OUTER-RIM EXPLORATION SERVICES

ABN 88 104 028 417

Geophysical Contracting Services

100% Australian Owned

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Volume 1 of 1

Client	:	Jaguar Minerals Ltd
Prospect	:	Wilson River
Area	:	Waratah, Tas.
Survey	:	Borehole PEM Survey
Survey Period	:	4th to 7th November, 2008
Operator	:	Jonathan Turley

DAILY LOG: Jaguar Minerals Ltd - November, 2008

DATE	COMMENTS	CHARGES
	Operator: Jonathan Turley **Field Assistant:** Matt King	
04-11-08	We left Rosebery and drove to Waratah, arriving at 11.00am. We met Ross and Simone from Jaguar and drove to site. We got bogged for an hour and then dummied holes WRD-14 and WRD-15. We then drove to WRD-16, opened the tap and the water shot out of the collar for half an hour. We packed up and returned to Waratah at 5.00pm.	½ Survey day $1175.00 ½ Field Assist. day $ 150.00
05-11-08	We left Waratah at 7.00am, drove to site and dummied WRD-16 while Ross and Simone started laying out loop WR1. We then helped lay out rest of the loop and I read the Z and X-Y components for WRD-15 while Ross, Simone and Matt laid out loop WR2. We packed up, moved the gear to WRD-14 and returned to Waratah at 5.00pm. **SURVEY PARAMETERS:** **Loop WR1** :250 x 500m 368325E, 5403000N; 368575E, 5403000N; 368575E, 5403500N; 368325E, 5403500N. Current :22 Amps Resistance :7.8 Ohms Time Base :50 ms Ramp Time :1.0 ms Sync :Clock **Hole No.** **:WRD-15** 368475E, 5403250N. Depth :240m Channels :31 Components :Z,X,Y	1 Survey day $2350.00 1 Field Assist. day $ 300.00
06-11-08	We left Waratah at 7.00am, drove to site, set up and read the Z and X-Y components for WRD-14. We then packed up and returned to Waratah at 4:30pm. **SURVEY PARAMETERS:** **Loop WR1** :250 x 500m 368325E, 5403000N; 368575E, 5403000N; 368575E, 5403500N; 368325E, 5403500N. Current :22 Amps	

Resistance :7.8 Ohms
Time Base :50 ms
Ramp Time :1.0 ms
Sync :Clock

Hole No. :WRD-14
368520E, 5403125N.
Depth :320m
Channels :36
Components :Z,X,Y

1 Survey day $2350.00
1 Field Assist. day $ 300.00

07-11-08 We left Waratah at 7.00am, drove to site, set up on loop WR2 and read the Z and X-Y components for WRD-16 while Matt recovered loop WR1. The data for all three components, especially the X and Y, was noisy due to flowing water in the hole. We recovered the second loop, packed up and returned to Waratah at 5.00pm.

SURVEY PARAMETERS:

Loop WR2 :250 x 235m
368515E, 5401750N; 368735E, 5401750N;
368765E, 5402000N; 368515E, 5402000N.
Current :25 Amps
Resistance :4.8 Ohms
Time Base :50 ms
Ramp Time :1.0 ms
Sync :Clock

Hole No. :WRD-16
368695E, 5401900N.
Depth :275m
Channels :36
Components :Z,X,Y

1 Survey day $2350.00
1 Field Assist. day $ 300.00

Appendix

CRONE GEOPHYSICS & EXPLORATION LTD.

3607 WOLFEDALE ROAD, MISSISSAUGA, ONTARIO, CANADA, L5C 1V8
Phone: (905) 270-0096 Fax: (905) 270-3472 www.cronegeophysics.com

3-D PULSE EM - SYSTEM DESCRIPTION

Name of System: Crone Pulse EM (PEM).

Method Employed: TDEM (Time-domain electromagnetics) or TEM (Transient EM).

Survey Types:
- **Surface** - DEEPEM, Large In-Loop, Moving Loop, Moving Coil - 3 components.
- **Borehole** - 3D Borehole PEM - 3 components are measured and oriented.
- **Underground** - 3D Borehole PEM - including flat or up-dipping holes.

Measured Quantity: Rate of change of magnetic field in nanoTesla/second (same as nV/m^2).

Receiver: Fully digital (input is digitized before stacking) with 24 bit dynamic range.

Channels (Gates):
- Typically 20 logarithmic channels in off-time and 1 during ramp (PP).
- Operator can select from several built-in tables including:
  - 10, 20, or 30 channel system (single, double, triple density)
  - 45 channels 4.5 usec wide covering the end of ramp and start of off-time.
  - 42 channels and PP for 150 msec time base.
  - full sampling of ramp and off-time (8 on ramp and full off-time starting at 0 usec).
- Programmable channel positions in the field.

Stacking: 512 to 65536 stacks with spike rejection.

Gain Control: Automatic software control (no selection or correction required).

Rx Operation: Menu-driven software. Large 16x40 character LCD. Full alphanumeric keyboard.

Display: 256 x 128 pixel scrollable graphic LCD for decay curves and profiles in the field.

Data Handling: Solid state storage; multiple files; all files can be appended at any time. Plot, list, sort, delete data. RS232 transmission of all data or only certain files.

Synchronization: Radio, cable, or crystal clock

Current Waveform: Bipolar on-off square waveform with exponential turn-on and ramp off.

Time Base: Off-time plus ramp time.
- 8.33, 16.66, 50, 100 and 150 msec for 60 Hz noise rejection (equivalent base frequencies of 30, 15, 5, 2.5, 1.67 Hz.)
- 10.0, 20.0, 50.0, 100.0 and 150 msec for 50 Hz noise rejection (equivalent base frequencies of 25, 12.5, 5, 2.5, 1.67 Hz.)

Ramp Time: The time required for the current to turn off.
- 500, 1000, or 1500 usec selections for precisely controlled linear turn-off ramps.
- "fast ramp" option turns current off as quickly as possible for a given loop size and current (2 usec or less to a few hundred usec).

Transmit Loop:
- Single turn loop of any dimension (less than 100m x 100m to greater than 2km x 2km).
- Multi-turn 14m diameter loop for near-surface Moving Coil surveys.

Tx Output Current:
- 30 Amps maximum at 160 Volts for 4.8 kWatt system.
- 20 Amps maximum at 120 Volts for 2.4 kWatt system.

Tx Output Voltage:
- 48 to 240 Volts continuously adjustable for 4.8 kWatt system.
- 24 to 120 Volts continuously adjustable for 2.4 kWatt system.

Tx Safety features: Transmitter automatically shuts off when loop is opened. Also shuts off with high instrument temperature and overload. Fuse and circuit breaker overload protection.

Borehole Probes: 32 mm diameter. Pressure-tested for depths of 2500m or more.

Operating Temperature: -40°C to 50°C

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3-D PULSE EM - SPECIAL FEATURES

High Power: A new 4.8 kWatt transmitter allows very large loops to be used while maintaining a high current.

Precise Current Ramps: Precisely- controlled linear ramps of fixed duration allow for proper comparisons to be made between data from different loop sizes, and also allows for the step response transformation.

Long Time Base (Low Frequency): A new long time base of 150 msec (1.67 Hz) ensures that very long time constant conductors can be seen in complicated environments.

Step Response: A new step response transformation allows even longer time-constant conductors to be seen by reproducing the response that would be seen in a direct measurement of the step response. Our controlled linear ramps and our standard Primary Pulse (PP) measurement on the ramp are necessary for this calculation.

Fast Ramp Option: A new "fast ramp" option duplicates the response seen from other pulse-type systems, but this does not allow for the step response calculation. We do not recommend fast ramps because they are not as linear as our controlled ramps, they drift in duration as the loop warms up, and there is no advantage in terms of power put into the ground since the *area* under the dB/dt pulse produced by the ramp is the same.

Calculation of Impulse Response: The "fast ramp" response can be calculated (as well as the true impulse response) from our standard linear ramp data.

True Digital Receiver: The Crone receiver is a true digital receiver in that the input is immediately digitized before stacking and binning. This produces the following feature (programmable gate positions) .

Programmable Gate Positions: There is complete freedom of channel (or gate) positions and widths, which can be programmed in the field. There are also numerous built-in tables.

Full Sampling: The entire ramp and off-time can be sampled with contiguous channels if desired.

Current Ramp always Sampled: A Primary Pulse (PP) measurement is always made on the current ramp, which is of great help to ensure proper polarities, and also is crucial for the step response transformation.

High Quality LCD Display: The 256 x 128 pixel LCD on the receiver allows for accurate plots of decay curves and line or borehole profiles on the receiver, and is of great assistance to the operator to monitor noise and anomaly build-up.

No Data Reduction: There is no data reduction for surface surveys and Z-component borehole surveys, so that what is seen on the receiver is what will be seen in the final plots. For 3-D borehole surveys, there is only the correction applied to the direction of the X and Y components to aid interpretation. Gain controls are automatic, so that the output is always in nanoTeslas/sec (= nV/m^2).

Slim-line Probes: A 32 mm probe diameter ensures that virtually all holes can be surveyed with 3-component measurements.

Oriented X and Y Components: X-Y orientation tools accurately orient the X and Y components. This helps tremendously with giving direction to off-hole conductors and to the centre of in-hole conductors.

Reliable, Durable and Portable Equipment: The PEM system has been in use since the early 1970's under temperature extremes of -40°C to +50°C, in desert, jungle, arctic, mountainous, and underground mining conditions.

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3-D PULSE EM - APPLICATIONS

- Base metals ⇒ direct detection of:
  - ◊ volcanogenic massive sulphide (VMS) deposits
  - ◊ magmatic sulphide deposits
  - ◊ sedex massive sulphide deposits
  - ◊ higher grade ore within disseminated zones

  ⇒ indirect detection of :
  - ◊ sphalerite and other non-conductors
  - ◊ galena and other poorly connected minerals

  through detection of associated well-connected conductors.

  ⇒ detection of conductive marker zones related to deposits
- Gold ⇒ detection of associated conductors - e.g. pyrite/pyrrhotite
  ⇒ detection of the host - e.g. banded iron formations
- Uranium ⇒ detection of associated graphitic basement conductors
  ⇒ detection of associated conductive alteration zones
- Diamonds ⇒ detection and definition of clay-rich layer overlying kimberlites
  ⇒ locating kimberlites under locally thinned conductive cover

In the ore definition, delineation and production stages of a mining operation, Pulse EM can still be highly effective to:

- Define the boundaries of conductive ore
- Determine the size of intersected conductors and thereby determine whether they are connected to main ore zones.
- Reduce the number of necessary drillholes by exploring between holes.
- Survey underground drillholes - even flat or inclined holes.

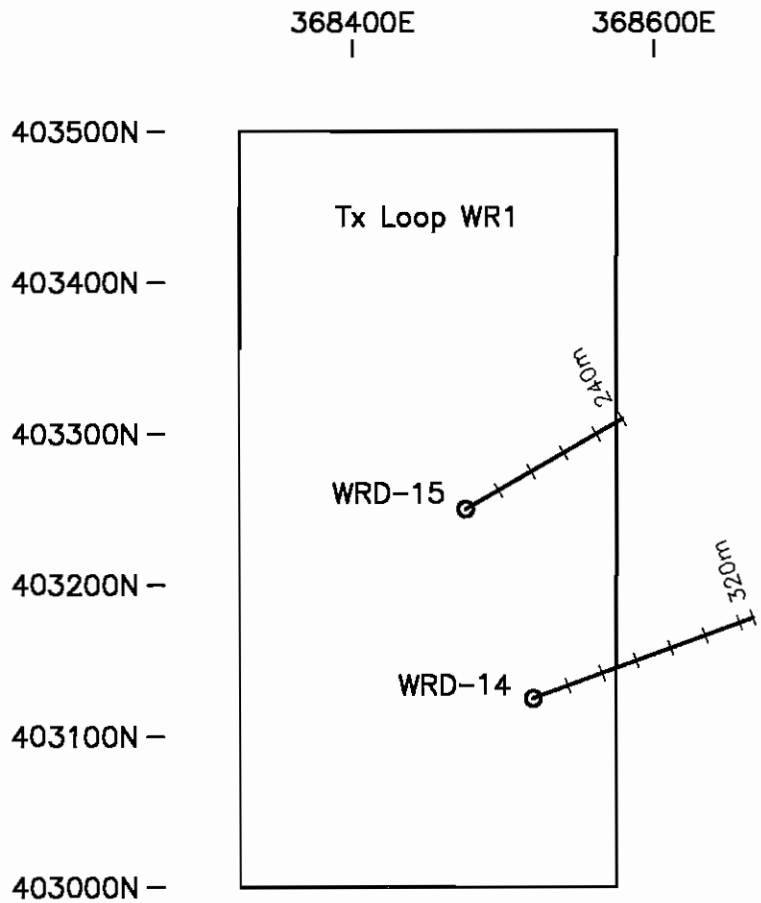
Pulse EM can also be used for:

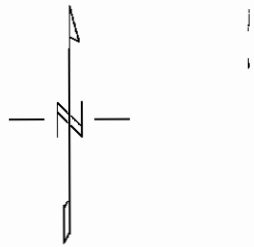
- General geological mapping of conductive structures
  - ⇒ shears, fractures, lineaments
  - ⇒ hydrothermal alteration
  - ⇒ graphite-rich rocks, including graphitic schist, shale, slate, and argillite
  - ⇒ clay alteration and zeolites
  - ⇒ differential and clay weathering
  - ⇒ conductive weathered layer at surface
- Groundwater exploration
- Mapping groundwater contamination plumes and freshwater-saltwater interface
- Geothermal exploration
- Mapping depth and thickness of horizontal strata
- Mapping permafrost thickness

PLOTS

CONTENTS

Plan No.	Plan Type	ID.	Description	Scale
1	Plan	WRD-14,15	Hole location plan	1:5000
2	Section	WRD-14	Primary Field plot	1:5000
3		WRD-15	Primary Field plot	1:2500
4	Header	WRD-14	Header information	N/A
5	Profile	(WR1)	Z - Log plot	1:2000
6			- Linear, Ch1-20, 1:4000	1:2000
7			- Linear, Ch20-30, 1:5	1:2000
8			- Linear, Ch30-36, 1:2	1:2000
9			X - Log plot	1:2000
10			- Linear, Ch1-20, 1:2500	1:2000
11			- Linear, Ch20-30, 1:5	1:2000
12			- Linear, Ch30-36, 1:2	1:2000
13			Y - Log plot	1:2000
14			- Linear, Ch1-20, 1:2500	1:2000
15			- Linear, Ch20-30, 1:5	1:2000
16			- Linear, Ch30-36, 1:2	1:2000
17			Total Field plot	1:2000
18	Header	WRD-15	Header information	N/A
19	Profile	(WR1)	Z - Log plot	1:2000
20			- Linear, Ch1-20, 1:3000	1:2000
21			- Linear, Ch20-30, 1:5	1:2000
22			- Linear, Ch30-36, 1:2	1:2000
23			X - Log plot	1:2000
24			- Linear, Ch1-20, 1:2000	1:2000
25			- Linear, Ch20-30, 1:5	1:2000
26			- Linear, Ch30-36, 1:2	1:2000
27			Y - Log plot	1:2000
28			- Linear, Ch1-20, 1:2000	1:2000
29			- Linear, Ch20-30, 1:5	1:2000
30			- Linear, Ch30-36, 1:2	1:2000
31			Total Field plot	1:2000
32	Plan	WRD-16	Hole location plan	1:2500
33	Section		Primary Field plot	1:5000
34	Header	WRD-16	Header information	N/A
35	Profile	(WR2)	Z - Log plot	1:2000
36			- Linear, Ch1-20, 1:4000	1:2000
37			- Linear, Ch20-30, 1:5	1:2000
38			- Linear, Ch30-36, 1:2	1:2000
39			X - Log plot	1:2000
40			- Linear, Ch1-20, 1:1500	1:2000
41			- Linear, Ch20-30, 1:5	1:2000
42			- Linear, Ch30-36, 1:2	1:2000
43			Y - Log plot	1:2000
44			- Linear, Ch1-20, 1:1500	1:2000
45			- Linear, Ch20-30, 1:5	1:2000
46			- Linear, Ch30-36, 1:2	1:2000
47			Total Field plot	1:2000





Jaguar Minerals Ltd

Wilson River

3-D Borehole Pulse EM Survey

Borehole & Loop Location Map

Hole: WRD-14 & WRD-15

Survey Date: Nov 5/6, 2008

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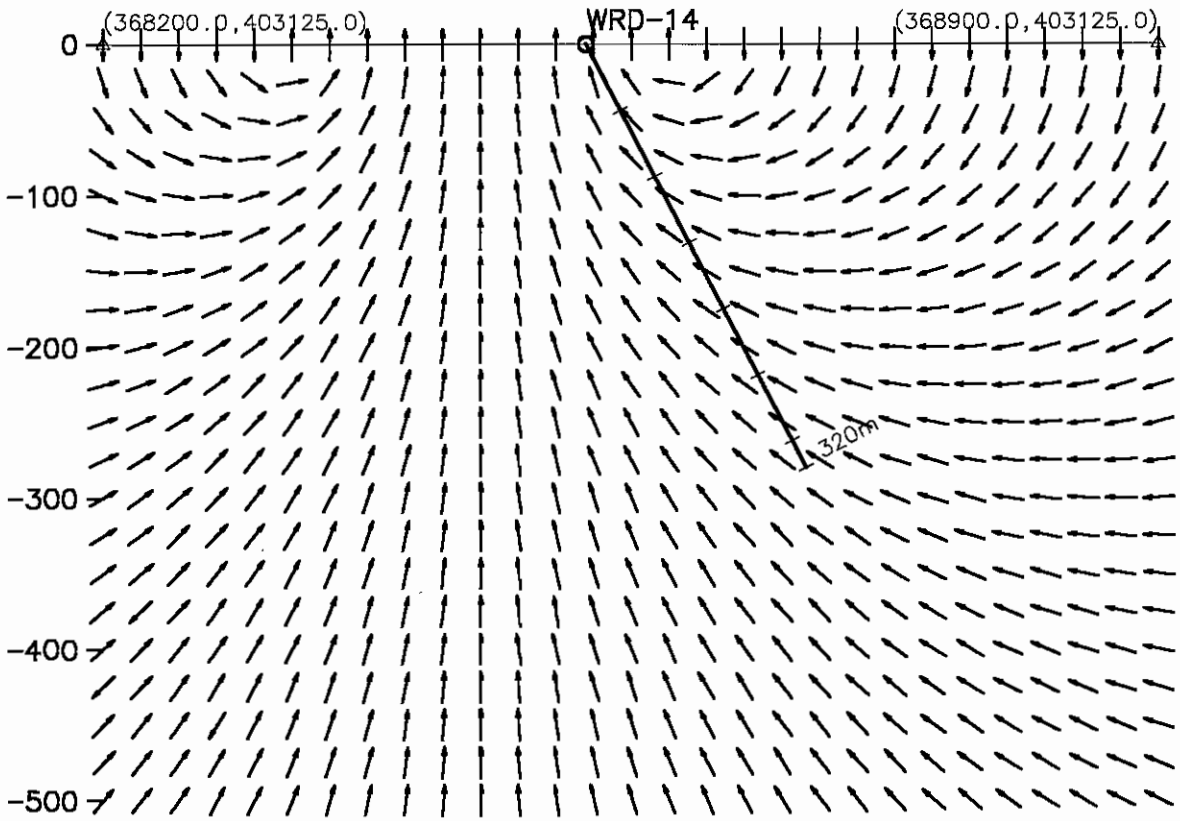


Scale 1:5000

50 0 50 100

(metres)

Jaguar Minerals Ltd

Wilson River

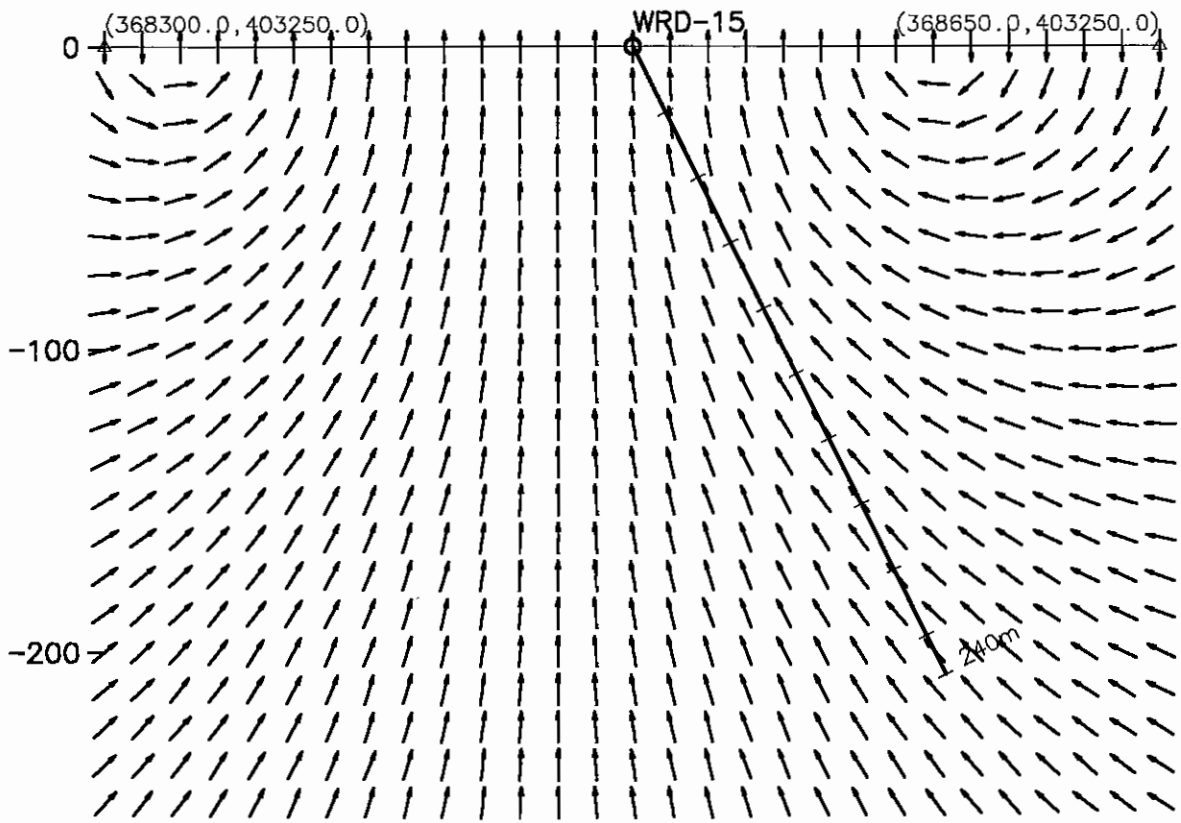
3-D Borehole Pulse EM Survey

Hole Section with Primary Field

Hole: WRD-14

Survey Date: Nov 6, 2008

Outer-Rim Exploration Services



Scale 1:2500

25 0 25 50

(metres)

Jaguar Minerals Ltd

Wilson River

3-D Borehole Pulse EM Survey

Hole Section with Primary Field

Hole: WRD-15

Survey Date: Nov 5, 2008

Outer-Rim Exploration Services

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-14**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 6, 2008	File name	: WRD14Z.PEM
Time Base	: 50.00 ms	# Readings	: 49
Ramp Time	: 1.00 ms	Stn Units	: Metric
# Channels	: 36	Coil Area	: 8000 sq m
Sync Type	: Crystal-Master	Polarity	: +
Loop Size	: 500m X 250m	Receiver	: Digital #132
Current	: 22 Amps	Operator	: Jonathan Turley

Loop Coordinates (X,Y,Z)

1. 368325m, 403500m, 0m
2. 368325m, 403000m, 0m
3. 368575m, 403000m, 0m
4. 368575m, 403500m, 0m

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

1. 368520m, 403125m, 0m
2. 70deg, 61deg, 320m

Channel Times (usec)

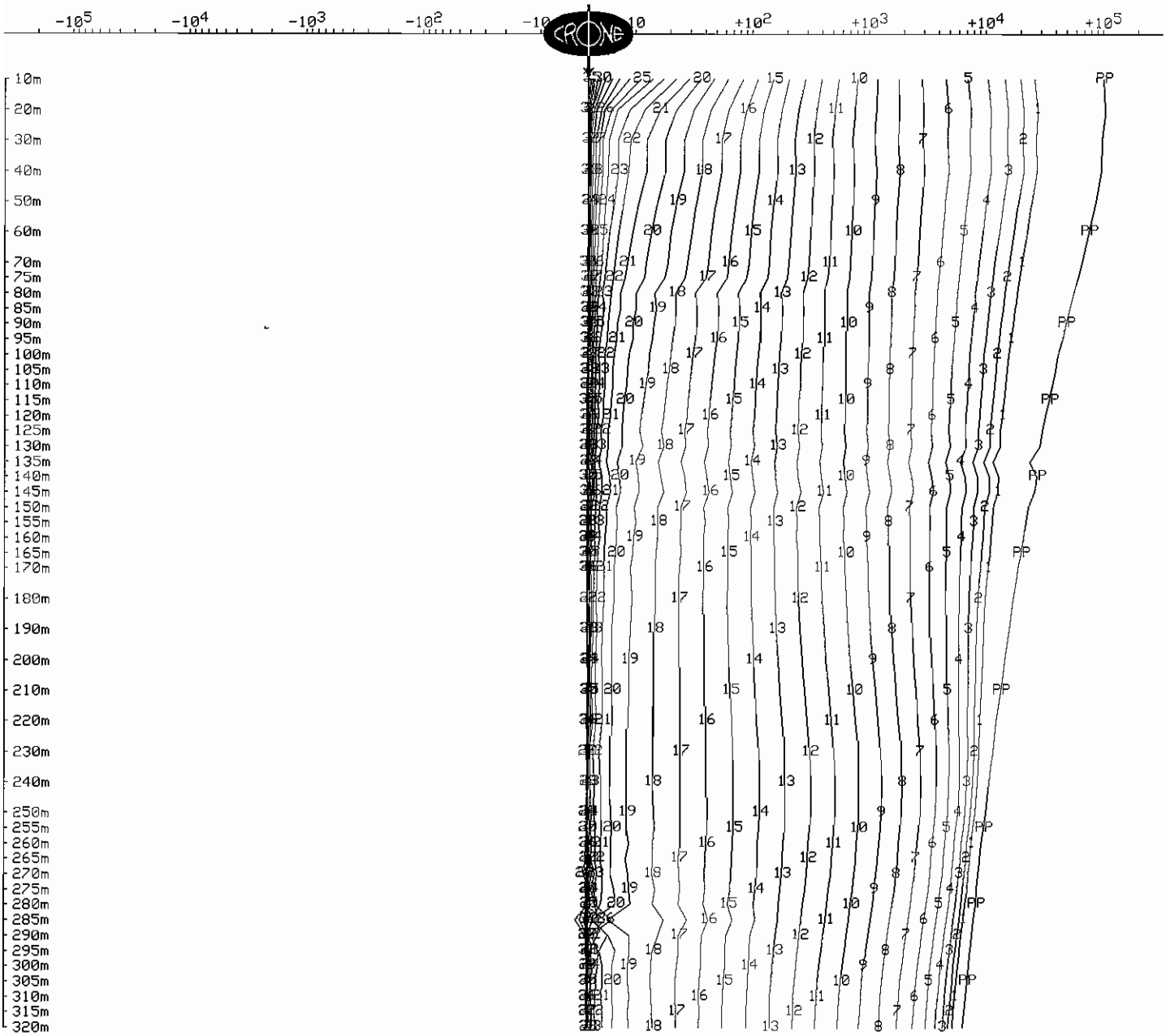
Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-200	-100	-150	1	48	56	52	2	56	72	64
3	72	84	78	4	84	104	94	5	104	124	114
6	124	152	138	7	152	184	168	8	184	224	204
9	224	268	246	10	268	328	298	11	328	396	362
12	396	480	438	13	480	580	530	14	580	700	640
15	700	848	774	16	848	1024	936	17	1024	1240	1132
18	1240	1496	1368	19	1496	1812	1654	20	1812	2188	2000
21	2188	2644	2416	22	2644	3196	2920	23	3196	3860	3528
24	3860	4664	4262	25	4664	5632	5148	26	5632	6808	6220
27	6808	8220	7514	28	8220	9936	9078	29	9936	12000	10968
30	12000	14400	13200	31	14400	17520	15960	32	17520	21150	19335
33	21150	25560	23355	34	25560	30870	28215	35	30870	37290	34080
36	37290	45040	41165								

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-14**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 6, 2008	File name	: WRD14Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 36 of 36 channels and PP

Scale: 1:2000

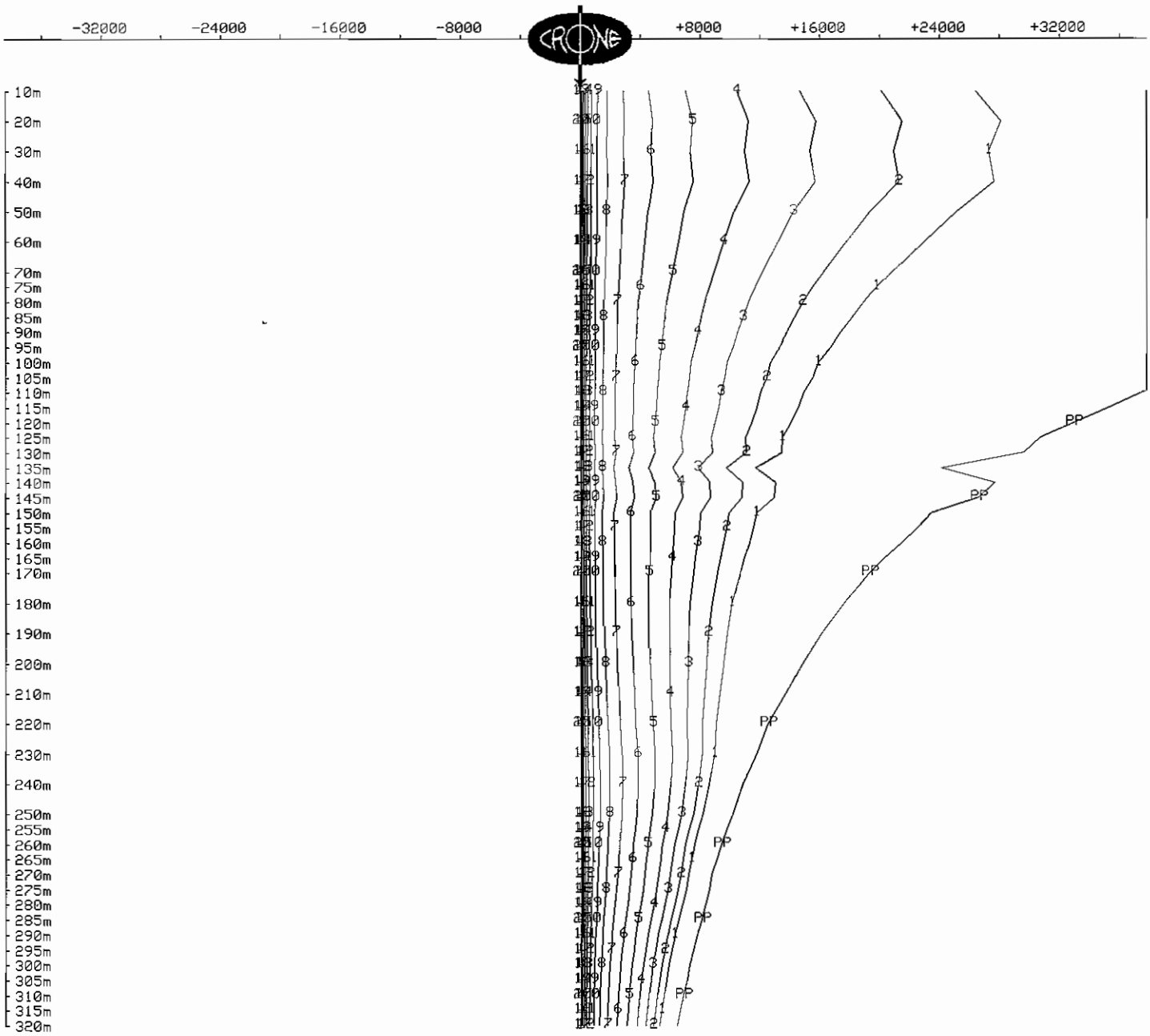


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-14**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 6, 2008	File name	: WRD14Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 20 of 36 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 4000 nT/s

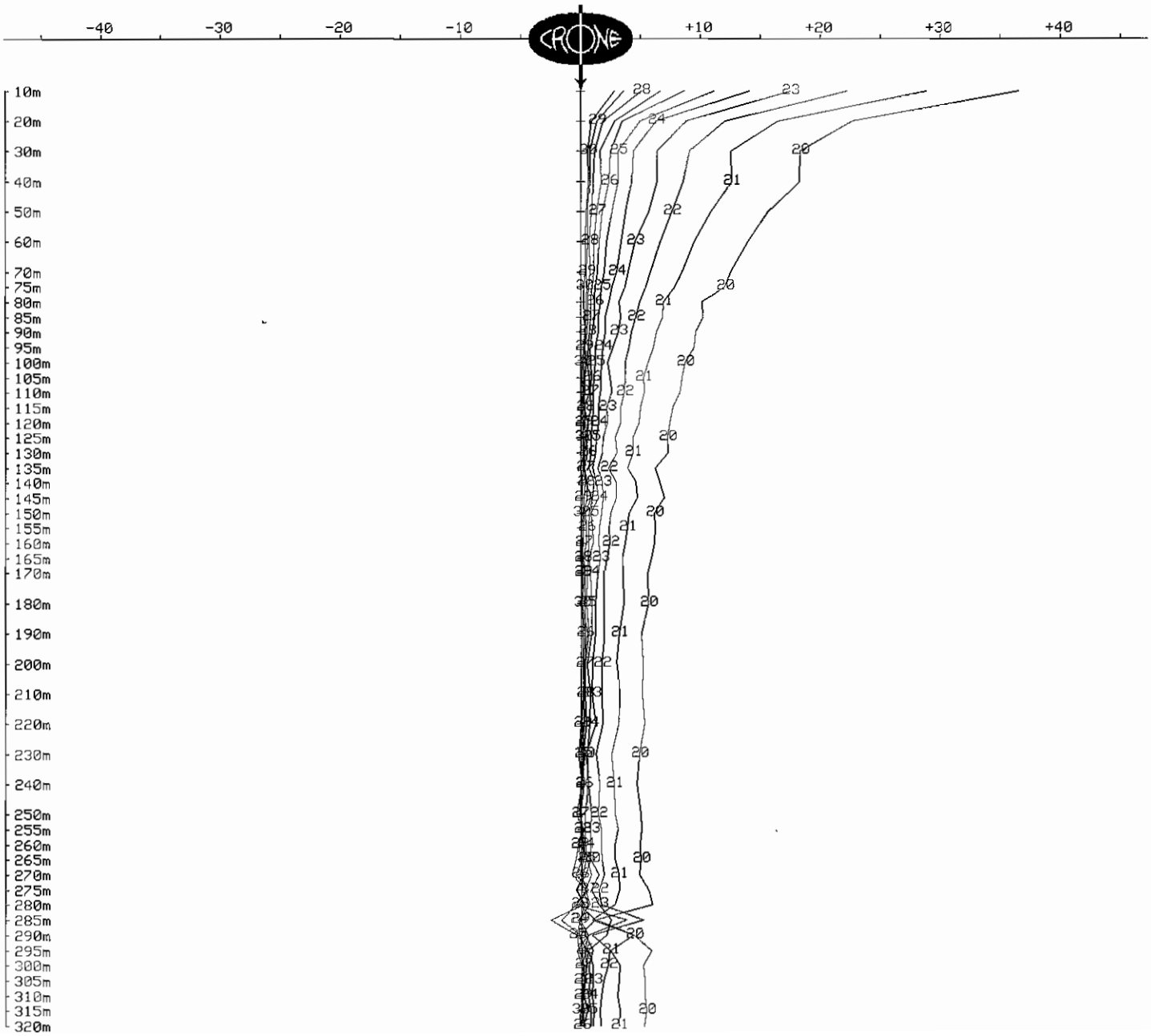


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-14**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 6, 2008	File name	: WRD14Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 11 of 36 channels

Scale: 1:2000 Unit Scale: 1cm = 5 nT/s

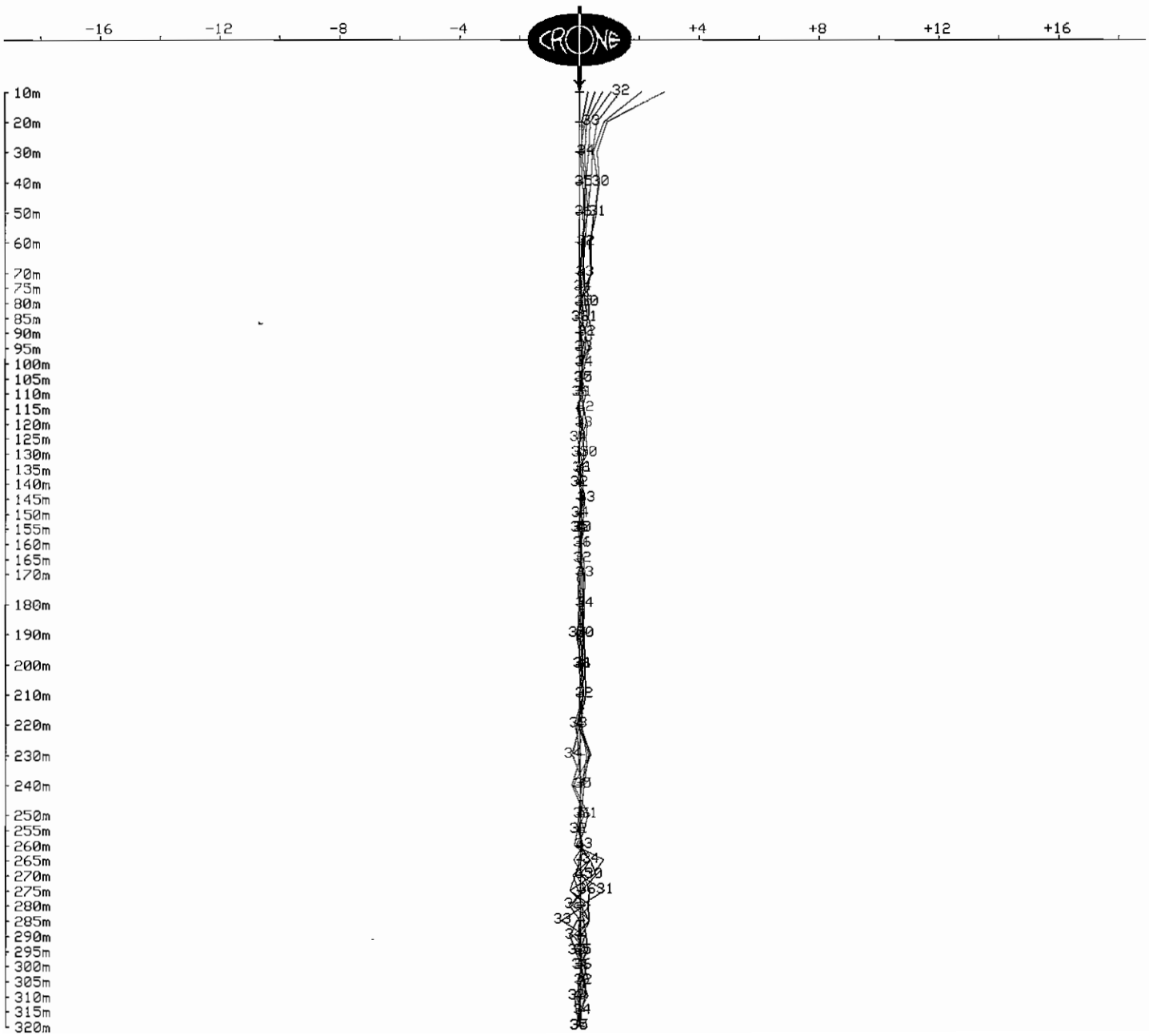


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-14**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 6, 2008	File name	: WRD14Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 7 of 36 channels

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

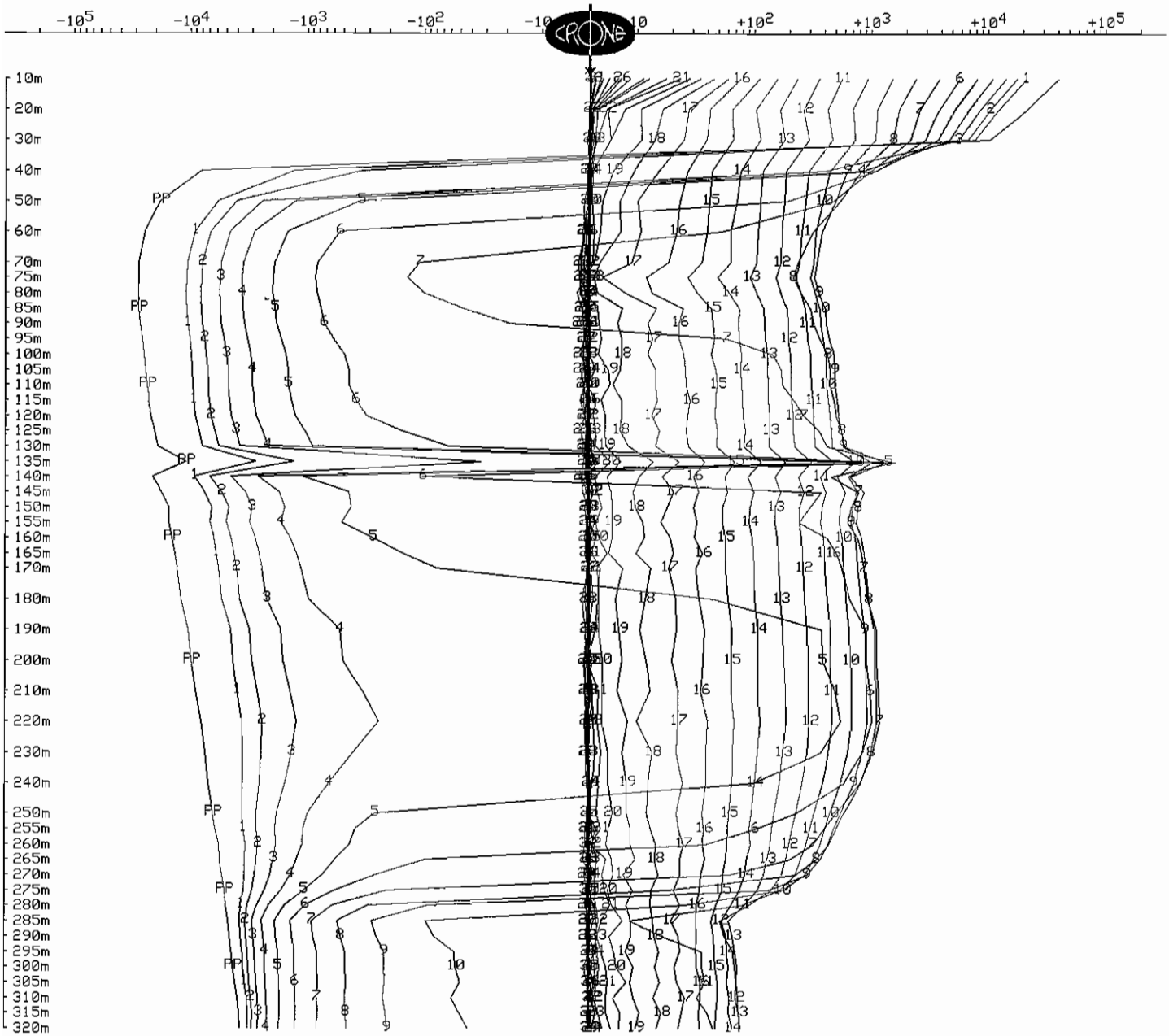


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-14**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 6, 2008	File name	: WRD14XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
X COMPONENT dBx/dt nanoTesla/sec - 36 of 36 channels and PP

Scale: 1:2000

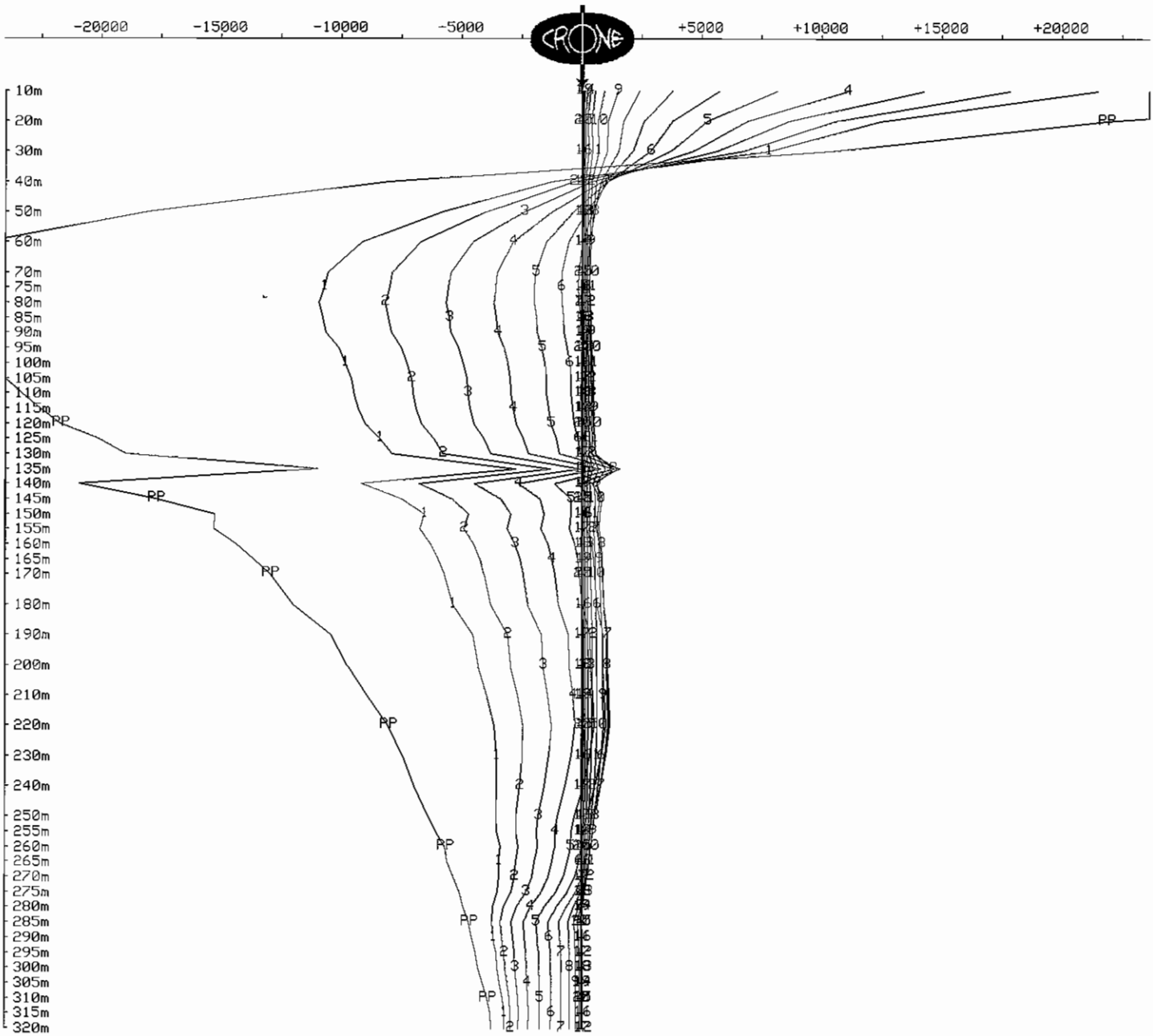


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-14**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 6, 2008	File name	: WRD14XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
X COMPONENT dBx/dt nanoTesla/sec - 20 of 36 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 2500 nT/s

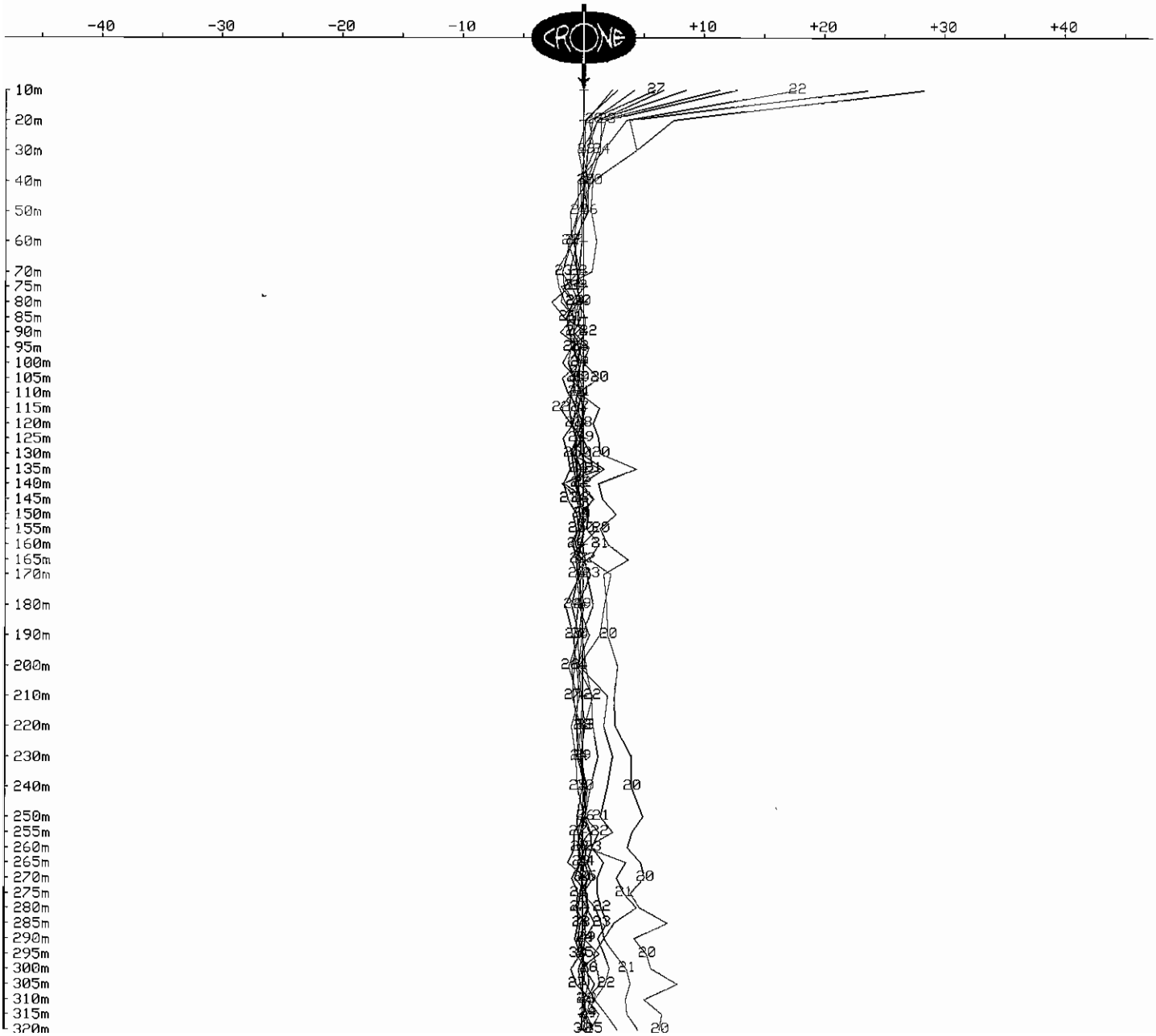


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-14**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 6, 2008	File name	: WRD14XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
X COMPONENT dBx/dt nanoTesla/sec - 11 of 36 channels

Scale: 1:2000 Unit Scale: 1cm = 5 nT/s

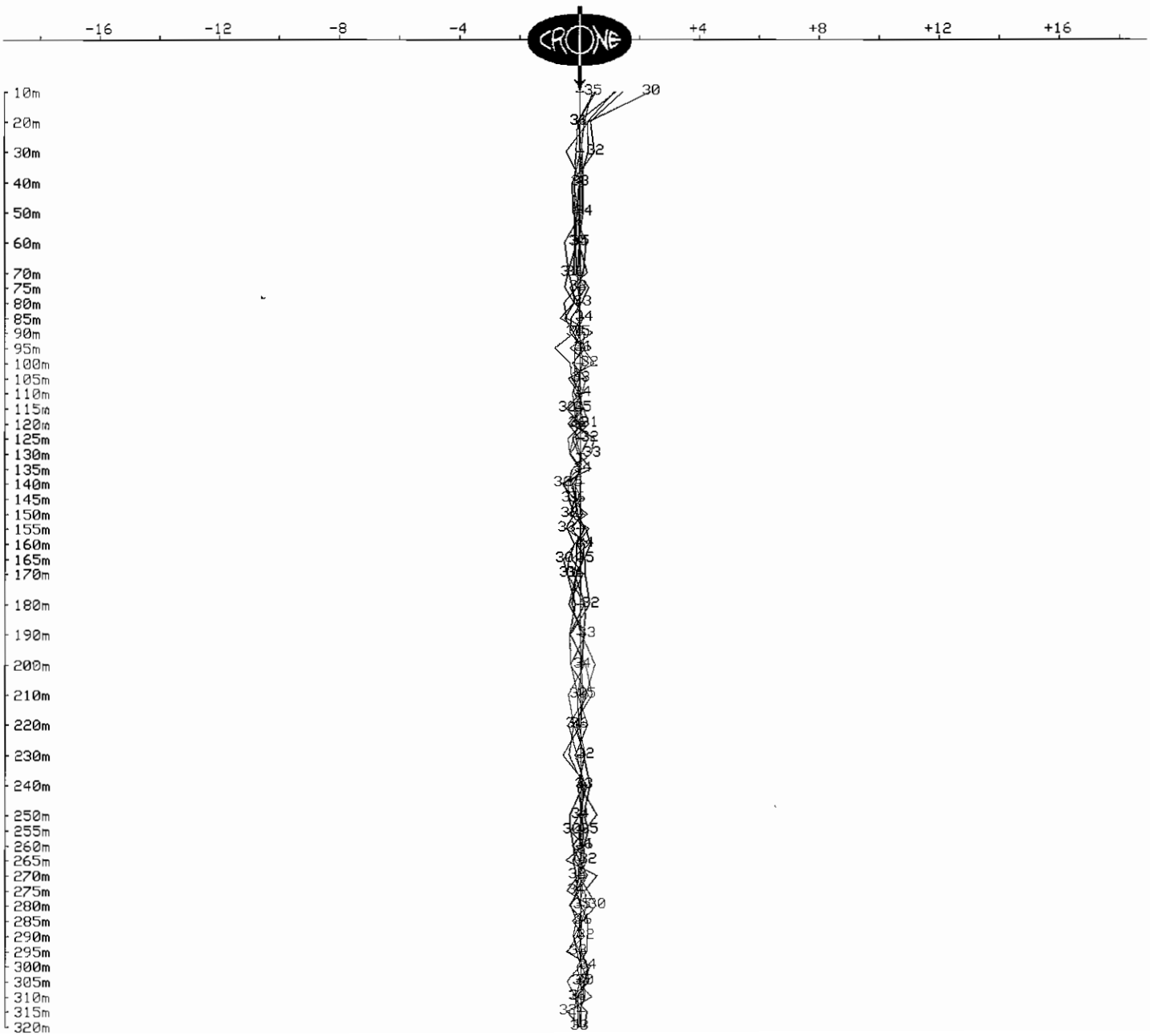


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-14**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 6, 2008	File name	: WRD14XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
X COMPONENT dBx/dt nanoTesla/sec - 7 of 36 channels

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

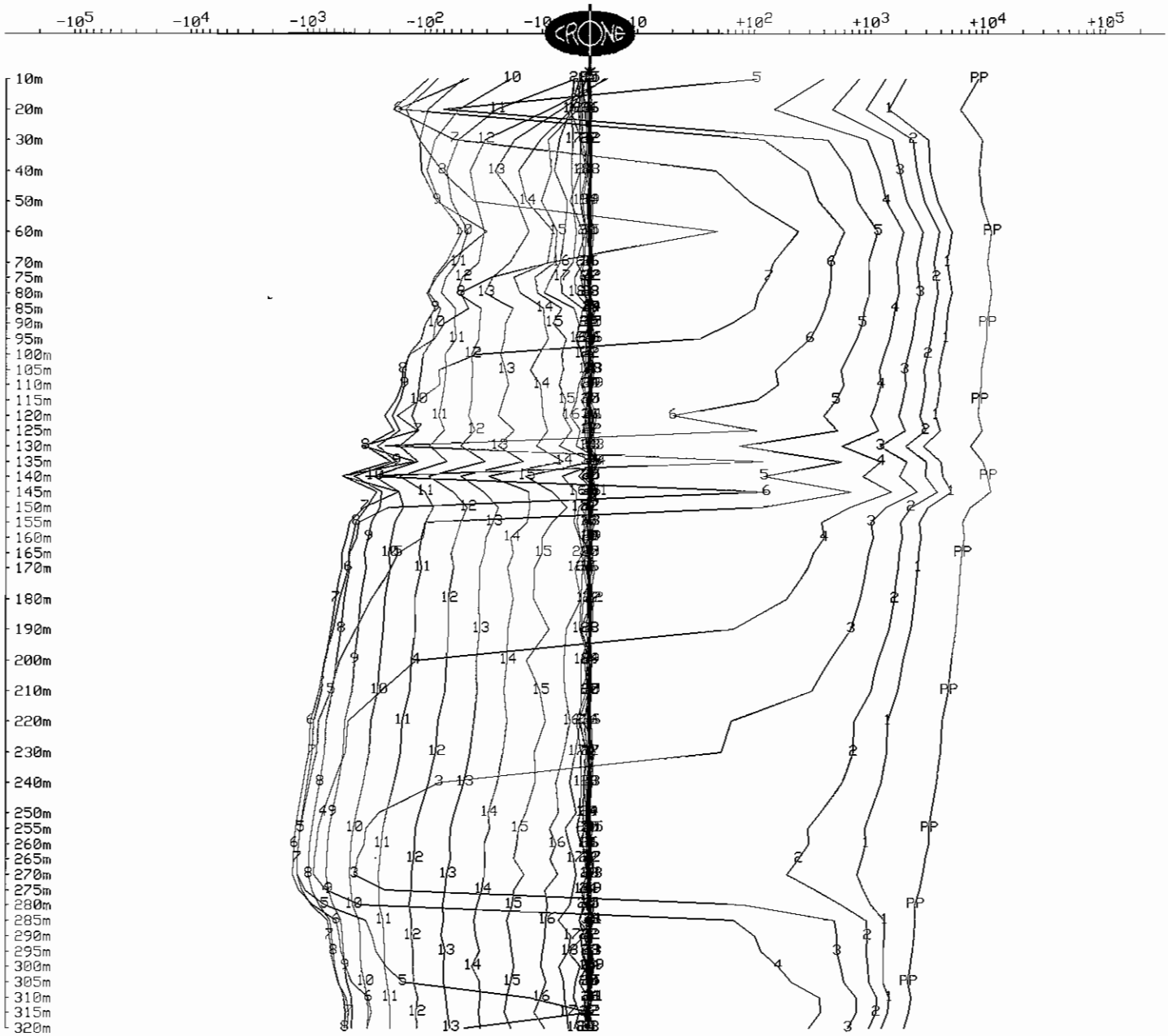


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-14**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 6, 2008	File name	: WRD14XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
Y COMPONENT dBy/dt nanoTesla/sec - 36 of 36 channels and PP

Scale: 1:2000

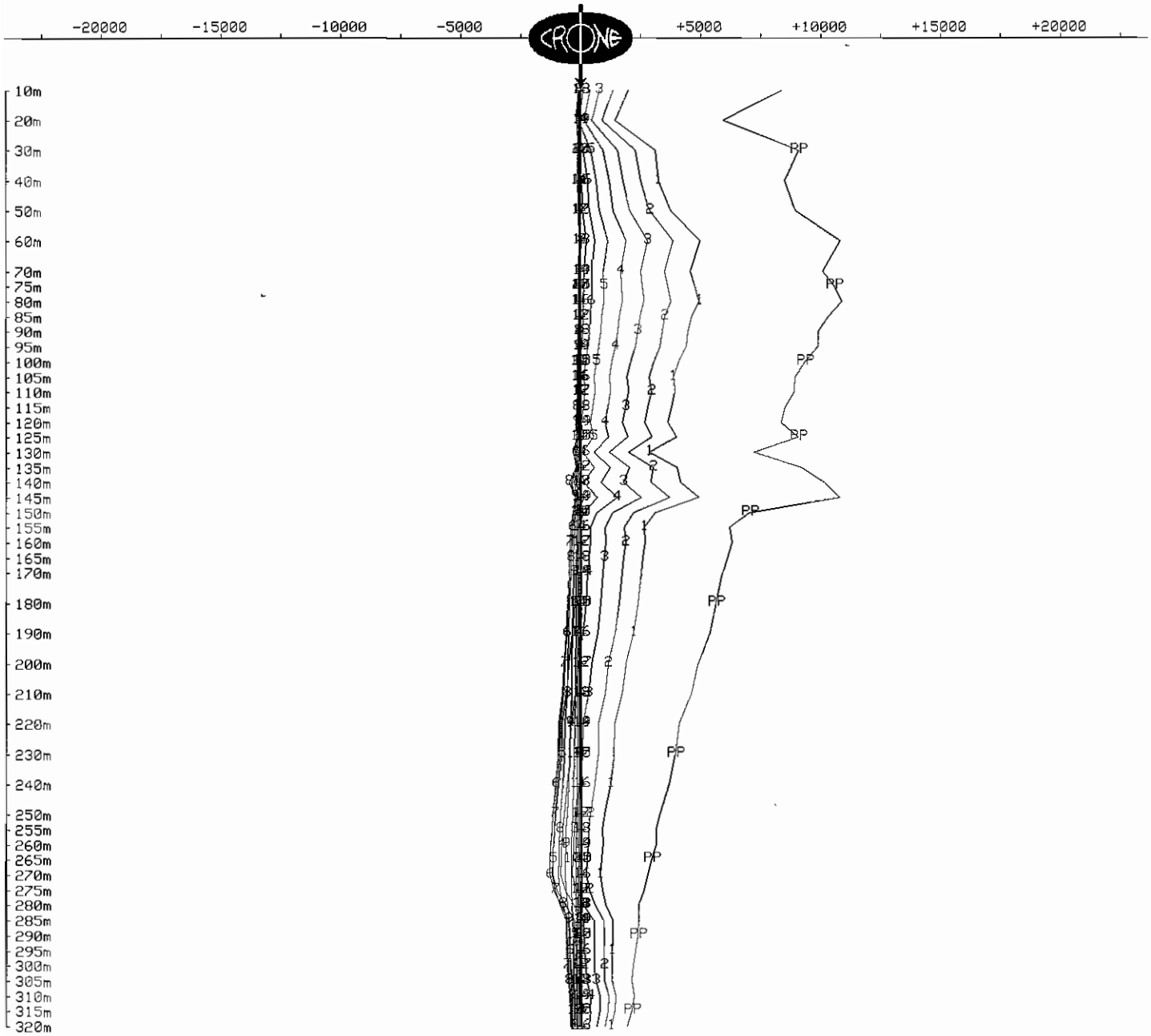


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-14**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 6, 2008	File name	: WRD14XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
Y COMPONENT dBy/dt nanoTesla/sec - 20 of 36 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 2500 nT/s

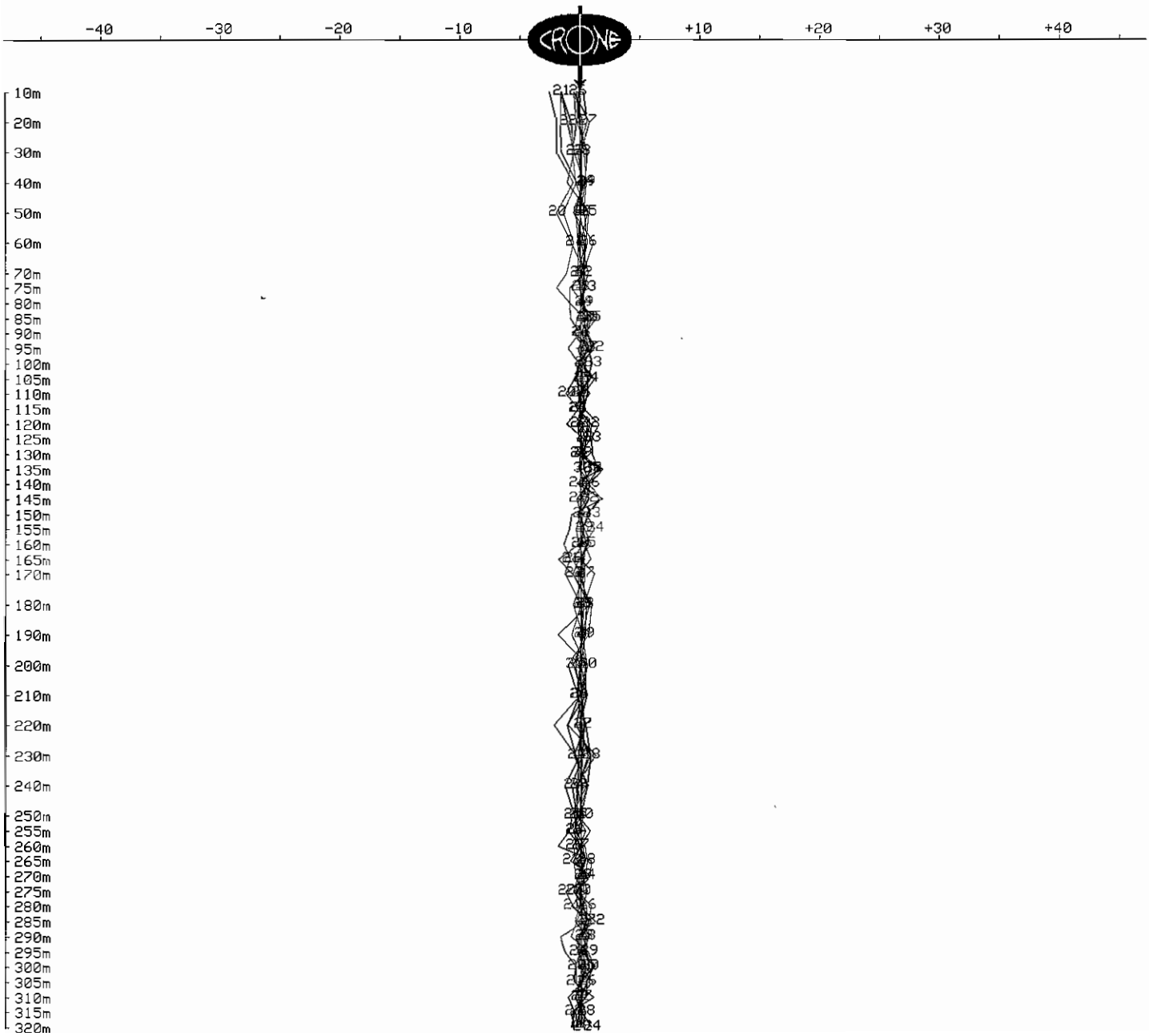


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-14**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 6, 2008	File name	: WRD14XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
Y COMPONENT dBy/dt nanoTesla/sec - 11 of 36 channels

Scale: 1:2000 Unit Scale: 1cm = 5 nT/s

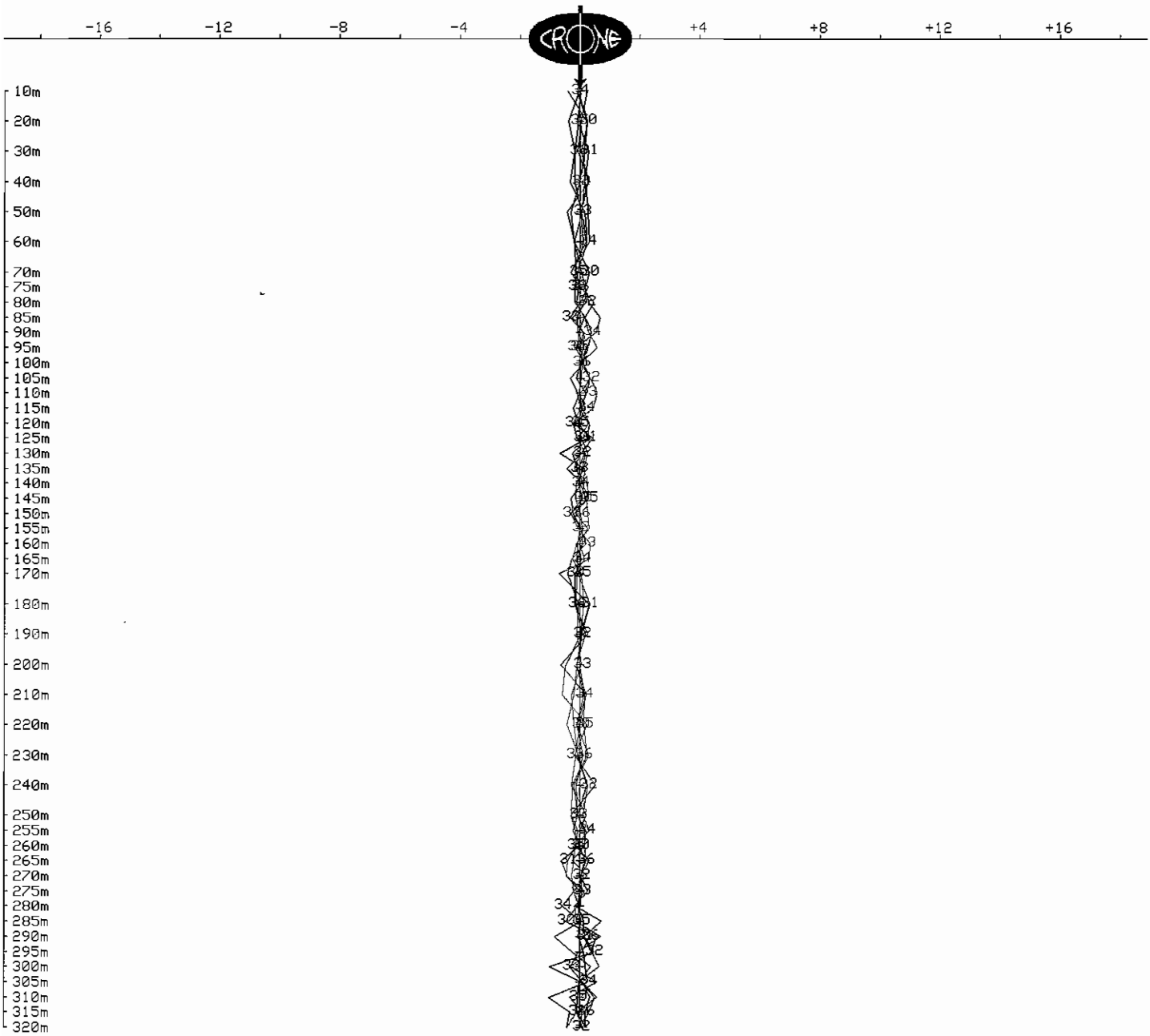


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-14**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 6, 2008	File name	: WRD14XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
Y COMPONENT dBy/dt nanoTesla/sec - 7 of 36 channels

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

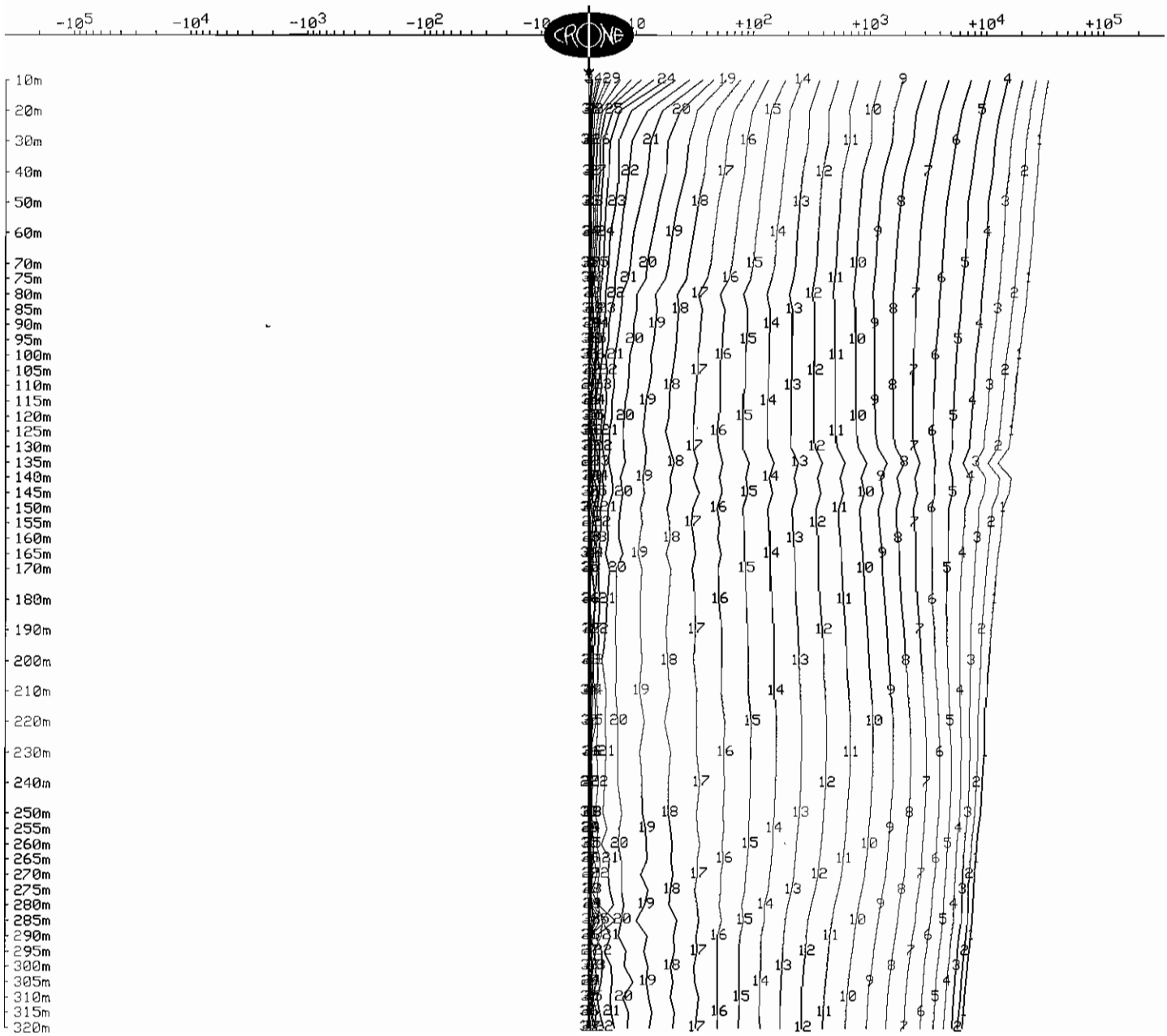


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-14**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 6, 2008	File name	: WRD14XYZ.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 36 of 36 channels

Scale: 1:2000



OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-15**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 5, 2008	File name	: WRD15Z.PEM
Time Base	: 50.00 ms	# Readings	: 36
Ramp Time	: 1.00 ms	Stn Units	: Metric
# Channels	: 36	Coil Area	: 8000 sq m
Sync Type	: Crystal-Master	Polarity	: +
Loop Size	: 500m X 250m	Receiver	: Digital #132
Current	: 22 Amps	Operator	: Jonathan Turley

Loop Coordinates (X,Y,Z)

1. 368325m, 403500m, 0m
2. 368325m, 403000m, 0m
3. 368575m, 403000m, 0m
4. 368575m, 403500m, 0m

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

1. 368475m, 403250m, 0m
2. 60deg, 60deg, 240m

Channel Times (usec)

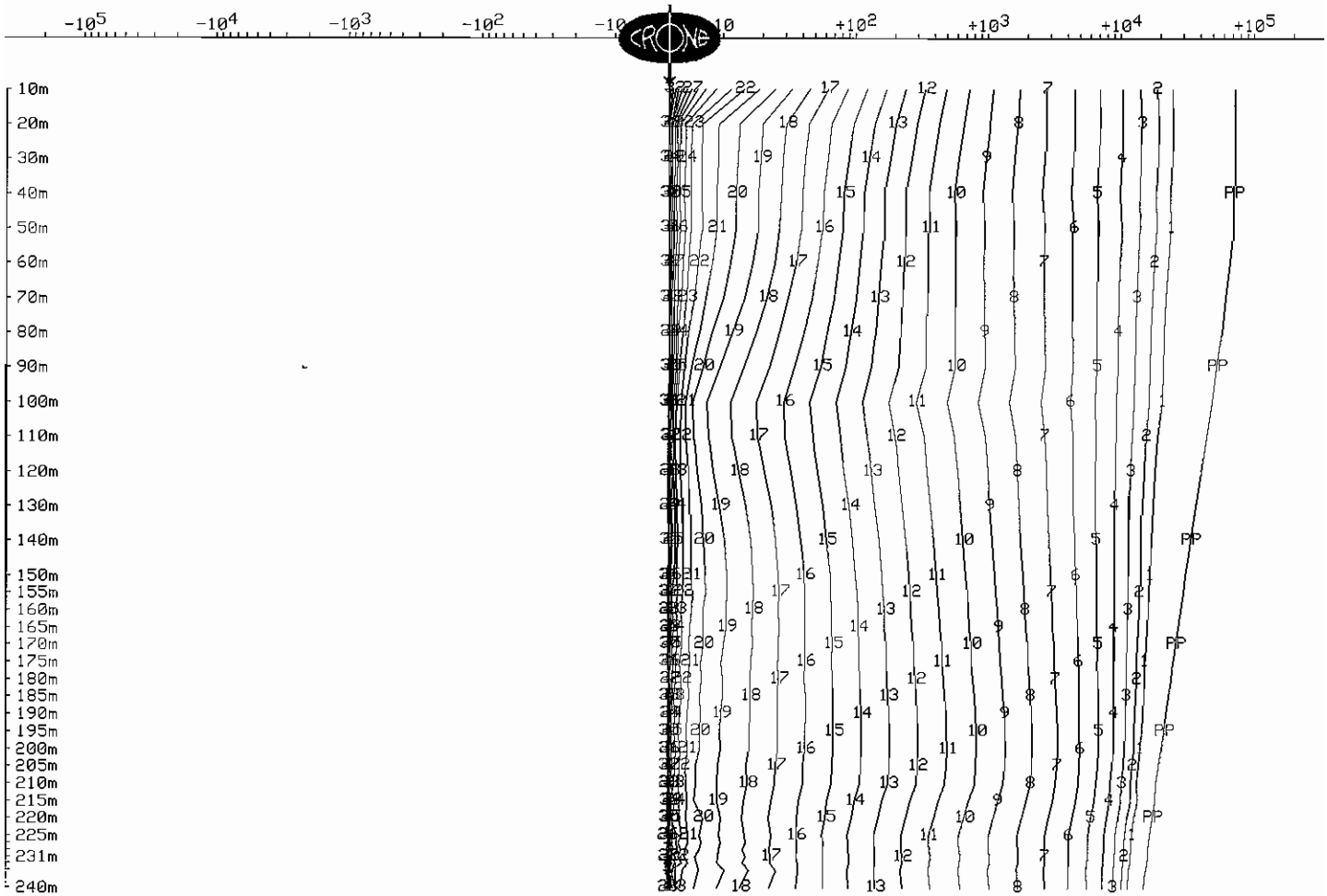
Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-200	-100	-150	1	48	56	52	2	56	72	64
3	72	84	78	4	84	104	94	5	104	124	114
6	124	152	138	7	152	184	168	8	184	224	204
9	224	268	246	10	268	328	298	11	328	396	362
12	396	480	438	13	480	580	530	14	580	700	640
15	700	848	774	16	848	1024	936	17	1024	1240	1132
18	1240	1496	1368	19	1496	1812	1654	20	1812	2188	2000
21	2188	2644	2416	22	2644	3196	2920	23	3196	3860	3528
24	3860	4664	4262	25	4664	5632	5148	26	5632	6808	6220
27	6808	8220	7514	28	8220	9936	9078	29	9936	12000	10968
30	12000	14400	13200	31	14400	17520	15960	32	17520	21150	19335
33	21150	25560	23355	34	25560	30870	28215	35	30870	37290	34080
36	37290	45040	41165								

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-15**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 5, 2008	File name	: WRD15Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 36 of 36 channels and PP

Scale: 1:2000

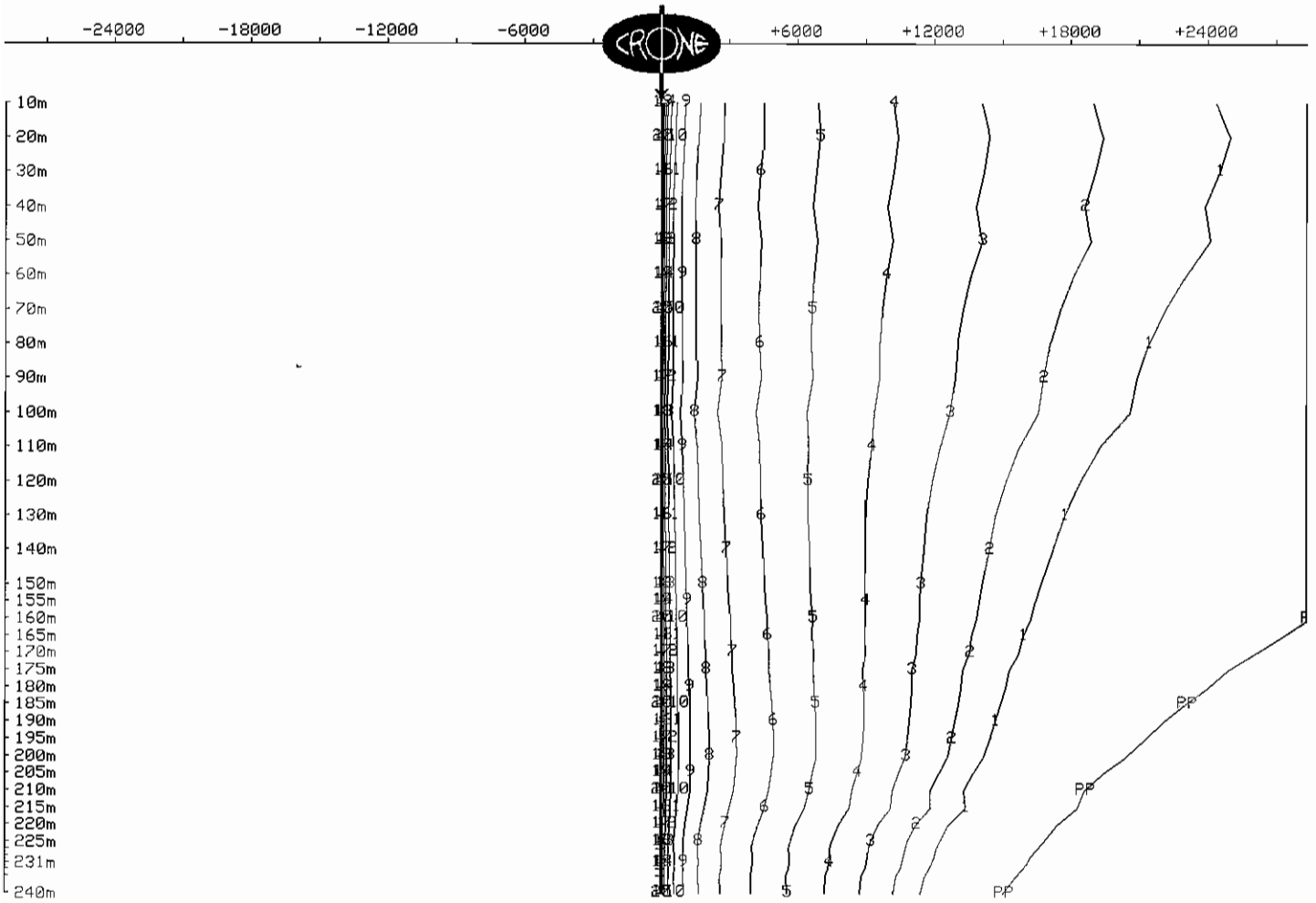


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-15**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 5, 2008	File name	: WRD15Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 20 of 36 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 3000 nT/s

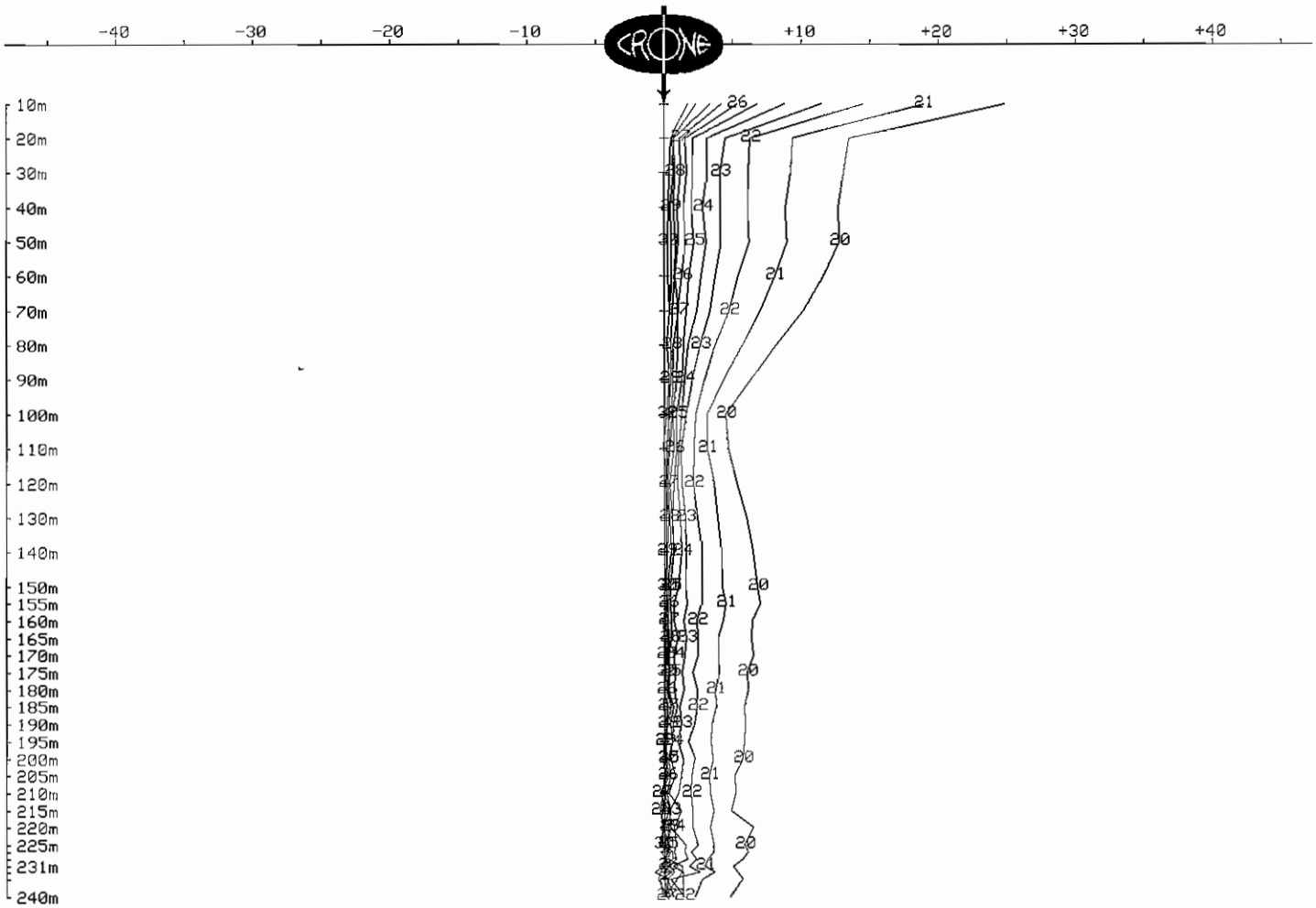


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-15**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 5, 2008	File name	: WRD15Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 11 of 36 channels

Scale: 1:2000 Unit Scale: 1cm = 5 nT/s

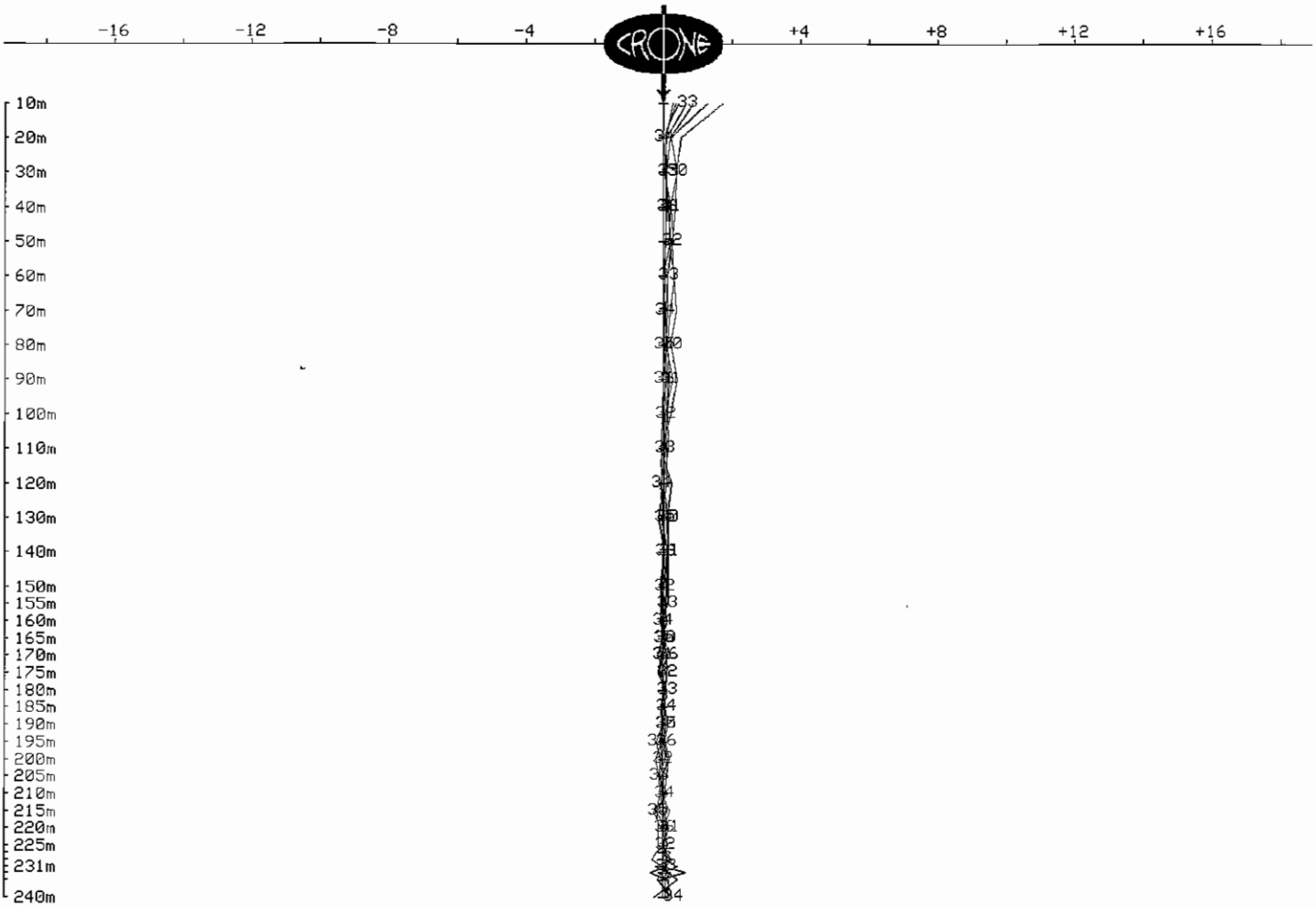


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-15**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 5, 2008	File name	: WRD15Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 7 of 36 channels

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

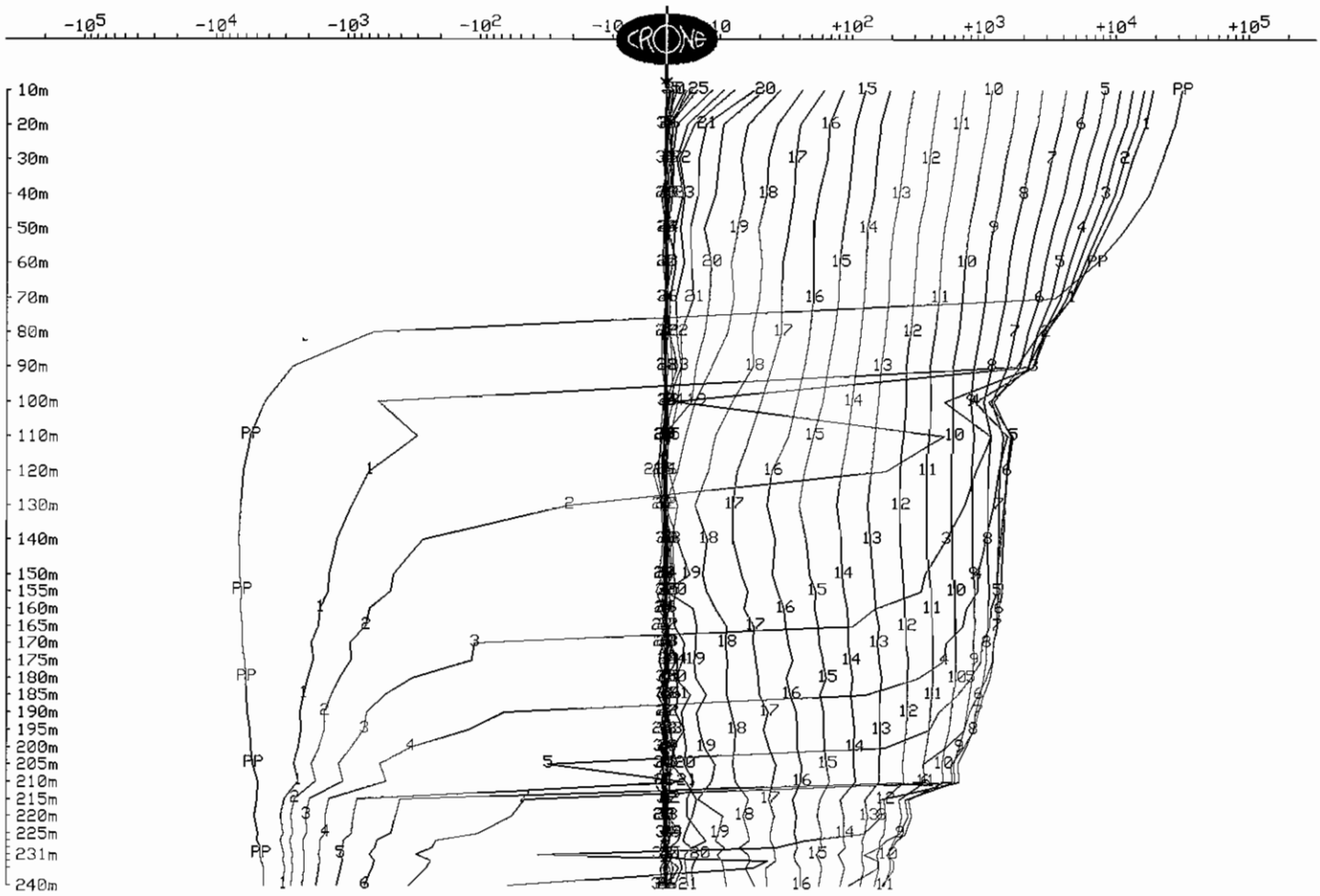


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-15**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 5, 2008	File name	: WRD15XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
X COMPONENT dBx/dt nanoTesla/sec - 36 of 36 channels and PP

Scale: 1:2000

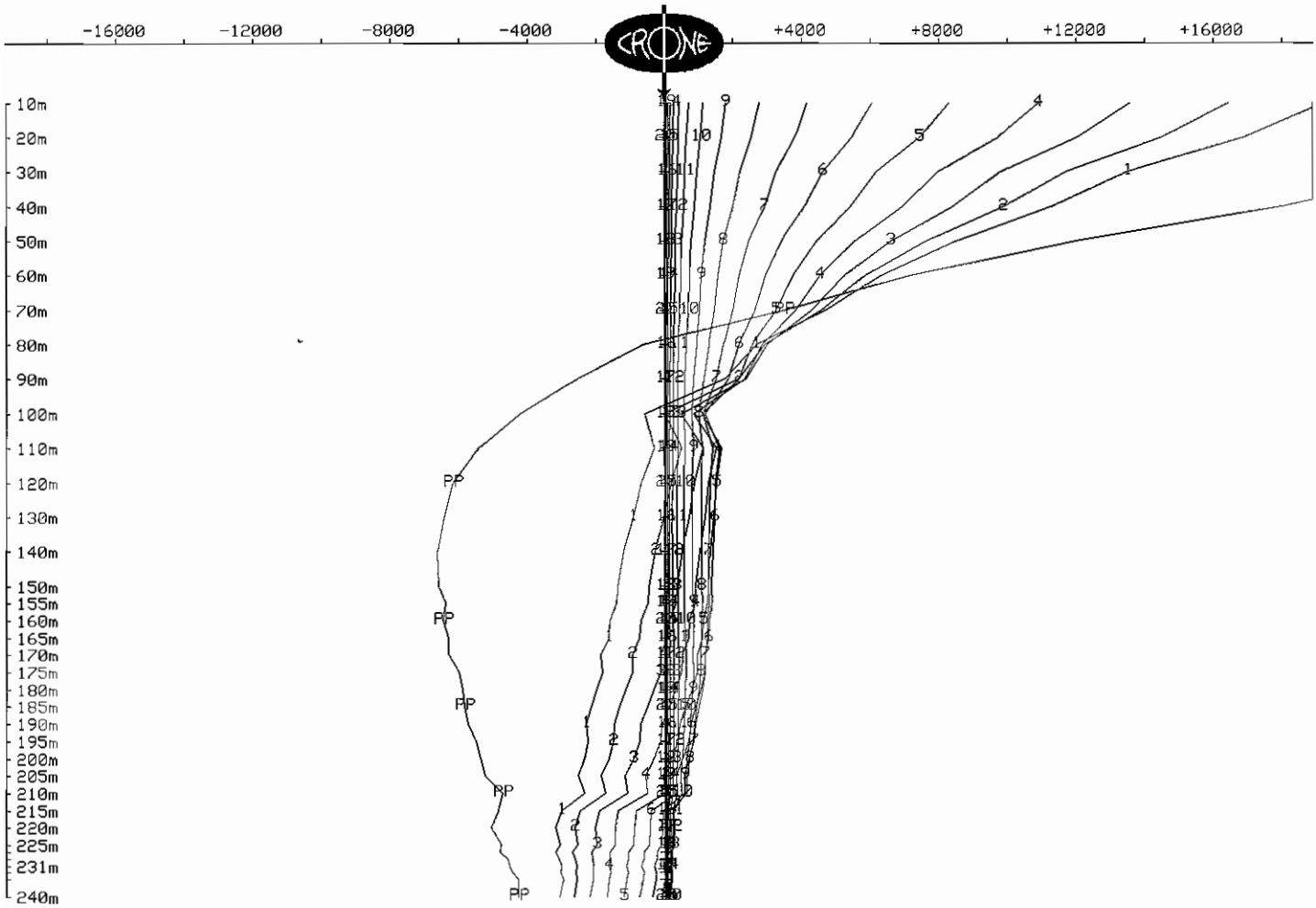


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-15**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 5, 2008	File name	: WRD15XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
X COMPONENT dBx/dt nanoTesla/sec - 20 of 36 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 2000 nT/s

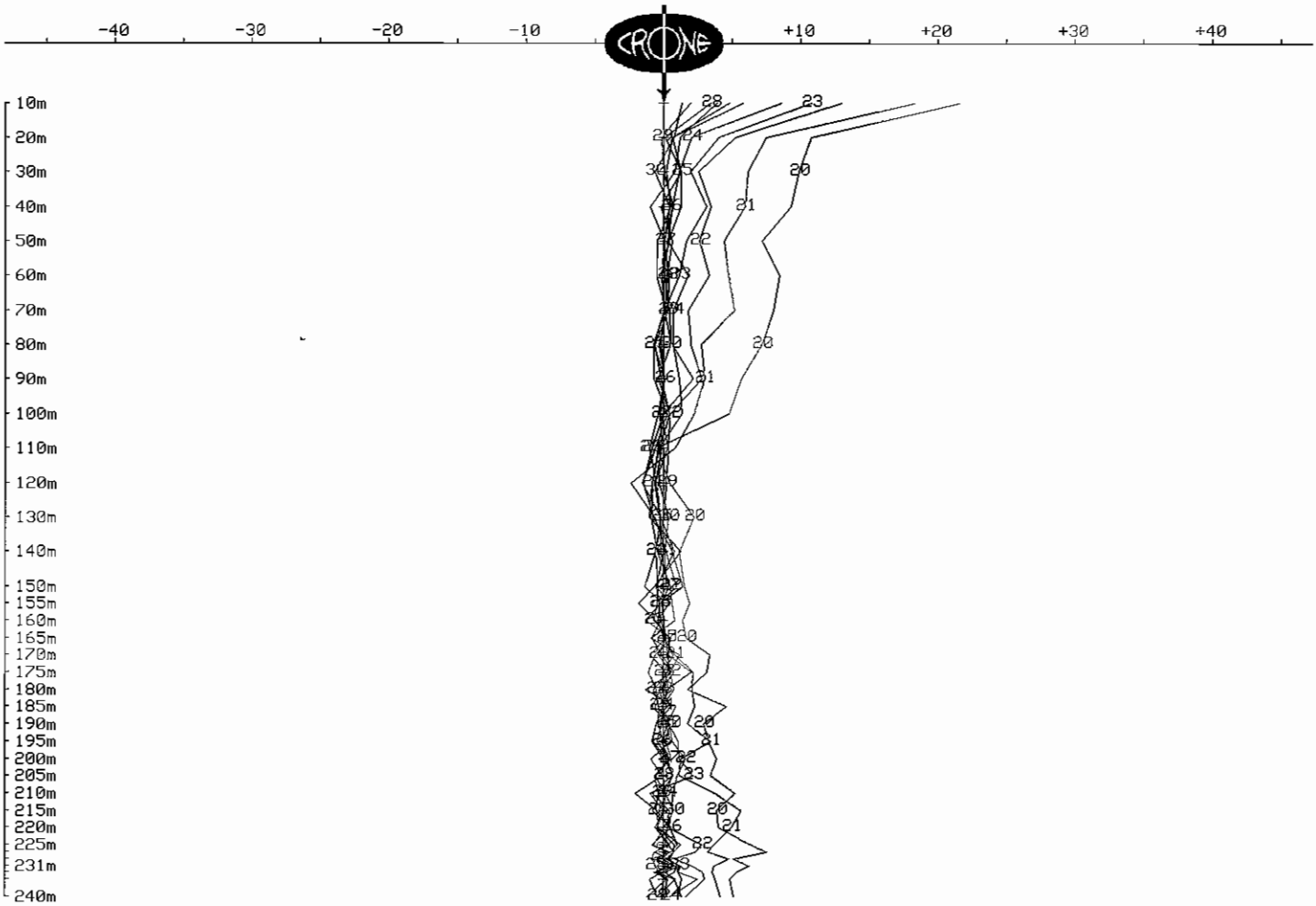


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-15**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 5, 2008	File name	: WRD15XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
X COMPONENT dBx/dt nanoTesla/sec - 11 of 36 channels

Scale: 1:2000 Unit Scale: 1cm = 5 nT/s

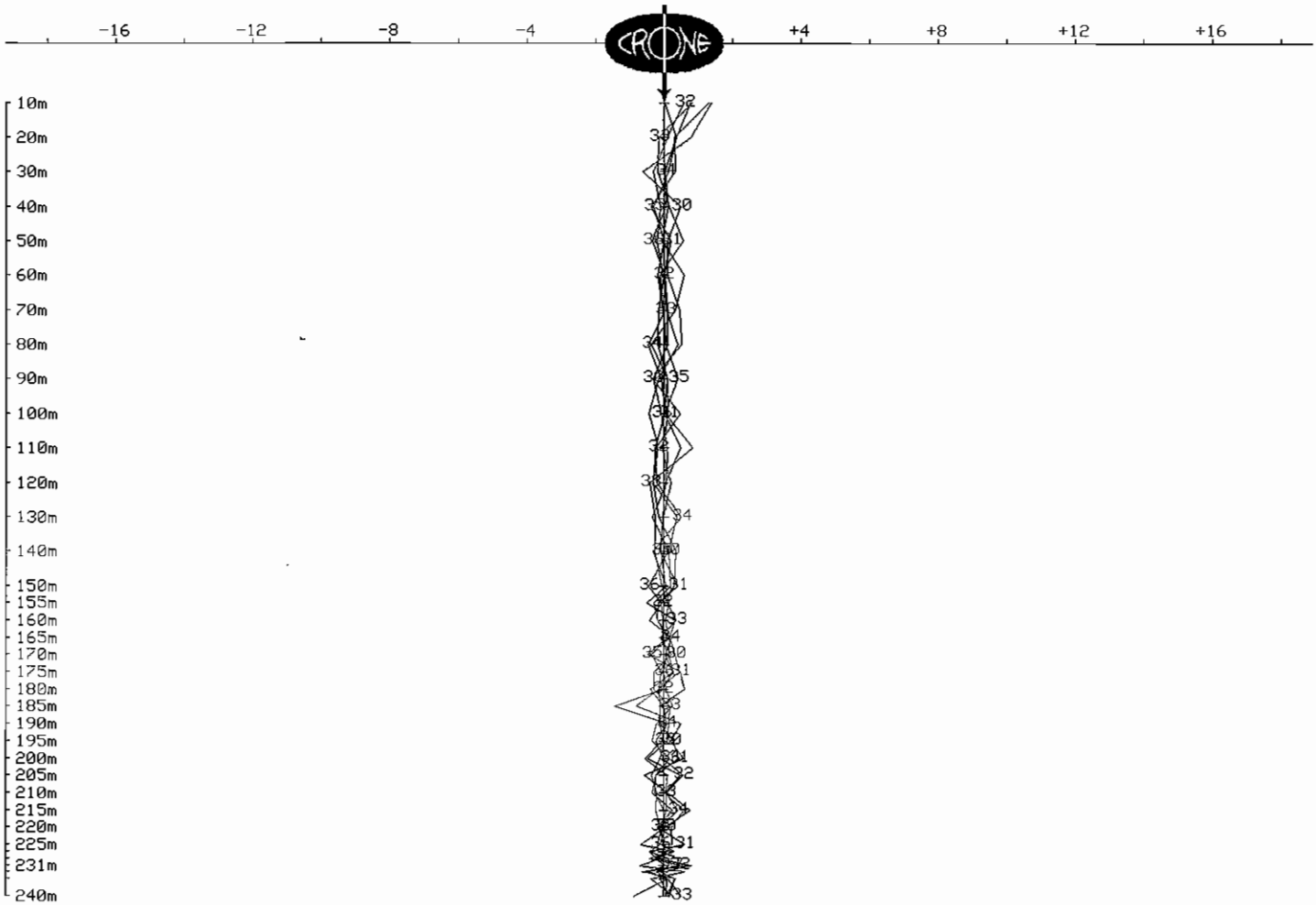


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-15**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 5, 2008	File name	: WRD15XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
X COMPONENT dBx/dt nanoTesla/sec - 7 of 36 channels

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

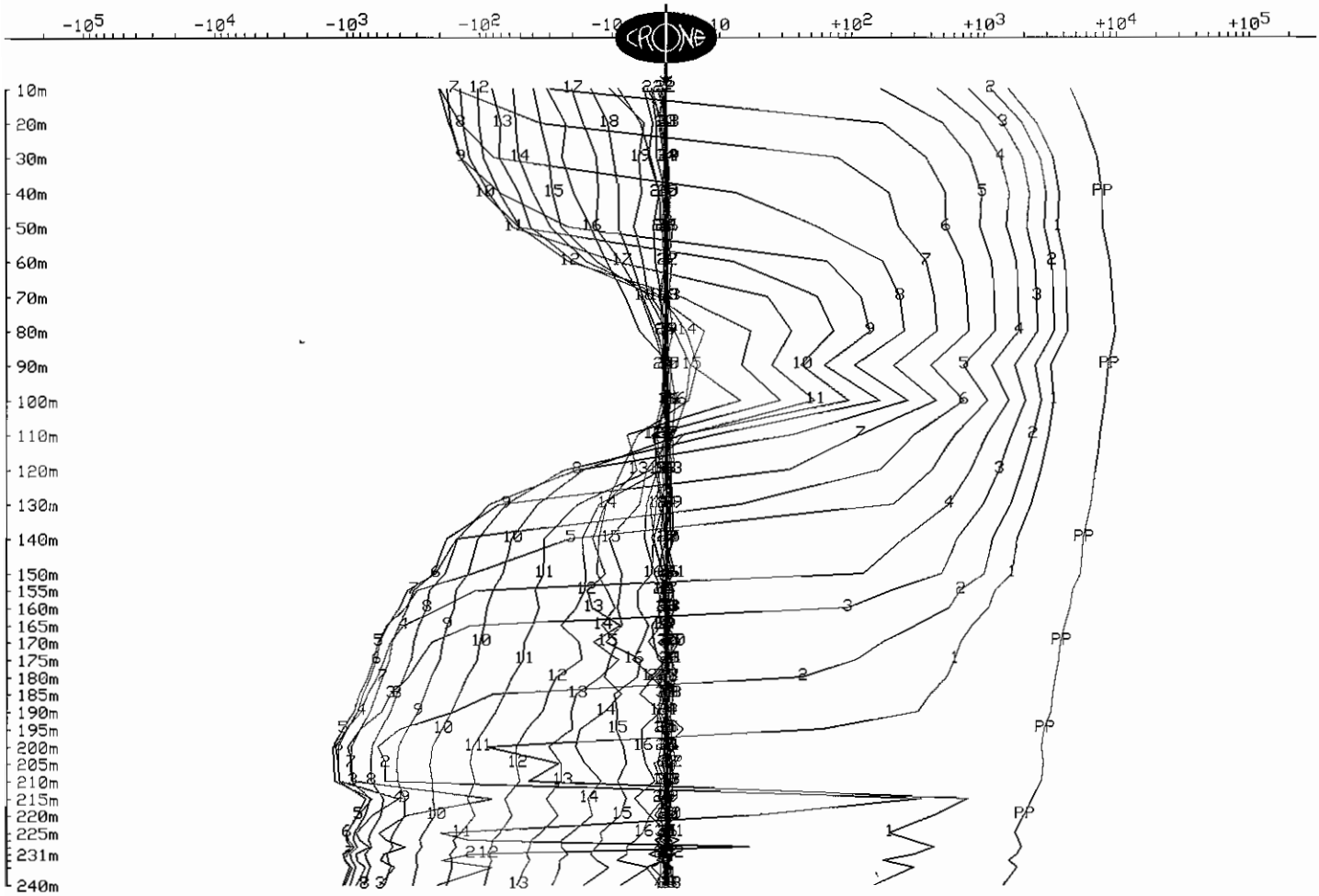


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-15**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 5, 2008	File name	: WRD15XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
Y COMPONENT dBy/dt nanoTesla/sec - 36 of 36 channels and PP

Scale: 1:2000

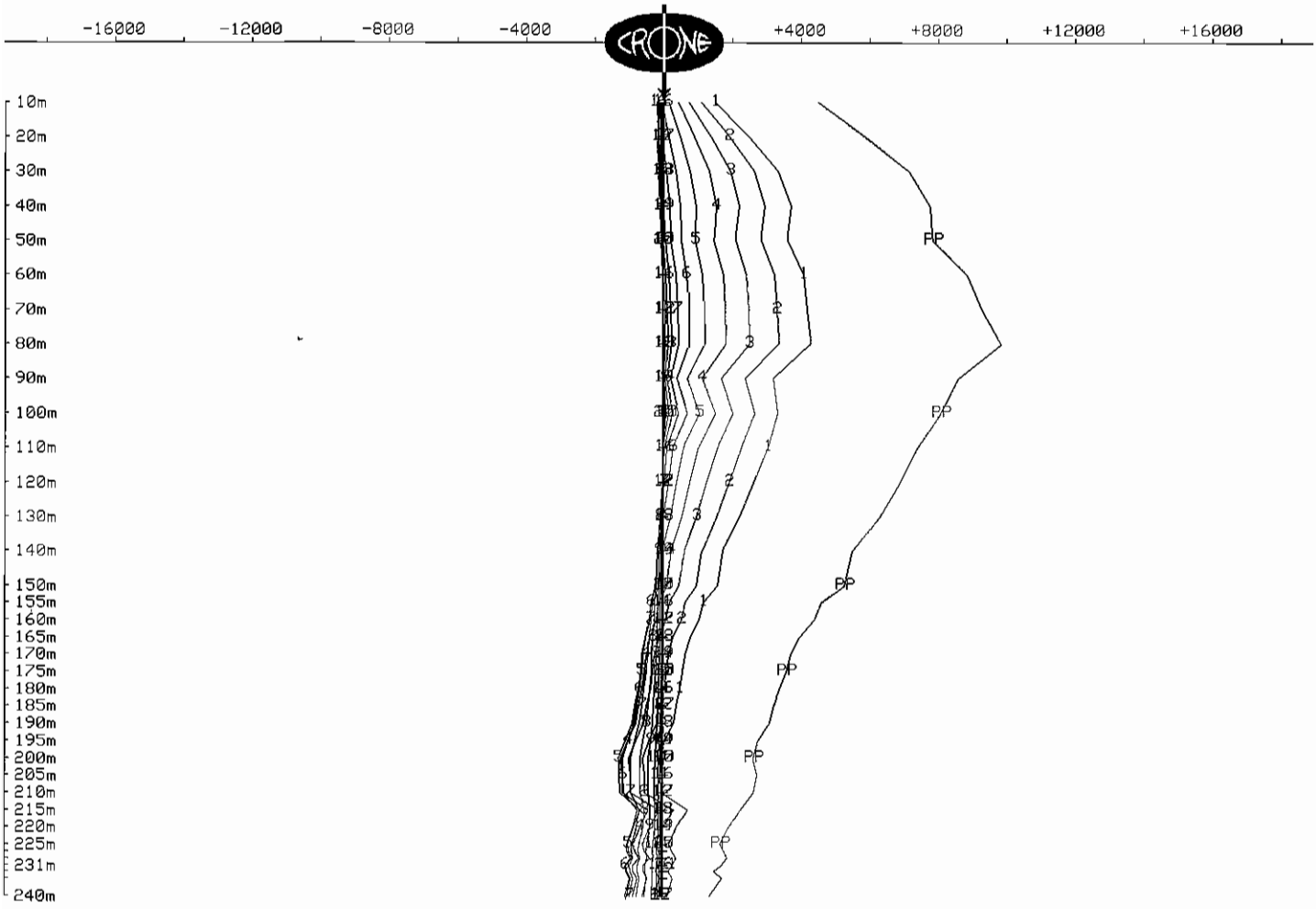


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: Jaguar Minerals Ltd	Hole	: WRD-15
Grid	: Wilson River	Tx Loop	: WR1
Date	: Nov 5, 2008	File name	: WRD15XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
Y COMPONENT dBy/dt nanoTesla/sec - 20 of 36 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 2000 nT/s

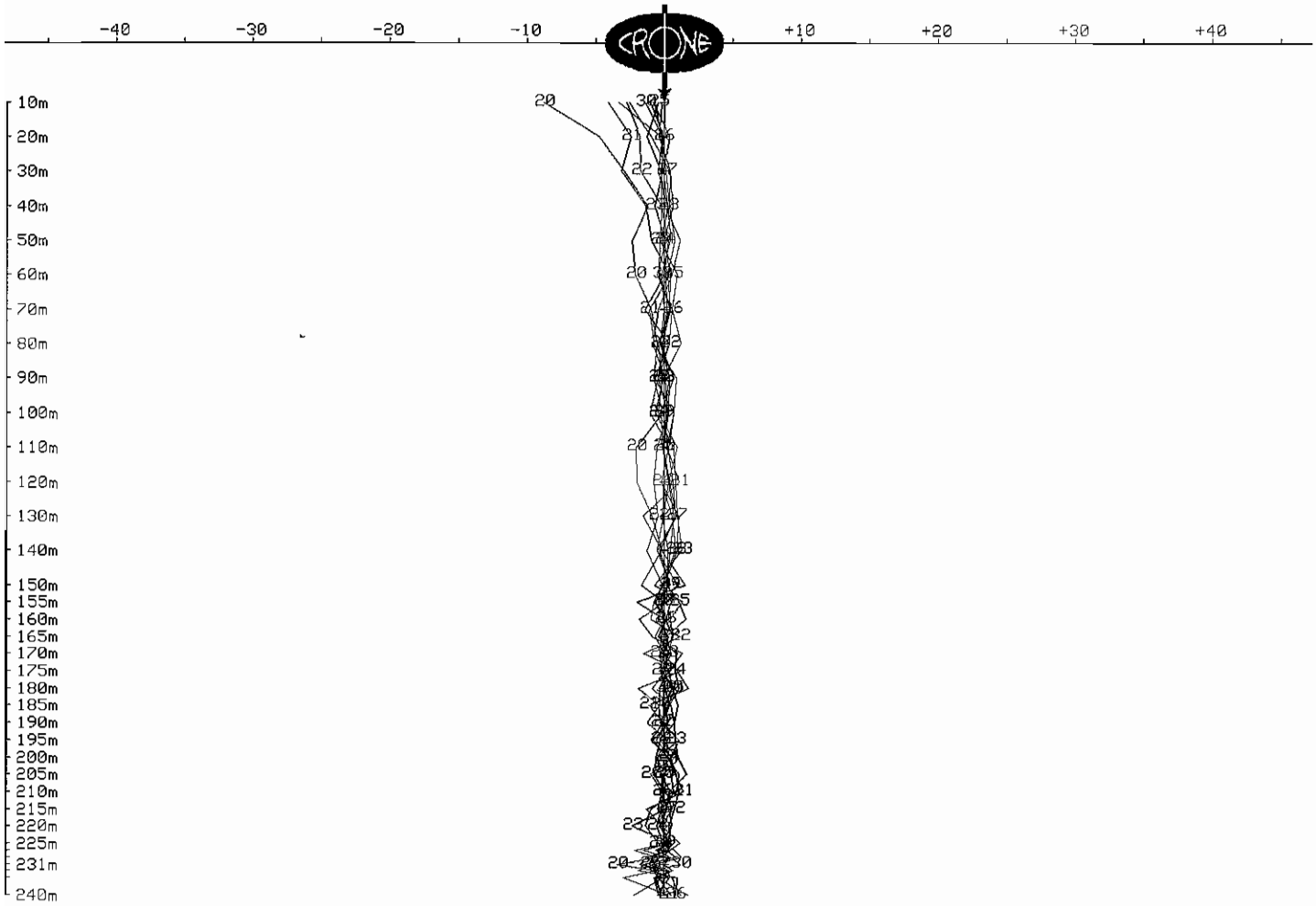


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-15**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 5, 2008	File name	: WRD15XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
Y COMPONENT dBy/dt nanoTesla/sec - 11 of 36 channels

Scale: 1:2000 Unit Scale: 1cm = 5 nT/s

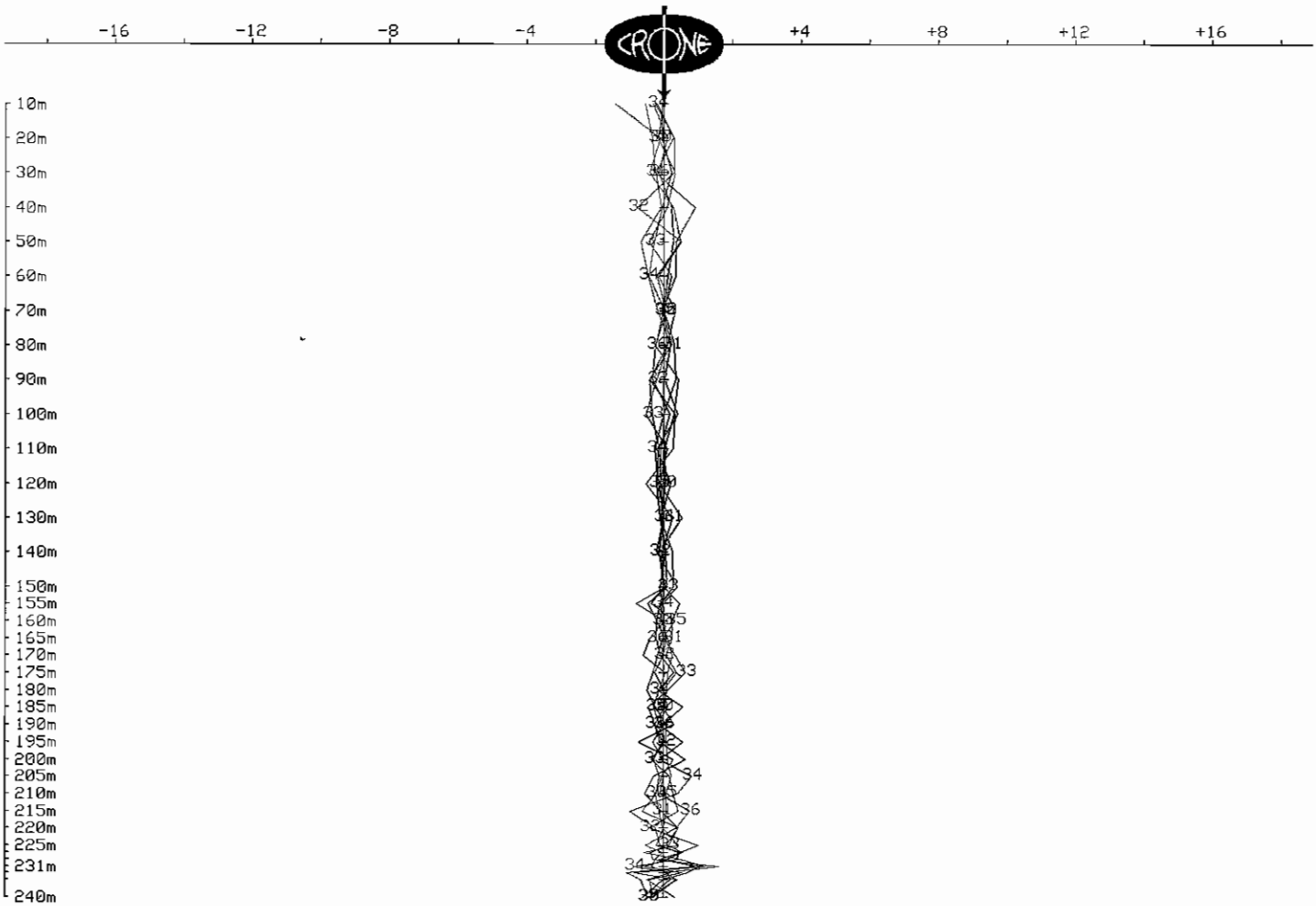


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-15**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 5, 2008	File name	: WRD15XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
Y COMPONENT dBy/dt nanoTesla/sec - 7 of 36 channels

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

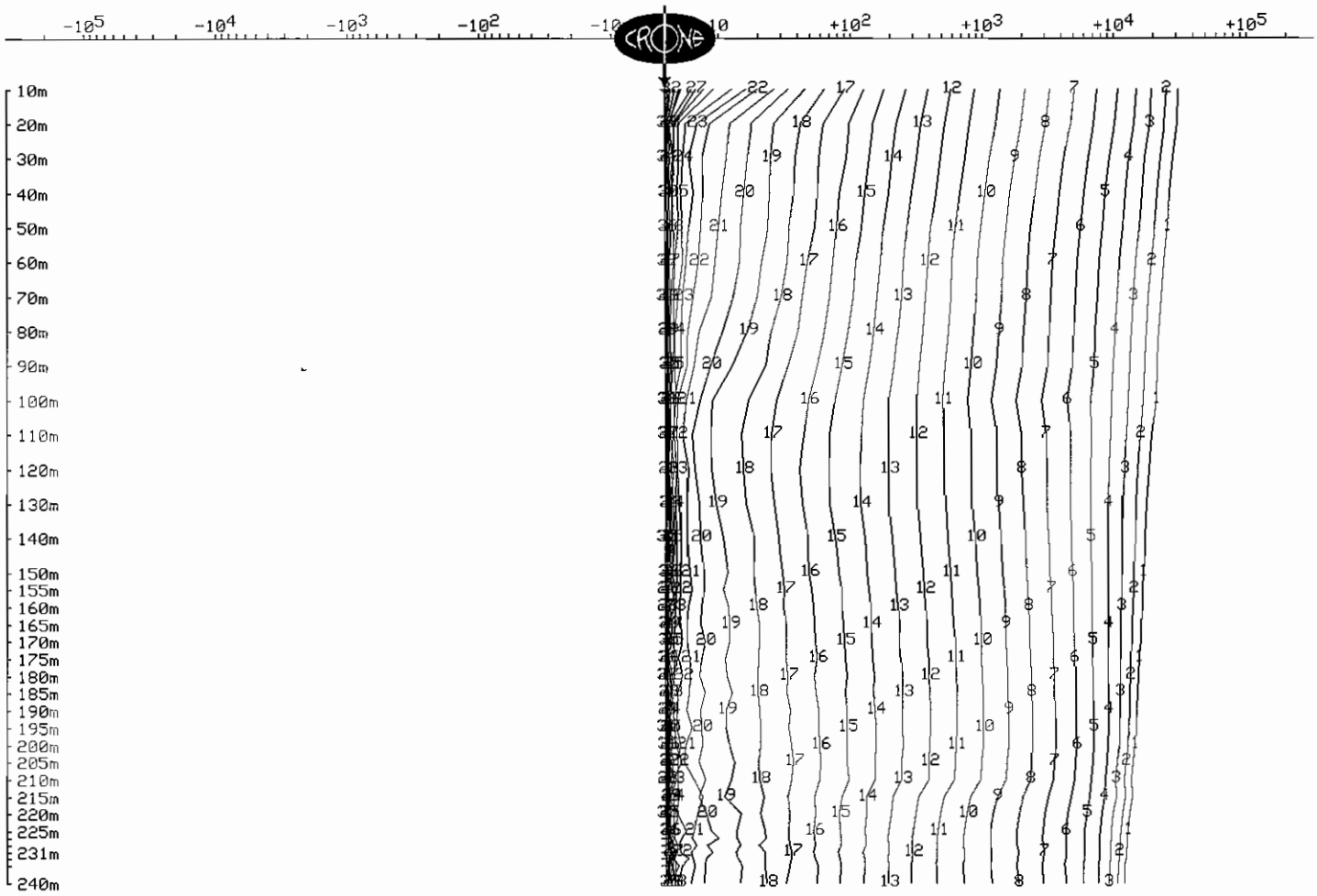


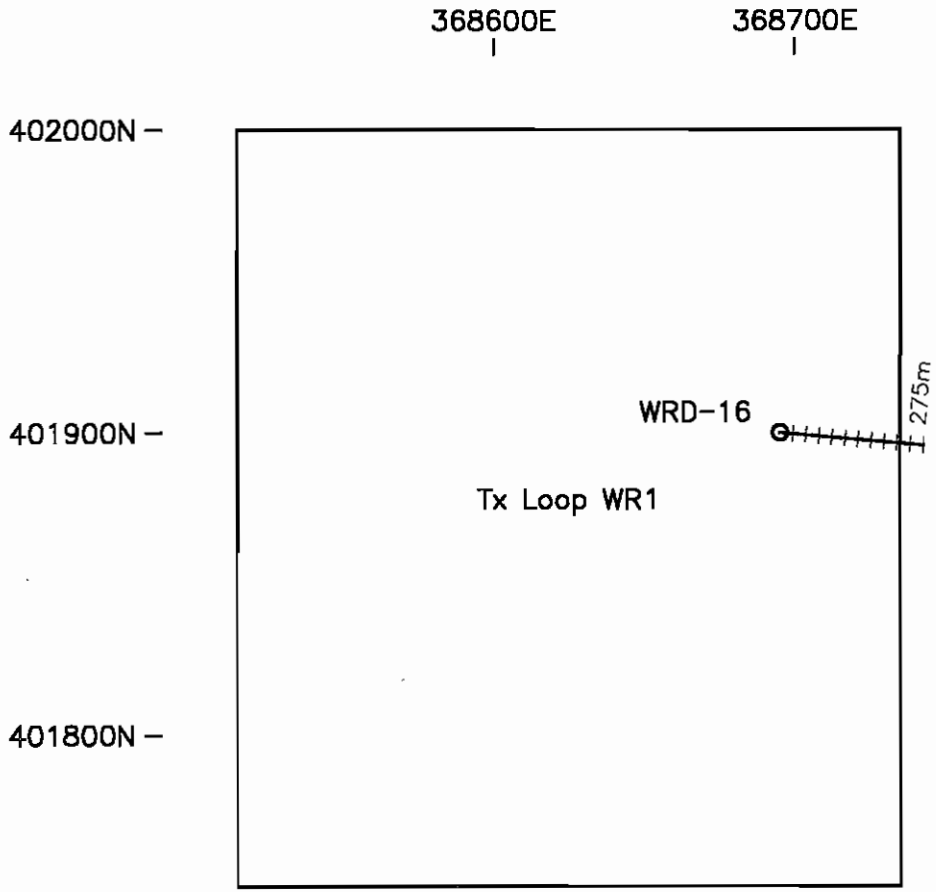
OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

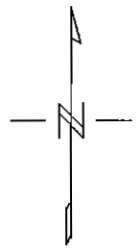
Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-15**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 5, 2008	File name	: WRD15XYZ.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 36 of 36 channels

Scale: 1:2000







Scale 1:2500

25 0 25 50

(metres)

Jaguar Minerals Ltd

Wilson River

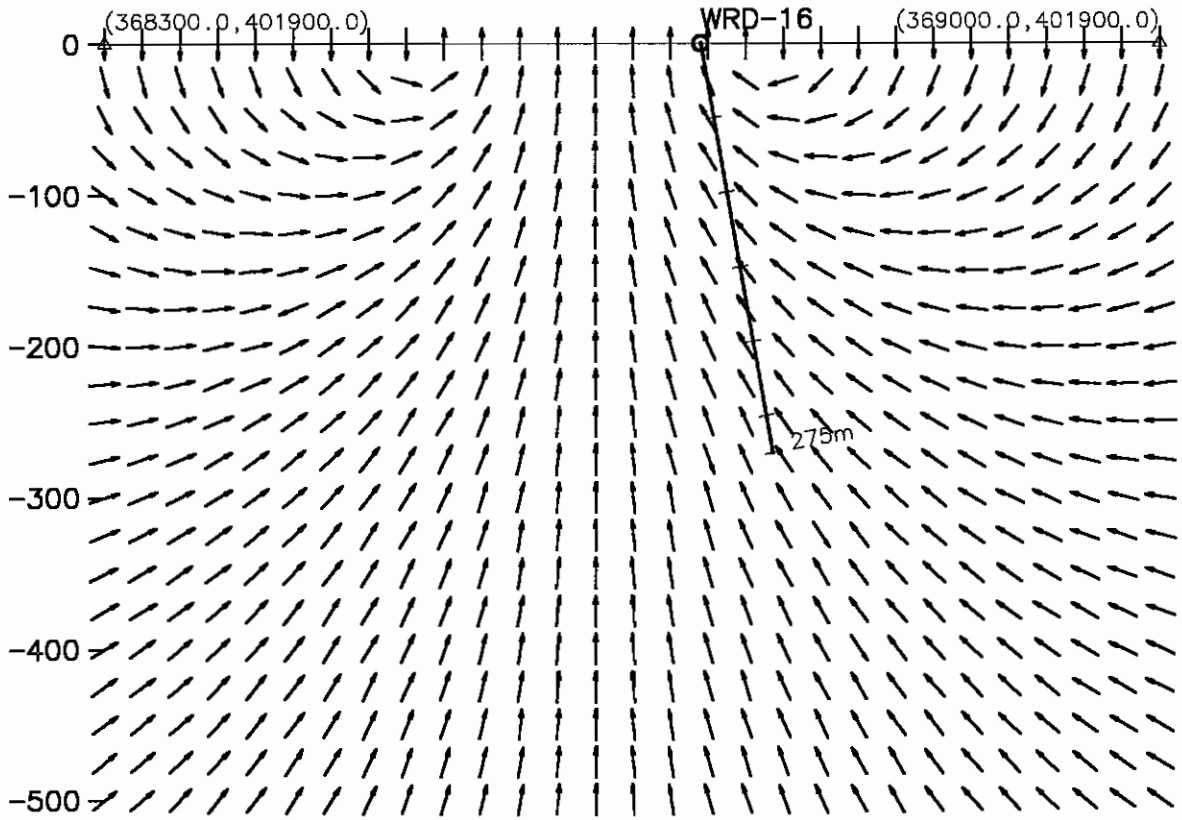
3-D Borehole Pulse EM Survey

Borehole & Loop Location Map

Hole: WRD-16

Survey Date: Nov 7, 2008

Outer-Rim Exploration Services



Scale 1:5000

50 0 50 100

(metres)

Jaguar Minerals Ltd

Wilson River

3-D Borehole Pulse EM Survey

Hole Section with Primary Field

Hole: WRD-16

Survey Date: Nov 7, 2008

Outer-Rim Exploration Services

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-16**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 7, 2008	File name	: WRD16Z.PEM
Time Base	: 50.00 ms	# Readings	: 37
Ramp Time	: 1.00 ms	Stn Units	: Metric
# Channels	: 36	Coil Area	: 8000 sq m
Sync Type	: Crystal-Master	Polarity	: +
Loop Size	: 235m X 250m	Receiver	: Digital #132
Current	: 25 Amps	Operator	: Jonathan Turley

Loop Coordinates (X,Y,Z)

1. 368515m, 402000m, 0m
2. 368515m, 401750m, 0m
3. 368735m, 401750m, 0m
4. 368735m, 402000m, 0m

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

1. 368695m, 401900m, 0m
2. 95deg, 80deg, 275m

Channel Times (usec)

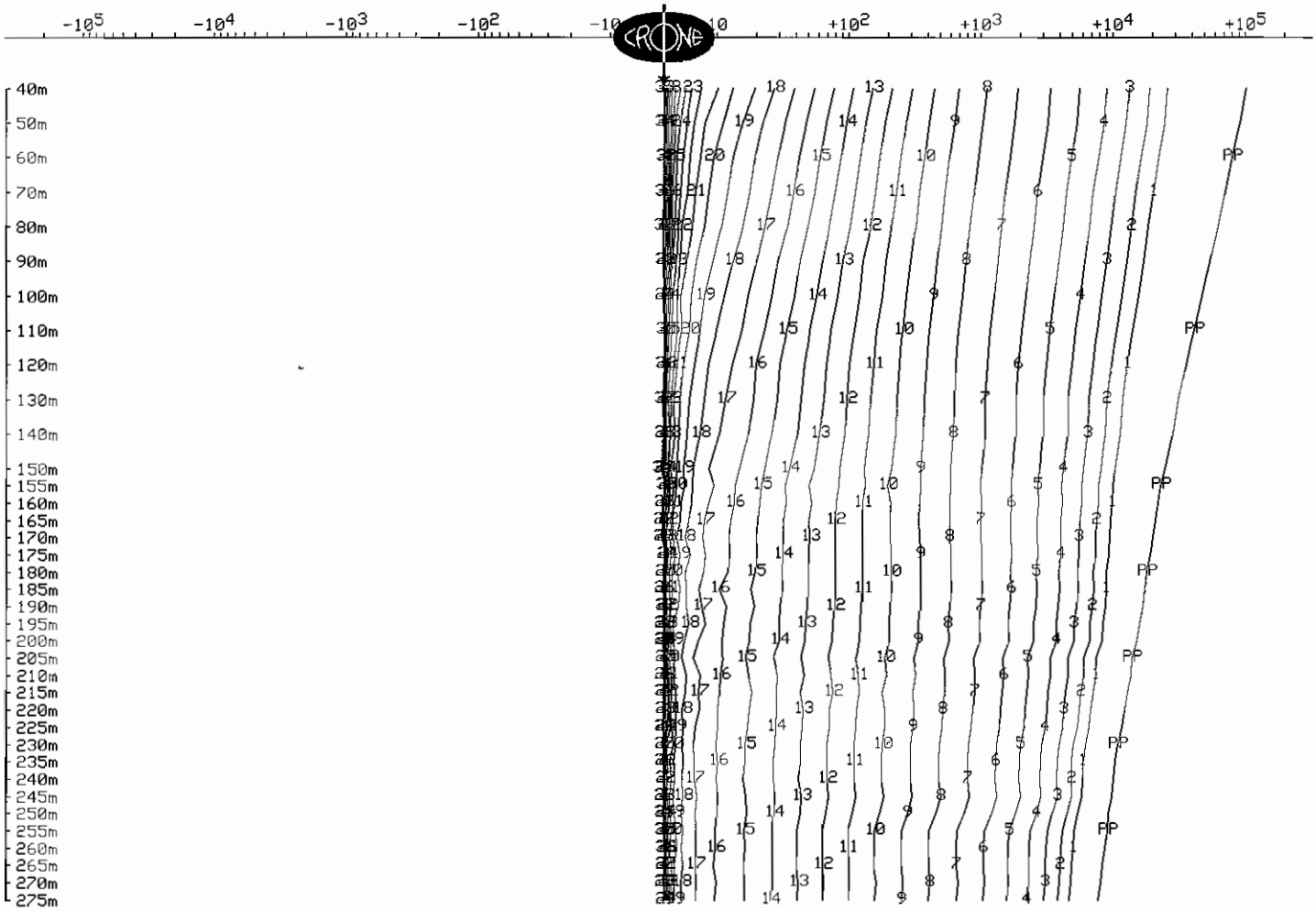
Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-200	-100	-150	1	48	56	52	2	56	72	64
3	72	84	78	4	84	104	94	5	104	124	114
6	124	152	138	7	152	184	168	8	184	224	204
9	224	268	246	10	268	328	298	11	328	396	362
12	396	480	438	13	480	580	530	14	580	700	640
15	700	848	774	16	848	1024	936	17	1024	1240	1132
18	1240	1496	1368	19	1496	1812	1654	20	1812	2188	2000
21	2188	2644	2416	22	2644	3196	2920	23	3196	3860	3528
24	3860	4664	4262	25	4664	5632	5148	26	5632	6808	6220
27	6808	8220	7514	28	8220	9936	9078	29	9936	12000	10968
30	12000	14400	13200	31	14400	17520	15960	32	17520	21150	19335
33	21150	25560	23355	34	25560	30870	28215	35	30870	37290	34080
36	37290	45040	41165								

OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-16**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 7, 2008	File name	: WRD16Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 36 of 36 channels and PP

Scale: 1:2000

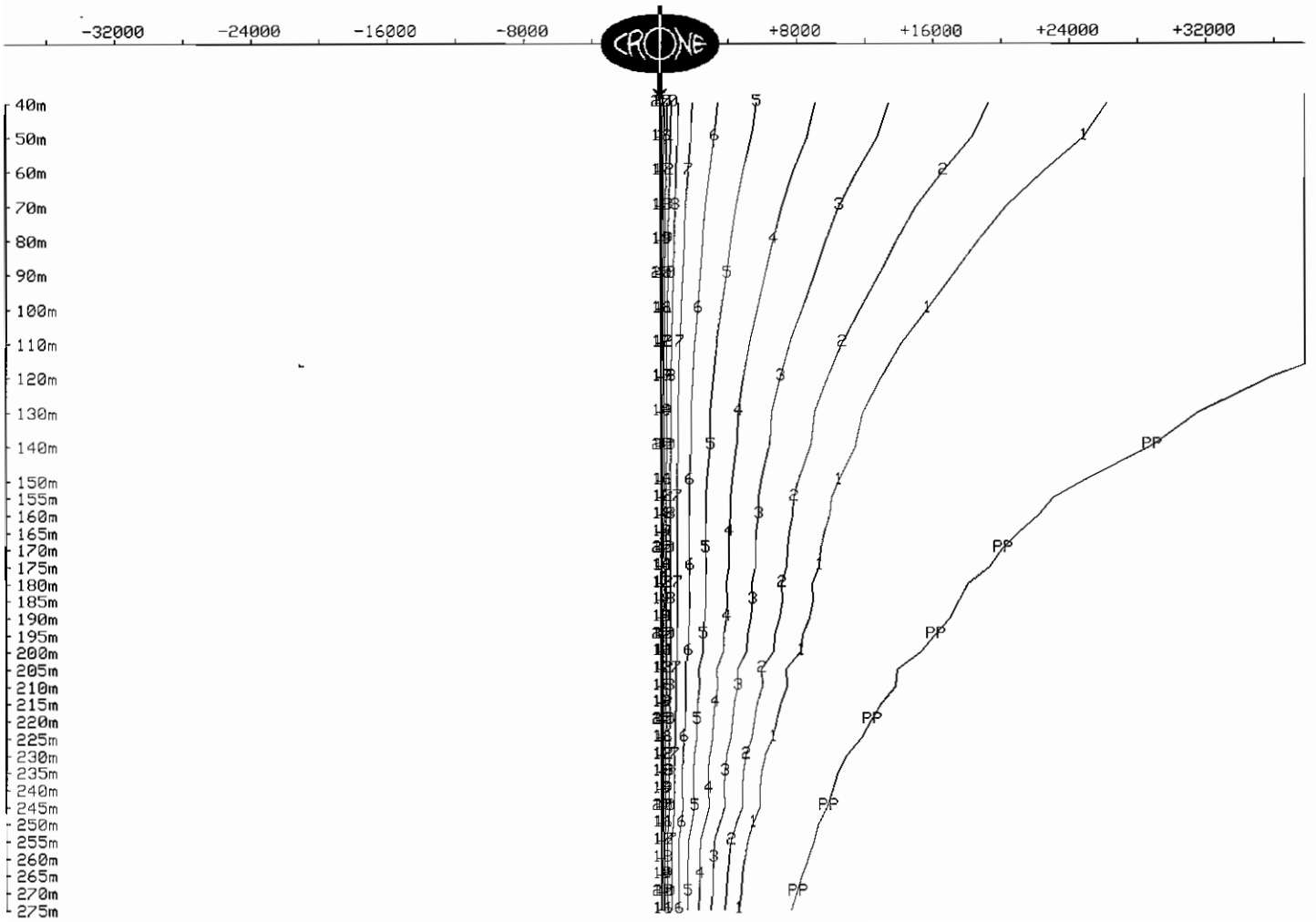


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-16**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 7, 2008	File name	: WRD16Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 20 of 36 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 4000 nT/s

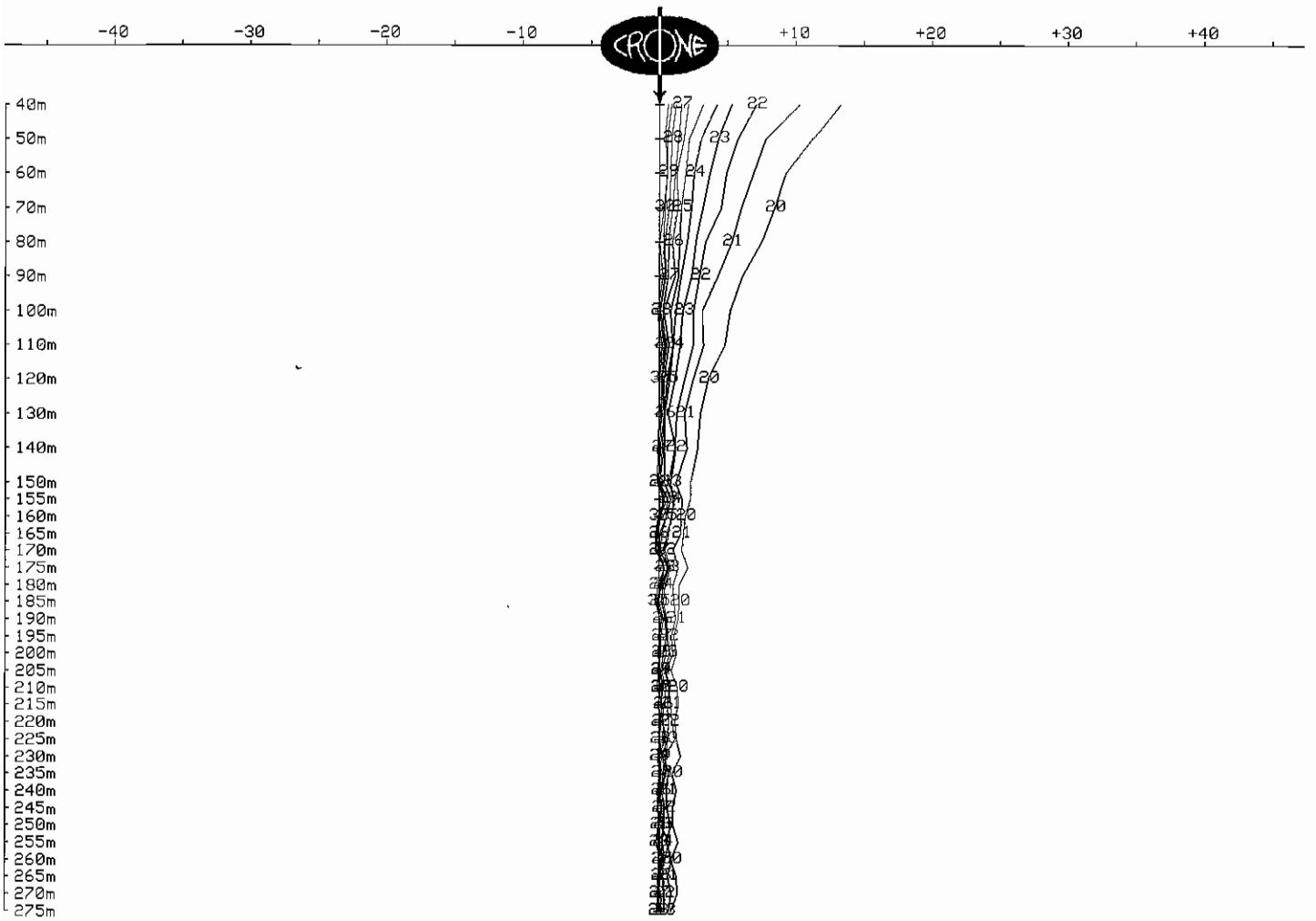


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-16**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 7, 2008	File name	: WRD16Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 11 of 36 channels

Scale: 1:2000 Unit Scale: 1cm = 5 nT/s

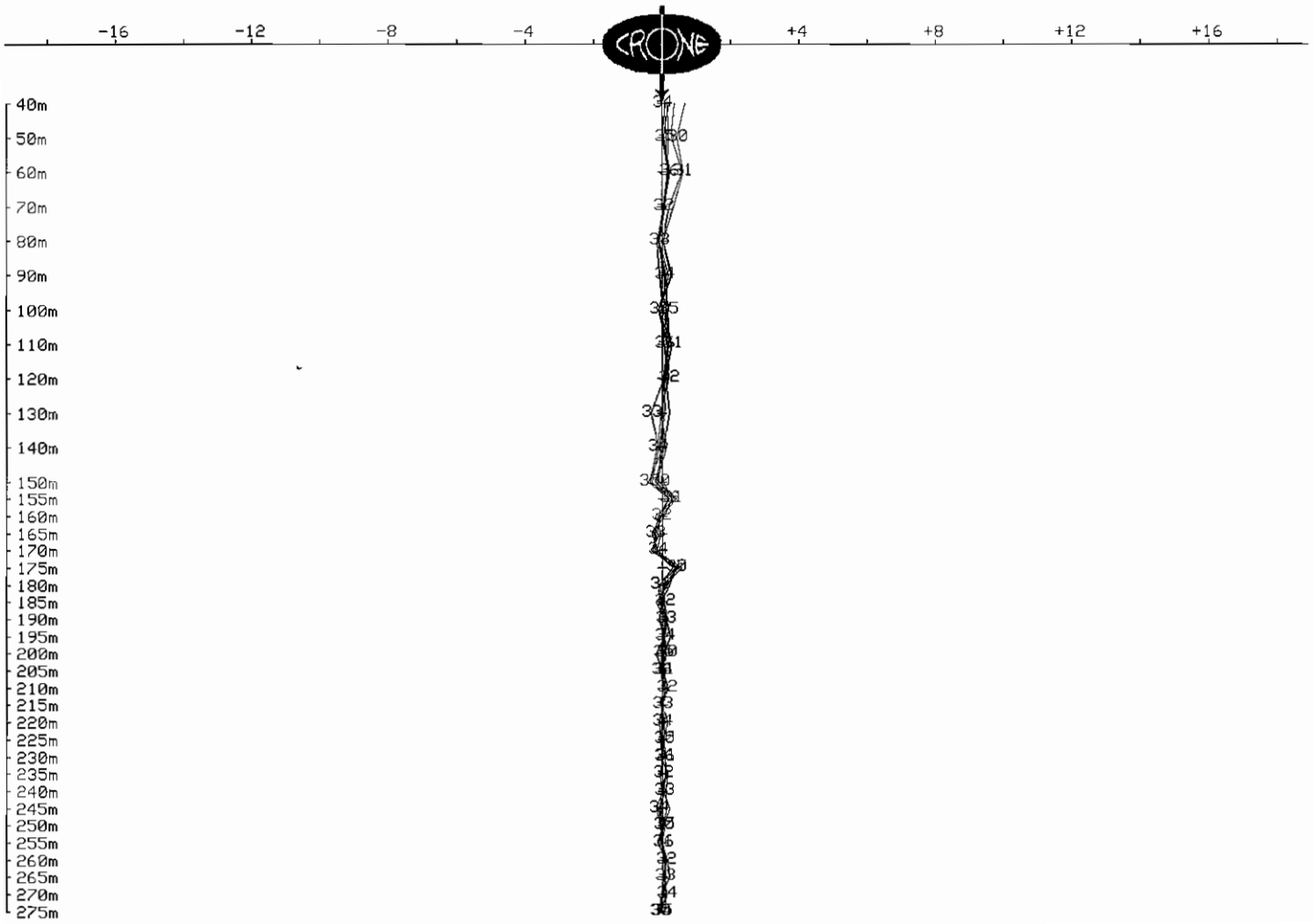


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-16**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 7, 2008	File name	: WRD16Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 7 of 36 channels

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

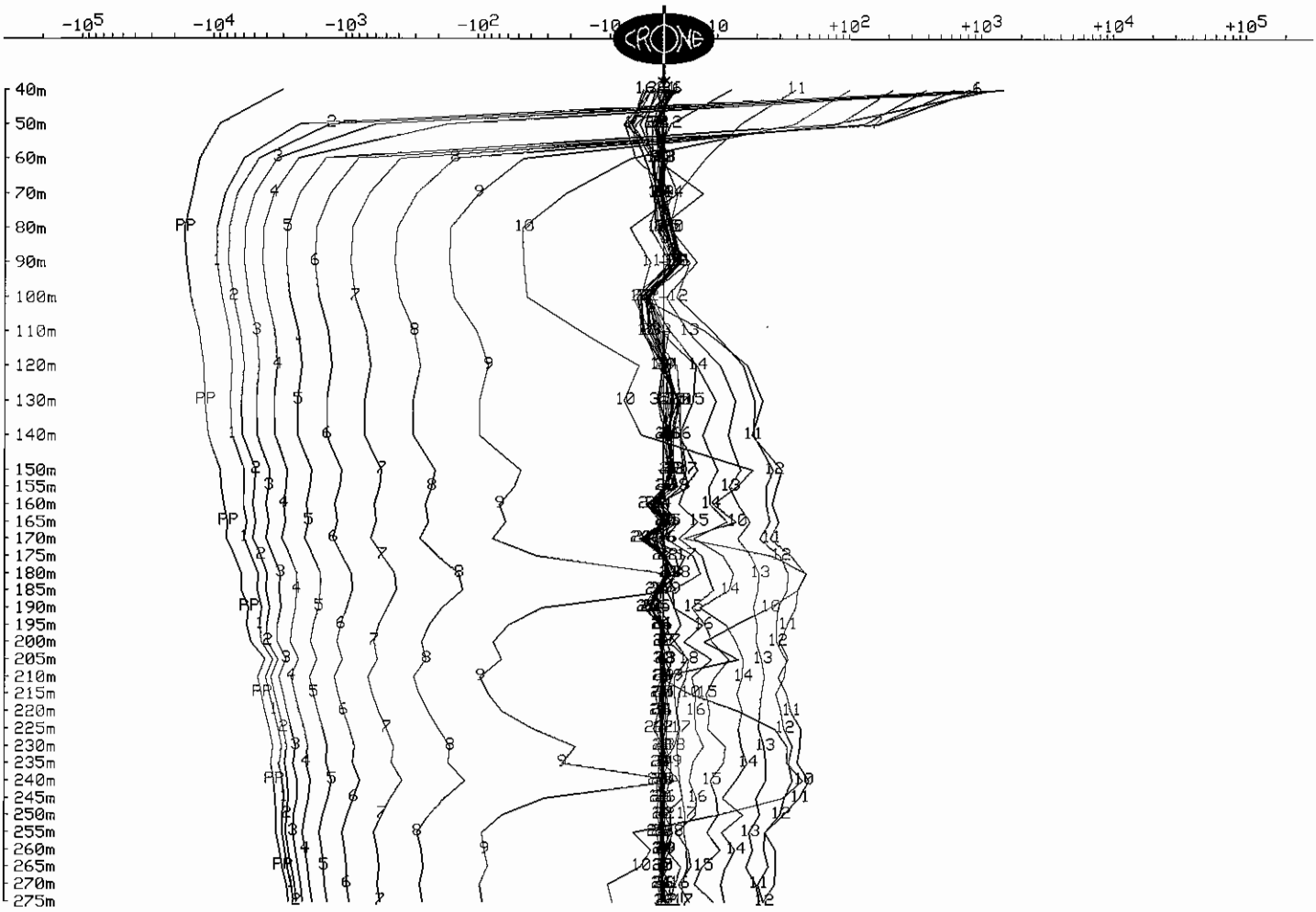


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-16**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 7, 2008	File name	: WRD16XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
X COMPONENT dBx/dt nanoTesla/sec - 36 of 36 channels and PP

Scale: 1:2000

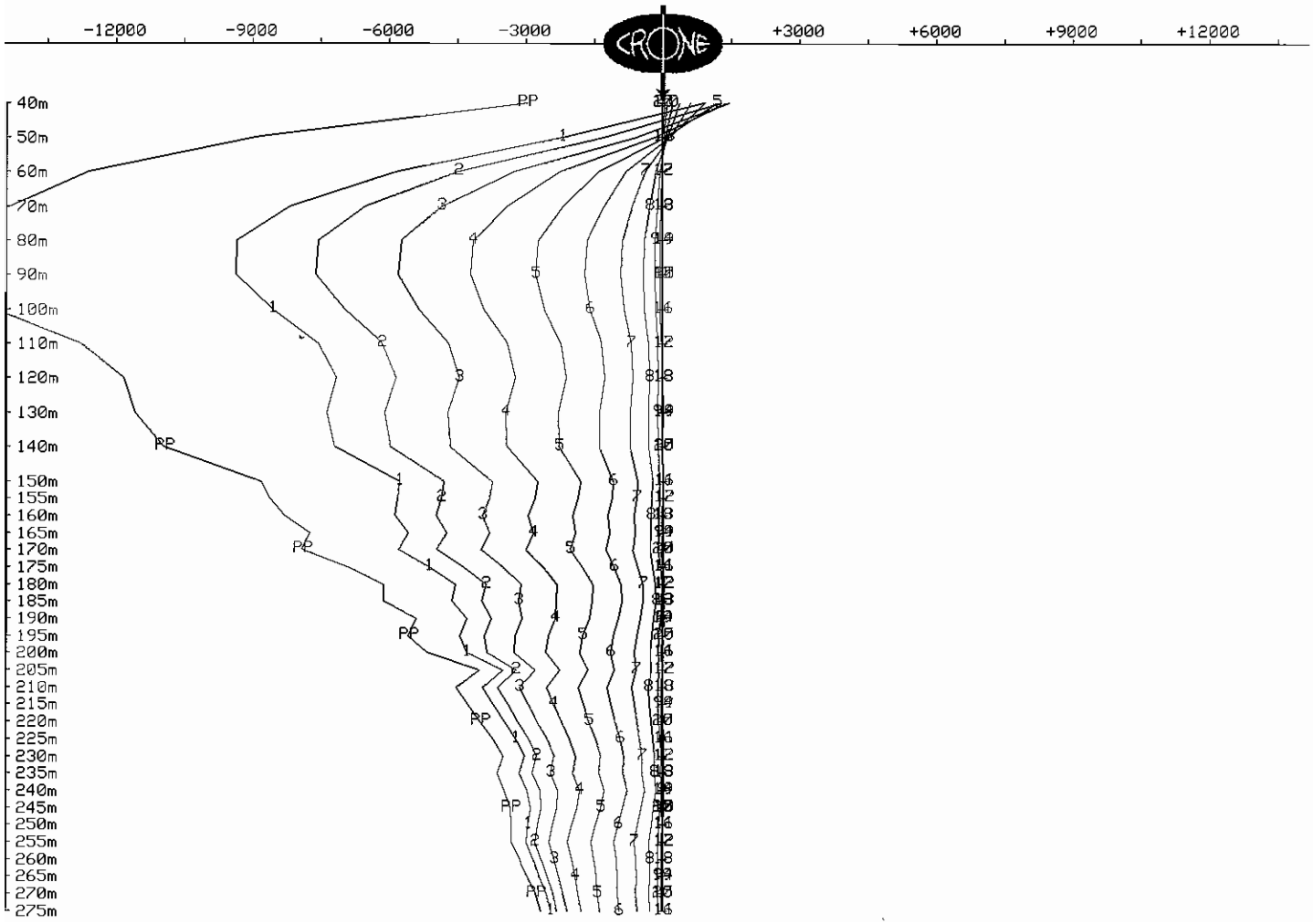


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-16**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 7, 2008	File name	: WRD16XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
X COMPONENT dBx/dt nanoTesla/sec - 20 of 36 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 1500 nT/s

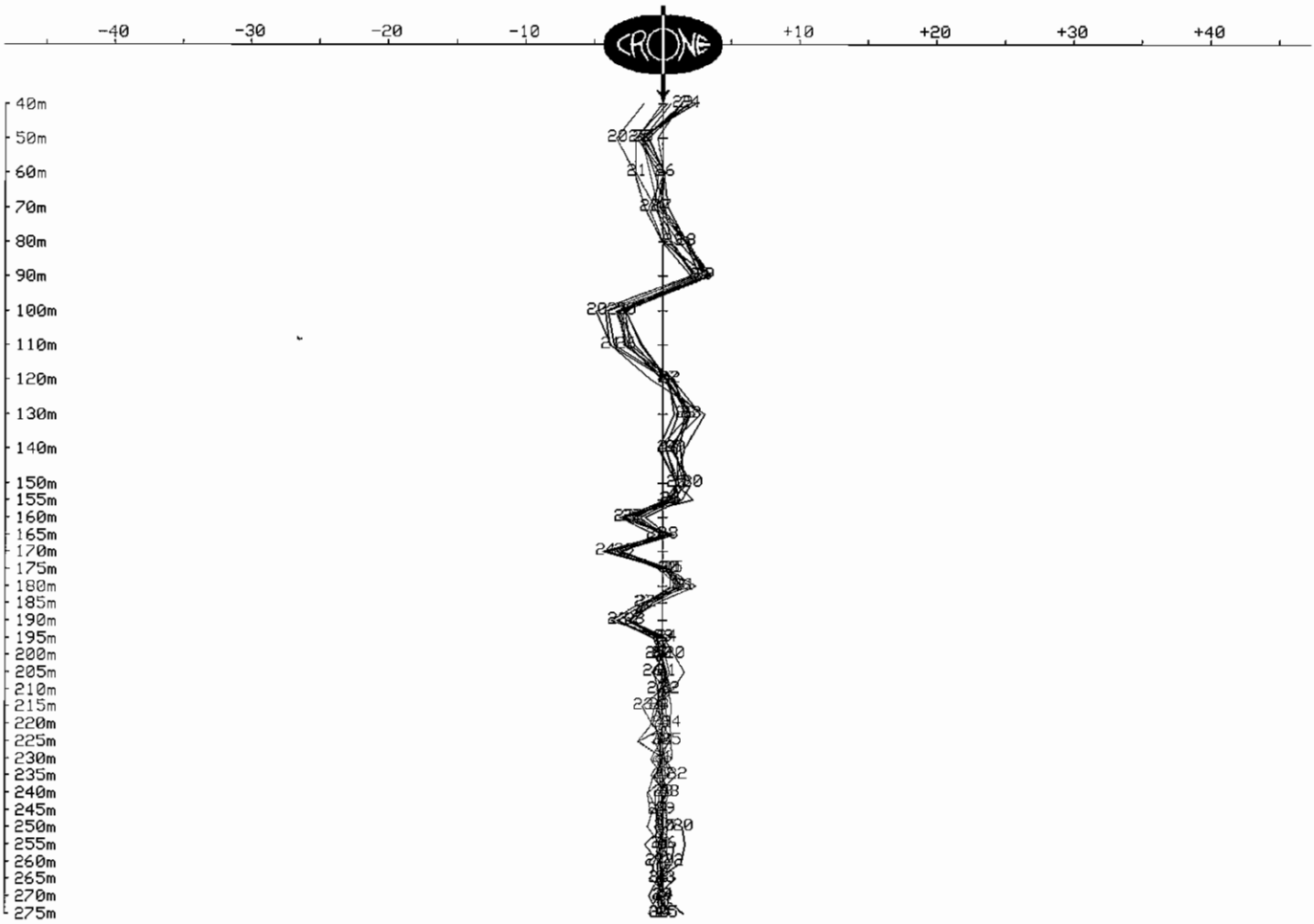


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-16**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 7, 2008	File name	: WRD16XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
X COMPONENT dBx/dt nanoTesla/sec - 11 of 36 channels

Scale: 1:2000 Unit Scale: 1cm = 5 nT/s

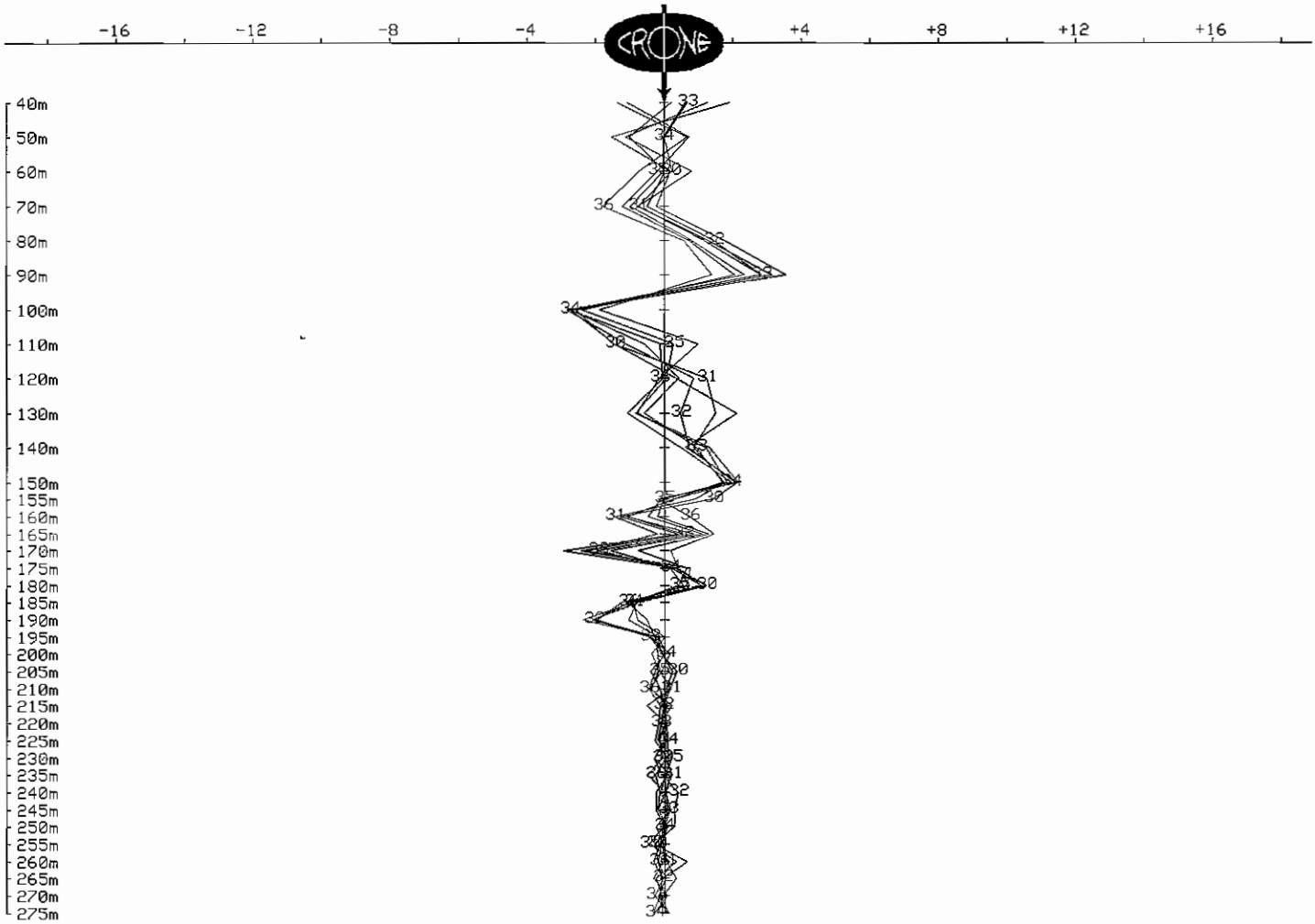


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-16**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 7, 2008	File name	: WRD16XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
X COMPONENT dBx/dt nanoTesla/sec - 7 of 36 channels

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

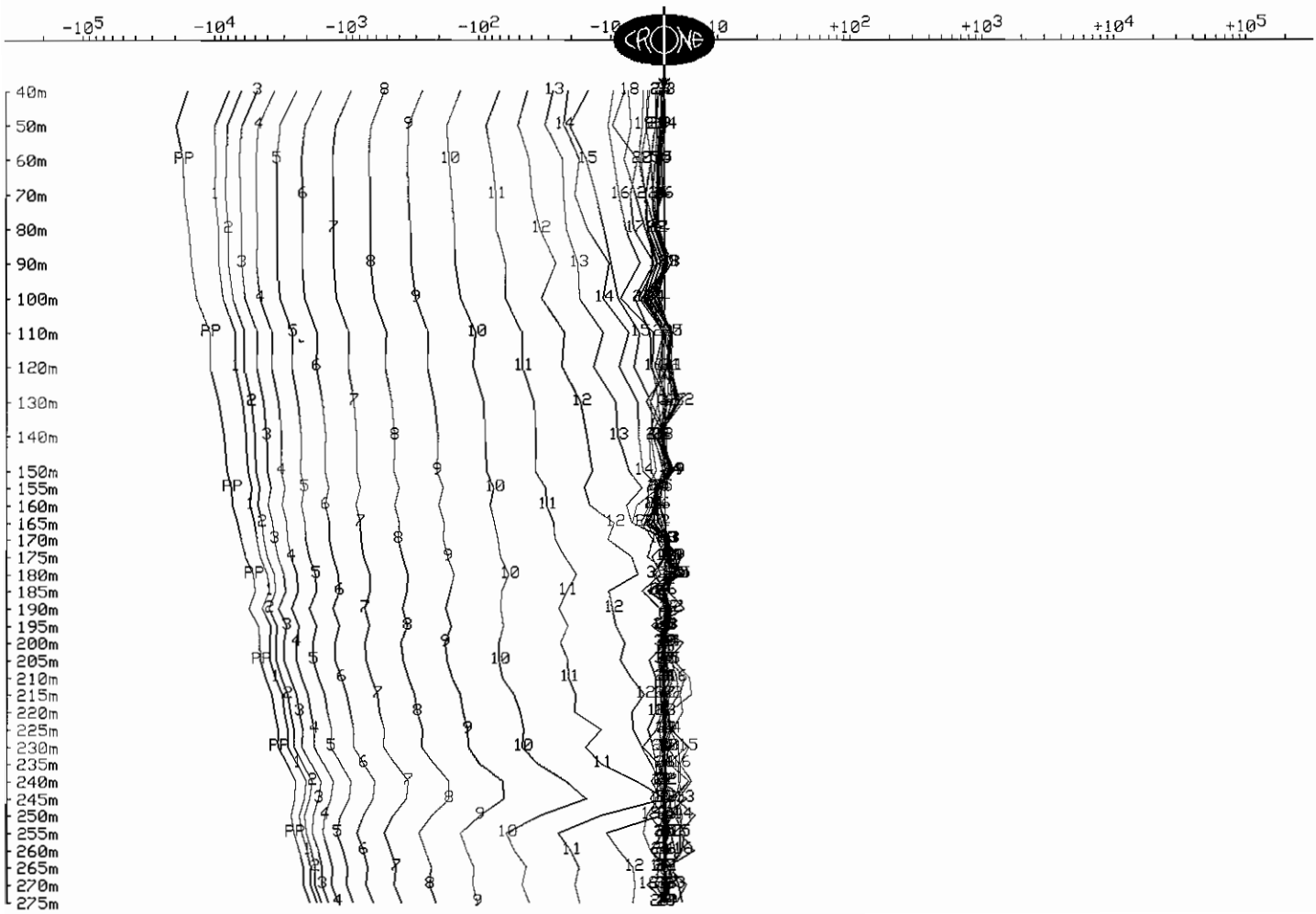


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-16**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 7, 2008	File name	: WRD16XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
Y COMPONENT dBy/dt nanoTesla/sec - 36 of 36 channels and PP

Scale: 1:2000

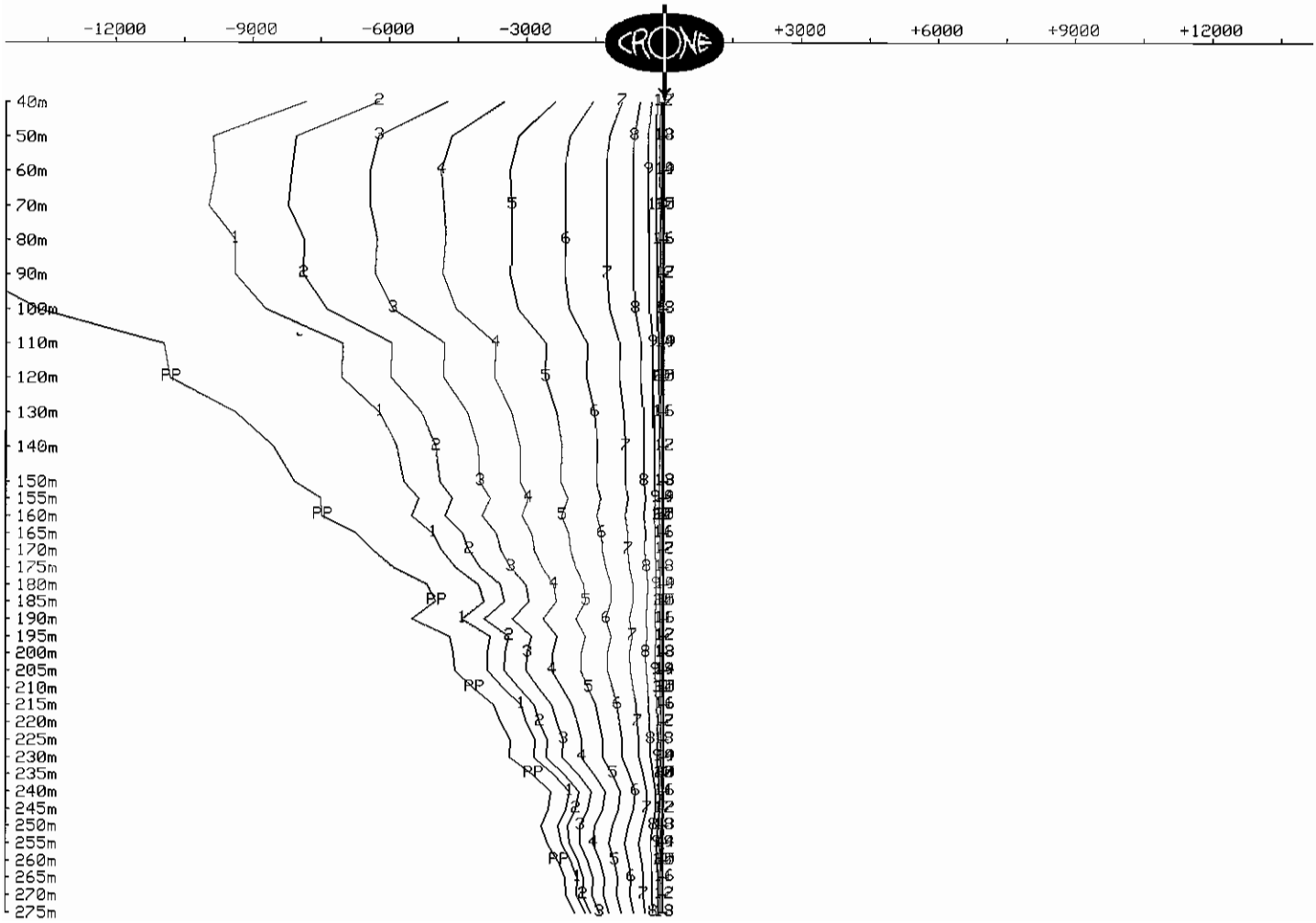


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-16**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 7, 2008	File name	: WRD16XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
Y COMPONENT dBy/dt nanoTesla/sec - 20 of 36 channels and PP

Scale: 1:2000 Unit Scale: 1cm = 1500 nT/s

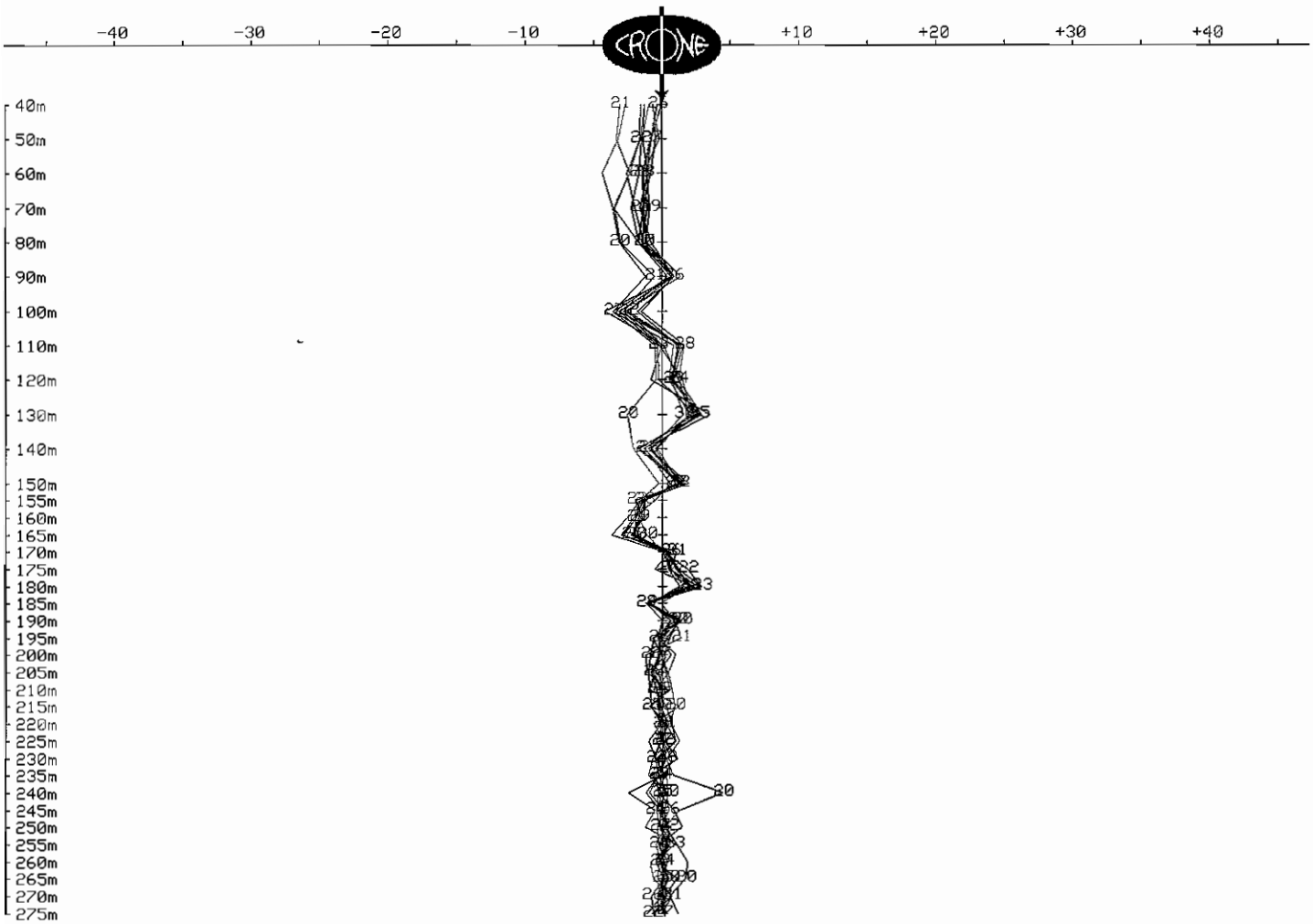


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-16**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 7, 2008	File name	: WRD16XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #28
Y COMPONENT dBy/dt nanoTesla/sec - 11 of 36 channels

Scale: 1:2000 Unit Scale: 1cm = 5 nT/s

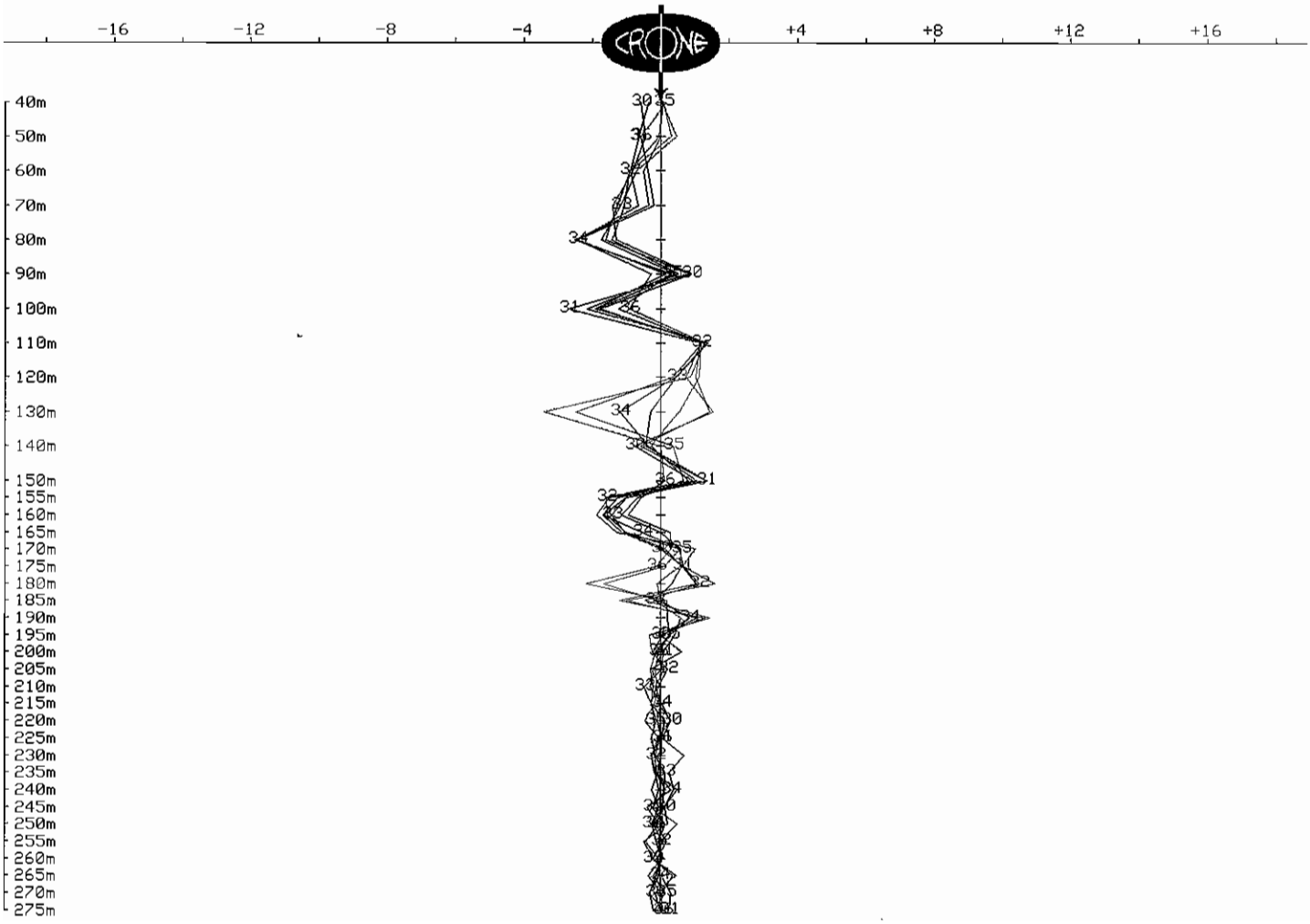


OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-16**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 7, 2008	File name	: WRD16XY.PEM

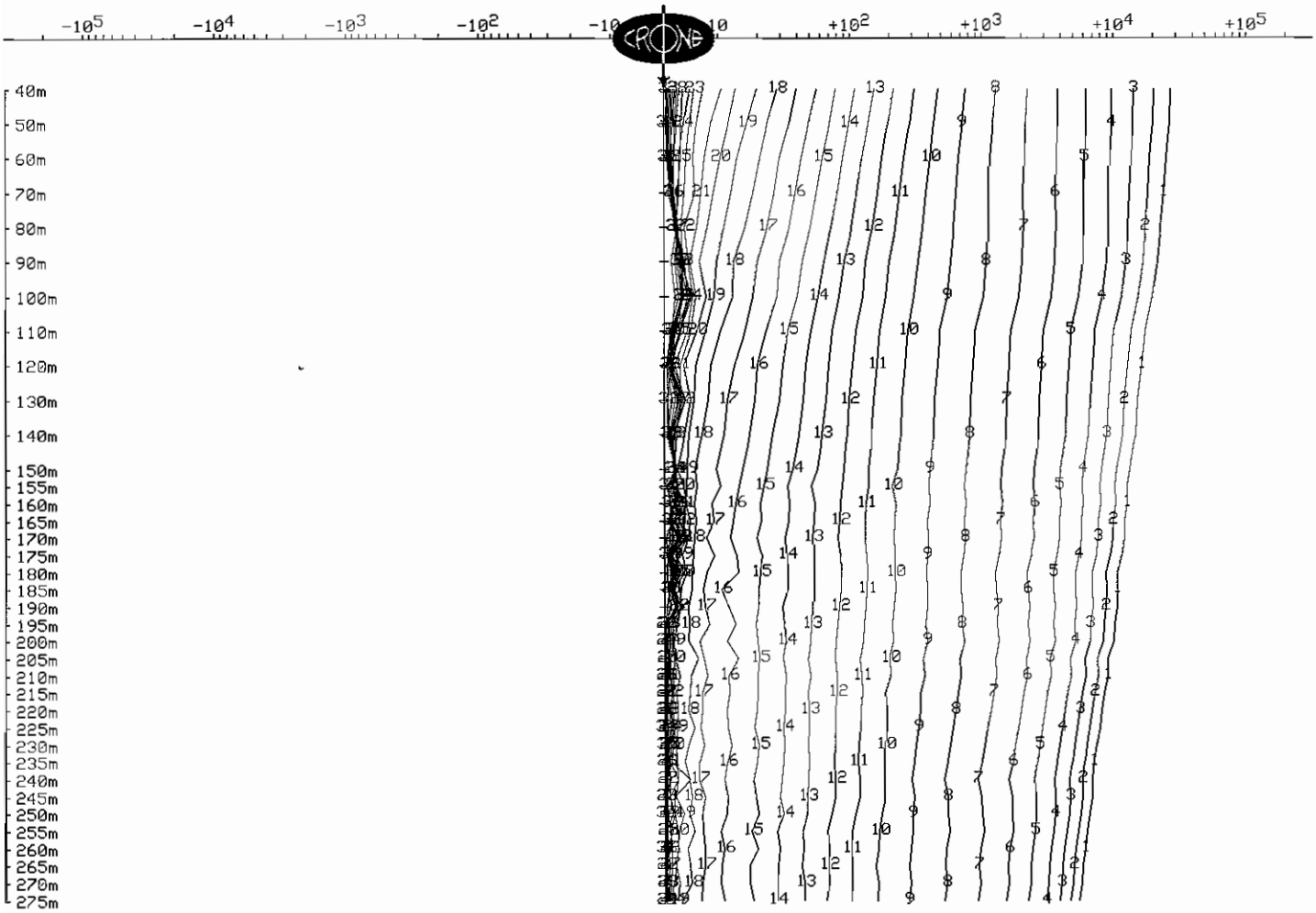
Data Corrected for Probe Rotation using Orientation Tool #28
Y COMPONENT dBy/dt nanoTesla/sec - 7 of 36 channels

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



OUTER-RIM EXPLORATION SERVICES
Borehole Pulse EM Survey

Client	: **Jaguar Minerals Ltd**	Hole	: **WRD-16**
Grid	: **Wilson River**	Tx Loop	: **WR1**
Date	: Nov 7, 2008	File name	: WRD16XYZ.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 36 of 36 channels

Scale: 1:2000