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APPENDIX C:

PETROGRAPHIC AND AGE DATING WORK

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Report for: **Colin Russell,**
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Job 126
December 1990

Samples: Eagle Bay Formation, north of Barriere B.C.
BC-90-1 186.93 m, BC-90-3 69.37 m.

Summary:

Sample BC-90-1 186.93 m is a medium to coarse grained **massive sulfide** dominated by **sphalerite** and **pyrite**, with much less galena, and interstitial patches of chlorite and of quartz. It is slightly banded, with some layers richer in sphalerite and others in pyrite. The host rock (at the edge of the hand sample) is a **chlorite-rich schist**, which probably was strongly altered hydrothermally. Its contact with the massive sulfide is sharp and slightly wavy.

Sample BC-90-3 69.37 m is a very fine grained **quartz-chlorite-muscovite-ankerite schist**, which was replaced by fine to coarse grained aggregates of **ankerite**, **quartz**, **sulfides**, and **muscovite**. Sulfides are dominated by **sphalerite** with less **pyrite** and **chalcopyrite**, and much less galena. Replacement patches vary moderately in composition in diffuse bands parallel to foliation. Probably the rock was recrystallized after sulfide formation.

Textures suggest that the rocks were metamorphosed and recrystallized, and that the present mineral grains were formed at that time. Thus, a history of the rocks would include original formation of the host rock, introduction of sulfides, and metamorphism and recrystallization. It is impossible to determine if the massive sulfide in Hole 90-1 is syngenetic or not; it does appear to be stratabound and slightly compositionally banded. In Hole 90-3, the sulfides appear to be part of a replacement assemblage.

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Sample BC-90-1 186.93 **Massive Sulfide: Sphalerite-Pyrite-(Galena); at Contact with Chlorite Schist**

The host rock (at the edge of the hand sample) is a chlorite-rich schist, which probably was strongly altered hydrothermally. Its contact with the massive sulfide is sharp and slightly wavy. The massive sulfide (thin section) is a medium to coarse grained aggregate dominated by sphalerite and pyrite, with less galena, and interstitial patches of chlorite and of quartz. It is slightly banded, with some layers richer in pyrite and others in sphalerite.

massive sulfide	
sphalerite	55-60%
pyrite	30-35
chlorite	5- 7
galena	2- 3
quartz	1- 2
chalcopyrite	minor
muscovite/sericite	minor

Sphalerite forms anhedral grains up to a few mm across. It is red-brown in color and is free of exsolution chalcopyrite blebs.

Pyrite forms anhedral to subhedral porphyroblasts up to a few mm across and finer irregular to subhedral grains averaging 0.2-0.5 mm in size intergrown with sphalerite. Pyrite commonly contains minor to moderately abundant blebs and lenses of galena, sphalerite, and less chalcopyrite averaging 0.02-0.1 mm in size. Finer grained pyrite intergrown with sphalerite commonly contains coarser inclusions and embayments of sphalerite.

Galena forms anhedral grains averaging 0.1-0.5 mm in size intergrown coarsely with sphalerite. In a few sphalerite-galena-rich layers, galena forms irregular patches up to 1.2 mm long.

Interstitial patches of silicates average 0.5-2 mm in size.

Very pale green chlorite forms aggregates of very fine to fine grained flakes, and a few aggregates of extremely fine grained flakes.

Quartz is concentrated in one layers as anhedral grains averaging 0.2-1 mm in size.

Muscovite/sericite forms aggregates of extremely fine to very fine grained flakes.

Sample BC-90-3 69.37 m Quartz-(Muscovite-Chlorite-Ankerite) Schist; Replacement Patches of Quartz-Ankerite-Sphalerite-Pyrite-(Chalcopyrite-Muscovite-Chlorite-Galena)

The host rock is a very fine grained quartz-chlorite-muscovite-ankerite schist, which was replaced by fine to coarse grained aggregates of ankerite, quartz, sulfides, and muscovite. Sulfides are dominated by sphalerite with less pyrite and chalcopyrite, and much less galena. Replacement patches vary moderately in composition in diffuse bands parallel to foliation. Probably the rock was recrystallized after sulfide formation.

host rock			
quartz	10-12%	chlorite	1- 2%
muscovite	1- 2	ankerite	1- 2
replacement patches			
quartz	30-35	muscovite	3- 4
ankerite	20-25	chalcopyrite	3- 4
sphalerite	10-12	chlorite	2- 3
pyrite	5- 7	galena	0.3

The host rock is dominated by submosaic quartz grains averaging 0.03-0.05 mm in grain size. Chlorite generally forms wispy interstitial flakes, whose orientation defines a weak foliation. Locally chlorite forms lenses up to 0.3 mm wide of very fine grained, subparallel flakes. Muscovite is concentrated in some layers averaging 0.1-0.3 mm wide as clusters of flakes averaging 0.1-0.15 mm in length; flakes commonly are oriented at a moderate to high angle to foliation. Ankerite forms skeletal porphyroblasts up to 0.6 mm across, and scattered euhedral grains up to 0.15 mm in size.

In the replacement patches, intergrowth textures indicate that the minerals were formed or recrystallized together. The patches are compositionally zoned, with some diffuse bands parallel to foliation richer in one or more of quartz, ankerite, sulfides, and muscovite.

Quartz forms patches of grains averaging 0.2-0.5 mm in grain size. Ankerite forms grains averaging 0.5-1 mm in size. Some ankerite patches are much finer grained; textures suggest that they may have been formed by recrystallization of coarser grains. Locally ankerite grains contain abundant, extremely fine grains of chalcopyrite. Muscovite forms flakes averaging 0.2-0.7 mm long, commonly intergrown with ankerite. Chlorite forms clusters up to 1 mm across of flakes averaging 0.03-0.2 mm long. In places quartz-chlorite aggregates are intermediate in texture between the rock and the replacement patch.

Sulfides occur mainly in fine to medium grained patches, with a much smaller total volume being in extremely fine to very fine grained aggregates intergrown with silicates and carbonate.

Pyrite forms anhedral, equant grains averaging 0.2-0.5 mm in size, and a few grains up to 1.5 mm across.

Other sulfides forms irregular patches and intergrowths, intergrown with carbonate and muscovite.

Sphalerite forms patches averaging 0.2-1 mm in size. Sphalerite is orange-brown in color and contains 2-3% disseminated chalcopyrite blebs averaging 0.01-0.02 mm in size.

Chalcopyrite forms patches averaging 0.1-0.5 mm in size, with a few up to 1.5 mm long. It is concentrated in a few bands parallel to foliation. In some patches it is intergrown coarsely with sphalerite (which also contains the much finer grained blebs of chalcopyrite).

Galena forms patches averaging 0.05-0.4 mm in size. In some patches it is intergrown intimately with chalcopyrite.

THIN SECTION NUMBER: VB04851

HOLE NUMBER: BC-90-01

DEPTH: 46.90 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Fine grained, weakly carbonate altered, recrystallized, quartz sericite schist. Rock groundmass is composed of 65-75% fine grained recrystallized quartz and 15-20% fine grained sericite imparting the foliated texture. Occasional, 2-3%, subrounded quartz crystals (phenocrysts). Minor (1-2%) irregular shaped carbonate spots or knots. 1-2% fine grained, disseminated pyrite.

65-75% - fine grained, recrystallized quartz
15-20% - fine grained sericite
2-3% - quartz crystals (<1.0mm)
1-2% - carbonate knots (<0.75mm)
1-2% - opaques (pyrite)

ROCK TYPE: FELSIC ASH TUFF

THIN SECTION NUMBER: VB04852

HOLE NUMBER: BC-90-01

DEPTH: 84.61 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Fine grained, weakly carbonate altered quartz-sericite schist. Partially recrystallized quartz groundmass with 2-3% strained quartz phenocrysts and 2-3%, stubby, subhedral to irregular shaped plagioclase phenocrysts with sericite inclusions. Up to 7% fine intercalated carbonate to irregular shaped carbonate crystals. Trace to 2% fine grained chlorite and 1-2% fine grained, disseminated opaques (pyrite)

65-75% - fine grained quartz
10-15% - fine grained sericite
5-7% - carbonate
2-3% - quartz crystals
2-3% - plagioclase crystals
1-2% - opaques

ROCK TYPE: FELSIC ASH TUFF

THIN SECTION NUMBER: VB04853

HOLE NUMBER: BC-90-01

DEPTH: 140.3 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Recrystallized quartz-sericite schist. Up to 3% fine grained disseminated opaques; majority are cube shaped (pyrite).

70-80% - fine grained, recrystallized quartz groundmass
15-20 - fine grained sericite
1-3% - Opaques

ROCK TYPE: FELSIC ASH TUFF

THIN SECTION NUMBER: VB04854

HOLE NUMBER: BC-90-01

DEPTH: 150.77 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Carbonate altered quartz-sericite schist. Up to 20% carbonate occurring as individual subangular to rhombohedral crystals, as crystal aggregates, and as discontinuous carbonate stringers. Several carbonate crystals display twin lamellae (dolomitic). 1-2% fine grained disseminated opaques.

55-65% - fine grained, quartz (plagioclase?) groundmass
25-30% - fine grained sericite
15-20% - carbonate
1-2% - opaques

ROCK TYPE: FELSIC ASH TUFF

THIN SECTION NUMBER: VB04855

HOLE NUMBER: BC-90-01

DEPTH: 188.80 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Partially recrystallized, chloritic quartz-sericite schist. Minor, discontinuous quartz and carbonate stringer parallel to and crosscutting foliation. Occasional (1-2%) subrounded to subangular quartz crystals, some displaying undulatory extinction (strain). 1-2% fine grained, disseminated opaques.

55-60% - fine grained, partially recrystallized quartz-plagioclase groundmass
35-40% - chlorite
7-10% - fine grained sericite
1-2% - quartz phenocrysts
1-2% - opaques

ROCK TYPE: CHLORITIC FELSIC ASH TUFF

THIN SECTION NUMBER: VB04856

HOLE NUMBER: BC-90-01

DEPTH: 228.15 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Weakly chlorite altered "hornfelsed" quartz-sericite schist. Partially recrystallized groundmass with chlorite/biotite development as fine grains to crystal aggregates ("spots"). 1-3% irregular shaped opaques.

55-65% - fine grained, partially recrystallized quartz groundmass
20-25% - fine grained sericite
7-10% - chlorite
2-4% - biotite
1-3% - opaques

ROCK TYPE: FELSIC ASH TUFF (DUST TUFF)

THIN SECTION NUMBER: VB04857

HOLE NUMBER: BC-90-01

DEPTH: 249.28 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Fine grained, recrystallized quartz-sericite schist. 3-5% fine grained, disseminated opaques (pyrite).

65-75% : fine grained, recrystallized quartz groundmass
25-30% : fine grained sericite
1-2% : quartz subrounded-subangular quartz crystals
3-5% : opaques

ROCK TYPE: FELSIC ASH TUFF

THIN SECTION NUMBER: VB04858

HOLE NUMBER: BC-90-03

DEPTH: 111.95 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Fine grained, recrystallized and carbonatized quartz-sericite schist. Recrystallized quartz groundmass with subangular to subrounded carbonate crystals (locally dolomitic) and carbonate crystal aggregate. Chlorite present as elongated patches or wisps. Trace to 1% fine grained, disseminated opaques; some as cube shaped (pyrite) crystals.

50-60% - fine grained recrystallized quartz groundmass
20-25% - fine grained sericite
15-20% - carbonate
7-10% - chlorite
tr-1% - opaques

ROCK TYPE: FELSIC ASH TUFF

THIN SECTION NUMBER: VB04859

HOLE NUMBER: BC-90-03

DEPTH: 140.00 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Fine grained, non-foliated felsic intrusion. No visible alteration.

60-70% - Fine grained, recrystallized quartz-plagioclase groundmass
10-15% - Plagioclase phenocrysts (oligoclase-andesine) with sericite inclusions. Phenocrysts occur individually or as crystal aggregate and generally are stubby to broken subhedral shapes.
2-3% - quartz phenocrysts; locally strained (undulatory extinction).
1-2% - fine grained sericite (as feldspar inclusions)
1-2% - carbonate; subrounded to rhombohedral shaped crystals
1-2% - opaques

ROCK TYPE: FELDSPAR PORPHYRITIC FELSIC INTRUSION

THIN SECTION NUMBER: VB04860

HOLE NUMBER: BC-90-03

DEPTH: 163.10 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Weakly chloritic quartz-sericite schist. Very fine grained, partially recrystallized quartz-plagioclase(?) groundmass with 20-30% fine grained sericite and chlorite. Up to 5% carbonate (locally dolomitic) single, subrounded to rhombohedral shaped crystals. Trace to 1% fine grained, disseminated opaques. Several cube shaped pyrite crystals around which foliation bends. Well developed foliation.

60-70% - Very fine grained, partially recrystallized quartz-plagioclase(?) groundmass
20-30% - Fine grained sericite/chlorite
3-5% - Carbonate
tr-1% - Opaques

ROCK TYPE: FELSIC ASH (DUST) TUFF

THIN SECTION NUMBER: VB04861

HOLE NUMBER: BC-90-03

DEPTH: 191.77 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Carbonate altered, quartz-sericite schist. Very fine grained, partially recrystallized, quartz groundmass with up to 20% sericite. Spotty to pervasive carbonate alteration with local, irregular shaped-mottled carbonate crystals. Trace to 1% fine grained, disseminated opaques.

55-65% - Very fine grained, partially recrystallized quartz-plagioclase(?) groundmass
15-20% - fine grained sericite
20-25% - carbonate
tr-1% - opaques

ROCK TYPE: FELSIC ASH TUFF

THIN SECTION NUMBER: VB04862

HOLE NUMBER: BC-90-03

DEPTH: 200.68 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Carbonate altered quartz sericite schist. Fine grained, recrystallized quartz-plagioclase(?) groundmass with up to 25% fine grained sericite. Spotty to pervasive carbonate (ankerite) alteration with local, irregular shaped carbonate crystals of which several display poorly developed twin lamellae features (dolomitic). Occasional, broken-subhedral plagioclase crystals which are partially rimmed by carbonate and contain 3-5% sericite inclusions. Trace to 1% fine grained, disseminated opaques.

60-70% - fine grained, recrystallized quartz-plagioclase(?) groundmass
20-25% - fine grained sericite
10-15% - carbonate
1-2% - plagioclase phenocrysts (crystals)
tr-1% - opaques

ROCK TYPE: FELSIC ASH TUFF

THIN SECTION NUMBER: VB04863

HOLE NUMBER: BC-90-04

DEPTH: 19.05 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Chlorite/carbonate altered intermediate ash tuff. Fine to very fine grained quartz-plagioclase groundmass with up to 15% broken, stubby (subhedral) to irregular shaped plagioclase phenocrysts (as individual crystals and crystal aggregates). Up to 7%, locally strained quartz phenocrysts (undulatory extinction). No visible mafic phenocysts (hornblende) as observed in drill core.

Discontinuous, <0.5mm fracture filling chlorite (2-4%). Irregular to rhombohedral shaped, <2mm carbonate crystals. Trace to 1% fine grained, disseminated opaques (pyrite).

50-60% - fine grained quartz-plagioclase groundmass
7-10% - chlorite
5-7% - carbonate
1-2% - biotite
12-15% - plagioclase phenocrysts (with sericite inclusions)
4-7% - quartz phenocryst (locally strained features)
1-2% - lithic fragments (90% chlorite/carbonate altered)
tr-1% - opaques

ROCK TYPE: FELDSPAR PHYRIC INTERMEDIATE (LAPILLI) ASH TUFF

THIN SECTION NUMBER: VB04864

HOLE NUMBER: BC-90-04

DEPTH: 63.85 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Weakly chlorite-carbonate altered intermediate crystal ash tuff. Fine grained, weakly chloritic quartz-plagioclase groundmass with up to 12%, broken, stubby-subhedral to irregular shaped, weakly altered, plagioclase phenocrysts and plagioclase aggregates.

Fine grained chlorite intercalated in the groundmass. Subhedral to rhombohedral shaped carbonate crystals (<.1mm) and carbonate crystal aggregates. Moderately well developed foliation.

60-70% - fine grained quartz-plagioclase groundmass
10-12% - plagioclase phenocrysts (with 4-5% sericite inclusions)
1-2% - quartz phenocrysts (crystals)
5-6% - carbonate
4-5% - chlorite
3-5% - biotite (wisps)
2-3% - opaques (pyrrhotite, pyrite)

ROCK TYPE: INTERMEDIATE CRYSTAL ASH TUFF

THIN SECTION NUMBER: VB04865

HOLE NUMBER: BC-90-04

DEPTH: 79.65 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Spotty chlorite-carbonate altered ("hornfelsed") felsic ash tuff (dacite). Fine grained partially recrystallized, weakly sericitic quartz-plagioclase groundmass. Broken, stubby-subhedral shaped plagioclase phenocrysts (crystals) with sericite inclusions and lesser, locally stained (undulatory extinction) quartz phenocrysts (crystals).

Alteration consists of weak chlorite/carbonate intercalated in the groundmass and as irregular shaped spots.

70-75% - fine grained, partially recrystallized, quartz-plagioclase groundmass
7-8% - plagioclase crystals
3-5% - quartz crystals
5-10% - Chlorite/carbonate
2-3% - opaques (pyrrhotite, pyrite)

ROCK TYPE: "HORNFELSED" FELSIC CRYSTAL TUFF

THIN SECTION NUMBER: VB04866

HOLE NUMBER: BC-90-04

DEPTH: 190.15 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Spotty carbonate altered "hornfelsed" quartz-sericite schist. Fine grained, partially recrystallized, sericitic quartz groundmass. Rare plagioclase phenocrysts/crystals (with sericite inclusions) and unstrained quartz phenocrysts/crystals.

Alteration consists of carbonate "spot" partially rimmed by chlorite and/or biotite and weak to moderate pervasive carbonate.

50-60% - fine grained, partially recrystallized quartz groundmass.
20-25% - fine grained sericite
10-15% - carbonate
2-3% - chlorite
2-3% - biotite
1-2% - plagioclase crystals
1-2% - quartz crystals

ROCK TYPE: "HORNFELSED" FELSIC ASH TUFF

THIN SECTION NUMBER: VB04867

HOLE NUMBER: BC-90-04

DEPTH: 205.10 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Carbonatized quartz-sericite schist.

50-60% - fine grained, recrystallized quartz groundmass
25-30% - sericite
15-20% - carbonate; intercalated in matrix and minor, discontinuous stringers; locally dolomitic
1-2% - opaques

ROCK TYPE: FELSIC ASH TUFF

THIN SECTION NUMBER: VB04868

HOLE NUMBER: BC-90-05

DEPTH: 25.50 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Spotty to pervasive carbonate altered quartz-sericite schist. Intensely sericite altered "band" with up to 5% opaques (pyrite) parallel to foliation.

50-60% - fine grained, partially recrystallized quartz-plagioclase(?) groundmass
25-30% - fine grained sericite
10-15% - carbonate spots; irregular shapes, partially rimmed by chlorite and/or biotite
3-4% - quartz crystals; occasionally strained (undulatory extinction
2-4% - chlorite (rimming carbonate spots)
2-3% - biotite (rimming carbonate spots)
1-2% - opaques

ROCK TYPE: INTERMEDIATE ASH TUFF

THIN SECTION NUMBER: VB04869

HOLE NUMBER: BC-90-05

DEPTH: 71.40 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Spotty chlorite-carbonate altered "hornfelsed" andesitic to dacitic ash tuff. Fine grained, partially recrystallized, sericitic quartz groundmass. Strongly sericitic (40% sericite) band with 6% pyrite parallel to foliation. Spotty to pervasive chlorite-carbonate.

60-70% - fine grained, partially recrystallized quartz groundmass
12-15% - fine grained sericite
17-20% - chlorite-carbonate spots
1-3% - opaques

ROCK TYPE: "HORNFELSED" FELSIC ASH TUFF

THIN SECTION NUMBER: VB04870

HOLE NUMBER: BC-90-05

DEPTH: 135.50 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Very fine grained, carbonate-sericite altered quartz-plagioclase groundmass with 7-8% carbonate spots rimmed by sericite. Well developed foliation.

70-80% - fine grained quartz-plagioclase groundmass
5-7% - fine grained sericite
10-15% - carbonate; spots and fine grained pervasive carbonate
1-2% - opaques

ROCK TYPE: INTERMEDIATE ASH TUFF

THIN SECTION NUMBER: VB04871

HOLE NUMBER: BC-90-05

DEPTH: 198.00 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Quartz-sericite schist, possible reworked ash tuff. Well developed, strongly crenulated foliation.

55-65% - fine grained, partially recrystallized quartz-plagioclase groundmass
15-20% - fine grained sericite
5-10% - broken, subrounded quartz crystals and recrystallized quartz aggregates
3-5% - plagioclase crystals; broken, lath to stubby-subhedral shaped crystals
7-8% - fine grained, disseminated opaques (subrounded, cube shaped pyrite crystals

ROCK TYPE: FELSIC CRYSTAL ASH TUFF

THIN SECTION NUMBER: VB04872

HOLE NUMBER: BC-90-04

DEPTH: 190.15 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Quartz-sericite schist possible reworked ash tuff. Pervasive carbonate alteration and as mottled irregular shaped carbonate spots (1-3%).

60-70% - fine to medium grained, recrystallized quartz-plagioclase groundmass
15-20% - fine grained sericite
7-10% - carbonate
2-3% - quartz phenocrysts and <1.5mm quartz crystal aggregates
3-5% - opaques

ROCK TYPE: FELSIC ASH TUFF

THIN SECTION NUMBER: VB04873

HOLE NUMBER: BC-90-05

DEPTH: 351.85 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Weakly hornfelsed quartz-sericite schist possible reworked ash tuff. Fine grained partially recrystallized, sericitic quartz matrix with fine grained biotite, chlorite, and carbonate.

55-65% - fine grained, partially recrystallized quartz groundmass
10-15% - fine grained sericite
7-10% - biotite
5-7% - chlorite
3-5% - carbonate
3-4% - broken, subangular quartz phenocrysts
2-4% - recrystallized quartz crystal aggregates (possible fragments)
2-3% - fine grained, disseminated opaques

ROCK TYPE: FELSIC ASH TUFF (reworked)

THIN SECTION NUMBER: VB04874

HOLE NUMBER: BC-90-05

DEPTH: 368.75 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Weakly hornfelsed quartz sericite schist possible reworked ash tuff. Fine grained, recrystallized sericitic groundmass with fine grained interstitial biotite, chlorite, and carbonate. Mottled - irregular shaped carbonate crystal aggregates - "spots".

55-65% - fine grained, recrystallized quartz groundmass
10-15% - fine grained sericite
8-12% - biotite
3-4% - chlorite
7-10% - carbonate; 3% carbonate crystal aggregates - "spots"
2-3% - broken, subrounded quartz phenocrysts
1-2 - fine grained, disseminated opaques

ROCK TYPE: "HORNFELSED" FELSIC ASH TUFF (reworked)

THIN SECTION NUMBER: VB04875

HOLE NUMBER: BC-90-07

DEPTH: 212.04 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Carbonate altered quartz-sericite schist. Pervasive carbonate and as discontinuous stringers.

60-70% - fine grained, partially recrystallized quartz groundmass
15-20% - fine grained sericite
10-15% - carbonate
3-4% - quartz phenocrysts
1-2% - fine grained, disseminated opaques

ROCK TYPE: QUARTZ CRYSTAL FELSIC ASH TUFF

THIN SECTION NUMBER: VB04876

HOLE NUMBER: BC-90-07

DEPTH: 287.90 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Carbonate altered quartz-sericite schist.

55-65% - fine grained quartz groundmass
15-20% - carbonate
15-20% - sericite
3-4% - fine grained disseminated opaques

ROCK TYPE: FELSIC ASH TUFF

THIN SECTION NUMBER: VB04877

HOLE NUMBER: BC-90-07

DEPTH: 341.00 metres

HAND SPECIMEN DESCRIPTION:

THIN SECTION DESCRIPTION:

Carbonate altered quartz-sericite schist.

65-70% - fine grained quartz-plagioclase(?) groundmass with 10-15% larger quartz grains.
15-20% - fine grained sericite
10-15% - carbonate
tr-1% - fine grained, disseminated opaques

ROCK TYPE: FELSIC ASH TUFF

Correspondence Victoria

THE UNIVERSITY OF BRITISH COLUMBIA
Department of Geological Sciences
Vancouver, B.C. V6T 2B4
August 8, 1990

Mr. Colin Russell
Falconbridge Ltd.
202 - 856 Homer Street
Vancouver V6B 2W8

Dear Colin:

RE: GALENA LEAD ISOTOPE ANALYSES FOR THE UKE SHOWING (082M)

I ran your sample over the long weekend and the lead isotope ratios are as follows:

SAMPLE NUMBER	31024-001
$^{206}Pb/^{204}Pb$	18.874
$^{207}Pb/^{204}Pb$	15.710
$^{208}Pb/^{204}Pb$	38.721
$^{207}Pb/^{206}Pb$	0.83234
$^{208}Pb/^{206}Pb$	2.05135

Colin believes that the data plots in the lower part of mid - Devonian cluster (cluster 1) of Goutier, 1982 (pp. 41 & 43 attached). This clearly relates the deposit to known volcanogenic deposits in the Adams Plateau such as Rea Gold, Homestake (Kamad) and Birk Creek. Enclosed also is Goutier's Table 3.3 (pp. 37 - 38) for general reference.

It was very nice hearing from you. I'm glad to know you are still employed--not an easy feat in these economically troubled times. Hope everything is going well with you this summer. The weather cannot be better, what a glorious field season you must be having. Take care.

Yours very truly

My signature appears to be deteriorating with age.

Anne B.R. Pickering
Research Assistant, UBC
PHONE: (604)228-2804 Office
FAX: (604)228-6088

1 vial

LEAD ISOTOPE DATA SHEET
GEOCHRONOLOGY LABORATORY. DEPARTMENT OF GEOLOGICAL SCIENCES (PH (604)228-2804).
THE UNIVERSITY OF BRITISH COLUMBIA. VANCOUVER. B.C., CANADA V6T 2B4

LABORATORY ENTRY ONLY
Form Revised: 11/10/87 JEG

VIAL IS IN THE COLLECTION [_]
DATA ON THIS FORM HAS BEEN ENTERED
IN DBASE FOR BELT: II[_],CI[_],NI[_],
OI[_],SI[_],FI[_],OTHER[_____]

LAB NUMBER (1 sampleno): 3 1 0 2 4 - 0 0 1 .. ..
MAP SYMBOL (9 mapsymbol): __ __ __
HOST CODE (12 hostcode): __
TYPE CODE (14 typecode): 1
TECTONIC CODE (16 tectcode): 0 A D
SAMPLE ACQUIRED (5 acqdate): m 0 8 /d 0 1 /y 9 0

COLLECTOR ENTRY
DEPOSIT NAME (3 depname): UKE
COLLECTOR. SAMPLE NAME & NUMBER (4 samsource): Colin Russell; Falconbridge

NTS & GOVT NO (6 nts:bcmi): 0 8 2 /M/ 0 5 /W: S W- __ __ __
LATITUDE DEGREES NORTH (7 latnorth): 5 1 . 2 0 3 0 ° [(+) 5 1 . 3 5]DEG. N
LONG. DEGREES WEST (8 longwest): 1 1 9 ° 5 0 3 0 ° [(+) 1 1 9 . 8 4]DEG. W
HOST FORMATION & LITHOLOGY (10 hostlith): Eagle Bay Fm
HOST AGE (11 hostage):
DEPOSIT TYPE (13 deptype): Volcanogenic
TECTONIC ELEMENT (15 tectelem): Quesnel; Adams Plateau
COMMENTS. GEOLOGIC DETAILS. REFERENCES. ETC. (33 comments):

LABORATORY ENTRY
RUN NO (21 runno): 1 OR
ANALYST (17 analyst): A Pickering ANALYSTS CODE (18 anlystcode): __ __ __
MATERIAL ANALYSED (19 materanal): Pb
RUNDATE:NORM DATE (20 rundate): m 0 8 /d 0 5 /y 9 0 :m 0 3 /d 0 2 /y 9 0
RUN QUALITY:TEMPERATURE:BLOCKS (22 runqual): G 0 0 D : 1 2 1 0 : 0 6
PB206/204 NORMALIZED (23 pb206_4): 1 8.8 7 4
PRECISION: 0.0 0 2 ABSOLUTE (24 pb206_4pcerr) 0. 0 1 %
PB207/204 NORMALIZED (25 pb207_4): 1 5.7 1 0
PRECISION: 0.0 0 2 ABSOLUTE (26 pb207_4pcerr) 0. 0 1 %
PB208/204 NORMALIZED (27 pb208_4): 3 8.7 2 1
PRECISION: 0.0 0 7 ABSOLUTE (28 pb208_4pcerr) 0. 0 2 %
PB207/206 NORMALIZED (29 pb207_6): 0.8 3 2 3 4
PRECISION: 0.00 0 0 4 ABSOLUTE (30 pb207_6pcerr) 0. 0 0 %
PB208/206 NORMALIZED (31 pb208_6): 2.0 5 1 5 5
PRECISION: 0.00 0 2 ABSOLUTE (32 pb208_6pcerr) 0. 0 1 %
COMMENT (33 comments):

RUN NO (21 runno): 2 OR __
ANALYST (17 analyst): ANALYSTS CODE (18 anlystcode): __ __ __
MATERIAL ANALALYSED (19 materanal): __ __
RUNDATE:NORM DATE (20 rundate): m__ __/d__ __/y 8__:m__ __/d__ __/y 8__
RUN QUALITY:TEMPERATURE:BLOCKS (22 runqual): __ __ __ __:__ __ __ __:__ __
PB206/204 NORMALIZED (23 pb206_4): __ __.__ __ __ __
PRECISION: 0.0__ __ ABSOLUTE (24 pb206_4pcerr) 0.__ __ %
PB207/204 NORMALIZED (25 pb207_4): __ __.__ __ __ __
PRECISION: 0.0__ __ ABSOLUTE (26 pb207_4pcerr) 0.__ __ %
PB208/204 NORMALIZED (27 pb208_4): __ __.__ __ __ __
PRECISION: 0.0__ __ ABSOLUTE (28 pb208_4pcerr) 0.__ __ %
PB207/206 NORMALIZED (29 pb207_6): __.__ __ __ __ __
PRECISION: 0.00__ __ __ ABSOLUTE (30 pb207_6pcerr) 0.__ __ %
PB208/206 NORMALIZED (31 pb208_6): __.__ __ __ __ __
PRECISION: 0.00__ __ ABSOLUTE (32 pb208_6pcerr) 0.__ __ %
COMMENT (33 comments):

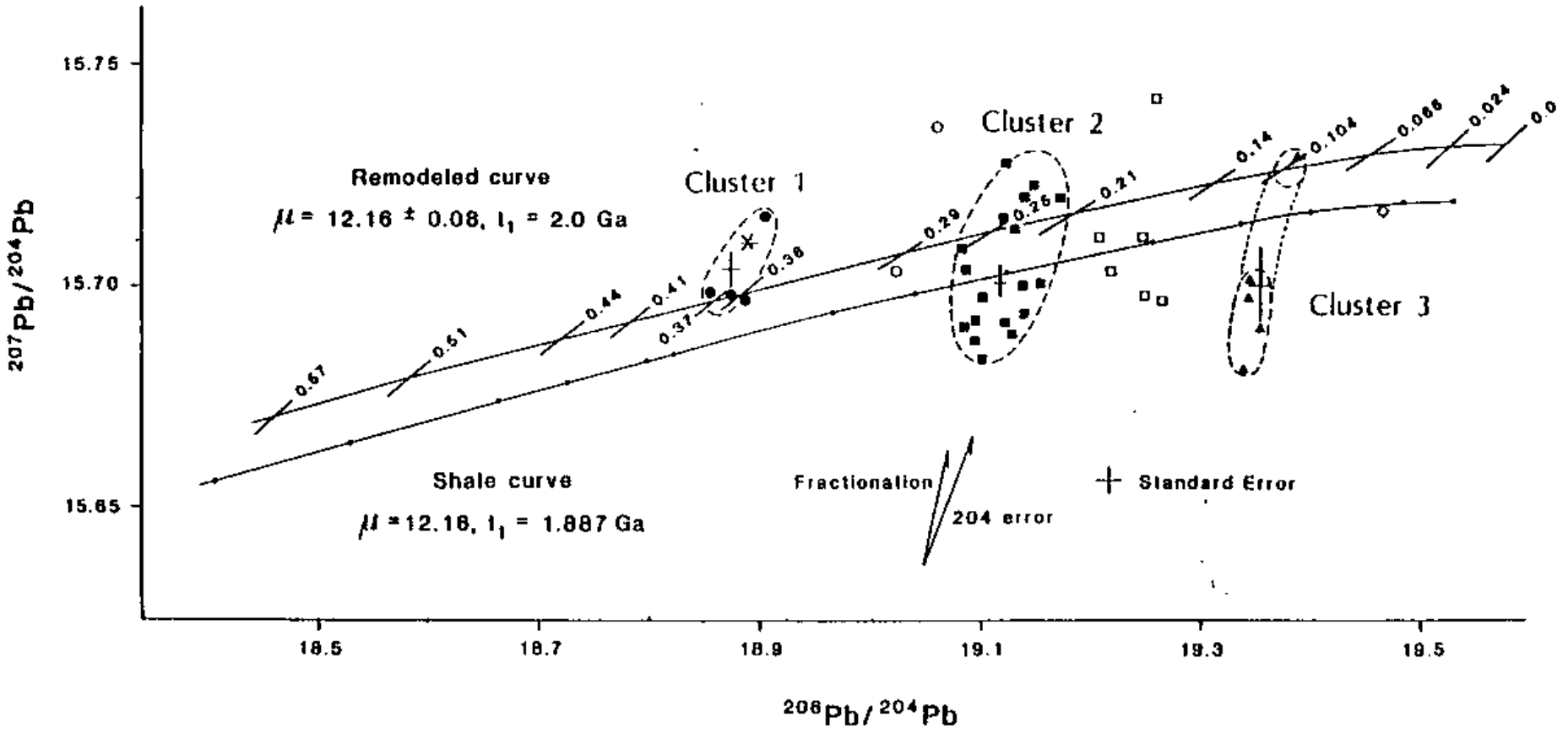
TABLE 3.3: Average galena lead isotope values from ore deposits in the Eagle Bay Formation.

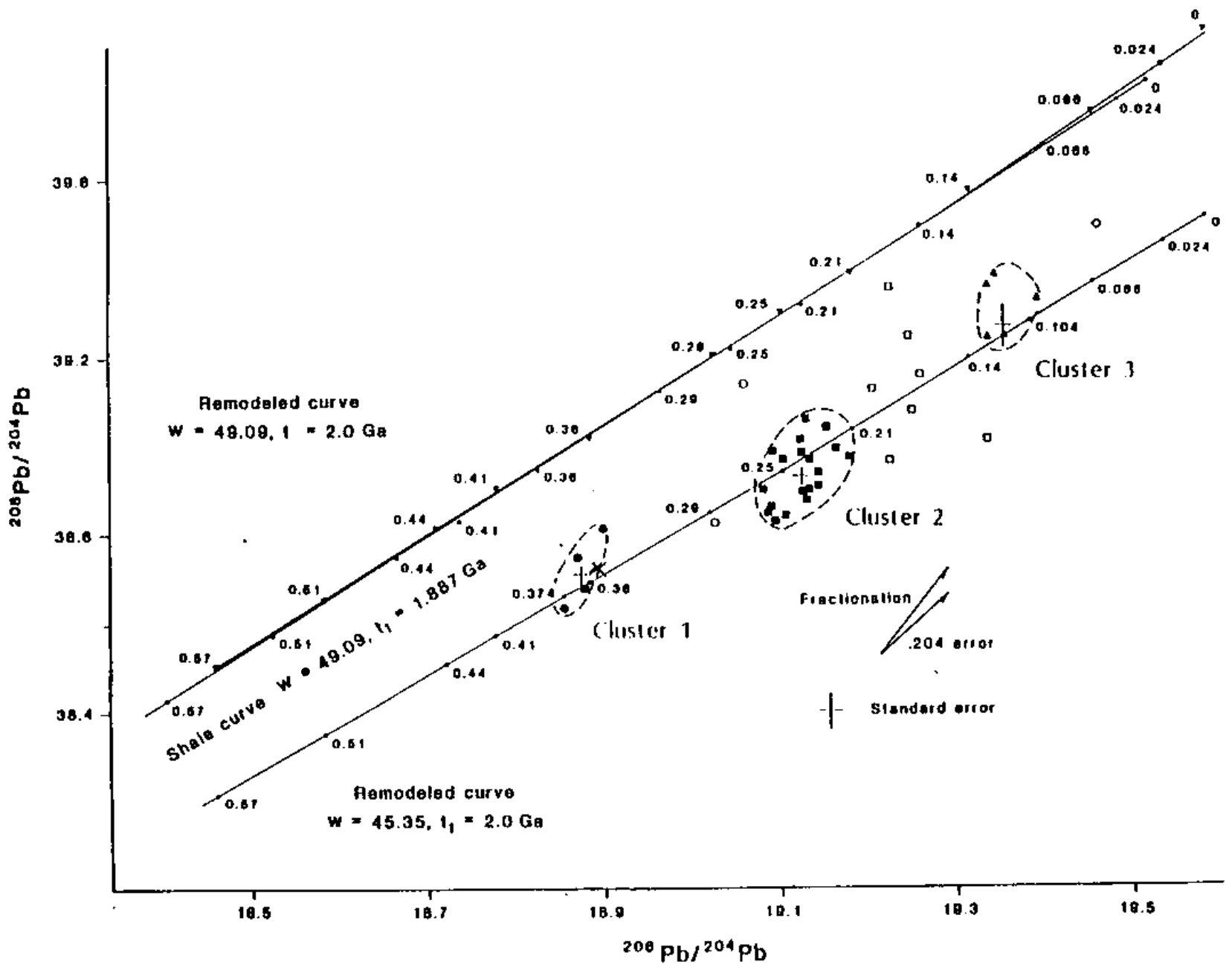
Deposit Name	Map No[2]	Lead Isotope Ratios[1] 206/204	207/204	208/204	206/207	206/208
Cluster 1 Devonian						
Birk Creek	508	18.907	15.716	38.848	1.20304	0.48699
Homestake	511	18.854	15.700	38.626	1.20085	0.48845
Rea Gold	515	18.869	15.699	38.755	1.20192	0.48698
Ford	538	18.883	15.698	38.676	1.20289	0.48823
Average (n=4)		18.887	15.703	38.720	1.20211	0.48767
Std. Error Mean		±0.010	±0.004	±0.216	±.00047	±.00039
Between cluster 1 & 2						
Art	517	19.060	15.737	39.147	1.21110	0.48687
Twin Mountain	519	19.027	15.704	38.832	1.21164	0.49027
Cluster 2 Triassic						
Agate Bay	506	19.143	15.701	38.909	1.21822	0.49200
Lucky Coon	518	19.142	15.694	38.900	1.21968	0.49208
King Tut	523	19.045	15.688	38.835	1.21718	0.49255
Elsie	524	19.142	15.700	38.975	1.21925	0.49157
Mosquito King	525	19.090	15.693	38.846	1.21648	0.49142
Pet	526	19.126	15.732	38.980	1.21575	0.49151
Spar	527	19.130	15.690	38.881	1.21927	0.49201
Red Top	531	19.146	15.721	38.939	1.21779	0.49170
Red Mineral 2	534	19.131	15.714	38.869	1.21747	0.48966
Silver King A	536	19.081	15.708	38.899	1.21471	0.49052
Orell SP	537	19.128	15.692	38.885	1.21902	0.49191
Sunrise	541	19.105	15.696	38.849	1.21716	0.49176
Enargite	504	19.096	15.690	38.987	1.21704	0.48979
Fortuna	513	19.125	15.721	39.018	1.21650	0.49016
White Rock	528	19.151	15.722	39.048	1.21810	0.49046
Waverby	542	19.191	15.703	38.846	1.21574	0.49145
Silver King-Queen	545	19.104	15.684	38.978	1.21807	0.49012
PS-85-175	548	19.177	15.721	38.962	1.21987	0.49220
Average (n=18)		19.125	15.701	38.936	1.21775	0.49138
Std. Error Mean		±0.007	±0.003	±0.016	±.00365	±.00023

TABLE 3.3 (continued)

Deposit Name	Map No[2]	Lead Isotope Ratios[1] 206/204	207/204	208/204	206/207	206/208
Between cluster 2 & 3						
Fluke	532	19.223	15.703	39.361	1.22416	0.48838
Mt McClennan	539	19.269	15.698	38.967	1.22747	0.49448
Foghorn	505	19.208	15.711	39.138	1.22258	0.49076
Rexspar	516	19.177	15.916	38.986	1.20528	0.49273
Birch Island	540	19.335	15.820	39.235	1.22200	0.49364
Tindal	543	19.251	15.714	39.080	1.22509	0.49261
Rouge	547	19.260	15.744	39.156	1.22330	0.49188
Cluster 3						
Leemac	546	19.391	15.729	39.336	1.23279	0.49294
Red Mineral 1	533	19.345	15.699	39.350	1.23229	0.49149
Red Mineral 3	535	19.354	15.706	39.383	1.23228	0.49142
Sonja	544	19.356	15.691	39.251	1.23353	0.49313
Beca	507	19.339	15.680	39.016	1.23338	0.49567
Average (n=5)		19.357	15.701	39.264	1.23285	0.49293
Std. Error Mean		±0.040	±0.008	±0.055	±.00026	±.00077
Beside cluster 3						
June	521	19.461	15.719	39.504	1.23809	0.49263

1. Lead isotopic ratios represent calculated average values from data in Appendix C (calculation of average value is described in section 3.3.2).
2. Map no. in Appendix C is prefixed by 30 and suffixed by analytical sample number.


15.75
15.70
15.65
$^{207}Pb/^{204}Pb$
18.5
18.7
18.9
19.1
19.3
19.5
$^{206}Pb/^{204}Pb$
Remodeled curve
$\mu = 12.16 \pm 0.08$, $t_1 = 2.0$ Ga
Shale curve
$\mu = 12.16$, $t_1 = 1.887$ Ga
Cluster 1
Cluster 2
Cluster 3
0.67
0.51
0.44
0.41
0.37
0.36
0.29
0.26
0.21
0.14
0.104
0.066
0.024
0.0
Fractionation
204 error
Standard Error


Remodeled curve
w = 49.09, t = 2.0 Ga
Shale curve w = 49.09, t1 = 1.887 Ga
Remodeled curve
w = 45.35, t1 = 2.0 Ga
Cluster 1
Cluster 2
Cluster 3
Fractionation
.204 error
Standard error
208Pb/204Pb
206Pb/204Pb
39.0
38.8
38.6
38.4
18.5
18.7
18.9
19.1
19.3
19.5

THE UNIVERSITY OF BRITISH COLUMBIA
Department of Geological Sciences
Vancouver, B.C. V6T 2B4
December 19, 1990

Mr. Colin Russell
Falconbridge Ltd.
202 - 856 Homer Street
Vancouver V6B 2W2

Dear Colin:

RE: GALENA LEAD ISOTOPE ANALYSES FOR VICTORIA SHOWING (082M)

Your sample BG1 (from DDH-BC-90-01:186.70m) has been analysed twice. Results are:

SAMPLE NUMBER	31036-001A	31036-001B
$^{206}Pb/^{204}Pb$	18.857	18.850
$^{207}Pb/^{204}Pb$	15.726	15.716
$^{208}Pb/^{204}Pb$	38.694	38.671
$^{207}Pb/^{206}Pb$	0.83398	0.83374
$^{208}Pb/^{206}Pb$	2.0520	2.0515

All analyses were performed in the Geochronology Laboratory of The University of British Columbia by Anne Pickering under my direction. Procedures used are as described in Godwin et al., 1988, with the exception that samples were normalized to the National Bureau of Standards sample NBS981 with values taken to be $^{206}Pb/^{204}Pb = 16.004$, $^{207}Pb/^{204}Pb = 15.390$, $^{208}Pb/^{204}Pb = 35.651$, $^{207}Pb/^{206}Pb = 0.961635$, $^{208}Pb/^{206}Pb = 2.22763$ and $^{204}Pb/^{207}Pb = 0.64977$.

The objective of this study was to finger print the lead isotopes from the galena. This was to allow determination of the geological origin of the Victoria showing.

The data plots in the mid-Devonian cluster (cluster 1) of Goutier, 1982 (pp. 41 & 45 attached). This clearly relates the deposit to known volcanogenic deposits in the Adams Plateau such as Rea Gold, Homestake (Kamad) and Birk Creek. Enclosed also is Goutier's Table 3.3 (pp. 37 - 38) for general reference.

Yours very truly

Anne D.R. Pickering
Research Assistant, UBC
PHONE: (604)228-2804 Office
FAX: (604)228-6088

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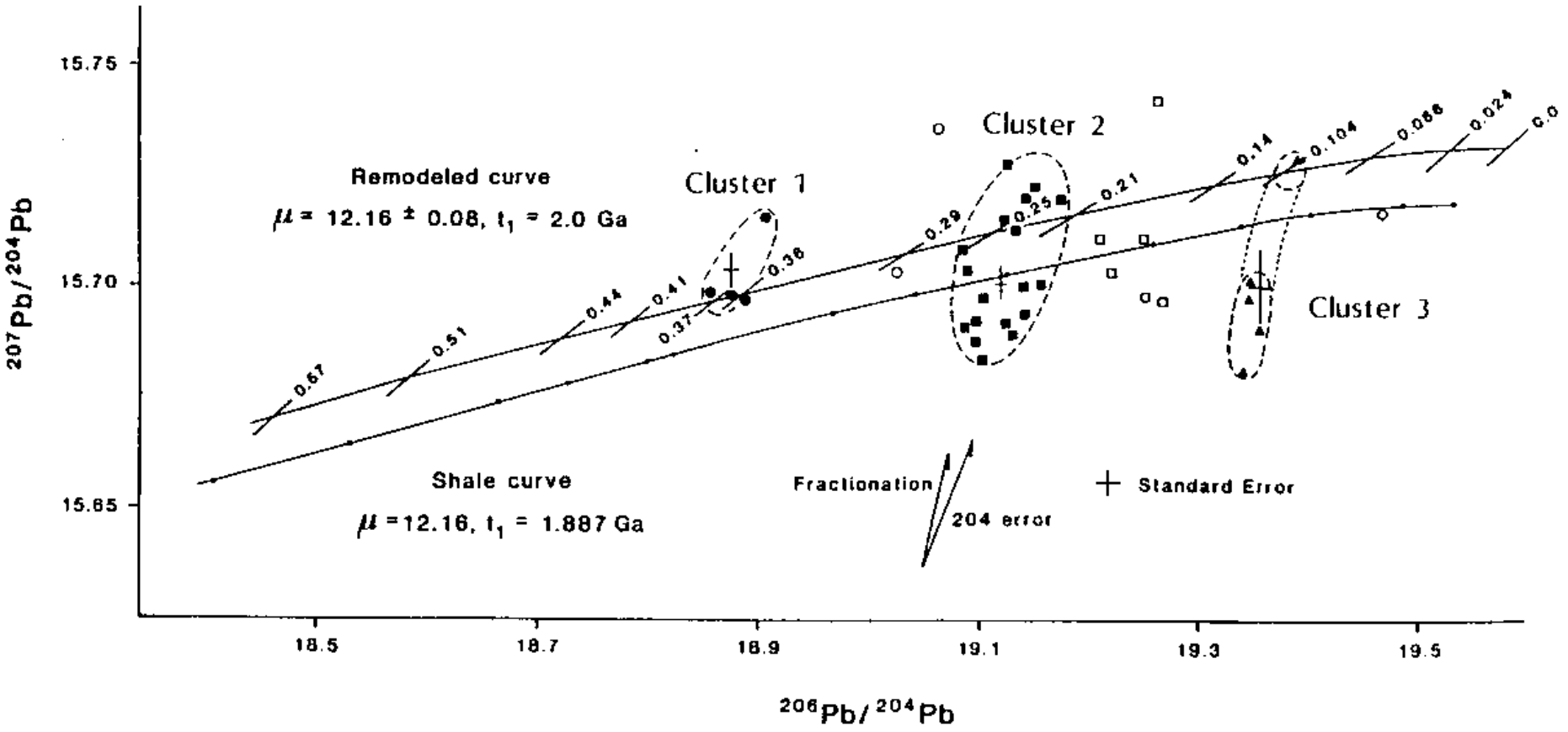
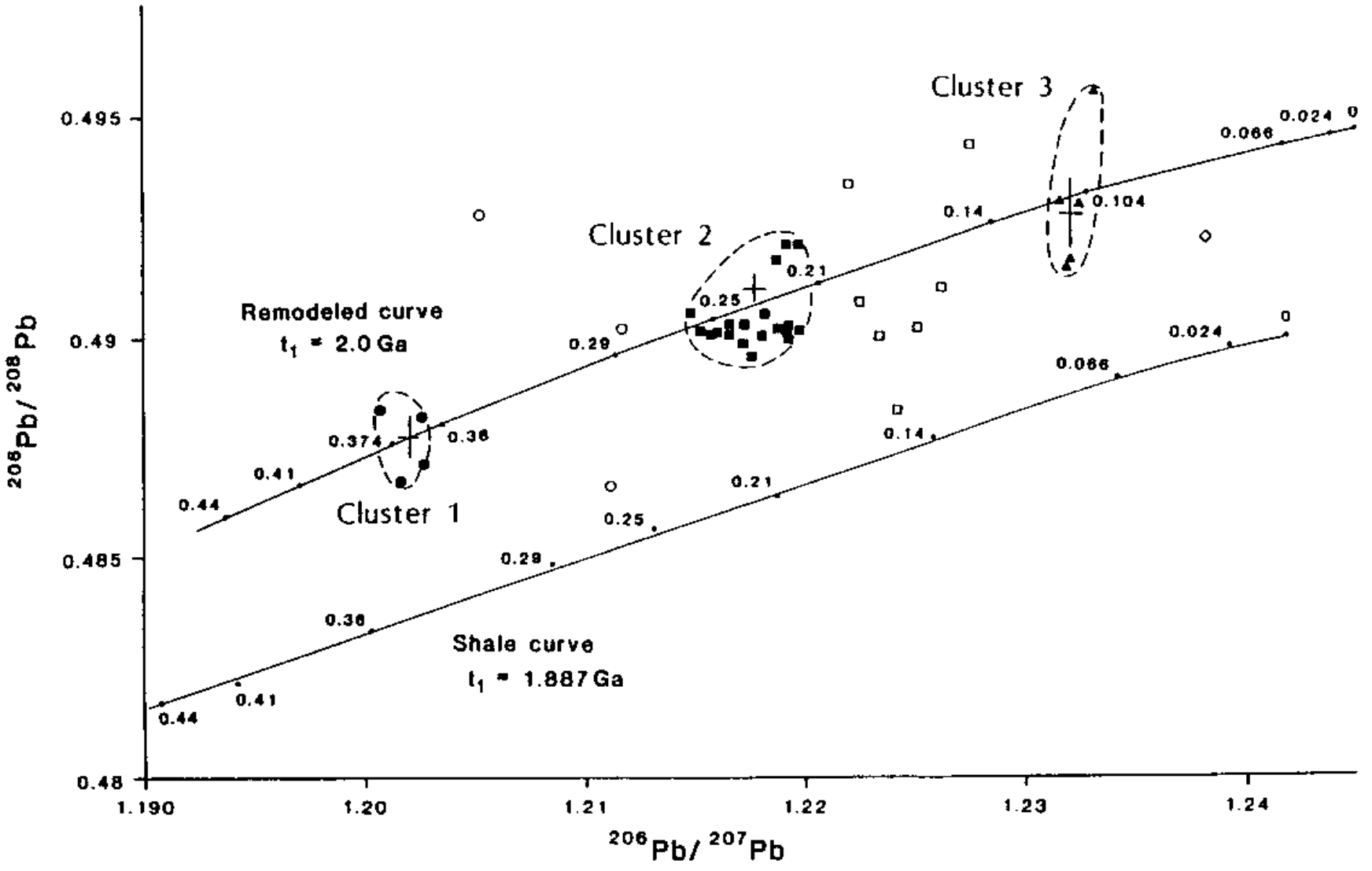

15.75
15.70
15.65
$^{207}Pb/^{204}Pb$
18.5
18.7
18.9
19.1
19.3
19.5
$^{206}Pb/^{204}Pb$
Remodeled curve
μ = 12.16 ± 0.08, t_1 = 2.0 Ga
Shale curve
μ = 12.16, t_1 = 1.887 Ga
Cluster 1
Cluster 2
Cluster 3
0.67
0.51
0.44
0.41
0.37
0.36
0.29
0.25
0.21
0.14
0.104
0.086
0.024
0.0
Fractionation
204 error
Standard Error


Cluster 3
Cluster 2
Cluster 1
Remodeled curve
t_1 = 2.0 Ga
Shale curve
t_1 = 1.887 Ga
0.495
0.49
0.485
0.48
1.190
1.20
1.21
1.22
1.23
1.24
$^{208}Pb/^{208}Pb$
$^{206}Pb/^{207}Pb$
0.066
0.024
0
0.104
0.14
0.21
0.25
0.29
0.374
0.36
0.41
0.44

APPENDIX D:

STRUCTURAL GEOLOGIST REPORT

MEMO

to: Mr. Douglas McLaughlin, Falconbridge Ltd.
from: D.A.Shaw, Gentoo Research Ltd.
re: Barriere Property Structural Review
date: 90-10-10

As requested Doug I am forwarding some comments/observations formed during my visit to the property at Barriere.

1. The "model" that was outlined (mineralized package within an upper plate that is located above a gently, east dipping thrust fault) is partly based on mapping done by the B.C.D.M. On the relevant map however the surface trace of the fault indicates a very steep or vertical structure. Consequently either the fault trace has been mis-mapped or the fault is more probably a reverse fault (this assumes that the stratigaphic relationships presented are correct) rather than a thrust fault.

2. If the indicated steep orientation of the fault is correct then the well developed gently dipping planar fabric observed in the "upper plate" is probably not genetically related to the fault structure. It is more probably related an earlier event. My suspicion, based on the form of the fabric and the host rocks, is that the fabric is related to a ductile or ductile-brittle event. If it were possible to isolate compositional layering I suspect that a series of isoclinal folds may be recognized.

3. Based on the reports of the other properties in the literature and on observations at the Barriere property the enviroment appears to be one that is conducive to concentration of mineralization by remobilization as opposed to having a "passive" v.m.s. situation.

4. The distribution of the different lithologies and the control of the mineralization/alteration on the west bank of Birch(?) Creek appeared to be structurally controlled. There appears to have been movement along pre-existing fractures with the situation appearing as one of later

tensional stress on an already joint fractured package.

Should you wish to discuss these comments and the results of recent programme I will be pleased to meet at your conveniance.

JAS

APPENDIX E:

GEOPHYSICAL CONTRACTORS' REPORT

GEOPHYSICAL REPORT

VLF, MAGNETIC AND INDUCED POLARIZATION SURVEY

BIRK CREEK PROPERTY

BARRIERE, B.C.

KAMLOOPS MINING DISTRICT

BY

DELTA GEOSCIENCE LTD.

OCTOBER 7, 1990.

GRANT A. HENDRICKSON, P.GEOPH.

TABLE OF CONTENTS

INTRODUCTION

At the request of Falconbridge Ltd., Delta Geoscience Ltd. conducted Induced Polarization, Resistivity, VLF and Magnetic surveys on major extensions to the Birk Creek Grid first surveyed in 1989. Approximately 60 km of line were surveyed during the period August 8 - September 4, 1990.

The Birk Creek property is located in the Kamloops Mining District, approximately 25 km northeast of the town of Barriere, B.C.

The exploration target is volcanogenic massive sulphide mineralization, hosted by felsic and mafic rocks of the Eagle Bay Group. The Baldy Batholith is just north of the survey area. This property has in the past been worked by other operators with limited success. Structural complications compounded by shallow dipping volcanic strata with intercalated conductive argillite and sulphide horizons have combined to present a difficult exploration problem.

Steep topography, dense forest and large areas of clear cut characterize the survey area. Fortunately, grid lines generally paralleled the topography. The exception to this are those lines that cross the Birk Creek canyon, where the topography created some difficult survey conditions. Elevation changes along the baseline (40,000E) are substantial as the property lies on a steep east facing slope.

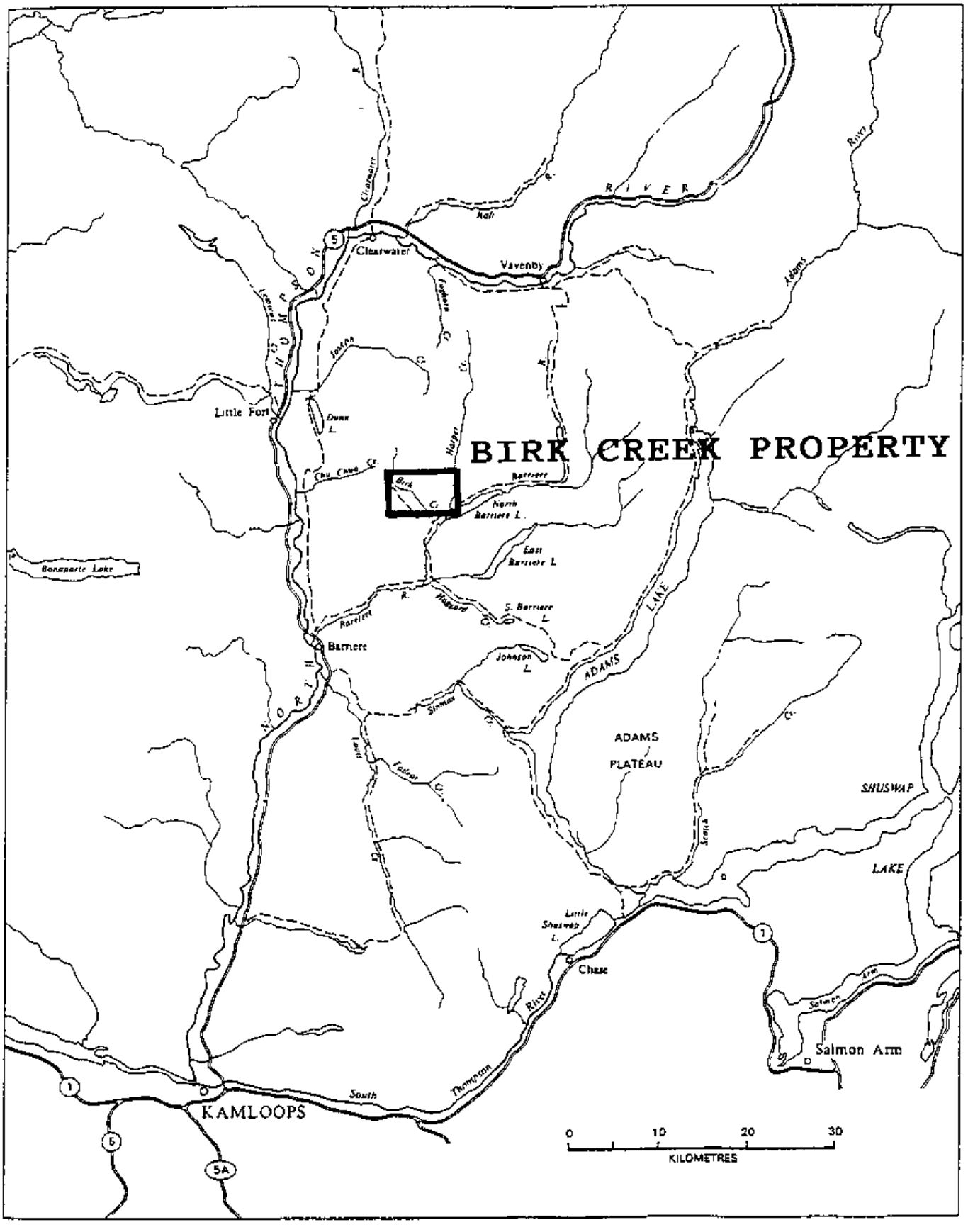
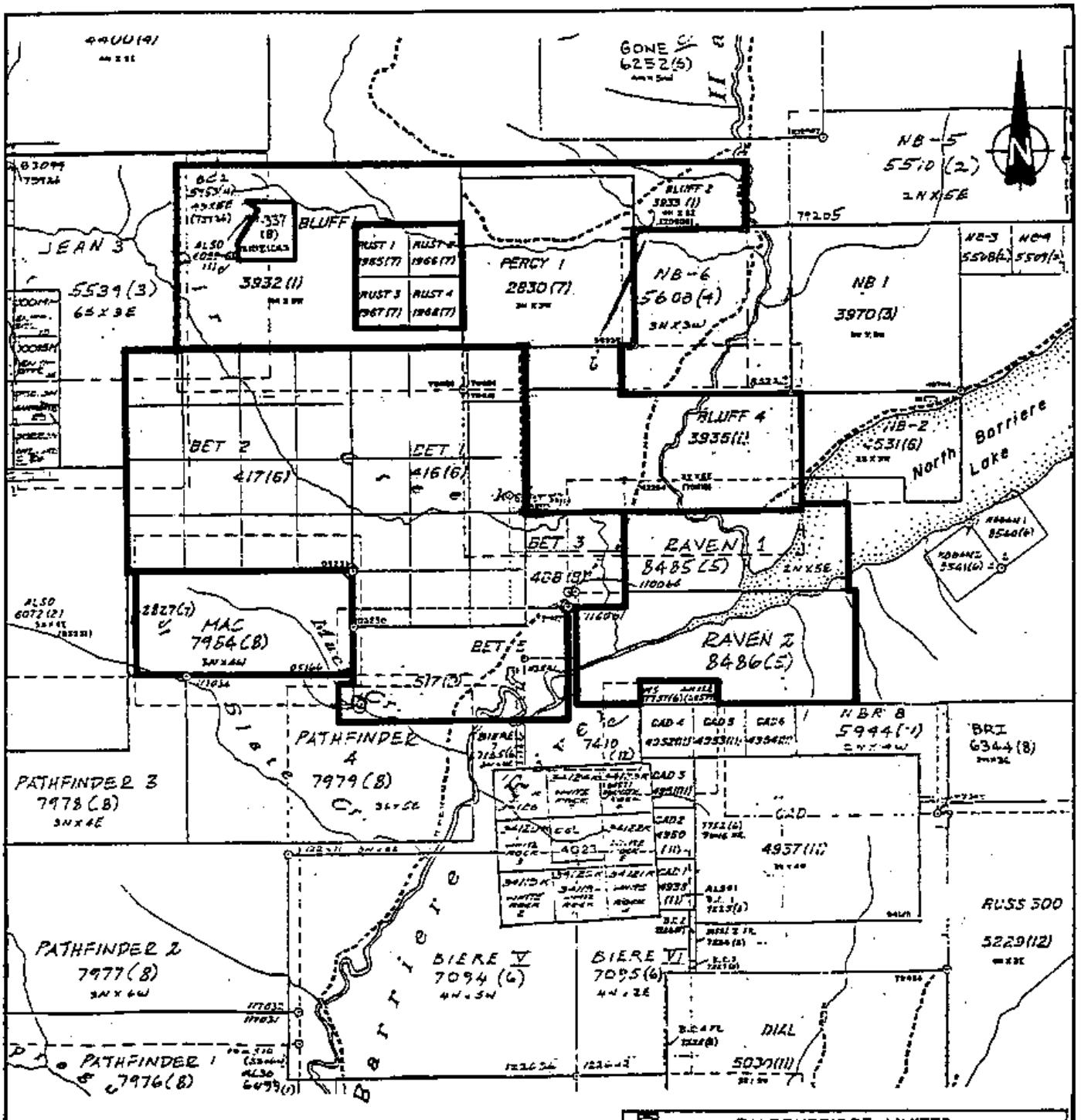


FIGURE 1: LOCATION MAP



FALCONBRIDGE LIMITED: Mac Claim, Raven 1 and 2 Claims

VICTORIA RESOURCES OPTION: Bluff 1, 2, 4 and Percy 1 Claims

BABIY/ RUST OPTION: Rust 1 - 4 Claims

BET / COMINCO OPTION: Bet 1, 2, 3 and 5 Claims

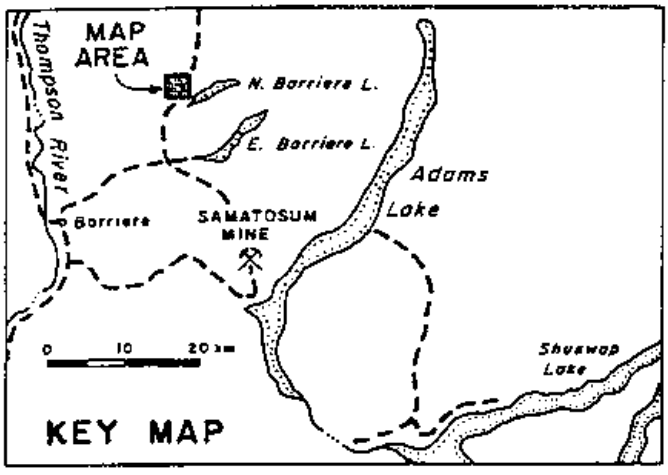
FALCONBRIDGE LIMITED

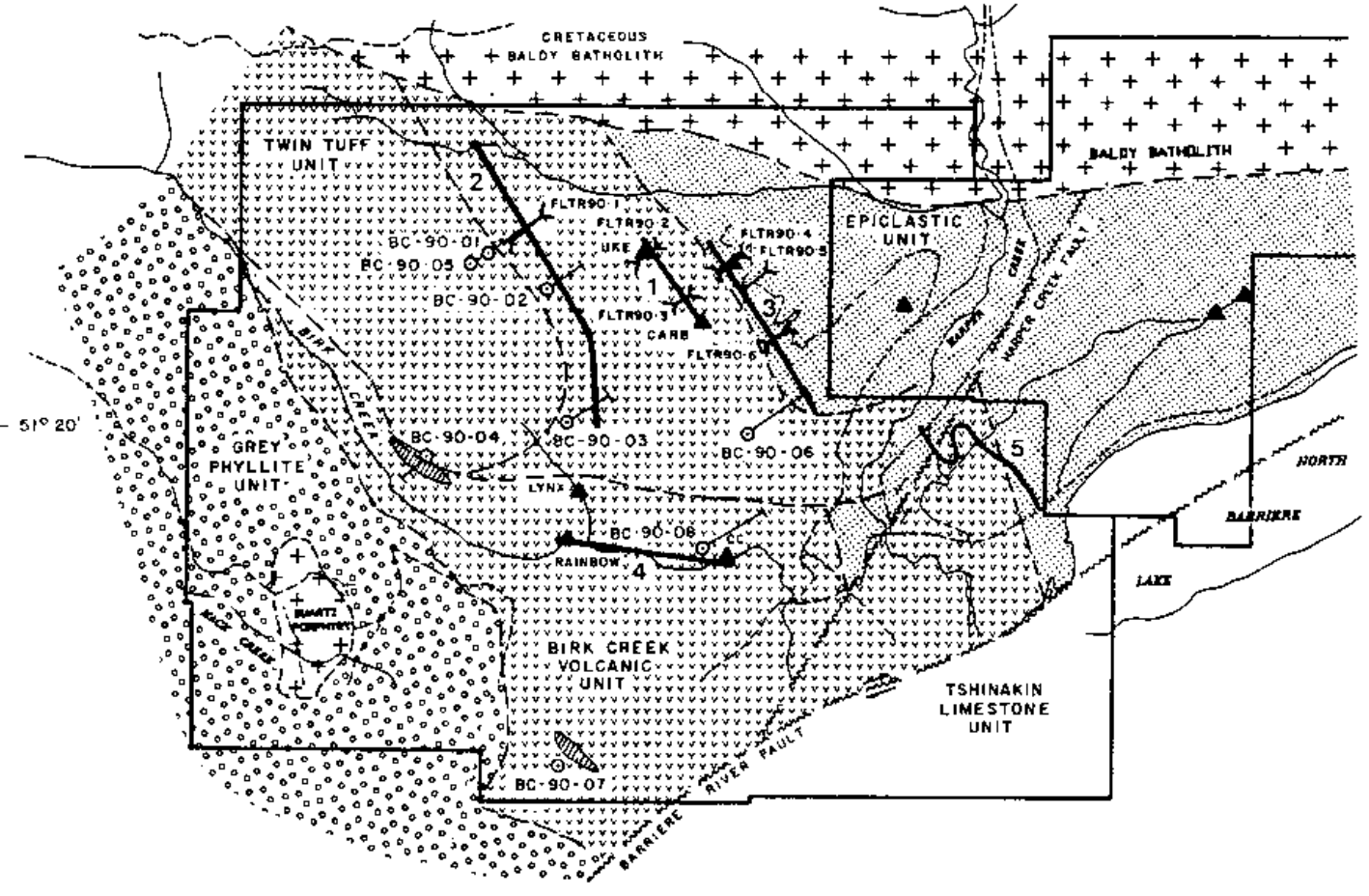
BIRK CREEK PROPERTY

CLAIM MAP

0 1 km

DRAWN BY: SC	DATE: 11-89	PROJECT NUMBER: 145-148	FIGURE NO: 2
REVISED BY: RDS	DATE: 02-91	N.T.S. NO: 82M/05W	
APPROVED BY: VJG	DATE: 11-89	MAP # 146-1-0005	





SCALE 1 : 50,000

1000 0 1000 m

LEGEND

SYMBOLS

- Massive Sulphide Showing
- Fault
- Roads
- Geological Contact
- Creeks, Rivers
- Property Boundaries
- 1 Uke Trend
- 2 Central Trend
- 3 Epiclastic Trend
- 4 Birk Creek Trend
- 5 Harper Creek Trend

LITHOLOGY

- Mafic to Intermediate Volcanics and Sediments
- Felsic-Intermediate Volcanics and Sediments
- Grey Phyllite
- 1990 Drill Hole
- Trench
- IP Anomaly

FALCONBRIDGE LIMITED

BIRK CREEK PROJECT

COMPILATION MAP

DRAWN BY: ADM	DATE: 12-90	PROJECT NUMBER: 146/147	FIGURE NO: 3
REVISED BY:	DATE:		
APPROVED BY: VJG	DATE: 12-90	N.T.S. MAP: 82M/05	
		MAP # 147-1-0005	

PERSONNEL

Craig Raynes	- Geophysicist/Crew Chief
Tom Bokenfohr	- Geophysical Technologist
4 Local Helpers.	
Grant Hendrickson	- Senior Geophysicist/Supervisor

EQUIPMENT

2 - Scintrex IGS VLF/MAG Receivers
1 - Scintrex MP-3 Base Station Magnetometer
2 - B.R.G.M. IP-6 Induced Polarization Receivers
2 - Huntec 2.5 kva Induced Polarization Transmitters
5 - King VHF Portable Radios
1 - Toshiba 3200 Field Computer
1 - Fujitsu DL2600 Printer/Plotter
2 - Toyota 4x4 Trucks
1 - Toshiba 1200 Field Computer

DATA PRESENTATION

Maps of the filtered vertical in-phase VLF, VLF vertical inphase combined with VLF horizontal field strength, total field magnetic, resistivity and chargeability data are presented as stacked profile plans and contour plans. All of these maps are at a scale of 1:5000. Note: The 1990 and 1989 surveys have been joined together to facilitate viewing all the data. In some of the stacked profile plans, the overlap has been left in so one can see how well the data fitted. Generally, the fit was excellent.

Profiles aid in interpretation since the profile shape (the wavelength) is directly related to the depth, attitude and width of anomalous areas.

Profile data is presented increasing to the right or north from a base level (value at line position). Stacked profiles give an overall view of the data prior to any contouring bias.

Contoured plans give a good spatial view of the data's intensity and continuity.

The VLF data was recorded using either the Cutler, Maine station, NAA, transmitting at 24.0 khz, or Annapolis, Maryland, NSS, transmitting at 21.4 khz. Most of the 1989 VLF work was done with Cutler, whereas the 1990 VLF work was generally done with Annapolis. Separate profile sections of the filtered VLF data for each line have been prepared, with the Fraser and Hjelt filtered values posted below the profiles. These sections should be appended to this report.

SURVEY PROCEDURE

The grid was established with a line spacing of 200 meters and a station separation of 25 meters. Co-ordinates of the grid are in northings and eastings. The Baldy Batholith on the eastern side of the property limited the eastern extent of the survey.

VLF and magnetic readings were taken at 12.5 meter intervals along the grid lines. The VLF stations NAA (alternate), and NSS (primary) were chosen for this survey since they are approximately on strike with the expected strike of the geological features of interest. Note that for optimum electromagnetic coupling, the conductive features should strike directly towards the VLF transmitter.

Three components of the VLF electromagnetic field were measured: the horizontal field strength, vertical in-phase and vertical quadrature. All of the vertical in-phase data was subsequently filtered using the Fraser and Hjelt filters. These filtering techniques help in understanding the spatial position of conductive zones, both along strike and downdip. Filtering also minimizes topographical effects in the data, an important consideration for this survey area.

Technical details of the filtering procedures are referenced at the end of this report and the reader is urged to refer to them.

Skin depth is an important parameter of VLF surveying which should be considered. It is a useful term for describing the depth of penetration of electromagnetic signals. A good conductor buried at one skin depth will provide a signal at the surface with an amplitude equal to approximately 10% of the incident field. Detection of this weak a signal is difficult in the presence of any noise. Skin depth decreases with an increase in frequency, or a decrease of the resistivity of the bedrock and/or overburden. Skin depth for this survey area is estimated to be generally 125 meters, however it is substantially less in the conductive argillite areas.

The total magnetic field was recorded every 12.5 meters along the lines. Magnetic field measurements were corrected for any diurnal variation and to a common datum, through the use of the MP-3 base station magnetometer, which sampled the field every minute for the duration of the magnetic survey. The earth's magnetic field was relatively quiet (±30nt) for the survey period.

The gradient array was chosen for the Induced Polarization survey work. The relative operational ease of this array is an important factor, since the grid topography was very severe at times. The current electrode separation "AB" was set at 1200m, while the potential electrode separation "MN" was 50m. Overlap on each reading was 50%, i.e. 25m between reading points. This array size gives good horizontal resolution, with the prime depth of investigation focused in the +100m range. We would have preferred to use a smaller "MN", however weak signals in the low resistivity areas required the larger "MN". The size and irregular nature of the grid required surveying with a series of gradient blocks. Each gradient block covered an east-west distance of 600m and a strike distance (north-south) of 5 lines. The east and west edges of the gradient blocks were joined together by overlapping two or three stations and comparing the data for the current electrode positions. Generally, the overlaps were close, however at times the placement of one of the remote current electrodes on a chargeability or resistivity anomaly, elevated the background at the edge of the block. This elevated background required adjustment prior to joining the blocks together. Joining blocks together along strike was quite straight forward, since there is better continuity along strike than across strike.

These surveys have been designed to have good lateral resolution, good signal to noise response and excellent mobility, to help solve four main exploration problems:

a) spatial position and strength of subsurface sulphide zones.

b) spatial position of structures, both along strike and cross-cutting.

c) to respond to the different lithologies to assist in geological mapping.

d) cost effective surveying in rough terrain.

The Induced Polarization (chargeability) was expected to respond primarily to sulphide zones and only moderately to changes in lithology. Pyritic argillites would also respond well to the I.P. The intimate relationship between sulphide zones and pyritic argillaceous zones would make it impossible to differentiate between these responses.

The Resistivity survey was expected to respond primarily to the lithology, and moderately to structures (linear resistivity lows). Any correlation of high chargeability with resistivity lows would be a significant exploration target. Deeply buried large sulphide deposits will only produce a modest resistivity low that generally occurs slightly downdip of the centre of the chargeability response.

The VLF survey was expected to respond primarily to graphitic structures, argillites and/or sulphide zones.

The magnetics were expected to respond primarily to near surface pyrrhotite/magnetite mineralization and moderately to lithology, due to slight changes in the magnetic susceptibility of the underlying bedrock. Mafic volcanic rocks or sediments normally have a slightly higher magnetic response than felsic volcanics and tuffs. Felsic intrusives are generally magnetic lows, however the response of intrusives depends largely on the amount of disseminated magnetite mineralization present - something which varies considerably between intrusives.

Intense hydrothermal alteration of mafic volcanic to intrusive rocks can destroy any magnetite mineralization, thus these rock types can display a very "local" magnetic low in areas of interest.

DISCUSSION OF THE DATA

VLF:

The map of vertical inphase and horizontal field strength profiles (Fig. #10), clearly illustrates the quality of the raw data. Anomalies (conductors) are indicated by cross-overs in the tilt angle (from positive to negative as you move east), that are coincident with peaks in the horizontal field strength data. Numerous VLF conductors have been detected. Severe terrain effects are indicated in the strong isolated VLF responses occurring at approx. 39300E on lines 22200N and 22400N. Abrupt level changes in horizontal field strength are due to variations in the output power of the VLF transmitter.

The Fraser filter contour map (Fig. #7) accurately shows the near surface location and relative strength of most VLF responses. The Hjelt filter sections that accompany this report will help to show the depth and attitude of all the VLF responses, including the deeper and possibly more interesting responses.

The shallow VLF responses correlate well with areas of low resistivity. The important correlation of low resistivity, VLF conductivity and high chargeability is common on the east central side (approx. 41800E) of the property and is caused by a broad area of near surface graphitic pyritic argillites, possibly containing some massive sulphide lenses.

Although numerous VLF conductors were detected, the strength, isolated nature and size of certain responses stand out as worthy of more attention. These areas are:

1: twin responses at approx. 39300E on lines 22200N and 22400N.

2: parallel responses at approx. 39900E and 40075E on lines 22000N, 21800N and 21600N.

3: responses at approx. 40100E on lines 20800N and 20600N.

4: responses at approx. 41050E on lines 20400N, 20600N and 20800N.

5: responses at approx. 42600E on lines 20000N and 19800N.

6: responses at approx. 41360E on lines 22800N and 22600N.

Areas 1, 5 and 6 have directly correlating strong I.P. and resistivity lows, thus should be high priority follow-up targets. Areas 2 and 4 have good I.P. responses on their eastern flank, thus also deserve serious attention. Area 3 does not have any correlating I.P. response, thus is not of any significance for sulphide mineralization.

MAGNETICS:

The magnetic total field data (Figs. #6 & 9) indicates numerous narrow magnetic responses, particularly in the east central and northwest corner of the grid. The correlation of magnetic responses line to line is good, considering the 200m. line spacing. The spikey nature of most responses suggests narrow, depth limited, near surface pyrrhotite and/or magnetite lenses. The areas of spikey magnetics occur within broad areas of elevated magnetic responses, thus there must be a mafic component to the host rock. There is a good correlation of magnetic anomalies with VLF conductivity and high chargeability/low resistivity, which suggests the mineral pyrrhotite is associated with the cause of many of the responses. Most magnetic anomalies appear to have a moderate west dip, although their dip extent (lenses?) is very limited. Generally, the interference of numerous adjacent thin magnetic horizons makes it difficult to successfully model the magnetic data. The magnetic responses at 42630E on lines 20000N and 20200N do however display good depth extent and if modelled would display a 30 to 40 degree west dip. Note that there is an excellent directly correlating I.P. response.

The intrusives flanking the east side of the grid appear to have a low magnetic response, however this should be correlated more closely with the detailed geology to be sure. The pyrrhotite zones that dominate the east central side of the magnetic maps may become non magnetic pyrite zones as one moves to the west away from the intrusive contact.

The similarity of the magnetic responses in the east, central and north central part of the grid suggests some similarity to underlying geology, however the resistivity background is much higher in the north central area, therefore the geology must be different. The broad area of low resistivity in the east central part of the grid may in part be due to a general increase in sulphide mineralization, perhaps related to the proximity of the Baldy Batholith, however the prime cause is a large graphitic argillite horizon.

RESISTIVITY:

The resistivity contour map (Fig. #5) is a very interesting map in that it appears to map the geology quite well. The felsic and mafic volcanic rocks of the Eagle Bay formation are largely tuffaceous rocks within this grid and are showing up as the higher resistivity areas. Felsic and mafic flow rocks would normally be more resistive, with the felsic rocks having the highest resistivity. A good example of this may be the broad linear high resistivity area centered around 39100E and 22400N. Rocks that have been intensely silicified rocks will also show up as resistivity highs. The broad areas of lower resistivity sandwiched between the higher resistivity areas, are likely caused by intercalated weakly pyritic sediments.

The Baldy Batholith on the far east side of the grid is starting to show up as a moderately resistive (approximately 800 ohm-m) area.

The east central side of the grid (41450E)is dominated by a broad area (700 meters wide) of low resistivity (less than 200 ohm-m), which can be largely attributed to carbonaceous pyritic argillites containing several pyrrhotite lenses.

The isolated pronounced resistivity low centered at 22200N and 39500E is an interesting feature since it correlates with a strong I.P. response. In addition, the intense isolated resistivity low at 39280E and 22300N (stratigraphically below the abovementioned anomaly) was found to have a strong polarized I.P. response.

The resistivity low at 39670E, L21500N, and a pair of resistivity lows at 40050E on lines 21400N and 21600N, also correlate closely with high chargeability.

The circular shaped resistivity low at 40300E on line 22400 is a nicely isolated feature with a good I.P. correlation.

The large resistivity low occurring in the extreme grid southeast corner (42625E on line 20000N), is very interesting since it correlates with a very strong I.P. response.

The series of resistivity lows trending E-W at approx. 21400N may be partly due to a major E-W trending structure. Large offsets in the resistivity contour patterns are probably indicative of fault zones, i.e. at 21600N, 39100E and at 19700N.

CHARGEABILITY:

The chargeability survey has delineated several good anomalies, most of which appear to be thin linear near surface lenses that correlate with VLF conductors and low resistivity zones. The dip of these zones appears to be moderate to steeply grid west. The correlation along strike is fair considering the 200 meter line spacing. These anomalies have to be checked out carefully with the data from previous operators to ensure all significant size responses have been tested by drilling, or against the geology and geochemistry. Anomalies definitely within the argillites should be downgraded, but not completely ignored.

It's interesting to note that the chargeability anomalies that are building up at the extreme northeast and northwest corners of the grid are also correlating with low resistivity. The response at the west end of line 24400N should be examined closely.

The most significant I.P. response (in terms of size and strength, are listed below and given a priority for further followup (drilling).

Zone	Centered At	
A	39280E, 22200N	(high priority)
B	39620E, 22200N	(high priority)
C	40100E, 21400N	(twin responses) (high priority)
D	40400E, 22400N	(twin responses) (medium priority)
E	41300E, 22200N	(likely hosted by argillites) (medium priority)
F	41425E, 21300N	(likely hosted by argillites) (high priority)

This broad response (F) is interesting in that it may be caused by a deeply buried source (approximately 150m deep). Several shallower and smaller I.P. responses are superimposed on this broad response. The significant resistivity low that is centered just to the west or downdip of this large I.P. response is also encouraging.

Zone	Centered At	
H	41225E, 20600N	(likely hosted by argillites) (medium priority)
I	42650E, 19800N	(very strong I.P. response dipping approx. 30 to 40 degrees to the grid west. The spatial extent of this zone has not been completely defined) (high priority)

CONCLUSIONS AND RECOMMENDATIONS

The geophysical surveys have helped to map the geology of the grid and detect probably zones of significant sulphide mineralization. The resistivity survey in particular has shown that the geology is largely sedimentary, with intercalated bands of volcanic flows and tuffs.

Numerous areas of high chargeability, high magnetics, and low resistivity that correlate with VLF conductors have the potential to be significant massive sulphide deposits. The effect of a pyritic (pyrrhotite?) argillaceous host rock has certainly made many of these anomalies (east central area) look better than they actually are.

Zones A, B, C, F and I defined and listed in the discussion on Chargeability, should be tested by drilling. This drilling will evaluate the best geophysical targets and provide useful geologic information to improve the understanding of the geophysical surveys in this geologic environment. Note that this report is written with only general knowledge of the grid geology. At some point in the future, the detailed grid geology should be closely correlated with the geophysics.

The Hjelt filter sections (VLF-EM) that were produced to accompany this report, should be studied carefully, particularly for Zones A, B & C, since they will provide useful information on the depth and attitude of the VLF-EM conductors associated with the five zones picked as drill targets from the I.P. survey.

The rough topography and general shallow west dipping strata will combine to present some problems in deciding the optimum drill collar location. Drill targets A, B & C appear to be steeply dipping, perhaps due to a local folding, whereas targets F & I are dipping approx. 30 degrees to the west. Targets F & I should be drilled to a depth of 200 meters to ensure possible parallel and deeper sulphide horizons are tested.

Borehole electromagnetic surveys should be planned to evaluate the possibility that minor sulphide intersections can improve dramatically adjacent (within 100m) to the hole.

Grant A. Hendrickson, P.Geoph.

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STATEMENT OF QUALIFICATION

Grant A. Hendrickson

- B.Science, U.B.C. 1971, Geophysics option.
- For the past 19 years, I have been actively involved in mineral exploration projects throughout Canada, the United States, Europe and Central and South America.
- I am a registered Professional Geophysicist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta.
- I am an active member of the S.E.G., E.A.E.G., and B.C.G.S.

Dated at Delta, British Columbia, this 8 day of OCTOBER, 1990.

G. Hendrickson

Grant A. Hendrickson, P.Geoph.

LOGISTICAL REPORT

CRONE BOREHOLE PEM SURVEY

BIRK CREEK PROJECT

BARRIERE AREA, BRITISH COLUMBIA

on behalf of

FALCONBRIDGE LTD.
202 - 856 Homer Street
Vancouver, B.C. V6B 2W2

Field work completed: October 19-22, and November 3-5, 1990

by

Alan Scott, Geophysicist
SCOTT GEOPHYSICS LTD.
4013 West 14th Avenue
Vancouver, B.C. V6R 2X3

November 16, 1990

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1. INTRODUCTION

Borehole Pulse EM surveys were performed on the Birk Creek Project, Barriere Area, B.C., by Scott Geophysics Ltd. on behalf of Falconbridge Ltd. The field work was done within the periods October 19-22 and November 3-5, 1990.

The axial component of the secondary magnetic field and the primary pulse were measured using various loop sizes and configurations.

This report presents the results of the survey, describes the instrumentation and procedures, and gives the approximate depth of selected conductors detected on the survey.

2. PERSONNEL

Jim Hawkins, geophysicist, was the party chief on the survey and operated the PEM receiver. Doug McLaughlin, geologist, was the Falconbridge representative on site for the survey.

3. INSTRUMENTATION AND PROCEDURES

A Crone 20 channel digital PEM receiver, and a Crone 2000 watt PEM transmitter were used for the downhole PEM survey. Time reference between the two was maintained by a sync cable link.

Readings of the primary pulse and the axial component of the secondary magnetic field (at 20 time channels) were read routinely at 10 meter intervals using a standard Crone borehole probe.

The receiver and transmitter settings and loop parameters are given for each borehole in section 4 of this report. The ramp time, time base, and current were kept constant throughout the survey.

The survey data was archived, processed, and plotted using a Toshiba 1200 microcomputer running Crone PEM and proprietary software.

4. BOREHOLE SUMMARY

Hole BC 90-01
Surveyed October 22, 1990 to a depth of 300 meters.

Loops: oriented with respect to grid
Collar Loop (200 x 200 m) centered around hole
SW directional loop (200 x 200 m)

Receiver/transmitter settings:

Ramp	1.5 msecs
Time Base	16.6 msecs
ZTS	1521.0
Current	8 amps (peak to peak)
Stacking	1024

Weak offhole response at 220 meters (SW loop).

Hole BC 90-02
Surveyed October 19, 1990 to a depth of 230 meters.

Loops: oriented with respect to grid
Collar Loop (150 x 150 m) centered around hole
NE directional loop (150 x 150 m)

Receiver/transmitter settings:

Ramp	1.5 msecs
Time Base	16.6 msecs
ZTS	1516.5
Current	8 amps (peak to peak)
Stacking	1024

Hole BC 90-03
Surveyed October 21, 1990 to a depth of 150 meters.

Loops: oriented with respect to grid
Collar Loop (100 x 100 m) centered around hole
NE directional loop (100 x 100 m)

Receiver/transmitter settings:

Ramp	1.5 msecs
Time Base	16.6 msecs
ZTS	1525.5
Current	8 amps (peak to peak)
Stacking	1024

Anomaly at approx. 30 meters (NE loop).

Hole BC 90-04
Hole blocked near surface, plastic casing broken.

Hole BC 90-05
Surveyed October 22, 1990 to depth of 400 meters.

Loops: oriented with respect to grid
Collar Loop (200 x 200 m) centered around hole
NE directional loop (200 x 200 m)

Receiver/transmitter settings:

Ramp	1.5 msecs
Time Base	16.6 msecs
ZTS	1521.0
Current	8 amps (peak to peak)
Stacking	1024

Hole BC 90-06
Surveyed November 4, 1990 to depth of 340 meters.

Loops: oriented with respect to grid
Collar Loop (200 x 200 m) centered around hole
SE directional loop (200 x 200 m)
SW directional loop (200 x 200 m)
NW directional loop (200 x 200 m)

Receiver/transmitter settings:

Ramp	1.5 msecs
Time Base	16.6 msecs
ZTS	1512.0
Current	8 amps (peak to peak)
Stacking	1024

Anomaly at approx. 175 meters (collar loop).

Hole BC 90-07
Surveyed November 5, 1990 to depth of 340 meters.

Loops: oriented with respect to grid
Collar Loop (200 x 200 m) centered around hole
SE directional loop (200 x 200 m)
SW directional loop (200 x 200 m)
NW directional loop (200 x 200 m)
NE directional loop (200 x 200 m)

Receiver/transmitter settings:

Ramp	1.5 msecs
Time Base	16.6 msecs
ZTS	1498.5
Current	8 amps (peak to peak)
Stacking	1024

Hole BC 90-08
Surveyed November 3, 1990 to depth of 290 meters.

Loops: oriented with respect to grid
Collar Loop (150 x 150 m) centered around hole
SE directional loop (150 x 150 m)
SW directional loop (150 x 150 m)
NW directional loop (150 x 150 m)

Receiver/transmitter settings:

Ramp	1.5 msecs
Time Base	16.6 msecs
ZTS	1525.5
Current	8 amps (peak to peak)
Stacking	1024

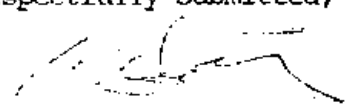
Anomaly at approx. 245 meters (NW loop).

6. RECOMMENDATIONS

A preliminary examination of the results of the borehole PEM survey on the Birk Creek Property indicates the presence of discrete conductors that merit further investigation.

A detailed interpretation of these results, and correlation to geological and geochemical information, is required before any specific recommendations could be made.

Respectfully Submitted,



Alan Scott, Geophysicist

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-01
Tx Loop : COL
Date : Oct 22, 1990
File : BC9001C.PEM

Station	Cmp	Gains	ATS	Delay	Stack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
10m	Z	2 A7	1521.0	90	1024	PP	82	43070	874	425	260	189	142	99	72	56	46
20m	Z	2 A7	1521.0	90	1024	PP	83	44670	919	423	262	185	140	87	56	48	34
30m	Z	2 A7	1521.0	90	1024	PP	84	47380	1012	450	279	189	139	89	66	47	36
40m	Z	2 A7	1521.0	90	1024	PP	85	47890	1064	481	290	198	143	91	65	48	37
50m	Z	2 A7	1521.0	90	1024	PP	86	46420	1092	497	297	196	142	91	62	45	36
60m	Z	2 A7	1521.0	90	1024	PP	87	43090	1097	503	305	194	137	83	59	43	33
70m	Z	2 A7	1521.0	90	1024	PP	88	38530	1094	510	305	189	131	77	53	39	31
80m	Z	2 A7	1521.0	90	1024	PP	89	33750	1052	524	302	185	119	75	50	37	29
90m	Z	3 A7	1521.0	90	1024	PP	90	29000	1101	538	312	180	111	66	45	34	26
100m	Z	3 A7	1521.0	90	1024	PP	91	24600	1111	561	316	176	105	60	42	31	24
110m	Z	3 A7	1521.0	90	1024	PP	92	20770	1122	581	328	181	104	57	38	29	22
120m	Z	3 A7	1521.0	90	1024	PP	93	17500	1158	603	342	178	97	57	37	26	22
130m	Z	4 A7	1521.0	90	1024	PP	94	14750	1188	638	356	181	97	53	36	24	19
140m	Z	4 A7	1521.0	90	1024	PP	95	12480	1206	677	379	190	97	51	32	24	19
150m	Z	4 A7	1521.0	90	1024	PP	96	10580	1296	719	405	200	97	53	31	23	20
160m	Z	4 A7	1521.0	90	1024	PP	97	9050	1347	783	436	215	105	54	31	23	19
170m	Z	4 A7	1521.0	90	1024	PP	98	7763	1452	861	489	234	110	58	34	22	19
180m	Z	5 A7	1521.0	90	1024	PP	99	6668	1631	992	562	265	119	58	33	23	19
190m	Z	5 A7	1521.0	90	1024	PP	100	5790	1850	1142	647	305	135	62	34	24	18
200m	Z	5 A7	1521.0	90	1024	PP	101	5069	1879	1184	680	320	139	64	35	24	19
210m	Z	5 A7	1521.0	90	1024	PP	102	4467	1925	1241	701	333	146	66	37	25	20
220m	Z	5 A7	1521.0	90	1024	PP	103	3917	1904	1238	718	340	150	71	39	26	20
230m	Z	6 A7	1521.0	90	1024	PP	104	3471	1791	1194	704	334	150	71	40	28	22
240m	Z	6 A7	1521.0	90	1024	PP	105	3073	1702	1155	676	334	150	76	44	30	24
250m	Z	6 A7	1521.0	90	1024	PP	106	2745	1540	1052	624	312	145	75	45	32	24
260m	Z	6 A7	1521.0	90	1024	PP	107	2442	1336	909	547	280	140	73	46	35	27
270m	Z	6 A7	1521.0	90	1024	PP	108	2200	1189	812	491	258	131	74	49	34	28
280m	Z	6 A7	1521.0	90	1024	PP	109	1984	1046	723	443	242	136	79	54	38	27
290m	Z	7 A7	1521.0	90	1024	PP	110	1790	984	676	422	232	124	76	54	41	32
300m	Z	7 A7	1521.0	90	1024	PP	111	1636	908	631	397	224	126	78	54	43	33

CRONE GEOPHYSICS & EXPLORATION LTD

BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-01
Tx Loop : COL
Date : Oct 22, 1990
File : BC9001C.PEM

Station	Cmp	10	11	12	13	14	15	16	17	18	19	20
10m	Z	35	27	20	16	14	10	8	6	5	3	3
20m	Z	27	19	15	9	6	4	3	2	2	0	1
30m	Z	26	19	14	11	6	4	3	2	2	1	1
40m	Z	28	20	13	9	7	5	3	3	1	1	1
50m	Z	26	19	14	10	7	5	4	2	2	0	1
60m	Z	24	17	13	9	7	5	3	2	1	1	1
70m	Z	22	15	11	10	7	5	4	1	1	1	1
80m	Z	21	15	11	8	6	5	3	1	2	0	0
90m	Z	20	15	11	8	6	3	3	2	1	1	0
100m	Z	18	15	11	7	5	3	2	2	1	1	0
110m	Z	18	12	1	8	5	3	3	1	1	1	0
120m	Z	15	11	9	8	5	3	2	1	1	1	0
130m	Z	16	12	9	7	5	3	2	2	1	0	0
140m	Z	16	12	1	7	5	3	2	1	1	0	0
150m	Z	15	12	8	7	5	3	2	2	1	0	0
160m	Z	15	12	9	7	5	3	2	2	1	1	0
170m	Z	16	13	9	7	5	3	1	1	1	1	0
180m	Z	15	12	1	7	5	3	2	1	1	1	0
190m	Z	15	13	1	6	5	4	2	2	1	0	0
200m	Z	16	12	1	8	5	4	3	2	1	1	0
210m	Z	17	13	10	7	5	3	2	1	1	1	0
220m	Z	17	13	11	8	5	4	2	1	1	1	0
230m	Z	18	14	11	8	6	4	3	1	1	1	0
240m	Z	20	16	11	9	6	5	3	1	1	1	0
250m	Z	20	15	12	9	7	4	2	1	1	1	0
260m	Z	22	17	13	1	7	4	3	2	1	0	0
270m	Z	24	19	14	11	7	5	3	2	1	0	0
280m	Z	20	18	16	1	8	4	3	2	1	1	1
290m	Z	25	19	16	12	8	5	3	2	1	0	0
300m	Z	28	20	17	11	8	5	3	2	1	0	0

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRRCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-01
Tx Loop : SW
Date : Oct 22, 1990
File : BC9001SW.PEM

Station	Cmp	Gains	RTS	Delay	Stack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
10m	Z	6 A7	1521.0	90	1024	PP	141	-3162	159	136	86	46	32	18	11	7	4
20m	Z	6 A7	1521.0	90	1024	PP	140	-2334	197	136	87	59	35	18	17	8	9
30m	Z	7 A7	1521.0	90	1024	PP	139	-1803	226	169	107	68	40	22	16	14	5
40m	Z	7 A7	1521.0	90	1024	PP	138	-1383	249	182	117	73	41	23	17	10	7
50m	Z	7 A7	1521.0	90	1024	PP	137	-998	280	186	123	76	43	27	17	13	9
60m	Z	7 A7	1521.0	90	1024	PP	136	-685	294	202	133	79	49	27	18	13	9
70m	Z	7 A7	1521.0	90	1024	PP	135	-416	316	211	139	85	52	30	20	13	9
80m	Z	7 A7	1521.0	90	1024	PP	134	-206	326	214	141	86	52	31	18	13	1
90m	Z	7 A7	1521.0	90	1024	PP	133	-46	325	217	144	88	50	32	21	13	10
100m	Z	7 A7	1521.0	90	1024	PP	132	82	331	225	155	94	54	34	24	14	12
110m	Z	7 A7	1521.0	90	1024	PP	131	171	326	226	158	98	57	35	22	17	11
120m	Z	7 A7	1521.0	90	1024	PP	130	243	296	226	158	102	57	37	22	17	12
130m	Z	7 A7	1521.0	90	1024	PP	129	300	306	231	166	104	64	38	22	17	11
140m	Z	7 A7	1521.0	90	1024	PP	128	325	308	243	174	112	64	38	23	17	12
150m	Z	7 A7	1521.0	90	1024	PP	127	348	322	255	186	120	68	39	24	16	12
160m	Z	7 A7	1521.0	90	1024	PP	126	350	324	265	198	127	76	43	27	20	14
170m	Z	7 A7	1521.0	90	1024	PP	125	349	340	290	221	142	80	44	27	18	14
180m	Z	7 A7	1521.0	90	1024	PP	124	343	397	352	268	171	97	52	31	21	13
190m	Z	7 A7	1521.0	90	1024	PP	123	340	498	437	327	207	113	62	34	21	14
200m	Z	7 A7	1521.0	90	1024	PP	122	342	459	421	326	207	113	61	34	23	16
210m	Z	7 A7	1521.0	90	1024	PP	121	345	559	502	376	232	123	67	36	22	16
220m	Z	7 A7	1521.0	90	1024	PP	120	335	557	510	382	236	129	68	39	24	17
230m	Z	7 A7	1521.0	90	1024	PP	119	330	481	447	347	220	122	65	38	23	16
240m	Z	7 A7	1521.0	90	1024	PP	118	314	476	444	347	214	122	66	39	24	17
250m	Z	7 A7	1521.0	90	1024	PP	117	308	448	404	306	193	110	61	36	24	17
260m	Z	7 A7	1521.0	90	1024	PP	116	290	374	340	262	170	99	58	37	24	18
270m	Z	7 A7	1521.0	90	1024	PP	115	284	329	293	225	148	89	54	35	25	18
280m	Z	7 A7	1521.0	90	1024	PP	114	278	298	264	203	136	84	53	34	25	18
290m	Z	7 A7	1521.0	90	1024	PP	113	265	275	240	184	124	80	50	34	25	19
300m	Z	7 A7	1521.0	90	1024	PP	112	259	254	228	179	119	78	51	34	26	19

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-01
Grid	: BIRKCREEK	Tx Loop	: SW
Time Base	: 16.66 ms	Date	: Oct 22, 1990
Ramp Time	: 1.50 ms	File	: BC9001SW.PEM

Station	Cmp	10	11	12	13	14	15	16	17	18	19	20
10m	Z	5	4	3	-0	2	2	1	1	-0	-0	-0
20m	Z	5	4	4	5	2	2	2	0	-0	0	1
30m	Z	6	5	4	3	2	3	1	1	0	0	0
40m	Z	7	8	4	4	3	2	1	1	0	0	0
50m	Z	7	6	5	3	3	1	2	1	0	0	-0
60m	Z	8	7	5	4	3	1	2	1	1	-0	1
70m	Z	8	6	4	3	2	2	2	1	0	0	0
80m	Z	9	5	5	4	2	2	1	0	1	1	0
90m	Z	8	6	5	4	3	2	1	1	1	1	0
100m	Z	8	6	5	4	3	2	1	1	1	1	0
110m	Z	8	6	5	4	3	2	1	1	0	1	0
120m	Z	9	8	5	5	3	2	2	1	0	1	0
130m	Z	1	8	5	4	3	2	2	1	1	0	0
140m	Z	9	7	7	5	3	2	1	1	0	0	0
150m	Z	1	8	6	5	3	2	2	1	1	0	0
160m	Z	11	8	7	5	3	2	2	1	1	0	0
170m	Z	1	8	6	5	3	3	2	1	0	0	0
180m	Z	11	8	7	5	3	2	2	1	0	0	0
190m	Z	12	9	7	5	4	3	2	1	1	0	-0
200m	Z	11	9	8	5	4	3	2	1	0	0	0
210m	Z	12	1	7	6	4	3	2	1	1	1	0
220m	Z	13	9	7	6	5	3	2	1	1	0	0
230m	Z	13	9	8	6	4	3	2	1	1	1	0
240m	Z	13	10	8	6	4	3	2	1	0	0	0
250m	Z	15	11	8	6	4	3	2	1	1	0	0
260m	Z	14	12	9	6	4	3	2	1	0	0	0
270m	Z	14	11	8	7	5	3	2	1	1	0	0
280m	Z	15	12	9	7	4	4	2	1	1	0	0
290m	Z	16	11	9	7	6	3	3	1	1	0	0
300m	Z	15	12	10	8	5	3	2	2	1	0	0

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-02
Tx Loop : COL
Date : Oct 19, 1990
File : BC9002C.PEM

Station	Cmp	Gains	RTS	Delay	Stack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
20m	Z	2 A7	1516.5	90	1024	PP	3	57400	639	326	237	208	184	154	123	101	79
30m	Z	2 A7	1516.5	90	1024	PP	4	55130	609	292	226	203	178	145	114	97	78
40m	Z	2 A7	1516.5	90	1024	PP	5	51730	592	302	232	202	174	140	121	97	80
50m	Z	2 A7	1516.5	90	1024	PP	6	47180	572	289	222	197	172	144	116	98	78
60m	Z	2 A7	1516.5	90	1024	PP	7	41350	630	296	221	200	174	144	121	97	79
70m	Z	2 A7	1516.5	90	1024	PP	8	35330	508	279	219	195	172	154	116	96	82
80m	Z	3 A7	1516.5	90	1024	PP	9	29520	453	268	223	193	172	143	120	100	84
90m	Z	3 A7	1516.5	90	1024	PP	10	24400	441	287	213	201	174	152	122	105	87
100m	Z	3 A7	1516.5	90	1024	PP	11	20140	463	299	245	212	183	152	128	111	88
110m	Z	3 A7	1516.5	90	1024	PP	12	16460	424	291	237	219	190	157	132	115	94
120m	Z	4 A7	1516.5	90	1024	PP	13	13670	472	321	272	229	200	172	143	122	101
130m	Z	4 A7	1516.5	90	1024	PP	14	11330	519	353	286	246	215	182	155	128	105
140m	Z	4 A7	1516.5	90	1024	PP	15	9378	501	368	305	262	226	192	165	134	113
150m	Z	4 A7	1516.5	90	1024	PP	16	7895	547	401	339	286	250	212	176	148	123
160m	Z	5 A7	1516.5	90	1024	PP	17	6653	609	445	366	311	267	226	192	158	131
170m	Z	5 A7	1516.5	90	1024	PP	18	5663	630	466	398	336	290	245	206	173	139
180m	Z	5 A7	1516.5	90	1024	PP	19	4813	632	499	425	362	312	263	220	183	151
190m	Z	5 A7	1516.5	90	1024	PP	20	4140	664	533	457	393	337	287	238	200	161
200m	Z	6 A7	1516.5	90	1024	PP	21	3588	713	586	502	432	366	309	261	215	174
210m	Z	6 A7	1516.5	90	1024	PP	22	3086	733	614	538	462	392	333	278	230	186
220m	Z	6 A7	1516.5	90	1024	PP	23	2707	820	692	599	514	438	371	310	254	204
230m	Z	6 A7	1516.5	90	1024	PP	24	2361	847	728	638	549	471	399	332	271	219

Station	Cmp	10	11	12	13	14	15	16	17	18	19	20
20m	Z	65	50	38	30	23	18	14	8	6	4	1
30m	Z	62	49	38	27	21	16	1	7	4	3	2
40m	Z	71	48	39	29	20	14	12	6	4	3	1
50m	Z	64	51	39	31	22	16	11	7	3	3	2
60m	Z	65	51	41	30	23	17	10	7	4	3	2
70m	Z	66	54	40	31	24	18	13	8	5	3	1
80m	Z	68	53	42	34	25	18	12	8	5	2	1
90m	Z	71	56	45	35	27	18	12	8	5	3	1
100m	Z	75	60	47	36	26	19	13	8	5	2	1
110m	Z	75	62	46	38	29	20	13	8	5	3	1
120m	Z	83	66	51	39	29	20	14	8	5	3	1
130m	Z	87	70	56	41	31	21	14	9	5	2	1
140m	Z	91	73	58	43	32	23	15	1	5	3	1
150m	Z	99	80	62	48	35	24	16	1	6	2	1
160m	Z	105	84	67	50	36	25	17	10	6	3	1
170m	Z	114	91	71	53	38	27	17	11	5	3	2
180m	Z	121	97	76	56	41	28	18	11	6	3	1
190m	Z	131	103	80	59	42	29	19	11	6	3	1
200m	Z	139	111	86	64	45	30	20	12	6	3	1
210m	Z	150	118	90	68	48	32	21	12	7	3	1
220m	Z	164	128	98	73	51	34	21	13	7	3	2
230m	Z	175	136	104	77	54	35	23	13	7	4	2

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-02
Tx Loop : NE
Date : Oct 19, 1990
File : BC9002NE.PEM

Station	Cmp	Gain	STS	Delay	Stack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
20m	Z	4	A7	1516.5	90	1024	PP	48	-13280	650	379	233	166	135	125	98	10	85
30m	Z	3	A7	1516.5	90	1024	PP	47	-15460	677	396	254	178	145	130	116	107	86
40m	Z	3	A7	1516.5	90	1024	PP	46	-16140	755	430	261	183	148	139	127	107	93
50m	Z	4	A7	1516.5	90	1024	PP	45	-15050	751	446	293	201	160	157	136	117	105
60m	Z	4	A7	1516.5	90	1024	PP	44	-12470	807	480	309	225	198	164	151	128	111
70m	Z	4	A7	1516.5	90	1024	PP	43	-9111	809	483	337	257	217	190	163	141	120
80m	Z	5	A7	1516.5	90	1024	PP	42	-5696	842	518	366	284	238	211	179	152	130
90m	Z	6	A7	1516.5	90	1024	PP	41	-2680	920	570	398	313	263	226	195	166	138
95m	Z	7	A7	1516.5	90	1024	PP	39	-1452	984	603	424	328	279	236	202	173	145
100m	Z	7	A7	1516.5	90	1024	PP	38	-317	999	624	442	347	292	247	210	180	150
105m	Z	6	A7	1516.5	90	1024	PP	40	637	980	611	448	358	299	258	220	185	155
110m	Z	6	A7	1516.5	90	1024	PP	37	1503	992	625	464	369	312	269	228	193	163
120m	Z	6	A7	1516.5	90	1024	PP	36	2758	1020	665	497	400	339	289	247	206	171
130m	Z	6	A7	1516.5	90	1024	PP	35	3623	1049	688	528	430	369	313	262	224	182
140m	Z	5	A7	1516.5	90	1024	PP	34	4209	1057	713	562	465	394	334	280	236	195
150m	Z	5	A7	1516.5	90	1024	PP	33	4596	1092	768	606	503	427	365	307	254	212
160m	Z	5	A7	1516.5	90	1024	PP	32	4621	1138	815	656	544	463	390	329	274	224
170m	Z	5	A7	1516.5	90	1024	PP	31	4605	1198	879	716	594	502	424	356	296	242
180m	Z	5	A7	1516.5	90	1024	PP	30	4465	1241	943	776	646	548	459	383	319	260
190m	Z	5	A7	1516.5	90	1024	PP	29	4266	1311	1018	840	706	596	499	416	345	278
200m	Z	5	A7	1516.5	90	1024	PP	28	3994	1382	1105	923	771	651	547	453	370	300
210m	Z	5	A7	1516.5	90	1024	PP	27	3717	1443	1179	996	839	707	589	489	398	321
220m	Z	6	A7	1516.5	90	1024	PP	26	3482	1572	1308	1110	928	782	652	538	434	348
230m	Z	6	A7	1516.5	90	1024	PP	25	3182	1673	1412	1210	1017	855	709	582	470	375

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-02
Grid	: BIRKCREEK	Tx Loop	: NE
Time Base	: 16.66 ms	Date	: Oct 19, 1990
Ramp Time	: 1.50 ms	File	: BC9002NE.PEM

Station	Cmp	10	11	12	13	14	15	16	17	18	19	20
20m	Z	77	60	51	40	29	21	14	8	5	3	1
30m	Z	78	66	53	42	31	21	15	9	6	2	2
40m	Z	81	68	55	44	34	24	15	1	5	2	1
50m	Z	89	73	61	45	35	25	17	9	6	3	1
60m	Z	91	79	63	49	36	26	16	11	6	3	1
70m	Z	103	82	67	52	38	27	17	11	6	3	1
80m	Z	111	89	72	55	41	28	19	12	6	3	1
90m	Z	118	97	77	58	43	30	20	12	7	3	2
95m	Z	121	98	79	61	44	31	20	11	7	3	1
100m	Z	126	102	81	61	46	32	20	12	7	3	1
105m	Z	130	105	84	64	47	32	20	13	7	3	2
110m	Z	134	109	86	66	48	33	21	13	7	3	2
120m	Z	142	115	92	69	51	35	23	14	7	4	2
130m	Z	153	122	96	73	53	37	23	14	8	4	1
140m	Z	160	130	102	77	56	39	24	15	8	4	1
150m	Z	172	138	110	81	59	40	26	16	8	4	2
160m	Z	184	148	116	86	62	42	27	16	9	4	2
170m	Z	197	156	123	92	66	45	29	17	9	5	2
180m	Z	211	167	129	97	69	47	29	17	1	4	2
190m	Z	224	178	138	102	74	49	30	18	9	4	2
200m	Z	241	190	146	108	77	52	32	19	1	5	2
210m	Z	256	200	155	114	80	54	34	19	10	5	2
220m	Z	276	215	165	122	85	56	35	20	11	5	2
230m	Z	294	230	175	128	89	59	37	21	10	5	2

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-03
Tx Loop : COL
Date : Oct 21, 1990
File : BC9003C.PEM

Station	Cmp	Gains	NTS	Delay	Stack	Ovld	Rdgf	PP	1	2	3	4	5	6	7	8	9
20m	Z	1	A7	1525.5	90	1024	PP	50	95740	906	468	648	628	369	218	151	109	88
30m	Z	1	A7	1525.5	90	1024	PP	51	86370	882	474	634	616	368	220	169	136	98
40m	Z	1	A7	1525.5	90	1024	PP	52	70930	763	418	544	525	333	213	161	126	103
50m	Z	2	A7	1525.5	90	1024	PP	53	53900	655	327	418	416	266	168	128	108	82
55m	Z	2	A7	1525.5	90	1024	PP	54	46400	586	300	360	360	233	150	111	92	73
60m	Z	2	A7	1525.5	90	1024	PP	55	39610	537	271	313	311	199	129	102	78	66
65m	Z	2	A7	1525.5	90	1024	PP	56	33750	474	236	273	270	175	111	85	70	54
70m	Z	3	A7	1525.5	90	1024	PP	57	28910	438	222	231	242	152	101	73	58	48
75m	Z	3	A7	1525.5	90	1024	PP	58	24730	400	196	203	204	131	92	69	51	45
80m	Z	3	A7	1525.5	90	1024	PP	59	21260	366	179	184	182	123	79	57	50	39
90m	Z	3	A7	1525.5	90	1024	PP	60	15930	324	165	149	148	99	68	55	39	35
100m	Z	4	A7	1525.5	90	1024	PP	61	12140	293	148	128	123	82	59	46	35	29
110m	Z	4	A7	1525.5	90	1024	PP	62	9390	286	139	120	108	74	53	45	35	30
120m	Z	4	A7	1525.5	90	1024	PP	63	7398	263	137	104	97	70	50	40	34	27
130m	Z	5	A7	1525.5	90	1024	PP	64	5903	267	129	96	88	68	51	38	35	26
140m	Z	5	A7	1525.5	90	1024	PP	65	4851	261	131	97	81	65	49	41	32	29
150m	Z	5	A7	1525.5	90	1024	PP	66	3990	253	131	93	85	65	51	44	37	30

Station	Cmp	10	11	12	13	14	15	16	17	18	19	20
20m	Z	61	44	31	21	14	8	5	4	2	1	1
30m	Z	77	56	41	29	20	11	8	4	2	1	0
40m	Z	75	58	47	30	20	12	9	6	4	2	1
50m	Z	64	47	33	25	17	10	8	5	2	3	1
55m	Z	58	43	30	22	16	12	9	4	3	1	0
60m	Z	47	38	28	21	14	9	7	3	2	1	1
65m	Z	41	33	25	18	12	8	6	4	2	1	1
70m	Z	37	28	22	14	11	7	5	2	2	1	1
75m	Z	33	26	19	14	1	7	4	3	2	2	0
80m	Z	31	24	18	13	8	6	3	3	2	1	0
90m	Z	27	22	17	12	7	5	3	3	3	2	-0
100m	Z	23	19	14	11	7	5	4	2	1	1	0
110m	Z	24	20	15	11	8	5	3	1	1	-0	0
120m	Z	21	18	14	10	8	6	4	3	2	1	1
130m	Z	24	19	14	11	8	6	4	2	2	1	0
140m	Z	23	18	15	11	9	5	4	1	1	0	1
150m	Z	25	20	15	12	9	6	4	2	1	1	0

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-03
Grid	: BIRKCREEK	Tx Loop	: NE
Time Base	: 16.66 ms	Date	: Oct 21, 1990
Ramp Time	: 1.50 ms	File	: BC9003NE.PEM

Station	Cmp	Gains	STS	Delay	SLack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
20m	Z	3 A7	1525.5	90	1024	PP	80	-24010	-16	26	-7	-29	-12	8	1	15	11
30m	Z	3 A7	1525.5	90	1024	PP	79	-23570	-13	5	-9	-43	-19	4	-3	1	9
40m	Z	3 A7	1525.5	90	1024	PP	78	-17670	39	16	-3	-27	-18	-1	-0	-0	2
50m	Z	4 A7	1525.5	90	1024	PP	77	-9607	97	52	23	6	3	6	2	10	3
60m	Z	6 A7	1525.5	90	1024	PP	76	-2145	180	82	43	21	20	19	17	13	12
70m	Z	6 A7	1525.5	90	1024	PP	75	3089	224	103	59	39	37	35	26	18	16
80m	Z	5 A7	1525.5	90	1024	PP	74	6156	254	115	72	60	50	42	31	26	23
90m	Z	4 A7	1525.5	90	1024	PP	73	7583	272	118	77	67	59	48	35	27	26
100m	Z	4 A7	1525.5	90	1024	PP	72	8325	275	136	84	77	67	52	40	33	28
110m	Z	4 A7	1525.5	90	1024	PP	71	8441	280	135	93	81	70	52	41	37	30
120m	Z	4 A7	1525.5	90	1024	PP	70	7959	290	140	96	83	75	55	46	41	31
130m	Z	5 A7	1525.5	90	1024	PP	69	7451	301	146	99	83	75	58	49	41	35
140m	Z	5 A7	1525.5	90	1024	PP	68	6618	295	144	105	85	76	61	53	45	36
150m	Z	5 A7	1525.5	90	1024	PP	67	5910	292	148	106	90	77	64	53	47	39

Station	Cmp	10	11	12	13	14	15	16	17	18	19	20
20m	Z	16	17	14	1	7	7	5	4	3	1	1
30m	Z	9	9	8	4	6	4	4	3	-0	1	1
40m	Z	3	3	0	2	2	2	-1	-0	-0	-1	-1
50m	Z	8	5	3	2	0	1	-1	-0	-1	-1	-1
60m	Z	8	6	5	4	2	1	0	0	-1	-0	0
70m	Z	13	11	8	5	4	3	2	1	0	-0	-0
80m	Z	17	14	11	8	6	4	2	1	1	0	0
90m	Z	20	14	12	8	6	5	2	1	1	0	-0
100m	Z	25	19	15	10	8	5	4	2	1	1	0
110m	Z	26	20	15	12	9	5	4	2	1	1	1
120m	Z	29	22	17	13	8	6	4	3	1	1	0
130m	Z	29	23	19	14	1	7	5	2	1	1	0
140m	Z	31	24	20	16	11	7	5	3	2	1	0
150m	Z	34	28	21	17	12	9	5	3	1	1	1

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-05
Tx Loop : COL
Date : Oct 22, 1990
File : BC9005C.PEM

Station	Cmp	Gains	TTS	Delay	Stack	Ovld	Rdgi	PP	1	2	3	4	5	6	7	8	9
10m	Z	1 A7	1521.0	90	1024	PP	142	61290	958	411	283	210	159	118	85	61	46
20m	Z	1 A7	1521.0	90	1024	PP	143	61080	1006	420	293	213	154	113	81	63	44
30m	Z	2 A7	1521.0	90	1024	PP	144	57150	978	421	277	209	152	108	77	57	40
40m	Z	2 A7	1521.0	90	1024	PP	145	50740	923	412	273	190	136	97	74	50	38
50m	Z	2 A7	1521.0	90	1024	PP	146	43440	889	381	247	173	127	95	62	44	34
60m	Z	2 A7	1521.0	90	1024	PP	147	36530	841	370	240	163	111	81	60	38	29
70m	Z	2 A7	1521.0	90	1024	PP	148	30510	728	352	223	162	107	71	48	41	23
80m	Z	3 A7	1521.0	90	1024	PP	149	25180	743	342	213	142	98	67	44	32	23
90m	Z	3 A7	1521.0	90	1024	PP	150	21200	722	335	211	137	90	66	44	29	22
100m	Z	3 A7	1521.0	90	1024	PP	151	17750	704	340	208	134	87	56	39	27	19
110m	Z	4 A7	1521.0	90	1024	PP	152	14980	685	348	208	133	84	56	38	26	20
120m	Z	4 A7	1521.0	90	1024	PP	153	12690	695	346	211	134	82	56	35	24	18
130m	Z	4 A7	1521.0	90	1024	PP	154	10880	677	350	214	132	83	54	35	25	18
140m	Z	4 A7	1521.0	90	1024	PP	155	9367	672	362	218	130	82	53	33	23	17
150m	Z	4 A7	1521.0	90	1024	PP	156	8097	684	365	221	133	84	54	36	24	18
160m	Z	5 A7	1521.0	90	1024	PP	157	7043	691	382	225	133	83	53	34	24	17
170m	Z	5 A7	1521.0	90	1024	PP	158	6165	706	386	228	136	83	53	33	23	16
180m	Z	5 A7	1521.0	90	1024	PP	159	5429	703	392	230	140	84	54	35	24	18
190m	Z	5 A7	1521.0	90	1024	PP	160	4791	720	399	234	138	85	53	36	24	16
200m	Z	5 A7	1521.0	90	1024	PP	161	4258	726	403	236	139	84	55	36	23	16
210m	Z	5 A7	1521.0	90	1024	PP	162	3798	744	406	238	140	86	55	36	27	19
220m	Z	6 A7	1521.0	90	1024	PP	163	3404	776	422	244	138	87	57	35	24	18
230m	Z	6 A7	1521.0	90	1024	PP	164	3051	796	427	243	142	87	57	37	25	18
240m	Z	6 A7	1521.0	90	1024	PP	165	2764	778	418	234	138	87	57	37	26	18
250m	Z	6 A7	1521.0	90	1024	PP	166	2494	770	422	243	139	88	58	38	27	20
260m	Z	6 A7	1521.0	90	1024	PP	167	2267	760	434	246	145	91	58	40	27	20
270m	Z	6 A7	1521.0	90	1024	PP	168	2059	732	432	255	152	92	60	39	28	19
280m	Z	6 A7	1521.0	90	1024	PP	169	1859	735	443	261	155	98	62	39	29	19
290m	Z	7 A7	1521.0	90	1024	PP	170	1697	744	451	275	160	97	63	43	31	21
300m	Z	7 A7	1521.0	90	1024	PP	171	1571	711	444	272	161	99	64	43	31	21
310m	Z	7 A7	1521.0	90	1024	PP	172	1449	686	433	273	162	102	64	45	31	22
320m	Z	7 A7	1521.0	90	1024	PP	173	1335	652	428	272	165	104	69	42	25	24
325m	Z	7 A7	1521.0	90	1024	PP	174	1279	635	416	265	161	102	67	46	32	24
330m	Z	7 A7	1521.0	90	1024	PP	175	1226	624	411	265	161	104	67	47	33	24
340m	Z	7 A7	1521.0	90	1024	PP	176	1120	594	408	259	169	108	71	44	34	27
350m	Z	7 A7	1521.0	90	1024	PP	177	1039	568	384	252	162	105	70	48	34	27
360m	Z	7 A7	1521.0	90	1024	PP	178	973	537	370	249	157	103	71	51	36	28
370m	Z	7 A7	1521.0	90	1024	PP	179	903	515	364	243	160	105	74	52	38	27
380m	Z	7 A7	1521.0	90	1024	PP	180	836	488	346	238	156	107	75	52	38	28
390m	Z	7 A7	1521.0	90	1024	PP	181	780	478	343	238	163	111	77	56	40	30
400m	Z	7 A7	1521.0	90	1024	PP	182	725	451	326	237	160	110	79	55	40	30

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-05
Tx Loop : COL
Date : Oct 22, 1990
File : BC9005C.PEM

Station	Comp	10	11	12	13	14	15	16	17	18	19	20
10m	Z	31	22	17	10	9	5	4	4	2	2	1
20m	Z	31	19	14	11	8	5	3	3	2	1	1
30m	Z	29	19	13	8	7	5	4	2	2	1	1
40m	Z	25	19	12	9	7	5	4	2	2	1	1
50m	Z	22	15	13	8	5	4	3	2	1	1	1
60m	Z	18	15	10	6	6	4	3	2	2	1	1
70m	Z	20	14	8	7	5	3	3	2	1	1	1
80m	Z	17	11	9	7	5	3	2	1	1	1	1
90m	Z	16	11	8	5	4	3	2	2	1	1	1
100m	Z	14	11	7	7	4	3	2	1	1	1	0
110m	Z	12	9	8	6	3	3	2	1	1	1	0
120m	Z	13	1	7	5	4	2	2	1	1	0	0
130m	Z	13	8	7	5	3	3	2	1	1	1	1
140m	Z	13	9	8	6	4	3	2	1	1	1	1
150m	Z	13	1	7	5	5	3	2	2	1	0	0
160m	Z	13	1	7	5	4	2	2	1	1	0	1
170m	Z	12	9	7	5	4	3	2	1	1	0	0
180m	Z	13	9	7	6	4	3	2	-0	0	0	-0
190m	Z	13	10	7	5	4	3	2	1	1	1	1
200m	Z	13	9	7	6	4	2	2	1	1	1	1
210m	Z	15	1	9	6	5	3	3	1	0	0	1
220m	Z	12	1	8	6	4	3	2	1	1	1	1
230m	Z	13	10	8	5	5	3	3	1	1	1	0
240m	Z	14	1	8	6	4	3	2	1	1	1	1
250m	Z	13	10	9	6	4	4	2	2	1	1	1
260m	Z	15	11	9	6	4	3	3	1	1	1	1
270m	Z	15	12	9	6	5	3	3	1	1	1	0
280m	Z	16	11	1	6	5	3	2	2	1	1	1
290m	Z	16	12	9	7	5	3	3	1	1	1	0
300m	Z	17	13	1	7	5	4	2	2	1	0	0
310m	Z	18	13	10	7	5	3	2	2	1	1	1
320m	Z	15	17	12	5	8	5	4	2	2	-0	0
325m	Z	17	13	11	8	5	4	2	2	1	1	0
330m	Z	18	14	11	7	6	4	3	1	1	0	0
340m	Z	18	16	10	8	6	5	3	2	1	1	0
350m	Z	19	15	12	8	6	4	3	2	1	1	1
360m	Z	22	15	1	9	6	5	3	3	2	1	1
370m	Z	20	15	12	9	6	5	3	2	1	1	1
380m	Z	21	16	14	9	7	4	3	2	1	0	0
390m	Z	24	18	15	11	8	6	5	3	3	2	1
400m	Z	22	17	13	1	7	5	3	2	1	1	1

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-05
Tx Loop : NE
Date : Oct 22, 1990
File : BC9005NE.PEM

Station	Cmp	Gains	STS	Delay	Stack	Ovld	Rdgf	PP	1	2	3	4	5	6	7	8	9
10m	Z	3	A7	1521.0	90	1024	PP	224	-21110	219	181	94	37	2	2	-4	-4	-3
20m	Z	3	A7	1521.0	90	1024	PP	223	-21550	232	185	99	38	3	3	2	-6	1
30m	Z	3	A7	1521.0	90	1024	PP	222	-19170	285	213	115	45	8	4	1	-2	2
40m	Z	4	A7	1521.0	90	1024	PP	221	-14890	346	232	134	61	22	13	6	5	2
50m	Z	4	A7	1521.0	90	1024	PP	220	-10140	407	260	146	75	38	18	13	7	6
60m	Z	5	A7	1521.0	90	1024	PP	219	-5861	488	294	170	90	43	27	18	10	9
70m	Z	6	A7	1521.0	90	1024	PP	218	-2484	534	314	182	103	58	37	21	15	11
75m	Z	7	A7	1521.0	90	1024	PP	217	-1025	610	346	204	112	65	38	25	17	12
80m	Z	7	A7	1521.0	90	1024	PP	215	165	615	352	210	116	66	41	24	20	13
85m	Z	7	A7	1521.0	90	1024	PP	216	1106	652	371	218	123	70	41	27	21	13
90m	Z	6	A7	1521.0	90	1024	PP	214	1974	607	352	210	123	74	44	25	22	14
100m	Z	6	A7	1521.0	90	1024	PP	213	3282	670	376	223	127	74	46	28	23	16
110m	Z	5	A7	1521.0	90	1024	PP	212	4074	675	378	224	130	76	48	30	20	16
120m	Z	5	A7	1521.0	90	1024	PP	211	4531	683	387	228	129	80	49	31	23	16
130m	Z	5	A7	1521.0	90	1024	PP	210	4742	709	391	231	132	81	52	33	23	17
140m	Z	5	A7	1521.0	90	1024	PP	209	4821	713	395	237	135	80	51	32	25	18
150m	Z	5	A7	1521.0	90	1024	PP	208	4729	719	401	235	137	84	52	34	25	18
160m	Z	5	A7	1521.0	90	1024	PP	207	4612	721	402	238	142	84	53	36	24	18
170m	Z	5	A7	1521.0	90	1024	PP	206	4474	712	399	237	140	86	54	35	25	20
180m	Z	5	A7	1521.0	90	1024	PP	205	4318	694	394	233	139	86	55	35	26	19
190m	Z	5	A7	1521.0	90	1024	PP	204	4072	689	382	229	140	88	57	37	26	20
200m	Z	5	A7	1521.0	90	1024	PP	203	3845	633	353	217	134	85	57	40	26	20
210m	Z	6	A7	1521.0	90	1024	PP	202	3613	603	326	202	130	85	59	38	27	22
220m	Z	6	A7	1521.0	90	1024	PP	201	3351	518	279	180	127	88	60	40	30	22
230m	Z	6	A7	1521.0	90	1024	PP	200	3159	466	240	163	118	87	63	43	30	22
240m	Z	6	A7	1521.0	90	1024	PP	199	2932	367	191	139	111	87	65	44	32	23
250m	Z	6	A7	1521.0	90	1024	PP	198	2760	394	209	148	117	89	65	45	32	25
260m	Z	6	A7	1521.0	90	1024	PP	197	2547	463	255	174	128	92	66	45	33	25
270m	Z	6	A7	1521.0	90	1024	PP	196	2399	530	305	200	137	95	66	45	35	25
280m	Z	6	A7	1521.0	90	1024	PP	195	2209	571	344	222	143	98	68	46	34	24
290m	Z	6	A7	1521.0	90	1024	PP	194	2072	598	365	233	148	97	68	47	35	26
300m	Z	6	A7	1521.0	90	1024	PP	193	1941	617	381	244	153	101	68	47	34	27
310m	Z	7	A7	1521.0	90	1024	PP	192	1800	651	408	260	161	104	72	48	36	27
320m	Z	7	A7	1521.0	90	1024	PP	191	1681	654	419	267	168	106	74	49	37	27
330m	Z	7	A7	1521.0	90	1024	PP	190	1570	648	418	268	168	108	74	51	37	28
340m	Z	7	A7	1521.0	90	1024	PP	189	1474	634	416	270	172	109	73	52	38	29
350m	Z	7	A7	1521.0	90	1024	PP	188	1374	620	409	268	170	111	76	52	40	30
360m	Z	7	A7	1521.0	90	1024	PP	187	1274	593	400	268	172	113	77	55	40	32
370m	Z	7	A7	1521.0	90	1024	PP	186	1181	567	396	264	172	114	80	57	42	32
380m	Z	7	A7	1521.0	90	1024	PP	185	1094	553	387	260	172	114	78	58	42	34
390m	Z	7	A7	1521.0	90	1024	PP	184	1027	538	379	262	176	117	83	60	45	34
400m	Z	7	A7	1521.0	90	1024	PP	183	961	517	375	261	175	118	85	62	45	35

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-05
Tx Loop : NE
Date : Oct 22, 1990
File : BC9005NE.PEM

Station	Comp	10	11	12	13	14	15	16	17	18	19	20
10m	Z	0	1	2	1	2	1	1	0	1	0	0
20m	Z	-1	2	1	2	1	1	1	0	0	0	-0
30m	Z	1	3	3	2	2	1	1	0	1	0	0
40m	Z	6	3	3	3	2	2	1	1	0	0	1
50m	Z	5	5	3	3	2	2	1	1	1	0	0
60m	Z	7	6	5	4	3	2	2	1	1	0	-0
70m	Z	1	6	6	5	3	3	1	1	1	0	1
75m	Z	1	8	6	5	3	3	2	1	1	0	0
80m	Z	11	8	7	5	3	2	2	1	1	1	0
85m	Z	12	9	6	6	4	2	2	1	0	0	0
90m	Z	11	9	7	5	3	3	2	2	1	1	0
100m	Z	13	1	8	6	4	3	2	2	1	1	0
110m	Z	12	1	8	6	4	3	2	1	1	0	1
120m	Z	13	9	7	6	4	3	2	1	1	1	0
130m	Z	13	1	8	6	4	3	2	1	1	1	1
140m	Z	14	9	8	6	4	3	2	1	1	0	0
150m	Z	13	11	8	6	4	3	2	1	1	1	0
160m	Z	14	11	9	6	5	3	2	2	1	1	0
170m	Z	14	11	9	7	5	3	2	2	1	1	1
180m	Z	15	11	8	6	5	3	2	2	1	1	0
190m	Z	16	11	9	7	5	3	2	2	1	0	0
200m	Z	16	12	9	7	5	4	3	2	1	1	0
210m	Z	16	12	9	7	5	3	2	2	1	1	0
220m	Z	16	13	1	7	5	3	2	2	1	1	0
230m	Z	16	12	1	8	5	3	3	2	1	1	0
240m	Z	19	14	11	9	6	4	2	2	1	1	0
250m	Z	18	14	11	7	6	4	2	2	1	1	1
260m	Z	19	14	11	8	6	4	2	2	1	1	0
270m	Z	18	15	11	8	6	4	3	2	1	1	0
280m	Z	19	15	12	8	6	4	3	1	1	1	0
290m	Z	19	15	12	8	6	4	3	2	1	1	0
300m	Z	21	16	12	8	6	4	3	2	1	1	0
310m	Z	22	16	12	9	7	5	3	2	1	1	0
320m	Z	21	17	13	1	7	4	3	2	1	1	1
330m	Z	23	16	13	10	7	5	3	1	1	1	0
340m	Z	22	17	14	10	7	5	3	2	1	1	0
350m	Z	24	18	14	1	7	5	3	2	1	1	1
360m	Z	24	18	15	11	8	5	3	2	2	1	0
370m	Z	25	19	15	10	8	5	3	2	1	1	1
380m	Z	26	21	15	11	8	6	4	2	1	1	0
390m	Z	27	21	15	11	8	5	4	2	2	1	0
400m	Z	28	22	16	12	9	6	3	2	1	1	1

BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-06
Tx Loop : COL
Date : Nov 4, 1990
File : BC9006C.PEM

Station	Cmp	Gains	ATS	Delay	Stack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
10m	Z	2 A7	1512.0	90	1024	PP	3	48720	6728	5138	4133	3244	2550	1982	1515	1123	812
20m	Z	2 A7	1512.0	90	1024	PP	4	50250	7171	5497	4334	3367	2612	2013	1528	1134	818
30m	Z	2 A7	1512.0	90	1024	PP	5	50900	7870	5924	4619	3519	2696	2061	1552	1154	831
40m	Z	2 A7	1512.0	90	1024	PP	6	49430	8745	6440	4940	3689	2788	2106	1582	1165	841
50m	Z	2 A7	1512.0	90	1024	PP	7	46420	9700	7141	5354	3943	2928	2188	1628	1198	862
60m	Z	2 A7	1512.0	90	1024	PP	8	41860	10870	7871	5812	4205	3072	2269	1678	1227	883
70m	Z	2 A7	1512.0	90	1024	PP	9	36400	12100	8746	6333	4508	3244	2374	1741	1267	912
80m	Z	2 A7	1512.0	90	1024	PP	10	31070	11680	8522	6246	4463	3232	2379	1753	1284	926
90m	Z	3 A7	1512.0	90	1024	PP	11	26250	11870	8806	6577	4688	3380	2475	1820	1329	958
100m	Z	3 A7	1512.0	90	1024	PP	12	22210	12770	9778	7403	5223	3725	2691	1957	1418	1019
110m	Z	3 A7	1512.0	90	1024	PP	13	18660	12190	9609	7299	5175	3701	2690	1973	1441	1041
120m	Z	3 A7	1512.0	90	1024	PP	14	15780	11000	8983	6956	5087	3712	2744	2042	1501	1090
130m	Z	4 A7	1512.0	90	1024	PP	15	13350	9701	8051	6430	4864	3667	2785	2109	1569	1144
140m	Z	4 A7	1512.0	90	1024	PP	16	11370	8767	7481	6136	4802	3717	2879	2215	1658	1208
150m	Z	4 A7	1512.0	90	1024	PP	17	9762	8043	7092	6045	4912	3928	3118	2427	1832	1334
160m	Z	4 A7	1512.0	90	1024	PP	18	8420	7383	6781	6025	5126	4251	3448	2715	2056	1492
170m	Z	4 A7	1512.0	90	1024	PP	19	7499	6966	6616	6144	5459	4679	3865	3052	2295	1636
180m	Z	4 A7	1512.0	90	1024	PP	20	5421	5899	5919	5922	5887	5794	5591	5218	4614	3809
190m	Z	5 A7	1512.0	90	1024	PP	21	4750	5087	5123	5168	5187	5103	4841	4357	3678	2896
200m	Z	5 A7	1512.0	90	1024	PP	22	4481	4544	4489	4380	4172	3857	3442	2945	2391	1838
210m	Z	5 A7	1512.0	90	1024	PP	23	3970	3947	3872	3733	3484	3143	2741	2299	1844	1410
220m	Z	5 A7	1512.0	90	1024	PP	24	3504	3463	3381	3244	3000	2680	2317	1931	1541	1183
230m	Z	6 A7	1512.0	90	1024	PP	25	3085	3054	2985	2860	2647	2361	2040	1701	1365	1054
240m	Z	6 A7	1512.0	90	1024	PP	26	2727	2710	2649	2538	2346	2093	1808	1509	1213	941
250m	Z	6 A7	1512.0	90	1024	PP	27	2413	2403	2354	2263	2096	1873	1623	1361	1095	854
260m	Z	6 A7	1512.0	90	1024	PP	28	2152	2150	2112	2035	1893	1699	1475	1238	1001	783
270m	Z	6 A7	1512.0	90	1024	PP	29	1933	1943	1907	1842	1720	1550	1350	1136	922	724
280m	Z	6 A7	1512.0	90	1024	PP	30	1733	1749	1720	1668	1562	1413	1233	1044	850	671
290m	Z	6 A7	1512.0	90	1024	PP	31	1563	1581	1557	1516	1422	1291	1135	963	788	623
300m	Z	7 A7	1512.0	90	1024	PP	32	1411	1431	1419	1383	1306	1192	1051	896	737	583
310m	Z	7 A7	1512.0	90	1024	PP	33	1273	1296	1280	1253	1186	1086	963	824	678	538
320m	Z	7 A7	1512.0	90	1024	PP	34	1158	1182	1168	1143	1088	998	889	763	630	504
330m	Z	7 A7	1512.0	90	1024	PP	35	1057	1081	1073	1050	999	922	823	710	588	469
340m	Z	7 A7	1512.0	90	1024	PP	36	966	989	983	965	920	854	762	660	548	440

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-06
Tx Loop : COL
Date : Nov 4, 1990
File : BC9006C.PEM

Station	Comp	10	11	12	13	14	15	16	17	18	19	20
10m	Z	567	383	252	157	95	54	29	15	7	3	2
20m	Z	574	390	256	160	96	55	30	15	7	3	1
30m	Z	587	399	262	166	100	57	31	15	7	3	1
40m	Z	592	405	266	170	103	58	31	15	7	3	1
50m	Z	609	417	275	175	106	60	32	16	7	3	1
60m	Z	624	427	283	180	109	62	33	16	7	3	1
70m	Z	642	441	291	185	112	62	33	15	7	3	1
80m	Z	654	448	295	186	112	63	33	15	7	2	1
90m	Z	677	464	306	193	115	64	32	15	6	2	1
100m	Z	717	489	321	202	119	65	32	14	6	2	0
110m	Z	733	498	326	201	117	63	30	13	5	1	1
120m	Z	768	522	338	206	118	62	29	11	4	1	0
130m	Z	806	543	348	208	114	58	24	9	2	0	-0
140m	Z	847	563	354	205	110	50	19	5	1	-1	-0
150m	Z	930	611	376	211	106	45	13	1	-2	-2	-1
160m	Z	1029	662	392	206	90	29	1	-7	-6	-4	-2
170m	Z	1089	660	340	126	7	-39	-43	-30	-16	-8	-3
180m	Z	2889	1963	1143	517	129	-42	-76	-54	-28	-12	-5
190m	Z	2117	1422	869	470	217	78	15	-6	-9	-6	-3
200m	Z	1327	893	553	310	152	62	18	0	-4	-3	-2
210m	Z	1023	700	448	265	141	66	25	7	0	-1	-1
220m	Z	867	603	396	242	135	68	30	11	3	0	-0
230m	Z	782	553	371	234	136	71	34	13	4	1	1
240m	Z	702	501	340	217	129	70	34	14	6	2	0
250m	Z	641	462	316	206	124	69	34	15	5	2	1
260m	Z	591	428	295	194	118	67	34	15	6	2	0
270m	Z	548	399	277	184	113	65	33	15	7	2	1
280m	Z	508	373	261	174	109	63	33	15	6	2	1
290m	Z	474	348	245	164	103	59	31	15	6	2	1
300m	Z	447	328	231	155	98	58	31	15	6	2	1
310m	Z	413	305	215	145	92	54	29	14	6	2	1
320m	Z	387	286	204	138	88	52	27	13	6	2	1
330m	Z	362	268	191	129	83	49	27	13	6	2	0
340m	Z	341	253	180	122	79	47	25	13	6	2	1

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-06
Tx Loop : NW
Date : Nov 4, 1990
File : BC9006NW.PEM

Station	Cmp	Gains	RTS	Delay	Stack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
10m	Z	5 A7	1512.0	90	1024	PP	138	-4357	1050	1094	1003	886	766	643	531	417	318
20m	Z	5 A7	1512.0	90	1024	PP	137	-3680	992	1050	981	871	747	630	519	410	311
30m	Z	6 A7	1512.0	90	1024	PP	136	-3033	934	1015	965	859	745	627	513	403	308
40m	Z	6 A7	1512.0	90	1024	PP	135	-2363	864	961	929	835	723	610	498	392	298
50m	Z	6 A7	1512.0	90	1024	PP	134	-1831	843	940	920	833	723	605	494	387	295
60m	Z	7 A7	1512.0	90	1024	PP	133	-1366	868	957	938	852	734	612	494	388	293
70m	Z	7 A7	1512.0	90	1024	PP	132	-946	627	786	834	791	701	590	478	375	284
80m	Z	7 A7	1512.0	90	1024	PP	131	-604	275	536	653	674	621	538	445	350	266
90m	Z	7 A7	1512.0	90	1024	PP	130	-321	384	587	677	682	621	534	437	343	257
100m	Z	7 A7	1512.0	90	1024	PP	129	-93	439	606	690	693	629	537	434	335	247
110m	Z	7 A7	1512.0	90	1024	PP	128	112	326	452	555	596	563	482	392	304	223
120m	Z	7 A7	1512.0	90	1024	PP	127	263	402	483	535	549	509	438	356	272	198
130m	Z	7 A7	1512.0	90	1024	PP	126	374	344	340	358	378	373	340	284	219	157
140m	Z	7 A7	1512.0	90	1024	PP	125	521	416	364	340	333	319	289	237	179	121
150m	Z	7 A7	1512.0	90	1024	PP	124	576	495	448	409	378	344	299	240	174	112
160m	Z	7 A7	1512.0	90	1024	PP	123	655	577	526	476	424	370	310	241	168	102
170m	Z	7 A7	1512.0	90	1024	PP	122	748	660	612	549	482	408	328	244	156	78
180m	Z	7 A7	1512.0	90	1024	PP	121	568	596	588	571	547	512	470	420	359	300
190m	Z	7 A7	1512.0	90	1024	PP	120	406	494	506	535	593	665	715	716	646	523
200m	Z	7 A7	1512.0	90	1024	PP	119	604	610	600	591	564	529	480	412	330	242
210m	Z	7 A7	1512.0	90	1024	PP	118	592	586	572	551	513	458	395	324	249	178
220m	Z	7 A7	1512.0	90	1024	PP	117	546	537	522	503	462	407	341	276	211	152
230m	Z	7 A7	1512.0	90	1024	PP	116	522	515	508	488	450	396	336	276	213	161
240m	Z	7 A7	1512.0	90	1024	PP	115	480	477	466	452	418	369	314	258	202	155
250m	Z	7 A7	1512.0	90	1024	PP	114	451	451	444	430	399	355	305	252	202	158
260m	Z	7 A7	1512.0	90	1024	PP	113	411	414	406	394	371	336	289	241	196	156
270m	Z	7 A7	1512.0	90	1024	PP	112	376	383	375	366	345	314	272	233	190	152
280m	Z	7 A7	1512.0	90	1024	PP	111	358	364	361	356	336	305	270	232	192	156
290m	Z	7 A7	1512.0	90	1024	PP	110	327	336	332	328	311	285	253	218	183	151
300m	Z	7 A7	1512.0	90	1024	PP	109	312	326	320	314	302	279	250	218	184	153
310m	Z	7 A7	1512.0	90	1024	PP	108	284	294	290	288	276	258	231	202	172	143
320m	Z	7 A7	1512.0	90	1024	PP	107	271	285	286	280	268	250	230	200	172	144
330m	Z	7 A7	1512.0	90	1024	PP	106	249	261	265	259	248	232	212	188	161	136
340m	Z	7 A7	1512.0	90	1024	PP	105	241	255	253	251	241	226	207	185	159	137

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-06
Tx Loop : NW
Date : Nov 4, 1990
File : BC9006NW.PEM

Station	Cmp	10	11	12	13	14	15	16	17	18	19	20
10m	Z	233	164	111	74	46	29	16	8	4	2	1
20m	Z	230	163	112	75	47	28	16	8	4	2	1
30m	Z	227	161	112	74	48	29	17	9	4	2	1
40m	Z	220	157	110	73	47	28	16	9	4	1	0
50m	Z	217	156	108	72	46	28	16	8	4	2	0
60m	Z	215	154	106	71	46	28	16	8	4	2	0
70m	Z	208	148	102	68	44	27	15	8	3	1	0
80m	Z	194	138	94	62	41	24	13	7	3	1	1
90m	Z	186	130	88	59	38	23	12	6	2	1	0
100m	Z	178	123	82	54	34	20	11	5	2	0	-0
110m	Z	157	106	68	43	27	15	8	4	2	0	-0
120m	Z	135	89	56	35	20	11	5	2	0	-0	-0
130m	Z	104	64	37	20	9	4	1	-1	-1	-1	-0
140m	Z	73	38	16	3	-2	-4	-4	-3	-2	-1	-0
150m	Z	60	25	4	-8	-10	-9	-8	-5	-3	-2	-1
160m	Z	47	9	-12	-19	-20	-16	-12	-7	-4	-2	-1
170m	Z	21	-17	-37	-42	-38	-29	-19	-11	-6	-3	-1
180m	Z	236	165	89	26	-12	-23	-19	-11	-6	-3	-1
190m	Z	381	247	144	76	36	15	5	0	-1	-1	-1
200m	Z	159	91	45	18	4	-2	-3	-3	-3	-1	-1
210m	Z	118	70	37	18	7	1	-1	-2	-2	-1	-1
220m	Z	103	65	38	21	11	5	1	-0	-1	-1	-1
230m	Z	114	79	52	33	20	11	4	2	-0	-1	-1
240m	Z	114	81	57	38	24	14	7	3	1	-0	-0
250m	Z	120	88	63	44	29	18	1	4	1	0	-0
260m	Z	119	90	65	46	31	19	10	5	2	0	-0
270m	Z	120	91	68	49	33	21	11	6	2	1	0
280m	Z	122	96	72	53	37	23	13	7	2	1	0
290m	Z	119	94	71	52	36	24	13	7	3	1	0
300m	Z	124	97	74	54	38	24	14	7	3	1	0
310m	Z	118	94	71	53	37	24	14	7	3	1	0
320m	Z	118	95	74	54	38	24	14	8	4	1	0
330m	Z	112	89	70	52	37	24	13	7	3	1	0
340m	Z	113	91	70	53	37	24	14	7	3	1	0

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-06
Tx Loop : SE
Date : Nov 4, 1990
File : BC9006SE.PEM

Station	Cmp	Gains	STS	Delay	Stack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
10m	Z	5 A7	1512.0	90	1024	PP	70	-4418	2297	2193	1973	1711	1451	1208	972	757	565
20m	Z	5 A7	1512.0	90	1024	PP	69	-4392	2057	2043	1880	1655	1415	1192	970	758	567
30m	Z	5 A7	1512.0	90	1024	PP	68	-4241	1787	1864	1774	1593	1391	1178	963	757	568
40m	Z	5 A7	1512.0	90	1024	PP	67	-3980	1517	1689	1658	1534	1354	1161	959	757	573
50m	Z	5 A7	1512.0	90	1024	PP	66	-3606	1214	1483	1527	1454	1314	1143	952	757	575
60m	Z	6 A7	1512.0	90	1024	PP	65	-3164	816	1226	1366	1363	1267	1120	944	756	579
70m	Z	6 A7	1512.0	90	1024	PP	64	-2698	764	1180	1328	1345	1263	1125	955	768	588
80m	Z	6 A7	1512.0	90	1024	PP	63	-2167	452	881	1076	1151	1129	1037	900	736	572
90m	Z	6 A7	1512.0	90	1024	PP	62	-1691	359	682	879	1004	1036	984	872	723	570
100m	Z	7 A7	1512.0	90	1024	PP	61	-1251	460	655	803	945	1014	990	889	744	588
110m	Z	7 A7	1512.0	90	1024	PP	60	-870	-296	-91	180	488	705	790	766	675	552
120m	Z	7 A7	1512.0	90	1024	PP	59	-531	-150	36	286	566	753	816	786	690	566
130m	Z	7 A7	1512.0	90	1024	PP	58	-220	214	412	625	823	928	929	856	738	602
140m	Z	7 A7	1512.0	90	1024	PP	57	-29	319	494	672	845	928	924	855	745	615
150m	Z	7 A7	1512.0	90	1024	PP	56	188	414	526	655	789	868	876	826	737	622
160m	Z	7 A7	1512.0	90	1024	PP	55	318	538	640	748	854	905	905	857	771	662
170m	Z	7 A7	1512.0	90	1024	PP	54	396	586	656	728	803	847	860	842	788	699
180m	Z	7 A7	1512.0	90	1024	PP	53	418	559	581	618	661	714	762	799	794	736
190m	Z	7 A7	1512.0	90	1024	PP	52	486	582	598	620	643	650	643	623	595	561
200m	Z	7 A7	1512.0	90	1024	PP	51	572	653	668	679	688	691	681	654	611	548
210m	Z	7 A7	1512.0	90	1024	PP	50	614	685	690	703	707	704	685	647	588	514
220m	Z	7 A7	1512.0	90	1024	PP	49	703	764	771	770	765	752	718	660	589	500
230m	Z	7 A7	1512.0	90	1024	PP	48	703	755	758	758	752	731	692	635	557	470
240m	Z	7 A7	1512.0	90	1024	PP	47	696	744	745	742	731	708	666	606	528	441
250m	Z	7 A7	1512.0	90	1024	PP	46	698	739	744	738	724	694	652	588	509	421
260m	Z	7 A7	1512.0	90	1024	PP	45	691	728	726	720	701	670	626	563	485	399
270m	Z	7 A7	1512.0	90	1024	PP	44	705	737	736	725	700	669	617	550	473	388
280m	Z	7 A7	1512.0	90	1024	PP	43	671	704	696	689	670	637	590	526	449	367
290m	Z	7 A7	1512.0	90	1024	PP	42	670	702	697	687	668	636	586	521	443	361
300m	Z	7 A7	1512.0	90	1024	PP	41	638	667	662	653	635	602	554	495	420	342
310m	Z	7 A7	1512.0	90	1024	PP	40	622	650	648	638	619	589	540	480	408	331
320m	Z	7 A7	1512.0	90	1024	PP	39	580	608	604	596	577	549	504	450	382	310
330m	Z	7 A7	1512.0	90	1024	PP	38	570	595	594	584	566	539	497	440	373	303
340m	Z	7 A7	1512.0	90	1024	PP	37	543	569	563	557	541	514	472	422	357	289

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-06
Tx Loop : SE
Date : Nov 4, 1990
File : BC9006SE.PEM

Station	Cmp	10	11	12	13	14	15	16	17	18	19	20
10m	Z	403	272	176	106	61	33	18	9	4	3	1
20m	Z	404	276	178	109	62	34	18	9	5	2	1
30m	Z	409	279	182	110	64	35	19	1	5	2	1
40m	Z	413	284	186	113	66	35	19	1	5	2	1
50m	Z	418	287	188	116	67	37	19	1	5	2	1
60m	Z	422	292	193	118	69	38	20	1	5	2	1
70m	Z	432	301	197	121	71	39	20	10	5	2	1
80m	Z	423	296	196	121	72	39	20	10	5	2	1
90m	Z	425	300	200	125	73	40	21	10	5	3	1
100m	Z	442	314	209	131	76	42	21	11	5	3	1
110m	Z	425	308	208	131	77	42	21	10	4	2	1
120m	Z	438	319	217	138	81	43	22	1	5	2	1
130m	Z	465	339	230	145	84	44	21	9	4	2	1
140m	Z	481	353	242	152	87	45	21	9	4	1	1
150m	Z	497	372	256	160	92	46	21	8	2	1	1
160m	Z	536	404	278	173	95	45	18	6	1	0	0
170m	Z	579	438	295	171	82	28	4	-3	-3	-1	-0
180m	Z	638	516	381	241	118	35	-3	-11	-7	-3	-1
190m	Z	517	435	334	224	129	62	23	7	1	-0	-0
200m	Z	468	373	271	177	101	51	22	8	2	0	0
210m	Z	426	332	238	156	92	48	22	9	3	1	1
220m	Z	405	309	220	144	85	45	22	1	4	1	1
230m	Z	377	286	204	133	80	44	22	1	4	2	1
240m	Z	351	263	186	121	73	40	20	9	4	2	1
250m	Z	331	248	172	112	68	37	19	9	4	1	0
260m	Z	312	232	161	105	64	36	18	8	4	2	1
270m	Z	301	222	154	99	60	34	17	8	4	2	1
280m	Z	285	209	146	93	57	32	17	8	3	1	1
290m	Z	278	203	141	91	55	31	17	8	4	1	0
300m	Z	263	192	132	85	52	30	16	8	3	1	1
310m	Z	255	185	127	82	50	28	15	8	3	2	1
320m	Z	238	174	119	76	47	27	14	7	3	1	1
330m	Z	233	169	115	74	45	26	14	7	3	1	1
340m	Z	222	162	111	71	43	25	14	7	3	1	1

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-06
Tx Loop : SW-UP
Date : Nov 4, 1990
File : BC9006SW.PEM

Station	Cmp	Gains	RTS	Delay	Stack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
10m	Z	5 A7	1512.0	90	1024	PP	71	-3575	-2499	-2239	-2012	-1729	-1443	-1180	-926	-684	-486
20m	Z	6 A7	1512.0	90	1024	PP	72	-2799	-2059	-1854	-1659	-1438	-1216	-996	-781	-581	-410
30m	Z	6 A7	1512.0	90	1024	PP	73	-2165	-1641	-1486	-1332	-1163	-984	-807	-636	-474	-334
40m	Z	7 A7	1512.0	90	1024	PP	74	-1574	-1248	-1130	-1018	-891	-759	-626	-495	-369	-258
50m	Z	7 A7	1512.0	90	1024	PP	75	-1151	-926	-844	-768	-673	-574	-475	-376	-278	-194
60m	Z	7 A7	1512.0	90	1024	PP	76	-785	-638	-584	-528	-466	-401	-334	-264	-193	-132
70m	Z	7 A7	1512.0	90	1024	PP	77	-472	-403	-374	-342	-304	-266	-224	-176	-127	-82
80m	Z	7 A7	1512.0	90	1024	PP	78	-225	-290	-284	-268	-252	-223	-193	-154	-112	-72
90m	Z	7 A7	1512.0	90	1024	PP	79	-45	-108	-110	-108	-108	-99	-85	-67	-45	-24
100m	Z	7 A7	1512.0	90	1024	PP	80	119	102	95	88	79	67	55	51	48	47
110m	Z	7 A7	1512.0	90	1024	PP	81	242	210	192	174	149	127	102	85	71	63
120m	Z	7 A7	1512.0	90	1024	PP	82	324	305	288	270	234	208	177	150	126	104
130m	Z	7 A7	1512.0	90	1024	PP	83	391	366	349	328	294	261	228	196	165	136
140m	Z	7 A7	1512.0	90	1024	PP	84	452	441	421	394	361	324	284	247	208	168
150m	Z	7 A7	1512.0	90	1024	PP	85	485	483	473	450	423	389	352	308	263	210
160m	Z	7 A7	1512.0	90	1024	PP	86	521	531	524	512	493	464	428	380	324	262
170m	Z	7 A7	1512.0	90	1024	PP	87	559	586	584	575	559	536	500	450	385	309
180m	Z	7 A7	1512.0	90	1024	PP	88	470	540	544	551	558	566	566	552	514	450
190m	Z	7 A7	1512.0	90	1024	PP	89	261	327	336	344	355	371	386	398	397	376
200m	Z	7 A7	1512.0	90	1024	PP	90	380	411	432	436	438	437	428	411	381	332
210m	Z	7 A7	1512.0	90	1024	PP	91	368	410	412	412	413	410	399	376	342	297
220m	Z	7 A7	1512.0	90	1024	PP	92	344	380	382	386	387	383	371	350	322	278
230m	Z	7 A7	1512.0	90	1024	PP	93	316	355	358	360	360	358	348	331	305	268
240m	Z	7 A7	1512.0	90	1024	PP	94	289	326	326	330	332	332	324	309	286	255
250m	Z	7 A7	1512.0	90	1024	PP	95	262	301	300	303	306	306	300	288	270	241
260m	Z	7 A7	1512.0	90	1024	PP	96	240	271	276	282	282	282	279	270	254	231
270m	Z	7 A7	1512.0	90	1024	PP	97	222	258	261	262	265	268	264	261	245	223
280m	Z	7 A7	1512.0	90	1024	PP	98	202	233	238	241	245	245	247	240	229	211
290m	Z	7 A7	1512.0	90	1024	PP	99	186	215	218	225	228	230	231	228	218	202
300m	Z	7 A7	1512.0	90	1024	PP	100	174	205	207	208	214	217	218	216	209	195
310m	Z	7 A7	1512.0	90	1024	PP	101	156	186	187	190	195	198	204	201	194	183
320m	Z	7 A7	1512.0	90	1024	PP	102	147	175	179	181	184	189	190	191	186	176
330m	Z	7 A7	1512.0	90	1024	PP	103	136	164	165	168	172	177	181	181	177	169
340m	Z	7 A7	1512.0	90	1024	PP	104	126	151	156	157	162	168	172	172	168	160

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-06
Tx Loop : SW-UP
Date : Nov 4, 1990
File : BC9006SW.PEM

Station	Comp	10	11	12	13	14	15	16	17	18	19	20
10m	Z	-320	-197	-113	-59	-26	-9	-3	-1	-0	0	-0
20m	Z	-271	-164	-93	-47	-21	-7	-2	0	-0	0	-0
30m	Z	-218	-132	-72	-35	-14	-3	0	1	0	0	-0
40m	Z	-168	-99	-52	-22	-7	-0	2	1	1	0	-0
50m	Z	-123	-69	-34	-12	-1	4	3	2	1	1	-0
60m	Z	-80	-42	-16	-2	5	6	4	3	1	0	-0
70m	Z	-45	-19	-3	7	9	7	5	2	1	0	-0
80m	Z	-39	-16	-2	5	7	6	4	1	0	-0	-0
90m	Z	-5	6	13	14	11	7	5	2	0	-0	-0
100m	Z	44	40	33	25	17	11	6	2	-0	-1	-0
110m	Z	54	44	34	24	15	8	3	-0	-1	-1	-1
120m	Z	84	64	45	29	18	8	2	-0	-1	-2	-1
130m	Z	106	79	53	33	16	6	0	-2	-2	-2	-1
140m	Z	129	91	59	33	15	3	-3	-4	-4	-2	-1
150m	Z	161	113	70	36	15	1	-4	-6	-5	-3	-2
160m	Z	197	135	81	38	11	-4	-9	-9	-7	-4	-2
170m	Z	229	150	84	31	-2	-18	-20	-16	-1	-5	-3
180m	Z	264	266	167	79	15	-20	-29	-22	-13	-6	-3
190m	Z	334	271	201	132	78	38	15	3	-1	-2	-1
200m	Z	273	208	145	90	48	22	6	-1	-3	-2	-1
210m	Z	243	185	132	86	49	24	1	2	-1	-1	-1
220m	Z	230	179	131	89	54	30	14	5	1	-1	-1
230m	Z	226	180	136	95	61	35	18	7	2	0	-0
240m	Z	217	175	135	96	64	39	21	11	5	2	0
250m	Z	209	170	132	97	66	41	23	12	4	1	0
260m	Z	200	166	131	97	67	43	24	12	5	2	0
270m	Z	196	165	131	98	69	45	26	13	6	2	1
280m	Z	187	159	128	96	69	45	27	14	6	2	1
290m	Z	180	154	125	96	68	45	27	14	7	2	0
300m	Z	175	151	124	96	69	46	28	15	7	3	1
310m	Z	165	144	117	91	67	44	27	15	7	3	1
320m	Z	160	138	115	90	65	44	28	15	7	3	1
330m	Z	154	135	111	89	64	44	27	15	8	3	1
340m	Z	148	130	109	86	63	43	27	15	7	3	1

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-07
Tx Loop : COL
Date : Nov 5, 1990
File : BC9007C.PEM

Station	Comp	Gains	STS	Delay	Stack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
20m	Z	2 A7	1498.5	90	1024	PP	144	57890	609	377	288	210	158	116	83	59	46
30m	Z	2 A7	1498.5	90	1024	PP	145	54430	592	375	286	205	148	107	79	58	40
40m	Z	2 A7	1498.5	90	1024	PP	146	49330	696	394	285	204	147	106	74	53	40
50m	Z	2 A7	1498.5	90	1024	PP	147	43260	674	388	275	192	139	95	67	49	34
60m	Z	2 A7	1498.5	90	1024	PP	148	37220	612	361	257	182	130	85	62	47	31
70m	Z	2 A7	1498.5	90	1024	PP	149	31620	593	343	247	171	123	81	53	42	29
80m	Z	3 A7	1498.5	90	1024	PP	150	26750	560	334	231	157	109	73	53	36	28
90m	Z	3 A7	1498.5	90	1024	PP	151	22750	623	350	237	160	111	72	49	36	25
100m	Z	3 A7	1498.5	90	1024	PP	152	19290	622	351	237	155	105	68	45	33	24
110m	Z	3 A7	1498.5	90	1024	PP	153	16450	582	336	224	145	98	65	43	31	20
120m	Z	4 A7	1498.5	90	1024	PP	154	14130	563	328	217	143	96	62	42	29	21
130m	Z	4 A7	1498.5	90	1024	PP	155	12110	552	323	215	140	93	59	39	27	20
140m	Z	4 A7	1498.5	90	1024	PP	156	10460	552	327	214	139	91	58	40	28	20
150m	Z	4 A7	1498.5	90	1024	PP	157	9083	553	332	219	140	91	58	39	28	19
160m	Z	4 A7	1498.5	90	1024	PP	158	7927	546	333	214	140	89	58	38	27	19
170m	Z	5 A7	1498.5	90	1024	PP	159	6946	597	354	224	142	91	58	38	28	19
180m	Z	5 A7	1498.5	90	1024	PP	160	6122	590	353	226	143	94	60	38	27	21
190m	Z	5 A7	1498.5	90	1024	PP	161	5385	560	350	224	141	90	57	40	29	21
200m	Z	5 A7	1498.5	90	1024	PP	162	4746	532	328	214	139	87	57	39	28	21
210m	Z	5 A7	1498.5	90	1024	PP	163	4236	510	320	210	133	85	57	39	29	21
220m	Z	6 A7	1498.5	90	1024	PP	164	3751	502	314	211	134	85	56	38	29	21
230m	Z	6 A7	1498.5	90	1024	PP	165	3368	486	314	206	135	86	57	39	30	22
240m	Z	6 A7	1498.5	90	1024	PP	166	3011	513	331	212	137	90	58	42	28	23
250m	Z	6 A7	1498.5	90	1024	PP	167	2713	588	366	232	146	90	60	41	31	23
260m	Z	6 A7	1498.5	90	1024	PP	168	2444	624	383	242	150	94	61	41	29	23
270m	Z	6 A7	1498.5	90	1024	PP	169	2217	631	389	246	151	95	63	43	31	24
280m	Z	6 A7	1498.5	90	1024	PP	170	1992	608	382	242	151	94	60	43	33	25
290m	Z	7 A7	1498.5	90	1024	PP	171	1804	593	374	239	149	95	62	43	33	25
300m	Z	7 A7	1498.5	90	1024	PP	172	1634	522	334	218	139	88	61	43	32	25
310m	Z	7 A7	1498.5	90	1024	PP	173	1480	544	350	229	143	95	62	44	33	26
320m	Z	7 A7	1498.5	90	1024	PP	174	1345	533	348	227	143	91	61	45	35	28
330m	Z	7 A7	1498.5	90	1024	PP	175	1228	514	338	221	140	91	63	46	35	27
340m	Z	7 A7	1498.5	90	1024	PP	176	1114	492	326	213	138	90	64	46	35	28

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-07
Grid	: BIRKCREEK	Tx Loop	: COL
Time Base	: 16.66 ms	Date	: Nov 5, 1990
Ramp Time	: 1.50 ms	File	: BC9007C.PEM

Station	Comp	10	11	12	13	14	15	16	17	18	19	20
20m	Z	30	20	14	9	7	6	5	4	3	2	1
30m	Z	28	19	14	1	7	6	4	3	3	2	2
40m	Z	26	18	13	9	7	5	3	3	2	2	1
50m	Z	23	16	12	9	6	5	4	2	2	2	2
60m	Z	23	15	11	8	6	5	3	3	2	1	1
70m	Z	22	15	11	6	6	4	3	3	2	2	1
80m	Z	18	13	1	8	6	4	3	3	2	2	1
90m	Z	18	12	8	7	6	5	3	3	2	1	1
100m	Z	17	11	9	7	6	4	3	3	2	1	1
110m	Z	16	12	9	6	5	4	3	3	2	2	1
120m	Z	16	11	8	6	5	4	3	3	2	1	1
130m	Z	15	11	8	6	6	4	4	3	2	2	1
140m	Z	14	11	8	6	5	4	3	3	2	2	1
150m	Z	14	11	8	6	5	4	3	3	2	2	1
160m	Z	15	12	8	6	5	5	3	3	2	2	1
170m	Z	15	12	1	6	6	5	4	3	2	2	1
180m	Z	15	11	9	7	6	5	4	3	3	2	2
190m	Z	15	10	10	7	6	4	4	3	2	2	2
200m	Z	15	12	1	8	6	5	4	3	3	2	1
210m	Z	17	13	10	8	6	5	4	3	3	2	2
220m	Z	15	12	11	7	7	5	4	3	3	2	2
230m	Z	17	12	10	9	7	5	4	4	3	2	2
240m	Z	17	14	10	9	8	6	5	4	3	2	2
250m	Z	18	14	11	8	8	6	5	4	3	3	2
260m	Z	18	14	11	9	8	7	5	4	3	3	2
270m	Z	19	14	11	9	8	6	5	4	3	2	2
280m	Z	20	16	13	1	8	7	6	4	3	3	2
290m	Z	20	17	13	10	9	7	6	5	4	3	2
300m	Z	19	16	14	11	9	7	5	5	4	3	2
310m	Z	22	17	14	12	1	8	6	5	4	3	2
320m	Z	22	18	14	12	10	8	7	5	4	3	3
330m	Z	23	19	15	12	10	8	7	6	4	3	3
340m	Z	24	19	16	13	12	9	7	6	4	3	3

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-07
Tx Loop : NE
Date : Nov 5, 1990
File : BC9007NE.PEM

Station	Cmp	Gains	NTS	Delay	SLack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
20m	Z	6 A7	1498.5	90	1024	PP	275	-3028	317	286	188	110	61	37	23	10	9
30m	Z	6 A7	1498.5	90	1024	PP	274	-2882	315	290	193	114	65	35	19	14	8
40m	Z	6 A7	1498.5	90	1024	PP	273	-2691	330	295	196	119	69	39	21	14	9
50m	Z	6 A7	1498.5	90	1024	PP	272	-2419	328	305	203	120	70	40	24	14	1
60m	Z	6 A7	1498.5	90	1024	PP	271	-2120	345	308	207	123	71	41	25	16	9
70m	Z	7 A7	1498.5	90	1024	PP	270	-1834	320	324	218	132	73	43	26	15	11
80m	Z	7 A7	1498.5	90	1024	PP	269	-1525	335	328	222	132	78	47	25	16	11
90m	Z	7 A7	1498.5	90	1024	PP	268	-1215	345	331	225	136	80	46	27	16	11
100m	Z	7 A7	1498.5	90	1024	PP	267	-941	358	337	230	137	82	46	27	18	11
110m	Z	7 A7	1498.5	90	1024	PP	266	-654	386	343	231	142	82	48	29	18	12
120m	Z	7 A7	1498.5	90	1024	PP	265	-409	416	355	236	146	82	49	29	19	12
130m	Z	7 A7	1498.5	90	1024	PP	264	-230	436	359	240	146	82	49	30	18	13
140m	Z	7 A7	1498.5	90	1024	PP	263	-37	461	367	244	147	84	49	31	18	14
150m	Z	7 A7	1498.5	90	1024	PP	262	114	472	371	243	145	86	50	29	18	14
160m	Z	7 A7	1498.5	90	1024	PP	261	208	504	382	249	150	87	51	29	18	13
170m	Z	7 A7	1498.5	90	1024	PP	260	328	520	389	250	147	86	50	29	19	14
180m	Z	7 A7	1498.5	90	1024	PP	259	395	516	384	249	147	86	49	30	20	14
190m	Z	7 A7	1498.5	90	1024	PP	258	464	508	379	248	145	87	50	29	20	13
200m	Z	7 A7	1498.5	90	1024	PP	257	470	498	371	245	147	87	50	30	19	13
210m	Z	7 A7	1498.5	90	1024	PP	256	526	491	366	243	145	85	50	32	19	14
220m	Z	7 A7	1498.5	90	1024	PP	255	513	470	354	238	145	84	49	30	20	14
230m	Z	7 A7	1498.5	90	1024	PP	254	548	461	350	232	143	83	50	31	20	15
240m	Z	7 A7	1498.5	90	1024	PP	253	533	456	343	232	143	83	49	30	20	15
250m	Z	7 A7	1498.5	90	1024	PP	252	530	447	340	227	138	85	49	32	21	15
260m	Z	7 A7	1498.5	90	1024	PP	251	524	435	334	225	140	82	48	31	22	16
270m	Z	7 A7	1498.5	90	1024	PP	250	539	425	324	223	136	82	49	32	20	15
280m	Z	7 A7	1498.5	90	1024	PP	249	501	400	310	216	133	82	47	31	21	16
290m	Z	7 A7	1498.5	90	1024	PP	248	508	403	308	214	132	78	48	29	21	16
300m	Z	7 A7	1498.5	90	1024	PP	247	470	384	299	205	129	79	47	31	22	17
310m	Z	7 A7	1498.5	90	1024	PP	246	469	367	287	198	124	76	48	30	20	17
320m	Z	7 A7	1498.5	90	1024	PP	245	429	341	268	192	120	74	46	30	21	17
330m	Z	7 A7	1498.5	90	1024	PP	244	422	330	261	183	115	73	45	28	22	16
340m	Z	7 A7	1498.5	90	1024	PP	243	391	310	246	175	112	68	45	29	20	15

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-07
Tx Loop : NE
Date : Nov 5, 1990
File : BC9007NE.PEM

Station	Comp	10	11	12	13	14	15	16	17	18	19	20
20m	Z	5	4	3	3	3	2	1	1	1	1	1
30m	Z	7	5	4	3	3	2	1	1	1	1	1
40m	Z	7	5	3	4	3	3	2	2	1	1	1
50m	Z	7	5	4	3	3	3	2	1	1	1	1
60m	Z	8	5	5	4	3	2	2	2	1	1	1
70m	Z	8	6	4	4	3	2	2	2	1	1	1
80m	Z	9	6	5	3	3	2	2	2	1	1	1
90m	Z	7	7	5	4	3	3	2	2	1	1	1
100m	Z	8	7	6	4	3	3	2	2	1	1	1
110m	Z	9	6	5	4	4	3	2	2	1	1	1
120m	Z	9	7	5	4	4	3	2	2	2	1	1
130m	Z	8	8	6	4	4	3	2	2	1	1	1
140m	Z	9	8	6	5	4	3	2	2	1	1	1
150m	Z	9	8	5	5	3	3	3	2	2	1	1
160m	Z	10	7	6	5	5	3	2	2	2	1	1
170m	Z	11	7	7	5	4	3	3	2	1	1	1
180m	Z	10	8	7	5	4	3	3	2	2	1	1
190m	Z	1	8	6	5	4	4	3	2	2	1	1
200m	Z	10	9	6	5	5	3	3	2	2	1	1
210m	Z	11	8	7	6	5	3	3	2	2	2	1
220m	Z	11	9	7	6	4	3	3	2	2	1	1
230m	Z	12	9	7	6	5	4	3	3	2	2	1
240m	Z	11	8	7	6	5	4	3	3	2	2	1
250m	Z	11	9	8	6	6	4	4	3	3	2	1
260m	Z	12	10	8	6	5	4	4	3	2	2	2
270m	Z	12	9	8	6	5	4	4	3	3	2	1
280m	Z	13	10	9	7	6	5	4	3	2	2	2
290m	Z	12	10	8	7	6	4	4	3	3	2	2
300m	Z	13	10	8	7	5	5	4	3	3	2	1
310m	Z	13	11	8	7	6	5	5	3	3	2	2
320m	Z	13	11	9	8	6	5	5	4	3	2	2
330m	Z	13	11	9	8	6	6	4	4	3	3	2
340m	Z	14	12	9	8	7	6	5	4	3	3	2

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-07
Tx Loop : NW
Date : Nov 5, 1990
File : BC9007NW.PEM

Station	Cmp	Gains	XTS	Delay	Stack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
20m	Z	5 A7	1498.5	90	1024	PP	209	-3848	362	274	164	99	59	30	20	13	6
30m	Z	6 A7	1498.5	90	1024	PP	208	-3049	405	289	178	10	59	14	20	13	8
40m	Z	6 A7	1498.5	90	1024	PP	207	-2145	421	301	181	105	63	37	22	15	9
50m	Z	7 A7	1498.5	90	1024	PP	206	-1692	442	324	192	110	66	40	24	15	1
60m	Z	7 A7	1498.5	90	1024	PP	205	-1142	444	328	198	115	66	42	26	16	11
70m	Z	7 A7	1498.5	90	1024	PP	204	-688	461	332	201	118	70	41	27	16	11
80m	Z	7 A7	1498.5	90	1024	PP	203	-329	469	331	200	120	70	43	28	17	13
90m	Z	7 A7	1498.5	90	1024	PP	202	-59	461	329	205	122	74	44	27	19	12
100m	Z	7 A7	1498.5	90	1024	PP	201	149	460	327	205	122	73	46	29	18	13
110m	Z	7 A7	1498.5	90	1024	PP	200	361	461	328	206	123	76	45	28	20	14
120m	Z	7 A7	1498.5	90	1024	PP	199	501	467	328	206	127	76	45	29	19	14
130m	Z	7 A7	1498.5	90	1024	PP	198	564	465	325	207	124	77	46	26	19	14
140m	Z	7 A7	1498.5	90	1024	PP	197	616	468	329	210	127	79	47	28	19	13
150m	Z	7 A7	1498.5	90	1024	PP	196	651	451	322	212	129	79	47	30	19	14
160m	Z	7 A7	1498.5	90	1024	PP	195	695	489	340	215	129	78	47	30	19	14
170m	Z	7 A7	1498.5	90	1024	PP	194	682	492	339	219	128	79	48	30	19	13
180m	Z	7 A7	1498.5	90	1024	PP	193	697	487	342	216	132	76	46	30	19	15
190m	Z	7 A7	1498.5	90	1024	PP	192	673	474	335	212	130	78	47	29	20	14
200m	Z	7 A7	1498.5	90	1024	PP	191	655	460	324	209	128	78	48	29	21	15
210m	Z	7 A7	1498.5	90	1024	PP	190	654	452	324	210	125	79	48	29	20	14
220m	Z	7 A7	1498.5	90	1024	PP	189	615	426	309	204	126	75	46	31	20	15
230m	Z	7 A7	1498.5	90	1024	PP	188	605	415	305	202	126	76	49	29	20	15
240m	Z	7 A7	1498.5	90	1024	PP	187	569	401	298	200	125	74	47	28	21	15
250m	Z	7 A7	1498.5	90	1024	PP	186	550	398	294	200	122	77	48	31	20	15
260m	Z	7 A7	1498.5	90	1024	PP	185	519	384	293	197	122	74	46	32	20	16
270m	Z	7 A7	1498.5	90	1024	PP	184	507	379	285	195	120	75	48	30	21	15
280m	Z	7 A7	1498.5	90	1024	PP	183	462	358	277	190	118	73	46	29	21	15
290m	Z	7 A7	1498.5	90	1024	PP	182	440	349	272	189	119	72	44	30	22	16
300m	Z	7 A7	1498.5	90	1024	PP	181	421	335	264	181	114	72	46	30	21	16
310m	Z	7 A7	1498.5	90	1024	PP	180	390	317	244	173	109	69	46	31	22	16
320m	Z	7 A7	1498.5	90	1024	PP	179	365	294	231	163	103	67	44	29	22	16
330m	Z	7 A7	1498.5	90	1024	PP	178	350	280	222	156	102	67	42	30	22	17
340m	Z	7 A7	1498.5	90	1024	PP	177	329	267	213	152	97	67	43	30	22	17

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-07
Tx Loop : NW
Date : Nov 5, 1990
File : BC9007NW.PEM

Station	Comp	10	11	12	13	14	15	16	17	18	19	20
20m	Z	6	5	4	3	2	1	1	2	1	0	1
30m	Z	7	5	4	3	2	2	1	1	1	1	1
40m	Z	6	5	5	3	2	2	2	1	1	1	1
50m	Z	7	5	4	4	2	2	2	1	1	1	1
60m	Z	8	6	5	4	3	2	2	2	1	1	1
70m	Z	7	6	4	4	3	2	2	1	1	1	1
80m	Z	8	6	5	4	3	2	2	2	1	1	1
90m	Z	9	6	5	4	3	2	1	1	1	1	1
100m	Z	9	7	6	4	3	2	1	2	1	1	1
110m	Z	9	6	5	4	3	2	2	1	1	1	1
120m	Z	1	7	5	4	4	2	2	2	1	1	1
130m	Z	12	6	5	5	2	4	2	1	1	1	1
140m	Z	9	7	5	5	3	3	2	1	1	1	1
150m	Z	10	8	5	4	4	3	2	2	2	1	1
160m	Z	1	7	6	5	3	3	2	1	2	1	1
170m	Z	10	7	5	4	4	3	2	2	1	1	1
180m	Z	10	8	7	4	4	3	3	2	1	1	1
190m	Z	11	7	5	4	3	3	3	2	2	1	1
200m	Z	10	0	6	5	4	3	2	2	2	2	1
210m	Z	11	8	6	5	4	3	3	2	2	1	1
220m	Z	10	9	6	5	4	3	2	2	2	1	1
230m	Z	11	9	6	5	4	3	3	2	2	2	1
240m	Z	11	9	7	5	4	3	3	2	2	1	1
250m	Z	12	8	7	5	4	3	3	2	2	1	1
260m	Z	12	9	6	5	4	3	3	2	2	2	1
270m	Z	12	8	7	5	4	4	3	2	2	2	1
280m	Z	12	1	7	6	5	4	4	2	2	1	1
290m	Z	13	10	8	6	5	4	3	2	2	1	1
300m	Z	12	9	7	6	5	4	3	3	2	1	1
310m	Z	12	10	7	6	5	4	3	3	2	2	1
320m	Z	14	11	8	6	5	4	3	3	2	1	2
330m	Z	13	11	8	7	5	4	3	3	2	1	1
340m	Z	13	11	8	7	5	4	4	3	3	2	1

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-07
Tx Loop : SE
Date : Nov 5, 1990
File : BC9007SE.PEM

Station	Cmp	Gains	XTS	Delay	Slack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
20m	Z	3 A7	1498.5	90	1024	PP	276	-18970	549	468	283	152	84	46	25	14	10
30m	Z	3 A7	1498.5	90	1024	PP	277	-17740	627	501	302	160	88	47	29	15	11
40m	Z	4 A7	1498.5	90	1024	PP	278	-14970	740	547	324	174	96	55	33	19	12
50m	Z	4 A7	1498.5	90	1024	PP	279	-11650	891	595	344	190	105	59	36	23	15
60m	Z	4 A7	1498.5	90	1024	PP	280	-8088	1064	646	363	202	112	68	40	24	19
70m	Z	5 A7	1498.5	90	1024	PP	281	-5136	1197	698	390	215	124	73	44	30	19
80m	Z	6 A7	1498.5	90	1024	PP	282	-2594	1369	756	415	228	130	79	46	31	20
90m	Z	6 A7	1498.5	90	1024	PP	283	-559	1524	802	436	238	138	80	52	34	22
100m	Z	6 A7	1498.5	90	1024	PP	284	916	1611	838	450	241	140	84	53	34	24
110m	Z	6 A7	1498.5	90	1024	PP	285	1853	1656	865	459	247	143	87	55	36	24
120m	Z	6 A7	1498.5	90	1024	PP	286	2525	1685	870	460	249	148	91	55	35	27
130m	Z	6 A7	1498.5	90	1024	PP	287	3037	1706	875	470	256	152	92	58	37	27
140m	Z	6 A7	1498.5	90	1024	PP	288	3533	1705	891	472	258	152	92	59	39	27
150m	Z	6 A7	1498.5	90	1024	PP	289	3702	1720	892	478	260	152	94	59	39	27
160m	Z	6 A7	1498.5	90	1024	PP	290	3674	1574	850	467	259	152	97	61	42	29
170m	Z	6 A7	1498.5	90	1024	PP	291	3703	1526	838	460	257	155	96	63	43	31
180m	Z	6 A7	1498.5	90	1024	PP	292	3611	1492	812	458	261	157	98	63	43	30
190m	Z	6 A7	1498.5	90	1024	PP	293	3512	1463	812	460	261	155	99	64	44	32
200m	Z	6 A7	1498.5	90	1024	PP	294	3444	1437	801	456	258	155	99	66	44	33
210m	Z	6 A7	1498.5	90	1024	PP	295	3219	1376	786	452	256	157	99	63	44	34
220m	Z	6 A7	1498.5	90	1024	PP	296	3140	1363	784	450	257	155	99	65	46	34
230m	Z	6 A7	1498.5	90	1024	PP	297	2930	1342	777	447	258	155	99	67	45	35
240m	Z	6 A7	1498.5	90	1024	PP	298	2747	1270	747	439	251	153	97	66	46	33
250m	Z	6 A7	1498.5	90	1024	PP	299	2631	1224	743	430	249	153	98	68	48	36
260m	Z	6 A7	1498.5	90	1024	PP	300	2424	1169	711	420	247	149	98	68	48	36
270m	Z	6 A7	1498.5	90	1024	PP	301	2285	1116	685	412	245	149	99	70	50	38
280m	Z	6 A7	1498.5	90	1024	PP	302	2143	1082	667	406	237	147	97	69	49	38
290m	Z	6 A7	1498.5	90	1024	PP	303	1996	1012	638	391	234	149	97	69	51	38
300m	Z	6 A7	1498.5	90	1024	PP	304	1871	976	619	382	230	145	96	69	50	41
310m	Z	7 A7	1498.5	90	1024	PP	305	1737	980	622	388	231	149	100	69	52	41
320m	Z	7 A7	1498.5	90	1024	PP	306	1616	935	605	377	228	143	97	69	52	41
330m	Z	7 A7	1498.5	90	1024	PP	307	1499	882	582	368	223	143	98	71	54	43
340m	Z	7 A7	1498.5	90	1024	PP	308	1370	826	556	351	214	141	97	72	55	43

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-07
Grid	: BIRKCREEK	Tx Loop	: SE
Time Base	: 16.66 ms	Date	: Nov 5, 1990
Ramp Time	: 1.50 ms	File	: BC9007SE.PEM

Station	Comp	10	11	12	13	14	15	16	17	18	19	20
20m	Z	6	6	5	4	3	3	2	2	1	1	1
30m	Z	8	7	4	5	3	3	2	2	2	2	1
40m	Z	9	8	7	6	4	3	3	2	2	2	1
50m	Z	11	9	6	5	5	3	2	2	2	1	1
60m	Z	12	10	8	6	5	4	3	3	2	2	1
70m	Z	13	9	8	7	5	3	3	3	2	2	1
80m	Z	16	12	9	7	6	5	3	3	2	2	1
90m	Z	17	13	9	7	6	5	4	3	2	2	1
100m	Z	17	12	1	7	6	4	3	3	2	2	1
110m	Z	18	13	1	8	6	5	4	3	3	2	2
120m	Z	18	13	11	8	6	5	4	3	3	2	2
130m	Z	18	14	1	8	6	6	5	3	3	2	2
140m	Z	20	14	11	8	6	6	5	4	3	3	2
150m	Z	21	15	11	1	7	5	4	3	3	2	2
160m	Z	22	16	12	9	8	6	5	4	3	2	2
170m	Z	22	16	12	10	8	6	5	4	3	3	2
180m	Z	22	16	13	11	8	7	6	4	3	3	2
190m	Z	22	18	13	11	8	7	6	4	4	3	2
200m	Z	24	19	15	11	9	7	6	5	3	3	2
210m	Z	23	19	14	12	9	8	6	5	4	3	2
220m	Z	25	20	15	12	1	9	6	5	4	3	2
230m	Z	25	20	16	13	11	8	7	6	4	3	3
240m	Z	25	21	16	13	11	8	6	7	5	3	3
250m	Z	28	21	17	14	11	9	8	6	5	3	3
260m	Z	27	22	17	14	12	9	8	6	5	4	3
270m	Z	28	22	19	15	12	10	8	6	5	4	3
280m	Z	30	24	19	15	13	11	8	7	5	4	3
290m	Z	31	25	20	16	13	11	9	7	5	5	3
300m	Z	32	25	20	17	13	12	9	8	6	5	3
310m	Z	33	27	22	17	15	12	1	8	6	4	3
320m	Z	33	27	22	18	15	12	10	8	7	5	3
330m	Z	35	27	23	19	16	13	11	8	6	5	4
340m	Z	35	28	24	21	17	13	11	9	7	5	4

BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-07
Tx Loop : SW
Date : Nov 5, 1990
File : BC9007SW.PEM

Station	Cmp	Gains	XIS	Delay	Stack	Grid	Rkgl	PP	1	2	3	4	5	6	7	8	9
20m	Z	5 A7	1498.5	90	1024	PP	210	-5859	124	200	171	117	69	40	21	17	8
30m	Z	5 A7	1498.5	90	1024	PP	211	-5050	240	302	209	130	76	45	29	17	11
40m	Z	5 A7	1498.5	90	1024	PP	212	-3826	359	349	221	135	79	46	28	17	11
50m	Z	6 A7	1498.5	90	1024	PP	213	-2693	451	379	244	140	83	51	31	19	13
60m	Z	7 A7	1498.5	90	1024	PP	214	-1755	522	423	266	156	88	52	31	20	15
70m	Z	7 A7	1498.5	90	1024	PP	215	-956	628	458	276	157	92	56	32	22	14
80m	Z	7 A7	1498.5	90	1024	PP	216	-299	699	486	284	165	94	55	35	22	13
90m	Z	7 A7	1498.5	90	1024	PP	217	121	752	504	296	166	97	57	36	22	15
100m	Z	7 A7	1498.5	90	1024	PP	218	482	801	522	307	173	10	58	37	23	14
110m	Z	7 A7	1498.5	90	1024	PP	219	745	889	523	309	171	10	59	37	23	16
120m	Z	7 A7	1498.5	90	1024	PP	220	997	810	526	311	176	104	61	37	24	15
130m	Z	7 A7	1498.5	90	1024	PP	221	1029	798	526	312	179	102	62	36	24	17
140m	Z	7 A7	1498.5	90	1024	PP	222	1075	788	516	314	177	101	65	38	25	17
150m	Z	7 A7	1498.5	90	1024	PP	223	1080	770	517	315	180	104	64	38	25	17
160m	Z	7 A7	1498.5	90	1024	PP	224	1130	777	511	312	179	106	62	39	26	16
170m	Z	7 A7	1498.5	90	1024	PP	225	1075	748	504	307	176	105	65	40	26	17
180m	Z	7 A7	1498.5	90	1024	PP	226	1061	741	500	308	181	105	63	38	25	17
190m	Z	7 A7	1498.5	90	1024	PP	227	1012	723	491	307	180	105	62	40	26	16
200m	Z	7 A7	1498.5	90	1024	PP	228	1004	699	480	305	178	105	64	39	24	18
210m	Z	7 A7	1498.5	90	1024	PP	229	940	676	474	302	176	102	64	38	26	17
220m	Z	7 A7	1498.5	90	1024	PP	230	914	655	467	300	176	102	63	38	25	18
230m	Z	7 A7	1498.5	90	1024	PP	231	860	629	455	297	177	105	64	38	26	18
240m	Z	7 A7	1498.5	90	1024	PP	232	818	604	450	293	173	103	62	39	27	19
250m	Z	7 A7	1498.5	90	1024	PP	233	774	583	435	286	170	101	61	39	26	18
260m	Z	7 A7	1498.5	90	1024	PP	234	724	557	422	278	169	10	63	39	26	18
270m	Z	7 A7	1498.5	90	1024	PP	235	667	535	408	276	167	101	61	39	26	19
280m	Z	7 A7	1498.5	90	1024	PP	236	629	512	401	272	165	98	61	39	26	19
290m	Z	7 A7	1498.5	90	1024	PP	237	574	485	381	261	162	97	61	40	27	20
300m	Z	7 A7	1498.5	90	1024	PP	238	553	462	366	251	154	94	59	38	26	19
310m	Z	7 A7	1498.5	90	1024	PP	239	501	426	342	245	152	92	59	39	28	21
320m	Z	7 A7	1498.5	90	1024	PP	240	474	404	327	233	145	89	56	40	26	20
330m	Z	7 A7	1498.5	90	1024	PP	241	434	379	311	222	142	99	57	38	28	21
340m	Z	7 A7	1498.5	90	1024	PP	242	412	356	295	211	136	86	57	37	27	20

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-07
Tx Loop : SW
Date : Nov 5, 1990
File : BC9007SW.PEM

Station	Cmp	10	11	12	13	14	15	16	17	18	19	20
20m	Z	7	5	4	3	2	2	1	1	1	1	0
30m	Z	8	6	4	4	2	1	1	1	1	1	1
40m	Z	8	6	4	3	3	2	1	1	1	1	0
50m	Z	7	6	4	3	2	1	1	1	1	1	1
60m	Z	9	7	5	4	3	2	1	2	1	1	1
70m	Z	1	7	5	3	3	2	1	2	1	1	1
80m	Z	9	6	5	5	3	2	2	2	1	1	1
90m	Z	1	7	5	3	3	2	2	1	1	1	1
100m	Z	10	8	5	4	3	2	2	2	1	1	1
110m	Z	1	7	5	4	3	3	2	1	1	1	1
120m	Z	10	7	5	5	3	2	2	1	1	1	1
130m	Z	12	8	5	4	3	3	2	2	1	1	1
140m	Z	11	8	6	4	3	3	2	2	1	1	1
150m	Z	11	7	6	4	3	2	2	2	1	1	1
160m	Z	11	8	6	5	3	3	2	2	2	1	1
170m	Z	11	8	6	4	4	3	2	2	1	1	1
180m	Z	11	9	6	5	4	3	2	2	2	1	1
190m	Z	11	8	6	5	4	4	3	2	2	1	1
200m	Z	13	9	6	5	4	3	2	2	2	1	1
210m	Z	13	9	6	6	4	3	2	2	2	1	1
220m	Z	12	9	7	5	4	4	3	2	1	1	1
230m	Z	12	1	7	5	5	4	3	2	2	1	1
240m	Z	14	1	7	6	5	3	3	2	1	1	1
250m	Z	14	1	7	6	5	4	3	2	2	1	1
260m	Z	13	11	8	6	6	3	2	3	2	2	1
270m	Z	13	10	8	6	5	3	3	3	2	1	2
280m	Z	13	10	8	7	5	5	4	3	2	2	1
290m	Z	15	11	9	7	5	4	4	2	2	2	1
300m	Z	14	11	8	6	6	5	3	3	2	1	1
310m	Z	16	11	9	7	6	4	4	3	3	2	2
320m	Z	16	13	1	7	6	5	4	3	2	2	2
330m	Z	15	13	1	7	6	5	4	3	3	2	1
340m	Z	16	12	9	7	6	5	4	3	3	2	2

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-08
Tx Loop : COL
Date : Nov 3, 1990
File : BC9008C.PEM

Station	Cmp	Gains	STS	Delay	SLack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
10m	Z	1 A7	1525.5	90	1024	PP	3	64750	985	538	420	343	281	229	198	173	140
20m	Z	1 A7	1525.5	90	1024	PP	4	61170	970	509	386	313	258	214	178	151	129
30m	Z	2 A7	1525.5	90	1024	PP	5	56510	978	511	389	302	256	215	184	155	132
40m	Z	2 A7	1525.5	90	1024	PP	6	50890	965	516	379	309	258	215	186	160	137
50m	Z	2 A7	1525.5	90	1024	PP	7	44710	954	509	377	303	257	220	189	163	142
60m	Z	2 A7	1525.5	90	1024	PP	8	38360	923	498	378	307	262	222	193	169	146
70m	Z	2 A7	1525.5	90	1024	PP	9	32250	891	514	367	311	263	231	200	177	152
80m	Z	3 A7	1525.5	90	1024	PP	10	26670	900	518	380	310	266	231	209	183	163
90m	Z	3 A7	1525.5	90	1024	PP	11	21970	950	529	384	312	275	244	215	193	171
100m	Z	3 A7	1525.5	90	1024	PP	12	18010	969	525	381	312	278	252	226	204	183
110m	Z	4 A7	1525.5	90	1024	PP	13	14760	950	539	391	328	292	268	240	219	194
120m	Z	4 A7	1525.5	90	1024	PP	14	12120	929	552	416	350	314	282	264	234	211
130m	Z	4 A7	1525.5	90	1024	PP	15	9954	875	556	432	371	334	308	282	257	228
140m	Z	4 A7	1525.5	90	1024	PP	16	8201	826	545	443	395	363	333	307	279	248
150m	Z	5 A7	1525.5	90	1024	PP	17	6766	769	528	447	414	388	359	331	300	270
160m	Z	5 A7	1525.5	90	1024	PP	18	5584	669	495	451	432	414	386	358	328	293
170m	Z	5 A7	1525.5	90	1024	PP	19	4613	569	471	456	455	444	418	389	357	316
180m	Z	5 A7	1525.5	90	1024	PP	20	3831	794	626	558	522	488	453	418	381	341
190m	Z	6 A7	1525.5	90	1024	PP	21	3166	847	691	619	568	528	490	447	408	366
200m	Z	6 A7	1525.5	90	1024	PP	22	2595	869	732	663	607	560	522	475	434	388
210m	Z	6 A7	1525.5	90	1024	PP	23	2127	868	755	689	635	586	542	496	450	402
220m	Z	6 A7	1525.5	90	1024	PP	24	1741	856	764	702	644	598	552	506	459	409
230m	Z	7 A7	1525.5	90	1024	PP	25	1406	824	744	689	635	588	543	499	455	409
240m	Z	7 A7	1525.5	90	1024	PP	26	1127	749	691	647	603	560	521	484	445	402
250m	Z	7 A7	1525.5	90	1024	PP	27	938	662	618	580	542	511	480	451	417	380
260m	Z	7 A7	1525.5	90	1024	PP	28	582	609	592	579	557	532	505	475	442	407
270m	Z	7 A7	1525.5	90	1024	PP	29	329	386	391	397	404	401	400	395	384	370
280m	Z	7 A7	1525.5	90	1024	PP	30	246	299	308	315	322	325	329	332	329	321
290m	Z	7 A7	1525.5	90	1024	PP	31	168	222	237	247	263	272	284	288	292	292

CRONE GEOPHYSICS & EXPLORATION LTD

BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-08
Tx Loop : COL
Date : Nov 3, 1990
File : BC9008C.PEM

Station	Comp	10	11	12	13	14	15	16	17	18	19	20
10m	Z	121	99	84	70	57	47	37	29	23	16	11
20m	Z	107	88	72	60	48	40	31	23	17	13	8
30m	Z	111	92	74	62	49	40	32	25	18	13	8
40m	Z	113	97	79	65	53	42	33	26	19	13	9
50m	Z	120	102	88	69	57	46	36	28	20	14	1
60m	Z	128	106	91	73	61	49	38	30	22	15	1
70m	Z	133	114	94	79	63	51	42	31	23	16	1
80m	Z	139	121	102	85	69	54	42	34	25	16	11
90m	Z	149	128	109	90	73	58	47	36	26	18	11
100m	Z	158	138	116	97	79	63	49	38	28	19	12
110m	Z	172	147	125	104	85	68	53	40	29	20	12
120m	Z	186	160	136	113	93	74	57	44	32	22	14
130m	Z	202	175	147	122	10	30	62	47	34	23	15
140m	Z	220	190	160	133	108	86	68	51	37	25	16
150m	Z	238	206	175	143	117	93	73	55	40	27	17
160m	Z	259	223	190	156	127	100	79	59	43	29	18
170m	Z	281	242	204	169	138	109	85	64	46	31	19
180m	Z	300	259	219	180	147	116	90	68	49	33	20
190m	Z	322	277	234	193	156	124	97	72	52	34	21
200m	Z	341	293	248	205	166	132	103	78	55	37	22
210m	Z	354	305	257	213	174	138	108	81	58	39	24
220m	Z	360	310	263	218	178	142	111	84	60	40	24
230m	Z	362	313	266	221	181	146	114	86	62	41	25
240m	Z	358	312	266	222	182	146	115	87	62	42	25
250m	Z	341	297	254	211	173	138	109	83	60	41	24
260m	Z	366	324	281	238	198	162	129	99	73	49	30
270m	Z	351	324	293	257	219	182	144	110	79	52	32
280m	Z	312	294	271	242	209	175	139	106	76	50	30
290m	Z	289	278	261	236	206	170	135	101	71	46	28

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-08
Tx Loop : NE
Date : Nov 3, 1990
File : BC9008NE.PEM

Station	Cmp	Gains	ATS	Delay	Stack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
10m	Z	4 A7	1525.5	90	1024	PP	133	-11050	483	365	291	230	194	178	171	153	140
20m	Z	4 A7	1525.5	90	1024	PP	134	-12280	514	398	308	253	218	198	188	168	154
30m	Z	4 A7	1525.5	90	1024	PP	135	-12680	550	419	333	272	237	211	195	185	164
40m	Z	4 A7	1525.5	90	1024	PP	136	-12120	606	453	352	288	254	231	210	198	178
50m	Z	4 A7	1525.5	90	1024	PP	137	-10570	673	486	374	315	274	247	227	212	192
60m	Z	4 A7	1525.5	90	1024	PP	138	-8455	759	526	401	337	294	273	246	225	210
70m	Z	5 A7	1525.5	90	1024	PP	139	-6037	822	561	436	363	320	293	264	246	222
80m	Z	5 A7	1525.5	90	1024	PP	140	-3786	910	608	457	386	340	314	286	263	241
90m	Z	6 A7	1525.5	90	1024	PP	141	-1866	878	606	479	408	366	339	311	283	257
100m	Z	7 A7	1525.5	90	1024	PP	142	-362	777	581	487	431	392	360	335	306	276
110m	Z	7 A7	1525.5	90	1024	PP	143	826	768	590	502	452	416	385	354	324	294
120m	Z	6 A7	1525.5	90	1024	PP	144	1740	832	630	537	478	438	406	376	343	311
130m	Z	6 A7	1525.5	90	1024	PP	145	2337	873	663	559	504	458	425	393	360	326
140m	Z	6 A7	1525.5	90	1024	PP	146	2678	883	670	575	519	478	443	410	377	341
150m	Z	6 A7	1525.5	90	1024	PP	147	2956	869	666	575	527	489	454	422	388	351
160m	Z	6 A7	1525.5	90	1024	PP	148	2944	826	633	565	527	494	464	430	398	359
170m	Z	6 A7	1525.5	90	1024	PP	149	2960	751	598	541	514	487	460	427	392	356
180m	Z	6 A7	1525.5	90	1024	PP	150	2801	849	654	569	523	487	456	421	387	351
190m	Z	6 A7	1525.5	90	1024	PP	151	2639	794	633	554	506	468	436	401	367	333
200m	Z	6 A7	1525.5	90	1024	PP	152	2402	740	597	532	486	446	412	379	346	311
210m	Z	6 A7	1525.5	90	1024	PP	153	2241	683	562	492	446	407	376	345	311	279
220m	Z	6 A7	1525.5	90	1024	PP	154	2049	629	521	460	412	376	345	314	284	256
230m	Z	6 A7	1525.5	90	1024	PP	155	1805	584	495	439	397	367	341	314	287	261
240m	Z	7 A7	1525.5	90	1024	PP	156	1520	559	482	436	408	387	371	354	332	305
245m	Z	7 A7	1525.5	90	1024	PP	157	1383	533	463	429	412	404	395	387	372	345
250m	Z	7 A7	1525.5	90	1024	PP	158	1156	552	498	472	461	463	464	461	450	422
255m	Z	7 A7	1525.5	90	1024	PP	159	795	868	857	830	801	783	765	744	707	650
260m	Z	7 A7	1525.5	90	1024	PP	160	447	616	658	697	743	778	802	806	787	737
265m	Z	7 A7	1525.5	90	1024	PP	161	386	507	527	554	585	614	640	654	650	624
270m	Z	7 A7	1525.5	90	1024	PP	162	331	436	447	462	488	512	539	562	572	563
275m	Z	7 A7	1525.5	90	1024	PP	163	310	406	424	431	453	474	498	515	524	518
280m	Z	7 A7	1525.5	90	1024	PP	164	349	437	450	462	472	489	501	509	508	496
285m	Z	7 A7	1525.5	90	1024	PP	165	348	428	441	450	461	471	480	485	481	469
290m	Z	7 A7	1525.5	90	1024	PP	166	379	461	470	480	490	495	500	500	493	480

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-08
Tx Loop : NE
Date : Nov 3, 1990
File : BC9008NE.PEM

Station	Cmp	10	11	12	13	14	15	16	17	18	19	20
10m	Z	124	108	93	79	65	52	43	34	26	18	12
20m	Z	138	121	104	88	73	59	48	37	29	20	14
30m	Z	149	131	111	94	79	63	51	39	30	21	15
40m	Z	160	140	120	101	83	68	54	42	32	23	15
50m	Z	173	148	129	109	90	73	59	45	34	25	16
60m	Z	184	162	140	115	96	79	62	48	36	26	18
70m	Z	198	173	150	124	102	84	67	51	39	28	18
80m	Z	213	188	161	133	111	90	70	56	42	29	20
90m	Z	229	200	172	144	119	97	76	60	45	32	21
100m	Z	247	216	183	155	128	104	82	64	48	34	22
110m	Z	262	228	197	165	136	110	88	68	51	36	24
120m	Z	277	242	208	175	144	118	94	73	55	39	25
130m	Z	290	255	220	184	154	125	100	78	58	41	27
140m	Z	304	267	231	195	162	132	106	83	62	44	28
150m	Z	314	276	240	202	170	140	113	88	67	47	30
160m	Z	322	283	246	210	177	147	119	94	71	50	33
170m	Z	319	281	245	210	179	151	124	99	75	53	34
180m	Z	314	278	243	211	182	155	130	104	79	56	36
190m	Z	297	263	232	204	178	155	132	107	82	58	38
200m	Z	279	247	219	195	175	155	135	112	87	62	40
210m	Z	248	219	197	178	164	150	134	113	89	64	42
220m	Z	227	200	180	165	155	146	134	116	92	66	43
230m	Z	231	205	183	165	156	147	137	119	96	69	45
240m	Z	274	239	208	182	165	153	140	123	98	72	47
245m	Z	312	271	231	197	173	157	143	124	10	73	47
250m	Z	380	327	272	226	192	168	150	130	104	76	50
255m	Z	574	481	389	308	247	206	175	146	116	85	55
260m	Z	661	564	464	372	299	245	205	168	131	95	62
265m	Z	578	513	439	366	304	253	210	171	132	94	61
270m	Z	515	487	427	364	306	255	210	170	130	92	59
275m	Z	495	455	404	350	297	248	205	165	126	89	57
280m	Z	473	434	387	335	284	238	195	156	118	83	53
285m	Z	448	415	373	324	275	230	187	148	112	78	50
290m	Z	456	422	377	326	273	222	176	137	102	71	45

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-08
Tx Loop : NW
Date : Nov 3, 1990
File : BC9008NW.PEM

Station	Cmp	Gains	STS	Delay	Stack	Ovld	Rdgf	PP	1	2	3	4	5	6	7	8	9
10m	Z	4 A7	1525.5	90	1024	PP	132	-10140	351	261	178	146	108	97	86	81	72
20m	Z	5 A7	1525.5	90	1024	PP	111	-7299	391	294	209	160	124	106	99	91	78
30m	Z	5 A7	1525.5	90	1024	PP	110	-4710	430	309	235	176	140	115	106	98	83
40m	Z	6 A7	1525.5	90	1024	PP	129	-2478	469	332	248	185	148	128	112	102	88
50m	Z	7 A7	1525.5	90	1024	PP	128	-999	529	366	263	199	158	134	120	108	97
60m	Z	7 A7	1525.5	90	1024	PP	127	86	554	381	279	206	169	142	126	114	103
70m	Z	7 A7	1525.5	90	1024	PP	126	927	560	388	285	213	173	155	133	117	108
80m	Z	7 A7	1525.5	90	1024	PP	125	1444	556	389	290	224	181	157	139	124	110
90m	Z	7 A7	1525.5	90	1024	PP	124	1763	516	364	278	220	180	162	144	127	115
100m	Z	6 A7	1525.5	90	1024	PP	123	1870	404	299	248	210	182	165	147	133	121
110m	Z	6 A7	1525.5	90	1024	PP	122	1954	377	291	243	211	188	168	152	139	124
120m	Z	6 A7	1525.5	90	1024	PP	121	1892	420	312	260	222	198	175	159	145	130
130m	Z	6 A7	1525.5	90	1024	PP	120	1822	424	320	260	227	202	183	166	150	134
140m	Z	7 A7	1525.5	90	1024	PP	119	1688	414	315	264	236	207	190	173	158	140
150m	Z	7 A7	1525.5	90	1024	PP	118	1523	374	295	262	236	216	199	181	166	148
160m	Z	7 A7	1525.5	90	1024	PP	117	1386	323	270	248	235	220	204	187	169	153
170m	Z	7 A7	1525.5	90	1024	PP	116	1289	289	249	242	234	220	208	189	171	154
180m	Z	7 A7	1525.5	90	1024	PP	115	1175	365	309	278	256	233	213	194	175	156
190m	Z	7 A7	1525.5	90	1024	PP	114	1075	396	329	295	260	239	214	194	174	153
200m	Z	7 A7	1525.5	90	1024	PP	113	943	414	347	309	272	243	219	196	174	152
210m	Z	7 A7	1525.5	90	1024	PP	112	878	429	359	303	264	233	207	182	159	137
220m	Z	7 A7	1525.5	90	1024	PP	111	818	418	343	287	244	209	183	159	136	117
230m	Z	7 A7	1525.5	90	1024	PP	110	734	378	304	246	202	172	146	125	108	92
235m	Z	7 A7	1525.5	90	1024	PP	109	725	347	269	214	169	139	120	101	86	74
240m	Z	7 A7	1525.5	90	1024	PP	108	716	299	220	165	124	102	83	71	59	53
245m	Z	7 A7	1525.5	90	1024	PP	107	692	235	154	102	68	48	36	31	30	29
250m	Z	7 A7	1525.5	90	1024	PP	106	647	158	78	31	1	-11	-15	-13	-6	3
255m	Z	7 A7	1525.5	90	1024	PP	105	497	188	121	68	32	10	-2	2	1	22
260m	Z	7 A7	1525.5	90	1024	PP	104	276	243	222	191	155	128	112	106	104	105
265m	Z	7 A7	1525.5	90	1024	PP	103	196	204	195	186	170	156	147	142	139	137
270m	Z	7 A7	1525.5	90	1024	PP	102	162	186	188	185	182	177	170	162	159	155
275m	Z	7 A7	1525.5	90	1024	PP	101	154	181	183	187	189	188	185	181	175	168
280m	Z	7 A7	1525.5	90	1024	PP	100	163	191	192	192	193	193	190	184	174	165
285m	Z	7 A7	1525.5	90	1024	PP	99	162	190	194	196	198	199	197	190	180	169
290m	Z	7 A7	1525.5	90	1024	PP	98	164	194	204	206	209	210	206	200	189	178

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-08
Grid	: BIRKCREEK	Tx Loop	: NW
Time Base	: 16.66 ms	Date	: Nov 3, 1990
Ramp Time	: 1.50 ms	File	: BC9008NW.PEM

Station	Cmp	10	11	12	13	14	15	16	17	18	19	20
10m	Z	66	59	50	43	35	29	24	18	14	9	7
20m	Z	73	65	56	46	39	32	26	21	15	11	7
30m	Z	78	68	58	50	41	34	27	22	16	11	7
40m	Z	81	70	59	51	42	35	28	22	17	12	8
50m	Z	86	75	65	55	45	37	30	24	18	12	9
60m	Z	91	79	68	58	48	38	32	25	19	13	9
70m	Z	94	81	71	59	50	41	33	26	20	14	9
80m	Z	98	86	74	61	52	42	35	27	21	15	1
90m	Z	102	89	76	64	54	44	36	28	22	16	10
100m	Z	107	93	80	67	56	46	38	30	22	17	11
110m	Z	110	96	82	69	58	48	38	31	23	17	11
120m	Z	116	10	86	72	60	50	40	32	25	18	12
130m	Z	119	104	89	75	62	51	42	33	26	18	13
140m	Z	124	108	93	77	64	53	44	35	27	20	13
150m	Z	131	112	96	81	67	56	46	37	29	21	14
160m	Z	134	115	99	84	69	58	47	38	30	22	14
170m	Z	134	115	99	82	68	57	48	39	31	22	15
180m	Z	136	116	99	82	69	57	48	39	31	23	15
190m	Z	132	112	95	80	67	57	48	39	32	24	16
200m	Z	131	111	93	78	66	56	48	40	33	24	17
210m	Z	118	99	83	71	60	52	46	39	32	24	17
220m	Z	99	84	71	60	53	47	43	37	31	24	16
230m	Z	79	66	58	51	47	44	41	36	30	24	17
235m	Z	64	55	49	45	42	40	38	34	30	23	16
240m	Z	48	43	40	37	36	36	35	32	28	22	16
245m	Z	30	31	31	32	32	33	33	31	27	22	15
250m	Z	13	20	24	29	31	32	33	31	28	22	16
255m	Z	35	44	49	52	52	50	47	42	36	27	19
260m	Z	108	108	103	96	88	79	70	60	48	36	24
265m	Z	135	130	122	111	10	88	76	64	51	38	25
270m	Z	147	139	128	113	10	87	74	62	49	37	25
275m	Z	158	146	131	114	98	84	71	59	47	35	24
280m	Z	154	139	124	106	90	76	64	53	42	32	22
285m	Z	156	139	123	105	89	74	61	50	40	30	20
290m	Z	162	146	127	107	89	72	59	47	37	28	19

BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-08
Tx Loop : SE
Date : Nov 3, 1990
File : BC9008SE.PEM

Station	Comp	Gains	STS	Delay	Stack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
10m	Z	4 A7	1525.5	90	1024	PP	66	-9311	224	210	168	128	108	91	76	73	61
20m	Z	4 A7	1525.5	90	1024	PP	67	-9376	243	224	173	139	119	103	88	80	73
30m	Z	4 A7	1525.5	90	1024	PP	68	-8793	258	247	192	154	124	108	10	87	79
40m	Z	4 A7	1525.5	90	1024	PP	69	-7687	272	256	202	162	133	120	108	94	85
50m	Z	5 A7	1525.5	90	1024	PP	70	-6208	272	269	220	177	150	130	112	102	90
60m	Z	5 A7	1525.5	90	1024	PP	71	-4664	293	282	232	192	160	144	125	114	99
70m	Z	6 A7	1525.5	90	1024	PP	72	-3335	308	299	250	205	177	154	133	120	108
80m	Z	6 A7	1525.5	90	1024	PP	73	-2181	290	305	267	226	189	167	147	132	117
90m	Z	7 A7	1525.5	90	1024	PP	74	-1172	423	375	294	239	202	178	160	142	129
100m	Z	7 A7	1525.5	90	1024	PP	75	-399	603	451	324	249	211	188	170	154	138
110m	Z	7 A7	1525.5	90	1024	PP	76	40	649	470	341	265	228	205	185	168	150
120m	Z	7 A7	1525.5	90	1024	PP	77	398	596	457	349	283	244	222	202	184	165
130m	Z	7 A7	1525.5	90	1024	PP	78	607	579	458	359	297	262	240	218	199	180
140m	Z	7 A7	1525.5	90	1024	PP	79	744	581	462	377	314	280	258	237	217	197
150m	Z	7 A7	1525.5	90	1024	PP	80	813	592	480	391	331	297	276	255	236	215
160m	Z	7 A7	1525.5	90	1024	PP	81	819	604	485	404	350	322	297	278	258	237
170m	Z	7 A7	1525.5	90	1024	PP	82	708	594	495	420	374	346	324	306	286	263
180m	Z	7 A7	1525.5	90	1024	PP	83	641	597	521	454	404	375	356	334	315	291
190m	Z	7 A7	1525.5	90	1024	PP	84	497	581	525	475	436	411	391	370	348	325
200m	Z	7 A7	1525.5	90	1024	PP	85	411	553	524	488	458	432	416	400	379	356
210m	Z	7 A7	1525.5	90	1024	PP	86	248	510	530	511	489	472	455	438	419	392
220m	Z	7 A7	1525.5	90	1024	PP	87	106	508	531	530	515	498	486	472	450	426
230m	Z	7 A7	1525.5	90	1024	PP	88	0	487	541	537	531	520	508	491	472	445
240m	Z	7 A7	1525.5	90	1024	PP	89	-127	485	550	559	556	542	527	507	484	457
250m	Z	7 A7	1525.5	90	1024	PP	90	-168	515	586	606	594	568	544	515	487	455
260m	Z	7 A7	1525.5	90	1024	PP	91	-30	28	54	78	107	139	163	183	200	216
265m	Z	7 A7	1525.5	90	1024	PP	92	-80	-43	-35	-23	-5	18	40	68	98	127
270m	Z	7 A7	1525.5	90	1024	PP	93	-128	-104	-98	-101	-86	-76	-52	-22	21	67
275m	Z	7 A7	1525.5	90	1024	PP	94	-145	-125	-119	-115	-105	-94	-72	-39	1	49
280m	Z	7 A7	1525.5	90	1024	PP	95	-179	-149	-146	-132	-117	-10	-74	-38	6	53
285m	Z	7 A7	1525.5	90	1024	PP	96	-216	-187	-178	-166	-144	-121	-94	-57	-13	38
290m	Z	7 A7	1525.5	90	1024	PP	97	-270	-233	-222	-203	-178	-153	-120	-81	-32	21

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-08
Grid	: BIRKCREEK	Tx Loop	: SE
Time Base	: 16.66 ms	Date	: Nov 3, 1990
Ramp Time	: 1.50 ms	File	: BC9008SE.PEM

Station	Cmp	10	11	12	13	14	15	16	17	18	19	20
10m	Z	57	48	42	34	29	24	18	14	11	8	5
20m	Z	64	57	48	39	33	26	22	17	13	1	6
30m	Z	69	61	51	44	35	30	24	19	14	1	6
40m	Z	75	64	56	47	38	32	25	20	15	11	7
50m	Z	81	70	59	50	42	34	26	21	16	11	7
60m	Z	89	76	65	54	44	36	29	23	17	12	8
70m	Z	95	82	69	58	49	41	32	24	19	13	9
80m	Z	104	90	77	65	53	42	34	26	19	13	9
90m	Z	112	97	83	70	57	46	37	28	22	15	1
100m	Z	123	106	90	76	62	50	39	30	23	17	11
110m	Z	134	116	99	83	69	56	43	33	25	17	11
120m	Z	147	128	110	92	75	61	48	37	27	19	12
130m	Z	160	141	120	101	83	67	52	40	30	20	13
140m	Z	177	155	133	111	91	74	58	43	32	22	14
150m	Z	193	171	147	123	101	81	63	48	35	24	15
160m	Z	214	188	163	136	112	90	70	52	38	26	16
170m	Z	240	213	183	154	126	100	78	59	42	29	18
180m	Z	265	236	204	172	140	111	86	65	47	31	19
190m	Z	298	265	230	193	157	125	96	72	51	34	21
200m	Z	327	293	254	214	174	138	106	79	56	37	23
210m	Z	363	326	284	238	194	153	117	87	61	41	25
220m	Z	395	354	309	260	212	167	128	95	66	44	26
230m	Z	413	373	327	276	226	179	137	101	71	47	28
240m	Z	425	384	339	288	236	188	144	107	75	49	29
250m	Z	420	381	336	288	238	190	146	107	76	49	30
260m	Z	229	233	229	212	186	155	124	94	68	46	28
265m	Z	158	184	197	197	183	160	131	102	73	49	30
270m	Z	113	153	182	194	188	169	141	110	79	53	32
275m	Z	99	142	174	190	189	172	145	113	82	54	33
280m	Z	102	146	177	192	192	175	148	115	83	55	33
285m	Z	88	134	170	190	192	178	151	119	85	56	33
290m	Z	79	132	172	195	200	186	158	124	89	57	34

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

Hole : BC-90-08
Tx Loop : SW
Date : Nov 3, 1990
File : BC9008SW.PEM

Station	Cmp	10	11	12	13	14	15	16	17	18	19	20
10m	Z	41	35	29	24	20	17	13	10	8	6	4
20m	Z	43	36	32	26	22	17	15	11	8	6	4
30m	Z	45	38	31	28	22	19	15	12	9	7	4
40m	Z	47	41	32	28	23	19	15	12	9	7	4
50m	Z	50	42	35	29	25	20	17	13	1	7	5
60m	Z	51	44	38	31	26	22	18	14	11	8	5
70m	Z	55	47	40	33	27	22	18	14	11	8	5
80m	Z	57	48	42	34	29	23	19	15	12	8	5
90m	Z	60	51	43	35	30	25	20	16	12	9	6
100m	Z	63	54	47	38	31	26	21	17	13	9	6
110m	Z	66	57	48	40	33	28	22	18	13	1	7
120m	Z	70	58	50	43	37	30	25	19	13	10	8
130m	Z	75	64	55	45	38	31	25	20	15	11	7
140m	Z	79	69	59	49	40	33	27	21	17	12	8
150m	Z	86	74	63	52	43	35	29	22	18	13	8
160m	Z	94	80	67	56	46	38	31	24	19	14	9
165m	Z	97	82	70	58	48	39	32	25	19	14	9
170m	Z	100	86	73	60	49	40	33	26	20	14	9
175m	Z	105	90	76	62	51	41	33	26	20	15	1
180m	Z	109	94	79	65	53	43	35	28	21	15	1
185m	Z	113	97	81	67	54	44	36	28	22	16	10
190m	Z	117	100	85	69	56	46	37	29	22	16	10
200m	Z	127	109	91	74	60	49	39	31	24	17	11
210m	Z	134	114	97	79	64	52	42	32	25	18	12
220m	Z	138	117	98	81	65	53	43	33	26	18	12
230m	Z	136	114	97	81	66	54	44	35	26	19	12
240m	Z	119	103	89	75	64	53	43	34	26	19	12
250m	Z	78	70	64	59	52	45	38	31	23	17	11
260m	Z	22	23	28	33	34	35	32	27	21	16	11
270m	Z	39	43	46	50	51	48	43	37	29	21	14
275m	Z	48	52	56	57	57	53	47	39	31	22	14
280m	Z	57	61	63	64	62	57	50	41	31	23	15
285m	Z	59	65	69	70	68	62	53	43	33	24	15
290m	Z	58	67	73	76	74	68	58	47	35	25	16

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client : FALCONBRIDGE
Grid : BIRKCREEK
Time Base : 16.66 ms
Ramp Time : 1.50 ms

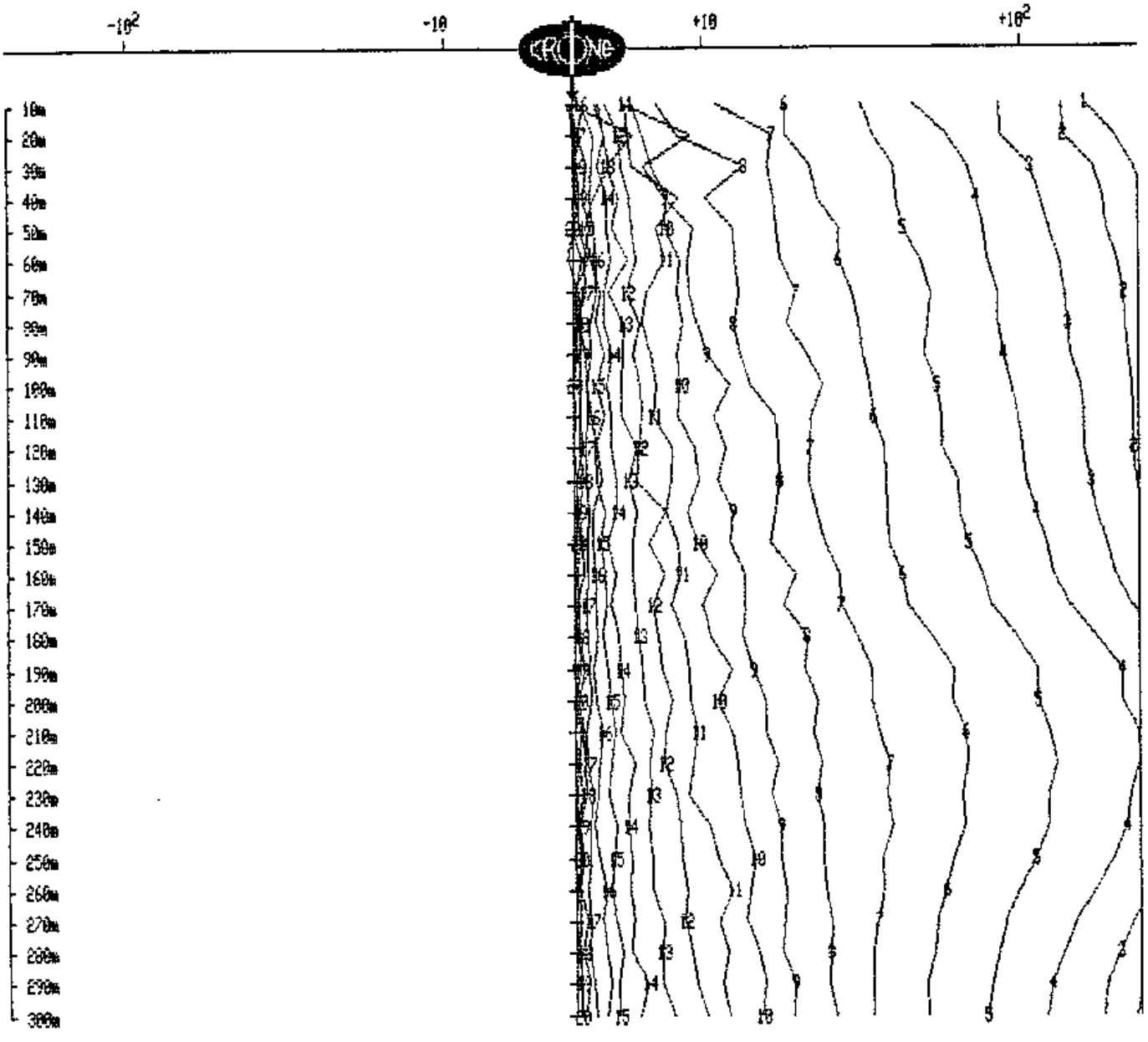
Hole : BC-90-08
Tx Loop : SW
Date : Nov 3, 1990
File : BC9008SW.PEM

Station	Cmp	Gain	XTS	Delay	Stack	Ovld	Rdg#	PP	1	2	3	4	5	6	7	8	9
10m	Z	5	A7	1525.5	90	1024	PP	65	-5999	116	127	111	94	78	71	59	54	45
20m	Z	5	A7	1525.5	90	1024	PP	64	-4632	129	132	114	96	84	75	61	56	51
30m	Z	6	A7	1525.5	90	1024	PP	63	-3464	117	139	120	104	85	73	63	58	51
40m	Z	6	A7	1525.5	90	1024	PP	62	-2512	106	133	127	106	91	79	68	60	54
50m	Z	7	A7	1525.5	90	1024	PP	61	-1755	74	122	129	113	98	87	74	64	57
60m	Z	7	A7	1525.5	90	1024	PP	60	-1181	53	122	132	116	101	89	79	68	59
70m	Z	7	A7	1525.5	90	1024	PP	59	-750	41	122	134	124	104	93	83	73	63
80m	Z	7	A7	1525.5	90	1024	PP	58	-409	106	146	145	129	109	99	87	75	64
90m	Z	7	A7	1525.5	90	1024	PP	57	-148	214	199	168	138	116	101	91	79	67
100m	Z	7	A7	1525.5	90	1024	PP	56	39	416	297	205	147	120	105	93	83	72
110m	Z	7	A7	1525.5	90	1024	PP	55	176	399	289	204	150	124	108	97	85	76
120m	Z	7	A7	1525.5	90	1024	PP	54	260	338	248	193	148	130	115	103	91	81
130m	Z	7	A7	1525.5	90	1024	PP	53	280	305	244	194	158	136	123	109	98	86
140m	Z	7	A7	1525.5	90	1024	PP	52	306	282	230	190	165	142	128	117	104	92
150m	Z	7	A7	1525.5	90	1024	PP	51	315	271	231	195	170	151	137	124	112	98
160m	Z	7	A7	1525.5	90	1024	PP	50	296	259	229	199	177	162	147	132	121	106
165m	Z	7	A7	1525.5	90	1024	PP	49	290	253	228	202	182	166	153	138	125	110
170m	Z	7	A7	1525.5	90	1024	PP	48	281	240	223	204	185	170	157	145	129	114
175m	Z	7	A7	1525.5	90	1024	PP	47	270	238	234	215	197	181	167	150	136	121
180m	Z	7	A7	1525.5	90	1024	PP	46	260	247	242	226	205	189	173	157	143	125
185m	Z	7	A7	1525.5	90	1024	PP	45	258	261	251	229	213	197	179	164	148	129
190m	Z	7	A7	1525.5	90	1024	PP	44	251	262	252	238	220	204	186	168	151	135
200m	Z	7	A7	1525.5	90	1024	PP	43	207	262	265	254	238	220	202	185	164	145
210m	Z	7	A7	1525.5	90	1024	PP	42	171	259	270	265	254	236	215	198	176	156
220m	Z	7	A7	1525.5	90	1024	PP	41	155	261	274	269	260	243	224	202	179	159
230m	Z	7	A7	1525.5	90	1024	PP	40	111	243	264	270	261	242	221	198	178	155
240m	Z	7	A7	1525.5	90	1024	PP	39	114	230	252	254	246	223	202	180	158	137
250m	Z	7	A7	1525.5	90	1024	PP	38	150	159	187	195	189	172	150	125	107	92
260m	Z	7	A7	1525.5	90	1024	PP	37	203	175	164	144	123	98	76	55	37	26
270m	Z	7	A7	1525.5	90	1024	PP	36	82	89	84	85	80	71	61	50	42	39
275m	Z	7	A7	1525.5	90	1024	PP	35	42	50	55	59	54	52	50	44	45	47
280m	Z	7	A7	1525.5	90	1024	PP	34	20	33	37	38	43	44	47	47	49	53
285m	Z	7	A7	1525.5	90	1024	PP	33	-23	-3	5	12	21	29	35	41	46	52
290m	Z	7	A7	1525.5	90	1024	PP	32	-58	-37	-25	-9	5	16	28	35	43	49

CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-01
Grid	: BIRKCREEK	Tx Loop	: SW
Time Base	: 16.66 ms	Date	: Oct 22, 1990
Ramp Time	: 1.50 ms	File	: BC9001SW.PEM
Scale	: 1:2000		

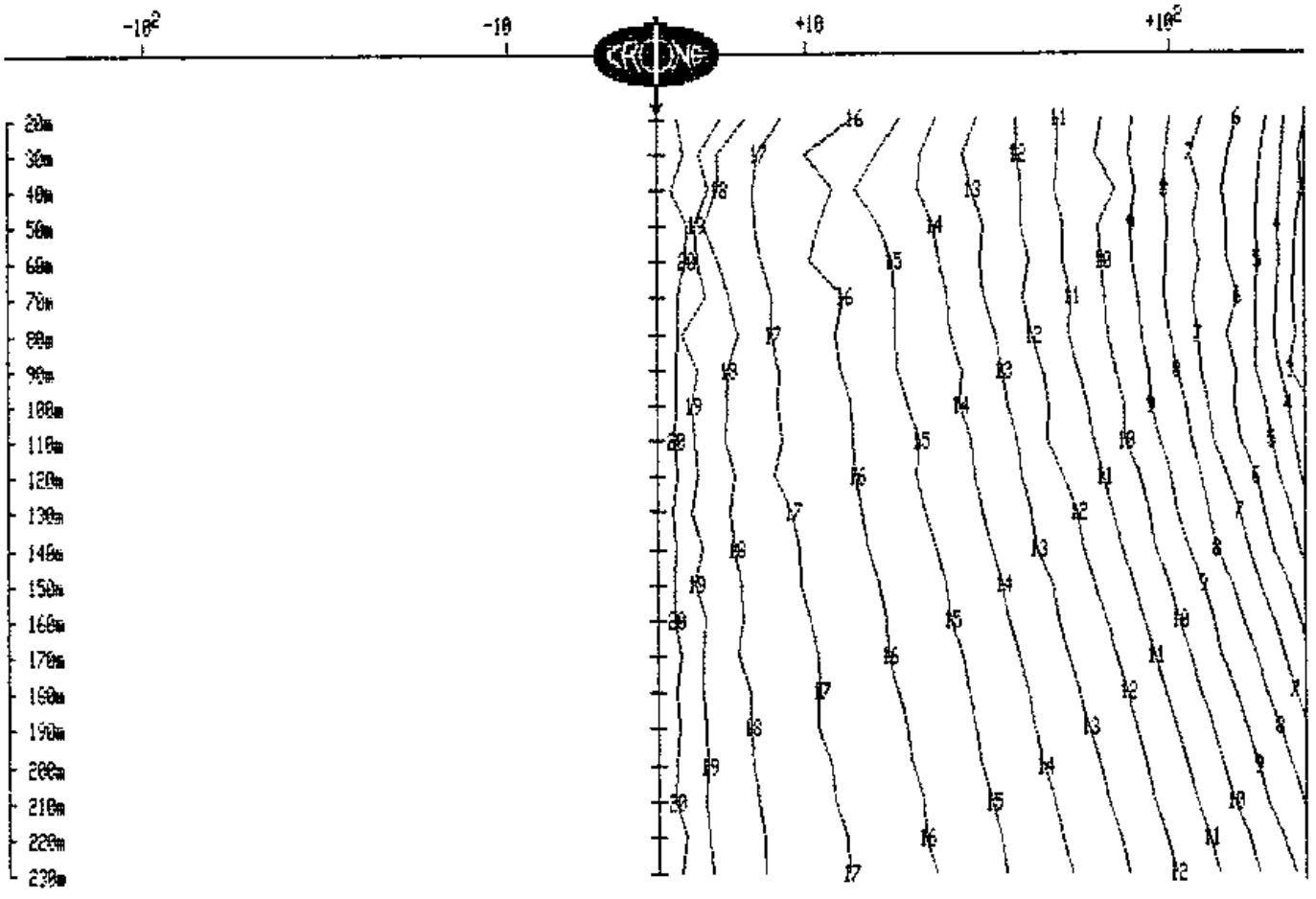
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-02
Grid	: BIRKCREEK	Tx Loop	: COL
Time Base	: 16.66 ms	Date	: Oct 19, 1990
Ramp Time	: 1.50 ms	File	: BC9002C.PEM
Scale	: 1:2000		

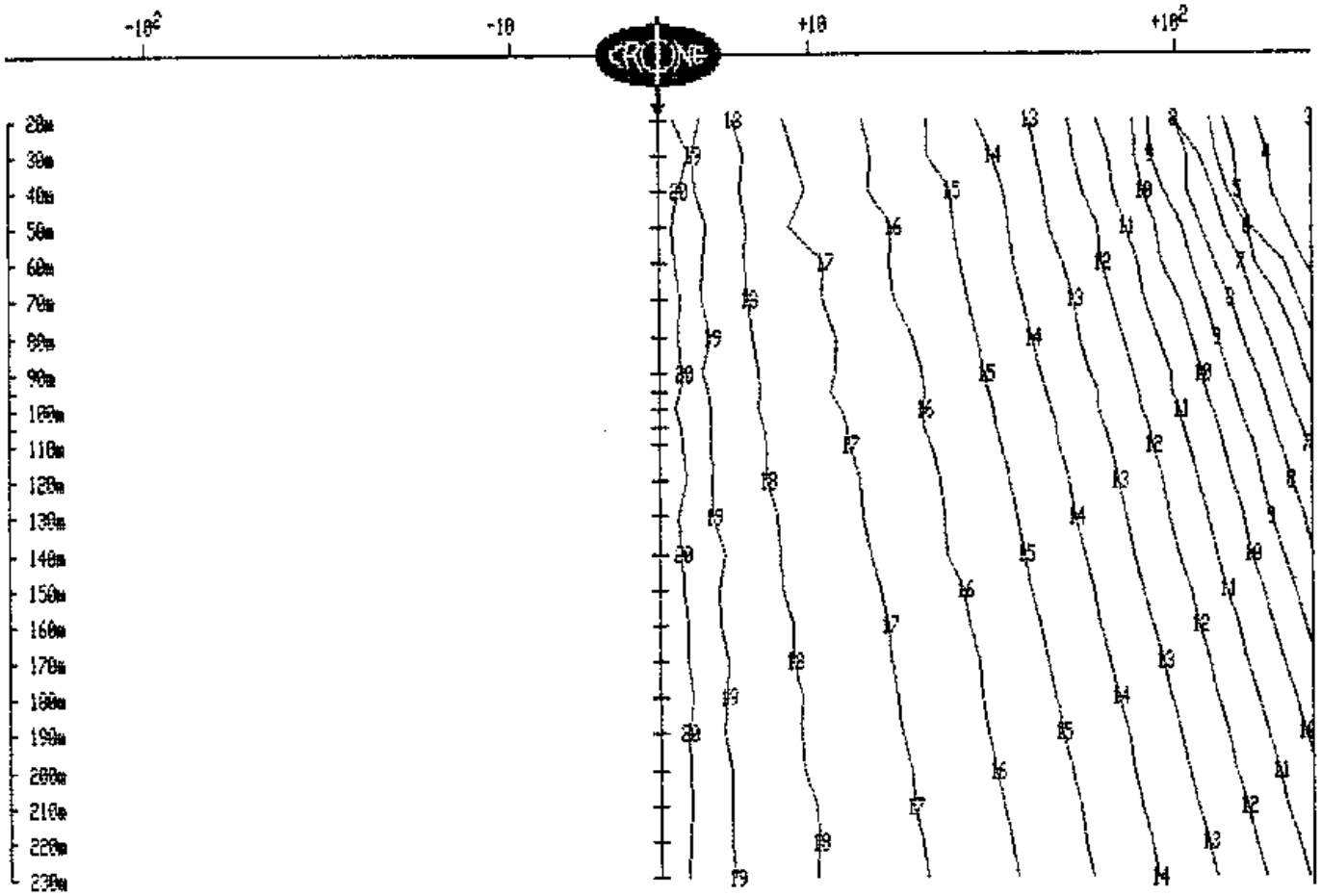
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-02
Grid	: BIRKCREEK	Tx Loop	: NE
Time Base	: 16.66 ms	Date	: Oct 19, 1990
Ramp Time	: 1.50 ms	File	: BC9002NE.PEM
Scale	: 1:2000		

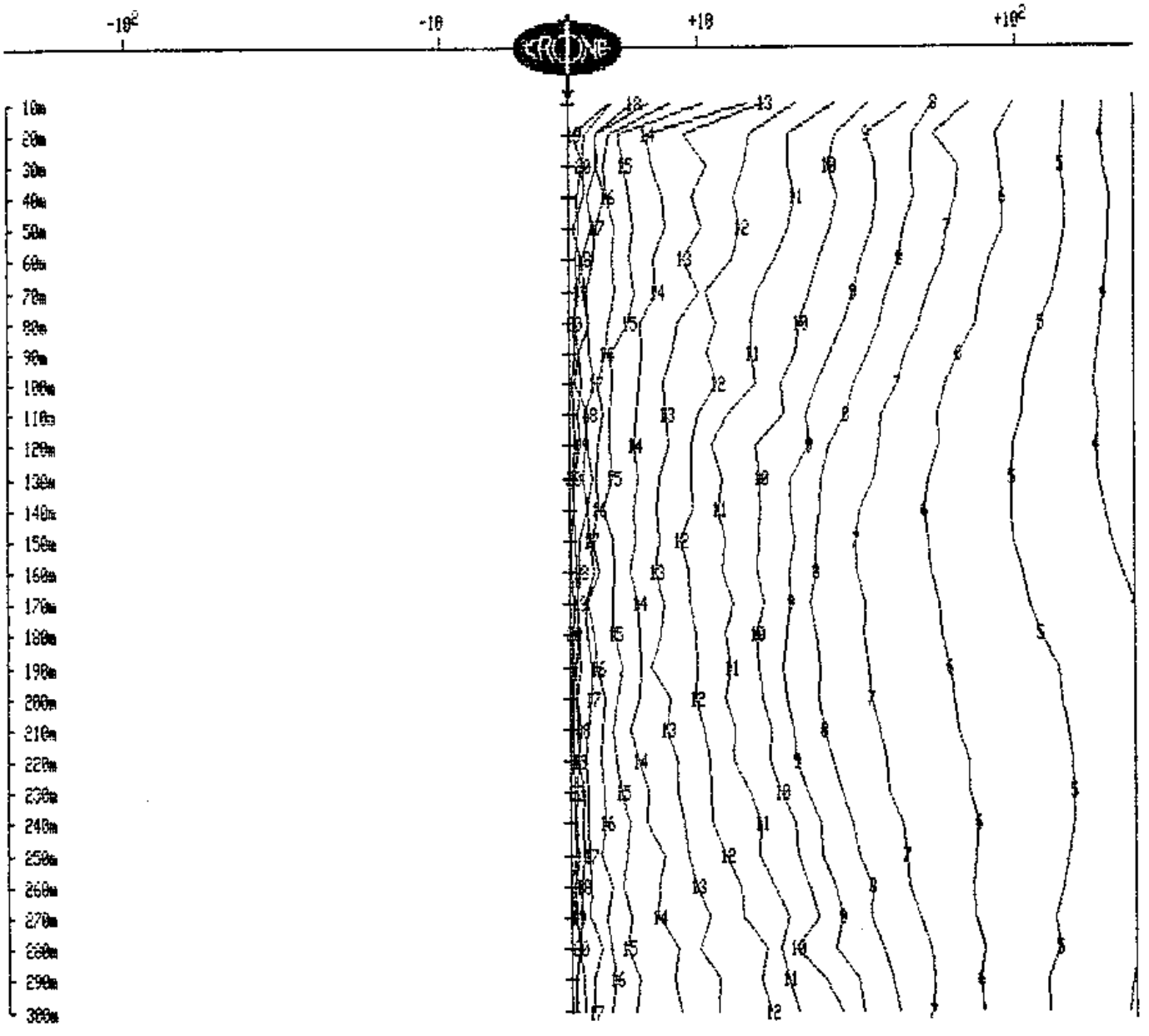
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-01
Grid	: BIRKCREEK	Tx Loop	: COL
Time Base	: 16.66 ms	Date	: Oct 22, 1990
Ramp Time	: 1.50 ms	File	: BC9001C.PEM
Scale	: 1:2000		

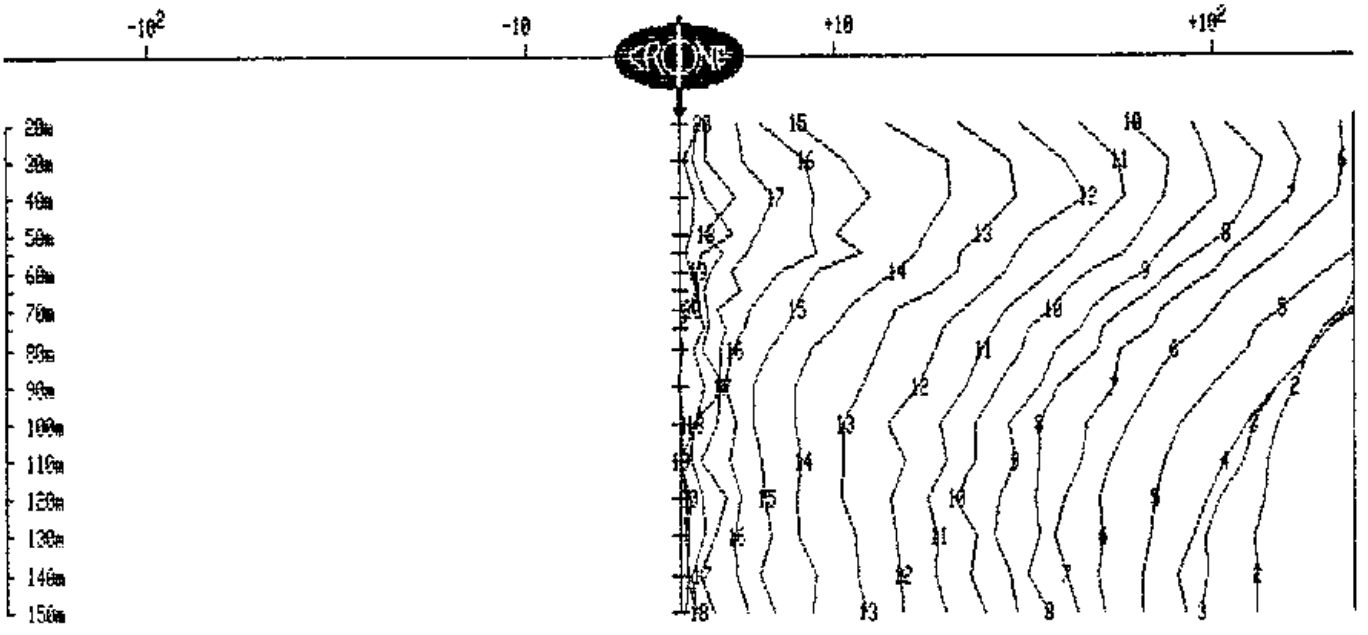
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-03
Grid	: BIRKCREEK	Tx Loop	: COL
Time Base	: 16.66 ms	Date	: Oct 21, 1990
Ramp Time	: 1.50 ms	File	: BC9003C.PEM
Scale	: 1:2000		

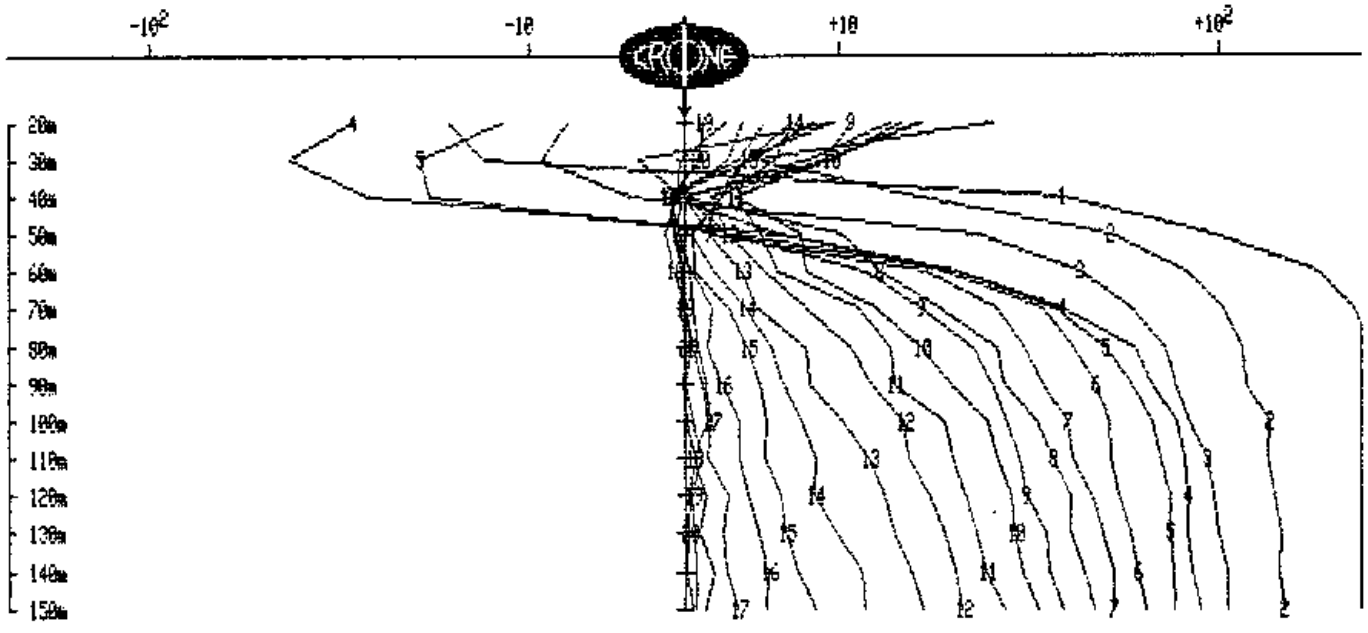
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-03
Grid	: BIRKCREEK	Tx Loop	: NE
Time Base	: 16.66 ms	Date	: Oct 21, 1990
Ramp Time	: 1.50 ms	File	: BC9003NE.PEM
Scale	: 1:2000		

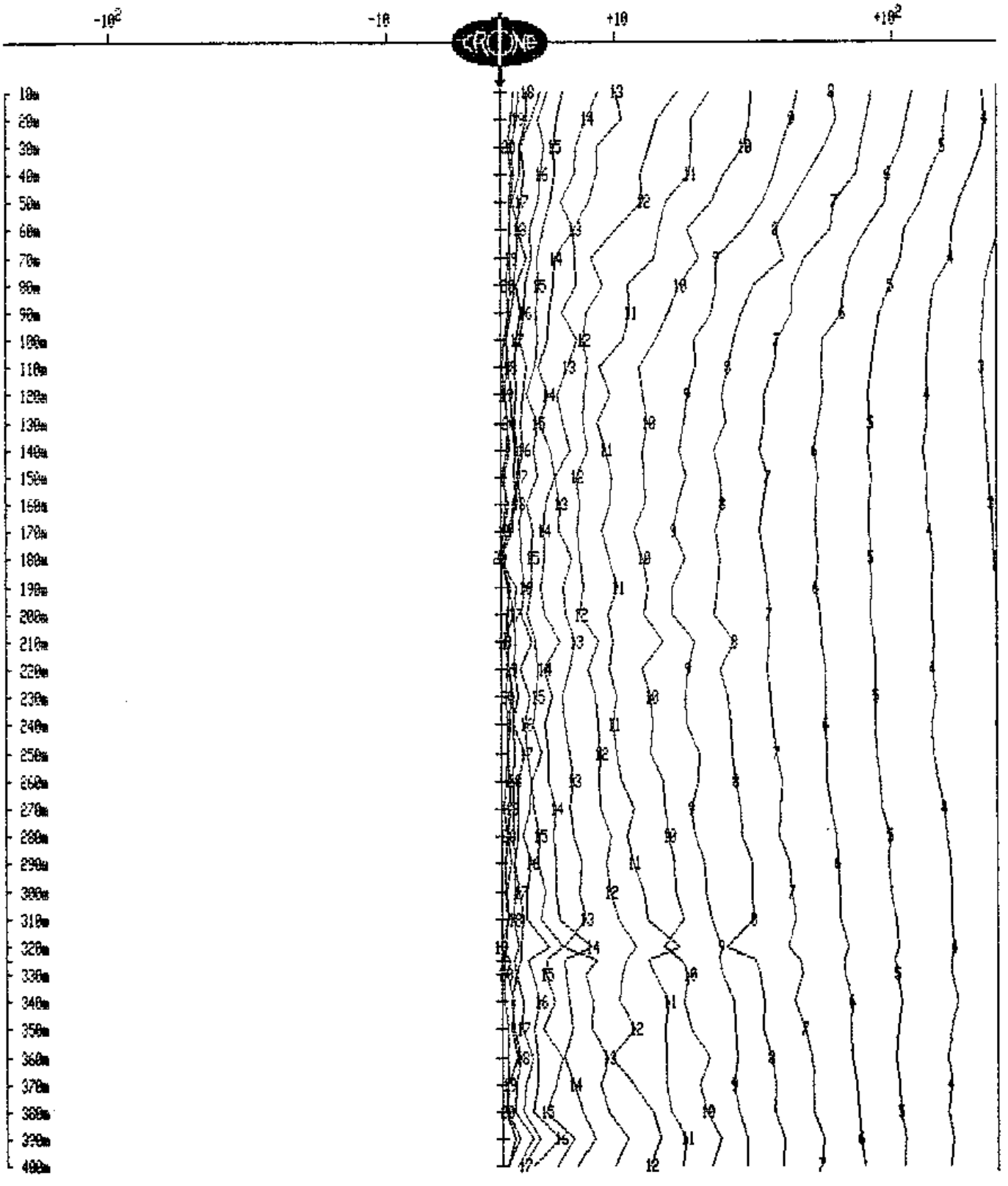
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-05
Grid	: BIRKCREEK	Tx Loop	: COL
Time Base	: 16.66 ms	Date	: Oct 22, 1990
Ramp Time	: 1.50 ms	File	: BC9005C.PEM
Scale	: 1:2000		

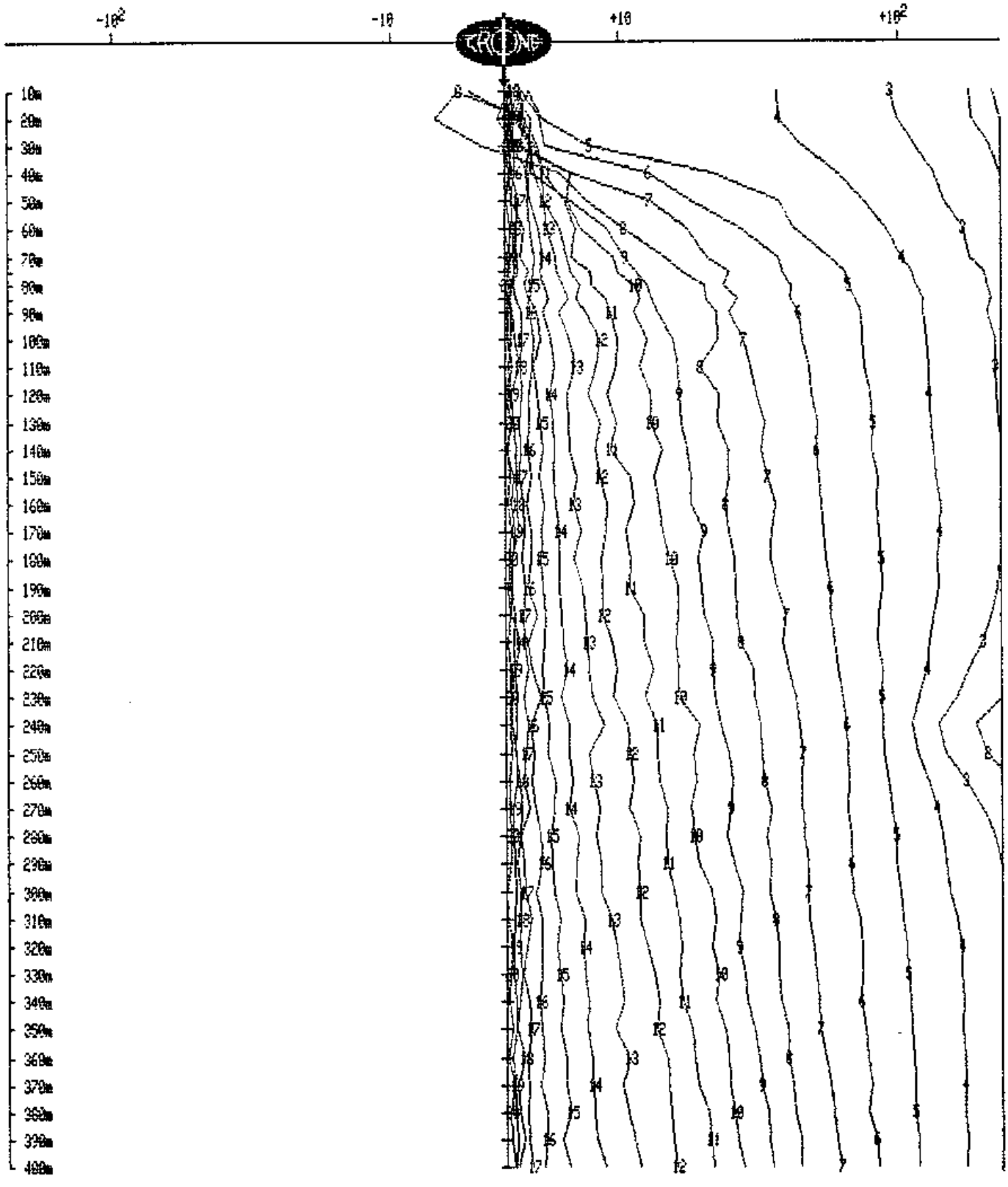
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-05
Grid	: BIRKCREEK	Tx Loop	: NE
Time Base	: 16.66 ms	Date	: Oct 22, 1990
Ramp Time	: 1.50 ms	File	: BC9005NE.PEM
Scale	: 1:2000		

AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels

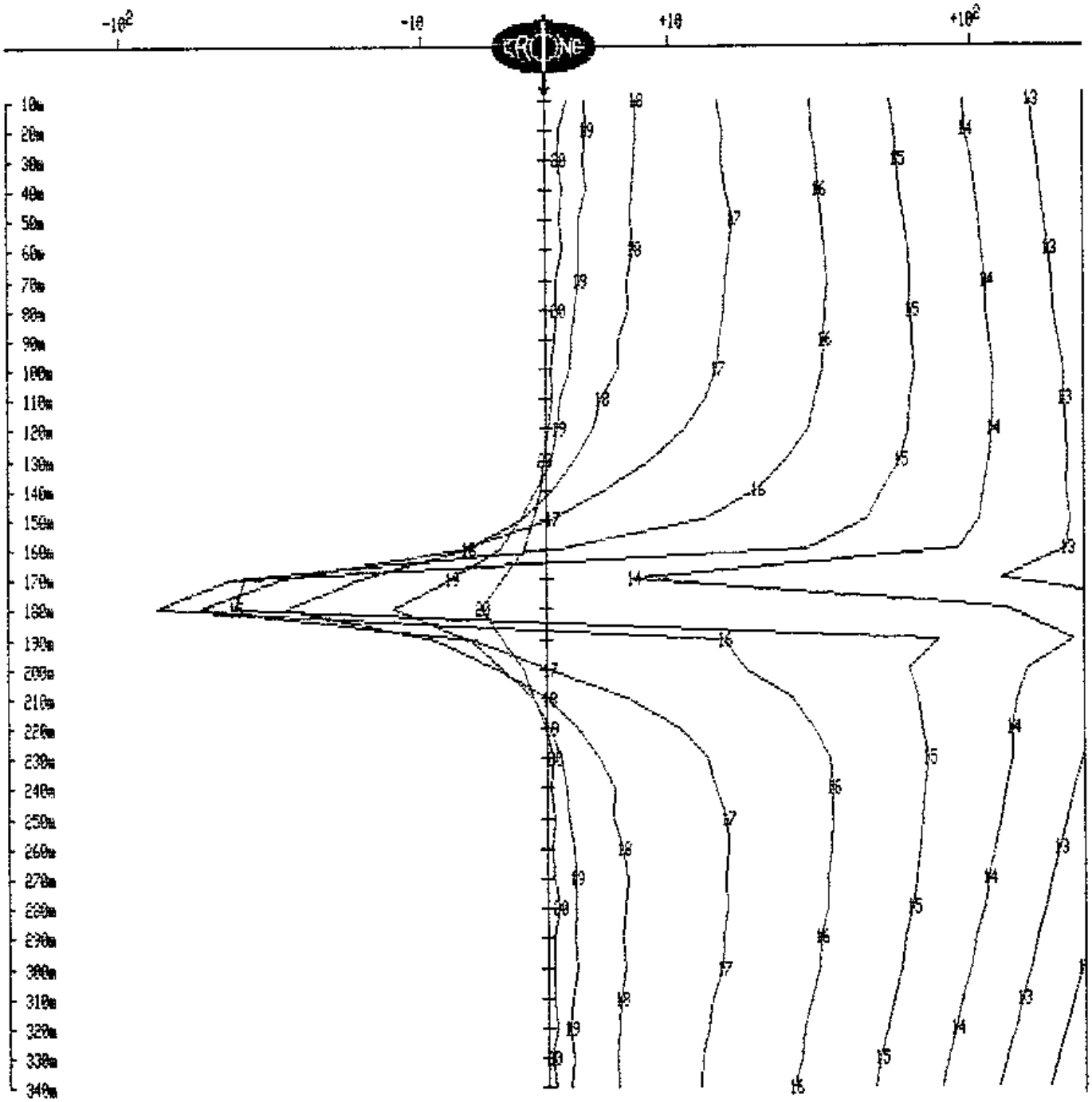


CRONE GEOPHYSICS & EXPLORATION LTD

BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-06
Grid	: BIRKCREEK	Tx Loop	: COL
Time Base	: 16.66 ms	Date	: Nov 4, 1990
Ramp Time	: 1.50 ms	File	: BC9006C.PEM
Scale	: 1:2000		

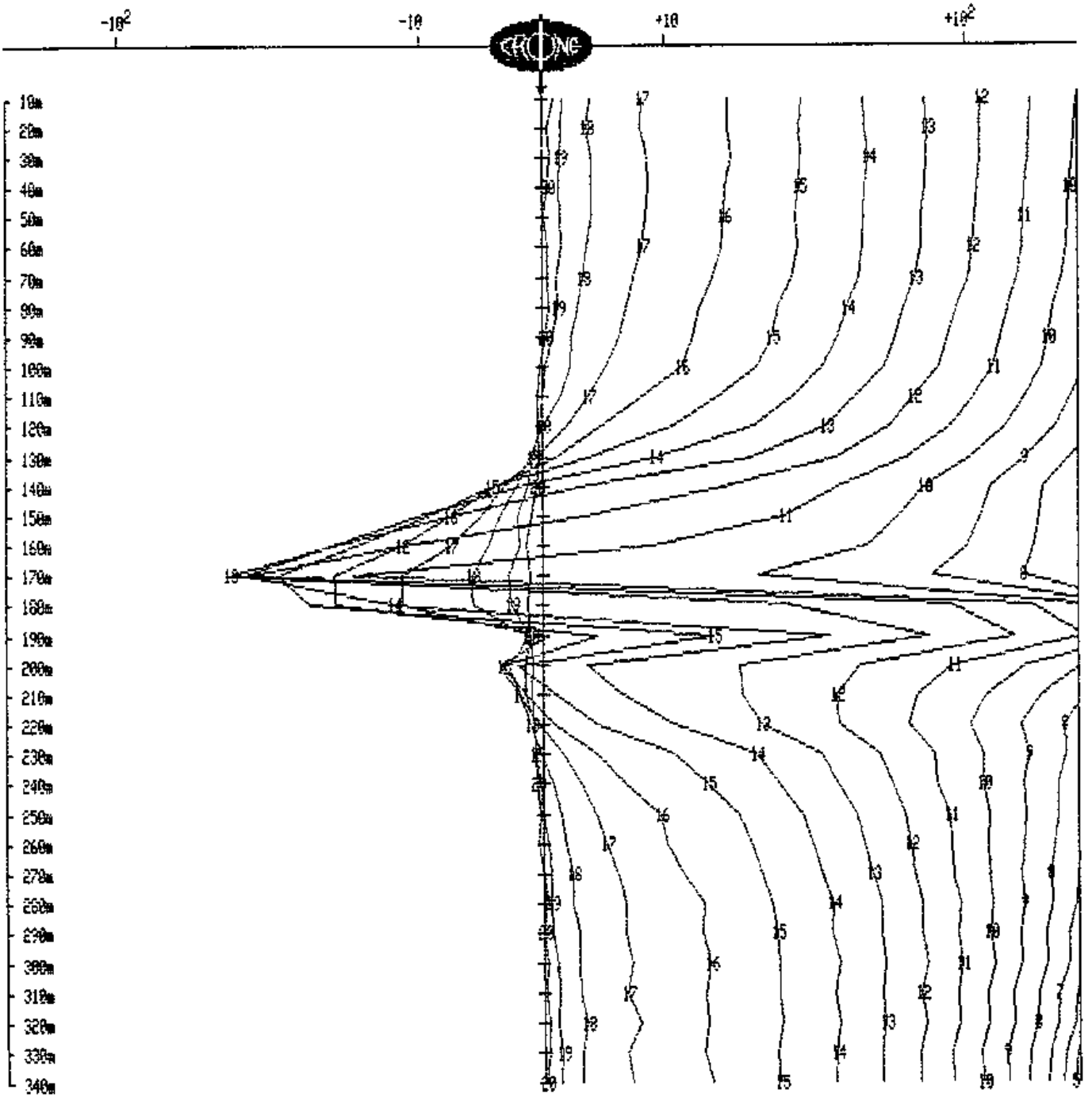
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-06
Grid	: BIRKCREEK	Tx Loop	: NW
Time Base	: 16.66 ms	Date	: Nov 4, 1990
Ramp Time	: 1.50 ms	File	: BC9006NW.PEM
Scale	: 1:2000		

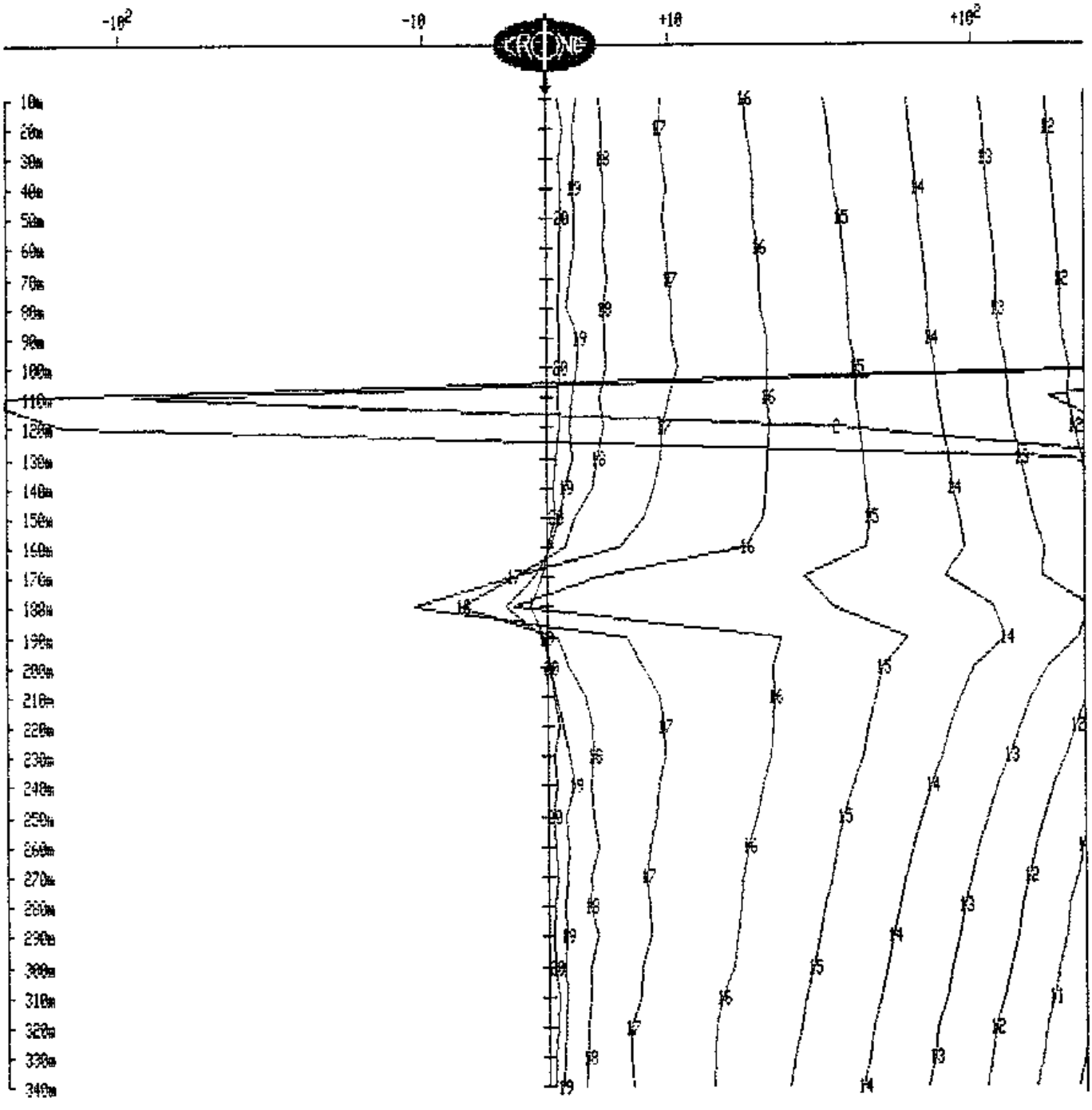
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-06
Grid	: BIRKCREEK	Tx Loop	: SE
Time Base	: 16.66 ms	Date	: Nov 4, 1990
Ramp Time	: 1.50 ms	File	: BC9006SE.PEM
Scale	: 1:2000		

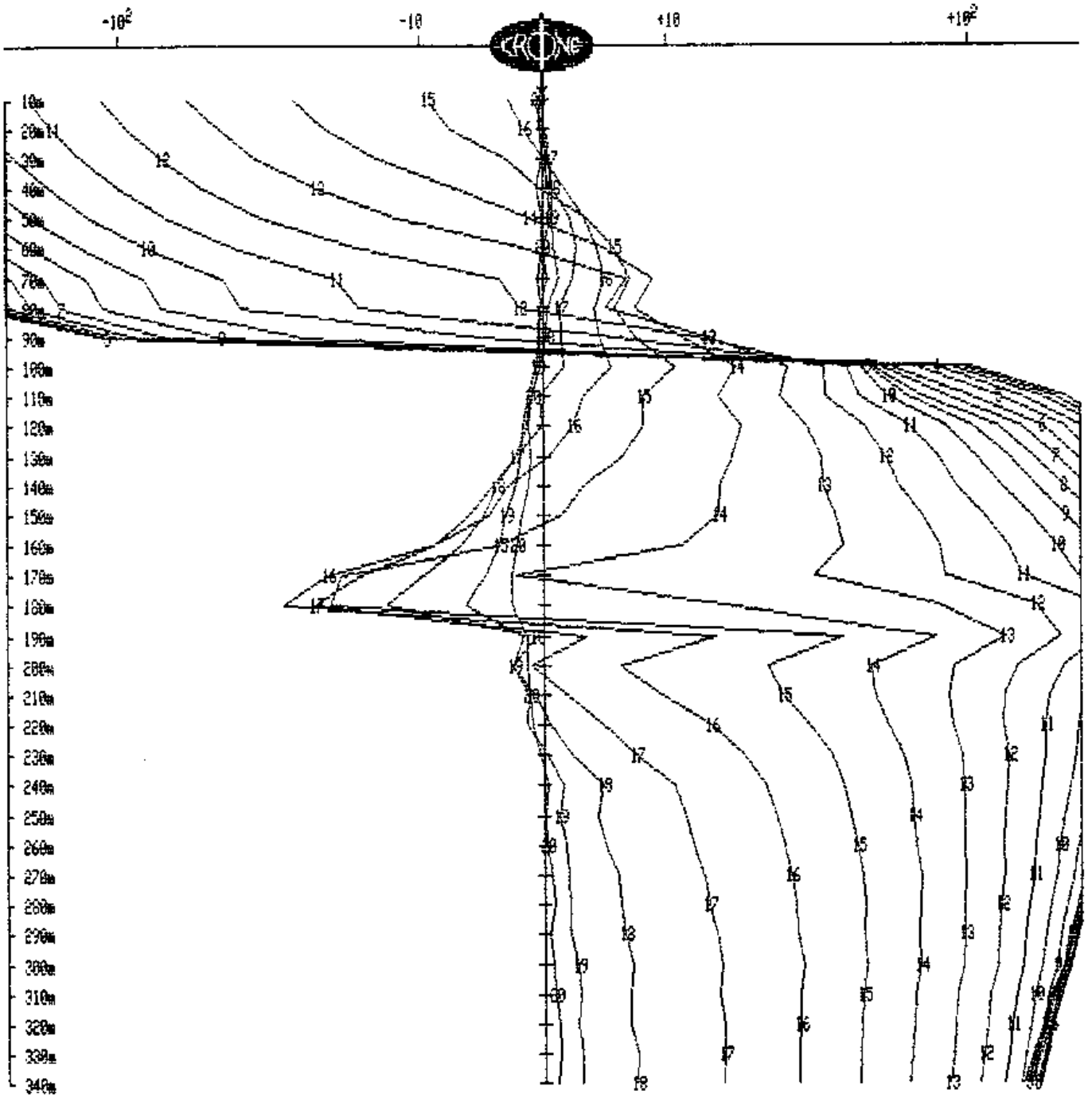
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-06
Grid	: BIRKCREEK	Tx Loop	: SW-UP
Time Base	: 16.66 ms	Date	: Nov 4, 1990
Ramp Time	: 1.50 ms	File	: BC9006SW.PEM
Scale	: 1:2000		

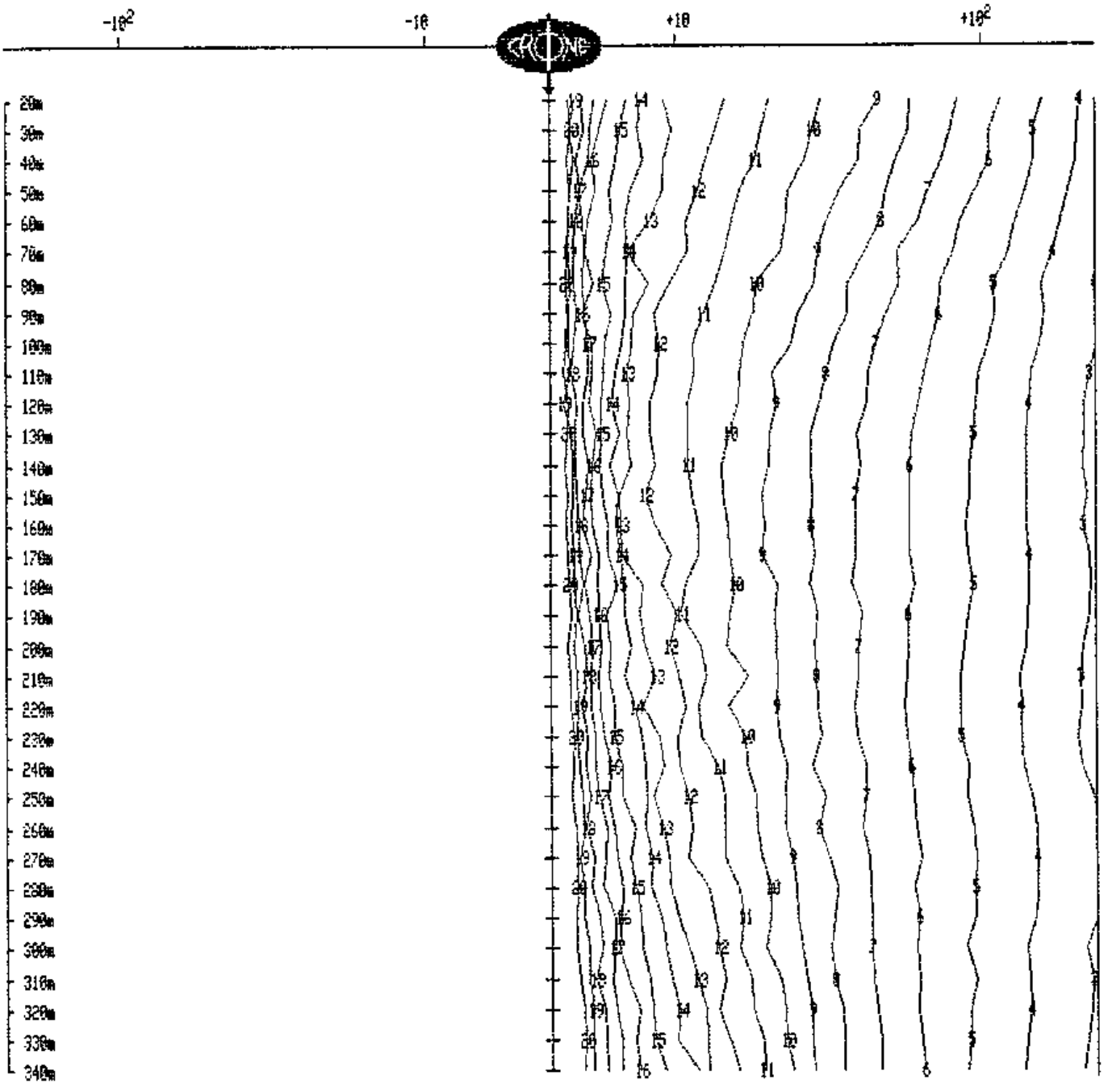
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-07
Grid	: BIRKCREEK	Tx Loop	: COL
Time Base	: 16.66 ms	Date	: Nov 5, 1990
Ramp Time	: 1.50 ms	File	: BC9007C.PEM
Scale	: 1:2000		

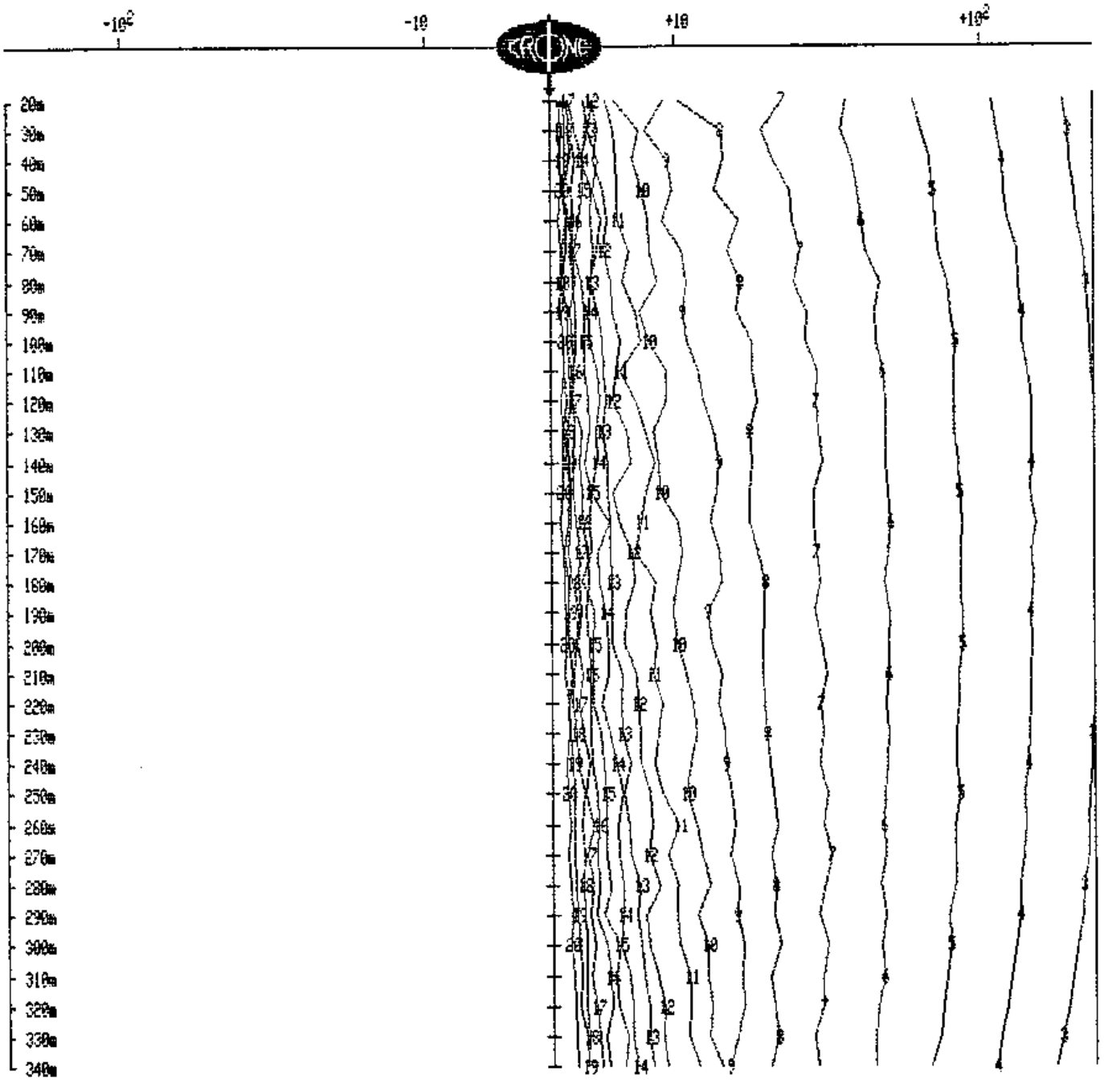
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-07
Grid	: BIRKCREEK	Tx Loop	: NE
Time Base	: 16.66 ms	Date	: Nov 5, 1990
Ramp Time	: 1.50 ms	File	: BC9007NE.PEM
Scale	: 1:2000		

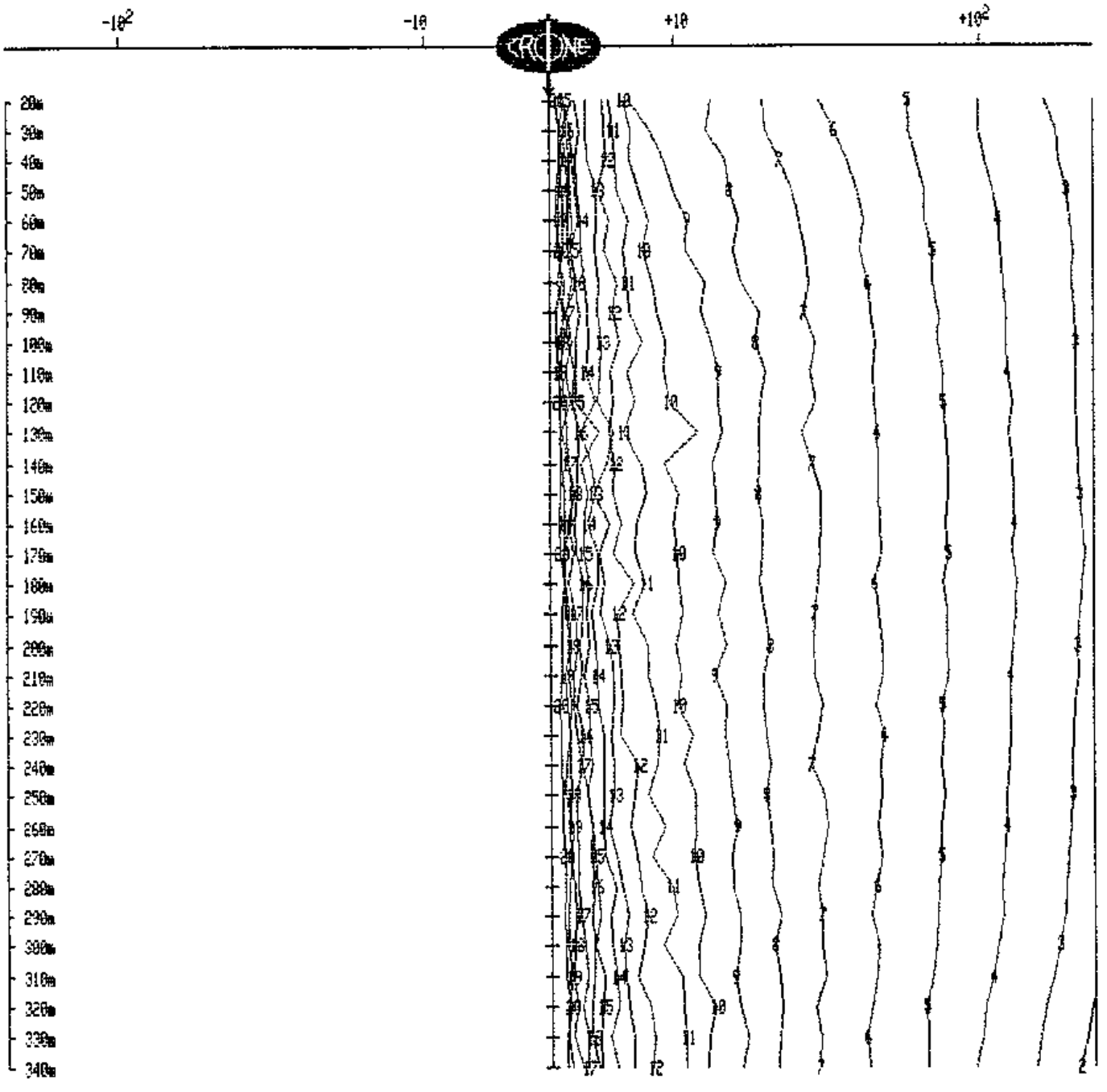
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-07
Grid	: BIRKCREEK	Tx Loop	: NW
Time Base	: 16.66 ms	Date	: Nov 5, 1990
Ramp Time	: 1.50 ms	File	: BC9007NW.PEM
Scale	: 1:2000		

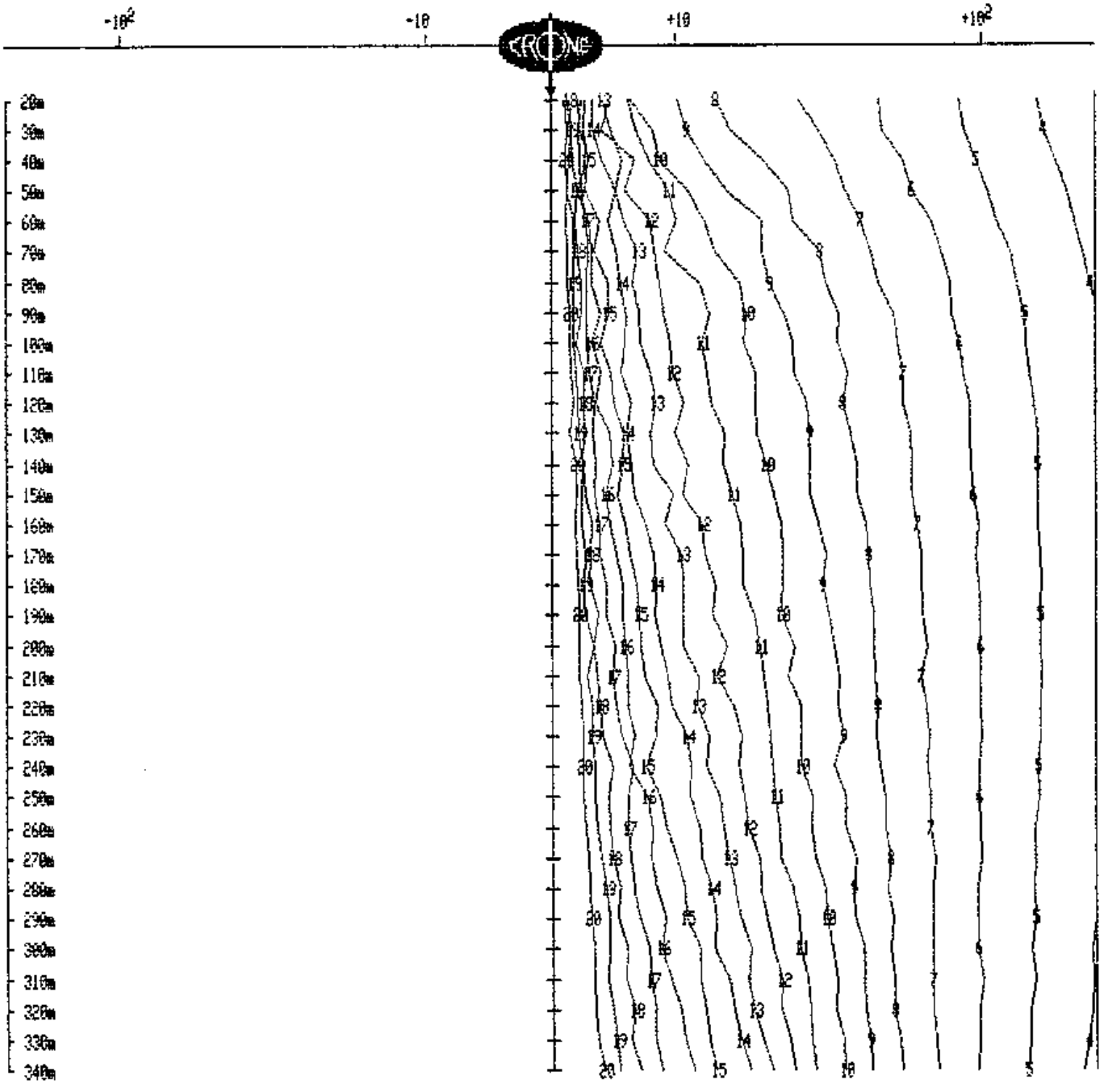
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-07
Grid	: BIRKCREEK	Tx Loop	: SE
Time Base	: 16.66 ms	Date	: Nov 5, 1990
Ramp Time	: 1.50 ms	File	: BC9007SE.PEM
Scale	: 1:2000		

AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels

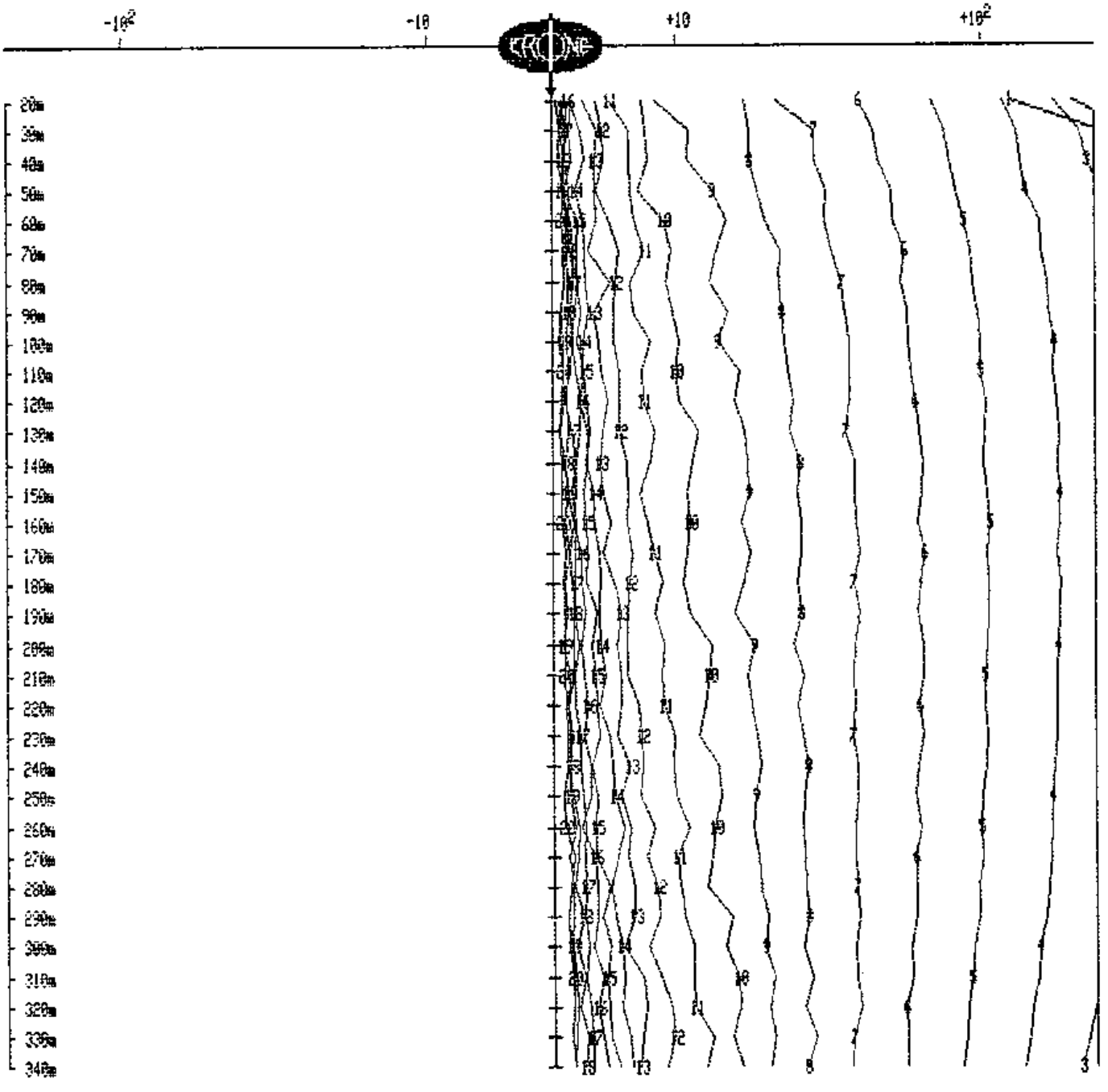


CRONE GEOPHYSICS & EXPLORATION LTD

BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-07
Grid	: BIRKCREEK	Tx Loop	: SW
Time Base	: 16.66 ms	Date	: Nov 5, 1990
Ramp Time	: 1.50 ms	File	: BC9007SW.PEM
Scale	: 1:2000		

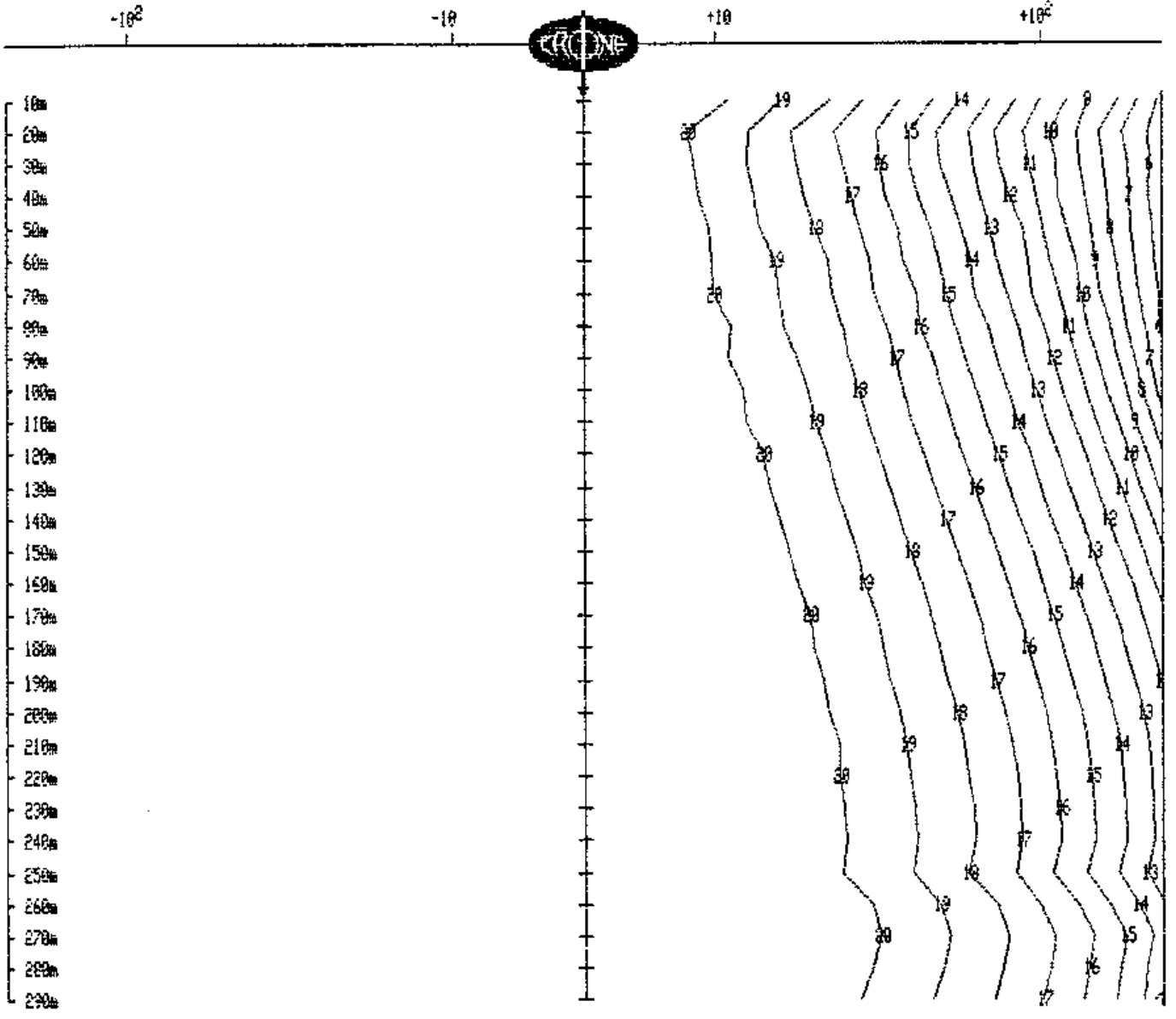
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-08
Grid	: BIRKCREEK	Tx Loop	: COL
Time Base	: 16.66 ms	Date	: Nov 3, 1990
Ramp Time	: 1.50 ms	File	: BC9008C.PEM
Scale	: 1:2000		

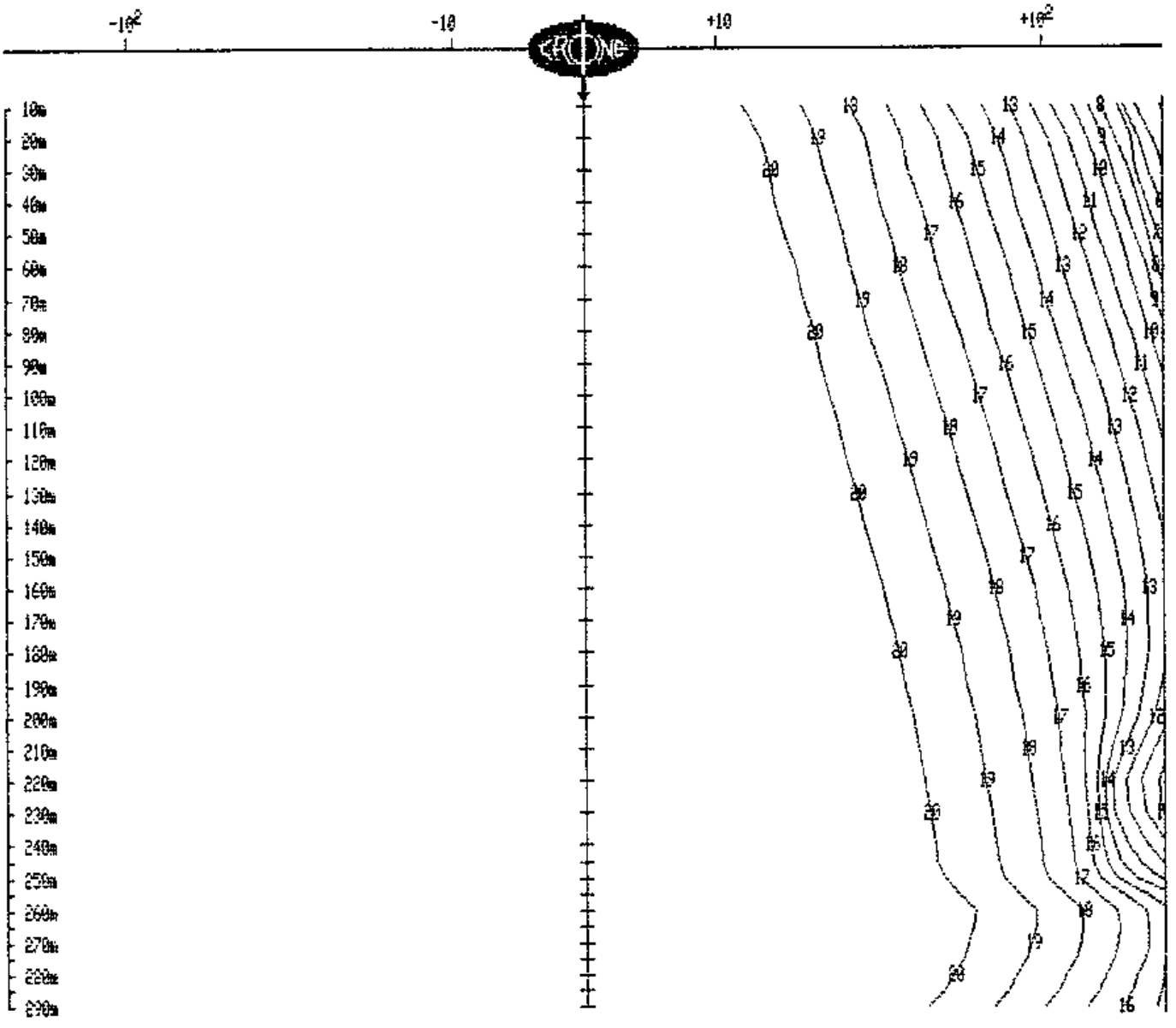
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-08
Grid	: BIRKCREEK	Tx Loop	: NE
Time Base	: 16.66 ms	Date	: Nov 3, 1990
Ramp Time	: 1.50 ms	File	: BC9008NE.PEM
Scale	: 1:2000		

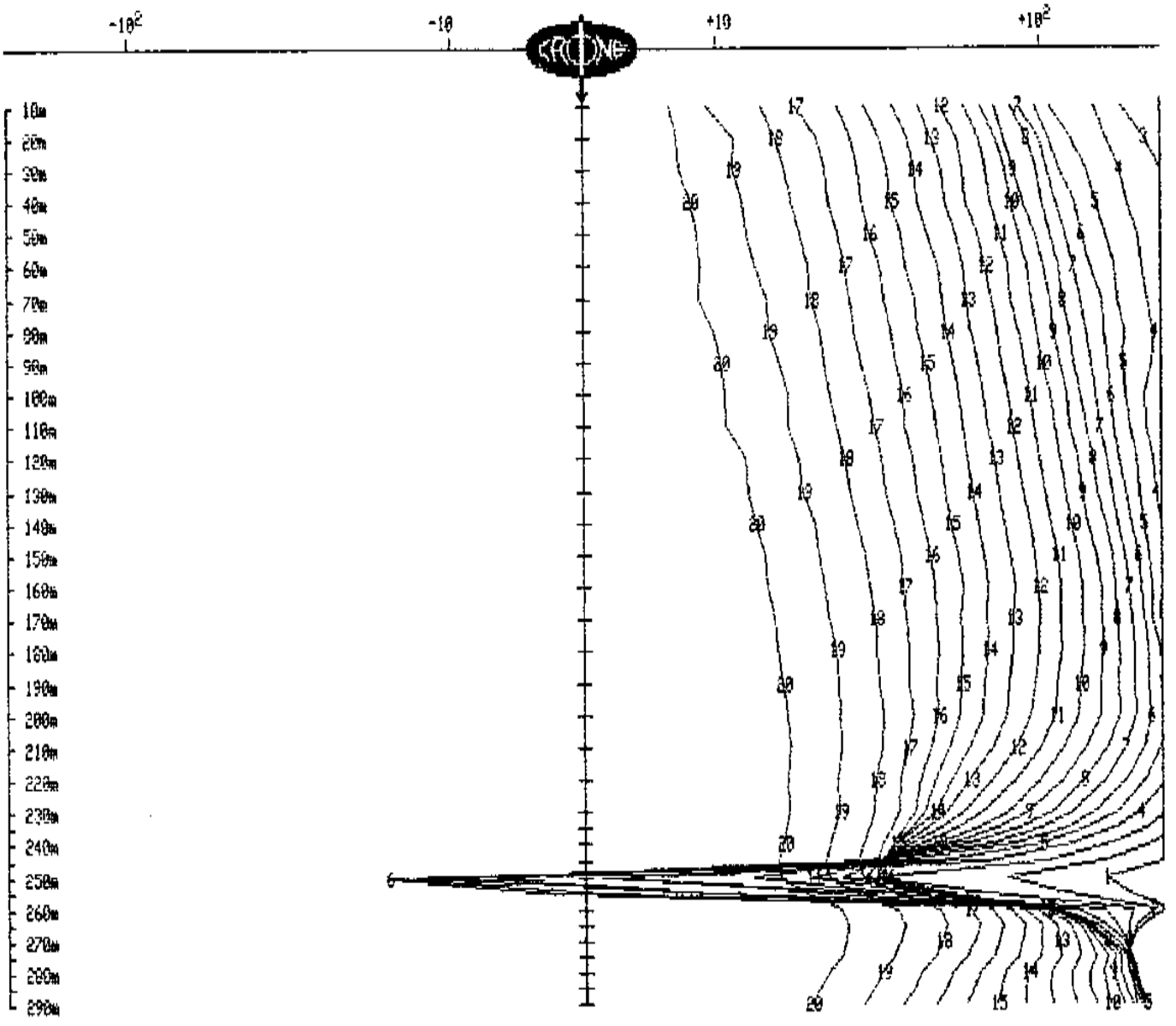
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-08
Grid	: BIRKCREEK	Tx Loop	: NW
Time Base	: 16.66 ms	Date	: Nov 3, 1990
Ramp Time	: 1.50 ms	File	: BC9008NW.PEM
Scale	: 1:2000		

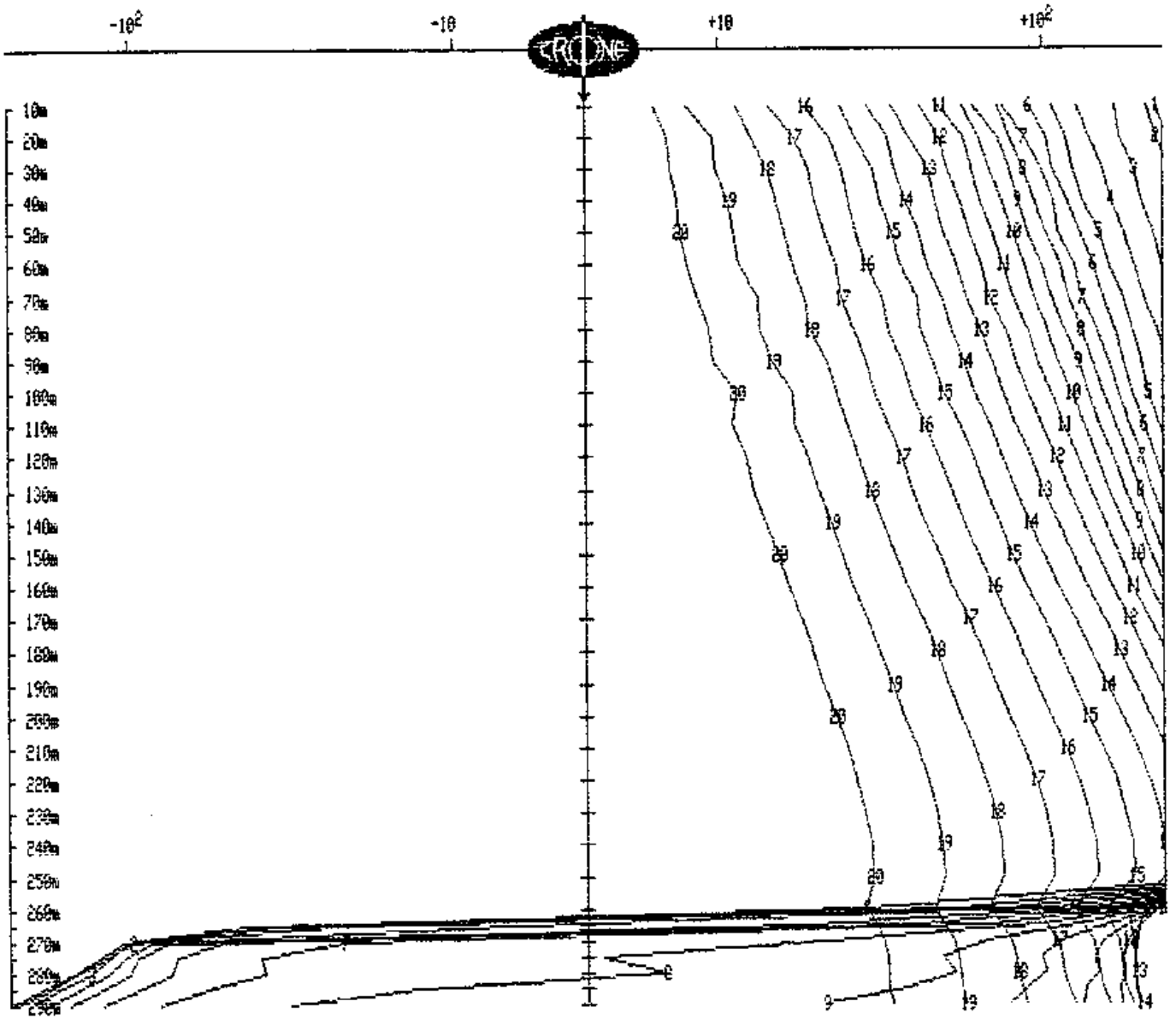
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-08
Grid	: BIRKCREEK	Tx Loop	: SE
Time Base	: 16.66 ms	Date	: Nov 3, 1990
Ramp Time	: 1.50 ms	File	: BC9008SE.PEM
Scale	: 1:2000		

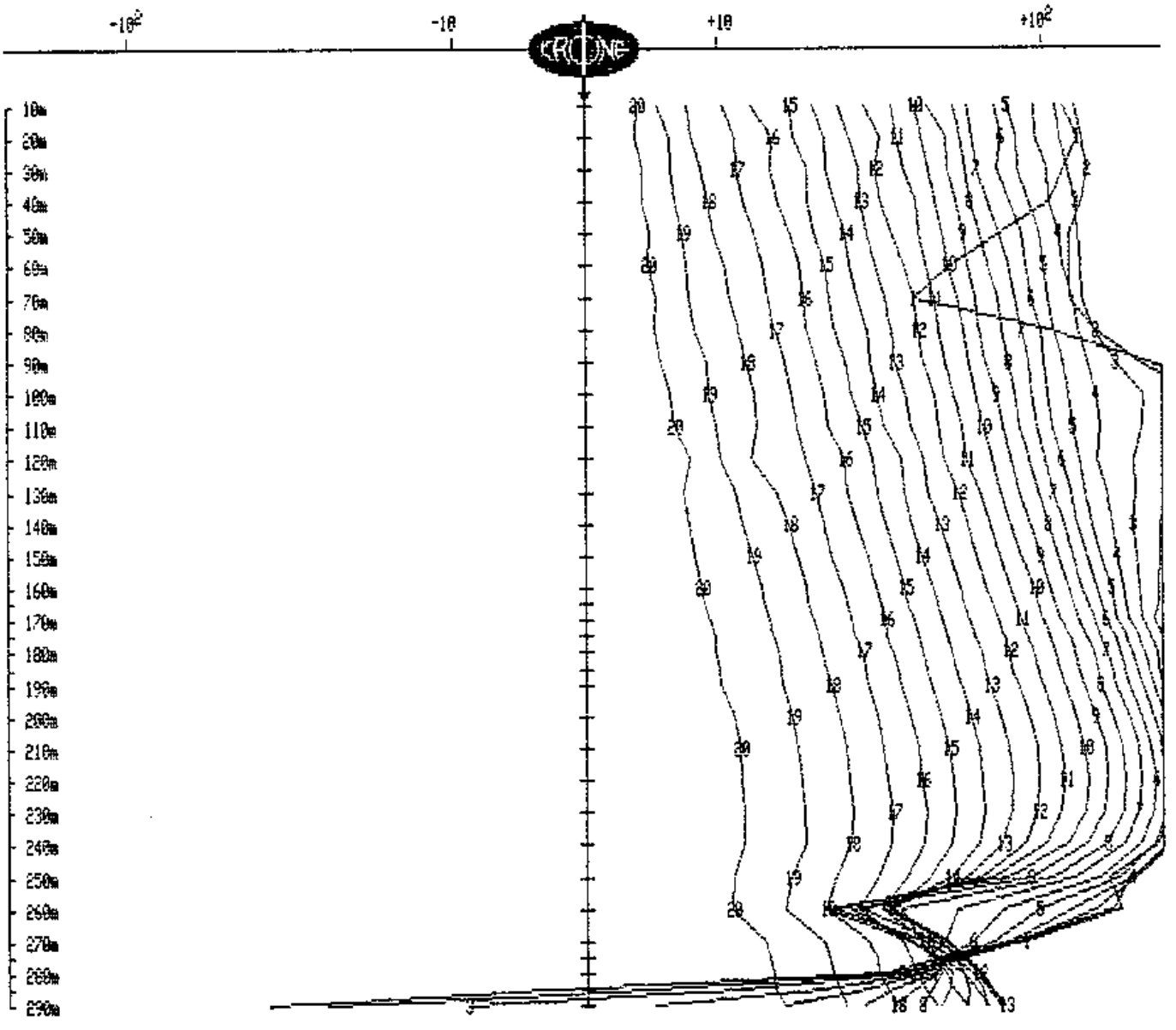
AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



CRONE GEOPHYSICS & EXPLORATION LTD
BOREHOLE PEM

Client	: FALCONBRIDGE	Hole	: BC-90-08
Grid	: BIRKCREEK	Tx Loop	: SW
Time Base	: 16.66 ms	Date	: Nov 3, 1990
Ramp Time	: 1.50 ms	File	: BC9008SW.PEM
Scale	: 1:2000		

AXIAL COMPONENT dBa/dt nanoTesla/sec - 20 channels



APPENDIX F:

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, **A. DOUG MCLAUGHLIN**, at the time of the work completed in this report, was an employee of Falconbridge Limited, with offices at 202 - 856 Homer Street, Vancouver, British Columbia, V6B 2W2, do hereby certify that:

1. I am a geologist residing at 253 East 28th Street, North Vancouver, British Columbia, V7N 1C1.

2. I have a Bachelor of Science Degree in Geology from Acadia University, Wolfville, Nova Scotia awarded in 1977 .

3. I am a Fellow of the Geological Association Of Canada

4. I have been involved in various aspects of mineralization since 19789.

5. I was the Project Geologist for the Birk Creek Project and that the work was completed under my direction.

Dated at Vancouver, B.C.

Jan 2, 1997

A. Doug McLaughlin

STATEMENT OF QUALIFICATIONS

I, **COLIN W. P. RUSSELL**, an employee of Falconbridge Limited, with offices at 202 - 856 Homer Street, Vancouver, British Columbia, V6B 2W2, do hereby certify that:

1. That I am a geologist residing at #53 - 10780 Guildford Drive, Surrey, British Columbia, V3R 1W6.

2. That I graduated with a B.Sc. in Geology from the University of British Columbia in 1989.

3. That I have been employed in mineral exploration since 1986.

Dated at Vancouver, B.C.

JAN. 2/91

Colin Russell

Colin W. P. Russell
Associate Geologist
Falconbridge Limited

STATEMENT OF QUALIFICATIONS

I, **MICHAEL J. VANDE GUCHTE**, an employee of Falconbridge Limited, with offices at 202 - 856 Homer Street, Vancouver, British Columbia, V6B 2W2 do hereby certify that:

1. I am a geologist residing at 1086 Nagle Street, Duncan, British Columbia.

2. I graduated with a B.Sc in geology from the University of Alberta in 1986.

3. I have been continuously employed in mineral exploration since 1987.

4. I am a licensed member in good standing with the Association of Professional Engineers, Geologists and Geophysicists of Alberta

Dated at Vancouver, B.C.

M.J. Vande Guchte, P. Geol.
Field Geologist
Falconbridge Limited

APPENDIX G:

DETAIL OF EXPENDITURES

DATA FOR ASSESSMENT RECORDING:

TIME PERIOD OF WORK:
June 19 to December 28, 1990

STATEMENT OF COSTS:

LINECUTTING:
Promin Exploration Services, Kamloops, B.C.
63.6 line-kilometres @ $706.56/km.....$44,937.00

GEOPHYSICS:
Delta Geoscience Ltd., Delta, B.C.
60 line-kilometres @ $1,006.40/km.....$60,384.09

Scott Geophysics Ltd., Vancouver, B.C.
2164.72 metres @ $10.87/m.....$23,530.51

TRENCHING:
Stecon Contracting Ltd., Chase, B.C.
2.43 hectares @ $3792.72/ Ha.....$9,216.32

Sanders & Company, Merritt, B.C.
0.84 hectares @ $1996.87/Ha.....$1,677.37

DRILLING:
Burwash Enterprises Ltd., Duncan, B.C.
2377.87 metres @ $56.29/m.....$133,837.16

ANALYTICAL COSTS:
Bondar Clegg & Co., N. Vancouver, B.C.
561 samples for 28 elements @ $18.21/sample.....$10,215.81
Cominco Research Lab., Vancouver, B.C.
454 samples for major oxides @ $18.00/sample.....$8,172.00
ACME Analytical, Vancouver, B.C.
175 soil samples for 32 element ICP @ $4.16/sample.....$727.80

EQUIPMENT RENTAL:
4x4 Toyota Landcruiser; Rentway, Burnaby, B.C.
5 months @ $1659.52 (includes fuel).....$8,297.61

3 4x4 Ford F250 Pickups, Can-Ex Rentals, Kamloops, B.C.
(includes fuel).....$4,341.49

Radios; Canada Wide Communications, N. Vancouver, B.C.
5 months @ $298.41/month.....$1,492.06

Sperry-Sun; Pothier Enterprises, Richmond, B.C.
35 days @ $52.95/day.....$1,853.25

Road repairs: T. L. Fripp Contracting, Kamloops, B.C.
2 days @ $497.00 (includes mobe/demobe).....$958.00

WAGES:

H. Keats	Exploration Manager....2 days @ $400.00.....	$800.00
N. von Fersen	Senior Geologist..10 days @ $300.00.....	$3,000.00
A. McLaughlin	Project Geologist...101 days @ $200.00....	$20,200.00
M. Vande Guchte	Field Geologist...27 days @ $175.00.....	$4,725.00
C. Russell	Associate Geologist..106 days @ $140.00...	$14,840.00
D. Shaw	Consultant Geologist..1.5 days @ $437.36.....	$656.05
R. Muzyka	Assistant.....31 days @ $120.00.....	$3,720.00
C. Cook	Assistant.....14 days @ $100.00.....	$1,400.00
G. Noble	Sampler.....5 days @ $110.00.....	$550.00
D. Sargeant	Sampler.....3 days @ $125.00.....	$375.00
F. Noble	Sampler.....2 days @ $110.00.....	$220.00
C. Noble	Data input....33 hours @ $10.00.....	$330.00

ROOM AND BOARD:

147 days @ $40.95/day.....$6,019.65

FIELD EXPENSES:

Telephone, Hydro, courier, bus, etc.....$8,914.25

REPORT PREPARATION:

Drafting, reproduction, etc.....$7,000.00

TOTAL: $382,390.42

Inclination: 76 Deg
Declination: 23 Deg E

DATE OF DRAWING:	1990
DRAWING BY:	MATEO
REVISED BY:	DATE:
APPROVED BY:	DATE:
TRACED BY:	DATE:
Ref. #: 147-2-0060	

FALCONBRIDGE LTD

BIRK CREEK I.P. PROJECT
CHARGEABILITY PLAN
Gradient array, AB = 1200 m, MN = 50m
contour interval 4 mv/v

SCALE 1:5000 Fig #2

DELTA GEOSCIENCE LTD

Inclination: 76 Deg
Declination: 23 Deg E

DATE OF WORK: 1990	
ORIGINAL BY:	DATE:
REVISED BY:	DATE:
APPROVED BY:	DATE:
DRAWN BY:	DATE:
MAP #: 147-2-0061	

FALCONBRIDGE LTD

BIRK CREEK I.P.PROJECT
RESISTIVITY PLAN
Gradient array, AB = 1200 m, MN = 50m
contour interval 200 ohm-m

SCALE 1:5000 FIG # 5

DELTA GEOSCIENCE LTD

Inclination: 76 Deg
Declination: 29 Deg E

DATE OF WORK: 1990	
DRAWN BY:	DATE:
REVISED BY:	DATE:
APPROVED BY:	DATE:
ISSUED BY:	DATE:
MAP # 147-2-0062	

FALCONBRIDGE LTD

BIRK CREEK PROJECT
TOTAL FIELD MAGNETIC PLAN
contour interval 100 nt

SCALE 1:5000 F16-6

DELTA GEOSCIENCE LTD

Inclination: 76 Deg
Declination: 23 Deg E

Date of work: 1990	
Planned by:	Date:
Revised by:	Date:
Drafted by:	Date:
Check by:	Date:
Map # 147-2-0063	

FALCONBRIDGE LTD

BIRK CREEK PROJECT
FILTERED VLF-EM PLAN, (Fraser)
Freq. 21.4 khz & 24.0 khz
contour interval 5 %

SCALE 1:5000

FIG # 7

DELTA GEOSCIENCE LTD

Inclination: 76 Deg
Declination: 29 Deg E

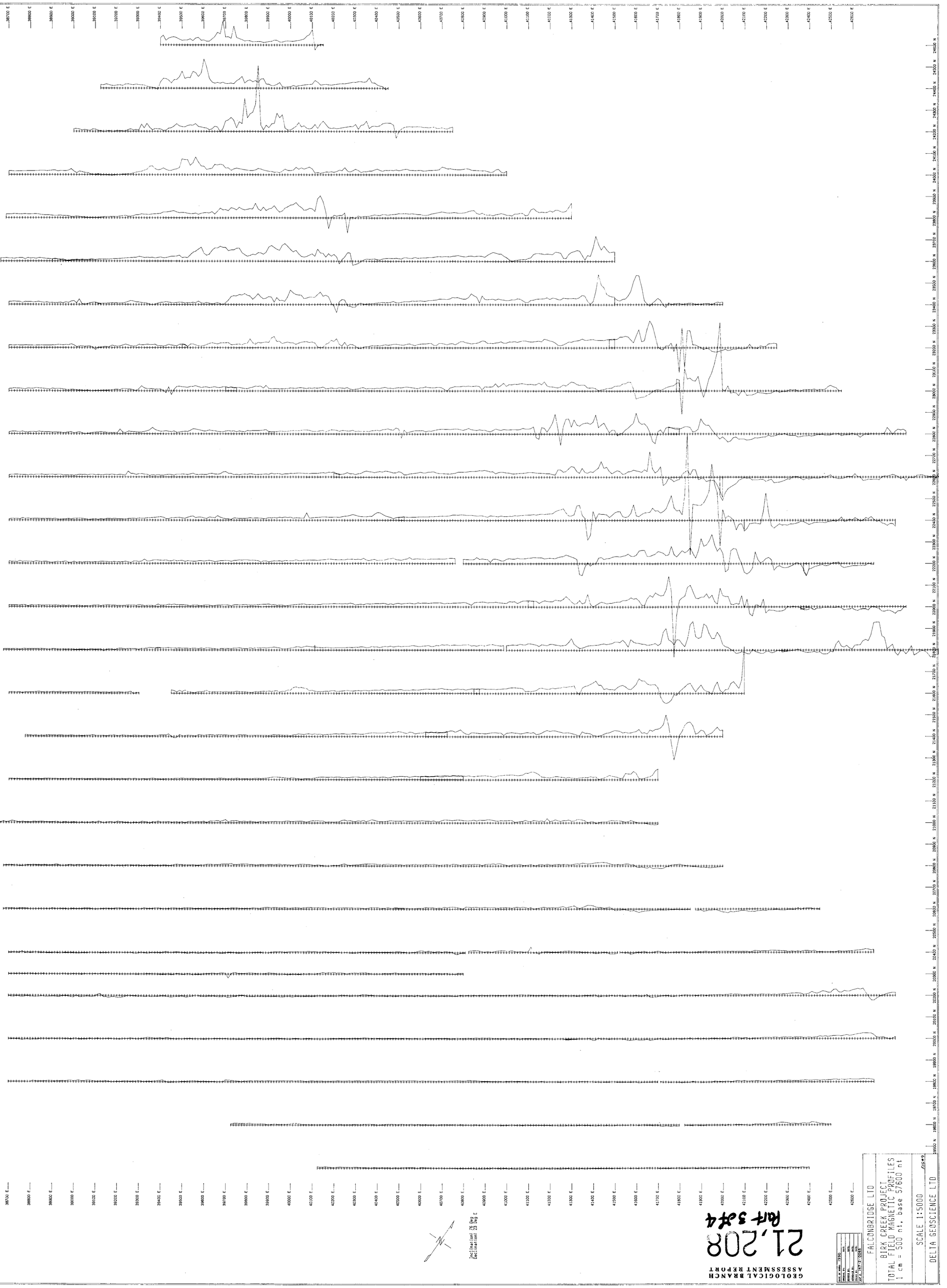
DATE OF WORK:	1990
ORIGINAL BY:	DATE:
PLOTTED BY:	DATE:
CHANGED BY:	DATE:
CHANGE BY:	DATE:
MAP #:	147-2-0084

FALCONBRIDGE LTD

BIRK CREEK I.P.PROJECT
CHARGEABILITY & RESISTIVITY PROFILES, GRAD. ARRAY
Charg. solid line @ 1cm=20mv/v, base 10, AB=1200m
Resist. dash line @ 1cm=1000ohm-m, base 0, MN=50m

SCALE 1:5000 FIG#8

DELTA GEOSCIENCE LTD



GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,208
Bk #3&4

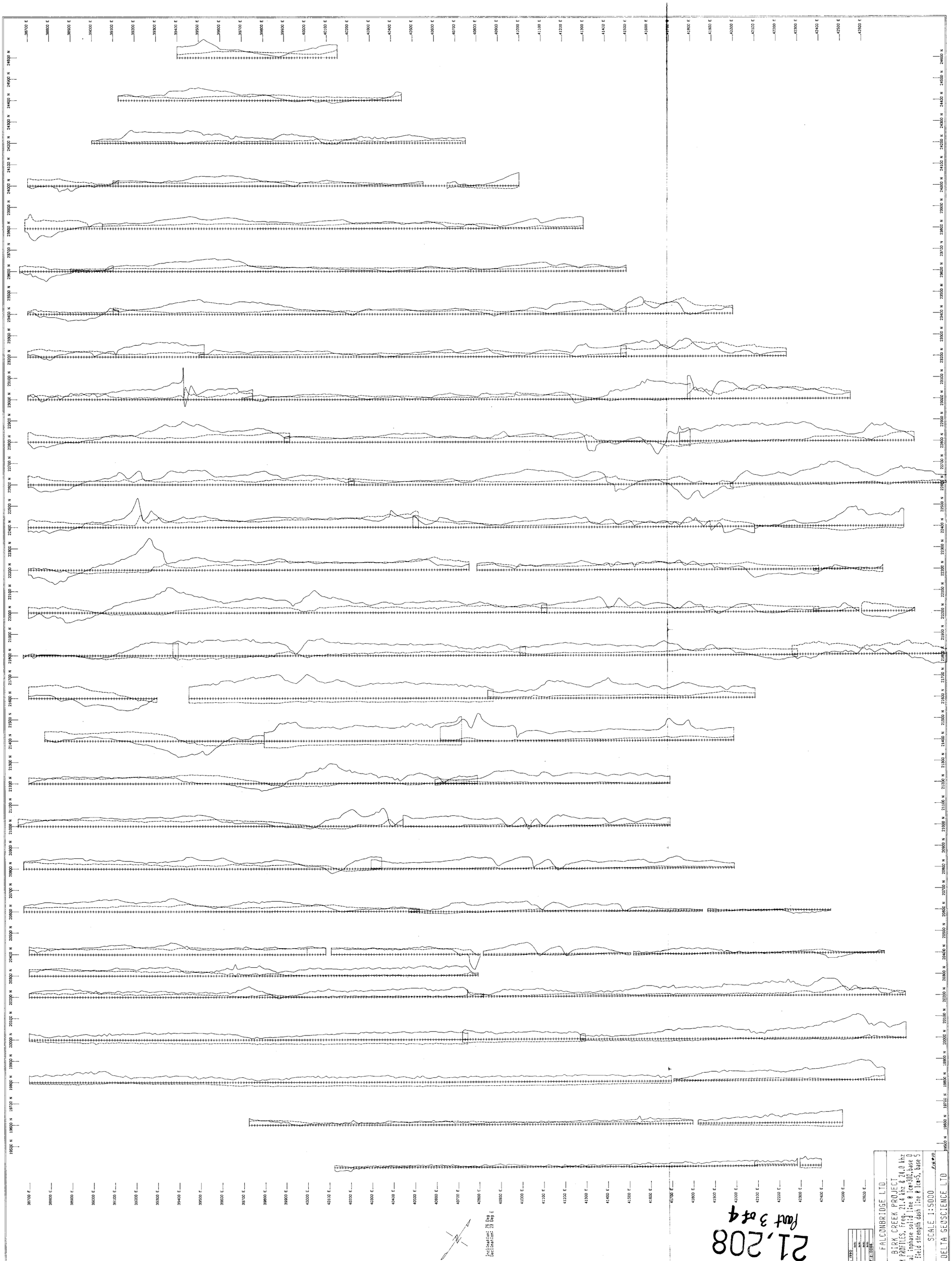
FALCONBRIDGE LTD

BIRK CREEK PROJECT
TOTAL FIELD MAGNETIC PROFILES
1 cm = 500 nt, base 57600 nt

SCALE 1:5000

Fig #2

DELTA GEOSCIENCE LTD



GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,208

Part 3 of 4