POLARIS MINERALS CORPORATION

REPORT ON

TRANSIENT ELECTROMAGNETIC SURVEY

AT THE

ORCA SAND AND GRAVEL PROJECT

NORTHERN VANCOUVER ISLAND, B.C.

Nanaimo Mining Division

Alberni, Dolphin, Cougar, Raven, Wolf, Frog, and Elk Claim Blocks

Longitude: 127°10' West

Latitude: 50° 36' North

NTS: 92L/10&11 (92L054, 055, 064, R065)

by

Kevin Payne, P.Eng.
and
Cliff Candy, P.Geo.

February, 2005 **PROJECT FGI-802**

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ILLUSTRATIONS

1. INTRODUCTION

In February of 2005, Frontier Geosciences Inc. carried out a transient electromagnetic (TEM) investigation for Polaris Minerals Corporation, at the Orca sand and gravel deposit near Port McNeill, B.C. A total of 68 TEM central soundings were measured, using a 100 metre square transmitter loop. The TEM survey was conducted over existing grid lines cut for a seismic refraction survey carried out in June, 2003. The purpose of the investigation was to assess the stratigraphy of the basal layers that underlie the sand and gravel deposit, by measuring the electrical resistivities of the subsurface geology.

2. PROPERTY CLAIMS INFORMATION

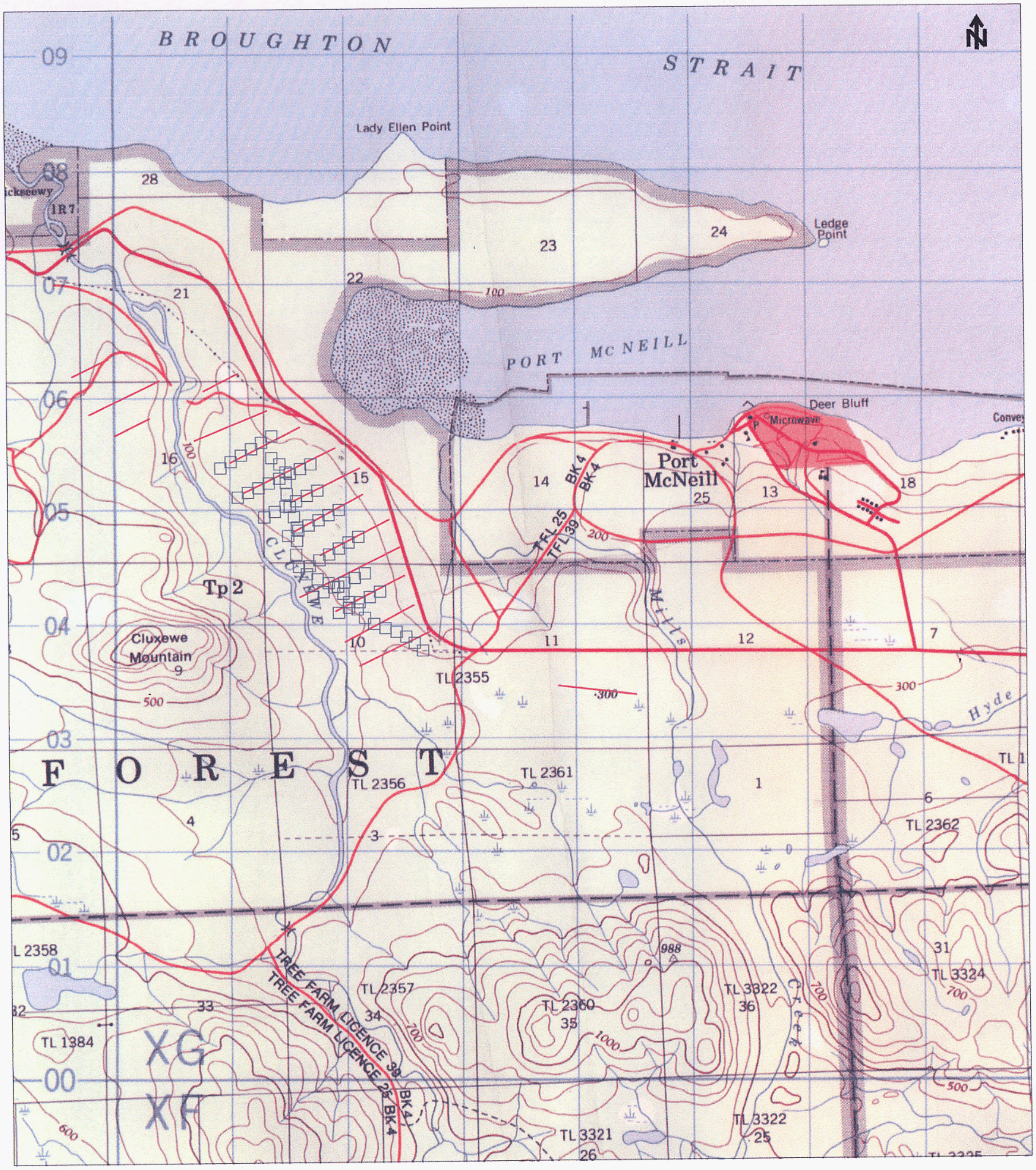
A description of the Alberni, Dolphin, Cougar, Raven, Wolf, Frog, and Elk Claim Blocks is as follows:

Tenure Number	Claim Name	Owner Number	Map Number	Work Recorded To	Status	Mining Division	Area	Tag Number
385367	ALBERNI	143485 100%	092F02W	2010.03.29	Good Standing 2010.03.29	01 ALBERNI	20 un	239465
410433	DOLPHIN	143485 100%	092L11E	2005.04.28	Good Standing 2005.04.28	11 NANAIMO	12 un	245450
410434	COUGAR	143485 100%	092L11E	2005.04.28	Good Standing 2005.04.28	11 NANAIMO	20 un	245449
410435	RAVEN	143485 100%	092L11E	2005.05.05	Good Standing 2005.05.05	11 NANAIMO	20 un	245446
410436	WOLF	143485 100%	092L11E	2005.05.07	Good Standing 2005.05.07	11 NANAIMO	20 un	245448
410437	FROG	143485 100%	092L11E	2005.05.10	Good Standing 2005.05.10	11 NANAIMO	10 un	245451
410438	ELK	143485 100%	092L11E	2005.05.13	Good Standing 2005.05.13	11 NANAIMO	20 un	245453

3. LOCATION AND ACCESS

The claims are located approximately four kilometres west of Port McNeill, adjacent to the main highway on Vancouver Island, BC. A Survey Location Plan of the area of investigation is shown at 1:50,000 scale in Figure 1. The claims are located at approximately longitude 127°10' west and latitude 50° 36' north, on NTS mapsheet 92L/11.

Port McNeill is located 350 kilometers northwest of Vancouver, British Columbia at latitude 50 degrees 30 seconds and longitude 126 degrees 17 seconds. It is a forest-based town with a population of about 3,000. The town has a good supply of skilled industrial workers. Three logging companies, Weyerhaeuser, Western Forest Products and Canadian Forest



0 500 1000 1500 2000

METRES

APPROXIMATE LOCATION OF SEISMIC LINE

APPROXIMATE LOCATION OF TEM SOUNDING

NTS MAPSHEET 92 L/11 ' PORT McNEILL'

POLARIS MINERALS CORP. PORT McNEILL, BC		
TRANSIENT EM SURVEY		
SURVEY LOCATION PLAN		
FRONTIER GEOSCIENCES INC.		
DATE: FEB. 2005	SCALE 1:50,000	FIG. 1

Products provide the majority of employment in the area. Fishing and tourism are the other main industry employers. Access is via ferry from Vancouver to Nanaimo and a 3.5 hour drive north on Island Highway #19. Daily scheduled air flights by Pacific Coastal Airlines are available from Vancouver to Port Hardy, which is located 40 kilometers northwest of Port McNeill. Port Hardy has a population of 5,000. Charter aircraft and helicopters are located both at Port McNeill and Port Hardy. A network of private logging roads maintained by Weyerhaeuser and Western Forest Products provide excellent access to the project area. The area has been extensively logged over the last 100 years.

Northern Vancouver Island has a typical, west coast marine climate, which brings cool, moist weather to the area for most of the year. Annual rainfall ranges from 375 mm to 500 mm. Temperature variations are moderate with an average annual temperature of 8 degrees Celsius (46 degrees Fahrenheit). The summer months, May through September, are considerably drier than the winter. Temperatures average 17.4 degrees Celsius (63 degrees Fahrenheit) in July and August, with hot, sunny days and some cooler days as well. Rarely does the temperature fall below 0 degrees Celsius (32 degrees Fahrenheit) in the winter.

4. GENERAL GEOLOGY

The survey area is located in an Upper Cretaceous deposit of Nanaimo Group Equivalents: "Medium to coarse-grained arkosic to lithic wacke, pebble to cobble conglomerate, siltstone and minor coal. Locally fossiliferous." (Nixon et. al, 2000). Local Tertiary outcrops of Alert Bay Volcanics are found nearby, and west of the site is a high-angle fault, separating the Nanaimo Group from the Upper Triassic to Middle Jurassic Bonanza Volcanics Group. The Island Copper porphyry deposit is located in the Bonanza Group, about 23 km west of the survey area.

The following description of the geological history of the area is taken from Nordin and Boronowski, 2002:

"Bedrock geology of the area is complex consisting of Mesozoic age volcanic and sedimentary rocks that have been intruded by Jurassic age granites and overlain by coeval extensive volcanic rocks. The bedrock has been extensively modified by glaciers during the Pleistocene period. In general most of the surficial material shown on the maps Figures 2-4 and 7-11 are related to the most recent glacial episode, the Fraser Glaciation, which occurred 9,000 to 25,000 years ago.

During the maximum extent of the Fraser glaciation about 15,000 years ago, ice from the Coast Mountains on the mainland overrode the east coast of Vancouver Island in a northwesterly direction across the then ice-free Nahwitti lowlands in the Port Hardy- Port McNeill area. The glaciers began receding 13,000 years ago with the uplands and mountain peaks emerging first.. Vast amounts of melt waters flowed from the decaying ice masses in the Vancouver Island Mountains and the Nahwitti lowlands. Thick sequences of sand and gravel were deposited around the bedrock highs and decaying ice masses in the Susquash basin in deltas where the waters emptied into the sea.

A large complex three pronged delta was formed in the Port McNeill area over an area measuring 25 kilometers (east-west), by 10 kilometers (north-south). Large braided sand and gravel deltaic deposits were formed at the east end of Rupert Inlet (15 kilometers west of Port Hardy), along the Cluxewe River and along the Nimpkish River. Later glacial lacustrian varved-clay deposits were laid down after the melting of the mountain glaciers. Thick lacustrian deposits are mapped on the west end of Port McNeill Inlet and Port McNeill town site measuring 4 kilometers by 3 kilometers. Thin isolated lens of lacustrian clay are also mapped on top of sand and gravel deposits east of the Cluxewe River and on the west end of Malcolm Island.

Coastal areas were depressed during glaciation by up to 100 meters in the Port McNeill area. The land rebounded gradually after the glaciers receded creating large elevated sand and gravel benches in the coastal areas. Recent rivers have eroded these deposits to depths of up to 50 meters."

5. PREVIOUS WORK

An extensive sand and gravel research study was initiated in September 2001 by Polaris in search of large sand and gravel deposits along the coast of British Columbia. The search utilized the extensive BC Government Department of the Environment, surficial geological maps of southern coastal British Columbia from the period 1976-1981. All the major sand and gravel target areas outlined were followed-up by field mapping and sampling by Polaris geologists, Gary Nordin and Alex Boronowski.

The search study indicated the Port McNeill area of Northern Vancouver Island as having the highest potential for a large coastal sand and gravel deposit (Figures 1-5). Mapping by the BC Department of the Environment outlined a very large elevated bench of glacial fluvial deltaic aggregate extending both east and west of Port McNeill with dimensions of 5 kilometers by 10 kilometers.

The area was visited by Polaris geologists, Gary Nordin and Alex Boronowski, in June and September 2001, and mapped in a reconnaissance fashion. Four samples were taken for analysis. Mapping indicated there were two large potential coastal sand and gravel target areas near Port McNeill; 1) Cluxewe River Area and 2) Weyerhaeuser Area. The findings are contained in a report "North Island Aggregates - Proposed Exploration Program, October 2001".

Following the Port McNeill field examination negotiations towards an Exploration and Development Joint Venture were initiated with the Kwakiutl and Namgis First Nations, whose traditional Territories cover the potential sand and gravel target areas. Upon signing an agreement with the Kwakiutl First Nation a more detailed exploration program was conducted over the Port McNeill area targets during the period October 31 to November 8, 2002. Nineteen samples were taken for analysis. One employee from the Kwakiutl First Nation band at Fort Rupert, BC accompanied Polaris geologists during this program.

Seismic refraction surveying over the four Cluxewe River Area, potential sand and gravel deposits was undertaken to determine the thicknesses and compositions of overburden materials overlying bedrock, and the depths to and configuration of, the competent bedrock surface. A total of approximately 10 kilometres of seismic refraction surveying was completed in June, 2003. A sonic drill program was also completed in 2003, to determine the geologic stratigraphy in the claims areas.

6. THE TRANSIENT ELECTROMAGNETIC SOUNDING METHOD

Geo-electric sounding and profiling methods are used to determine the configuration of subsurface materials based upon their capacity to pass electrical current. The Transient Electromagnetic survey is an inductive method utilizing the behaviour of electromagnetic signals to determine ground resistivity. In this survey, the Transient EM method was employed to detail behaviour of geologic units and infer characteristics of their composition.

The electrical resistivity of a geological unit is determined by the amount of contained water, the distribution of the water within the unit, the quality of dissolved solids in the water, and the presence of minerals such as clays with conductive ion exchange properties.

Thus the resistivity of most granular soils and rocks is controlled more by porosity, water content and water quality than by the conductivity of matrix materials.

6.1 INSTRUMENTATION AND FIELD PROCEDURE

The instrument utilized in this survey was the Geonics Ltd. Protem Transient EM system. This system is comprised of a Protem receiver used in conjunction with both the TEM-47 and TEM-57 transmitters.

In operation, a primary field is provided by the transmitter driving a transmitter loop appropriate for the depth of exploration. In this survey a 100 m by 100 m loop was used in order to explore depths of up to 600 m.. The transmitter produces a bipolar rectangular current in the loop with a finely controlled linear ramp current shutoff. The rapid change of current in the loop results in the induction of a current circulation in the ground beneath the loop, often described as a 'current filament'. A multi-turn coil connected to the receiver samples the secondary magnetic field resulting from this current filament during the primary off time, immediately following termination of the ramp. The variation in this magnetic field, as the current filament sweeps through the materials in the section, contains diagnostic information on the resistivities and thicknesses of the layers encountered.

The receiver coil, synchronized with the transmitter by means of a cable reference, is situated at the middle of the 100 m by 100 m wire loop. The Protem receiver samples 20 channel windows on the secondary field decay.

Two receiver coils were utilized in this survey in order to capture a range of data sampling repetition rates. A high-frequency coil collected the 285 Hz and 75 Hz repetition rates and a low-frequency coil collected the 30 Hz, 7.5 Hz, and 3 Hz repetition rates. At each repetition rate, twenty data points are collected from 6.85 microseconds to 701 microseconds during the primary off time. The receiver stores 1000 data sets in memory together with labels, gain, and other information for later download to the field computer for processing and display.

6.2 DATA PROCESSING

The data is provided by the instrument in gain-uncorrected millivolts and is normalized to convert to units of time derivative of the magnetic field (nanovolts/m^2). The data are converted to apparent resistivity which is plotted versus time in log-log format. The twenty channels record approximately two decades of coverage at ten points per decade, providing sufficient information to resolve a multiple layer earth model. The data are then modelled using an inversion technique incorporated in the TEMIXGL program to produce an inverted section of true resistivities. The maximum contribution to the response results from materials in close proximity to and directly below the transmitter loop so good lateral resolution of layering behavior is obtained.

6.3 LIMITATIONS

The depths to subsurface boundaries derived from transient electromagnetic soundings are generally accepted as accurate to within fifteen percent of the true depths to the boundaries. In some cases, unusual geological conditions may produce misleading data points with the result that computed depths to subsurface boundaries may be less accurate. These conditions may be caused by thin layer equivalence effects or by lateral changes in the layers on a scale smaller than the transmitter loop spacing or the electrode spacing.

The results are interpretive in nature and are considered to be a reasonably accurate presentation of subsurface conditions at the site within the limitations of the transient electromagnetic method.

7. GEOPHYSICAL RESULTS

7.1 General

The results of the Transient E.M. survey are illustrated in the Resistivity Profiles shown in Figures 3 to 10 in the Appendix. TEM Line 1 is the longest line, and is shown in Figure 3 at a scale of 1:10,000. The other lines are shown in Figures 4 to 10, at a scale of 1:5,000. The profiles show the interpreted resistivity distributions to a maximum depth of approximately 600 metres.

7.2 Discussion

The results indicate that the near-surface materials are electrically resistive, with an apparent resistivity of about 2000 ohm-metres, which correlates with the sands and gravels encountered by the drilling program. This resistive layer is generally about 60 to 80 metres thick, which correlates with the thickness of materials that were indicated by the seismic refraction survey to overly the more competent bedrock.

Below the electrically resistive surficial deposits, a highly conductive layer was indicated by the TEM data, with an apparent resistivity of approximately 30 ohm-metres. The top of this layer was in general agreement with the seismic interpreted depth to bedrock, as shown in Figures 4 to 10. The depth to bedrock was interpolated from the seismic results, and projected onto the TEM survey lines, as shown by the cyan-coloured line in these figures. The drill holes that extended to these depths encountered clays and siltstones, which are generally electrically conductive. This layer is about 100 to 300 metres thick, and is prevalent on all of the TEM survey lines. In general, the thickness of this layer increases substantially towards the northeast ends of the lines, and the base of this conductor dips at an angle of zero to 30 degrees from horizontal.

The TEM data indicate that an electrically resistive layer lies below this strong conductive layer, with a apparent resistivity of about 800 ohm-metres. The top of this resistive layer is at an elevation of -100 to -500 metres. In some areas the thickness of this resistive layer was indicated by the presence of a second highly conductive layer that underlies it, but in other areas the thickness of the resistive layer was too great to determine its extent. Where the thickness could be measured, it was indicated to range from about 150 to 350 metres. No drilling results are available at these depths to aid in identifying the material types in this intermediate resistive layer.

Where it could be detected, the second conductor that underlies the intermediate resistive layer indicated an apparent resistivity that was similar to the values measured in the upper conductive layer. This suggests a possibly similar material type of clays or siltstones in the basal conductor.

8. SUMMARY AND CONCLUSIONS

The TEM survey results was successful in measuring the geological stratigraphy of the bedrock that lies below the surficial deposit of sands and gravels. This surficial layer is electrically resistive, and lie above an electrically conductive layer of bedrock. The interpreted depth to bedrock from the seismic refraction survey correlated well with the top of this conductive layer, which the drilling results indicated is composed of clays or mudstones.

The conductive bedrock layer is underlain by another resistive layer, which is as shallow as elevation -100 metres on the western end of the survey lines, and as deep as about elevation -450 metres on the eastern end. No drilling results are available at these depths to compare with the TEM results. In some areas the resistive layer was too thick to be able to detect its extent, but in other areas its thickness was defined by the presence of a second conductive layer that was detected to lie below it. The high slope angles and large contrast in the apparent resistivities of the bedrock layers are consistent with the local geology, which describes a mixture of sedimentary deposits and volcanic intrusives.

9. RECOMMENDATIONS

Further drilling is recommended to identify the geological stratigraphy of the bedrock layers, and mineralized zones of possible economic value. Larger loop TEM soundings and more powerful transmitters are recommended to enhance the results and more accurately define the layering deep in the bedrock. Other geophysical techniques that could be used to assess the economic potential of the site include gravimetric surveying to identify zones of high density, and magnetometer surveying to identify mineralization that may be associated with a potential mineral target. Seismic reflection surveying could also be used to identify the stratigraphy of the deep layers detected with the TEM survey.

For: Frontier Geosciences Inc.

Kevin Payne

Kevin Payne, P.Eng..

Cliff Candy

Cliff Candy, P.Geo.

10. STATEMENT OF QUALIFICATIONS, CLIFF CANDY

I, Cliff Candy, Hereby certify that:

1) I am a geophysicist with business offices at 237 St. Georges Ave., North Vancouver, B.C., V7L 4T4.

2) I am a principle of Frontier Geosciences Inc., a company performing geophysical consulting and surveys.

3) I am a graduate of the University of British Columbia in Geophysics (B.Sc., 1977.)

4) I am a member of the Association of Professional Engineers and Geoscientists of British Columbia.

5) I have practiced my profession as a geophysicist for over 27 years.

Signed ____________________

Cliff Candy, P.Geo.
North Vancouver, B.C., February 2005

I, Kevin Payne, Hereby certify that:

1) I am a geophysicist with business offices at 237 St. Georges Ave., North Vancouver, B.C., V7L 4T4.

2) I am an engineer at Frontier Geosciences Inc., a company performing geophysical consulting and surveys.

3) I am a graduate of Queen's University in Geological Engineering (B.Sc.,1994), and a graduate of the University of British Columbia (M.A.Sc., 2002) in Civil Engineering.

4) I am a member of the Association of Professional Engineers and Geoscientists of British Columbia.

5) I have practiced my profession as a geophysicist for over 11 years.

Signed Kevin Payne

Kevin Payne, P.Eng.
North Vancouver, B.C., February 2005

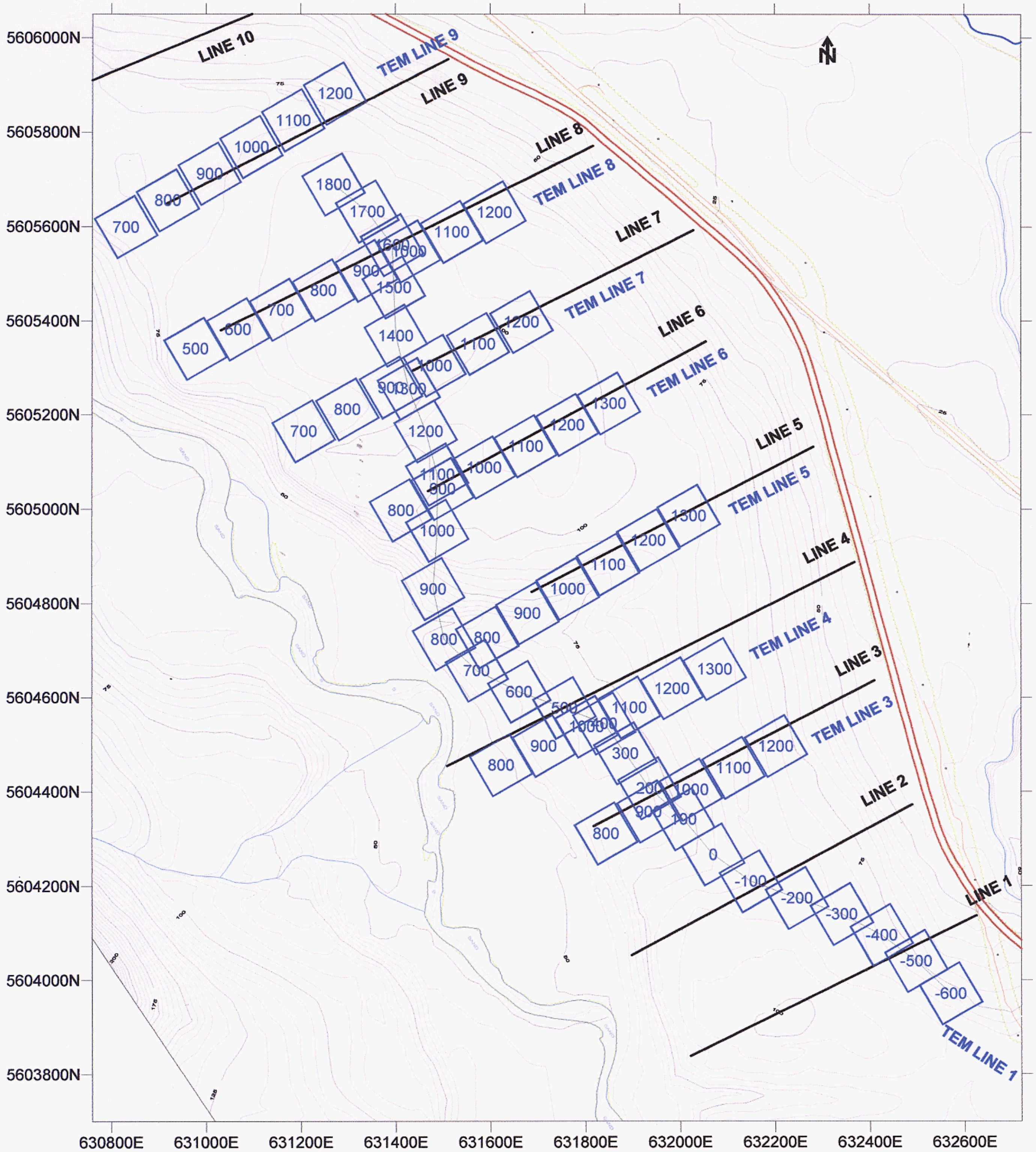
11. COST STATEMENT

Wages:	**Position**	**# Days**	**Rate/Day**	**Amount**	**Totals**
Scott Gifford	Project Manager	12	$400.00	$4,800.00	
Dale Scow	Field Worker	7	$135.00	$945.00	
Bertrum Svanvik	Field Worker	7	$135.00	$945.00	
Mike Hall	Geophysical Operator	7	subcontractor	$0.00	
Subtotal:				$6,690.00	$6,990.00
Disbursements:					
Field Supplies				$122.11	
Groceries & Meals				$842.36	
Ferries & Taxi				$128.50	
Ground Transportation	Ford F150 4x4	1556kms	$0.45/kms	$700.20	
Fuel	Isuzu & Generator			$54.01	
Trimble ScoutMaster	GPS c/w antenna	6	$25.00/day	$125.00	
Subtotal:				$1,972.18	$1,972.18
Subcontractors:					
Frontier Geosciences	TEM Survey Contractor	7	fieldwork	$9,612.26	$9,612.26
			report writing	$3,850.00	$3,850.00
Totals:					$22,424.44
7% GST					$1,569.71
Project Total:					**$23,994.15**

12. REFERENCES

1. Garry Nordin and Alex Boronowski, *Northern Vancouver Island Joint Venture, Kwakiutl First Nations-Polaris Minerals Corporation,* December, 2002.

2. Nixon, G.T., Hammack, J.L., Koyanagi, V.M., Payie, G.J., Haggart, J.W., Orchard, M.J., Tozer, T., Archibald, D.A., Friedman, R.M., Palfy, J. and Cordey, F. (2000): Geology of the Quatsino-Port Mcneill Map Area, Northern Vancouver Island; B.C. Ministry of Energy and Mines Geoscience Map 2000-6.



——	APPROXIMATE LOCATION OF SEISMIC LINE
□	APPROXIMATE LOCATION OF TEM SOUNDING

0 100 200 300 400
METRES

DATUM: NAD 83, UTM ZONE 9

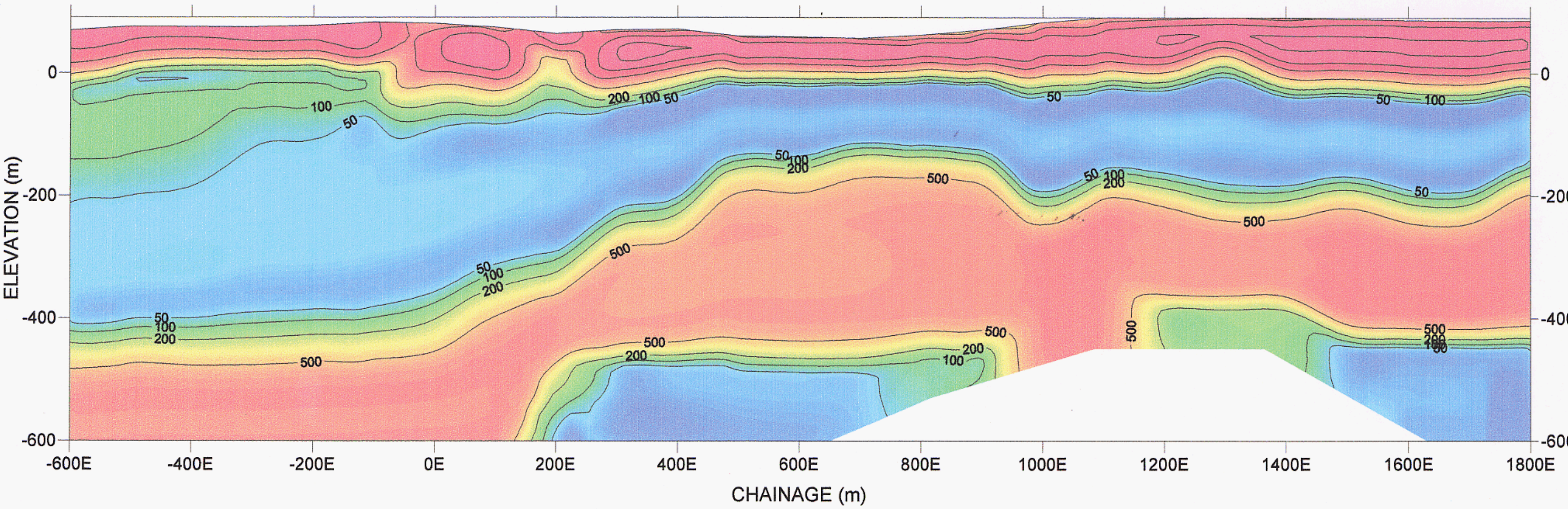
POLARIS MINERALS CORP.
PORT McNEILL, BC

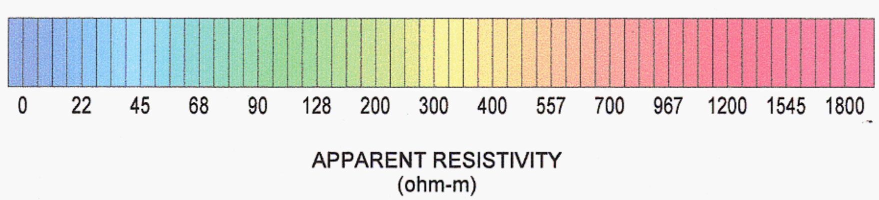
TRANSIENT EM SURVEY

SITE PLAN

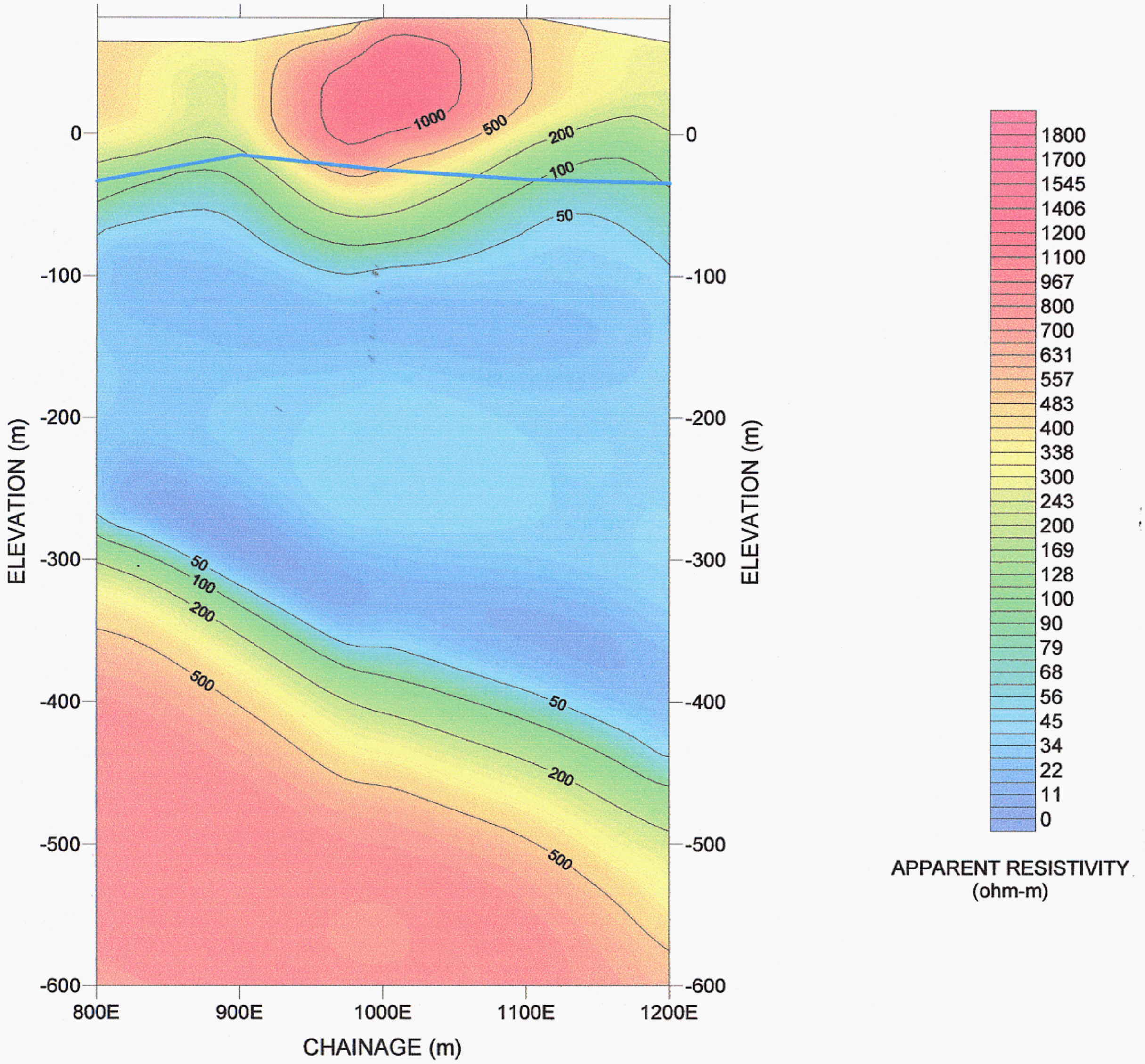
FRONTIER GEOSCIENCES INC.

DATE: FEB. 2005	SCALE 1:12,000	FIG. 2





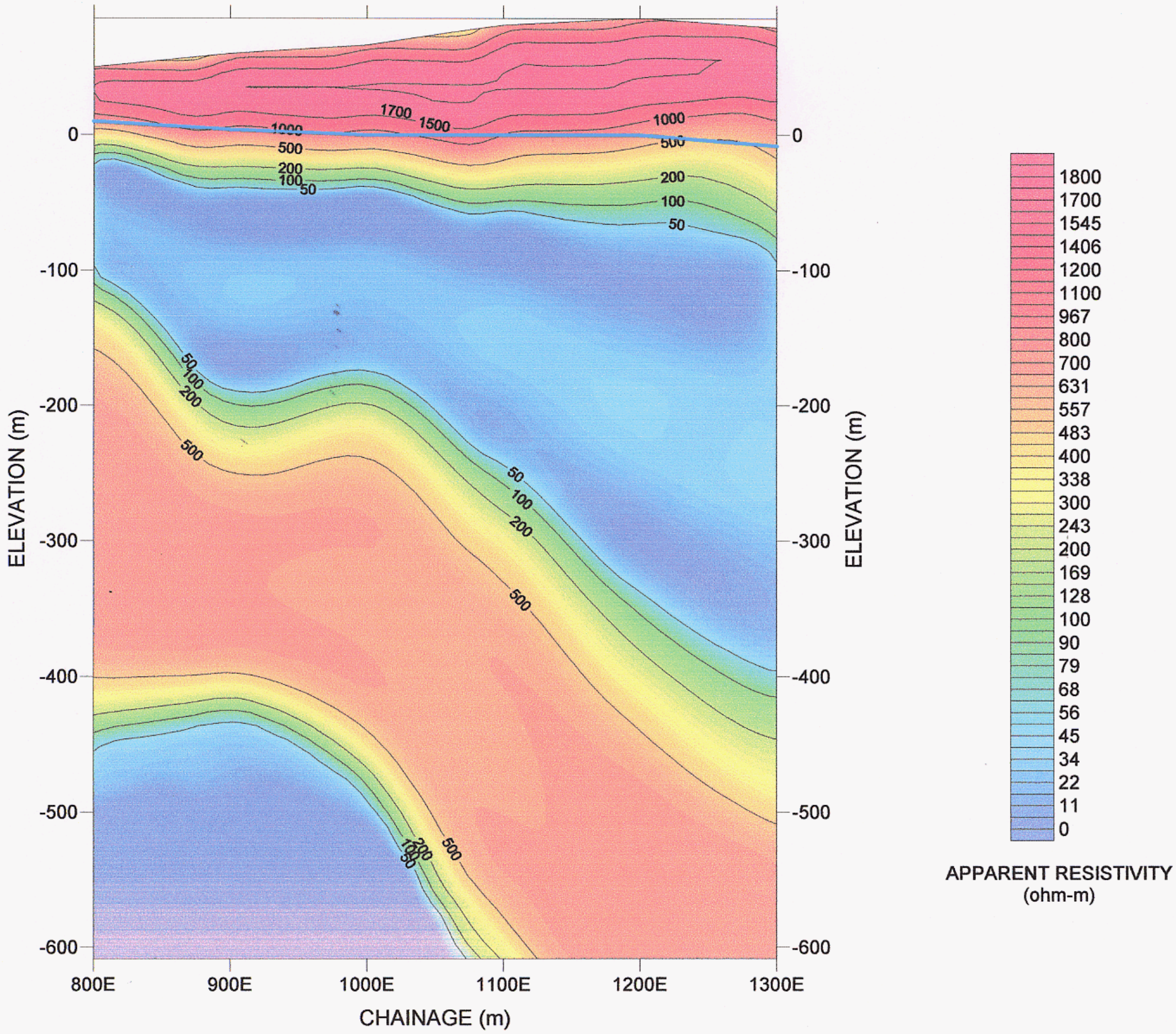
POLARIS MINING CORP. PORT McNEILL, BC		
TRANSIENT EM SURVEY		
LINE 1 RESISTIVITY PROFILE		
FRONTIER GEOSCIENCES INC.		
DATE: FEB 2005	SCALE 1:10000	FIG. 3



LEGEND

INTERPRETED SEISMIC BASAL LAYER

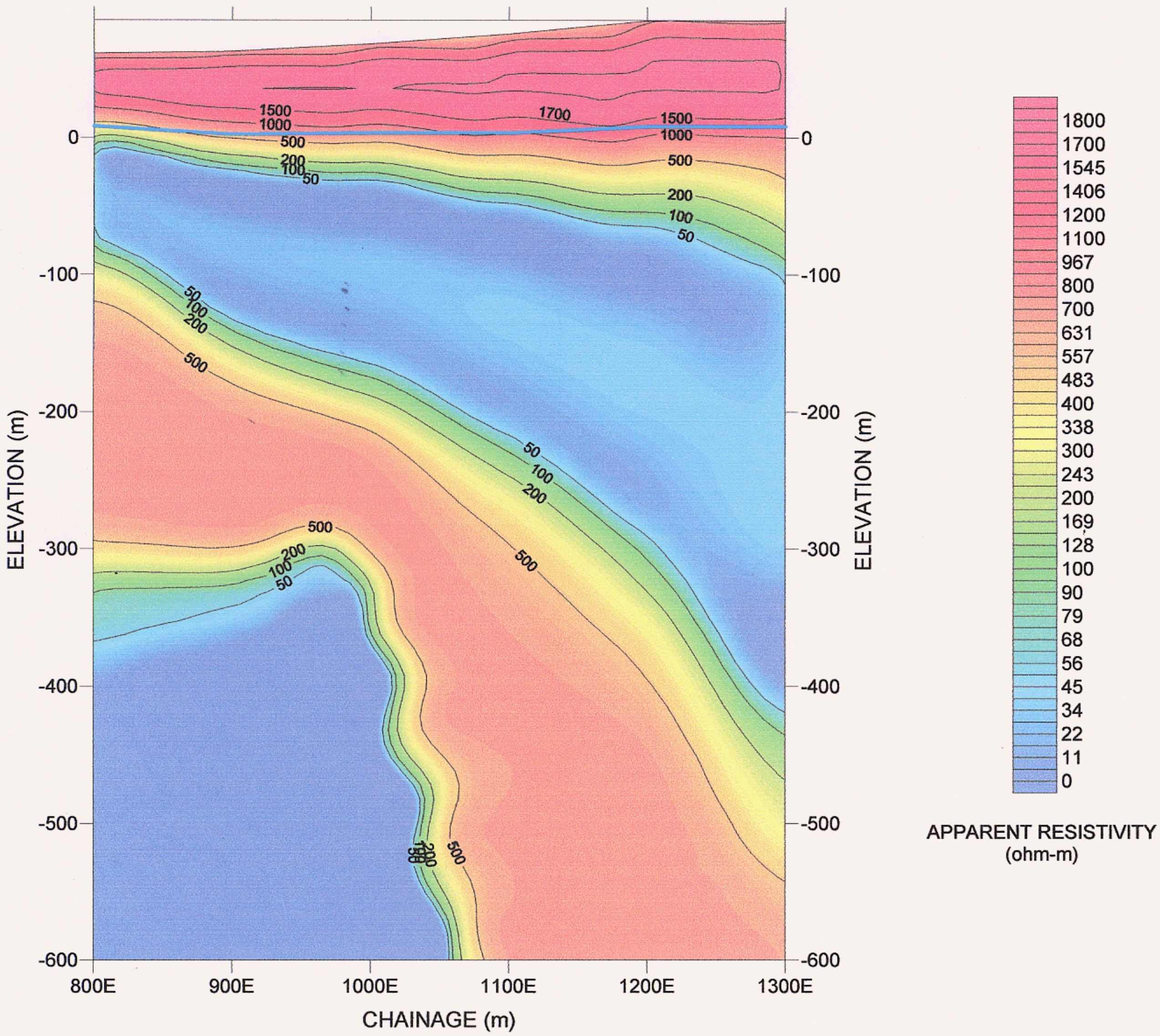
POLARIS MINING CORP. PORT McNEILL, BC		
TRANSIENT EM SURVEY		
LINE 3 RESISTIVITY PROFILE		
FRONTIER GEOSCIENCES INC.		
DATE: FEB 2005	SCALE 1:5000	FIG. 4



LEGEND

INTERPRETED SEISMIC BASAL LAYER

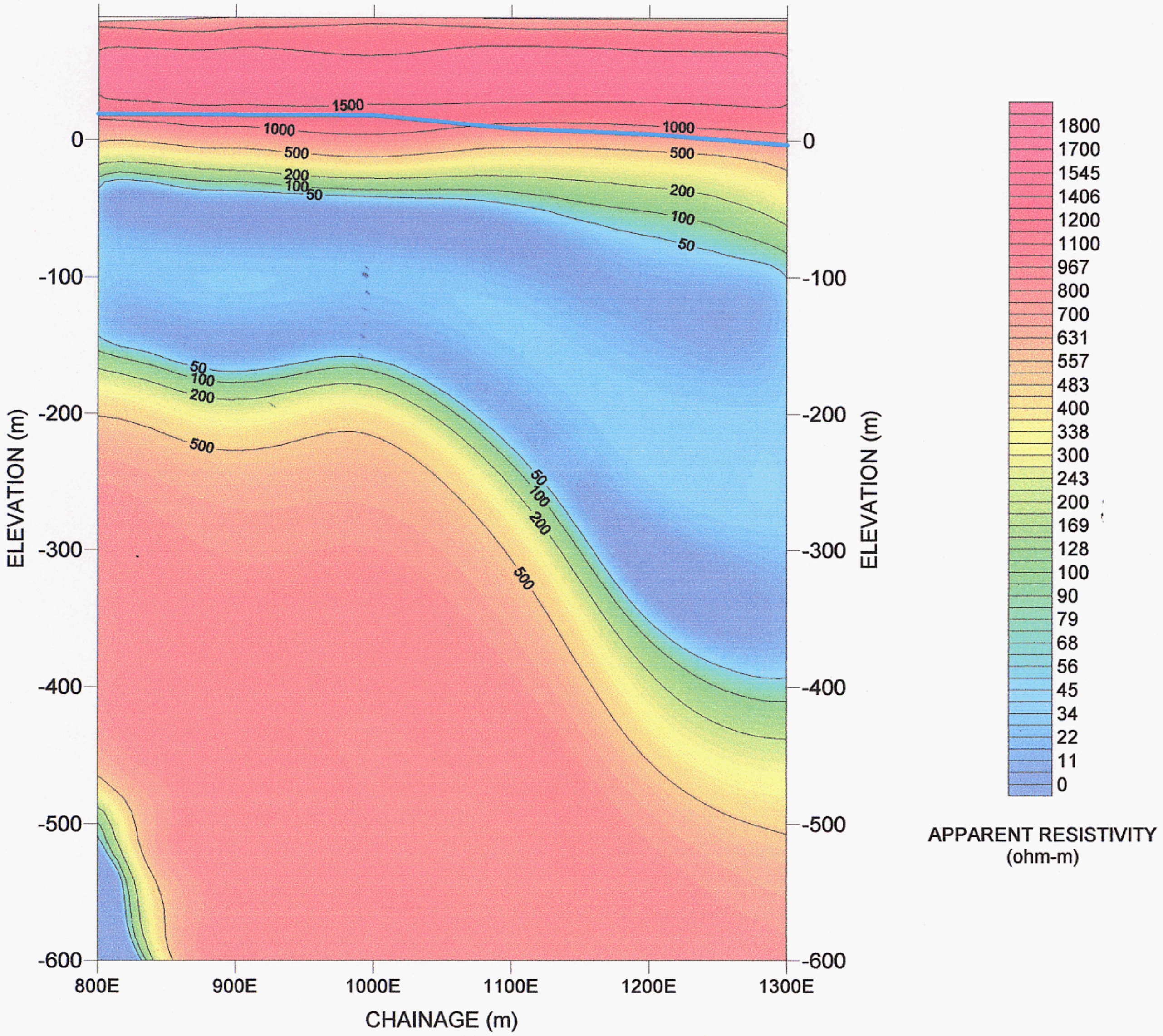
POLARIS MINING CORP. PORT McNEILL, BC		
TRANSIENT EM SURVEY		
LINE 4 RESISTIVITY PROFILE		
FRONTIER GEOSCIENCES INC.		
DATE: FEB 2005	SCALE 1:5000	FIG. 5



LEGEND

INTERPRETED SEISMIC BASAL LAYER

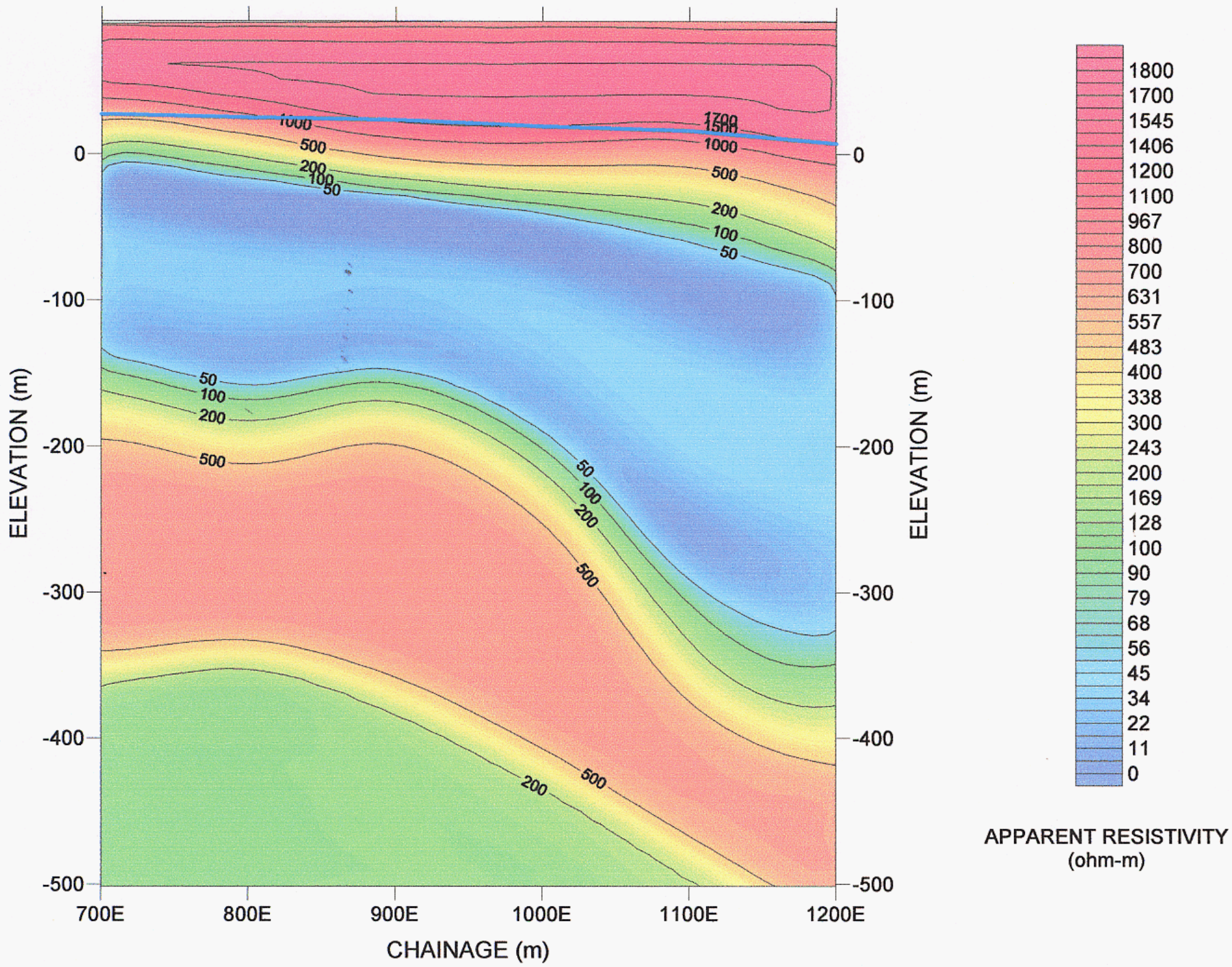
POLARIS MINING CORP. PORT McNEILL, BC		
TRANSIENT EM SURVEY		
LINE 5 RESISTIVITY PROFILE		
FRONTIER GEOSCIENCES INC.		
DATE: FEB 2005	SCALE 1:5000	FIG. 6



LEGEND

INTERPRETED SEISMIC BASAL LAYER

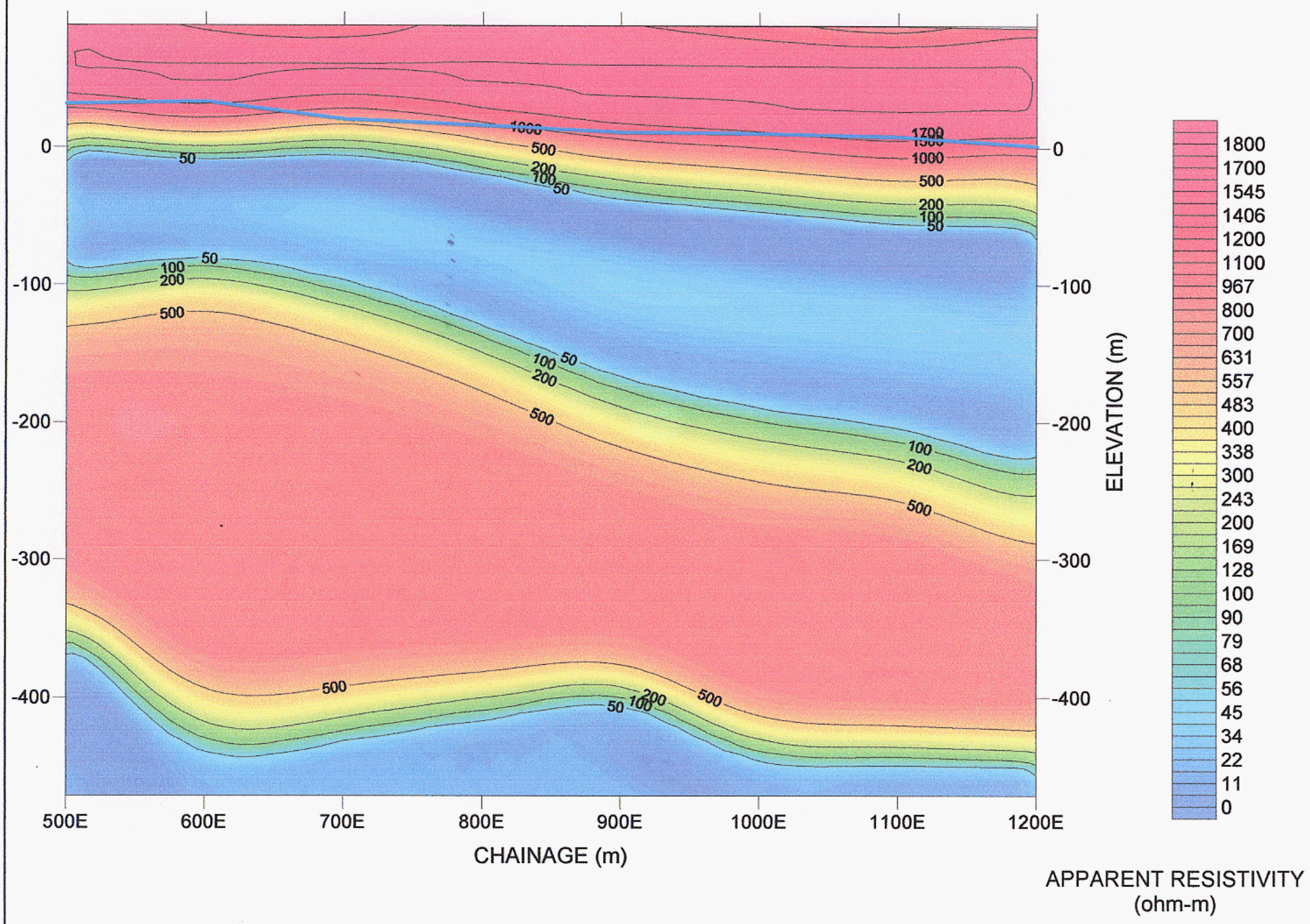
POLARIS MINING CORP. PORT McNEILL, BC		
TRANSIENT EM SURVEY		
LINE 6 RESISTIVITY PROFILE		
FRONTIER GEOSCIENCES INC.		
DATE: FEB 2005	SCALE 1:5000	FIG. 7



LEGEND

INTERPRETED SEISMIC BASAL LAYER

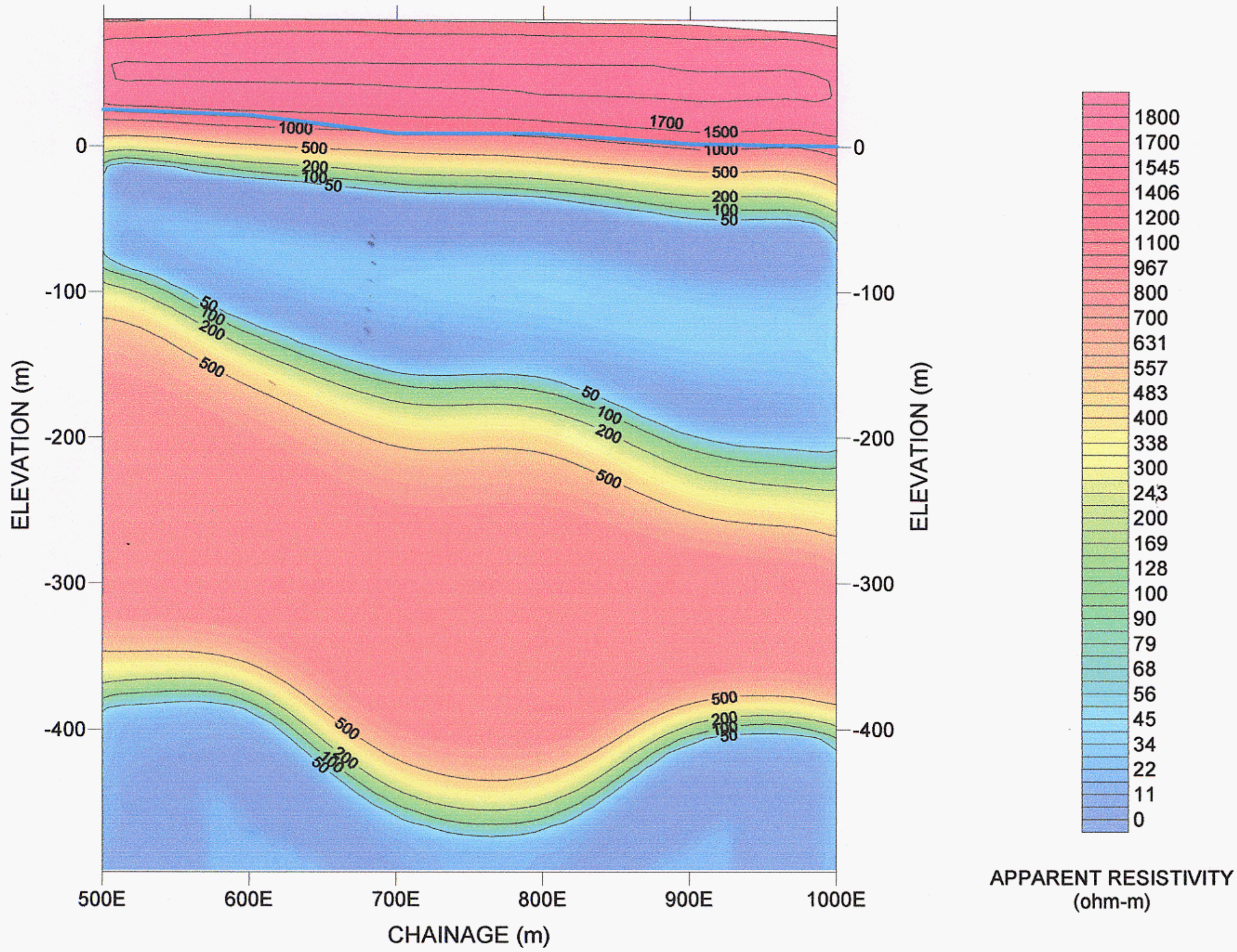
POLARIS MINING CORP. PORT McNEILL, BC		
TRANSIENT EM SURVEY		
LINE 7 RESISTIVITY PROFILE		
FRONTIER GEOSCIENCES INC.		
DATE: FEB 2005	SCALE 1:5000	FIG. 8



LEGEND

INTERPRETED SEISMIC BASAL LAYER

POLARIS MINING CORP. PORT McNEILL, BC		
TRANSIENT EM SURVEY		
LINE 8 RESISTIVITY PROFILE		
FRONTIER GEOSCIENCES INC.		
DATE: FEB 2005	SCALE 1:5000	FIG. 9



LEGEND

INTERPRETED SEISMIC BASAL LAYER

POLARIS MINERALS CORP. PORT McNEILL, BC		
TRANSIENT EM SURVEY		
LINE 9 RESISTIVITY PROFILE		
FRONTIER GEOSCIENCES INC.		
DATE: FEB 2005	SCALE 1:5000	FIG. 10