biotite
 - Aspy Arsenopyrite
 - Mu Muscovite
 - Gn Galena
 - Cl Chlorite
 - Sp Sphalerite
 - Ser Sericite
 - Fe Oxidation ± Limonite
 - Act Actinolite
 - Mn Manganesse
 - Mal Malachite
 - Azur Azurite
- 100 Sample Interval and Number
 Rock Geochemical Value (ppm Sn)
 Rock Assay Value (% Sn)
 Soil Geochemical Value (ppm Sn)
 NS No Sample Taken
- 200#-14 Diamond Drill Hole Collar and Direction
- Except where shown, only rock chip and soil samples responding to PIF testing were analyzed by geochemical methods
- Except where noted, all displayed soil geochemical results are - 10, +40 mesh
- Except where limited by sample size, all geochemical results < 2000 ppm Sn were assayed for Sn

CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.
 N.T.S. 115 P / 15
 EPD GROUP

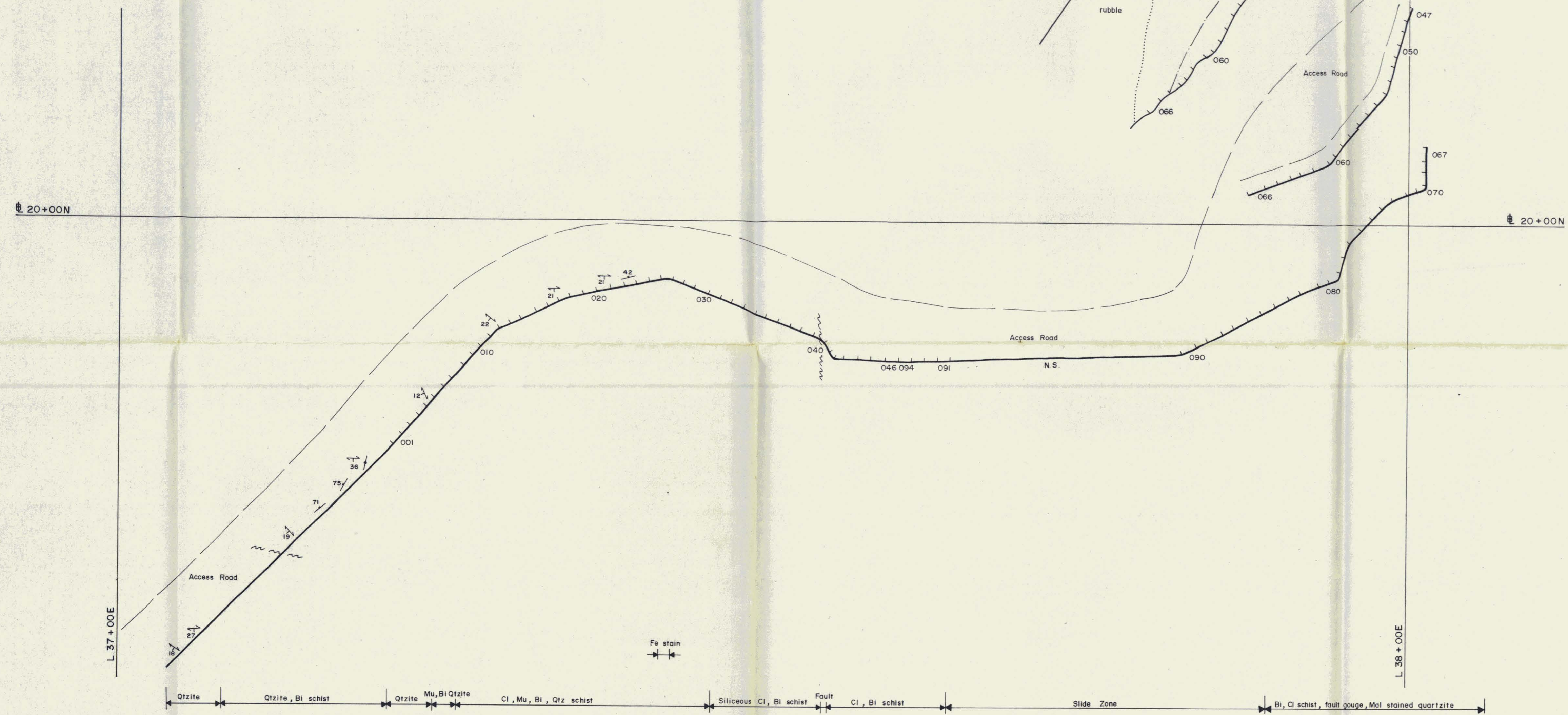
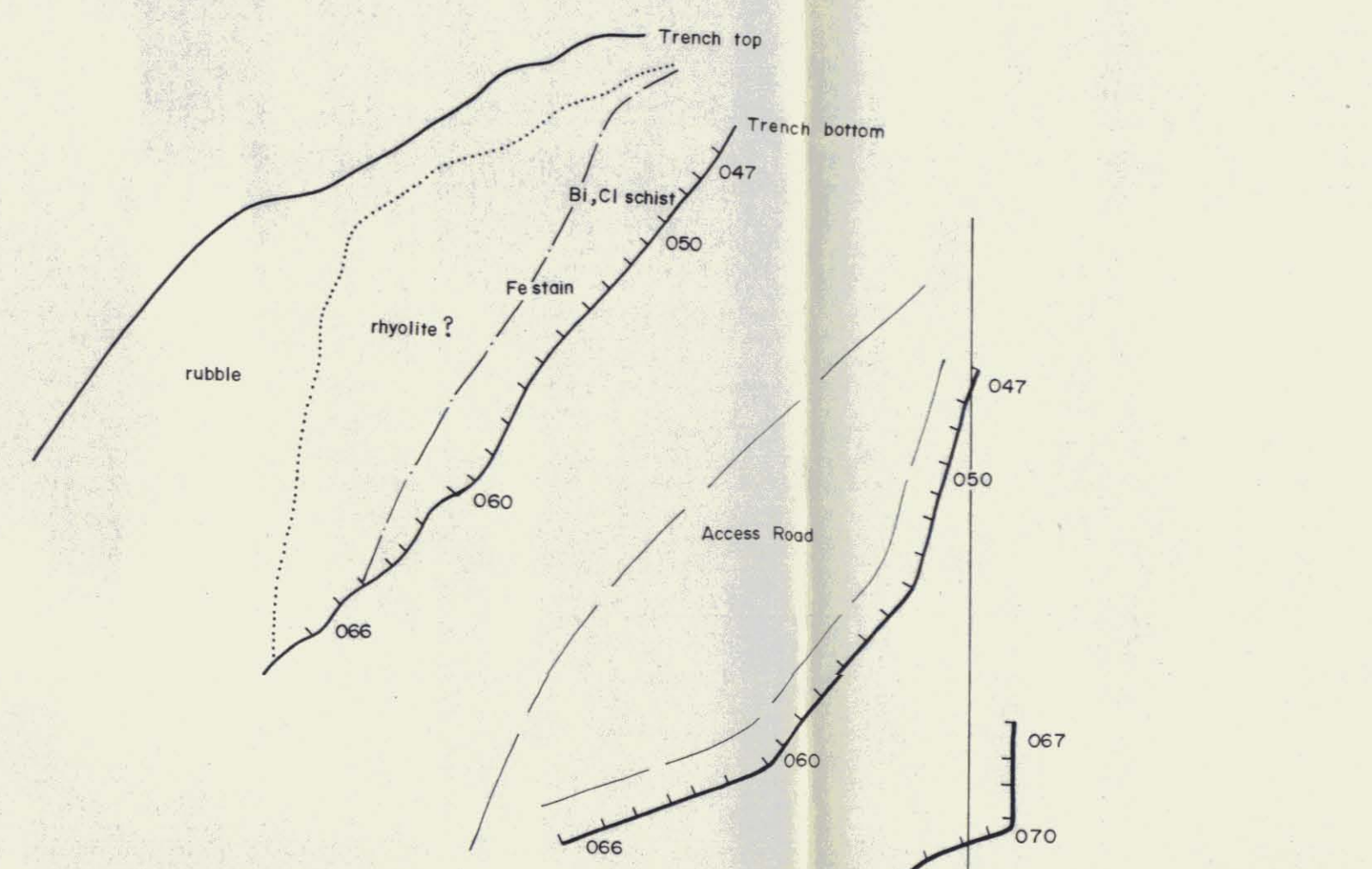
TRENCH T81-28

SCALE 1:200 DRAWN BY WJS DATE JULY 1981 PLAN NO. 704-70
 REVISION BY RGW / SS DATE SEPT 1981

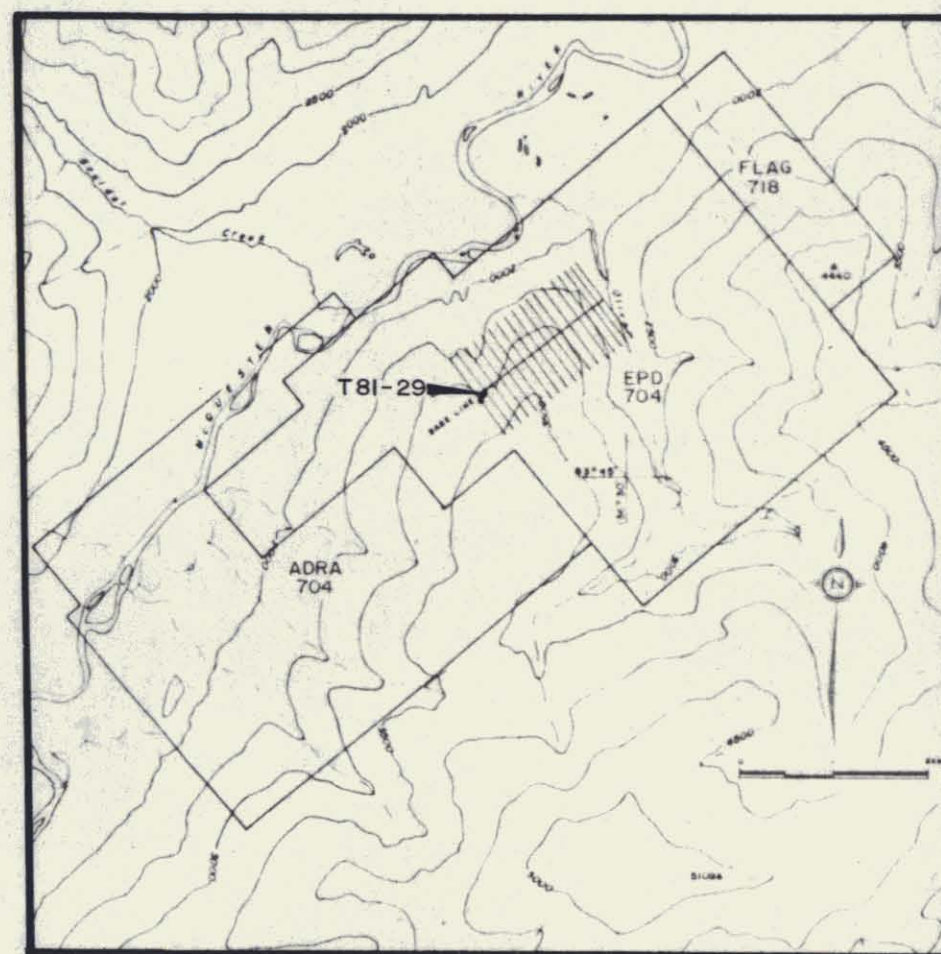
CJIV-EPD
922-(704-70)



CROSS SECTION



PLAN VIEW



LEGEND

PRECAMBRIAN AND/OR CAMBRIAN "BRIT" DIVISION (Formerly YUKON GROUP)

Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, greenstone, morn

Contact, Sharp, Gradational
Form Lines

20' Strike and Dip of Schistosity
45' Strike and Dip of Fractures
80' Strike and Dip of Vein Structures

Fault Zone Shear Zone

sch	Schist	Py	Pyrite
Qtzite	Quartzite	Cp	Chalcopyrite
Sp	Spinel	Asp	Asaropyrite
Mu	Muscovite	Ga	Galena
Cl	Chlorite	Sl	Siderite
Ser	Sericite	Fe	Goethite ± Limonite
Act	Actinolite	Mn	Manganese
Mal	Malachite	Az	Azurite

Sample Intervals and Number
Rock Geochemical Value (ppm Sn)
Rock Assay Value (% Sn)
Soil Geochemical Value (ppm Sn)
NS No Sample Taken

SHOW-14
Diamond Drill Hole Collar and Direction

Except where shown, only rock chip and soil samples responding to PIP testing were analyzed by geochemical methods.

Except where noted, all displayed soil geochemical results are -10,+40 mesh.

Except where limited by sample size, all geochemical results <2000 ppm Sn were assayed for Sn.

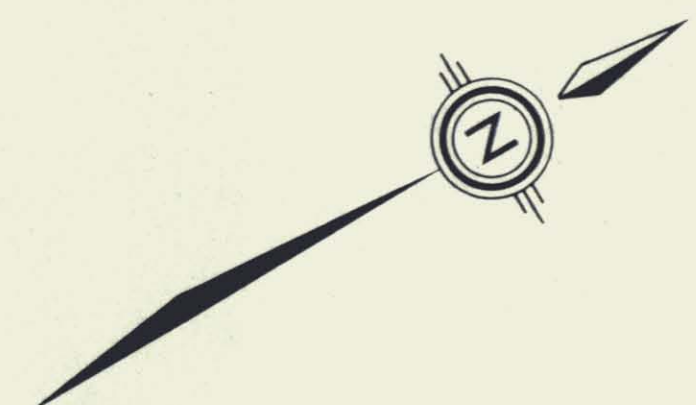
**CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.**

N.T.S. I15P / 15
EPD GROUP

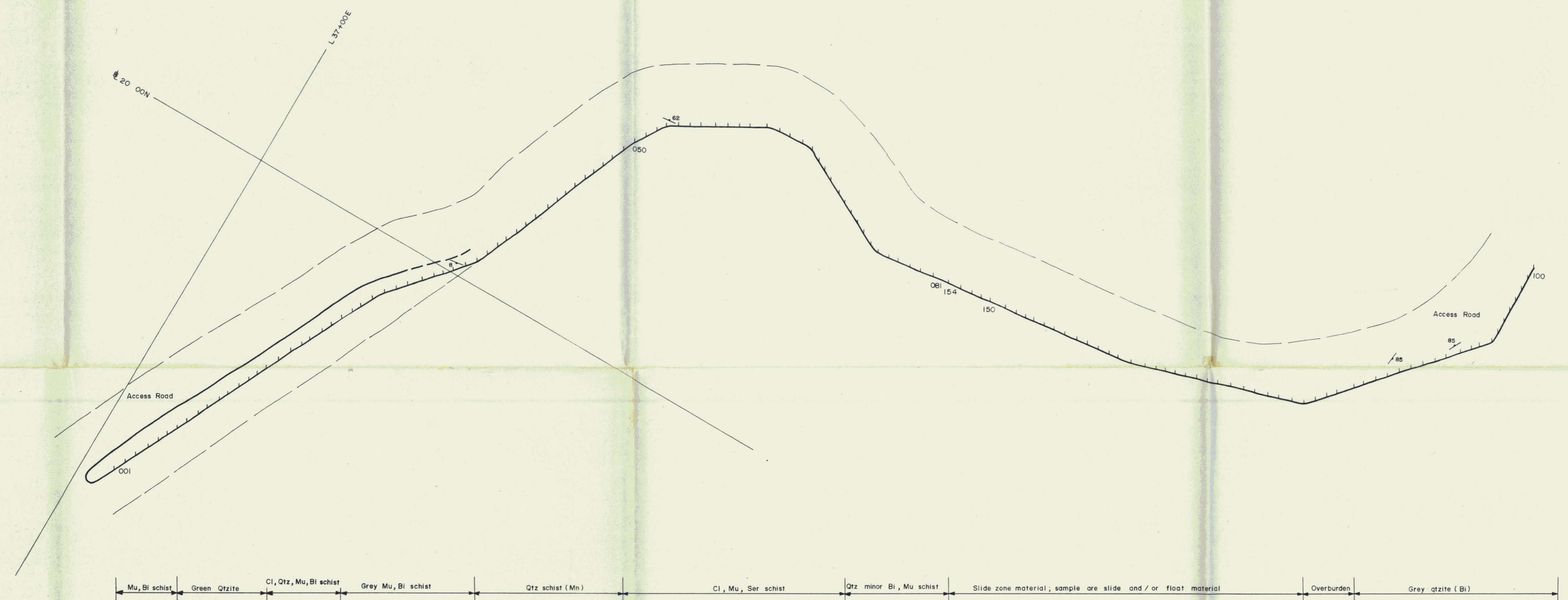
TRENCH T81-29

SCALE 1:200	DRAWN BY JRE	DATE JULY 1981	PLAN NO. 704-71
FIELD YEAR 1981	REVISED RGW / SG	DATE SEPT 1981	

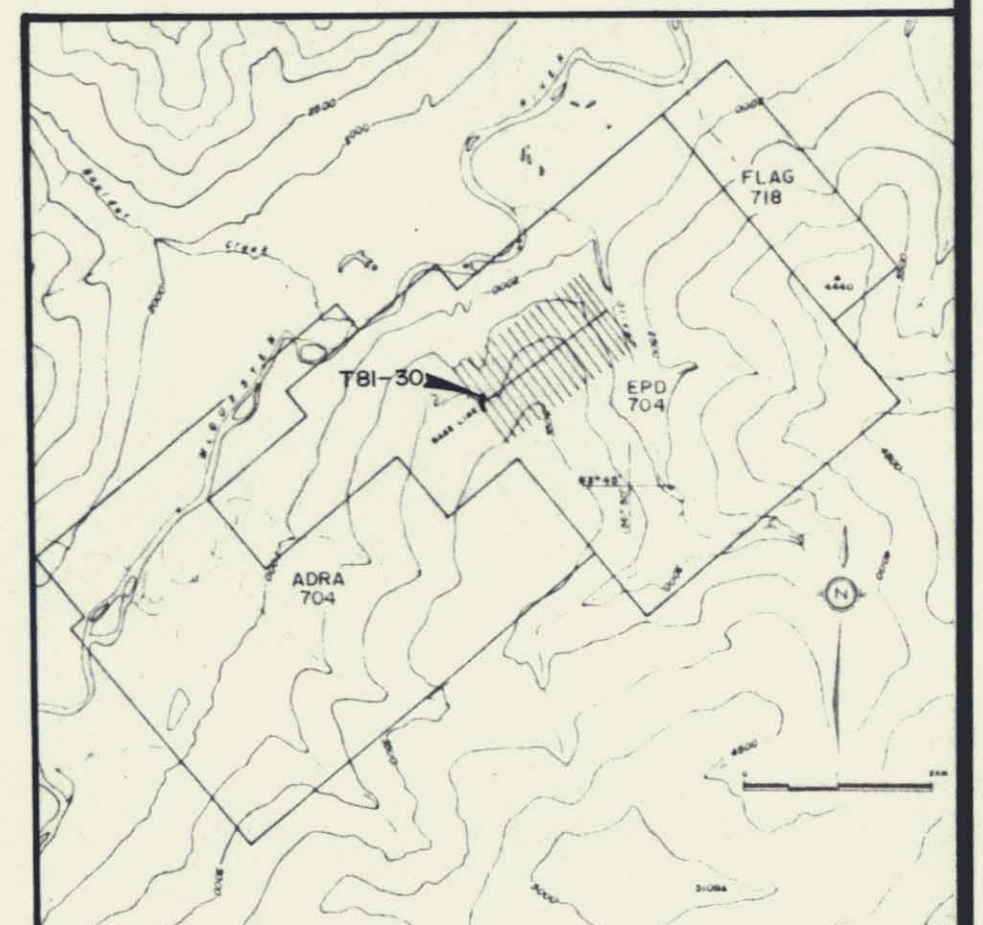
CIV - EPD
922-(704-71)



CROSS SECTION



PLAN VIEW



LEGEND

- PRECAMBRIAN AND/OR CAMBRIAN
"BRIT" DIVISION (Formerly YUKON GROUP)
- Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, ? gneiss, ? gneiss
 - Contact, Sharp, Gradational Form Lines
 - 20/ Strike and Dip of Schistosity
 - 65/ Strike and Dip of Fractures
 - 80/ Strike and Dip of Vein Structures
 - Fault Zone
 - Shear Zone
- | | | | |
|--------|------------|------|----------------------|
| SchT | Schist | Py | Pyrite |
| Qtzite | Quartzite | Cp | Chalcopyrite |
| Bi | Biotite | Aspy | Arsenopyrite |
| Mu | Muscovite | Gn | Galenite |
| Cl | Chlorite | Sp | Sphalerite |
| Ser | Sericite | Fe | Gossanous ± Limonite |
| Act | Actinolite | Mn | Manganese |
| Mal | Malachite | Az | Azurite |
- 100 Sample Interval and Number
 - Rock Geochemical Value (ppm Sn)
 - △ Rock Assay Value (% Sn)
 - ▲ Soil Geochemical Value (ppm Sn)
 - NS No Sample Taken
 - Diamond Drill Hole Collar and Direction

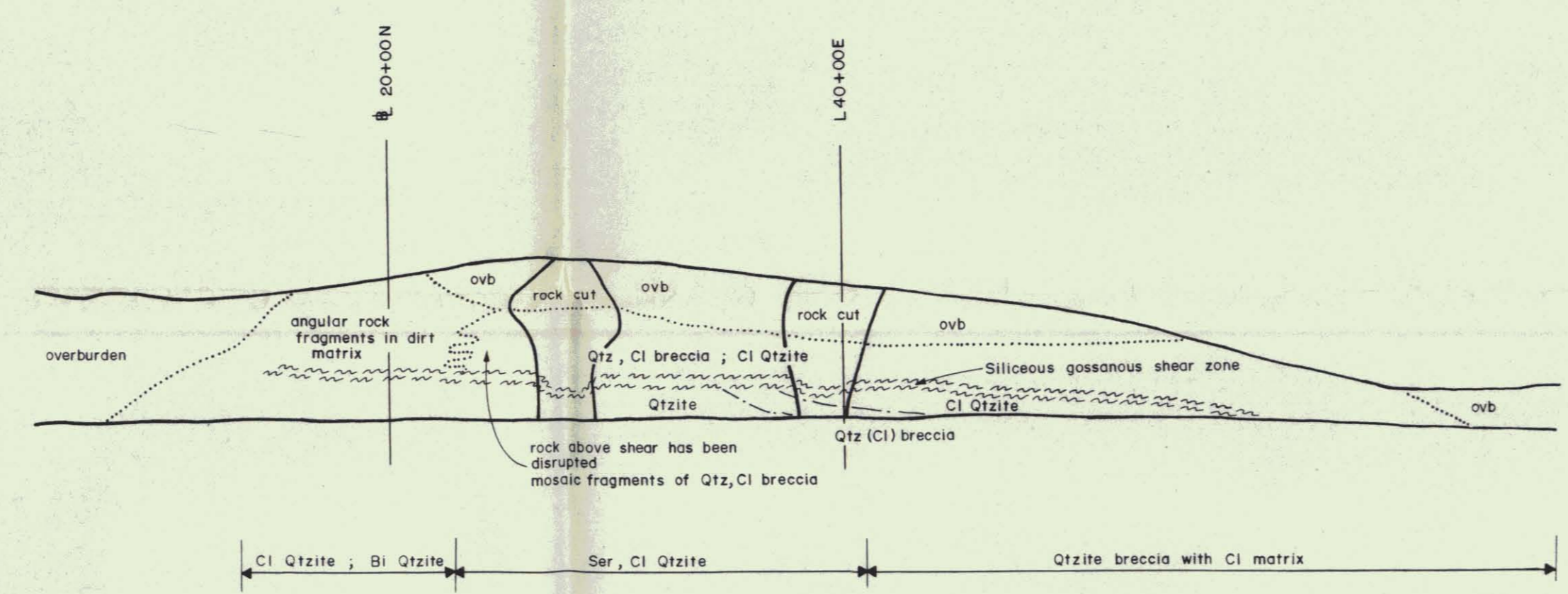
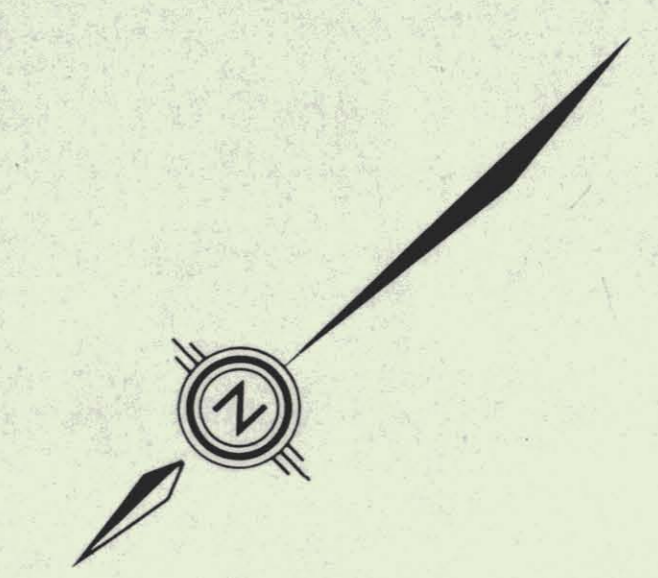
CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.

N.T.S. 115 P / 15
EPD GROUP

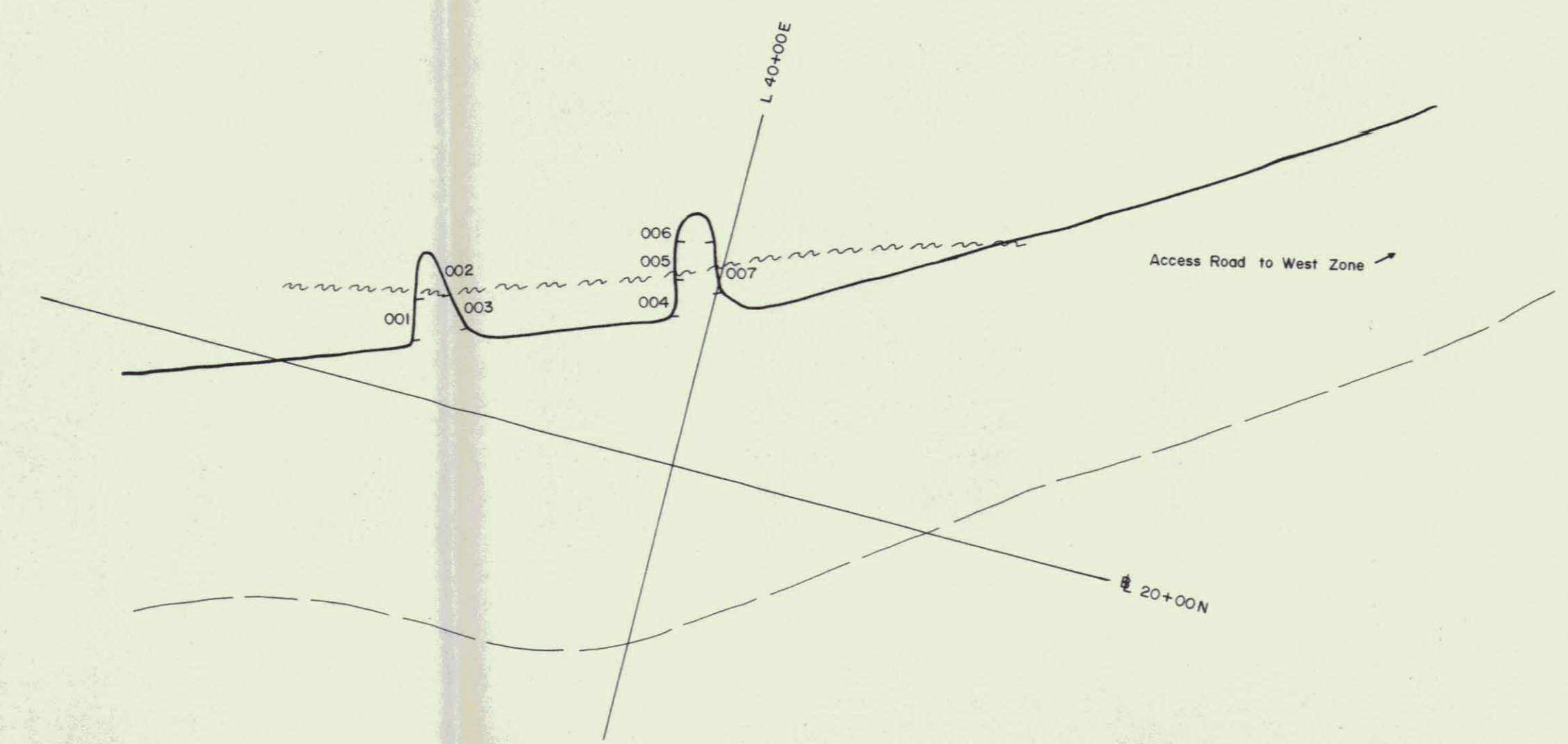
TRENCH T81-30

SCALE 1:200	DRAWN BY JRE	DATE JULY 1981	PLAN NO. 704-72
REVISION ROW/90	DATE SEPT. 1981		

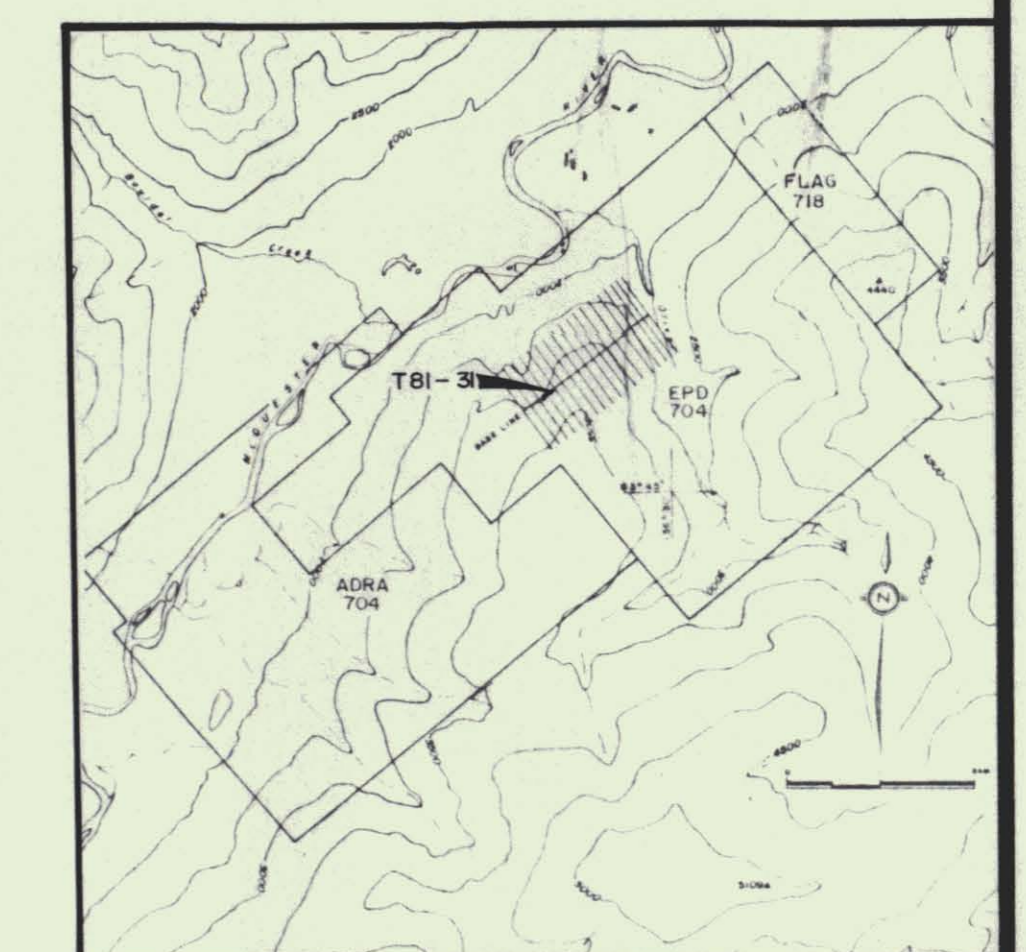
CJV - EPD
922-(704-72)



CROSS SECTION



PLAN VIEW



LEGEND

PRECAMBRIAN AND/OR CAMBRIAN "BRIT" DIVISION (Formerly YUKON GROUP)

- Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, greenstone, mafic
- Contact, Sharp, Gradational
- Form Lines
- 20° Strike and Dip of Schistosity
- 45° Strike and Dip of Fractures
- 60° Strike and Dip of Vein Structures
- Fault Zone
- Shear Zone

Scht	Schist	Py	Pyrite
Qtzite	Quartzite	Cp	Chalcopyrite
Bl	Biotite	Aspy	Arsenopyrite
Mu	Muscovite	Gr	Galenite
Cl	Chlorite	Sl	Sphalerite
Ser	Sericite	Fa	Gossanous ± Limonite
Act	Actinolite	Mn	Manganese
Mal	Malachite	Azur	Azurite

100 Sample Intervals and Number

Rock Geochemical Value (ppm Sn)

Rock Assay Value (% Sn)

Soil Geochemical Value (ppm Sn)

NS No Sample Taken

00+00 N Diamond Drill Hole Collar and Direction

Except where shown, only rock chip and soil samples responding to PIF testing were analyzed by geochemical methods

Except where noted, all displayed soil geochemical results are -10, +40 mesh

Except where limited by sample size, all geochemical results < 2000 ppm Sn were assayed for Sn

**CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.**

N.T.S. 115 P / 15
EPD GROUP

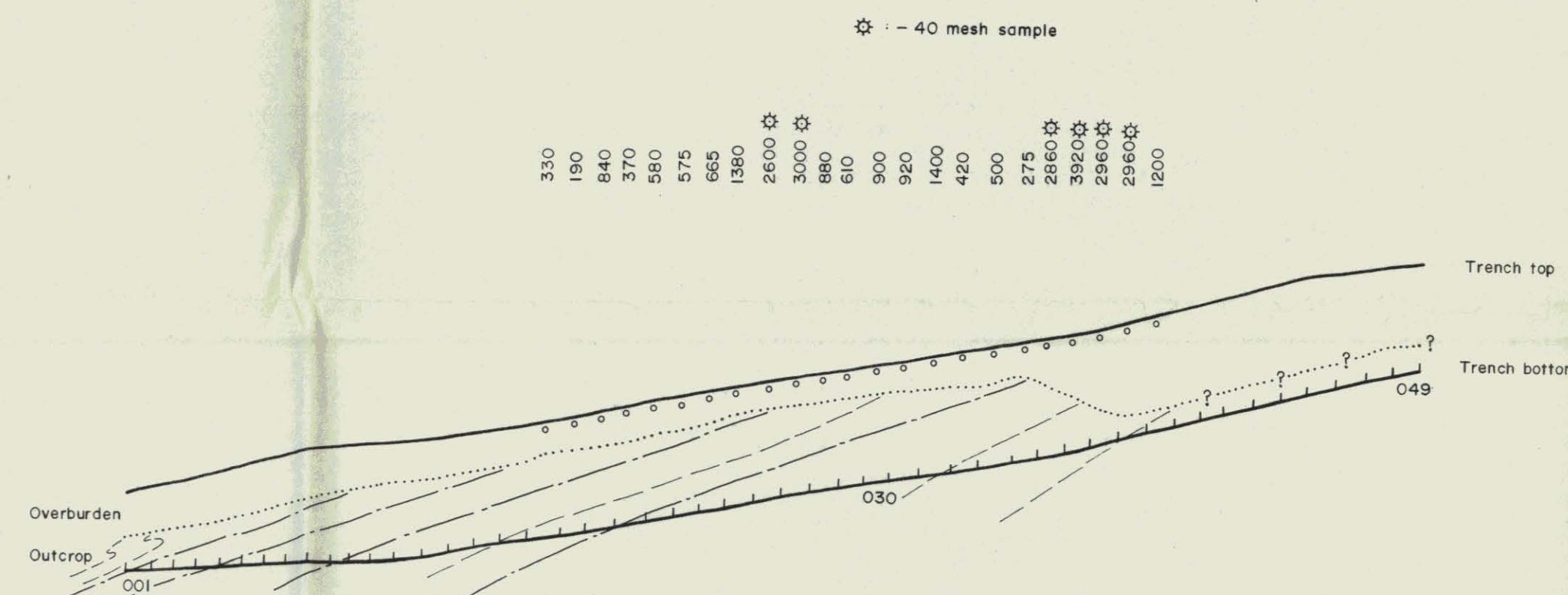
TRENCH T81-31

SCALE 1:200	DRAWN BY JRE	DATE JULY 1981	PLAN NO. 704-73
FIELD YEAR 1981	REVISED BY RGW/SG	DATE SEPT 1981	

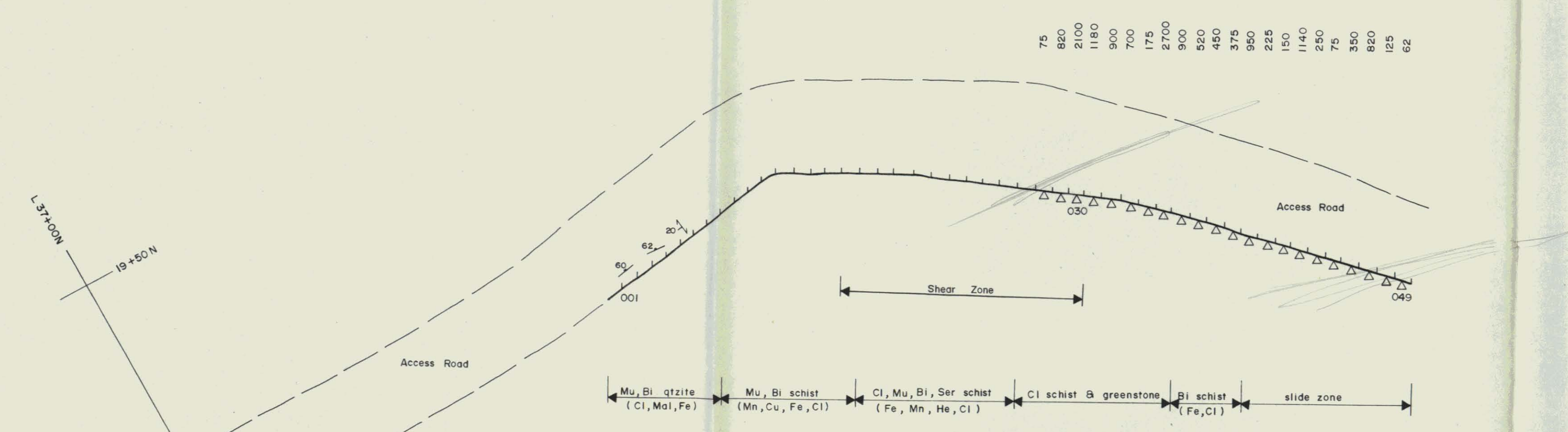
CJV - EPD
922 - (704-73)



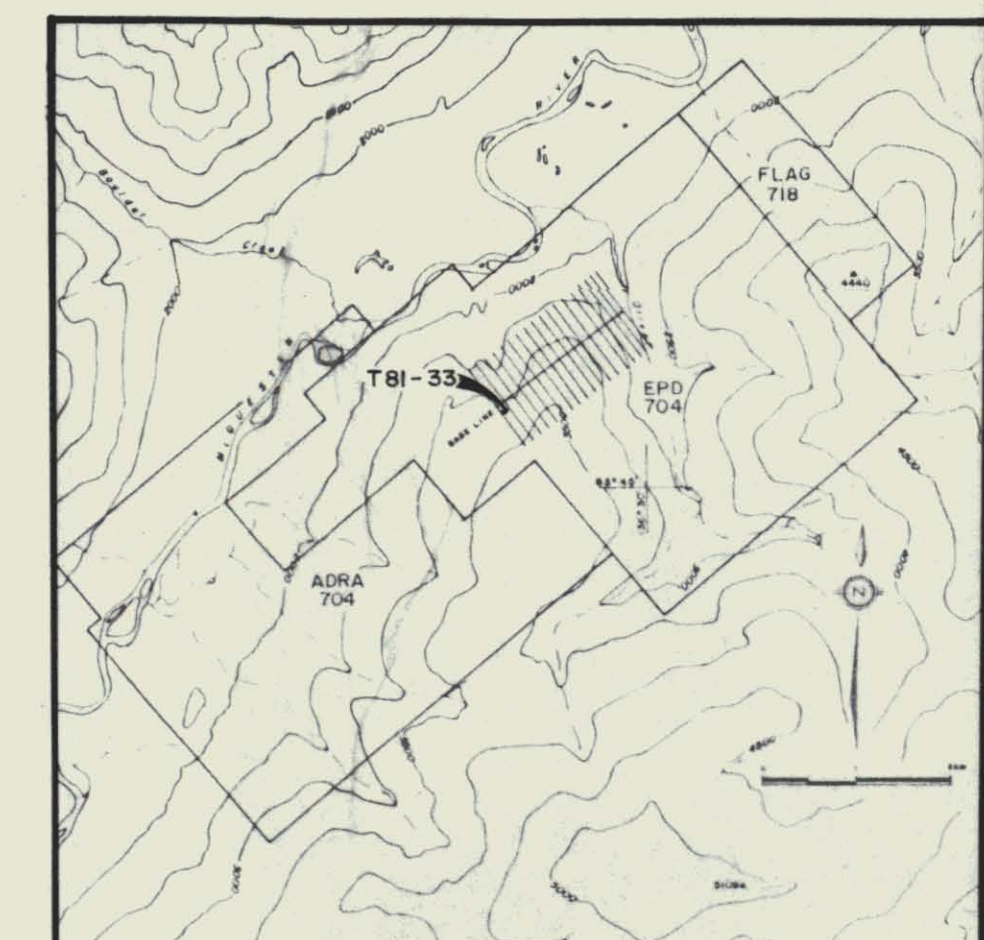
SAMPLE NO.	WIDTH (meters)	PIF (% Sn)	Sn (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	As (ppm)
028	1.0	-	75	225	240	2200	2.4
029	0.9	0.0200	820	345	1700	3800	16.5
030	0.9	0.0249	2100	660	1900	1700	35.0
031	1.1	0.0093	1180	290	140	2800	4.5
032	1.0	0.1062	900	185	250	2800	7.5
033	1.0	0.0593	700	275	120	2800	4.0
034	1.0	0.0160	175	265	65	2800	3.3
035	0.9	0.2571	2700	325	50	3400	7.8
036	1.1	0.0858	900	235	30	1900	2.1
037	0.9	0.0624	520	285	70	12,800	5.2
038	1.1	0.0254	450	90	35	2800	1.3
039	1.0	0.0199	375	130	55	3600	2.2
040	1.0	0.0287	950	310	200	2800	5.6
041	1.0	0.0406	225	255	580	3600	5.4
042	0.9	-	150	410	70	3200	15.5
043	1.0	0.2107	1140	320	120	4400	3.4
044	1.1	0.0203	250	155	180	3200	3.2
045	0.9	0.0087	75	145	190	2200	1.6
046	1.0	0.0434	350	235	100	4000	7.4
047	1.1	0.0344	820	250	190	4200	10.0
048	1.0	-	125	64	160	1800	3.3
049	1.0	-	62	77	90	3200	3.8



CROSS SECTION



PLAN VIEW



LEGEND

PRECAMBRIAN AND/OR CAMBRIAN "TRIT" DIVISION (Formerly TUKON GROUP)

Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, greenstone, wairu

Contact, Sharp, Gradational
Form Lines

Strike and Dip of Schistosity
Strike and Dip of Fractures
Strike and Dip of Vein Structures

Fault Zone
Shear Zone

Schist Schist
Py Pyrite
Qtzite Quartzite
Cp Chalcopyrite
Bi Biotite
Aspy Arsenopyrite
Mu Muscovite
Gn Galena
Cl Chlorite
Sp Sphalerite
Ser Sericite
Fe Sessilous ± Limonite
Act Actinolite
Mn Mangnese
Mal Malachite
Azur Azurite

100 Sample Interval and Number
Rock Geochemical Value (ppm Sn)
Rock Assay Value (% Sn)
Soil Geochemical Value (ppm Sn)
NS No Sample Taken

14 Diamond Drill Hole Collar and Direction

Except where shown, only rock chip and soil samples responding to PIF testing were analyzed by geochemical methods

Except where noted, all displayed soil geochemical results are -10,+40 mesh

Except where limited by sample size, all geochemical results <2000 ppm Sn were assayed for Sn

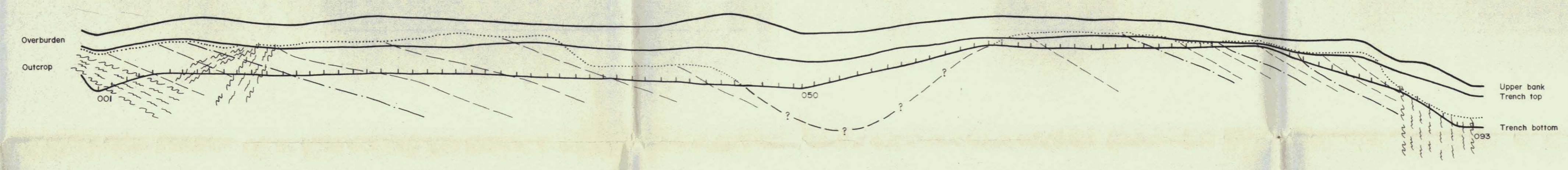
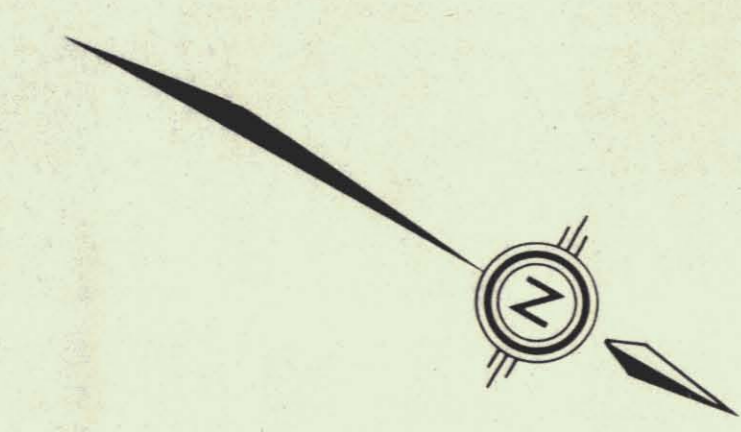
**CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.**

N.T.S. 115 P / 15
EPD GROUP

TRENCH T81-33

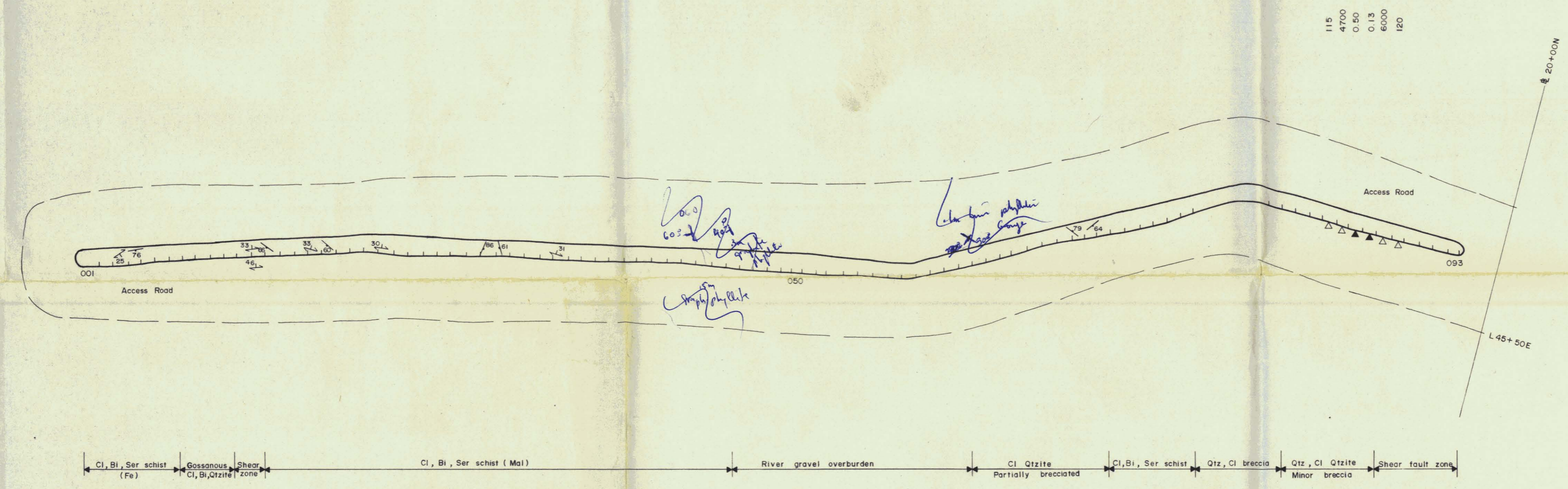
SCALE 1:200 DRAWN BY JRE DATE JULY 1981 PLAN NO. 704-74
FIELD YEAR 1981 REVISED BY RGW/SG DATE SEPT 1981

CJV-EPD
922-(704-74)

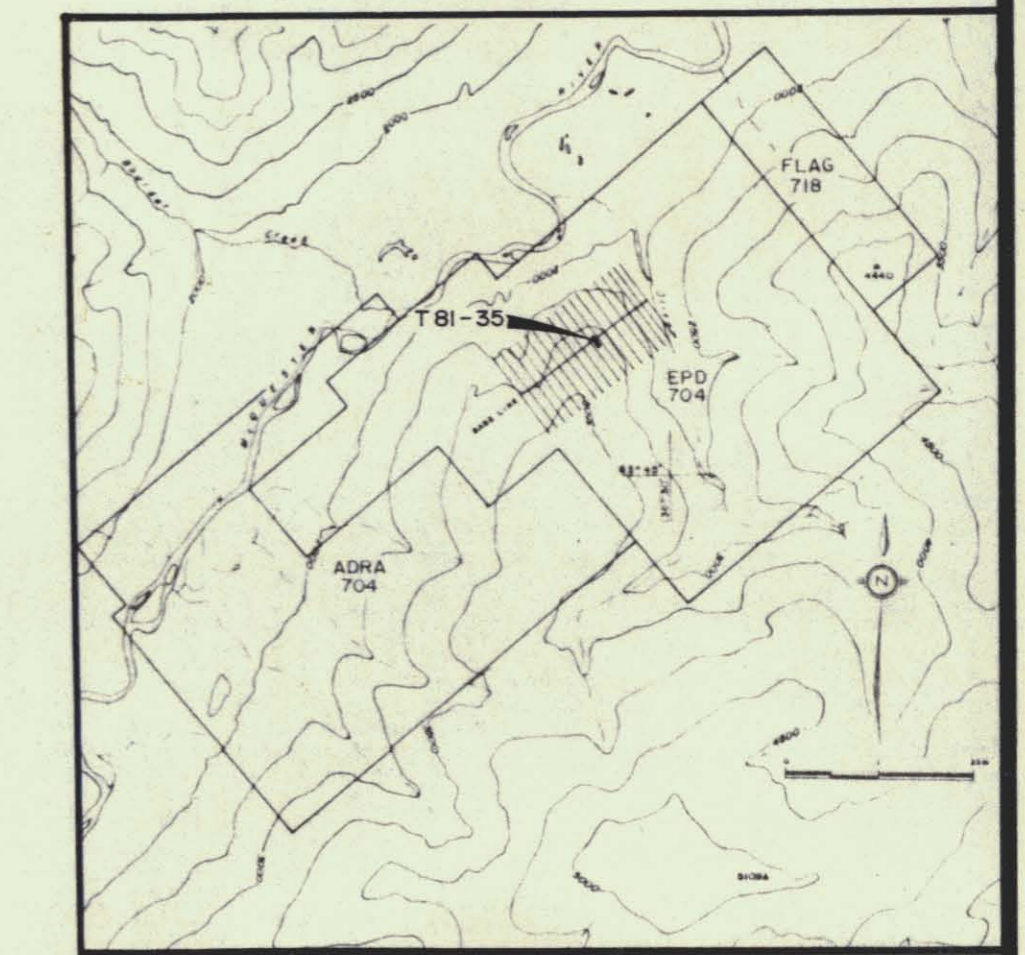


CROSS SECTION

SAMPLE NO.	WIDTH (metres)	PIF % Sn	Sn ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm
084	1.0	-	115	325	370	350	1.9
085	0.9	0.2567	4700	2200	830	860	50
086	1.1	0.2975	4500	2300	540	1200	50
087	1.1	0.0289	1300	280	137	440	2.6
088	1.1	0.1996	6000	390	126	390	4.2
089	1.0	-	120	205	32	370	1.0



PLAN VIEW



LEGEND

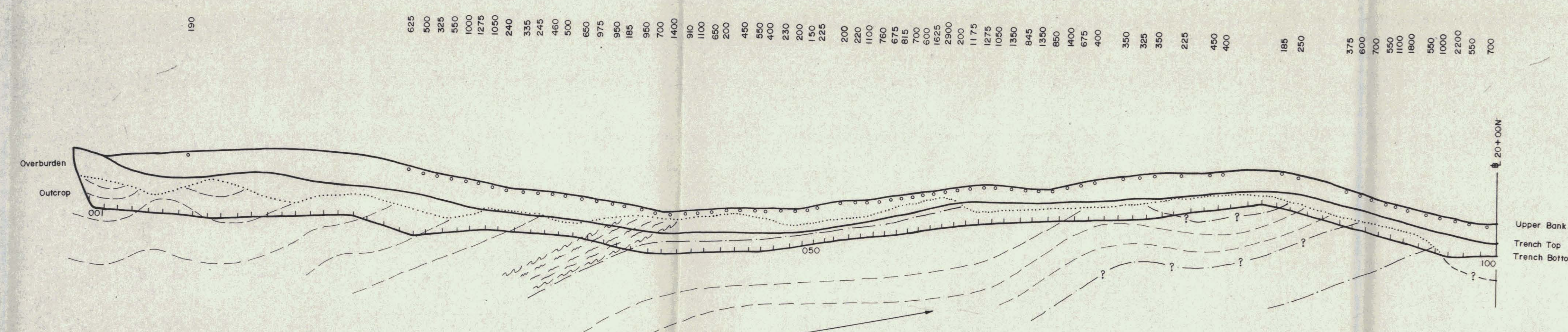
- PRECAMBRIAN AND/OR CAMBRIAN "GRIT" DIVISION (Formerly YUKON GROUP)
- Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, greenstone, siltstone
 - Contact, Sharp, Gradational Form Lines
 - Strike and Dip of Schistosity
 - Strike and Dip of Fractures
 - Strike and Dip of Vein Structures
 - Fault Zone
 - Shear Zone
- | | | | |
|--------|------------|------|---------------------|
| schist | Schist | Py | Pyrite |
| Qtzite | Quartzite | Cp | Chalcopyrite |
| Bl | Biotite | Aspy | Arsenopyrite |
| Mu | Muscovite | Gr | Galenite |
| Cl | Chlorite | Sl | Sphalerite |
| Ser | Sericite | Fe | Goethite ± Limonite |
| Act | Actinolite | Mn | Manganese |
| Mal | Malachite | Azur | Azurite |
- 100 - Sample Intervals and Number
 - Rock Geochemical Value (ppm Sn)
 - Rock Assay Value (% Sn)
 - Soil Geochemical Value (ppm Sn)
 - NS No Sample Taken
 - Diamond Drill Hole Collar and Direction
- Except where shown, only rock chip and soil samples responding to PIF testing were analyzed by geochemical methods.
- Except where noted, all displayed soil geochemical results are - 10, +40 mesh.
- Except where limited by sample size, all geochemical results < 2000 ppm Sn were assayed for Sn.

CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.
 N.T.S. 115 P / 15
 EPD GROUP

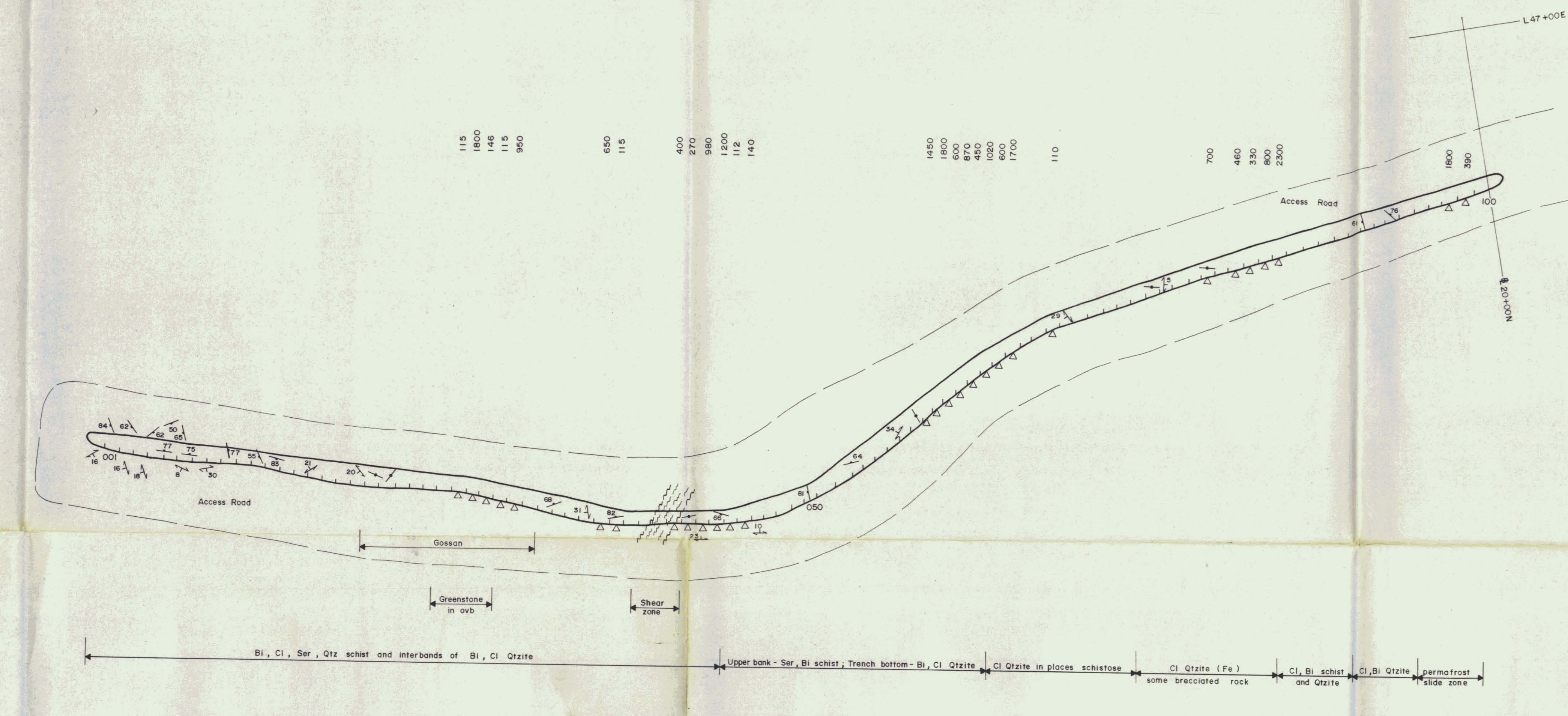
TRENCH T81-35

SCALE 1:200	DRAWN BY JRE	DATE JULY 1981	PLAN NO. 704-75
FIELD YEAR 1981	REVISED BY ROW/SG	DATE SEPT. 1981	

CJV-EPD
704-75

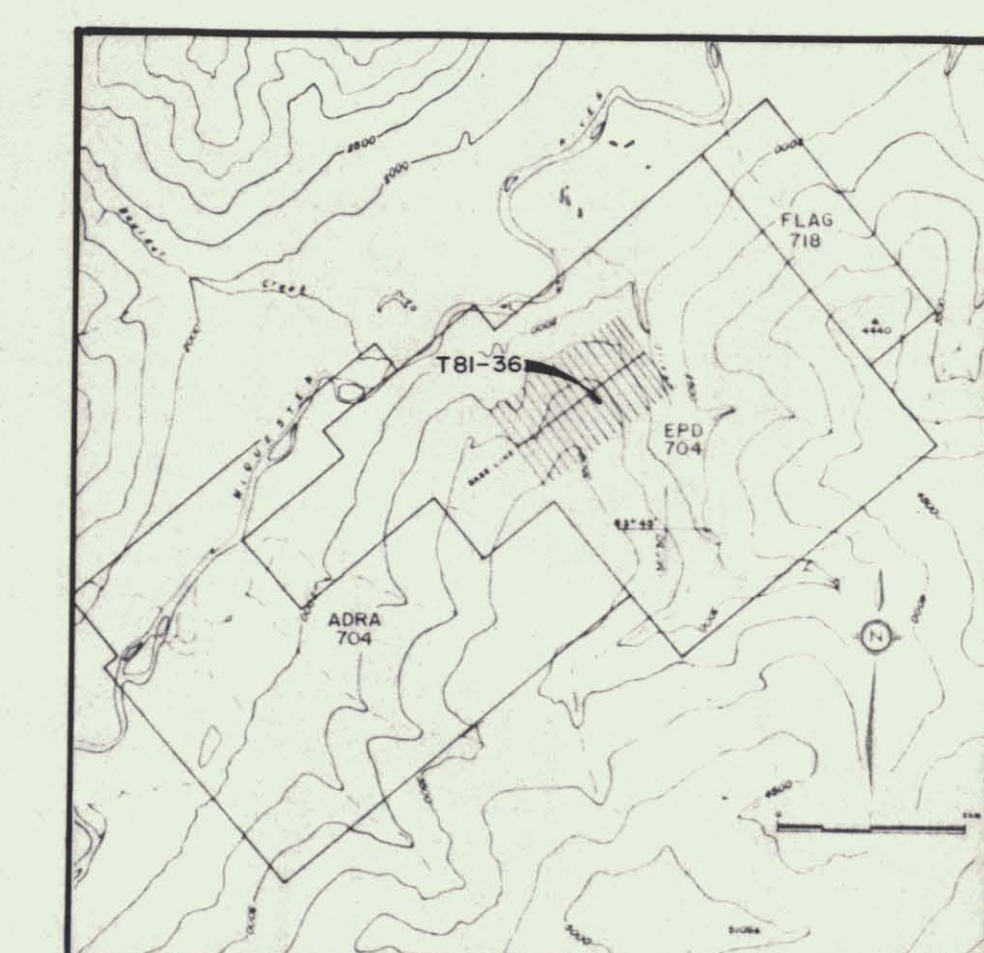


CROSS SECTION



PLAN VIEW

SAMPLE NO	DEPTH (metres)	PIF	Sn	Cu	Pb	Zn	Ag
		%Sn	ppm	ppm	ppm	ppm	ppm
025	0.9	-	115	222	1750	3670	2.70
026	0.9	-	1800	610	4096	7260	17.0
027	1.0	0.0217	146	96	103	1440	0.9
028	1.0	0.0039	115	121	496	1378	3.5
029	1.1	0.0328	950	92	22	402	0.4
030	1.1	-	15	68	23	297	0.3
034	1.0	-	12	58	96	431	0.4
035	1.1	0.0533	650	86	62	458	0.5
036	1.0	0.0159	115	122	98	664	0.5
037	1.0	-	26	68	116	517	0.7
038	1.0	-	9	76	90	365	0.4
039	1.0	-	27	83	74	820	0.4
040	1.1	0.0326	400	187	51	2614	0.8
041	1.0	0.0182	270	227	29	1428	0.7
042	1.0	0.1312	980	294	193	1281	0.9
043	1.0	0.1129	1200	331	832	899	9.2
044	1.0	-	112	87	219	573	0.7
045	1.0	0.0160	140	48	69	301	0.6
046	0.9	-	12	32	92	260	0.5
059	0.9	-	10	62	74	193	0.5
060	1.0	0.0520	1450	62	92	179	0.8
061	1.0	0.0952	1800	69	96	219	1.8
062	1.0	0.0173	600	80	117	269	0.6
063	1.0	0.0458	870	93	132	308	0.6
064	1.1	0.0227	450	346	46	311	1.6
065	1.0	0.1500	1020	96	50	276	1.1
066	1.1	0.0338	600	180	59	570	2.1
067	0.8	0.0630	1700	212	84	523	4.5
068	1.0	-	60	159	73	466	1.0
069	1.1	0.0324	78	151	74	502	1.5
070	1.0	-	110	162	34	531	1.1
080	1.0	-	20	131	12	350	0.6
081	1.0	0.0193	700	103	12	361	0.7
082	1.0	0.0193	73	74	11	353	0.3
083	1.1	0.1107	460	282	29	410	2.4
084	1.0	0.0661	330	1790	145	582	27.0
085	1.1	0.0237	800	1092	150	621	13.0
086	1.0	0.1711	2300	1764	41	360	23.0
087	1.2	-	51	227	36	104	2.7
097	1.0	-	97	159	34	149	1.7
098	1.1	0.1327	1800	144	123	299	6.4
099	1.2	0.0175	390	348	72	489	17.0
100	1.4	-	51	257	38	438	3.2



LEGEND

PRECAMBRIAN AND/OR CAMBRIAN "DRIT" DIVISION (Formerly YUKON GROUP)

Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, greenstone, gneiss

Contact; Sharp, Gradational
Form Lines

Strike and Dip of Schistosity
Strike and Dip of Fracture
Strike and Dip of Vein Structures

Fault Zone Shear Zone

sch Schist Py Pyrite
Qtz Quartzite Cp Chalcocopyrite
Bt Biotite Aspy Arsenopyrite
Mu Muscovite Sn Galena
Cl Chlorite Sl Sphalerite
Ser Sericite Fe Gossanous ± Limonite
Act Actinolite Mn Manganese
Mal Malachite Azur Azurite

Sample Interval and Number
Rock Geochemical Value (ppm Sn)
Rock Assay Value (% Sn)
Soil Geochemical Value (ppm Sn)
NS No Sample Taken

DDH 81-14 Diamond Drill Hole Collar and Direction

Except where shown, only rock chip and soil samples responding to PIF testing were analyzed by geochemical methods

Except where noted, all displayed soil geochemical results are -10,+40 mesh

Except where limited by sample size, all geochemical results < 2000 ppm Sn were assayed for Sn

**CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.**

N.T.S. 115 P / 15
EPD GROUP

TRENCH T81-36

SCALE 1:200 DRAWN BY JRE DATE JULY 1981
FIELD YEAR 1981 REVISION BY RW / SG DATE SEPT 1981

PLAN NO. 704-76

CIV - EPD
922 - (704-76)

1020m
1000m
980m
960m
940m
920m
900m
880m
860m
840m
820m
800m
780m
760m
740m
720m
200m



LEGEND

Ca Calcite	Si Siderite
Ch Chlorite	Qtz Quartz
Py Pyrite	Cp Chalcopyrite
Sp Sphalerite	Tx Talc
Gr Graphite	S Sphalerite
Ti Tourmaline	Sh Shearing

SYMBOLS

[Blue box]	QUARTZITE
[Light blue box]	SCHIST
[Dark blue box]	CHLORITIC QUARTZITE
[Yellow box]	QUARTZITE BRECCIA
[Green box]	CHLORITE BRECCIA
[Red box]	QUARTZ VENE
[Black box]	QUARTZ ZONE
[Green box]	GREENSTONE
[Dark green box]	CHLORITE
[Light green box]	PIRRE
[White box]	MUSC. SLAN
[White box]	DIORITE
[White box]	ANALUSITE SCHIST
[White box]	TOURMALINE BRECCIA
[White box]	DACTE PORPHYRY

OTHER SYMBOLS

- COME LOSS

0.99 1.00
1.00 1.00

091015

**CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.**

EPD GROUP
DDH 81-16
SECTION 43+00E
(LOOKING WEST)

SCALE 1:200
DATE Nov 5, 1981
PAGE NO 704-78



LEGEND

Si	Siderite	Co	Carbonates
Sc	Sericite	Py	Pyrrhotite
Pr	Pyrite	Ch	Chlorite
Tl	Tourmaline	As	Asbestos
Cu	Copper	~	Shearing

GEOLGIC

□	QUARTZITE
□	SCHIST
□	CHLORITE QUARTZITE
□	CHLORITE SCHIST
□	QUARTZITE BRECCIA
□	CHLORITE BRECCIA
□	QUARTZ VEN
□	SULF ZONE
□	"GREENSTONE"
□	OLIGONITE
□	TUFF
□	MUD SEAM
□	DIORITE
□	ANDALUSITE SCHIST
□	TORNALITE BRECCIA
□	DIORITE PORPHYRY

— CORE LOSS

0.5% $\frac{1}{2}$ m
1.0% $\frac{1}{4}$ m

091015

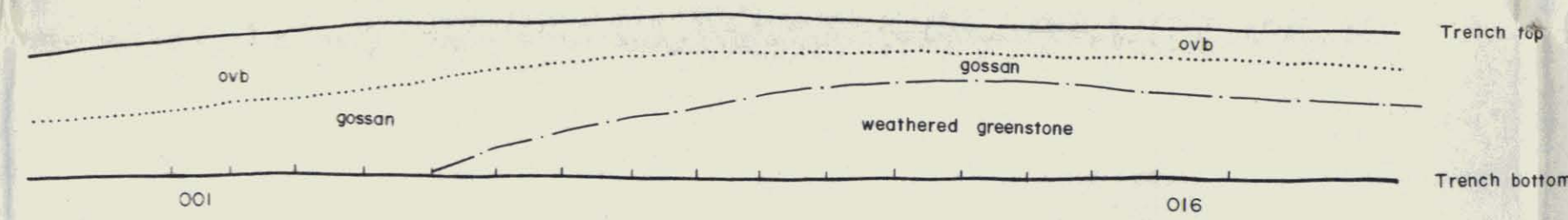
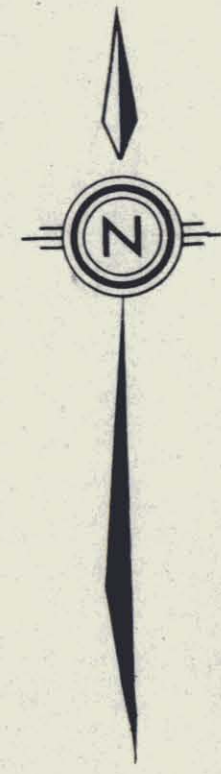
CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.

EPD GROUP
DDH 81-15
SECTION 44+97E
(LOOKING WEST)

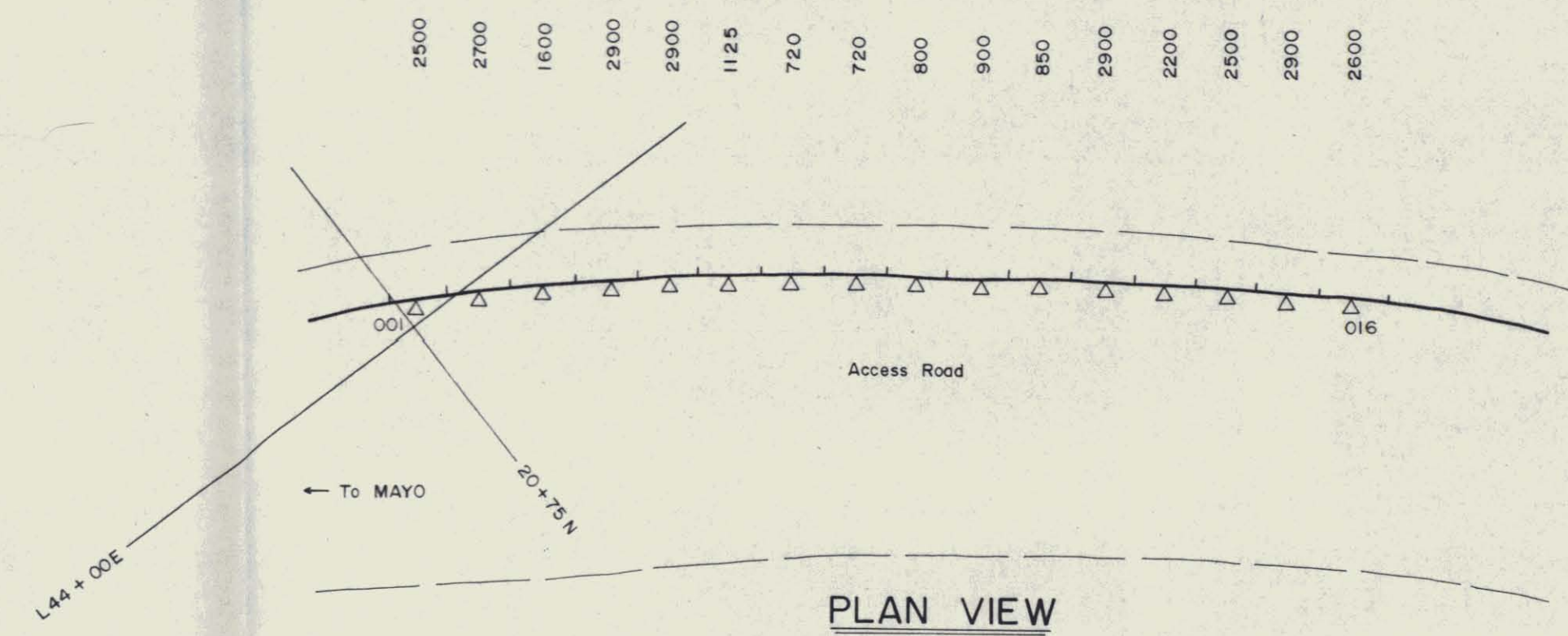
SCALE 1:200
DRAWN BY
FIELD YEAR 1981
DATE

DATE Nov 6, 1981
REVISION
DATE

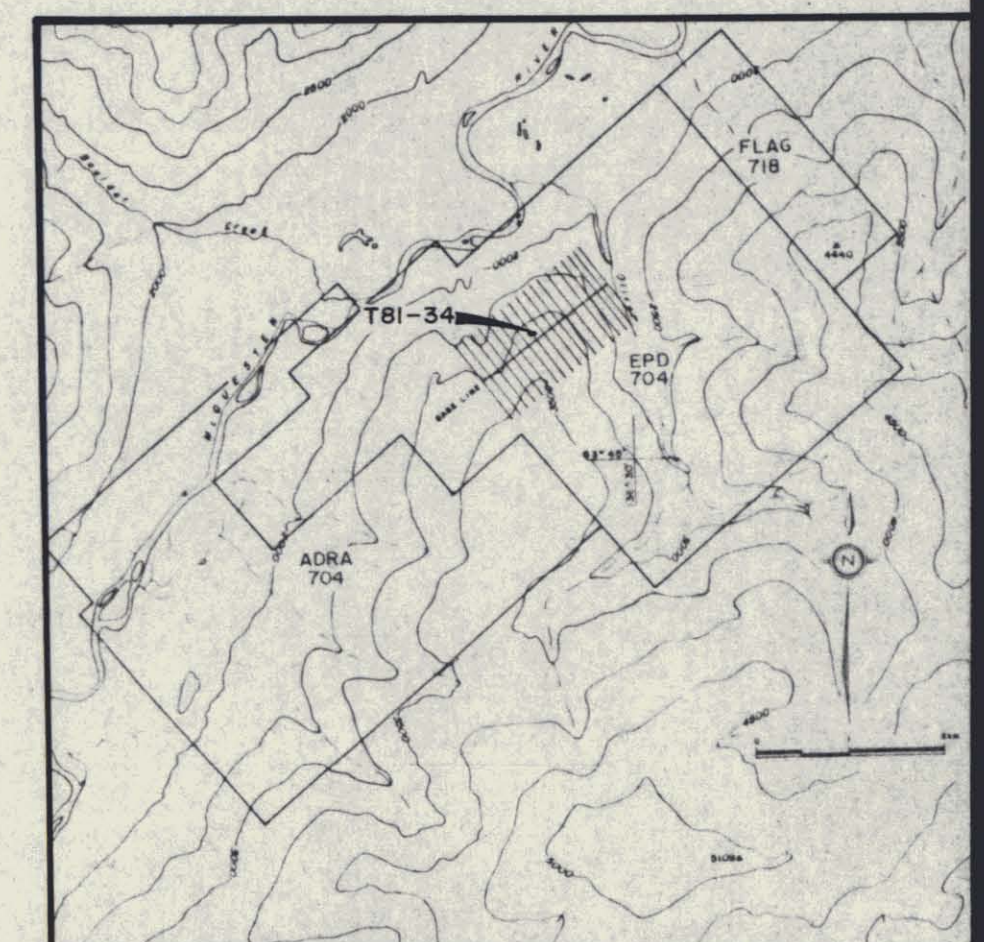
PLAN NO. 704-79



CROSS SECTION



PLAN VIEW



LEGEND

- PRECAMBRIAN AND/OR CAMBRIAN
"GRIT" DIVISION (Formerly YUKON GROUP)
- Buff, brown and rusty weathering gritty quartzite, schistose quartzite, quartzite chlorite schist, quartz mica schist, quartzite chlorite breccia, greenstone, metabasalt
 - Contact, Sharp, Gradational
 - Form Lines
 - Strike and Dip of Schistosity
 - Strike and Dip of Fractures
 - Strike and Dip of Vein Structures
 - Fault Zone
 - Shear Zone
- | | | | |
|--------|------------|------|---------------------|
| Schist | Schist | Py | Pyrite |
| Qtzite | Quartzite | Cp | Chalcopyrite |
| Bt | Biotite | Aspy | Arsenopyrite |
| Mu | Muscovite | On | Galena |
| Cl | Chlorite | Sp | Sphalerite |
| Ser | Sericite | Fs | Goethite ± Limonite |
| Act | Actinolite | Mn | Manganese |
| Mal | Malachite | Az | Azurite |
- 100
50
25
12.5
6.25
3.125
1.5625
0.78125
0.390625
0.1953125
0.09765625
0.048828125
- Sample Intervals and Number
 - Rock Geochemical Value (ppm Sn)
 - Rock Assay Value (% Sn)
 - Soil Geochemical Value (ppm Sn)
 - NS No Sample Taken
 - Diamond Drill Hole Collar and Direction
- Except where shown, only rock chip and soil samples responding to PIF testing were analyzed by geochemical methods.
- Except where noted, all displayed soil geochemical results are -10,+40 mesh.
- Except where limited by sample size, all geochemical results < 2000 ppm Sn were assayed for Sn.
- Note: Change in scale, 1:100

CORTIN JOINT VENTURE
CAMPBELL RESOURCES INC.
N.T.S. 115 P / 15
EPD GROUP

TRENCH T81-34

SCALE 1:100 DRAWN BY DR DATE JULY 1981 PLAN NO. 704-92
FIELD YEAR 1981 REVISION BY RW/SQ DATE SEPT. 1981

CJV-EPD
922-(704-92)