559001

99-4263

GOLDFIELDS EXPLORATION

ACN 008 560 978

Annual Report
March 1998 - March1999

Tasmania Gold

EL5/96

White Spur

EL5/96

Vol 1 of 1
Text and Appendices

See letter 10/2/99
Folio 28-29

HELD BY: **Renison Limited**

MANAGER & OPERATOR: **Goldfields Exploration Pty Ltd**

AUTHOR :M Vicary
C Dauth

9 February, 1999

PROSPECTS: Jones Creek

MAP SHEETS:	**1:25,000: Dundas**	**1:100,000: Sophia**
	Oceana	
GEOGRAPHIC COORDS	**Min East: 375 000 mE**	**Max East: 379 000 mE**
	Min North:5358 000 mN	**Max North: 5364 000 mN**

COMMODITY(s):Au, Cu, Pb, Zn, Ag

KEY WORDS:

Distribution:

- **Goldfields Exploration Information Centre Reference:**
- **Goldfields - Zeehan**
- **Mineral Resources Tasmania**

99-4263

ANNUAL REPORT – EL 5/96
WHITE SPUR – RENISON LTD
M VICARY/C DAUTH

SUMMARY

The White Spur EL 5/96 was obtained for its potential to host volcanic hosted massive sulphide mineralisation. It is located 2.5 kilometres south of the recently reopened deposit at Hercules and 10.5 kilometres south of the Rosebery deposit. Both these deposits are hosted in the upper parts of the Central Volcanic Sequence close to the contact with the overlying White Spur Formation, a sequence of interbedded massflows and black siltstones. Clasts of massive sulphide are present in the basal parts of the White Spur Formation and are considered to be eroded fragments of local sulphide accumulations carried down slope by mass flows. The contact between the Central Volcanic Sequence - White Spur Formation can be traced from the Hercules Mine south into the White Spur EL until it intersects the North Henty Fault, a major regional structure..

Exploration from March 1996 to March 1999 centred on the construction of a fence of diamond drilll holes (9 holes ~3.9 km in total) aimed at testing the strike length of the White Spur Formation - Central Volcanics Sequence contact at about 300 to 400m below the surface. The holes were spaced between 100m to 1000m apart. A series of ground geophysical surveys (CSAMT, VLF IP and Ground Magnetics) were also completed over the White Spur Formation - Central Volcanics Sequence contact.

A significant alteration zone was located at the White Spur Formation - Central Volcanic Sequence contact in WSP5 and returned assay of 17m at 0.77% Zn and 0.4% Pb. A sulphur and lead isotope study has shown that WSP5 intersection is consistent with the results of studies from the outer margins of typical VHMS footwall stringer system about 500m from the ore.

A DHEM survey of WSP5 located an off-hole conductor which was coincident with a CSAMT and DIGHEM anomaly. Drilling along strike and down dip of this zone has failed to locate a high grade zone of mineralisation. The DHEM anomaly detected in WSP5 and other holes is considered to result from flattening of conductive siltstones at depth under the DHEM loops. No further work is planned.

A review of the geology of the Jones Creek area was made in late 1997. No additional targets were completed.

The exploration program at White Spur has tested most of the obvious targets. New targets are required to justify additional expenditure on the tenement. It is recommended that the 1997 CSAMT data should be reprocessed and modelled to generate additional targets. If no worthy targets are generated, the EL should be relinquished.

CONTENTS

LIST OF FIGURES

LIST OF PLANS

LIST OF APPENDICES

1. INTRODUCTION

EL 5/96 - White Spur is held by Renison Limited and is explored by Goldfields Exploration. The licence is located in western Tasmania approximately 20 kilometres north of Queenstown, and is situated on the south western flanks of Mount Read (Figure 1). It was granted on April 5, 1996 and has an area of 19 square kilometres.

The major access to the EL is via Howards Road. Howards Road is accessed via the Anthony Road, approximately 14 kilometres east of the junction with the Zeehan Highway. Access within the EL is provided by a series of old logging tracks and the new HEC road which follows a major canal.

The vegetation of the EL is quite varied with Myrtle and King Billy Pine rainforest dominating in the higher elevated regions and also occurs in steep sided gullies. In areas covered by glacial deposits and frequently burnt out areas the rainforest has degenerated into Tea Tree and Button Grass scrub.

The White Spur EL 5/96 was obtained for its potential to host volcanic hosted massive sulphide mineralisation. It is located 2.5 kilometres south of the recently reopened deposit at Hercules and 10.5 kilometres south of the Rosebery deposit (Figure 2). Both these deposits are hosted in the upper parts of the Central Volcanic Sequence close to the contact with the overlying White Spur Formation, a sequence of interbedded massflows and black siltstones. Clasts of massive sulphide are present in the basal parts of the White Spur Formation and are considered to be eroded fragments of local sulphide accumulations carried down slope by mass flows. The contact between the Central Volcanic Sequence - White Spur Formation can be traced from the Hercules Mine south into the White Spur EL until it intersects the North Henty Fault, a major regional structure.

In the first year of tenure a small zone (~10m wide) of massive pyrite lenses within intensely sericite altered dacitic pumiceous volcaniclastic sandstones was located near the top of the Central Volcanic Sequence close to the intersection of the Central Volcanics Sequence - White Spur Formation contact with the North Henty Fault. This area, the Anneliese Prospect, has been the focus for the first phase of detailed systematic exploration. A 7.1 line kilometre grid was established and a soil and rock chip sampling program completed. A variety of geophysical techniques have tested the along strike extensions of the mineralisation. These include:- Ground Magnetics, Self Potential, Induced Polarisation, and VLF-EM. A 307m diamond drill hole ANNE001 tested the down dip extension of the mineralisation and a DHEM survey performed. The results suggest that the mineralisation at the Anneliese Prospect is uneconomic and has limited strike extension.

Exploration from March 1997 to March 1998 centred on the construction of a fence of diamond drilll holes aimed at testing the White Spur Formation - Central Volcanics Sequence about 300 to 400m below the surface. The holes were spaced between 800m to 1000m apart. A series of ground geophysical surveys (CSAMT, VLF and Ground Magnetics) were completed over the strike extent of the White Spur Formation - Central Volcanics Sequence contact.

A zone of sericite-pyrite alteration was intersected at the White Spur Formation - Central Volcanics Sequence contact in WSP5. It returned an anomalous assay of 17m at 0.77% Zn and 0.4% Pb. This intersection was subsequently followed up by

four additional close spaced holes aimed at testing the along strike and down dip potential. The results were not spectacular and structural complications down grade the potential of this zone. A series of DHEM surveys recently completed indicate the presence of a possible conductor at depth. The source of this anomaly is uncertain but made be due to flattening at depth of conductive siltstones under DHEM loops.

In March 1998, RGC Exploration refocused its exploration and mining activities and base metal exploration in western Tasmania was suspended. A review of the prospectivity of the Jones Creek area focusing on the potential to host gold mineralisation was made.

Goldfields Exploration and RGC Exploration are currently negotiating a Joint Venture or transfer of the White Spur EL. This should be finalised in 1999.

2. TENURE

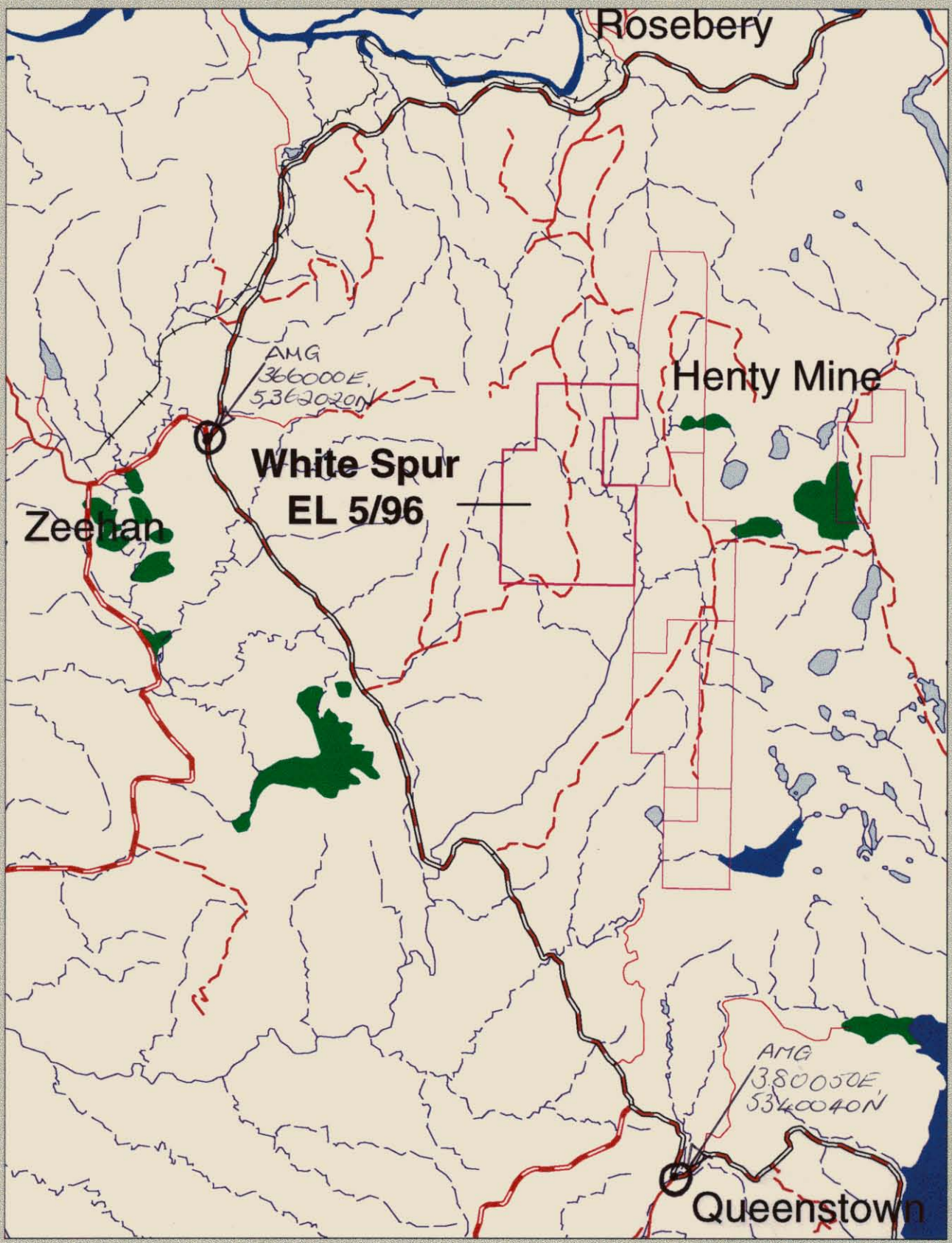
The EL comprises: Crown Land (Deferred Forest Land)
Land Vested in HEC (105 ha)
Mt Dundas RAP
Mt Read RAP

The EL is almost entirely within the Mount Dundas (CAR) Reserve.

559007

RGC Exploration

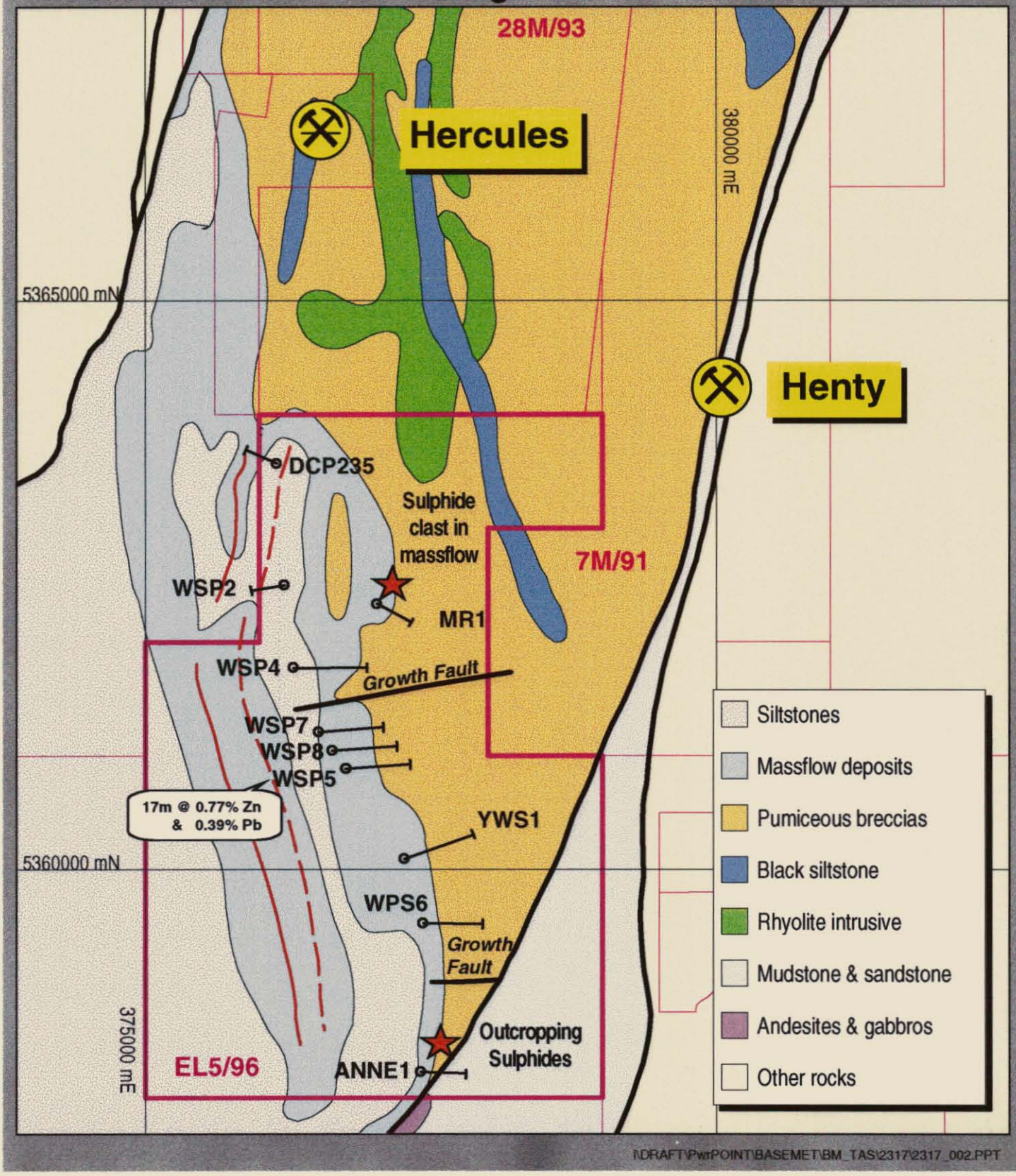
Figure 1
EL 5/96 White Spur
Location Map



559008

RGC Exploration

WHITE SPUR PROJECT
Simplified Geology
Figure 2



\DRAFT\PwrPOINT\BASEMET\BM_TAS\2317\2317_002.PPT

3. EXPLORATION MODEL

The current exploration model used in the Mount Read Volcanics is based on the recognition of several distinctive characteristic features of volcanic hosted massive sulphide deposits (Figure 3). These include:-

- occurrence of VHMS deposits in clusters along favourable horizons,
- spatial control of synvolcanic growth faults,
- distinctive zoned and asymmetric footwall alteration zones, and
- chemical sediments (exhalites) and sulphide clast rich mass flow units at the favourable horizon.

The initial phase of an exploration program is to define the favourable mineralised horizon. A systematic program of detailed geological mapping and logging of any existing core is performed with emphasis on the delineating potential target areas which are considered to have the greatest possibility for an economic grade mineral discovery.

The target areas identified in Phase 1 are prioritised and systematically drilled in Phase 2 of the program. A nominal drill spacing of 800m to 1000m along the favourable horizon is used to provide maximum geological information. Where significant mineralisation or alteration is intersected the spacing between adjacent drill holes is reduced. In areas that have been covered by surficial geophysical surveys (eg, IP) it is considered that the upper 200m of the bedrock have been adequently explored and drill holes generally target the favourable horizon about 300 to 350m down dip of the surface. It is hoped that any off hole conductors at depths greater than 200m will be found by routine DHEM surveying. Thus each drill hole in this phase of the program will test a volume of rock and will provide maximum geological information.

Specific geochemical and geophysical techniques are employed in Phase 3 of the program to determine the proximity to the mineralisation system.

Advanced exploration targets are rigorously tested by drilling in Phase 4 of the exploration program.

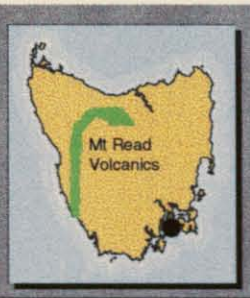
The exploration program depends entirely on the quality of the targets generated. Once a target worthy of advanced testing has been identified additional regional exploration targets are assessed. In this way a project could have several Phase 1 and Phase 4 targets that are simultaneously explored.

Figure 3.

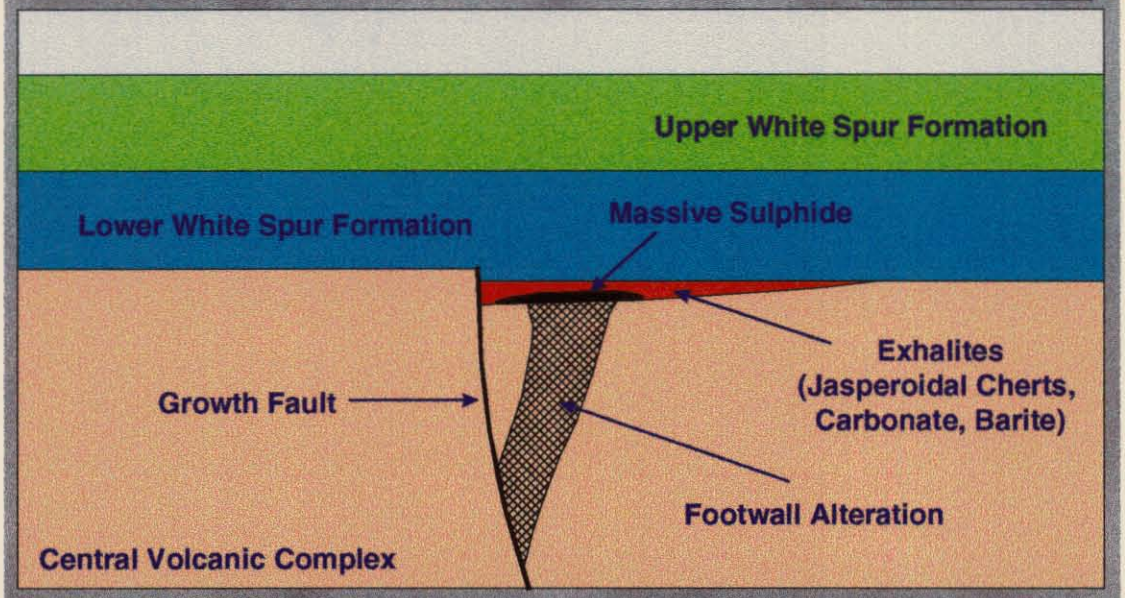
559010

RGC Exploration

Mount Read Volcanics



Exploration Model



Exploration Strategy

1st Phase	Mapping	Define Mineralised Horizons. Locate growth faults, footwall alteration, & exhalites (chemical sediments).	Hatfield River, Boco Siding.
2nd Phase	Drilling	Systematically test favourable horizons	Lynchford, Gowrie Park
3rd Phase	Specific Geochemistry Geophysics	Determine proximity to mineralised systems.	Basin Lake, White Spur
4th Phase	Follow up Drilling	Orebody delineation	Mt Julia (Goldfields)

L:\DRAFT\PWR\CNI\BASEMET\BMLTAS\2301\2301_004.PPT

4. PREVIOUS EXPLORATION IN THE WHITE SPUR AREA

The previous exploration in the White spur area prior to March 1996 is fully discussed in Vicary, 1997.

The work completed by RGC Exploration in EL 5/96 - White Spur since 1997 includes the following:-

March 1996 - March 1997 (Vicary 1997)

1) Geological mapping the EL at 1:5000,
2) Relogging of several old diamond drill holes,
3) 7.1 kilometres of grid cut at the Anneliese Prospect,
4) Geological Mapping of the grid at 1:1000,
5) 128 Soil samples were analysed by ICP, XRF and NAA,
6) 38 Rock chip samples were analysed by ICP, XRF, NAA and/or AAS
7) 5 samples analysed for S and Pb isotopes
8) A 306.6m drill hole (ANNE001) was drilled at the Anneliese Prospect.
9) 34 split core samples from ANNE001 were analysed.
10) Ground Magnetics, VLF-EM, and IP Surveys at the Anneliese Prospect.
11) Down hole EM Survey of drill hole ANNE001.

March 1997 - March 1998 (Vicary, 1998)

1) Construction of a 20.7 line km grid over the EL,
2) 1:5000 geological mapping over the grid,
3) Grid based CSAMT, ground magnetics and VLF-EM surveys,
4) 46 rock chips were assayed by AAS, NAA and XRF
5) 3 samples were assayed for Pb isotopes,
6) 10 samples were assayed for S isotopes,
7) 12 samples were assayed for O isotopes, whole rock analysis and quantitative XRD,
8) 445 split core samples assayed by AAS, NAA and XRF
9) 9 diamond drill holes and one wedge totalling 4087.6m were completed.
10) Several holes were surveyed by DHEM,
11) Historical geophysical data was reprocessed,
12) Three reviews of the project were made by consultants,
13) Magnetic susceptibility measurements were made on all drill core,

5. WORK COMPLETED

In the period March 1998 - March 1999 the work completed in EL 5/96 - White Spur includes the following:-

1) Drill holes WSP10 and WSP 12 were completed,
2) DHEM data processed from January 1998 survey,
3) 38 split core samples assayed by AAS, NAA and XRF,
3) Review of exploration in the Jones Creek area.

6. RESULTS

6.1 GEOLOGICAL MAPPING

6.1.1 Review of Jones Creek area

A review of the geology and exploration potential of the Jones Creek area was made by Keith Corbett in October - November 1998. A detailed report of this work is presented in Appendix 1. No additional work was recommended.

A revised geological map of the Jones Creek area is presented in Figure 2 Appendix 1. A significant modification to the previous geological mapping in the area (Corbett, 1988) is the continuation of the Jones Creek Shale south of a sinistral NE trending fault to the New Howards Road - HEC Canal area. It was previously considered that the Jones Creek Shale terminated near the Old Howards Road possibly against a splay of the Henty Fault (Keele, 1991).

6.2 DIAMOND DRILLING

6.2.1 WSP10

Diamond drill hole WSP10 (Plan 1)was designed and drilled to intersect the down dip extension of the weakly anomalous alteration intersected in diamond drill hole WSP5 and a large off hole conductor interpreted by DHEM of previous drill holes in the vicinity.

The hole was drilled by Contract Diamond Drilling using a Longyear 44 drill rig.

Due to the hole starting to dip to vertical when an uplift of dip was expected, a Hall-Rowe wedge was emplaced at 300m to gain the lift necessary to intersect the target positions at a more reasonable depth. This was successful with an 5^0 degree lift from the wedge itself and a further 3^0 over the next thirty metres. The two holes were then named WSP10 for the parent hole which terminated at 384.4m and the daughter hole became WSP10A and finished drilling at 626.2m.

The target position of the WSF/CVC contact yielded a zone of weak sericite alteration with no discernible sulphide development. The down hole conductor may be explained by the presence of black siltstones above the WSF/CVC contact.

A detailed graph log and summary of WSP10 and 10A is presented in Appendix 3.

6.2.2 WSP12

Diamond drill hole WSP12 (Plan 2)was targeted to intercept and test the White Spur Formation and Central Volcanic Sequence contact in the northern portion of EL 5/96.

The hole was helicopter supported utilising Helicopter Resources and the drilling was undertaken by Almac Drilling Pty Ltd using an LF70 drilling rig.

Total depth of the hole was 353.5m with the WSF/CVC contact intersected at 250m. Rock types included intrusive rhyolite, black siltstones and mass flows of the White Spur Formation before passing on through pumiceous feldspar phyric volcaniclastics of the Central Volcanic Complex.

The target horizon (WSF/CVC contact), exhibited only minor sericite alteration with no notable sulphide mineralisation present therefore downgrading the north of the tenement with respect to further prospectively for Rosebery style base metal mineralisation.

A detailed graph log and summary of WSP12 is presented in Appendix 4.

6.2.3 WSP 1, WSP3 and JC1

The core for WSP1, WSP3 and JC1 was rediscovered in the Zeehan Core Yard in mid 1998. The core was in poor condition and WSP1 was completely retrayed and relabelled. The three holes were relogged as part of the review of Jones Creek area. Summary logs are presented in Appendix 1 (Figures 5 and 6).

6.3 DRILL CORE GEOCHEMISTRY

Twenty half core samples from WSP10A and 19 samples from WSP12 were sampled and analysed by Analabs and Becquerel Laboratories for the suite of elements tabled below :-

Table 1:- Analytical Methods

Method	Elements
AAS (A101)	Cu,Pb,Zn,Ag
XRF (X401)	P,Zr,V,Ti
Neutron Activation (N701)	Au,Ag,As,Ba,Br,Ca,Ce,Co,Cr,Cs,Eu Fe,Hf,Ir,K,La,Lu,Mo,Na,Rb,Sb,Sc,Se Sm,Ta,Te,Th,U,W,Zr,Yb

For both holes the sampling interval straddled the contact between the Central Volcanic Sequence and White Spur Formation. The assay results are presented in Appendices 3 and 4. There were no significant anomalies.

6.4 GEOPHYSICS

6.4.1 DHEM Survey

Three component down hole electromagnetic surveys using the CRONE time-domain EM system were performed on holes WSP7, WSP8, WSP9 and WSP11 in January - February 1998. The surveys were conducted by Outer Rim Exploration.

The results are presented in detail in Appendix 5.

Drill holes WSP7, WSP8 and WSP9 were drilled to follow-up anomalous alteration and a broad wavelength axial component DHEM response in hole WSP5. This same response is evident in the surveys of the three new holes and requires further modelling to fully determine the cause of the anomaly. A possible model favoured by Chris Dauth is that the anomaly can be explained if the thick sequence of black siltstones shallows down-dip and acts as a potential flat lying conductor below loops Tx 1, 2 and 9. There is some geological information to support this observation. If the north plunging anticline and syncline located to the west of the HEC canal at about 377200mE, 5359500mN continues north until about 5361000mN then flat lying siltstones would occur in the hinge of the folds under the loop positions as predicted. The shallow intersection of the Central Volcanic Sequence - White Spur Formation contact in drill hole WSP10 is also explained by shallowing of the contact at depth in response to the northern continuation of the folds.

Hole WSP11 was drilled in the north of the EL. A shallow near hole response attributed to black siltstones was reported.

A survey was planned for hole WSP12 but was never completed.

6.3.2 Magnetic Susceptibility Measurements

The magnetic susceptibility measurements for WSP10/10A and WSP12 are tabulated in Appendices 3 and 4.

7 DISCUSSION AND RECOMMENDATIONS

Exploration completed to date at White Spur has been aimed at locating a poly-metallic base metal deposit at or near the Central Volcanic Sequence - White Spur Formation contact.

Fourteen drill holes have tested the favourable horizon along a 5 kilometre strike length in the western portion of the EL with encouraging results from two drill holes ANNE001 and WSP5.

Drill hole ANNE001 tested the down-dip potential of thin massive sulphide lens developed in the upper part of the Central Volcanic Sequence close to the North Henty Fault. The sulphide is mainly pyrite and unfortunately barren in base metals and gold. DHEM and other geophysical surveys completed over the prospect suggest that the mineralisation has limited strike length.

Drill hole WSP5 tested the Central Volcanic Sequence - White Spur Formation contact to the south of an inferred Cambrian growth fault, across which there is pronounced thickening in the basal White Spur Formation. Sericite - pyrite alteration straddling the Central Volcanic Sequence - White Spur Formation contact returned assays of 17m @ 0.77% Zn and 0.39% Pb including 2.5m @ 1.6% Zn and 0.78% Pb. A DHEM survey located an off-hole conductor. These was targeted by 4 drill holes along strike and down dip of WSP5. The results of this program and subsequent DHEM surveys have failed to identify any additional mineralisation and no further work is planned.

In late 1998 a review of the Jones Creek area in the eastern part of the White Spur EL was made to identify potential gold and base metal targets. No targets were identified.

Approximately $1 million has been spent on exploration in the White Spur area since 1996. The base metal gold potential of the EL has largely been tested and few obvious targets exist. Additional exploration will require deep drilling.

It is recommended that the 1997 CSAMT survey be static corrected and inverted to help define additional targets. If no targets worthy of testing are located then the EL should be relinquished.

8. REFERENCES

Corbett, K.D.,1986. Geology of the Henty River - Mt Read area. MRVP Map 3, 1:25 000 scale, Dept of Mines, Tasmania.

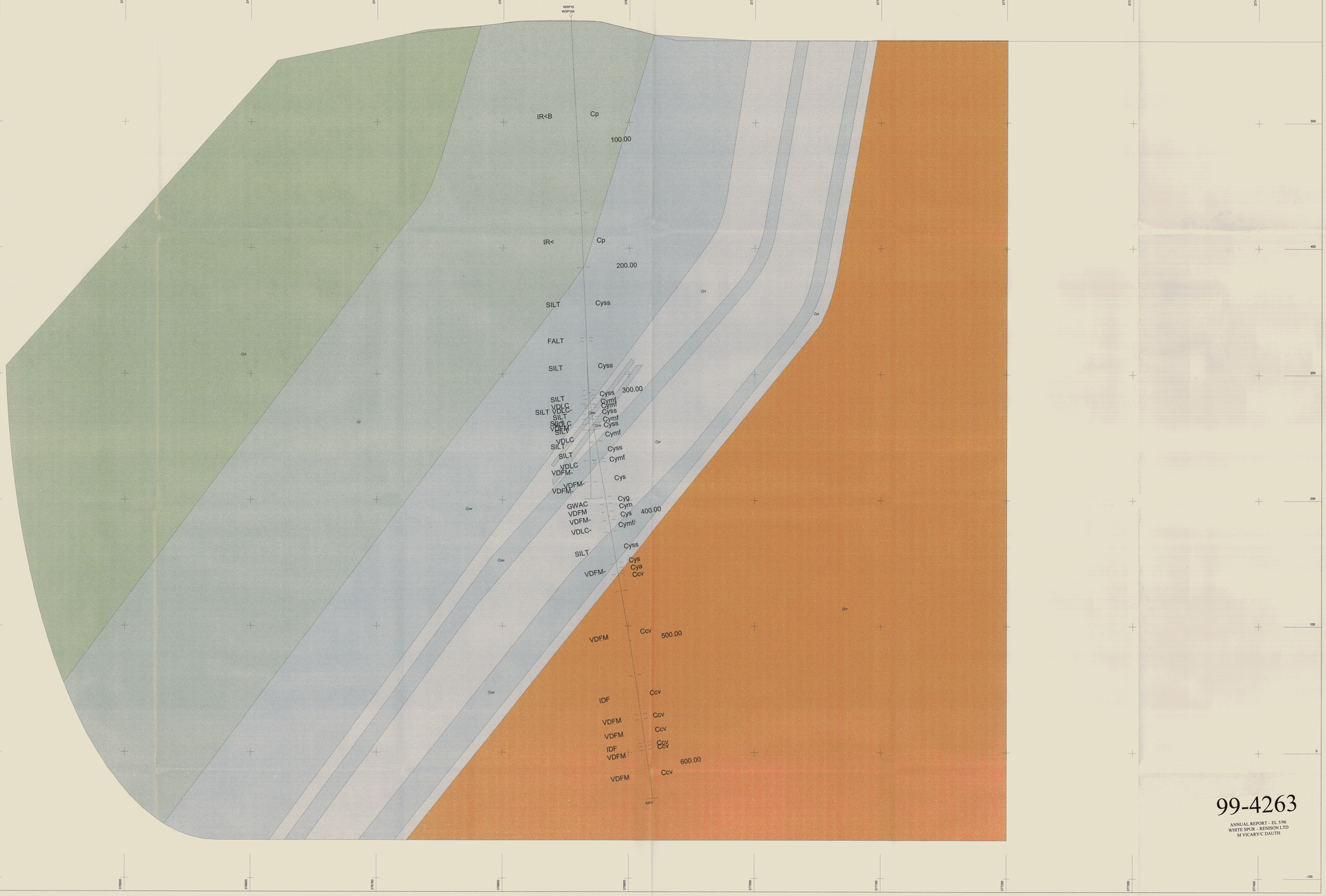
Keele, R.A., 1991 The Zeehan - Red Hills - Lake Selina Traverse. A domain approach to the analysis of structural data. CODES: AMIRA Project P291 - Structure and Mineralisation of Western Tasmania. Report No. 3, pp 40 - 73.

Vicary, M.J., 1997 Annual Report March 1996 - March 1997. EL 5/96 White Spur. RGC Exploration Pty Ltd.

Vicary, M.J., 1998 Annual Report March 1997 - March 1998. EL 5/96 White Spur. RGC Exploration Pty Ltd.

559017

Plans



Ccv	Mainly felsic pyroclastic rocks, dominantly feldspar phyric, including pumice bearing tuff & breccia, crystal-vitric tuff, vitric tuff & minor shale & sandstone
Cyf	Ashy siltstone
Cyt	Units of bedded siltstone, sandstone
Cyss	Black siltstone
Cyg	Dominantly greywacke & mudstone with some interbedded vitric tuff, crystal tuff & crystal-lithic tuff
Cyf	Undifferentiated Lower White Spur Formation
Cyx	Crystal-rich volcaniclastics sandstone
Cyft	Rhyolitic-dacitic volcaniclastic sandstone
Cyr	Quartz feldspar porphyry

0 10 20 50 100m
Distances in metres

Scale 1 : 1 000

Workspace : n:\ gis \ xsect \ tas \ 2317 \ wsp10.wor
Page Setup: A0 841x1189mm Landscape
Date: 22 May 1996

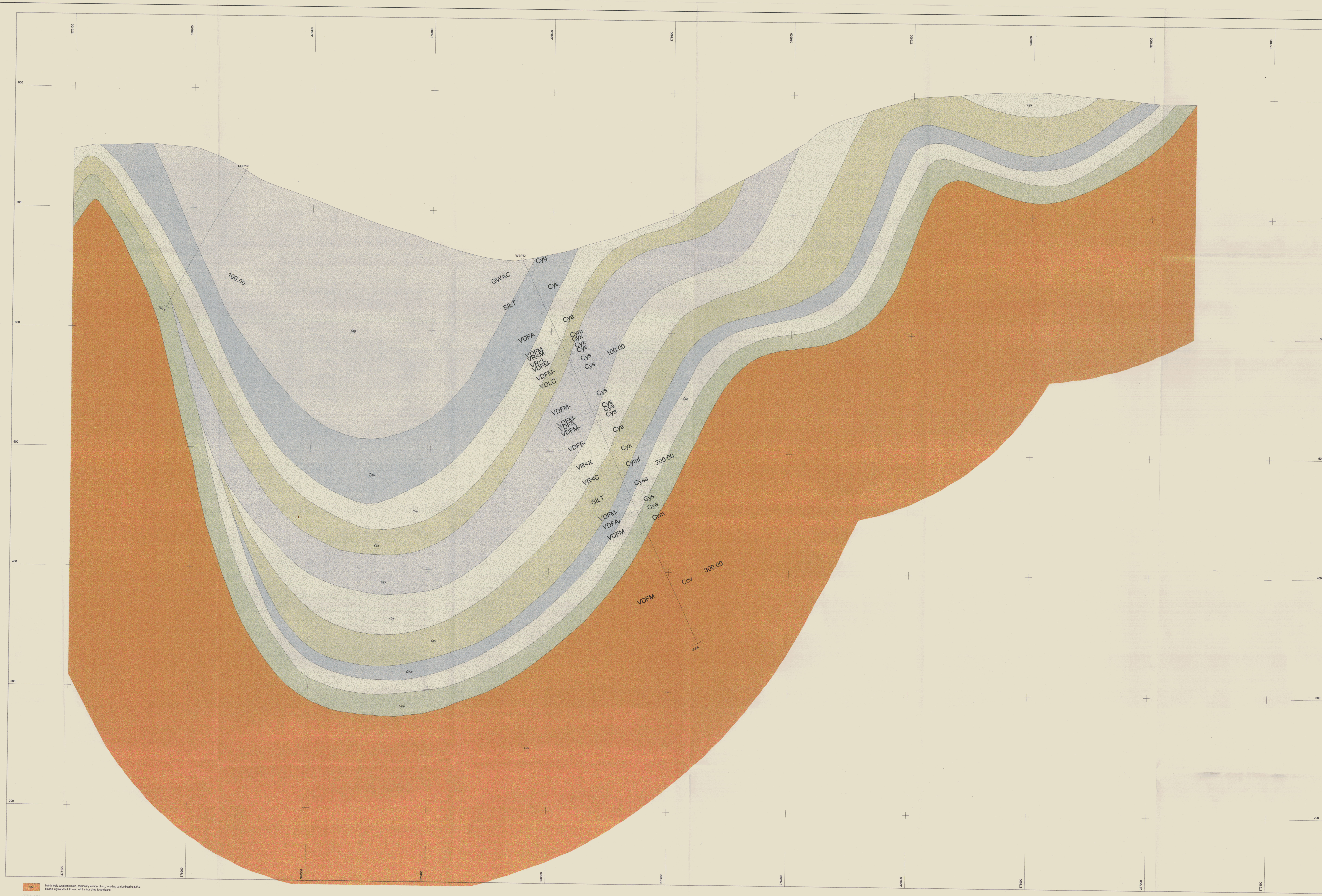
5 cm

RGC Exploration

Plan 1
Diamond Drill Section
WSP10 & 10A
Section 5360872mN

99-4263

ANNUAL REPORT - EL 5/96
WHITE SPUR - RENISON LTD
M VICARY/C DAUTH



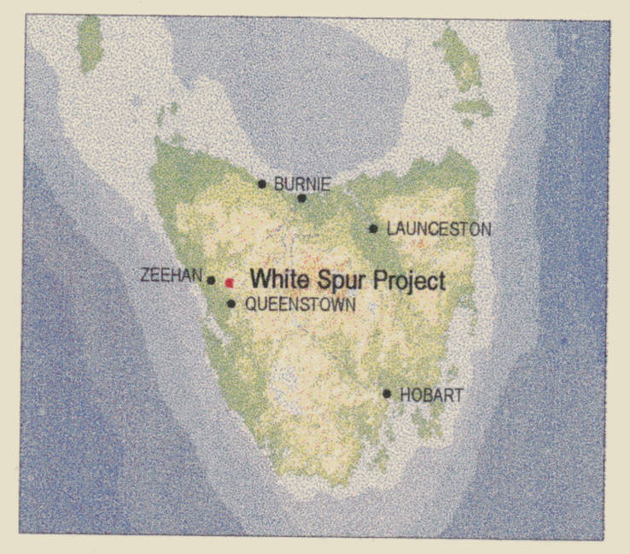
Ccv	Mainly felsic pyroclastic rocks, dominantly feldspar phyric, including pumice bearing tuff & breccia, crystal vitric tuff, vitric tuff & minor shale & sandstone
Cya	Ashy siltstone
Cys	Units of bedded siltstone, sandstone
Cyss	Black siltstone
Cyg	Dominantly greywacke & mudstone with some interbedded vitric tuff, crystal tuff & crystal-lithic tuff
Cyb	Undifferentiated Lower White Spur Formation
Cyx	Crystal rich volcaniclastics sandstone
Cym	Rhyolitic-dacitic volcaniclastic sandstone
Cp	Quartz feldspar porphyry

0 10 20 50 100m
Distances in metres

Scale 1 : 1 000

Workspace : n:\ gis \ xsect \ tas \ 2317 \ wsp12.wor
Page Setup: A0 841x1189mm Landscape
Date: 22 May 1998

5 cm



RGC Exploration

Plan 2
Diamond Drill Section WSP12
Section 5363430mN

559019

99-4263

ANNUAL REPORT – EL 5/96
WHITE SPUR – RENISON LTD
M VICARY/C DAUTH

559020

99-4263A

Appendix 1

An assessment of the Jones Creek area, Mt Read, in terms of geology, previous exploration and exploration potential.

K.D. Corbett
November 1998

99-4263A-AMP x 1 of 99-4263

A REPORT FOR RGC EXPLORATION PTY LTD.

AN ASSESSMENT OF THE JONES CREEK AREA, MT READ, IN TERMS OF GEOLOGY, PREVIOUS EXPLORATION AND EXPLORATION POTENTIAL

Author: K.D. Corbett

November 1998

Report No. KC98/4

EXECUTIVE SUMMARY

1. This report contains the results of an assessment of the geology (including some new mapping), previous exploration and exploration potential of the Jones Creek area of EL5/96 and the adjacent part of the Henty Mine Lease 7M/91. The study was done during the period September-November 1998, and involved mapping, core logging and literature review.

2. A major shale-siltstone unit, of the order of 400m wide, is present at Jones Creek within massive CVC-type pumice breccia sequences, and appears to link along strike to the north with the Rosebery shale horizon and, via a faulted synclinal structure, with the Hercules shale. The shale sequence is folded, deformed and faulted, and facings are ambiguous, the favoured interpretation being an anticline-syncline couple on the east flank of the faulted synclinal structure. The general NNW-trending line of the shale horizon and the associated felsic and mafic intrusive bodies could reflect a Cambrian growth fault position.

3. The area has been subject to intensive exploration in the period 1975-86, involving gridding, mapping, soil sampling, rock chip sampling, IP surveys, DIGHEM survey, and UTEM survey. Three diamond holes have been drilled over the two kilometre strike length exposed (and two more just to the north of the present area), and down-hole EM surveys carried out.

4. The exploration has shown widespread but quite minor lead-zinc mineralisation associated with disseminated pyrite and pyrrhotite in the shale sequence but, despite follow-up drilling, no significant mineralisation has been found. None of the sampling or drilling has produced anomalous gold values.

5. The present study has not identified any further possibilities of mineralisation to justify further exploration.

INTRODUCTION

The author was requested by Mr Michael Vicary (Exploration Geologist, RGC Exploration Pty Ltd) in July 1998, to carry out an assessment of the geology and mineral potential of the Jones Creek area, together with consideration of some associated regional geological problems relevant to the White Spur area, as part of the Company's review of existing tenements with respect to their gold potential.

Field work for the project was conducted at Zeehan in late September (3 days mapping, 3 days core logging, 1 day literature review of RGC reports), and final literature review (MRT library) and report preparation (6 days) were undertaken in Hobart in October-November.

The author is grateful to Michael Vicary, Richard Hill and Tim Callaghan for assistance in the field. Drafting of colour diagrams was done by Ray Carroll.

GEOLOGICAL SETTING AND RELATIONSHIP TO HERCULES AND ROSEBERY

The Jones Creek area is located on the southern flanks of Mt Read to the north of the North Henty Fault (fig. 1), in an area dominated by two major volcanic sequences. These are the Central Volcanic Complex (CVC), comprising massive feldspar-phyric pumice breccias and lavas, and the White Spur Formation (WSF), comprising interbedded siltstone, sandstone and volcaniclastic mass-flow breccias. The west-facing WSF generally overlies the CVC rocks, but an interfingering relationship seems likely and the White Spur lithologies extend into the CVC pumice breccia sequences to form the hangingwall units at Hercules and Rosebery (fig. 1). Extensive bodies of feldspar-quartz porphyry intrude the CVC in the area, as do numerous irregular dykes and tabular sills of altered basalt and dolerite referred to as the Henty dyke swarm. A previous description of the geology is given by Corbett and Lees (1987).

The Jones Creek Shale unit lies within the CVC at the southern end of a 500m wide linear zone of steeply-dipping and strongly cleaved sedimentary 'epiclastic' rocks made up of lenses of shale and tuffaceous siltstone interbedded with tuffaceous sandstone, lithic-rich mass-flow breccia, and pumice-rich felsic 'tuff'. The zone

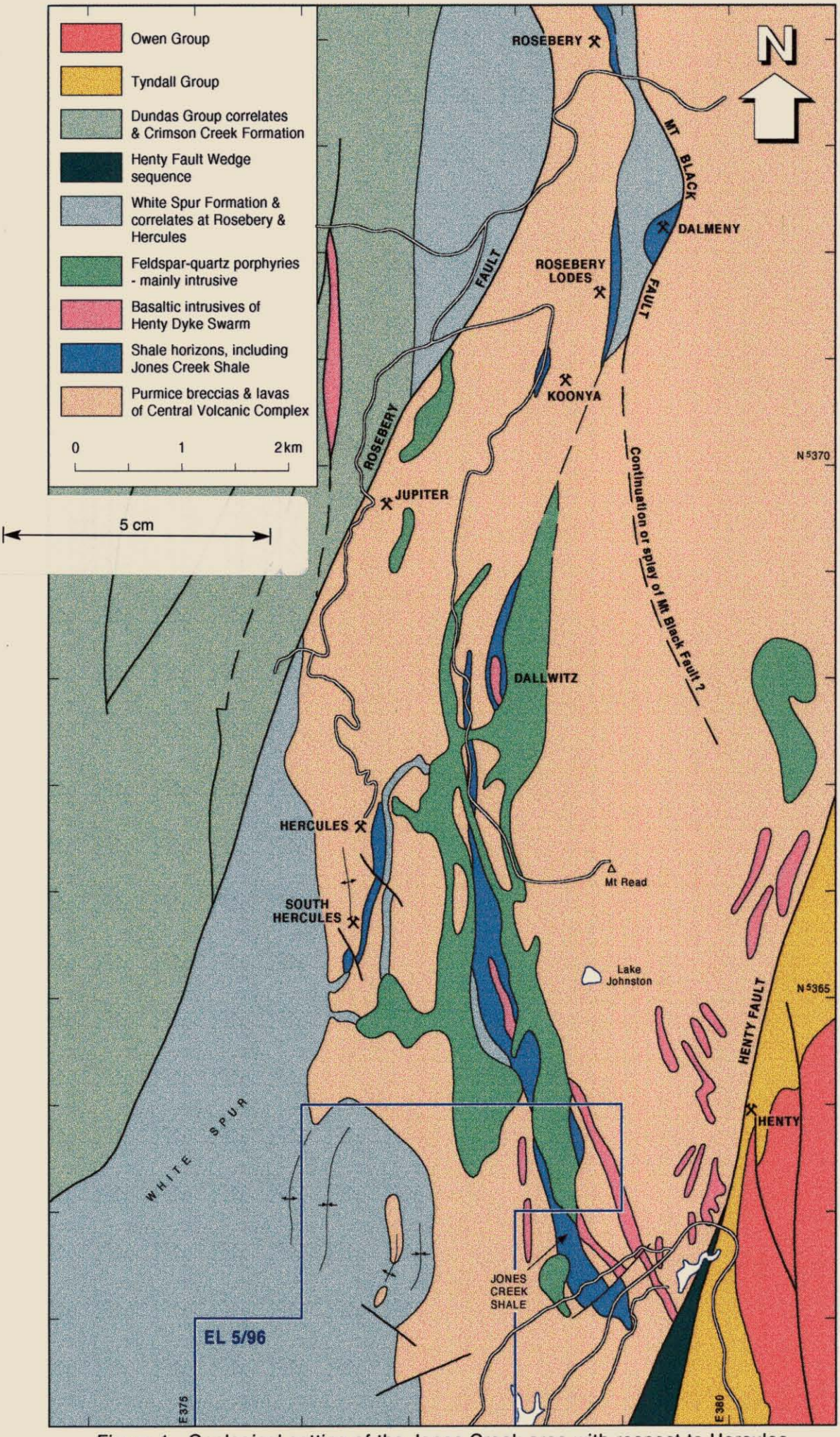


Figure 1. Geological setting of the Jones Creek area with respect to Hercules and Rosebery (modified after Corbett and Lees, 1987).

trends NNW into the head of Jones Creek and across the flat plateau area between Mt Read and Mt Hamilton, east of Hercules Mine (fig. 1). The zone is much disrupted by felsic and basaltic intrusive bodies, such that relationships to adjacent sequences are generally obscured. The zone *appears* to connect with similar shale lenses at Dallwitz prospect, on the northern slopes of Mt Read, and from here to other lenses at Koonya, Rosebery Lodes and Damleny prospects, and on to Rosebery itself (fig. 1). It is not surprising, therefore, that nearly all assessments of the geology of the Jones Creek area conclude that the shale zone is a probable continuation of, or correlate of, the Rosebery horizon.

Although bedding can be seen in many outcrops of the shales (sometimes partly transposed into the similarly west-dipping cleavage), clear *facing* evidence has been almost impossible to obtain in surface outcrops, and there remains considerable uncertainty about the structural orientation of the shale zone. Most of the measured dips are steep westerly, with a few to the east. The eastern margin of the zone dips moderately west (about 50°), as indicated by intersections of the contact in drill holes WSP1 and WSP3, and the western margin also appears to be west-dipping. There is evidence for folding within the zone, and the nature of the closure at the southern end of the zone, around the HEC road and canal (fig. 2), clearly suggests a fold closure.

The relationship to the Hercules Mine sequence is of considerable interest. A black shale unit immediately overlies the Hercules host horizon at the mine, and dips and faces east. It is overlain by a unit of graded quartz-phyric mass-flow breccias correlated with the Rosebery hangingwall sequence and with the basal White Spur Formation. Apparently overlying the quartz-phyric hangingwall rocks at Hercules is a massive feldspar-phyric pumice breccia similar to that forming the footwall sequence. The contact is silicified and enigmatic, but is probably faulted. Lees et al (1990) show this "Mt Hamilton Fault" as a normal fault dipping steeply east, displacing the base of the hangingwall unit some 140m down dip. It has also been suggested, however, that it might be a continuation of the Mt Black (Thrust) Fault at Rosebery, which is located in a similar stratigraphic position but is apparently a flattish-dipping (45°) reverse fault parallel to the Rosebery Fault (eg Graves et al, 1997) and responsible for upthrusting of footwall-type rocks above the hangingwall.

There appears to be considerable doubt concerning the southerly continuation of the Mt Black Fault beyond the Koonya area (fig.1). My own observations from earlier mapping suggest there is a significant fault running south-easterly along Koonya Creek from the Koonya prospect area, and this structure must be either a splay or continuation of the Mt Black Fault (fig. 1). The simplified map published by Graves et al (1997) shows the Mt Black Fault continuing southwards to near Hercules, where it is cut off by a NW-trending structure running from near Jupiter prospect to the Jones Creek area, more or less along the Jones Creek Shale horizon. A Cambrian fault in this area, acting as a locus for intrusion of the felsic intrusive bodies and mafic dykes, seems quite likely, although clear evidence for it (or for a reactivated equivalent) has not been seen in outcrop or in drilling. Whether or not the Mt Black Fault is represented at Hercules remains unclear.

The sequence immediately east of the pumice breccia unit at Hercules includes bedded crystal-rich 'tuffs' and pumiceous rocks which dip uniformly east towards a probable synclinal zone (and fault ?) now occupied by the large felsic intrusive body on the western side of the Jones Creek zone (fig. 1; Corbett, 1986). The Jones Creek Shale unit lies immediately east of this 300 m-wide zone, and dips moderately to steeply west. A quartz-phyric lithic 'tuff' or mass-flow unit lies along to the western margin of the shale unit in this area, and could represent an equivalent of the quartz-phyric hangingwall mass-flow at Hercules. Thus a simple interpretation would have the Jones Creek Shale as a west-facing Hercules shale equivalent on the east flank of a faulted syncline, probably with some additional folding to explain its 'belled-out' nature. The nature of the fold closure at the southern end of the zone, and the presence of strips of CVC-type rocks within the zone in places (and in WSP3), suggests an anticline-syncline couple as a possible interpretation. This interpretation is summarised in the inset sketch on figure 5.

In the Rosebery-Koonya area (fig. 1), however, and possibly as far south as Dallwitz prospect, the shale horizon dips and faces *east*, suggesting the possibility of a major anticlinal axis somewhere in the Dallwitz area.

HISTORY OF EXPLORATION IN THE JONES CREEK AREA

1. Modern exploration was initially focussed on the White Spur Creek area. In the 1957-62 period, Rio Tinto Australia Expl carried out fairly detailed mapping which identified Rosebery-type environment of shales and greywackes (White Spur Formation) associated with massive pyroclastics and lavas (CVC). They carried out gridding, Turam, magnetics and gravity surveys, and identified five EM anomalies. One hole (WSP-103) was drilled on an EM anomaly, encountering a black shale unit with minor disseminated pyrite.

2. Exploration after this period was divided between EL1/62, held by EZ Co. to the north, and EL9/66, held by Mt Lyell Co (later Gold Fields Expl and RGC) to the south (figs 3,4). Access in the area was much improved in the 1960's by the construction of numerous logging tracks and roads for extraction of King Billy Pine logs by Howards Timber Co of Zeehan.

   Mt Lyell Co carried out detailed work in the White Spur Creek area in 1971-72, relocating the Rio Tinto grid, mapping the area, and doing rock chip sampling. They related the previous EM anomalies to pyritic-graphitic black slate units (McKibben, 1972). The grid was later extended and IP surveys were carried, as well as regional soil sampling, ground magnetics, and more detailed mapping (Stevens-Hoare, 1975). The discovery of a large boulder of massive sulphide within a mass-flow unit on the track from White Spur Creek to Hercules Mine was reported in Stevens-Hoare (1976).

3. Work in the headwaters of Jones Creek was first carried out by EZ Co in 1973-74 (EL1/62), and involved an extension of the Dallwitz grid together with mapping and soil sampling.

4. Mt Lyell Co activity was extended into the Jones Creek area in about 1976-77, when the grid was extended eastwards and soil sampling and gradient array IP carried out. Some 26 IP anomalies were defined in the western White Spur Creek area, and 4 in the 'eastern' Jones Creek area (Walter and Brophy, 1977).

559028

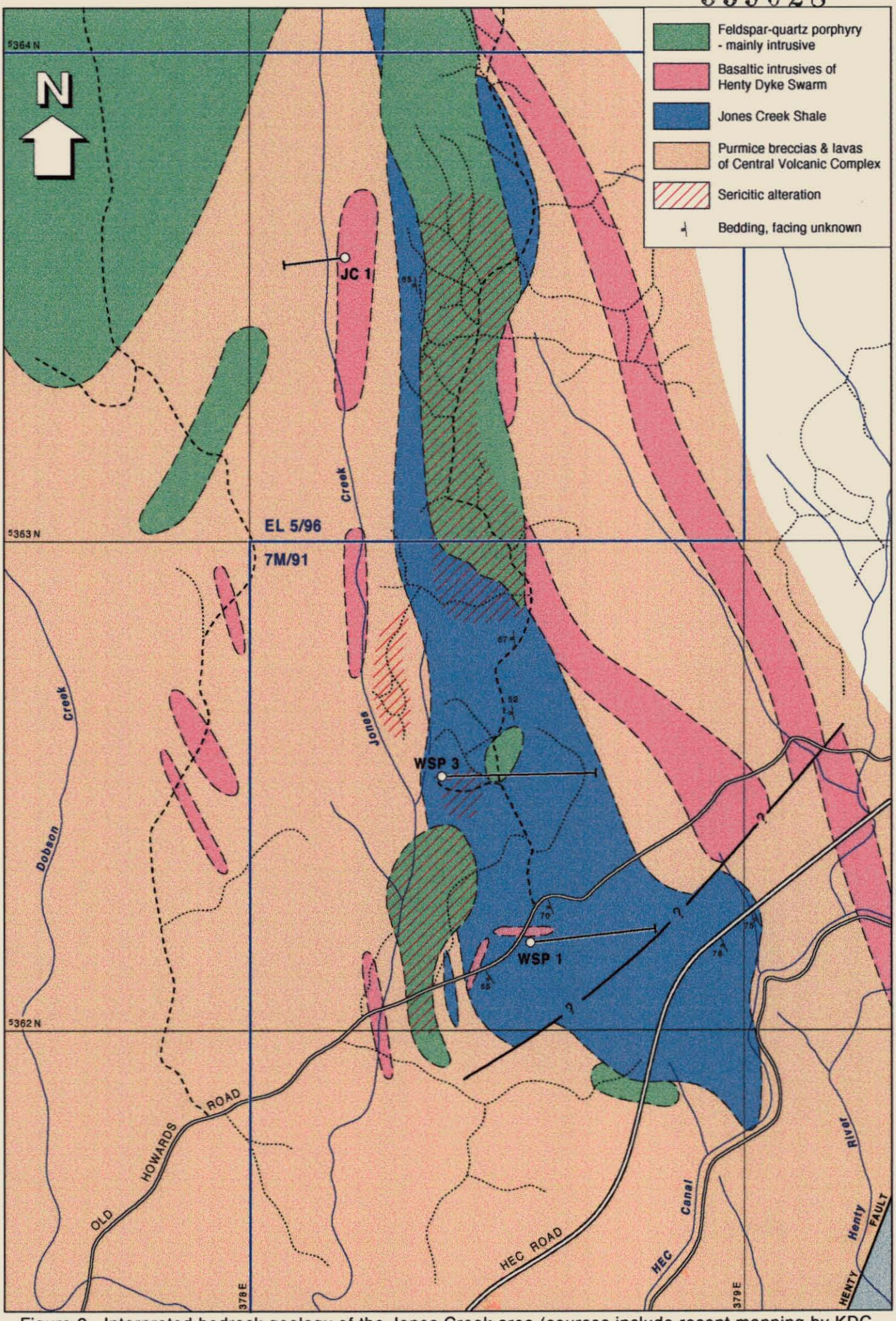


Figure 2. Interpreted bedrock geology of the Jones Creek area (sources include recent mapping by KDC, MRVP Map 3, recent RGC mapping (M. Vicary), earlier mapping for Getty Oil & EZ Co).

5. A major programme of work was carried out by Mt Lyell Co in the Jones Creek area in 1977-78, when it was recognised that a major shale unit was present, as well as mafic intrusives (Walter, 1978). Infill grid lines were established between lines 37N and 42N (figs 3,4) and a detailed IP survey carried out. This resulted in confirmation and greater definition of the IP anomalies (fig 4). A major zone of high chargeability was defined, with peaks >25ms (background 10-12ms), strike length of 600m and width of about 250m. This anomaly coincided largely with the main zone of tuffaceous shales (fig 4). A further dipole-dipole IP survey was done on line 39N and suggested that the bulk of the source of the IP anomaly was below 50m depth.

Further soil sampling was carried out over the area of the geophysical anomalies and defined a series of Pb and Zn anomalies, again more or less corresponding to the zone of shales (fig 3).

A costean, 150m long, was dug on line 39N (figs 3,4) across the main IP and soil anomaly. The western end of the costean was mainly in tuffaceuos shales, and the eastern end in 'lithic-crystal tuffs'. Rock-chip sampling of the costean did not produce particularly anomalous results.

Two drill holes were recommended to follow up these results.

6. Drilling of hole WSP 1 was carried out to 382m in March, 1979 (Reid et al, 1979). The hole was angled east at 60° to test the twin chargeability anomalies (fig 4) with coincident magnetic anomaly, and the major Pb-Zn soil anomaly (fig 3), in a prospective shale unit considered to be stratigraphically equivalent to Rosebery. The hole did not intersect any significant mineralisation (best assay 8m of 0.26% Zn from 138-146m). Downhole IP on the hole suggested that the chargeability anomaly was due to fine-grained 'tuff' with up to 2% pyrite. Disseminated pyrrhotite was considered the likely cause of the slight magnetic anomaly.

Following the discouraging results from WSP1, the second proposed hole was not drilled.

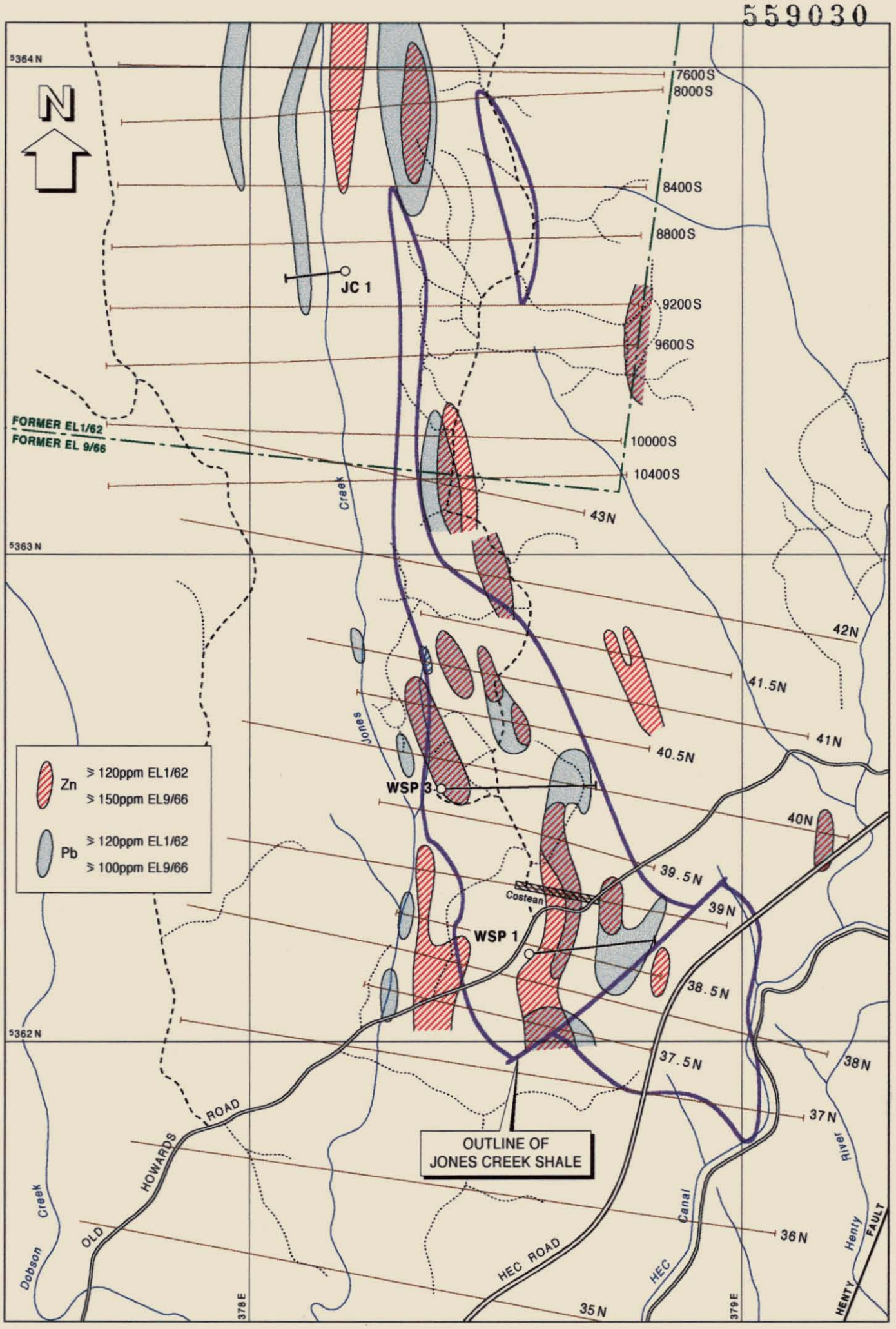


Figure 3. Soil geochemical results for Pb and Zn, Jones Creek area (from McDonald, 1985).

7. Getty Oil Development Co Ltd became actively involved in West Coast exploration in 1978, and signed a joint venture agreement with EZ Co on the relevant part of EL1/62 in November, 1978. EZ Co were to be managers initially, but Getty became managers late in 1983. The upper Jones Creek grid was re-cut in this 1978-79 season, and both gradient array and dipole-dipole IP surveys were carried out. The surveys produced two IP anomalies, both north of the present EL5/96 boundary, and drilling of both was recommended.

8. Hole JCP211 was drilled to 343m in July-August, 1979, on line 5600S – this was 800m north of the present EL5/96 boundary, on the ridge crest just west of Jones Creek. The hole was angled east at 70°, and intersected felsic 'pyroclastics' with bands of shale with minor pyrite-pyrrhotite-sphalerite-galena. The best assay was 32m of 0.22% Zn and 0.087% Pb from 266-298m (Mill et al, 1980).

   Hole JCP216 was drilled to 149m in March, 1980, near the creek bed of the east branch of Jones Creek, on line 6400S (600m north of EL5/96 boundary). The hole was angled west at 50° (hence may have drilled largely down dip), and intersected dacitic 'tuff' and minor 'intermediate tuff and lava' (mafic dykes?) with interbedded tuffaceous shale and sandstone carrying minor sulphides (pyrite, pyrrhotite, sphalerite). Best assay was an overall 92m of 0.24%Zn and 0.085% Pb from 3-95m.

   Downhole IP surveys of both holes suggested that the surface anomalies coincided with shale units with normal minor sulphide mineralisation (Mill et al, 1980), and interest in the area lapsed somewhat.

9. Getty Oil also became involved in joint venture on EL9/66 in about 1983, and exploration was carried out for them by Fitzgerald and McNaught (in Roberts and Cartwright,1984), in conjunction with work on the adjacent EL1/62. A DIGHEM survey was flown over all of the White Spur-Jones Creek area in December 1983 for the joint venture. This gave a series of strong EM anomalies over the White Spur Creek area, and some smaller anomalies in the

Jones Creek area, related mainly to superficial conductors (eg glacial deposits) and a 'broad conductor' just east of the major dolerite dyke (figs 2, 4). Further detailed mapping of the Jones Creek area was carried out by Fitzgerald, together with rock chip sampling. It was concluded from this work that: (1) rock chip anomalies generally coincided with soil geochemical anomalies, with irregularities largely due to the patchy moraine cover; (2) there was a western zone of anomalous geochemistry which had not been tested by WSP1; and (3) the anomalies were open to the south of WSP1 for at least 500m. It was considered that alteration within the Jones Creek horizon increased to the north, and that the northern and western parts of the zone were untested.

A further two drill holes were proposed, totalling 700m, for 1984-85.

10. The Geological Survey became involved in the area in the period 1982-84 through the work of K D Corbett, who was carrying out a one-man mapping operation on the Mt Read belt. A preliminary report on mapping in the Henty River-Williamsford area, with hand-drawn maps, was produced in 1984 (Corbett, 1984), followed by a report on a stratigraphic drill hole through the White Spur Formation / CVC contact (Corbett, 1985), a comprehensive publication on the Rosebery-Henty area (Corbett and Lees, 1987), and finally a colour geological map at 1:25, 000 scale (Corbett, 1986).

11. Further work was done by Getty Oil on Els 1/62 and 9/66 in 1984-85, including a UTEM survey over the Jones Creek area (McDonald, 1985). The only anomaly evident was a relatively weak linear feature extending for 500m along the creek (fig 4), about 500m along strike to the south of JCP216. The zone was coincident with a narrow weak Pb soil anomaly with peak value of 220ppm Pb. Geological evaluation of the UTEM response was impossible because of moraine cover in the creek, and it was decided to drill test it on line 8800S where it was strongest.

Consequently, hole JC1 was drilled in April, 1985, with helicopter access. The hole did not intersect any significant mineralisation, but was considered to have intersected the source of the UTEM anomaly in the form of a thin tuffaceous

559033

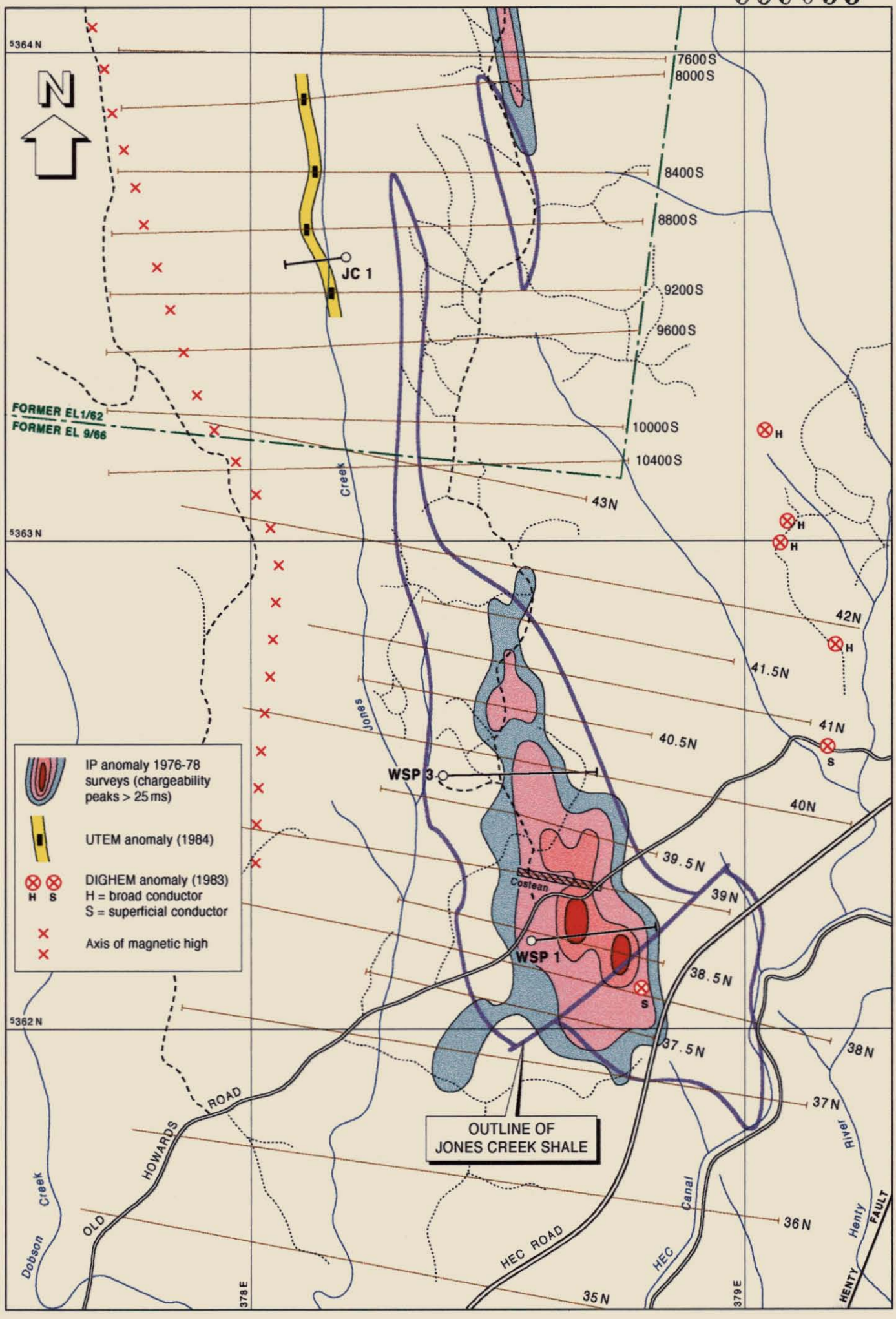


Figure 4. Geophysical anomalies in the Jones Creek area.

'epiclastic' unit from 116-118 m (fig 6) with minor disseminated pyrite. Maximum assay values were 55ppm Cu, 115 Pb, 360 Zn, 1.5 Ag, 0.01 Au, 1280 Ba. This hole was drilled in the wrong direction to intersect the main shale horizon.

12. The Jones Creek area of EL9/66 was retained by Gold Fields Expl Pty Ltd after the Getty Oil joint venture lapsed, and despite the generally negative results of previous exploration, it was decided in 1986 that a further drill test was warranted (Roberts, 1986, memo to L.A. Newnham). Positive features emphasised were: (1) the likely equivalence of the zone to the Rosebery host horizon; (2) only one previous drill hole (WSP1) to test a zone over 1 km long; (3) the significant sericite alteration within and around the shale unit which could represent footwall-style alteration peripheral to a buried massive sulphide body; (4) calculated zinc numbers from WSP1 were similar to those from Rosebery.

Consequently, hole WSP3 was drilled in October, 1986, 350m north of WSP1 (fig 2). The hole was angled 50° east, and due to rapid flattening was still only 140m beneath surface at EOH 360m. Results were again disappointing, with no significant mineralisation. Maximum assays were 90ppm Cu, 580 Pb, 2400 Zn, 1.0 Ag, with no gold above 0.01 g/t. Details of the geology are given later.

13. Downhole Sirotem was conducted on WSP3 (and also on WSP1, which was re-opened with the drill rig) immediately after drilling. No significant conductors were located in WSP3, although an unexplained strong negative reading was obtained from the bottom of the hole. This was considered unlikely to be an off-hole conductor because of the unfavourable geology (a thick basalt dyke, fig 5), and most likely represents a piece of metal accidentally dropped down the hole. The survey of WSP1 showed a broad low between 140-180m, centred on a strong single-point low at 150m, and coincident with the best (but still minor) Pb-Zn mineralisation in the core.

Interest in the Jones Creek area has been minimal since the 1986 period.

SURFACE GEOLOGY OF THE JONES CREEK AREA

Introduction

The author initially mapped in this area in 1979 and 1982, prior to construction of the HEC road to White Spur dam and the HEC Henty Canal. Work for the present project consisted mostly of mapping the new road and canal exposures plus re-checking of previous mapping and re-familiarisation with rock types and alteration styles etc. The shale sequence was found to be exposed in several places on the new road (fig 2) – partly under a cover of glacial deposits – and an exposure of the margin of the shales was noted in the canal area.

The new outcrops suggest that the shale unit closes off in a fold-type closure at its southern end, and does not cross the Henty Canal. The southern part of the 'nose' appears to be offset to the east on a postulated cross-fault trending ENE. Most of the bedrock in this area is obscured by bouldery glacial deposits of greatly variable depth (up to 10m +), and this patchy glacial cover complicates interpretation of the geology, geochemistry and geophysics over all of the area. A considerable degree of extrapolation and indeed guesswork is involved in drawing bedrock boundaries (particularly for the intrusive bodies) such as shown on fig. 2, and it should be noted that the actual distribution of units is likely to be much more complex.

The stratigraphy of the area may be considered in terms of four major rock types: (1) the CVC 'background' sequence; (2) the Jones Creek shale sequence; (3) the felsic intrusive bodies; and (4) the mafic intrusives. An overprint of sericitic alteration affects much of the area, and particularly the felsic intrusives.

The Central Volcanic Complex Rocks

These are present on either side of the Jones Creek shale, and for the most part consist of pale buff to pink-weathering, massive, feldspar-phyric rocks, commonly with small pink feldspars and faint wispy pumice textures visible. A faint eutaxitic or compaction foliation, formed by alignment of the pumice clasts, is evident is some units, and others show faint banding or bedding. Fine-grained 'ashy' vitric units and lenses also occur, as do feldspar-rich, sandy textured units. Massive feldspar-phyric lavas are also present in places.

Jones Creek Shale Sequence

The zone rich in shales and siltstones has a maximum width of about 400m at the old Howards Road, and consists generally of about 50% 'shales' and 50% sandstones and 'tuffs'. The typical shale rock type is a buff to grey coloured, faintly to prominently laminated siltstone, usually somewhat vitric and tuffaceous in character, with interbedded tuffaceous sandstone layers. Dark grey siltstones, approaching 'black shale' in character, are very rare or absent. The sandstones vary from crystal-rich varieties, with feldspar and lesser quartz grains and a variable admixture of lithic clasts, to poorly-granular pumice-rich types with little visible internal texture, resembling some CVC lithologies.

Graded bedding is only rarely observed in the sandstone units (in contrast to the White Spur Formation sequence, where well-graded turbidite-type sandstones are common), but is present in some cases, together with rip-up shale clasts suggesting a mass-flow origin.

Felsic Intrusives

Massive to flow-banded felsic lava-like rocks with a finely-porphyritic texture in feldspar and quartz are present throughout the area, and for the most part appear to represent a complex series of intrusive bodies. Fresher examples preserve a fine spherulitic texture (giving a sacharoidal or sandstone-like appearance on weathered surfaces), and some units have large embayed quartz 'eyes' up to 1cm long. The majority of units in the Jones Creek area are fine-grained and variably sericite-altered, and apart from the small quartz phenocrysts may be difficult to distinguish from some of the CVC rocks.

Boundaries of the various units are seldom well exposed, and there is considerable uncertainty as to their shape. The large body on the ridge crest west of Jones Creek shows abundant flow banding and some autobrecciation textures in places, and may be partly extrusive.

The felsic intrusives may be more or less contemporaneous with the basaltic intrusives, but clear relationships have not been observed.

Basaltic Intrusives

These are also widespread and abundant, and range from narrow dykes less than 1m across (usually dark green, fine-grained, chlorite-epidote-altered and sometimes strongly cleaved) to broad zones or tabular bodies 100m or more across. The latter may include coarse-grained doleritic-textured phases. A distinctive gabbroic type forms an 80m wide, NNW-tending sub-linear body east of the Jones Creek shale (fig 2), and appears to be continuous over several kilometres. It intersects the shale unit at the northern end of the mapped area, and a similar unit has been mapped intermittently within the shale for several km north of this. The apparent concentration of dykes along the Jones Creek zone suggests localisation along an early fault structure.

The tholeiitic nature of the dykes, and their probable genetic connection to extrusive basalts in the western part of the Henty Fault Wedge, have been discussed by Corbett (1989) and Crawford et al (1992).

DETAILED GEOLOGY FROM THE JONES CREEK DRILL HOLES

Introduction

Holes WSP1 and WSP3, drilled in 1979 and 1986 respectively, provide good intersections of the Jones Creek shale and adjacent rocks to the east (fig. 5). Hole JC1, drilled in 1985, mostly intersected CVC rocks and basaltic intrusives west of the shale, and is less revealing (fig. 6). Logs from the two holes drilled by the Getty Oil/ EZ Co joint venture on the Jones Creek shale north of the present licence area (JCP211 and JCP216) have also been examined, and are briefly considered here.

Hole WSP1

This hole was inclined -60° to the east, and located some 100m inside the western boundary of the shale unit (fig. 2). The hole flattened to -24° at 350m, giving a flattening rate of 10° per 100m. The hole intersected mainly tuffaceous siltstone and shale, with interbedded sandstone/mass-flow units, to 206m, then mainly massive CVC-type pumice breccia-sandstones, with some basaltic and felsic intrusives, to EOH at 381m (fig. 5).

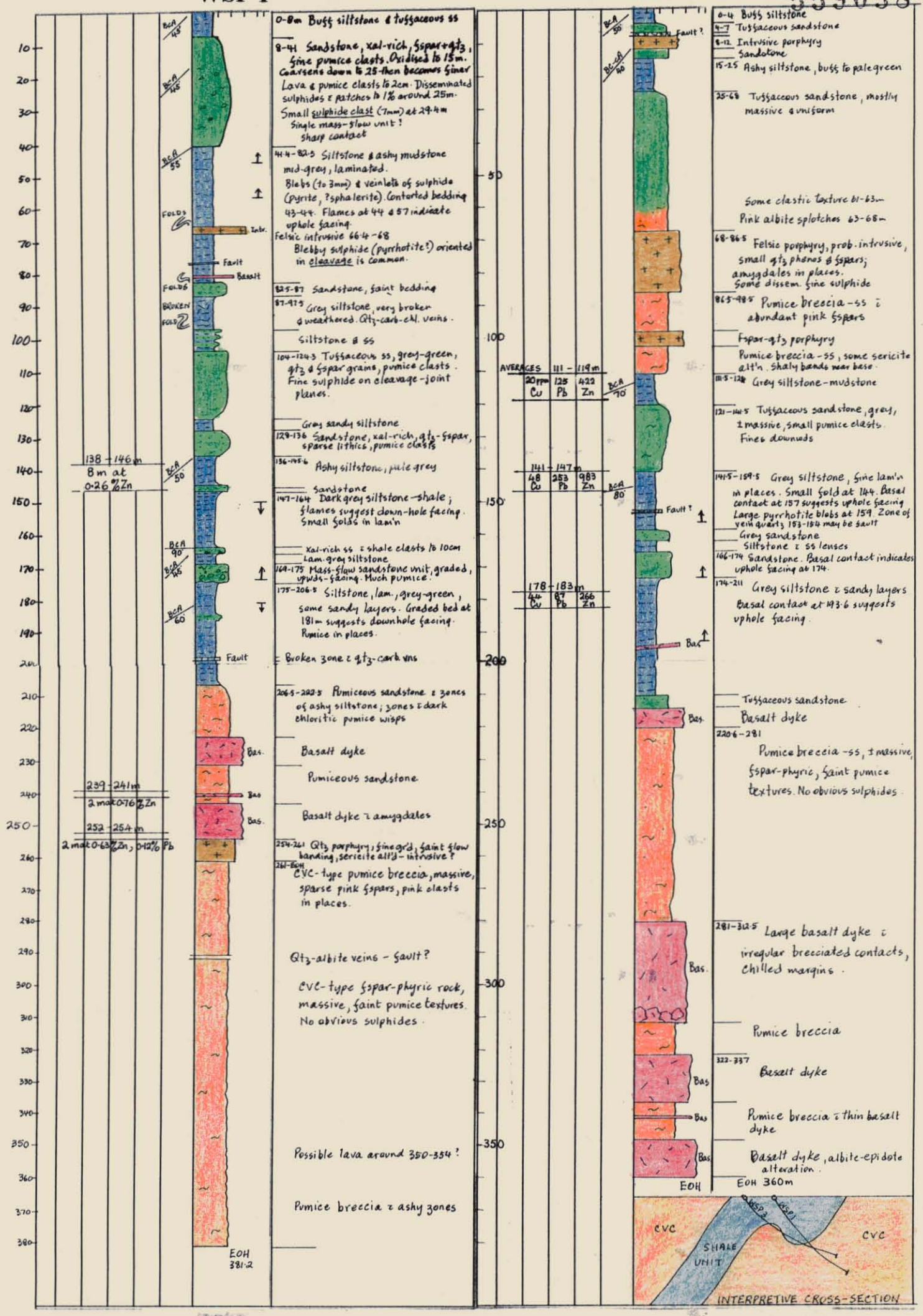


Figure 5. Comparative logs for drill holes WSP1 and WSP3

A 30m thick mass-flow sandstone unit near the top of the hole (8-41m) contained small clasts of lava and pumice to 2cm across, and a small (7mm) clast of sulphide (mainly pyrite) was noted at 29.4m. The sandstone contained both feldspar and quartz grains, as did several of the other major sandstone units within the sequence. Most also contained pumice clasts, and the pumice-rich types were not unlike the CVC-type pumiceous rocks.

The siltstones/shales varied from a rare dark grey type (possibly slightly carbonaceous) at 150m to a more common grey-green to buff coloured vitric-tuffaceous type with sandy bands and lenses.

Possible uphole facings were noted at 44 and 57m (small flame structures at base of sandy beds) and also at 175m (grading in sandstone), and possible downhole facings at 150m (flames) and 181m (grading). However, folding and fault-type disruptions were noted at a number of places (fig. 5), and these, together with the intensity of cleavage development, place considerable uncertainty on interpretation of the overall structure of the unit.

The siltstone-sandstone sequence has an apparently gradational and conformable contact with the CVC-type pumiceous sandstone at the eastern margin. This contact dips west at about 50°.

Hole WSP3

This hole was also located inside the western boundary of the shale unit (fig. 2). It was inclined east at -50°, and flattened rapidly to -15° at 360m (again giving a flattening rate of about 10° per 100m). It intersected tuffaceous siltstone and sandstone to 25m, then a thick unit of massive tuffaceous sandstone, grading to pumice breccia-sandstone, to 111m, intruded by two bodies of feldspar-quartz porphyry. This unit resembles the CVC rocks in part, and may be an intercalation of CVC-type rocks or possibly a fold core (anticlinal?) of such rock, as shown in the inset of fig. 5. A sequence of siltstones and tuffaceous sandstones follows to 215m, where a basalt dyke marks the contact with massive CVC-type pumice breccia.

Several possible uphole facings were noted in the siltstone-sandstone sequence between 150-200m.

Comparison of the sequences in the two holes suggests that the same eastern boundary of the shale sequence has been intersected in both cases, and there are some similarities in the eastern 80m or so of the siltstone-sandstone stratigraphy in each case. However, there is no obvious correlate of the thick pumice breccia-sandstone unit in WSP3 (25-111m) to be seen in WSP1, and the degree of structural overprint and 'reworking' makes correlation uncertain.

A number of thick units of basalt are well represented in WSP3, and while most appear to be 'normal' intrusives, the presence of a wide breccia zone at one contact around 312m suggests the possibility of intrusion into unconsolidated host rocks. An even better example of this is present in JC1 (fig. 6), where a 9m wide breccia zone with chilled and vesicular fragments at 53m suggests peperitic mixing at the basalt contact. This implies that the basaltic rocks of the Henty Dyke Swarm may have been emplaced during a period roughly coinciding with the deposition of the Jones Creek shale sequence.

Hole JC1

Hole JC1 was located on glacial gravels overlying a large basaltic dyke body some 100m west of the margin of the shale sequence. The hole was angled -56° *west*, and flattened to -37° at EOH at 189m (10° per 100m again). The drill site was cleared of standing timber, and was accessed by helicopter. The hole intersected unconcolidated gravels to 10m, followed by weathered and fresh basalt, with a basal breccia zone, to 62m, followed by CVC- type massive pumice breccia-sandstone to EOH at 188m (fig. 6). An interval of 12m of tuffaceous sandstone at 104-116m is followed by 1.5m of sandy siltstone containing minor disseminated pyrite, and this latter was considered to be the source of the original UTEM response (McDonald, 1985).

Holes JCP211 and JCP216

These holes were drilled in 1979 and 1980 respectively, into the western and eastern margins of the shale zone, on lines 5600S and 6400S respectively (approximately 1000m and 800m north of JC1). Both were designed to test IP and soil geochemical

559041

HOLE JC1

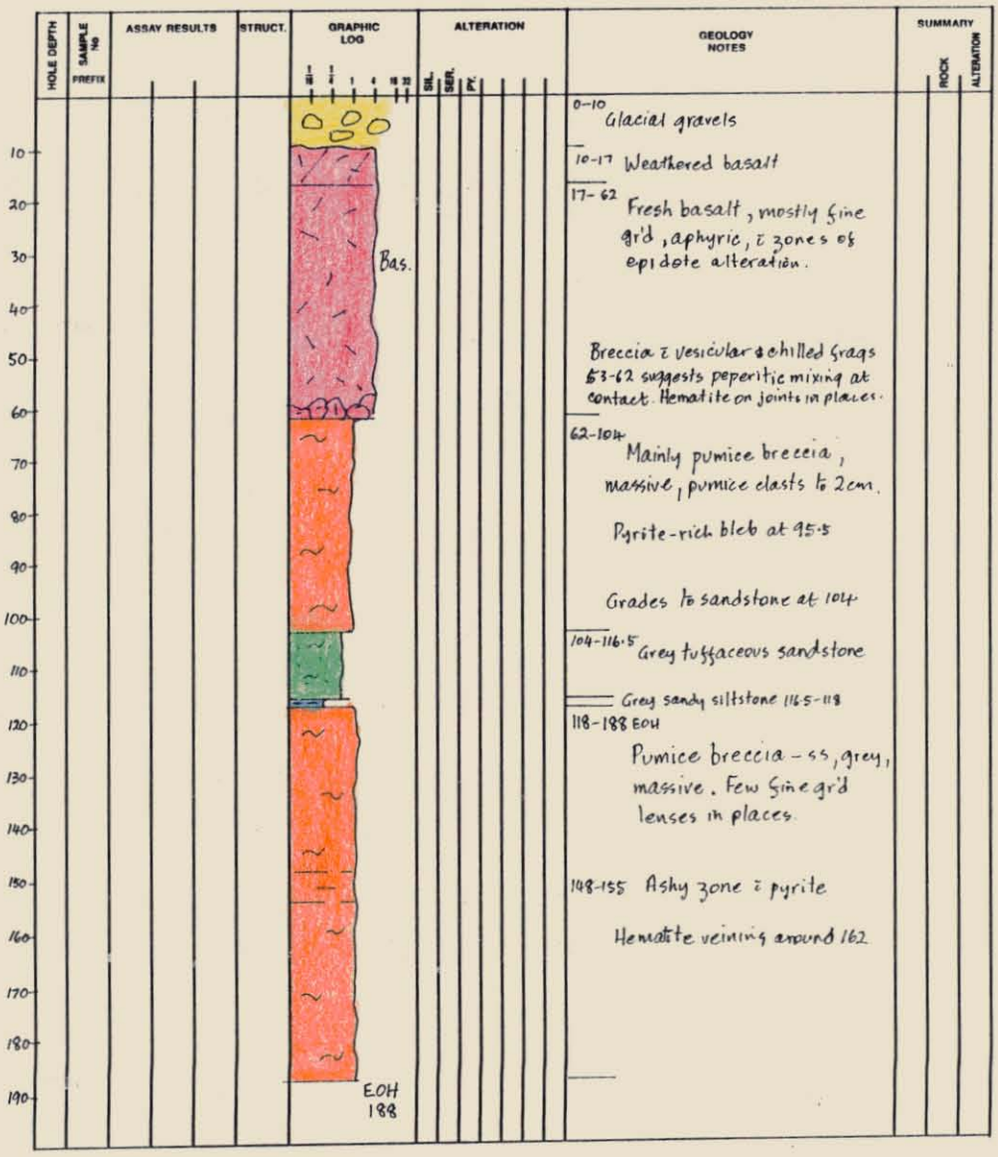


Figure 6. Log of hole JC1

anomalies. JCP211 drilled east at -70°, and intersected several siltstone-shale zones (up to 40m downhole thickness) intercalated within various 'tuffs' and tuffaceous sandstones and several basaltic and felsic intrusive bodies.

Hole JCP216 was drilled west at -50° (and therefore probably down-dip to a large extent), and intersected several 'shale' units (maximum thickness 10m downhole) intercalated within various 'tuffs', tuffaceous sandstones and felsic and basaltic intrusives.

ALTERATION IN THE JONES CREEK AREA

The Jones Creek area shows extensive sericitic alteration of rather enigmatic character. The alteration, as seen along the logging tracks, seems to mainly affect the felsic intrusive bodies (fig. 2) but in places overlaps onto CVC rocks and the Jones Creek shale sequence. In many places, the altered rocks have been transformed into sericite schists by intense development of the Devonian cleavage. It is notable, however, that there is generally only very minor sulphide associated with the sericite alteration, a factor which appears to distinguish the alteration in this area from that associated with major VHMS deposits in the Mt Read belt, eg Hercules, Rosebery, Mt Lyell.

McDonald (1985, p25) has suggested that the extensive sericitic schists in the Jones Creek area might be the result of "dynamo-thermal metamorphism", ie related more to Devonian deformation and regional metamorphism than to Cambrian hydrothermal alteration. There appears to be merit in this suggestion, although some indication of a Cambrian connection is provided by the way the schistosity development and deformation seem to be focused along a possible Cambrian growth fault zone. It could also be the case that extensive but very weak Cambrian hydrothermal alteration was associated with the low-tenor base metal mineralisation now recognised in the shale zone.

Other alteration seen in the area seems to be of the normal 'regional' type, eg chlorite-epidote alteration of the basaltic rocks, splotchy pink albite alteration of various felsic units, widespread quartz-carbonate veining. Several occurrences of red hematite alteration associated with veins and cracks in basalt units in JC1 are unusual.

MINERALISATION

Only very minor mineralisation has been noted at surface in the Jones Creek area, mainly in the form of disseminated fine pyrite and pyrrhotite. Drill core from WSP1 and WSP3 shows such mineralisation (plus sulphide veinlets) to be fairly widespread in the siltstone-shale units and some of the associated sandstones.

It is noticeable in a number of places in the WSP1 core that fine spotty sulphides (particularly pyrite and pyrrhotite but possibly including sphalerite in places) are oriented in the Devonian cleavage at a high level angle to the bedding. In some cases the sulphide forms very fine films on the cleavage planes, giving considerable continuity to the mineralisation (and possibly offering an explanation for the IP responses?). This form of mineralisation suggests either that the sulphides have been extensively remobilised into the cleavage, or that some of the mineralisation has been introduced in the Devonian. Minor sphalerite and galena are associated with quartz-carbonate veins in a few places.

The general tenor of the base metal mineralisation in the shale sequence is indicated by the assays obtained from WSP1 and WSP3 (fig. 5). WSP1 produced 8m of 0.26%Zn from 138-146, associated with siltstone and sandstone, including part of a dark grey unit approaching 'black shale' in character. Two small zones with up to 0.76% Zn and 0.12% Pb were associated with basaltic intrusives within the CVC sequence in the lower part of the hole. Lower values of Zn and Pb were recorded from shale units in WSP3, and from the thin epiclastic unit in JC1.

GEOCHEMICAL SAMPLING

The general results for Zn and Pb obtained from soil sampling on grids in the Jones Creek area are shown of figure 3. Copper values were generally low, as were those for silver and gold (the latter mostly below detection limit). The distribution of Pb and Zn values is quite patchy, probably reflecting the patchy cover of glacial deposits to a large degree, but in general follows the main shale unit fairly closely. Some 'spillover' on to the altered felsic intrusives associated with the shale unit is also apparent. Some outlying highs seem to be associated with dolerite dykes, and it was

noted in the original results that the highest copper values tended to be over basalt/dolerite bodies (Walter, 1978).

The background soil value for Pb in the area was about 35ppm, with a maximum value of 1850ppm. The soil Zn background is about 55ppm, with maximum value of 1460 ppm on line 42N, within a sericite-altered intrusive.

The main zone of high Pb-Zn values is in the southern part of the area, and coincides with the main IP anomaly zone (fig. 4). A costean was cut across this zone in 1977-78 on line 39N (fig. 3), but the rock chip samples from it were not particularly anomalous – 50-70 ppm Cu (max 170); 60 ppm Pb (max 140); 150-300 ppm Zn (max 375). The costean was re-sampled in 1984 (Fitzgerald, 1984), and some higher values were obtained (1735ppm Pb, 715 Zn).

General rock chip sampling was carried out over the area by Fitzgerald (1984), and gave assays up to 1050ppm Zn, 1735 Pb and 140 Cu. The location of the anomalous samples generally coincided with the main soil anomaly zones. No significant gold was reported.

GEOPHYSICAL RESPONSES

Geophysical anomalies recorded from the area are summarised in figure 4. Gradient array IP was first carried out over the area in 1976-77, with a follow-up detailed survey in 1978 further defining the major zone of high chargeability (peaks over 25ms, background 10-12ms) in the old Howards Road area (note that the outline of this zone in fig. 4 is traced from an RGC computer image rather than from original data). A further dipole-dipole IP survey on line 39N suggested the bulk of the source of the IP anomaly was below 50m, and the resistivity data suggested a westerly dip.

The main IP anomaly coincides closely with the main shale unit (fig. 4), and it is possible that the second offset peak reflects the cross-fault suggested by the mapping. The lack of geophysical response over the south-eastern 'nose' of the shale unit is rather puzzling, but may reflect a shallowing of the shale in the fold closure (closing out the main chargeable horizon), or a significantly increased depth of glacial cover, or a lack of IP coverage because of the location of the grid.

It was concluded after drilling that the main chargeability anomaly was due to pyrite-bearing shale and fine-grained 'tuff', with the peak corresponding to the 94-100m section of WSP1.

IP surveys were also carried out by EZ Co on EL1/62 in 1978-79. Most of the interest from the surveys was to the north of the present area, with the 'tail' of one low-order anomaly extending into the northern part of the present EL5/96, possibly coinciding with shale outcrops seen on the track in this area (fig. 2).

The helicopter-borne DIGHEM survey conducted in 1983 produced various local anomalies related to surface features and 'broad conductors' in the general Jones Creek area (fig. 4), but no significant responses were identified. A magnetic high axis was defined along the ridge crest west of Jones Creek.

The UTEM survey of 1984 produced only the one anomaly or response in Jones Creek, off the western margin of the shale unit (McDonald, 1985). Hole JC1 was drilled to test this feature, considered to be at about 100 m depth, and the anomaly was attributed to a thin pyritic shale unit within CVC- type pumice breccias.

SUMMARY AND CONCLUSIONS

1. The Jones Creek area contains a major shale-siltstone-sandstone unit, closed off to the south and bordered by CVC-type pumice breccia sequences on either side. The unit appears to dip moderately to steeply west, with some folding, and is intruded by numerous basaltic dykes and irregular felsic bodies. The area has a patchy cover (40-50%) of bouldery to clayey glacial moraine, up to 10m+ thick, which clearly affects soil geochemistry and geophysical responses.

2. Sericitic alteration is widespread, and is particularly evident within the felsic intrusives, which are commonly reduced to sericite schists. However, there is very little sulphide associated with the alteration. Visible mineralisation is mostly in the form of spotty pyrite and minor pyrrhotite in the shaly units, much of it oriented in the Devonian cleavage.

3. Regionally, the Jones Creek horizon of shale lenses seems to link up with the Rosebery horizon to the north, possibly across an anticlinal fold in the Dallwitz area, and is very likely a fold repetition of the Hercules shale zone across a faulted synclinal structure. Some structural and facing evidence suggests the Jones Creek shale may be an anticline-syncline couple on the east limb of a major syncline, but other interpretations are possible. The shales may have been deposited in a series of small shallow basins, possibly controlled by a NNW-oriented Cambrian growth fault. Such a growth fault could also account for the strong localisation of mafic and felsic intrusives along the zone.

4. The area has been intensively explored by Mt Lyell-Gold Fields-RGC (on EL9/66) and EZ Co (on EL1/62), and by Getty Oil in joint ventures, over the period 1975-1986. Exploration done has included gridding (60-120m spacing), mapping, grid-based soil sampling, rock chip sampling, costeaning, IP surveys (both gradient array and dipole-dipole), DIGHEM survey (with magnetics), and UTEM survey. Three diamond holes have been drilled in the present area, and two more just to the north, and downhole EM surveys have been carried out.

5. The soil geochemistry shows widespread but patchy lead-zinc anomalism coinciding fairly closely with the main shale sequence. Background lead is about 35ppm, with maxima to 1850 ppm; zinc background is about 55 ppm, with maxima to 1460 ppm. Copper is generally low, and gold and silver typically below detection limit. Costeaning of the major lead-zinc soil anomaly did not improve the general values significantly, and best assays from the drilling (WSP1) were only 8m of 0.26% Zn in the shales and some patchy higher values (eg 2m of 0.76% Zn) in basaltic intrusives. Rock chip sampling gave assays up to 1050 ppm Zn, 1735 ppm Pb, 140 Cu, with the anomalies generally corresponding to soil anomaly areas.

5. A major double-peaked IP chargeability anomaly was recorded over the shale unit straddling the old Howards Road, and was tested by holes WSP1 and WSP3. The anomalies were subsequently interpreted to be due to minor sulphides (pyrite, pyrrhotite) in shale units. Cleavage plane films may have added to the continuity of this mineralisation. A weak UTEM response further

north in Jones Creek was tested by JC1, and was attributed to a minor unit of pyritic-tuffaceous shale within otherwise massive CVC-type rocks.

5. It is apparent that the Jones Creek area has been intensively prospected to reveal the widespread lead-zinc anomalism associated with minor pyrite- pyrrhotite mineralisation in the main shale sequence. However, despite follow-up drilling, no significant mineralisation has been found. No anomalous gold has been detected despite extensive rock chip and soil sampling. There do not appear to be any significant untested geophysical anomalies. Some slightly anomalous soil geochemistry is still untested in the western part of the shale zone in the Howards Road area, but there is no associated geophysical response. The present assessment, therefore, has not been able to identify any further possibilities of mineralisation considered worthy of follow up.

REFERENCES

Corbett, K.D., 1984. Geological maps and summary of the Cambrian stratigraphic units and relationships in the Henty River- Williamsford area, western Tasmania. Unpub. Report 1984/ 84, Dept of mines Tasm., 23pp.

Corbett, K.D., 1985. The Mt Read drill hole (MR1) through the central volcanic sequence- White Spur Formation contact near Howards Road, western Tasmania. Unpub. Report 1985/55, Dept of Mines Tasm., 5pp.

Corbett, K.D., 1986. Geology of the Henty River- Mt Read area. MRVP Map 3, 1:25,000 scale, Geol. Survey of Tasmania.

Corbett, K.D. and Lees, T.C., 1987. Stratigraphic and structural relationships and evidence for Cambrian deformation at the western margin of the Mt Read Volcanics, Tasmania. Aust. J. Earth Sci., 34, 45- 67.

Crawford, A.J., Corbett, K.D. and Everard, J.L., 1992. Geochemistry of the Cambrian volcanic- hosted massive sulfide- rich Mount Read Volcanics, Tasmania, and some tectonic implications. Econ. Geol., 87, 597- 619.

Fitzgerald, F.G., 1987. EL 9/66- Tyndall area, Tasmania. Annual Report 1986- 1987. Gold Fields Exploration Pty Ltd.

Graves, C.C., Carnie, C.W.A. and Hale, C.T., 1997. Rosebery Mine exploration- recent successes. Mining Geology Conference, Launceston, Nov 1997, 21- 24.

McDonald, I.R., 1985. EL 1/62 Mt Black. Annual report on exploration. EZ Company. TCR 85- 2516.

McKibben, P.J., 1972. Annual report Mt Tyndall EL 9/66, 1971- 72. The Consolidated Syndicate.

Mill, J.H.A., McDonald, I.R. and Weeden, R.J., 1980. Mt Black EL 1/62. Report on work undertaken 30 June, 1979- 30 June, 1980. EZ Company. TCR 80- 1468.

Reid, K.O., Meares, R.M.D., Walter, A.C., Hutton, M.J. and Drake, G., 1979. Annual Report EL 9/66, 1978- 79. Mt Lyell Mining and Railway Co.

Roberts, P.A., 1986. Proposed diamond drilling, White Spur. Memo to L. Newnham, 15/5/86. Gold Fields Expl Pty Ltd (in Fitzgerald, 1987).

Roberts, P.A. and Cartwright, A.J., 1984. EL 9/66 Tyndall area, Tasmania. Annual Report 1983- 84. Gold Fields Expl Pty Ltd.

Stevens- Hoare, N.P., 1975. Annual report EL 9/66 (Mt Tyndall), 1974- 75. Mt Lyell Mining and Rly Co.

Stevens- Hoare, N.P., 1976. Annual Report El 9/66, 1975- 76. Mt Lyell Mining and Rly Co.

559049

Appendix 2

Symbols and coded used in drill logs

559050

RGC EXPLORATION (ZEEHAN) - ROCK CODES

TYPE

U - Volcanic (general)
V - Volcaniclastic
E - Epiclastic
L - Lava
I - Intrusive

COMPOSITION

R - Rhyolite
Y - Rhyodacite
D - Dacite
A - Andesite
B - Basaltic
F - Felsic
M - Mafic
U - Ultramafic

CRYSTAL TYPE

X - Crystal rich
A - Aphyric
F - Feldspar phyric
< - Feldspar - quartz phyric
> - Quartz - feldspar phyric
Q - Quartz phyric
H - Hornblende phyric
P - Pyroxene phyric
B - Biotite phyric
V - Vitric / glassy
L - Lithic rich
R - Reworked, commonly with Carbonate matrix

OTHERS

TILL - Glacial moraine
CLAY - Glacial clays
SILT - Black pyritic siltstone
FALT - Fault
CARB - Massive Carbonate
CBBX - Carbonate breccia
VEIN - Vein
GWAC - Greywacke
CONG - Siliciclastic Conglomerate
SAND - Siliciclastic Sandstone
XXXX/YYYY - Interbedded units

GRAINSIZE

B - Breccia
C - Coarse
M - Medium (Sandy)
F - Fine (Silty)
V - Very fine (Shaley)
A - Ashy
/ - Undifferentiated
X - Crystal Rich
P - Pumiceous

ALTERATION

P - Pyrite
$ - Mineralised
Q - Quartz
O - Chlorite
C - Carbonate
H - Hematite
S - Sericite
K - K feldspar
A - Albite
E - Epidote
F - Fuchsite
M - Magnetite
L - Limonite

N - Scale

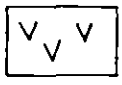
1 - Very Weak
3 - Weak
5 - Moderate
7 - Strong
9 - Intense

eg. AOC7
Strong albite-chlorite-carbonate alteration
(albite>chlorite>carbonate, albite = 7)

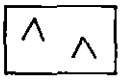
559051

SYMBOLS FOR COHERENT TEXTURES

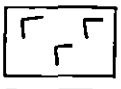
- single line symbols for low to moderate phenocryst abundance
- double line symbols for abundant phenocrysts
- smaller symbols for fine grained phenocrysts
- larger symbols for coarse grained phenocrysts
- additional "+" symbol for coarse, phenocryst-rich granitoid texture

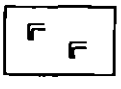

basalt, poorly to moderately porphyritic basalt


phenocryst-rich basalt

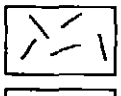

andesite, poorly to moderately porphyritic andesite


phenocryst-rich andesite

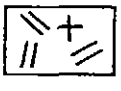

dacite, poorly to moderately porphyritic dacite

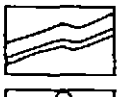

phenocryst-rich dacite


fine, poorly to moderately porphyritic rhyolite


coarse, poorly to moderately porphyritic rhyolite


coarse, phenocryst-rich rhyolite

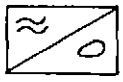

coarse rhyolitic porphyry

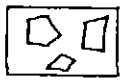

flow foliation

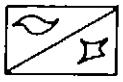

spherulites, lithophysae, alteration spots, nodular devitrification texture

SYMBOLS FOR VOLCANICLASTIC TEXTURES

- closer spaced symbols for dominant grain size and grain type


pumice or relict pumice


angular, juvenile lava clasts

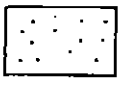

fiamme/ vitriclast or relict vitriclast

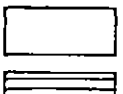

accretionary lapilli

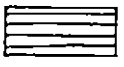

angular, polymict lithic clasts

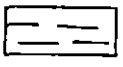

rounded, polymict lithic clasts


mudstone intraclast

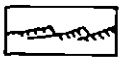

sand-size particles, granular texture


mud-size particles


distinct planar stratification


diffuse planar stratification


cross bedding


micro-cross lamination

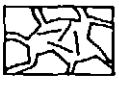
e.g.


pumice clasts in sand matrix

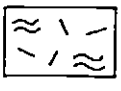

angular polymict lithic clasts and mudstone intraclasts in sand matrix

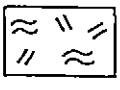
SYMBOLS FOR JUVENILE-CLAST-RICH DEPOSITS


jigsaw-fit texture of fine, moderately porphyritic rhyolite


jigsaw-fit texture of coarse, moderately porphyritic rhyolite


jigsaw-fit texture of coarse phenocryst-rich andesite


pumice-clast-rich deposit, coarse, moderately porphyritic rhyolitic composition


pumice-clast-rich deposit, coarse, phenocryst-rich rhyolitic composition

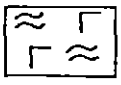

pumice-clast-rich deposit, coarse, moderately porphyritic dacitic composition

Fig. 9—Recommended composition and texture symbols for graphic logging of volcanic deposits.
(From:- McPhie, Doyle and Allen. CODES 1993)

559052

Appendix 3

WSP10/10A Drill log and assays

RGC EXPLORATION DRILL HOLE RECORD

HOLE NUMBER	WSP10	**DRILLED BY**	Fred Ortner
PROJECT	White Spur	**NORTHING**	5360781.59
PROSPECT		**EASTING**	376853.21
DESIGNED BY	M Vicary	**RL**	585
LOGGED BY	A Elliston	**INCLINATION**	-87
COMMENCED	January 1998	**AZIMUTH**	050 mag / 062 AMG
FINISHED	February 1998	**EOH**	384.4

PURPOSE

To test the White Spur Formation - Central Volcanic Sequence contact between 400 and 500 m down dip of the WSP5 intersection. The target horizon should be intersected at about 745m.

SURVEY DATA

DEPTH	INC.	AZ.	DEPTH	INC.	AZ.	DEPTH	INC.	AZ.
0	-87	062	154	-87.25	070	305	-88.25	084.5
31	-86.5	066	184	-87.75	077	334	-88.0	067
64	-86.5	068	215	-87.0	082	350	-88.0	082
94	-86.5	073	245	-88.75	079	365	-88.0	070
124	-87.25	070.5	275	-88.0	076	380	-89.5	122

DRILLING DATA

HOLE SIZE	DEPTH	COMMENTS
HQ	0 - 155.5	
NQ	155.5 - 384.4	

SUMMARY

Summary Log:-	
0 - 200.5	Rhyolite Intrusive (Cp)
200.5 - 301.9	Black siltstone (Cyss)
301.9 - 309.9	Feldspar phyric volcaniclastic sandstone (Cym)
309.9 - 316.8	Black siltstone (Cyss)
316.8 - 321.3	Feldspar phyric volcaniclastic sandstone (Cym)
321.3 - 325.3	Black siltstone (Cyss)
325.3 - 329.5	Feldspar phyric volcaniclastic sandstone (Cym)
329.5 - 354.0	Black siltstone (Cyss)
354.0 - 370.8	Graded feldspar phyric volcaniclastic sandstone (Cym/Cya)
370.8 - 384.4	Graded feldspar phyric volcaniclastic sandstone (Cym/Cya)
Due to variation in the lift of the hole WSP10 was stopped at 384.4 and a wedge (WSP10A) positioned at 298m. See the WSP10A drill hole record for more details.	

RGC EXPLORATION DRILL HOLE RECORD

HOLE NUMBER	WSP10A (Wedge)	**DRILLED BY**	Fred Ortner
PROJECT	White Spur	**NORTHING**	5360781.59
PROSPECT		**EASTING**	376853.21
DESIGNED BY	M Vicary	**RL**	585
LOGGED BY	A Elliston	**INCLINATION**	-87
COMMENCED	February 1998	**AZIMUTH**	050 mag / 062 AMG
FINISHED	18 March 1998	**EOH**	626.6

PURPOSE

Due variations in the dip of WSP10 a wedge was positioned at 298.0m with the aim of lifting the hole.

SURVEY DATA - For surveys 0 to 298m see WSP10 drill hole record

DEPTH	INC.	AZ.	DEPTH	INC.	AZ.	DEPTH	INC.	AZ.
310	-83.0	089	394	-80.25	073	515.2	-81.0	081
322	-81.0	072	424	-80.0	075	548	-81.0	080
335	-80.25	069	454	-80.0	079	578	-81.75	084.5
364	-80	076	484	-80.0	080	608	-82.0	087

DRILLING DATA

HOLE SIZE	DEPTH	COMMENTS
HQ	0 - 155.5	Pilot Hole (WSP10)
NQ	155.5 - 298	Pilot Hole (WSP10)
Hall - Rowe Wedge	298	To lift hole (gained 5^{0} first 15m)
NQ	298 - 626.6	Hole cased with PVC

SUMMARY

Summary Log:-	
0 - 298.0	see WSP10 drill hole record
298.0 - 304.9	Black Siltstone (Cyss)
304.9 - 312.0	Feldspar phyric volcaniclastic sandstone (Cym)
312.0 - 319.6	Black Siltstone (Cyss)
319.6 - 324.1	Feldspar phyric volcaniclastic sandstone (Cym)
324.1 - 329.6	Black Siltstone (Cyss)
329.6 - 333.3	Feldspar phyric volcaniclastic sandstone (Cym)
333.3 - 361.3	Graded feldspar phyric volcaniclastic sandstone (Cym/Cya)
361.3 - 383.8	Graded feldspar phyric volcaniclastic sandstone (Cym/Cya)
383.8 - 396.0	Interbedded volcaniclastic sandstone and ashy siltstone (Cym/Cya)
396.0 - 400.0	Interbedded volcaniclastic sandstone and ashy siltstone (Cym/Cya)
400.0 - 412.1	Interbedded volcaniclastic sandstone and black siltstone (Cym/Cyss)
412.1 - 430.0	Black Siltstone (Cyss)
430.0 - 433.5	Interbedded volcaniclastic sandstone and black siltstone (Cym/Cyss)
433.5 - 437.8	Black Siltstone (Cyss)
437.8 - 444.1	Interbedded volcaniclastic sandstone, ashy siltstone, black siltstone and probable feldspar-quartz? phyric peperitic rhyolite (Ccv/Ccvs/Cyss/Cp)
441.1 - 460.0	Undifferentiated Central Volcanic Sequence - weak sericite alteration (Ccv)
460.0 - 601.1	Undifferentiated Central Volcanic Sequence - grey albite-chlorite alteration (Ccv)
601.1 - 626.2	Undifferentiated Central Volcanic Sequence - pink albite-chlorite alteration (Ccv)

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10 (SUMMARY LOG)

SHEET 1 OF 2

PROJECT	WHITE SPUR
PROSPECT	
DATE	MAY 1998
LOGGED BY	ALE

Bedding
Cleavage
Foliation
Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG | ALTERATION SIL SER PY | GEOLOGY NOTES | SUMMARY ROCK ALTERATION

0-157m
Coherent Rhyolite
- auto breccia / hyaloclastic
quench textures throughout

157 → 200.54
coherent Rhyolite with
flow banding

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10 (SUMMARY)

SHEET 2 OF 2

PROJECT	WHITE SPUR
PROSPECT	
DATE	MAY 1998
LOGGED BY	ALE

Bedding
Cleavage
Foliation
Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG | ALTERATION SIL SER PY | GEOLOGY NOTES | SUMMARY ROCK ALTERATION

200.54 → 301.85
laminated ofte
pyritic black siltstone.

301.85 - 310.14
m-g fsp-qtz phyric volcaniclastic sst.

310.14 - 354.0 Interbedded
fsp-qtz phyric volc sst + black
siltstone

354.0 → 370.8 - fining top grading
down fsk to m-g lithic
fsk

370.8 → 384.3 - As above

384.3 - E.O.H
WEDGE for WSP10A
@ 300m

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A (SUMMARY LOG)

SHEET 1 OF 2

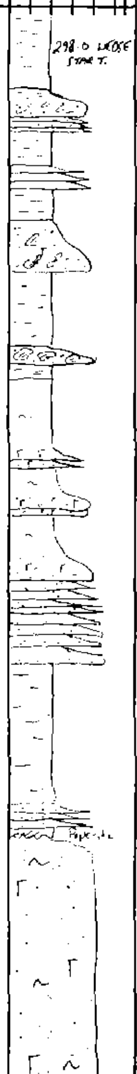
PROJECT :	WHITE SPUR
PROSPECT :	
DATE :	MAY 1998
LOGGED BY :	ALE

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH | SAMPLE No (PREFIX) | ASSAY RESULTS | STRUCT. | GRAPHIC LOG (1/16, 1/4, 1, 4, 16, 32) | ALTERATION (SIL., SER., PY.) | GEOLOGY NOTES | SUMMARY (ROCK, ALTERATION)

Hole depth: 300, 310, 320, 330, 340, 350, 360, 370, 380, 390, 400, 410, 420, 430, 440, 450, 460, 470, 480, 490

Sample No: Sample 102021 → 241



298 → 358.3
Interbedded black siltstone and m.g fspar phyric volcaniclastic sandstone.

358.3 → 396
graded ashy siltstone → m.g qtz/fspar phyric volcaniclastic sandstone.

396 - 402.8 - Series of small sst/siltstone (ashy) units. - Some units with black siltstone tops.

402.8 - 437.62 black siltstone

437.62 - 441.75 - Interbedded ashy siltstone / m.g fspar phyric sandstone

441.75 - 443.95 - ashy siltstone intruded by fspar/qtz phyric peperitic rhyolite?

443.95 - 527.7
m.g fspar phyric pumiceous volcaniclastic sandstone / breccia (CVC)

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A (SUMMARY LOG)

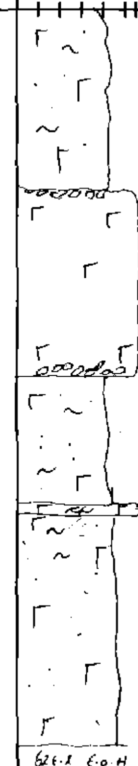
SHEET 2 OF 2

PROJECT :	
PROSPECT :	
DATE :	
LOGGED BY :	

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH | SAMPLE No (PREFIX) | ASSAY RESULTS | STRUCT. | GRAPHIC LOG (1/16, 1/4, 1, 4, 16, 32) | ALTERATION (SIL., SER., PY.) | GEOLOGY NOTES | SUMMARY (ROCK, ALTERATION)

Hole depth: 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630



527.7 - 558.25
coherent amygdaloidal dacite - auto brecciated contacts @ top + bottom

558.25 - 581.2 - m.g fspar phyric pumiceous volcaniclastic sst / bx

581.2 - 583.91 - flow banded coherent dacite

583.91 - 626.2 (E.O.H)
m.g fspar fspar phyric pumiceous volcaniclastic sandstone / breccia.

REMARKS

559056

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 1 OF 19

PROJECT	WHITE SPUR
PROSPECT	
DATE	JAN 1998
LOGGED BY	ALE

Bedding · Cleavage · Foliation · Fault, Shear · Breccia · Broken core · Disseminated · Massive · Pervasive · Narrow vein · * Visible gold

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION SIL. SER. PY.	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
1–20						0 - 15.7 Coherent Rhyolite with auto brecciated + quench fragmental textures throughout. - FeO_2 oxidation of joints common - CO_3 + $FeCO_3$ veins + veinlets common (late stage) - some minor qtz veinlets Kaolinised/clay - FeO_2 weath. zone 7.40 → 8.15m - coherent lava section interfingering with autobrx.	CP IR<B	

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 2 OF 19

PROJECT	WHITE SPUR
PROSPECT	
DATE	JAN 1998
LOGGED BY	A.L.E

Bedding · Cleavage · Foliation · Fault, Shear · Breccia · Broken core · Disseminated · Massive · Pervasive · Narrow vein · * Visible gold

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION SIL. SER. PY.	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
21–48			CO_3 vns			As Above. Auto brx + quench fragmented rhyolitic lavas. 37.84 → 38.45m FeO_2/clay ox. brx	CA IR<B	

REMARKS

[redacted] EXPLORATION PTY LTD [redacted] DRILL HOLE No WS 10

SHEET 3 OF 19

— Bedding
⌐ Cleavage
▲ Foliation
~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

PROJECT	: WHITE SPUR
PROSPECT	:
DATE	: JAN 1998
LOGGED BY	: A.L.E

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION SIL. SER. PY.	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
41								
42								
43								
44								
45			CQ3					
46								
47						DITTO.		
48								
49								
50								
51							CP	
52							IR<8	
53								
54								
55								
56								
57			CQ3					
58								
59								
60								

REMARKS

[redacted] EXPLORATION PTY LTD [redacted] DRILL HOLE No WS 10

SHEET 4 OF 19

— Bedding
⌐ Cleavage
▲ Foliation
~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

PROJECT	: WHITE SPUR
PROSPECT	:
DATE	: JAN 1998
LOGGED BY	: A.L.E

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION SIL. SER. PY.	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
61						61.8 -> 75.48m		
62						Zone of moderately intense		
63						Alteration/silicification of		
64						brecciated lavas (rhyolitic)		
65			CQ3			- zone qtz + CQ3 veining		
66								
67						Brx with late stage CQ3 matrix.		
68						CQ3 veins - <1.5cm.		
69								
70								
71								
72								
73			QTZ VNS					
74								
75								
76								
77						Oxidised (FeO_2) Broken zone.		
78								
79							CP	
80							IR<8	
							AQ-5	

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 5 OF 19

PROJECT	WHITE SPUR
PROSPECT	
DATE	JAN 1998
LOGGED BY	A.L.E

— Bedding
⌴ Cleavage
▲ Foliation
~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG (1/16 1/4 1 4 16 32) | ALTERATION (SIL. SER. PY.) | GEOLOGY NOTES | SUMMARY (ROCK ALTERATION)

81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

84.78m - qtz/py/clst vn.

Alt brxed fspar phyric lavas. (rhyolitic)

94.2 - 94.5 small sick CO_3 stwk.

97.6 - 100.5m - core quite silicified + clotted

98.6m - $FeCO_3$ + CO_3 veinlets

99.6m - vuggy qtz/CO_3 vein 2 1cm

SUMMARY: CD IRLB

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 6 OF 19

PROJECT	WHITE SPUR
PROSPECT	
DATE	JAN 1998
LOGGED BY	A.L.E

— Bedding
⌴ Cleavage
▲ Foliation
~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG (1/16 1/4 1 4 16 32) | ALTERATION (SIL. SER. PY.) | GEOLOGY NOTES | SUMMARY (ROCK ALTERATION)

101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120

RHYOLITIC FSPAR PHYRIC LAVAS + BRECCIAS

BRECCIAS > COHERENT LAVA

113.96 + 114.16 qtz vein - minor CO_3 1-2cm thick - con broken ton

115.07, 115.10 & 115.15 CO_3 veinlets

119 - 123.5 core ton a vuggy clast minor ? present

SUMMARY: CD IRLB/IRL

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 7 OF 19

PROJECT	: WHITE SPUR
PROSPECT	:
DATE	: JAN 1998
LOGGED BY	: A.C.E

— Bedding
⌴ Cleavage
▲ Foliation
~~~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION SIL. SER. PY.	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
121						Wispy anastomosing dark mineral.		
122						122.4 - qtz/CO3 vein with calcite + minor muscovite (to 6cm)		
123								
124						123.37 -> qtz/calcite vein to 3cm		
125								
126								
127								
128						RHYOLITIC FSPAR PHYRIC LAVAS + AUTO BRECCIAS		
129						COHERENT LAVAS > BXS		
130							CP	A-S
131							IRL/IRLB	
132						125.3 -> 160.		
133						Splotchy + pervasive fine (clay) alt° common, giving the core a marble like appearance esp: @ 145, 146, 150 & 151 metres.		
134								
135								
136								
137								
138								
139								
140								

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 8 OF 19

PROJECT	: WHITE SPUR
PROSPECT	:
DATE	: JAN 1998
LOGGED BY	: A.C.E

— Bedding
⌴ Cleavage
▲ Foliation
~~~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION SIL. SER. PY.	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
141						RHYOLITIC FSPAR PHYRIC LAVAS + BRECCIAS		
142								
143						COHERENT LAVAS > BXS		
144								
145								
146								
147								
148						147.18 -> 150 - albite? / sericite altered lavas		
149								
150							CP	A-S
151							IRL/IRLB	
152								
153								
154								
155								
156								
157								
158								
159								
160								

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 9 OF 19

Bedding | Cleavage | Foliation | Fault, Shear | Breccia | Broken core
Disseminated | Massive | Pervasive | Narrow vein | * Visible gold

PROJECT	White Spur
PROSPECT	
DATE	Feb - 1998
LOGGED BY	A.L.E

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG | ALTERATION (SIL. SER. PY) | GEOLOGY NOTES | SUMMARY (ROCK, ALTERATION)

157 → 200.54

Coherent rhyolitic lavas with flow banding common

& @ - 169.5m
- 177.9m
- 185.10

- Asto 6mm @
- 158.0
- 182.0
- 182.93

- Quartz veins @
- 195.48
- 197.45
- 198.25
- 198.41
- 198.62
- 199.23
- 199.34
- 199.64

flow banding

flow banding

C2 IRL

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 10 OF 19

Bedding | Cleavage | Foliation | Fault, Shear | Breccia | Broken core
Disseminated | Massive | Pervasive | Narrow vein | * Visible gold

PROJECT	WHITE SPUR
PROSPECT	
DATE	FEB - 1998
LOGGED BY	A.L.E

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG | ALTERATION (SIL. SER. PY) | GEOLOGY NOTES | SUMMARY (ROCK, ALTERATION)

Coherent fspar > qtz rhyolitic lava/intrusive

flow banding

qtz

quartz vein to 1cm w.d.

C2 IRL

Q-5

59061

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 11 OF 19

PROJECT	: WHITE SPUR
PROSPECT	:
DATE	: FEB 1998
LOGGED BY	: A.L.E

Bedding · Cleavage · Foliation · Fault, Shear · Breccia · Broken core · Disseminated · Massive · Pervasive · Narrow vein · * Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG | ALTERATION (SIL. SER. PY.) | GEOLOGY NOTES | SUMMARY (ROCK, ALTERATION)

200 · 54 ⇒ 301 · 95m

LAMINATED OFTEN PARTIC
DEALK SILTSTONE
- MINOR QTZ VEINS
- 200·54 → 204·66m FAULT ZONE - QTZ /PY/PO VEINS - MINOR SPHALERITE?
- CHLORITE CLAST WITH QTZ COMMON.

Core Broken

SUMMARY: CYSS SLT 0095

216 → 225·37m
→ S/ST NOT AS CARBONACEOUS NOR AS DARK + LIGHTER GREY IN COLOR.

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 12 OF 19

PROJECT	: WHITE SPUR
PROSPECT	:
DATE	: FEB - 1998
LOGGED BY	: A.L.E

Bedding · Cleavage · Foliation · Fault, Shear · Breccia · Broken core · Disseminated · Massive · Pervasive · Narrow vein · * Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG | ALTERATION (SIL. SER. PY.) | GEOLOGY NOTES | SUMMARY (ROCK, ALTERATION)

STRUCT.: 45°/50°?

BLACK LAMINATED OFTEN PARTIC SILTSTONE
- PO MINOR.
- PY OFTEN IN LAMINATIONS ~ 45° TO C.A

SUMMARY: CYSS SLT P--4

REMARKS

559062

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 13 OF 19

PROJECT :	WHITE SPUR
PROSPECT :	
DATE :	Feb - 1998
LOGGED BY :	A.L.E

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY.)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
241								
242								
243								
244								
245						BLACK SILTSTONE.		
246								
247								
248								
249								
250								
251							Cyss SILT	P-4
252								
253								
254								
255								
256						256.12 → 259.0m - Broken zone (fault?)		
257								
258								
259								
260								

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 14 OF 19

PROJECT :	WHITE SPUR
PROSPECT :	
DATE :	Feb 1998
LOGGED BY :	A.L.E

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY.)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
261								
262						Ditto		
263								
264								
265								
266								
267								P-4
268								
269								
270				qtz/py/po veining		270.4 → 270.10m - qtz/py/po ± chlorite veining		
271							Cyss SILT	Pooh
272								
273								
274								
275								
276								P-4
277								
278								
279								
280								

REMARKS

065063

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 15 OF 19

PROJECT	WHITE SPUR
PROSPECT	
DATE	FEB - 1998
LOGGED BY	A.L.E

— Bedding
⌊ Cleavage
Foliation
Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG (1/16, 1/4, 1, 4, M, M) | ALTERATION (SIL. SER. PY.) | GEOLOGY NOTES | SUMMARY ROCK | SUMMARY ALTERATION

281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300

BLACK LAMINATED OFTEN PYRITIC SILTSTONE.

296.74 - Py/Cb3 clot ~ 2cm²

Cyss SILT P-3

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 16 OF 19

PROJECT	WHITE SPUR
PROSPECT	
DATE	FEB 1998
LOGGED BY	A.L.E

— Bedding
⌊ Cleavage
Foliation
Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG (1/16, 1/4, 1, 4, M, M) | ALTERATION (SIL. SER. PY.) | GEOLOGY NOTES | SUMMARY ROCK | SUMMARY ALTERATION

301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320

brx

So 45°

Int. Sst

"

301.95 → 309.50
f/gr. Phyric xtal sandstone
- Py veinlets + disseminations
e.g. elongate bl slst clasts @ base.

310.14 → 316.82m
Black siltstones with minor 6mm/beds of sandstone to 2cm thick @ ~45° to CA
- minor Py dissemination in parts

316.82 → 321.86m
grey xtal sandstone (f/gr phyric) - minor Py-dissem.

Cyss SILT P-2
Cyss VDFM P-4
Cyss SILT P-3
Cyss VDFM P-3

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 17 OF 19

PROJECT	WHITE SPUR
PROSPECT	
DATE	Feb-1998
LOGGED BY	A.L.E

— Bedding
⌊ Cleavage
▲ Foliation
~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG (1/16 1/4 1 4 16 32) | ALTERATION (SIL. SER. PY. Po) | GEOLOGY NOTES | SUMMARY ROCK | SUMMARY ALTERATION

321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340

gtz pg vnlet

321.26 → 325.27m

Black diffusely laminated siltstone
- po/pg clot @ 325m
- po/pg/qtz vn @ 323m

325.27 → 329.5m

fgr phyric grey xtal sandstone with minor laminations of black siltstone
6cm with siltstone @ base of unit.

329.5 → 354.0m

Black siltstone
- minor sandier units recorded. rip @ 345-346m
- xtal sandstone units to 2cm @ 345 + 346m

CySS SILT VAFM P_4
CySS VOFM P_2
CySS SILT P_3

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10

SHEET 18 OF 19

PROJECT	WHITE SPUR
PROSPECT	
DATE	Feb-1998
LOGGED BY	A.L.E

— Bedding
⌊ Cleavage
▲ Foliation
~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG (1/16 1/4 1 4 16 32) | ALTERATION (SIL. SER. PY.) | GEOLOGY NOTES | SUMMARY ROCK | SUMMARY ALTERATION

341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360

354 → 370.8m

well graded sequence with v fine silty siltstone top grading to m-g sandstone base

CySS SILT P_2

REMARKS

559065

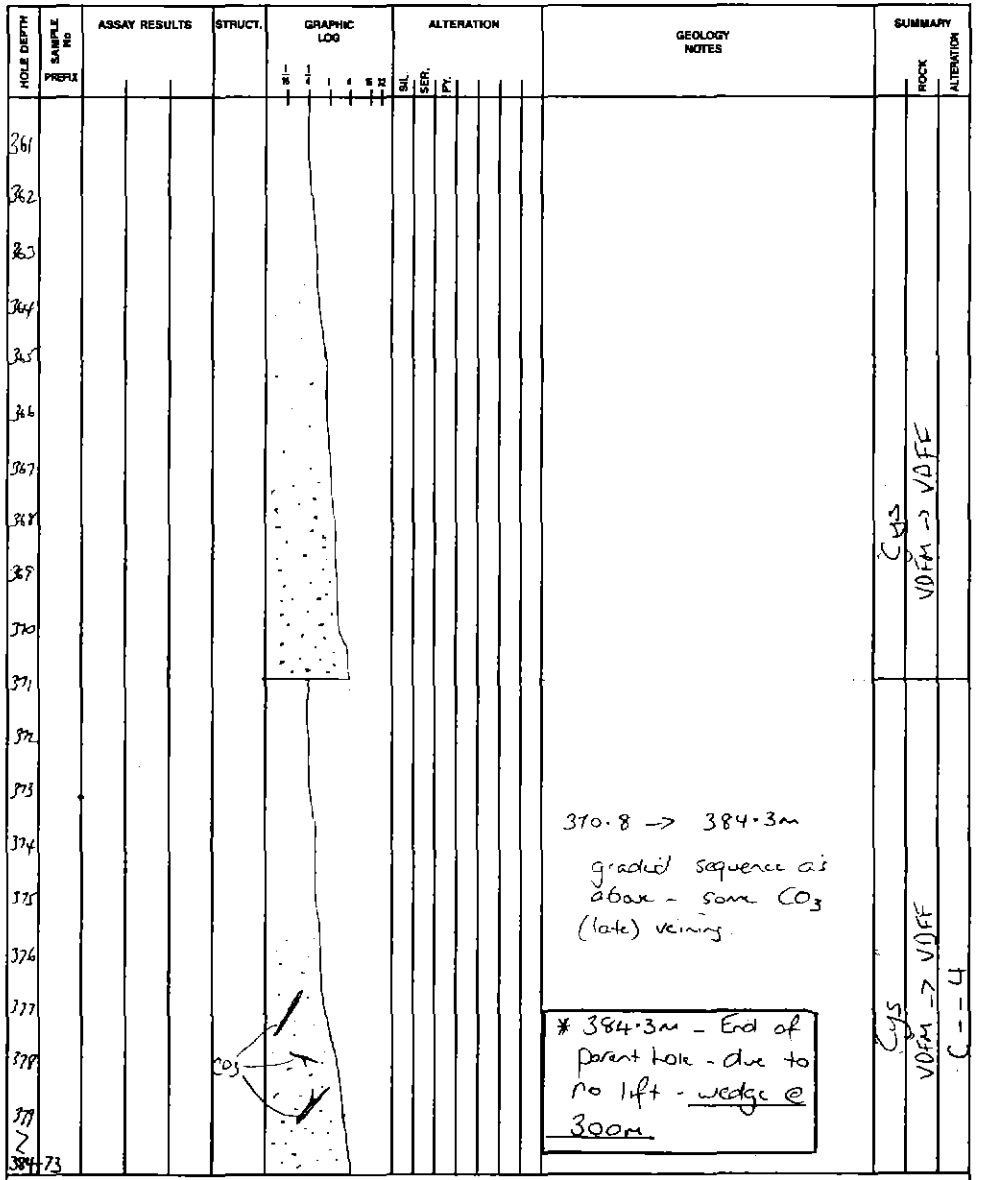
RGC EXPLORATION PTY LTD

DRILL HOLE No USP-10

SHEET 19 OF 19

PROJECT :	WHITE SAP
PROSPECT :	
DATE :	
LOGGED BY :	A.L.E

- Bedding
- Cleavage
- Foliation
- Fault, Shear
- Breccia
- Broken core
- Disseminated
- Massive
- Pervasive
- Narrow vein
- * Visible gold



REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10A

SHEET 1 OF 17

PROJECT :	White Spur
PROSPECT :	
DATE :	March 1998
LOGGED BY :	ALE

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No / PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. / SER. / PY.)	GEOLOGY NOTES	SUMMARY ROCK	ALTERATION
298						298 - 304.80 Black siltstone. minor qtz veining with py @ 298.05		
99								
300							Cyss SILT	P-4
301								
2								
3								
4								
5						304.85 → 310.05 lithic (black silt) sandstone unit as basal unit to above silt. py associated with black silt lithics common		
6								
7								
8							Cys VDLC	P-3
9								
10			S-43°			310.05 → 312.00 mass flow - sst (lithics) → silty tops (Cys lithic bases common)	Cys VDLC-A	
11								
12			S-39°					
13						312.00 → 319.6m Black moderately pyritic black siltstone		
14								
15							Cyss SILT	P-4
16								
17								

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-10A

SHEET 2 OF 17

PROJECT :	White Spur
PROSPECT :	
DATE :	March 1998
LOGGED BY :	ALE

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No / PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. / SER. / PY.)	GEOLOGY NOTES	SUMMARY ROCK	ALTERATION
318								
19								
20						319.6 → 320.18 sst base to black silt top		
21			S°-42°			320.18 → 322.0 c.g lithic (black silt) base grading up to black silt top.		
22							Cys VDLC/VDFM - SILT	P-3
23						Ditto.		
24						3		
25						324 → 329.63 Black laminated pyritic siltstone		
26								
27								
28							Cyss SILT	P-4
29								
330			S0-37°					
31								
32								
33						329.63 → 339.18 Coarse grained black siltstone lithic base in m.g fsp-phyric sst matrix with black silt top. clasts of bl. silt often quite pyritic.		
34							Cys VDLC	P-3
35								
36								
337								

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A.

SHEET 3 OF 17

PROJECT :	White Spur
PROSPECT :	
DATE :	March 1998
LOGGED BY :	ALE

Legend: —— Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No (PREFIX)	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY.)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
338								
339			S· 60°					
340								
341								
342								
343						339.18 → 349.24 moderately fissile black siltstone (laminated)		
344								
345								
346							Cyss SILT	P–L
347								
348								
349				py clot		349.24 → 349.4 int. sst/black silt.		
350						349.4 → 349.5 – Ditto.		
351						349.9 → 353.4 – Black siltstone often anastomosing laminae		
52								
53				py				
54								
55						353.4 → 356.0 Basal lithic rich in sst matrix mass flow unit. – Py with lithics.	Cyss VOLC	P–L
56								
57								

REMARKS

358.33

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A

SHEET 4 OF 17

PROJECT :	White Spur
PROSPECT :	
DATE :	March 1998
LOGGED BY :	ALE

Legend: —— Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No (PREFIX)	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY.)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
358			S. 57°			356.0 → 358.3 – black siltstone with thin sst. base.	Cyss SILT	
59								
60								
61								
62								
63								
64								
65								
66						358.3 → 374 graded unit – Ashy siltstone top grading to a f/g sandstone base for approx. 1m of thickness.	Cyo VDFM-A	
67								
68								
69								
70								
71								
72								
73								
74						374 → 375.18 – ditto as above		
75			S. 60°					
76								
77								

REMARKS

383.83

559068

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A

SHEET 5 OF 17

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

PROJECT :	White Spur
PROSPECT :	
DATE :	March 1998
LOGGED BY :	ALE

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY.)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
378								
79								
80								
81						375.18 → 383.83 Basic qtz/feldspar phyric m.g sandstone grading up into an ashy top siltstone.	Cys	VDFM-A
82								
83								
84						383.83 – 384.76 f.g sandstone	Cys	VDFM
85								
86						384.76 → 385.73 Ashy siltstone.		
87								
88						385.73 → 389.42 siltstones + f.g sst		
89			So 48°					
90								
91								
92						389.42 → 396.0 basal m.g graded (phyllic) sandstone (qtz/fspar phyric)	Cys	VDFM
93								
94								
95								
96								
397						396.0 → 402.80. Series of thin sst/silt units.		

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A

SHEET 6 OF 17

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

PROJECT :	White Spur
PROSPECT :	
DATE :	March 1998
LOGGED BY :	ALE

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY.)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
398								
99						Interbedded graded units of sst + siltstone (ashy)	Cys	VDFM-A
400								
01								
02								
03			So 50°			402.80 → 403.6. basal C.g lithic (Cys) mass flow in sst matrix.	Cys	VDLC
04							Cys	VDLC-F
05								
06							Cyss	SILT
07			So 70°			403.6 – 408.5 black siltstone top (some diffuse interbedded sst) with a more coherent m.g f/spar phyric sandstone – base Cys lithic	Cys	VDFM
08								
09						408.5 → 409.27 Ditto.	Cys	VDFM-F
410								
11						409.27 → 412.12 Ditto w/ ashy silt top with m.g sst base	Cys	VDFM-A
12								
13								
14								
15						412.12 → 430.0. Black moderately pyritic siltstone some large clots of py/po. @ 422, 425, 429.2m	Cyss	SILT
16								D–U
17								

REMARKS

69066

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A

SHEET 7 OF 17

PROJECT	White Spur
PROSPECT	
DATE	March 1998
LOGGED BY	ALE

Bedding · Cleavage · Foliation · Fault, Shear · Breccia · Broken core · Disseminated · Massive · Pervasive · Narrow vein · * Visible gold

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION: SIL.	SER.	PY.	GEOLOGY NOTES	SUMMARY: ROCK	ALTERATION
418										
19										
20										
21				qtz/fpy						
22										
23										
24										
25										
26										
27										
28										
29										
30										
31			0-55°							
32								430.0 → 433.27 Interbedded m-g sandstone and black siltstone - siltstone moderately pyritic		
33										
34				qtz						
35	221			fpy qtz						
36	222							433.27 → 437.62 Black siltstone - qtz veining common as well as fpy clots + disseminations		
37	223									

Cyss · SILT · P_4 · PQ-4

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A

SHEET 8 OF 17

PROJECT	White Spur
PROSPECT	
DATE	March 1998
LOGGED BY	ALE

Bedding · Cleavage · Foliation · Fault, Shear · Breccia · Broken core · Disseminated · Massive · Pervasive · Narrow vein · * Visible gold

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS: Cu	Pb	Zn	STRUCT.	GRAPHIC LOG	ALTERATION: SIL.	SER.	PY.	GEOLOGY NOTES	SUMMARY: ROCK	ALTERATION
438	224									437.62 → 441.75 Interbedded m-g fpor phyric sandstone and ashy siltstone	Cyss	VDFM_A
39	225											
40	226				40-45°							
41	242											
42	227				50-55°							
43	228					fpporphyritic?				441.75 → 443.95 Ashy siltstone intruded by feldspar/qtz? porphyritic rhyolite	Cya	VDFA_IRK
44	229											
45	230											
46	231									443.95 → 446.14 feldspar phyric pumiceous, clastic sandstone (CVC)	CCV	VDFA_3
47	232											
48	233											
49	234											
50	235											
51	236									446.14 → 460.0 m-g feldspar phyric sandstone (locally) altered pumiceous sandstone	CCV	VDFM_3
52	237											
53	238											
54	239											
55												
56												
457												

REMARKS

0105 63

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A

SHEET 9 OF 17

PROJECT :	
PROSPECT :	
DATE :	March 1998
LOGGED BY :	ALE

Legend: —— Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY. A/b)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
458								SO-3
59								
60								
61								
62						460.0 → 527.7 mg feldspar phyric grey albite altered pumiceous sandstone.		
63								
64								
65								
66								
67								
68							CcV VDFM	A-3
69								
70								
71								
72								
73								
74								
75								
76								
477								

REMARKS

→ 527.7 – ?c sst

527.7 → 558.25 – Cp ... conglomerate ...

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A

SHEET 10 OF 17

PROJECT :	White Spur
PROSPECT :	
DATE :	March 1998
LOGGED BY :	ALE

Legend: —— Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY. A/b)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
478								
79								
80								
81								
82								
83								
84						medium grained grey albite altered (weak) fspar phyric pumiceous sandstone		
85								
86								
87								
88							CcV VDFM	A-3
89								
490								
91								
92								
93								
94								
95								
96								
497								

REMARKS

65071

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A

SHEET 11 OF 17

PROJECT :	White Spur
PROSPECT :	
DATE :	March 1998
LOGGED BY :	

Legend: —— Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No (PREFIX)	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY. Chl-C)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
498								
99								
500								
01								
02								
03								
04								
05						Ditto.		
06								
07							CcV VDFM	A--3
08								
09								
10								
11								
12								
13								
14								
15								
16								
517								

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A

SHEET 12 OF 17

PROJECT :	White Spur
PROSPECT :	
DATE :	March 1998
LOGGED BY :	ALE

Legend: —— Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No (PREFIX)	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY. Chl-C)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
518								
19								
20								
21						m.g grey albite altered fspar phyric pumiceous sandstone.		
22							CcV VDFM	A--3
23								
24								
25								
26								
27								
28			ΔΔΔ					
29								
30								
31						527.7 → 538.25m.		
32						amygdaloidal fspar phyric dacite lava?		
33						- contacts with sst both uphole + down hole are brecciated. (auto)	CcV LDF	Q--5
34								
35						- qtz veins to 5cm common, x cutting @ various attitudes.		
36								
537								

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A

SHEET 13 OF 17

PROJECT	White Spur
PROSPECT	
DATE	March 1998
LOGGED BY	ALE

Bedding · Cleavage · Foliation · Fault, Shear · Breccia · Broken core · Disseminated · Massive · Pervasive · Narrow vein · * Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG (1/4 1/2 1 4 16 32) | ALTERATION (SIL. SER. PY.) | GEOLOGY NOTES | SUMMARY (ROCK ALTERATION)

538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557

SUMMARY: CcV LDF

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A

SHEET 14 OF 17

PROJECT	White Spur
PROSPECT	
DATE	March 1998
LOGGED BY	ALE

Bedding · Cleavage · Foliation · Fault, Shear · Breccia · Broken core · Disseminated · Massive · Pervasive · Narrow vein · * Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG (1/4 1/2 1 4 16 32) | ALTERATION (SIL. SER. PY. Calcite Chlorite) | GEOLOGY NOTES | SUMMARY (ROCK ALTERATION)

559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577

558.25 → 562-44

dark albitic pervasive feldspar pyric sandstone

562.44 → 581.20m.

grey albite altered medium grained feldspar pyric bearing sandstone

SUMMARY: CcV VDFM A-3 1 0-5

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A

SHEET 15 OF 17

PROJECT :	White Spur
PROSPECT :	
DATE :	March 1998
LOGGED BY :	ALE

Legend: — Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No	ASSAY RESULTS	STRUCT.	GEOLOGY NOTES	SUMMARY ROCK	ALTERATION
578						
79					Ccl VDFM	A-3
80						
81						
82				581.2 → 583.91m flow banded dark after chloritic intrusive fspar phyric dacite.	Ccl IDF	
83			→ grey albite alt?			
84						
85				583.91 → 587.15 m.g fspar phyric grey albite altered s.st.		A-3
86						
87						
88			pink albite alt?			
89						
90					Ccl VDFM	AO-4
91				587.15 → 626.2m (E.O.H)		
92				chlorite/pink albite altered m.g feldspar phyric pumiceous sandstone		
93						
94				qtz chlorite veins to be common		
95						
96				ie @ 612m		
597						

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP10A

SHEET 16 OF 17

PROJECT :	White Spur
PROSPECT :	
DATE :	March 1998
LOGGED BY :	ALE

Legend: — Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	GEOLOGY NOTES	SUMMARY ROCK	ALTERATION
598							
99							
600							
01							
02							
03							
04					Ditto		
05							
06							
07						Ccl VDFM	AO-4
08							
09							
10							
11							
12							
13				qtz chlorite			
14							
15							
16							
617							

REMARKS

559074

RGC EXPLORATION PTY LTD

DRILL HOLE No USP10A

SHEET 17 OF 17

PROJECT :	White Spur
PROSPECT :	
DATE :	March 1998
LOGGED BY :	ALE

— Bedding
⌴ Cleavage
— Foliation
~~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG (1/16, 1/4, 1, 4, 16, 32)	ALTERATION (SIL. SER. PY.)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
618				~			Cc1	
19				⌐			VDFM	
20				~				
21								
22				⌐				AO-4
23				~				
24				.				
25				⌐				
621				~				
				EOH 621.20m				

REMARKS

5907S

Hole_Id	Sample No	Sample Type	Depth From	Depth To	CU_A	PB_A	ZN_A	AG_A	AG_N	AS_N	AU_N	BA_N	BR_N	CA_N	CE_N	CO_N	CR_N	CS_N
WSP10A	1020221	HALFCORE	434.00	435.00	101	249	397	2	-5	77	10	585	-2	3.6	60	17	117	6
WSP10A	1020222	HALFCORE	435.00	436.00	81	156	293	2	-5	89	10	695	-2	4.6	50	15	162	6
WSP10A	1020223	HALFCORE	436.00	437.00	96	92	122	2	-5	126	10	677	-2	3.3	91	16	117	7
WSP10A	1020224	HALFCORE	437.00	438.00	128	90	124	2	-5	87	-5	629	1	3.8	74	11	73	9
WSP10A	1020225	HALFCORE	438.00	439.00	105	47	64	1	-5	159	10	1120	2	3	119	12	55	9
WSP10A	1020226	HALFCORE	439.00	440.00	25	42	96	1	-5	107	-5	1210	-2	3.1	133	9	12	12
WSP10A	1020241	HALFCORE	440.00	441.00	19	25	62	2	-5	95	-5	1410	1	2.5	145	9	7	10
WSP10A	1020227	HALFCORE	441.00	442.00	17	26	50	1	-5	36	-5	1290	-2	1.9	140	7	32	11
WSP10A	1020228	HALFCORE	442.00	443.00	20	25	41	1	-5	39	-5	1320	-2	1.8	121	5	7	11
WSP10A	1020229	HALFCORE	443.00	444.00	12	22	58	1	-5	29	-5	1470	-2	2	145	6	25	11
WSP10A	1020230	HALFCORE	444.00	445.00	9	30	57	1	-5	28	-5	1620	-2	2	167	6	-5	14
WSP10A	1020231	HALFCORE	445.00	446.00	8	45	53	1	-5	16	-5	1330	-2	2	152	5	72	12
WSP10A	1020232	HALFCORE	446.00	447.00	6	37	57	1	-5	32	-5	1240	-2	1.8	145	7	-5	12
WSP10A	1020233	HALFCORE	447.00	448.00	14	26	55	1	-5	60	-5	1110	-2	2.4	135	6	57	11
WSP10A	1020234	HALFCORE	448.00	449.00	11	12	50	1	-5	62	-5	1070	1	2.6	131	4	-5	9
WSP10A	1020235	HALFCORE	449.00	450.00	11	25	104	1	-5	51	-5	442	-2	2.7	102	2	176	4
WSP10A	1020236	HALFCORE	450.00	451.00	17	188	343	1	-5	221	-5	431	-2	2.3	105	4	11	2
WSP10A	1020237	HALFCORE	451.00	452.00	13	254	247	2	-5	486	-5	1120	-2	3.3	130	9	84	7
WSP10A	1020238	HALFCORE	452.00	453.00	18	372	263	2	-5	266	-5	701	1	4.1	106	19	8	6
WSP10A	1020239	HALFCORE	453.00	454.00	11	44	92	1	-5	26	-5	829	-2	2.8	113	3	118	4
			Dectection Limit		2	3	2	1	5	1	5	100	1	1	2	1	5	1
			Units		ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	%	ppm	ppm	ppm	ppm
			Method		A101	A101	A101	A101	N701	N701	N701	N701	N701	N701	N701	N701	N701	N701

Hole_Id	Sample No	Sample Type	Depth From	Depth To	EU_N	FE_N	HF_N	IR_N	K_N	LA_N	LU_N	MO_N	NA_N	RB_N	SB_N	SC_N	SE_N	SM_N
WSP10A	1020221	HALFCORE	434.00	435.00	1.5	5.22	3.9	-20	2	27.1	0.4	-5	0.31	120	9.7	15.5	-5	5.4
WSP10A	1020222	HALFCORE	435.00	436.00	1.1	5.42	3.5	-20	1.9	22	0.4	-5	0.27	85	8.7	15.3	-5	5.1
WSP10A	1020223	HALFCORE	436.00	437.00	1.7	6.2	4.7	-20	2.3	38	0.5	-5	0.21	115	8.7	15.6	-5	8
WSP10A	1020224	HALFCORE	437.00	438.00	1.7	4.27	4.2	-20	2.3	31	0.5	-5	0.65	120	5.8	13.9	-5	6.7
WSP10A	1020225	HALFCORE	438.00	439.00	2.6	3.53	7.7	-20	3.8	53.3	0.6	-5	2.64	165	3.8	19.5	-5	11.8
WSP10A	1020226	HALFCORE	439.00	440.00	2.3	3.52	8.2	-20	3.6	56.3	0.7	-5	1.72	200	4.5	17.5	-5	12.1
WSP10A	1020241	HALFCORE	440.00	441.00	2.2	3.22	8.8	-20	4	65.1	0.6	-5	1.54	205	4.8	14.5	-5	12.1
WSP10A	1020227	HALFCORE	441.00	442.00	2.3	2.49	7.9	-20	3.3	61.7	0.7	-5	0.86	220	3.3	10.1	-5	10.5
WSP10A	1020228	HALFCORE	442.00	443.00	1.8	2.06	7.3	-20	3.3	54.7	0.7	-5	0.81	195	2.4	9.6	-5	9.1
WSP10A	1020229	HALFCORE	443.00	444.00	2.3	2.23	8.4	-20	3.9	65.5	0.7	-5	0.92	210	2.6	12.3	-5	11.4
WSP10A	1020230	HALFCORE	444.00	445.00	2.7	2.57	9.3	-20	3.9	74.2	0.8	-5	1.01	230	3.2	14.1	-5	13.7
WSP10A	1020231	HALFCORE	445.00	446.00	2.1	1.92	8.6	-20	3.8	66.5	0.7	-5	0.97	190	2	13	-5	12.2
WSP10A	1020232	HALFCORE	446.00	447.00	2.3	2.47	8.6	-20	3.4	65	0.8	-5	0.93	190	2.2	12.7	-5	12.3
WSP10A	1020233	HALFCORE	447.00	448.00	1.7	2.56	7.2	-20	3.2	59.3	0.7	-5	1.04	175	1.6	11.5	-5	10.7
WSP10A	1020234	HALFCORE	448.00	449.00	2	2.56	7.2	-20	2.7	57.7	0.6	-5	1.4	150	1.3	11.4	-5	10.9
WSP10A	1020235	HALFCORE	449.00	450.00	1.3	1.88	5.8	-20	0.8	44.8	0.6	-5	3.63	45	1.7	9	-5	8.6
WSP10A	1020236	HALFCORE	450.00	451.00	1.5	2.51	6.1	-20	1.5	48.3	0.5	-5	3.3	70	1.6	8.8	-5	8.6
WSP10A	1020237	HALFCORE	451.00	452.00	2.1	2.46	6.4	-20	2.7	54.6	0.7	-5	1.67	125	1	10.4	-5	10.6
WSP10A	1020238	HALFCORE	452.00	453.00	2	2.65	5.3	-20	2.4	45	0.7	-5	1.45	95	1.9	9	-5	9.8
WSP10A	1020239	HALFCORE	453.00	454.00	1.2	2.47	6.4	-20	1.6	51.4	0.6	-5	2	110	1.2	9.5	-5	9.3
			Dectection Limit		0.5	0.02	0.5	20	0.2	0.5	0.2	-5	0.01	20	0.2	0.1	5	0.2
			Units		ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
			Method		N701	N701	N701	N701	N701	N701	N701	N701	N701	N701	N701	N701	N701	N701

Hole_Id	Sample No	Sample Type	Depth From	Depth To	TA_N	TE_N	TH_N	U_N	W_N	YB_N	ZN_N	ZR_N	P_X	TI_X	V_X	ZR_X
WSP10A	1020221	HALFCORE	434.00	435.00	1	-20	12.5	4	-2	2.9	454	-500	613	3384	163	121
WSP10A	1020222	HALFCORE	435.00	436.00	2	-20	11.8	3	-2	3.1	328	-500	604	3390	302	123
WSP10A	1020223	HALFCORE	436.00	437.00	1	-20	14	4	-2	3.4	145	-500	667	3803	205	150
WSP10A	1020224	HALFCORE	437.00	438.00	1	-20	11.4	6	-2	3.3	154	-500	613	3062	93	136
WSP10A	1020225	HALFCORE	438.00	439.00	-1	-20	14.4	21	-2	4.4	153	-500	635	3707	63	256
WSP10A	1020226	HALFCORE	439.00	440.00	1	-20	18.4	19	-2	4.8	122	-500	634	3549	66	277
WSP10A	1020241	HALFCORE	440.00	441.00	2	-20	23.8	19	-2	4.5	-100	-500	486	3251	51	265
WSP10A	1020227	HALFCORE	441.00	442.00	2	-20	26.2	13	-2	4.6	-100	-500	354	2421	51	239
WSP10A	1020228	HALFCORE	442.00	443.00	2	-20	23.6	10	-2	4.5	-100	-500	310	2392	44	214
WSP10A	1020229	HALFCORE	443.00	444.00	1	-20	26.7	10	-2	4.7	-100	-500	342	2757	57	237
WSP10A	1020230	HALFCORE	444.00	445.00	1	-20	29.1	8	-2	5.5	-100	-500	458	2976	63	290
WSP10A	1020231	HALFCORE	445.00	446.00	3	-20	25.2	7	-2	5.1	-100	-500	440	2891	55	274
WSP10A	1020232	HALFCORE	446.00	447.00	2	-20	24.8	3	-2	5.1	-100	-500	418	3064	56	270
WSP10A	1020233	HALFCORE	447.00	448.00	3	-20	22.7	5	-2	4.7	-100	-500	421	2625	49	231
WSP10A	1020234	HALFCORE	448.00	449.00	-1	-20	23	5	-2	4.4	-100	-500	454	2718	47	251
WSP10A	1020235	HALFCORE	449.00	450.00	2	-20	18.5	5	-2	3.9	155	-500	386	2166	36	183
WSP10A	1020236	HALFCORE	450.00	451.00	1	-20	18.1	5	-2	3.5	431	-500	404	2216	32	199
WSP10A	1020237	HALFCORE	451.00	452.00	-1	-20	21.1	6	-2	4.6	266	-500	402	2442	41	227
WSP10A	1020238	HALFCORE	452.00	453.00	-1	-20	16.2	5	-2	5.2	319	-500	359	1859	32	171
WSP10A	1020239	HALFCORE	453.00	454.00	1	-20	18.8	6	-2	4	131	-500	362	2259	41	207
			Dectection Limit		1	5	0.5	2	2	0.5	100	500	30	100	5	5
			Units		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
			Method		N701	N701	N701	1	N701	N701	N701	N701	X401	X401	X401	X401

WSP10/10A Magnetic Susceptibility Measurements magsusWSP1012.xls

Hole	From	To	Core size	Sensor Position	Reading	Min	Max
WSP10	0	97	HQ	2	0	0	0
WSP10	97	160	HQ	2	0	0	0
WSP10	160	165	HQ	2	0	0	0
WSP10	165	187	NQ	2	0	0	0
WSP10	187	195	NQ	2	0	0	0
WSP10	195	196	NQ	2	0	0	32
WSP10	196	200	NQ	2	0	0	0
WSP10	200	201	NQ	2	5	0	45
WSP10	201	223	NQ	2	10	0	0
WSP10	223	225	NQ	2	20	0	75
WSP10	225	226	NQ	2	40	5	95
WSP10	226	227	NQ	2	30	10	80
WSP10	227	228	NQ	2	10	0	10
WSP10	228	229	NQ	2	10	5	20
WSP10	229	230	NQ	2	20	10	80
WSP10	230	231	NQ	2	30	10	200
WSP10	231	232	NQ	2	40	20	65
WSP10	232	233	NQ	2	40	25	60
WSP10	233	234	NQ	2	20	20	20
WSP10	234	235	NQ	2	35	20	95
WSP10	235	236	NQ	2	80	60	125
WSP10	236	237	NQ	2	150	35	260
WSP10	237	238	NQ	2	20	15	55
WSP10	238	239	NQ	2	250	50	425
WSP10	239	240	NQ	2	150	25	520
WSP10	240	241	NQ	2	100	40	220
WSP10	241	242	NQ	2	20	10	50
WSP10	242	243	NQ	2	50	30	68
WSP10	243	244	NQ	2	30	10	47
WSP10	244	245	NQ	2	50	10	170
WSP10	245	246	NQ	2	20	15	28
WSP10	246	247	NQ	2	20	10	40
WSP10	247	248	NQ	2	30	10	40
WSP10	248	249	NQ	2	15	5	30
WSP10	249	250	NQ	2	25	15	35
WSP10	250	251	NQ	2	15	0	69
WSP10	251	252	NQ	2	20	10	38
WSP10	252	253	NQ	2	20	15	35
WSP10	253	254	NQ	2	22	15	30
WSP10	254	255	NQ	2	15	5	38
WSP10	255	256	NQ	2	10	10	10
WSP10	256	257	NQ	2	0	0	0
WSP10	257	258	NQ	2	0	0	10
WSP10	258	259	NQ	2	0	0	0
WSP10	259	260	NQ	2	7	5	10
WSP10	260	261	NQ	2	40	20	65
WSP10	261	262	NQ	2	30	10	50
WSP10	262	263	NQ	2	40	10	90
WSP10	263	264	NQ	2	55	20	72
WSP10	264	265	NQ	2	200	50	270
WSP10	265	266	NQ	2	200	80	430
WSP10	266	267	NQ	2	150	25	430
WSP10	267	268	NQ	2	200	85	1900
WSP10	268	269	NQ	2	100	30	375
WSP10	269	270	NQ	2	250	20	820
WSP10	270	271	NQ	2	20	0	40
WSP10	271	272	NQ	2	150	0	850
WSP10	272	273	NQ	2	100	40	490
WSP10	273	274	NQ	2	150	80	250
WSP10	274	275	NQ	2	30	20	40
WSP10	275	276	NQ	2	50	15	650

Hole	From	To	Core size	Sensor Position	Reading	Min	Max
WSP10	276	277	NQ	2	40	5	120
WSP10	277	278	NQ	2	30	0	500
WSP10	278	279	NQ	2	30	10	65
WSP10	279	280	NQ	2	40	20	90
WSP10	280	281	NQ	2	20	10	200
WSP10	281	282	NQ	2	15	5	180
WSP10	282	283	NQ	2	7	5	10
WSP10	283	284	NQ	2	15	15	15
WSP10	284	285	NQ	2	10	10	10
WSP10	285	286	NQ	2	5	0	10
WSP10	286	287	NQ	2	7	5	10
WSP10	287	288	NQ	2	10	0	15
WSP10	288	289	NQ	2	5	0	10
WSP10	289	290	NQ	2	5	0	10
WSP10	290	291	NQ	2	10	5	15
WSP10	291	292	NQ	2	13	10	15
WSP10	292	293	NQ	2	20	10	150
WSP10	293	294	NQ	2	15	10	25
WSP10	294	295	NQ	2	20	10	40
WSP10	295	296	NQ	2	35	10	75
WSP10	296	297	NQ	2	30	15	120
WSP10	297	298	NQ	2	50	30	95
WSP10	298	299	NQ	2	60	30	120
WSP10	299	300	NQ	2	40	25	80
WSP10	300	301	NQ	2	80	50	110
WSP10	301	302	NQ	2	13	10	15
WSP10	302	303	NQ	2	20	20	20
WSP10	303	304	NQ	2	500	150	780
WSP10	304	305	NQ	2	250	150	620
WSP10	305	306	NQ	2	200	100	400
WSP10	306	307	NQ	2	100	10	230
WSP10	307	308	NQ	2	30	10	270
WSP10	308	309	NQ	2	180	15	480
WSP10	309	310	NQ	2	10	5	70
WSP10	310	311	NQ	2	60	150	280
WSP10	311	312	NQ	2	40	30	55
WSP10	312	313	NQ	2	30	20	40
WSP10	313	314	NQ	2	100	25	310
WSP10	314	315	NQ	2	120	15	800
WSP10	315	316	NQ	2	70	30	180
WSP10	316	317	NQ	2	25	10	40
WSP10	317	318	NQ	2	0	0	0
WSP10	318	319	NQ	2	0	0	0
WSP10	319	320	NQ	2	0	0	0
WSP10	320	321	NQ	2	0	0	0
WSP10	321	322	NQ	2	0	0	0
WSP10	322	323	NQ	2	40	0	0
WSP10	323	324	NQ	2	0	0	0
WSP10	324	325	NQ	2	10	0	10
WSP10	325	326	NQ	2	40	0	300
WSP10	326	327	NQ	2	60	10	80
WSP10	327	328	NQ	2	20	0	20
WSP10	328	329	NQ	2	40	0	60
WSP10	329	330	NQ	2	100	100	200
WSP10	330	331	NQ	2	60	40	150
WSP10	331	332	NQ	2	200	100	500
WSP10	332	333	NQ	2	20	0	80
WSP10	333	334	NQ	2	40	0	90
WSP10	334	335	NQ	2	200	30	750
WSP10	335	336	NQ	2	0	0	0
WSP10	336	337	NQ	2	20	20	60

WSP10/10A Magnetic Susceptibility Measurements magsusWSP1012.xls

Hole	From	To	Core size	Sensor Position	Reading	Min	Max
WSP10	337	338	NQ	2	90	40	200
WSP10	338	339	NQ	2	150	40	150
WSP10	339	340	NQ	2	20	0	60
WSP10	340	341	NQ	2	200	30	220
WSP10	341	342	NQ	2	50	10	60
WSP10	342	343	NQ	2	60	30	80
WSP10	343	344	NQ	2	70	20	110
WSP10	344	345	NQ	2	400	100	1500
WSP10	345	346	NQ	2	150	100	200
WSP10	346	347	NQ	2	120	50	200
WSP10	347	348	NQ	2	100	50	150
WSP10	348	349	NQ	2	50	40	70
WSP10	349	350	NQ	2	40	10	60
WSP10	350	351	NQ	2	40	10	60
WSP10	351	352	NQ	2	20	15	30
WSP10	352	353	NQ	2	20	10	60
WSP10	353	354	NQ	2	30	15	50
WSP10	354	355	NQ	2	50	20	70
WSP10	355	356	NQ	2	200	150	300
WSP10	356	357	NQ	2	30	20	50
WSP10	357	358	NQ	2	15	10	20
WSP10	358	359	NQ	2	200	150	500
WSP10	359	360	NQ	2	5	5	5
WSP10	360	361	NQ	2	10	10	10
WSP10	361	362	NQ	2	0	0	0
WSP10	362	363	NQ	2	0	0	0
WSP10	363	364	NQ	2	0	0	0
WSP10	364	365	NQ	2	0	0	0
WSP10	365	366	NQ	2	0	0	0
WSP10	366	367	NQ	2	0	0	0
WSP10	367	368	NQ	2	0	0	0
WSP10	368	369	NQ	2	0	0	0
WSP10	369	370	NQ	2	0	0	0
WSP10	370	371	NQ	2	0	0	0
WSP10	371	372	NQ	2	0	0	0
WSP10	372	373	NQ	2	0	0	0
WSP10	373	374	NQ	2	0	0	0
WSP10	374	375	NQ	2	20	0	20
WSP10	375	376	NQ	2	60	20	100
WSP10	376	377	NQ	2	0	0	0
WSP10	377	378	NQ	2	0	0	0
WSP10	378	379	NQ	2	0	0	0
WSP10	379	380	NQ	2	0	0	0
WSP10	380	381	NQ	2	0	0	0
WSP10	381	382	NQ	2	0	0	0
WSP10	382	383	NQ	2	0	0	30
WSP10	383	384	NQ	2	0	0	0
WSP10A	297	298	NQ	2	25	10	40
WSP10A	298	299	NQ	2	10	5	20
WSP10A	299	300	NQ	2	40	20	60
WSP10A	300	301	NQ	2	15	15	20
WSP10A	301	302	NQ	2	40	20	65
WSP10A	302	303	NQ	2	20	0	35
WSP10A	303	304	NQ	2	15	15	30
WSP10A	304	305	NQ	2	0	0	200
WSP10A	305	306	NQ	2	150	60	300
WSP10A	306	307	NQ	2	150	50	225
WSP10A	307	308	NQ	2	100	40	150
WSP10A	308	309	NQ	2	20	10	70
WSP10A	309	310	NQ	2	40	20	70
WSP10A	310	311	NQ	2	10	5	15

Hole	From	To	Core size	Sensor Position	Reading	Min	Max
WSP10A	311	312	NQ	2	20	10	75
WSP10A	312	313	NQ	2	40	35	90
WSP10A	313	314	NQ	2	50	40	150
WSP10A	314	315	NQ	2	50	20	90
WSP10A	315	316	NQ	2	50	40	70
WSP10A	316	317	NQ	2	60	30	200
WSP10A	317	318	NQ	2	50	20	70
WSP10A	318	319	NQ	2	40	15	60
WSP10A	319	320	NQ	2	0	0	5
WSP10A	320	321	NQ	2	0	0	10
WSP10A	321	322	NQ	2	0	0	0
WSP10A	322	323	NQ	2	0	0	5
WSP10A	323	324	NQ	2	20	0	300
WSP10A	324	325	NQ	2	20	0	20
WSP10A	325	326	NQ	2	60	20	70
WSP10A	326	327	NQ	2	20	15	40
WSP10A	327	328	NQ	2	100	50	400
WSP10A	328	329	NQ	2	20	15	40
WSP10A	329	330	NQ	2	10	0	10
WSP10A	330	331	NQ	2	10	0	15
WSP10A	331	332	NQ	2	10	5	20
WSP10A	332	333	NQ	2	60	40	80
WSP10A	333	334	NQ	2	150	100	200
WSP10A	334	335	NQ	2	200	150	600
WSP10A	335	336	NQ	2	100	50	200
WSP10A	336	337	NQ	2	100	50	300
WSP10A	337	338	NQ	2	150	100	200
WSP10A	338	339	NQ	2	200	50	500
WSP10A	339	340	NQ	2	400	300	600
WSP10A	340	341	NQ	2	300	150	550
WSP10A	341	342	NQ	2	300	150	500
WSP10A	342	343	NQ	2	300	200	600
WSP10A	343	344	NQ	2	200	150	2000
WSP10A	344	345	NQ	2	100	100	100
WSP10A	345	346	NQ	2	100	50	150
WSP10A	346	347	NQ	2	100	50	150
WSP10A	347	348	NQ	2	100	50	100
WSP10A	348	349	NQ	2	20	10	30
WSP10A	349	350	NQ	2	20	10	40
WSP10A	350	351	NQ	2	20	20	30
WSP10A	351	352	NQ	2	40	30	60
WSP10A	352	353	NQ	2	40	10	70
WSP10A	353	354	NQ	2	20	60	150
WSP10A	354	355	NQ	2	80	40	150
WSP10A	355	356	NQ	2	50	20	80
WSP10A	356	357	NQ	2	40	10	80
WSP10A	357	358	NQ	2	40	20	80
WSP10A	358	359	NQ	2	30	20	70
WSP10A	359	360	NQ	2	30	0	50
WSP10A	360	361	NQ	2	5	0	10
WSP10A	361	362	NQ	2	0	0	0
WSP10A	362	363	NQ	2	0	0	0
WSP10A	363	364	NQ	2	0	0	0
WSP10A	364	365	NQ	2	10	0	10
WSP10A	365	366	NQ	2	10	0	10
WSP10A	366	367	NQ	2	0	0	0
WSP10A	367	368	NQ	2	0	0	20
WSP10A	368	369	NQ	2	0	0	0
WSP10A	369	370	NQ	2	0	0	0
WSP10A	370	371	NQ	2	0	0	0
WSP10A	371	372	NQ	2	0	0	0

Hole	From	To	Core size	Sensor Position	Reading	Min	Max
WSP10A	372	373	NQ	2	0	0	0
WSP10A	373	374	NQ	2	0	0	20
WSP10A	374	375	NQ	2	0	0	0
WSP10A	375	376	NQ	2	0	0	0
WSP10A	376	377	NQ	2	0	0	0
WSP10A	377	378	NQ	2	40	0	60
WSP10A	378	379	NQ	2	20	0	20
WSP10A	379	380	NQ	2	40	0	60
WSP10A	380	381	NQ	2	0	0	0
WSP10A	381	382	NQ	2	40	0	40
WSP10A	382	383	NQ	2	60	20	800
WSP10A	383	384	NQ	2	50	40	200
WSP10A	384	385	NQ	2	0	0	0
WSP10A	385	386	NQ	2	0	0	0
WSP10A	386	387	NQ	2	0	0	0
WSP10A	387	388	NQ	2	0	0	0
WSP10A	388	389	NQ	2	0	0	0
WSP10A	389	390	NQ	2	20	0	0
WSP10A	390	391	NQ	2	0	0	30
WSP10A	391	392	NQ	2	0	0	5
WSP10A	392	393	NQ	2	0	0	0
WSP10A	393	394	NQ	2	0	0	0
WSP10A	394	395	NQ	2	0	0	0
WSP10A	395	396	NQ	2	0	0	1500
WSP10A	396	397	NQ	2	0	0	0
WSP10A	397	398	NQ	2	0	0	0
WSP10A	398	399	NQ	2	0	0	0
WSP10A	399	400	NQ	2	0	0	0
WSP10A	400	401	NQ	2	0	0	0
WSP10A	401	402	NQ	2	0	0	20
WSP10A	402	403	NQ	2	30	20	40
WSP10A	403	404	NQ	2	0	0	10
WSP10A	404	405	NQ	2	0	0	0
WSP10A	405	406	NQ	2	0	0	0
WSP10A	406	407	NQ	2	20	10	60
WSP10A	407	408	NQ	2	40	30	60
WSP10A	408	409	NQ	2	0	0	10
WSP10A	409	410	NQ	2	0	0	5
WSP10A	410	411	NQ	2	0	0	10
WSP10A	411	412	NQ	2	NA	0	10
WSP10A	412	413	NQ	2	NA	5	10
WSP10A	413	414	NQ	2	NA	0	10
WSP10A	414	415	NQ	2	NA	0	10
WSP10A	415	416	NQ	2	NA	0	10
WSP10A	416	417	NQ	2	NA	0	0
WSP10A	417	418	NQ	2	NA	0	0
WSP10A	418	419	NQ	2	NA	0	0
WSP10A	419	420	NQ	2	NA	0	0
WSP10A	420	421	NQ	2	NA	0	0
WSP10A	421	422	NQ	2	NA	0	0
WSP10A	422	423	NQ	2	NA	0	0
WSP10A	423	424	NQ	2	NA	0	0
WSP10A	424	425	NQ	2	NA	0	0
WSP10A	425	426	NQ	2	NA	0	0
WSP10A	426	427	NQ	2	NA	0	0
WSP10A	427	428	NQ	2	NA	0	0
WSP10A	428	429	NQ	2	NA	0	0
WSP10A	429	430	NQ	2	NA	0	0
WSP10A	430	431	NQ	2	NA	0	0
WSP10A	431	432	NQ	2	NA	0	0
WSP10A	432	433	NQ	2	NA	0	0

Hole	From	To	Core size	Sensor Position	Reading	Min	Max
WSP10A	433	434	NQ	2	NA	0	0
WSP10A	434	435	NQ	2	NA	0	0
WSP10A	435	436	NQ	2	NA	0	0
WSP10A	436	437	NQ	2	NA	0	0
WSP10A	437	438	NQ	2	NA	0	0
WSP10A	438	439	NQ	2	NA	0	0
WSP10A	439	440	NQ	2	NA	0	0
WSP10A	440	441	NQ	2	NA	0	0
WSP10A	441	442	NQ	2	NA	0	0
WSP10A	442	443	NQ	2	NA	0	0
WSP10A	443	444	NQ	2	NA	0	0
WSP10A	444	445	NQ	2	NA	0	0
WSP10A	445	446	NQ	2	NA	0	0
WSP10A	446	447	NQ	2	0	0	0
WSP10A	447	448	NQ	2	NA	0	0
WSP10A	448	449	NQ	2	20	0	40
WSP10A	449	450	NQ	2	0	0	40
WSP10A	450	451	NQ	2	15	0	40
WSP10A	451	452	NQ	2	20	0	20
WSP10A	452	453	NQ	2	15	0	15
WSP10A	453	454	NQ	2	20	0	20
WSP10A	454	455	NQ	2	0	0	0
WSP10A	455	456	NQ	2	0	0	20
WSP10A	456	457	NQ	2	NA	0	0
WSP10A	457	458	NQ	2	NA	NA	0
WSP10A	458	459	NQ	2	NA	NA	0
WSP10A	459	460	NQ	2	NA	NA	0
WSP10A	460	461	NQ	2	NA	NA	0
WSP10A	461	462	NQ	2	NA	NA	0
WSP10A	462	463	NQ	2	NA	NA	0
WSP10A	463	464	NQ	2	NA	NA	0
WSP10A	464	465	NQ	2	NA	NA	0
WSP10A	465	466	NQ	2	NA	NA	0
WSP10A	466	467	NQ	2	NA	NA	0
WSP10A	467	468	NQ	2	NA	NA	0
WSP10A	468	469	NQ	2	NA	NA	0
WSP10A	469	470	NQ	2	0	NA	0
WSP10A	470	471	NQ	2	NA	NA	0
WSP10A	471	472	NQ	2	20	NA	0
WSP10A	472	473	NQ	2	-	NA	0
WSP10A	473	474	NQ	2	15	NA	0
WSP10A	474	475	NQ	2	20	NA	0
WSP10A	475	476	NQ	2	15	NA	0
WSP10A	476	477	NQ	2	20	NA	0
WSP10A	477	478	NQ	2	0	NA	0
WSP10A	478	479	NQ	2	0	NA	0
WSP10A	479	480	NQ	2	NA	NA	0
WSP10A	480	481	NQ	2	NA	NA	0
WSP10A	481	482	NQ	2	NA	NA	0
WSP10A	482	483	NQ	2	NA	NA	0
WSP10A	483	484	NQ	2	NA	NA	0
WSP10A	484	485	NQ	2	NA	NA	0
WSP10A	485	486	NQ	2	NA	NA	0
WSP10A	486	487	NQ	2	NA	NA	0
WSP10A	487	488	NQ	2	NA	NA	0
WSP10A	488	489	NQ	2	NA	NA	0
WSP10A	489	490	NQ	2	NA	NA	0
WSP10A	490	491	NQ	2	NA	NA	0
WSP10A	491	580	NQ	2	0	0	0
WSP10A	580	581	NQ	2	150	0	200
WSP10A	581	582	NQ	2	500	400	600

Hole	From	To	Core size	Sensor Position	Reading	Min	Max
WSP10A	582	583	NQ	2	100	100	450
WSP10A	583	584	NQ	2	0	0	0
WSP10A	584	602	NQ	2	0	0	0
WSP10A	602	603	NQ	2	250	0	500
WSP10A	603	604	NQ	2	60	0	160
WSP10A	604	605	NQ	2	0	0	0
WSP10A	605	606	NQ	2	100	100	200
WSP10A	606	607	NQ	2	100	0	300
WSP10A	607	608	NQ	2	600	1580	600
WSP10A	608	609	NQ	2	300	200	350
WSP10A	609	610	NQ	2	600	500	600
WSP10A	610	611	NQ	2	150	0	500
WSP10A	611	612	NQ	2	0	0	0
WSP10A	612	613	NQ	2	0	0	400
WSP10A	613	614	NQ	2	300	0	400
WSP10A	614	615	NQ	2	800	50	2500
WSP10A	615	616	NQ	2	250	10	250
WSP10A	616	617	NQ	2	700	450	800
WSP10A	617	618	NQ	2	700	550	1500
WSP10A	618	619	NQ	2	550	500	800
WSP10A	619	620	NQ	2	700	600	850
WSP10A	620	621	NQ	2	600	250	650
WSP10A	621	622	NQ	2	800	650	800
WSP10A	622	623	NQ	2	800	650	950
WSP10A	623	624	NQ	2	650	550	850
WSP10A	624	625	NQ	2	700	550	1000
WSP10A	625	626	NQ	2	300	200	450

Appendix 4

WSP12 Drill log and assays

RGC EXPLORATION DRILL HOLE RECORD

HOLE NUMBER	WSP12	**DRILLED BY**	Almac
PROJECT	White Spur	**NORTHING**	5363429.82
PROSPECT		**EASTING**	376475.23
DESIGNED BY	M Vicary	**RL**	660
LOGGED BY	A Elliston	**INCLINATION**	-65
COMMENCED	January 1998	**AZIMUTH**	078 mag / 090 AMG
FINISHED	February 1998	**EOH**	353.5

PURPOSE

To intersect White Spur Formation - Central Volcanics Complex contact (Hercules / Rose bery horizon) at approximately 350 - 400m downhole depth.

SURVEY DATA

DEPTH	INC.	AZ.	DEPTH	INC.	AZ.	DEPTH	INC.	AZ.
0	-65	090	120	-65	096	251.5	-64	104
15	-64	NA	150	-65	097	280	-63.75	106
30	-65	091	180	-65.5	099	311.5	-63.75	106
60	-64	NA	205.2	-65	096	344	-63.75	109
92.5	-65	091	251.5	-64	104			

DRILLING DATA

HOLE SIZE	DEPTH	COMMENTS
HQ	0 - 120.1	
NQ	120.1 - 353.5 EOH	Cased hole with PVC

SUMMARY

Summary Log:-	
0 -12.4	Greywacke/lithicwacke (Cyg)
12.4 - 47.4	Black siltstone (Cyss)
47.4 - 69.0	Ashy siltstone top of mass flow unit (Cya)
69.0 - 85.7	Qtz / f'spar crystal rich volcaniclastic sandstone (Cyx)
85.7 - 104.41	Ashy siltstone top grading downhole to coarse lithic base (Cyx/Cya)
104.41 - 139.4	Ashy siltstone top grading downhole to coarse lithic base (Cyx/Cya)
139.4 - 172.0	Ashy siltstone top of underlying mass flow (Cya)
172.0 - 183.0	Qtz / f'spar crystal rich volcaniclastic sandstone (Cyx)
183.0 - 199.45	Coarse lithic rich base of mass flow (Cyx)
199.45 - 218.0	Black siltstone (Cyss)
218.0 - 246.0	Small interbedded mass flow units (sandstone - ashy siltstone) (Cya)
246.0 - 249.57	Serecite altered coarse lithic base of larger mass flow unit (Cymfs?)
249.57 - 353.5	Medium grained feldspar phyric pumiceous sanstone (Central Volcanics Sequence Ccv)

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12 (SUMMARY LOG)

SHEET 1 OF 2

PROJECT	: WHITE SPUR
PROSPECT	:
DATE	: MAY 1998
LOGGED BY	: ALE

Bedding · Cleavage · Foliation · Fault, Shear · Breccia · Broken core

Disseminated · Massive · Pervasive · Narrow vein · * Visible gold

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT	GRAPHIC LOG	ALTERATION	GEOLOGY NOTES	SUMMARY
					SIL. SER. PY.		ROCK ALTERATION
0						0-10.0 - overburden. Broken interbedded siltstone + m-g greywacke chips.	
10						10.0-12.4 - black siltstone tops grading down to greywacke/lithic	
20						12.4-45.7 - Black laminated pyritic siltstone	
30							
40							
50						45.7 - 72.90 - dominantly ashy siltstone	
60							
70							
80						72.90 → 86.2 m-g g/z < fspar xtal rich volcaniclastic sandstone	
90							
100						86.2 → 104.41 - series of graded units with ashy siltstone tops grading down to m-g f/p phyric volc sandstone + lithic rich beds.	
110							
120						104.41 - 118.0 - ashy silt top grading down to f-g volc. sst. - some flattened lithic pumice ~1cm	
130						118.0 - 136.55 - ashy top grading to m-g fspar phyric sst bed with intervals of black siltstone.	
140							
150						136.55 - 172 - interbedded siltstone → f-g rock sst units.	
160							
170							
180						172 - 183.0 - m-g g/z < fspar phyric xtal rich volcaniclastic sandstone	
190						183.0 - 199.45 - C-g lithic rich beds to clean unit - clasts of rhyolite + black silt.	
EOH							

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12 (SUMMARY LOG)

SHEET 2 OF 2

PROJECT	: WHITE SPUR
PROSPECT	:
DATE	: MAY 1998
LOGGED BY	: ALE

Bedding · Cleavage · Foliation · Fault, Shear · Breccia · Broken core

Disseminated · Massive · Pervasive · Narrow vein · * Visible gold

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT	GRAPHIC LOG	ALTERATION	GEOLOGY NOTES	SUMMARY
					SIL. SER. PY.		ROCK ALTERATION
210						199.45 - 218.04 Black Siltstone	
220						218.04 - 230.17 - interbedded graded units of black/ashy silt tops with f-g - m-g rock substone beds.	
230							
240						230.17 - 249.57 - ashy silt top with rhyolite clasts grading down to f-g - m-g fspar phyric sandstone.	
250	Sample # 102021 → 2.9						
260							
270							
280						249.57 → 353.5m	
290						m-g feldspar phyric pumiceous volcaniclastic sandstone/breccia (CENTRAL VOLCANICS SEQUENCE)	
300							
310							
320							
330							
340							
350						353.5 (EOH)	
360							

REMARKS

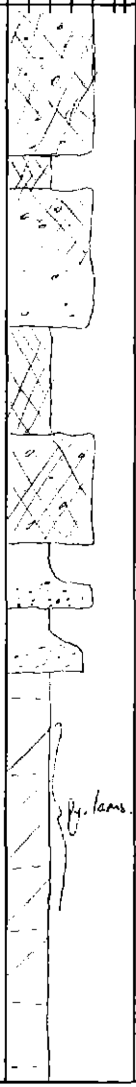
RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12 **SHEET** 1 **OF** 18

PROJECT :	White Spur
PROSPECT :	
DATE :	12/3/98
LOGGED BY :	ALE

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No (PREFIX)	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY.)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
1–10						0 – 10m Oxidised ashy siltstones + interbedded m-g lithic greywackes quite broken + rubbly	Cyss GWAC	L-5
11–12						10.0 – 12.4 2. greywacke base grading to black slst top.		
13–20				py lams		12.40 → 45.7m. black siltstone - laminated - pyritic - pyrite often mimics laminations qtz vns + assoc. pyrite common " @ - 22.0m - 25.0 – 26.0m. - laminations ~ 45° to C.A.	Cyss SILT	PQ-6



REMARKS

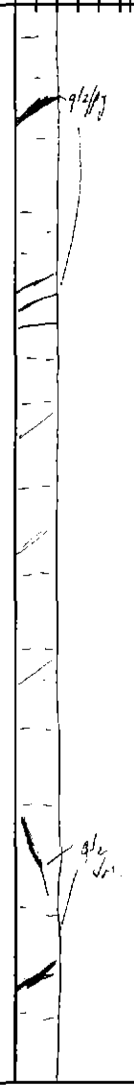
RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12 **SHEET** 2 **OF** 18

PROJECT :	White Spur
PROSPECT :	
DATE :	12/3/98
LOGGED BY :	ALE

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No (PREFIX)	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY.)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
21–40				qtz/py (22); qtz vn (36)		qtz veining common both 45° to CA + x cutting core axis @ various orientations	Cyss SILT	PQ-6



REMARKS

6809

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 3 OF 18

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

PROJECT :	White Spar
PROSPECT :	
DATE :	12/3
LOGGED BY :	ACE

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY.)	GEOLOGY NOTES	SUMMARY ROCK	ALTERATION
41								
42						Black Siltstone. pyritic + qtz/veined		
43							Cyss	VSILT P–6
44								
45								
46							Cys/Cys	VDFM-SILT P–3
47			5°60°			45.7 – 47.4m small graded and intermixed sequence.		
48						Small Sandstone base ~5cm thick grading up into mixed ashy/black siltstone		
49								
50								
51								
52								
53				~				
54						47.4 → 72.90m		
55						large section of generally ashy siltstone	Cya	VDFF – VDFA
56								
57						– shearing section @ 53.2m & 53.5m.		
58								
59								
60								

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 4 OF 18

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

PROJECT :	White Spar
PROSPECT :	
DATE :	12/3/
LOGGED BY :	ACE

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY.)	GEOLOGY NOTES	SUMMARY ROCK	ALTERATION
61								
62								
63								
64								
65								
66								
67								
68							Cya	VDFF - VDFA
69								
70								
71								
72								
73						72.9 → 73.18 – small basal unit of m-g sandstone		
74						73.18 → 75.53 single unit of graded sandstone m-g → f-g	Cyn	VDFM
75			50 45°					
76								
77								
78						75.53 → 80.? qtz/f'spar phyric, altd and m-g volc. sandstone unit.	Cyh	VRCLM
79								
80								

REMARKS

006955

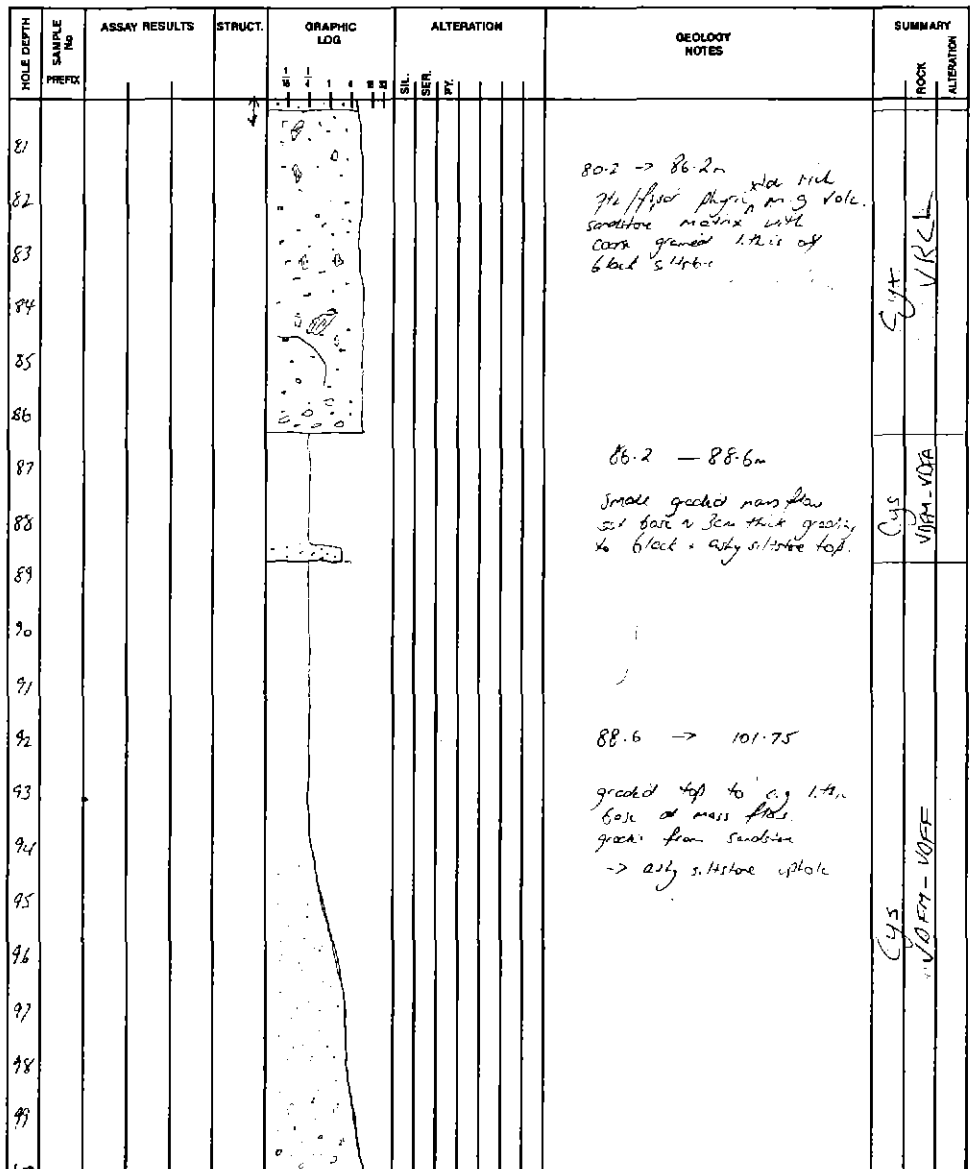
RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 5 OF 18

PROJECT :	White Spur
PROSPECT :	
DATE :	12/3/
LOGGED BY :	ALE

— Bedding
⌊ Cleavage
▲ Foliation
~~~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold



REMARKS

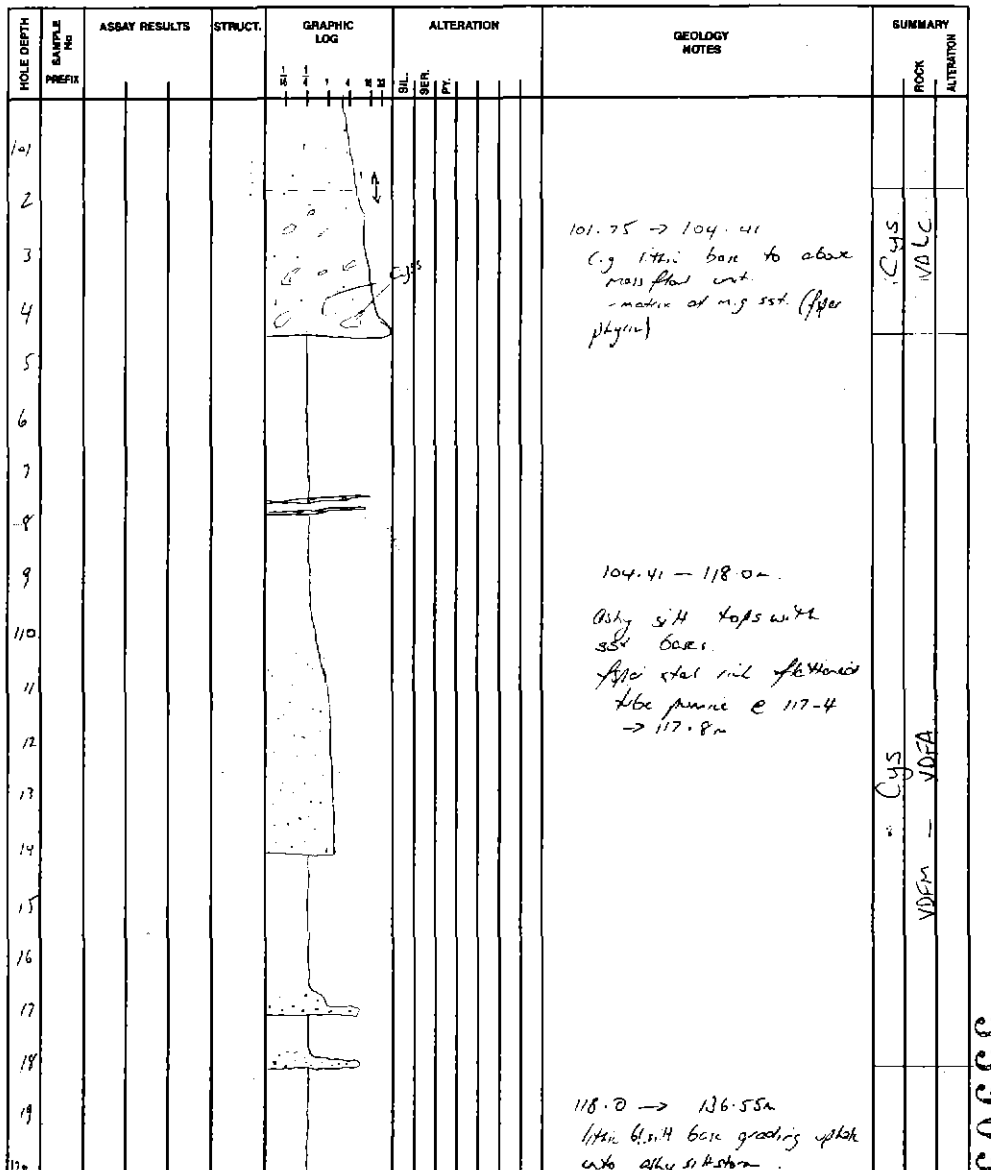
RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 6 OF 18

PROJECT :	White Spur
PROSPECT :	
DATE :	12-3-
LOGGED BY :	ALE

— Bedding
⌊ Cleavage
▲ Foliation
~~~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold



REMARKS

Cased off HQ → NQ @ 120.1m

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 7 OF 18

PROJECT :	White Spur
PROSPECT :	
DATE :	12/3/
LOGGED BY :	ACE

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No (PREFIX)	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY.)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
21			S•60°					
22								
23								
24								
25								
26						D.46		
27								
28								
29								
130							Cys	VDFM – VDFA
31								
32								
33								
34								
35				Cys clsts				
36								
37								
38						126.55 – 139.4 - small mass flow – black silt clasts in base grading up into ashy silt.	Cys	VDLC - VDFA
39								
140								

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 8 OF 18

PROJECT :	White Spur
PROSPECT :	
DATE :	12/3/
LOGGED BY :	ACE

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH	SAMPLE No (PREFIX)	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION (SIL. SER. PY.)	GEOLOGY NOTES	SUMMARY ROCK	SUMMARY ALTERATION
41								
42						139.4 – 144.0 · Ashy silt minor flattened tube pumice (fp xtal rich).	Cys	VDFF - VDFA
43								
44								
45								
46							Cys	VDFM – VDFA
47						144.0 – 149.18 sequence of mass flows with f.g – m.g sst bases grading to ashy/silt tops. - Dacitic composition?		
48								
49								
150								
51								
52								
53						149.18 → ~172		
54						graded mass flow.		
55						Ashy tops grading down through fg-mg		
56						172.0 ↓ 199.45 → c.g sandstone with		
57						a xtal fp phyric rich	Cys	VDFA
58						Volcaniclastic sandstone + lithic base (185-199.45)		
59								
160								

REMARKS

55 9092

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 9 OF 18

PROJECT :	White Spur
PROSPECT :	
DATE :	12/31
LOGGED BY :	ALE

— Bedding
⌴ Cleavage
▲ Foliation
~~~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG (7/16, 1/4, 1, 4, 16, 32) | ALTERATION (SIL. SER. PY.) | GEOLOGY NOTES | SUMMARY ROCK ALTERATION

61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 180

Cys
VDFM - VDFA

Cyx
VRLX

172.0 - 183.0
Well mel gtz/feldspar phyric sandstone

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 10 OF 18

PROJECT :	White Spur
PROSPECT :	
DATE :	12/31
LOGGED BY :	ALE

— Bedding
⌴ Cleavage
▲ Foliation
~~~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG (1/16, 1/4, 1, 4, 16, 32) | ALTERATION (SIL. SER. PY.) | GEOLOGY NOTES | SUMMARY ROCK ALTERATION

81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 200

≤ 50°

Cyx
VRLX

Cyx
VRLC

183 - 199.45m

Coarse lithic and bar to gradial mass flow unit

- Some pyritic clasts - are they marker clasts?
- rhyolitic clasts to 15cm ø bar
- Some clasts are black silt

REMARKS

559093

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

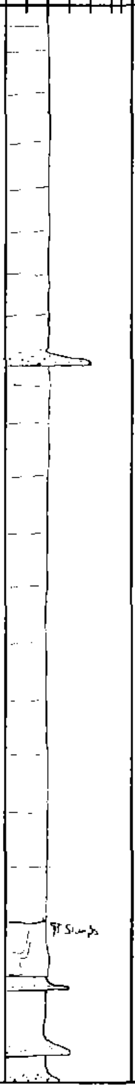
SHEET 11 OF 18

PROJECT :	White Spar
PROSPECT :	
DATE :	12/3/
LOGGED BY :	ALE

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG | ALTERATION (SIL. SER. PY.) | GEOLOGY NOTES | SUMMARY (ROCK, ALTERATION)

Hole depth: 1, 2, 3, 4, 5, 6, 7, 8, 9, 210, 11, 12, 13, 14, 15, 16, 17, 18, 19, 220



STRUCT.: 5°·48°

Geology notes:

199.45 → 206.74m
fspar xtal rich sst base grading up into black slst top.
Py @ base of sst in reducing zone with bl. slst

206.74 217.09.
- black siltstone. often. dissem with pyrite and associated with qtz as veins + veinlets.

217.09 → 218.04
black siltstone + dacitic interbedded ashy silt.

Summary:

Rock	Alteration
Cyss VDFM - SILT	P - 2
VDFA	
Cyss SILT	P - 4
Cyss SILT/VDFA	P - 2

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 12 OF

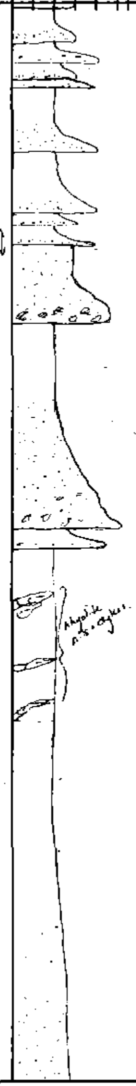
PROJECT :	White Spar
PROSPECT :	
DATE :	12/3/
LOGGED BY :	ALE

Legend: Bedding; Cleavage; Foliation; Fault, Shear; Breccia; Broken core; Disseminated; Massive; Pervasive; Narrow vein; * Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG | ALTERATION (SIL. SER. PY.) | GEOLOGY NOTES | SUMMARY (ROCK, ALTERATION)

Hole depth: 221, 22, 23, 24, 25, 26, 27, 28, 29, 230, 31, 32, 33, 34, 35, 36, 37, 38, 39, 240

STRUCT.: So. 60°



Geology notes:

218.04 → 226.0
Sequence of small graded units often with a f.g.-m.g. sandstone base, grading up to an ashy siltstone top.

224.58 → 226.0 - confusing zone of c.g. lithic + sandstone → lithic c.g. clastic base of black siltstone top

226.0 → 229.8 m
C.g. lithic base grading upward to ashy siltstone top.

230.17 → 233.3
Zone of ashy siltstone with small sills + dykes of intrusive rhyolitic rock - peperitic contacts?

233 → 246m
fspar phyric volcaniclastic graded sst
- moderate sericite alteration from ~ 240m

Summary:

Rock	Alteration
Cys. VDFM - VDFA	
Cys VDLM	
Cys VDLM - VDFA	
Cya VDFA-IRL	
Cym VDFA	

REMARKS

559094

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 13 OF

PROJECT	White Spur
PROSPECT	
DATE	16/3/98
LOGGED BY	ALE

Bedding · Cleavage · Foliation · Fault, Shear · Breccia · Broken core · Disseminated · Massive · Pervasive · Narrow vein · * Visible gold

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS Cu	Pb	Zn	STRUCT.	GRAPHIC LOG	ALTERATION SIL. SER. PY.	GEOLOGY NOTES	SUMMARY ROCK	ALTERATION
241	201	8	141	241					CyS	
42	202	10	74	145					VDFM	
43	203	9	23	150						
44	204	8	19	63						
45	205	6	25	51						
46	206	7	18	50						
47	207	3	9	22						
48	208	3	6	16						
49	209	5	26	31	Sa. 55°			246.0 → 249.57 - Contact with CVL - moderately sericite altered - Bom at ground unit with intrus to 10cm		S-5
50	210	7	7	44						
51										
52	211	7	5	36						
53	212	8	114	203				249.57 → 353.5m		
54	213	5	17	55				Central Volcanics Stockade	CcV	AO3-4
55	214	8	115	160				medium grained feldspar phyric pumiceous sandstone + minor units of siltstone	VDFM	
56	215	8	346	479				- quite chloritic		
57	216	10	212	307				- often albitised		
58	217	5	20	86				- minor sericite alt'n		
59	218	4	34	53						
260	219	7	63	108						

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 14 OF 18

PROJECT	White Spur
PROSPECT	
DATE	12/3/
LOGGED BY	ALE

Bedding · Cleavage · Foliation · Fault, Shear · Breccia · Broken core · Disseminated · Massive · Pervasive · Narrow vein · * Visible gold

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION SIL. SER. PY. ALBITE	GEOLOGY NOTES	SUMMARY ROCK	ALTERATION
61							CcV	
62							VDFM	
63								AO-4
64								
65								
66								
67								
68								
69								
270								
71								
72								
73								
74								
75			Sa. 50°					
76								
77								
78								
79								
280								

REMARKS

66066

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 15 OF 18

PROJECT :	White Spur
PROSPECT :	
DATE :	12/31
LOGGED BY :	ALE

— Bedding
⌊ Cleavage
▲ Foliation
~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG | ALTERATION (SIL. SER. PY. ALBITE) | GEOLOGY NOTES | SUMMARY (ROCK, ALTERATION)

80 81 82 83 84 85 86 87 88 89 290 91 92 93 94 95 96 97 98 99 300

qtz chlorite vn

289.0 - 300m
Zone of intense albitisation

Ccv
VDFM
AO-6
AO-4

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 16 OF 18

PROJECT :	White Spur
PROSPECT :	
DATE :	12/31
LOGGED BY :	ALE

— Bedding
⌊ Cleavage
▲ Foliation
~ Fault, Shear
Breccia
Broken core
Disseminated
Massive
Pervasive
Narrow vein
* Visible gold

HOLE DEPTH | SAMPLE No PREFIX | ASSAY RESULTS | STRUCT. | GRAPHIC LOG | ALTERATION (SIL. SER. PY. ALBITE) | GEOLOGY NOTES | SUMMARY (ROCK, ALTERATION)

01 02 03 04 05 06 07 08 09 310 11 12 13 14 15 16 17 18 19 320

307 - 310.82
Sheeted mass flow with thin sst bed ~ 3cm thick

311.5 - intense brittle qtz albite zone

Ccv
VDFM
AO-4

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 17 OF 18

PROJECT	White Spur
PROSPECT	
DATE	12/3/
LOGGED BY	ACE

Bedding · Cleavage · Foliation · Fault, Shear · Breccia · Broken core · Disseminated · Massive · Pervasive · Narrow vein · * Visible gold

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION	GEOLOGY NOTES	SUMMARY
					BIL. SER. PY. ALBITE		ROCK: Cev / VOFM; ALTERATION: AO-4
21							
22							
23							
24							
25							
26							
27							
28							
29							
330							
31							
32							
33							
34							
35							
36							
37							
38							
39							
340							

REMARKS

RGC EXPLORATION PTY LTD

DRILL HOLE No WSP-12

SHEET 18 OF 18

PROJECT	White Spur
PROSPECT	
DATE	12/3/
LOGGED BY	ACE

Bedding · Cleavage · Foliation · Fault, Shear · Breccia · Broken core · Disseminated · Massive · Pervasive · Narrow vein · * Visible gold

HOLE DEPTH	SAMPLE No PREFIX	ASSAY RESULTS	STRUCT.	GRAPHIC LOG	ALTERATION	GEOLOGY NOTES	SUMMARY
					BIL. SER. PY. ALBITE		ROCK: Cev / VOFM; ALTERATION: AO-4
41							
42							
43							
44							
45							
46							
47							
48							
49							
350							
51							
52							
53							
54				E.O.H 353.5m			

REMARKS

Hole_Id	Sample No	Sample Type	Depth From	Depth To	CU_A	PB_A	ZN_A	AG_A	AG_N	AS_N	AU_N	BA_N	BR_N	CA_N	CE_N	CO_N	CR_N	CS_N
WSP12	1020201	HALFCORE	240.00	241.00	8	141	241	-1	-5	21	-5	1410	-2	-1	146	-1	214	5
WSP12	1020202	HALFCORE	241.00	242.00	10	74	145	-1	-5	19	-5	1840	-2	-1	140	-1	10	4
WSP12	1020203	HALFCORE	242.00	243.00	9	23	150	-1	-5	16	-5	1650	-2	-1	145	-1	197	4
WSP12	1020204	HALFCORE	243.00	244.00	8	19	63	-1	-5	21	-5	1910	-2	-1	149	-1	8	4
WSP12	1020205	HALFCORE	244.00	245.00	6	25	51	-1	-5	64	-5	1750	-2	-1	145	2	176	4
WSP12	1020206	HALFCORE	245.00	246.00	7	18	50	-1	-5	16	-5	2320	-2	1.1	139	-1	13	4
WSP12	1020207	HALFCORE	246.00	247.00	3	9	22	-1	-5	27	-5	2420	-2	-1	157	-1	160	6
WSP12	1020208	HALFCORE	247.00	248.00	3	6	16	-1	-5	2	-5	2400	-2	-1	137	-1	8	7
WSP12	1020209	HALFCORE	248.00	249.57	5	26	31	-1	-5	6	-5	2540	-2	-1	126	2	260	5
WSP12	1020210	HALFCORE	249.57	251.00	7	7	44	-1	-5	9	-5	1620	-2	2.3	134	3	-5	12
WSP12	1020211	HALFCORE	251.00	252.00	7	5	36	-1	-5	4	-5	1060	-2	3.3	127	4	80	10
WSP12	1020212	HALFCORE	252.00	253.00	8	114	263	-1	-5	6	-5	966	-2	2.5	127	4	-5	9
WSP12	1020213	HALFCORE	253.00	254.00	5	17	55	-1	-5	6	-5	1010	-2	2.9	128	5	65	10
WSP12	1020214	HALFCORE	254.00	255.00	8	115	160	-1	-5	4	-5	958	-2	3	122	3	8	10
WSP12	1020215	HALFCORE	255.00	256.00	8	346	479	-1	-5	6	-5	735	-2	4.8	101	3	79	10
WSP12	1020216	HALFCORE	256.00	257.00	10	212	307	-1	-5	6	-5	802	-2	2.7	144	4	-5	12
WSP12	1020217	HALFCORE	257.00	258.00	5	20	86	-1	-5	5	-5	726	-2	4.7	114	4	62	11
WSP12	1020218	HALFCORE	258.00	259.00	4	34	53	-1	-5	5	-5	911	-2	3.6	127	5	-5	10
WSP12	1020219	HALFCORE	259.00	260.00	7	63	108	-1	-5	5	-5	900	-2	2.7	120	3	63	9
			Dectection Limit		2	3	2	1	5	1	5	100	1	1	2	1	5	1
			Units		ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	%	ppm	ppm	ppm	ppm
			Method		A101	A101	A101	A101	N701	N701	N701	N701	N701	N701	N701	N701	N701	N701

Hole_Id	Sample No	Sample Type	Depth From	Depth To	EU_N	FE_N	HF_N	IR_N	K_N	LA_N	LU_N	MO_N	NA_N	RB_N	SB_N	SC_N	SE_N	SM_N
WSP12	1020201	HALFCORE	240.00	241.00	1.1	1.09	4.3	-20	2.6	69.5	0.5	-5	2.47	120	2.8	2.6	-5	7.9
WSP12	1020202	HALFCORE	241.00	242.00	0.9	1.38	4.4	-20	3.2	65.9	0.5	-5	2.45	125	2.9	2.5	-5	7.5
WSP12	1020203	HALFCORE	242.00	243.00	1.2	0.97	4.2	-20	3.2	69.8	0.6	-5	2.68	115	2.3	2.5	-5	7.7
WSP12	1020204	HALFCORE	243.00	244.00	0.9	1.17	4.2	-20	2.8	70.4	0.5	-5	2.71	130	2.1	2.6	-5	8
WSP12	1020205	HALFCORE	244.00	245.00	0.7	0.82	4.7	-20	3.1	69.4	0.5	-5	2.74	130	2.8	2.5	-5	7.8
WSP12	1020206	HALFCORE	245.00	246.00	1.7	1.06	3.9	-20	2.9	65.8	0.5	-5	2.38	125	2.3	2.2	-5	8.4
WSP12	1020207	HALFCORE	246.00	247.00	0.9	1.02	4.3	-20	3.7	74.5	0.6	-5	1.97	160	1.5	2.6	-5	8.2
WSP12	1020208	HALFCORE	247.00	248.00	0.6	1.48	4.1	-20	4	63.2	0.5	-5	0.91	195	2.9	2.4	-5	7.2
WSP12	1020209	HALFCORE	248.00	249.57	0.8	1.08	3.7	-20	3.9	60.2	0.5	-5	1.3	155	2.1	2.3	-5	6.6
WSP12	1020210	HALFCORE	249.57	251.00	2.1	2.56	7.1	-20	3.9	58.3	0.7	-5	1.25	245	2.1	12	-5	10.7
WSP12	1020211	HALFCORE	251.00	252.00	2	2.39	6.9	-20	3	53.9	0.6	-5	1.26	205	1	12.2	-5	10.2
WSP12	1020212	HALFCORE	252.00	253.00	2.4	2.51	6.7	-20	3	54.2	0.6	-5	1.64	200	1.3	11.9	-5	10.2
WSP12	1020213	HALFCORE	253.00	254.00	2.7	2.32	7	-20	2.6	55.3	0.5	-5	1.74	195	1.1	11.8	-5	10.7
WSP12	1020214	HALFCORE	254.00	255.00	2.4	2.31	6.6	-20	2.6	52	0.6	-5	1.61	165	1.6	11.4	-5	9.8
WSP12	1020215	HALFCORE	255.00	256.00	2.3	2.06	5.5	-20	2.7	42.1	0.6	-5	1.43	170	2.2	10.2	-5	9.2
WSP12	1020216	HALFCORE	256.00	257.00	2.2	2.15	7.1	-20	2.8	61.5	0.6	-5	1.45	200	2	11.8	-5	11.6
WSP12	1020217	HALFCORE	257.00	258.00	1.8	2.58	6.1	-20	2.6	48	0.6	-5	1.43	155	2.6	10.8	-5	9.3
WSP12	1020218	HALFCORE	258.00	259.00	2	2.74	6.5	-20	2.7	54.8	0.7	-5	1.42	170	2.3	11.4	-5	10.4
WSP12	1020219	HALFCORE	259.00	260.00	1.5	2.4	6.7	-20	2.6	51.1	0.7	-5	1.77	190	1.3	11.6	-5	9.9
			Dectection Limit		0.5	0.02	0.5	20	0.2	0.5	0.2	-5	0.01	20	0.2	0.1	5	0.2
			Units		ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
			Method		N701	N701	N701	N701	N701	N701	N701	N701	N701	N701	N701	N701	N701	N701

Hole_Id	Sample No	Sample Type	Depth From	Depth To	TA_N	TE_N	TH_N	U_N	W_N	YB_N	ZN_N	ZR_N	P_X	TI_X	V_X	ZR_X
WSP12	1020201	HALFCORE	240.00	241.00	3	-20	33.3	9	-2	3.5	266	-500	61	852	5	116
WSP12	1020202	HALFCORE	241.00	242.00	3	-20	33	9	-2	3.5	154	-500	52	858	8	118
WSP12	1020203	HALFCORE	242.00	243.00	3	-20	32.3	9	-2	3.7	193	-500	66	870	8	113
WSP12	1020204	HALFCORE	243.00	244.00	1	-20	32.8	9	-2	3.5	-100	-500	61	857	-5	112
WSP12	1020205	HALFCORE	244.00	245.00	2	-20	34.5	9	-2	3.7	-100	-500	62	834	9	115
WSP12	1020206	HALFCORE	245.00	246.00	2	-20	31.3	8	-2	3.3	-100	-500	76	755	-5	107
WSP12	1020207	HALFCORE	246.00	247.00	2	-20	35.5	9	-2	3.6	-100	-500	55	834	-5	119
WSP12	1020208	HALFCORE	247.00	248.00	2	-20	32.2	8	-2	3.3	-100	-500	38	788	6	115
WSP12	1020209	HALFCORE	248.00	249.57	2	-20	28.8	7	-2	3	-100	-500	56	701	6	100
WSP12	1020210	HALFCORE	249.57	251.00	2	-20	22.1	6	-2	4.5	-100	-500	568	2526	36	246
WSP12	1020211	HALFCORE	251.00	252.00	2	-20	20	4	-2	4.5	-100	-500	573	2056	31	233
WSP12	1020212	HALFCORE	252.00	253.00	2	-20	19.5	5	-2	4	326	-500	596	2359	37	233
WSP12	1020213	HALFCORE	253.00	254.00	1	-20	19.3	6	-2	3.8	-100	-500	601	2206	31	237
WSP12	1020214	HALFCORE	254.00	255.00	-1	-20	18.7	5	-2	4.3	219	-500	542	2180	29	224
WSP12	1020215	HALFCORE	255.00	256.00	2	-20	17	5	-2	4	579	-500	502	1887	28	202
WSP12	1020216	HALFCORE	256.00	257.00	-1	-20	19.7	5	-2	4	358	-500	542	2579	34	246
WSP12	1020217	HALFCORE	257.00	258.00	1	-20	17.5	5	-2	4.2	143	-500	549	2218	30	218
WSP12	1020218	HALFCORE	258.00	259.00	-1	-20	19.7	5	-2	4.3	-100	-500	565	2233	30	237
WSP12	1020219	HALFCORE	259.00	260.00	1	-20	19.8	5	-2	4.3	140	-500	538	2305	33	232
			Dectection Limit		1	5	0.5	2	2	0.5	100	500	30	100	5	5
			Units		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
			Method		N701	N701	N701	1	N701	N701	N701	N701	X401	X401	X401	X401

WSP12 Magnetic susceptobility Measurements magsusWSP1012.xls

Hole	From	To	Core size	Sensor Position	Reading	Min	Max
WSP12	0	12	HQ	2	0	0	0
WSP12	13	13	HQ	2	20	0	20
WSP12	14	14	HQ	2	15	0	15
WSP12	15	16	HQ	2	0	0	0
WSP12	16	17	HQ	2	20	0	30
WSP12	17	18	HQ	2	15	0	20
WSP12	18	19	HQ	2	10	10	10
WSP12	19	20	HQ	2	20	0	20
WSP12	20	21	HQ	2	40	10	40
WSP12	21	22	HQ	2	0	0	0
WSP12	22	23	HQ	2	20	10	100
WSP12	23	24	HQ	2	40	10	80
WSP12	24	25	HQ	2	15	0	40
WSP12	25	40	HQ	2	0	0	0
WSP12	40	41	HQ	2	30	0	50
WSP12	41	42	HQ	2	20	0	40
WSP12	42	43	HQ	2	0	0	50
WSP12	43	44	HQ	2	20	0	50
WSP12	44	46	HQ	2	0	0	0
WSP12	46	47	HQ	2	10	0	70
WSP12	47	87	HQ	2	0	0	0
WSP12	87	88	HQ	2	150	0	200
WSP12	88	89	HQ	2	100	15	300
WSP12	89	92	HQ	2	0	0	0
WSP12	92	93	HQ	2	15	15	20
WSP12	93	94	HQ	2	20	20	20
WSP12	94	120	HQ	2	0	0	0
WSP12	120	185	NQ	2	0	0	0
WSP12	185	186	NQ	2	20	0	30
WSP12	186	197	NQ	2	0	0	0
WSP12	197	198	NQ	2	60	20	80
WSP12	198	199	NQ	2	40	0	80
WSP12	199	200	NQ	2	350	200	350
WSP12	200	201	NQ	2	15	0	20
WSP12	201	202	NQ	2	200	100	400
WSP12	202	203	NQ	2	225	150	225
WSP12	203	204	NQ	2	225	50	1000
WSP12	204	205	NQ	2	20	0	40
WSP12	205	206	NQ	2	300	200	350
WSP12	206	207	NQ	2	225	20	280
WSP12	207	208	NQ	2	300	60	700
WSP12	208	209	NQ	2	350	300	350
WSP12	209	210	NQ	2	250	200	1000
WSP12	210	211	NQ	2	60	60	70
WSP12	211	212	NQ	2	225	80	225
WSP12	212	213	NQ	2	250	200	300
WSP12	213	214	NQ	2	225	150	225
WSP12	214	215	NQ	2	200	45	250
WSP12	215	274	NQ	2	0	0	0
WSP12	274	275	NQ	2	0	0	60
WSP12	275	278	NQ	2	0	0	0
WSP12	278	279	NQ	2	0	0	70
WSP12	279	301	NQ	2	0	0	0
WSP12	301	302	NQ	2	0	0	50
WSP12	302	353	NQ	2	0	0	0

559102

Appendix 5

White Spur DHEM Report

C Dauth

559103

RGC Exploration

RGC Exploration Pty Limited

ACN 001 426 946
89 Burswood Road Victoria Park WA 6979 Australia
Telephone: 61 (08) 9442 8100 Fax: 61 (08) 9442 8181

TECHNICAL NOTE

To : **Michael Vicary**

cc. : **RGC Exploration Information Centre Reference:**

From : **Chris Dauth**

Date : **January 1999**

Subject : **White Spur DHEM Results**

INTRODUCTION

The White Spur Project is situated within the Mt Read Volcanics of Western Tasmania. The project was at the time of the above mentioned survey being explored by RGC Exploration for its potential to host Rosebery style VHMS base metals mineralisation. This TECHNOTE summarises results from down-hole three component time domain electromagnetic geophysical surveys (DHEM) conducted during early 1998.

During the period February 2nd to 10th 1998 down-hole three component time domain electromagnetic surveys were completed on diamond drill-holes WSP7, WSP8, WSP9, and WSP11 at the White Spur Project. The CRONE three component system was used for all holes operated by OUTER RIM Exploration Services. The aim of the DHEM surveys was to delineate off-hole electromagnetic responses that could be attributed to massive sulphide accumulation either as stringer style or strataform VHMS mineralisation. Drillholes WSP7, 8, and 9 were drilled in the vicinity of a previous drillhole WSP5 which intersected minor basemetals mineralisation (17m @ 0.6% Zn, 0.4% Pb, and 4.5g/t Ag from Vicary 1998) and exhibited a broad wavelength axial component response in DHEM in addition to numerous shorter wavelength responses apparent in all components. The exact geometrical nature of the sources of the off-hole conductors were unable to be accurately determined as a consequence of multiple conductive black siltstone horizons providing many spurious responses. Results of the previous surveys on WSP5 are documented by Dauth 1998.

An interpretation of results is not the object of this TECHNOTE, but more to document work completed and comment on any particular results of interest. It was initially intended to produce a complete interpretation on the combined DHEM results from all holes at this prospect, however, the last hole targeting the horizon was being drilled during the DHEM program, and future renewed interest by RGC in the area would be required to embark on such an interpretation. Copies of hardcopy plans provided by the contractor are provided in the APPENDIX with this TECHNOTE as are copies of digital data. Re-plotting of all results at common linear scales and computer modelling were conducted during the survey period, however, these results were only produced on screen, and no hardcopy plans were produced, hence are not provided with this TECHNOTE.

GEOLOGY

The geology is described well by Vicary 1998. Following are drillhole summary logs of WSP 7, 8, and 9 for use with interpretation.

RGC EXPLORATION DRILL HOLE RECORD

HOLE NUMBER	WSP7	**DRILLED BY**	Fred Ortner
PROJECT	White Spur	**NORTHING**	5361157
PROSPECT		**EASTING**	376772
DESIGNED BY	M Vicary	**RL**	557
LOGGED BY	M Vicary	**INCLINATION**	-75
COMMENCED		**AZIMUTH**	090
FINISHED		**EOH**	598.7

PURPOSE

To test a possible DHEM conductor located at the White Spur Formation - Central Volcanic Sequence contact about 300m north of WSP5, which intersected low grade Zn - Pb mineralisation. The hole was located about 100m south of a possible growth fault.

SURVEY DATA

DEPTH	INC.	AZ.	DEPTH	INC.	AZ.	DEPTH	INC.	AZ.
0	-75	090	240	-73.2	100	450	-73.2	112
30	-74.7	094	270	-73.8	102	480.7	-73.5	113
60	-74.7	096	300	-73	103	510	-73.7	115
90	-74.2	095	330	-73.2	104	540	-73.4	117
120	-74	095	360	-73.2	105	570	-73	118
150	-73.75	095	390	-73	106	598.9	-73.2	118
181	-73.8	097	420	-73	103			
211	-74	098	442.7	-73	110			

DRILLING DATA

HOLE SIZE	DEPTH	COMMENTS
HQ	0 - 193.7	Hole cased with PVC
NQ	193.7 - 598.7	

SUMMARY

Summary Log:-

0 - 144.45	White spur Formation
144.45 - 598.7	Central Volcanic Sequence

The hole intersected the White Spur Formation - Central Volcanics Sequence contact at 144.45m, much shallower than planned. The contact was highly sheared and most likely faulted. The Central Volcanics Sequence from 144.45 to 168m was weak to moderate sericite - chlorite and albite altered with minor disseminated pyrite and rare sphalerite and galena microveins.

RGC EXPLORATION DRILL HOLE RECORD

HOLE NUMBER	WSP8	**DRILLED BY**	Fred Ortner
PROJECT	White Spur	**NORTHING**	5360986
PROSPECT		**EASTING**	376812
DESIGNED BY	M Vicary	**RL**	565
LOGGED BY	M Vicary	**INCLINATION**	-60
COMMENCED	24/09/97	**AZIMUTH**	090
FINISHED	03/11/97	**EOH**	385.3

PURPOSE

To test the White Spur Formation - Central Volcanic Sequence contact about 150m north of WSP5, which intersected low grade Zn - Pb mineralisation. The hole was targeted at a combined CSAMT, DIGHEM and DHEM anomaly.

SURVEY DATA

DEPTH	INC.	AZ.	DEPTH	INC.	AZ.	DEPTH	INC.	AZ.
0	-60	090	120	-55.2	098	241	-50	098
30	-59.2	100	150	-54	097	271	-48	098
34	-58.7	096	180	-52.5	098	301	-46.5	102
60	-58	097	205	-51.5	098	330	-45	104
91.3	-56.9	097	223	-50.75	098	360	-44.8	105

DRILLING DATA

HOLE SIZE	DEPTH	COMMENTS
HQ	0 - 278.4	Hole cased with PVC to end of hole.
NQ	278.4 - EOH	

SUMMARY

Summary Log:-	
0 - 8.4	Mass flows
8.4 - 21.1	Black siltstone
21.1 - 47.0	Rhyolite intrusion
47.0 - 64.7	Black siltstone
64.7 - 85.2	Rhyolite intrusion
85.2 - 117.0	Black siltstone
117.0 - 170.3	Ashy siltstone and fine grained dacitic volcaniclastic sandstone
170.3 - 215.0	Black siltstone
215.0 - 218.2	Dacitic volcaniclastic sandstone
218.2 - 243.2	Interbedd black siltstone and ashy siltstone
243.2 - 264.9	Ashy siltstone and fine grained dacitic volcaniclastic sandstone
264.9 - 277.2	Altered Central Volcanic Sequence
	inc. 265 - 267.8m 2.8m @ 0.7% Zn and 0.2% Pb
277.2 - 385.3	Central Volcanic Sequence

RGC EXPLORATION DRILL HOLE RECORD

HOLE NUMBER	WSP9	**DRILLED BY**	Fred Ortner
PROJECT	White Spur	**NORTHING**	5360559.4
PROSPECT	White Spur	**EASTING**	377065.4
DESIGNED BY	M Vicary	**RL**	565
LOGGED BY	M Vicary	**INCLINATION**	-80
COMMENCED		**AZIMUTH**	056
FINISHED	12/12/1997	**EOH**	508.0

PURPOSE

WSP9 was designed to test the White Spur Formation - Central Volcanic Sequence contact about 400m south of WSP5. The hole was planned to intersect the target horizon about 450m down hole.

SURVEY DATA

DEPTH	INC.	AZ.	DEPTH	INC.	AZ.	DEPTH	INC.	AZ.
0	-80	056	184	-78	058	376	-76.75	062
34	-80	056	210	-77.8	058	427	-76.25	066
61	-79.25	056	241	-77.5	059	457	-77	066
90	-79.2	058	277	-76.8	061	487	-78	067
120	-78.8	057	316	-76.5	062			
151	-79	057	346	-76.25	061			

DRILLING DATA

HOLE SIZE	DEPTH	COMMENTS
HQ	0 - 55.3	
NQ	55.3 - 508.3	

SUMMARY

Summary Log:-	
0 - 31.5	Mass flow
31.5 - 169.2	Rhyolite Intrusion
169.2 - 189.8	Black siltstone
189.8 - 197.0	Zone of quatz veining and tectonised siltstone
197.0 - 199.1	Siltstone and rhyolite breccia
199.1 - 207.8	Rhyolite intrusion
207.8 - 217.2	Black siltstone
217.2 - 226.5	Graded mass flows
226.5 - 355.0	Back siltstone
355.0 - 358.8	Fine - medium grained volcaniclastic sandstone
358.8 - 378.0	Ashy siltstone and fine grained sandstone
378.0 - 415.0	Central Volcanic Sequence
415.0 - 420.1	Black siltstone
420.1 - 425.6	Medium grained volcaniclastic sandstone
425.6 - 442.4	Black siltstone
442.4 - 455.1	Interbedded black siltstone and medium grained volcaniclastic sandstone
455.1 - 459.0	Black Siltstone
459.0 - 476.0	Fine - medium grained volcaniclastic sandstone and rhyolite peperite.
476.0 - 508.0	Central Volcanic Sequence

RESULTS

Specifications for all surveys are well documented in the contractor report in the APPENDIX. Transmitter loop positions are similarly well documented in the APPENDIX. A regional plan outlining drillhole locations and DHEM transmitter loop positions (excluding WSP11 located further to the north) is presented in Plan 1. All loop corner location coordinates and RL levels are indicated on Plan 1. Drillhole collars and geological contacts are also displayed in Plan 1. The drillhole collar and Tx loop location for WSP11 is presented in Plan 2. The DHEM survey parameters and results are summarised as follows:

Hole	Collar East (AMG)	Collar North (AMG)	RL	Depth drilled	Tx Loops	Comments
WSP7	376772	5361157	557	598.7	1, 10	Relatively non-anomalous response. Broad crossover in axial +ve to -ve at 270m migrating downhole at later time. Off-hole in axial centred at 50m attributed to black siltstone.
WSP8	376812	5360986	565	385.3	1, 10	EM responses at 85m and 175m downhole attributed to intersected pyritic black siltstones. A broad wavelength -ve axial feature for Tx1 again cannot be explained.
WSP9	377065	5360559	565	508	1, 9	EM responses at 200m, 300m and 440m downhole are associated with black siltstone intersections in the drillhole. The broad wavelength -ve anomaly in the axial component is repeated, and shows closure at 500m downhole. This indicates a centre at 440m downhole and a wavelength of up to 300m Most prominant in channels 12-18.
WSP11	376520	5362535	NA	290	11	Strong off-hole response centred at 120m down-hole. V(CRONE X) component cross-over of -ve to +ve suggests an up-dip source. Associated with intersected black siltstone. No further anomalies.

Numerous interpreted short wavelength in-hole and off-hole DHEM anomalies were encountered in the results. These are generally able to be "explained" or perhaps better worded as associated with intersected black siltstone horizons. The black siltstones at White Spur are variably pyritic and pyrrhotitic giving rise to non-homogenous EM response. The commonly observed broad wavelength DHEM response observed as an axial component positive to negative cross-over migrating down the hole in later times proves more difficult to interpret. This response is only observed in the immediate area at White Spur, and is seen in all holes logged. The axial component results from WSP9 Tx Loop 1 are a classic example. Initial interpretation using results from only WSP5 suggested that the response was worthy of further investigation. The logging of additional holes in the region only confirms the response. A possible geological scenario giving rise to this response is that the thick sequence of conductive black siltstones shallows in dip further down-dip, and may act as a flat lying conductor well coupled below Tx loops 1, 2, and 9. Further analysis including modelling of the DHEM results would be required to confidently suggest a source for this response.

Computer modelling using EMVISION was conducted on the results proposing a confined strataform conductor as the source of the response lying down-dip and between WSP5 and WSP9. WSP10 would have been positioned well to test this theory, however yet again did not intersect any geology that could explain a confined response. WSP10 was drilled deeper down-dip than any of the existing holes and did suggest a shallowing dip, perhaps giving evidence for the interpretation of a well coupled siltstone response beneath the Tx loops.

WSP11 was drilled further to the north along strike from WSP7, 8, and 9 and did not exhibit the same broad wavelength response. A shallow near hole response is attributed to a black siltstone above the hole. No further work is recommended.

REFERENCES

Dauth, C., 1998, White Spur Down-Hole Electromagnetic Survey Results, June 1997; RGC Internal Report No. 2317-9801

Vicary, M., 1998, Annual Report March 1997 - March 1998 White Spur; Vol. 1, 2, and 3, report to the Mines Dept., and RGC Internal Report No. 2317-9802

559108

APPENDIX

OUTER RIM Report on
DHEM survey results

Copied from RGC Exploration Internal Report No. 2317-9801c

559109

2317-9801c

OUTER-RIM EXPLORATION SERVICES

ACN 059 220 192

Geophysical Contracting Services

100% Australian Owned

35 Fleming Street,
(P.O. Box 1754)
AITKENVALE, QLD. 4814

Tel: 07 4725 3544
Fax: 07 4725 4805
Mob: 0412 54 9980
Email: oreserv@ozemail.com.au

Volume 1 of 3

Client	:	RGC Exploration Ltd
Prospect	:	Tyndall Creek and White Spur.
Area	:	Zeehan, Tas.
Survey	:	Borehole PEM Survey
Survey Period	:	2nd to 10th February 1998.
Operator	:	Brett Rankin.

DAILY LOG: RGC Exploration Limited - February, 1998

DATE	COMMENTS	CHARGES
31-01-98	Travelled from Melbourne to Burnie.	
	½ Mob. day	$ 275.00
01-02-98	Travelled from Burnie to Zeehan, arriving approximately midday. Contacted Chris Dauth from RGC to discuss the program. RGC was not ready for us to start work today so we caught up with paper work from the previous job.	
	½ Mob. day	$ 275.00
	½ Office day	N/C
02-02-98	Arrived in the field on the Tyndal Creek Grid at 7.45am. Dummied TC-16 to 25m - the hole was blocked by what appeared to be a pinched section in the poly pipe. We relocated to the White Spur Grid and dummied WSP-8 to the end of the hole. We laid out Loop #1 and logged all three components to 380m. We then laid out Loop #10 and departed from the field at 7.00pm.	
	SURVEY PARAMETERS:	
	Loop #1 :475 x 400m 376575E; 5361000N: 376540E; 5360730N 376925E; 5360720N: 377000E; 5361000N	
	Current :16 Amps Time Base :20 ms Ramp Time :0.5ms Sync :Cable	
	Hole No. **:WSP-8** 376812E, 5360560N Depth :380m Channels :31 Components :Z,X,Y	
	1 Survey day	$1250.00
	1 Field Assist. day	$ 180.00
03-02-98	Arrived in the field at 7:30am and dummied WSP-7 to the end of the hole. The dummy cable snapped at approx. 400m while recovering the dummy probe but it was retrieved. We surveyed all three components on WSP-7 to 590m (EOH) using Loop #1. We left the field at 5.30pm.	
	SURVEY PARAMETERS:	
	Loop #1 :475 x 400m 376575E; 5361000N: 376540E; 5360730N 376925E; 5360720N: 377000E; 5361000N	

Current :16 Amps
Time Base :20 ms
Ramp Time :0.5ms
Sync :Cable

Hole No. **:WSP-7**
376772E, 5361160N
Depth :590m
Channels :31
Components :Z,X,Y

1 Survey day $1250.00
1 Field Assist. day $ 180.00

04-02-98 Arrived in the field at 7:50am, connected Loop #10 and surveyed all three components on WSP-7 to 590m. We then recovered the cable, moved to WSP-8 and surveyed the Z component to 220m using loop #10. We then moved to hole WSP-9 where we recovered the dummy probe (Brett had dummied the hole by hand earlier in the day) and relocated to the Tyndal Creek grid. We re-dummied TYN-16, this time successfully - had to stretch the poly pipe to remove the kink. We left the field at 6.15pm.

SURVEY PARAMETERS:

Loop #10 :800 x 325m
376250E; 5361400N: 376250E; 5360600N
376525E; 5360600N: 376575E; 5361000N
376575E; 5361400N
Current :16 Amps
Time Base :20 ms
Ramp Time :0.5ms
Sync :Cable

Hole No. **:WSP-7**
376772E, 5361160N
Depth :590m
Channels :36
Components :Z,X,Y

Hole No. **:WSP-8**
376812E, 5360560N
Depth :220m
Channels :36
Components :Z

1 Survey day $1250.00
1 Field Assist. day $ 180.00

05-02-98 Arrived in the field at 8:45am. Returned to WSP-8 and completed logging the Z and X-Y components to 380m (EOH)

using Loop #10. We reconnected Loop #1, moved to WSP-9 and logged the Z component to 260m. We also recovered loop #10. It rained from approximately 11:00 to the end of the day - very damp indeed. We left the field at 5.15pm.

SURVEY PARAMETERS:

Loop #10	:800 x 325m 376250E; 5361400N: 376250E; 5360600N 376525E; 5360600N: 376575E; 5361000N 376575E; 5361400N
Current	:16 Amps
Time Base	:20 ms
Ramp Time	:0.5ms
Sync	:Cable
Hole No.	**:WSP-8** 376812E, 5360560N
Depth	:380m
Channels	:31
Components	:Z,X,Y
Loop #1	:475 x 400m 376575E; 5361000N: 376540E; 5360730N 376925E; 5360720N: 377000E; 5361000N
Current	:16 Amps
Time Base	:20 ms
Ramp Time	:0.5ms
Sync	:Cable
Hole No.	**:WSP-9** 377065E, 5360560N
Depth	:260m
Channels	:31
Components	:Z

1 Survey day	$1250.00
1 Field Assist. day	$ 180.00

06-02-98 Arrived in the field at 8:15am. We completed reading the Z component on WSP-9 to 495m (EOH) using Loop #1. We laid out Loop #9 while reading the X-Y components on WSP-9 to 385m using Loop #1. Unfortunately, a low battery stopped play at 4:15pm so we packed up and returned to the motel to dump the data.

SURVEY PARAMETERS:

Loop #1	:475 x 400m 376575E; 5361000N: 376540E; 5360730N 376925E; 5360720N: 377000E; 5361000N
Current	:16 Amps

Time Base :20 ms
Ramp Time :0.5ms
Sync :Cable

Hole No. **:WSP-9**
377065E, 5360560N
Depth :495m
Channels :31
Components :Z,X,Y

1 Survey day $1250.00
1 Field Assist. day $ 180.00

07-02-98 Arrived in the field at 8:15am and completed reading the X-Y components on WSP-9 from 385m to 495m (EOH) using Loop #1. We connected to Loop #9 and relogged the Z component on WSP-9 to 495m and the X-Y to 210m. Loop #1 was recovered whilst the logging was in progress. Unfortunately we were unable to complete the hole as the receiver registered low battery voltage. We had to stop at 4.30pm. We ordered new batteries from Townsville to hopefully solve the problem. It rained today from 11:00am.

SURVEY PARAMETERS:

Loop #1 :475 x 400m
376575E; 5361000N: 376540E; 5360730N
376925E; 5360720N: 377000E; 5361000N
Current :16 Amps
Time Base :20 ms
Ramp Time :0.5ms
Sync :Cable

Hole No. **:WSP-9**
377065E, 5360560N
Depth :495m
Channels :31
Components :X,Y

Loop #9 :530 x 400m
376540E; 5360730N: 376525E; 5360200N
376925E; 5360200N: 377065E; 5360559N
Current :16 Amps
Time Base :20 ms
Ramp Time :0.5ms
Sync :Cable

Hole No. **:WSP-9**
377065E, 5360560N
Depth :495m
Channels :31

Components :Z,X,Y

1 Survey day $1250.00
1 Field Assist. day $ 180.00

8-02-98 Out to the field at 8:45am. Heavy rain in the morning meant we had to check the level of some of the creeks before beginning work to establish whether the water levels were rising or falling during the day. We read the X-Y components on WSP-9 from 210 to 495m using Loop #9. We packed up and relocated to the Tyndall Creek grid (access to WSP-11 was impossible due to rising water levels in one of the creeks). We set up and logged the X-Y components on TYN-016 from 20 to 440m (EOH) using Loop #16. The rain continued throughout the day and we finished up at 5.15pm.

SURVEY PARAMETERS:

Loop #9 :530 x 400m
376540E; 5360730N: 376525E; 5360200N
376925E; 5360200N: 377065E; 5360559N
Current :16 Amps
Time Base :20 ms
Ramp Time :0.5ms
Sync :Cable

Hole No. **:WSP-9**
377065E, 5360560N
Depth :495m
Channels :31
Components :X,Y

Loop #16 :400 x 400m
380100E; 5352150N: 379960E; 5351770N
380350E; 5351630N: 380470E; 5352010N
Current :16 Amps
Time Base :20 ms
Ramp Time :0.5ms
Sync :Cable

Hole No. **:TYN-016**
380555E, 5351680N
Depth :437m
Channels :31
Components :Z

1 Survey day $1250.00
1 Field Assist. day $ 180.00

09-02-98 Travelled to another client for a mine induction, then returned to Zeehan, picked up the equipment and arrived in the field at 12.30pm. We surveyed the X-Y components on TYN-016

from 20 to 437m (EOH) using Loop #16. We packed up and travelled across to the White Spur grid. The creek was now safe to cross so we dropped the equipment off at the WSP-11 site at 6.00pm and returned to Zeehan.

SURVEY PARAMETERS:

Loop #16	:400m x 400m
	380100E; 5352150N: 379960E; 5351770N
	380350E; 5351630N: 380470E; 5352010N
Current	:16 Amps
Time Base	:20 ms
Ramp Time	:0.5ms
Sync	:Cable
Hole No.	**:TYN-016**
	380555E, 5351680N
Depth	:437m
Channels	:31
Components	:X,Y

½ Induction day	N/C
½ Survey day	$ 625.00
½ Field Assist. day	$ 90.00

10-02-98 Out to the field by 8:00am and dummied WSP11 to 290m (EOH). We surveyed the Z and X-Y components on WSP-11 to 290m using Loop #11 and recovered Loop #9 whilst the hole was being surveyed. We then recovered Loop #11 with the help of the RGC field assistants, finishing up at 4.40pm.

SURVEY PARAMETERS:

Loop #11	:400 x 400m
	376250E; 5362600N: 376250E; 5362200N
	376675E; 5362200N: 376650E; 5362600N
Current	:16 Amps
Time Base	:20 ms
Ramp Time	:0.5ms
Sync	:Cable
Hole No.	**:WSP-11**
	376520E, 5362540N
Depth	:290m
Channels	:31
Components	:Z,X,Y

1 Survey day	$1250.00
1 Field Assist. day	$ 180.00

11-02-98 Dropped the data off to Chris, said our farewells and drove to the next job.

½ Mob. day	N/C

APPENDIX

CRONE PULSE EM SYSTEM

SYSTEM DESCRIPTION

The Crone Pulse EM system is a time domain electromagnetic method (TDEM) that utilizes an alternating pulsed primary current with a controlled shut-off and measures the rate of decay of the induced secondary field across a series of time windows during the off-time. The system uses a transmit loop of any size or shape. A portable power source feeds a transmitter which provides a precise current waveform through the loop. The receiver apparatus is moved along surface lines or down boreholes.

The transmitter cycle consists of slowly increasing the current over a few milliseconds, a constant current, abrupt linear termination of the current, and finally zero current for a selected length of time in milliseconds. The EMF created by the shutting-off of the current induces eddy currents in nearby conductive material thus setting-up a secondary magnetic field. When the primary field is terminated, this magnetic field will decay with time. The amplitude of the secondary field and the decay rate are dependent on the quality and size of the conductor. The receiver, which is synchronized to the off-time of the transmitter, measures this transient magnetic field where it cuts the surface coil or borehole probe. These readings are across fixed time windows or "channels".

SYSTEM TERMINOLOGY

Ramp Time

"Ramp time" refers to the controlled shut-off of the transmitter current. Three ramp times are selectable by the operator; 0.5ms, 1.0ms, and 1.5ms. By controlling the shut-off rather than having it depend on the loop size and current ensures that the same waveform is maintained for different loops so data can be properly compared.

The 1.5ms ramp is the normally used setting for good conductors. It keeps the early channel responses on scale and decreases the chance of overload. The faster ramp times of 1.0ms and 0.5ms will enhance the early time responses. This can be useful for weak conductors when data from the higher end of the frequency spectrum is desired.

Time Base

Time base is the length of time the transmitter current is off (it includes the ramp time). This also equals the on time of the current. Eight time bases are selectable by the operator. They include the original time bases used in the analog system as well as time bases to eliminate the effects of powerline interference. The eight time bases are as follows: compatible to analog Rx: 10.89ms, 21.79ms; 60hz powerline noise reduction: 8.33ms, 16.66ms, & 33.33ms; 50hz powerline noise reduction: 10.00ms, 20.00ms, 50.00ms and 150ms.

Since readings are taken during the off cycles, the time base will have an effect on the receiver channels. Normally, a standard time base is selected for the type of system and survey being used, but this can be changed to suit a particular situation. A longer time base is preferred for conductors of greater time constants, and in surveys such as resistive soundings where more channels are desired.

Zero Time Set

The term "zero time set" or "ZTS" refers to the starting point for the receiver channel measurements. It is manually set on the receiver by the operator thus allowing adjustments for the ramp times and fine tuning for any fluctuations in the transmitter signal.

Receiver Channels

The rate of decay of the secondary field is measured across fixed time windows which occupy most of the off-time of the transmitter. These time windows are referred to as "channels". These channels are numbered in sequence with "1" being the earliest. The analog and datalogger receivers measured eight fixed channels. The digital receiver, being under software control, offers more flexibility in the channel positioning, channel width, and number of channels.

PP Channel

The PEM system monitors the primary field by taking a measurement during the current ramp and storing this information in a "PP channel". This means that data can be presented in either normalized or unnormalized formats, and additional information is available during interpretation. The PP channel data can provide useful diagnostic information and helps avoid critical errors in field polarity.

Synchronization

Since the PEM system measures the secondary field in the absence of the primary field, the receiver must be in

"sync" with the transmitter to read during the off-time. There are three synchronization methods available: cable connection, radio telemetry, and crystal clock. This flexibility enhances the operational capabilities of the system.

SURVEY METHODS

The wide frequency spectrum of data produced by a Pulse EM survey can be used to provide structural geological information as well as the direct detection of conductive or conductive associated ore deposits. The various types of survey methods, from surface and borehole, have greatly improved the chances of success in deep exploration programs. There are eight basic profiling methods as well as a resistivity sounding mode.

Moving Coil

A small, multi-turn transmitter loop (13.7m diameter) is moved for each reading while the receiver remains a fixed distance away. This method is ideal for quick reconnaissance in areas of high background conductivity.

Moving Loop

Same as Moving Coil method, but with a larger transmit loop (100 to 300 meters square). This method provides deeper penetration in areas of high background conductivity, and works best for near-vertical conductors. This method can be used in conjunction with the Moving In-loop survey for increased sensitivity to horizontal conductors.

Moving In-Loop

A transmit loop of size 100 to 300 meters square is moved for each reading while the receiver remains at the center of the loop. This method provides deep penetration in areas of very high background conductivity, and works best for near-horizontal conductors. It can be used in conjunction with the Moving Loop survey.

Large In-Loop

A very large, stationary transmit loop (800m square or more) is used, and survey lines are run inside the loop. This mode provides very deep penetration (700m or more) and couples best with shallow dip conductors (<45 deg.) under the loop.

Deepem

A large, stationary transmit loop is used, and survey lines are run outside the loop. This mode provides very deep penetration, and couples best with steeply dipping conductors (>45 deg.) outside the loop.

Borehole (Z Component only)

Isolated Borehole: A drill hole is surveyed by lowering a probe down a hole and surveying it with a number of transmit loops laid out on surface. The data from multiple loops gives directional information on the conductors.

Multiple Boreholes: One large transmit loop is used to survey a number of closely spaced holes. The change in anomaly from hole to hole provides directional information.

These methods have detected conductors to depths of 2500m from surface and up to 200m from the hole.

3-D Borehole

Drill holes are surveyed with both the Z and the XY borehole probes. The X and Y components provide accurate direction information using just one transmit loop.

Since the probe rotates as it moves down the hole a correction is required for the X-Y data. This is accomplished in one of two ways. The standard approach is to use the measurement of the primary field from the "PP" channel, apply a "cleaning" algorithm to remove most of the secondary field contamination, and compare this to theoretical values. The amount of probe rotation is then calculated, and the correction can be made. The second method involves the use of an optional orientation device for the X-Y probe which is produced in cooperation with IFG Corp. This attachment uses dipmeters to calculate the probe rotation.

Underground Borehole

Underground drill holes can be surveyed in any of the above mentioned borehole methods with one or more transmit loops on the surface. Near-horizontal holes can be surveyed using a push-rod system.

Resistivity Soundings

By reading a large number of channels in the centre of a transmit loop it is possible to preform a decay curve analysis giving a best-fit layer earth model using programs such as ARRTI or TEMIX.

EQUIPMENT

Transmit Loops

The PEM system can operate with practically any size of transmit loop, from a multi-turn circular loop 13.7m in diameter, to a 1 or 2 turn loop of any shape up to 1 or 2 kilometers square using standard insulated copper wire of 10 or 12 gauge. The multi-turn loop is made in two sections with screw connectors. The 10 or 12 gauge loop wire comes on spools in either 300m or 400m lengths.

Power Supply

The PEM system normally operates with an input voltage from 24v to 120v. The maximum current is 20 amps in a single loop but the effective current can be increased by doubling the loop wire in series. For low power surveys a 20amp/hr 24v battery can be used. The power supply requires a motor generator and a voltage regulator to control and filter the input voltage to the transmitter.

Specifications: PEM Motor Generator

- 4.5 hp Wisconsin, (2 kw)
- belt drive to D.C. alternator
- cable output to regulator
- maximum output: 120v, 20amp (2 kw),
- fuse type overload protection
- steel frame
- external gas tank
- unit weight: 33kg (2 kw); 52kg (4 kw)

Specifications: PEM Variable Voltage Regulator

- selectable voltage between 24v and 120v or 48v and 240v
- 20amp maximum current
- fuse and internal circuit breaker protection

Transmitter

The transmitter controls the bi-polar on-off waveform and linear current shut-off ramp. The latest 2000w PEM Transmitter has the following specifications:

Specifications: PEM Transmitter

- time bases: 10.89ms, 21.79ms, 8.88ms, 16.66ms, 33.33ms, 10ms, 20ms, 50ms 150ms
- ramp times: 0.5ms, 1.0ms, 1.5ms
- operating voltage: 24v to 120v (2 kw); 48v to 240v (4 kw)
- output current: 5amp to 20amp
- monitors for input voltage, output current, shut-off ramp, tx loop continuity, instrument temperature, and overload output current
- automatic shut-off for open loop, high instrument temperature, and overload
- fuse and circuit breaker overload protection
- three sync modes: 1) built-in radio and antenna
  2) cable sync output for direct wire link to receiver or remote radio
  3) connectors for the crystal clock

Receiver

The receivers measure the rate of decay of the secondary field across several time channels. Three types of receivers are available with the PEM system: Analog Rx, Datalogger Rx, and Digital Rx. The Analog Rx and Datalogger Rx read eight fixed time channels while the Digital Rx, under software control, offers a variety of channel configurations. The Digital Rx has been used in the field for contract surveys since 1987.

Specifications: Digital PEM Receiver

- operating temperature -40 °C to 50 °C
- unit weight 15kg; shipping weight 25.5kg

Hardware:

- 24v rechargeable gel cell battery supply
- two CMOS microprocessors (NSC800)
- alphanumeric keyboard

- 2 x 16 character cold weather display
- 16 x 40 character (256 x 128 pixels graphic) display
- 64k byte solid state memory storage
- cable, radio or crystal clock synchronization
- RS-232 serial I/O

Sampling process features:
- 16 bit A/D conversion
- digital recording of data in nano-tesla/sec
- rejection of atmospheric noise samples based on digital threshold detection
- automatic gain control to optimize receiver signal to noise ratio

Menu driven operating software system offering the following functions:
- controls channel positions, channel widths, and number of channels using a basic slice of 4.5µsec
- time bases: 10.89ms, 21.79ms, 8.88ms, 16.66ms, 33.33ms, 10ms, 20ms, 50ms and 150ms
- ramp time selectable in 4.5µsec steps
- sample stacking from 512 to 65536
- scrolling routines for viewing data
- graphic display of decay curve and profile with various plotting options
- routines for memory management
- control of data transmission
- provides information on instrument and operating status

Sync Equipment

There are three modes of synchronization available; radio, cable, and crystal clock. The radio sync signal can be transmitted through a booster antenna from either the PEM Transmitter internal radio or through a Remote Radio.

Specifications: Sync Cable
- 2 conductor, 24awg, teflon coated
- approx. 900m per aluminum spool with connectors

Specifications: Remote Radio
- operating frequency 27.12mhz
- 12v rechargeable gel cell battery supply
- fuse protection
- sync wire link to transmitter
- coaxial link to booster antenna

Specifications: Booster Antenna
- 8m, 4 section aluminum mast
- guide rope support
- ¼ wave CB fiberglass antenna
- range up to 2km
- coaxial connection to transmitter or remote radio

Specification: Crystal Clocks
- heat stabilized crystals
- 24v rechargeable gel cell battery supply
- rx unit can be separate or housed in the receiver
- outlet for external supplementary battery supply

Surface PEM Receive Coil

The Surface PEM Receive Coil picks up the EM field to be measured by the receiver. The coil is mounted on a tripod that can be positioned to take readings of any component of the field.

Specifications: Surface PEM Receive Coil
- ferrite core antenna
- built-in preamplifier
- VLF filter
- 10khz bandwidth
- 23:1 amplifier gain
- two 9v transistor battery supply
- tripod adjustable to all planes

Borehole PEM Z Component Probe

The Z component probe measures the axial component of the EM field. The Z component data is not affected

by probe rotation so no correction are required.

Specifications: Borehole PEM Z Component Probe

- ferrite core
- built-in preamplifier
- dimensions: length - 1.6m; dia - 3.02cm (3.15cm for high pressure tested probes)
- internal rechargeable ni-cad battery supply
- replaceable heat shrink tubing for abrasion protection
- pressure tested for depths 2800m

Borehole PEM XY Component Probe

The XY probe measures two orthogonal components of the EM field perpendicular to the axis of the hole. Correction for probe rotation can be achieved by two methods. The standard approach is to use the measurement of the primary field from the "PP" channel, apply a "cleaning" algorithm to remove most of the secondary field contamination, and compare this to theoretical values. The amount of probe rotation is then calculated, and the correction can be made. The second method involves the use of an optional orientation device for the X-Y probe that uses dipmeters to calculate the probe rotation.

Specifications: Borehole PEM XY Component Probe

- ferrite core
- built-in preamplifier
- dimensions: length - 2.01m; dia - 3.02cm
- internal rechargeable ni-cad battery supply
- selection of X or Y coils by means of a swich box on surface or automatic switching with Digital receiver
- replaceable heat shrink tubing for abrasion protection
- pressure tested for depths to 2800m

Orientation Device

The orientation device is an optional attachment for the XY probe which measures the rotation of the probe using two dipmeters.

Specifications: Orientation Device

- 2 axis tilt sensors
- sensitivity +/- 0.1 deg.
- operating range -89.5 to -10 deg
- dimensions: length - 0.94m; dia - 28.5cm

Borehole Equipment

To lower the probe down a drill hole requires a cable and spool, winch assembly frame and cable counter. Borehole surveys also require equipment to "dummy probe" the hole before doing the survey.

Specifications: Borehole Cable

- two conductor shielded cable
- kevlar strengthened
- currently 1500m but will shortly have cabability of surveying to depths of 3000m.

Specifications: Slip Ring

- attaches to side of borehole cable spool providing a connection to the receiver while allowing the spool to turn.
- VLF filter
- pure silver contacts

Specifications: Borehole Counter

- attaches to the drill hole casing
- calibrated in meters

Specifications: Dummy Probe and Cable

- solid steel or steel pipe
- same dimensions as borehole probe
- shear pin connection to dummy cable

559122

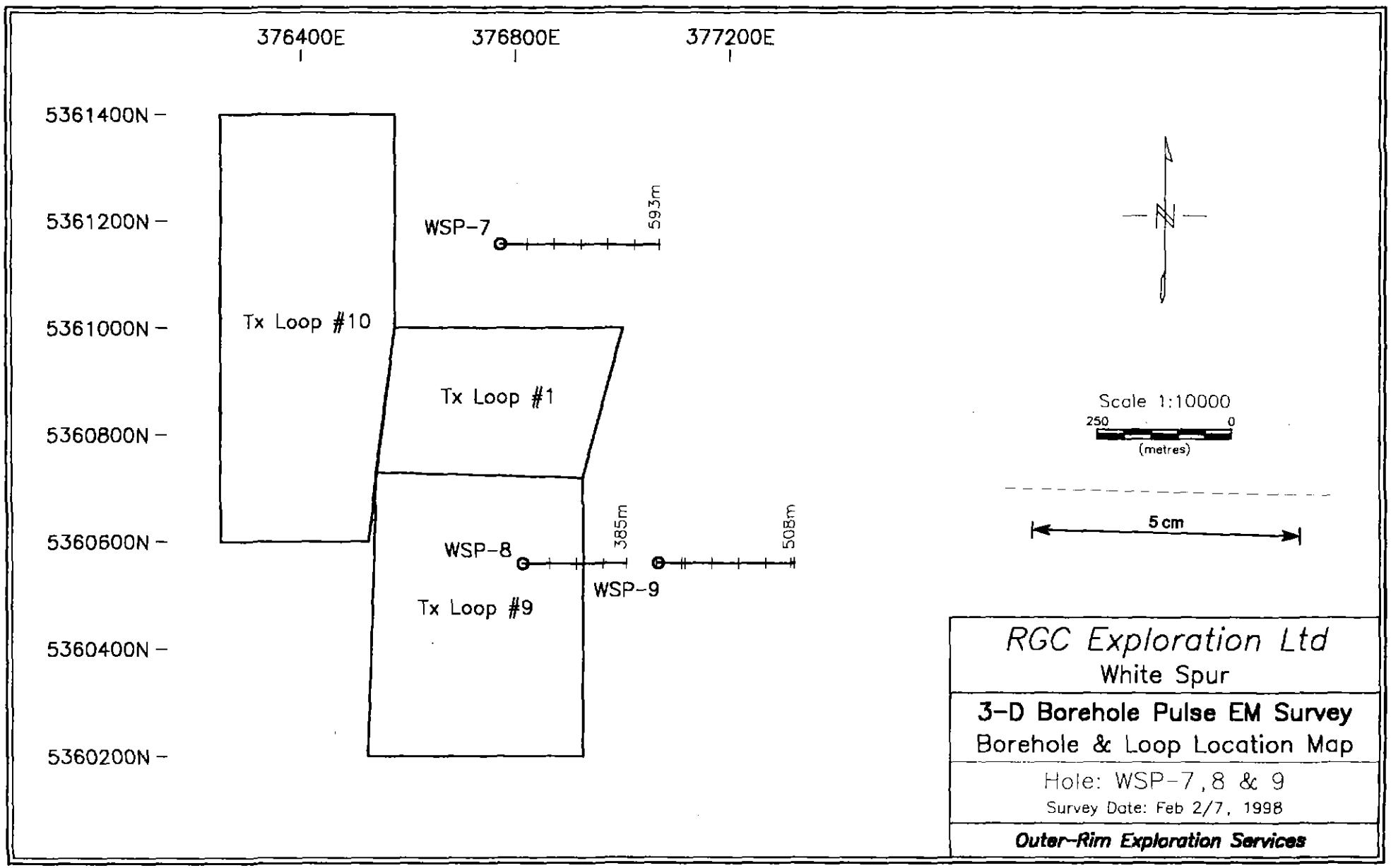
PLOTS

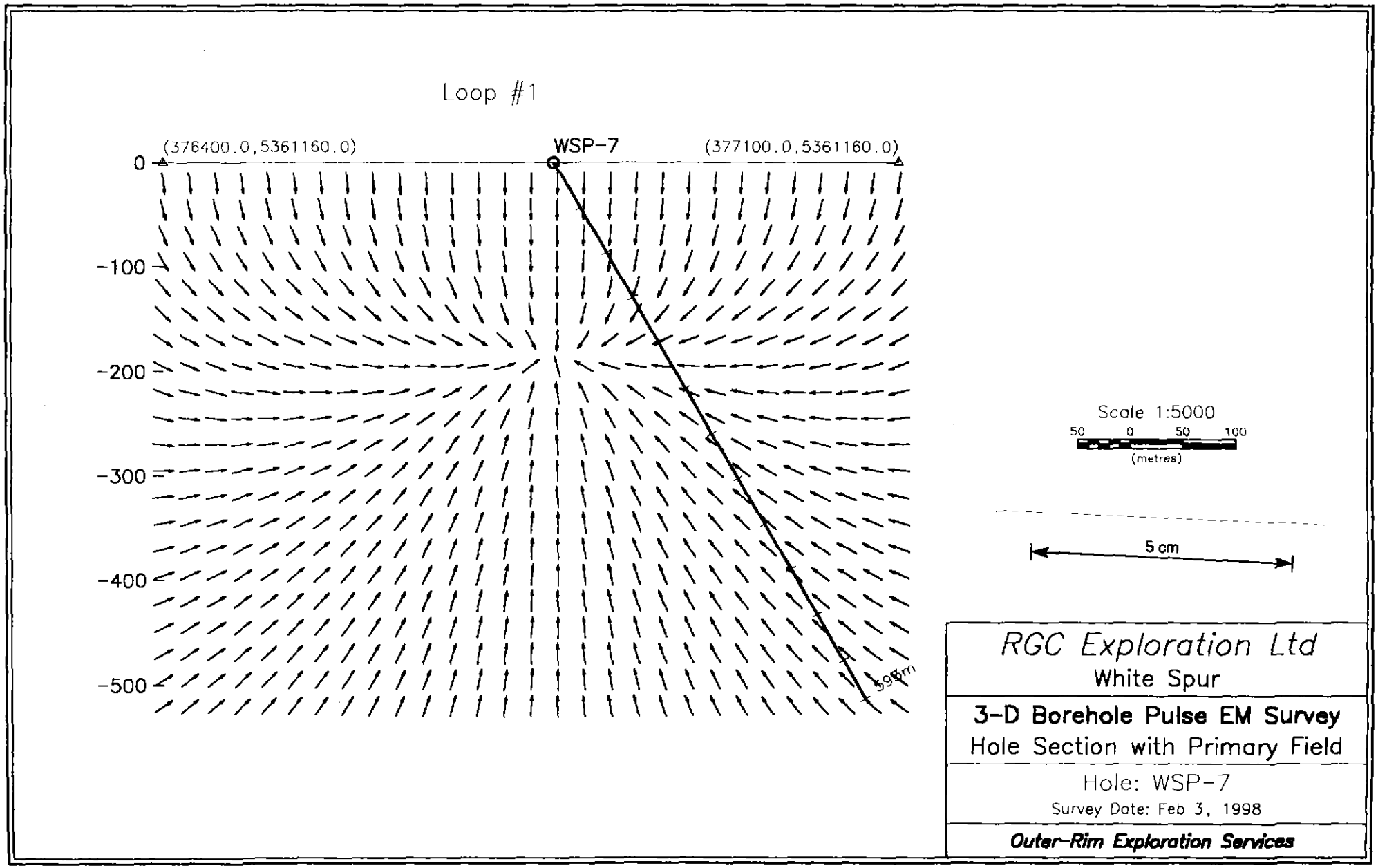
559123

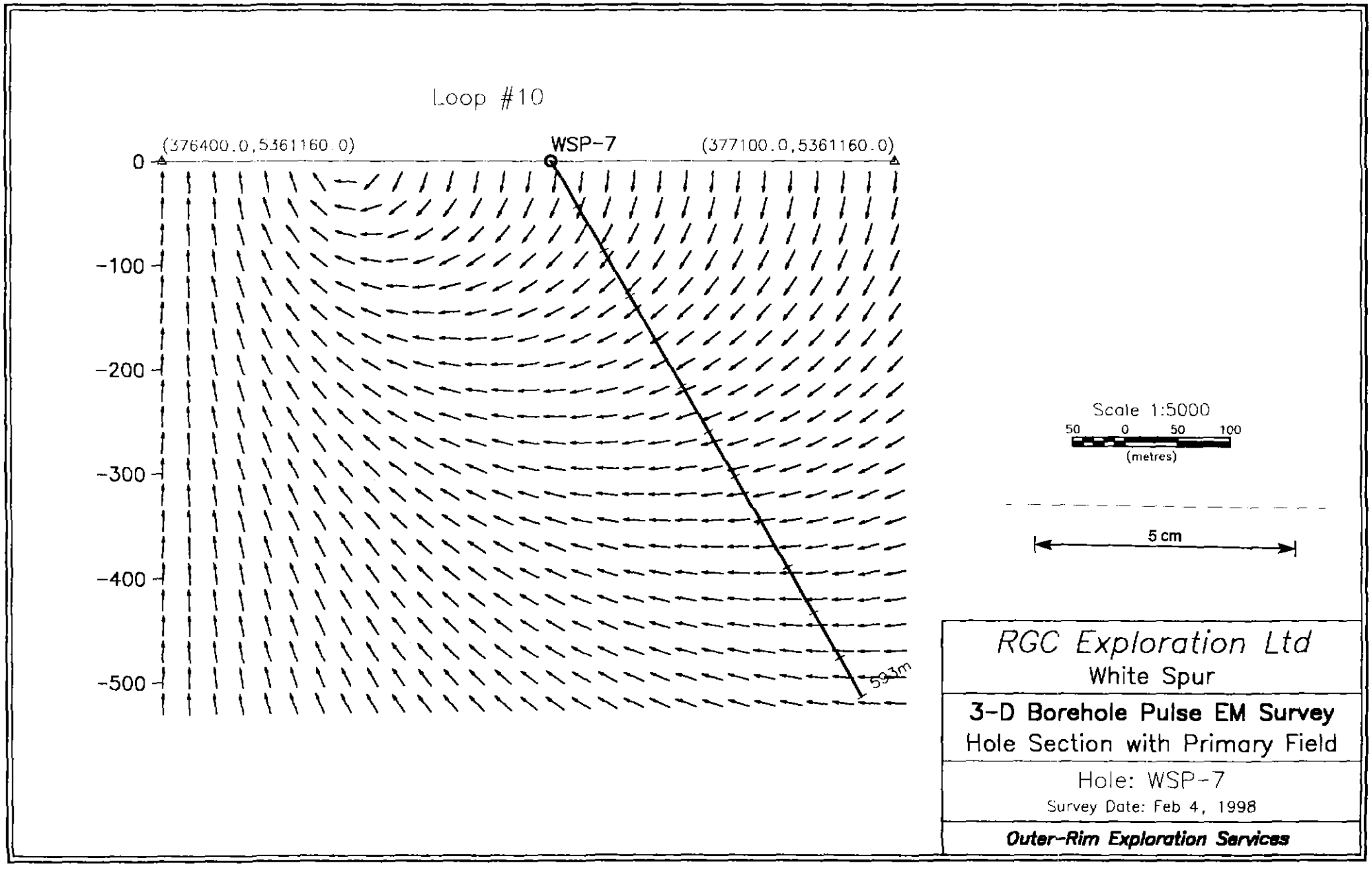
CONTENTS

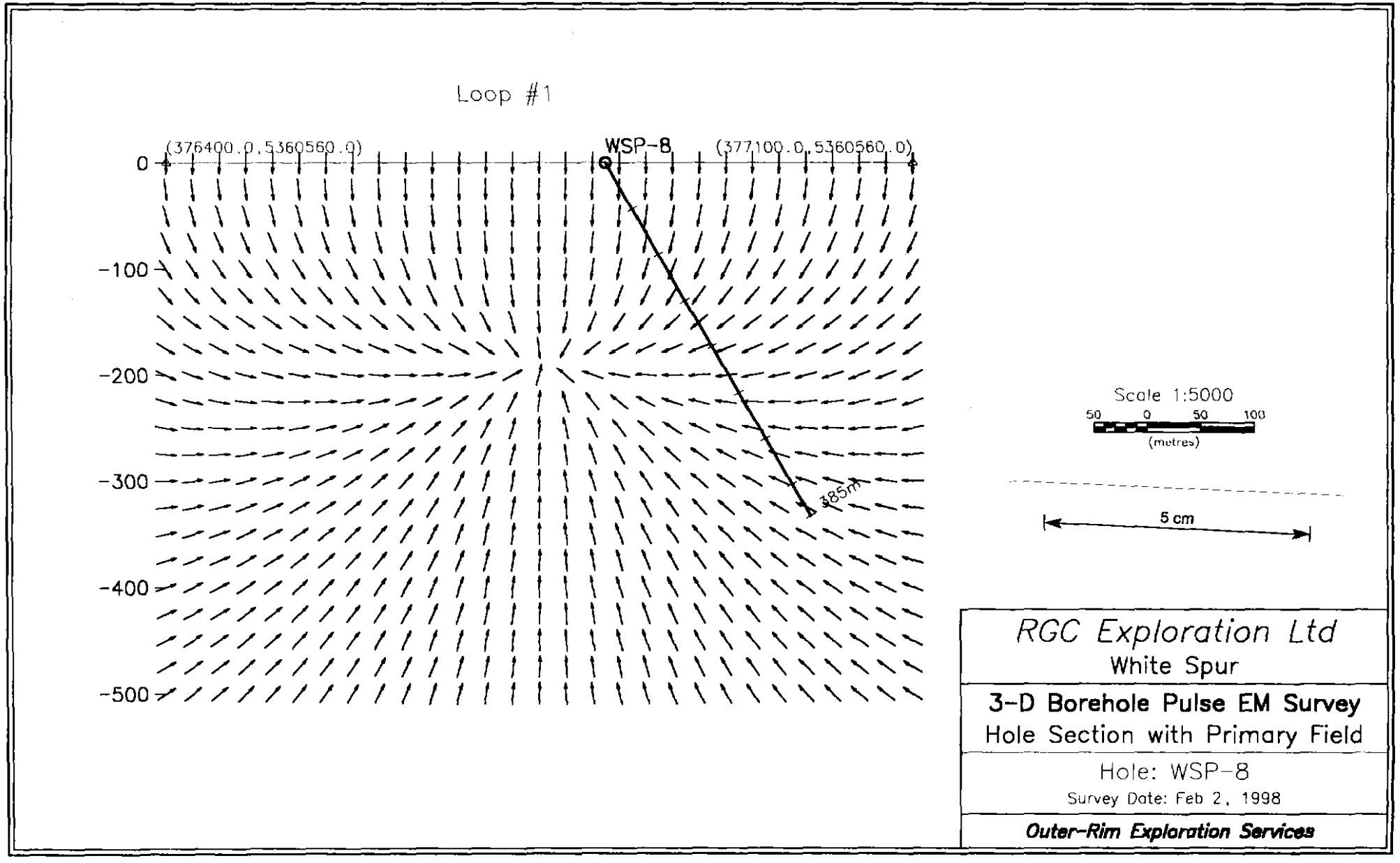
CONTENTS

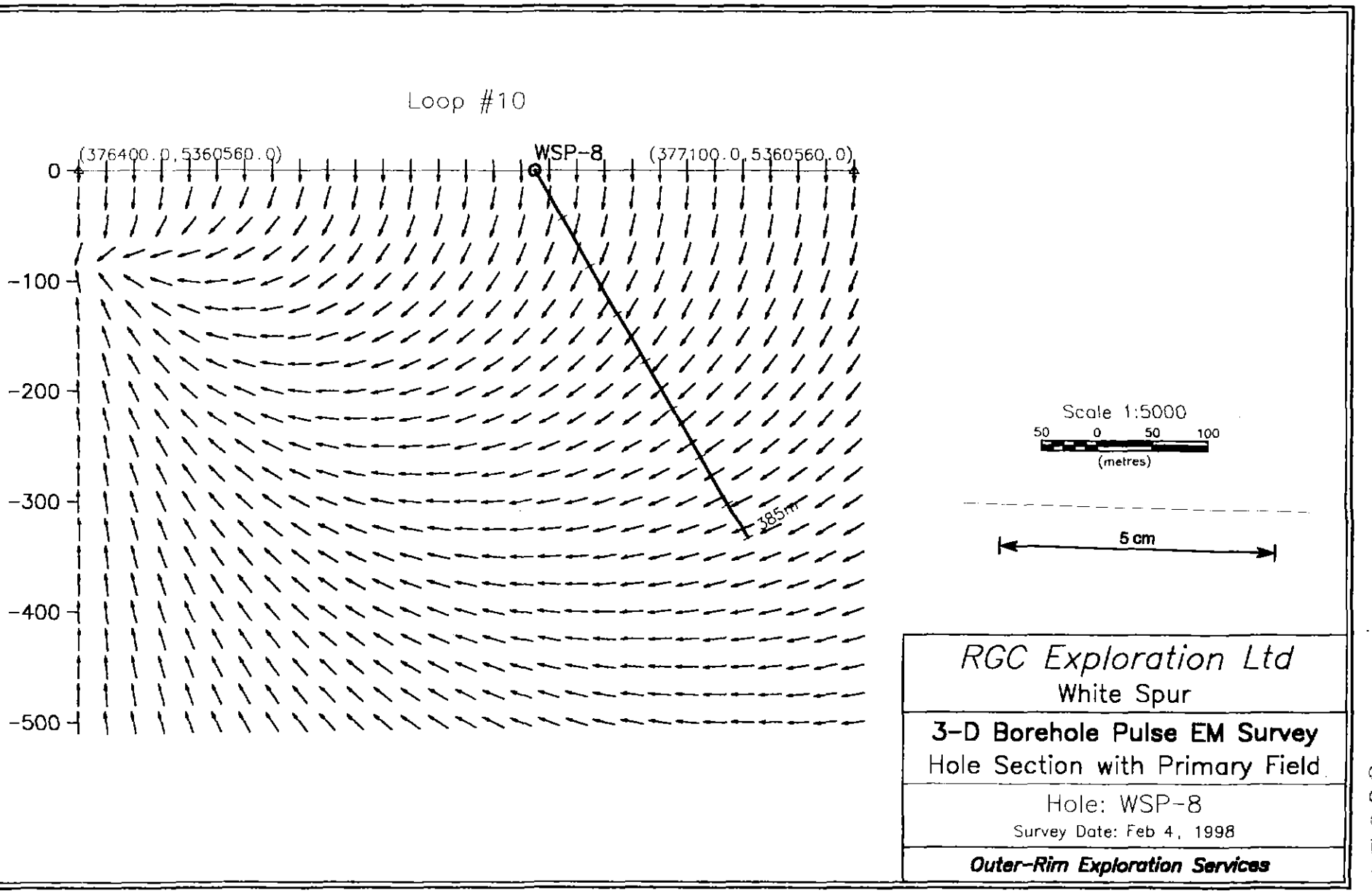
CONTENTS

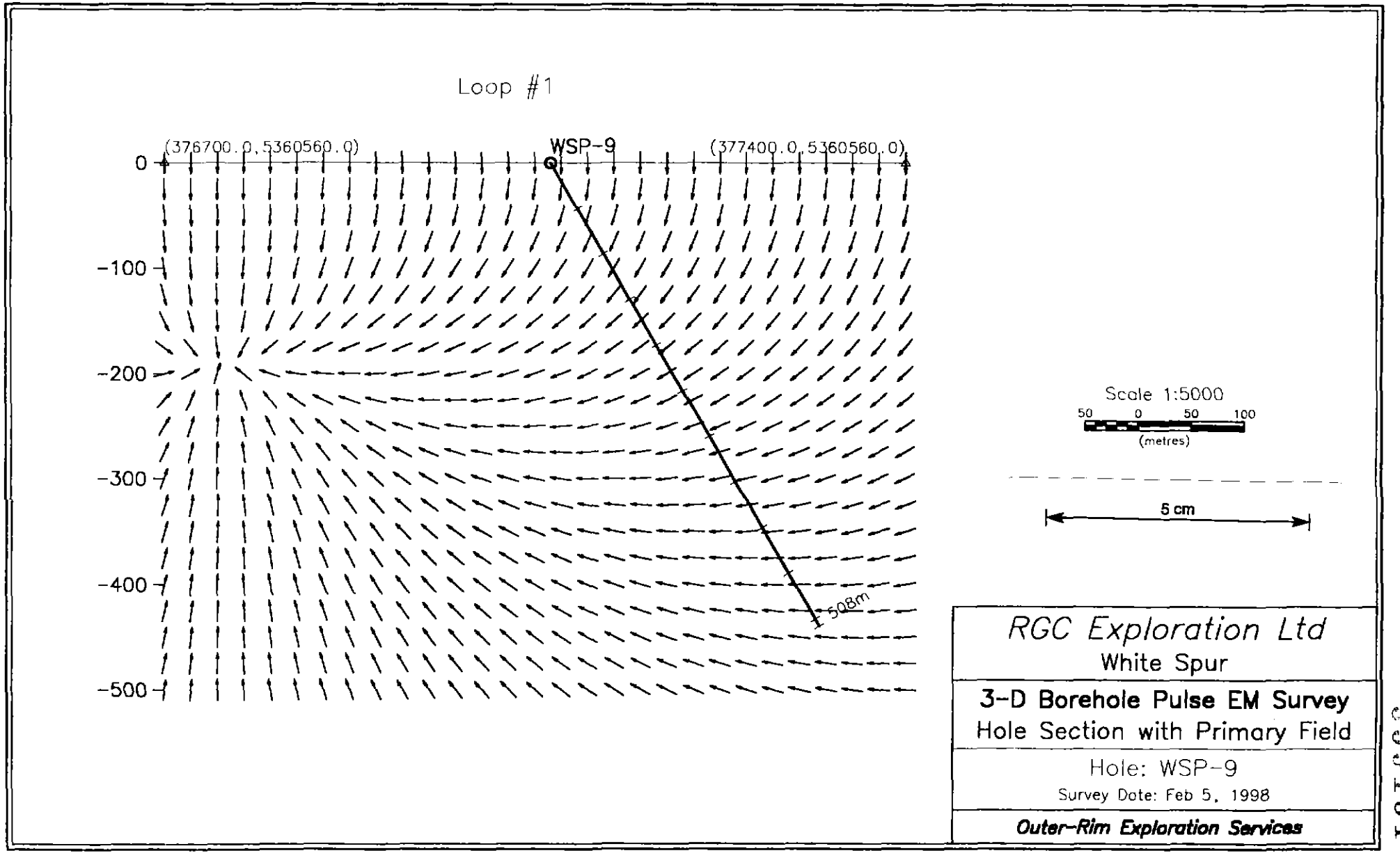

376400E
376800E
377200E
5361400N
5361200N
5361000N
5360800N
5360600N
5360400N
5360200N
WSP-7
593m
Tx Loop #10
Tx Loop #1
WSP-8
385m
508m
WSP-9
Tx Loop #9
Scale 1:10000
250
0
(metres)
5 cm
RGC Exploration Ltd
White Spur
3-D Borehole Pulse EM Survey
Borehole & Loop Location Map
Hole: WSP-7,8 & 9
Survey Date: Feb 2/7, 1998
Outer-Rim Exploration Services

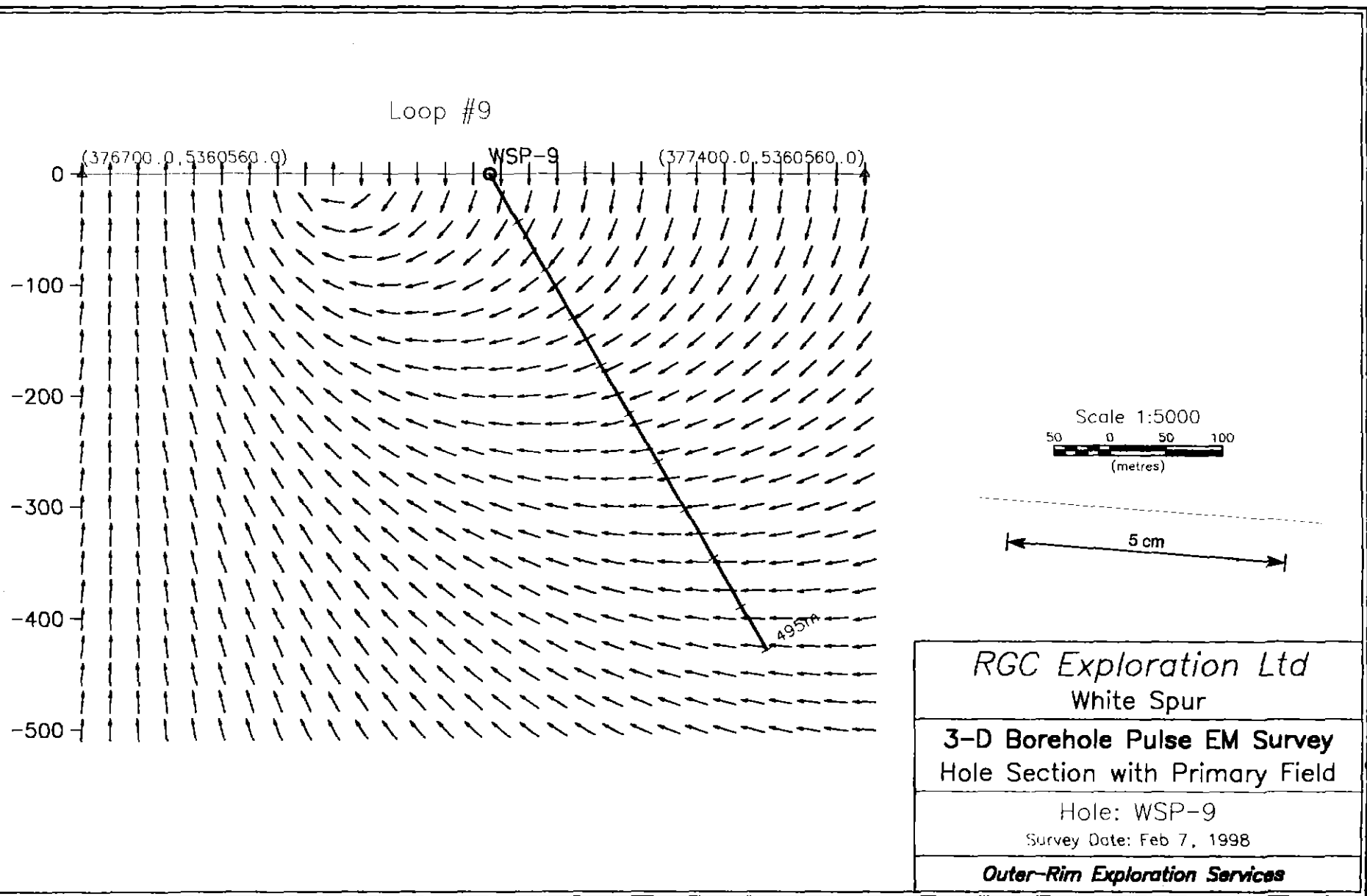

Loop #1
(376400.0,5361160.0)
WSP-7
(377100.0,5361160.0)
0
-100
-200
-300
-400
-500
599m
Scale 1:5000
50 0 50 100
(metres)
5 cm
RGC Exploration Ltd
White Spur
3-D Borehole Pulse EM Survey
Hole Section with Primary Field
Hole: WSP-7
Survey Date: Feb 3, 1998
Outer-Rim Exploration Services


Loop #10
(376400.0,5361160.0)
WSP-7
(377100.0,5361160.0)
0
-100
-200
-300
-400
-500
593m
Scale 1:5000
50 0 50 100
(metres)
5 cm
RGC Exploration Ltd
White Spur
3-D Borehole Pulse EM Survey
Hole Section with Primary Field
Hole: WSP-7
Survey Date: Feb 4, 1998
Outer-Rim Exploration Services


Loop #1
(376400.0,5360560.0)
WSP-8
(377100.0,5360560.0)
0
-100
-200
-300
-400
-500
385m
Scale 1:5000
50 0 50 100
(metres)
5 cm
RGC Exploration Ltd
White Spur
3-D Borehole Pulse EM Survey
Hole Section with Primary Field
Hole: WSP-8
Survey Date: Feb 2, 1998
Outer-Rim Exploration Services


Loop #10
(376400.0,5360560.0)
WSP-8
(377100.0,5360560.0)
0
-100
-200
-300
-400
-500
385m
Scale 1:5000
50 0 50 100
(metres)
5 cm
RGC Exploration Ltd
White Spur
3-D Borehole Pulse EM Survey
Hole Section with Primary Field
Hole: WSP-8
Survey Date: Feb 4, 1998
Outer-Rim Exploration Services


Loop #1
(376700.0, 5360560.0)
WSP-9
(377400.0, 5360560.0)
0
-100
-200
-300
-400
-500
508m
Scale 1:5000
50 0 50 100
(metres)
5 cm
RGC Exploration Ltd
White Spur
3-D Borehole Pulse EM Survey
Hole Section with Primary Field
Hole: WSP-9
Survey Date: Feb 5, 1998
Outer-Rim Exploration Services


Loop #9
(376700.0,5360560.0)
WSP-9
(377400.0,5360560.0)
0
-100
-200
-300
-400
-500
495m
Scale 1:5000
50 0 50 100
(metres)
5 cm
RGC Exploration Ltd
White Spur
3-D Borehole Pulse EM Survey
Hole Section with Primary Field
Hole: WSP-9
Survey Date: Feb 7, 1998
Outer-Rim Exploration Services

559133

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 3, 1998	File name	: WSP7Z.PEM
Time Base	: 20.00 ms	# Readings	: 78
Ramp Time	: 0.50 ms	Stn Units	: Metric
# Channels	: 31	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 475m X 400m	Receiver	: Digital #109
Current	: 19 Amps	Operator	: Brett Rankin

Loop Coordinates (X,Y,Z)

1. 376575m, 5.361e+06m, 0m
2. 376540m, 5.36073e+06m, 0m
3. 376925m, 5.36072e+06m, 0m
4. 377000m, 5.361e+06m, 0m

Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)

1. 376772m, 5.36116e+06m, 0m
2. 90deg, 60deg, 593m

Channel Times (usec)

Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-198	-99	-149	1	50	58	54	2	58	72	65
3	72	86	79	4	86	104	94	5	104	126	115
6	126	153	140	7	153	185	169	8	185	225	205
9	225	270	248	10	270	328	299	11	328	396	362
12	396	482	439	13	482	580	531	14	580	702	641
15	702	850	776	16	850	1026	938	17	1026	1242	1134
18	1242	1498	1370	19	1498	1813	1656	20	1813	2187	2000
21	2187	2646	2416	22	2646	3195	2920	23	3195	3861	3528
24	3861	4666	4264	25	4666	5634	5150	26	5634	6808	6221
27	6808	8221	7514	28	8221	9936	9078	29	9936	12000	10968
30	12000	14490	13245	31	14490	17510	16000				

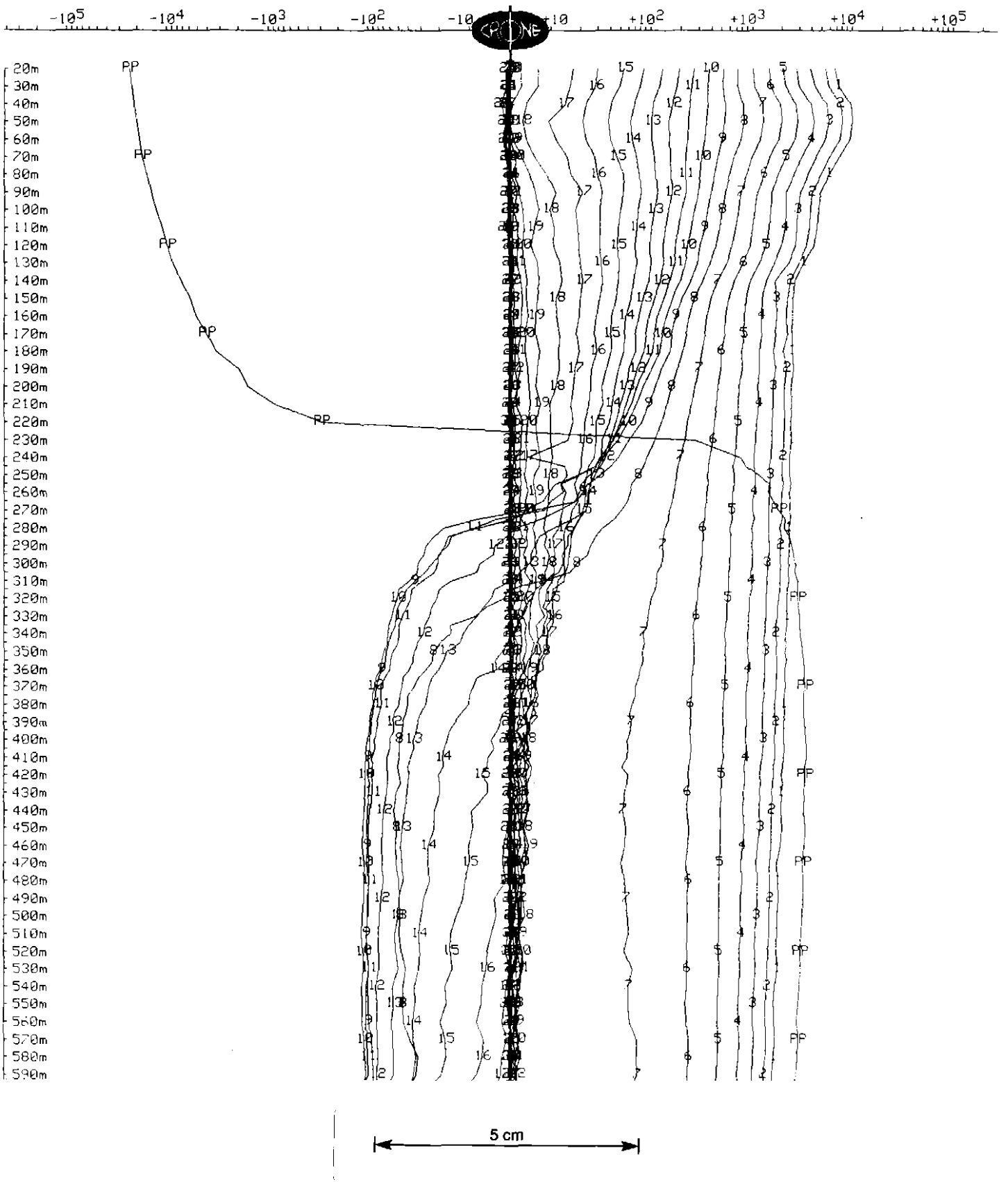
559134

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RCC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 3, 1998	File name	: WSP7Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000



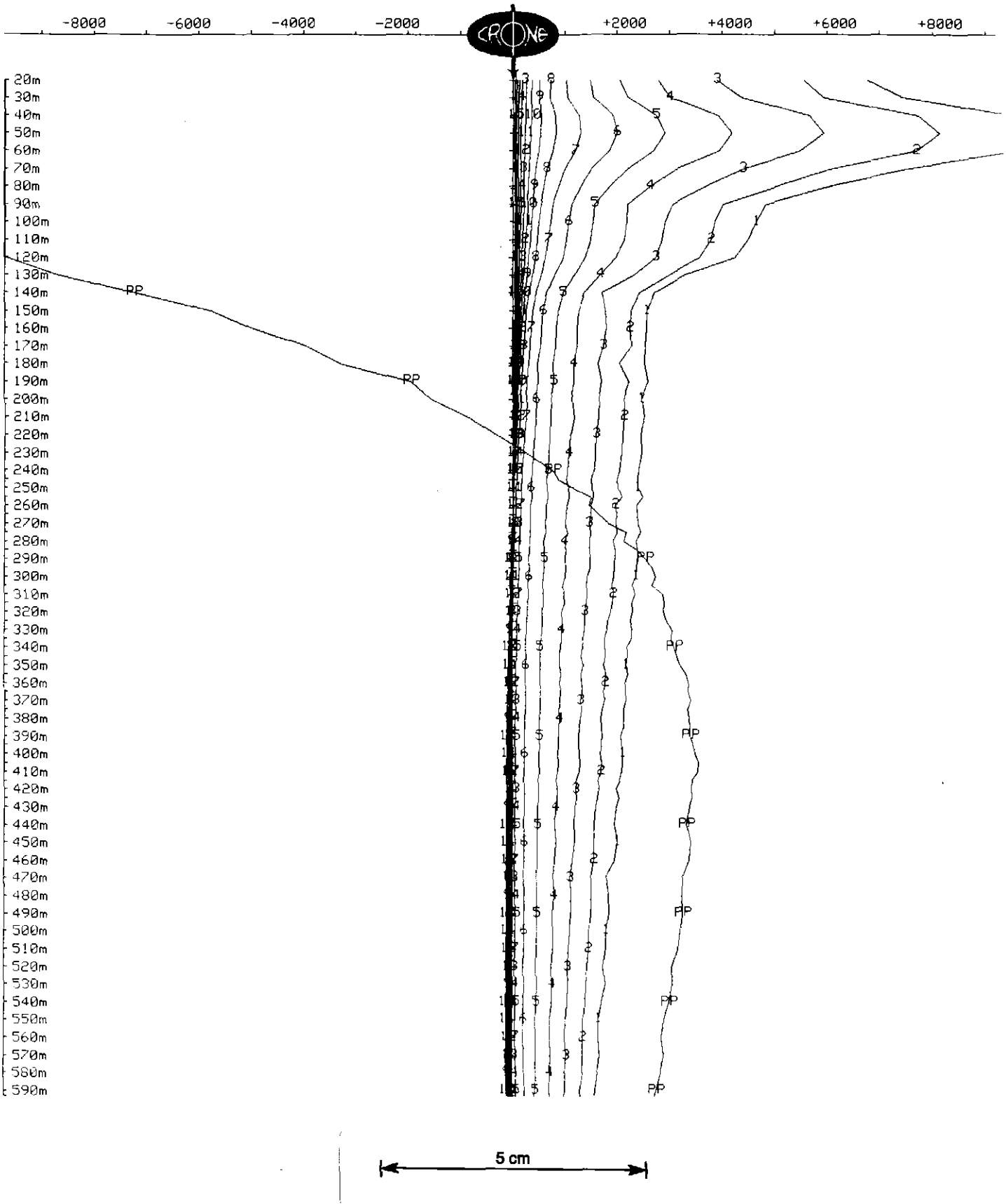
559135

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 3, 1998	File name	: WSP7Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 1000 nT



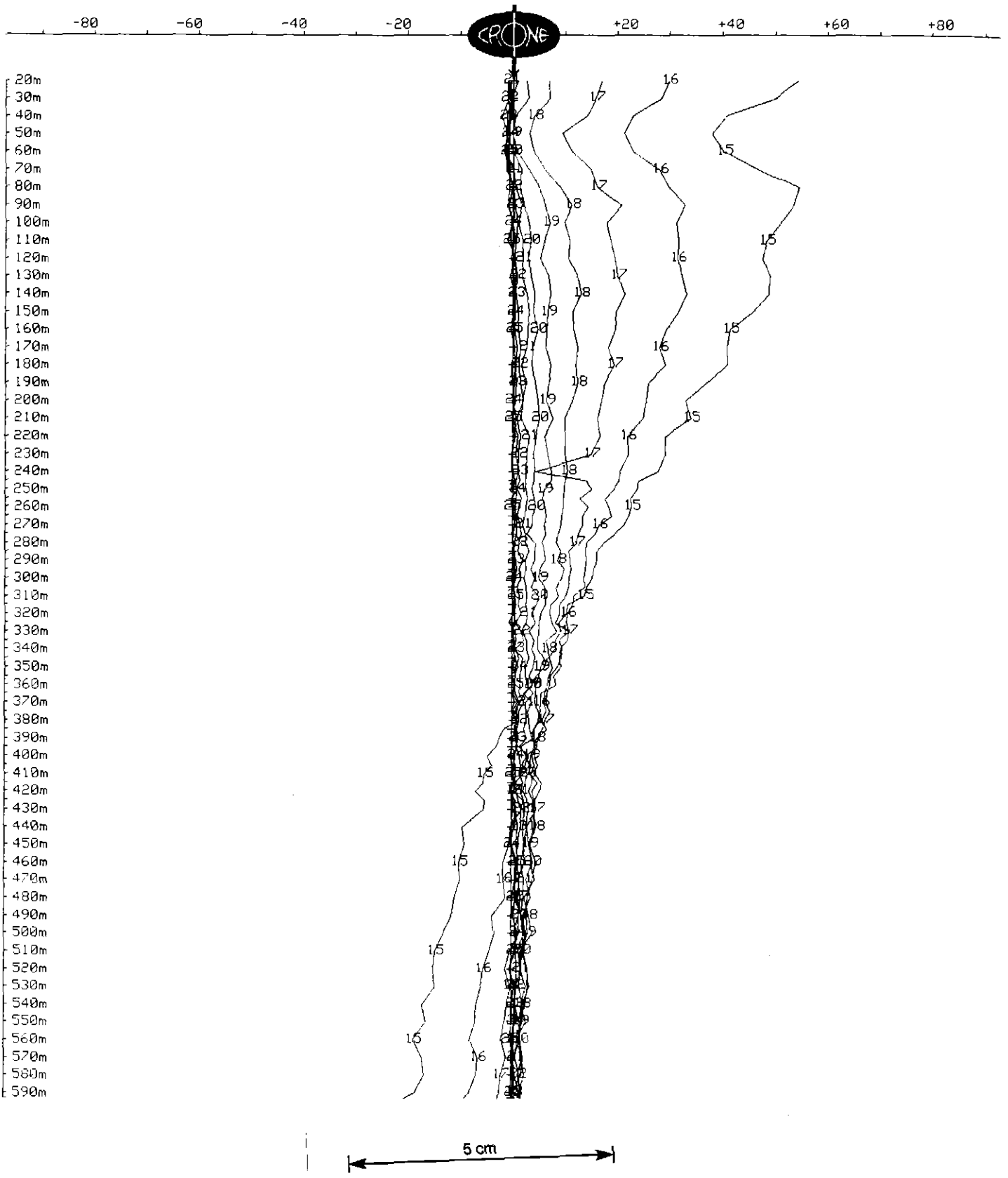
559136

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 3, 1998	File name	: WSP7Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 10 nT



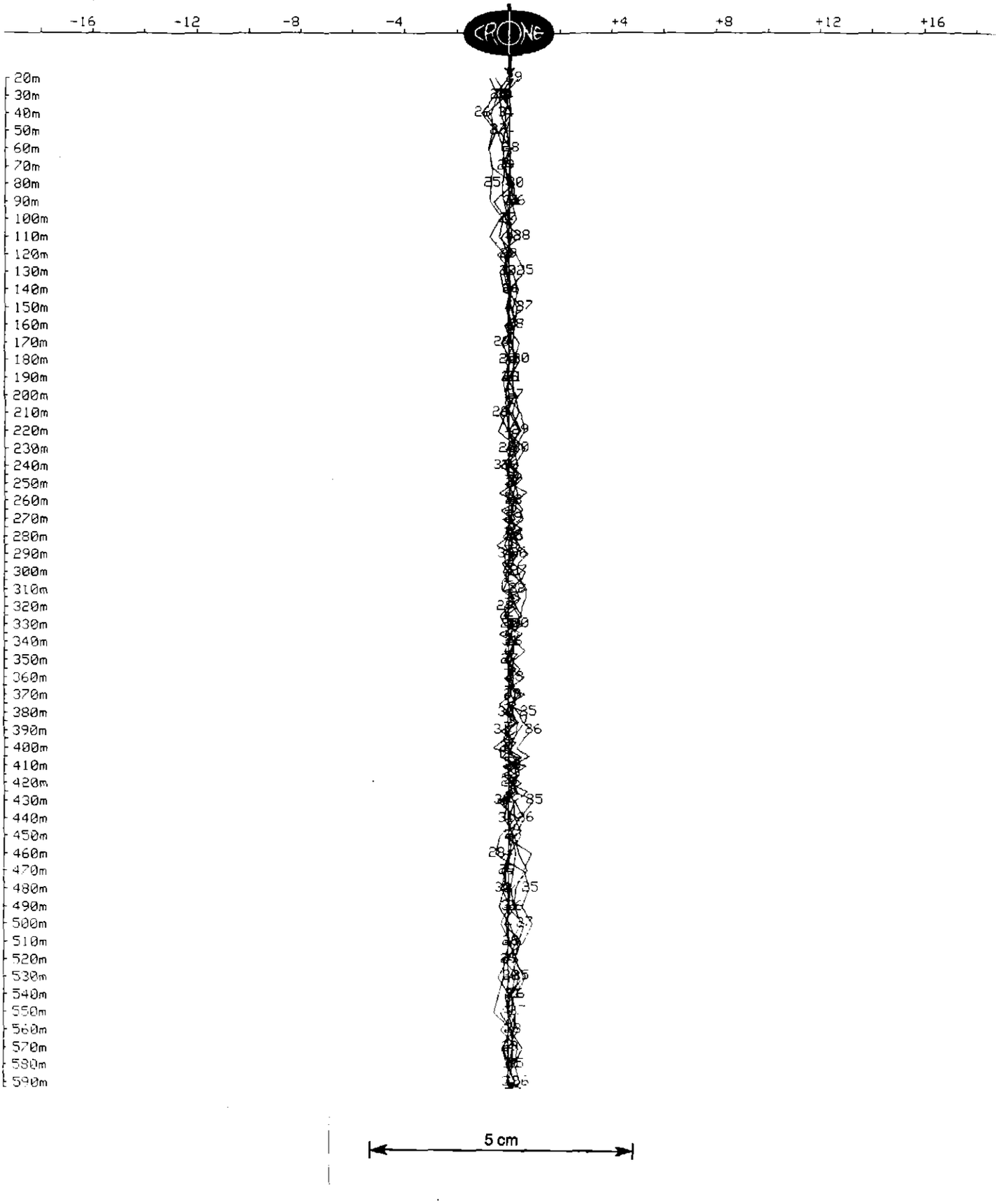
559137

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 3, 1998	File name	: WSP7Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT



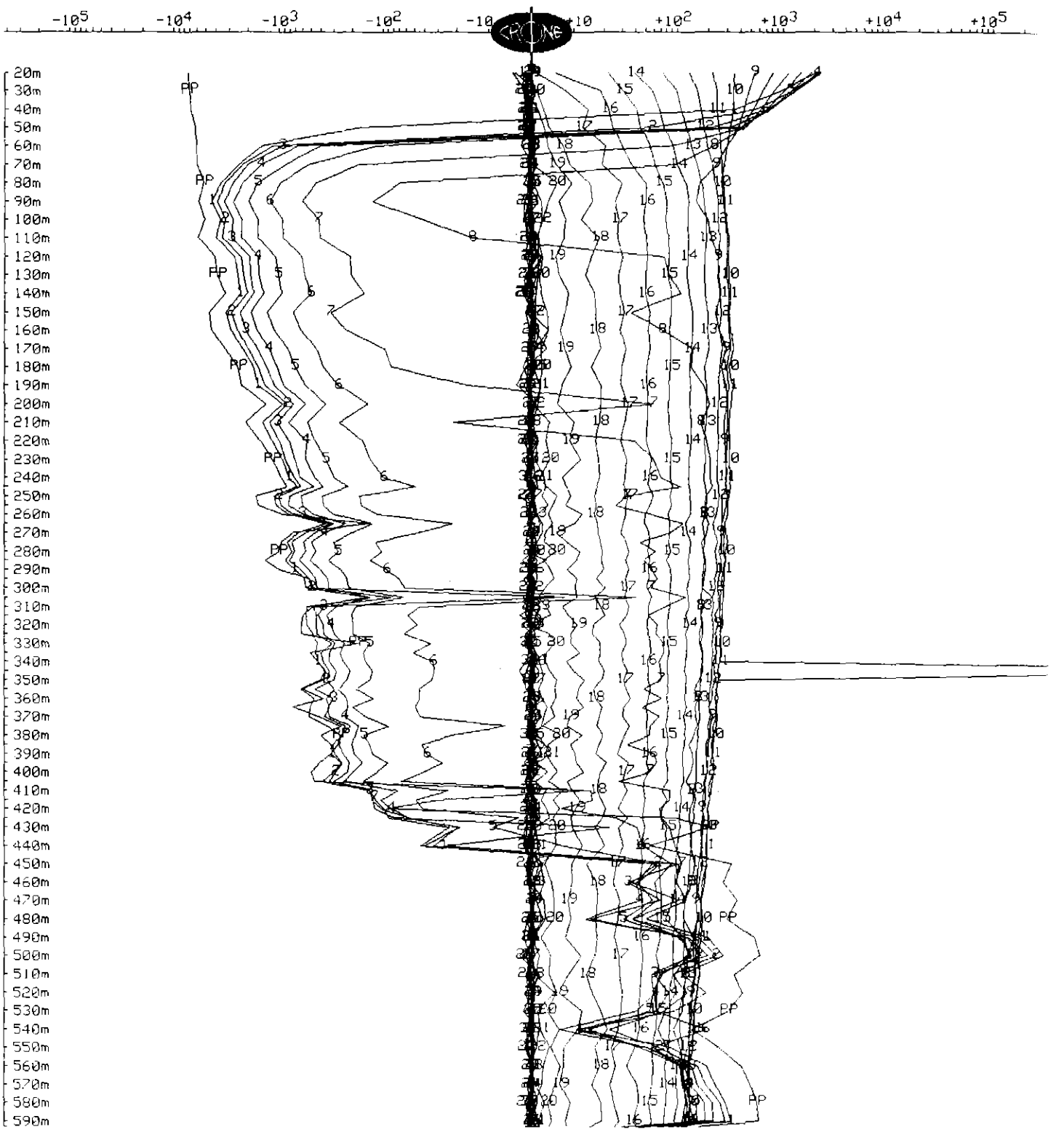
559138

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 3, 1998	File name	: WSP7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000



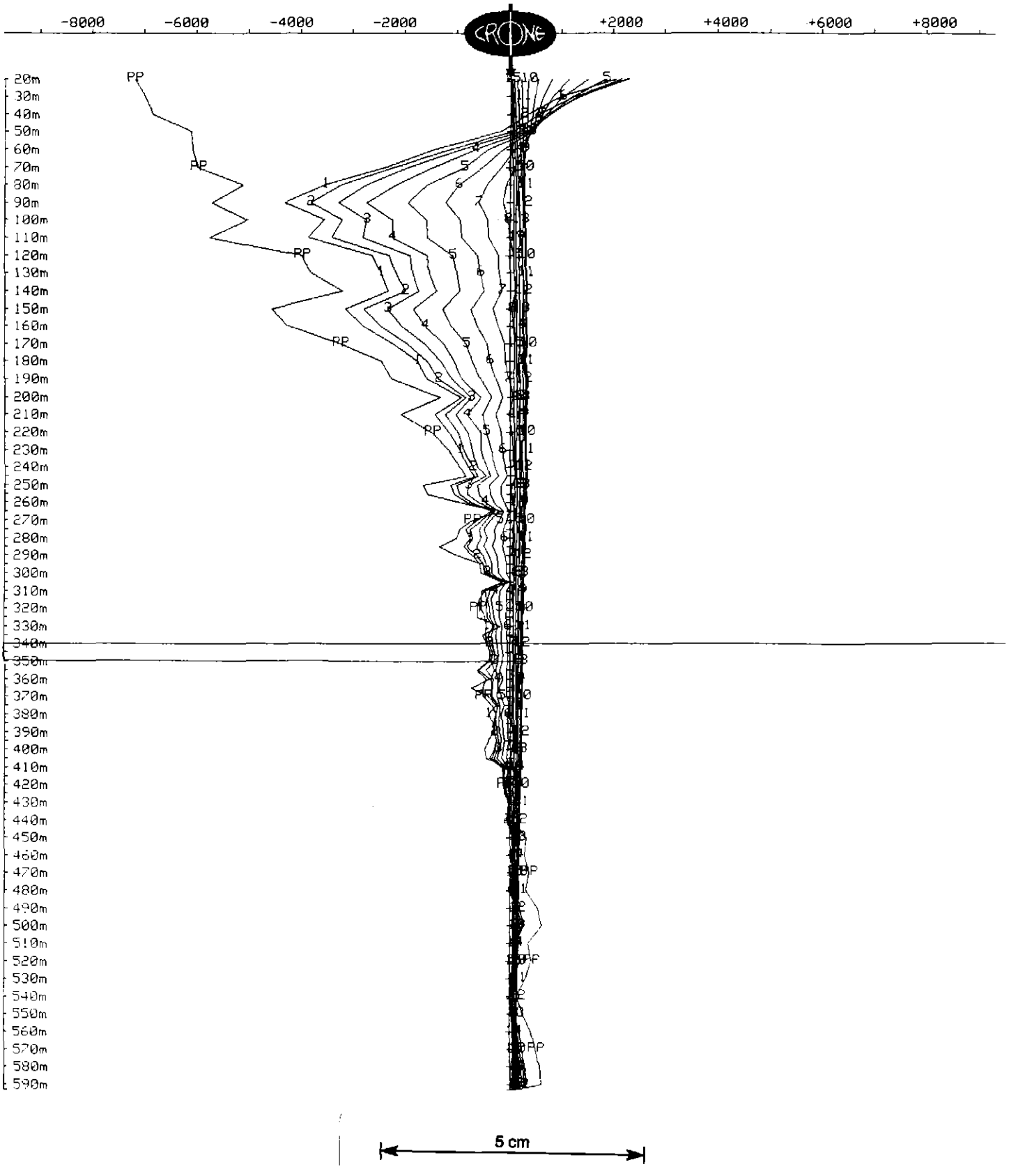
559139

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 3, 1998	File name	: WSP7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 1000 nT



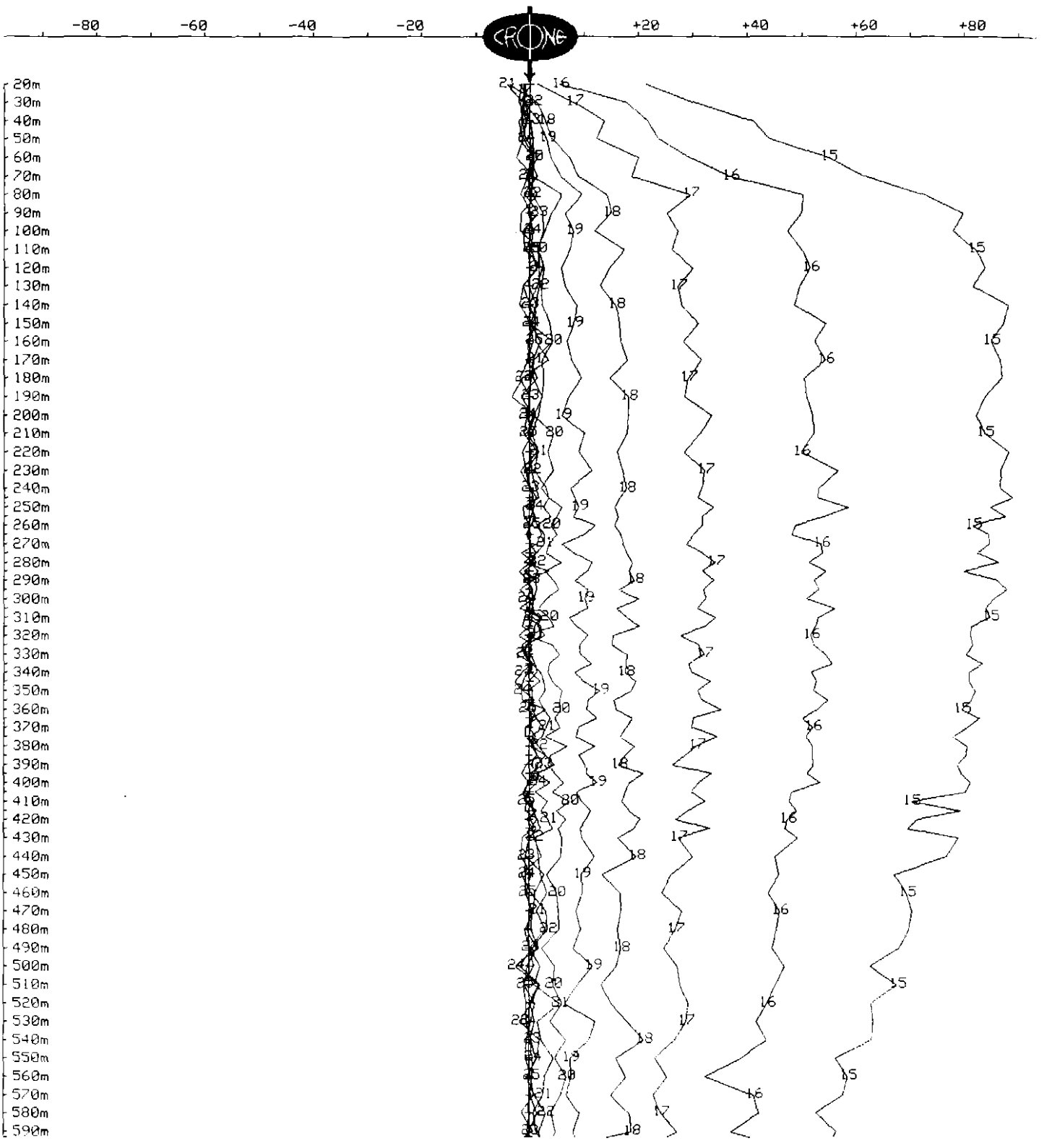
559140

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 3, 1998	File name	: WSP7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 10 nT



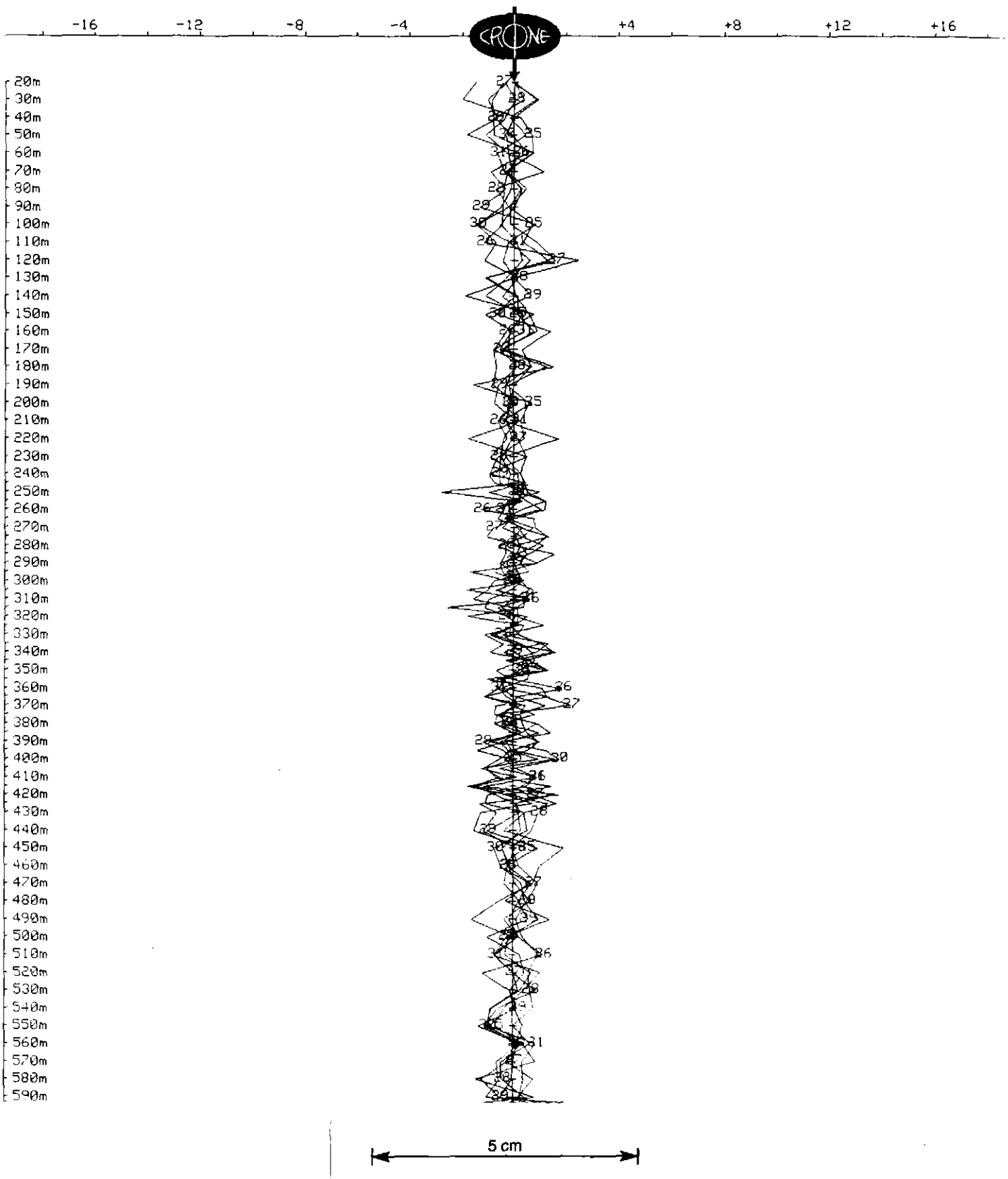
559141

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 3, 1998	File name	: WSP7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT



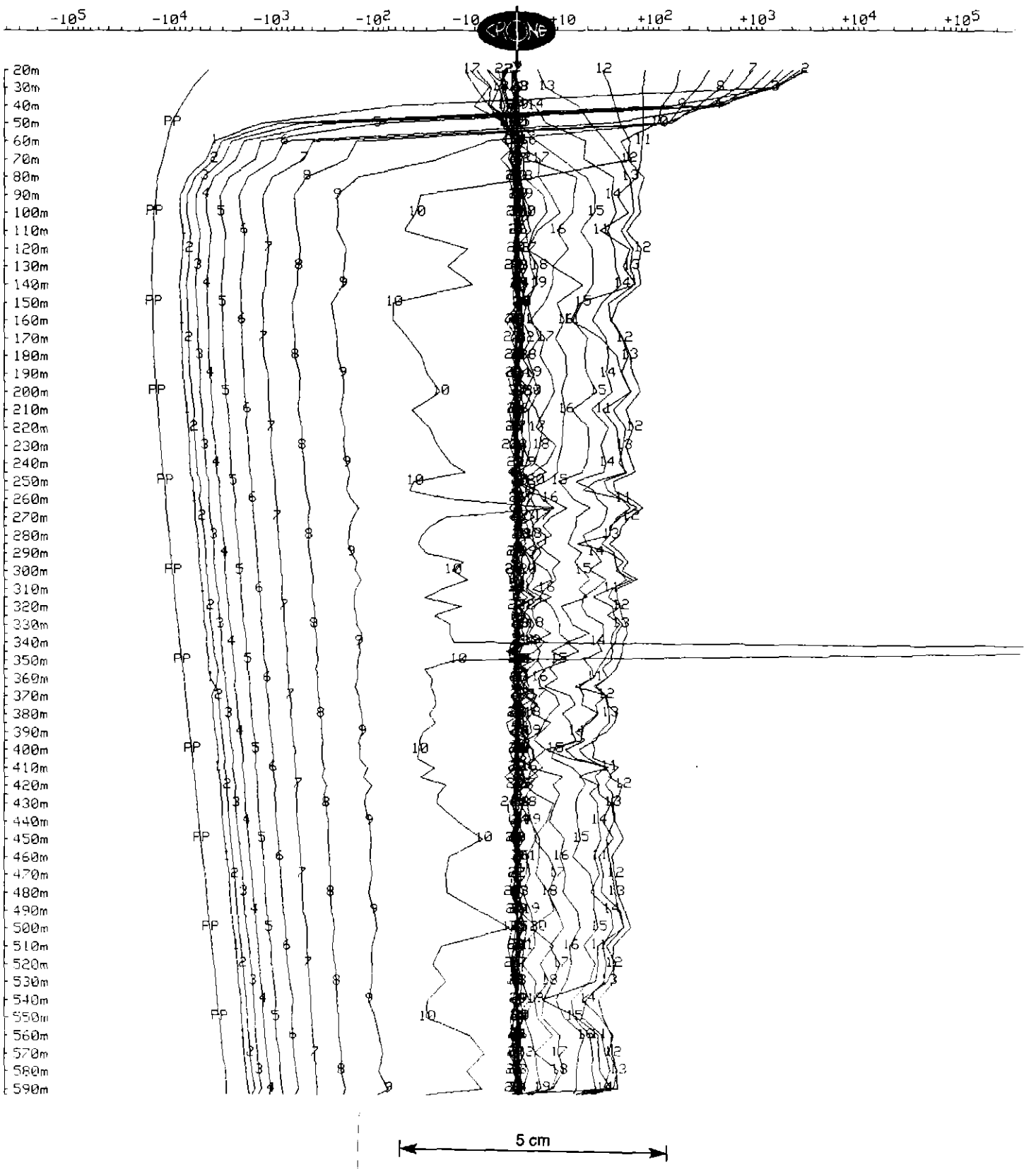
559142

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 3, 1998	File name	: WSP7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000



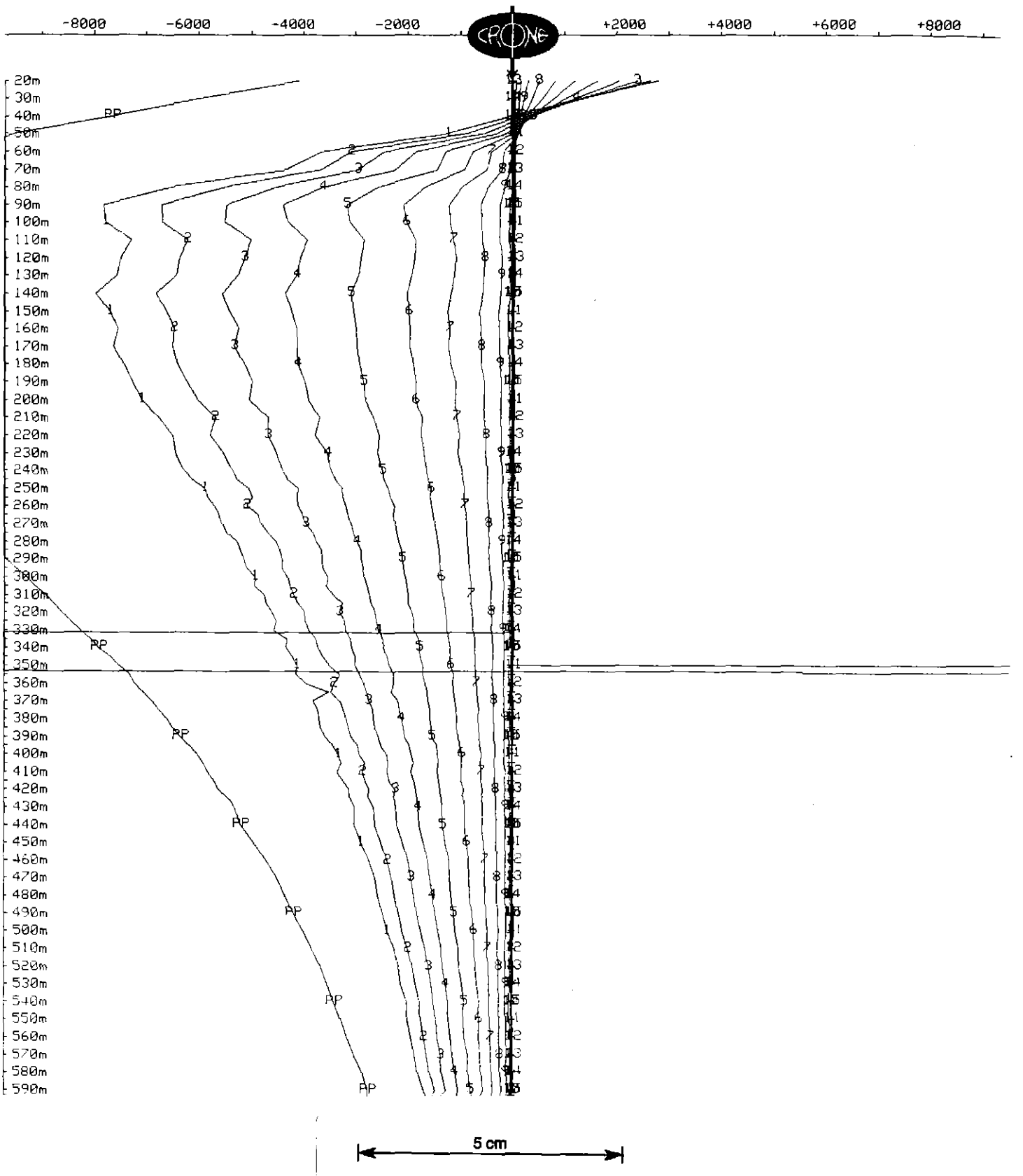
559143

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 3, 1998	File name	: WSP7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 1000 nT



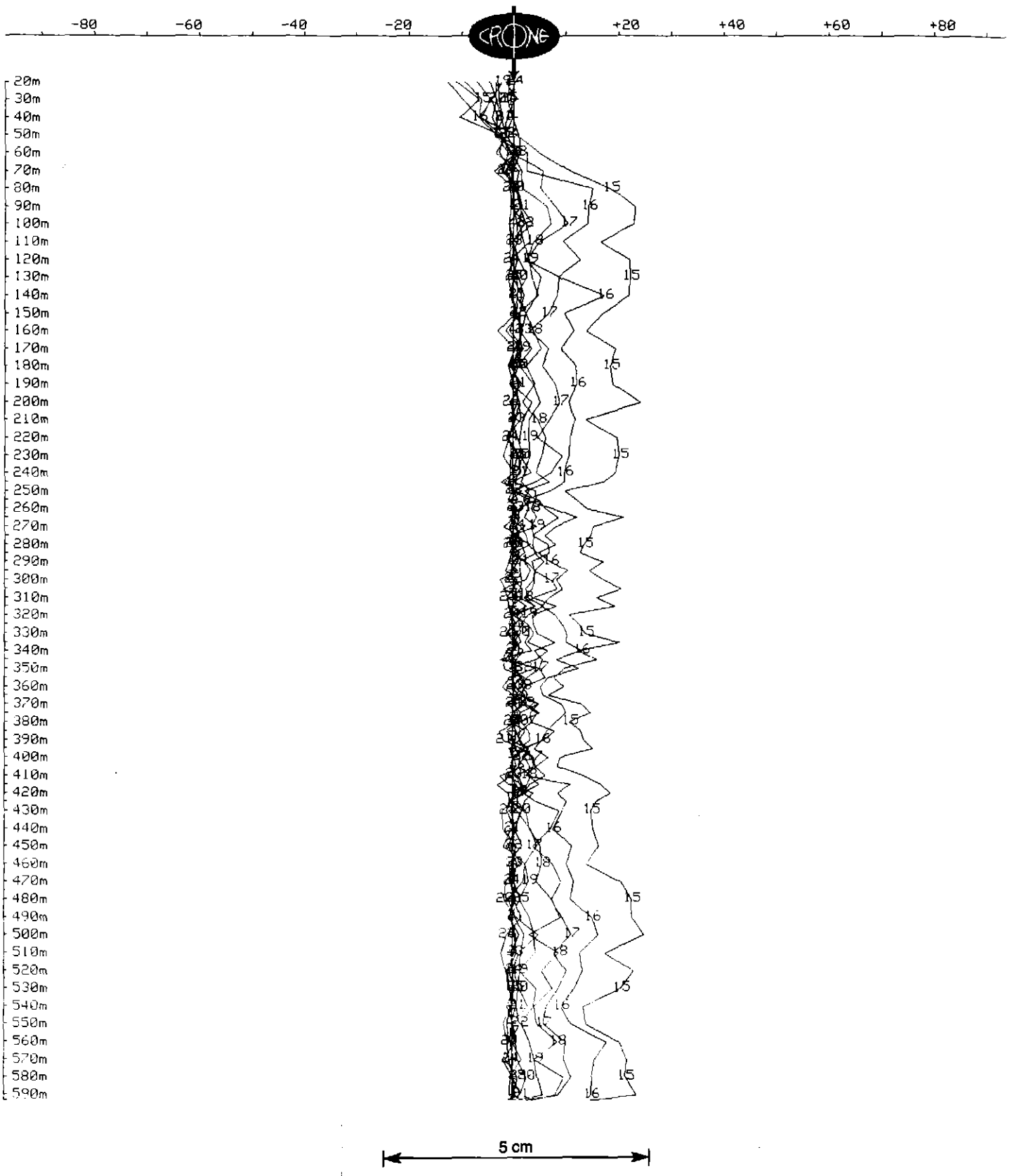
559144

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 3, 1998	File name	: WSP7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 10 nT



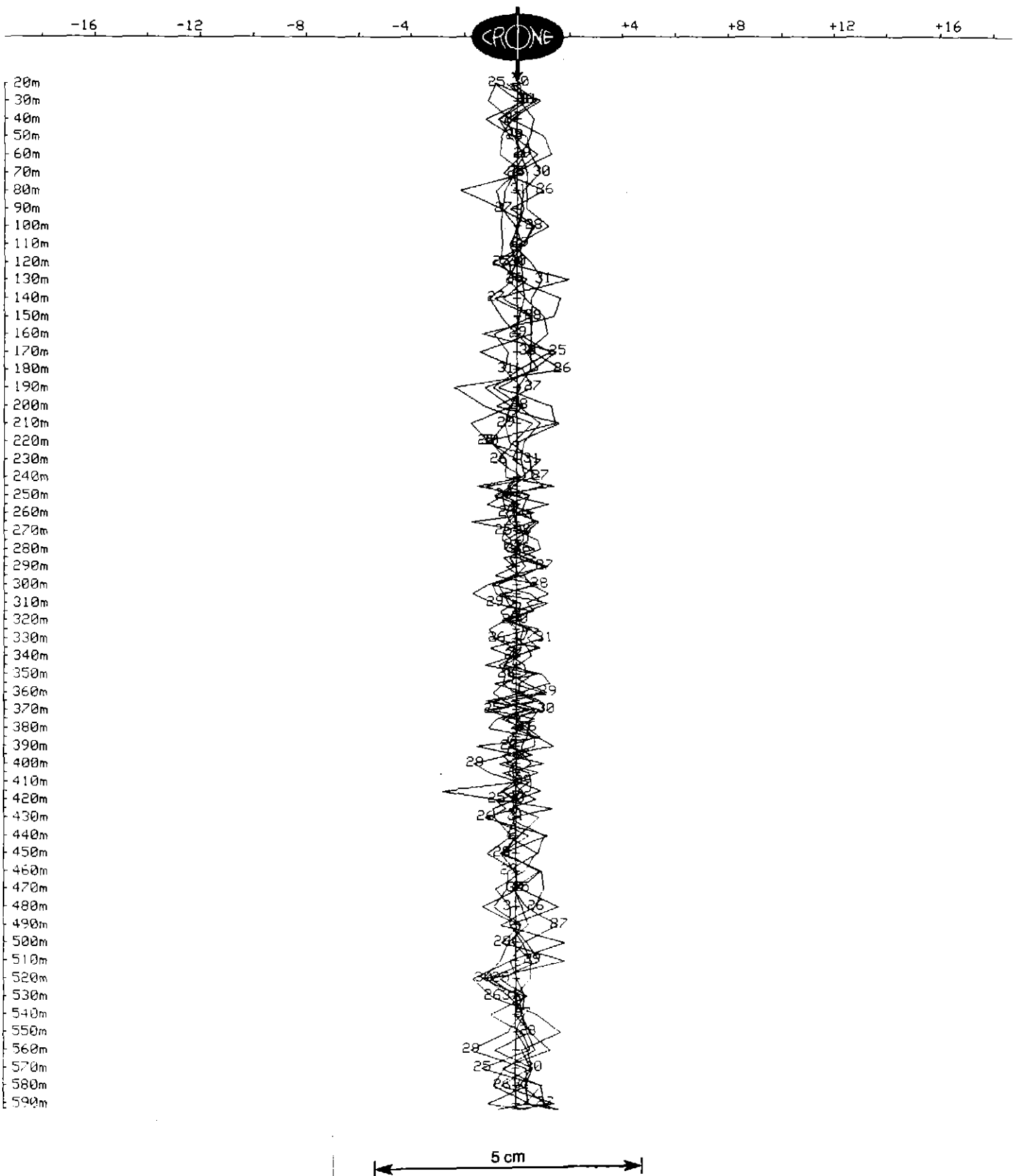
559145

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 3, 1998	File name	: WSP7XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT



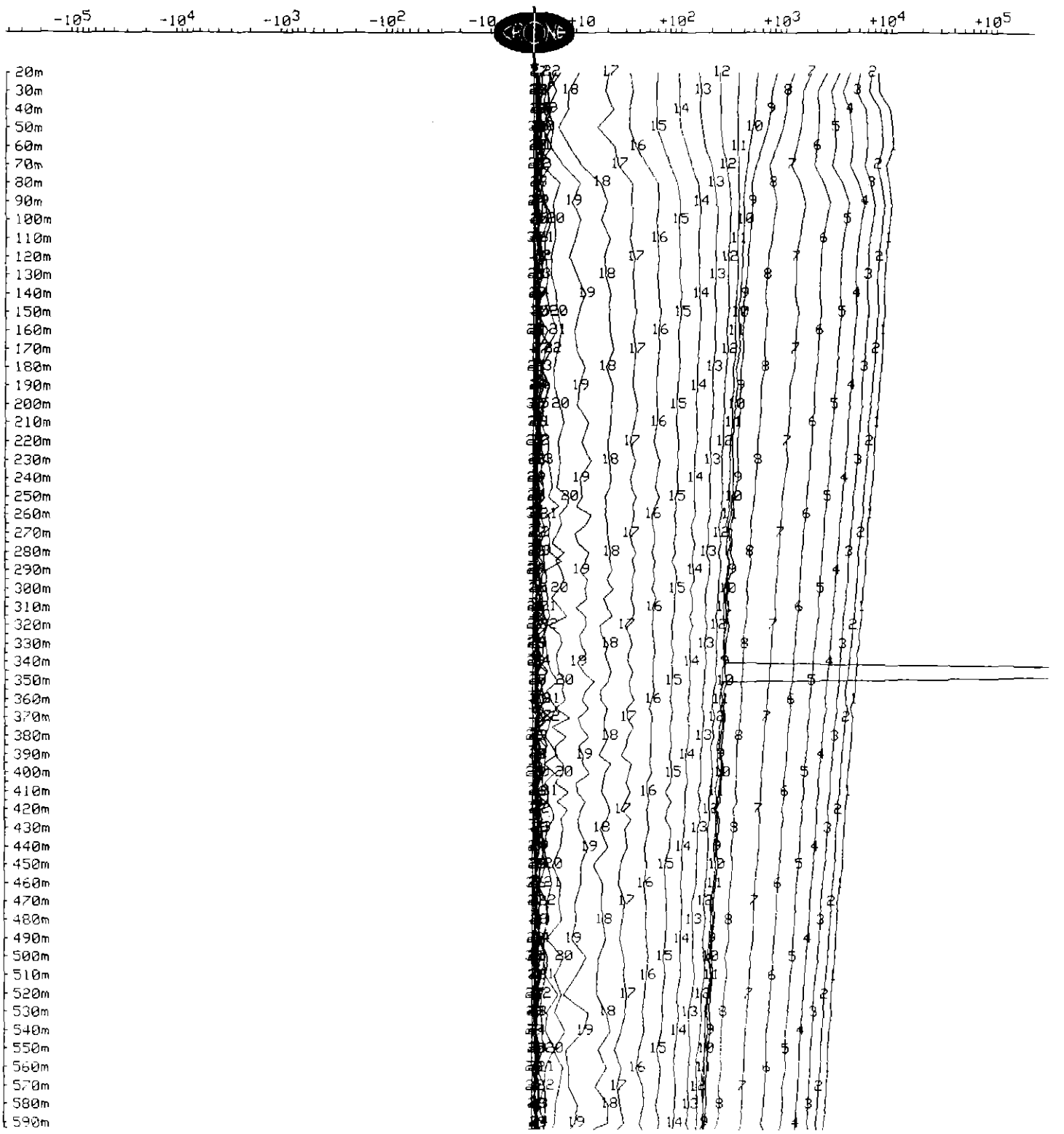
559146

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 3, 1998	File name	: WSP7XYZ.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 31 channels

Scale: 1:3000



5 cm

559147

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP7Z10.PEM
Time Base	: 20.00 ms	# Readings	: 58
Ramp Time	: 0.50 ms	Stn Units	: Metric
# Channels	: 31	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 800m X 325m	Receiver	: Digital #109
Current	: 16 Amps	Operator	: Brett Rankin

Loop Coordinates (X,Y,Z)

1. 376250m, 5.3614e+06m, 0m
2. 376250m, 5.3606e+06m, 0m
3. 376525m, 5.3606e+06m, 0m
4. 376575m, 5.361e+06m, 0m
5. 376575m, 5.3614e+06m, 0m

Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)

1. 376772m, 5.36116e+06m, 0m
2. 90deg, 60deg, 593m

Channel Times (usec)

Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-198	-99	-149	1	50	58	54	2	58	72	65
3	72	86	79	4	86	104	94	5	104	126	115
6	126	153	140	7	153	185	169	8	185	225	205
9	225	270	248	10	270	328	299	11	328	396	362
12	396	482	439	13	482	580	531	14	580	702	641
15	702	850	776	16	850	1026	938	17	1026	1242	1134
18	1242	1498	1370	19	1498	1813	1656	20	1813	2187	2000
21	2187	2646	2416	22	2646	3195	2920	23	3195	3861	3528
24	3861	4666	4264	25	4666	5634	5150	26	5634	6808	6221
27	6808	8221	7514	28	8221	9936	9078	29	9936	12000	10968
30	12000	14490	13245	31	14490	17510	16000				

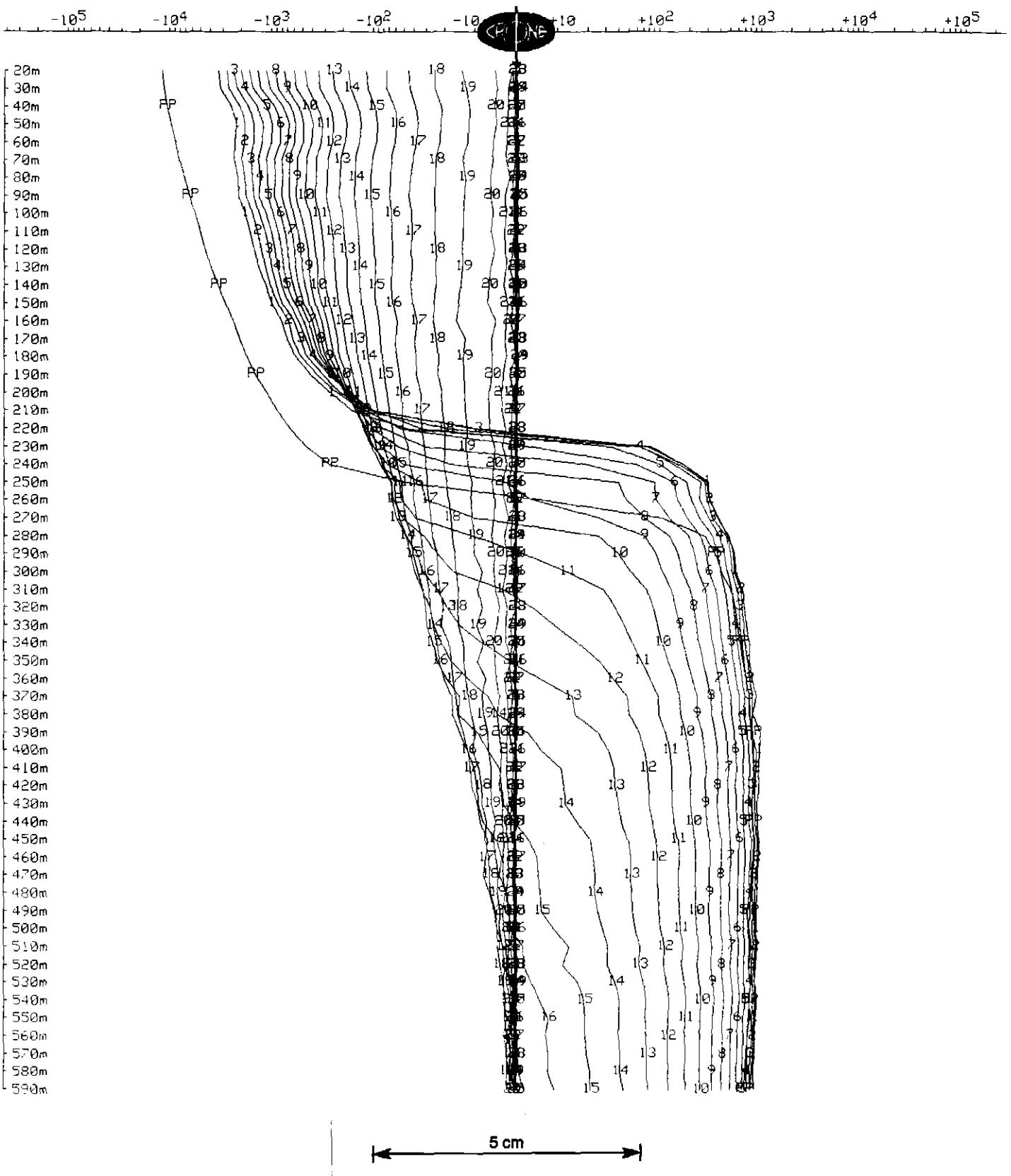
559148

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP7Z10.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000



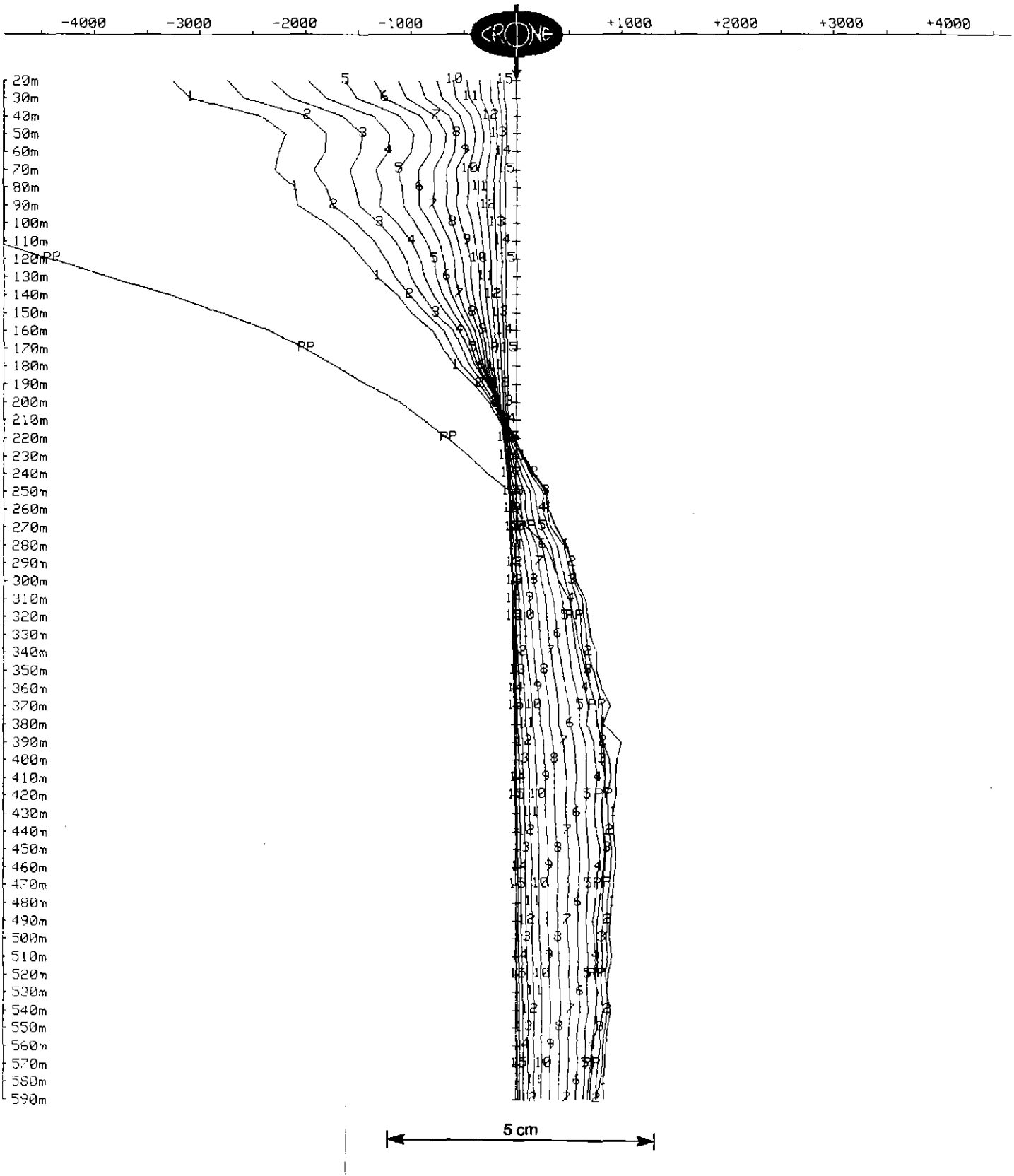
559149

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP7Z10.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 500 nT

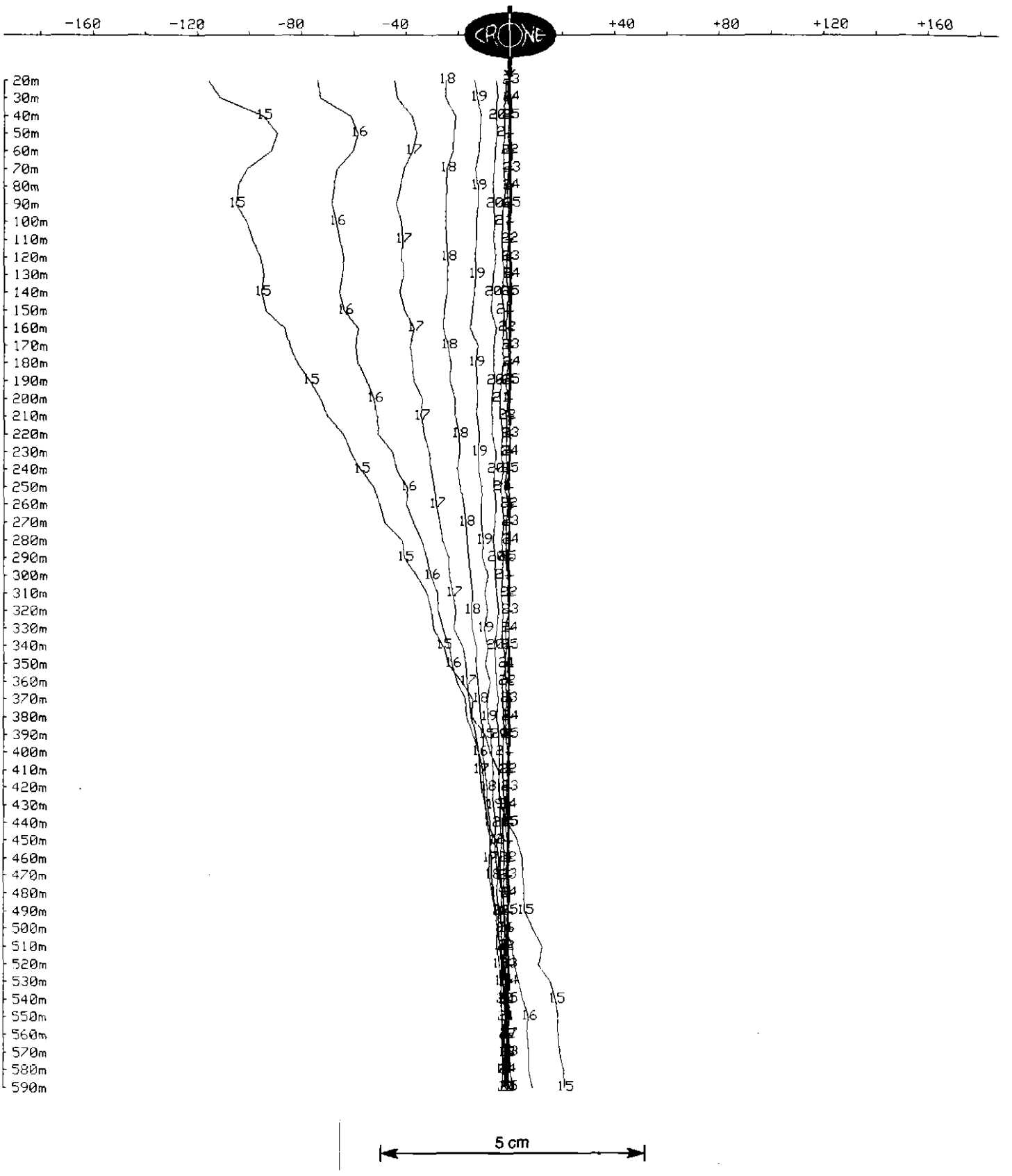


OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP7Z10.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 20 nT



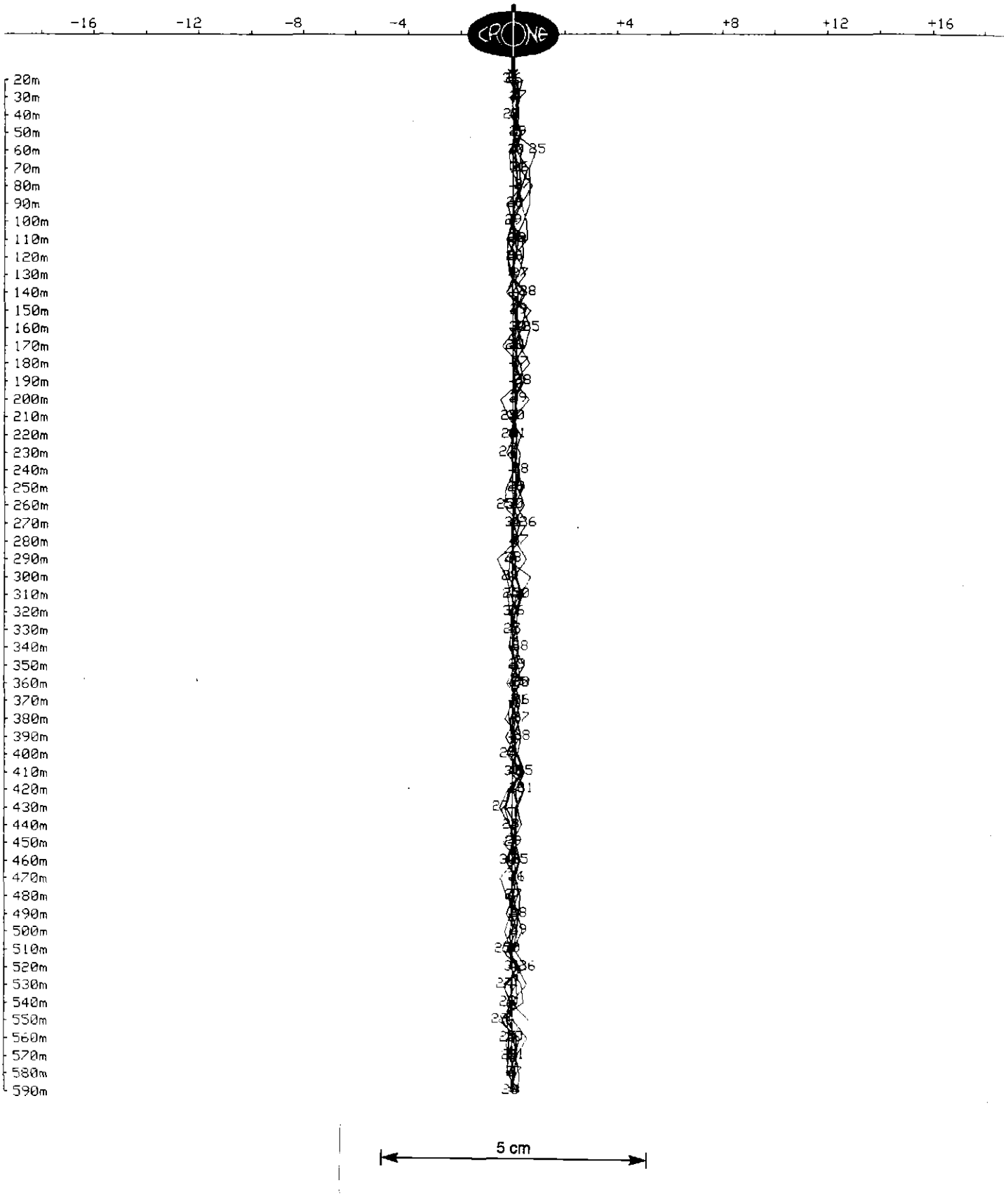
559151

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP7Z10.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT



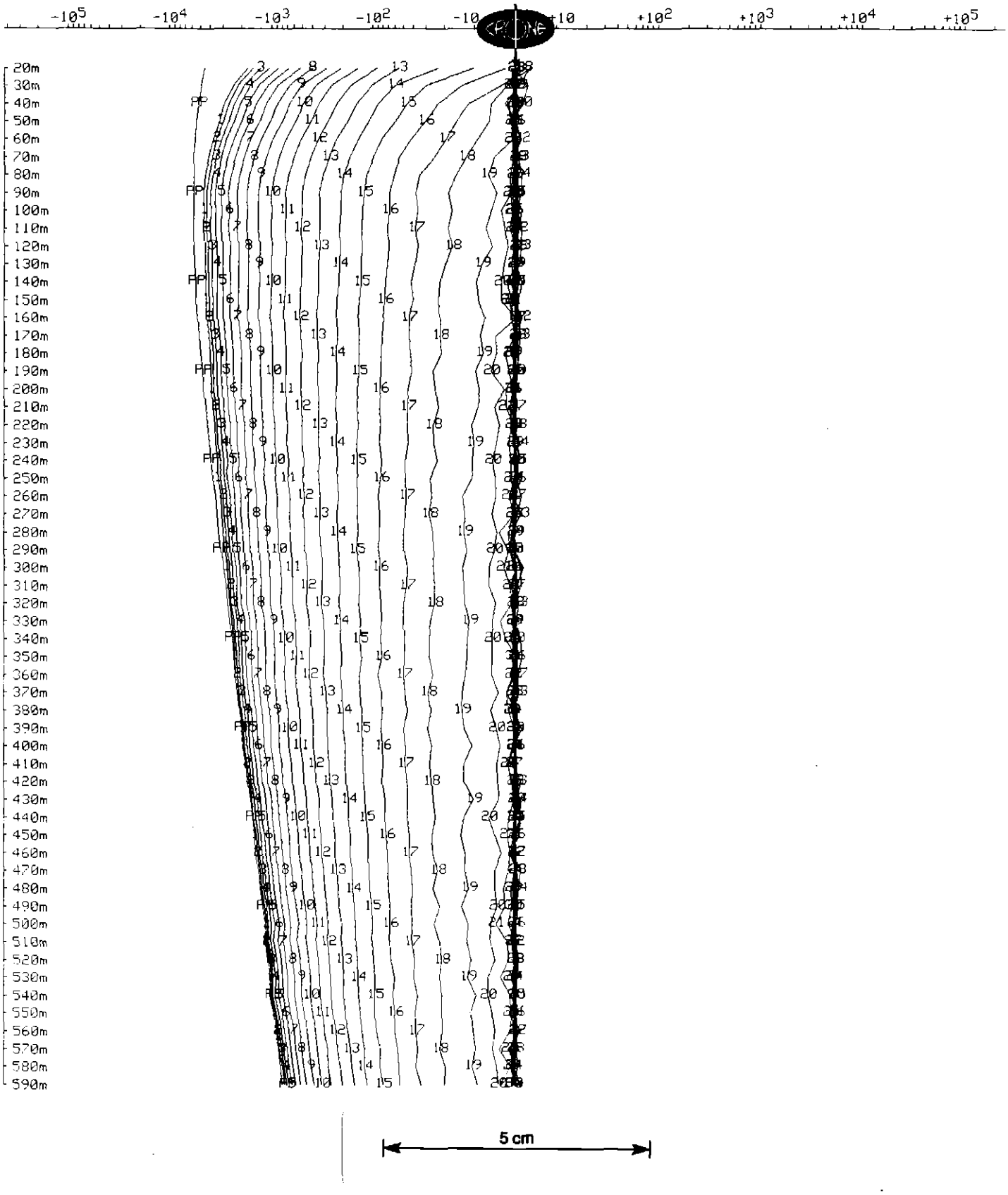
559152

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP7XY10.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000



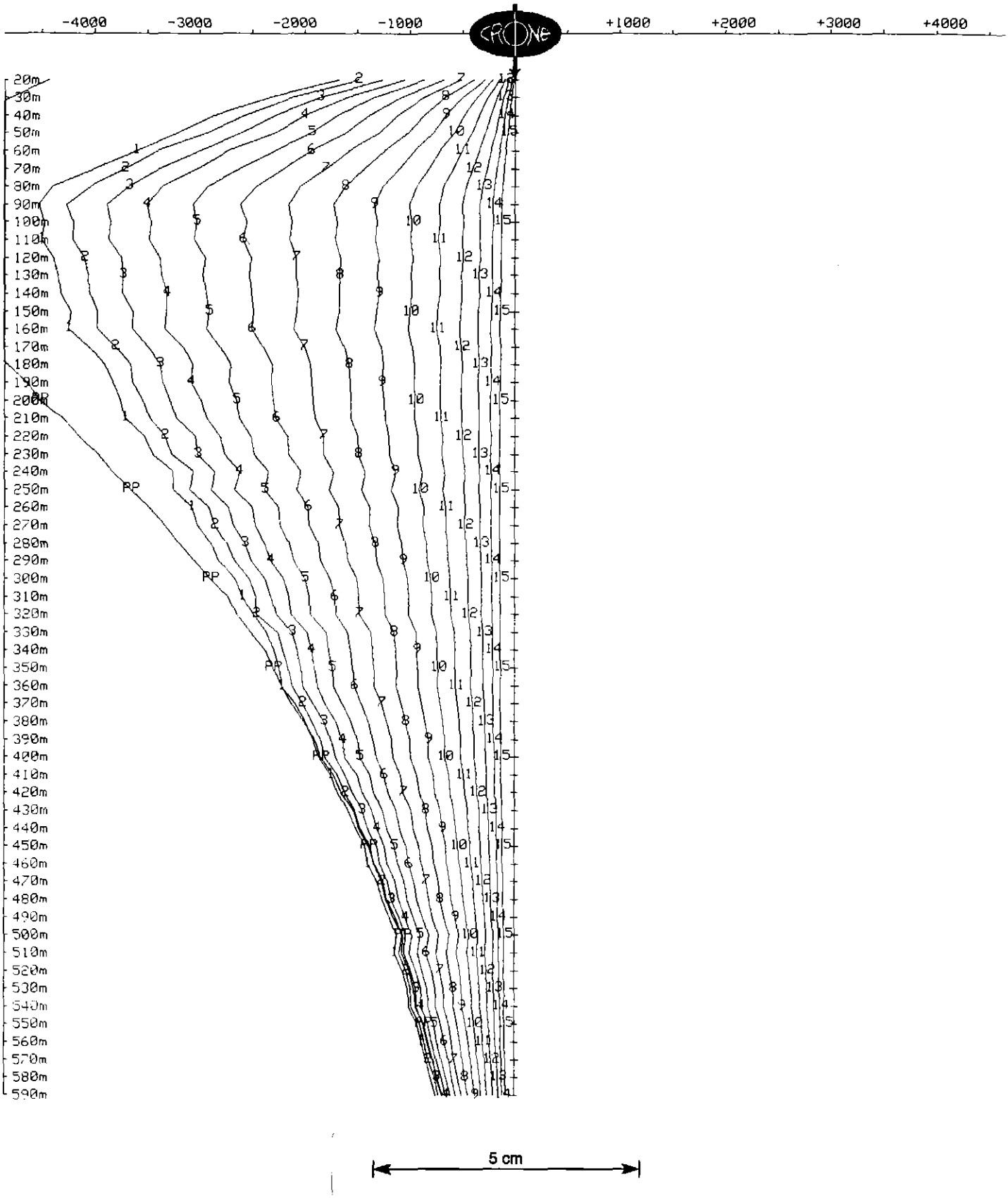
559153

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP7XY10.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 500 nT



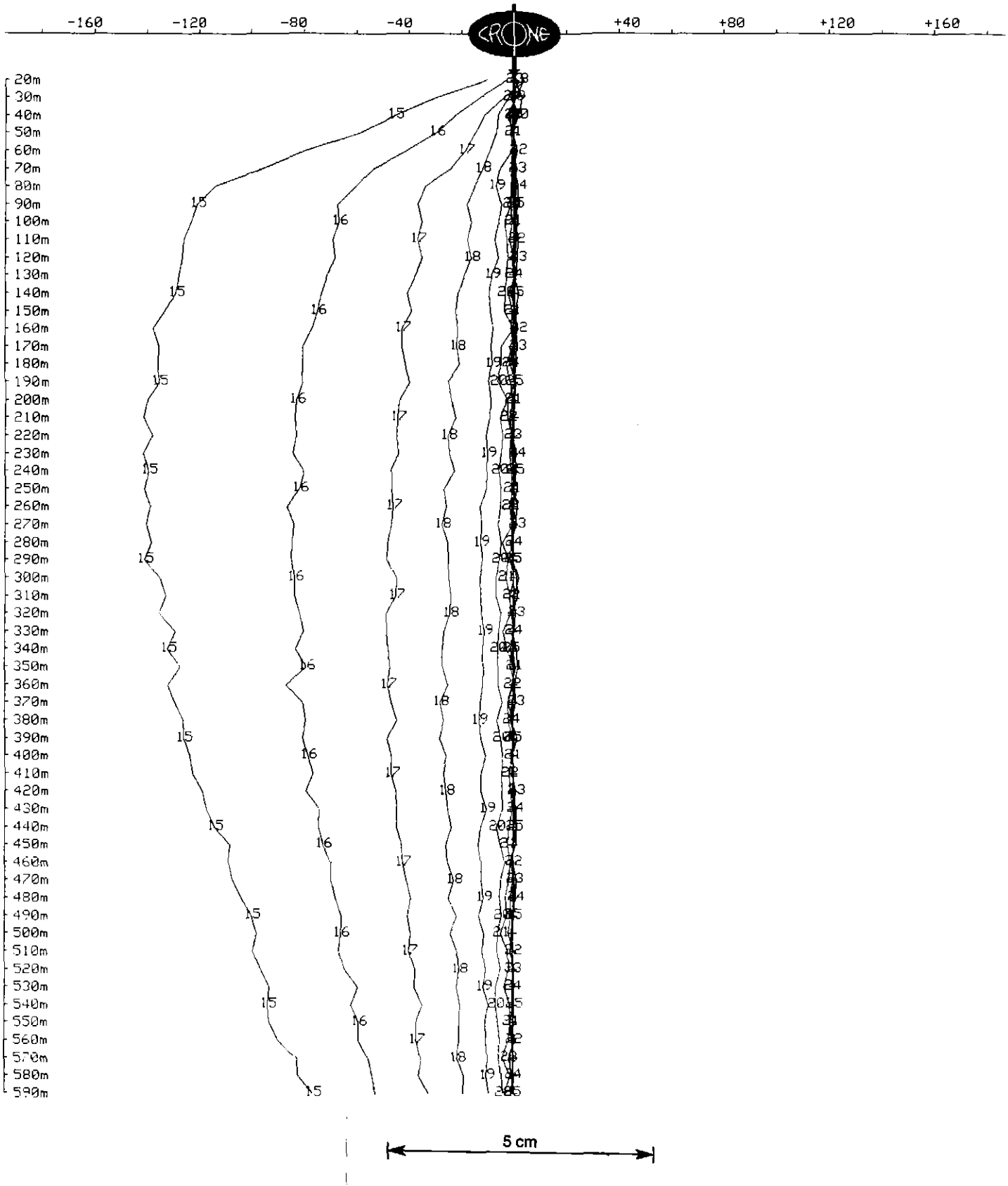
559154

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP7XY10.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 20 nT

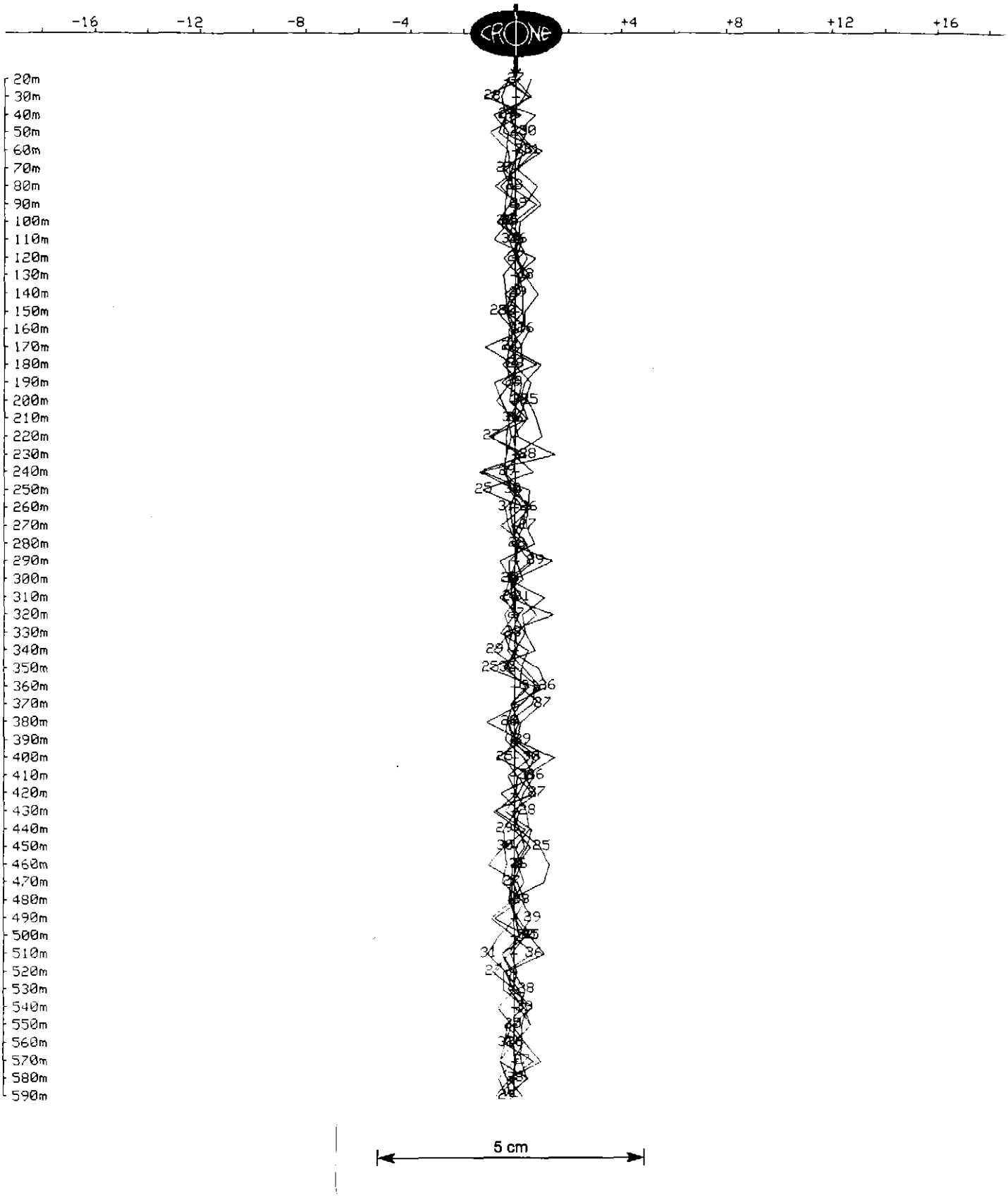


OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP7XY10.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT



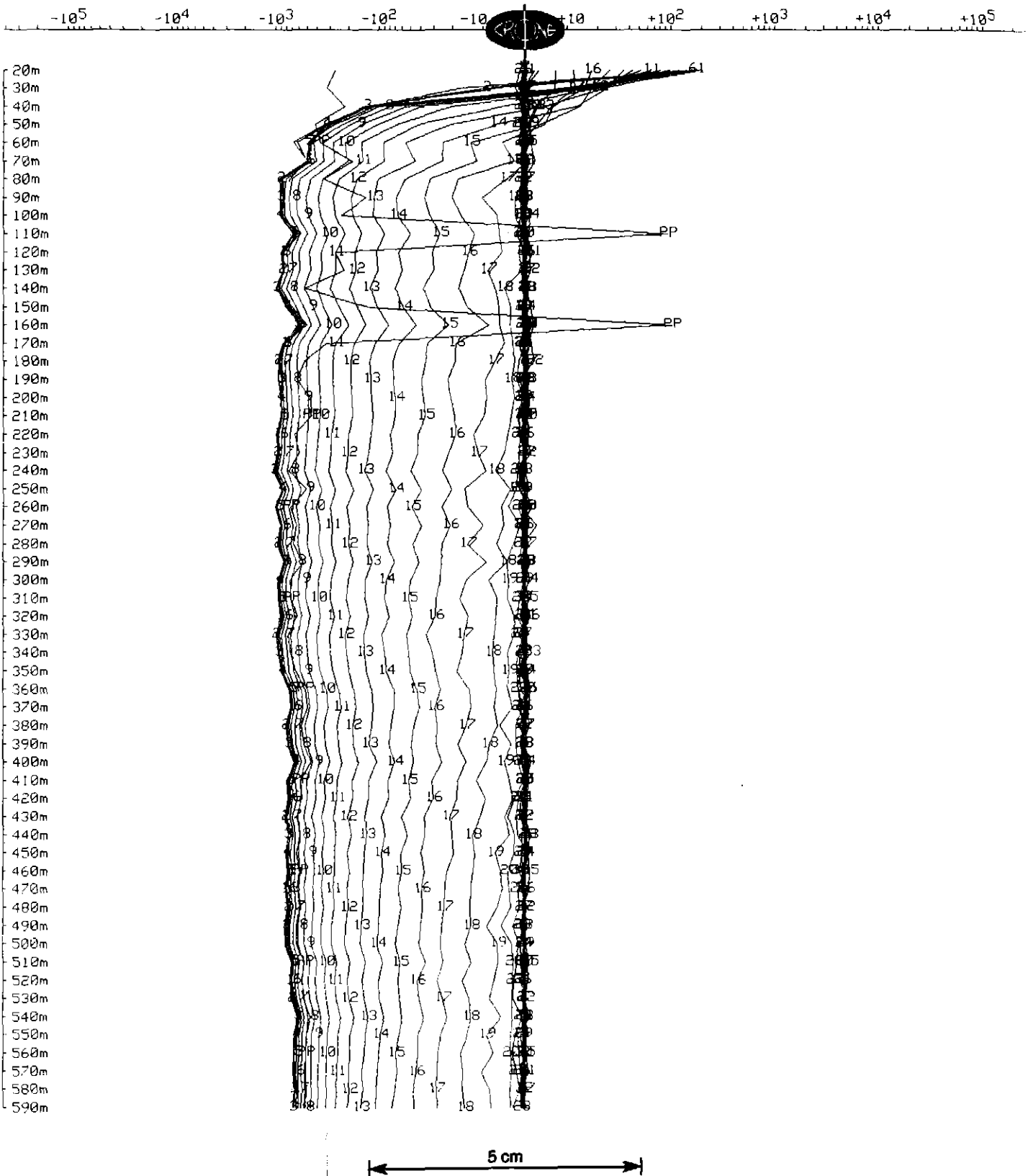
559156

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP7XY10.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000



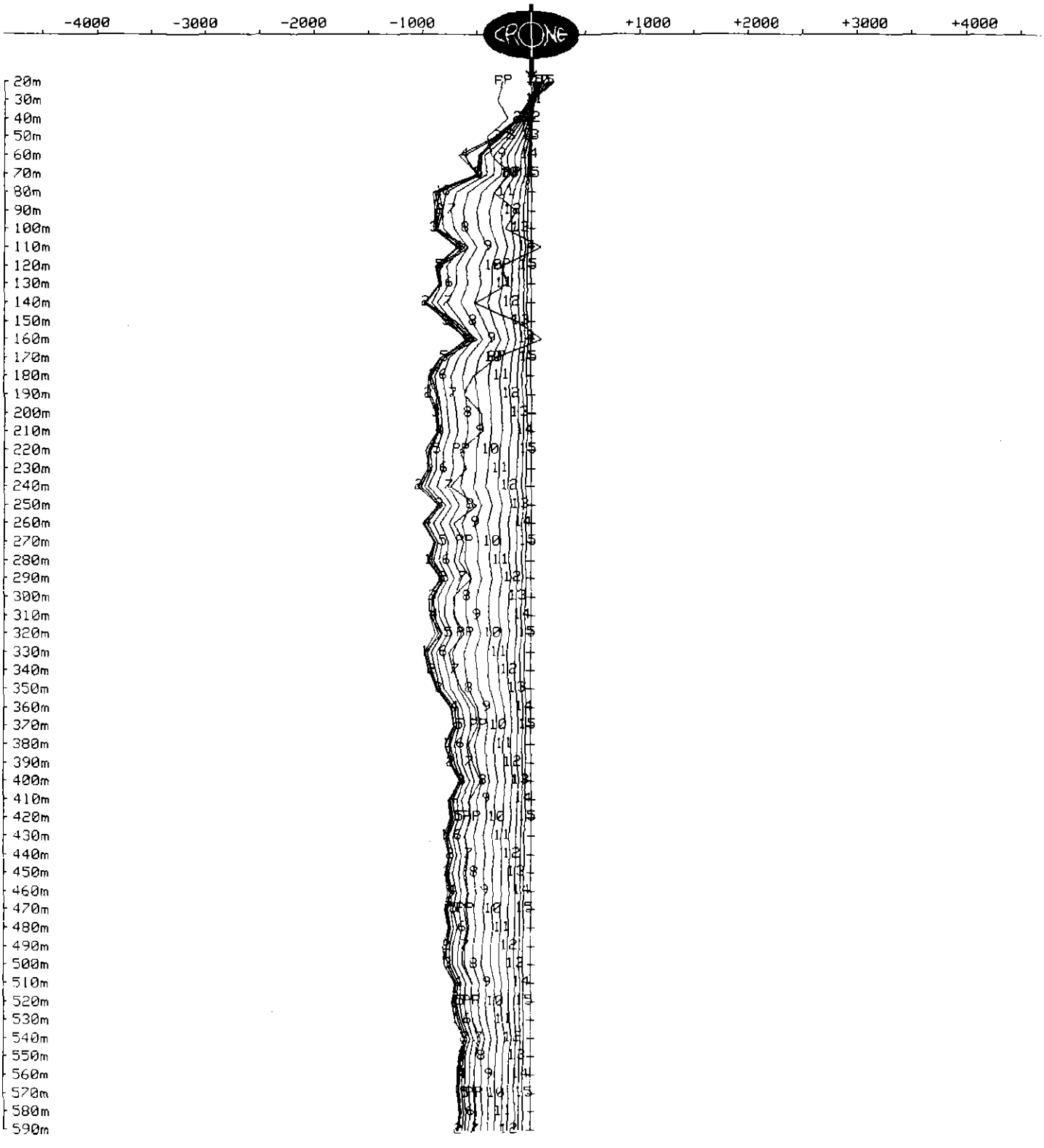
559157

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP7XY10.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 500 nT



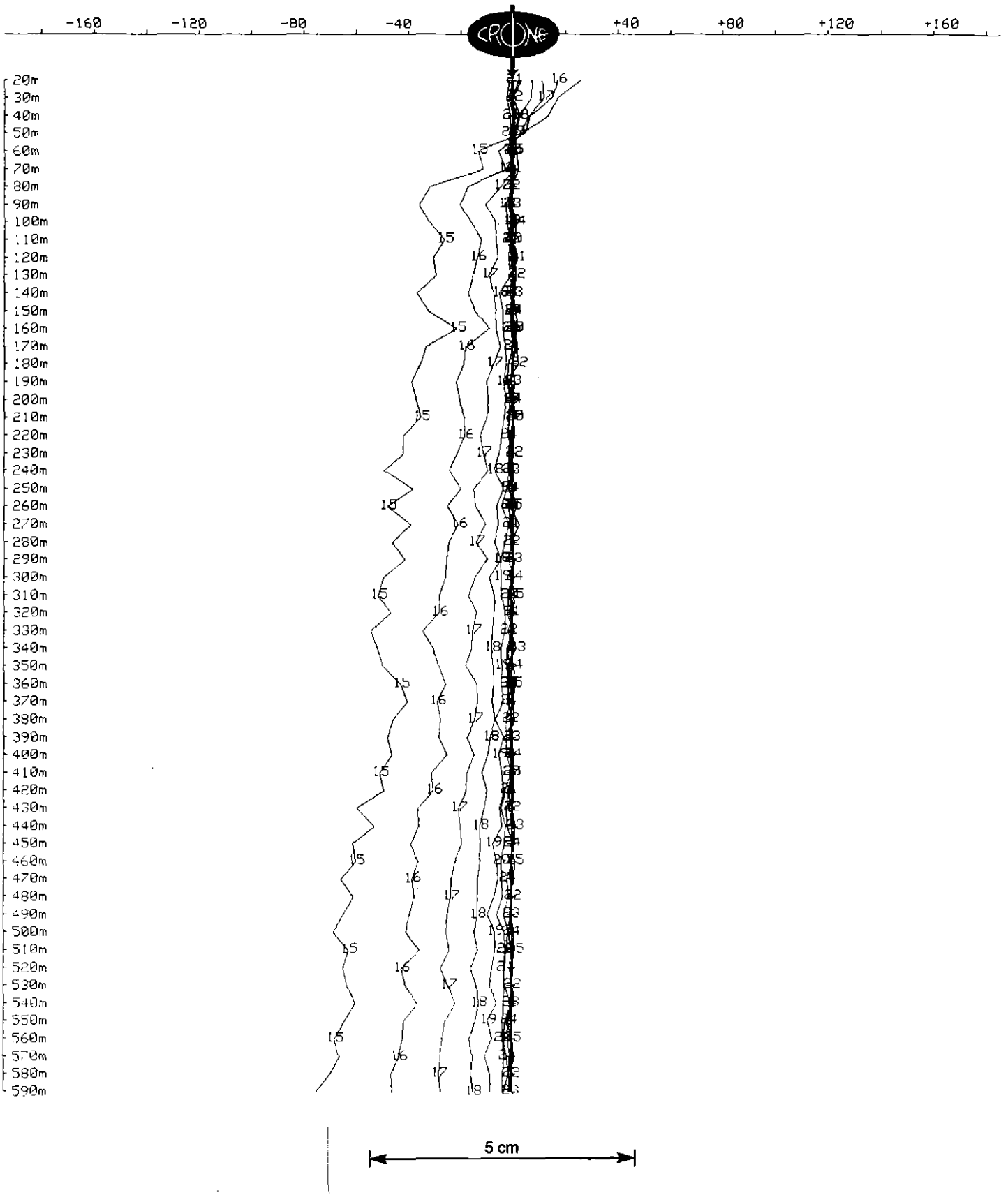
559158

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP7XY10.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 20 nT



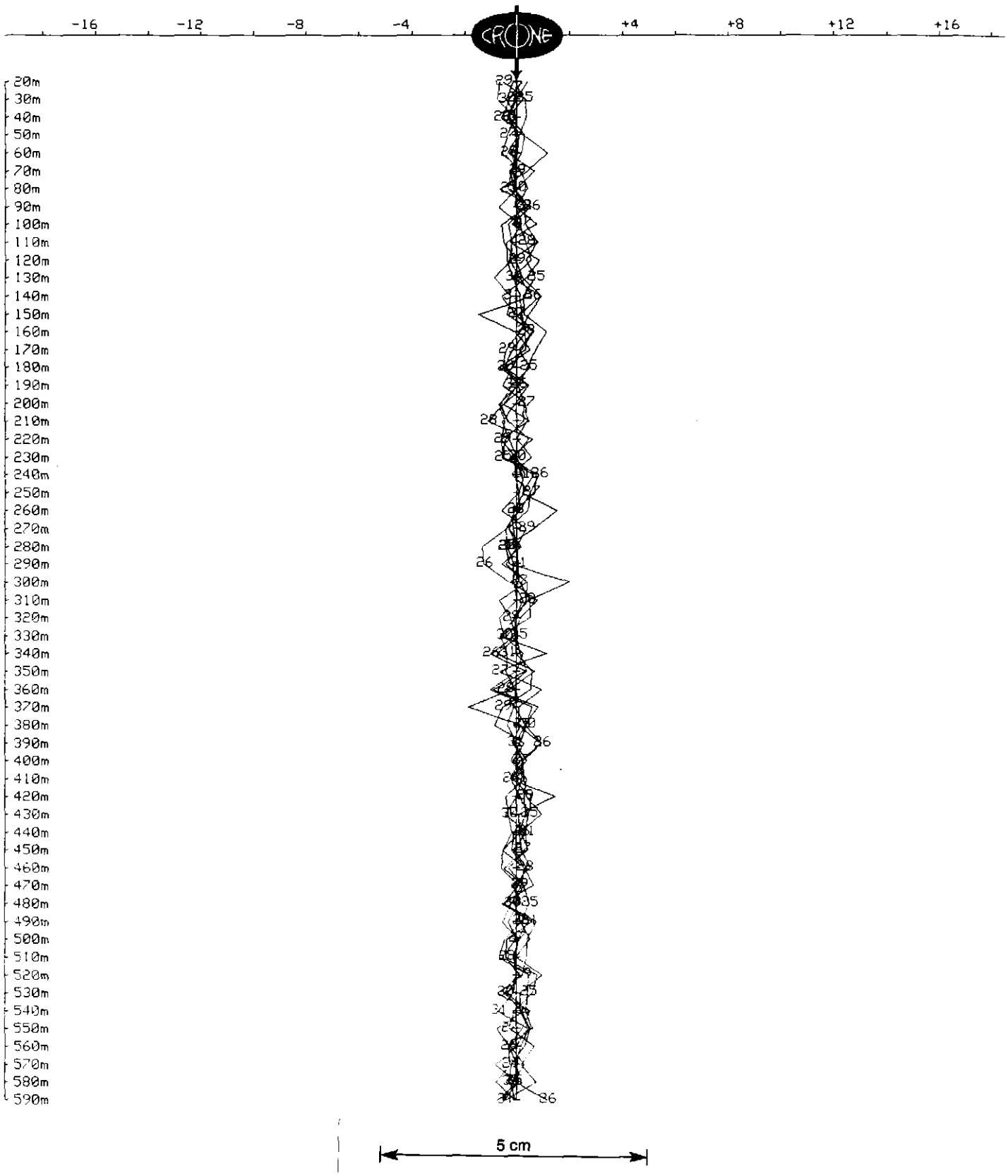
559159

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP7XY10.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT



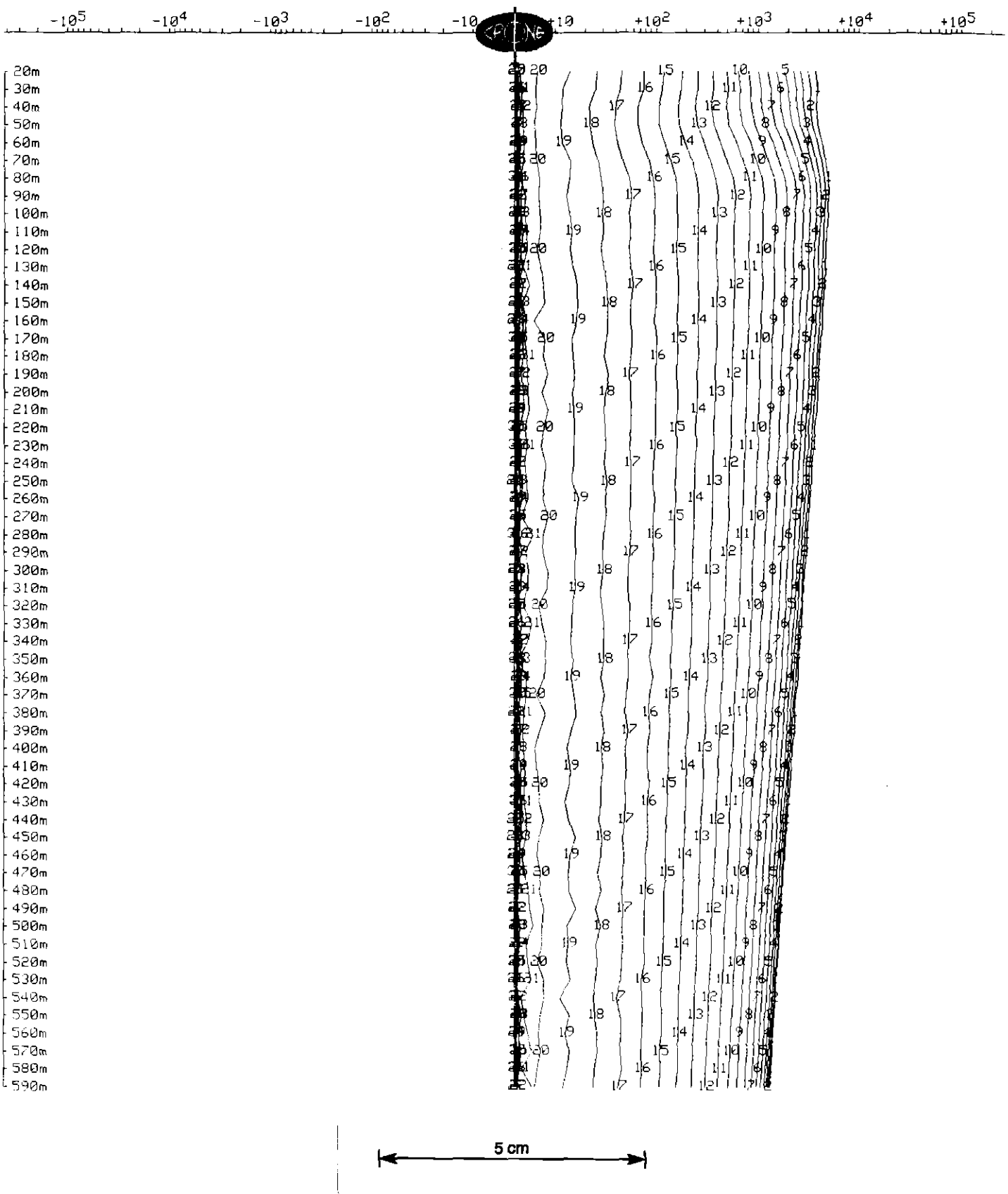
559160

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-7
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP7XYZ1.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 31 channels

Scale: 1:3000



5 cm

OUTER-RIM EXPLORATION SERVICES

ACN 059 220 192

Geophysical Contracting Services

100% Australian Owned

35 Fleming Street,
(P.O. Box 1754)
AITKENVALE, QLD. 4814

Tel: 07 4725 3544
Fax: 07 4725 4805
Mob: 0412 54 9980
Email: oreserv@ozemail.com.au

Volume 2 of 3

Client	:	RGC Exploration Ltd
Prospect	:	Tyndall Creek and White Spur.
Area	:	Zeehan, Tas.
Survey	:	Borehole PEM Survey
Survey Period	:	2nd to 10th February 1998.
Operator	:	Brett Rankin.

2317-9801c

559162

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 2, 1998	File name	: WSP8Z.PEM
Time Base	: 20.00 ms	# Readings	: 49
Ramp Time	: 0.50 ms	Stn Units	: Metric
# Channels	: 31	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 475m X 400m	Receiver	: Digital #109
Current	: 19 Amps	Operator	: Brett Rankin

Loop Coordinates (X,Y,Z)
1. 376575m, 5.361e+06m, 0m
2. 376540m, 5.36073e+06m, 0m
3. 376925m, 5.36072e+06m, 0m
4. 377000m, 5.361e+06m, 0m

Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)
1. 376812m, 5.36056e+06m, 0m
2. 90deg, 60deg, 385m

Channel Times (usec)

Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-198	-99	-149	1	50	58	54	2	58	72	65
3	72	86	79	4	86	104	94	5	104	126	115
6	126	153	140	7	153	185	169	8	185	225	205
9	225	270	248	10	270	328	299	11	328	396	362
12	396	482	439	13	482	580	531	14	580	702	641
15	702	850	776	16	850	1026	938	17	1026	1242	1134
18	1242	1498	1370	19	1498	1813	1656	20	1813	2187	2000
21	2187	2646	2416	22	2646	3195	2920	23	3195	3861	3528
24	3861	4666	4264	25	4666	5634	5150	26	5634	6808	6221
27	6808	8221	7514	28	8221	9936	9078	29	9936	12000	10968
30	12000	14490	13245	31	14490	17510	16000				

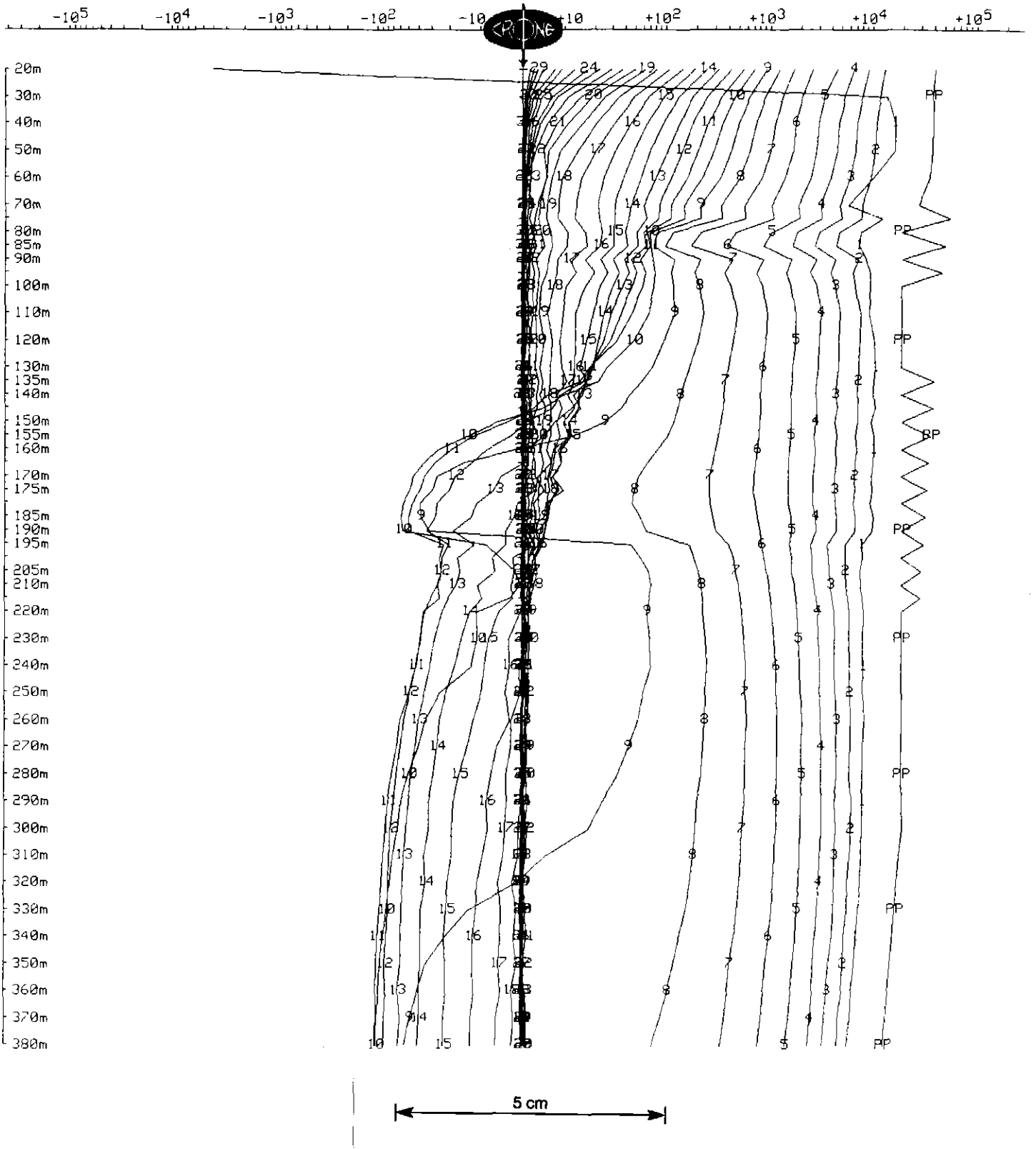
559163

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 2, 1998	File name	: WSP8Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000



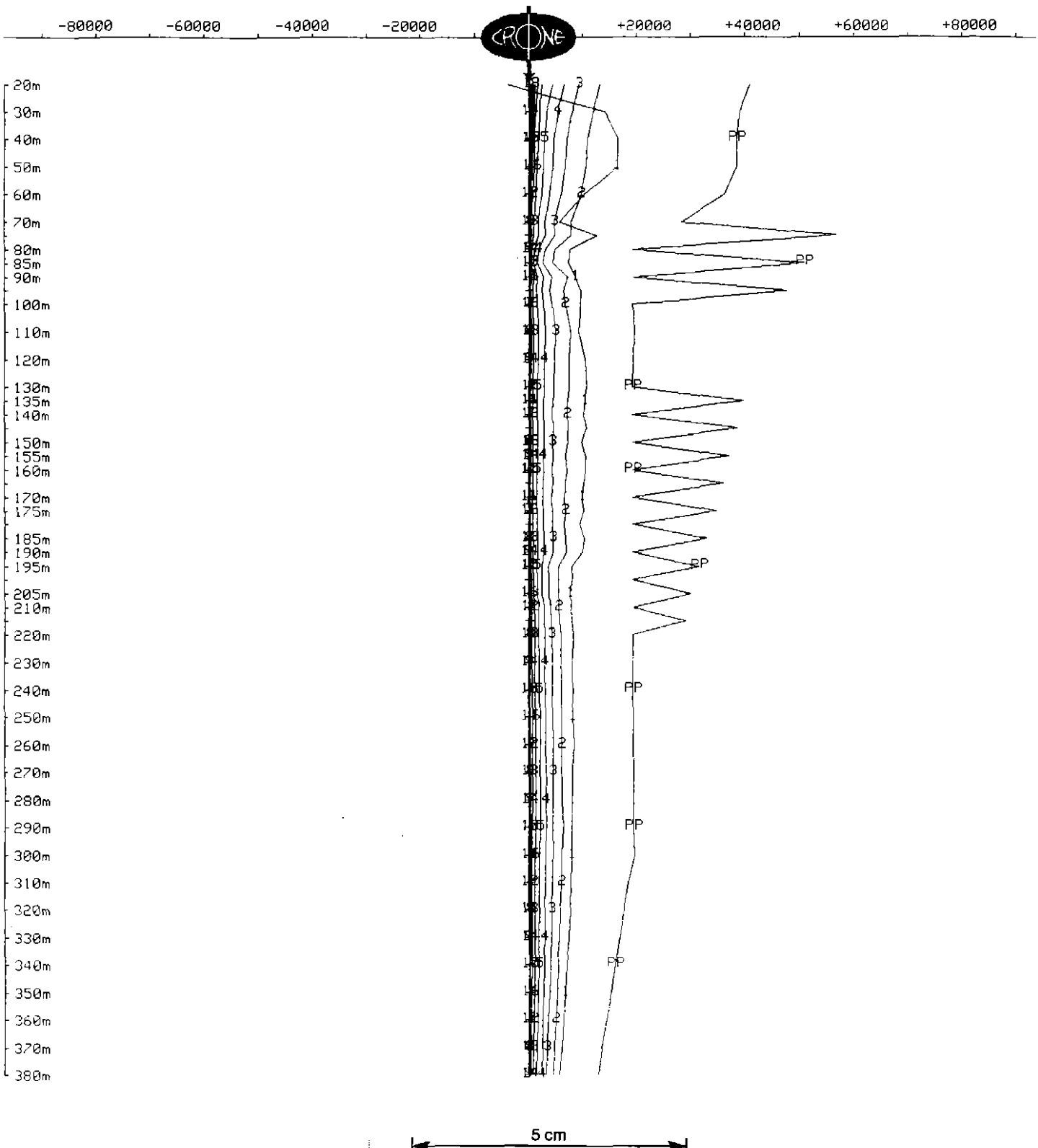
559164

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 2, 1998	File name	: WSP8Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 10000 nT



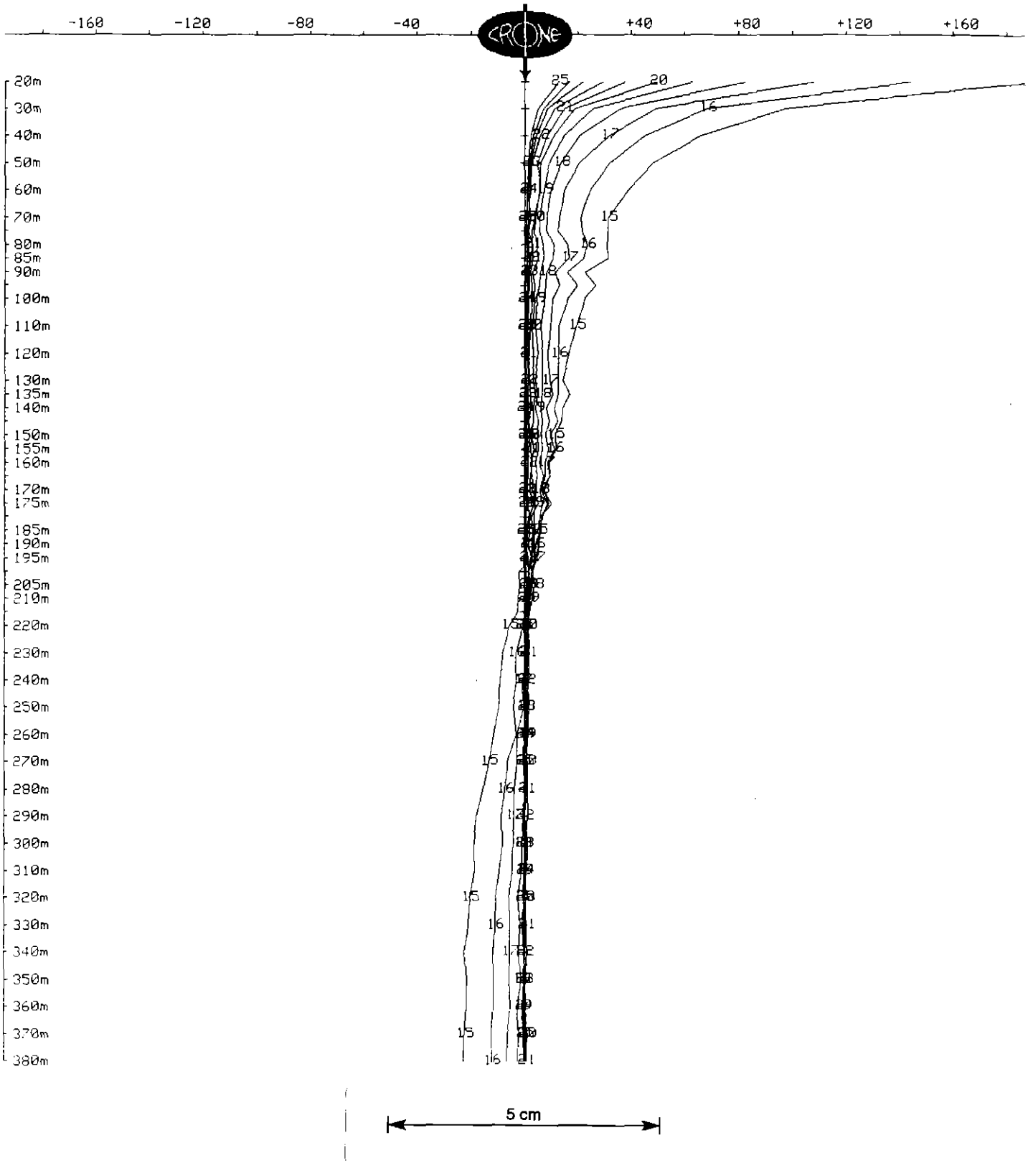
559165

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 2, 1998	File name	: WSP8Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 20 nT



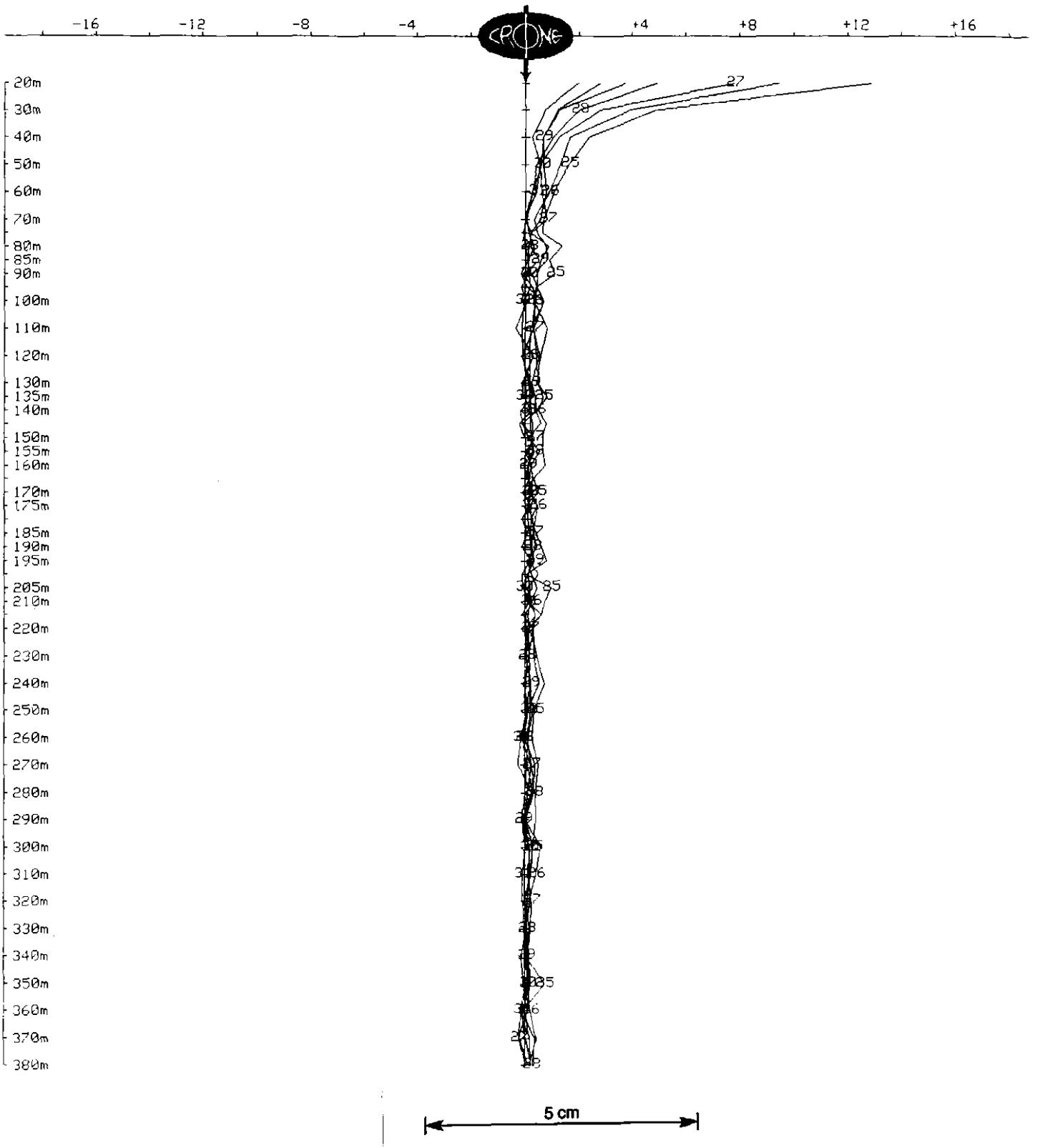
559166

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 2, 1998	File name	: WSP8Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 2 nT



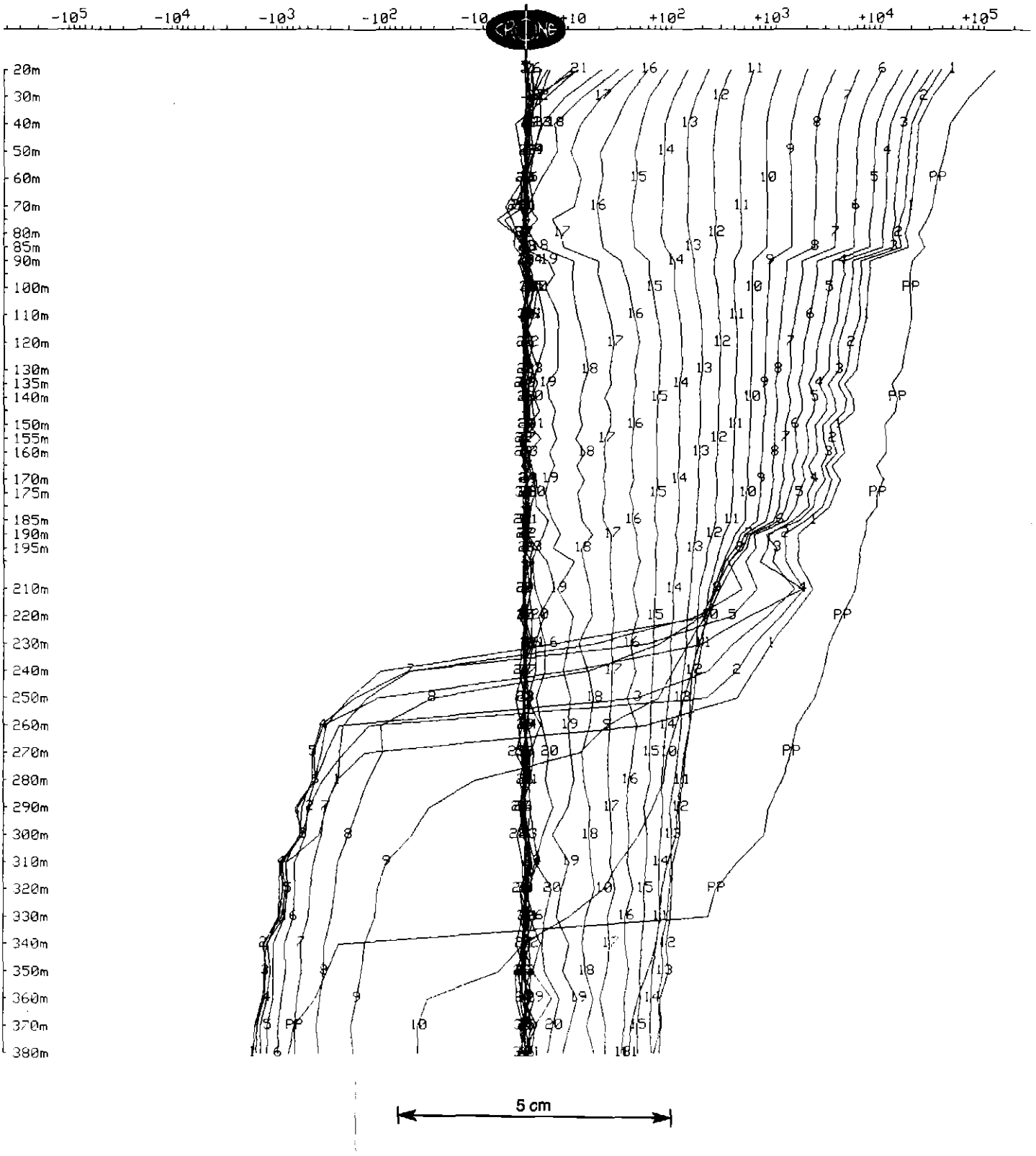
559167

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 2, 1998	File name	: WSP8XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000



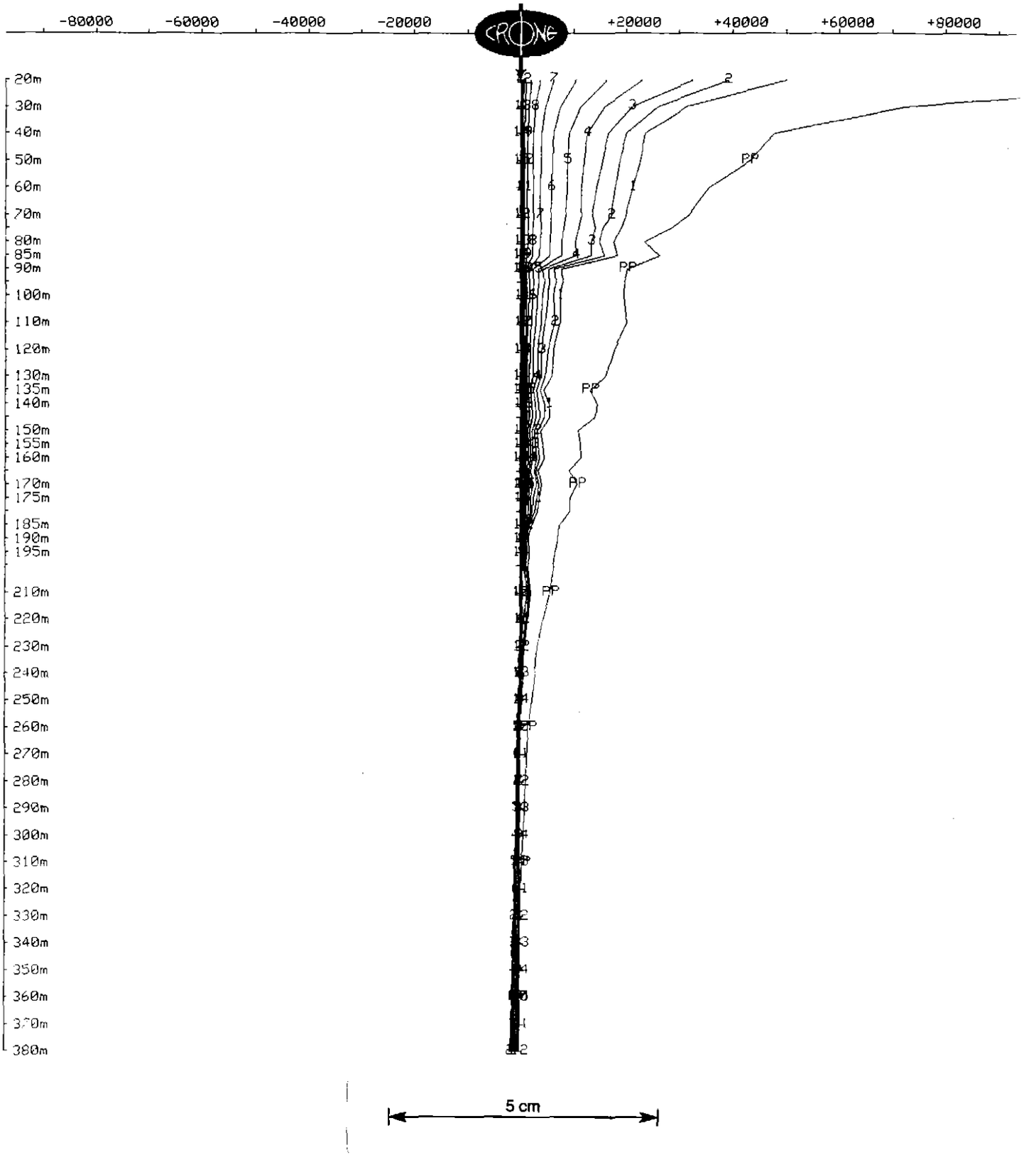
559168

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 2, 1998	File name	: WSP8XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 10000 nT



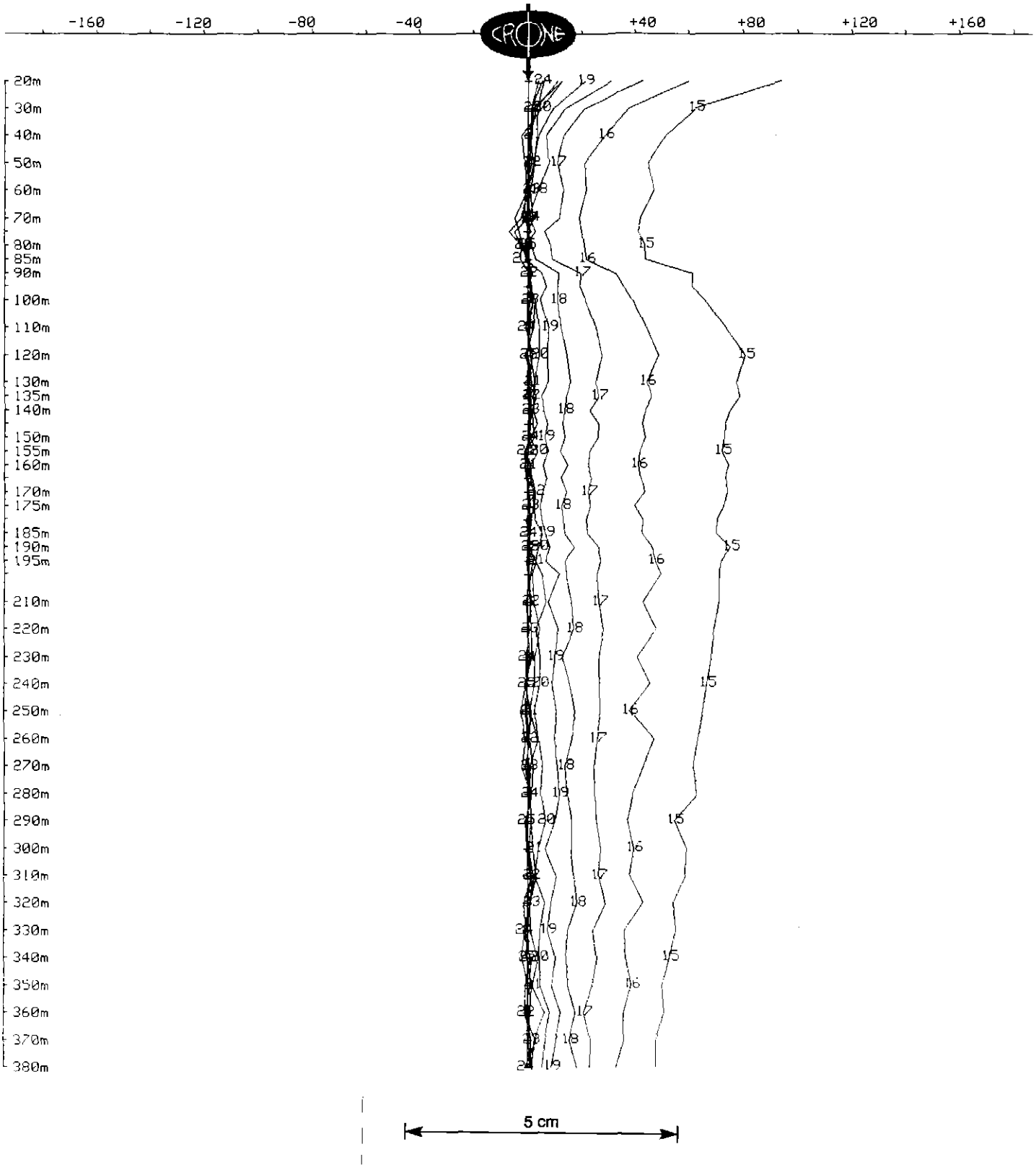
559169

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 2, 1998	File name	: WSP8XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 20 nT



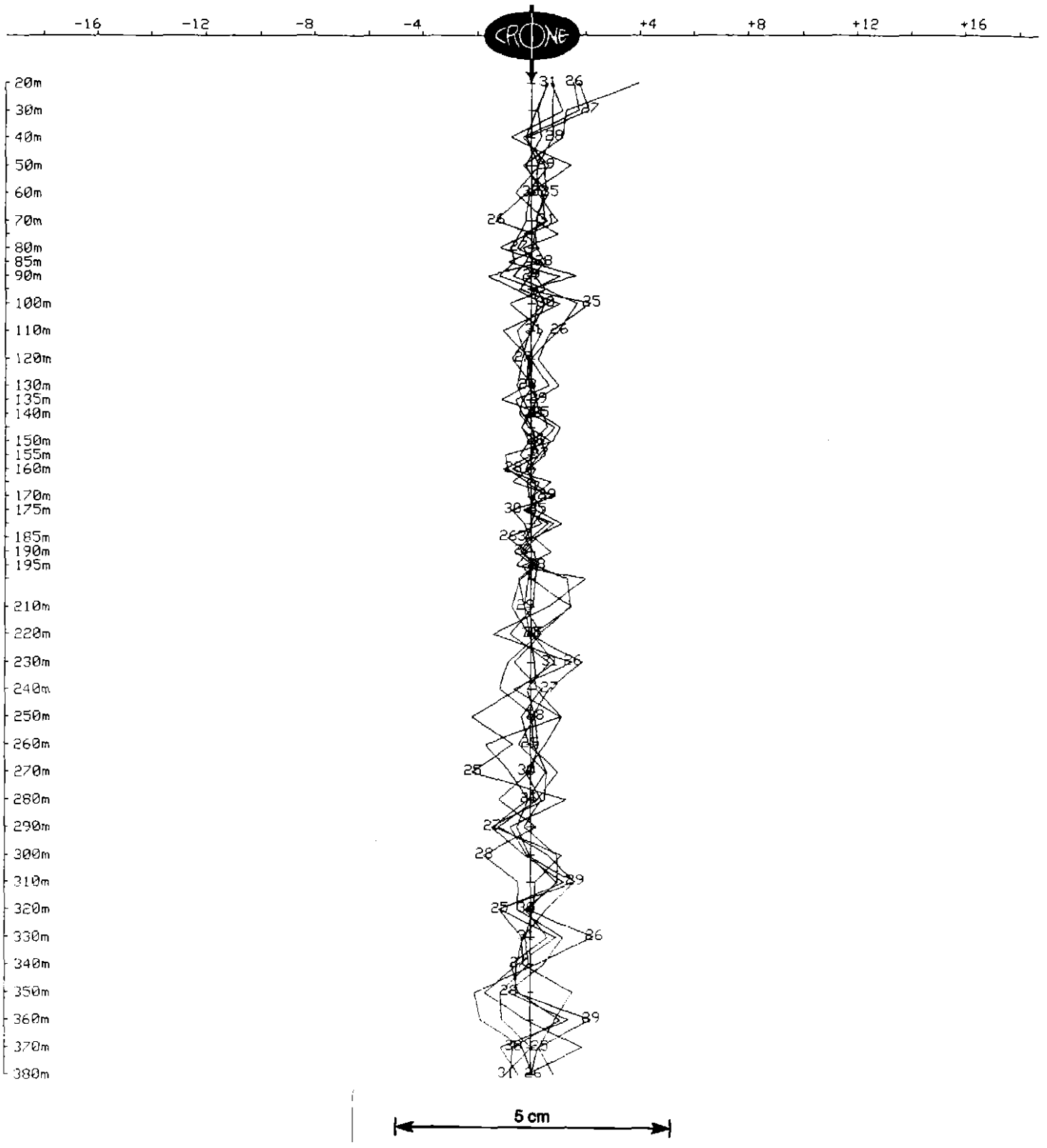
559170

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 2, 1998	File name	: WSP8XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 2 nT



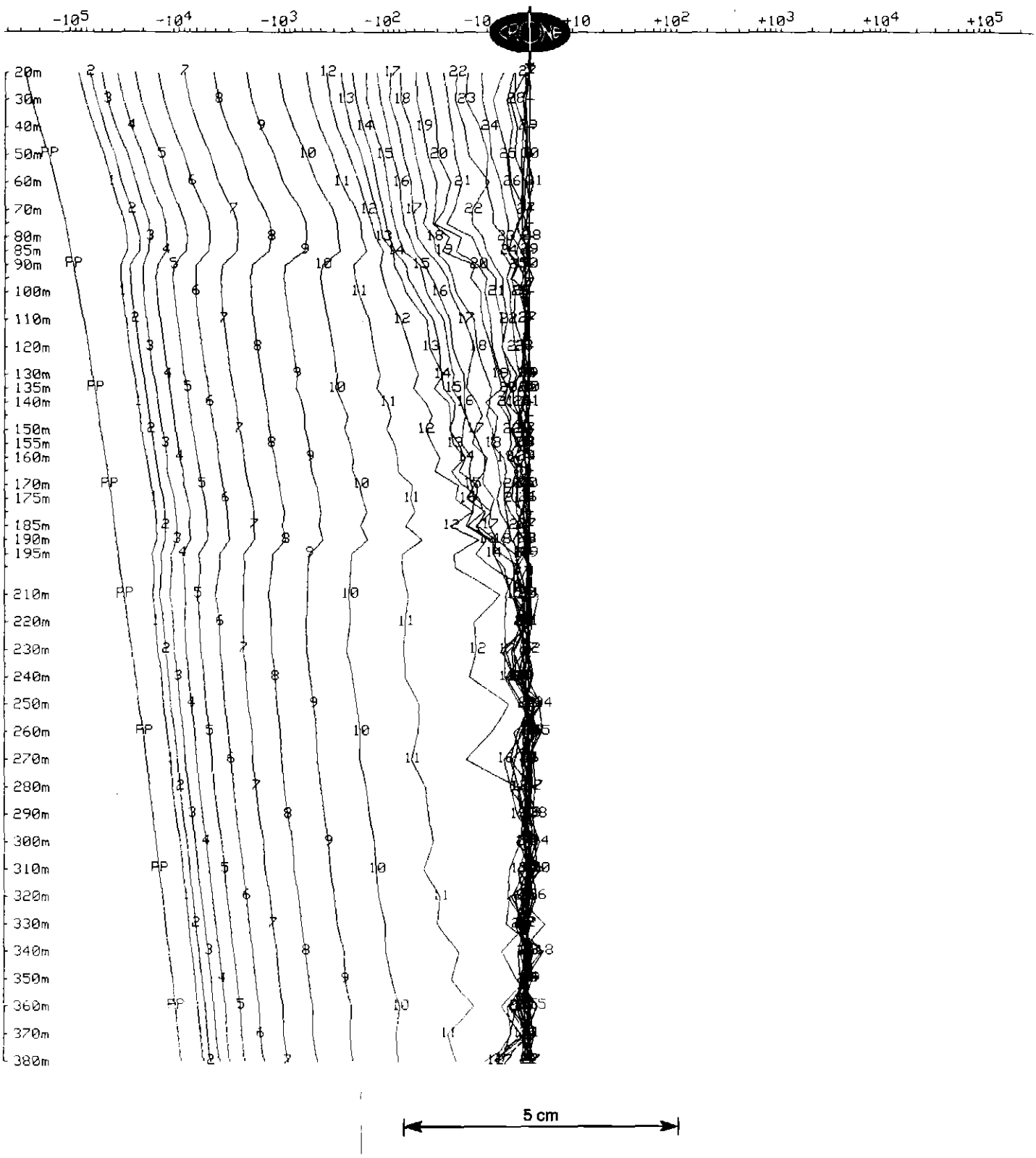
559171

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 2, 1998	File name	: WSP8XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000



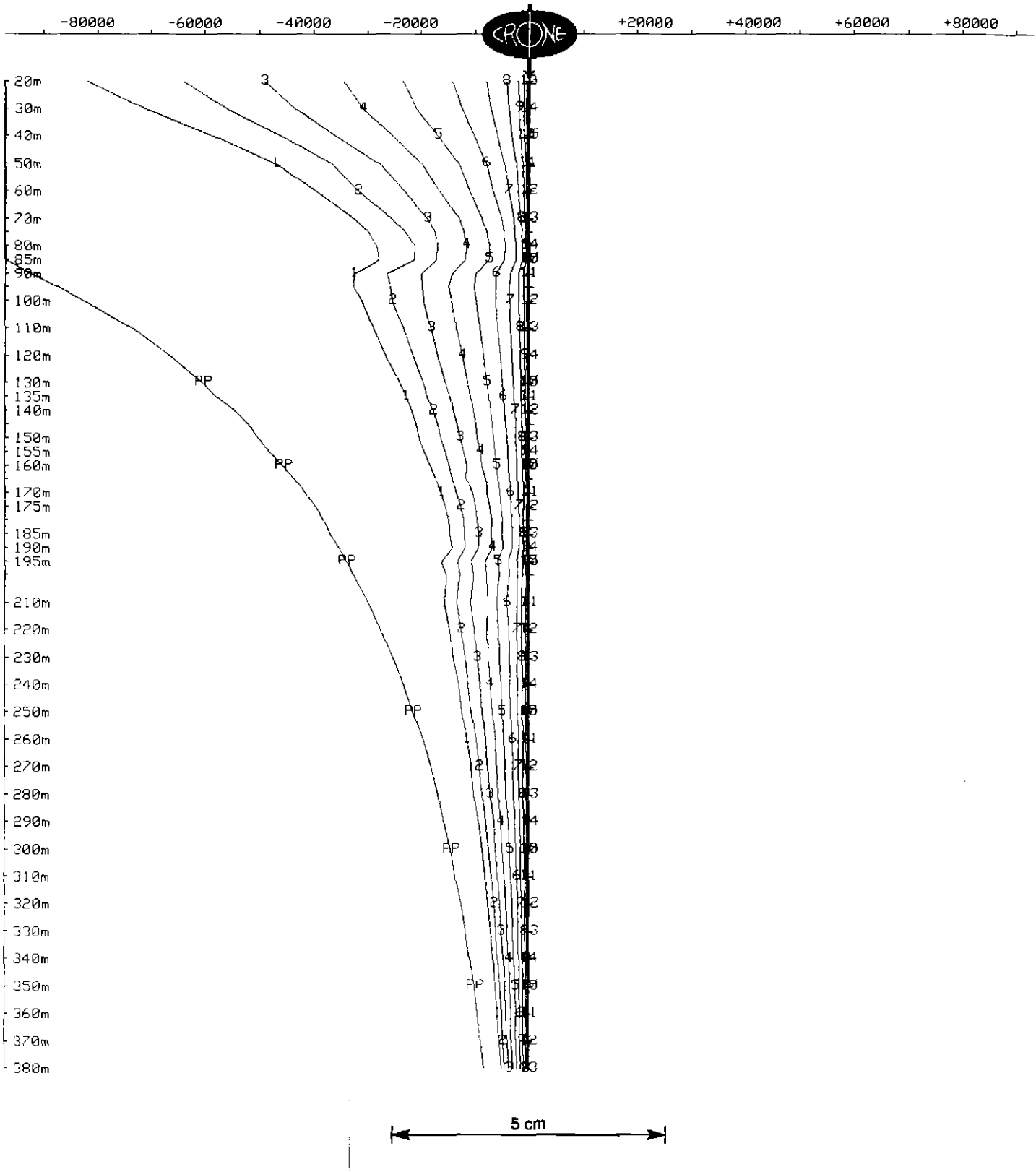
559172

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 2, 1998	File name	: WSP8XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 10000 nT



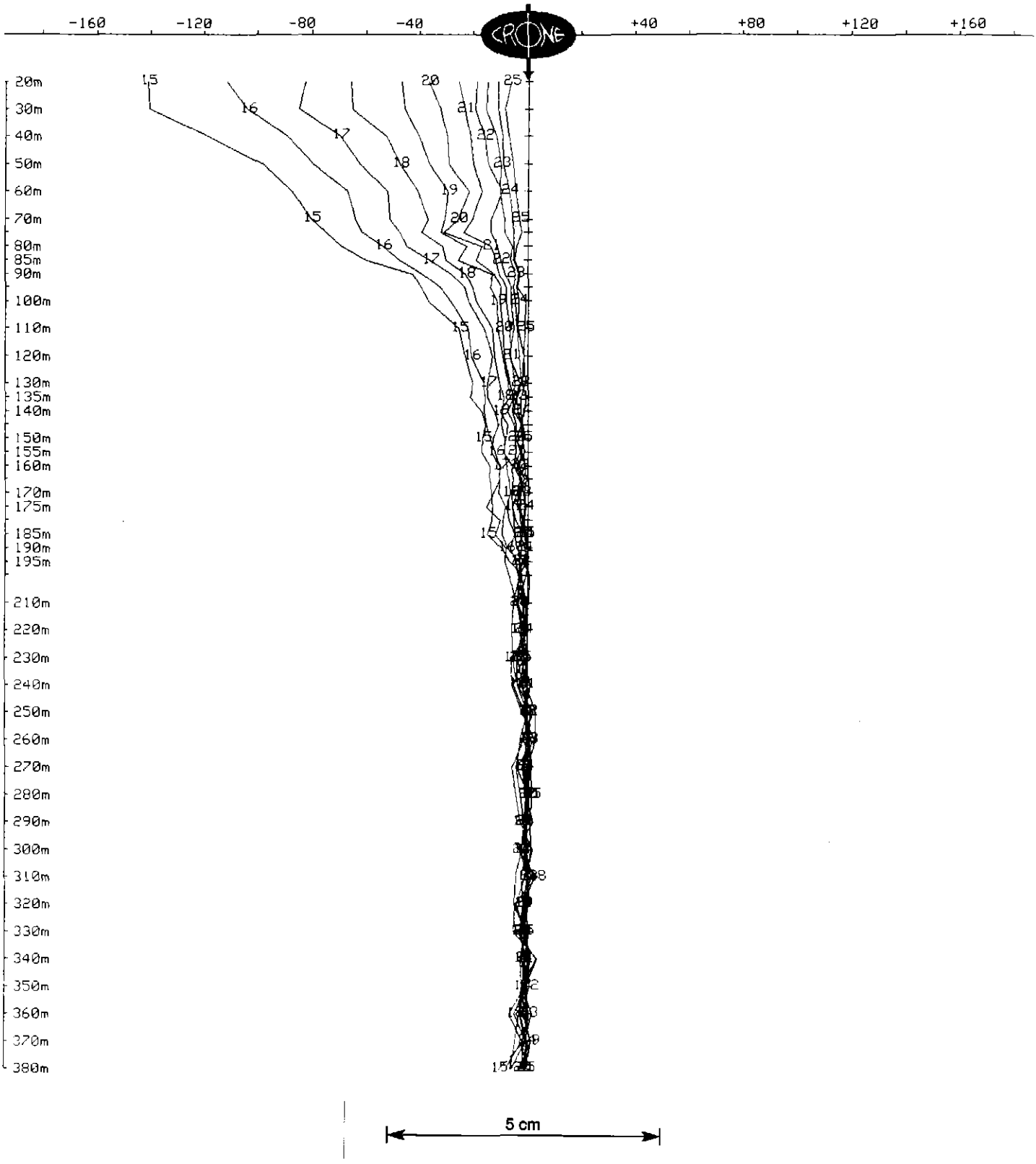
559173

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 2, 1998	File name	: WSP8XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 20 nT



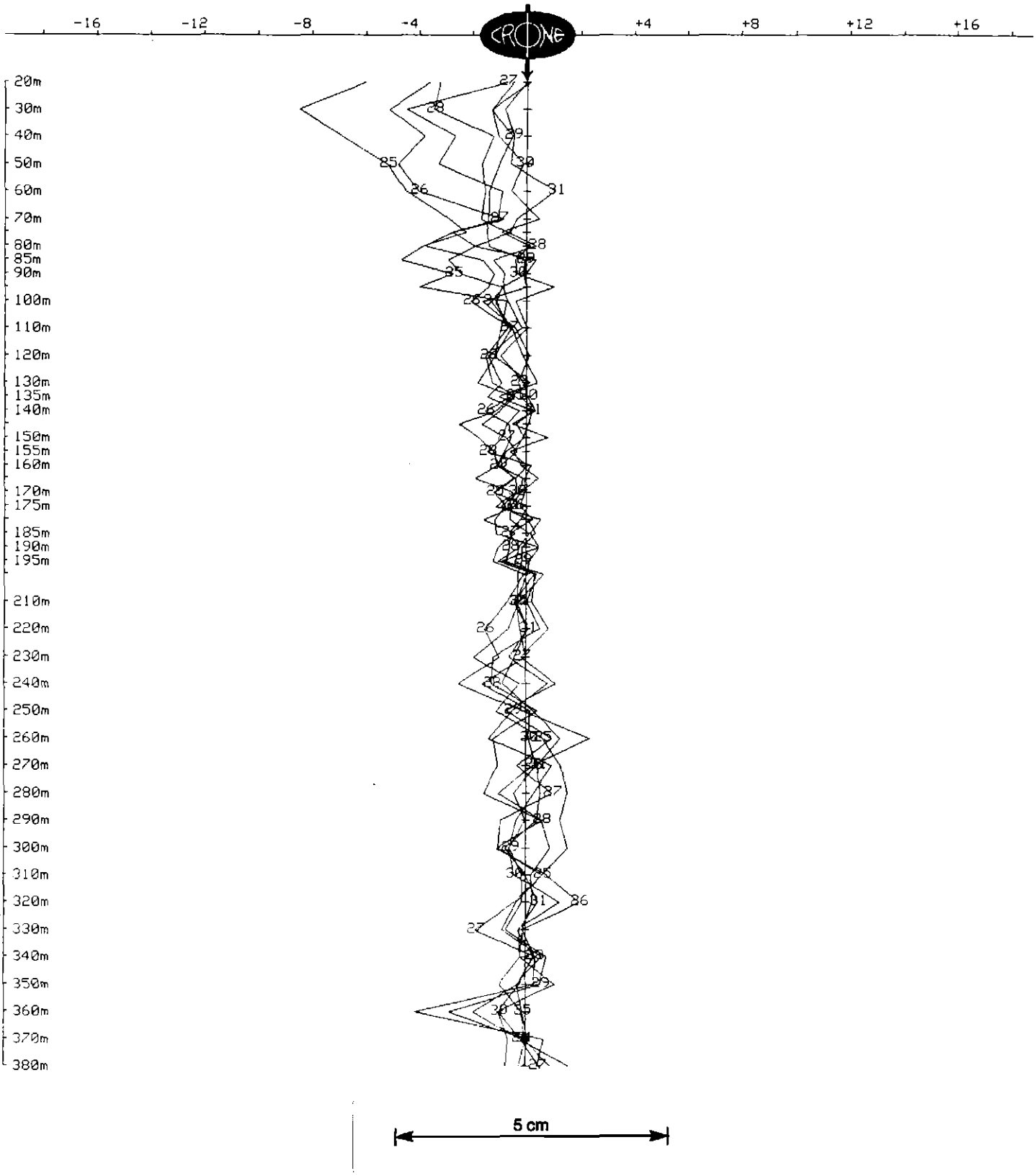
559174

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 2, 1998	File name	: WSP8XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 2 nT



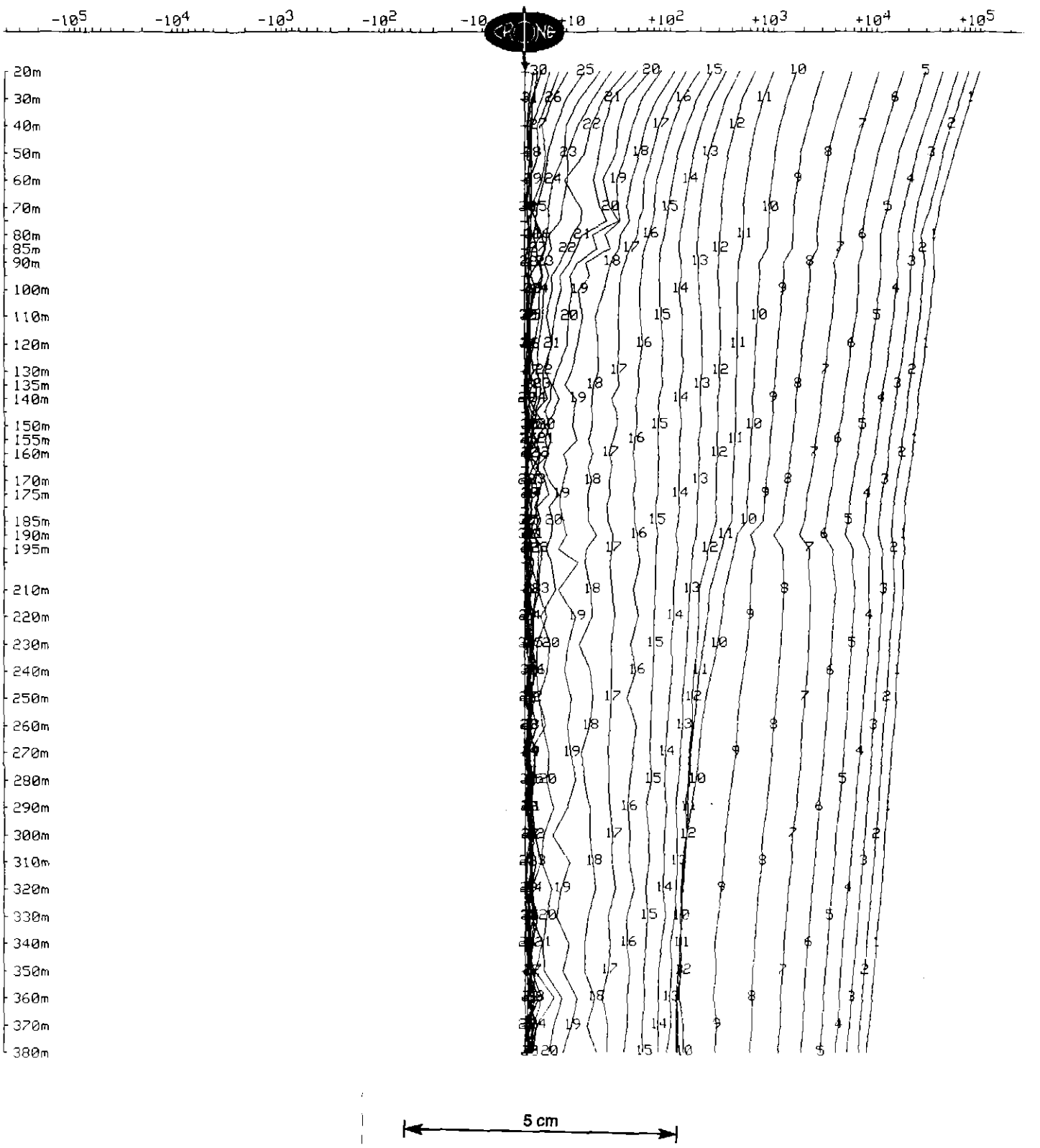
559175

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 2, 1998	File name	: WSP8XYZ.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 31 channels

Scale: 1:2000



5 cm

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP8Z10.PEM
Time Base	: 20.00 ms	# Readings	: 23
Ramp Time	: 0.50 ms	Stn Units	: Metric
# Channels	: 31	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 800m X 325m	Receiver	: Digital #109
Current	: 16 Amps	Operator	: Brett Rankin

Loop Coordinates (X,Y,Z)

1. 376250m, 5.3614e+06m, 0m
2. 376250m, 5.3606e+06m, 0m
3. 376525m, 5.3606e+06m, 0m
4. 376575m, 5.361e+06m, 0m
5. 376575m, 5.3614e+06m, 0m

Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)

1. 376812m, 5.36056e+06m, 0m
2. 90deg, 60deg, 385m

Channel Times (usec)

Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-198	-99	-149	1	50	58	54	2	58	72	65
3	72	86	79	4	86	104	94	5	104	126	115
6	126	153	140	7	153	185	169	8	185	225	205
9	225	270	248	10	270	328	299	11	328	396	362
12	396	482	439	13	482	580	531	14	580	702	641
15	702	850	776	16	850	1026	938	17	1026	1242	1134
18	1242	1498	1370	19	1498	1813	1656	20	1813	2187	2000
21	2187	2646	2416	22	2646	3195	2920	23	3195	3861	3528
24	3861	4666	4264	25	4666	5634	5150	26	5634	6808	6221
27	6808	8221	7514	28	8221	9936	9078	29	9936	12000	10968
30	12000	14490	13245	31	14490	17510	16000				

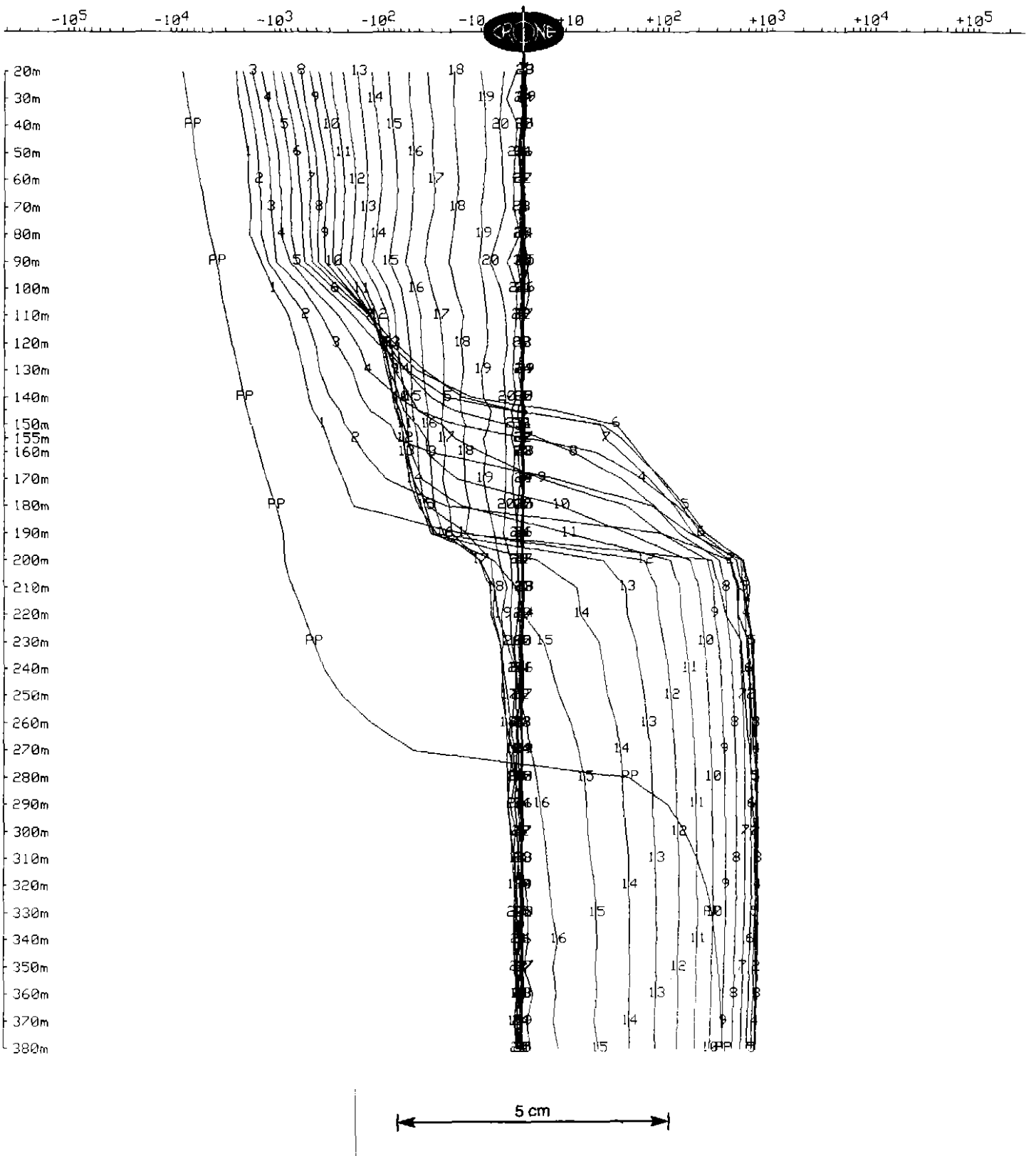
559177

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: Renison Gold Corp.	Hole	: WSP8
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP8Z10A.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000



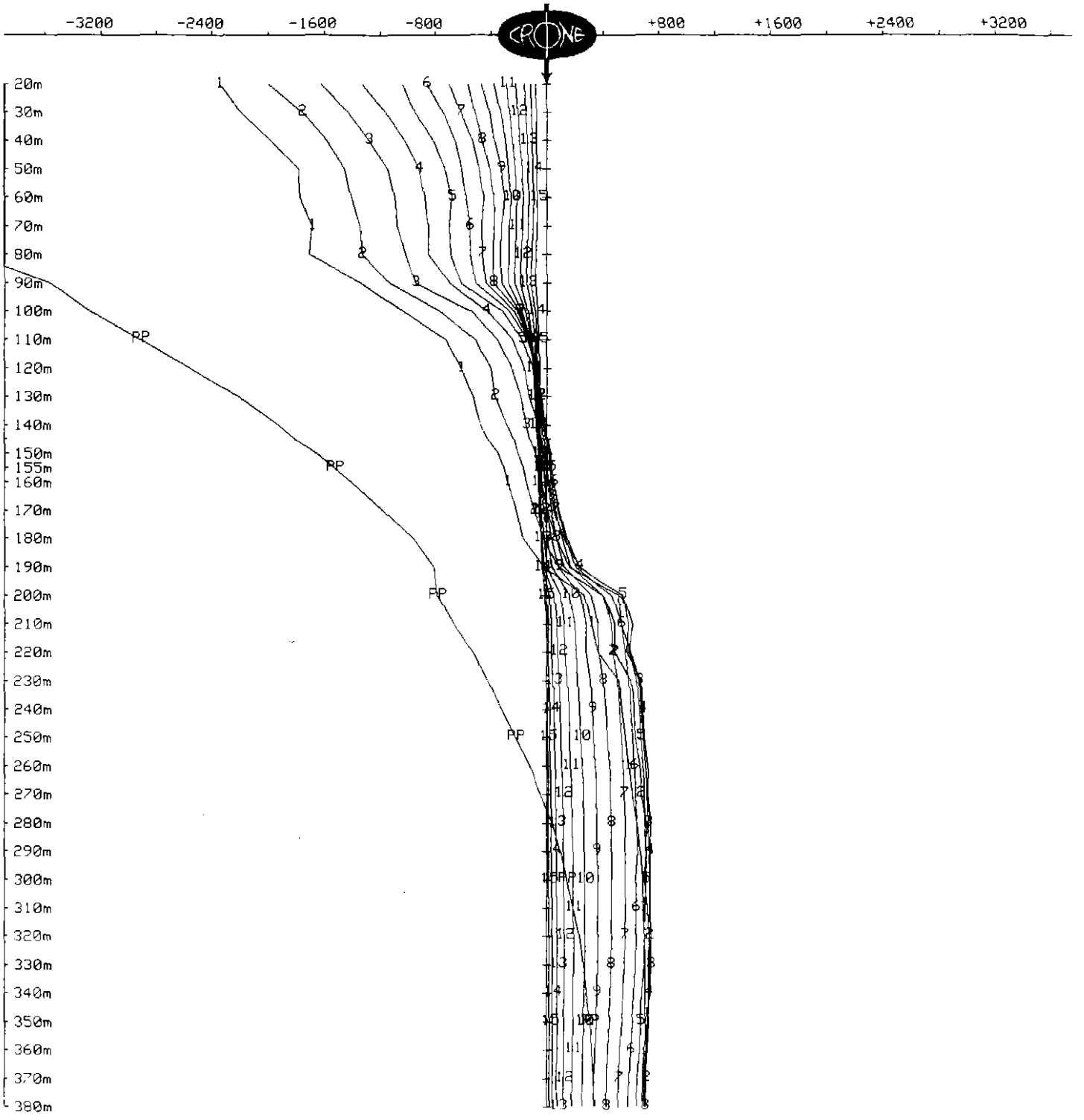
559178

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: Renison Gold Corp.	Hole	: WSP8
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 4, 1998	File name	: WSP8Z10A.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 400 nT



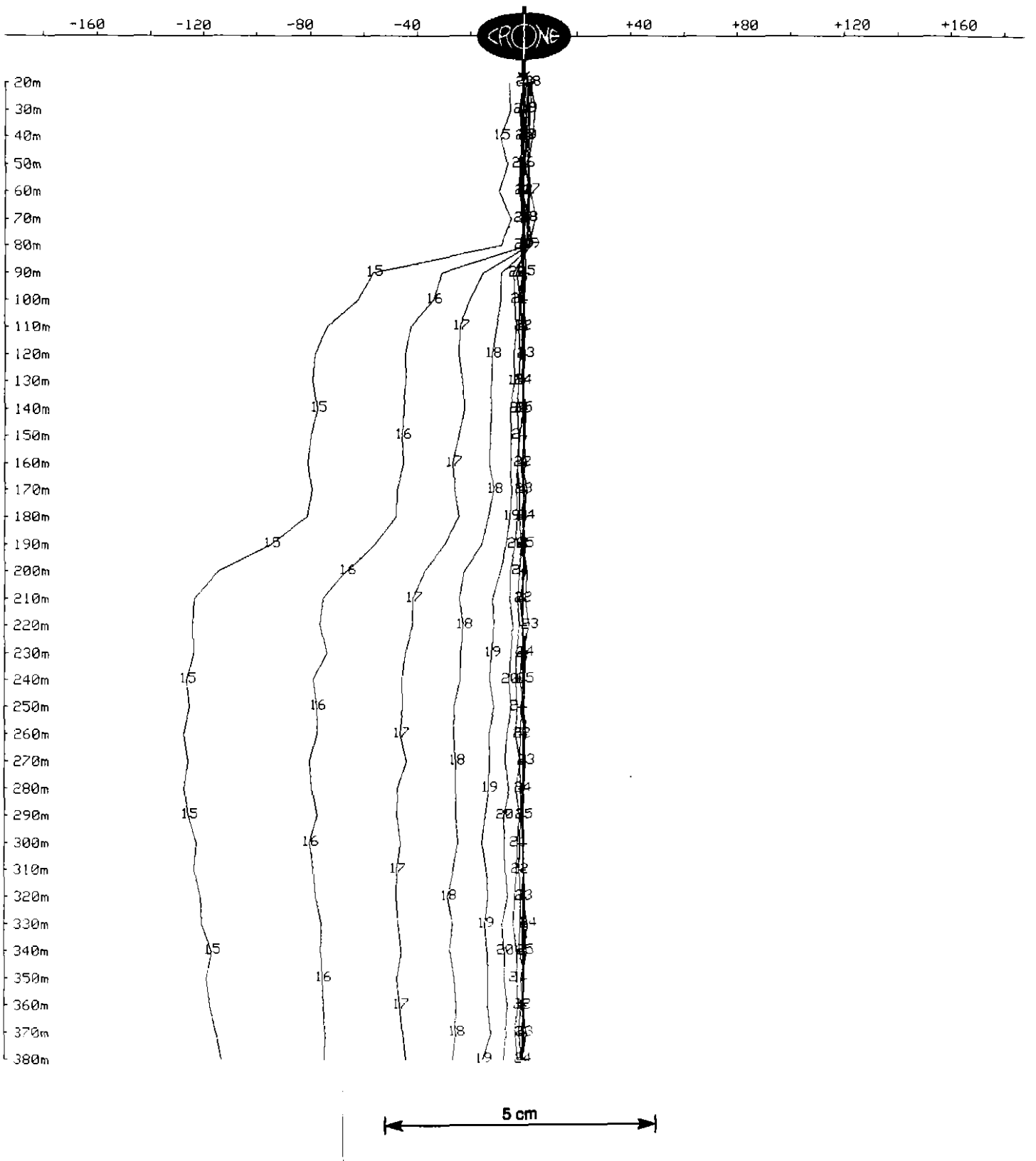
5 cm

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 5, 1998	File name	: WSP8XY10.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 20 nT



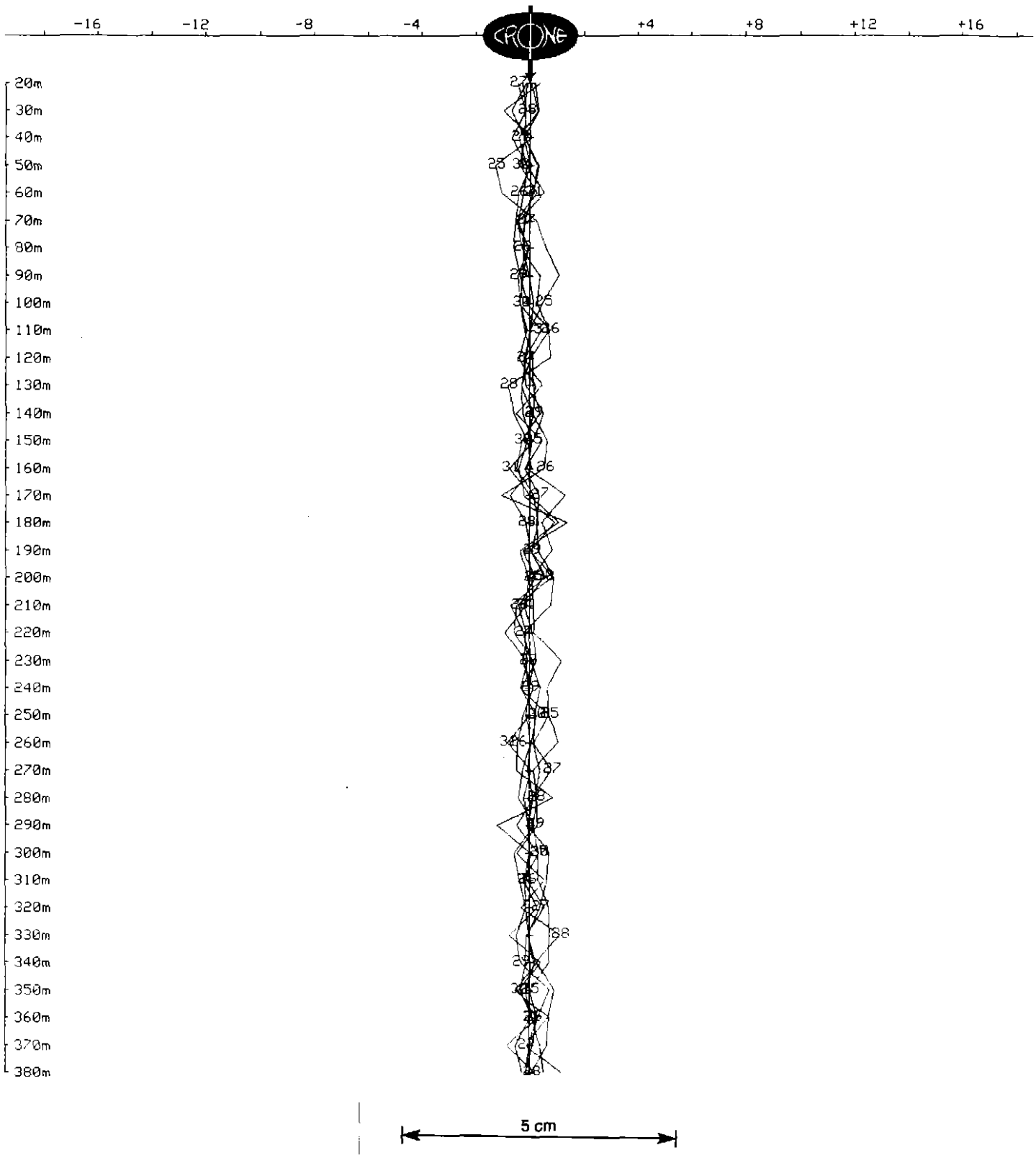
559180

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 5, 1998	File name	: WSP8XY10.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 2 nT



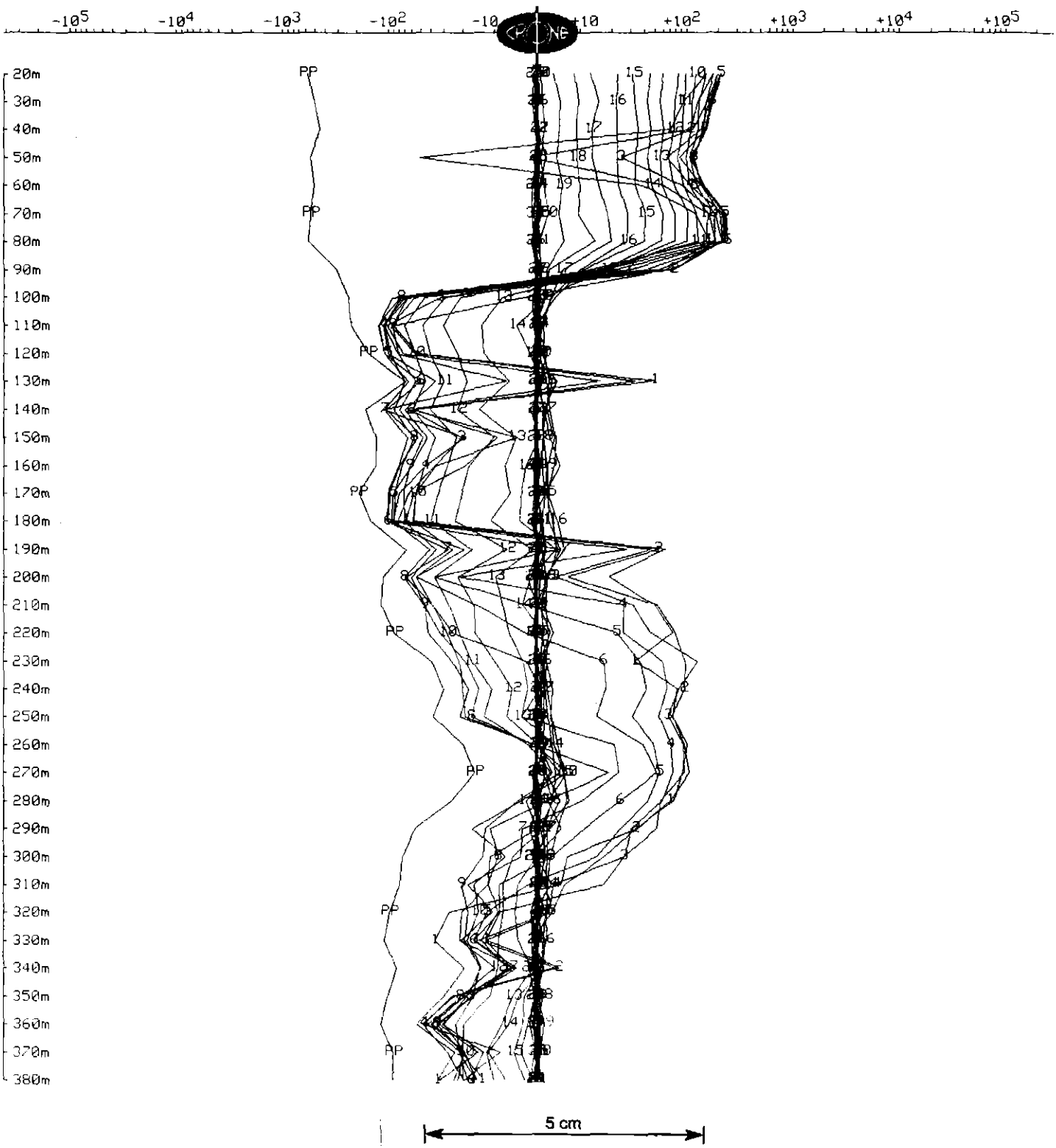
559181

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 5, 1998	File name	: WSP8XY10.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000



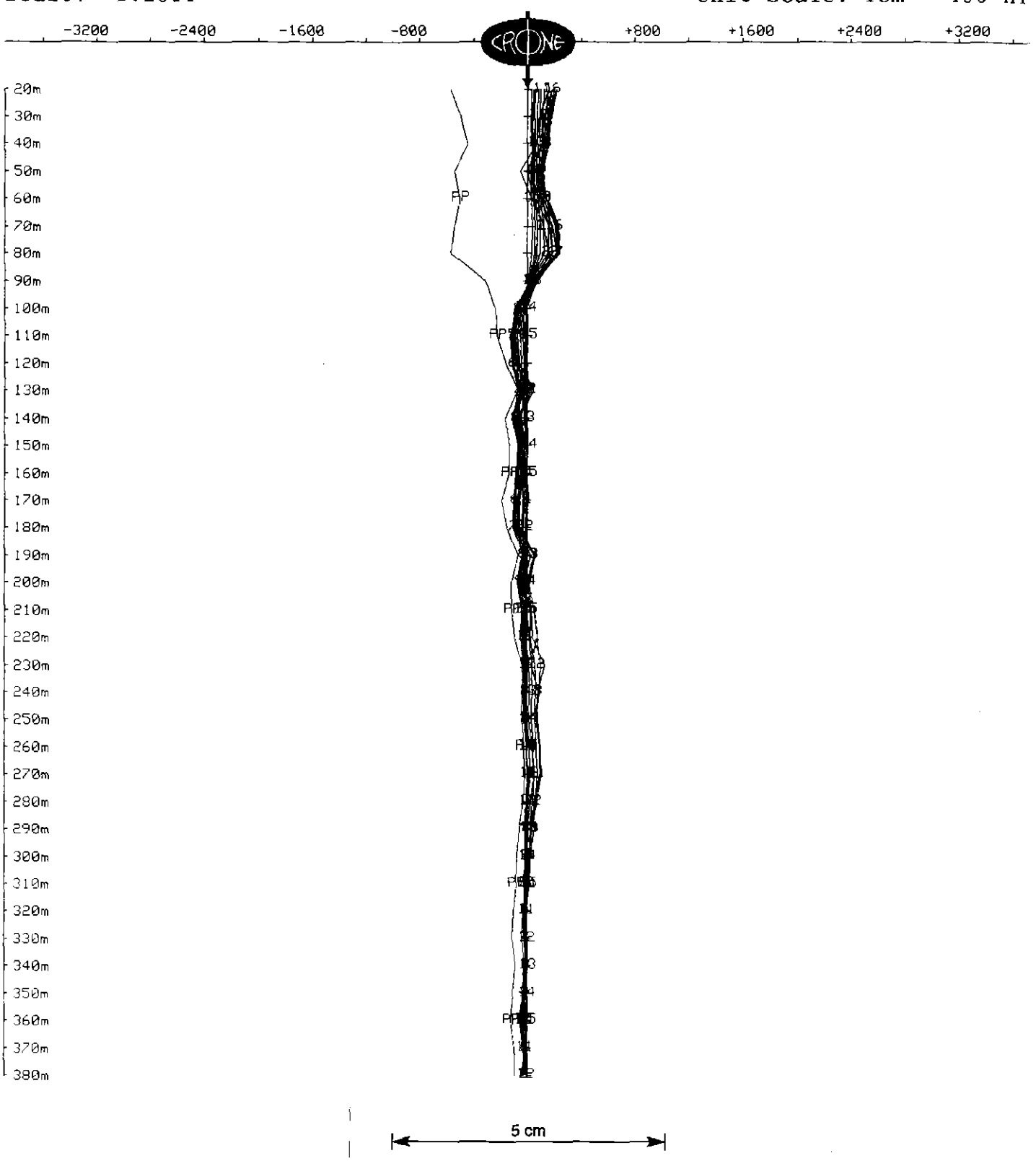
559182

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 5, 1998	File name	: WSP8XY10.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 400 nT



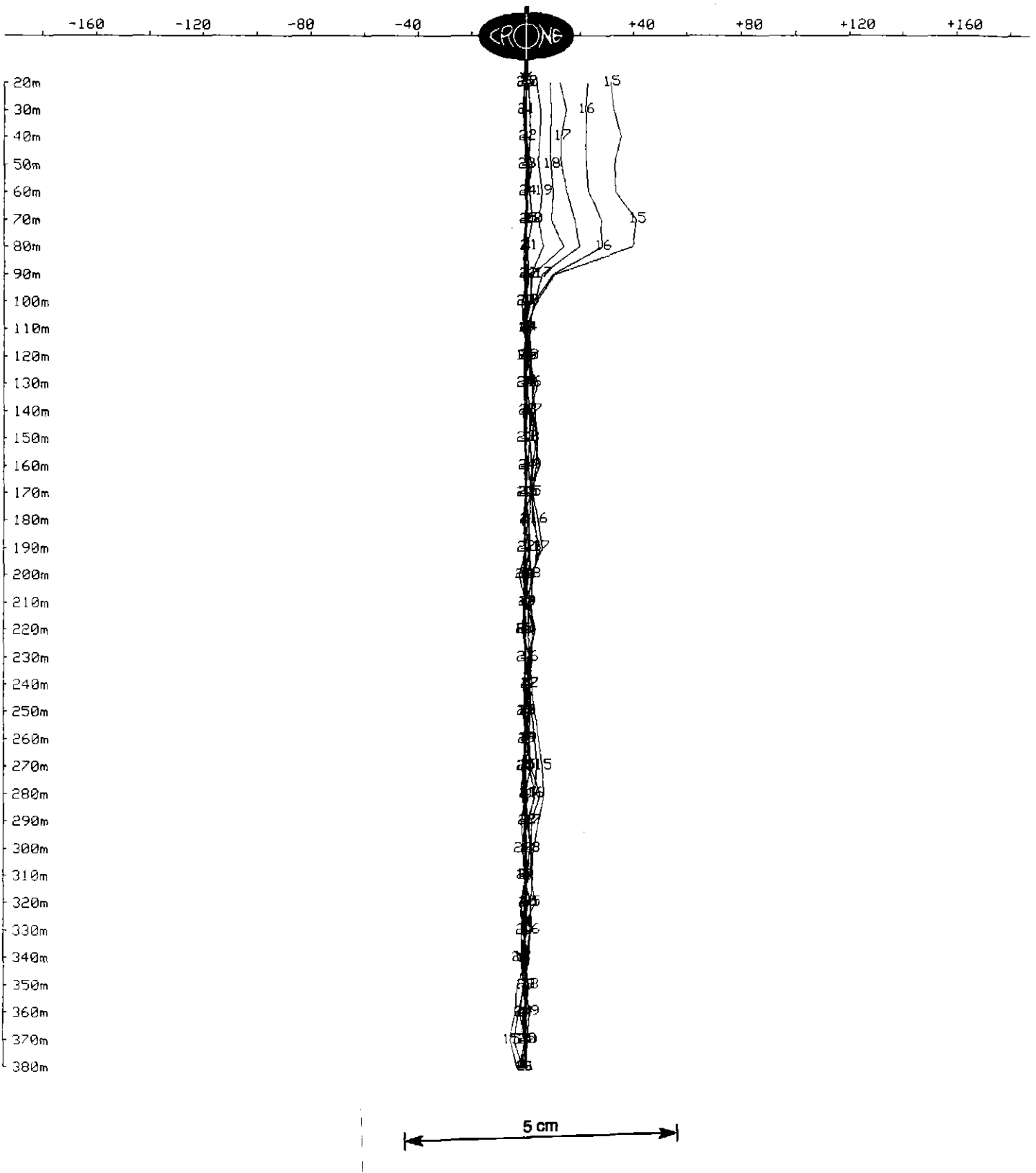
559183

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 5, 1998	File name	: WSP8XY10.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 20 nT



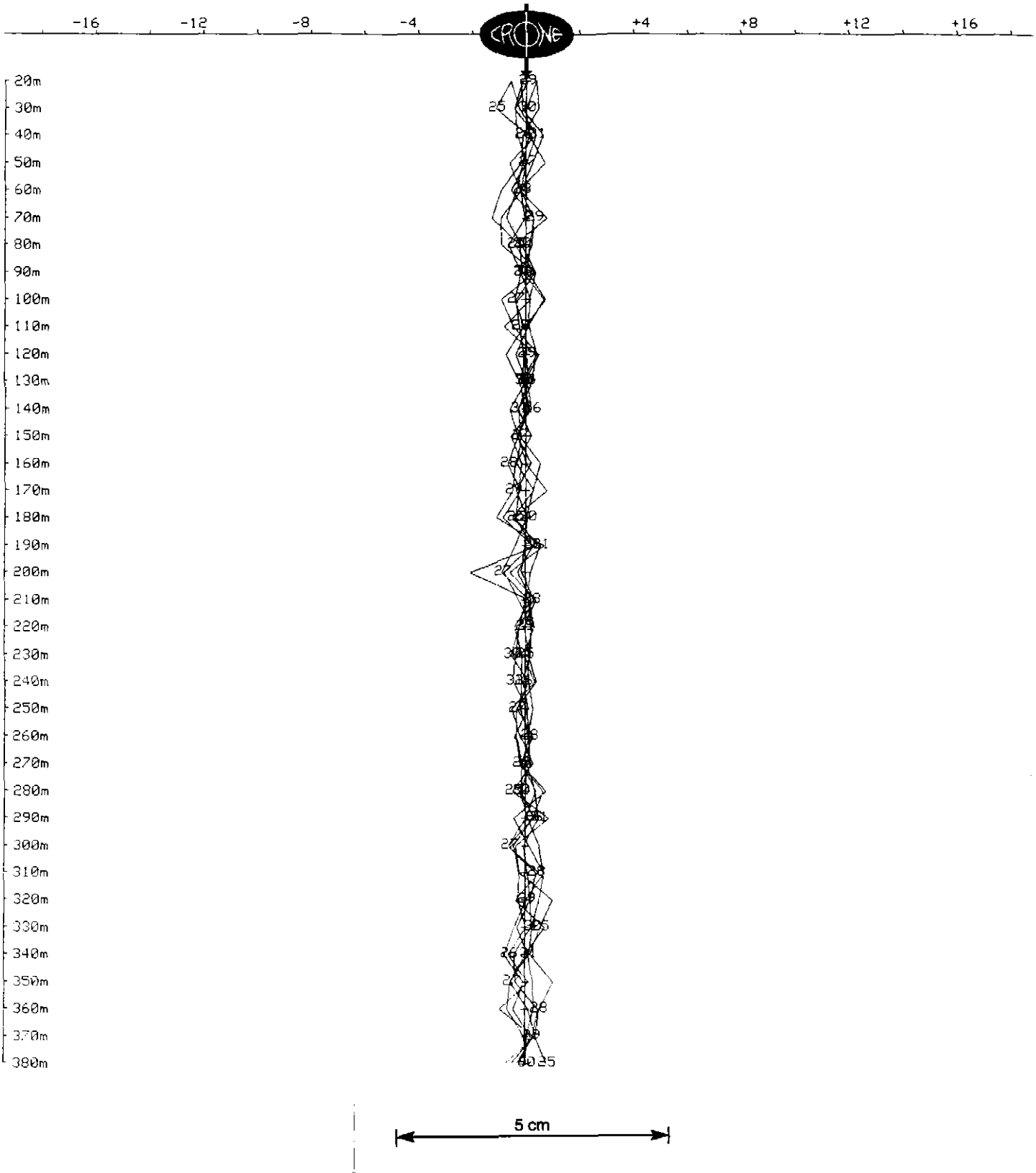
559184

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 5, 1998	File name	: WSP8XY10.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 2 nT



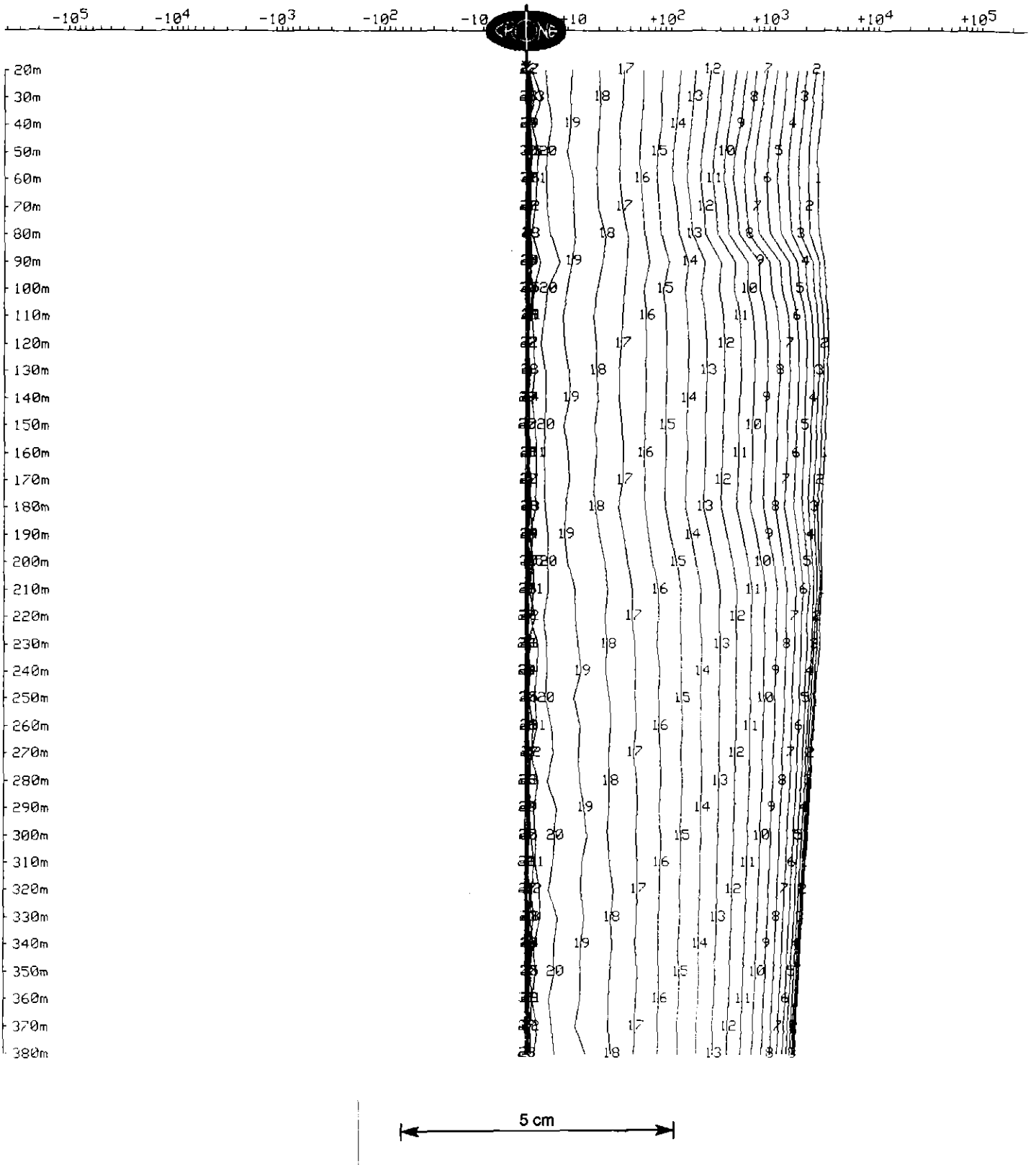
559185

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-8
Grid	: White Spur	Tx Loop	: #10
Date	: Feb 5, 1998	File name	: WSP8XYZ1.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 31 channels

Scale: 1:2000



5 cm

559186

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 5, 1998	File name	: WSP9Z1.PEM
Time Base	: 20.00 ms	# Readings	: 49
Ramp Time	: 0.50 ms	Stn Units	: Metric
# Channels	: 31	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 475m X 400m	Receiver	: Digital #109
Current	: 16 Amps	Operator	: Brett Rankin

Loop Coordinates (X,Y,Z)

1. 376575m, 5.361e+06m, 0m
2. 376540m, 5.36073e+06m, 0m
3. 376925m, 5.36072e+06m, 0m
4. 377000m, 5.361e+06m, 0m

Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)

1. 377065m, 5.36056e+06m, 0m
2. 90deg, 60deg, 508m

Channel Times (usec)

Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-198	-99	-149	1	50	58	54	2	58	72	65
3	72	86	79	4	86	104	94	5	104	126	115
6	126	153	140	7	153	185	169	8	185	225	205
9	225	270	248	10	270	328	299	11	328	396	362
12	396	482	439	13	482	580	531	14	580	702	641
15	702	850	776	16	850	1026	938	17	1026	1242	1134
18	1242	1498	1370	19	1498	1813	1656	20	1813	2187	2000
21	2187	2646	2416	22	2646	3195	2920	23	3195	3861	3528
24	3861	4666	4264	25	4666	5634	5150	26	5634	6808	6221
27	6808	8221	7514	28	8221	9936	9078	29	9936	12000	10968
30	12000	14490	13245	31	14490	17510	16000				

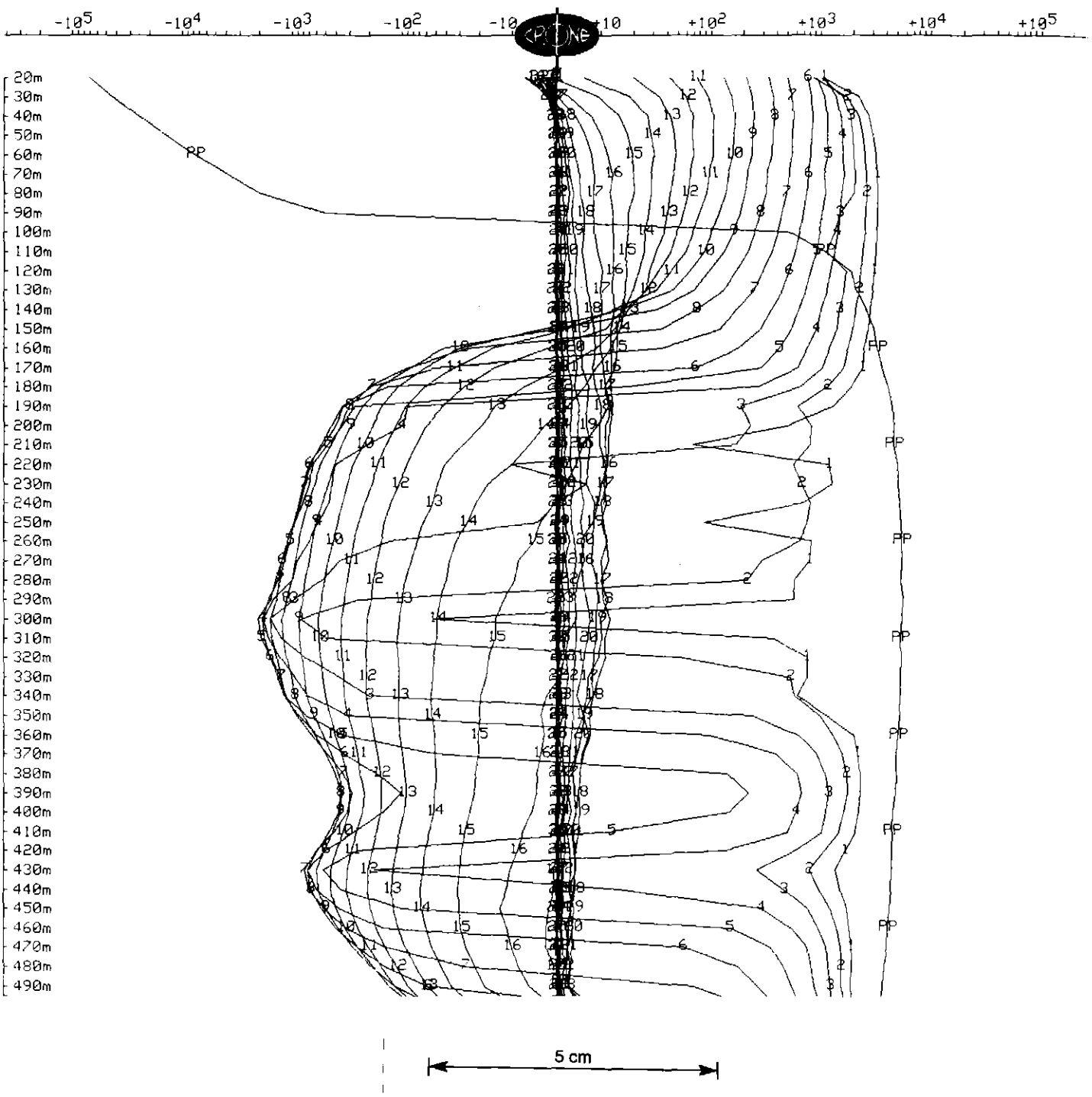
559187

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 5, 1998	File name	: WSP9Z1.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000



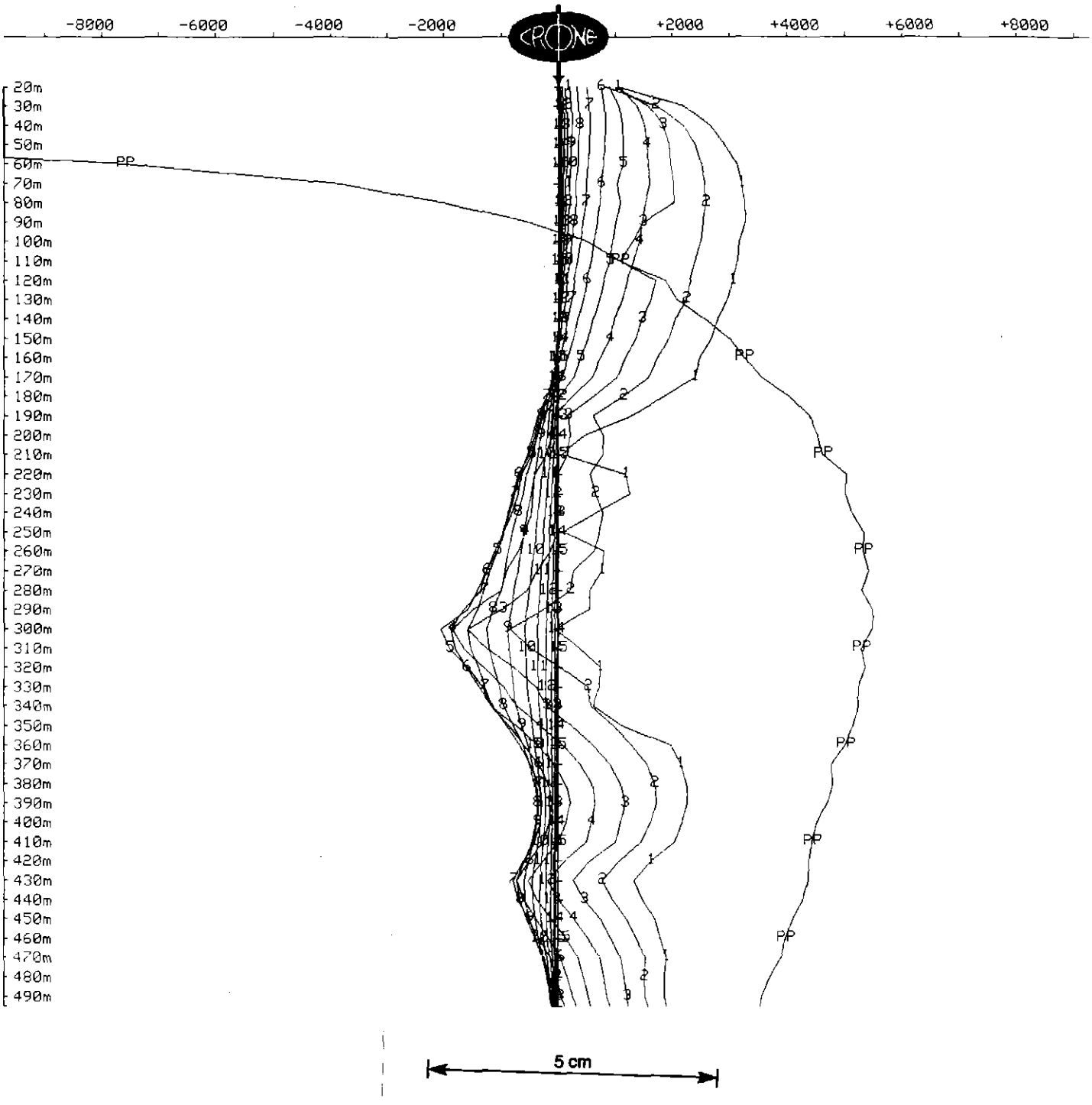
559188

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 5, 1998	File name	: WSP9Z1.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 1000 nT



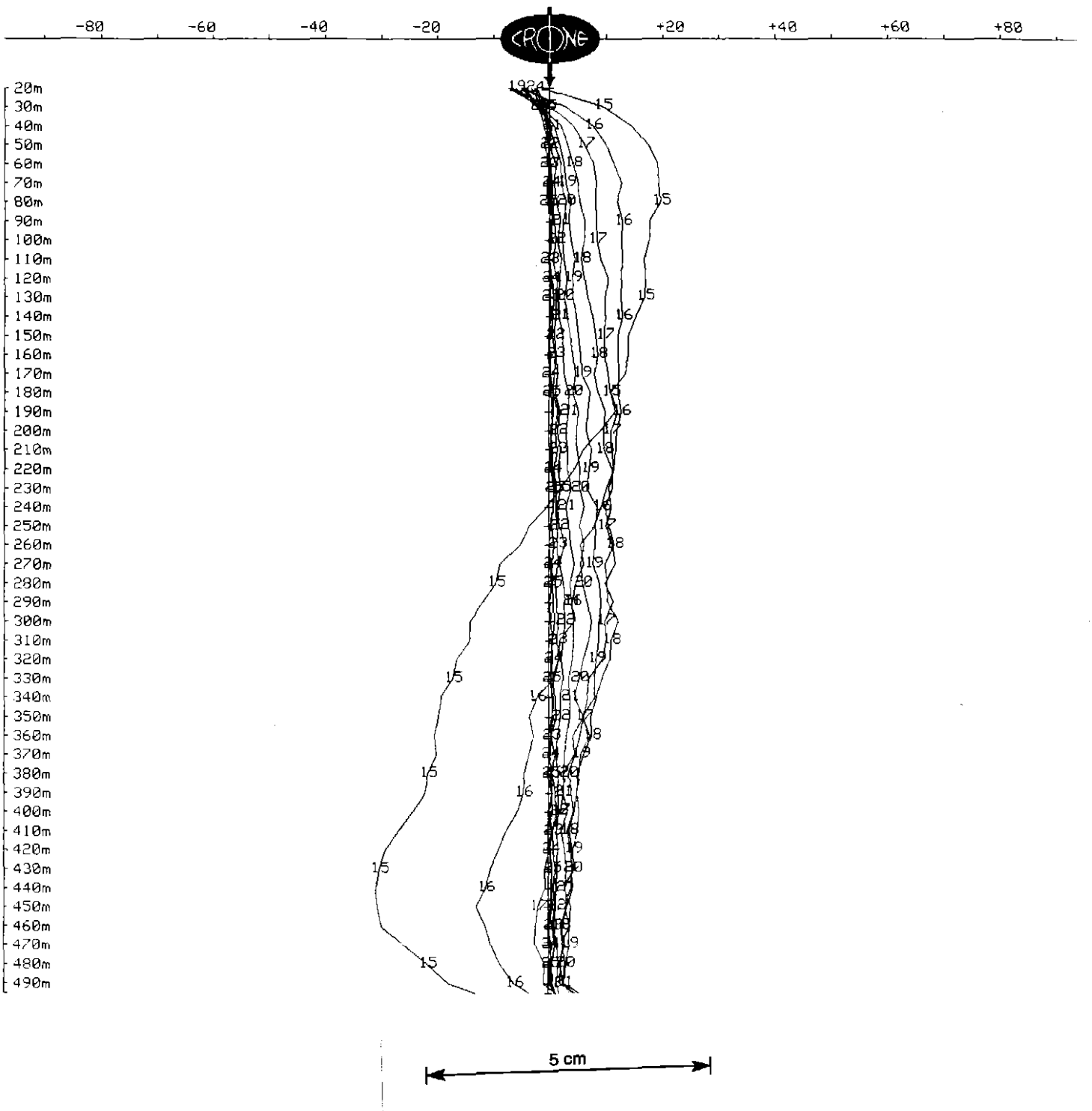
559189

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 5, 1998	File name	: WSP9Z1.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 10 nT

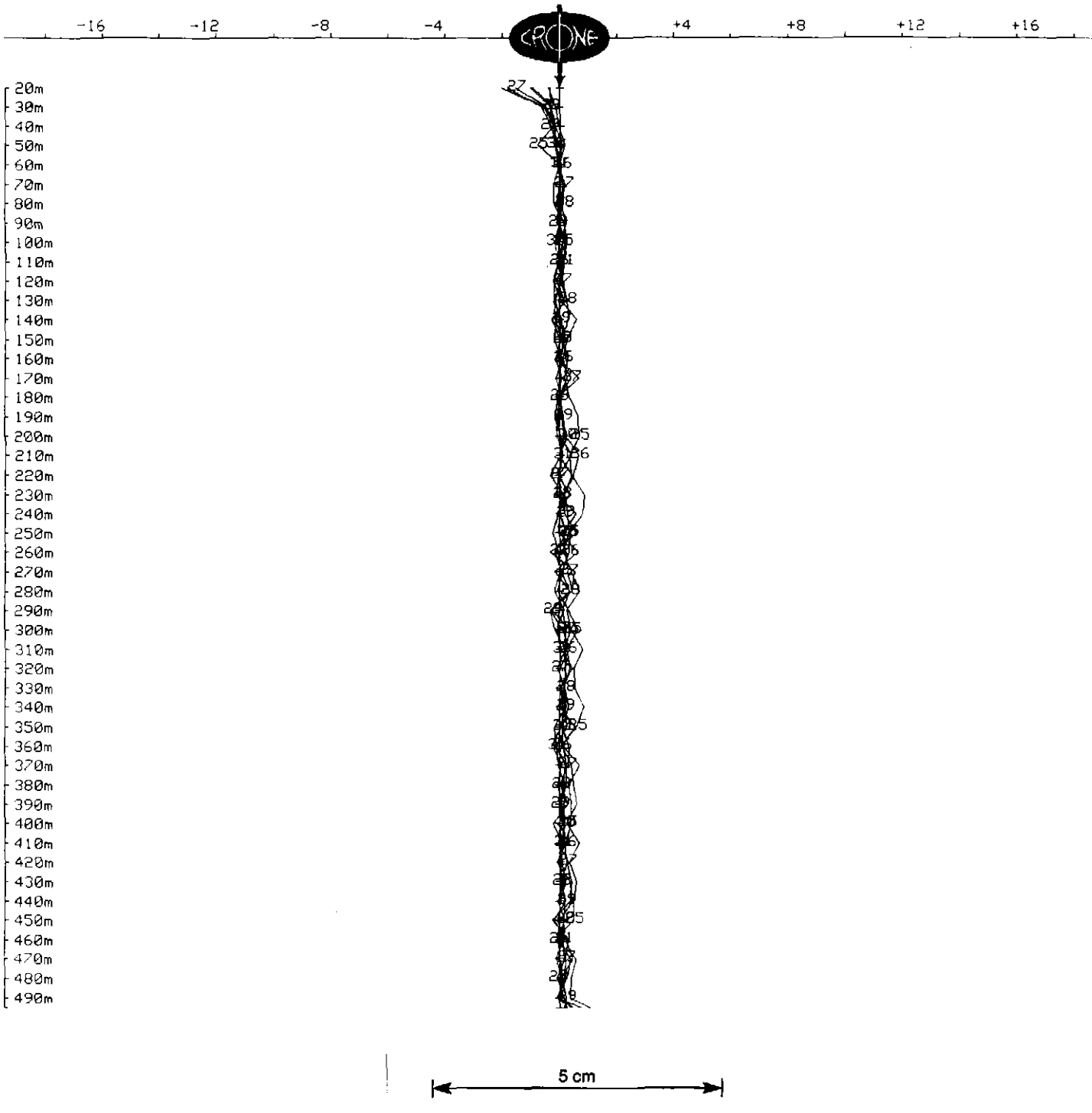


OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 5, 1998	File name	: WSP9Z1.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT



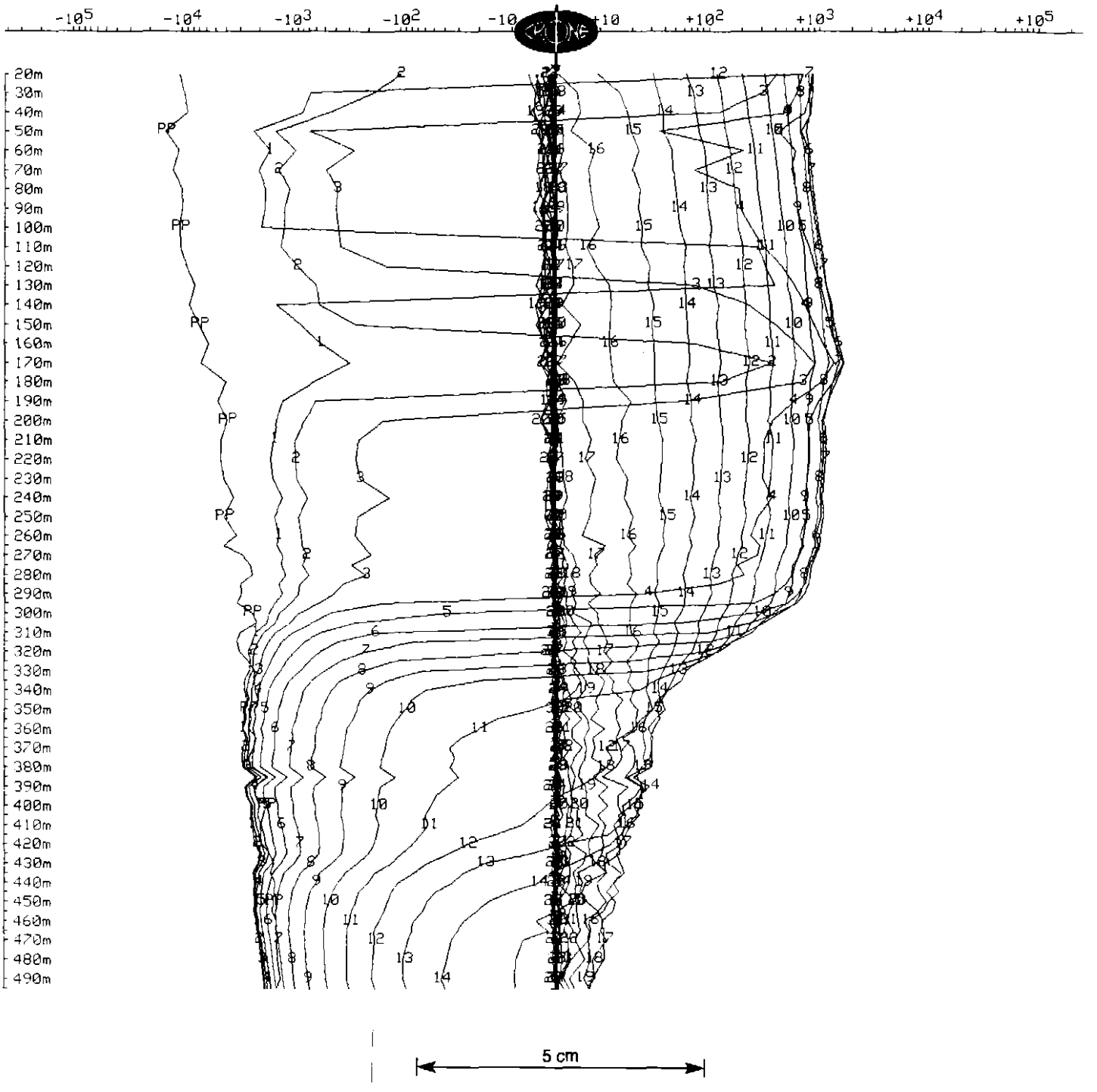
559191

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 6, 1998	File name	: WSP9XY1F.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000



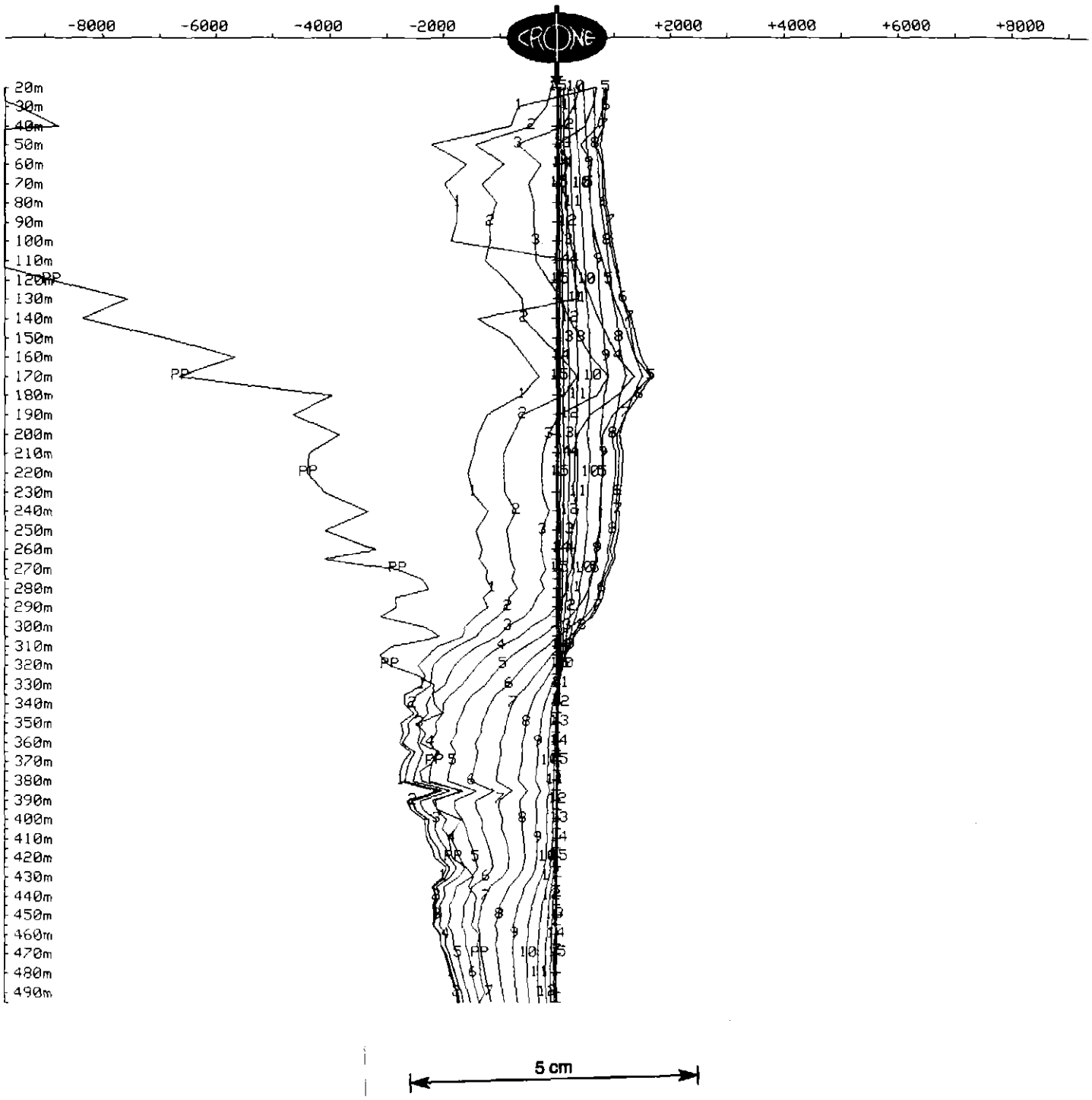
559192

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 6, 1998	File name	: WSP9XY1F.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 1000 nT



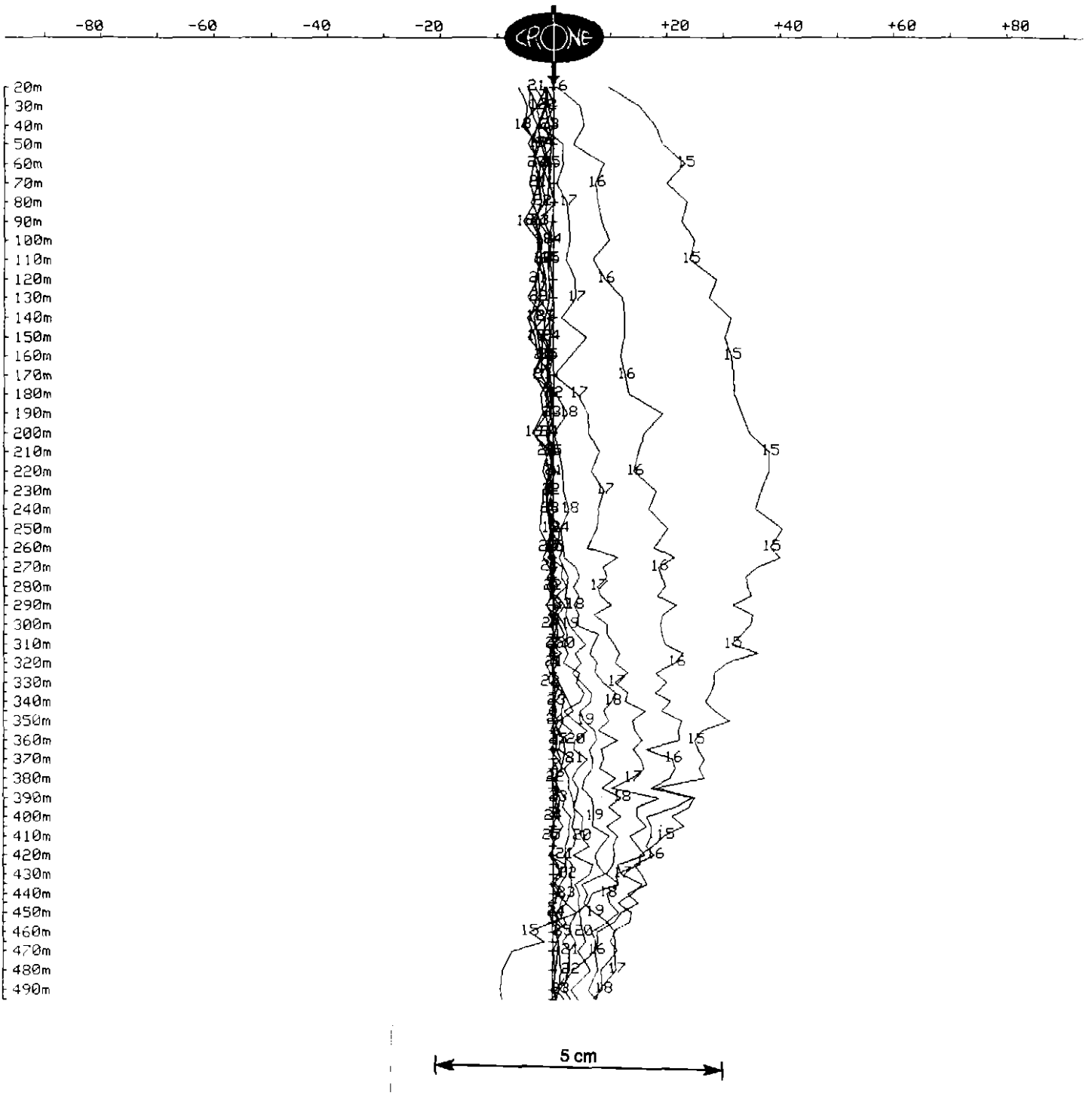
559193

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 6, 1998	File name	: WSP9XY1F.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 10 nT



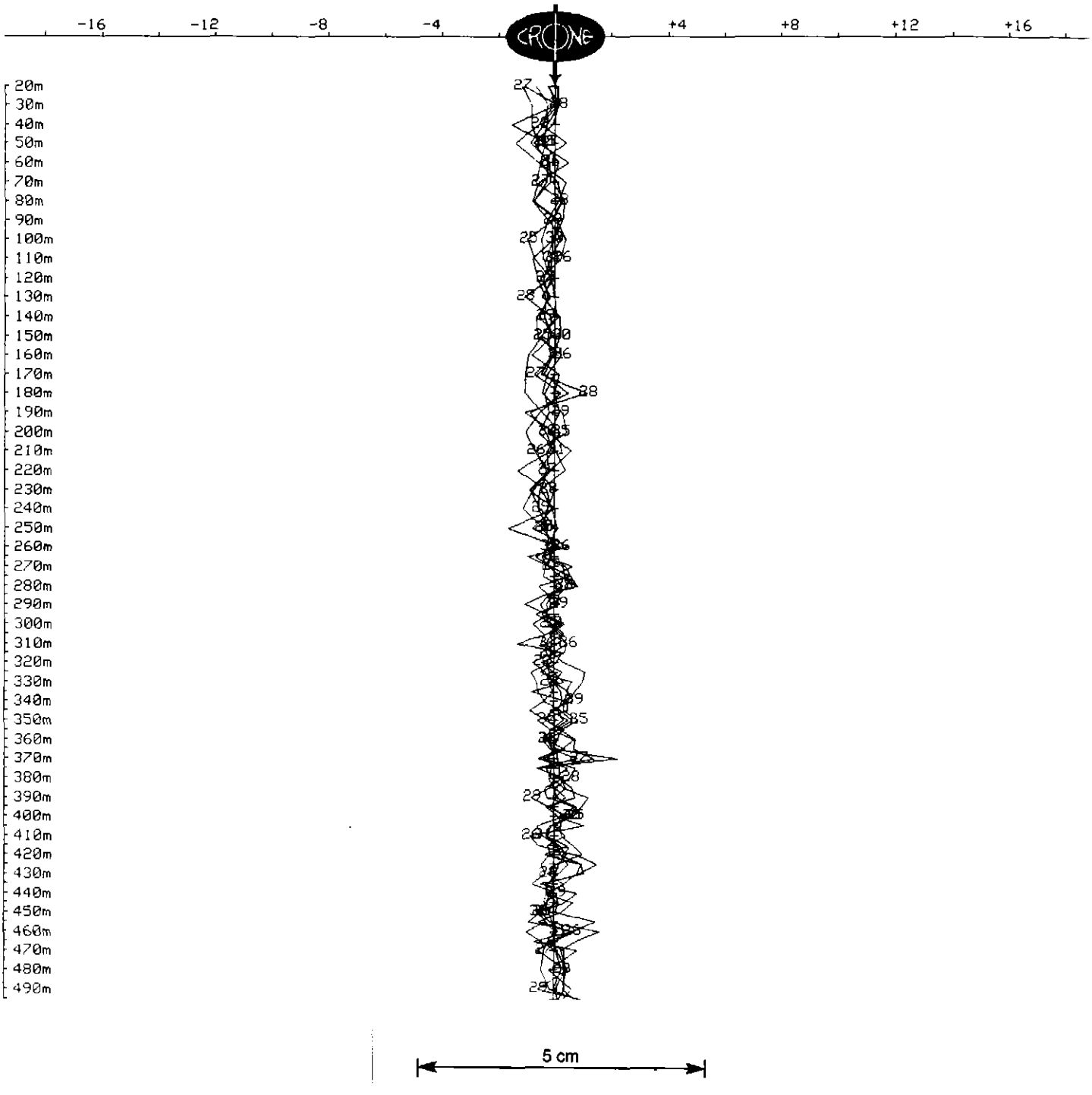
559194

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 6, 1998	File name	: WSP9XY1F.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT



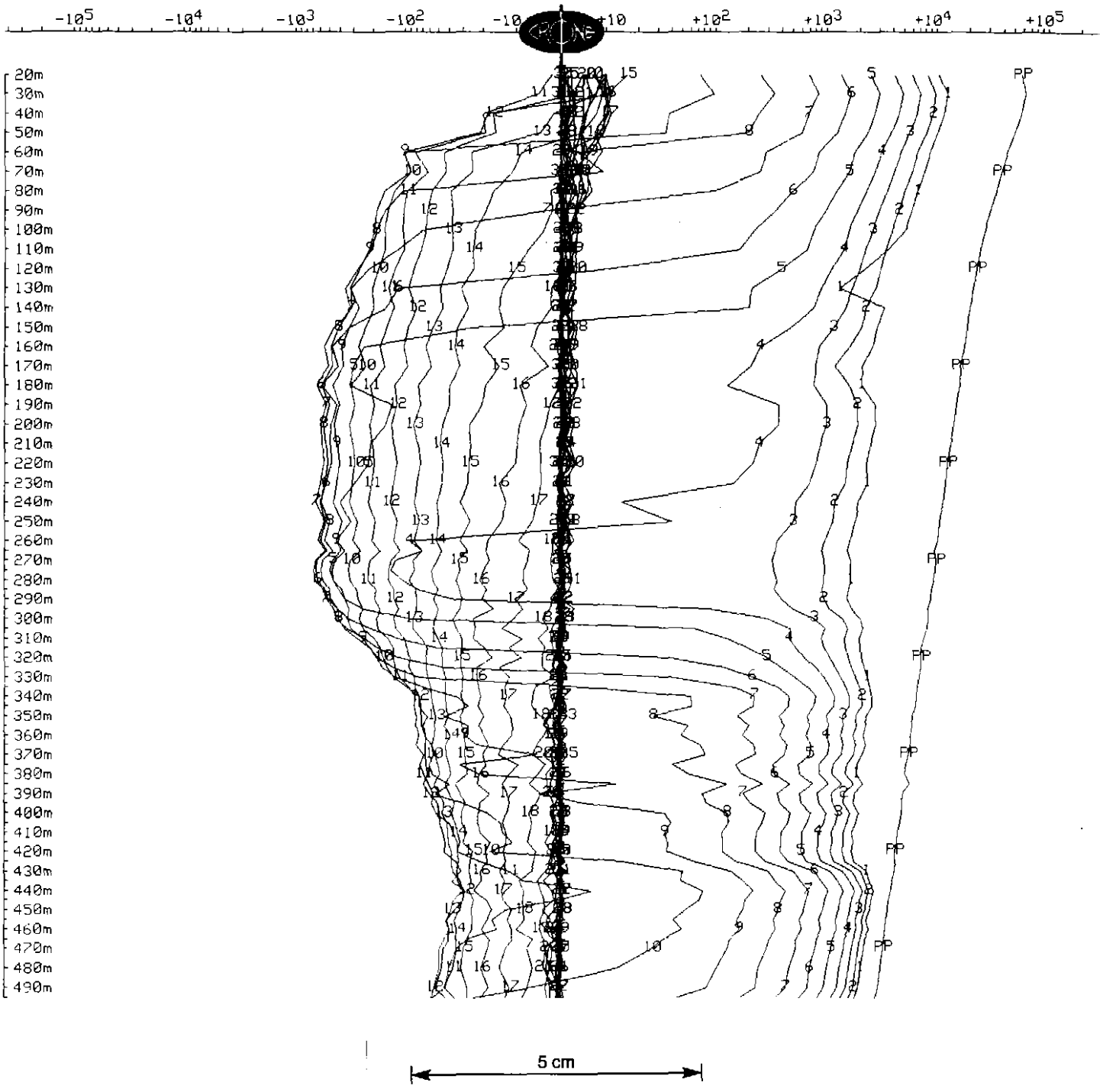
559195

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 6, 1998	File name	: WSP9XY1F.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000



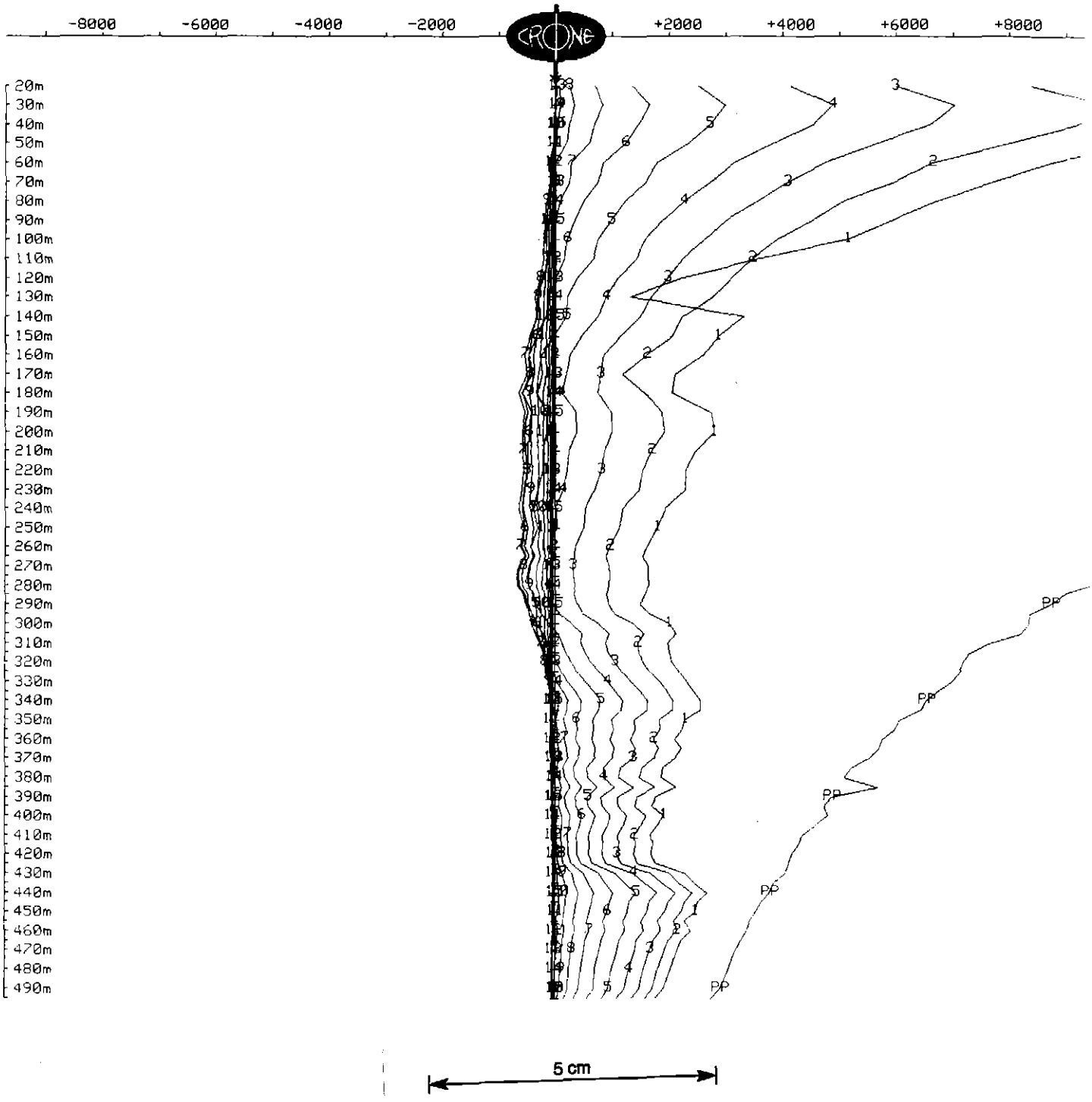
559196

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 6, 1998	File name	: WSP9XY1F.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 1000 nT



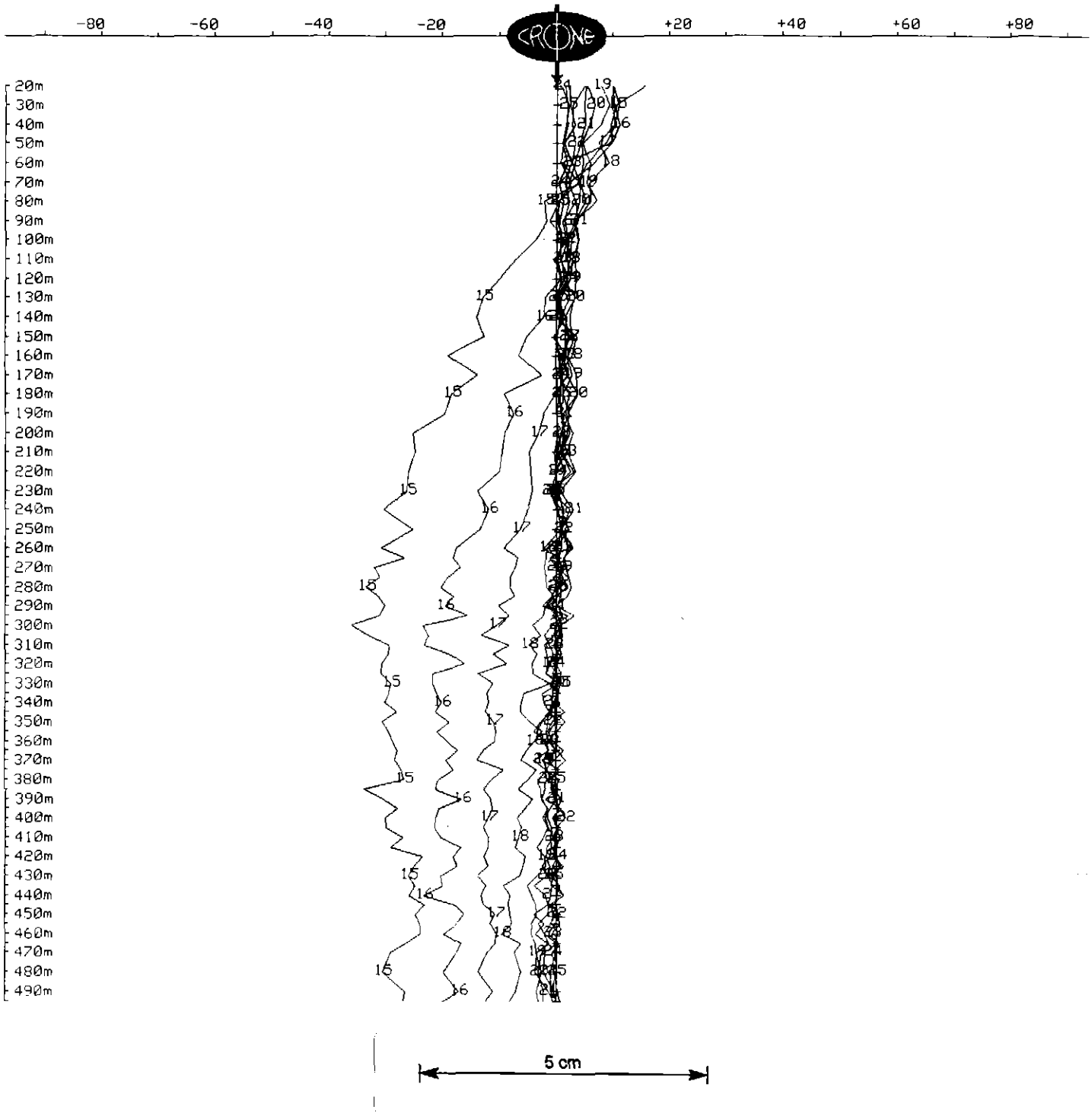
559197

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 6, 1998	File name	: WSP9XY1F.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 10 nT



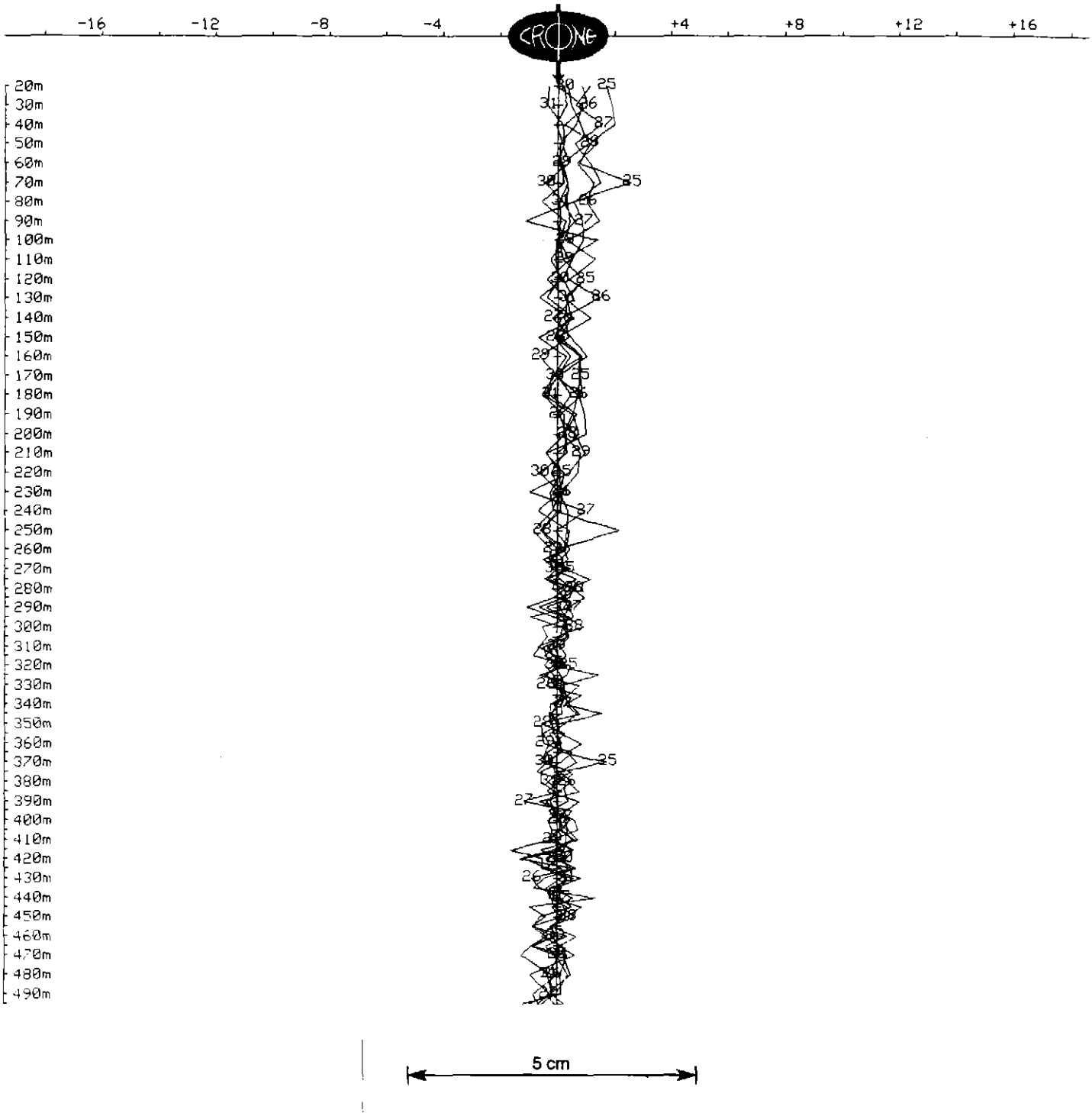
559198

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 6, 1998	File name	: WSP9XY1F.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT



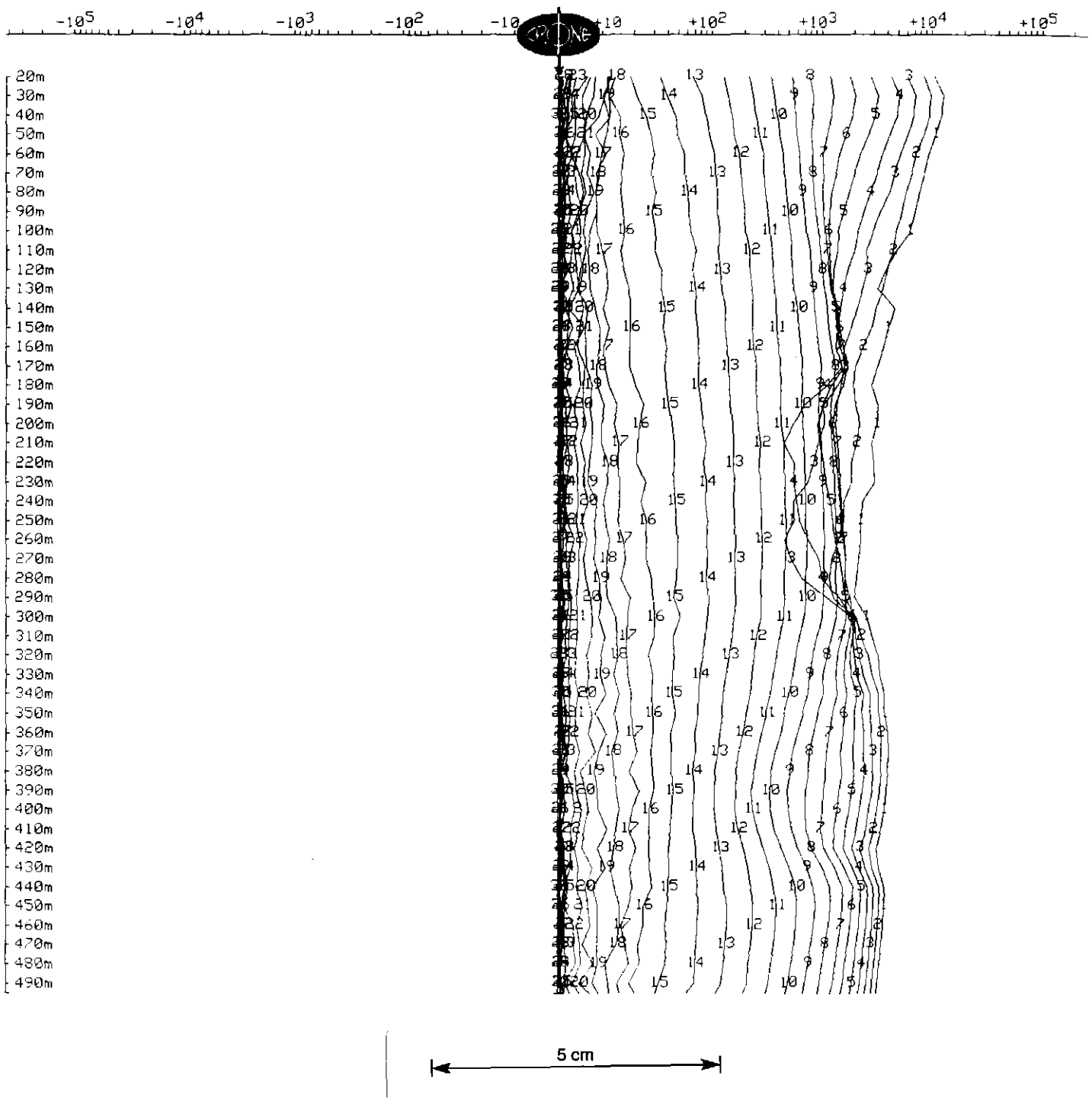
559199

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #1
Date	: Feb 6, 1998	File name	: WSP9XYZ1.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 31 channels

Scale: 1:3000



OUTER-RIM EXPLORATION SERVICES
ACN 059 220 192

Geophysical Contracting Services

100% Australian Owned

35 Fleming Street,
(P.O. Box 1754)
AITKENVALE, Q.L.D. 4814

Tel: 07 4725 3544
Fax: 07 4725 4805
Mob: 0412 54 9980
Email: oreserv@ozemail.com.au

Volume 3 of 3

Client	:	RGC Exploration Ltd
Prospect	:	Tyndall Creek and White Spur.
Area	:	Zeehan, Tas.
Survey	:	Borehole PEM Survey
Survey Period	:	2nd to 10th February 1998.
Operator	:	Brett Rankin.

2317-9801c

559201

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #9
Date	: Feb 7, 1998	File name	: WSP9Z9.PEM
Time Base	: 20.00 ms	# Readings	: 49
Ramp Time	: 0.50 ms	Stn Units	: Metric
# Channels	: 31	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 530m X 400m	Receiver	: Digital #109
Current	: 16 Amps	Operator	: Brett Rankin

Loop Coordinates (X,Y,Z)

1. 376540m, 5.36073e+06m, 0m
2. 376525m, 5.3602e+06m, 0m
3. 376925m, 5.3602e+06m, 0m
4. 376925m, 5.36072e+06m, 0m

Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)

1. 377065m, 5.36056e+06m, 0m
2. 90deg, 60deg, 495m

Channel Times (usec)

Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-198	-99	-149	1	50	58	54	2	58	72	65
3	72	86	79	4	86	104	94	5	104	126	115
6	126	153	140	7	153	185	169	8	185	225	205
9	225	270	248	10	270	328	299	11	328	396	362
12	396	482	439	13	482	580	531	14	580	702	641
15	702	850	776	16	850	1026	938	17	1026	1242	1134
18	1242	1498	1370	19	1498	1813	1656	20	1813	2187	2000
21	2187	2646	2416	22	2646	3195	2920	23	3195	3861	3528
24	3861	4666	4264	25	4666	5634	5150	26	5634	6808	6221
27	6808	8221	7514	28	8221	9936	9078	29	9936	12000	10968
30	12000	14490	13245	31	14490	17510	16000				

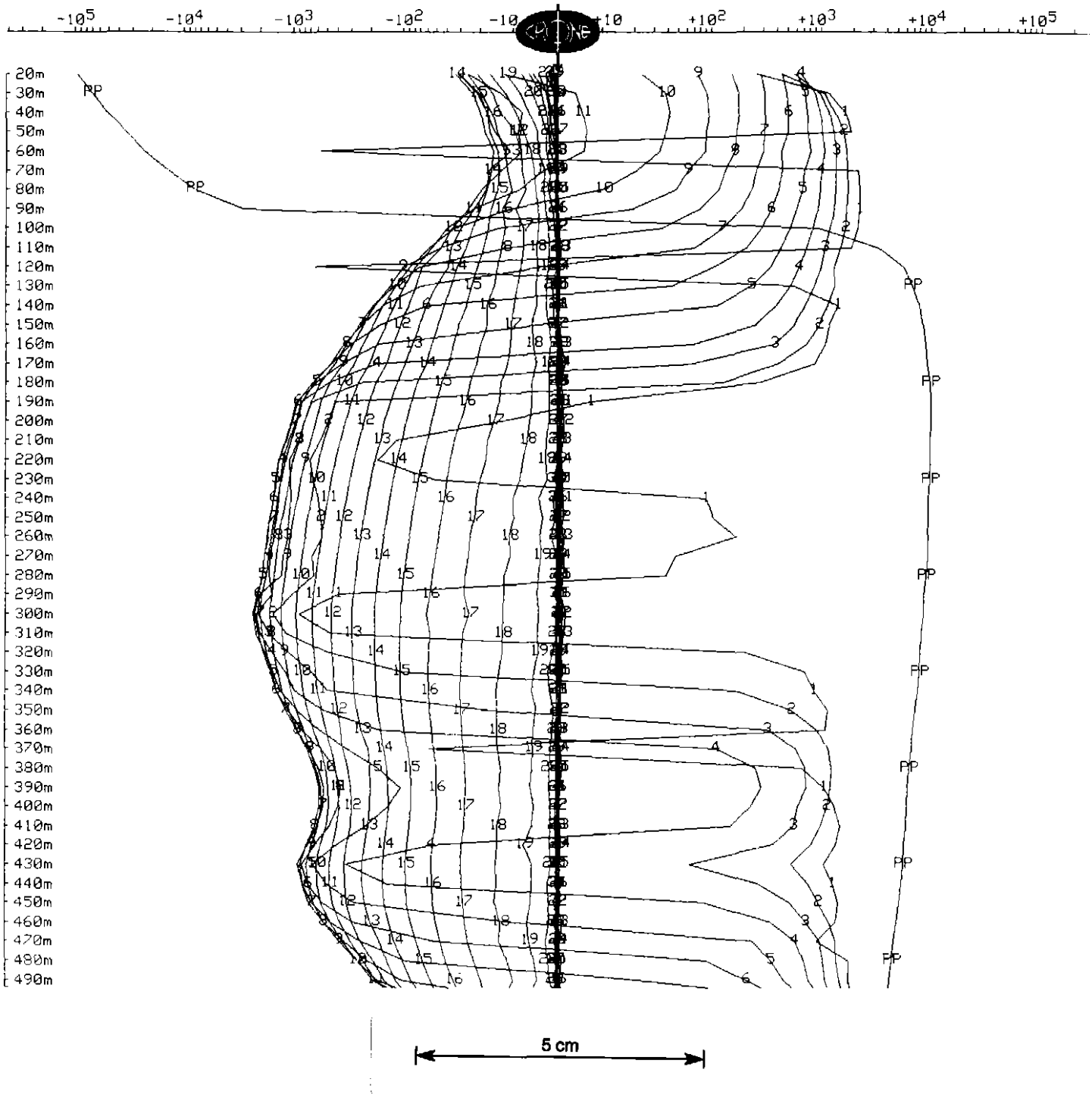
559202

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #9
Date	: Feb 7, 1998	File name	: WSP9Z9.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000



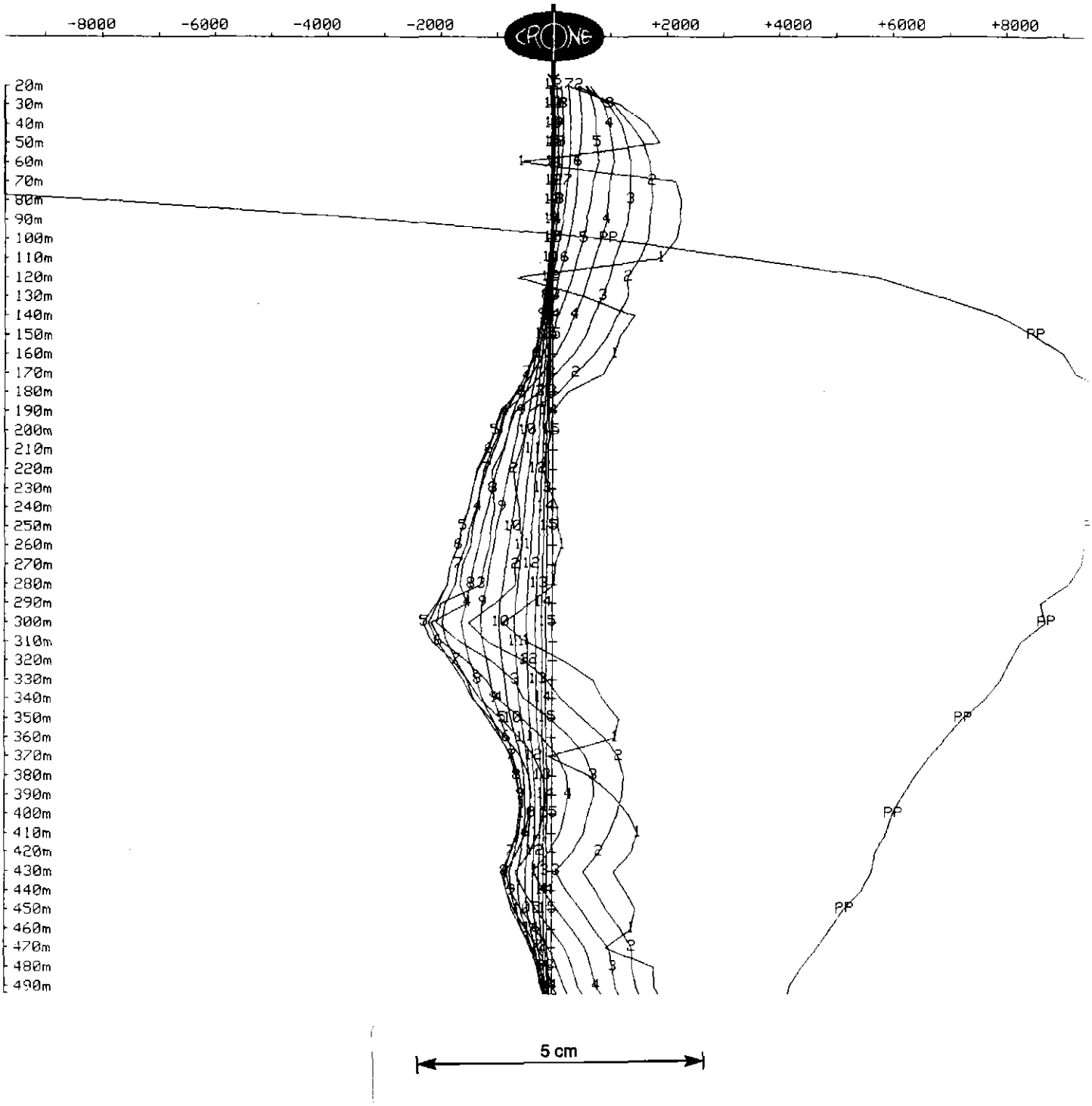
559203

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #9
Date	: Feb 7, 1998	File name	: WSP9Z9.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 1000 nT

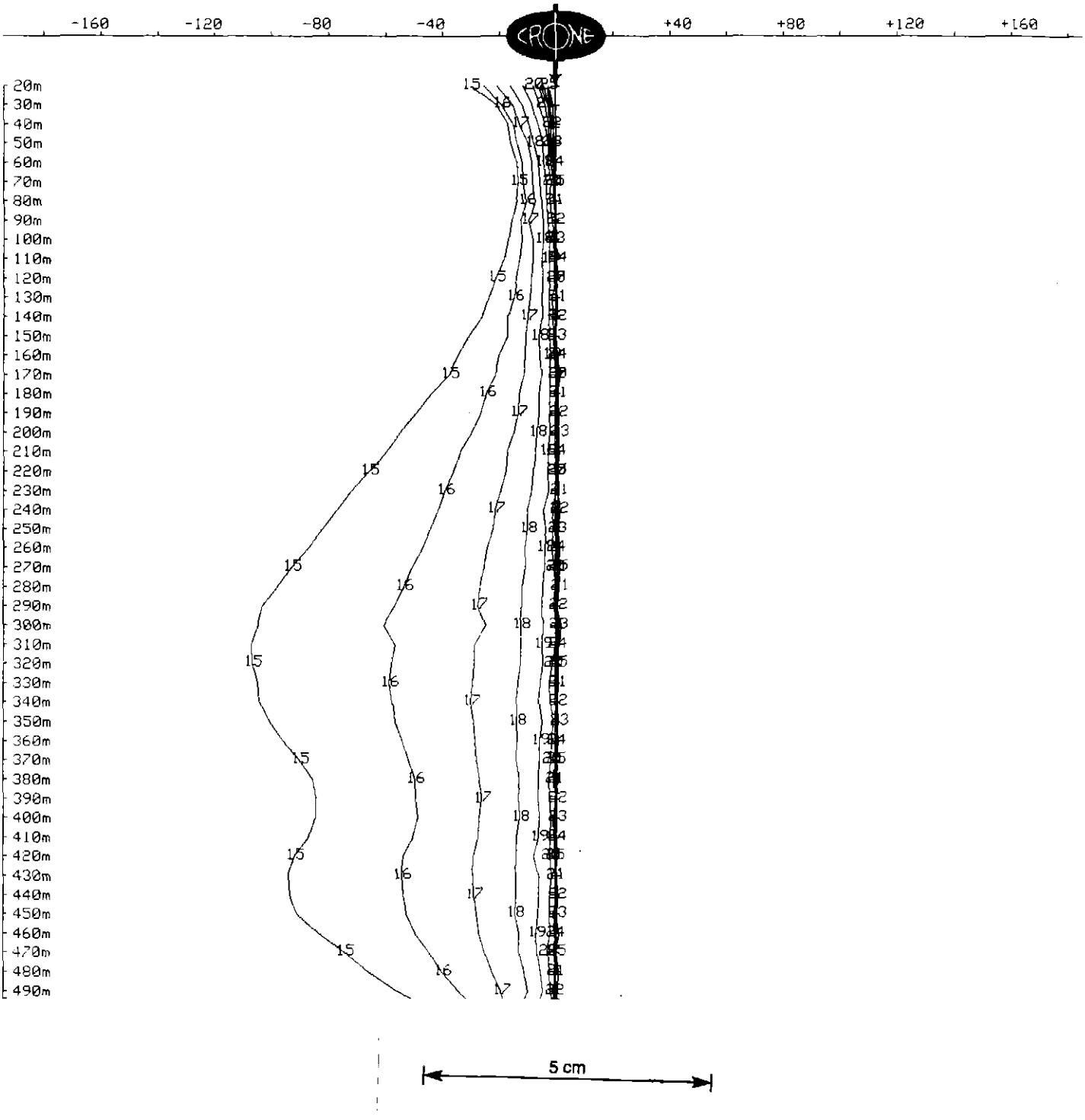


OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #9
Date	: Feb 7, 1998	File name	: WSP9Z9.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 20 nT



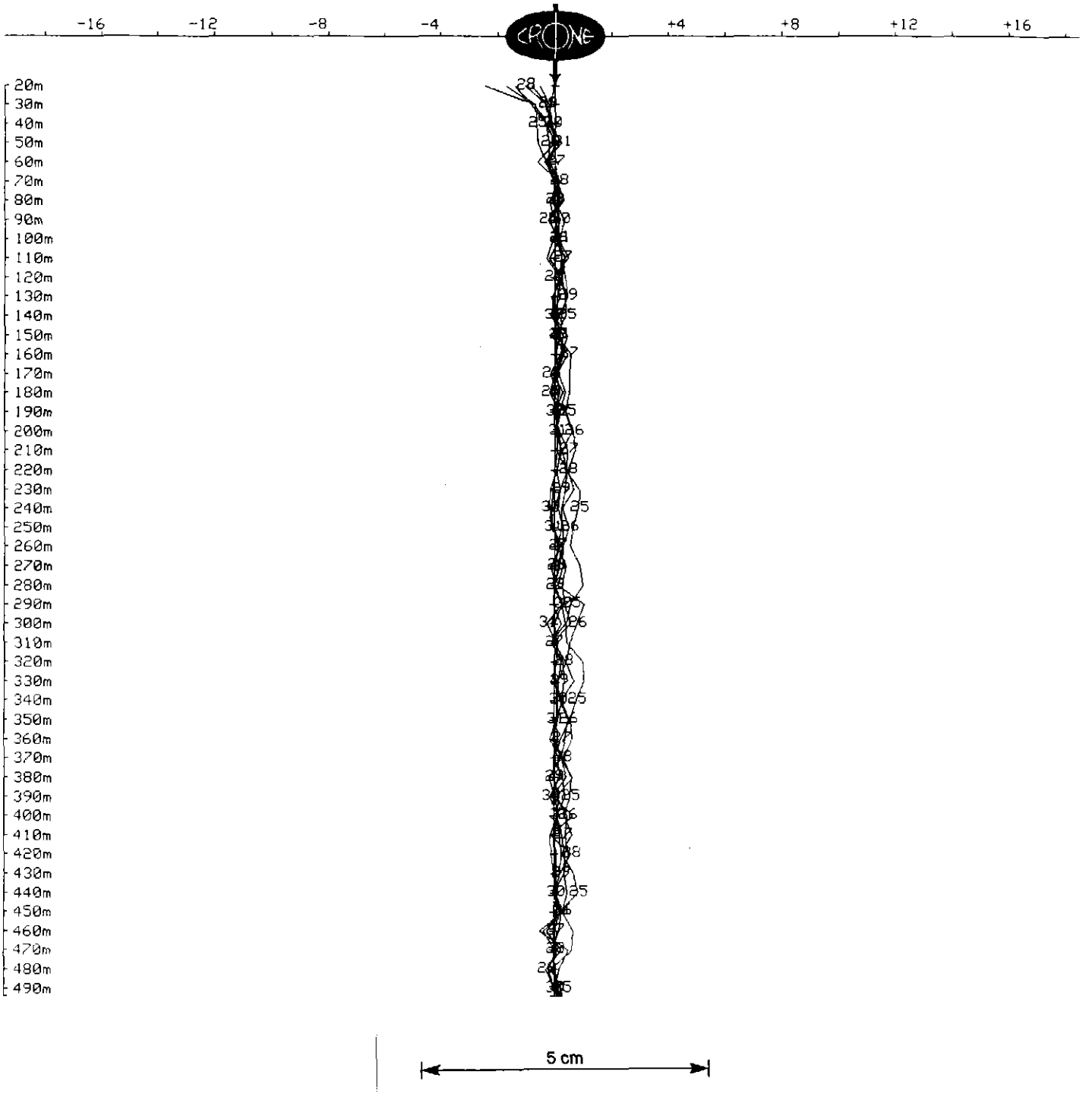
559205

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #9
Date	: Feb 7, 1998	File name	: WSP9Z9.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT



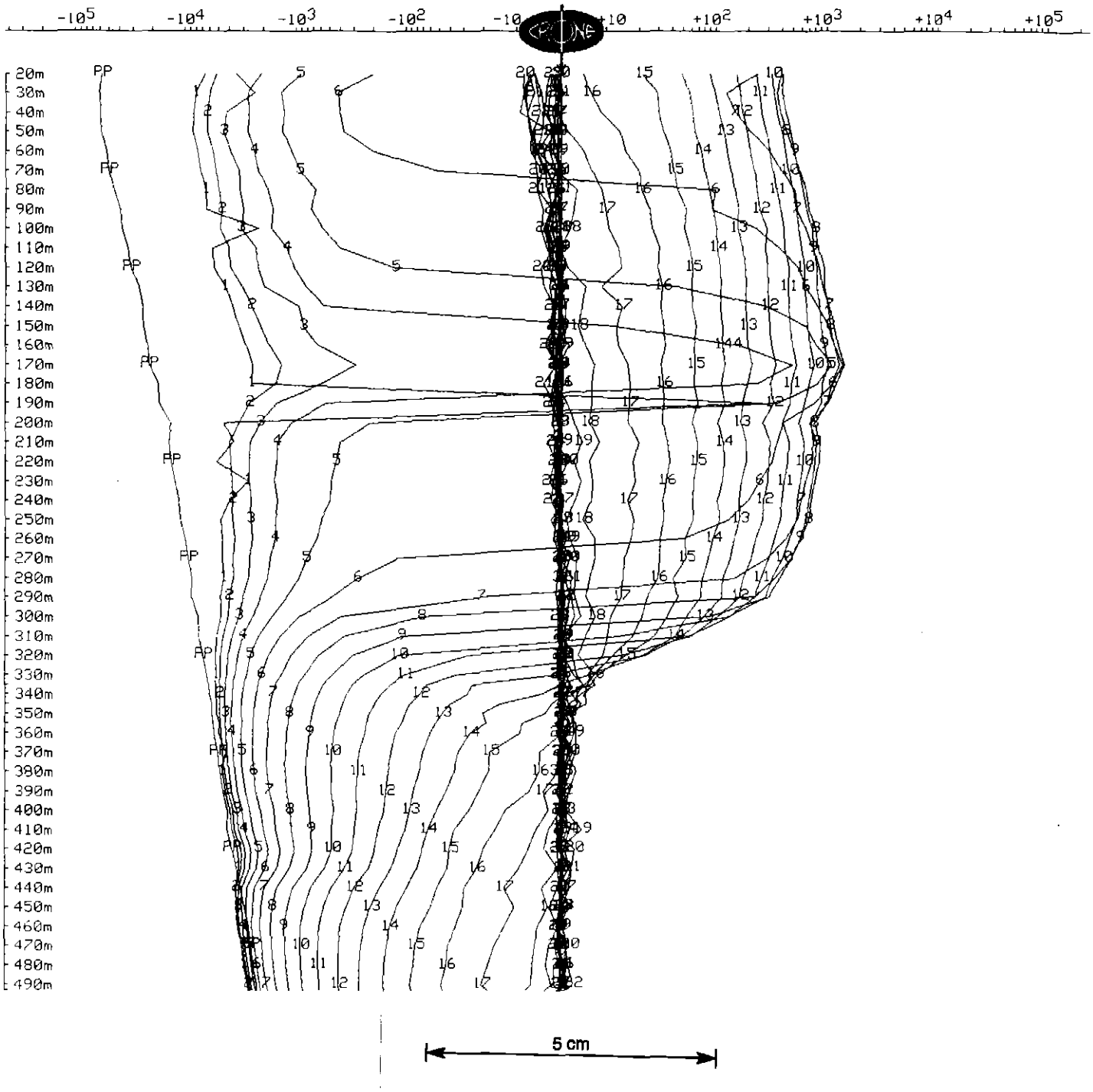
559206

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #9
Date	: Feb 7, 1998	File name	: WSP9XY9.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000



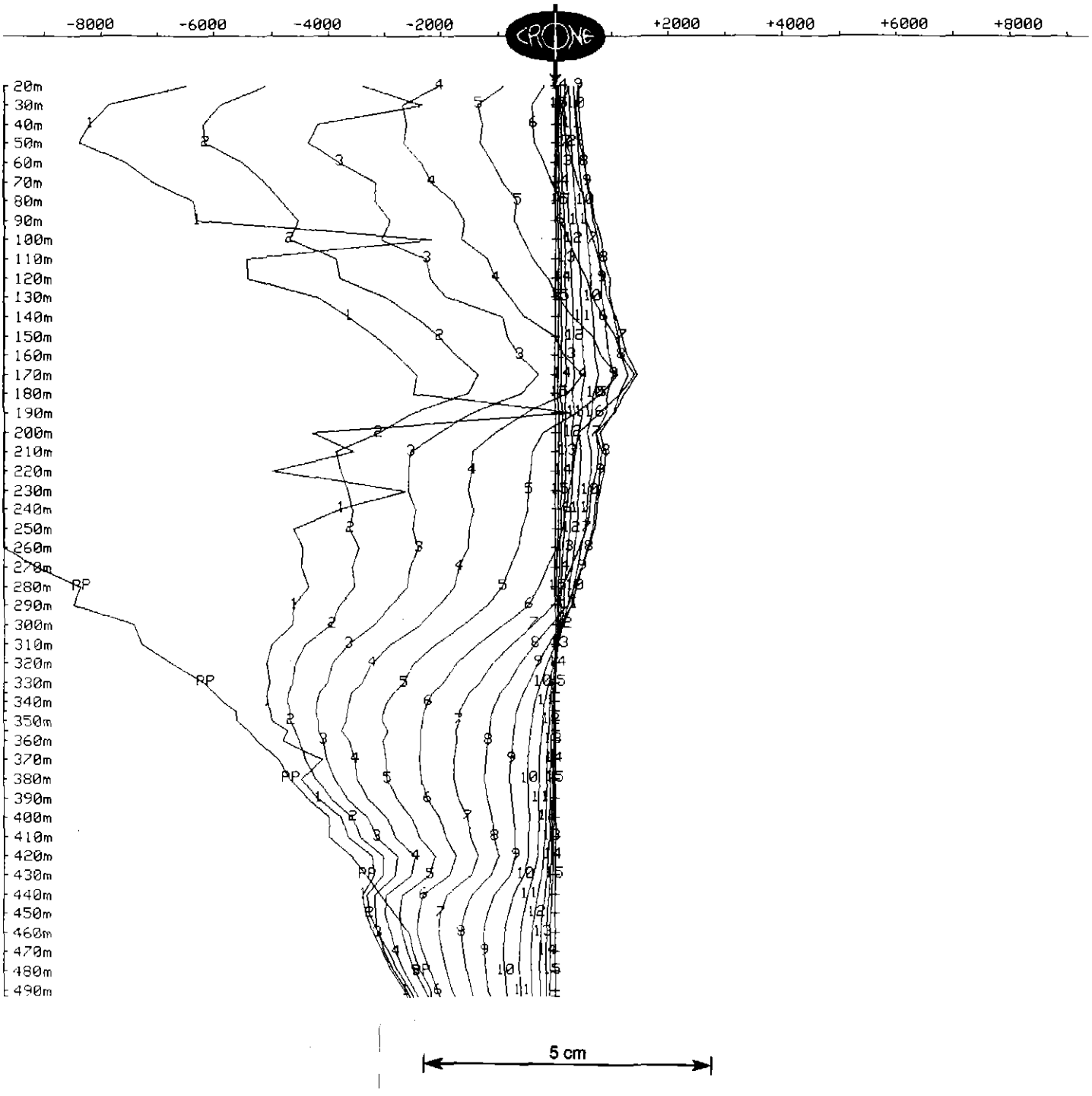
559207

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #9
Date	: Feb 7, 1998	File name	: WSP9XY9.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 1000 nT



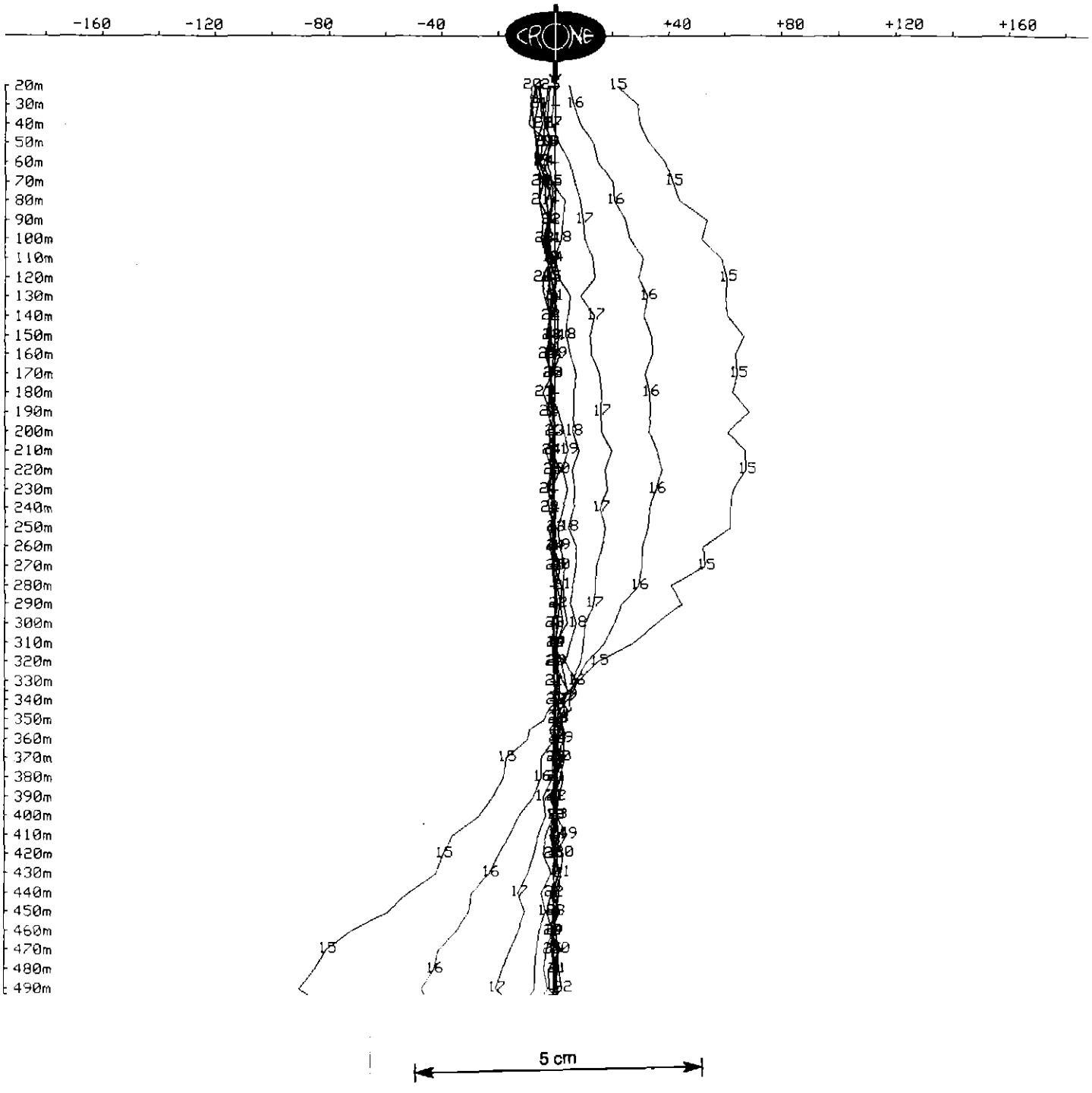
559208

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #9
Date	: Feb 7, 1998	File name	: WSP9XY9.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 20 nT



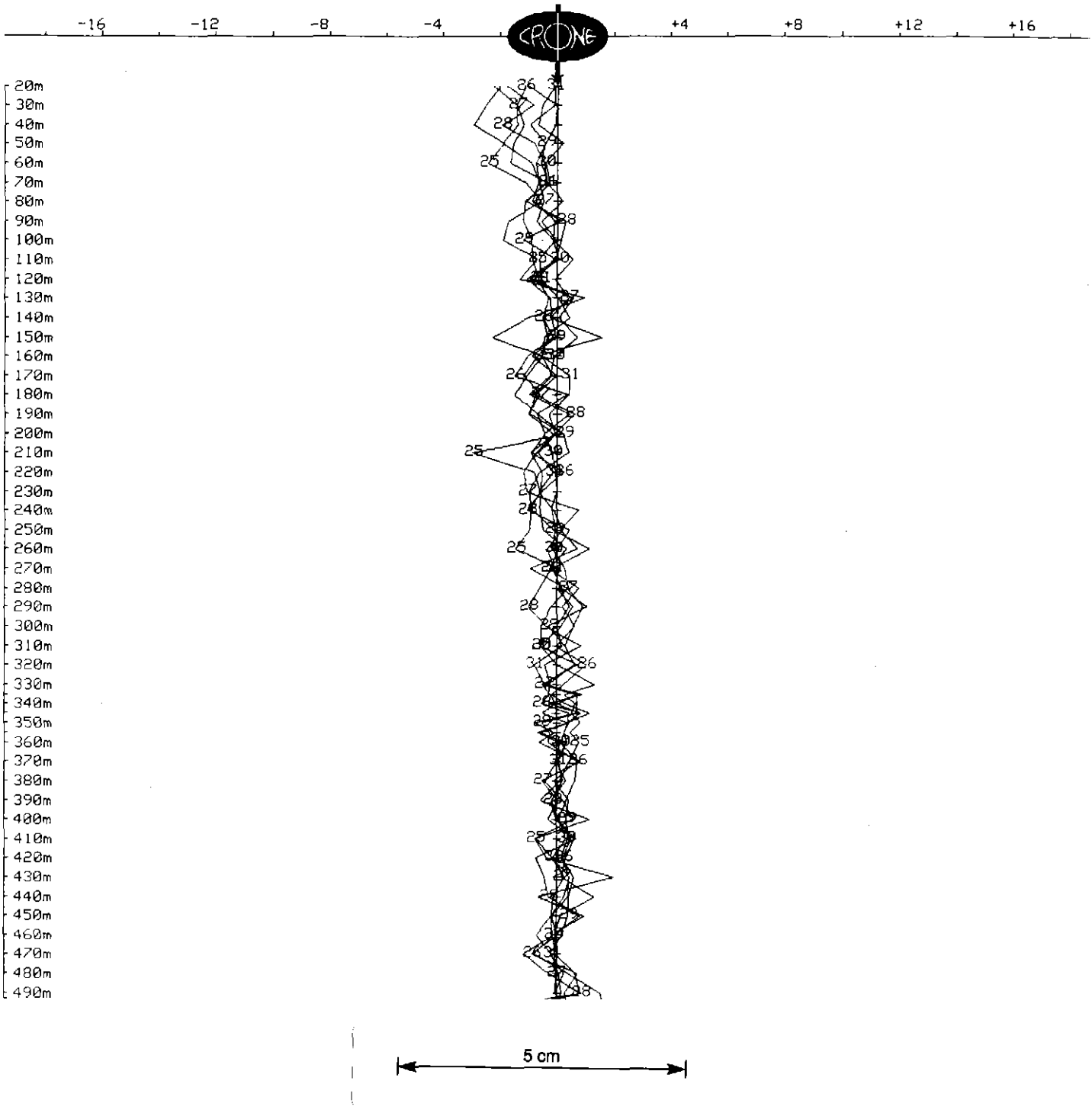
559209

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #9
Date	: Feb 7, 1998	File name	: WSP9XY9.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT



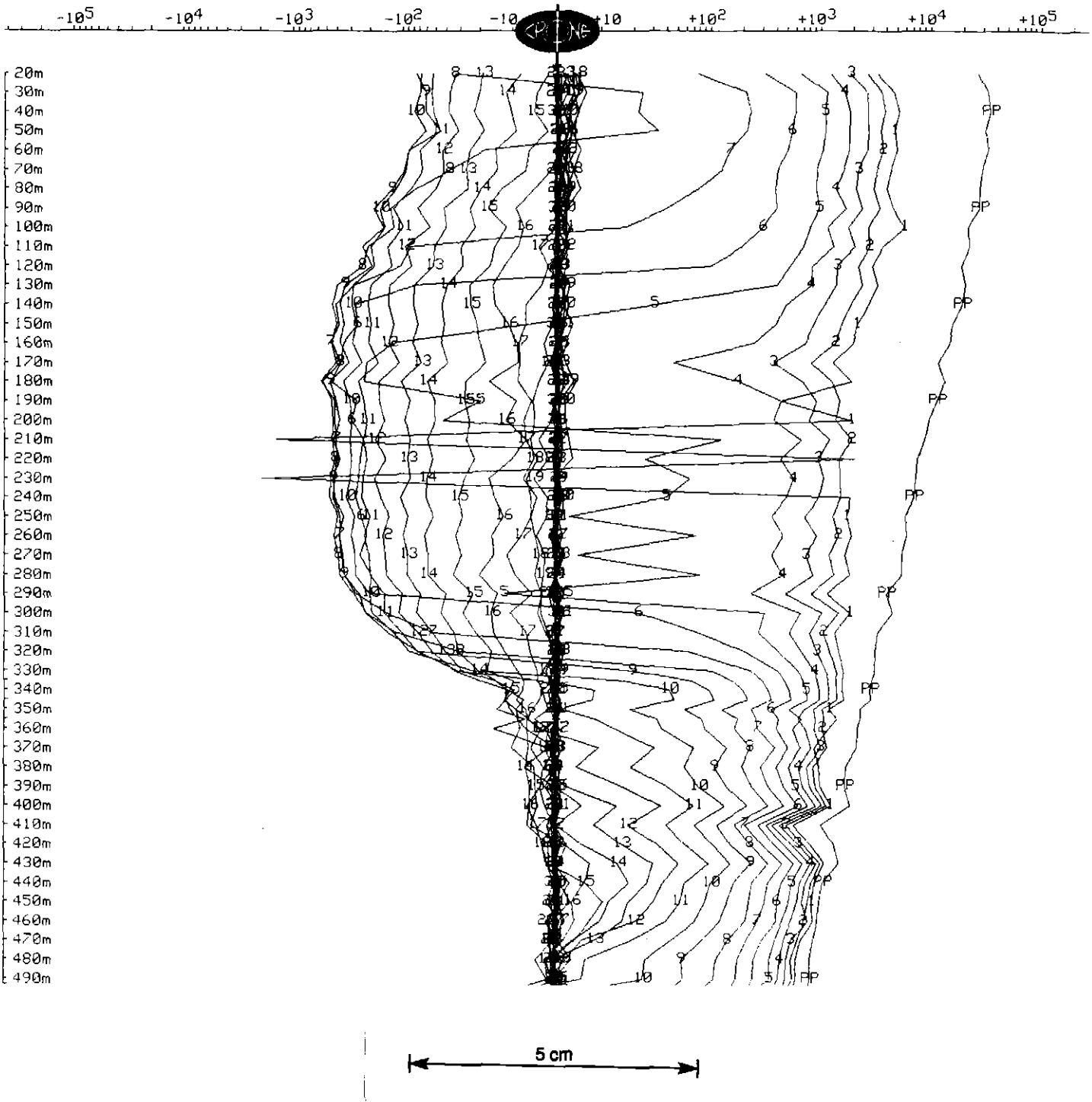
559210

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #9
Date	: Feb 7, 1998	File name	: WSP9XY9.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000



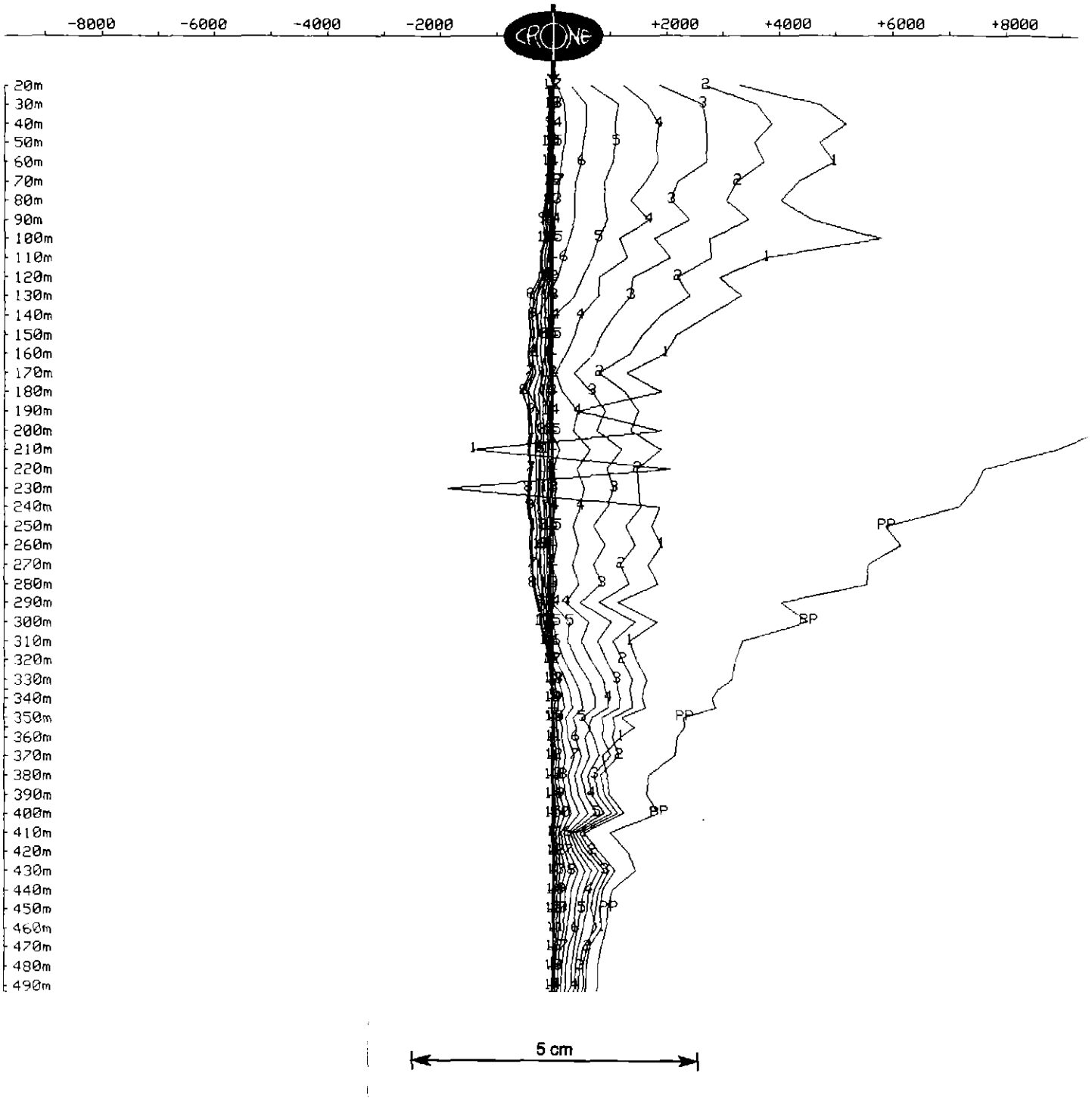
559211

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #9
Date	: Feb 7, 1998	File name	: WSP9XY9.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels and PP

Scale: 1:3000 Unit Scale: 1cm = 1000 nT



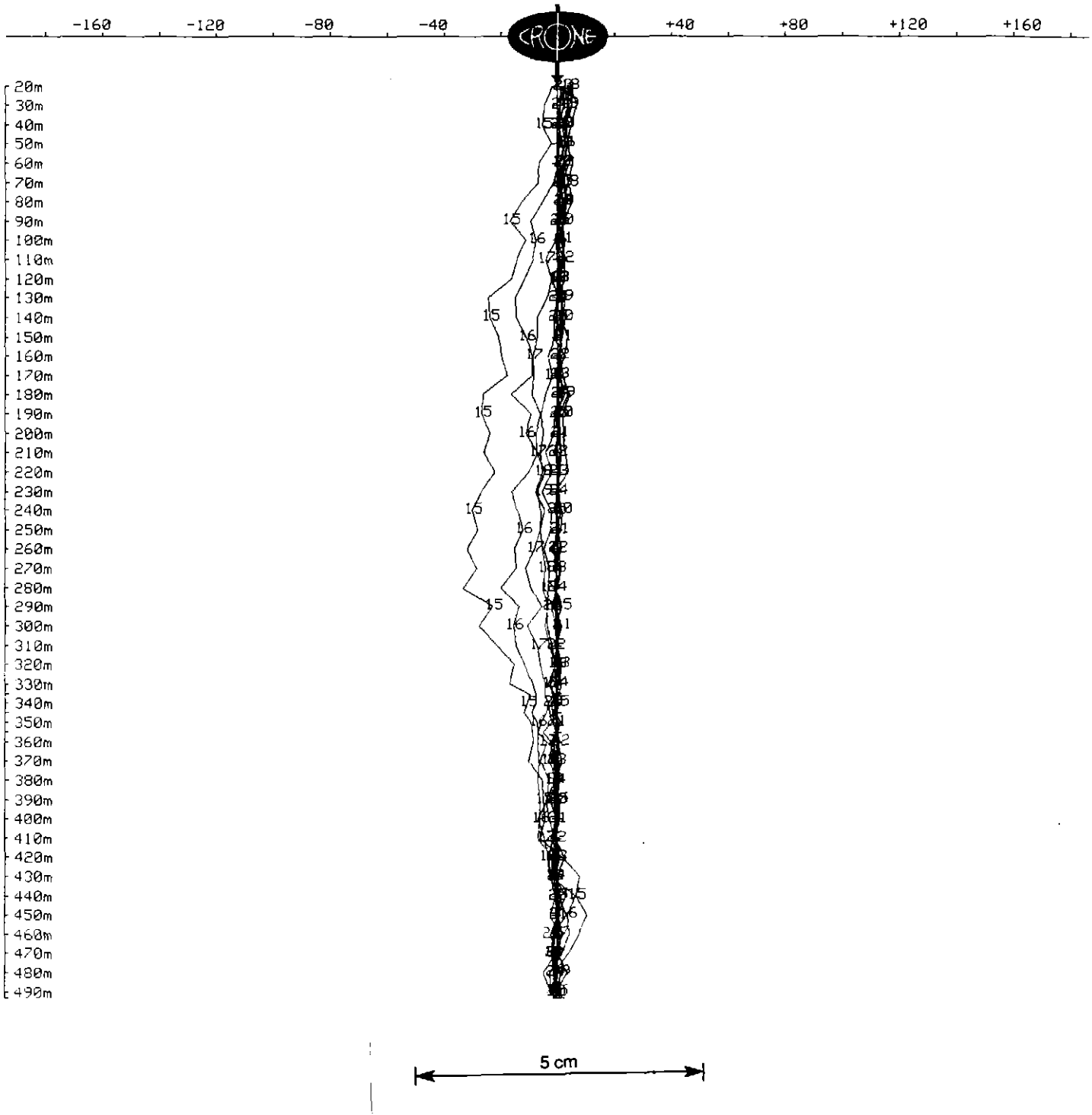
559212

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #9
Date	: Feb 7, 1998	File name	: WSP9XY9.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 20 nT



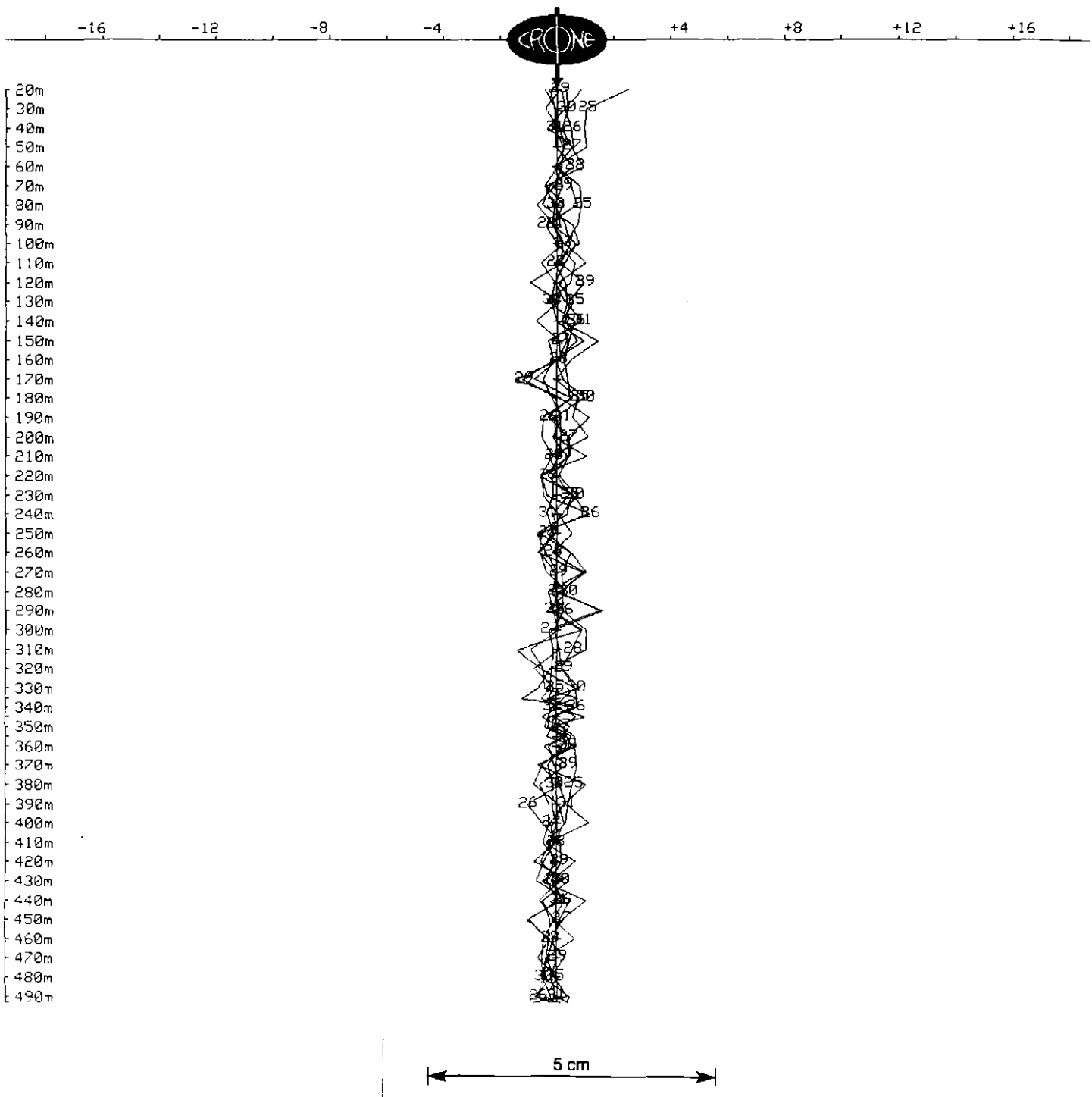
559213

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #9
Date	: Feb 7, 1998	File name	: WSP9XY9.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels

Scale: 1:3000 Unit Scale: 1cm = 2 nT



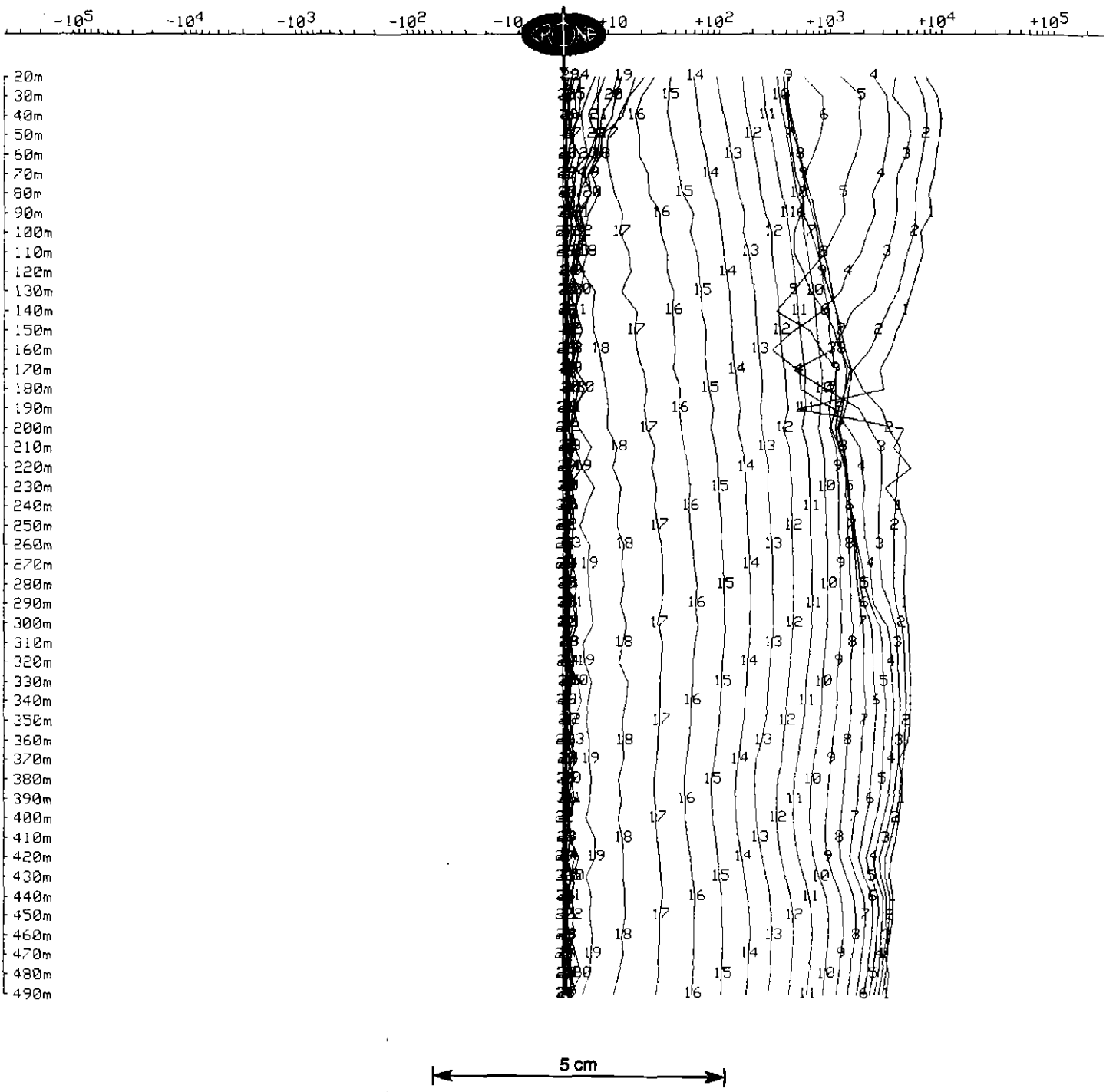
559214

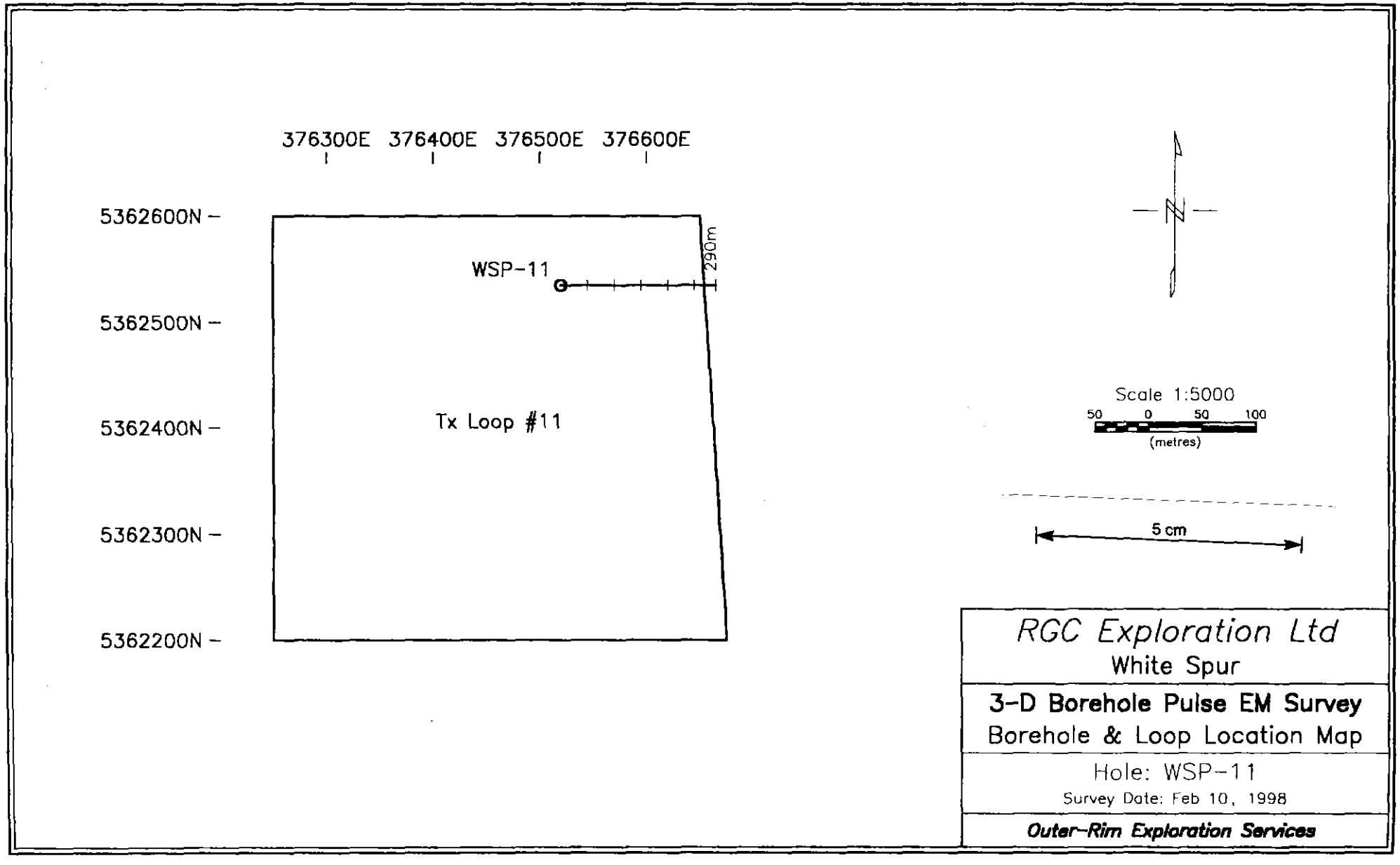
OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-9
Grid	: White Spur	Tx Loop	: #9
Date	: Feb 7, 1998	File name	: WSP9XYZ9.PEM

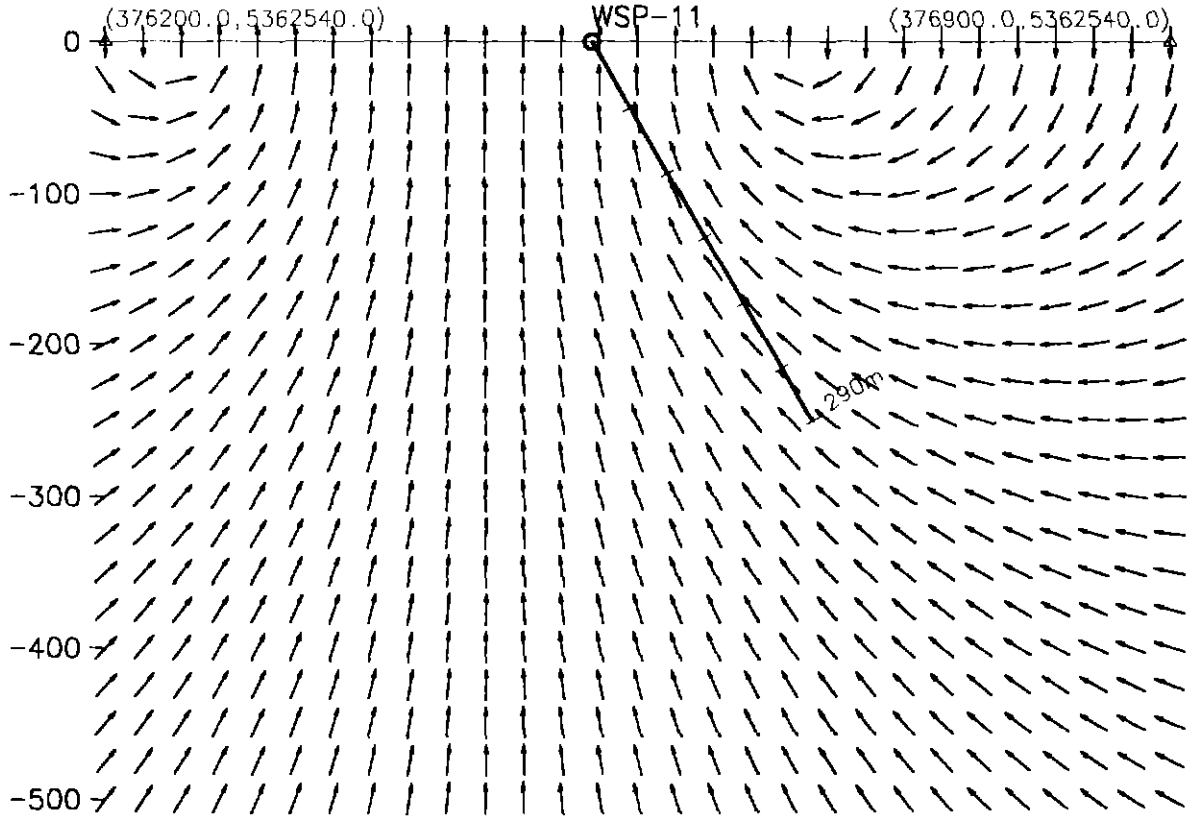
TOTAL FIELD dBxyz/dt nanoTesla/sec - 31 channels

Scale: 1:3000




376300E
376400E
376500E
376600E
5362600N
5362500N
5362400N
5362300N
5362200N
WSP-11
290m
Tx Loop #11
Scale 1:5000
50 0 50 100
(metres)
5 cm
RGC Exploration Ltd
White Spur
3-D Borehole Pulse EM Survey
Borehole & Loop Location Map
Hole: WSP-11
Survey Date: Feb 10, 1998
Outer-Rim Exploration Services

559215



Scale 1:5000

50 0 50 100

(metres)

5 cm

RGC Exploration Ltd

White Spur

3-D Borehole Pulse EM Survey

Hole Section with Primary Field

Hole: WSP-11

Survey Date: Feb 10, 1998

Outer-Rim Exploration Services

559217

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-11
Grid	: White Spur	Tx Loop	: #11
Date	: Feb 10, 1998	File name	: WSP11Z.PEM
Time Base	: 20.00 ms	# Readings	: 38
Ramp Time	: 0.50 ms	Stn Units	: Metric
# Channels	: 31	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 400m X 400m	Receiver	: Digital #109
Current	: 16 Amps	Operator	: Brett Rankin

Loop Coordinates (X,Y,Z)

1. 376250m, 5.3626e+06m, 0m
2. 376250m, 5.3622e+06m, 0m
3. 376675m, 5.3622e+06m, 0m
4. 376650m, 5.3626e+06m, 0m

Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)

1. 376520m, 5.36254e+06m, 0m
2. 90deg, 60deg, 290m

Channel Times (usec)

Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-198	-99	-149	1	50	58	54	2	58	72	65
3	72	86	79	4	86	104	94	5	104	126	115
6	126	153	140	7	153	185	169	8	185	225	205
9	225	270	248	10	270	328	299	11	328	396	362
12	396	482	439	13	482	580	531	14	580	702	641
15	702	850	776	16	850	1026	938	17	1026	1242	1134
18	1242	1498	1370	19	1498	1813	1656	20	1813	2187	2000
21	2187	2646	2416	22	2646	3195	2920	23	3195	3861	3528
24	3861	4666	4264	25	4666	5634	5150	26	5634	6808	6221
27	6808	8221	7514	28	8221	9936	9078	29	9936	12000	10968
30	12000	14490	13245	31	14490	17510	16000				

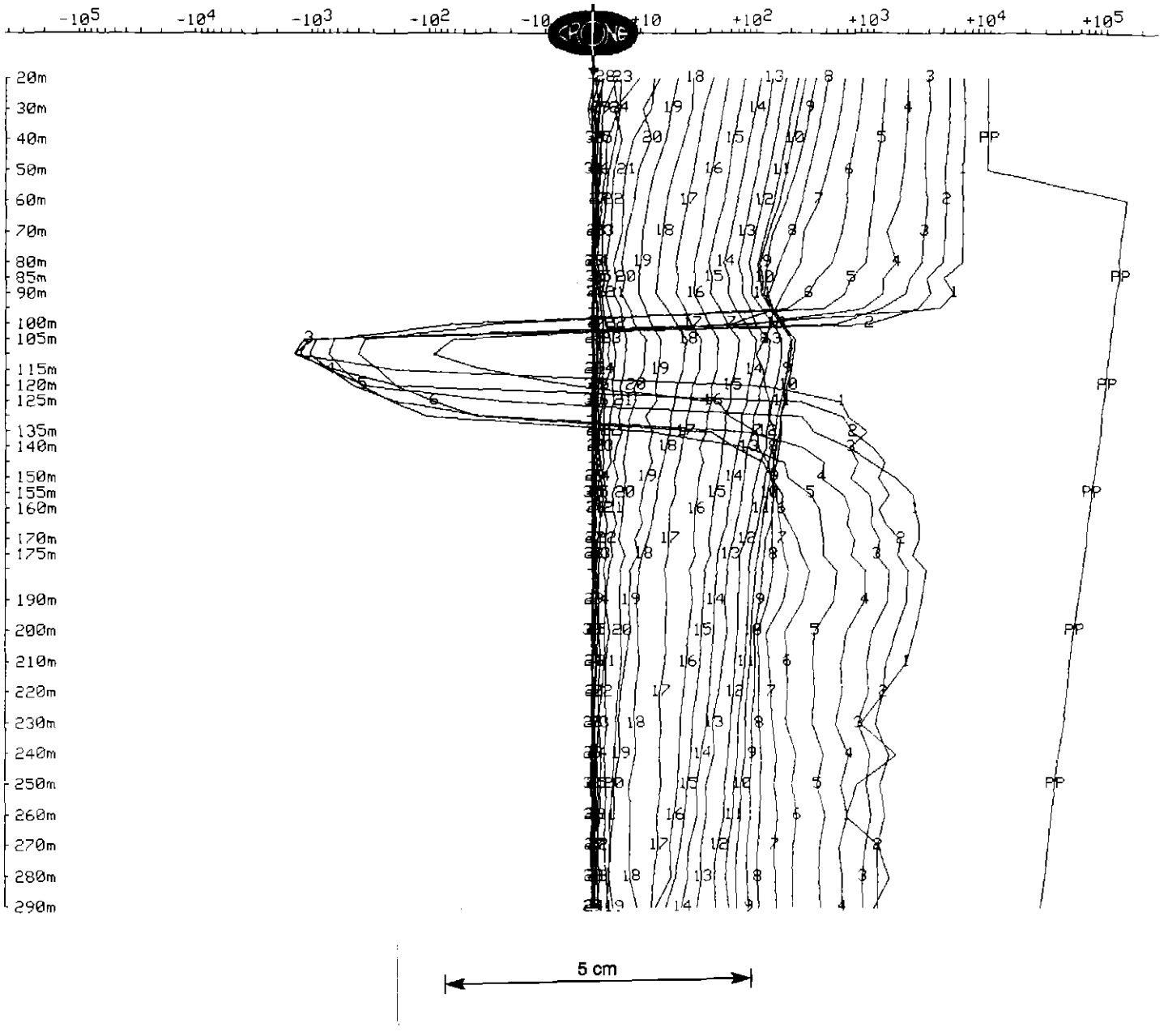
559218

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-11
Grid	: White Spur	Tx Loop	: #11
Date	: Feb 10, 1998	File name	: WSP11Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000



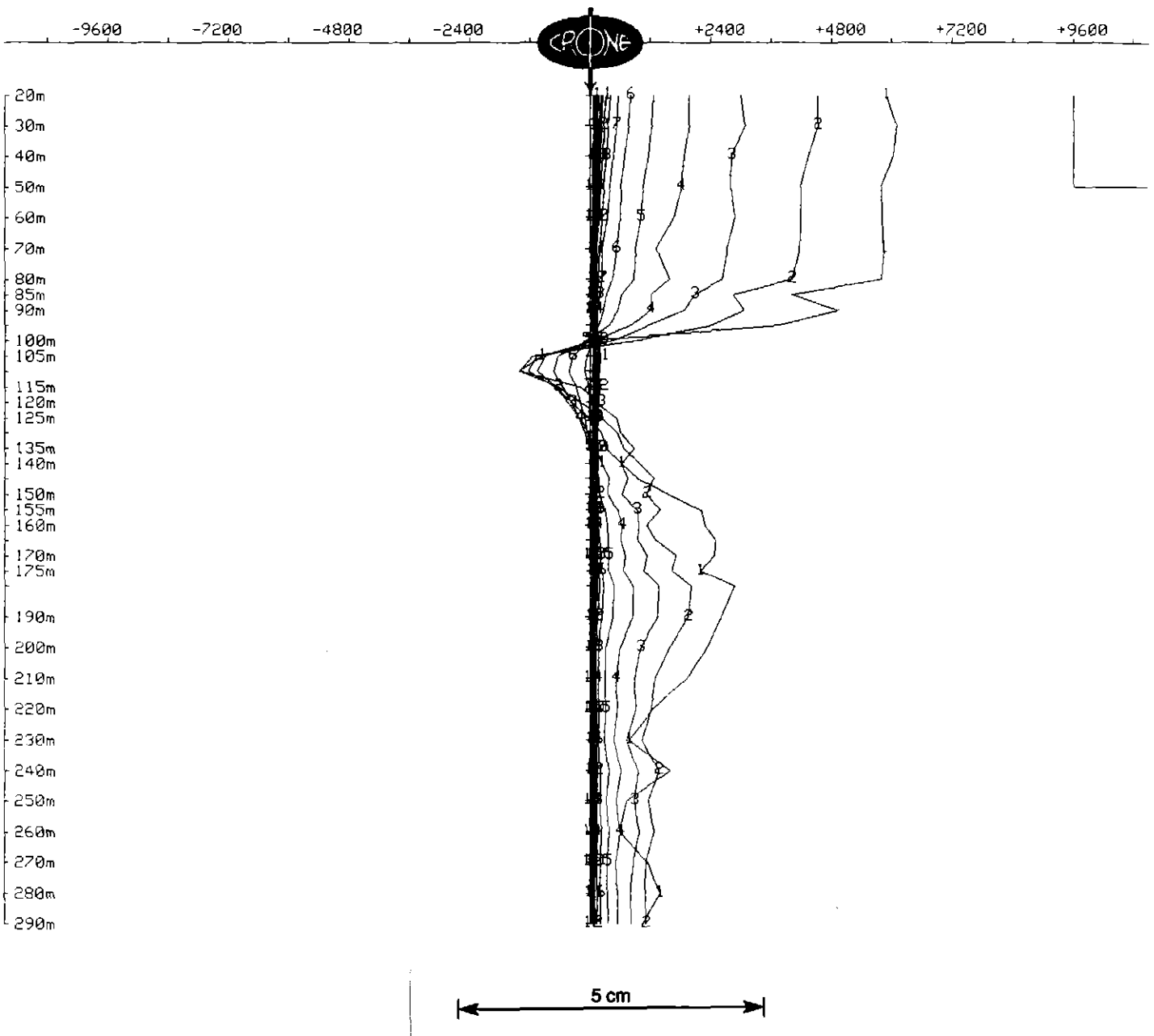
559219

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-11
Grid	: White Spur	Tx Loop	: #11
Date	: Feb 10, 1998	File name	: WSP11Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 1200 nT



5 cm

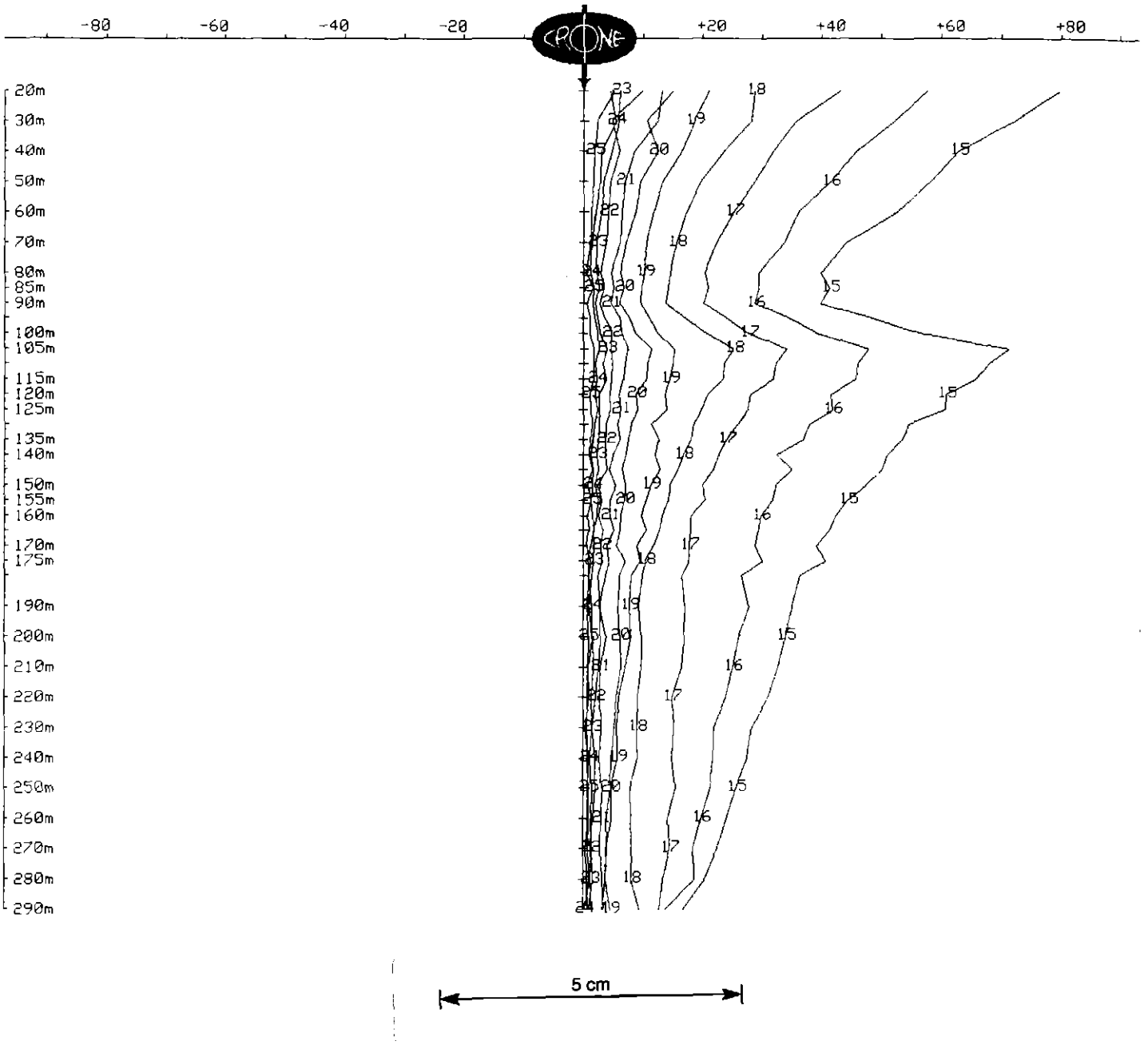
559220

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-11
Grid	: White Spur	Tx Loop	: #11
Date	: Feb 10, 1998	File name	: WSP11Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 10 nT



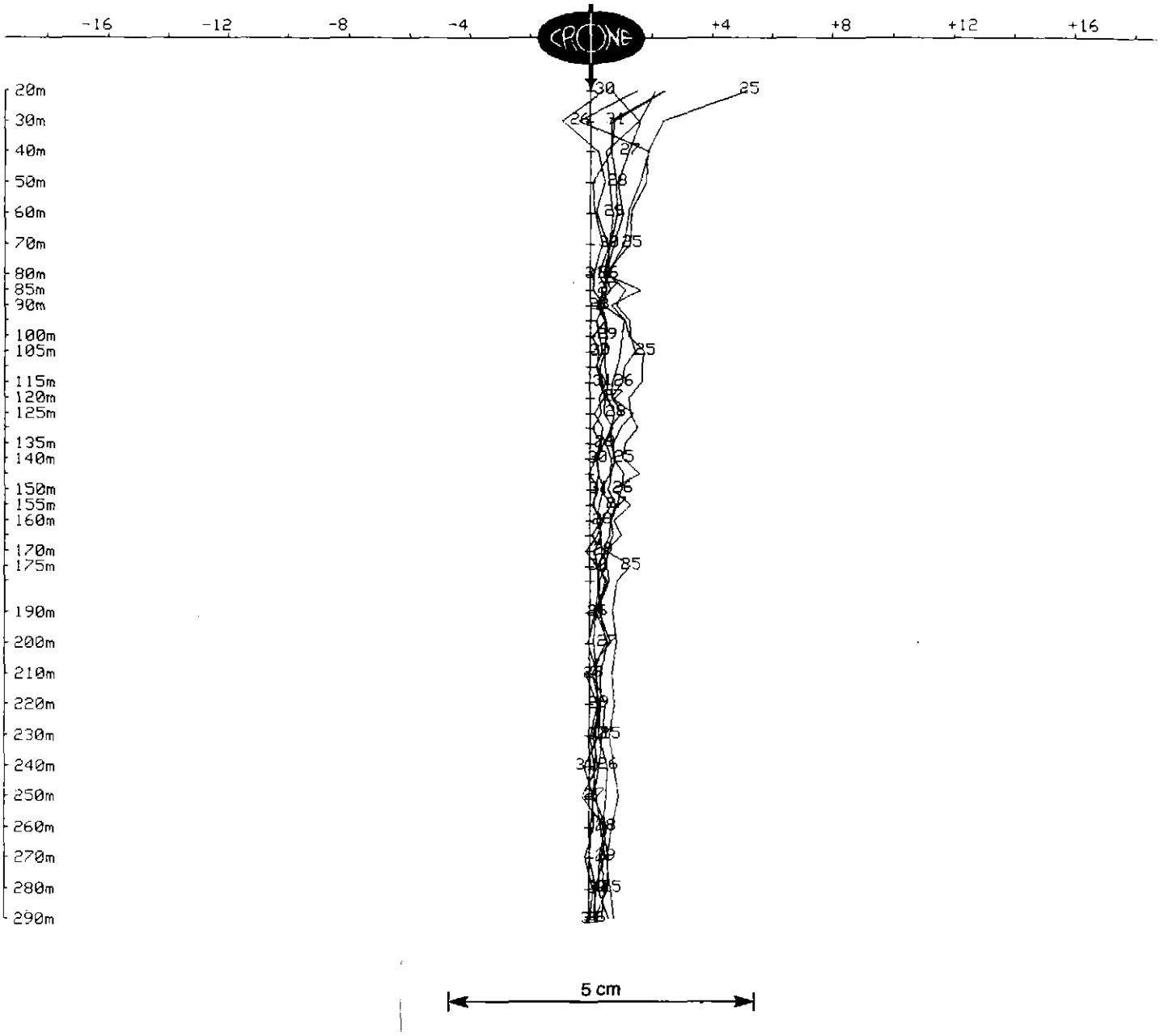
559221

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-11
Grid	: White Spur	Tx Loop	: #11
Date	: Feb 10, 1998	File name	: WSP11Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 2 nT



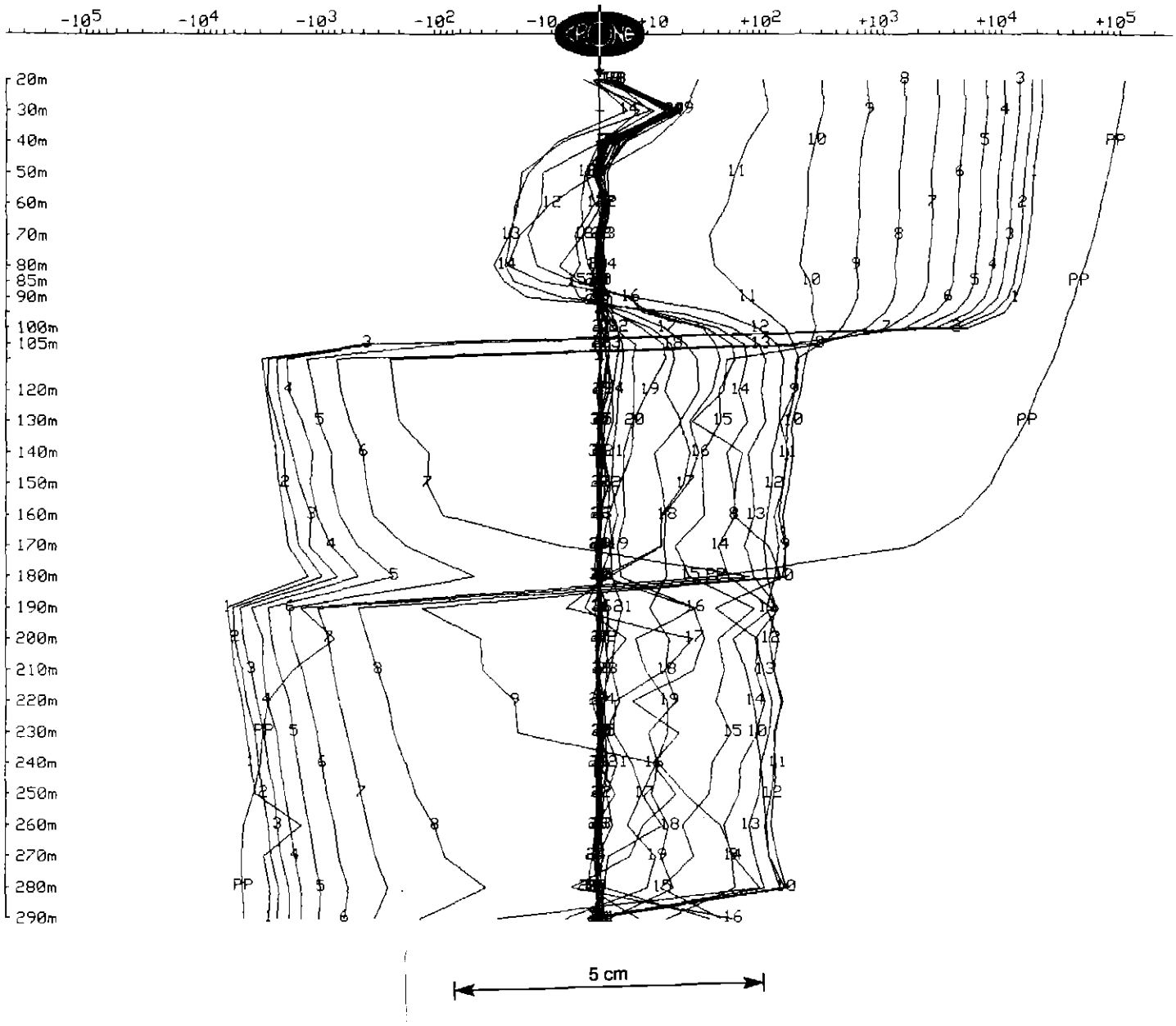
559222

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-11
Grid	: White Spur	Tx Loop	: #11
Date	: Feb 10, 1998	File name	: WSP11XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000



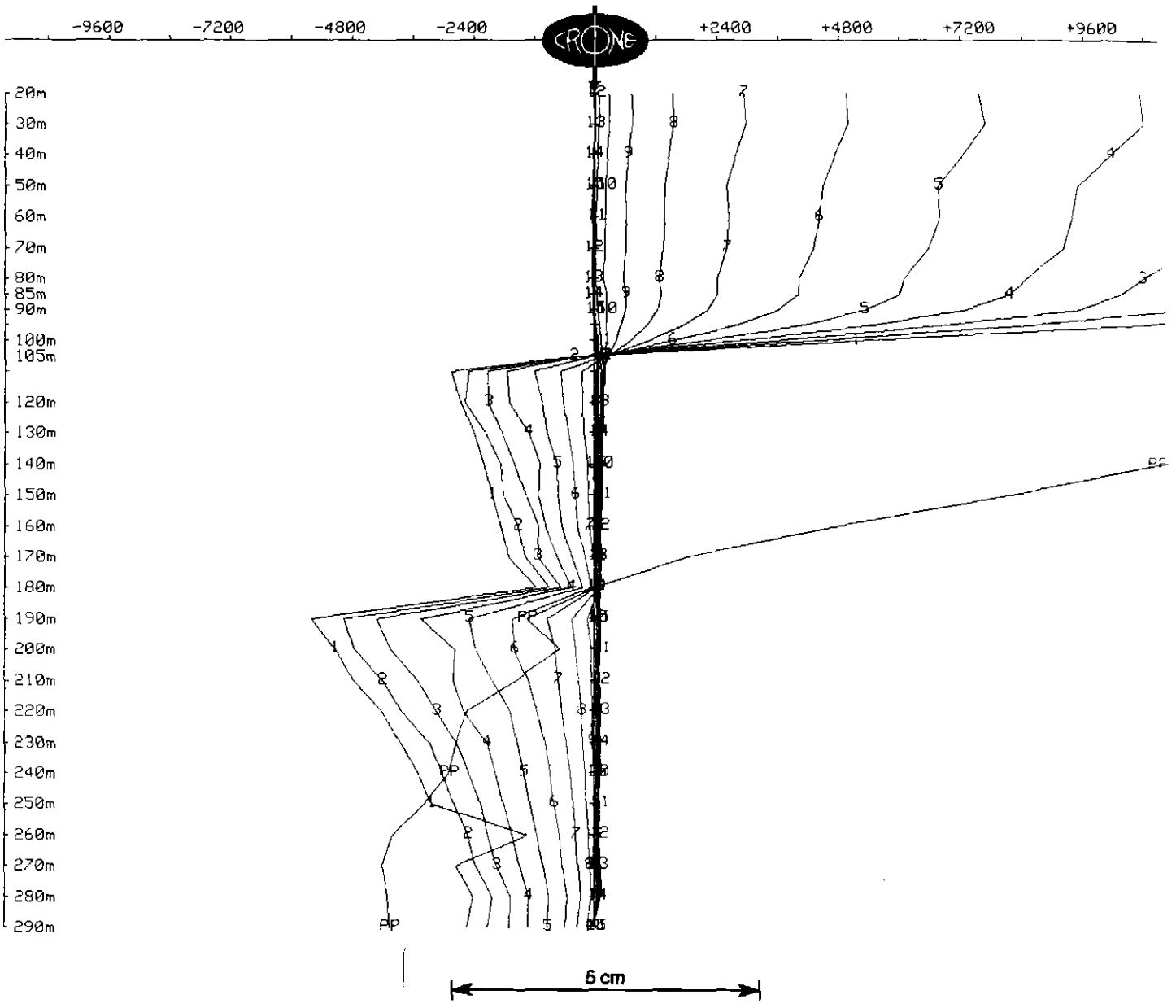
559223

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-11
Grid	: White Spur	Tx Loop	: #11
Date	: Feb 10, 1998	File name	: WSP11XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 1200 nT



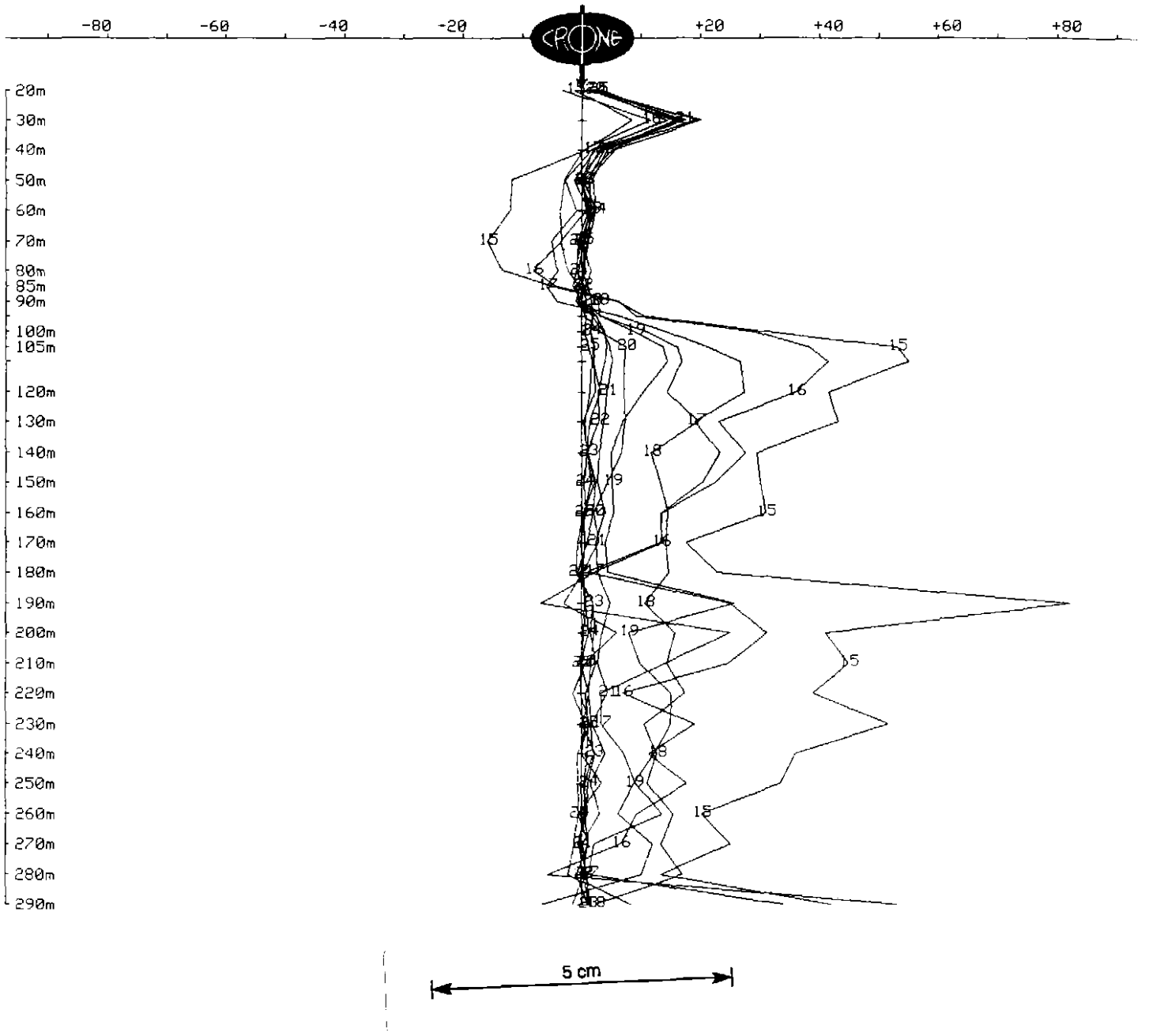
559224

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-11
Grid	: White Spur	Tx Loop	: #11
Date	: Feb 10, 1998	File name	: WSP11XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 10 nT



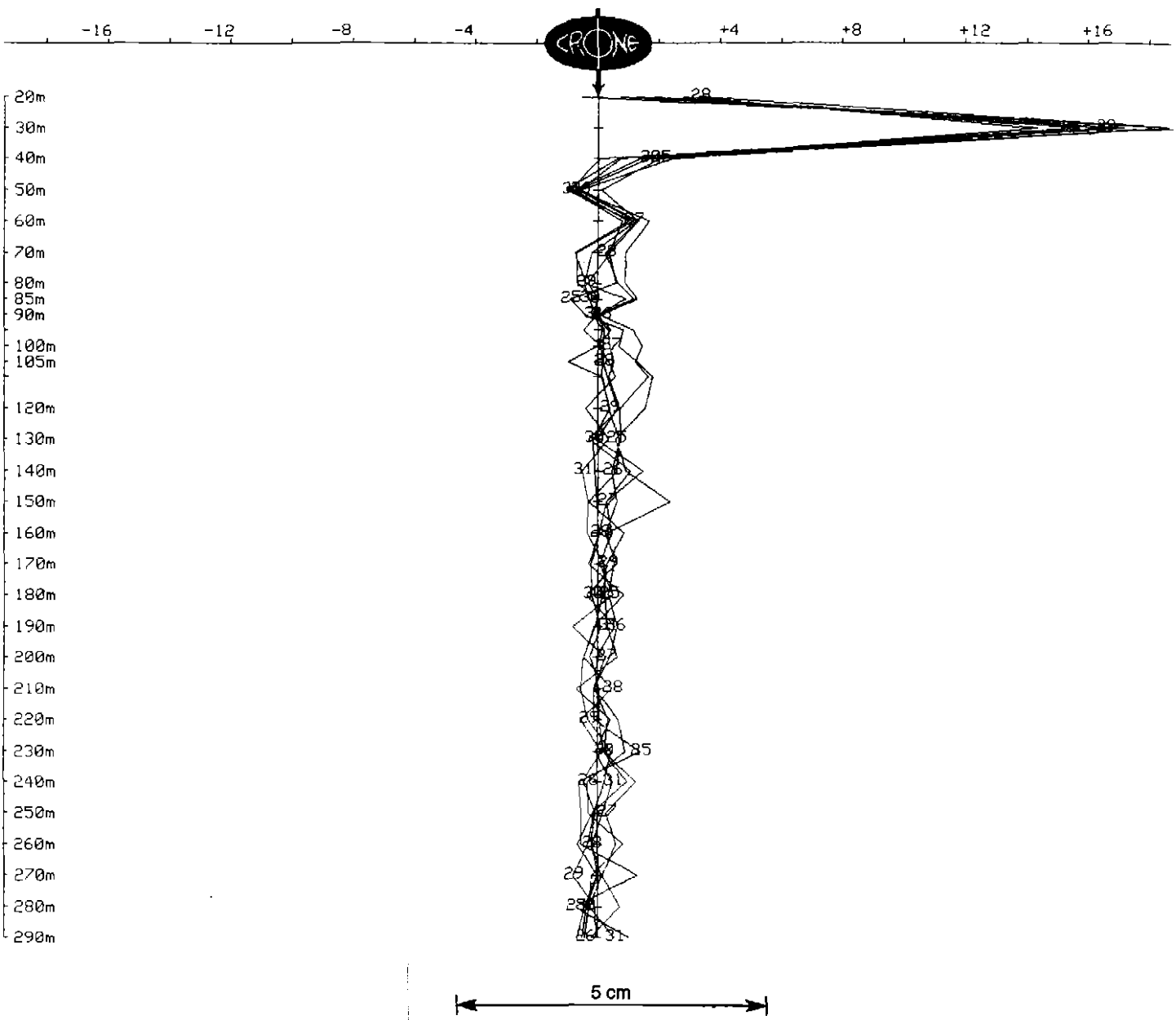
559225

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-11
Grid	: White Spur	Tx Loop	: #11
Date	: Feb 10, 1998	File name	: WSP11XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
X COMPONENT dBx/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 2 nT



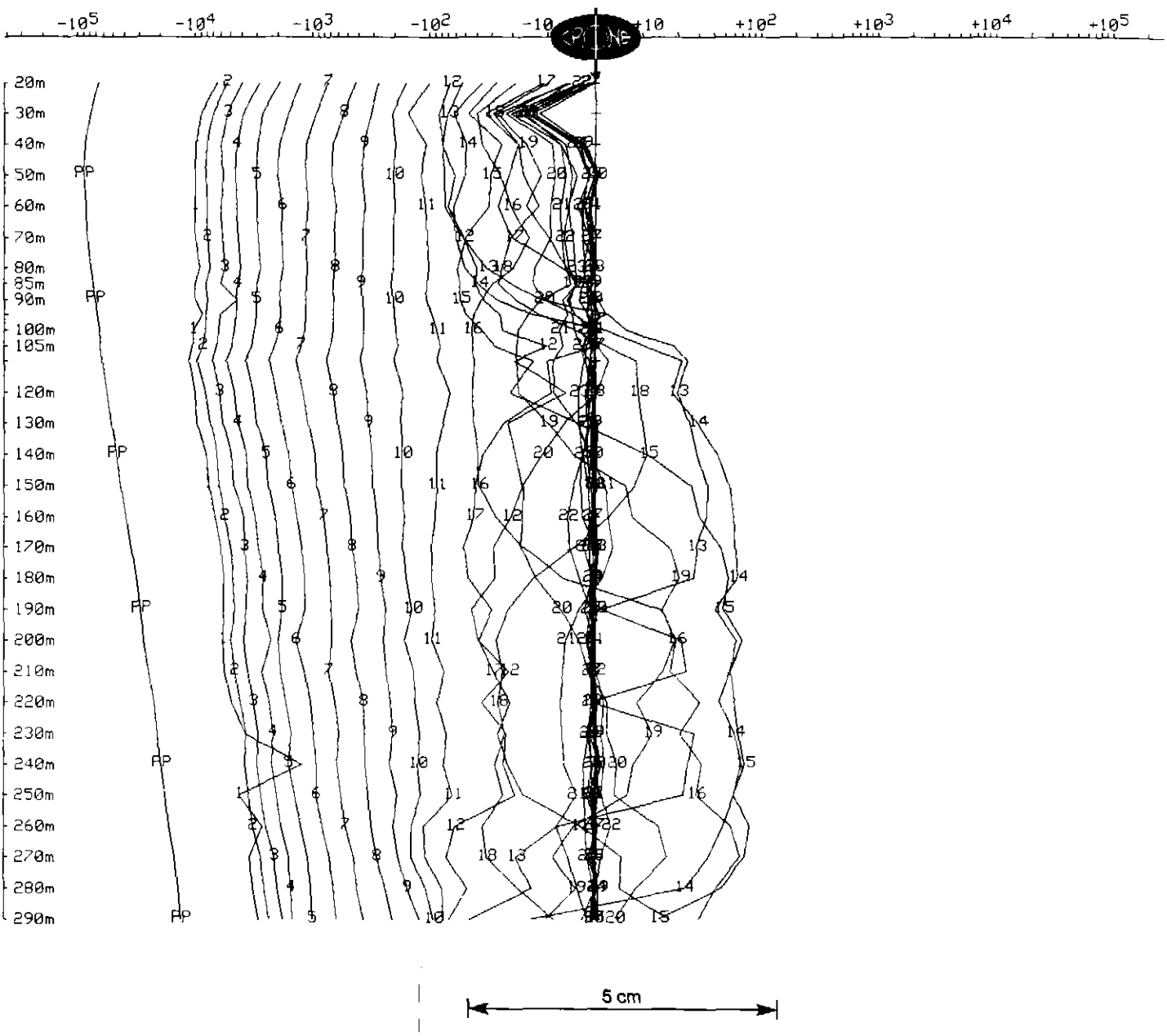
559226

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-11
Grid	: White Spur	Tx Loop	: #11
Date	: Feb 10, 1998	File name	: WSP11XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000



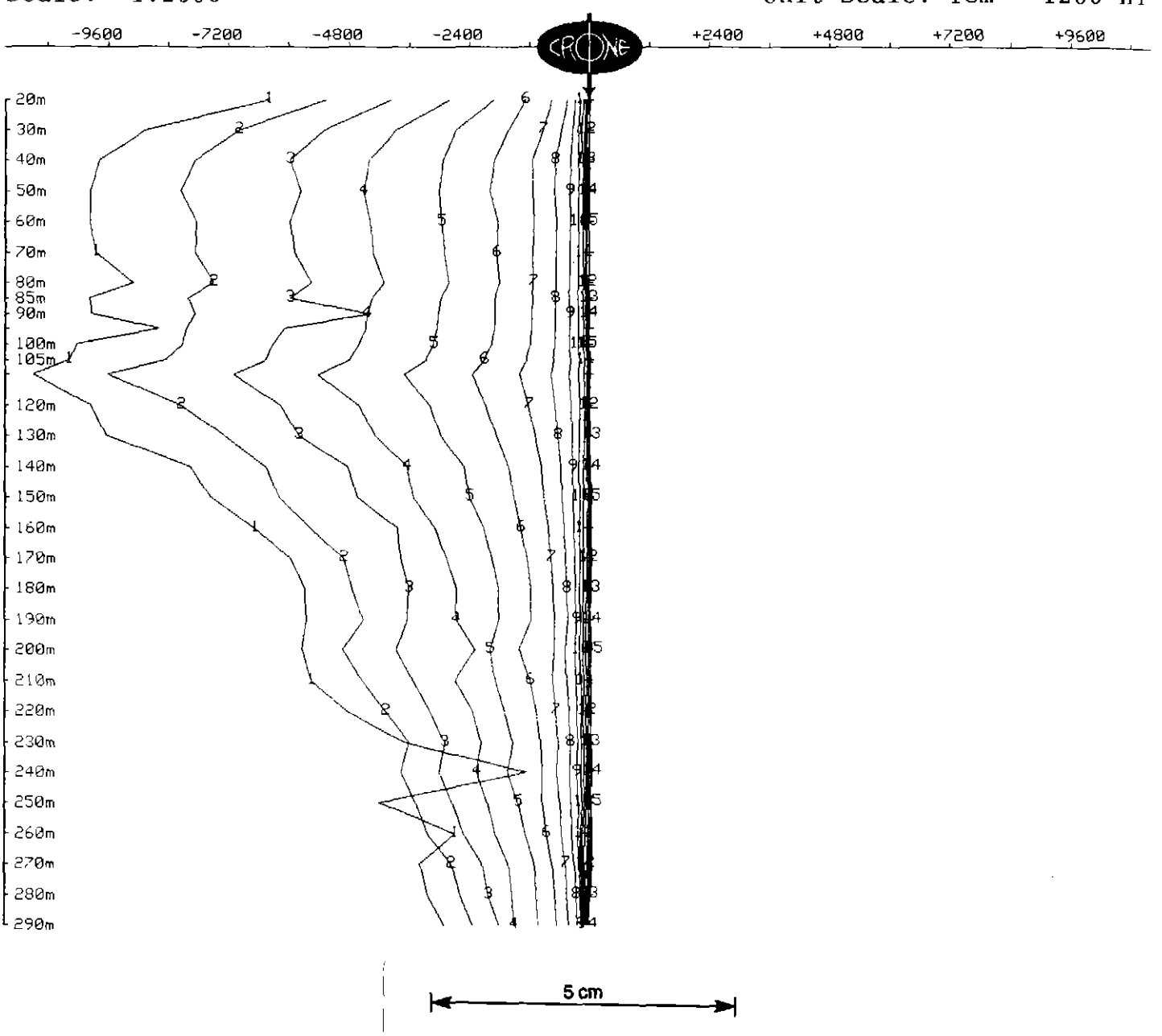
559227

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-11
Grid	: White Spur	Tx Loop	: #11
Date	: Feb 10, 1998	File name	: WSP11XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 1200 nT



5 cm

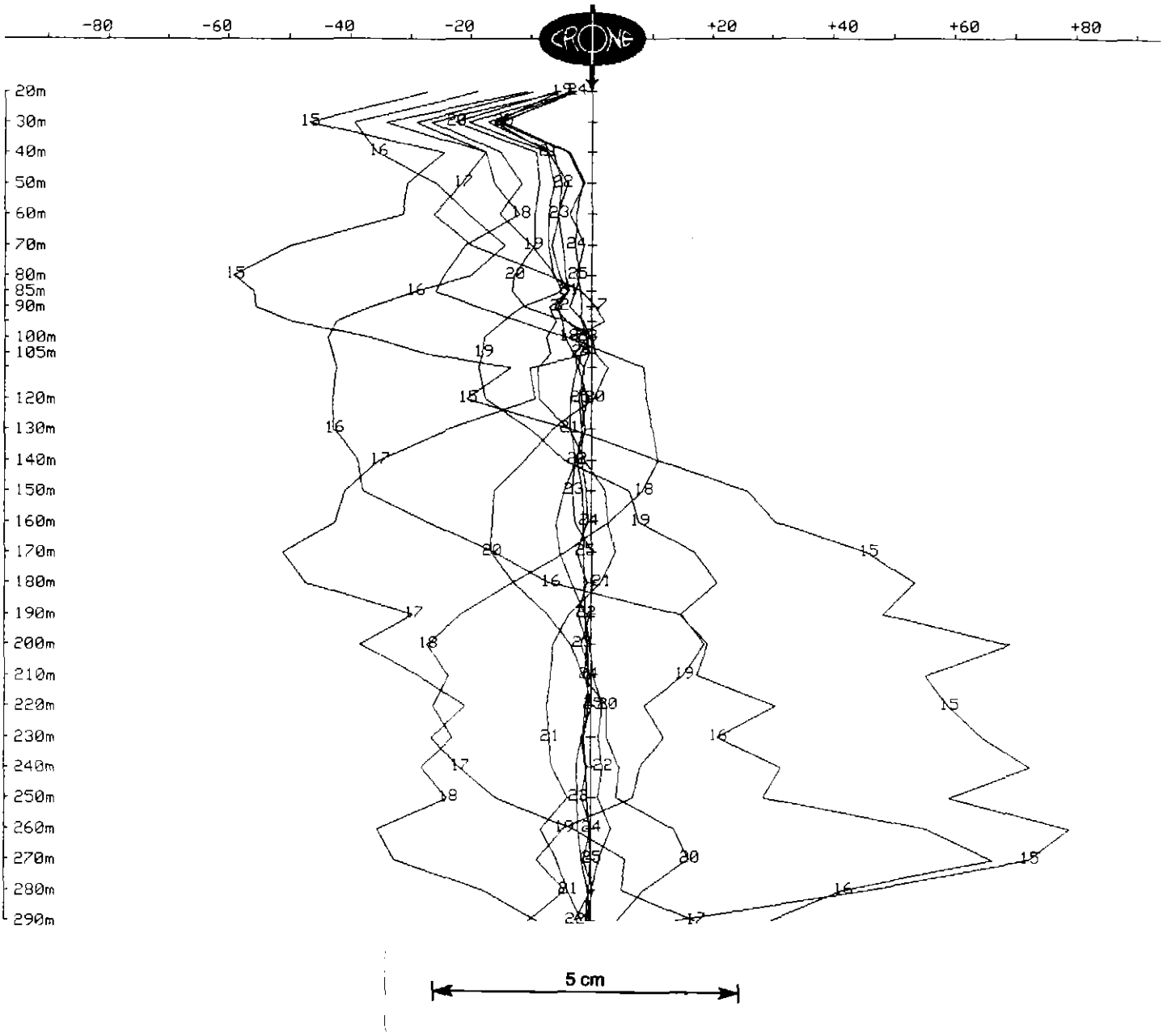
559228

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-11
Grid	: White Spur	Tx Loop	: #11
Date	: Feb 10, 1998	File name	: WSP11XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 10 nT



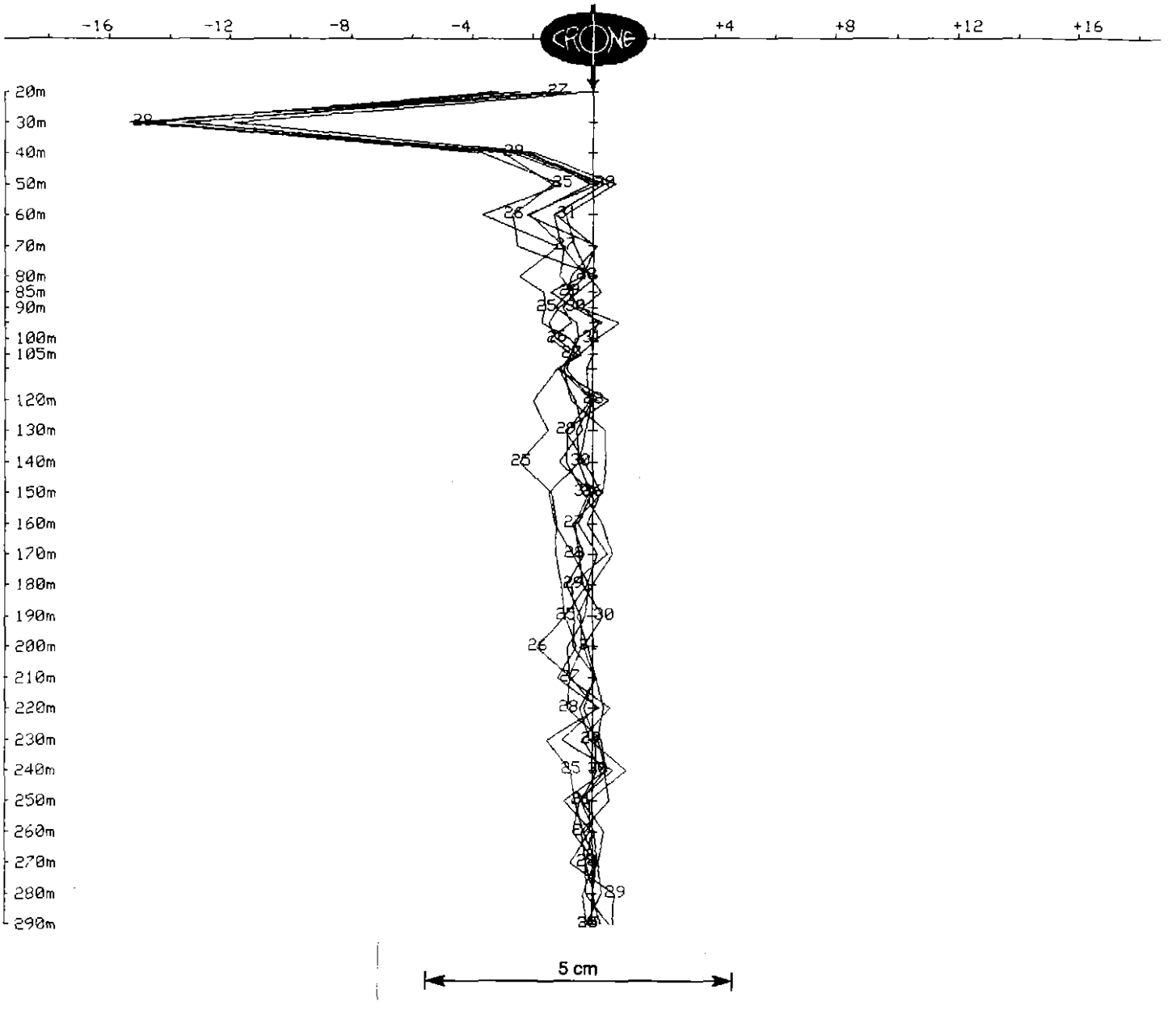
559229

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-11
Grid	: White Spur	Tx Loop	: #11
Date	: Feb 10, 1998	File name	: WSP11XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #5
Y COMPONENT dBy/dt nanoTesla/sec - 31 channels

Scale: 1:2000 Unit Scale: 1cm = 2 nT



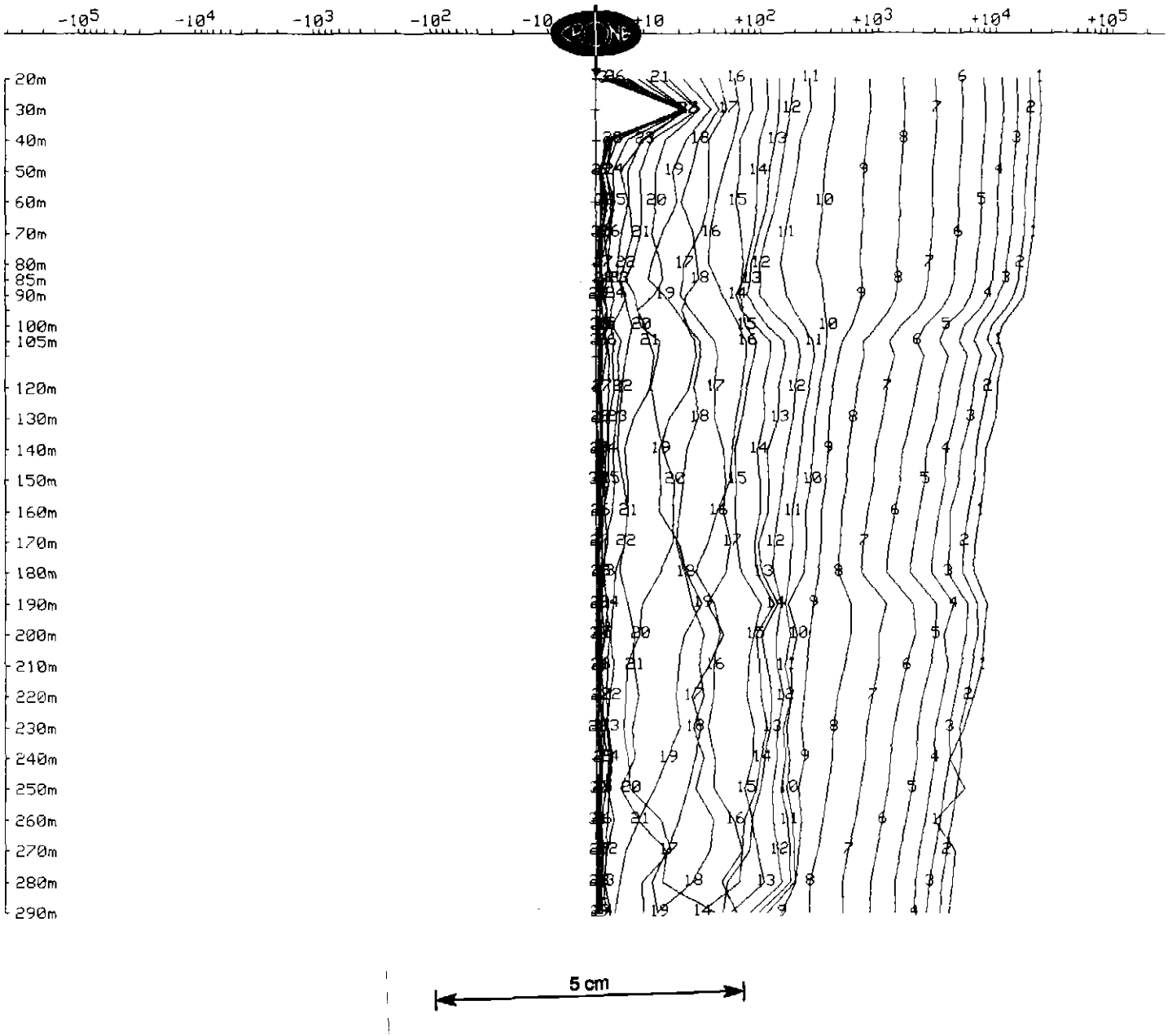
559230

OUTER-RIM EXPLORATION SERVICES
Operating Crone PEM System
BOREHOLE PEM

Client	: RGC Exploration Ltd	Hole	: WSP-11
Grid	: White Spur	Tx Loop	: #11
Date	: Feb 10, 1998	File name	: WSP11XYZ.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 31 channels

Scale: 1:2000



376000 mE
376200 mE
376400 mE
376600 mE
376800 mE
377000 mE
377200 mE
377400 mE

376300mE
5361800mN
578mRL

376510mE
5361800mN
575mRL

376710mE
5361800mN
580mRL

WSP103
WSP4

5361600 mN

LOOP 5
LOOP 4

376300mE
5361400mN
605mRL

376540mE
5361400mN
567mRL

376730mE
5361400mN
555mRL

5361400 mN

376250mE
5361400mN
610mRL

376575mE
5361400mN
565mRL

376900mE
5361400mN
567mRL

LOOP 2

5361200 mN

Loop 7

WSP7

376575mE
5361000mN
585mRL

376900mE
5361000mN
553mRL

377000mE
5361000mN
545mRL

550

5361000 mN

376250mE
5361000mN
665mRL

Loop 10

WSP8

WSP5

Loop 8

650

Loop 1

5360800 mN

WSP10

376540mE
5360730mN
630mRL

376925mE
5360720mN
590mRL

376250mE
5360600mN
695mRL

5360600 mN

376525mE
5360600mN
637mRL

377000mE
5360600mN
570mRL

WSP9

Loop 9

5360400 mN

376525mE
5360200mN
666mRL

376925mE
5360200mN
600mRL

5360200 mN

600

YWS1

5360000 mN

559231

99-4263

ANNUAL REPORT – EL 5/96
WHITE SPUR – RENISON LTD
M VICARY/C DAUTH

Scale 1:5000

0 50 100 250 500m

Distances in metres

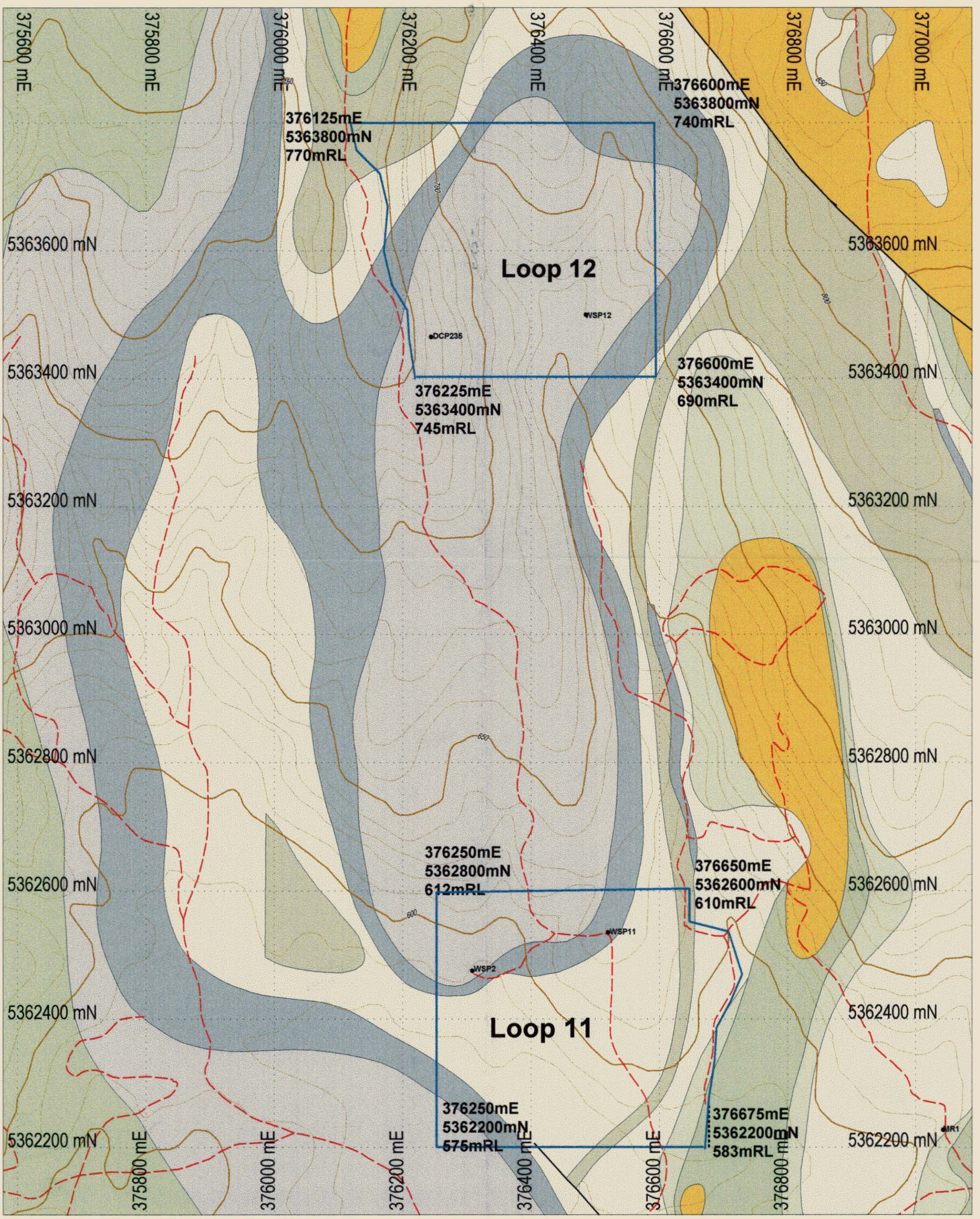
Projection: UTM
Zone: 55
Datum AGD84

5 cm

RGC Exploration

Plan 1.
White Spur Project Tasmania
DHEM Survey Loop Layout

Scale 1:5000	*Plan 1*
Compiled by C Dauth	*January 1999*



559232

99-4263

ANNUAL REPORT – EL 5/96
WHITE SPUR – RENISON LTD
M VICARY/C DAUTH

Scale 1:5000

0 50 100 250

Distances in metres

Projection: UTM
Zone: 55
Datum AGD84

5 cm

RGC Exploration

Plan 2.
White Spur Project Tasmania
DHEM Survey Loop Layout
WSP11 and WSP12

NB. WSP12 was not logged

Scale 1:5000	*Plan 2*
Compiled by C Dauth	*January 1999*