

**ASSESSMENT REPORT**  
**ON**  
**MAGNETIC and IP/RESISTIVITY SURVEYING**  
**AND**  
**RE-INTERPRETATION (INVERSION)**  
**OF HISTORICAL**  
**INDUCED POLARIZATION and RESISTIVITY SURVEYING**  
**ON THE**  
**TREADWELL/ALLIES PROPERTY**  
**CANNELL CREEK, TRANQUILLE PLATEAU**  
**KAMLOOPS MINING DIVISION, BRITISH COLUMBIA**

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LOCATED: 28 km 325° (N35°W) of the city of Kamloops  
50° 43' North Latitude, and 120°35' West Longitude  
NTS: 92I/15E

WRITTEN FOR: **TREADWELL RESOURCES LTD.**  
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DATED: December 11, 2007

**BC Geological Survey**  
**Assessment Report**  
**32299**

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<b><u>MMI SURVEY PLAN MAPS</u></b>			
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Cerium	1:10,000	GC-1	GC-11
Cobalt	1:10,000	GC-2	GC-12
Copper	1:10,000	GC-3	GC-13
Gold	1:10,000	GC-4	GC-14
Lead	1:10,000	GC-5	GC-15
Molybdenum	1:10,000	GC-6	GC-16
Nickel	1:10,000	GC-7	GC-17
Silver	1:10,000	GC-8	GC-18
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		<i>Pseudosection</i>	<i>Inversion</i>
50+00E	1:10,000	GP-1	GPI-1
49+00E	1:10,000	GP-2	GPI-2
48+00E	1:10,000	GP-3	GPI-3
47+00E	1:10,000	GP-4	GPI-4
46+00E	1:10,000	GP-5	GPI-5
45+00E	1:10,000	GP-6	GPI-6
44+00E	1:10,000	GP-7	GPI-7
43+00E	1:10,000	GP-8	GPI-8
42+00E	1:10,000	GP-9	GPI-9
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## SUMMARY

MMI soil sampling along with grid emplacement was carried out along two grids within the Treadwell/Allies Property during June and July, 2007. This property is located on Cannell Creek about 25 km north of the Afton Mine within the Kamloops Mining Division of B.C.

The first purpose of the sampling was to locate the source of the sulphide-mineralized boulders that occur within Cannell Creek and that carry gold apparently assaying up to 3 oz/ton. The second purpose was to look for base metal mineralization such as porphyry copper type containing gold and silver values such as the nearby Afton Mine. The property covers an erosional window of Nicola Group rocks occurring within much younger Kamloops Group basalts.

Past work by the current owners has included 8,580 meters of IP and resistivity surveying that was carried out during 2004 and 2005 and occurring within the northeastern part of the current Sydney Lake grid area. This survey revealed four anomalous zones that correlated with MMI test sampling (52 samples done on 3 out of the 10 IP survey lines) carried out at the same time

The MMI survey consisted of 1,569 samples which includes 52 from the 2005 survey work. These were bagged and sent to SGS Laboratories in Toronto, Ontario for analysis where they were initially tested for 45 elements for the first 449 samples. The results were examined and this number, for budget purposes, was reduced to 10 elements, or metals, namely, gold, silver, copper, zinc, lead, molybdenum, cobalt, uranium, cerium, and nickel.

Two stacked histograms were then made to show the correlation of the results with each other. The first stacked histograms consisted of copper, gold, silver, and cobalt and the second stacked histograms consisted of nickel cerium lead, and zinc. Plan maps were also made, respectively, of each of the 10 metals for each of the two grids wherein the data was plotted and contoured at a logarithmic interval. The scale for plan maps of the Sydney Lake Grid was 1:6,000 and that for the Pass Lake Grid was 1:2,500.

## CONCLUSIONS

1. Boulders occur within the property within an area called the Boulder Field that have had grab-type assays taken from them and reportedly assaying up to 3 oz/ton. In addition Cannell Creek which drains the property has carried placer gold. It therefore follows that the source of the placer gold and the mineralized boulders occur within the property boundaries.
2. The MMI soil sampling results revealed 11 anomalous zones and/or anomalies over the two grids that have been labeled by the upper case letters A to K. Anomalies A, B, and C were labeled in the writer's previous report on the 2005 work. Anomalies A to I, inclusive, occurs within the Sydney Lake grid and anomalies J and K occur within the Pass Lake grid.
3. Anomalous Zone A is an IP and MMI anomaly consisting of strong values in copper with associated strong zinc results. It also consists of anomalous values in gold, silver lead and cobalt. It strikes in a northwest direction with a minimum strike length of 1,100 meters being open to the northwest as well as the southeast. The correlating IP anomaly indicates the causative source(s) to be base metal sulphides with gold and silver values.
4. Anomalous Zone B is occurs to the immediate northeast of anomalous zone A and primarily consists of anomalous copper along with anomalous lead, zinc, and silver results as well as some anomalous gold and molybdenum results. It has a minimum strike length of 900 meters with it also being open to the northwest and southeast. As with anomalous zone A, the correlating IP anomaly indicates the causative source(s) to be base metal sulphides with possible gold and silver values.
5. Anomalous Zone C consists, for the most part of anomalous copper, silver, and cobalt results with some gold and a correlating IP anomaly along line 3500E. The size of this anomaly is 450 meters in a northeast direction by a minimum 200 meters in a northwest direction with it being open to the northwest. Anomalous zinc results with some lead also occur within this zone as well as around it. This is a typical signature of a porphyry copper deposit and is thus of strong exploration interest especially considering the correlating IP anomaly.
6. Anomalous Zone D also consists of MMI anomalous results correlating with an IP anomaly. It occurs just to the south of anomalous zone C and consists of strong anomalous copper and silver with some cobalt and gold results as well as some anomalous zinc results with most occurring around the zone. As with anomalous zone C, the IP and MMI results suggest the possibility of a porphyry copper deposit. Anomalous zone D strikes in a northwesterly direction, is open to the northwest and

7. Anomalous Zone E consists of strong zinc and lead with elevated uranium and molybdenum results. It occurs on all four lines at the southwestern edge of the survey area and thus is open to the northwest, southwest, and southeast with a minimum size of 350 meters by 300 meters.
8. Anomalous Zone F occurs within the center of the grid area and is about 500 meters square. It consists of highly anomalous results in copper, silver, and cobalt. It also has anomalous results in nickel suggesting that the host rock is basic or possibly ultra-basic. Anomalous zinc results occur along the northwestern edge of the anomaly. As with anomalous zones C and D, zone F could be reflecting porphyry-style type mineralization.
9. Anomaly G is a lineal-shaped MMI anomaly consisting of strong copper, silver and cobalt results striking in a north-northwesterly direction and occurring to the south of anomalous zone A. It has a minimum strike length of 700 meters with it being open to the north-northwest. It also correlates with a nickel anomaly perhaps indicating a basic rock-type, such as an intrusive dyke, that is mineralized with copper silver, and cobalt.
10. Anomaly H is also a lineal-shaped anomaly that strikes in a west-northwest direction and has a minimum strike length of 600 meters being open both to the west-northwest and east-southeast. It occurs to the northeast of anomalous zone B. It consists of strong copper results with some silver and cobalt. It could also be reflecting a mineralized dyke.
11. Anomalous Zone I is a large area with dimensions of 1,400 meters in a north-northeast direction where it is open, by 250 to 700 meters in an east-southeast direction. It consists mainly of a series of lead anomalies with some correlation with zinc anomalies that strike in a northwesterly direction. It is probably reflecting a series of lead mineralized zones that are parallel and sub-parallel to each other.
12. Anomaly J, is the main feature of the Pass Lake MMI grid. It consist of strong correlating copper, gold, silver, cobalt, and nickel anomalous results that appear to be striking northwesterly. The strike length appears to be 500 meters with it possibly being open to the northwest, and the width is 250 to 300 meters.
13. Anomaly K occurs to the immediate northeast of anomaly J and consists of strongly anomalous zinc results with correlating anomalous values in lead and molybdenum. It also strikes northwesterly and has a minimum strike length of 500 meters being open to both the northwest and southeast and a minimum width of 250 meters being open to the northeast. Anomalies J and K are probably within the same system perhaps reflecting, as with anomalous zones C, D, and F, porphyry copper mineralization.

## **RECOMMENDATIONS**

The anomalous zones are prime targets over which exploration should continue and is recommended as follows:

1. Geologically map the property. Special attention should be given to the areas within and surrounding the IP and MMI anomalies.
2. Extend the MMI sampling to the northwest for a further minimum 500 meters in order to determine the extension of the MMI anomalies, especially C and D. Also extend the sampling around anomaly E, that is, to the northwest, to the southeast and to the southwest in order to determine the extension of anomaly E. The sampling should be continued at a 25-meter sampling interval along 100-meter lines.
3. Carry out IP/resistivity surveying over MMI anomalous areas in order to help define drill targets. This is especially important for depth of the causative source. The MMI anomalies considered prime for IP/resistivity surveying are C, D, E, F, J, and K. The survey lines will need to be cut out for this work.
4. Continue the magnetic surveying over the two grid areas taking readings every 25 meters along 100-meter survey lines. The magnetic survey is very useful in assisting the mapping of geology.
5. Carry out a diamond drilling program on the MMI anomalies once the detail sampling and extensions are complete since the completion of the MMI work will optimize drill targets.

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**INTRODUCTION AND GENERAL REMARKS**

This report discusses survey procedure, compilation of data, interpretation methods, and the results of MMI soil sampling carried out over a portion of the Treadwell/Allies Property belonging to P. Larkin and A.R. Simpson, respectively. The property is located on Cannell Creek about 28 km northwesterly of the city of Kamloops within the Kamloops Mining Division, British Columbia. This reo

The work is a continuation of the exploration program being carried out on the property which also consists of additional IP and resistivity surveying, additional MMI work as well as inversion interpretation of the IP and resistivity surveying. Thus this report is an all-inclusive report put together mainly for assessment purposes.

The MMI sampling was carried out by a 6- to 11-man Geotronics crew under the direction of the writer from June 16<sup>th</sup> to July 21<sup>st</sup>, 2007. The histor

The general purpose of exploration on this property is to locate sulphide mineralization associated with gold values. Boulders of silicified feldspar porphyry containing gold values up to 3 oz/ton with associated sulphides, occur in the Cannell Creek valley, especially at the southwest end of the grid in an area called the "Boulder Field" (see fig 3). Therefore, the specific purpose is to locate the source of these mineralized boulders, or at least, mineralization similar to that of the boulders. The second purpose is to locate base metal

mineralization such as porphyry copper type containing gold and silver values, the best local example being the nearby Afton Mine, which is a past producer.

## **PROPERTY AND OWNERSHIP**

The Treadwell/Allies Property is comprised of 49 mineral claims totaling 21,641.28 hectares within map sheet 092I088 described as follows and as shown on the claim map fig #2.

<b>Tenure #</b>	<b>Claim Name</b>	<b>Reg Owner</b>	<b>Expiry Date</b>	<b>Area (in hectares)</b>
541328	TREADWELL EAST	Treadwell Resources	2009/aug/20	203.94
541329	TREADWELL ON	Treadwell Resources	2009/aug/20	61.19
560874	TREADWELL 2	Treadwell Resources	2009/aug/20	489
560875	TREADWELL 3	Treadwell Resources	2009/aug/20	489
560876	TREADWELL 4	Treadwell Resources	2009/aug/20	489
560877	TREADWELL 5	Treadwell Resources	2009/aug/20	407.5
560878	TREADWELL 6	Treadwell Resources	2009/aug/20	489.2
560880	TREADWELL 7	Treadwell Resources	2009/aug/20	509.58
560882	TREADWELL 8	Treadwell Resources	2009/aug/20	509.58
560883	TREADWELL 9	Treadwell Resources	2009/aug/20	489.17
561061	TREADWELL 10	Treadwell Resources	2009/aug/20	509.58
561062	TREADWELL 11	Treadwell Resources	2009/aug/20	489.39
561063	TREADWELL 12	Treadwell Resources	2009/aug/20	489.39
561065	TREADWELL 13	Treadwell Resources	2009/aug/20	489.39
561066	TREADWELL 14	Treadwell Resources	2009/aug/20	489.6
561067	TREADWELL 15	Treadwell Resources	2009/aug/20	489.6
561069	TREADWELL 16	Treadwell Resources	2009/aug/20	489.56
561074	TREADWELL 17	Treadwell Resources	2009/aug/20	510.05
561076	TREADWELL 18	Treadwell Resources	2009/aug/20	510.23
561077	TREADWELL 19	Treadwell Resources	2009/aug/20	510.27
561078	TREADWELL 20	Treadwell Resources	2009/aug/20	489.74
561079	TREADWELL 21	Treadwell Resources	2009/aug/20	510.21
561080	TREADWELL 22	Treadwell Resources	2009/aug/20	510.32
561081	TREADWELL 23	Treadwell Resources	2009/aug/20	510.33
561082	TREADWELL 24	Treadwell Resources	2009/aug/20	510.25
561083		Treadwell Resources	2009/aug/20	428.82
561084	TREADWELL 26	Treadwell Resources	2009/aug/20	510.55
561497	TREADWELL 27	Treadwell Resources	2009/aug/20	510.48

<b>Tenure #</b>	<b>Claim Name</b>	<b>Reg Owner</b>	<b>Expiry Date</b>	<b>Area (in hectares)</b>
561498	TREADWELL 28	Treadwell Resources	2009/aug/20	510.59
561499	TREADWELL 29	Treadwell Resources	2009/aug/20	429.05
561500	TREADWELL 30	Treadwell Resources	2009/aug/20	265.6
532019	ALLIES 1	Ana Simpson	2009/aug/20	489.66
532023	ALLIES II	Ana Simpson	2009/aug/20	367.22
532024	ALLIES III	Ana Simpson	2009/aug/20	509.85
532026	ALLIES IV	Ana Simpson	2009/aug/20	407.7
532027	ALLIES V	Ana Simpson	2009/aug/20	469.08
532029	ALLIES VI	Ana Simpson	2009/aug/20	510.02
532030	ALLIES VII	Ana Simpson	2009/aug/20	489.45
532033	ALLIES VIII	Ana Simpson	2009/aug/20	468.65
532035	ALLIES IX	Ana Simpson	2009/aug/20	509.48
536261	ALLIES X	Ana Simpson	2009/aug/20	306.03
536264	ALLIES XI	Ana Simpson	2009/aug/20	102.04
541104	ALLIES 2	Ana Simpson	2009/aug/20	509.58
541105	ALLIES 8	Ana Simpson	2009/aug/20	509.6
541106	ALLIES 3	Ana Simpson	2009/aug/20	326.15
513217		Paul Larkin	2009/aug/20	693.34
541756	TREADWELL EXTENSION 1	Paul Larkin	2009/aug/20	510.15
541765	ALLIES WEST	Paul Larkin	2009/aug/20	142.74
552036	ALLIES XII	Paul Larkin	2009/aug/20	20.38

The registered owners as shown are Treadwell Resources, Ana Simpson, and Paul Larkin, all of Vancouver, B.C.

## **LOCATION AND ACCESS**

The Treadwell/Allies Property is located 28 km (17.5 miles) 325° (N35°W) of the city of downtown Kamloops on Cannell Creek at the southern edge of Tranquille Plateau.

The geographical coordinates for the center of the property are 50° 43' north latitude and 120° 35' west longitude with the UTM coordinates being 5639000 m N and 670500 m E. The NTS index is 92I/15E, and the BCGS index is 92I087, '88, '97, and '98 (since the property occurs at the juncture of four maps).

Access is easily gained by a main logging road that runs northwesterly through the property. From North Kamloops, one travels north along 8<sup>th</sup> Avenue, which leads into the Batchelor Hills where it becomes a gravel road and is the main access road for logging trucks in this area. One travels past Lac du Bois, McQueen Lake, and Pass Lake. The southeastern edge



of the property is at about the 27 km marking. A two-wheel drive vehicle is quite adequate for the main road. However, parts of the property are accessible by older logging and mining roads where four-wheel drive is necessary.

## **PHYSIOGRAPHY**

The Property is found within the Thompson Plateau, which is a physiographic unit of the Interior Plateau System. The Thompson Plateau consists of gently rolling upland of low relief for the most part. On the Treadwell/Allies Property the elevations vary from 1130 meters (3700 feet) at the southeastern edge of the property to 1,550 meters (5,100 feet) within the northwestern corner. Steep to moderate slopes to gently rolling hills with variable soil cover blanket much of the property. The steep slopes occur mostly along Cannell Creek and its tributaries.

The main water sources are Cannell Creek with its tributaries, which flow easterly and southeasterly through the southern portion of the claims, and a number of lakes which occur within the western part of the property (Dynes Lake, Sydney Lake, and Andrus Lake).

Tree cover is generally that of open forest, with some grasslands as well as some thick second growth. Parts of the property have been logged.

Glaciers occupied the Thompson Plateau and thus much of the claim area is covered by glacial drift, which can become quite deep over the flatter areas.

The climate in the Kamloops area is semi-arid, and thus the precipitation is low, about 25 to 28 centimeters (10 to 11 inches). Temperatures vary from the high extreme in summer of around 40°C to the low in winter of around -30°C, though the usual temperature during the summer days would be 15°C to 25°C and that in winter would be -10°C to 5°C.

## **PREVIOUS WORK**

During the early 1900's Prospectors looking for the source of the placer gold found in the Tranquille River discovered large (2 meter square) blocks of silicified feldspar porphyry carrying sulphides that assayed up to 1.42 ounces gold per ton in one of its tributaries, Cannell Creek. This discovery became known as the "Allies Showing". The first recorded work on the property was noted in 1924 when considerable prospecting and trenching was undertaken.

From 1933 - 34 an extensive program of underground exploration was carried out towards the west and southwest of the original discovery area. At least three shafts and five adits totaling approximately 900 linear feet (275 meters) were driven at several locations. Although they tunneled through several occurrences of porphyry material in place which was similar to that found at the original shaft (No. 1 shaft), the source of the high-grade material was not found.

The property was dormant until 1968 when some limited trenching was done on the original showing.

In 1972 and 1973 Bon-Val Mines Ltd., conducted magnetic, VLF electromagnetic and geochemical sampling surveys, which were centered over the original showing. Bon-Val Mines was subsequently reorganized as Yamoto Industries Ltd.

A geochemical soil sampling program conducted in 1976 collected 800 samples, which were analyzed for gold and copper. Results showed only a few random gold “highs” presumably because of the heavy, clay-rich overburden.

In 1978, three diamond drill holes totaling 162.5 meters were bored near and to the south of the No.1 shaft around the main showing (i.e. the mineralized boulder field). Drill logs reported barren serpentine in all holes.

In 1984, Laramide Resources Ltd, was awarded the property after a legal dispute.

In 1985, Laramide initiated a detailed exploration program consisting of grid layout, geological mapping, road construction, trenching and soil and silt sampling.

In 1985, the property was optioned to Relay Creek Resources Ltd., which conducted some induced polarization and excavator trenching.

In 1986, Relay Creek Resources initiated a drilling program consisting of five NQ-sized core holes totaling 619.2 meters. Two holes were drilled under the mineralized boulder field (i.e. the main “Allies showing”), two holes were drilled about 400 meters to the south and one hole was drilled near the southwest showing (500m southwest of the main showing). Some holes were not completed due to some problems with the drilling and bad weather caused the drilling to be prematurely halted in mid-November.

Although Relay Creek Mines conducted no further work on the property, it held the property in good standing until 1995.

In 1995 Mr. Richard Simpson acquired the property by staking the Treadwell # 1 mineral claim. In 1996, Dr. Franco Oboni, PhD, was commissioned to conduct a study of the surficial rock movement around the area of the mineralized boulder field. Dr. Oboni determined that the mineralized boulders found on the original showing, would have come from the area to the north and/or northwest of the boulder field.

Paul Larkin became the registered holder of the Treadwell #1 property in May of 2004 when it was acquired through re-staking.

Some samples, which were taken from float in Cannell Creek during the early summer of 2004, returned high-grade gold values of up to 3 ounces per tonne and copper values in excess of 0.2 percent.

Other than occasional prospecting trips by Mr. Simpson, activity on the property remained dormant from 1996 until 2004. Since previous exploration work appears to have been focused on the original showing (i.e. the mineralized boulder field) or to the south, the west and the southwestern areas of the original showing, it was decided to investigate the area of to the north of the original showing by conducting an IP survey over a limited area. Survey lines were cut out and the IP survey was carried out in November, 2004 and consisted of 2,460 meters along four survey lines.

Positive results were obtained and the IP survey was continued in 2005 consisting of 6,120 meters along six additional lines to give a total of 8,580 meters along ten lines. In addition, 52 MMI soil samples were picked up every 60 meters along lines 3300E (now 3500E, see Survey Procedure), 4500E and 4600E.

## **GEOLOGY**

### **(a) General**

The oldest rocks of the area are those of the Nicola Group, which is of Upper Triassic Age and consists of a predominantly subaqueous island arc assemblage of sedimentary and volcanic rocks. The Nicola Group is broken into three blocks that are separated by two northerly-trending sub-parallel faults with the eastern one being partly defined by Cherry Creek and the western one by Guichon Creek and Deadman River.

According to Owsiacki, "The Nicola Group has been divided into four lithologic assemblages; a steeply dipping, east-facing 'western volcanic belt' (this unit does not occur on the Kamloops Lake map sheet) consisting predominantly of subaqueous felsic, intermediate and mafic volcanics of calcalkalic affinity that grade upward into volcanoclastic rocks; a 'central volcanic belt' composed of both subaqueous and subaerial basalt and andesite flows, volcanic breccias and lahars of both alkalic and calcalkalic (both plagioclase and augite-phyric)affinities; an overlying, westerly dipping 'eastern volcanic belt' composed of predominantly subaqueous and subaerial alkalic (both augite and hornblende-phyric; shoshonites and ankaramites) intermediate and mafic volcanic flow, fragmental and epiclastic rocks; and an 'eastern sedimentary assemblage' that is over lapped by the eastern volcanic belt and is composed predominantly of greywackes, siltites, argillites, alkalic intermediate tuffs and reefal limestones."

The Nicola Group has been cut by Late Triassic and Early Jurassic alkalic intrusions such as the Iron Mask batholith. These consist of medium to small, commonly fault-bounded stocks and dyke swarms of diorite, monzodiorite, monzonite and syenite.

The Iron Mask Batholith consists of four major, successively emplaced units, which are called the Iron Mask Hybrid, Pothook, Sugarloaf, and Cherry Creek units. The composition and texture range from coarse-grained gabbro to microsyenite. In addition there occurs a picrite unit that does not appear to be related to the batholith but it

appears to be important to the mineralization since it is always found nearby. All the above-mentioned phases contain some copper mineralization.

The youngest rocks of the area are Eocene arc volcanics and sediments of the Kamloops Group, extensive Miocene-Pliocene plateau basalts, as well as scattered minor Pleistocene and Recent flows. The Kamloops Group unconformably overlies the Nicola rocks and the Iron Mask batholith. Rocks of this group consist of tuffaceous sandstone, siltstone, and shale with minor conglomerate, as well as basaltic to andesitic flows and agglomerate with minor dacite, latite, and trachyte.

## **(b) Property**

Much of the following is taken from Dawson's 1986 report on the property.

The main geological feature of the property is that it covers an erosional tectonic window of Nicola greenstones, picrite, and felsic dykes within Miocene plateau basalts. This window is about 400 meters by 600 meters.

"The plateau basalts are black, fine-grained, massive to olivine porphyritic, occasionally amygdaloidal, and columnar jointed. The basalts locally overlie a poorly stratified unit, up to 30 meters thick, composed of volcanic wacke and conglomerate (Kamloops Group?).

"Picrite is usually a green to dark greenish-black rock composed of subrounded serpentinized olivine grains (two to five millimeters) set in a dark chloritic matrix. Outcrops of picrite are generally deeply weathered and decomposed. The 'greenstones' consists of light green, chloritized and carbonatized, feldspar porphyritic to aphanitic rocks which can be interpreted as either flows or tuffs. Age relationships between 'greenstones' and picrite cannot be established in the field: however, according to Monger, the picritic rocks at the Allies property are probably coeval with or slightly younger than the 'greenstones'.

"Felsic, porphyritic dykes are found cutting the older picrite and Nicola volcanics and have been noted in place at Dodd's Showing and the Southwest Showing. Identical dyke rocks as a series of large angular blocks have been found in the vicinity of the Main or Discovery Showing. These are usually grey to buff coloured rocks composed of 20% to 30% small feldspar (two to five millimeters) and minor hornblende phenocrysts set in a grey, aphanitic groundmass. Data from surface and drilling indicate that these dykes strike easterly to northeasterly and dip steeply south. At both the Southeast and Dodd's Showings, the dykes occur as a cluster or swarm over a 20- to 30-meter width, with intervening sweeps of chloritized country rock.

"Cockfield (1961) noted light and dark porphyries in his mapping. The writer has seen two other outcrop areas at No. 2 and No. 3 adits where light porphyry cuts the surrounding, friable picrite. This dyke rock is paler and more siliceous than the previously described 'dark' porphyries and does not contain any quartz veining."

**(c) Mineralization of the Area**

The many copper occurrences in the general area are found both within the Iron Mask Batholith and the older, intruded Nicola rocks close to the batholith. Generally, they occur with veins, impregnations, stockworks, and mineralized shear zones in the country rock with the principle copper minerals being chalcopyrite and bornite as well as some chalcocite, cuprite, azurite and malachite. Additional minerals that often occur with the copper are magnetite and pyrite. There have been shipments of ore, though small, from many of the prospects. The largest producer of these was the Iron Mask Mine, which shipped a total of 189,230 tons of ore. Another small producer was the Copper King, which had values that ran about 4.4 % copper and 0.8 oz/ton gold.

The Afton area became the center of one of the hottest staking rushes in Canada when significant mineralization was discovered on the Afton property in the early '70's. Eventually, the discovery became an ore deposit that was mined from 1977 to 1988 by Teck. At the beginning of production, Afton had drill-proven ore reserves of 30.84 million tonnes grading 1.0% copper, 0.58 ppm gold, and 4.19 ppm silver. The main mineral form was native copper and chalcocite with minor covellite and chalcopyrite found within an intrusive breccia at the contact of the Nicola volcanics.

Currently, DRC Resources have discovered a new mineral body that has a combined size of measured and estimated 68.7 million tonnes, grading 1.68% copper equivalent using copper at \$0.85/lb, gold at \$375/oz, silver at \$5.25/oz, and palladium at \$200/oz, all US prices. The mineralization occurs below the old Afton Pit and extends in a southwesterly direction for over 1000 meters.

Mineralization of the area appears to be structurally related to mainly northwesterly-trending faults, but also northeasterly-trending faults and to a lesser degree, northerly-trending faults. Some of the main mineral zones occur near the confluence of any two of the above fault trends.

**(d) Property Mineralization**

The following is quoted from Dawson's 1986 report on the property.

“At the Main or Discovery Showing, boulders of quartz-veined, ‘dark’ porphyry are found over an area roughly 150 meters (east-west) by about 40 meters (north-south) adjacent to the contact with the overlying (or fault-bounded) sediments and volcanics. Within this area at least 50 such boulders varying in size from two meters square down to fist-size have been found. These boulders are almost always angular, but seem to decrease in size towards the west. Typically, such boulders are cut by sub-parallel sets of milky and quartz stringers and veins, one to twenty centimeters wide carrying disseminated pyrite, blebs of chalcopyrite and minor galena. Vein density accounts for 10% to 30% of the rock volume. Country rock between quartz veins is strongly silicified and ankeritized. Samples of quartz stringers are reported to have assayed up to 45.2 grams/tonne (?) gold over 20 centimeters (Cockfield, 1961). A number of

samples from mineralized boulders have been taken over the last several years by the writer and others. These samples varied from 0.44 ounces/ton to trace gold. The average of all grab samples from mineralized boulders (in this area) averaged about 0.1 ounces gold per ton. [Mr. R Simpson had apparently obtained assays of up to 3 oz/ton, but probably over a relatively narrow sample width.]

“The original Southwest Showing was developed by one main adit and several pits. Here there are series of quartz-veined porphyry dykes in place cutting altered, friable picrite and silicified and opalized (locally pyretic ‘greenstone’. The porphyry dykes here are generally more pyritic, more chloritized and less silicified than the collection of float boulders near No. 1 (Discovery) Shaft. Here, low but anomalous (100 to 1000 ppb) gold values are bound in similar quartz-veined, ‘dark’ feldspar porphyry dykes.

“Narrow ( $\pm 1$  meter) quartz-veined and carbonatized, east-west trending, feldspar porphyry dykes containing minor disseminated pyrite and chalcopyrite are exposed in a new road cut on line 55 near Cannell Creek (Dodd’s Showing). All porphyry samples collected in 1984 from this locality returned low but anomalous (35 to 1032 ppb) gold values. It should be noted that this showing as well as the Southwest showing is located adjacent to the contact with the overlying plateau basalt.”

## **GEOCHEMISTRY**

### **(a) Sampling Procedure**

The grid emplacement and accompanying soil sampling was carried out within two grids, namely the main grid, or Sydney Lake grid, and the Pass Lake grid, as shown on fig. #4, the Grid Location Map. The Sydney Lake grid occurs to the immediate east of Sydney Lake and is the grid over which exploration has occurred over the past few years. It also includes the Allies Showing. The Pass Lake grid occurs about 5,000 meters to the east of the Sydney Lake grid and 2,300 meters north-northwest of Pass Lake.

The two grids were emplaced using compass and hip chain with the survey line direction being northeast/southwest and the line separation being 100 meters. Stations were put in every 25 meters with blue and blaze orange flagging as well as aluminum tags stapled to 24-inch by 2-inch by 1-inch wooden pickets. The grid coordinates were written on the aluminum tags. UTM readings were also taken with a GPS unit every few stations.

A total of 1,569 samples were picked up over 42,385 meters.

The current MMI sampling in-fills the area between the previously-done IP and MMI survey lines 4200E and 3300E and it was found that line 3300E was actually 3500E and that the stations were out by 100 meters so that station 240S was actually 340S (Line 3300E was labeled in 2005 using a crude map which was all that was available at the time.) Therefore this line was re-labeled correctly.

The sampling procedure was to first remove the organic material from the sample site (A<sub>0</sub> layer) and then dig a pit over 25 cm deep with a shovel. Sample material was then scraped from the sides of the pit over the measured depth interval of 10 centimeters to 25 centimeters. About 250 grams of sample material was collected and then placed into a plastic Zip-loc sandwich bag with the sample location marked thereon. The 52 samples were then packaged and sent to SGS Minerals located at 1885 Leslie Street, Toronto, Ontario. (This is only one of two labs in the world that do MMI analysis, the other being in Perth, Australia where the MMI method was developed.)

**(b) Analytical Methods**

At SGS Minerals, the testing procedure begins with weighing 50 grams of the sample into a plastic vial fitted with a screw cap. Next is added 50 ml of the MMI-M solution to the sample, which is then placed in trays and put into a shaker for 20 minutes. (The MMI-M solution is a neutral mixture of reagents that are used to detach loosely bound metal ions from the soil substrate and formulated to keep the ions in solution.) These are allowed to sit overnight and subsequently centrifuged for 10 minutes. The solution is then diluted 20 times for a total dilution factor of 200 times and then transferred into plastic test tubes, which are then analyzed on ICP-MS instruments.

Results from the instruments for the elements are processed automatically, loaded into the LIMS (laboratory information management system which is computer software used by laboratories) where the quality control parameters are checked before final reporting.

The MMI-M solution handles a total of 45 elements which were reported on for the first 457 samples. These results were then analyzed and it was decided for the remaining 1,112 samples to have the lab report on only 10 elements, or metals, for economic reasons, the 10 metals being silver, gold, cerium, cobalt, copper, molybdenum, nickel, lead, uranium, and zinc.

The number of samples being tested included the 52 from the 2005 survey which were retested with the MMI-M solution. The pulps had been saved for two years.

**(c) Compilation of Data**

The mean background value was calculated for each of the 10 elements and this number was then divided into the reported value to obtain a figure called the response ratio, which is given in the table below in parts per billion (ppb).

<b>Ag</b>	<b>Au</b>	<b>Ce</b>	<b>Co</b>	<b>Cu</b>	<b>Mo</b>	<b>Ni</b>	<b>Pb</b>	<b>U</b>	<b>Zn</b>
0.5	0.05	17	20	94	2.5	32	5.7	1.9	29

Two stacked histograms of the response ratios were then made for each of the 21 lines, the first stacked histogram consisted of copper, gold, silver, and cobalt, the second stacked histogram of nickel, cerium, lead, and zinc.

In addition, a plan map was made for each of 10 metals for each of the two grids, on maps GC-1 to GC-20, respectively. The 10 maps for the Sydney Lake grid was done at a scale of 1:6,000, and the 10 maps for the Pass Lake grid was done at a scale of 1:2,500. However, for hard copies of this report, the actual scale may be different due to 'fit to page' printing. On each map, the data were plotted and contoured at a logarithmic interval.

## **MAGNETIC SURVEY**

### **(a) Instrumentation**

The magnetic survey were each carried out with two model G-856 proton precession magnetometers manufactured by Geometrics of San Jose, California. One was used as a base station and the other was used as the field unit. This instrument reads out directly in nanoTeslas (nT) to an accuracy of  $\pm 1$  nT, over a range of 20,000 - 100,000 nT. The operating temperature range is  $-40^{\circ}$  to  $+50^{\circ}$  C, and its gradient tolerance is up to 3,000 gammas per meter.

### **(b) Theory**

Only two commonly occurring minerals are strongly magnetic, magnetite and pyrrhotite and therefore magnetic surveys are used to detect the presence of these minerals in varying concentrations, as follows:

- Magnetite and pyrrhotite may occur with economic mineralization on a specific property and therefore a magnetic survey may be used to locate this mineralization.
- Different rock types have different background amounts of magnetite (and pyrrhotite in some rare cases) and thus a magnetic survey can be used to map lithology. Generally, the more basic a rock-type, the more magnetite it may contain, though this is not always the case. In mapping lithology, not only is the amount of magnetite important, but also the way it may occur. For example, young basic rocks are often characterized by thumbprint-type magnetic highs and lows.
- Magnetic surveys can also be used in mapping geologic structure. For example, the action of faults and shear zones will often chemically alter magnetite and thus these will show up as lineal-shaped lows. Or, sometimes lineal-shaped highs or a lineation of highs will be reflecting a fault since a magnetite-containing magmatic fluid has intruded along a zone of weakness, being the fault.



### **(c) Survey Procedure**

A magnetic survey was carried within the northern part of the grid, essentially where the IP and resistivity surveys had been carried out. This consisted of taking a magnetic reading every 25 or 30 meters along the survey lines which are 100 meters apart. It consisted of 6,870 meters of surveying along eight lines.

### **(d) Data Reduction**

The data was input into a computer. Using Geosoft software, it was next plotted with 55,000 nT subtracted from each posted value and contoured at an interval of 200 nT on a base map, GP-11, with a scale of 1:10,000.

## **INDUCED POLARIZATION AND RESISTIVITY SURVEYS**

### **(a) Instrumentation**

The transmitter used was a BRGM model VIP 4000. It was powered by a Honda 6.5 kW motor generator. The receiver used was a six-channel BRGM model Elrec-6. This is state-of-the-art equipment, with software-controlled functions, programmable through a keyboard located on the front of the instrument. It can measure up to 6 chargeability windows and store up to 2,500 measurements within the internal memory.

### **(b) Theory**

When a voltage is applied to the ground, electrical current flows, mainly in the electrolyte-filled capillaries within the rock. If the capillaries also contain certain mineral particles that transport current by electrons (mostly sulphides, some oxides and graphite), then the ionic charges build up at the particle-electrolyte interface, positive ones where the current enters the particle and negative ones where it leaves. This accumulation of charge creates a voltage that tends to oppose the current flow across the interface. When the current is switched off, the created voltage slowly decreases as the accumulated ions diffuse back into the electrolyte. This type of induced polarization phenomena is known as electrode polarization.

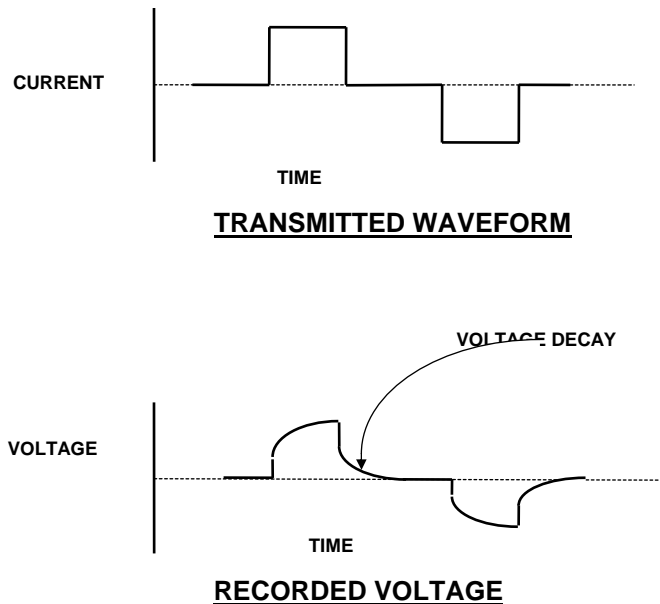
A similar effect occurs if clay particles are present in the conducting medium. Charged clay particles attract oppositely-charged ions from the surrounding electrolyte; when the current stops, the ions slowly diffuse back to their equilibrium state. This process is known as membrane polarization and gives rise to induced polarization effects even in the absence of metallic-type conductors.

Most IP surveys are carried out by taking measurements in the “time-domain” or the “frequency-domain”.

Time-domain measurements involve sampling the waveform at intervals after the current is switched off, to derive a dimensionless parameter, the chargeability “M”, which is a measure of the strength of the induced polarization effect. Measurements in

the frequency domain are based on the fact that the resistance produced at the electrolyte-charged particle interface decreases with increasing frequency. The difference between apparent resistivity readings at a high and low frequency is expressed as the percentage frequency effect, or “PFE”.

The quantity, apparent resistivity,  $\rho_a$ , computed from electrical survey results is only the true earth resistivity in a homogenous sub-surface. When vertical (and lateral) variations in electrical properties occur, as they almost always will, the apparent resistivity will be influenced by the various layers, depending on their depth relative to the electrode spacing. A single reading, therefore, cannot be attributed to a particular depth.



The ability of the ground to transmit electricity is, in the absence of metallic-type conductors, almost completely dependent on the volume, nature and content of the pore space. Empirical relationships can be derived linking the formation resistivity to the pore water resistivity, as a function of porosity. Such a formula is Archie’s Law, which states (assuming complete saturation) in clean formations:

$$R_o = O^{-2} R_w$$

Where:  $R_o$  is formation resistivity  
 $R_w$  is pore water resistivity  
 $O$  is porosity

**(c) Survey Procedure**

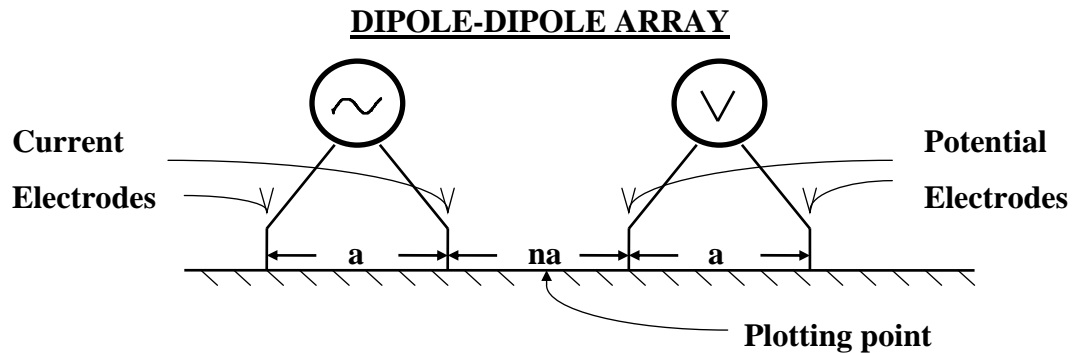
The grid emplacement, including line cutting, was put in as the survey was being carried out. It was intended for lines 47+00E and 48+00E to each be surveyed further

to the southwest and to the northeast but rock bluffs limited the surveying in both these directions.

No line cutting was done for lines 34+00E and 41+00E.

The IP and resistivity measurements were taken in the time-domain mode using an 8-second square wave charge cycle (2-seconds positive charge, 2-seconds off, 2-seconds negative charge, 2-seconds off). The delay time used after the charge shuts off was 80 milliseconds and the integration time used was 1,760 milliseconds divided into 10 windows.

The array chosen was the dipole-dipole, shown as follows:



The lines run in a due northeast direction (45°E) and are 100 meters apart. The electrode separation, or 'a' spacing, and reading interval was chosen to be 30 meters read to 12 separations, which is the 'na' in the above diagram, for all 12 lines. The 12 separations give a theoretical depth penetration of about 200 meters, or 650 feet.

Stainless steel stakes were used for current electrodes as well as for the potential electrodes.

The surveying was done on the following lines in the order as shown and to the following lengths.

LINE NUMBER	SURVEY STATIONS	SURVEY LENGTH	SURVEY DATE	MAP NUMBER
50+00E	30N to 630N	600 m	Nov '04	GP-1
49+00E	30N to 630N	600 m	Nov '04	GP-2
48+00E	210N to 930N	720 m	Nov '04	GP-3
47+00E	210N to 750N	540	Nov '04	GP-4
46+00E	210N to 1230N	1,020 m	May '05	GP-5

45+00E	270N to 1110N	840 m	May '05	GP-6
44+00E	150N to 1170N	1,020 m	May '05	GP-7
43+00E	30N to 1140N	1,110m	May '05	GP-8
42+00E	240S to 870N	1,110 m	May '05	GP-9
35+00E	1440S to 420S	1,020 m	May '05	GP-10
34+00E	1880S to 530S	1,350 m	June '10	GP-13
41+00E	1070S to 310N	1,380 m	June '10	GP-14

The total amount of IP and resistivity surveying carried out during November, 2004, was 2,460 meters, the total amount during May, 2005, was 6,120 meters, and the total amount during June, 2010, was 2,730 meters for a total amount of 11,310 meters.

**(d) Compilation of Data**

All the data were reduced by a computer software program developed by Geosoft Inc. of Toronto, Ontario. Parts of this program have been modified by Geotronics Surveys Inc. for its own applications. The computerized data reduction included the resistivity calculations, pseudosection plotting, survey plan plotting and contouring.

The chargeability (IP) values are read directly from the instrument and no data processing is therefore required prior to plotting. However, the data is edited for errors and for reliability. The reliability is usually dependant on the strength of the signal, which weakens at greater dipole separations. In the case of this survey, many of the values at greater dipole separations and therefore at greater depths, had to be edited out because of weak signals due to the very low resistivity values.

The resistivity values are derived from current and voltage readings taken in the field. These values are combined with the geometrical factor appropriate for the dipole-dipole array to compute the apparent resistivity. The resistivity data were relatively reliable to the 12 separations.

All the data have been plotted in pseudosection form at a scale of 1:10,000. One map has been plotted for each of the three pseudosections, as shown on the above table and in the Table of Contents. The pseudosection is formed by each value being plotted at a point formed from the intersection of a line drawn from the mid-point of each of the two dipoles. The result of this method of plotting is that the farther the dipoles are separated, the deeper the reading is plotted. The resistivity pseudosection is plotted on the upper part of the map for each of the lines, and the chargeability pseudosection is plotted on the lower part.

All pseudosections were contoured at an interval of 0.5 milliseconds for the chargeability results, and at a logarithmic interval to the base 10 for the resistivity results.

The self-potential (SP) data from the IP and resistivity surveys were plotted and profiled above the two pseudosections for each line at a scale of 1 cm = 100 millivolts with a base of zero millivolts. It is not expected that the SP data will be important in the exploration of the property, especially with the dipole length used, but considering that the data was taken, it was plotted and profiled for its possible usefulness.

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All chargeability and resistivity pseudosections were contoured at a logarithmic interval to the base 10.

The self-potential (SP) data from the IP and resistivity surveys were plotted and profiled above the two pseudosections for each line at a scale of 1 cm = 100 millivolts with a base of zero millivolts. It is not expected that the SP data will be important in the exploration of the property, especially with the dipole length used, but considering that the data was taken, it was plotted and profiled for its possible usefulness.

### **(e) Inversion Interpretation**

A 2-D inversion interpretation by a least squares method using computer software produced by Geotomo Software was carried out on the IP and resistivity data. This program uses the smoothness-constrained least-squares method inversion technique. The purpose of inversion interpretation is to eliminate the electrode effect that is endemic with IP and resistivity data and thus locate the causative sources more accurately.

## **DISCUSSION OF RESULTS**

The MMI survey has outlined a number of anomalies that occur throughout both grid areas. These have been labeled by the upper case letters A to K, with A to I occurring on the Sydney Lake grid and J and K occurring on the Pass Lake grid. The labeling is a continuation of the labeling done in the writer's previous report where the letters A to C were used to label three combination IP and MMI anomalies. The IP survey only covered the northeastern part of the Sydney Lake grid on lines 4200E to 5000E as well as the central part of line 3500E. That is, most of the Sydney Lake grid and none of the Pass Lake grid were covered by the IP survey.

Most of the labeled anomalies are actually anomalous zones. The term "anomalous zone" is used by the writer to define an area consisting of a series of anomalies each indicative of a separate causative source, whereas the term "anomaly" simply indicates one causative source.

Each MMI anomaly, or anomalous zone, as discussed below is indicative of sulphide mineralization with possible gold and silver values that is of further exploration interest. In addition, copper, silver, and cobalt anomalous results generally correlate together, whereas, lead and zinc anomalous results correlate together. However, zinc anomalous results usually occurs with, and adjacent to, copper anomalous results. This is common and is often indicative of porphyry copper style mineralization.

### **(a) Sydney Lake Grid**

*Anomalous Zone A* is a combination IP and MMI anomaly consisting of strong copper and associated strong zinc results. There is also some correlation with anomalous gold, silver, lead, and cobalt results. Most of the anomalous results occur within the southeastern part of the zone. Anomalous Zone A strikes in a northwesterly direction for a minimum strike length of 1,100 meters, and is open to the northwest as well as to the southeast.

The correlating IP anomaly indicates that the causative source is sulphides of the anomalous base metals of copper, lead and zinc.

A fairly strong SP anomaly also occurs along the southwestern edge of the Zone A. It correlates well with a lead anomaly and to a lesser extent with copper and zinc

anomalies. It may have a minimum strike length of 600 meters with it being open to the southeast, though on two of the survey lines, the SP anomaly did not show.

**Anomalous Zone B** is the second combination IP and MMI anomaly and occurs to the immediate northeast of anomalous zone A. It is possible that it is part of the same zone, though in pseudosection form it is quite apparent that the two IP anomalies are separate. Anomalous Zone B has a strike length of 900 meters with it being open both to the northwest and to the southeast.

This anomalous zone consists of anomalous copper results with anomalous lead, zinc, and silver results as well as some anomalous gold and molybdenum results. As with anomalous zone A, most of the anomalous results occur within the southeastern part of the zone. And in addition, as with anomalous zone A, the correlating IP anomaly indicates that the causative source is sulphides of the anomalous base metals of copper, lead and zinc.

Anomalous cerium results correlate with much of anomalous zone B as well as to the northeast. This is indicative of an acidic rock-type, probably an intrusive that could be associated with the causative source(s) of the MMI and IP anomalies.

**Anomalous Zone C** consists, for the most part of anomalous copper, silver, and cobalt results with some gold along three lines which are 3400E, 3500E, and 3600E. The size along the direction of the lines (northeasterly) is 450 meters whereas the minimum size perpendicular to the lines (northwesterly) is 200 meters with it being open to the northwest. It also correlates with an IP anomaly along line 3500E, which is the only survey line that IP was carried out on in this area.

Anomalous zinc results with some lead also occur within this zone as well as around it. This is a typical signature of a porphyry copper deposit and is thus of strong exploration interest especially considering the correlating IP anomaly.

A nickel anomaly occurs within the southwest part of zone C which indicates a possible basic rock-type such as basalt. Also anomalous cerium results occur around zone C. This indicates a rock-type change between the host rock of the causative source of the anomalous zone and the surrounding rock type. Or the lack of cerium may simply be a signature of zone C.

**Anomalous Zone D** is the fourth and final MMI anomalous zone that correlates with an IP anomaly, which, like IP anomaly C, occurs only on line 3500E. This IP anomaly was not labeled within the writer's previous report.

Zone D occurs just to the south of anomalous zone C and consists of strong anomalous copper and silver with some cobalt and gold results. It also contains some anomalous zinc results with most occurring around the zone. As with anomalous zone C, the IP and MMI results suggest the possibility of a porphyry copper deposit.

Anomalous zone D strikes in a northwesterly direction, is open to the northwest and southeast, and is up to 440 meters wide with a minimum strike length of 800 meters. The strongest part of the anomaly occurs along its northwest edge where it is open.

Cerium results are elevated within anomalous zone D indicating that the host rock may be acidic (possibly intrusive?).

An SP high occurs near the central part of this anomaly and correlates with a lead and zinc high, thus indicating lead and zinc sulphide mineralization.

**Anomalous Zone E** consists of strong zinc and lead with elevated uranium and molybdenum results. It occurs on all four lines at the southwestern edge of the survey area and thus is open to the northwest, southwest, and southeast. However, the minimum size is 350 meters by 300 meters.

A nickel anomaly occurs along the northeastern edge of anomalous zone E which could be reflecting an intrusive dyke with a basic rock-type composition.

**Anomalous Zone F** occurs within the center of the grid area and is about 500 meters square. It consists of highly anomalous results in copper, silver, and cobalt. It also has anomalous results in nickel suggesting that the host rock is basic or possibly ultra-basic.

Anomalous zinc results occur along the northwestern edge of the anomaly. As with anomalous zones C and D, zone F could be reflecting porphyry copper style type mineralization.

**Anomaly G** is a lineal-shaped MMI anomaly consisting of strong copper, silver and cobalt results and striking in a north-northwesterly direction. It occurs to the south of anomalous zone A. It has a minimum strike length of 700 meters with it being open to the north-northwest. It also correlates with a nickel anomaly perhaps indicating a basic rock-type, perhaps an intrusive dyke that is mineralized with copper silver, and cobalt. There is also some correlating zinc and lead values.

**Anomaly H** is also a lineal-shaped anomaly that strikes in a west-northwest direction and has a minimum strike length of 600 meters being open both to the west-northwest and east-southeast. It occurs to the northeast of anomalous zone B. It consists of strong copper results with some silver and cobalt. It could also be reflecting a mineralized dyke.

**Anomalous Zone I** is a large area with dimensions of 1,400 meters in a north-northeast direction where it is open, by 250 to 700 meters in an east-southeast direction. It consists mainly of a series of lead anomalies that strike in a northwesterly direction. There is some correlation with lesser zinc anomalies as well as silver, cobalt, and molybdenum anomalies. One of the lead anomalies encroaches into anomalous zone C and another one into anomalous zone F.



As indicated by the MMI results, the causative source of the anomalies within zone I is probably a series of lead mineralized zones that are parallel and sub-parallel to each other.

*The magnetic survey*, which was only carried out over the northern part of the Sydney Lake grid, that generally correlated with the resistivity highs and lows, respectively. The resistivity/magnetic highs are probably reflecting volcanics, perhaps of the Kamloops Group, whereas the resistivity/magnetic lows may be reflecting sediments. Lineations of magnetic lows were interpreted on the magnetic plan map and may be reflecting geological structure such as faults, shear zones, and contacts.

## **(b) Pass Lake Grid**

*Anomaly J*, or perhaps anomalous zone J, is the main feature of the Pass Lake MMI grid. It consist of strong correlating copper, gold, silver, cobalt, and nickel anomalous results that appear to be striking northwesterly. The strike length appears to be 500 meters with it possibly being open to the northwest, though the anomaly appears to be closing at about line 0. The width is 250 to 300 meters.

*Anomaly K* occurs to the immediate northeast of anomaly J and consists of strongly anomalous zinc results with correlating anomalous values in lead and molybdenum. It also strikes northwesterly and has a minimum strike length of 500 meters being open to both the northwest and southeast and a minimum width of 250 meters being open to the northeast.

These two anomalies are probably within the same system perhaps reflecting, as with anomalous zones C, D, and F, porphyry copper mineralization.

The nickel and copper anomalous results have a one to one correlation, that is, they correlate extremely well together. The nickel could be reflecting nickel mineralization, or simply, as mentioned above, basic or ultra-basic rock-types. In addition anomalous cerium results correlate with zinc anomaly K and surround anomaly J.

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## **GEOPHYSICIST'S CERTIFICATE**

I, DAVID G. MARK, of the City of Surrey, in the Province of British Columbia, do hereby certify that:

I am registered as a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

I am a Consulting Geophysicist of Geotronics Surveys Ltd., with offices at 6204 – 125<sup>th</sup> Street, Surrey, British Columbia.

I further certify that:

1. I am a graduate of the University of British Columbia (1968) and hold a B.Sc. degree in Geophysics.
2. I have been practicing my profession for the past 39 years, and have been active in the mining industry for the past 42 years.
3. This report is compiled from data obtained from IP, resistivity, and magnetic surveys as well as MMI soil sampling carried out over the Sydney Grid and the Pass Lake Grid of the Treadwell/Allies Property during the years 2004 through to 2010. All work was carried out by a crew of Geotronics Consulting and headed by me.
4. I do not hold any interest in Treadwell Resources Ltd, nor in the Treadwell/Allies Property, nor in any other property of Treadwell Resources, nor do I expect to be receiving any interest as a result of writing this report.

David G. Mark, P.Geo.  
Geophysicist

June 24, 2011

## **AFFIDAVIT OF EXPENSES for 2007 WORK**

Grid emplacement and MMI soil sample surveying was carried out over a portion of the Treadwell/Allies Property, which occurs on and around Cannell Creek at the southern edge of Tranquille Plateau, located 28 km 325°E of the city of Kamloops, B.C, from June 16<sup>th</sup> to July 21<sup>st</sup>, 2007, to the value of the following:

<b><u>MOB/DEMOB:</u></b>		
Crew wages	\$1,760.00	
Truck rental and gas	...660.00	
Room and board	<u>925.00</u>	
TOTAL	\$3,345.00	\$3,345.00
<b><u>FIELD (MMI Survey and Grid Work):</u></b>		
6-man crew, 9 days @ \$2200/day	\$19,800.00	
9-man crew, 3 days @ \$3400/day	\$10,200.00	
10-man crew, 8 days @ \$3700/day	29,600.00	
11-man crew, 3 days @ \$4050/day	12,150.00	
Courier costs for sample shipping	<u>2,586.00</u>	
TOTAL	\$74,336.00	\$74,336.00
<b><u>LABORATORY:</u></b>		
Testing of 457 samples @ \$35/sample	\$15,995.00	
Testing of 1,112 samples @ \$28/sample	<u>\$31,136.00</u>	
TOTAL	\$47,131.00	\$47,131.00
<b><u>DATA REDUCTION:</u></b>		
Data reduction, 63 hours @ \$50/hour	\$3,150.00	
Report	<u>\$2,000.00</u>	
TOTAL	\$5,150.00	\$5,150.00
<b>GRAND TOTAL</b>		<b>\$129,962.00</b>

Respectfully submitted,  
Geotronics Consulting Inc.

David G. Mark, P.Geo,  
Geophysicist

December 11, 2007

**AFFIDAVIT OF EXPENSES for 2009 WORK**

Magnetic surveying and a re-interpretation (inversion) of previously carried-out IP/resistivity surveying (2004 and 2005) was carried out over a portion of the Treadwell/Allies Property, which occurs on and around Cannell Creek at the southern edge of Tranquille Plateau, located 28 km 325°E of the city of Kamloops, B.C, from July 5<sup>th</sup> to September 8<sup>th</sup>, 2009, to the value of the following:

<b><u>MOB/DEMOB (share):</u></b>		
Crew wages	\$850.00	
Truck rental and gas	...375.00	
Room and board	<u>365.00</u>	
TOTAL	\$1,590.00	\$1,590.00
<b><u>FIELD:</u></b>		
2-man crew, 2 days @ \$1,200/day	\$2,400.00	\$2,400.00
<b><u>DATA REDUCTION and REPORT:</u></b>		
Senior Geophysicist	\$550.00	
Inversion interpretation, 10 IP lines @ \$500/line	\$5,000.00	
Data reduction and map preparation	<u>1,275.00</u>	
	\$1,625.00	\$6,825.00
<b>GRAND TOTAL</b>		<b>\$10,940.00</b>

Respectfully  
Geotronics Consulting Inc.

submitted,

David G. Mark, P.Geo,  
Geophysicist

December 11, 2007

**AFFIDAVIT OF EXPENSES for 2010 WORK**

Induced polarization(IP)/resistivity surveying was carried out over a portion of the Treadwell/Allies Property, which occurs on and around Cannell Creek at the southern edge of Tranquille Plateau, located 28 km 325°E of the city of Kamloops, B.C, from June 7<sup>th</sup> to 10<sup>th</sup>, 2010, to the value of the following:

<b><u>MOB/DEMOB (share):</u></b>		
Crew wages	\$850.00	
Truck rental and gas	...375.00	
Room and board	<u>365.00</u>	
TOTAL	\$1,215.00	\$1,215.00
<b><u>FIELD:</u></b>		
4-man crew, 3 days @ \$2,700/day	\$8,100.00	\$8,100.00
<b><u>DATA REDUCTION and REPORT:</u></b>		
Senior Geophysicist	\$850.00	
Data reduction and map preparation	<u>775.00</u>	
	\$1,625.00	\$1,625.00
<b>GRAND TOTAL</b>		<b>\$10,815.00</b>

Respectfully submitted,  
Geotronics Consulting Inc.

David G. Mark, P.Geo,  
Geophysicist

May 5, 2010

**APPENDIX –GEOCHEMISTRY DATA**



## TREADWELL MMI DATA

		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Dy	Er	Eu	Fe	Gd
Line 3300E																		
-1440S	3300E	4	34	<10	<0.1	5990	<1	360	2	212	38	<100	710	63	36.2	13.9	12	65
-1380S	3300E	1	13	<10	<0.1	4640	<1	350	<1	131	15	<100	450	31	16.4	10.5	13	45
-1320S	3300E	7	48	<10	<0.1	5330	<1	370	2	83	112	<100	860	60	41.8	9.3	7	47
-1260S	3300E	3	69	<10	<0.1	4040	<1	200	2	165	16	<100	120	19	8.9	5.9	10	25
-1200S	3300E	4	15	<10	<0.1	3510	<1	470	4	48	107	<100	450	23	18.7	3.8	8	22
-1140S	3300E	2	33	<10	<0.1	3030	<1	360	3	83	62	<100	510	60	36.9	11.3	17	55
1080S	3300E	3	19	<10	<0.1	4030	<1	340	2	30	8	<100	150	11	6.9	2.2	11	11
1020S	3300E	3	79	<10	<0.1	2600	<1	290	3	110	26	<100	180	14	7.3	4.7	24	18
-960S	3300E	4	32	<10	<0.1	3380	<1	460	4	47	83	<100	350	32	21.3	6.2	11	29
-900S	3300E	2	104	<10	<0.1	5670	<1	250	4	242	43	<100	420	39	18.7	11.6	18	49
-840S	3300E	8	3	<10	0.2	1600	<1	610	8	<5	63	<100	420	27	28.9	2.8	2	18
-780S	3300E																	
-720S	3300E	4	14	<10	<0.1	1760	<1	470	4	35	107	<100	310	23	16.8	4.6	9	22
-660S	3300E	4	11	<10	<0.1	2170	<1	530	4	40	82	<100	540	64	47.9	11.5	6	62
-600S	3300E	7	98	<10	<0.1	2980	<1	360	9	211	100	<100	610	89	51.5	14.4	24	63
-540S	3300E	4	129	<10	<0.1	2100	<1	140	11	20	76	<100	290	101	77.8	9.3	42	51
-480S	3300E	1	50	<10	<0.1	6290	<1	440	4	46	50	<100	520	96	65.6	18	10	92
-420S	3300E	<1	97	<10	<0.1	3760	<1	150	5	855	18	<100	70	73	32	24.3	12	91
-360S	3300E	2	103	<10	<0.1	2230	<1	290	7	42	44	<100	210	113	82.1	15.4	14	75
-300S	3300E	2	159	<10	0.2	1970	<1	70	6	105	88	<100	260	70	44.9	11.3	39	55
-240S	3300E	<1	52	<10	0.4	1750	<1	710	7	114	80	<100	270	51	34.9	12.4	7	43
Line 4200E																		
-1400	4200E	1	59	<10	<0.1	4520	<1	310	3	37	26	<100	210	35	21.6	6.7	11	32
-1375	4200E	<1	69	<10	<0.1	7400	<1	250	2	141	24	<100	230	60	32.5	14.5	10	66
-1350	4200E	<1	97	<10	<0.1	770	<1	180	4	171	24	<100	150	46	24.1	11.8	34	50
-1325	4200E	<1	67	<10	<0.1	1450	<1	140	2	107	18	<100	140	38	20.1	11.6	14	50
-1300	4200E	1	84	<10	<0.1	710	<1	80	3	131	37	<100	120	35	20.6	7.4	22	35
-1275	4200E	<1	126	<10	<0.1	2060	<1	210	7	152	61	<100	160	51	28.2	11.7	61	52
-1250	4200E	2	110	<10	<0.1	3590	<1	210	3	228	45	<100	240	52	28.6	12.1	28	54
-1225	4200E	3	69	<10	<0.1	1180	<1	140	2	189	23	<100	210	67	40.6	14.7	15	67
-1200	4200E	<1	83	<10	<0.1	870	<1	100	3	39	159	<100	1180	12	8.9	2.2	235	9
-1175	4200E	3	126	<10	<0.1	1530	<1	180	8	146	64	<100	120	34	17.8	6.9	37	31
-1150	4200E	3	135	<10	<0.1	2570	<1	180	7	116	43	<100	130	23	12.8	5.5	41	24
-1125	4200E	2	30	<10	<0.1	2850	<1	310	4	40	207	<100	490	37	24.4	8	13	38
-1100	4200E	1	5	<10	0.1	2240	<1	550	1	22	12	<100	190	66	38.2	14.1	8	68
-1075	4200E	1	123	<10	<0.1	2620	<1	220	3	126	49	<100	150	27	13.6	6	43	25
-1050	4200E	<1	<1	<10	<0.1	<10	<1	<10	<1	<5	<5	<100	<10	<1	<0.5	<0.5	<1	<1
-1025	4200E	1	84	<10	<0.1	2260	<1	270	4	254	28	<100	90	72	40.5	16.8	14	77
-1000	4200E	<1	51	<10	<0.1	3980	<1	420	3	245	18	<100	100	121	70.7	22.7	7	111
-975	4200E	<1	119	<10	<0.1	6210	<1	310	6	727	51	<100	140	153	75.3	36.9	20	151
-950	4200E	<1	139	<10	<0.1	5650	<1	260	6	530	41	<100	130	86	41.6	21.5	20	79
-925	4200E	<1	134	<10	<0.1	3030	<1	180	5	162	38	<100	150	63	34.4	13.6	20	56
-900	4200E	<1	138	<10	<0.1	4260	<1	140	6	250	26	<100	90	55	27.5	11.3	14	50
-875	4200E	<1	77	<10	<0.1	6570	<1	380	3	144	39	<100	170	44	24.7	8.1	10	37
-850	4200E	<1	74	<10	<0.1	4430	<1	120	<1	118	101	<100	810	46	28.3	9	193	38

## TREADWELL MMI DATA

		La	Li	Mg	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb
Line 3300E																			
-1440S	3300E	112	6	152	<5	<0.5	178	100	30	<1	35	57	<1	52	46	<1	5750	<1	10
-1380S	3300E	62	6	150	<5	<0.5	138	64	10	<1	24	43	<1	31	35	<1	4100	<1	6
-1320S	3300E	51	<5	127	<5	<0.5	90	31	30	<1	17	91	<1	73	27	<1	5690	<1	8
-1260S	3300E	81	<5	60	5	<0.5	104	15	30	<1	23	281	<1	30	24	<1	1740	<1	4
-1200S	3300E	24	<5	192	<5	1.2	49	92	<10	<1	8	114	<1	26	13	<1	4680	<1	3
-1140S	3300E	66	5	160	<5	<0.5	123	103	40	<1	23	81	<1	82	36	<1	3970	<1	9
1080S	3300E	12	6	167	<5	<0.5	25	78	<10	<1	4	70	<1	9	7	<1	2980	<1	2
1020S	3300E	43	<5	95	6	0.9	67	27	20	<1	14	133	<1	29	15	<1	2510	<1	3
-960S	3300E	35	<5	197	<5	<0.5	68	66	20	<1	13	32	<1	52	20	<1	4400	<1	5
-900S	3300E	132	<5	62	<5	<0.5	180	24	60	<1	38	174	<1	75	43	<1	3240	<1	7
-840S	3300E	6	<5	250	<5	<0.5	17	283	<10	<1	2	19	<1	15	7	<1	11700	<1	3
-780S	3300E																		
-720S	3300E	21	<5	204	<5	0.6	49	134	20	<1	8	25	<1	43	14	<1	3490	<1	3
-660S	3300E	54	<5	211	<5	0.6	122	159	10	<1	20	34	<1	58	36	<1	5750	<1	9
-600S	3300E	84	<5	109	<5	0.6	141	72	80	<1	28	152	<1	146	43	<1	2950	<1	12
-540S	3300E	27	5	64	<5	<0.5	84	82	230	<1	14	189	<1	76	28	<1	1830	<1	12
-480S	3300E	106	<5	146	<5	0.6	199	72	30	<1	36	169	<1	82	57	<1	5800	<1	14
-420S	3300E	269	<5	45	<5	<0.5	371	17	30	<1	82	181	<1	75	83	<1	1660	<1	13
-360S	3300E	79	<5	92	<5	<0.5	145	249	50	<1	27	231	<1	51	43	<1	3130	<1	14
-300S	3300E	64	<5	46	<5	0.5	148	50	140	<1	27	225	<1	109	39	<1	1130	<1	10
-240S	3300E	72	<5	155	<5	1.8	110	97	60	<1	22	54	<1	67	31	<1	11900	1	8
Line 4200E																			
-1400	4200E	25	<5	50	<5	<0.5	55	66	20	<1	9	250	<1	19	20	<1	3380	<1	5
-1375	4200E	125	<5	41	<5	<0.5	194	22	20	<1	33	316	<1	39	52	<1	3860	<1	10
-1350	4200E	87	<5	28	<5	0.6	155	59	30	<1	27	397	<1	39	41	<1	800	<1	7
-1325	4200E	97	<5	21	<5	<0.5	177	19	30	<1	30	168	<1	29	44	<1	870	<1	6
-1300	4200E	76	<5	12	<5	<0.5	116	50	70	<1	21	205	<1	32	29	<1	450	<1	5
-1275	4200E	75	<5	45	<5	1.1	142	120	70	<1	24	201	<1	41	40	<1	1960	<1	8
-1250	4200E	114	<5	41	<5	<0.5	167	51	50	<1	29	174	<1	46	43	<1	2310	<1	8
-1225	4200E	102	<5	28	<5	<0.5	187	34	20	<1	31	170	<1	63	53	<1	850	<1	10
-1200	4200E	12	<5	51	5	<0.5	22	303	<10	<1	4	143	<1	45	7	<1	930	<1	2
-1175	4200E	62	<5	40	<5	0.6	90	127	60	<1	17	358	<1	39	25	<1	810	<1	5
-1150	4200E	48	<5	26	<5	1.2	75	83	80	<1	13	234	<1	32	20	<1	920	<1	4
-1125	4200E	50	<5	55	<5	<0.5	91	81	<10	<1	15	106	<1	30	26	<1	3610	<1	6
-1100	4200E	32	12	181	<5	<0.5	96	63	<10	<1	13	45	<1	28	40	<1	7010	<1	10
-1075	4200E	52	5	41	<5	1.1	76	80	60	<1	14	354	<1	36	21	<1	1350	<1	4
-1050	4200E	<1	<5	<1	<5	<0.5	<1	<5	<10	<1	<1	<5	<1	<5	<1	<1	<10	<1	<1
-1025	4200E	146	<5	42	<5	<0.5	225	27	50	<1	39	99	<1	30	61	<1	1470	<1	12
-1000	4200E	127	<5	50	<5	<0.5	213	35	20	<1	35	118	<1	46	71	<1	4950	<1	18
-975	4200E	364	6	58	<5	<0.5	487	52	30	<1	90	93	<1	104	120	<1	4190	<1	25
-950	4200E	221	6	56	<5	<0.5	265	41	60	<1	50	82	<1	73	63	<1	4640	<1	14
-925	4200E	87	5	42	<5	<0.5	154	50	60	<1	26	143	<1	59	44	<1	1310	<1	9
-900	4200E	115	<5	29	<5	<0.5	163	23	50	<1	30	122	<1	38	39	<1	1480	<1	8
-875	4200E	74	<5	48	<5	<0.5	83	33	40	<1	15	56	<1	29	24	<1	5420	<1	6
-850	4200E	65	<5	42	<5	<0.5	89	56	<10	<1	16	104	<1	79	27	<1	2560	<1	7

## TREADWELL MMI DATA

		Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
Line 3300E											
-1440S	3300E	<10	1.7	11	<0.5	8	<1	290	29	70	26
-1380S	3300E	<10	1.9	15	<0.5	3	<1	185	13	120	28
-1320S	3300E	<10	1.7	7	0.6	13	<1	303	37	120	54
-1260S	3300E	<10	14.2	93	<0.5	14	<1	79	7	50	177
-1200S	3300E	<10	2.8	6	<0.5	15	<1	143	20	50	38
-1140S	3300E	<10	2.1	20	<0.5	14	<1	259	32	380	65
1080S	3300E	<10	0.9	9	<0.5	6	<1	55	6	130	<5
1020S	3300E	<10	7	127	<0.5	11	<1	67	6	910	140
-960S	3300E	<10	2.3	10	<0.5	11	<1	146	20	60	65
-900S	3300E	<10	18.2	110	<0.5	20	<1	185	15	50	282
-840S	3300E	<10	<0.5	<3	<0.5	5	<1	149	30	30	8
-780S	3300E										
-720S	3300E	<10	1.9	9	<0.5	13	<1	130	17	60	51
-660S	3300E	<10	2.2	8	<0.5	24	<1	373	47	30	46
-600S	3300E	<10	11.3	42	<0.5	30	<1	364	43	220	241
-540S	3300E	<10	11.5	57	0.6	17	<1	714	65	170	132
-480S	3300E	<10	3.5	15	0.7	27	<1	569	57	70	105
-420S	3300E	<10	8.1	55	<0.5	5	<1	337	22	30	69
-360S	3300E	<10	3.3	21	<0.5	4	1	692	69	270	<5
-300S	3300E	<10	23.7	82	0.7	28	1	406	40	80	276
-240S	3300E	<10	4.6	22	<0.5	15	4	205	31	170	57
Line 4200E											
-1400	4200E	<10	1.4	22	<0.5	2	<1	175	17	190	23
-1375	4200E	<10	2.8	16	<0.5	7	<1	327	22	30	47
-1350	4200E	<10	6.2	155	<0.5	6	<1	235	17	50	89
-1325	4200E	<10	2.7	28	<0.5	4	<1	208	14	<20	43
-1300	4200E	<10	5.2	69	<0.5	6	<1	220	16	50	69
-1275	4200E	<10	9	281	<0.5	4	<1	282	20	350	103
-1250	4200E	<10	6.1	143	<0.5	5	<1	290	20	120	81
-1225	4200E	<10	3.1	26	<0.5	5	<1	413	30	40	40
-1200	4200E	<10	4.3	187	0.5	6	<1	68	8	260	55
-1175	4200E	<10	7.4	157	<0.5	6	<1	176	13	100	97
-1150	4200E	<10	8	369	<0.5	5	<1	126	10	290	104
-1125	4200E	<10	0.8	18	<0.5	4	<1	204	19	60	18
-1100	4200E	<10	0.9	4	<0.5	4	<1	350	30	<20	14
-1075	4200E	<10	8.2	305	<0.5	7	<1	125	10	180	116
-1050	4200E	<10	<0.5	<3	<0.5	<1	<1	<5	<1	<20	<5
-1025	4200E	<10	4.3	17	<0.5	9	<1	427	28	<20	46
-1000	4200E	<10	1.8	3	<0.5	5	<1	623	49	30	27
-975	4200E	<10	8.6	66	<0.5	8	<1	786	50	110	105
-950	4200E	<10	13.1	89	<0.5	7	<1	437	27	50	116
-925	4200E	<10	13.5	177	<0.5	7	<1	335	25	120	151
-900	4200E	<10	8.1	68	<0.5	4	<1	298	18	40	74
-875	4200E	<10	3.2	20	<0.5	4	<1	258	17	60	35
-850	4200E	<10	6.3	124	<0.5	6	<1	259	21	<20	90

## TREADWELL MMI DATA

		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Dy	Er	Eu	Fe	Gd
-825	4200E	<1	104	<10	<0.1	8250	<1	340	2	402	36	<100	120	119	59.4	26.1	19	114
-800	4200E	<1	154	<10	<0.1	940	<1	20	4	807	22	<100	90	121	57.7	33.1	18	143
-775	4200E	<1	70	<10	<0.1	4590	<1	410	2	433	60	<100	110	180	107	34.1	8	156
-750	4200E	<1	178	<10	<0.1	1560	<1	100	5	244	38	<100	90	64	35.2	15.2	20	61
-725	4200E	<1	124	<10	<0.1	2000	<1	80	3	266	18	<100	70	59	30.1	13.6	10	59
-700	4200E	<1	113	<10	<0.1	3400	<1	70	1	942	45	<100	190	263	137	64.4	19	267
-675	4200E	<1	125	<10	<0.1	550	<1	40	5	273	62	<100	210	68	35.8	13.6	24	57
-650	4200E	<1	161	<10	<0.1	660	<1	50	6	62	56	<100	110	43	28.8	5.5	45	25
-625	4200E																	
-600	4200E	<1	135	<10	<0.1	430	<1	100	7	135	52	<100	120	76	43.9	15.9	17	65
-575	4200E	1	112	<10	<0.1	1830	<1	240	6	141	83	<100	90	38	22.8	8.4	52	37
-550	4200E	3	2	<10	0.2	2310	<1	500	3	31	328	<100	370	12	8.5	2.3	16	12
-525	4200E	2	7	<10	<0.1	1040	<1	470	6	52	283	<100	830	11	9.4	2.3	9	11
-500	4200E	<1	23	<10	0.2	6420	<1	440	2	70	155	<100	350	75	49.2	15.4	5	67
-475	4200E	3	113	<10	<0.1	3030	<1	160	3	202	26	<100	140	38	19.2	9.3	22	38
-450	4200E	3	53	<10	<0.1	4420	<1	320	3	70	141	<100	350	43	25.8	9	11	42
-425	4200E	3	83	<10	<0.1	2360	<1	310	6	81	42	<100	130	112	65.9	22.6	20	107
-400	4200E	5	9	<10	0.2	1710	<1	390	3	83	386	<100	320	27	16.1	5.7	13	26
-375	4200E	3	6	<10	<0.1	1260	<1	420	2	30	209	<100	190	33	20.5	6.3	7	32
-350	4200E	1	26	<10	<0.1	2200	<1	400	6	49	28	<100	130	73	40.9	15.9	11	78
-330	4200E	2	6	<10	<0.1	3370	<1	390	2	25	196	<100	390	19	13.5	2.8	8	17
-300	4200E	5	37	<10	<0.1	5990	<1	390	4	23	20	<100	380	114	79	14.8	4	89
-270	4200E	3	22	<10	<0.1	1360	<1	340	8	36	192	<100	690	34	29.7	5.1	7	26
-240	4200E	1	100	<10	<0.1	4110	<1	180	4	187	22	<100	170	38	20.1	9	16	42
-210	4200E	2	92	<10	<0.1	2200	<1	130	3	146	23	<100	70	32	18.3	8.7	20	36
-180	4200E	3	41	<10	<0.1	5730	<1	340	2	15	44	<100	130	10	7.3	1.4	8	9
-150	4200E	2	19	<10	<0.1	4790	<1	370	3	23	146	<100	180	25	16.9	4	7	22
-120	4200E	2	32	<10	<0.1	5750	<1	670	3	42	20	<100	50	19	15.2	2.2	4	13
-90	4200E	4	34	<10	0.2	3180	<1	490	4	11	11	<100	150	66	50.5	8.3	5	48
-60	4200E	1	99	<10	<0.1	5230	<1	360	4	57	43	<100	90	20	13	2.2	10	13
-30	4200E	3	87	<10	0.1	2900	<1	240	4	126	21	<100	120	61	35.4	16	25	67
0	4200E	3	8	<10	<0.1	1430	<1	430	2	6	43	<100	150	19	12.1	3.9	6	20
30	4200E	4	84	<10	<0.1	2740	<1	230	3	115	12	<100	100	18	9.7	5.3	15	21
60	4200E	3	109	<10	<0.1	5860	<1	240	4	211	35	<100	100	31	15.3	8	25	31
90	4200E	3	118	<10	<0.1	1170	<1	80	5	218	33	<100	60	26	12.8	7.7	35	32
120	4200E	1	56	<10	<0.1	720	<1	130	3	39	182	<100	300	12	7.3	3	365	13
150	4200E	2	77	<10	<0.1	1390	<1	140	4	159	41	<100	130	39	22	10	22	43
180	4200E	2	2	<10	<0.1	420	<1	390	3	21	260	<100	840	7	5.6	1.9	18	7
210	4200E	<1	5	<10	<0.1	390	<1	290	<1	24	598	<100	910	7	4.8	2.2	16	8
240	4200E	2	121	<10	<0.1	730	<1	160	5	42	141	<100	100	8	3.8	2	49	7
270	4200E	2	2	<10	<0.1	720	<1	570	4	<5	6	<100	<10	31	22.4	5.3	4	26
300	4200E	3	5	<10	0.1	3020	<1	290	3	18	203	<100	720	22	14.9	3.7	5	20
330	4200E	2	67	<10	<0.1	1050	<1	310	7	21	27	<100	90	23	15.5	4.5	15	20
360	4200E	3	54	<10	<0.1	3070	<1	210	4	29	17	<100	140	24	14.2	5.5	11	26
390	4200E	4	134	<10	<0.1	3000	<1	170	8	492	27	<100	120	53	24.1	11.9	45	48
420	4200E																	

TREADWELL MMI DATA

		La	Li	Mg	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb
-825	4200E	268	6	63	<5	<0.5	331	42	20	<1	61	70	<1	91	85	<1	4220	<1	19
-800	4200E	296	6	4	<5	<0.5	579	22	70	<1	105	83	<1	55	133	<1	260	<1	21
-775	4200E	252	7	45	<5	<0.5	379	34	20	<1	63	37	<1	79	106	<1	5960	<1	26
-750	4200E	100	11	18	<5	<0.5	203	32	50	<1	35	97	<1	46	50	<1	1000	<1	10
-725	4200E	130	10	15	<5	<0.5	210	19	50	<1	37	84	<1	38	49	<1	620	<1	9
-700	4200E	602	9	22	<5	<0.5	948	20	<10	<1	169	53	<1	185	221	<1	1050	<1	42
-675	4200E	99	8	16	<5	<0.5	191	52	50	<1	33	189	<1	48	47	<1	470	<1	10
-650	4200E	19	5	16	<5	<0.5	56	67	90	<1	9	144	<1	20	17	<1	620	<1	5
-625	4200E																		
-600	4200E	76	<5	29	<5	<0.5	184	35	60	<1	30	100	<1	29	51	<1	640	<1	11
-575	4200E	60	<5	66	<5	1.6	106	157	40	<1	19	172	<1	52	29	<1	900	<1	6
-550	4200E	19	5	63	<5	<0.5	35	173	<10	<1	6	46	<1	18	9	<1	2480	<1	2
-525	4200E	17	<5	65	<5	<0.5	31	534	<10	<1	6	59	<1	16	8	<1	2820	<1	2
-500	4200E	54	6	39	<5	<0.5	112	85	<10	<1	18	76	<1	26	41	<1	5650	<1	11
-475	4200E	90	5	53	<5	<0.5	127	74	20	<1	23	173	<1	46	32	<1	1080	<1	6
-450	4200E	53	6	65	<5	<0.5	92	58	10	<1	15	86	<1	31	29	<1	3260	<1	6
-425	4200E	102	9	74	<5	0.5	214	169	20	<1	33	74	<1	59	71	<1	2670	<1	17
-400	4200E	35	6	89	<5	<0.5	66	249	<10	<1	11	56	<1	23	19	<1	2160	<1	4
-375	4200E	23	7	76	<5	<0.5	54	144	<10	<1	9	57	<1	15	20	<1	2330	<1	5
-350	4200E	59	7	79	<5	0.9	140	173	30	<1	21	101	<1	20	51	<1	2050	<1	12
-330	4200E	13	6	81	<5	<0.5	27	154	<10	<1	5	53	<1	10	9	<1	3630	<1	2
-300	4200E	50	<5	60	<5	<0.5	104	79	<10	<1	16	132	<1	17	40	<1	4880	<1	14
-270	4200E	30	<5	38	<5	<0.5	60	606	<10	<1	10	285	<1	15	17	<1	2730	<1	4
-240	4200E	93	<5	28	<5	<0.5	139	30	50	<1	25	203	<1	47	35	<1	1270	<1	6
-210	4200E	67	<5	28	<5	<0.5	126	44	40	<1	21	305	<1	33	31	<1	1260	<1	5
-180	4200E	5	5	69	<5	<0.5	11	90	<10	<1	2	86	<1	8	5	<1	4400	<1	1
-150	4200E	19	5	79	<5	<0.5	37	86	<10	<1	6	67	<1	16	12	<1	4460	<1	3
-120	4200E	18	<5	30	<5	<0.5	20	70	20	<1	4	43	<1	7	7	<1	9020	<1	2
-90	4200E	28	10	57	<5	<0.5	62	224	10	<1	10	95	<1	21	24	<1	5410	<1	8
-60	4200E	19	<5	26	<5	<0.5	24	97	60	<1	5	81	<1	14	8	<1	5260	<1	2
-30	4200E	139	<5	49	<5	1.1	230	122	50	<1	40	220	<1	50	55	<1	2450	<1	9
0	4200E	13	<5	93	<5	<0.5	33	81	<10	<1	5	63	<1	7	12	<1	4010	<1	3
30	4200E	44	<5	27	<5	<0.5	80	22	10	<1	14	252	<1	21	19	<1	2510	<1	3
60	4200E	91	<5	66	<5	0.7	108	52	40	<1	21	80	<1	55	26	<1	3770	<1	5
90	4200E	98	<5	18	<5	0.9	135	29	30	<1	26	139	<1	27	30	<1	370	<1	4
120	4200E	23	<5	86	6	2	43	141	<10	<1	8	29	<1	24	11	<1	890	<1	2
150	4200E	91	<5	22	<5	<0.5	158	34	30	<1	28	113	<1	45	38	<1	700	<1	6
180	4200E	11	<5	48	6	<0.5	26	372	<10	<1	4	19	<1	10	6	<1	1260	<1	<1
210	4200E	12	<5	28	6	<0.5	31	681	<10	<1	5	26	<1	9	8	<1	1050	<1	1
240	4200E	15	<5	42	<5	1.5	23	232	40	<1	5	169	<1	16	6	<1	1080	<1	1
270	4200E	3	8	106	<5	<0.5	17	30	<10	<1	2	21	<1	<5	11	<1	3180	<1	4
300	4200E	21	<5	89	<5	<0.5	39	66	<10	<1	7	74	<1	9	12	<1	2900	<1	3
330	4200E	16	<5	59	<5	<0.5	35	69	80	<1	6	69	<1	13	12	<1	1580	<1	3
360	4200E	32	<5	61	<5	<0.5	67	30	20	<1	11	149	<1	22	19	<1	1410	<1	3
390	4200E	140	<5	40	<5	0.7	179	55	60	<1	36	149	<1	62	43	<1	1430	<1	8
420	4200E																		

## TREADWELL MMI DATA

		Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
-825	4200E	<10	8.2	57	<0.5	7	<1	623	38	<20	89
-800	4200E	<10	12.3	117	<0.5	6	<1	596	39	<20	100
-775	4200E	<10	4.4	6	<0.5	5	<1	1010	73	<20	36
-750	4200E	<10	8	63	<0.5	5	<1	364	25	20	66
-725	4200E	<10	6.5	44	<0.5	5	<1	331	20	<20	66
-700	4200E	<10	8.8	71	<0.5	7	<1	1770	93	<20	106
-675	4200E	<10	6.3	72	<0.5	4	<1	372	24	30	56
-650	4200E	<10	3.7	110	<0.5	3	<1	256	21	50	36
-625	4200E										
-600	4200E	<10	7.9	96	<0.5	6	<1	446	31	100	70
-575	4200E	<10	8.4	236	<0.5	7	<1	199	18	400	102
-550	4200E	<10	0.6	3	<0.5	3	<1	65	8	<20	6
-525	4200E	<10	<0.5	4	<0.5	4	<1	70	9	100	7
-500	4200E	<10	0.5	<3	<0.5	2	<1	366	37	<20	7
-475	4200E	<10	9	131	<0.5	6	<1	202	14	70	98
-450	4200E	<10	1.9	12	<0.5	3	<1	230	19	50	27
-425	4200E	<10	3.6	71	<0.5	4	<1	615	49	180	49
-400	4200E	<10	2	10	<0.5	3	<1	128	14	20	20
-375	4200E	<10	1.5	<3	<0.5	2	<1	161	18	30	7
-350	4200E	<10	0.6	24	<0.5	3	<1	358	31	150	15
-330	4200E	<10	<0.5	<3	<0.5	1	<1	93	12	70	10
-300	4200E	<10	0.6	<3	<0.5	3	<1	633	58	30	16
-270	4200E	<10	<0.5	5	0.8	3	<1	189	25	140	11
-240	4200E	<10	6.4	90	<0.5	8	<1	212	15	40	95
-210	4200E	<10	5.3	104	<0.5	3	<1	201	13	30	60
-180	4200E	<10	0.7	28	<0.5	<1	<1	60	7	60	15
-150	4200E	<10	0.9	25	<0.5	2	<1	134	14	50	18
-120	4200E	<10	1	<3	<0.5	<1	<1	109	12	50	8
-90	4200E	<10	1	10	<0.5	2	<1	364	43	80	15
-60	4200E	<10	2.3	14	<0.5	1	<1	104	10	60	14
-30	4200E	<10	6.8	84	<0.5	7	3	363	26	100	68
0	4200E	<10	0.5	18	<0.5	1	<1	108	9	<20	13
30	4200E	<10	3.1	55	<0.5	4	<1	103	7	40	53
60	4200E	<10	5.1	180	<0.5	3	<1	156	11	40	83
90	4200E	<10	6.6	230	<0.5	4	<1	144	9	90	102
120	4200E	<10	3.7	575	<0.5	4	<1	77	6	40	74
150	4200E	<10	4.4	92	<0.5	6	<1	224	16	80	66
180	4200E	<10	<0.5	8	<0.5	4	<1	46	5	30	10
210	4200E	<10	<0.5	6	<0.5	5	<1	47	4	<20	11
240	4200E	<10	3	238	<0.5	2	<1	37	3	860	54
270	4200E	<10	<0.5	<3	<0.5	5	<1	172	19	50	<5
300	4200E	<10	<0.5	4	<0.5	3	<1	110	12	40	11
330	4200E	<10	1.2	35	<0.5	2	<1	136	13	360	24
360	4200E	<10	1.6	14	<0.5	5	<1	168	11	30	37
390	4200E	<10	8.6	149	<0.5	6	<1	247	18	40	127
420	4200E										

## TREADWELL MMI DATA

		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Dy	Er	Eu	Fe	Gd
450	4200E																	
480	4200E																	
510	4200E	1	59	<10	<0.1	550	<1	30	3	264	21	<100	100	76	45	16.8	7	73
540	4200E																	
570	4200E	<1	43	<10	<0.1	4950	<1	260	2	65	38	<100	140	45	29.2	8.5	7	39
600	4200E	1	80	<10	<0.1	2220	<1	160	3	335	12	<100	130	92	48.8	22.4	13	96
630	4200E	2	73	<10	<0.1	1230	<1	150	3	94	17	<100	120	53	29.3	15.7	13	61
660	4200E	<1	109	<10	<0.1	850	<1	50	2	243	67	<100	140	62	32	15.3	11	69
690	4200E	<1	126	<10	<0.1	770	<1	60	3	360	25	<100	100	37	18.1	10.8	14	47
720	4200E	3	8	<10	<0.1	6000	<1	370	3	50	20	<100	330	149	96.6	29.1	4	132
750	4200E	2	28	<10	<0.1	1440	<1	360	5	32	10	<100	210	85	55	15.7	4	70
780	4200E	7	17	<10	<0.1	540	<1	340	3	49	6	<100	540	306	219	57.8	9	225
810	4200E	2	18	<10	0.1	630	<1	330	4	12	13	<100	50	21	16.1	2.8	3	14
840	4200E	12	140	<10	<0.1	360	<1	30	5	118	53	<100	100	36	19	7	24	32
870	4200E	2	91	<10	<0.1	780	<1	30	1	518	25	<100	190	122	60.5	38.5	18	160
900	4200E	<1	63	<10	<0.1	4430	<1	290	2	235	20	<100	470	170	98.4	37.8	7	174
930	4200E	2	27	<10	<0.1	3100	<1	360	3	42	229	<100	490	26	18.5	4.6	6	23
960	4200E	1	19	<10	0.1	910	<1	230	3	18	418	<100	210	4	3.7	0.6	12	4
990	4200E	5	114	<10	<0.1	350	<1	140	8	194	272	<100	280	72	48.6	16.6	434	76
1020	4200E	<1	113	<10	<0.1	220	<1	20	3	293	62	<100	200	104	54.7	18.9	39	90
1050	4200E	<1	88	<10	<0.1	6370	<1	80	1	784	33	<100	210	257	136	60.6	13	283
1080	4200E	<1	105	<10	<0.1	2720	<1	90	<1	648	64	<100	220	123	64.3	33.5	71	149
1110	4200E	<1	86	<10	<0.1	2950	<1	120	2	568	22	<100	100	114	51.7	34.3	12	158
1140	4200E	<1	125	<10	<0.1	930	<1	50	4	225	60	<100	210	45	22.4	11.4	27	53
1170	4200E	<1	162	<10	<0.1	360	<1	30	7	90	78	<100	230	27	14.5	5	28	22
1200	4200E	<1	154	<10	<0.1	2640	<1	90	3	201	30	<100	90	41	19.4	9.5	31	43
1230	4200E	3	48	<10	<0.1	2050	<1	280	1	434	29	<100	430	177	94.8	54.2	14	246
1260	4200E	1	73	<10	<0.1	5820	<1	310	1	392	32	<100	210	46	21	12.3	11	56
1290	4200E	4	4	<10	<0.1	3280	<1	480	4	21	39	<100	250	78	57.4	11.4	4	57
1320	4200E	1	120	<10	<0.1	1470	<1	240	3	108	12	<100	150	19	9.8	4.7	20	19
Line 4300E																		
-1400	4300E	<1	44	<10	<0.1	4020	<1	60	1	185	16	<100	80	29	15.9	6.4	8	33
-1375	4300E	1	56	<10	<0.1	1250	<1	50	1	125	25	<100	80	17	8.5	4	8	17
-1350	4300E	<1	57	<10	<0.1	2930	<1	110	2	182	26	<100	90	23	11.9	5.7	12	27
-1325	4300E	<1	61	<10	<0.1	3140	<1	130	2	448	18	<100	90	56	29.2	14.6	11	64
-1300	4300E	1	57	<10	<0.1	4540	<1	150	1	73	12	<100	70	10	5.2	2.4	7	11
-1275	4300E	2	41	<10	<0.1	6590	<1	390	<1	29	36	<100	270	28	21.5	3.2	4	17
-1250	4300E	1	58	<10	<0.1	2940	<1	130	1	113	23	<100	70	15	8	3.4	11	16
-1225	4300E	2	64	<10	<0.1	880	<1	150	3	131	178	<100	450	39	29.1	8	138	37
-1200	4300E																	
-1175	4300E																	
-1150	4300E	2	45	<10	<0.1	2050	<1	150	3	47	25	<100	120	17	9.6	4.5	16	20
-1125	4300E																	
-1100	4300E																	
-1075	4300E																	
-1050	4300E																	

TREADWELL MMI DATA

		La	Li	Mg	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb
450	4200E																		
480	4200E																		
510	4200E	145	<5	4	<5	<0.5	284	14	60	<1	50	106	<1	43	63	<1	190	<1	11
540	4200E																		
570	4200E	27	<5	46	<5	<0.5	60	79	<10	<1	9	41	<1	22	22	<1	4420	<1	6
600	4200E	148	<5	41	<5	<0.5	296	42	30	<1	49	133	<1	52	77	<1	2190	<1	13
630	4200E	81	<5	26	<5	<0.5	191	27	20	<1	31	138	<1	32	51	<1	1060	<1	8
660	4200E	150	<5	13	<5	<0.5	257	48	40	<1	46	139	<1	34	58	<1	300	<1	9
690	4200E	195	<5	11	<5	<0.5	212	31	60	<1	43	103	<1	18	43	<1	350	<1	6
720	4200E	99	5	64	<5	<0.5	202	64	<10	<1	31	20	<1	19	75	<1	3840	<1	20
750	4200E	41	<5	67	<5	<0.5	96	66	20	<1	15	81	<1	17	38	<1	3610	<1	11
780	4200E	92	<5	44	<5	<0.5	315	339	<10	<1	44	113	<1	57	124	<1	600	<1	37
810	4200E	2	<5	65	<5	0.6	12	94	<10	<1	2	66	<1	10	7	<1	2060	<1	3
840	4200E	48	<5	11	<5	0.9	104	69	80	<1	21	174	<1	35	25	<1	220	<1	6
870	4200E	310	<5	8	6	<0.5	632	45	20	<1	126	64	<1	98	146	<1	250	<1	22
900	4200E	308	<5	71	<5	<0.5	494	32	<10	<1	101	50	<1	61	116	<1	11000	<1	27
930	4200E	39	<5	50	<5	<0.5	60	55	<10	<1	12	51	<1	19	15	<1	6270	<1	4
960	4200E	3	<5	38	<5	<0.5	10	164	<10	<1	2	30	<1	15	3	<1	1550	<1	<1
990	4200E	66	<5	27	<5	2.9	191	233	20	<1	34	7	<1	85	56	<1	350	<1	12
1020	4200E	91	<5	13	<5	0.5	268	99	30	<1	49	142	<1	61	70	<1	210	<1	16
1050	4200E	563	<5	21	<5	<0.5	1010	30	20	<1	200	19	<1	117	233	<1	2930	<1	43
1080	4200E	301	<5	28	<5	0.6	504	64	<10	<1	104	23	<1	107	123	<1	1110	<1	22
1110	4200E	452	<5	21	<5	<0.5	670	29	20	<1	144	81	<1	65	146	<1	2560	<1	22
1140	4200E	130	<5	4	5	1	192	59	80	<1	41	149	<1	47	46	<1	340	<1	8
1170	4200E	35	<5	5	<5	0.7	72	67	60	<1	15	173	<1	25	17	<1	230	<1	4
1200	4200E	87	<5	19	<5	1	139	47	60	<1	29	181	<1	43	35	<1	1140	<1	7
1230	4200E	363	<5	74	<5	<0.5	747	50	<10	<1	134	17	<1	63	187	<1	3140	<1	32
1260	4200E	171	<5	54	<5	<0.5	196	33	10	<1	43	80	<1	38	44	<1	4400	<1	8
1290	4200E	22	5	63	<5	<0.5	65	72	<10	<1	11	55	<1	15	26	<1	2280	<1	10
1320	4200E	47	<5	46	<5	0.6	62	45	30	<1	14	124	<1	27	16	<1	1880	<1	3
Line 4300E																			
-1400	4300E	101	<5	12	<5	<0.5	132	26	20	<1	30	180	<1	27	29	<1	890	<1	5
-1375	4300E	54	<5	8	5	<0.5	69	33	20	<1	16	196	<1	23	16	<1	420	<1	3
-1350	4300E	92	<5	16	<5	<0.5	108	37	50	<1	25	164	<1	28	24	<1	1340	<1	4
-1325	4300E	216	<5	27	<5	<0.5	272	29	20	<1	62	153	<1	53	57	<1	1300	<1	10
-1300	4300E	35	<5	25	<5	<0.5	41	28	20	<1	10	173	<1	15	9	<1	1880	<1	2
-1275	4300E	13	<5	22	<5	<0.5	24	72	10	<1	5	68	<1	15	10	<1	5970	<1	3
-1250	4300E	52	<5	30	<5	<0.5	59	40	20	<1	14	154	<1	26	13	<1	1590	<1	2
-1225	4300E	62	<5	84	<5	1.4	110	220	<10	<1	22	50	<1	64	29	<1	1630	<1	6
-1200	4300E																		
-1175	4300E																		
-1150	4300E	51	<5	44	<5	<0.5	71	55	30	<1	15	84	<1	27	17	<1	1790	<1	3
-1125	4300E																		
-1100	4300E																		
-1075	4300E																		
-1050	4300E																		



## TREADWELL MMI DATA

		Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
450	4200E										
480	4200E										
510	4200E	<10	2.5	12	<0.5	6	<1	480	32	<20	46
540	4200E										
570	4200E	<10	1.1	7	<0.5	<1	<1	268	21	100	21
600	4200E	<10	4.9	16	<0.5	5	<1	562	32	70	57
630	4200E	<10	3.4	11	<0.5	3	<1	317	22	30	44
660	4200E	<10	5.2	30	<0.5	5	<1	370	22	20	66
690	4200E	<10	5.8	60	<0.5	4	<1	220	12	20	72
720	4200E	<10	0.7	<3	<0.5	3	<1	814	71	20	13
750	4200E	<10	0.6	<3	<0.5	2	<1	465	40	90	13
780	4200E	<10	0.6	5	<0.5	7	1	1950	168	<20	13
810	4200E	<10	1	<3	<0.5	1	<1	118	15	450	15
840	4200E	<10	6.6	226	<0.5	6	<1	213	15	80	102
870	4200E	<10	6.6	117	<0.5	7	<1	700	43	90	101
900	4200E	<10	2.3	11	<0.5	3	<1	1030	63	30	39
930	4200E	<10	0.9	5	<0.5	2	<1	143	16	40	21
960	4200E	<10	<0.5	19	<0.5	2	<1	24	4	50	11
990	4200E	<10	9	1440	0.8	6	2	441	44	90	188
1020	4200E	<10	7.3	176	<0.5	5	<1	569	39	200	78
1050	4200E	<10	4.6	28	<0.5	5	<1	1650	89	30	55
1080	4200E	<10	10.1	224	<0.5	5	<1	710	47	40	144
1110	4200E	<10	7.9	144	<0.5	8	<1	616	33	40	108
1140	4200E	<10	10.7	363	<0.5	9	<1	269	15	50	154
1170	4200E	<10	5.4	184	<0.5	4	<1	168	10	60	69
1200	4200E	<10	11	324	<0.5	7	<1	220	14	60	163
1230	4200E	<10	2.1	19	<0.5	4	<1	1230	65	30	35
1260	4200E	<10	5.1	28	<0.5	8	<1	237	14	60	83
1290	4200E	<10	0.7	<3	<0.5	3	<1	416	46	60	14
1320	4200E	<10	4.8	136	<0.5	4	<1	108	7	50	64
Line 4300E											
-1400	4300E	<10	5.1	69	<0.5	5	<1	166	13	<20	70
-1375	4300E	<10	6.5	93	<0.5	4	<1	83	7	30	95
-1350	4300E	<10	4.1	131	<0.5	4	<1	125	9	80	66
-1325	4300E	<10	7.4	195	<0.5	9	<1	307	21	40	130
-1300	4300E	<10	3.8	122	<0.5	3	<1	52	4	30	61
-1275	4300E	<10	1.7	<3	<0.5	1	<1	134	18	30	17
-1250	4300E	<10	5.1	163	<0.5	4	<1	76	6	30	97
-1225	4300E	<10	5.5	430	<0.5	9	<1	242	27	170	111
-1200	4300E										
-1175	4300E										
-1150	4300E	<10	2.5	105	<0.5	2	<1	100	7	90	50
-1125	4300E										
-1100	4300E										
-1075	4300E										
-1050	4300E										

## TREADWELL MMI DATA

		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Dy	Er	Eu	Fe	Gd
-1025	4300E																	
-1000	4300E																	
-975	4300E	1	79	<10	<0.1	2480	<1	230	3	360	30	<100	140	157	93.2	27.9	18	126
-950	4300E	<1	116	<10	<0.1	2040	<1	180	7	106	51	<100	60	47	32.8	9.2	22	39
-925	4300E	3	98	<10	<0.1	790	<1	120	6	145	39	<100	140	39	23	8.8	32	38
-900	4300E	<1	71	<10	<0.1	890	<1	130	2	180	49	<100	70	17	7.9	4.3	17	18
-875	4300E	<1	131	<10	<0.1	4380	<1	210	3	197	32	<100	60	112	59.7	17	6	83
-850	4300E	<1	129	<10	<0.1	1180	<1	110	5	430	13	<100	100	117	58.9	33.7	11	134
-825	4300E	1	110	<10	<0.1	4500	<1	200	3	595	19	<100	100	170	94.2	43.1	13	179
-800	4300E	1	107	<10	<0.1	2480	<1	210	5	114	28	<100	70	18	8.2	4.5	18	19
-775	4300E																	
-750	4300E																	
-725	4300E	<1	94	<10	<0.1	6180	<1	220	2	174	53	<100	120	96	64.2	11.1	4	65
-700	4300E	<1	84	<10	<0.1	510	<1	30	7	104	43	<100	290	24	13.7	4.9	23	22
-675	4300E	<1	76	<10	<0.1	2950	<1	50	<1	132	105	<100	580	39	22.9	6.9	162	31
-650	4300E	1	145	<10	<0.1	640	<1	<10	7	170	57	<100	120	53	27.9	10.1	16	46
-625	4300E	<1	175	<10	<0.1	1100	<1	50	6	386	32	<100	120	78	39.3	18.2	15	79
-600	4300E	2	127	<10	<0.1	3160	<1	50	2	157	87	<100	140	37	19.4	7.4	30	33
-575	4300E	<1	187	<10	<0.1	680	<1	20	7	73	77	<100	100	53	34.9	6.1	20	30
-550	4300E	<1	122	<10	<0.1	1120	<1	120	2	651	34	<100	110	88	44.7	27.6	22	114
-525	4300E	1	26	<10	<0.1	280	<1	250	2	47	890	<100	1390	5	3.5	1.5	58	6
-500	4300E	6	13	<10	<0.1	490	<1	350	5	27	74	<100	240	24	24.4	3.2	14	16
-475	4300E	10	30	<10	<0.1	1010	<1	330	2	80	88	<100	960	59	54.5	8.3	45	43
-450	4300E	2	10	<10	<0.1	670	<1	320	5	37	470	<100	690	5	3.5	1.3	12	6
-425	4300E	2	10	<10	<0.1	1190	<1	300	2	21	21	<100	80	11	7.8	2.2	6	11
-400	4300E	3	2	<10	<0.1	2380	<1	330	3	10	175	<100	130	18	12.8	2.9	2	16
-375	4300E	4	3	<10	<0.1	780	<1	300	3	17	355	<100	460	8	7.3	1.8	7	8
-350	4300E	2	2	<10	<0.1	1460	<1	270	3	34	179	<100	280	16	11.4	2.6	5	14
-325	4300E	<1	105	<10	<0.1	3420	<1	150	2	1040	15	<100	170	88	40.4	26.9	15	106
-300	4300E	1	22	<10	<0.1	2650	<1	290	2	37	172	<100	170	24	16.7	4.1	7	22
-275	4300E	2	42	<10	<0.1	2410	<1	360	2	51	312	<100	140	17	12.1	2.5	4	14
-250	4300E	7	43	<10	<0.1	5190	<1	270	3	21	150	<100	510	9	7.8	1	7	6
-225	4300E	3	16	<10	<0.1	2460	<1	300	5	11	43	<100	250	38	24.5	6.3	5	34
-200	4300E	3	12	<10	<0.1	2390	<1	340	2	17	372	<100	380	11	9	1.5	9	8
-175	4300E	5	10	<10	<0.1	2160	<1	320	2	49	567	<100	560	11	7.9	2.2	15	11
-150	4300E	4	25	<10	<0.1	490	<1	240	3	39	384	<100	640	14	11.2	2.8	23	14
-125	4300E	6	52	<10	<0.1	1100	<1	230	6	9	36	<100	280	58	42.9	7.9	7	44
-100	4300E	3	47	<10	<0.1	620	<1	220	5	22	163	<100	300	13	10.8	2.2	12	11
-75	4300E	3	40	<10	<0.1	880	<1	270	8	28	80	<100	160	70	49.6	10.2	9	56
-50	4300E	3	5	<10	<0.1	690	<1	300	3	25	379	<100	550	19	16.3	3.1	11	17
-25	4300E	3	161	<10	0.1	3150	<1	190	5	199	61	<100	130	21	9.8	6.3	44	21
0	4300E	3	41	<10	<0.1	830	<1	160	2	7	50	<100	970	18	19	2.1	43	11
30	4300E	4	129	<10	<0.1	770	<1	80	5	244	32	<100	130	48	26.8	10.4	22	48
60	4300E	6	76	<10	<0.1	2160	<1	370	11	44	14	<100	140	32	20.8	4.1	7	22
90	4300E	4	63	<10	0.1	1430	<1	390	4	57	238	<100	80	20	13	3.1	9	16
120	4300E	2	174	<10	<0.1	1250	<1	140	11	62	91	<100	120	12	7.4	2.7	60	11

## TREADWELL MMI DATA

		La	Li	Mg	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb
-1025	4300E																		
-1000	4300E																		
-975	4300E	187	<5	54	<5	<0.5	354	49	20	<1	69	130	<1	107	94	<1	2960	<1	23
-950	4300E	59	<5	46	<5	<0.5	104	49	40	<1	21	97	<1	44	29	<1	2340	<1	7
-925	4300E	65	<5	37	<5	0.6	118	121	50	<1	24	107	<1	47	31	<1	870	<1	6
-900	4300E	67	<5	29	<5	<0.5	67	53	30	<1	17	188	<1	23	15	<1	950	<1	3
-875	4300E	182	<5	32	<5	<0.5	218	36	30	<1	47	74	<1	62	53	<1	2500	<1	16
-850	4300E	203	<5	21	<5	<0.5	434	64	70	<1	85	202	<1	51	111	<1	910	<1	20
-825	4300E	313	<5	54	<5	<0.5	555	49	30	<1	107	77	<1	116	138	<1	3080	<1	28
-800	4300E	47	<5	52	<5	<0.5	60	77	30	<1	13	254	<1	28	16	<1	1720	<1	3
-775	4300E																		
-750	4300E																		
-725	4300E	115	<5	24	<5	<0.5	123	44	10	<1	27	39	<1	29	33	<1	3620	<1	13
-700	4300E	39	<5	12	<5	<0.5	69	150	40	<1	15	289	<1	26	18	<1	260	<1	4
-675	4300E	53	<5	31	<5	<0.5	82	55	<10	<1	17	43	<1	89	23	<1	1230	<1	6
-650	4300E	50	<5	4	<5	<0.5	133	38	40	<1	25	77	<1	33	35	<1	200	<1	8
-625	4300E	133	<5	15	<5	<0.5	267	41	40	<1	54	107	<1	32	63	<1	460	<1	13
-600	4300E	103	<5	23	<5	<0.5	97	36	10	<1	23	60	<1	38	25	<1	990	<1	6
-575	4300E	26	<5	12	<5	<0.5	71	65	70	<1	14	117	<1	27	21	<1	350	<1	7
-550	4300E	270	<5	26	<5	<0.5	461	44	40	<1	97	92	<1	65	105	<1	760	<1	16
-525	4300E	13	<5	69	<5	<0.5	21	252	<10	<1	5	76	<1	17	5	<1	630	<1	<1
-500	4300E	10	<5	37	<5	<0.5	25	493	<10	<1	5	45	<1	16	9	<1	880	<1	3
-475	4300E	35	<5	62	<5	<0.5	84	1050	<10	<1	16	<5	<1	41	26	<1	1200	<1	8
-450	4300E	9	<5	70	<5	<0.5	18	523	<10	<1	4	60	<1	14	5	<1	1200	<1	<1
-425	4300E	7	5	120	<5	<0.5	18	115	20	<1	4	51	<1	14	7	<1	1630	<1	2
-400	4300E	6	5	105	<5	<0.5	16	106	<10	<1	3	47	<1	14	8	<1	2810	<1	3
-375	4300E	11	<5	68	<5	<0.5	23	215	<10	<1	5	63	<1	12	6	<1	2090	<1	1
-350	4300E	11	<5	115	<5	<0.5	24	159	<10	<1	5	44	<1	14	8	<1	2160	<1	2
-325	4300E	435	<5	31	<5	<0.5	503	32	40	<1	117	131	<1	90	102	<1	2060	<1	16
-300	4300E	21	<5	77	<5	<0.5	42	111	<10	<1	8	103	<1	19	13	<1	2730	<1	3
-275	4300E	20	<5	80	<5	<0.5	26	148	<10	<1	6	58	<1	22	8	<1	3270	<1	2
-250	4300E	9	<5	38	<5	<0.5	12	60	<10	<1	3	68	<1	10	4	<1	3540	<1	1
-225	4300E	21	<5	89	<5	<0.5	49	108	10	<1	9	80	<1	23	18	<1	2720	<1	6
-200	4300E	9	<5	77	<5	<0.5	18	120	<10	<1	4	61	<1	11	6	<1	3470	<1	1
-175	4300E	22	<5	91	<5	<0.5	35	126	<10	<1	8	68	<1	17	9	<1	2970	<1	2
-150	4300E	29	<5	56	<5	<0.5	45	189	<10	<1	10	95	<1	16	11	<1	1600	<1	2
-125	4300E	23	<5	48	<5	<0.5	55	142	30	<1	10	80	<1	31	22	<1	1770	<1	8
-100	4300E	15	<5	55	<5	0.6	24	137	20	<1	5	87	<1	13	7	<1	1500	<1	2
-75	4300E	40	<5	55	<5	<0.5	81	215	50	<1	15	98	<1	26	29	<1	1760	<1	10
-50	4300E	28	<5	61	<5	<0.5	44	217	<10	<1	10	51	<1	12	11	<1	1990	<1	3
-25	4300E	69	<5	60	<5	1.7	79	94	150	<1	19	67	<1	62	19	<1	2580	<1	4
0	4300E	8	<5	23	<5	<0.5	23	104	<10	<1	4	185	<1	10	8	<1	1760	<1	2
30	4300E	90	<5	11	<5	<0.5	166	45	50	<1	35	135	<1	31	40	<1	570	<1	8
60	4300E	14	<5	24	<5	<0.5	33	167	10	<1	6	168	<1	11	12	<1	2910	<1	4
90	4300E	15	<5	30	<5	<0.5	28	109	<10	<1	6	46	<1	16	9	<1	3330	<1	3
120	4300E	20	<5	33	<5	1.8	32	62	150	<1	7	84	<1	15	9	<1	1350	<1	2

## TREADWELL MMI DATA

		Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
-1025	4300E										
-1000	4300E										
-975	4300E	<10	5.5	28	<0.5	9	<1	843	67	40	102
-950	4300E	<10	8.2	73	<0.5	5	<1	286	26	220	105
-925	4300E	<10	6.4	104	<0.5	3	<1	222	19	160	94
-900	4300E	<10	5.8	66	<0.5	3	<1	81	6	40	72
-875	4300E	<10	4.8	33	<0.5	5	<1	617	38	20	57
-850	4300E	<10	6.3	75	<0.5	4	<1	610	40	90	72
-825	4300E	<10	9.6	78	<0.5	7	<1	1000	68	40	112
-800	4300E	<10	6	74	<0.5	3	<1	88	5	90	70
-775	4300E										
-750	4300E										
-725	4300E	<10	2	23	<0.5	2	<1	621	43	20	25
-700	4300E	<10	3	8	<0.5	2	<1	136	10	150	21
-675	4300E	<10	6.1	46	<0.5	6	<1	221	17	<20	79
-650	4300E	<10	6.3	38	<0.5	4	<1	279	18	20	62
-625	4300E	<10	5.9	58	<0.5	3	<1	426	26	50	61
-600	4300E	<10	8.2	40	<0.5	5	<1	206	13	40	71
-575	4300E	<10	3.6	63	<0.5	3	<1	322	27	110	36
-550	4300E	<10	12	129	<0.5	8	<1	518	34	30	162
-525	4300E	<10	1.3	41	<0.5	5	<1	29	3	<20	15
-500	4300E	<10	0.5	<3	<0.5	5	<1	137	27	30	7
-475	4300E	<10	1.2	10	<0.5	7	<1	376	49	<20	21
-450	4300E	<10	0.7	6	<0.5	2	<1	29	4	150	9
-425	4300E	<10	<0.5	18	<0.5	1	<1	61	7	170	6
-400	4300E	<10	<0.5	4	<0.5	<1	<1	90	11	40	<5
-375	4300E	<10	<0.5	6	<0.5	2	<1	46	9	60	<5
-350	4300E	<10	0.5	8	<0.5	2	<1	80	11	90	5
-325	4300E	<10	15.2	107	<0.5	10	<1	436	29	30	185
-300	4300E	<10	0.9	38	<0.5	2	<1	116	14	50	14
-275	4300E	<10	0.9	14	<0.5	1	<1	86	10	30	18
-250	4300E	<10	0.5	7	<0.5	<1	<1	53	7	30	<5
-225	4300E	<10	0.8	29	<0.5	3	<1	187	21	370	15
-200	4300E	<10	0.6	18	<0.5	1	<1	52	10	70	6
-175	4300E	<10	0.9	21	<0.5	2	<1	58	8	50	12
-150	4300E	<10	0.7	48	<0.5	3	<1	81	13	240	9
-125	4300E	<10	0.9	26	<0.5	2	<1	322	36	160	14
-100	4300E	<10	1.2	60	<0.5	3	<1	76	10	250	20
-75	4300E	<10	1.3	63	<0.5	2	<1	394	42	310	10
-50	4300E	<10	0.9	19	<0.5	2	<1	112	18	60	<5
-25	4300E	<10	8.5	296	<0.5	3	2	102	7	240	97
0	4300E	<10	0.8	15	<0.5	3	<1	143	17	40	15
30	4300E	<10	9.3	89	<0.5	6	<1	274	21	60	85
60	4300E	<10	1.3	<3	<0.5	3	<1	174	16	160	12
90	4300E	<10	1.1	5	<0.5	1	<1	101	10	60	22
120	4300E	<10	8.8	280	<0.5	3	<1	68	6	820	75

## TREADWELL MMI DATA

		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Dy	Er	Eu	Fe	Gd
150	4300E	3	188	<10	<0.1	950	<1	70	9	44	53	<100	100	10	5.6	2.5	60	9
180	4300E	1	25	<10	<0.1	560	<1	340	8	22	166	<100	220	12	9.9	2	16	10
210	4300E	3	48	<10	<0.1	2830	<1	490	4	25	53	<100	140	23	18.4	3.5	8	19
240	4300E	7	4	<10	<0.1	1770	<1	580	6	8	17	<100	30	29	19.4	5	3	27
270	4300E	3	141	<10	<0.1	710	<1	120	10	72	43	<100	140	28	17.1	4.6	45	19
300	4300E	2	78	<10	<0.1	920	<1	480	4	9	37	<100	130	8	5.5	1.5	7	6
330	4300E																	
360	4300E	7	13	<10	0.1	690	<1	610	4	27	73	<100	260	21	14.9	2.9	5	17
390	4300E	3	49	<10	<0.1	670	<1	390	13	35	14	<100	210	23	16.5	3.2	8	19
420	4300E																	
450	4300E	2	79	<10	<0.1	1110	<1	370	6	67	38	<100	140	21	13.3	3.6	14	17
480	4300E	2	120	<10	<0.1	1180	<1	120	5	143	35	<100	150	50	31.7	7.7	28	39
510	4300E	1	85	<10	<0.1	3670	<1	150	3	192	19	<100	90	116	64.4	26.4	7	125
540	4300E	<1	115	<10	<0.1	2130	<1	120	3	434	26	<100	120	118	58.5	31.1	10	129
570	4300E	5	121	<10	<0.1	2250	<1	140	5	287	26	<100	150	80	45.8	16.9	18	80
600	4300E	1	169	<10	<0.1	820	<1	130	4	159	38	<100	120	23	11.8	6.2	27	25
630	4300E	1	122	<10	<0.1	350	<1	100	3	242	68	<100	220	53	29.2	16.8	24	65
660	4300E																	
690	4300E	1	133	<10	<0.1	680	<1	140	4	149	46	<100	120	25	12.7	7.2	19	28
720	4300E	2	138	<10	<0.1	570	<1	60	7	150	36	<100	140	64	37.7	11.9	20	54
750	4300E	1	91	<10	<0.1	1880	<1	110	3	1040	18	<100	190	261	136	86.7	14	375
780	4300E	1	86	<10	<0.1	1820	<1	50	2	834	11	<100	100	205	110	61.8	10	268
810	4300E	<1	145	<10	<0.1	1500	<1	50	3	777	26	<100	100	107	52.3	28.9	14	129
840	4300E	<1	190	<10	<0.1	550	<1	10	8	124	102	<100	180	34	20.5	6.3	25	27
870	4300E	<1	124	<10	<0.1	260	<1	10	2	125	52	<100	330	34	21.3	8	77	35
900	4300E	<1	129	<10	<0.1	6220	<1	210	2	1020	36	<100	410	199	101	52.7	18	245
930	4300E	<1	146	<10	<0.1	1520	<1	50	4	878	53	<100	130	116	56.1	29.9	24	134
960	4300E	3	2	<10	0.3	650	<1	640	<1	21	79	<100	100	62	39.9	8.8	3	59
990	4300E	<1	166	<10	<0.1	910	<1	100	6	132	92	<100	280	32	17.3	6.2	57	28
1020	4300E	<1	18	<10	<0.1	120	<1	190	2	26	114	<100	320	5	4.2	1.3	45	6
1050	4300E	<1	48	<10	<0.1	150	<1	<10	2	394	16	<100	120	58	33.5	14.9	6	70
1080	4300E	1	62	<10	<0.1	380	<1	70	<1	498	14	<100	130	143	80	46.9	8	190
1110	4300E	<1	155	<10	<0.1	190	<1	<10	3	190	46	<100	160	41	20.6	9.7	18	41
1140	4300E	<1	102	<10	<0.1	3930	<1	70	2	1740	29	<100	150	296	148	98	16	427
1170	4300E	<1	130	<10	<0.1	2590	<1	190	4	106	24	<100	130	25	13.2	5.7	21	25
1200	4300E	2	133	<10	<0.1	2420	<1	170	3	295	71	<100	140	46	23.2	11.6	22	53
1230	4300E																	
1260	4300E																	
1290	4300E																	
1325	4300E	6	3	<10	0.1	2100	<1	540	3	15	79	<100	690	25	19.6	3.3	3	20
1350	4300E	2	35	<10	<0.1	3010	<1	400	3	11	23	<100	340	33	23.2	4.2	3	26
1375	4300E	1	108	<10	<0.1	360	<1	420	6	31	28	<100	90	29	19	4.4	8	19
1400	4300E	2	61	<10	<0.1	880	<1	420	7	195	19	<100	70	24	11.9	4.5	25	27
Line 4400E																		
-825	4400E	<1	56	<10	<0.1	7170	<1	400	2	130	39	<100	100	91	56.9	14	5	67
-800	4400E	<1	75	<10	<0.1	3230	<1	160	3	272	7	<100	110	147	80.5	27.6	12	122

TREADWELL MMI DATA

		La	Li	Mg	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb
150	4300E	13	<5	13	<5	1.2	28	35	70	<1	6	123	<1	20	8	<1	460	<1	2
180	4300E	9	<5	36	<5	<0.5	20	102	20	<1	4	21	<1	11	6	<1	1860	<1	2
210	4300E	14	<5	31	<5	<0.5	30	86	<10	<1	6	84	<1	9	10	<1	3690	<1	3
240	4300E	3	<5	113	<5	<0.5	22	24	<10	<1	3	54	<1	7	13	<1	2580	<1	4
270	4300E	14	<5	31	<5	0.5	45	147	40	<1	9	205	<1	27	14	<1	750	<1	4
300	4300E	2	<5	29	<5	<0.5	8	59	10	<1	2	144	<1	<5	3	<1	1950	<1	1
330	4300E																		
360	4300E	7	<5	35	<5	<0.5	23	276	<10	<1	4	197	<1	8	9	<1	1000	<1	3
390	4300E	11	<5	26	<5	<0.5	31	77	10	<1	6	262	<1	9	11	<1	2020	<1	3
420	4300E																		
450	4300E	19	<5	27	<5	<0.5	37	23	20	<1	8	50	<1	11	11	<1	1710	<1	3
480	4300E	57	<5	13	<5	<0.5	108	26	90	<1	22	116	<1	35	30	<1	660	<1	7
510	4300E	278	<5	28	<5	<0.5	438	9	30	<1	91	98	<1	58	103	<1	1430	<1	19
540	4300E	275	<5	21	<5	<0.5	443	15	30	<1	94	110	<1	65	108	<1	1160	<1	20
570	4300E	172	<5	25	<5	<0.5	266	27	40	<1	57	96	<1	43	64	<1	1460	<1	13
600	4300E	73	<5	16	<5	0.9	96	29	60	<1	22	134	<1	17	22	<1	600	<1	4
630	4300E	147	<5	16	<5	<0.5	261	18	20	<1	58	68	<1	37	61	<1	250	<1	9
660	4300E																		
690	4300E	61	<5	26	<5	<0.5	98	35	40	<1	21	231	<1	19	24	<1	600	<1	4
720	4300E	57	<5	15	<5	<0.5	162	24	20	<1	30	116	<1	33	40	<1	510	<1	10
750	4300E	795	<5	23	<5	<0.5	1560	14	20	<1	326	123	<1	73	338	<1	1850	<1	49
780	4300E	514	<5	8	<5	<0.5	1090	9	20	<1	225	59	<1	74	247	<1	1030	<1	37
810	4300E	328	<5	9	<5	<0.5	542	12	40	<1	120	129	<1	46	117	<1	390	<1	19
840	4300E	43	<5	5	<5	<0.5	87	57	80	<1	19	150	<1	28	21	<1	130	<1	5
870	4300E	40	<5	3	5	<0.5	102	60	<10	<1	21	74	<1	49	30	<1	90	<1	6
900	4300E	733	<5	62	<5	<0.5	960	12	30	<1	206	51	<1	80	199	<1	5030	<1	36
930	4300E	361	<5	17	<5	0.5	554	26	30	<1	123	165	<1	59	121	<1	480	<1	21
960	4300E	4	10	181	<5	<0.5	33	28	<10	<1	5	<5	<1	8	22	<1	1770	<1	9
990	4300E	45	<5	40	<5	0.8	80	119	50	<1	17	90	<1	31	21	<1	630	<1	5
1020	4300E	8	<5	23	<5	<0.5	20	85	<10	<1	4	19	<1	10	5	<1	320	<1	<1
1050	4300E	190	<5	2	10	<0.5	321	17	30	<1	71	79	<1	29	65	<1	<10	<1	10
1080	4300E	365	<5	10	<5	<0.5	744	7	30	<1	151	59	<1	76	170	<1	270	<1	26
1110	4300E	76	<5	2	<5	<0.5	150	26	30	<1	32	75	<1	29	35	<1	40	<1	7
1140	4300E	1090	<5	16	<5	<0.5	1890	7	<10	<1	399	34	<1	145	391	<1	630	<1	58
1170	4300E	63	<5	31	<5	0.6	80	34	40	<1	18	202	<1	23	20	<1	1700	<1	4
1200	4300E	138	<5	40	<5	<0.5	187	23	10	<1	41	101	<1	34	43	<1	1440	<1	8
1230	4300E																		
1260	4300E																		
1290	4300E																		
1325	4300E	9	<5	46	<5	<0.5	22	47	<10	<1	4	39	<1	5	9	<1	1940	<1	3
1350	4300E	11	<5	32	<5	<0.5	26	22	20	<1	5	69	<1	12	12	<1	2230	<1	5
1375	4300E	10	<5	22	<5	<0.5	29	36	10	<1	5	64	<1	12	11	<1	800	<1	4
1400	4300E	57	<5	64	<5	<0.5	93	31	30	<1	21	151	<1	21	23	<1	1630	<1	4
Line 4400E																			
-825	4400E	84	<5	33	<5	<0.5	111	58	20	<1	19	54	<1	36	36	<1	6170	<1	12
-800	4400E	194	<5	26	<5	<0.5	329	29	50	<1	57	132	<1	92	89	<1	2350	<1	22

TREADWELL MMI DATA

		Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
150	4300E	<10	6.2	251	<0.5	3	<1	51	5	480	66
180	4300E	<10	0.6	20	<0.5	1	<1	68	9	750	16
210	4300E	<10	0.8	6	<0.5	2	<1	149	15	950	17
240	4300E	<10	<0.5	<3	<0.5	8	<1	157	16	400	8
270	4300E	<10	5.8	115	<0.5	6	<1	154	14	1730	53
300	4300E	<10	1.1	6	<0.5	<1	<1	49	5	170	6
330	4300E										
360	4300E	<10	0.9	5	<0.5	23	<1	108	13	240	12
390	4300E	<10	1	6	<0.5	3	<1	129	13	180	13
420	4300E										
450	4300E	<10	2.4	11	<0.5	5	<1	113	10	150	29
480	4300E	<10	8.5	47	<0.5	10	<1	301	25	140	74
510	4300E	<10	8.4	18	<0.5	12	<1	714	46	<20	91
540	4300E	<10	10	77	<0.5	8	<1	640	39	<20	105
570	4300E	<10	13.1	47	<0.5	11	<1	496	33	50	104
600	4300E	<10	11.7	244	<0.5	8	<1	121	9	80	138
630	4300E	<10	11.4	82	<0.5	9	<1	287	23	60	125
660	4300E										
690	4300E	<10	9	90	<0.5	7	<1	123	9	60	98
720	4300E	<10	5.9	43	<0.5	6	<1	391	27	280	50
750	4300E	<10	7.6	40	<0.5	9	<1	1530	88	50	74
780	4300E	<10	5.5	29	<0.5	7	<1	1090	79	<20	50
810	4300E	<10	12.5	125	<0.5	8	<1	569	36	<20	122
840	4300E	<10	8	96	<0.5	6	<1	188	16	120	87
870	4300E	<10	10.2	139	<0.5	6	<1	183	18	60	103
900	4300E	<10	11	172	<0.5	12	<1	1190	67	30	157
930	4300E	<10	14.1	119	<0.5	7	<1	583	39	30	124
960	4300E	<10	0.5	<3	<0.5	7	<1	324	31	<20	<5
990	4300E	<10	8.7	173	<0.5	4	<1	174	13	520	82
1020	4300E	<10	<0.5	31	<0.5	4	<1	35	4	120	9
1050	4300E	<10	2.8	7	<0.5	6	<1	363	27	<20	37
1080	4300E	<10	5.2	25	<0.5	9	<1	836	59	<20	60
1110	4300E	<10	5.2	56	<0.5	7	<1	204	16	60	60
1140	4300E	<10	8	116	<0.5	8	<1	1710	98	30	103
1170	4300E	<10	6.5	154	<0.5	5	<1	143	9	60	73
1200	4300E	<10	8.2	172	<0.5	6	<1	263	15	40	95
1230	4300E										
1260	4300E										
1290	4300E										
1325	4300E	<10	<0.5	<3	<0.5	3	<1	126	18	40	7
1350	4300E	<10	<0.5	3	<0.5	2	<1	180	18	100	13
1375	4300E	<10	1.1	10	<0.5	1	<1	152	14	140	16
1400	4300E	<10	4.3	64	<0.5	5	<1	115	9	470	43
Line 4400E											
-825	4400E	<10	1.1	<3	<0.5	3	<1	488	39	50	21
-800	4400E	<10	6.9	33	<0.5	8	<1	772	56	30	61

## TREADWELL MMI DATA

		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Dy	Er	Eu	Fe	Gd
-775	4400E	<1	5	<10	<0.1	3550	<1	390	1	126	140	<100	880	75	49.7	16.7	20	74
-750	4400E	<1	118	<10	<0.1	3830	<1	70	4	224	15	<100	110	55	28.9	9.9	14	44
-725	4400E	<1	129	<10	<0.1	3040	<1	40	3	806	22	<100	80	156	72.8	39.5	11	172
-700	4400E	<1	105	<10	<0.1	1010	<1	20	7	483	19	<100	100	98	53.3	19.6	17	91
-675	4400E	<1	124	<10	<0.1	3050	<1	110	2	567	29	<100	100	187	106	52.1	17	209
-650	4400E	<1	124	<10	<0.1	2670	<1	50	4	321	23	<100	100	97	51	22.2	16	93
-625	4400E	<1	107	<10	<0.1	8840	<1	190	3	345	26	<100	180	154	82.9	29.5	12	139
-600	4400E	<1	153	<10	<0.1	1290	<1	80	13	48	46	<100	140	42	29.2	3.8	35	18
-575	4400E	<1	100	<10	<0.1	1060	<1	380	7	78	48	<100	90	72	52.1	9.4	14	43
-550	4400E	2	37	<10	<0.1	1550	<1	310	6	8	30	<100	170	36	26.6	4.9	6	26
-525	4400E	3	4	<10	0.1	1100	<1	360	3	31	217	<100	340	27	18.2	5	10	23
-500	4400E	<1	44	<10	<0.1	1840	<1	230	3	45	320	<100	440	18	13.9	2.9	15	13
-475	4400E	3	5	<10	<0.1	3860	<1	380	2	28	49	<100	320	84	52.6	15.5	6	77
-450	4400E	2	4	<10	0.1	4780	<1	420	1	18	219	<100	310	68	41	13.5	5	67
-425	4400E	2	14	<10	<0.1	2800	<1	410	3	30	22	<100	190	89	55.6	16.1	6	81
-400	4400E	<1	168	<10	<0.1	2460	<1	120	6	361	76	<100	210	137	72.4	26	28	106
-375	4400E	<1	63	<10	<0.1	6030	<1	350	1	195	132	<100	350	104	64.7	20.8	12	91
-350	4400E	<1	139	<10	<0.1	3580	<1	110	2	698	46	<100	210	143	70.5	36.5	21	144
-325	4400E	<1	89	<10	<0.1	4650	<1	240	4	385	31	<100	110	101	55.6	17.9	8	81
-300	4400E	<1	53	<10	<0.1	7330	<1	370	2	62	29	<100	170	26	14.1	6	8	25
-275	4400E	1	35	<10	<0.1	4250	<1	390	3	12	16	<100	160	45	29.8	8.3	5	42
-250	4400E	2	17	<10	0.1	3260	<1	410	2	36	27	<100	190	57	35.6	10.8	6	54
-225	4400E	2	97	<10	<0.1	4320	<1	290	4	84	45	<100	330	86	59	12.4	18	62
-200	4400E	4	10	<10	<0.1	1560	<1	460	4	18	23	<100	280	152	98.7	24.8	5	140
-175	4400E	1	50	<10	<0.1	3310	<1	340	4	32	35	<100	260	96	62.1	15	8	79
-150	4400E	<1	24	<10	<0.1	3690	<1	410	2	11	24	<100	210	62	37.9	10.7	6	56
-125	4400E	2	123	<10	<0.1	6340	<1	230	3	109	28	<100	140	21	12	4.8	21	20
-100	4400E	1	82	<10	<0.1	1290	<1	220	4	103	352	<100	460	28	16.9	7.1	164	31
-75	4400E	3	99	<10	<0.1	1040	<1	180	3	112	34	<100	110	34	17.4	9	27	37
-50	4400E	5	2	<10	<0.1	730	<1	470	11	16	158	<100	70	32	27.6	3.9	3	22
-25	4400E	4	5	<10	<0.1	3020	<1	520	4	12	80	<100	60	44	30.8	7.1	5	40
0	4400E	5	1	<10	0.1	1200	<1	570	6	13	44	<100	70	51	39	5	2	33
25	4400E	6	8	<10	<0.1	1090	<1	330	4	41	225	<100	450	20	13.9	3.8	18	20
50	4400E	3	78	<10	<0.1	5820	<1	240	2	209	18	<100	180	21	9.7	6.4	16	24
75	4400E	6	75	<10	<0.1	2190	<1	240	4	187	9	<100	60	54	26.6	14.5	20	58
100	4400E	1	46	<10	<0.1	3390	<1	420	2	105	146	<100	180	123	92	15.4	5	78
125	4400E	3	60	<10	<0.1	3360	<1	580	2	47	30	<100	100	8	4.6	1.6	8	7
150	4400E	2	2	<10	<0.1	650	<1	440	2	20	297	<100	1140	6	4.8	1.7	14	7
180	4400E	4	9	<10	<0.1	1160	<1	350	3	15	181	<100	270	16	10.5	3.3	13	15
210	4400E	4	97	<10	<0.1	1360	<1	170	4	105	22	<100	90	19	9.5	5.6	25	18
240	4400E	5	3	<10	<0.1	3620	<1	620	3	7	9	<100	60	35	21.6	5.7	4	31
270	4400E																	
300	4400E	3	2	<10	<0.1	1120	<1	450	2	51	513	<100	580	22	15.7	4.4	18	21
330	4400E																	
360	4400E																	
390	4400E	2	13	<10	<0.1	830	<1	500	7	51	47	<100	100	46	30.1	6.7	9	38



TREADWELL MMI DATA

		La	Li	Mg	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb
-775	4400E	88	<5	46	<5	<0.5	176	129	<10	<1	29	8	<1	34	49	<1	6560	<1	11
-750	4400E	94	<5	16	<5	<0.5	153	24	70	<1	28	118	<1	35	35	<1	950	<1	8
-725	4400E	442	6	6	<5	<0.5	687	16	40	<1	124	79	<1	81	153	<1	410	<1	27
-700	4400E	157	<5	3	<5	<0.5	327	30	50	<1	57	154	<1	43	80	<1	170	<1	15
-675	4400E	358	<5	25	<5	<0.5	732	18	20	<1	122	56	<1	100	178	<1	1500	<1	31
-650	4400E	158	<5	12	<5	<0.5	310	22	60	<1	53	113	<1	52	77	<1	760	<1	15
-625	4400E	355	<5	30	<5	<0.5	451	23	60	<1	83	58	<1	78	105	<1	4430	<1	23
-600	4400E	17	<5	20	<5	<0.5	37	76	90	<1	6	199	<1	30	12	<1	580	<1	5
-575	4400E	34	<5	31	<5	<0.5	67	43	50	<1	11	47	<1	21	24	<1	2320	<1	9
-550	4400E	12	<5	33	<5	<0.5	29	137	50	<1	5	177	<1	14	13	<1	1050	<1	4
-525	4400E	20	<5	65	<5	<0.5	41	262	<10	<1	7	87	<1	15	14	<1	2310	<1	4
-500	4400E	21	<5	31	<5	<0.5	31	141	<10	<1	6	155	<1	18	9	<1	1500	<1	2
-475	4400E	30	<5	74	<5	<0.5	86	108	<10	<1	11	46	<1	27	42	<1	3560	<1	12
-450	4400E	34	<5	93	<5	<0.5	85	47	<10	<1	12	49	<1	21	38	<1	5250	<1	10
-425	4400E	36	<5	75	<5	<0.5	97	112	<10	<1	13	59	<1	28	43	<1	3830	<1	13
-400	4400E	120	<5	43	<5	0.5	291	70	60	<1	49	146	<1	58	79	<1	1450	<1	20
-375	4400E	103	<5	45	<5	<0.5	172	115	<10	<1	28	73	<1	45	56	<1	4940	<1	15
-350	4400E	380	<5	37	<5	0.5	534	41	50	<1	99	174	<1	105	121	<1	1090	<1	23
-325	4400E	139	<5	43	<5	<0.5	188	56	40	<1	34	150	<1	50	55	<1	2850	<1	15
-300	4400E	43	<5	57	<5	<0.5	60	32	20	<1	11	121	<1	28	18	<1	4240	<1	4
-275	4400E	22	<5	62	<5	<0.5	56	83	10	<1	8	89	<1	28	24	<1	3930	<1	7
-250	4400E	30	<5	75	<5	<0.5	71	97	<10	<1	10	91	<1	25	30	<1	3710	<1	8
-225	4400E	53	<5	49	<5	<0.5	103	104	60	<1	17	120	<1	50	38	<1	3420	<1	11
-200	4400E	55	<5	61	<5	<0.5	149	250	<10	<1	20	58	<1	20	69	<1	3490	<1	22
-175	4400E	46	<5	51	<5	<0.5	103	122	50	<1	15	109	<1	31	44	<1	2930	<1	14
-150	4400E	24	<5	64	<5	<0.5	65	86	10	<1	9	61	<1	21	30	<1	3710	<1	9
-125	4400E	50	<5	53	<5	0.9	65	42	60	<1	12	134	<1	28	17	<1	2560	<1	3
-100	4400E	57	<5	75	6	1.7	97	240	10	<1	17	93	<1	56	25	<1	2110	<1	5
-75	4400E	60	<5	40	<5	0.5	112	66	30	<1	20	127	<1	39	32	<1	1010	<1	6
-50	4400E	11	<5	101	<5	<0.5	28	186	<10	<1	5	64	<1	9	11	<1	2730	<1	4
-25	4400E	15	<5	80	<5	<0.5	41	33	<10	<1	6	95	<1	11	20	<1	3560	<1	6
0	4400E	4	<5	178	<5	0.6	17	113	<10	<1	3	58	<1	6	12	<1	4050	<1	6
25	4400E	34	<5	88	<5	0.7	50	149	<10	<1	9	91	<1	8	13	<1	2480	<1	3
50	4400E	68	<5	67	<5	<0.5	93	24	20	<1	18	71	<1	20	22	<1	5500	<1	3
75	4400E	99	<5	53	<5	<0.5	194	88	10	<1	33	137	<1	40	49	<1	2520	<1	8
100	4400E	73	<5	53	<5	<0.5	134	278	<10	<1	22	51	<1	57	42	<1	5640	<1	14
125	4400E	14	<5	48	<5	<0.5	19	93	<10	<1	4	77	<1	14	5	<1	5850	<1	1
150	4400E	11	<5	72	<5	<0.5	24	463	<10	<1	4	109	<1	8	6	<1	2140	<1	<1
180	4400E	14	<5	77	<5	<0.5	30	99	<10	<1	5	67	<1	10	9	<1	1510	<1	2
210	4400E	35	<5	40	<5	<0.5	61	34	60	<1	11	92	<1	29	16	<1	1090	<1	3
240	4400E	16	<5	138	<5	<0.5	36	27	<10	<1	6	52	<1	8	15	<1	4090	<1	5
270	4400E																		
300	4400E	32	<5	91	<5	<0.5	59	196	<10	<1	10	43	<1	15	15	<1	2360	<1	3
330	4400E																		
360	4400E																		
390	4400E	23	<5	85	<5	<0.5	53	194	10	<1	9	166	<1	12	20	<1	3790	<1	6

## TREADWELL MMI DATA

		Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
-775	4400E	<10	<0.5	<3	<0.5	3	<1	402	39	<20	6
-750	4400E	<10	6.2	96	<0.5	5	<1	296	19	80	56
-725	4400E	<10	10.4	100	<0.5	9	<1	788	45	<20	104
-700	4400E	<10	7.7	49	<0.5	4	<1	505	38	50	40
-675	4400E	<10	9.3	134	<0.5	6	<1	1110	73	<20	114
-650	4400E	<10	10.3	90	<0.5	8	<1	517	35	50	106
-625	4400E	<10	7.2	48	<0.5	10	<1	899	54	<20	79
-600	4400E	<10	6.5	121	<0.5	6	<1	209	22	70	66
-575	4400E	<10	3.2	13	<0.5	3	<1	352	41	90	28
-550	4400E	<10	<0.5	9	<0.5	2	<1	216	21	210	<5
-525	4400E	<10	<0.5	3	<0.5	2	<1	133	16	30	5
-500	4400E	<10	0.8	25	<0.5	2	<1	91	12	80	13
-475	4400E	<10	<0.5	4	<0.5	2	<1	421	41	80	8
-450	4400E	<10	<0.5	<3	<0.5	2	<1	330	31	<20	5
-425	4400E	<10	0.6	8	<0.5	2	<1	463	42	<20	8
-400	4400E	<10	10.2	247	<0.5	6	<1	715	48	480	74
-375	4400E	<10	1.9	9	<0.5	2	<1	531	46	30	20
-350	4400E	<10	13.7	201	<0.5	8	<1	732	47	60	126
-325	4400E	<10	5	15	0.5	5	<1	507	38	30	43
-300	4400E	<10	1.9	15	<0.5	4	<1	123	9	30	29
-275	4400E	<10	0.6	6	<0.5	2	<1	248	23	260	10
-250	4400E	<10	0.9	4	<0.5	2	<1	301	27	30	10
-225	4400E	<10	3.2	44	<0.5	4	<1	498	47	120	41
-200	4400E	<10	0.9	<3	<0.5	3	<1	888	72	90	<5
-175	4400E	<10	1.6	17	<0.5	4	<1	528	47	100	16
-150	4400E	<10	1.3	9	<0.5	2	<1	320	29	20	5
-125	4400E	<10	8.4	58	<0.5	5	<1	116	9	20	62
-100	4400E	<10	5.8	388	<0.5	9	<1	156	14	110	111
-75	4400E	<10	5.5	128	<0.5	6	<1	166	13	50	75
-50	4400E	<10	<0.5	<3	<0.5	15	<1	154	25	<20	<5
-25	4400E	<10	<0.5	<3	<0.5	7	<1	241	26	60	<5
0	4400E	<10	1.5	<3	0.8	15	<1	278	33	30	8
25	4400E	<10	1.6	30	<0.5	3	<1	118	12	240	16
50	4400E	<10	6.3	91	<0.5	4	<1	99	7	40	76
75	4400E	<10	3.9	25	<0.5	4	<1	273	18	30	59
100	4400E	<10	0.7	4	<0.5	7	<1	529	79	50	23
125	4400E	<10	1	6	<0.5	6	<1	35	3	380	20
150	4400E	<10	<0.5	4	<0.5	3	<1	42	4	70	7
180	4400E	<10	0.7	11	<0.5	2	<1	83	9	150	13
210	4400E	<10	5.1	73	<0.5	4	<1	88	7	60	77
240	4400E	<10	<0.5	<3	<0.5	2	<1	171	16	70	9
270	4400E										
300	4400E	<10	0.9	13	<0.5	3	<1	125	13	180	17
330	4400E										
360	4400E										
390	4400E	<10	1	17	<0.5	3	<1	236	24	30	20

## TREADWELL MMI DATA

		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Dy	Er	Eu	Fe	Gd
420	4400E	2	110	<10	<0.1	600	<1	180	5	208	63	<100	240	40	20.6	10.5	42	45
450	4400E																	
480	4400E																	
510	4400E	2	112	<10	<0.1	1190	<1	210	5	110	29	<100	130	19	10.7	4.8	37	20
540	4400E	3	56	<10	<0.1	2720	<1	370	4	330	23	<100	100	50	23.8	12.6	25	54
570	4400E	5	40	<10	<0.1	1310	<1	360	4	169	149	<100	130	58	31.5	9.1	12	41
600	4400E	6	4	<10	<0.1	1700	<1	660	3	21	26	<100	220	24	13.4	4	5	22
630	4400E	2	33	<10	<0.1	2160	<1	470	7	13	14	<100	90	6	3.8	0.9	6	5
660	4400E																	
690	4400E																	
720	4400E																	
750	4400E	<1	89	<10	<0.1	5870	<1	70	2	1630	29	<100	170	249	127	76.5	13	317
780	4400E	<1	56	<10	<0.1	970	<1	20	1	612	29	<100	190	77	39	24.2	19	100
810	4400E																	
840	4400E	<1	69	<10	<0.1	6210	<1	90	2	283	32	<100	150	68	37.8	19.9	10	85
870	4400E	<1	111	<10	<0.1	7930	<1	120	1	510	41	<100	140	77	37.6	22.9	23	91
900	4400E	<1	103	<10	<0.1	130	<1	10	2	698	36	<100	100	156	76.7	43.7	9	182
930	4400E	<1	72	<10	<0.1	4240	<1	120	<1	1030	15	<100	200	129	61	40.3	7	177
960	4400E	2	3	<10	<0.1	710	<1	550	<1	30	22	<100	80	56	39.6	6.7	4	48
990	4400E	<1	68	<10	<0.1	510	<1	100	1	313	131	<100	370	47	24.1	13.6	114	58
1020	4400E	<1	78	<10	<0.1	440	<1	20	3	275	164	<100	260	112	62.7	28.7	17	125
1050	4400E																	
1080	4400E	<1	36	<10	<0.1	250	<1	20	1	424	25	<100	140	122	70.4	32.3	4	144
1110	4400E	<1	141	<10	<0.1	170	<1	30	4	164	98	<100	120	30	13.9	8.6	22	35
1140	4400E	<1	84	<10	<0.1	2240	<1	80	<1	52	141	<100	390	28	16.3	6	258	25
1170	4400E	<1	132	<10	<0.1	1870	<1	50	3	485	23	<100	110	96	42	27.6	16	125
1200	4400E	<1	143	<10	<0.1	1620	<1	60	5	710	38	<100	130	113	54.3	30.3	21	135
1225	4400E	1	90	<10	<0.1	1200	<1	120	2	210	24	<100	170	36	18	9.9	14	46
1250	4400E	4	107	<10	<0.1	580	<1	30	3	425	22	<100	110	81	40.1	22.4	10	107
1275	4400E	2	13	<10	0.1	1730	<1	340	2	41	179	<100	410	22	17.1	4.2	14	22
1300	4400E	2	8	<10	0.1	1480	<1	390	3	<5	56	<100	190	24	15.6	4.3	5	24
1325	4400E	1	62	<10	<0.1	2140	<1	210	4	36	11	<100	210	71	50.4	9.1	7	45
1350	4400E																	
1375	4400E	<1	75	<10	<0.1	6040	<1	290	2	395	28	<100	260	93	54.4	16.8	7	79
1400	4400E	<1	97	<10	<0.1	1750	<1	120	3	278	23	<100	80	27	13.4	7.5	19	36
Line 4500E																		
-1300	4500E	<1	84	<10	<0.1	4290	<1	150	2	161	33	<100	200	83	47.7	19.5	13	90
-1275	4500E	<1	99	<10	<0.1	3190	<1	190	5	40	39	<100	170	56	37.5	5.2	9	29
-1250	4500E	1	58	<10	<0.1	7450	<1	290	3	104	35	<100	500	89	59	16.1	8	81
-1225	4500E	2	96	<10	<0.1	660	<1	140	4	78	15	<100	150	22	12.3	5.1	25	24
-1200	4500E	3	93	<10	<0.1	3740	<1	240	5	151	54	<100	310	85	45.4	21.9	44	99
-1175	4500E	<1	49	<10	<0.1	5550	<1	310	<1	461	42	<100	210	177	126	27.3	5	147
-1150	4500E	1	95	<10	<0.1	4150	<1	280	10	100	27	<100	220	116	83.5	11.9	5	67
-1125	4500E	<1	65	<10	<0.1	6470	<1	300	2	48	32	<100	140	79	57.7	9.6	4	55
-1100	4500E	<1	39	<10	<0.1	6930	<1	390	2	45	35	<100	150	68	50	9.1	3	50
-1075	4500E	<1	45	<10	<0.1	8620	<1	330	2	68	24	<100	210	55	36.9	8.1	4	45

TREADWELL MMI DATA

		La	Li	Mg	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb
420	4400E	106	<5	24	<5	1.1	162	54	70	<1	31	96	<1	33	40	<1	560	<1	6
450	4400E																		
480	4400E																		
510	4400E	40	<5	40	<5	0.8	62	51	50	<1	11	118	<1	24	16	<1	940	<1	3
540	4400E	119	<5	73	<5	0.7	179	47	20	<1	33	107	<1	32	45	<1	4950	<1	8
570	4400E	34	7	70	<5	0.6	57	242	10	<1	10	15	<1	42	24	<1	4280	<1	7
600	4400E	14	<5	109	<5	<0.5	30	84	<10	<1	5	18	<1	6	12	<1	9260	<1	3
630	4400E	2	<5	56	<5	<0.5	6	115	10	<1	1	122	<1	6	3	<1	4080	<1	<1
660	4400E																		
690	4400E																		
720	4400E																		
750	4400E	779	<5	20	<5	<0.5	1280	10	10	<1	231	38	<1	117	279	<1	2260	<1	39
780	4400E	269	<5	5	<5	<0.5	426	18	10	<1	79	94	<1	36	93	<1	150	<1	12
810	4400E																		
840	4400E	239	<5	26	<5	<0.5	350	12	10	<1	64	137	<1	77	76	<1	1270	<1	10
870	4400E	308	<5	31	<5	0.5	370	12	10	<1	71	60	<1	77	81	<1	2610	<1	12
900	4400E	350	<5	3	<5	<0.5	697	39	20	<1	142	202	<1	118	160	<1	90	<1	27
930	4400E	436	<5	29	<5	<0.5	704	29	<10	<1	143	69	<1	83	158	<1	1400	<1	25
960	4400E	7	7	200	<5	<0.5	36	51	<10	<1	5	<5	<1	10	18	<1	2910	<1	8
990	4400E	124	<5	42	<5	<0.5	214	75	<10	<1	45	37	<1	50	51	<1	400	<1	8
1020	4400E	139	<5	5	<5	<0.5	357	46	20	<1	67	171	<1	114	100	<1	260	<1	19
1050	4400E																		
1080	4400E	310	<5	5	7	<0.5	570	29	10	<1	114	126	<1	75	126	<1	150	<1	21
1110	4400E	63	<5	3	<5	<0.5	121	58	30	<1	25	232	<1	21	30	<1	180	<1	6
1140	4400E	34	<5	43	<5	0.7	71	59	<10	<1	14	37	<1	41	19	<1	2220	<1	4
1170	4400E	350	<5	15	<5	<0.5	507	44	20	<1	105	135	<1	71	112	<1	510	<1	18
1200	4400E	323	<5	16	<5	<0.5	530	52	30	<1	112	140	<1	77	121	<1	700	<1	20
1225	4400E	120	<5	16	<5	<0.5	170	37	20	<1	36	102	<1	31	39	<1	750	<1	7
1250	4400E	257	<5	6	<5	<0.5	450	35	40	<1	93	107	<1	50	96	<1	160	<1	15
1275	4400E	32	<5	52	<5	<0.5	58	65	<10	<1	12	40	<1	18	14	<1	3760	<1	3
1300	4400E	13	<5	78	<5	<0.5	37	55	<10	<1	7	39	<1	8	13	<1	1130	<1	3
1325	4400E	24	<5	30	<5	<0.5	61	62	20	<1	11	102	<1	34	23	<1	1030	<1	9
1350	4400E																		
1375	4400E	166	<5	45	<5	<0.5	227	50	20	<1	48	47	<1	71	54	<1	3910	<1	14
1400	4400E	120	<5	23	<5	0.8	161	36	30	<1	36	111	<1	23	34	<1	410	<1	5
Line 4500E																			
-1300	4500E	166	<5	35	<5	<0.5	294	35	10	<1	55	114	<1	81	72	<1	3200	<1	14
-1275	4500E	21	<5	28	<5	<0.5	38	87	60	<1	8	214	<1	43	14	<1	2600	<1	7
-1250	4500E	102	<5	64	<5	0.7	203	76	10	<1	39	191	<1	76	55	<1	5540	<1	13
-1225	4500E	43	<5	15	<5	<0.5	76	61	40	<1	16	219	<1	25	19	<1	710	<1	3
-1200	4500E	189	<5	72	<5	1.2	323	67	90	<1	65	147	<1	107	82	<1	3290	<1	15
-1175	4500E	237	<5	58	<5	<0.5	342	148	<10	<1	71	44	<1	77	87	<1	3980	<1	25
-1150	4500E	44	<5	30	<5	<0.5	103	122	60	<1	19	269	<1	25	35	<1	3370	<1	14
-1125	4500E	50	<5	38	<5	<0.5	88	61	<10	<1	17	122	<1	34	28	<1	3900	<1	10
-1100	4500E	43	<5	43	<5	<0.5	77	69	<10	<1	15	178	<1	24	26	<1	4760	<1	9
-1075	4500E	47	<5	59	<5	<0.5	81	56	20	<1	16	230	<1	27	25	<1	3920	<1	8

## TREADWELL MMI DATA

		Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
420	4400E	<10	9.6	260	<0.5	8	<1	211	16	110	133
450	4400E										
480	4400E										
510	4400E	<10	6.3	219	<0.5	5	<1	103	8	230	85
540	4400E	<10	4.5	85	<0.5	5	<1	233	17	90	76
570	4400E	<10	1	46	<0.5	2	<1	208	25	120	41
600	4400E	<10	<0.5	10	<0.5	3	<1	101	10	80	10
630	4400E	<10	<0.5	10	<0.5	<1	<1	31	3	1230	9
660	4400E										
690	4400E										
720	4400E										
750	4400E	<10	5.6	79	<0.5	5	<1	1440	83	20	88
780	4400E	<10	3.1	44	<0.5	2	<1	437	25	<20	34
810	4400E										
840	4400E	<10	6.3	69	0.7	5	<1	408	27	20	111
870	4400E	<10	9.1	300	<0.5	6	<1	409	26	20	186
900	4400E	<10	7.7	58	<0.5	6	<1	845	54	30	135
930	4400E	<10	3.8	53	<0.5	5	<1	759	39	30	57
960	4400E	<10	<0.5	<3	<0.5	4	<1	322	29	<20	<5
990	4400E	<10	5.5	75	<0.5	5	<1	287	18	60	91
1020	4400E	<10	5.2	35	0.5	3	<1	679	46	70	45
1050	4400E										
1080	4400E	<10	2.2	5	<0.5	5	<1	857	50	20	31
1110	4400E	<10	5.3	58	<0.5	3	<1	161	9	40	55
1140	4400E	<10	3.5	267	<0.5	3	<1	159	12	30	62
1170	4400E	<10	8	148	<0.5	7	<1	525	26	40	128
1200	4400E	<10	14.3	114	<0.5	9	<1	619	38	40	182
1225	4400E	<10	5.7	92	<0.5	5	<1	226	13	30	74
1250	4400E	<10	9.4	96	<0.5	7	<1	473	29	60	121
1275	4400E	<10	<0.5	7	<0.5	3	<1	132	16	60	16
1300	4400E	<10	<0.5	4	<0.5	1	<1	130	13	110	9
1325	4400E	<10	2	12	<0.5	2	<1	424	41	80	24
1350	4400E										
1375	4400E	<10	2.6	19	<0.5	4	<1	465	38	30	36
1400	4400E	<10	7	255	<0.5	4	<1	153	10	70	109
Line 4500E											
-1300	4500E	<10	5.3	27	<0.5	6	<1	560	34	40	62
-1275	4500E	<10	2.3	24	<0.5	4	<1	292	29	150	29
-1250	4500E	<10	2.9	53	<0.5	8	2	436	47	100	58
-1225	4500E	<10	3.8	58	<0.5	4	<1	123	9	50	62
-1200	4500E	<10	6.6	407	<0.5	8	<1	467	35	330	134
-1175	4500E	<10	0.7	6	<0.5	2	<1	955	101	40	8
-1150	4500E	<10	1.8	14	<0.5	2	<1	644	60	470	6
-1125	4500E	<10	1	9	<0.5	2	<1	444	44	50	15
-1100	4500E	<10	0.5	6	<0.5	1	<1	346	39	30	8
-1075	4500E	<10	0.9	7	<0.5	3	<1	286	28	60	17

## TREADWELL MMI DATA

		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Dy	Er	Eu	Fe	Gd
-1050	4500E	<1	65	<10	<0.1	5810	<1	270	4	439	36	<100	140	125	78.8	19.5	6	103
-1025	4500E	2	129	<10	<0.1	620	<1	100	2	386	72	<100	390	152	101	34.7	90	158
-1000	4500E	<1	100	<10	<0.1	3940	<1	160	4	251	26	<100	190	120	68.6	21.3	17	105
-975	4500E	1	59	<10	<0.1	11700	<1	350	3	87	48	<100	210	37	28.3	4.1	5	25
-950	4500E	1	55	<10	<0.1	7710	<1	390	5	119	63	<100	100	110	85.8	11.6	4	64
-925	4500E	2	89	<10	<0.1	3890	<1	360	10	51	19	<100	140	50	39.3	5.4	4	31
-900	4500E	2	14	<10	<0.1	7940	<1	450	2	18	26	<100	240	56	35.6	8.3	3	48
-875	4500E	2	49	<10	0.2	13000	<1	380	2	137	32	<100	190	88	64.7	11.5	4	64
-850	4500E	1	70	<10	0.2	7630	<1	350	6	148	30	<100	250	143	104	18.7	6	98
-825	4500E	3	55	<10	<0.1	7390	<1	330	3	76	42	<100	130	117	91.7	13.7	4	80
-800	4500E	1	113	<10	<0.1	4890	<1	230	6	242	41	<100	90	40	20	8.5	27	36
-775	4500E	<1	99	<10	<0.1	3600	<1	220	4	297	26	<100	120	80	44.2	18.2	19	82
-750	4500E	<1	66	<10	<0.1	5110	<1	260	5	117	149	<100	210	51	36.4	9.1	29	43
-725	4500E	<1	52	<10	<0.1	4610	<1	170	<1	50	148	<100	900	8	5.7	1.5	114	7
-700	4500E	<1	82	<10	<0.1	3730	<1	330	7	178	46	<100	120	31	15.5	6.9	27	29
-675	4500E	<1	139	<10	<0.1	2510	<1	250	8	155	85	<100	130	25	12.2	5.8	58	24
-650	4500E	4	144	<10	<0.1	1520	<1	90	8	60	71	<100	110	26	15.8	4.3	55	19
-625	4500E	6	145	<10	0.1	1500	<1	90	5	119	72	<100	150	47	25.9	9	48	42
-600	4500E	9	81	<10	1.7	1320	<1	170	4	240	15	<100	190	43	21	13.4	15	56
-575	4500E	4	7	<10	0.1	2150	<1	380	2	25	31	<100	170	34	19.7	7.4	6	40
-550	4500E	<1	109	<10	<0.1	4310	<1	150	4	214	21	<100	120	40	20.1	9.5	20	42
-525	4500E	2	42	<10	<0.1	1600	<1	300	6	184	8	<100	150	109	62	23.2	10	115
-500	4500E	4	10	<10	<0.1	2270	<1	410	5	77	17	<100	110	58	35.3	11.8	7	63
-475	4500E	3	52	<10	<0.1	4420	<1	260	5	103	158	<100	330	38	21.7	8.1	12	37
-450	4500E	4	24	<10	<0.1	3880	<1	320	3	35	51	<100	290	47	26.1	9.9	8	49
-425	4500E	<1	91	<10	<0.1	2090	<1	140	6	150	32	<100	120	39	21.5	7.6	16	38
-400	4500E	<1	43	<10	<0.1	2430	<1	320	4	207	32	<100	50	210	115	34	5	163
-375	4500E	<1	112	<10	<0.1	2760	<1	180	3	433	53	<100	100	183	89	42.2	33	168
-350	4500E	<1	59	<10	<0.1	3340	<1	410	6	105	33	<100	110	31	17.6	5.6	9	25
-325	4500E	<1	130	<10	<0.1	2020	<1	200	5	77	31	<100	120	23	12.3	4.4	20	19
-300	4500E	3	114	<10	<0.1	3260	<1	220	6	131	37	<100	110	32	16	6.2	36	28
-275	4500E	2	77	<10	<0.1	1610	<1	250	4	27	22	<100	170	44	30	7.4	23	40
-250	4500E	1	95	<10	0.2	2020	<1	220	3	128	13	<100	110	29	15.2	7	26	31
-225	4500E	2	81	<10	<0.1	4110	<1	290	3	108	31	<100	100	21	11.3	4.3	10	19
-200	4500E	<1	80	<10	<0.1	3640	<1	260	2	135	23	<100	80	25	12.4	5.7	13	24
-175	4500E	<1	167	<10	<0.1	870	<1	80	7	57	73	<100	110	11	5.9	2.6	59	10
-150	4500E	<1	64	<10	<0.1	1610	<1	160	2	110	15	<100	130	22	11.1	6.5	10	29
-125	4500E	1	103	<10	<0.1	910	<1	250	7	233	71	<100	160	45	22.7	10.8	40	51
-100	4500E	10	6	<10	<0.1	1140	<1	520	4	99	48	<100	170	41	21	11.8	5	55
-75	4500E	<1	94	<10	<0.1	2120	<1	250	6	102	30	<100	100	73	40.3	12.2	14	53
-50	4500E	2	75	<10	<0.1	2350	<1	250	2	195	20	<100	140	32	15.6	10.1	34	42
-25	4500E	2	7	<10	<0.1	700	<1	390	14	85	18	<100	110	120	100	14.5	6	92
0	4500E	2	56	<10	<0.1	2090	<1	150	2	95	226	<100	750	10	6.5	2.6	92	11
25	4500E	1	132	<10	<0.1	760	<1	60	3	58	46	<100	90	16	8.6	3.7	34	13
50	4500E	<1	113	<10	<0.1	1670	<1	60	4	104	105	<100	230	23	13.6	4.9	68	22
75	4500E	4	12	<10	<0.1	750	<1	330	4	169	335	<100	840	15	9.5	4.8	30	20

## TREADWELL MMI DATA

		La	Li	Mg	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb
-1050	4500E	142	<5	49	<5	<0.5	233	120	<10	<1	48	284	<1	39	63	<1	2910	<1	18
-1025	4500E	160	<5	20	<5	2.9	452	206	20	<1	81	9	<1	110	125	<1	420	<1	24
-1000	4500E	165	<5	32	<5	<0.5	302	51	30	<1	58	298	<1	86	79	<1	2030	<1	18
-975	4500E	35	<5	27	<5	<0.5	47	75	30	<1	10	338	<1	19	14	<1	5770	<1	5
-950	4500E	53	<5	27	<5	<0.5	105	116	40	<1	20	148	<1	24	33	<1	5340	<1	13
-925	4500E	26	<5	33	<5	<0.5	47	110	50	<1	9	266	<1	14	16	<1	3910	<1	6
-900	4500E	47	<5	81	<5	<0.5	82	94	<10	<1	15	156	<1	25	26	<1	5530	<1	8
-875	4500E	83	<5	36	<5	<0.5	135	129	30	<1	27	580	<1	32	39	<1	6200	<1	12
-850	4500E	75	<5	30	<5	<0.5	164	120	50	<1	29	182	<1	37	55	<1	4500	<1	19
-825	4500E	69	<5	40	<5	<0.5	140	67	10	<1	26	149	<1	39	43	<1	4040	<1	15
-800	4500E	94	<5	47	<5	<0.5	127	99	50	<1	27	320	<1	65	30	<1	2980	<1	6
-775	4500E	122	<5	53	<5	<0.5	238	57	30	<1	47	246	<1	53	67	<1	2120	<1	13
-750	4500E	64	<5	41	<5	<0.5	117	191	<10	<1	24	247	<1	32	33	<1	3400	<1	7
-725	4500E	20	<5	41	<5	<0.5	22	73	<10	<1	6	115	<1	28	6	<1	3100	<1	1
-700	4500E	46	<5	56	<5	<0.5	72	106	20	<1	15	214	<1	67	21	<1	3490	<1	5
-675	4500E	48	<5	65	<5	0.8	73	193	50	<1	16	100	<1	55	20	<1	2490	<1	4
-650	4500E	19	<5	36	<5	0.9	49	175	60	<1	10	134	<1	45	14	<1	900	<1	4
-625	4500E	49	<5	27	<5	0.8	111	210	60	<1	21	134	<1	52	30	<1	860	<1	7
-600	4500E	125	<5	34	<5	<0.5	212	45	30	2	44	187	<1	56	51	<1	890	<1	8
-575	4500E	25	<5	132	<5	<0.5	67	66	<10	<1	12	60	<1	27	25	<1	2880	<1	6
-550	4500E	108	<5	24	5	<0.5	150	40	60	<1	32	186	<1	46	35	<1	2270	<1	7
-525	4500E	133	<5	78	<5	<0.5	258	139	20	<1	49	140	<1	37	78	<1	2290	<1	18
-500	4500E	43	5	112	<5	<0.5	111	126	<10	<1	19	149	<1	21	40	<1	3080	<1	9
-475	4500E	60	<5	68	<5	<0.5	95	54	20	<1	20	100	<1	57	27	<1	3260	<1	6
-450	4500E	41	<5	87	<5	<0.5	84	78	20	<1	16	84	<1	34	30	<1	3330	<1	7
-425	4500E	77	<5	32	<5	<0.5	116	45	60	<1	24	248	<1	37	30	<1	950	<1	6
-400	4500E	128	<5	47	<5	<0.5	246	33	30	<1	45	76	<1	64	90	<1	3810	<1	30
-375	4500E	266	<5	57	<5	<0.5	481	50	30	<1	95	61	<1	150	133	<1	2460	<1	29
-350	4500E	36	<5	54	<5	<0.5	49	98	30	<1	10	46	<1	34	16	<1	4780	<1	5
-325	4500E	23	<5	60	<5	<0.5	44	73	60	<1	9	78	<1	23	13	<1	1890	<1	3
-300	4500E	50	<5	39	<5	0.8	74	90	70	<1	16	173	<1	56	21	<1	2620	<1	5
-275	4500E	26	<5	58	5	0.8	68	183	40	<1	11	269	<1	33	24	<1	2710	<1	6
-250	4500E	53	<5	62	<5	0.7	93	137	40	<1	19	172	<1	45	25	<1	1810	<1	5
-225	4500E	30	<5	68	<5	<0.5	47	227	20	<1	10	232	<1	22	14	<1	3510	<1	3
-200	4500E	47	<5	85	<5	0.5	64	107	20	<1	14	254	<1	36	18	<1	2970	<1	4
-175	4500E	16	<5	23	<5	1.8	30	174	110	<1	7	297	<1	21	9	<1	670	<1	2
-150	4500E	59	<5	45	<5	<0.5	110	30	20	<1	22	280	<1	24	27	<1	1040	<1	4
-125	4500E	91	<5	79	<5	1.5	155	297	50	<1	31	155	<1	38	40	<1	1830	<1	8
-100	4500E	29	<5	376	<5	0.6	104	597	<10	<1	16	149	<1	13	37	<1	3350	<1	8
-75	4500E	38	<5	51	<5	<0.5	92	485	30	<1	16	245	<1	31	34	<1	2470	<1	11
-50	4500E	87	<5	95	<5	1.2	150	96	20	<1	31	131	<1	35	36	<1	2400	<1	6
-25	4500E	24	<5	109	<5	<0.5	85	184	<10	<1	13	70	<1	14	39	<1	2790	<1	16
0	4500E	23	<5	72	<5	0.9	38	127	<10	<1	8	162	<1	23	10	<1	1980	<1	2
25	4500E	18	<5	14	5	1.3	40	91	50	<1	8	182	<1	34	11	<1	570	<1	2
50	4500E	43	<5	19	<5	0.8	68	74	30	<1	15	158	<1	39	18	<1	590	<1	4
75	4500E	41	<5	193	8	1	83	541	<10	<1	17	67	<1	34	19	<1	2330	<1	3

## TREADWELL MMI DATA

		Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
-1050	4500E	<10	1.8	25	<0.5	6	<1	633	58	130	22
-1025	4500E	<10	9.8	1090	<0.5	14	<1	915	94	20	147
-1000	4500E	<10	6.4	67	0.5	10	<1	724	50	100	90
-975	4500E	<10	1.1	6	<0.5	3	<1	219	23	100	11
-950	4500E	<10	0.9	4	<0.5	2	<1	563	69	120	<5
-925	4500E	<10	1	11	<0.5	2	<1	291	32	800	9
-900	4500E	<10	<0.5	4	<0.5	2	<1	263	27	40	<5
-875	4500E	<10	1	5	0.6	5	<1	466	52	100	9
-850	4500E	<10	1.5	8	<0.5	3	<1	746	81	320	9
-825	4500E	<10	1.3	4	<0.5	3	<1	630	73	70	14
-800	4500E	<10	15.3	60	<0.5	9	<1	201	14	140	96
-775	4500E	<10	9.8	79	<0.5	7	<1	441	30	50	78
-750	4500E	<10	2.9	38	<0.5	4	<1	311	28	150	38
-725	4500E	<10	3.8	131	<0.5	4	<1	50	5	20	73
-700	4500E	<10	4.3	49	<0.5	4	<1	144	11	60	65
-675	4500E	<10	7.7	199	<0.5	3	<1	121	8	260	94
-650	4500E	<10	5.2	237	<0.5	3	<1	148	12	280	59
-625	4500E	<10	5.6	213	<0.5	4	<1	293	18	130	63
-600	4500E	<10	5.7	71	<0.5	8	<1	231	15	30	84
-575	4500E	<10	0.8	22	<0.5	4	<1	200	15	20	17
-550	4500E	<10	7.3	115	<0.5	5	<1	235	13	70	77
-525	4500E	<10	2.1	27	<0.5	4	<1	636	43	120	32
-500	4500E	<10	1.2	23	<0.5	5	<1	319	28	40	18
-475	4500E	<10	2	37	<0.5	4	<1	199	15	100	44
-450	4500E	<10	1.2	26	<0.5	3	<1	251	19	30	27
-425	4500E	<10	6.1	77	<0.5	7	<1	231	15	100	71
-400	4500E	<10	2.4	16	<0.5	3	<1	1080	74	60	23
-375	4500E	<10	14.7	126	<0.5	11	<1	879	59	20	148
-350	4500E	<10	2.3	22	<0.5	1	<1	160	12	50	30
-325	4500E	<10	4.5	59	<0.5	3	<1	124	9	<20	46
-300	4500E	<10	6.6	121	0.6	5	<1	168	11	40	70
-275	4500E	<10	2.1	51	0.6	4	<1	349	22	650	28
-250	4500E	<10	4.7	80	<0.5	4	<1	159	11	200	64
-225	4500E	<10	2.1	22	<0.5	2	<1	99	8	100	38
-200	4500E	<10	3.4	37	<0.5	3	<1	111	9	110	62
-175	4500E	<10	6.3	300	<0.5	2	<1	56	4	510	80
-150	4500E	<10	3	16	<0.5	5	<1	120	9	<20	57
-125	4500E	<10	7.3	189	<0.5	6	<1	254	16	220	64
-100	4500E	<10	3.5	<3	<0.5	28	<1	218	15	20	26
-75	4500E	<10	2.2	6	<0.5	2	<1	352	29	530	34
-50	4500E	<10	5.6	138	<0.5	5	<1	168	12	50	84
-25	4500E	<10	<0.5	<3	<0.5	4	<1	831	77	630	8
0	4500E	<10	1.6	57	<0.5	4	<1	66	6	40	72
25	4500E	<10	6.4	207	<0.5	4	<1	84	7	180	98
50	4500E	<10	7.1	193	<0.5	5	<1	137	11	110	109
75	4500E	<10	3.7	15	<0.5	10	<1	105	9	<20	46



## TREADWELL MMI DATA

		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Dy	Er	Eu	Fe	Gd
100	4500E	1	124	<10	<0.1	2730	<1	190	2	202	88	<100	150	51	27.6	9.8	23	42
125	4500E	<1	88	<10	<0.1	2840	<1	210	2	91	328	<100	50	39	30.8	5.4	16	23
150	4500E	<1	9	<10	<0.1	220	<1	230	5	14	64	<100	200	3	2.1	0.8	43	3
175	4500E	2	82	<10	<0.1	560	<1	650	18	125	54	<100	110	67	39	19.4	93	81
200	4500E	3	97	<10	<0.1	1390	<1	190	2	757	44	<100	240	206	100	56.9	29	231
225	4500E	2	145	<10	<0.1	2030	<1	130	3	130	49	<100	110	25	13	6.5	38	26
240	4500E	14	18	<10	<0.1	2850	<1	490	8	37	56	<100	490	82	73.1	9.8	7	55
270	4500E	4	158	<10	<0.1	1700	<1	90	3	186	59	<100	120	51	26.3	10.6	37	45
300	4500E	2	9	<10	<0.1	1950	<1	300	2	47	14	<100	270	20	11.8	3.8	8	19
330	4500E	5	17	<10	<0.1	2440	<1	460	4	12	17	<100	130	52	29	12.1	7	61
360	4500E	3	130	<10	<0.1	3570	<1	270	4	119	21	<100	140	15	7.2	4.4	30	17
390	4500E	<1	127	<10	<0.1	1220	<1	230	11	69	55	<100	160	13	6.9	2.7	47	12
420	4500E	3	83	<10	<0.1	1280	<1	290	6	143	74	<100	200	21	11.1	5.5	52	24
450	4500E	<1	126	<10	<0.1	530	<1	140	16	44	35	<100	180	13	8.1	2.2	69	10
480	4500E	14	221	30	<0.1	3260	<1	730	16	527	107	<100	590	42	20	14.2	113	55
510	4500E	3	86	<10	<0.1	1610	<1	260	4	249	42	<100	170	36	17.3	9.6	31	39
540	4500E	19	159	<10	<0.1	1720	<1	210	13	375	97	<100	260	66	34.9	18	67	69
570	4500E	3	61	<10	<0.1	730	<1	300	5	175	27	<100	140	44	22	13	46	56
600	4500E	5	69	<10	<0.1	1520	<1	610	11	370	143	<100	280	106	57.8	29.9	34	124
630	4500E	3	21	<10	<0.1	1340	<1	430	4	53	27	<100	400	46	24.2	13.1	7	59
660	4500E	3	24	<10	<0.1	980	<1	710	11	121	77	<100	270	27	16.1	6.4	18	32
690	4500E																	
720	4500E	<1	107	<10	<0.1	530	<1	40	7	119	40	<100	140	56	31.2	9.8	27	45
750	4500E																	
780	4500E	<1	116	<10	<0.1	2150	<1	50	4	206	48	<100	140	164	88.6	28.6	26	140
810	4500E	<1	132	<10	<0.1	3090	<1	120	3	489	43	<100	170	64	29.1	17.5	28	76
840	4500E	<1	84	<10	<0.1	1520	<1	50	2	22	81	<100	360	11	8.5	1.6	153	7
870	4500E																	
900	4500E	<1	110	<10	<0.1	750	<1	60	3	203	25	<100	100	61	31.2	16.6	14	78
930	4500E	<1	133	<10	<0.1	2570	<1	60	3	1080	32	<100	170	190	89.2	50.6	32	212
960	4500E	<1	106	<10	<0.1	4200	<1	40	2	1210	36	<100	130	235	116	66.7	17	288
990	4500E																	
1020	4500E	<1	95	<10	<0.1	580	<1	40	1	660	10	<100	120	130	63.8	41	16	166
1050	4500E	<1	84	<10	<0.1	3150	<1	130	1	314	98	<100	170	84	47.2	21.9	60	96
1080	4500E	3	104	<10	<0.1	910	<1	50	7	233	24	<100	200	60	34.2	12.5	23	57
1110	4500E																	
1140	4500E	4	194	<10	<0.1	520	<1	180	2	403	93	<100	220	116	69.2	33.3	183	142
1174	4500E	<1	40	<10	<0.1	50	<1	40	<1	54	14	<100	40	16	11.5	4.6	24	19
1199	4500E	4	213	<10	<0.1	200	<1	230	<1	180	32	<100	130	110	71.7	27.8	109	126
1224	4500E	2	117	<10	<0.1	190	<1	250	2	369	72	<100	180	150	92.8	42.6	200	184
1249	4500E	<1	58	<10	<0.1	2780	<1	290	2	147	45	<100	140	66	39.6	15.8	11	70
1274	4500E	<1	163	<10	0.1	1290	<1	60	7	186	53	<100	140	60	32	12.6	31	57
1299	4500E	<1	91	<10	<0.1	3620	<1	190	2	145	22	<100	160	44	21.9	14.1	19	56
1324	4500E	<1	128	<10	<0.1	4210	<1	130	3	731	26	<100	140	110	50.7	31.1	17	131
1349	4500E	<1	90	<10	<0.1	950	<1	80	3	131	24	<100	120	84	43.2	27.9	11	97
1374	4500E	<1	127	<10	<0.1	1820	<1	90	4	631	23	<100	160	157	73.4	44.4	16	191

## TREADWELL MMI DATA

		La	Li	Mg	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb
100	4500E	72	<5	100	<5	<0.5	124	60	20	<1	26	55	<1	50	29	<1	3210	<1	8
125	4500E	20	<5	63	<5	<0.5	61	172	<10	<1	12	170	<1	37	16	<1	2350	<1	5
150	4500E	2	<5	69	17	0.8	8	198	<10	<1	2	32	<1	15	2	<1	1040	<1	<1
175	4500E	74	9	175	8	1.6	198	243	90	<1	36	94	<1	49	60	<1	2110	<1	12
200	4500E	329	<5	63	<5	0.7	748	47	30	<1	140	61	<1	128	196	<1	2130	<1	35
225	4500E	48	<5	38	6	1.1	82	64	40	<1	17	111	<1	28	20	<1	1390	<1	4
240	4500E	38	<5	132	<5	<0.5	79	132	30	<1	14	48	<1	47	27	<1	3440	<1	10
270	4500E	65	<5	49	<5	0.8	137	57	60	<1	27	108	<1	47	35	<1	900	<1	8
300	4500E	22	<5	162	<5	<0.5	39	70	10	<1	8	27	<1	13	11	<1	3080	<1	3
330	4500E	35	<5	147	<5	<0.5	101	51	<10	<1	16	42	<1	26	37	<1	3640	<1	9
360	4500E	39	<5	54	<5	0.6	55	32	40	<1	12	117	<1	26	14	<1	2840	<1	3
390	4500E	15	<5	54	<5	0.9	29	114	80	<1	6	177	<1	30	9	<1	1740	<1	2
420	4500E	48	<5	82	5	1.8	78	52	260	<1	16	161	<1	35	20	<1	1930	<1	4
450	4500E	10	<5	31	<5	1.1	22	120	90	<1	5	284	<1	32	7	<1	790	<1	2
480	4500E	191	7	140	25	6.9	236	209	1800	<1	55	492	3	52	52	<1	3980	<1	8
510	4500E	73	<5	74	<5	0.6	127	85	30	<1	26	84	<1	45	33	<1	2170	<1	6
540	4500E	142	<5	105	<5	1.2	223	57	80	<1	46	70	<1	113	58	<1	2840	<1	11
570	4500E	93	<5	69	<5	0.9	185	170	<10	<1	36	47	<1	26	47	<1	1900	<1	8
600	4500E	156	<5	208	<5	0.6	350	129	40	<1	68	44	<1	170	100	<1	5530	<1	18
630	4500E	46	<5	157	<5	<0.5	130	49	<10	<1	21	40	<1	33	41	<1	5560	<1	8
660	4500E	44	<5	120	<5	1.7	91	183	10	<1	17	103	<1	22	24	<1	5610	<1	5
690	4500E																		
720	4500E	39	<5	12	<5	<0.5	119	49	50	<1	21	161	<1	29	32	<1	410	<1	8
750	4500E																		
780	4500E	195	<5	24	<5	<0.5	428	37	40	<1	81	93	<1	113	102	<1	1020	<1	25
810	4500E	218	<5	27	<5	0.8	296	45	60	<1	64	136	<1	82	66	<1	980	<1	11
840	4500E	6	<5	26	<5	<0.5	15	75	<10	<1	3	116	<1	44	5	<1	680	<1	1
870	4500E																		
900	4500E	140	<5	6	<5	<0.5	287	27	40	<1	57	103	<1	44	69	<1	310	<1	11
930	4500E	514	<5	17	<5	1.1	799	25	20	<1	169	42	<1	135	178	<1	1390	<1	33
960	4500E	642	<5	14	<5	<0.5	1160	17	20	<1	235	47	<1	128	255	<1	680	<1	42
990	4500E																		
1020	4500E	291	<5	7	<5	<0.5	623	21	70	<1	123	141	<1	92	146	<1	220	<1	23
1050	4500E	150	<5	34	<5	<0.5	294	41	<10	<1	56	30	<1	78	75	<1	1540	<1	14
1080	4500E	75	<5	7	<5	<0.5	175	42	20	<1	32	121	<1	52	45	<1	420	<1	9
1110	4500E																		
1140	4500E	242	<5	11	<5	5.5	484	152	40	<1	94	<5	<1	79	121	<1	600	<1	20
1174	4500E	32	<5	3	<5	2	63	34	<10	<1	13	<5	<1	17	16	<1	140	<1	3
1199	4500E	101	<5	16	<5	3.7	308	132	40	<1	54	<5	<1	47	93	<1	580	<1	18
1224	4500E	209	<5	26	<5	2.5	560	173	30	<1	101	9	<1	70	146	<1	670	<1	26
1249	4500E	78	<5	67	<5	<0.5	163	39	<10	<1	30	56	<1	64	50	<1	3830	<1	10
1274	4500E	70	<5	16	<5	0.8	167	36	120	<1	31	137	<1	47	44	<1	700	<1	9
1299	4500E	95	<5	52	<5	<0.5	183	21	30	<1	35	107	<1	36	47	<1	2410	<1	8
1324	4500E	411	<5	39	<5	<0.5	531	13	20	<1	114	72	<1	88	116	<1	3050	<1	20
1349	4500E	141	<5	11	<5	<0.5	323	21	70	<1	61	128	<1	47	85	<1	350	<1	15
1374	4500E	523	<5	28	<5	<0.5	769	20	40	<1	163	123	<1	100	166	<1	1400	<1	29

TREADWELL MMI DATA

		Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
100	4500E	<10	7.4	21	<0.5	5	<1	320	18	30	82
125	4500E	<10	2	<3	<0.5	1	<1	256	24	110	18
150	4500E	<10	<0.5	43	<0.5	7	<1	19	2	530	14
175	4500E	<10	4.5	165	<0.5	25	<1	388	31	1070	99
200	4500E	<10	6.1	109	<0.5	8	<1	996	69	20	137
225	4500E	<10	6.3	226	<0.5	3	<1	142	9	40	81
240	4500E	<10	1.5	5	<0.5	14	<1	440	70	90	28
270	4500E	<10	9.1	183	<0.5	5	<1	286	19	60	114
300	4500E	<10	0.9	19	<0.5	4	<1	100	10	70	<5
330	4500E	<10	1.2	<3	<0.5	3	<1	287	20	70	20
360	4500E	<10	7.4	135	<0.5	7	<1	72	6	90	98
390	4500E	<10	7.1	127	<0.5	3	<1	61	5	1040	86
420	4500E	<10	8.7	146	<0.5	11	<1	100	10	180	191
450	4500E	<10	5	174	<0.5	3	<1	68	6	670	66
480	4500E	<10	30.9	979	0.8	24	4	181	17	1360	579
510	4500E	<10	4.5	79	<0.5	5	<1	173	13	60	73
540	4500E	<10	20	200	<0.5	14	<1	290	30	230	339
570	4500E	<10	4	86	<0.5	4	<1	222	16	320	70
600	4500E	<10	5.4	37	<0.5	33	<1	552	48	180	213
630	4500E	<10	1.4	<3	<0.5	5	<1	249	17	120	29
660	4500E	<10	3.9	31	<0.5	20	<1	128	15	90	91
690	4500E										
720	4500E	<10	3.8	109	<0.5	3	<1	329	20	120	40
750	4500E										
780	4500E	<10	5.6	98	<0.5	5	<1	1040	57	40	78
810	4500E	<10	11.8	250	<0.5	7	<1	319	19	50	208
840	4500E	<10	4.4	164	<0.5	2	<1	63	7	150	60
870	4500E										
900	4500E	<10	8	103	<0.5	6	<1	340	21	80	104
930	4500E	<10	11.3	317	<0.5	7	<1	1040	57	<20	197
960	4500E	<10	5.9	85	<0.5	5	<1	1330	74	<20	78
990	4500E										
1020	4500E	<10	13.4	85	<0.5	9	<1	650	51	20	153
1050	4500E	<10	5.4	97	<0.5	4	<1	480	36	<20	108
1080	4500E	<10	6.2	30	<0.5	4	<1	342	26	140	58
1110	4500E										
1140	4500E	<10	9.3	2340	<0.5	4	1	721	60	40	182
1174	4500E	<10	2.4	357	<0.5	<1	<1	94	11	<20	59
1199	4500E	<10	7.5	978	<0.5	3	1	726	61	30	126
1224	4500E	<10	5.2	821	<0.5	2	2	990	79	<20	80
1249	4500E	<10	2.2	9	<0.5	5	<1	376	29	<20	50
1274	4500E	<10	11.6	212	<0.5	7	<1	321	23	70	188
1299	4500E	<10	6.7	120	<0.5	5	<1	230	15	<20	102
1324	4500E	<10	12.5	149	<0.5	8	<1	566	31	<20	205
1349	4500E	<10	6.9	32	<0.5	8	<1	450	29	<20	97
1374	4500E	<10	9.5	75	<0.5	10	<1	881	47	50	142

## TREADWELL MMI DATA

		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Dy	Er	Eu	Fe	Gd
Line 4600E																		
-1250	4600E	1	88	<10	<0.1	4580	<1	170	<1	7	35	<100	410	14	13.2	1.2	9	8
-1225	4600E	2	85	<10	<0.1	5930	<1	200	2	100	14	<100	80	11	5.2	3.4	14	15
-1200	4600E	4	67	<10	<0.1	4080	<1	190	3	121	20	<100	480	331	184	87.2	27	416
-1175	4600E	2	28	<10	<0.1	17000	<1	350	3	64	12	<100	230	15	8.5	2.4	5	15
-1150	4600E	2	35	<10	<0.1	7100	<1	320	3	79	29	<100	120	57	46.4	6	4	36
-1125	4600E	<1	68	<10	<0.1	7220	<1	280	4	78	26	<100	140	27	18.2	3.1	5	19
-1100	4600E	<1	98	<10	<0.1	5140	<1	130	6	192	20	<100	150	54	30	10.3	16	49
-1075	4600E	<1	91	<10	<0.1	2240	<1	80	6	117	27	<100	160	61	37.9	10.7	18	54
-1050	4600E	2	58	<10	<0.1	8340	<1	380	3	57	27	<100	340	24	15	3.2	4	18
-1025	4600E	<1	25	<10	<0.1	3520	<1	430	10	97	62	<100	170	119	89.2	15.8	4	86
-1000	4600E	1	23	<10	<0.1	10400	<1	400	1	114	38	<100	230	69	43.3	10.8	4	59
-975	4600E	1	111	<10	<0.1	13700	<1	230	2	176	17	<100	110	115	77.9	13.8	5	78
-950	4600E	<1	61	<10	<0.1	5810	<1	360	2	151	49	<100	100	119	81.7	18.2	4	90
-925	4600E	1	74	<10	<0.1	9110	<1	290	3	167	27	<100	130	55	31.9	7.2	4	38
-900	4600E	2	49	<10	<0.1	4170	<1	340	4	148	21	<100	120	60	36.5	10.7	9	54
-875	4600E	<1	80	<10	<0.1	6020	<1	330	3	186	50	<100	80	32	20.1	4.6	7	24
-850	4600E	<1	4	<10	<0.1	4700	<1	530	2	28	14	<100	30	32	24.3	4	2	24
-825	4600E	<1	120	<10	<0.1	3850	<1	150	2	650	23	<100	80	117	61	25.2	12	117
-800	4600E	1	213	<10	<0.1	1350	<1	310	25	92	80	<100	330	19	10.6	5.2	102	22
-775	4600E	<1	20	<10	<0.1	2990	<1	350	2	10	19	<100	330	135	93.5	17.9	3	102
-750	4600E	<1	91	<10	<0.1	4100	<1	230	2	75	17	<100	110	22	11.9	4.3	6	19
-725	4600E	1	153	<10	<0.1	790	<1	80	5	148	60	<100	80	21	9.9	5.8	49	25
-700	4600E	2	50	<10	<0.1	2020	<1	200	3	11	26	<100	310	39	27.6	5.9	4	32
-675	4600E	2	2	<10	<0.1	1690	<1	380	2	16	489	<100	540	11	9.8	2.1	7	11
-650	4600E	7	93	<10	<0.1	4650	<1	260	5	267	19	<100	150	54	30.6	12	17	58
-625	4600E	1	110	<10	<0.1	1930	<1	200	5	90	31	<100	140	23	13	4.6	30	22
-600	4600E	<1	162	<10	<0.1	1410	<1	120	8	78	46	<100	130	19	10.9	3.3	49	15
-575	4600E	2	74	<10	<0.1	2270	<1	270	3	93	20	<100	170	97	61.1	16.1	10	86
-550	4600E	3	28	<10	<0.1	3610	<1	380	2	13	33	<100	190	26	17.1	4.1	4	25
-525	4600E	5	3	<10	0.1	1560	<1	460	2	11	58	<100	140	29	18	5.1	4	28
-500	4600E	3	60	<10	<0.1	2350	<1	250	3	64	19	<100	170	42	23.8	9.7	13	46
-475	4600E	3	33	<10	<0.1	1650	<1	370	3	56	71	<100	290	60	39.7	9.9	9	56
-450	4600E	9	5	<10	<0.1	2270	<1	440	3	23	45	<100	170	32	20.7	5.7	5	32
-425	4600E	4	62	<10	<0.1	1290	<1	240	3	103	23	<100	170	39	22.8	8	12	41
-400	4600E	5	9	<10	0.1	2490	<1	480	1	7	18	<100	150	43	27.7	7.2	3	40
-375	4600E	5	57	<10	<0.1	1400	<1	310	4	26	41	<100	250	83	58.2	11.9	9	67
-350	4600E	6	20	<10	<0.1	640	<1	320	4	54	326	<100	740	40	27.7	9.4	8	46
-325	4600E	5	32	<10	<0.1	2450	<1	410	5	47	50	<100	170	30	18	5.1	10	26
-300	4600E	6	44	<10	<0.1	1260	<1	360	4	30	59	<100	190	54	36.8	8.2	12	45
-275	4600E	5	29	<10	<0.1	1090	<1	380	3	19	49	<100	130	24	16.1	4.1	10	23
-250	4600E	9	37	<10	<0.1	2390	<1	310	3	35	32	<100	280	61	40.1	10.3	9	54
-225	4600E	4	116	<10	<0.1	1480	<1	240	7	140	111	<100	150	37	19	8.7	59	39
-200	4600E	20	4	<10	0.2	1750	<1	530	7	5	35	<100	100	53	32.6	10.3	3	57
-175	4600E	<1	7	30	<0.1	420	<1	270	2	15	62	<100	370	4	3.6	1.1	21	5
-150	4600E	6	25	<10	<0.1	2210	<1	670	10	44	17	<100	120	23	13.9	4.4	9	22

TREADWELL MMI DATA

		La	Li	Mg	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb
Line 4600E																			
-1250	4600E	4	<5	20	<5	<0.5	11	69	<10	<1	2	156	<1	5	4	<1	1550	<1	2
-1225	4600E	54	<5	38	<5	0.6	64	36	40	<1	15	309	<1	15	14	<1	1870	<1	2
-1200	4600E	657	6	62	<5	1	1470	128	30	<1	277	470	<1	87	361	<1	1440	<1	58
-1175	4600E	35	<5	66	<5	<0.5	50	46	20	<1	11	758	<1	11	12	<1	4370	<1	2
-1150	4600E	38	<5	20	<5	<0.5	66	101	40	<1	13	389	<1	13	21	<1	4150	<1	7
-1125	4600E	28	<5	36	<5	<0.5	36	58	30	<1	8	263	<1	15	11	<1	3880	<1	4
-1100	4600E	105	<5	32	<5	<0.5	159	65	70	<1	32	479	<1	50	40	<1	1720	<1	8
-1075	4600E	91	<5	20	<5	<0.5	170	50	100	<1	33	387	<1	52	43	<1	870	<1	9
-1050	4600E	33	<5	50	<5	<0.5	38	38	30	<1	9	199	<1	20	11	<1	5820	<1	3
-1025	4600E	93	<5	56	<5	<0.5	162	183	20	<1	32	156	<1	25	48	<1	5060	<1	15
-1000	4600E	100	<5	87	<5	<0.5	140	111	<10	<1	29	256	<1	44	38	<1	5330	<1	10
-975	4600E	110	<5	29	<5	<0.5	152	33	60	<1	31	300	<1	48	42	<1	4100	<1	15
-950	4600E	112	<5	54	<5	0.5	188	54	10	<1	37	122	<1	49	52	<1	5220	<1	16
-925	4600E	92	<5	31	<5	<0.5	93	38	30	<1	21	197	<1	30	23	<1	3230	<1	8
-900	4600E	85	<5	64	<5	<0.5	126	112	30	<1	26	234	<1	33	34	<1	3890	<1	9
-875	4600E	54	<5	46	<5	<0.5	65	151	20	<1	15	237	<1	43	16	<1	3750	<1	5
-850	4600E	11	<5	81	<5	<0.5	28	38	<10	<1	5	131	<1	11	12	<1	5840	<1	4
-825	4600E	258	<5	42	<5	<0.5	408	46	40	<1	86	308	<1	82	94	<1	1730	<1	19
-800	4600E	44	<5	67	7	4.2	71	277	270	<1	15	270	<1	32	19	<1	1340	<1	3
-775	4600E	48	<5	55	<5	<0.5	124	154	10	<1	20	98	<1	28	50	<1	4360	<1	18
-750	4600E	43	<5	39	<5	<0.5	50	47	<10	<1	11	125	<1	14	13	<1	3330	<1	3
-725	4600E	56	<5	25	<5	1.9	89	177	50	<1	20	257	<1	31	22	<1	520	<1	4
-700	4600E	22	<5	53	<5	<0.5	49	113	20	<1	8	134	<1	26	17	<1	2330	<1	5
-675	4600E	13	<5	97	<5	<0.5	31	153	<10	<1	6	110	<1	14	8	<1	3250	<1	2
-650	4600E	125	<5	41	<5	<0.5	200	42	40	<1	42	302	<1	45	47	<1	3010	<1	9
-625	4600E	40	<5	32	<5	0.6	67	90	60	<1	14	498	<1	24	17	<1	1510	<1	4
-600	4600E	16	<5	30	<5	1	39	109	120	<1	8	463	<1	27	11	<1	960	<1	3
-575	4600E	67	<5	33	<5	<0.5	144	183	20	<1	27	361	<1	29	50	<1	2150	<1	14
-550	4600E	13	<5	51	<5	<0.5	32	113	10	<1	6	291	<1	9	14	<1	2900	<1	4
-525	4600E	8	<5	121	<5	<0.5	32	46	<10	<1	5	36	<1	13	15	<1	3190	<1	4
-500	4600E	58	<5	63	<5	<0.5	126	53	30	<1	24	122	<1	27	36	<1	2010	<1	7
-475	4600E	43	<5	48	<5	<0.5	97	135	<10	<1	18	67	<1	19	31	<1	2520	<1	9
-450	4600E	12	<5	63	<5	<0.5	35	42	<10	<1	6	40	<1	6	16	<1	3740	<1	5
-425	4600E	42	<5	44	<5	<0.5	91	62	20	<1	17	94	<1	21	28	<1	1620	<1	6
-400	4600E	13	<5	59	<5	<0.5	45	35	<10	<1	7	44	<1	9	21	<1	3890	<1	6
-375	4600E	39	<5	38	<5	<0.5	93	165	40	<1	17	73	<1	20	35	<1	2350	<1	12
-350	4600E	76	<5	52	5	<0.5	149	477	<10	<1	29	41	<1	10	34	<1	2000	<1	7
-325	4600E	22	<5	50	<5	<0.5	44	191	20	<1	9	93	<1	19	16	<1	2650	<1	5
-300	4600E	30	<5	48	<5	<0.5	66	234	30	<1	12	77	<1	21	24	<1	2030	<1	8
-275	4600E	14	<5	51	<5	<0.5	32	193	<10	<1	6	57	<1	9	12	<1	2150	<1	4
-250	4600E	36	<5	46	<5	<0.5	84	233	20	<1	15	93	<1	17	31	<1	2250	<1	9
-225	4600E	73	<5	85	<5	1.6	119	225	80	<1	25	128	<1	41	31	<1	1460	<1	6
-200	4600E	14	<5	175	<5	<0.5	53	103	<10	<1	8	44	<1	8	28	<1	3260	<1	9
-175	4600E	5	<5	69	14	0.9	14	787	10	<1	3	113	1	6	4	<1	1640	<1	<1
-150	4600E	15	<5	80	<5	0.6	41	561	10	<1	8	422	<1	11	15	<1	4550	<1	4

## TREADWELL MMI DATA

		Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
Line 4600E											
-1250	4600E	<10	1.4	18	0.8	2	<1	96	12	50	21
-1225	4600E	<10	5.6	185	<0.5	5	<1	61	4	260	69
-1200	4600E	<10	7.9	252	<0.5	43	1	1960	144	270	102
-1175	4600E	<10	1.2	11	<0.5	8	<1	75	7	230	26
-1150	4600E	<10	2.7	<3	0.8	3	<1	341	38	150	15
-1125	4600E	<10	1.7	8	<0.5	3	<1	152	14	230	29
-1100	4600E	<10	10.9	40	<0.5	10	<1	330	22	170	86
-1075	4600E	<10	7.8	60	<0.5	8	<1	404	29	370	82
-1050	4600E	<10	1	<3	<0.5	3	<1	115	11	110	24
-1025	4600E	<10	0.7	8	<0.5	3	<1	589	70	750	15
-1000	4600E	<10	1.7	<3	0.5	8	<1	335	33	70	40
-975	4600E	<10	6.1	12	0.7	5	<1	729	58	30	50
-950	4600E	<10	2	<3	<0.5	4	2	626	62	40	32
-925	4600E	<10	2.7	6	<0.5	4	<1	281	22	70	37
-900	4600E	<10	1.8	25	<0.5	4	<1	310	26	190	34
-875	4600E	<10	3.2	22	<0.5	5	<1	158	15	140	58
-850	4600E	<10	1	<3	<0.5	3	<1	175	20	40	14
-825	4600E	<10	12	70	<0.5	8	<1	701	42	40	94
-800	4600E	<10	12.2	1300	<0.5	4	<1	101	8	4200	180
-775	4600E	<10	<0.5	<3	<0.5	2	<1	711	72	30	9
-750	4600E	<10	2.4	33	<0.5	1	<1	129	8	<20	31
-725	4600E	<10	7.6	536	<0.5	3	<1	106	8	190	97
-700	4600E	<10	0.6	<3	<0.5	2	<1	251	22	40	16
-675	4600E	<10	0.6	<3	<0.5	3	<1	70	11	<20	13
-650	4600E	<10	6.5	42	<0.5	11	<1	322	23	50	92
-625	4600E	<10	5.8	91	<0.5	7	<1	140	11	60	68
-600	4600E	<10	9.1	197	<0.5	3	<1	99	8	670	65
-575	4600E	<10	2	11	<0.5	6	<1	588	45	30	24
-550	4600E	<10	0.6	8	<0.5	5	<1	143	14	80	15
-525	4600E	<10	<0.5	<3	<0.5	10	<1	151	14	20	11
-500	4600E	<10	2.2	19	<0.5	6	<1	240	18	70	45
-475	4600E	<10	0.7	9	<0.5	3	<1	355	31	110	20
-450	4600E	<10	<0.5	<3	<0.5	2	<1	189	16	40	8
-425	4600E	<10	1.7	38	<0.5	3	<1	219	18	40	32
-400	4600E	<10	<0.5	<3	<0.5	2	<1	235	21	60	9
-375	4600E	<10	1.2	16	<0.5	3	<1	505	46	250	20
-350	4600E	<10	1.2	28	<0.5	6	<1	241	25	40	18
-325	4600E	<10	1.4	22	<0.5	3	<1	148	15	80	23
-300	4600E	<10	1.1	26	<0.5	3	<1	336	29	170	20
-275	4600E	<10	0.7	15	<0.5	1	<1	160	13	220	11
-250	4600E	<10	1.6	12	<0.5	5	<1	361	31	80	24
-225	4600E	<10	8.1	297	<0.5	6	<1	204	14	370	70
-200	4600E	<10	<0.5	<3	<0.5	9	<1	296	25	150	7
-175	4600E	<10	<0.5	33	<0.5	51	<1	36	3	60	8
-150	4600E	<10	0.8	12	<0.5	5	<1	110	11	650	18

## TREADWELL MMI DATA

		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Dy	Er	Eu	Fe	Gd
-125	4600E	1	185	<10	<0.1	640	<1	220	7	20	259	<100	130	11	10.2	1	48	5
-100	4600E	5	4	<10	<0.1	350	<1	740	8	22	42	<100	50	19	10.9	3.1	3	17
-75	4600E	<1	108	<10	<0.1	800	<1	310	26	29	49	<100	390	35	31.1	2.7	39	13
-50	4600E	1	31	<10	<0.1	2090	<1	490	3	59	28	<100	110	24	14.5	3.8	10	20
-25	4600E	2	132	<10	<0.1	2430	<1	240	4	219	37	<100	130	38	20.3	9.9	28	40
0	4600E																	
25	4600E	3	76	<10	<0.1	2300	<1	400	5	96	35	<100	150	21	12	4.4	19	19
50	4600E	1	167	<10	<0.1	480	<1	110	9	8	128	<100	180	2	3.4	<0.5	72	1
75	4600E	2	120	<10	<0.1	3470	<1	200	4	113	20	<100	70	18	9.8	4	22	17
100	4600E	1	66	<10	<0.1	680	<1	370	5	75	26	<100	90	45	27.1	7.7	9	36
120	4600E																	
150	4600E																	
180	4600E																	
210	4600E																	
240	4600E	4	22	<10	<0.1	610	<1	500	19	123	42	<100	180	106	64.9	19.6	8	103
270	4600E	8	27	<10	0.1	1200	<1	550	5	106	127	<100	320	41	27.7	6.8	8	34
300	4600E	1	166	<10	<0.1	1580	<1	140	22	16	215	<100	110	6	6.3	0.6	80	3
330	4600E	8	111	<10	<0.1	3150	<1	250	7	312	63	<100	320	47	23.6	14.7	36	58
360	4600E	5	114	<10	<0.1	2240	<1	140	5	121	26	<100	100	28	15.2	6.1	15	27
390	4600E	4	101	10	<0.1	1920	<1	230	6	209	54	<100	360	55	30.1	14.5	137	63
420	4600E	13	135	<10	<0.1	2410	<1	190	5	121	46	<100	260	20	11.1	5.3	27	20
450	4600E	8	143	<10	<0.1	1400	<1	280	6	151	145	<100	140	19	8.7	4.6	99	18
480	4600E	5	189	<10	0.1	560	<1	70	7	91	38	<100	80	19	10.7	3.4	49	15
510	4600E	9	123	<10	<0.1	1550	<1	230	9	196	49	<100	160	26	13.1	7	39	30
540	4600E	2	119	<10	0.1	990	<1	300	12	170	213	<100	210	80	61.7	8.7	23	46
570	4600E	9	95	<10	<0.1	890	<1	260	19	181	29	<100	290	49	25.8	13.6	24	60
600	4600E	12	12	<10	<0.1	1220	<1	540	4	12	101	<100	340	27	22.2	4.6	4	22
630	4600E																	
660	4600E	13	8	<10	0.5	1310	<1	570	<1	<5	12	<100	660	19	16.9	2.9	3	14
690	4600E																	
720	4600E	1	145	<10	<0.1	650	<1	80	9	177	46	<100	230	42	20.6	11.5	32	43
750	4600E																	
780	4600E	3	137	<10	<0.1	2580	<1	140	19	169	128	<100	490	218	153	21	73	107
810	4600E																	
840	4600E	<1	120	<10	<0.1	1380	<1	30	11	123	43	<100	220	127	79.2	16.2	27	79
870	4600E																	
900	4600E	<1	167	<10	<0.1	1030	<1	60	6	355	53	<100	220	45	21.2	12.2	25	52
930	4600E																	
960	4600E	<1	117	<10	<0.1	4200	<1	180	6	330	50	<100	180	57	26.1	15.1	22	63
990	4600E																	
1020	4600E	<1	95	<10	<0.1	580	<1	40	1	660	10	<100	120	130	63.8	41	16	166
1050	4600E																	
1080	4600E	<1	210	<10	<0.1	660	<1	30	7	57	211	<100	360	79	58.2	6.5	35	31
1110	4600E																	
1140	4600E	<1	93	<10	<0.1	660	<1	50	5	595	28	<100	240	132	69.9	33.3	19	151
1170	4600E																	

TREADWELL MMI DATA

		La	Li	Mg	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb
-125	4600E	1	<5	60	<5	0.7	8	321	70	<1	2	104	<1	26	3	<1	2070	<1	1
-100	4600E	5	<5	114	<5	<0.5	18	190	<10	<1	3	92	<1	<5	8	<1	2530	<1	3
-75	4600E	8	<5	51	<5	<0.5	23	117	90	<1	5	287	<1	13	8	<1	1470	<1	4
-50	4600E	16	<5	32	<5	<0.5	32	68	10	<1	7	73	<1	12	11	<1	3640	<1	3
-25	4600E	90	<5	38	<5	<0.5	133	33	50	<1	29	118	<1	21	33	<1	2260	<1	6
0	4600E																		
25	4600E	33	<5	46	<5	<0.5	51	45	20	<1	11	60	<1	12	14	<1	3860	<1	3
50	4600E	<1	<5	34	<5	1.2	1	178	60	<1	<1	41	<1	12	<1	<1	560	<1	<1
75	4600E	42	<5	28	<5	<0.5	59	28	40	<1	13	113	<1	17	14	<1	1690	<1	3
100	4600E	31	<5	40	<5	<0.5	61	133	20	<1	12	177	<1	11	21	<1	2810	<1	6
120	4600E																		
150	4600E																		
180	4600E																		
210	4600E																		
240	4600E	64	<5	70	<5	<0.5	162	586	20	<1	29	96	<1	11	57	<1	2310	<1	16
270	4600E	43	<5	182	<5	1.7	74	161	100	<1	14	21	<1	35	21	<1	4530	<1	6
300	4600E	3	<5	39	<5	1.4	5	100	80	<1	2	177	<1	24	2	<1	870	<1	<1
330	4600E	137	<5	99	<5	1.3	212	52	100	<1	44	126	<1	90	51	<1	2300	<1	8
360	4600E	52	<5	53	<5	<0.5	89	33	40	<1	19	136	<1	24	23	<1	660	<1	5
390	4600E	88	<5	92	<5	1.9	180	97	80	<1	34	64	<1	54	49	<1	1740	<1	9
420	4600E	42	<5	34	<5	0.7	64	50	50	<1	14	90	<1	21	16	<1	1780	<1	3
450	4600E	40	<5	73	8	3.2	55	110	110	<1	12	159	<1	52	15	<1	1100	<1	3
480	4600E	25	<5	10	<5	1.3	43	85	50	<1	10	142	<1	24	12	<1	320	<1	3
510	4600E	82	<5	72	<5	1.6	112	64	80	<1	25	188	<1	38	26	<1	1040	<1	4
540	4600E	36	7	61	<5	0.9	77	204	70	<1	15	48	<1	62	27	<1	1820	<1	10
570	4600E	127	<5	49	<5	0.9	214	80	80	<1	45	183	<1	47	51	<1	1150	<1	9
600	4600E	18	<5	175	5	0.6	43	108	110	<1	7	14	<1	26	13	<1	3150	<1	3
630	4600E																		
660	4600E	5	<5	190	<5	<0.5	17	127	230	<1	2	<5	<1	20	7	<1	2480	<1	2
690	4600E																		
720	4600E	67	<5	23	<5	<0.5	135	25	70	<1	27	91	<1	55	35	<1	660	<1	7
750	4600E																		
780	4600E	63	<5	77	<5	<0.5	181	53	880	<1	31	109	<1	151	60	<1	1780	<1	25
810	4600E																		
840	4600E	44	<5	18	<5	<0.5	156	43	120	<1	26	175	<1	67	49	<1	610	<1	16
870	4600E																		
900	4600E	134	<5	13	7	<0.5	186	34	390	<1	41	255	<1	49	44	<1	380	<1	8
930	4600E																		
960	4600E	157	<5	43	<5	<0.5	201	21	70	<1	42	138	<1	90	51	<1	2490	<1	10
990	4600E																		
1020	4600E	291	<5	7	<5	<0.5	623	21	70	<1	123	141	<1	92	146	<1	220	<1	23
1050	4600E																		
1080	4600E	14	<5	17	<5	<0.5	44	66	60	<1	7	278	<1	102	16	<1	520	<1	8
1110	4600E																		
1140	4600E	281	<5	8	<5	<0.5	533	46	50	<1	104	157	<1	82	124	<1	440	<1	22
1170	4600E																		



## TREADWELL MMI DATA

		Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
-125	4600E	<10	7.1	77	<0.5	3	<1	61	9	380	40
-100	4600E	<10	0.6	3	<0.5	6	<1	80	8	190	6
-75	4600E	<10	4.7	23	<0.5	10	<1	242	26	470	52
-50	4600E	<10	1.2	4	<0.5	4	<1	113	11	70	24
-25	4600E	<10	9.3	76	<0.5	7	<1	222	15	40	91
0	4600E										
25	4600E	<10	3.7	30	<0.5	3	<1	104	9	70	47
50	4600E	<10	3.4	87	<0.5	2	<1	14	5	520	32
75	4600E	<10	9.2	88	<0.5	6	<1	101	7	100	97
100	4600E	<10	2.6	6	<0.5	2	<1	247	21	40	20
120	4600E										
150	4600E										
180	4600E										
210	4600E										
240	4600E	<10	1.8	9	<0.5	5	<1	592	49	570	17
270	4600E	<10	2.1	12	<0.5	18	<1	174	25	60	80
300	4600E	<10	5.7	305	<0.5	3	<1	32	8	2110	61
330	4600E	<10	17.7	185	<0.5	17	<1	229	19	210	306
360	4600E	<10	7.1	54	<0.5	8	<1	157	11	40	77
390	4600E	<10	10.5	595	<0.5	9	<1	298	25	130	179
420	4600E	<10	8.2	142	<0.5	5	<1	117	8	70	80
450	4600E	<10	22.2	408	<0.5	17	<1	72	7	160	320
480	4600E	<10	10.7	253	<0.5	6	<1	95	9	550	126
510	4600E	<10	16.4	204	<0.5	14	<1	120	11	150	246
540	4600E	<10	6.9	56	<0.5	15	1	400	54	600	81
570	4600E	<10	8.9	94	0.7	20	<1	254	22	310	157
600	4600E	<10	1	<3	<0.5	19	<1	130	23	30	22
630	4600E										
660	4600E	<10	<0.5	<3	<0.5	5	<1	93	16	30	<5
690	4600E										
720	4600E	<10	18.3	109	<0.5	15	<1	179	17	110	208
750	4600E										
780	4600E	<10	19.2	54	0.6	25	1	1200	126	250	276
810	4600E										
840	4600E	<10	5.7	47	0.5	7	<1	736	62	80	67
870	4600E										
900	4600E	<10	15.4	110	<0.5	13	<1	189	16	230	223
930	4600E										
960	4600E	<10	17.9	59	0.5	15	<1	250	19	50	275
990	4600E										
1020	4600E	<10	13.4	85	<0.5	9	<1	650	51	20	153
1050	4600E										
1080	4600E	<10	11.2	99	3.8	16	<1	375	49	240	153
1110	4600E										
1140	4600E	<10	9.8	60	0.5	8	<1	777	52	<20	70
1170	4600E										

TREADWELL MMI DATA

		Ag	Al	As	Au	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Dy	Er	Eu	Fe	Gd
1200	4600E	<1	125	<10	<0.1	3320	<1	100	4	357	66	<100	230	148	78.7	31.2	22	154

TREADWELL MMI DATA

		La	Li	Mg	Mo	Nb	Nd	Ni	Pb	Pd	Pr	Rb	Sb	Sc	Sm	Sn	Sr	Ta	Tb
1200	4600E	304	<5	18	<5	<0.5	496	18	150	<1	101	166	<1	149	122	<1	1400	<1	24

TREADWELL MMI DATA

		Te	Th	Ti	Tl	U	W	Y	Yb	Zn	Zr
1200	4600E	<10	25.9	81	1.1	33	<1	791	61	60	290

TREADWELL RESOURCES LTD.

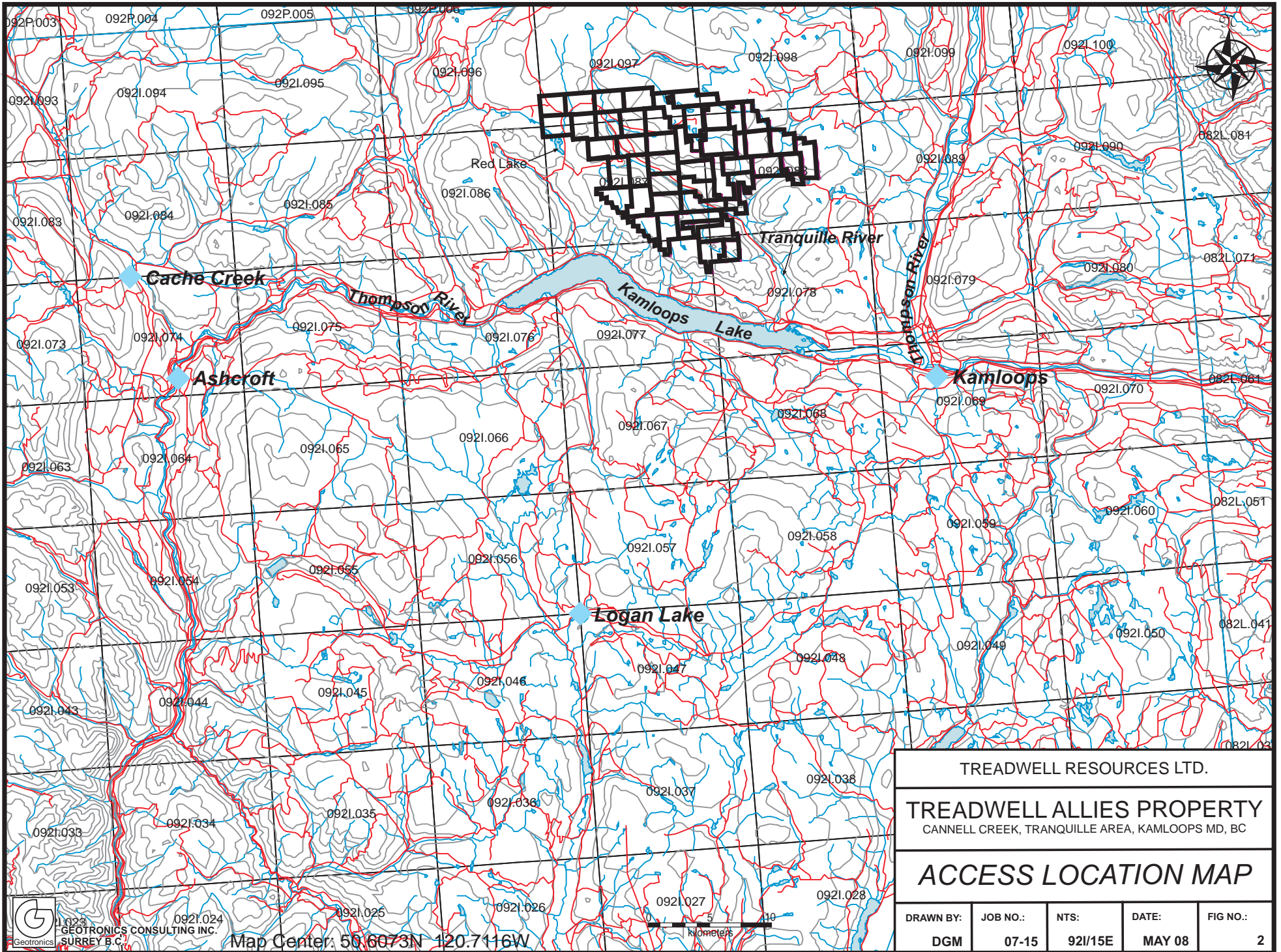
TREADWELL ALLIES PROPERTY  
CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC

## BC LOCATION MAP

DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
DGM	07-15	92I/15E	MAY 08	1

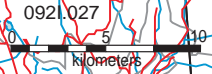


GEOTRONICS CONSULTING INC.  
SURREY B.C.



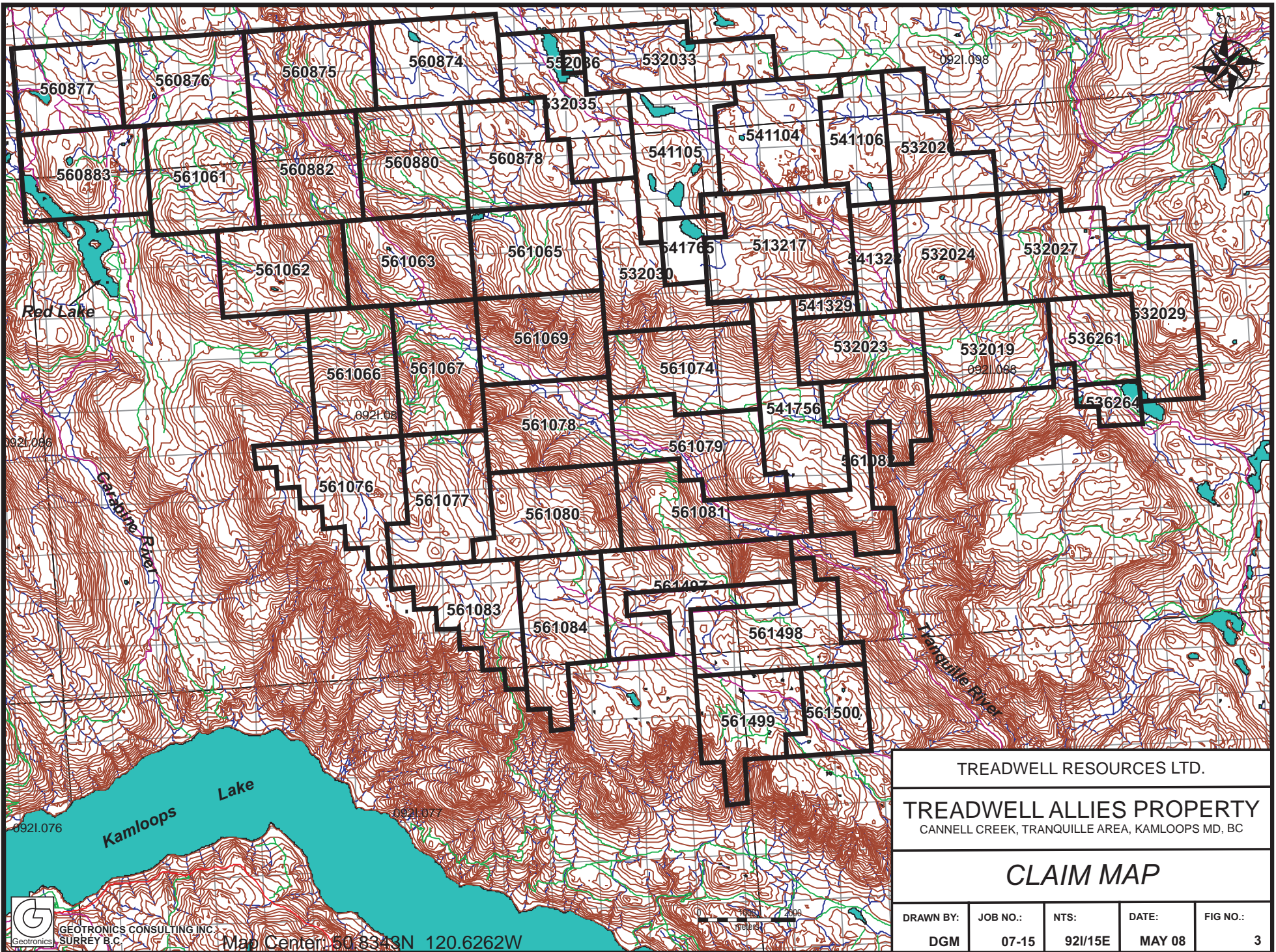

 GEOTRONICS CONSULTING INC.  
 SURREY B.C.

Map Center: 50 6073N 120.7116W



TREADWELL RESOURCES LTD.				
TREADWELL ALLIES PROPERTY CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
<b>ACCESS LOCATION MAP</b>				
DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
DGM	07-15	92I/15E	MAY 08	2





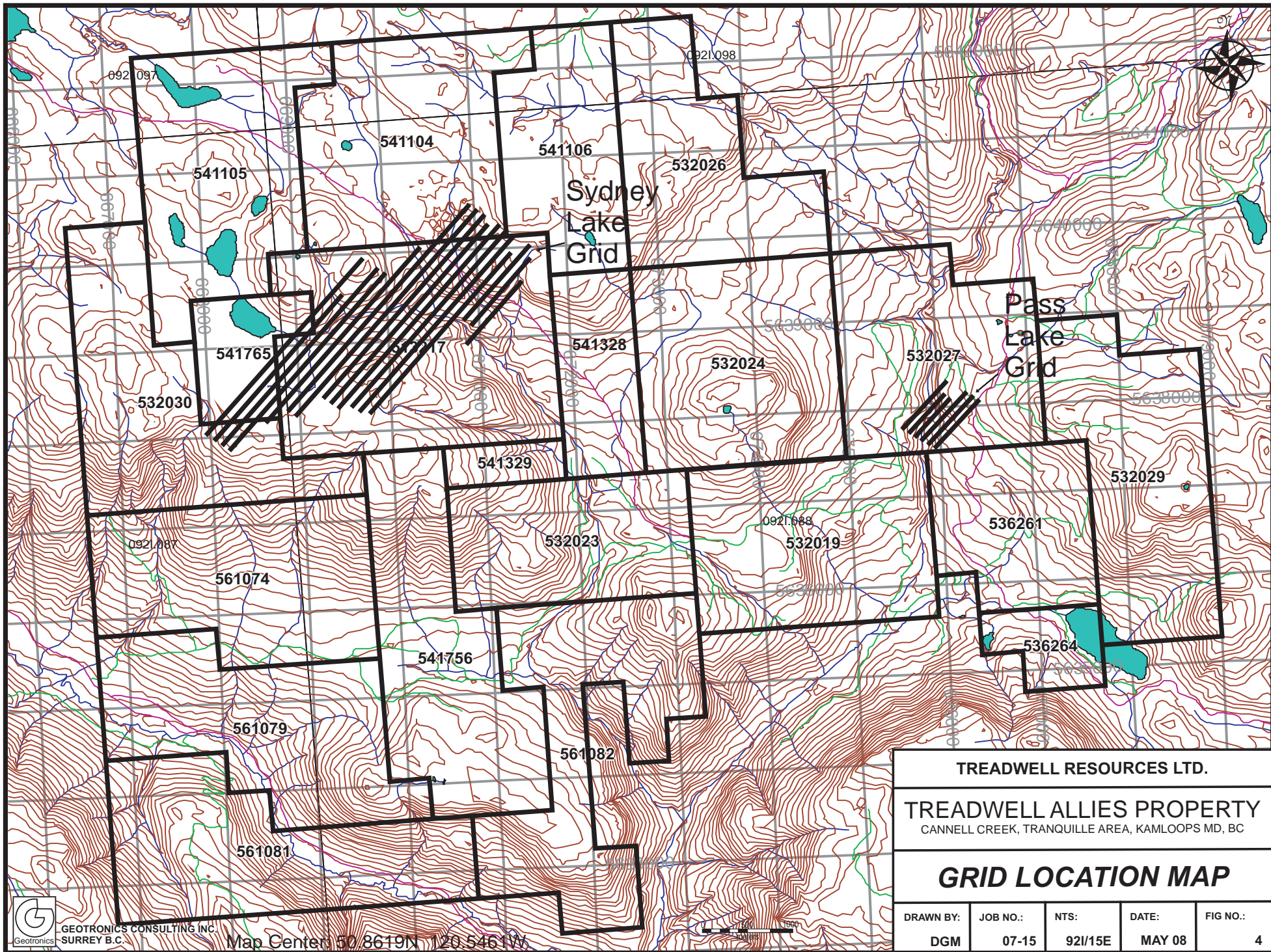
TREADWELL RESOURCES LTD.

**TREADWELL ALLIES PROPERTY**  
 CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC

**CLAIM MAP**

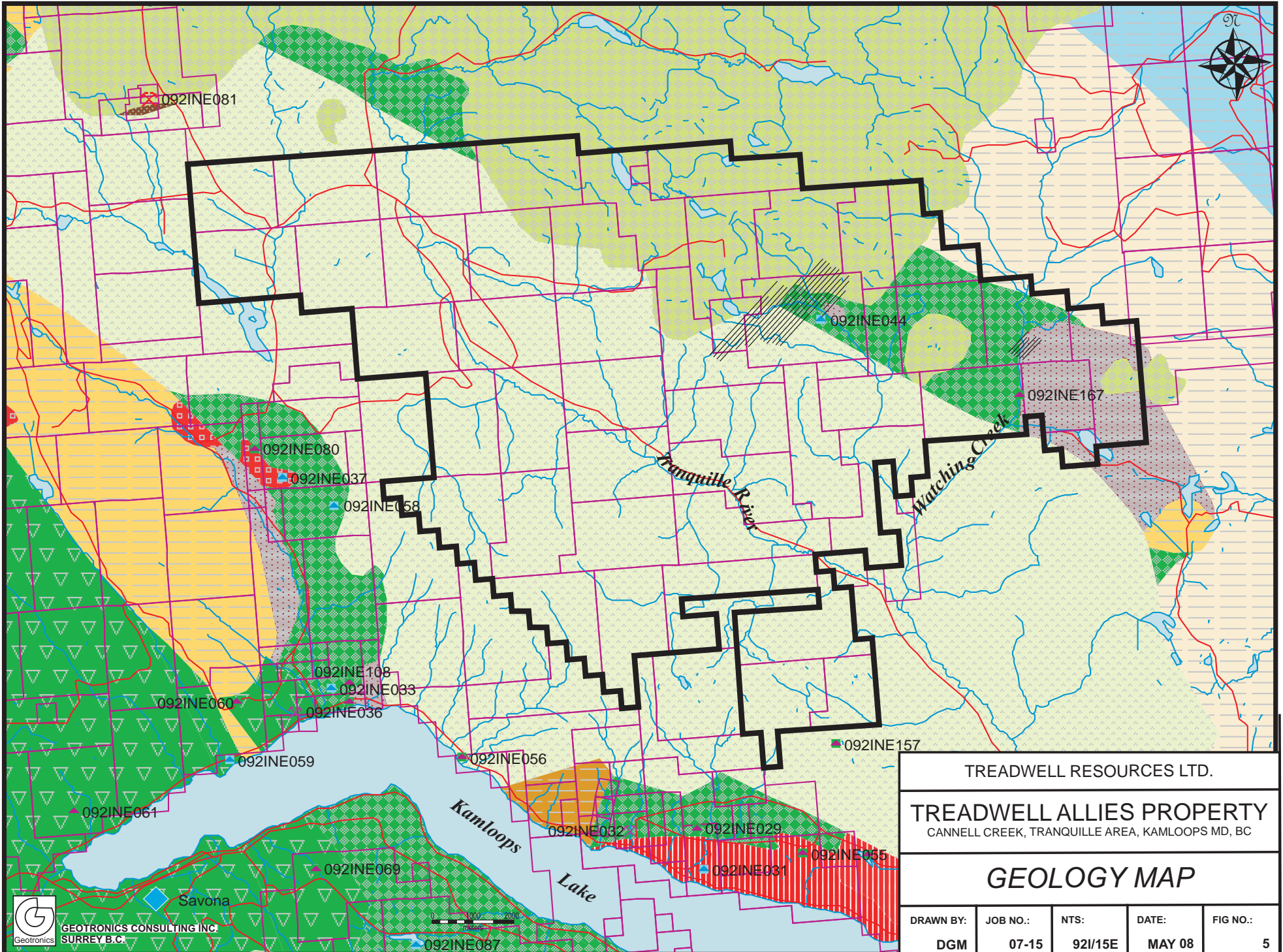
DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
DGM	07-15	921/15E	MAY 08	3





<b>TREADWELL RESOURCES LTD.</b>				
<b>TREADWELL ALLIES PROPERTY</b> CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
<b>GRID LOCATION MAP</b>				
<b>DRAWN BY:</b>	<b>JOB NO.:</b>	<b>NTS:</b>	<b>DATE:</b>	<b>FIG NO.:</b>
DGM	07-15	921/15E	MAY 08	4





092INE081

092INE080

092INE037

092INE058

092INE108

092INE033

092INE036

092INE059

092INE061

092INE060

092INE069

092INE056

092INE032

092INE029

092INE031

092INE055

092INE044

092INE167

092INE157

092INE087

Savona

Tranquille River

Watching Creek

Kamloops Lake

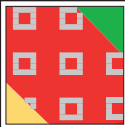


TREADWELL RESOURCES LTD.

**TREADWELL ALLIES PROPERTY**  
CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC

**GEOLOGY MAP**

DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
DGM	07-15	92I/15E	MAY 08	5



Eocene  
feldspar porphyritic intrusive rocks



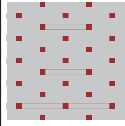
Eocene  
undivided volcanic rocks



Eocene  
mudstone, siltstone, shale fine clastic sedimentary rocks



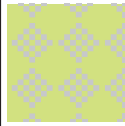
Lower Jurassic to Middle Jurassic  
mudstone, siltstone, shale fine clastic sedimentary rocks



Late Triassic to Early Jurassic  
ultramafic rocks



Late Triassic to Early Jurassic  
dioritic intrusive rocks



Upper Triassic  
basaltic volcanic rocks



Upper Triassic  
mudstone, siltstone, shale fine clastic sedimentary rocks



Upper Triassic  
andesitic volcanic rocks

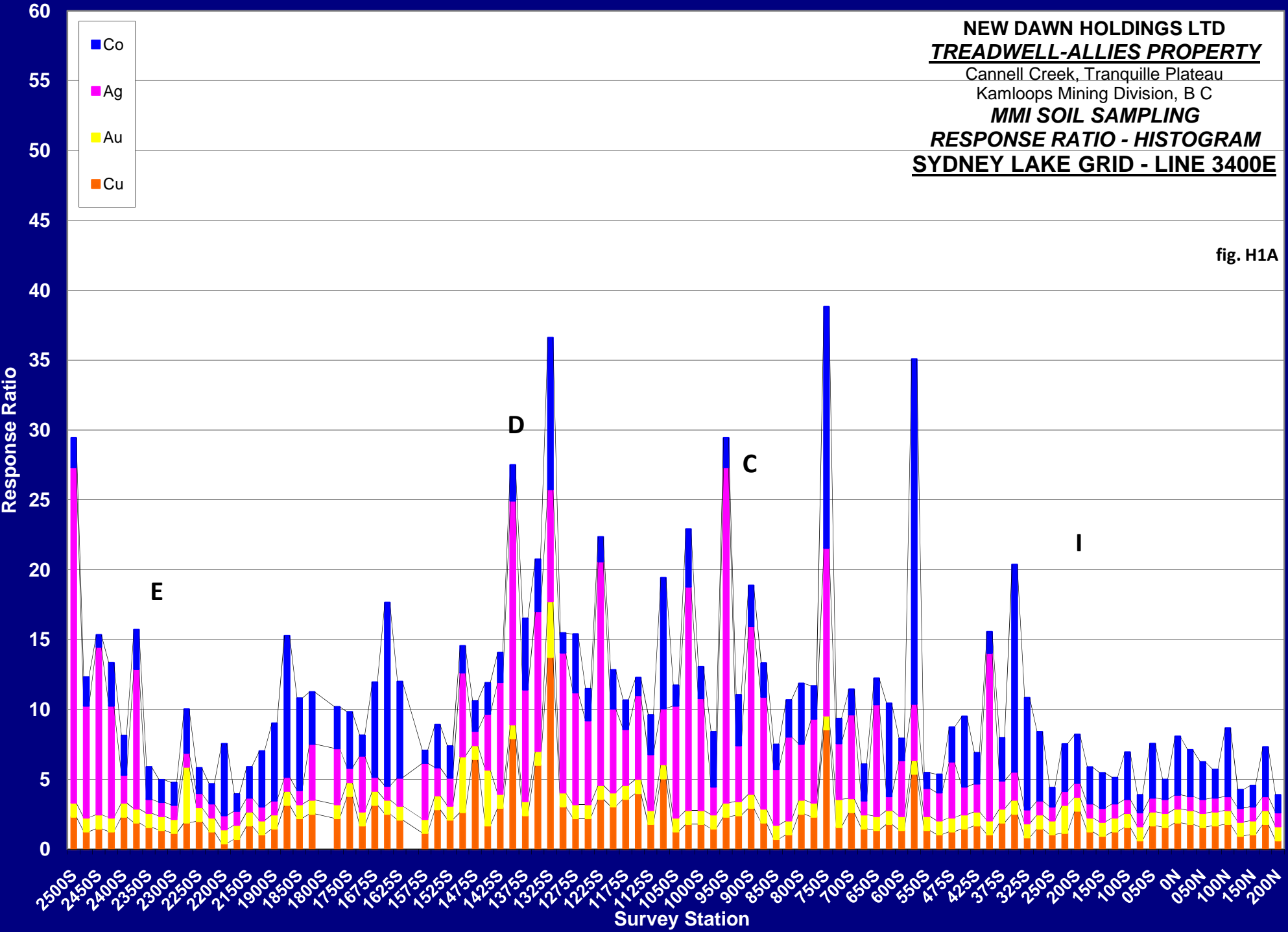


Devonian to Triassic  
mudstone, siltstone, shale fine clastic sedimentary rocks



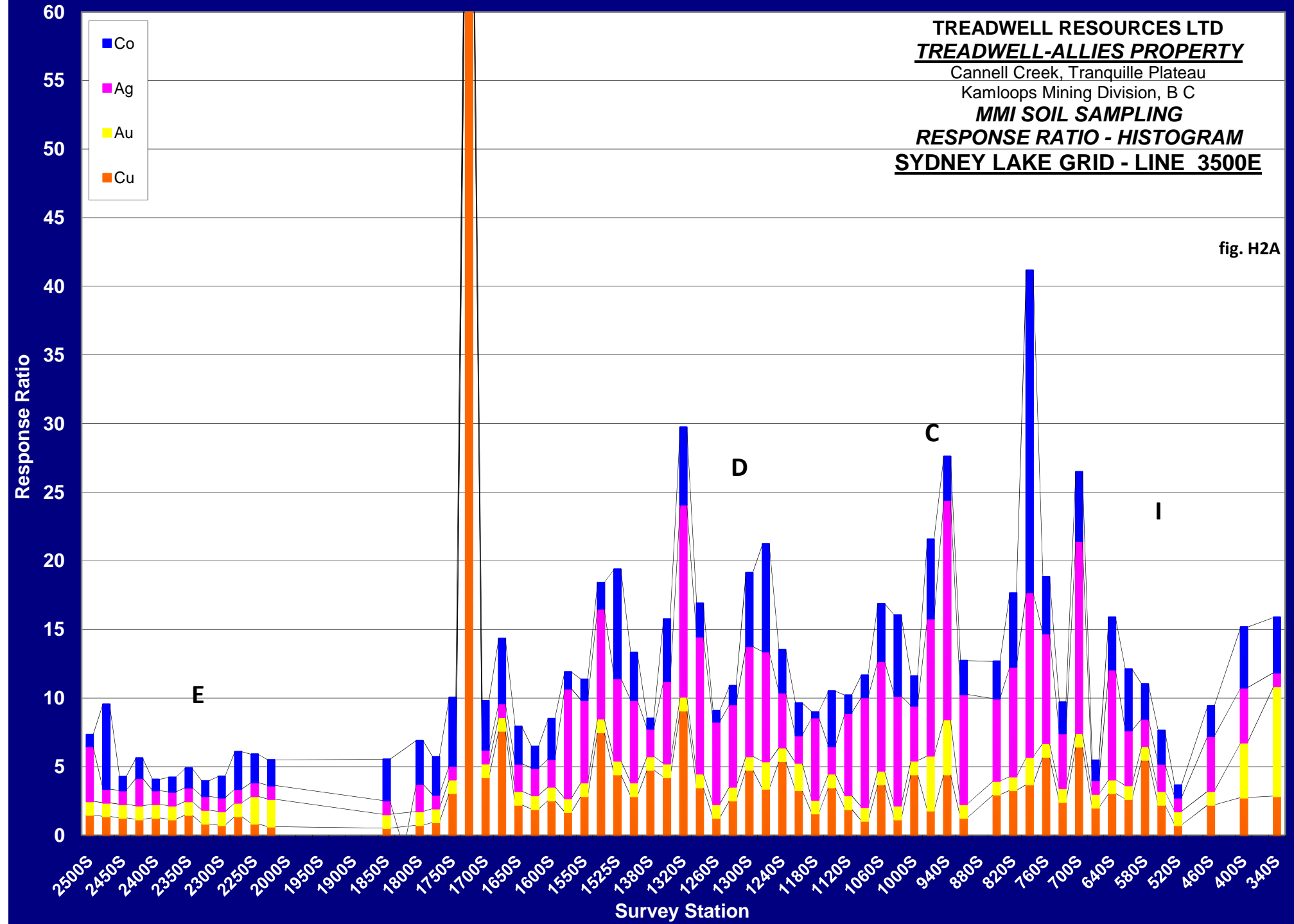
**NEW DAWN HOLDINGS LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 3400E**

fig. H1A



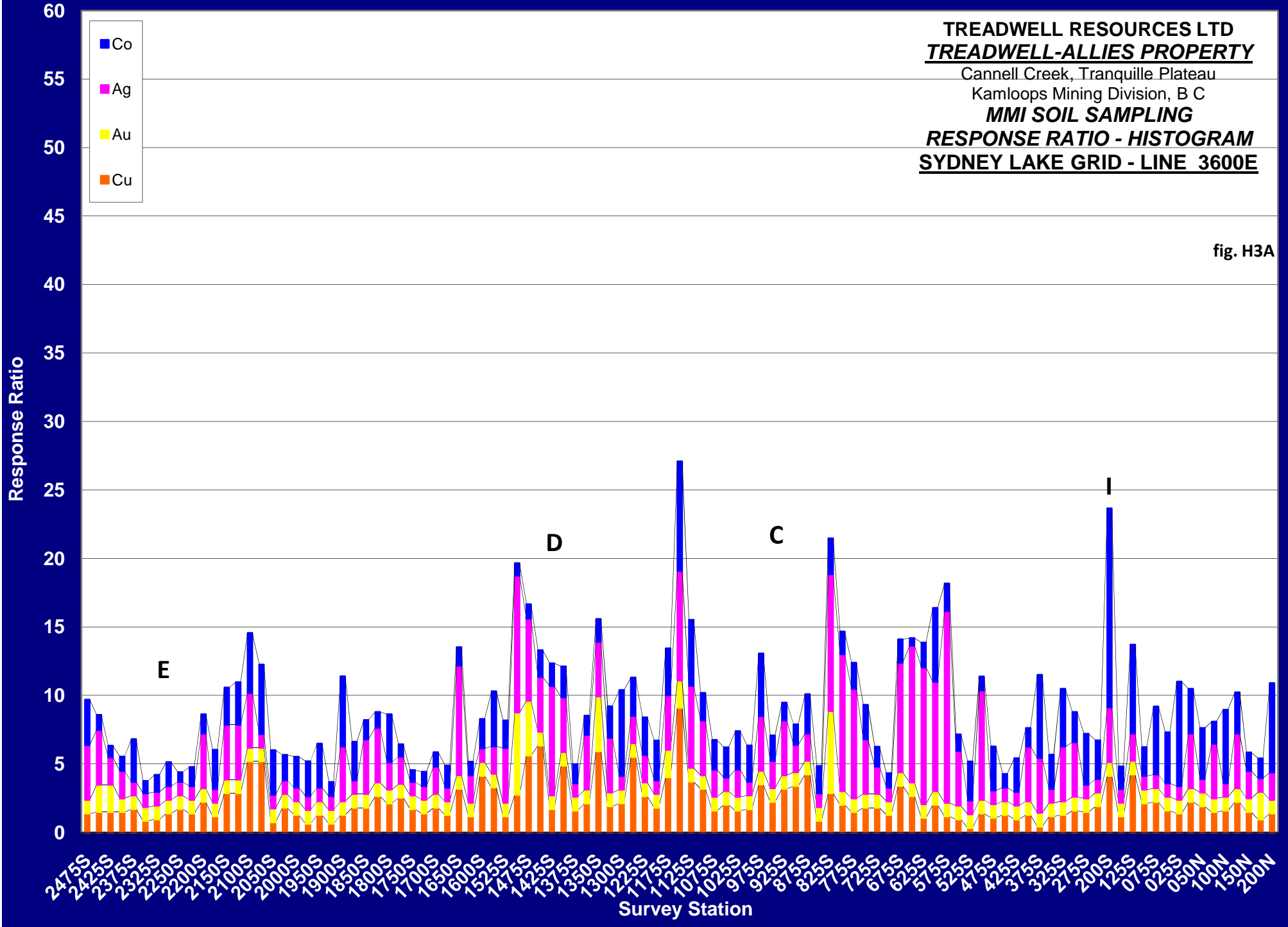
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 3500E**

fig. H2A



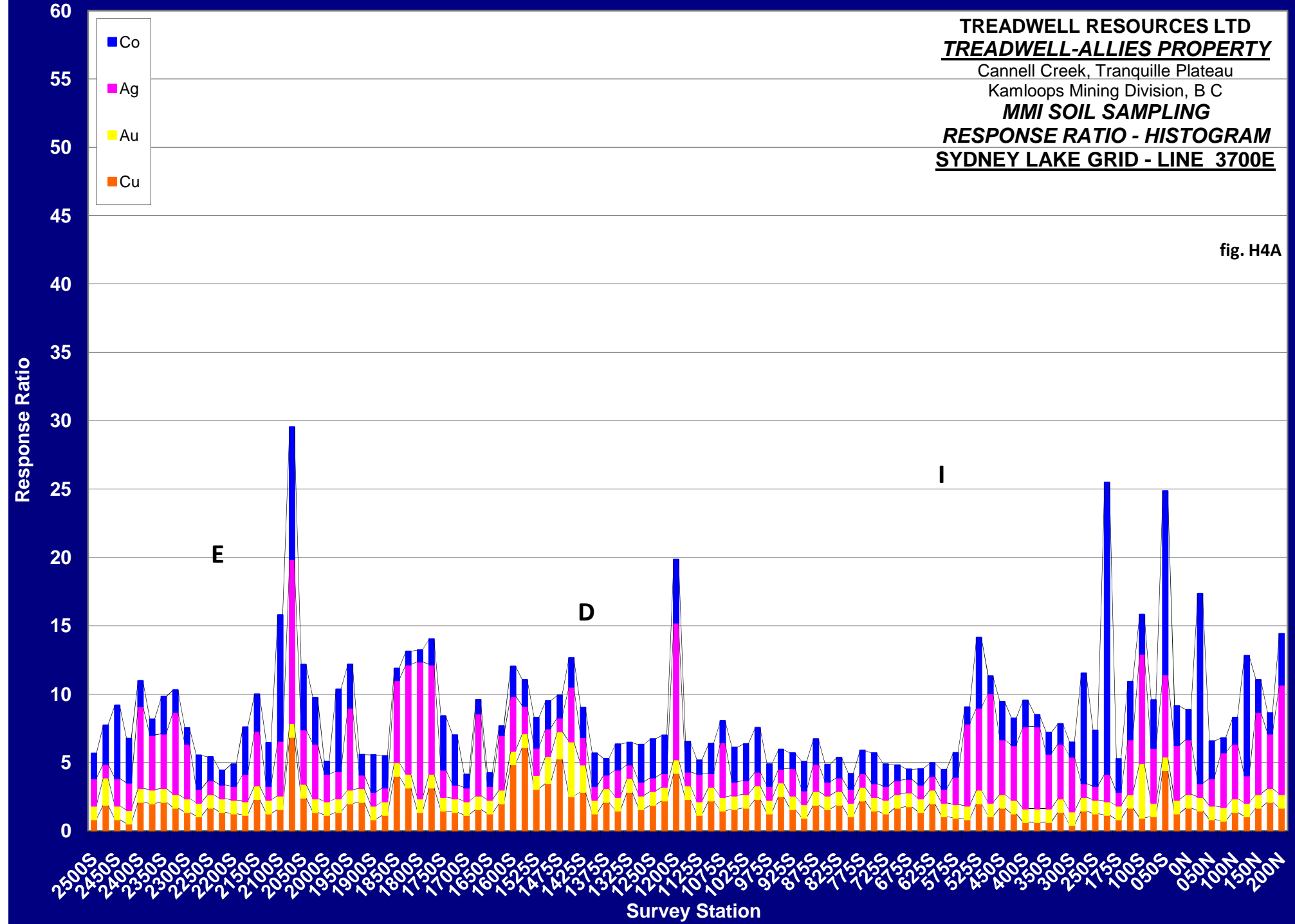
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 3600E**

fig. H3A



**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 3700E**

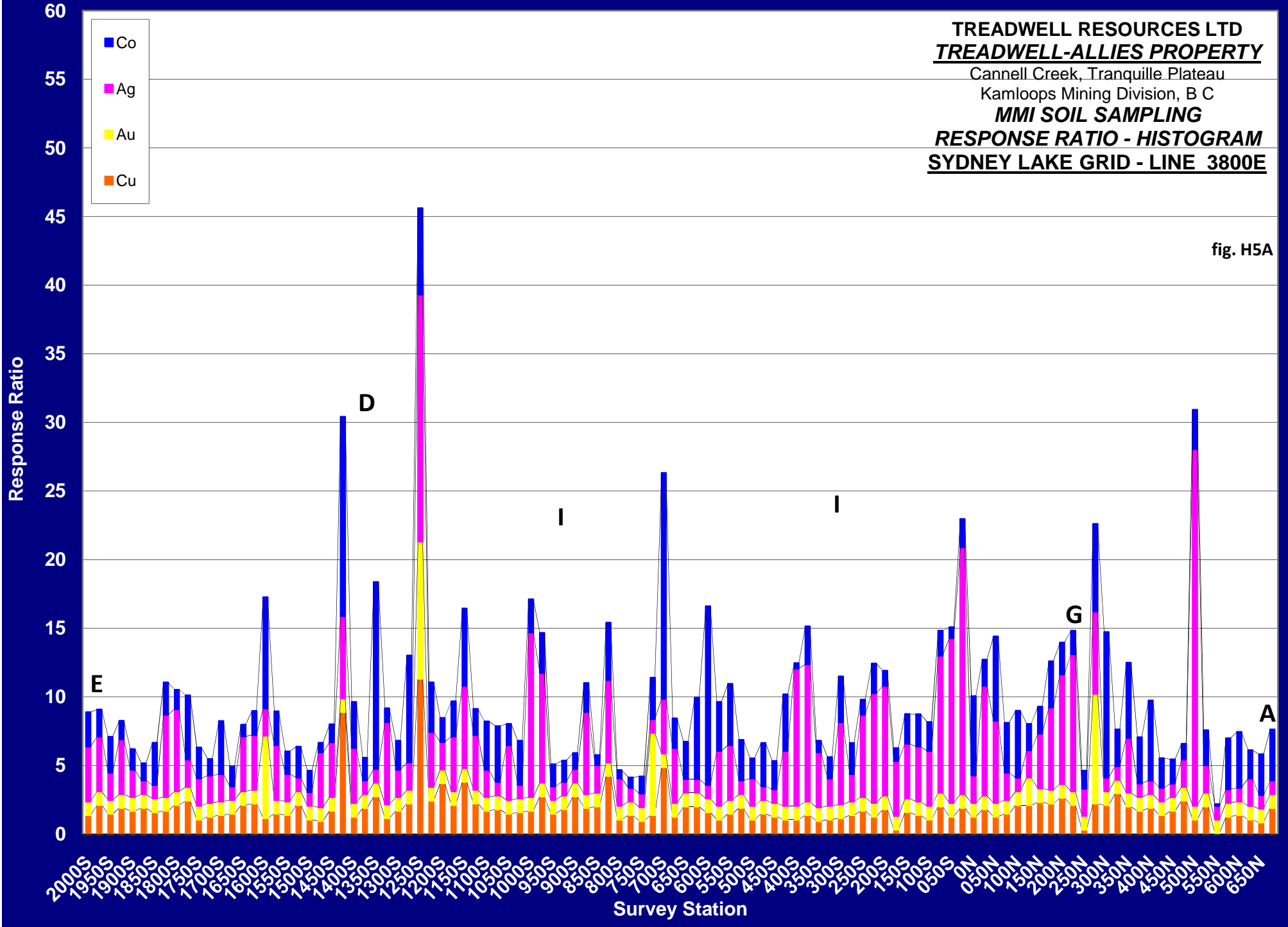
fig. H4A





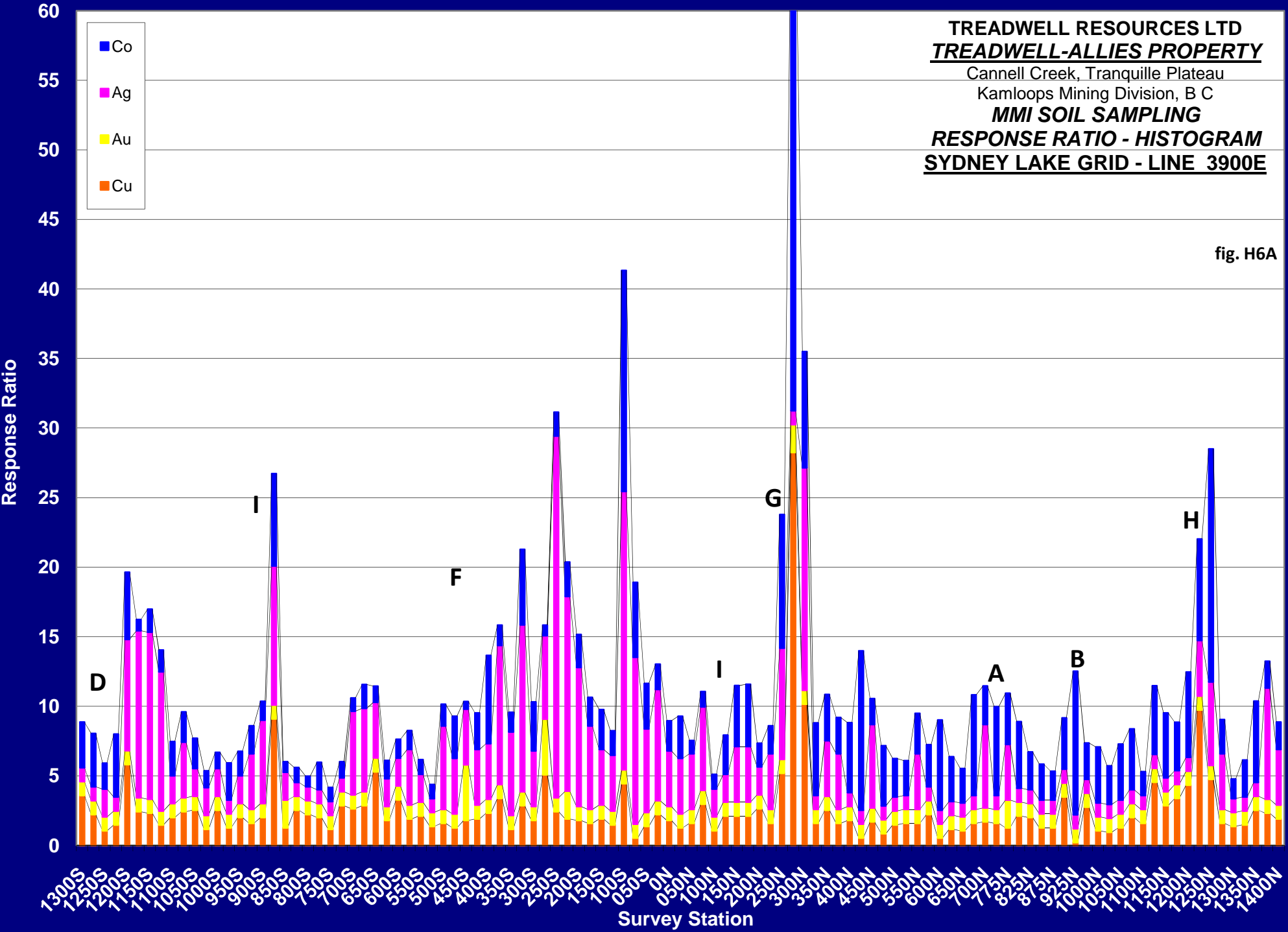
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 3800E**

fig. H5A



**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 3900E**

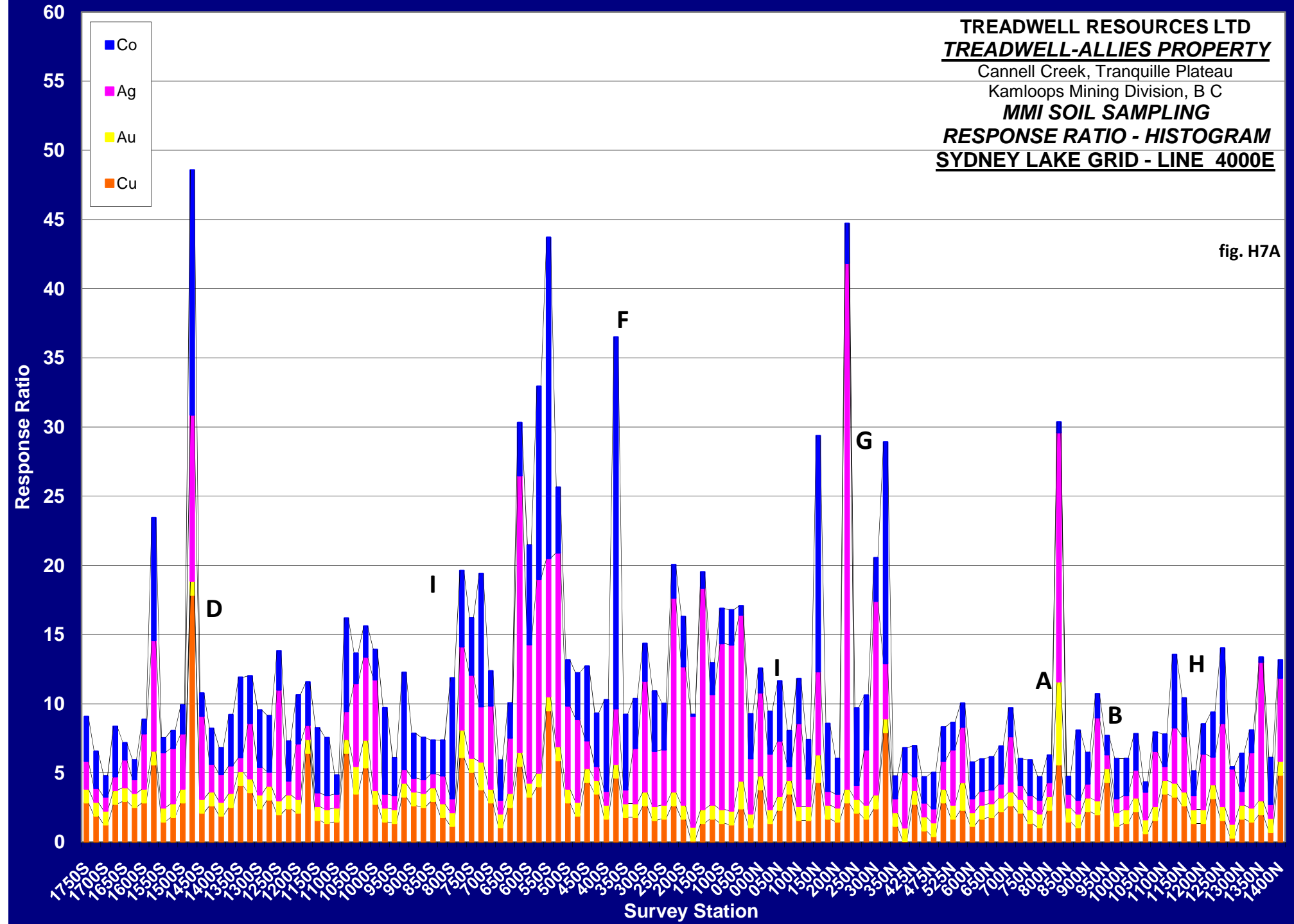
fig. H6A





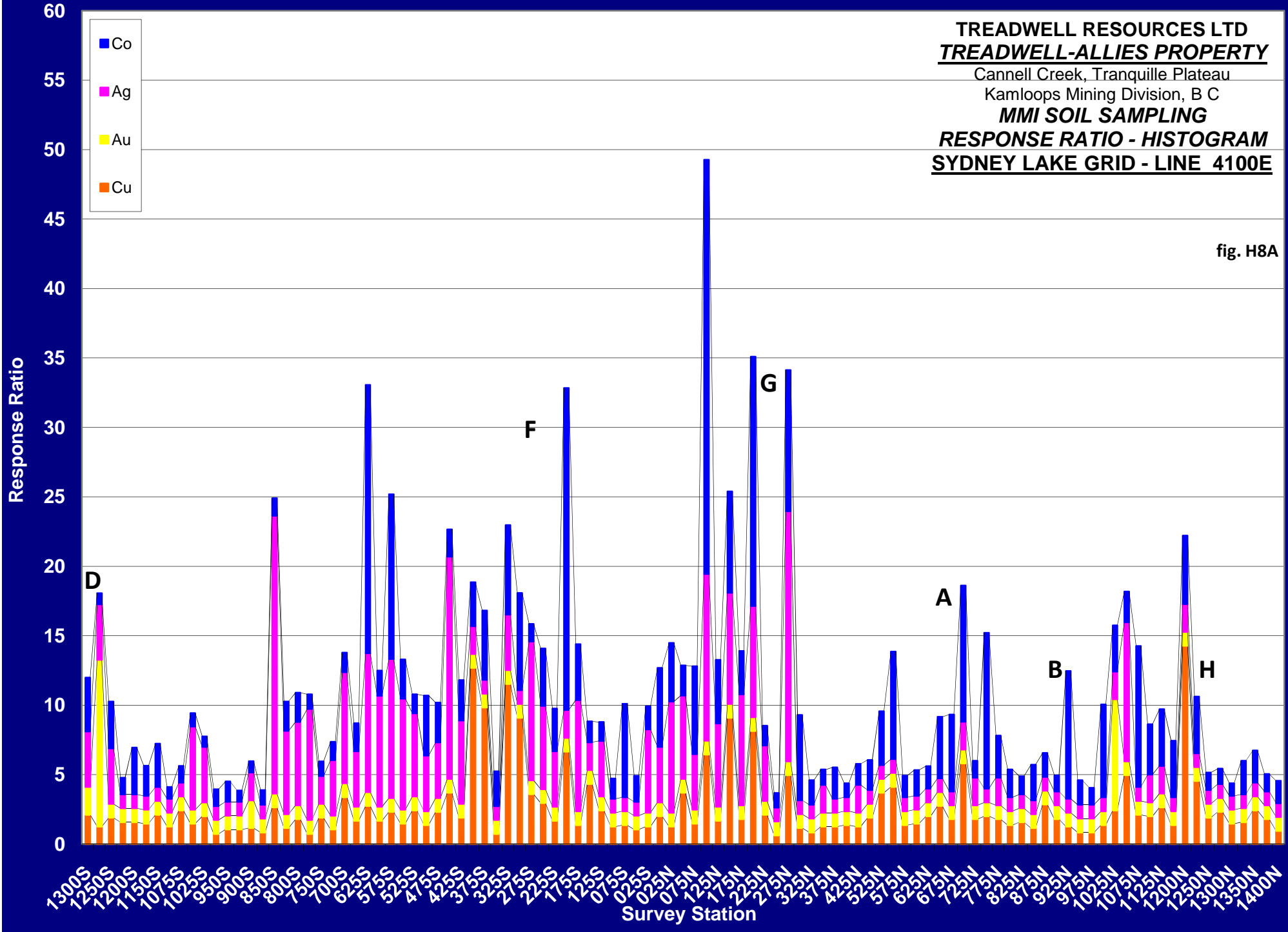
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
Cannell Creek, Tranquille Plateau  
Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4000E**

fig. H7A



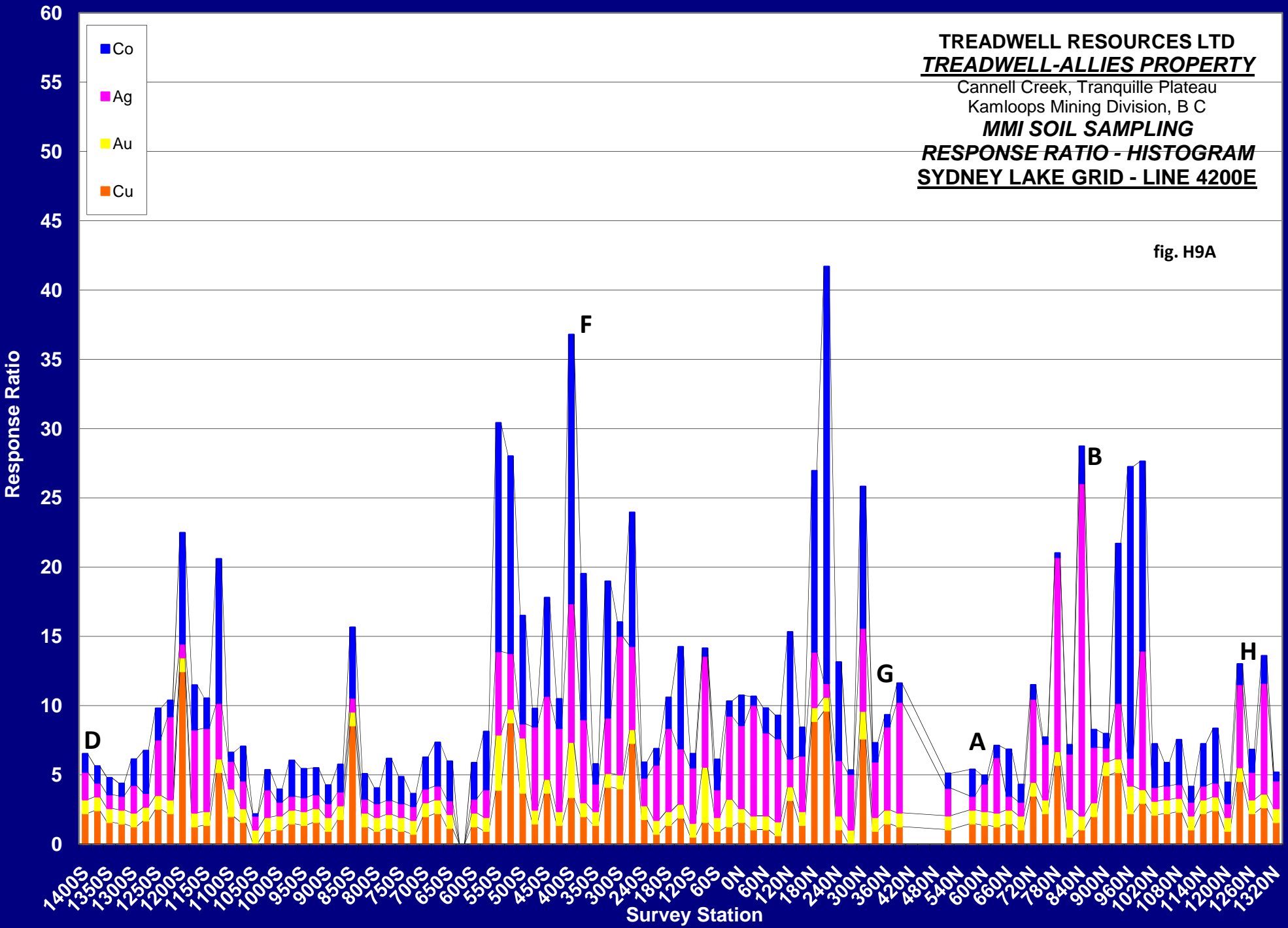
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4100E**

fig. H8A



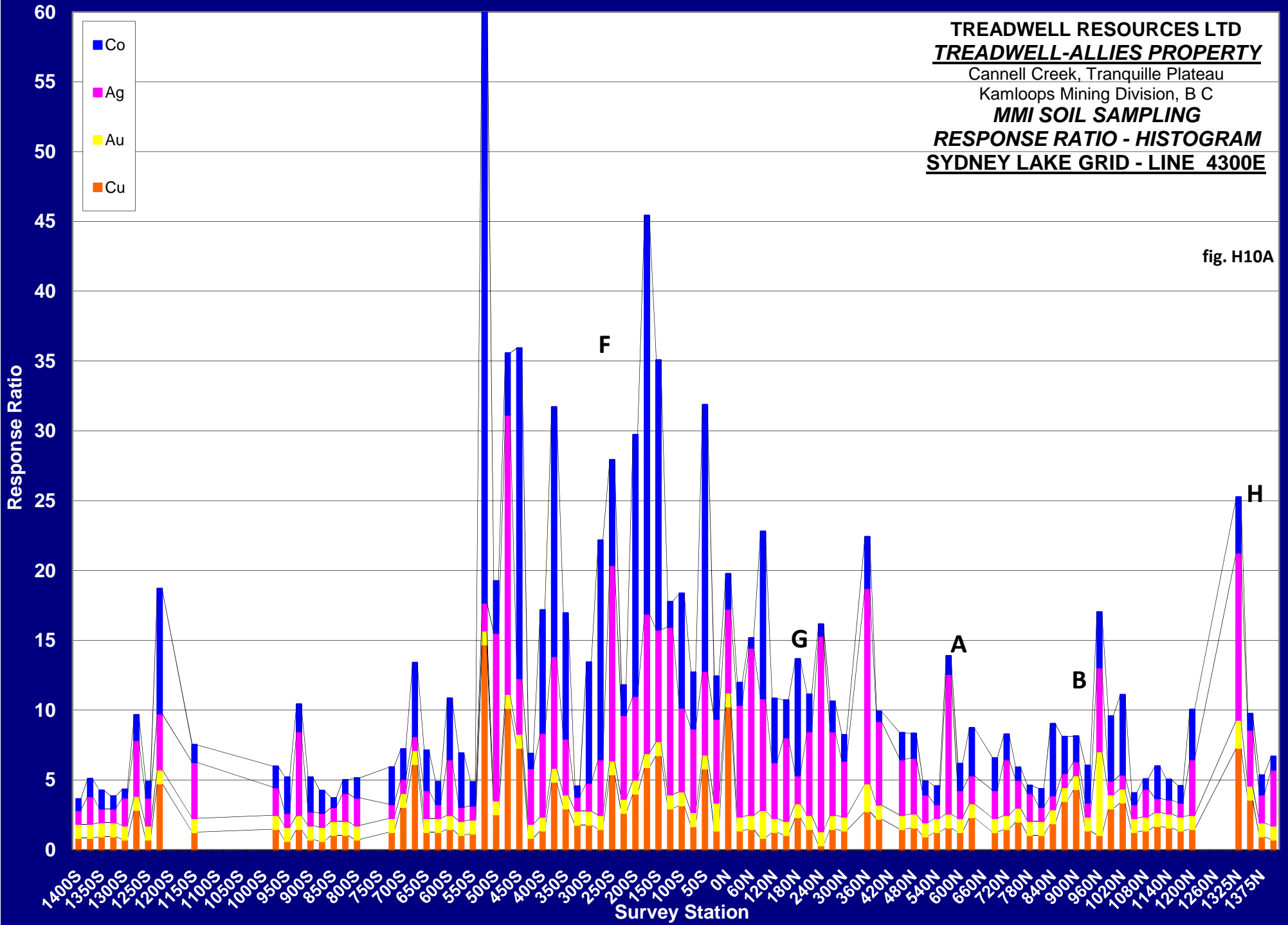
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4200E**

fig. H9A



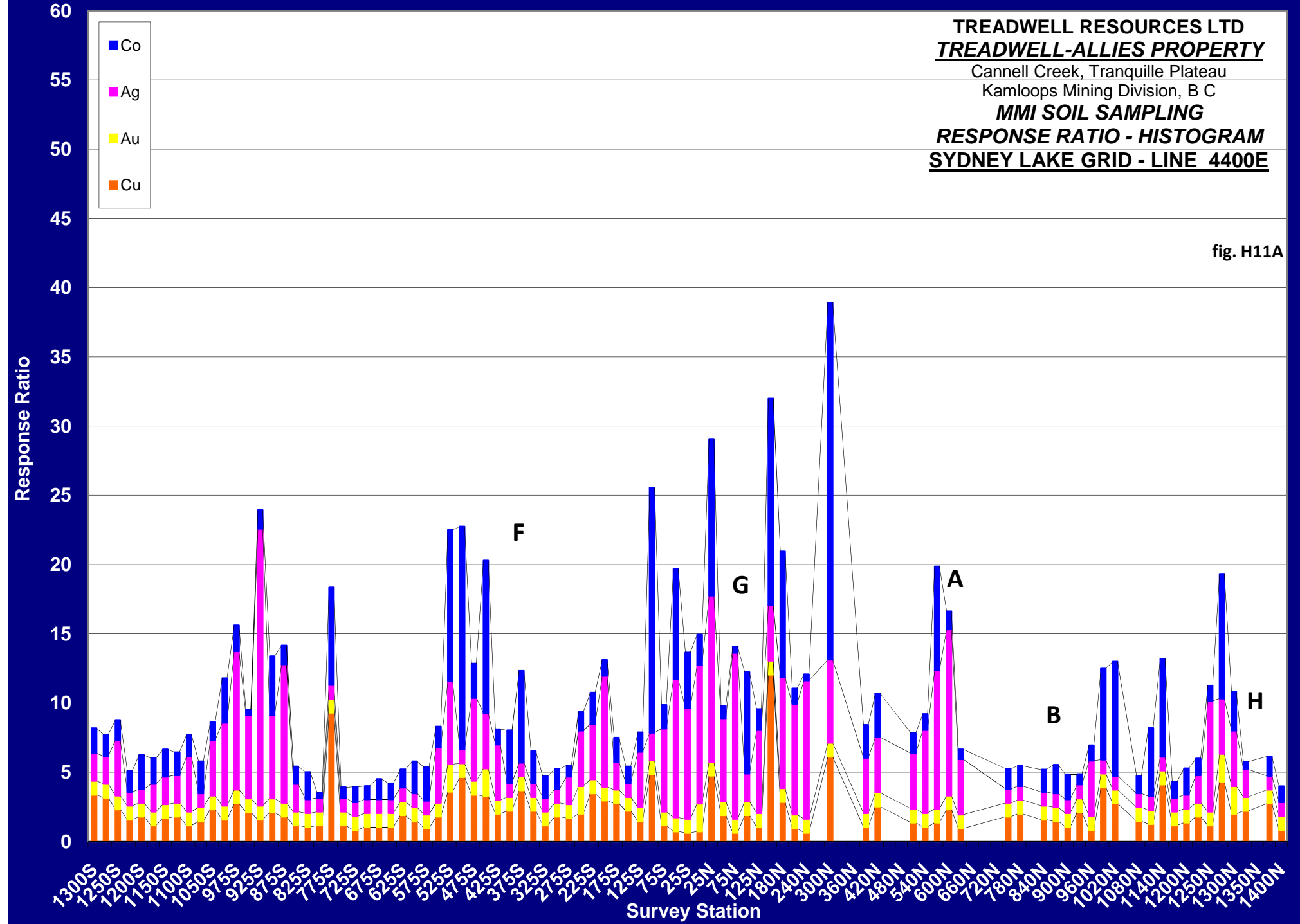
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4300E**

fig. H10A



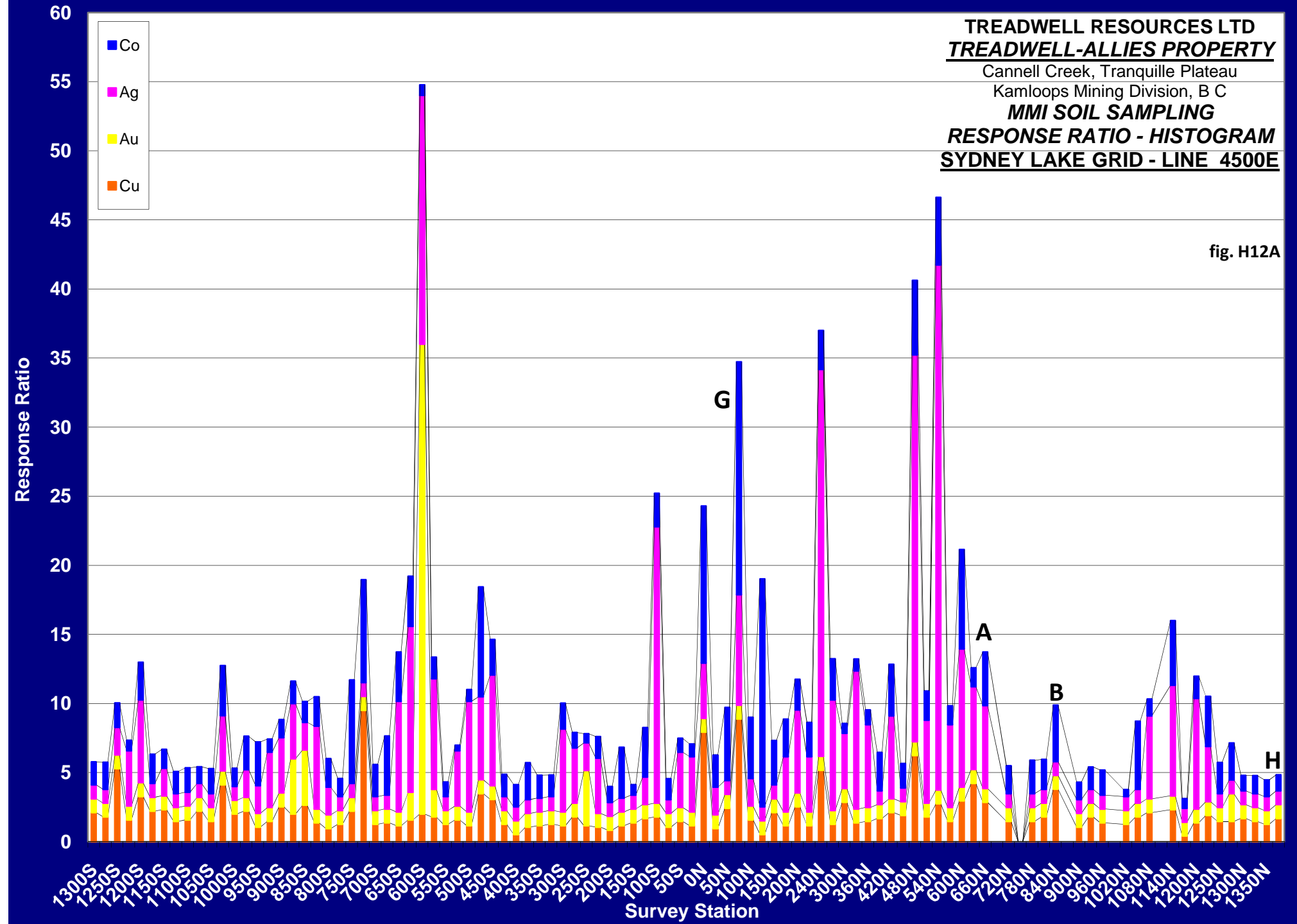
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4400E**

fig. H11A



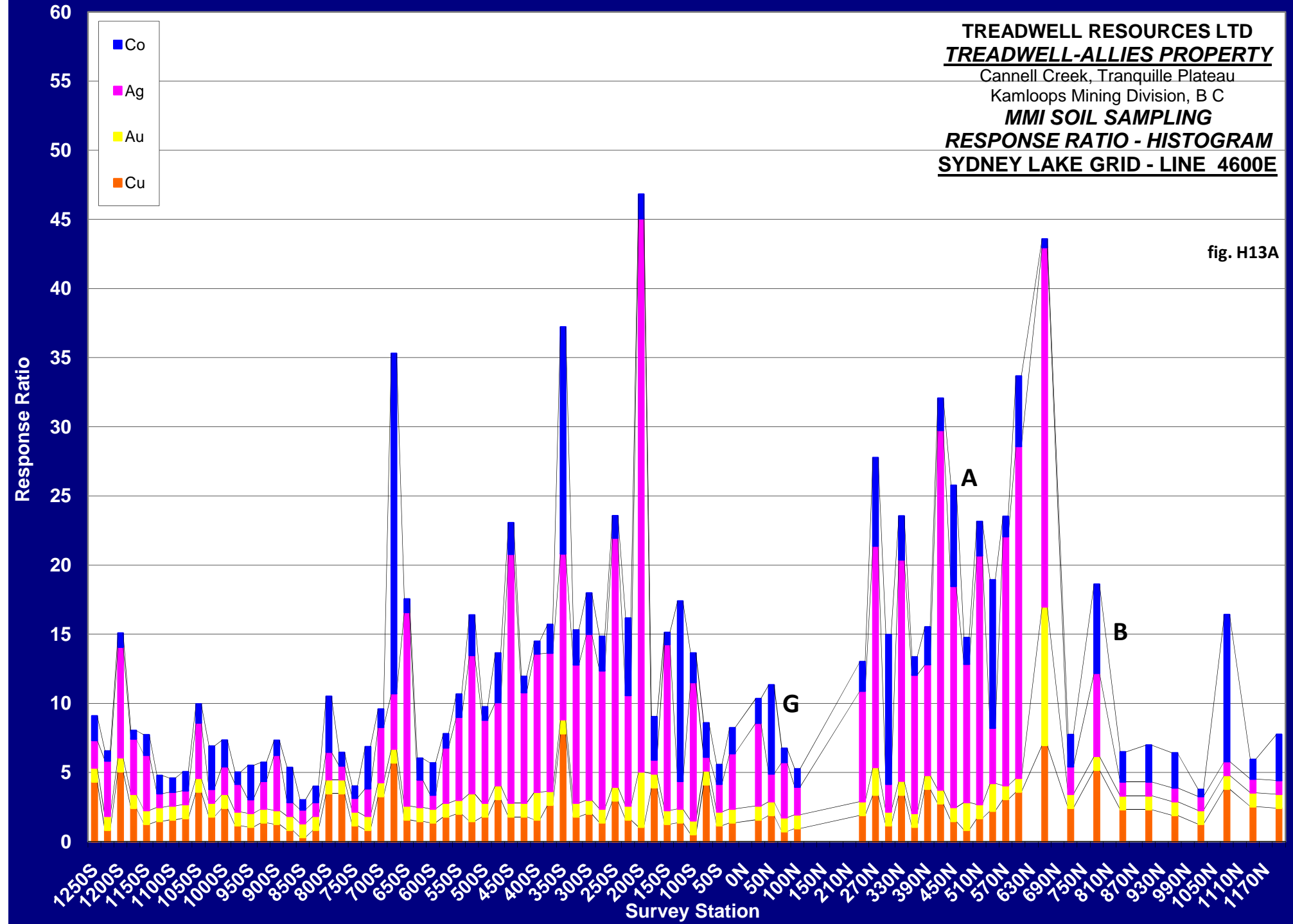
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4500E**

fig. H12A



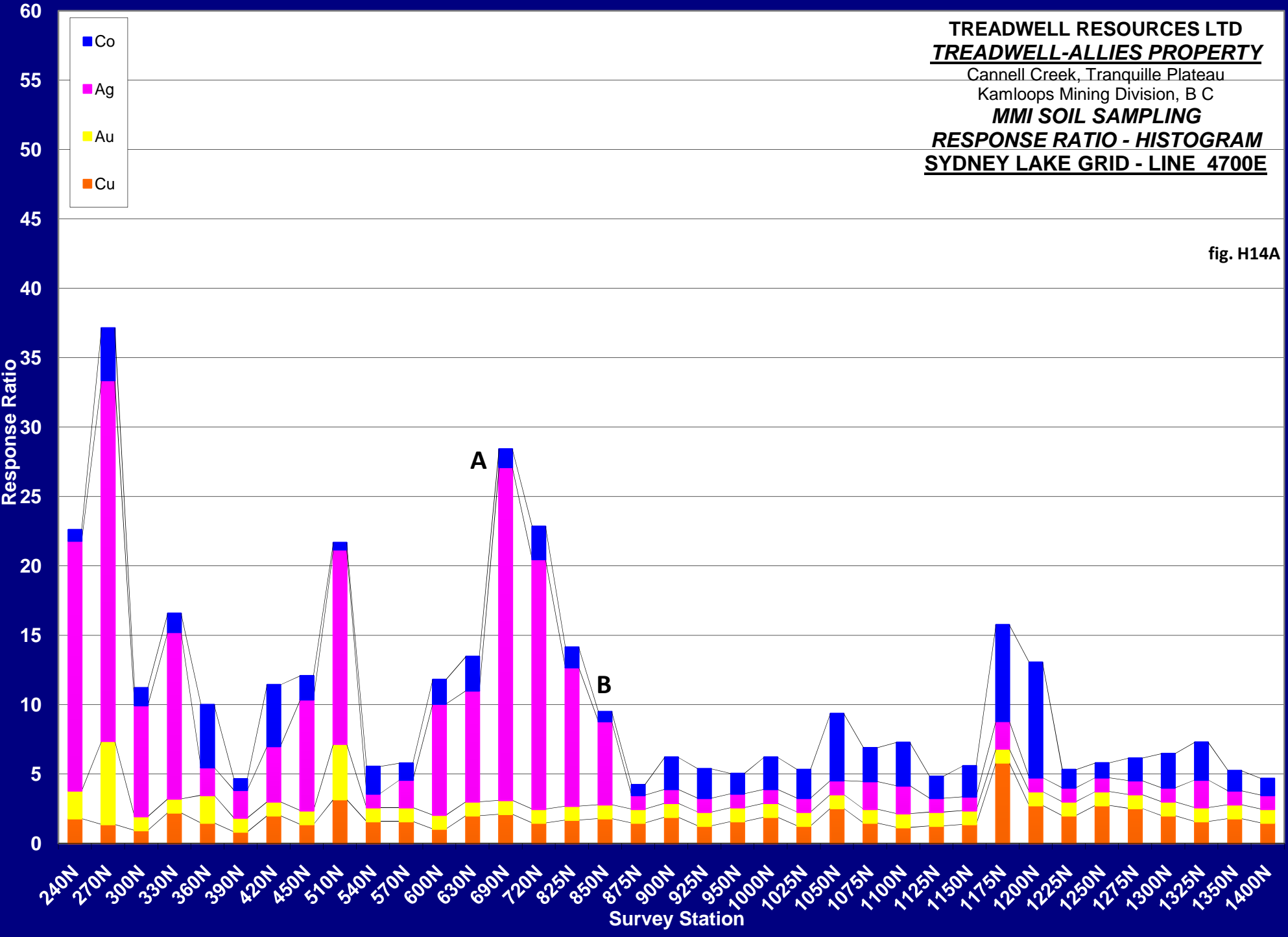
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4600E**

fig. H13A



**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4700E**

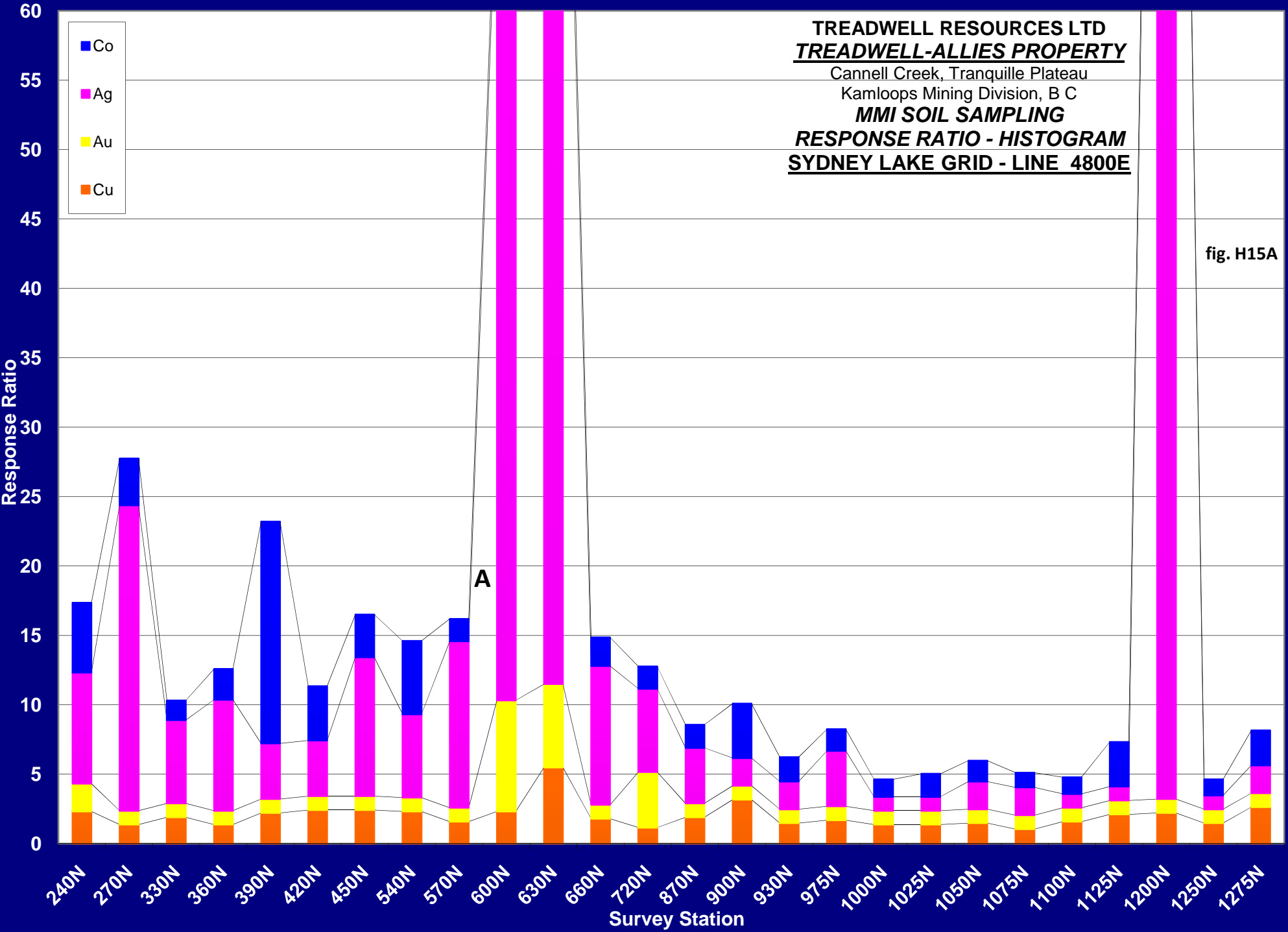
fig. H14A





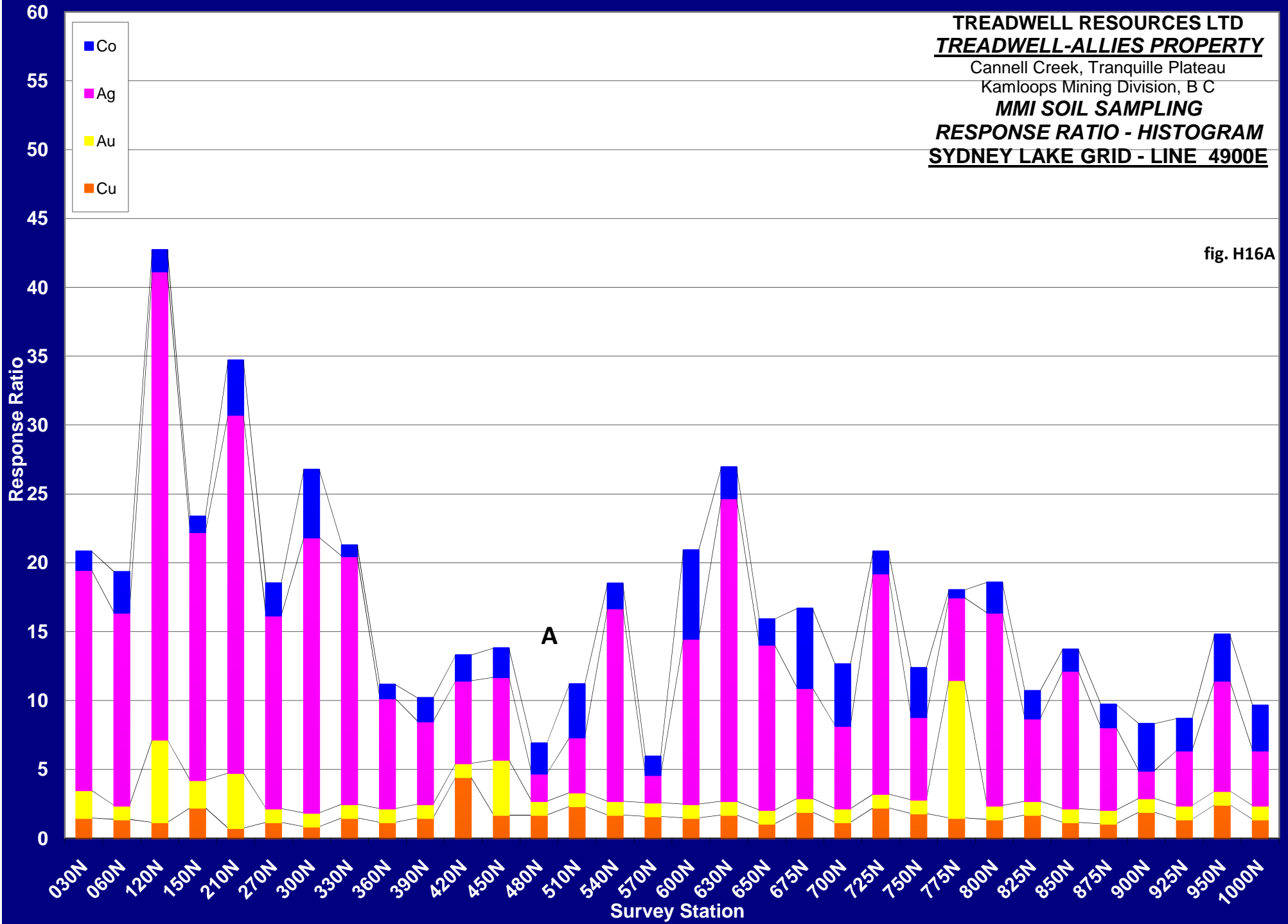
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4800E**

fig. H15A



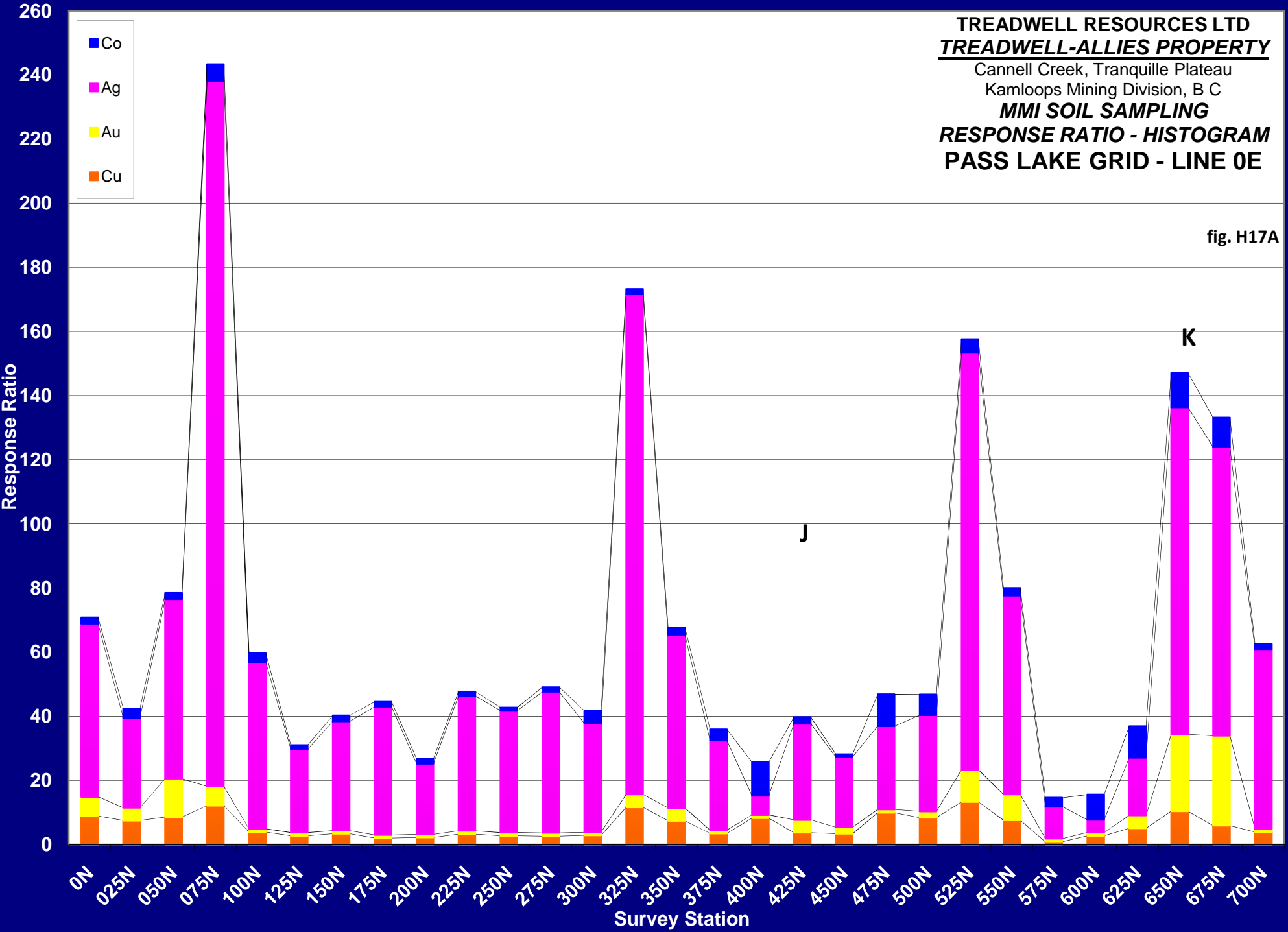
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4900E**

fig. H16A



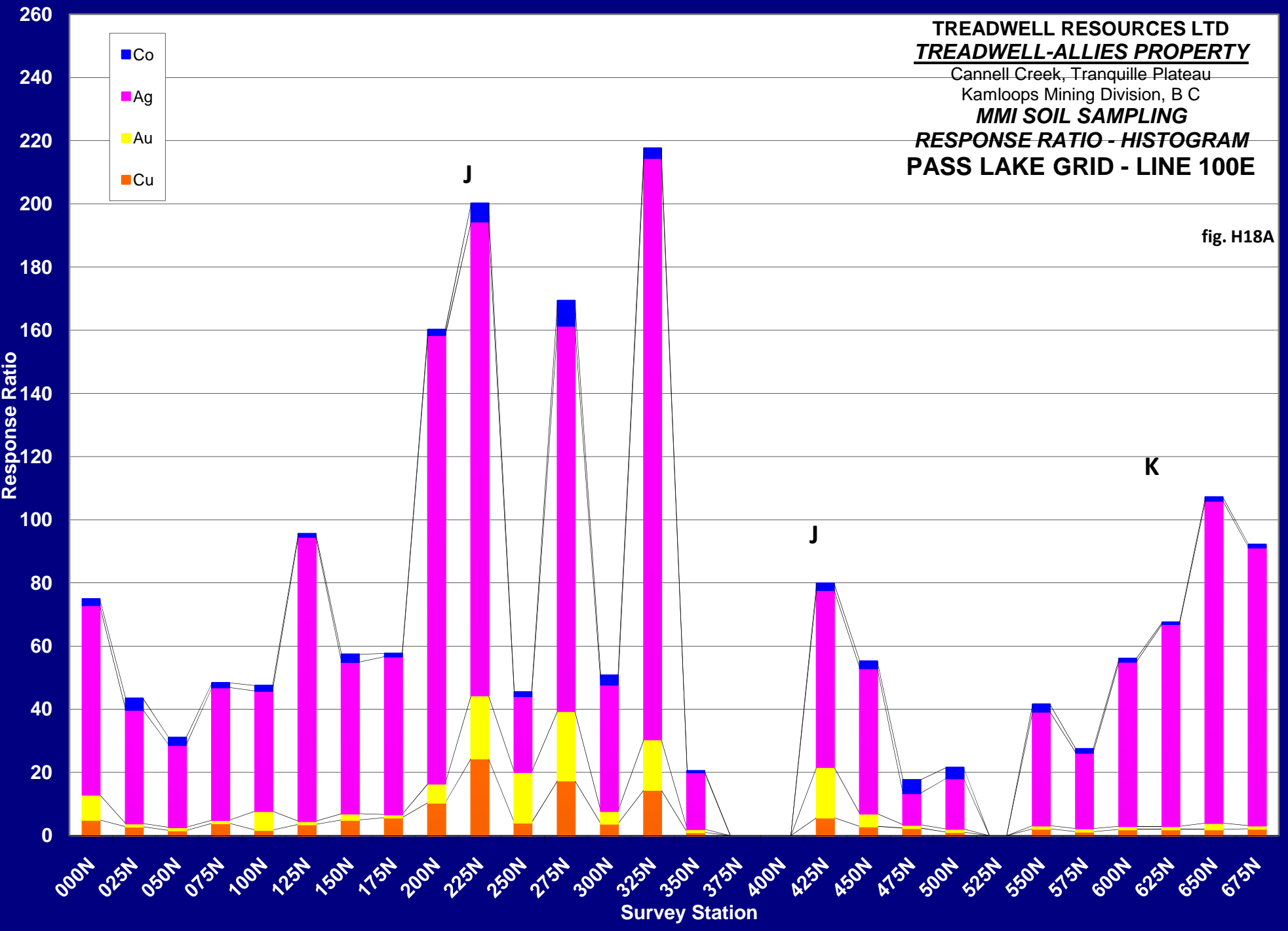
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**PASS LAKE GRID - LINE 0E**

fig. H17A



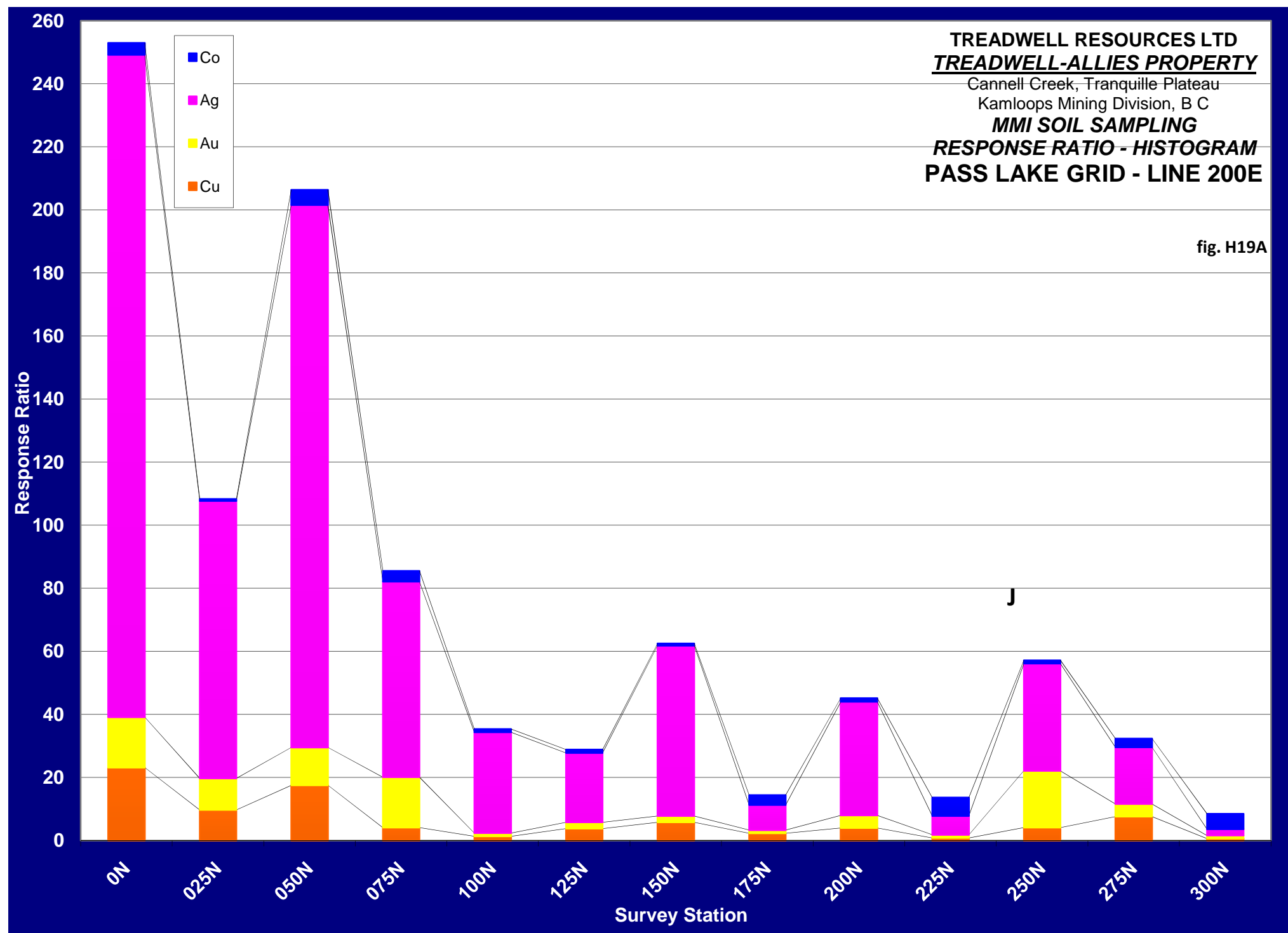
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**PASS LAKE GRID - LINE 100E**

fig. H18A



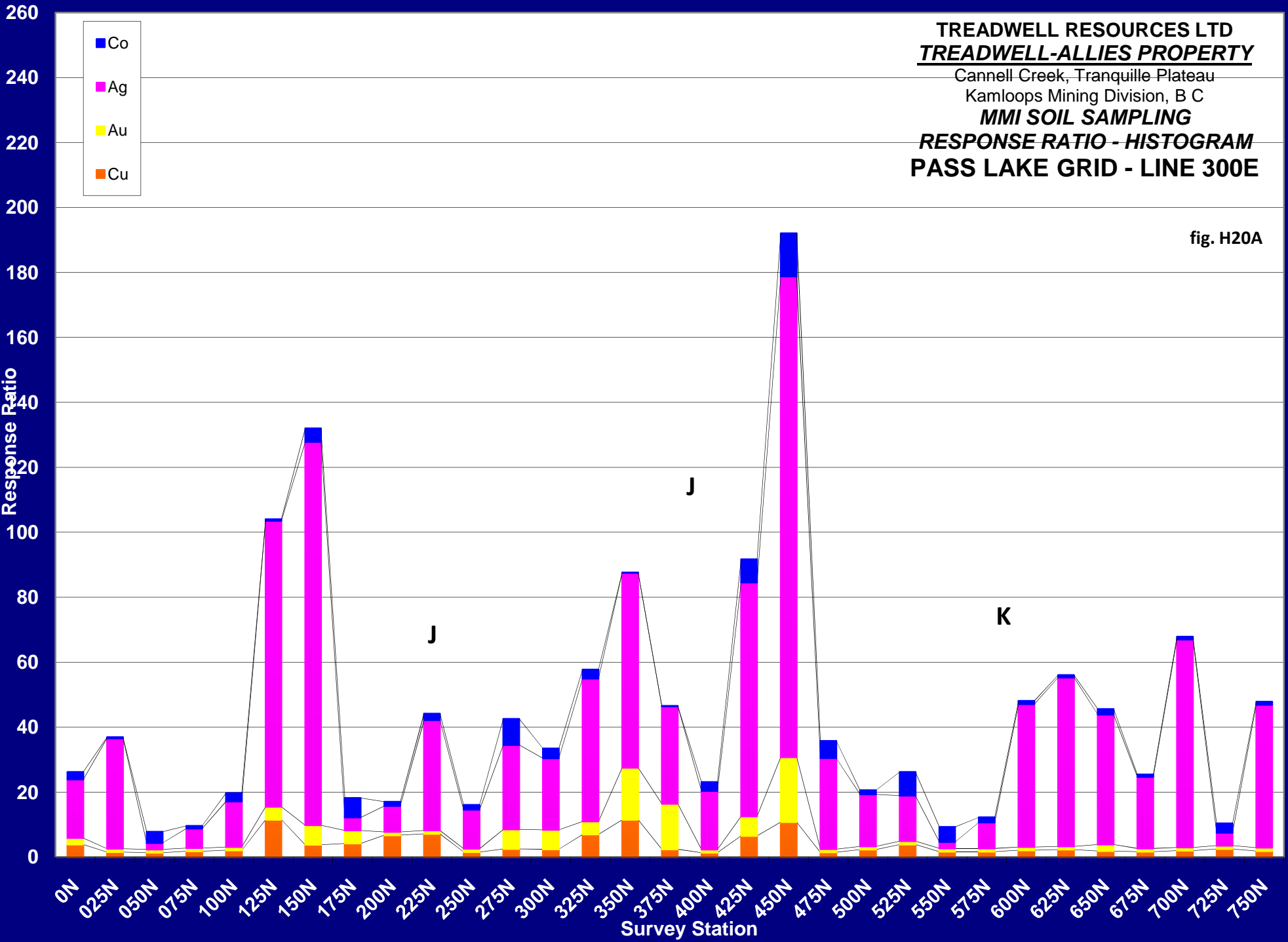
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**PASS LAKE GRID - LINE 200E**

fig. H19A



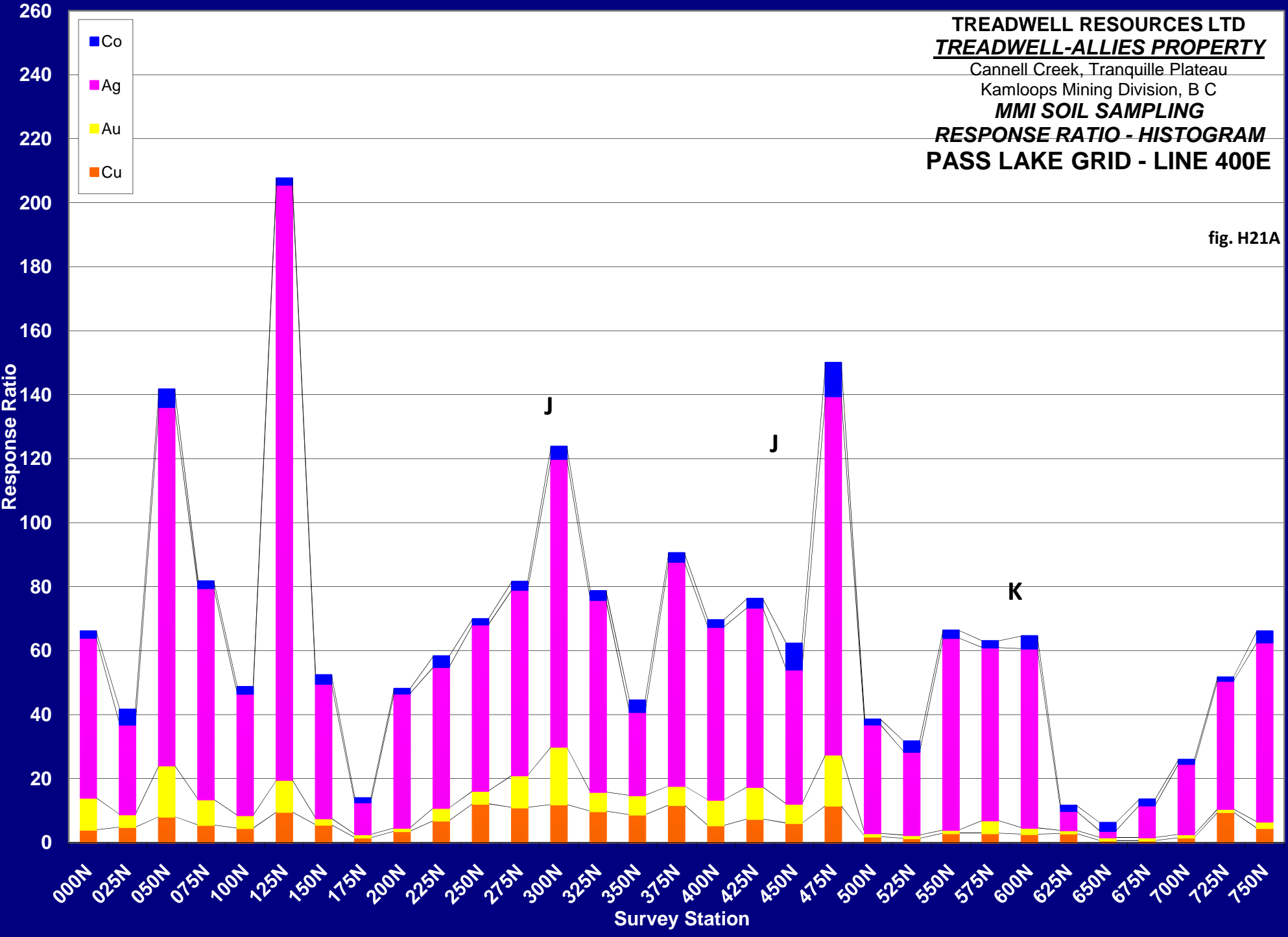
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**PASS LAKE GRID - LINE 300E**

fig. H20A



**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**PASS LAKE GRID - LINE 400E**

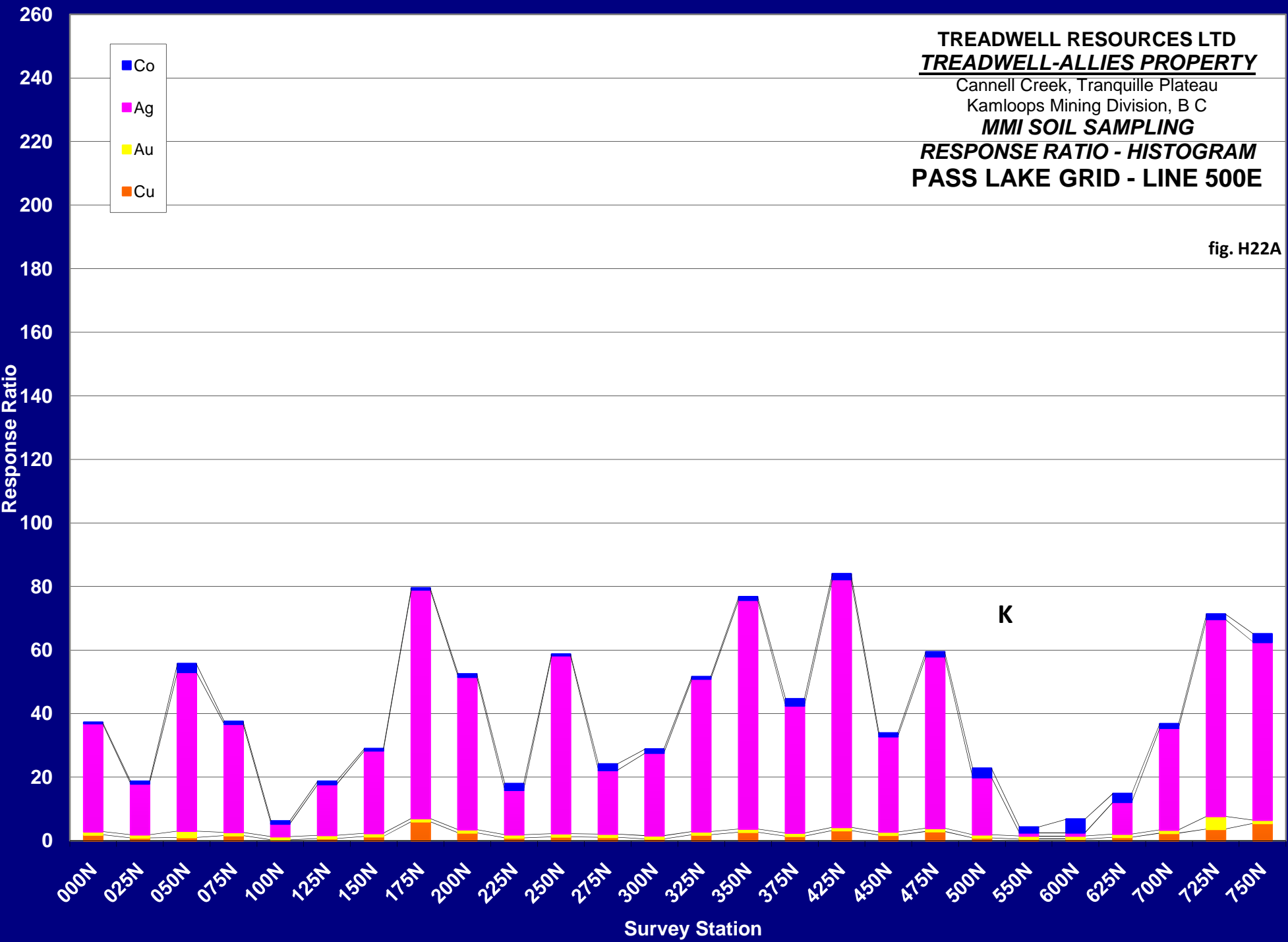
fig. H21A



Data Reduced by: GEOTRONICS SURVEYS LTD.

**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**PASS LAKE GRID - LINE 500E**

fig. H22A

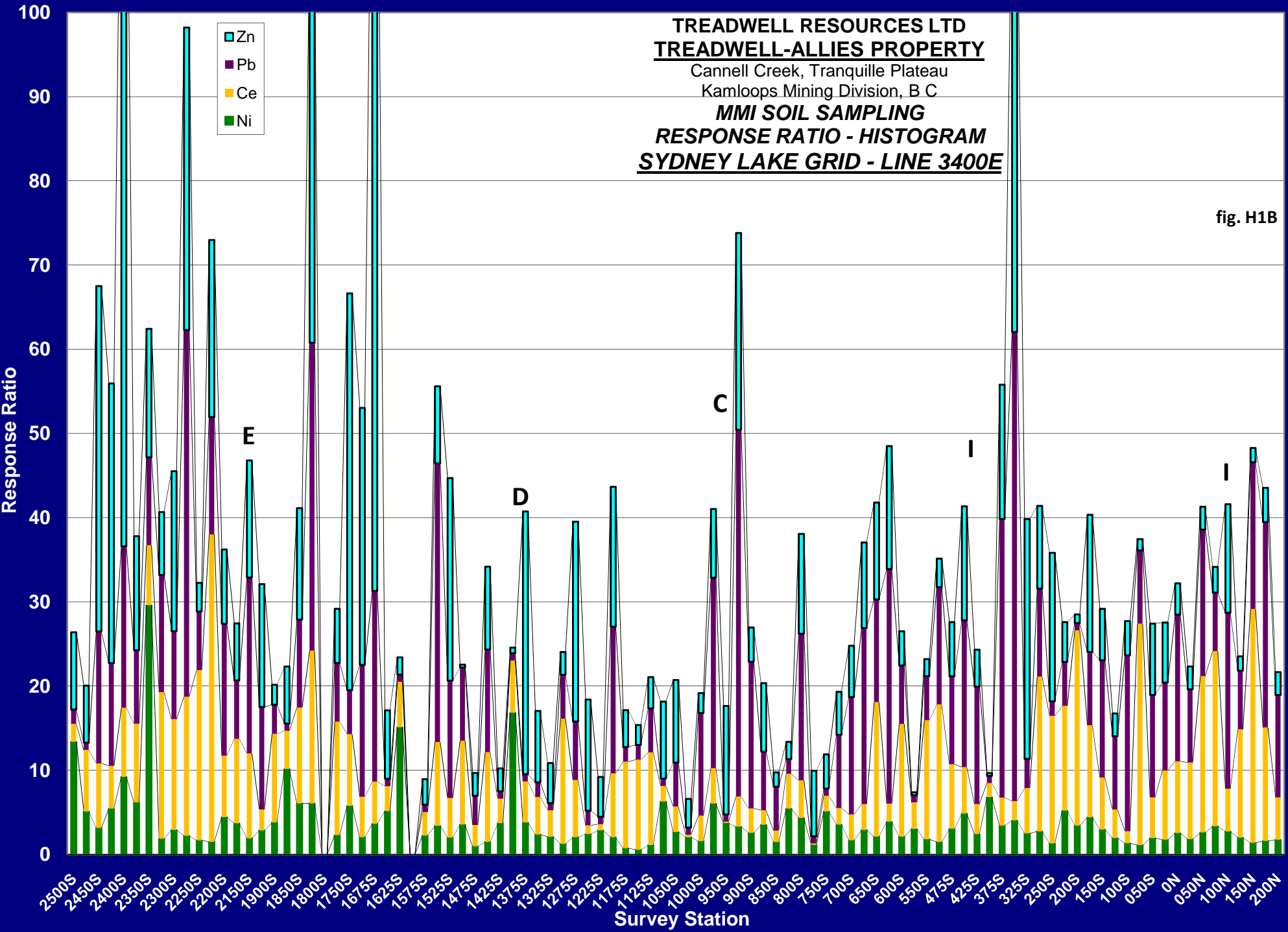




**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
Cannell Creek, Tranquille Plateau  
Kamloops Mining Division, B.C.  
**MMI SOIL SAMPLING**  
***RESPONSE RATIO - HISTOGRAM***  
**SYDNEY LAKE GRID - LINE 3400E**

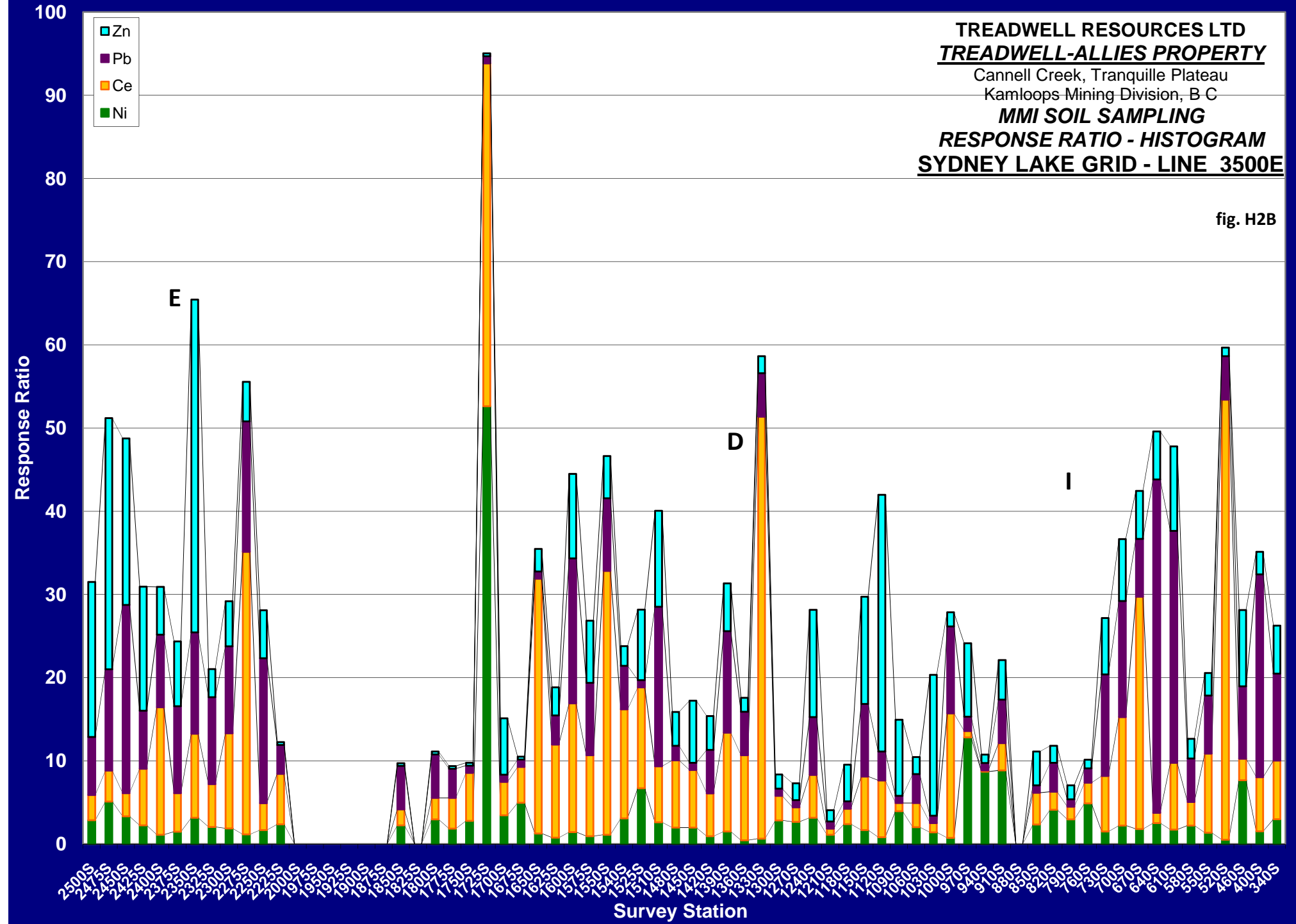
fig. H1B

Zn  
Pb  
Ce  
Ni



**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 3500E**

fig. H2B



**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
Cannell Creek, Tranquille Plateau  
Kamloops Mining Division, B-C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 3600E**

Zn  
Pb  
Ce  
Ni

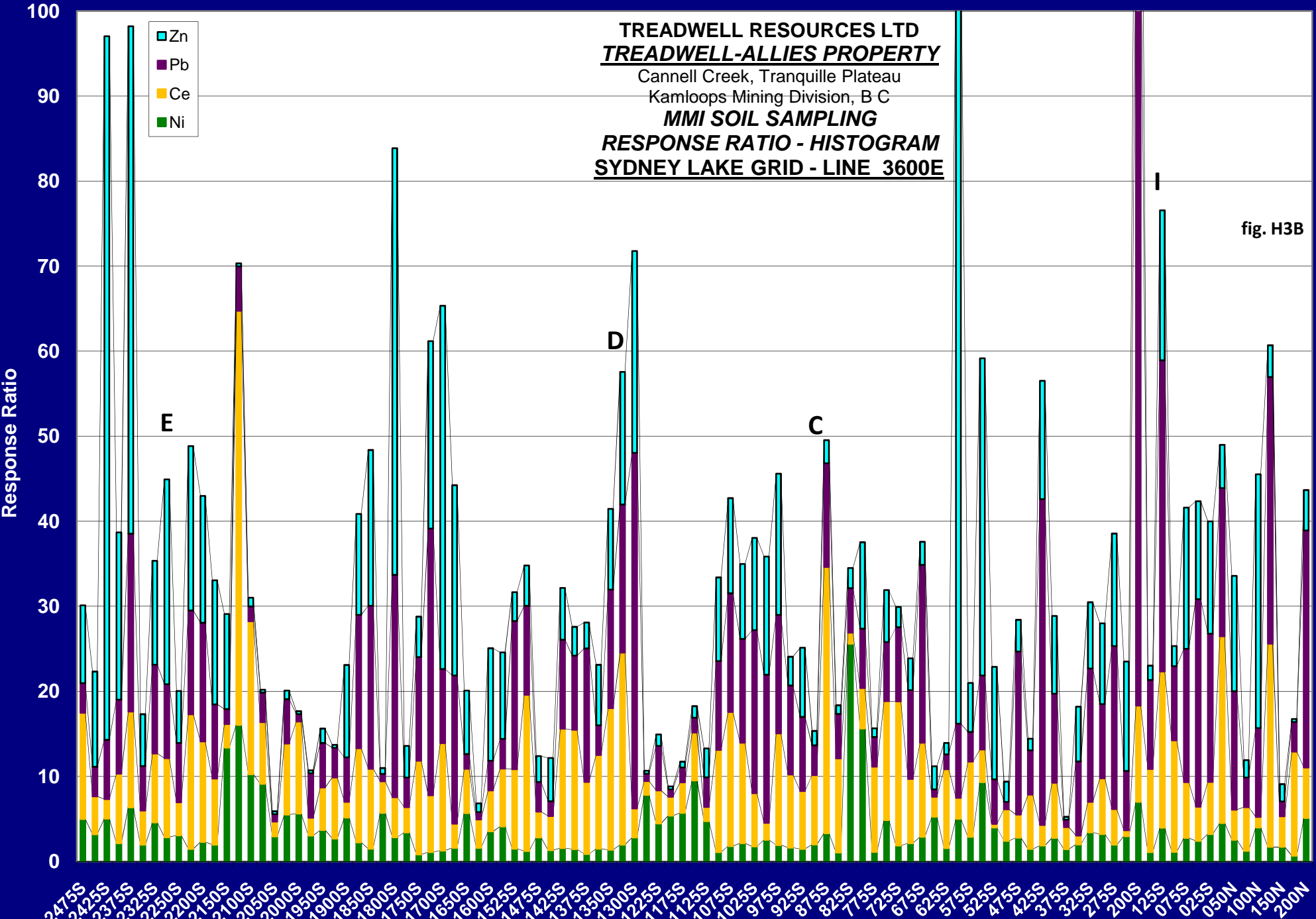
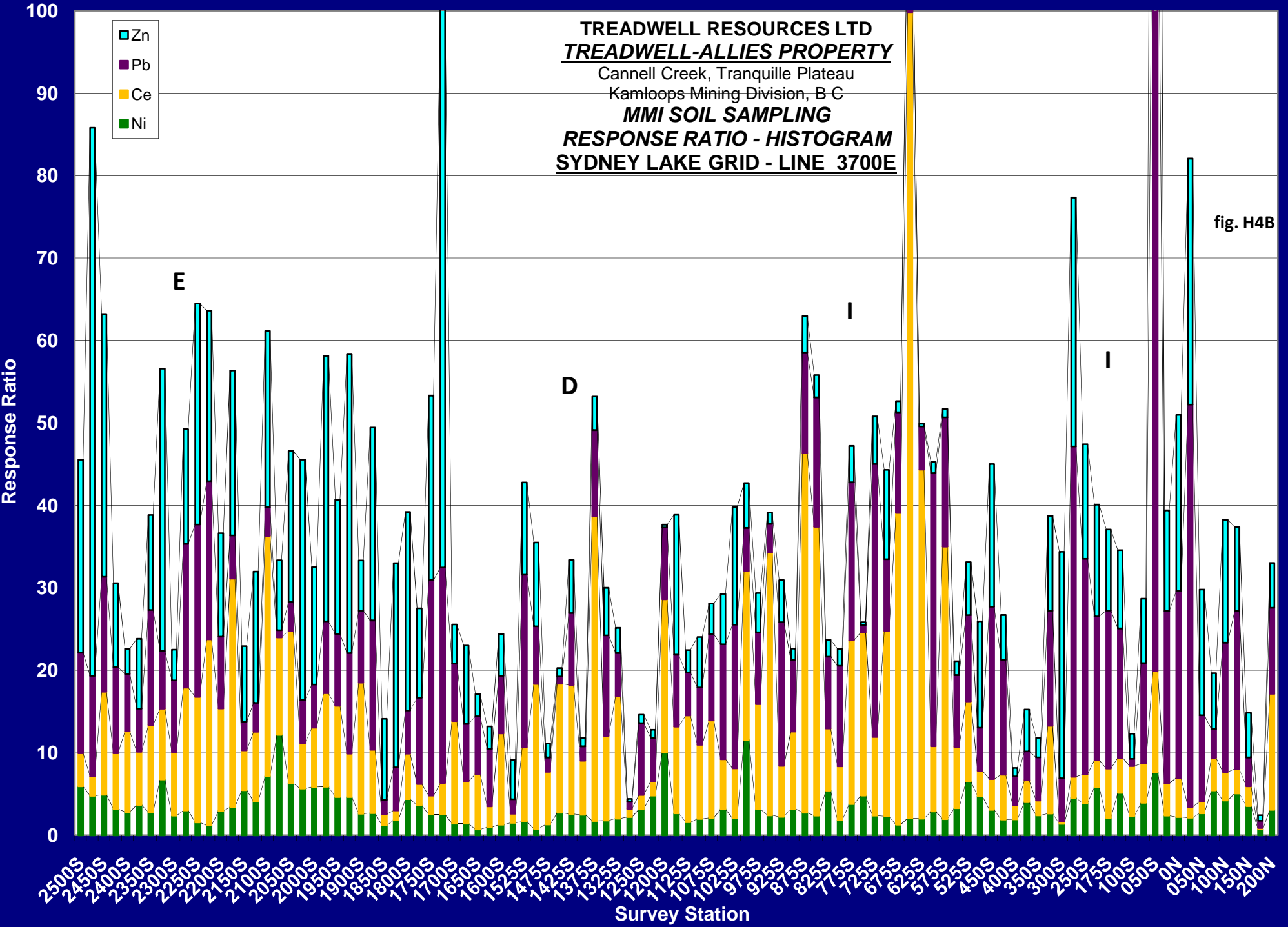


fig. H3B

Survey Station

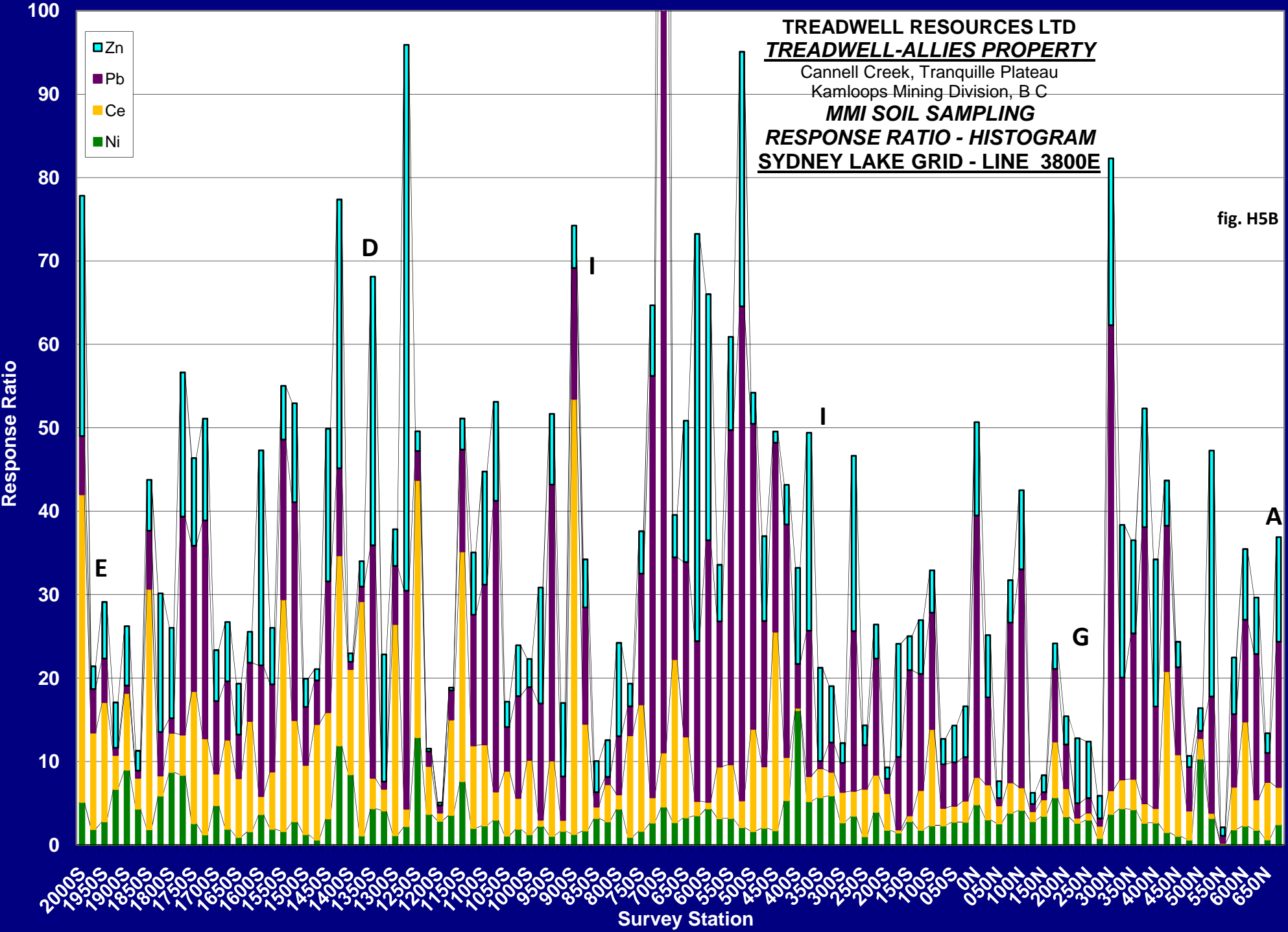
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
Cannell Creek, Tranquille Plateau  
Kamloops Mining Division, B-C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 3700E**

fig. H4B



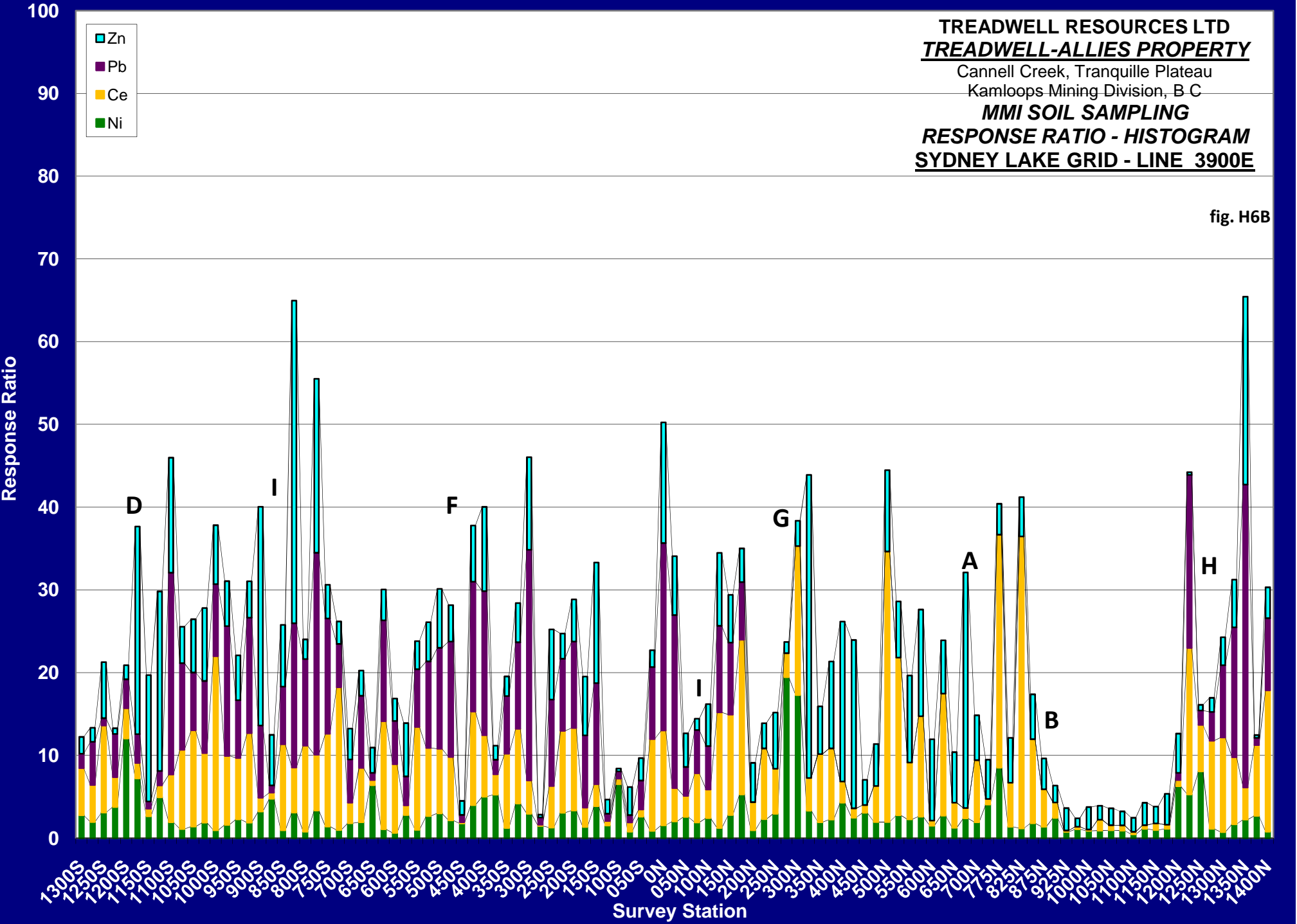
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
Cannell Creek, Tranquille Plateau  
Kamloops Mining Division, B.C.  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 3800E**

fig. H5B



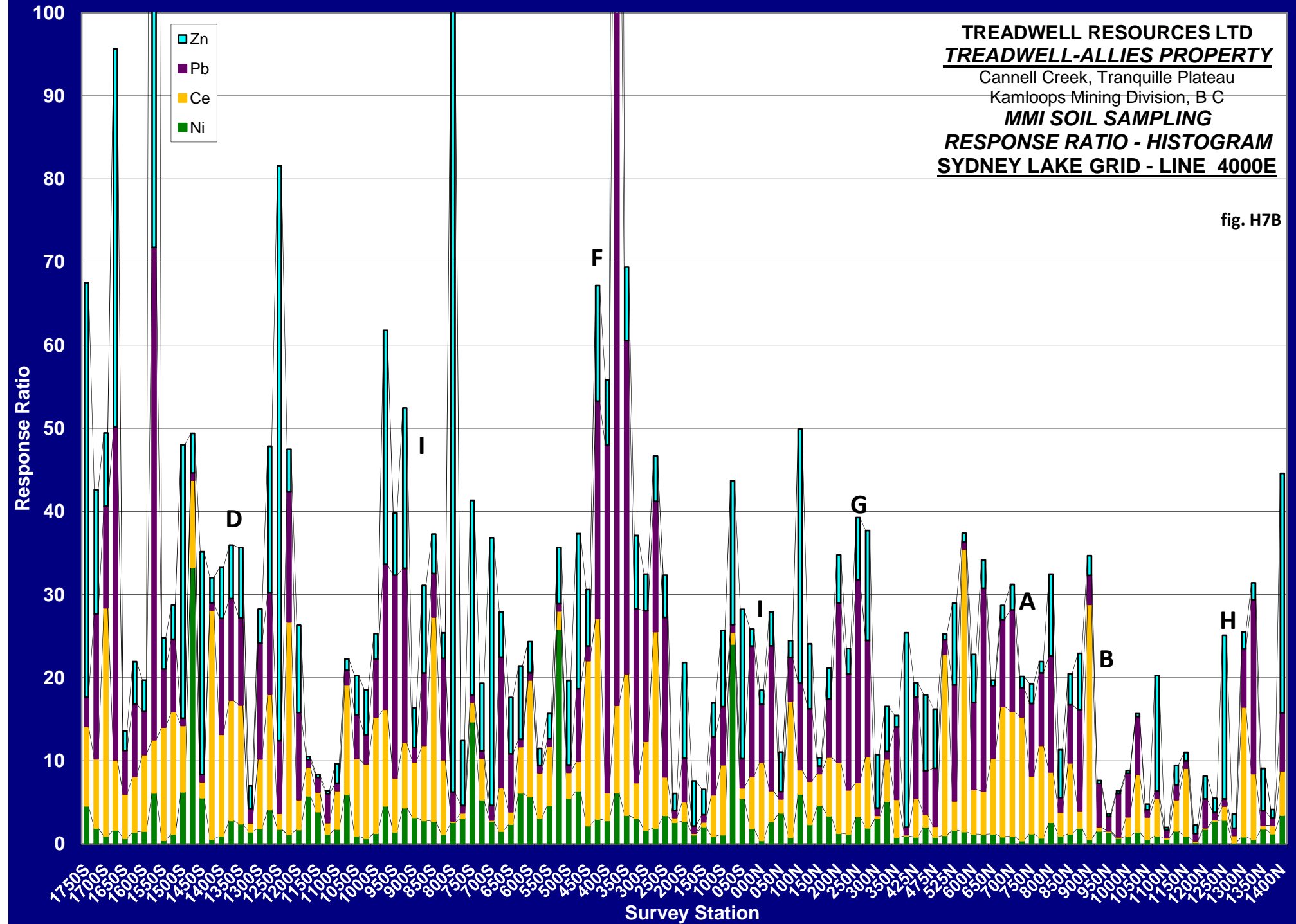
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 3900E**

fig. H6B



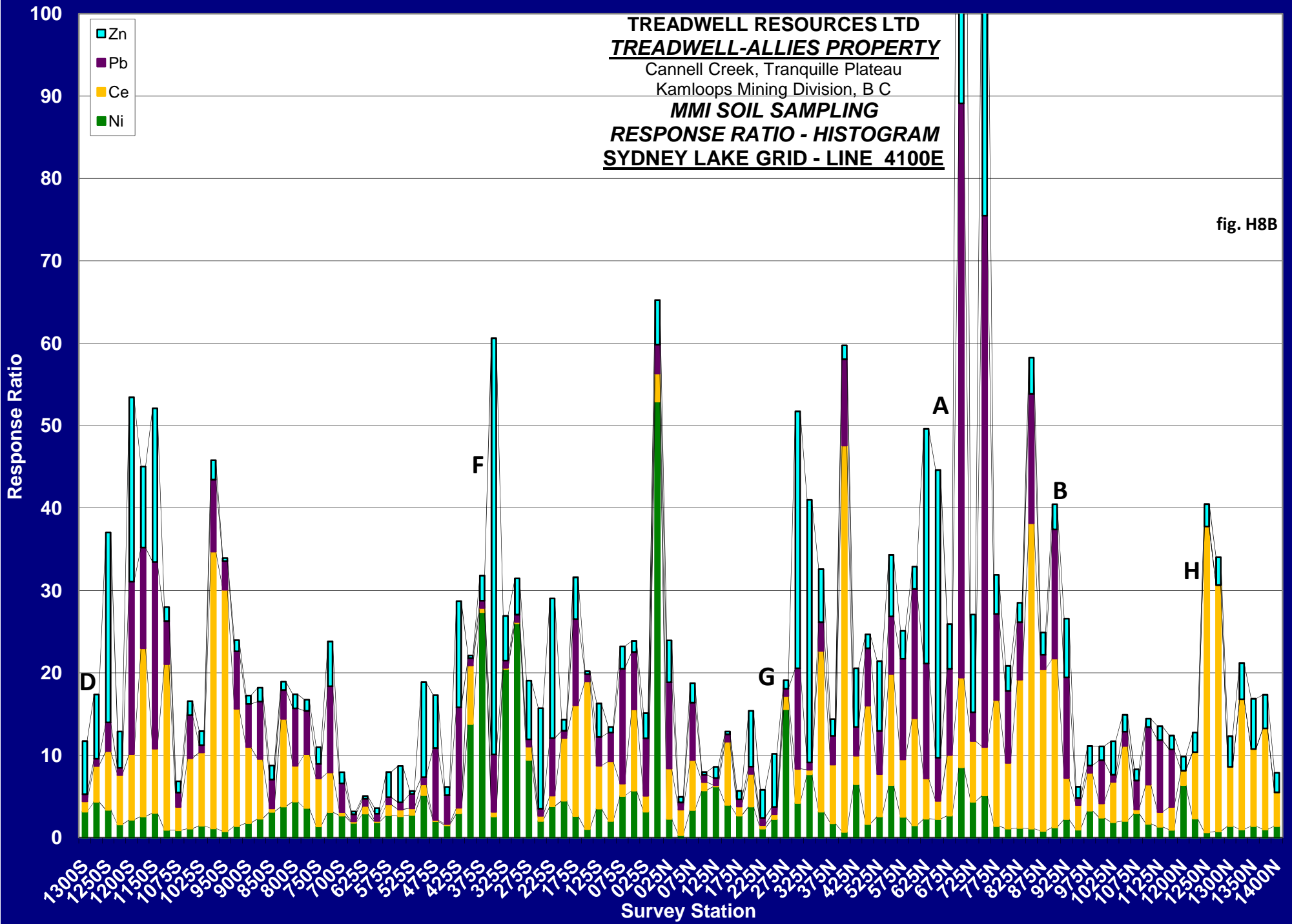
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
Cannell Creek, Tranquille Plateau  
Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4000E**

fig. H7B



**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
Cannell Creek, Tranquille Plateau  
Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4100E**

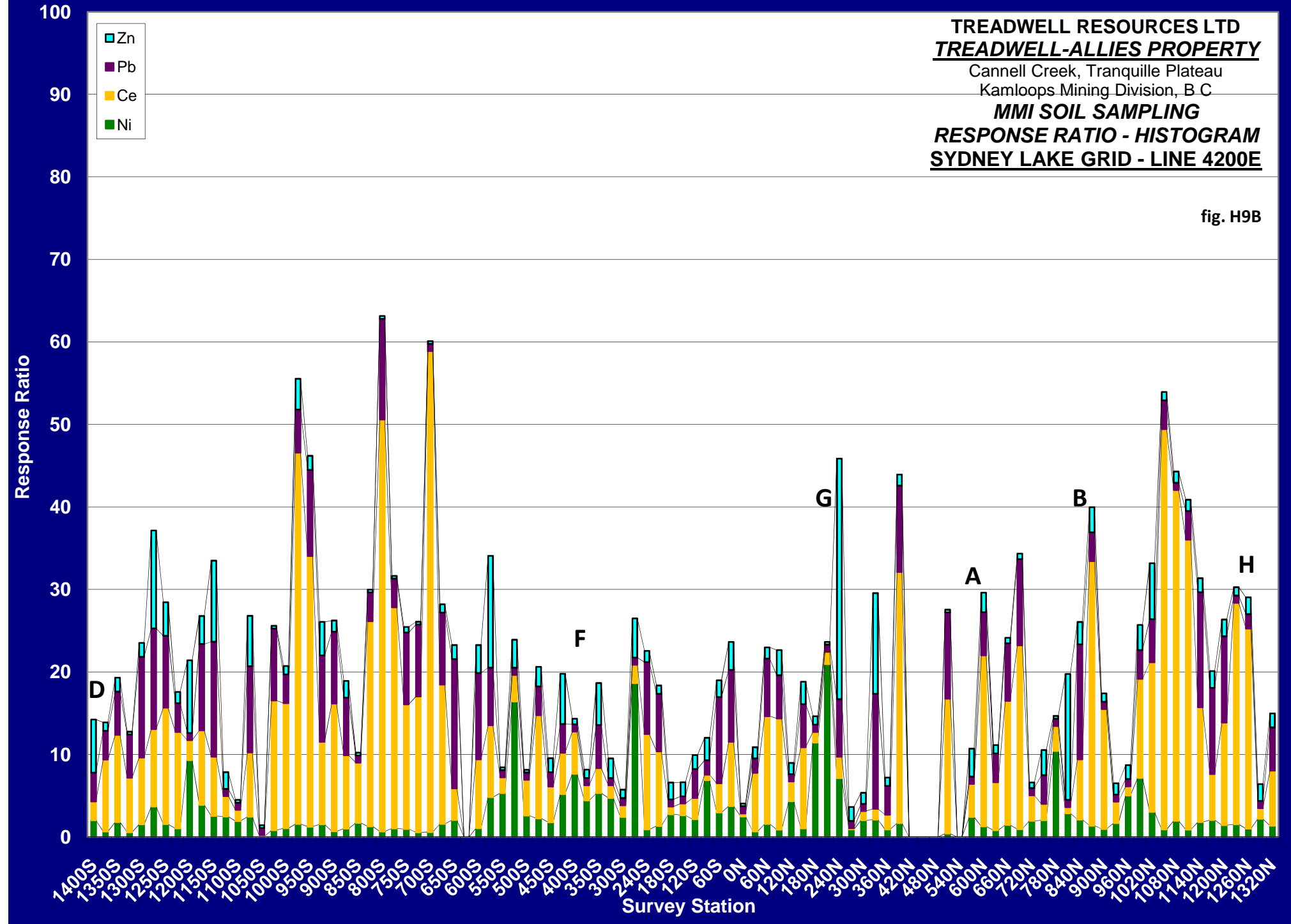
fig. H8B





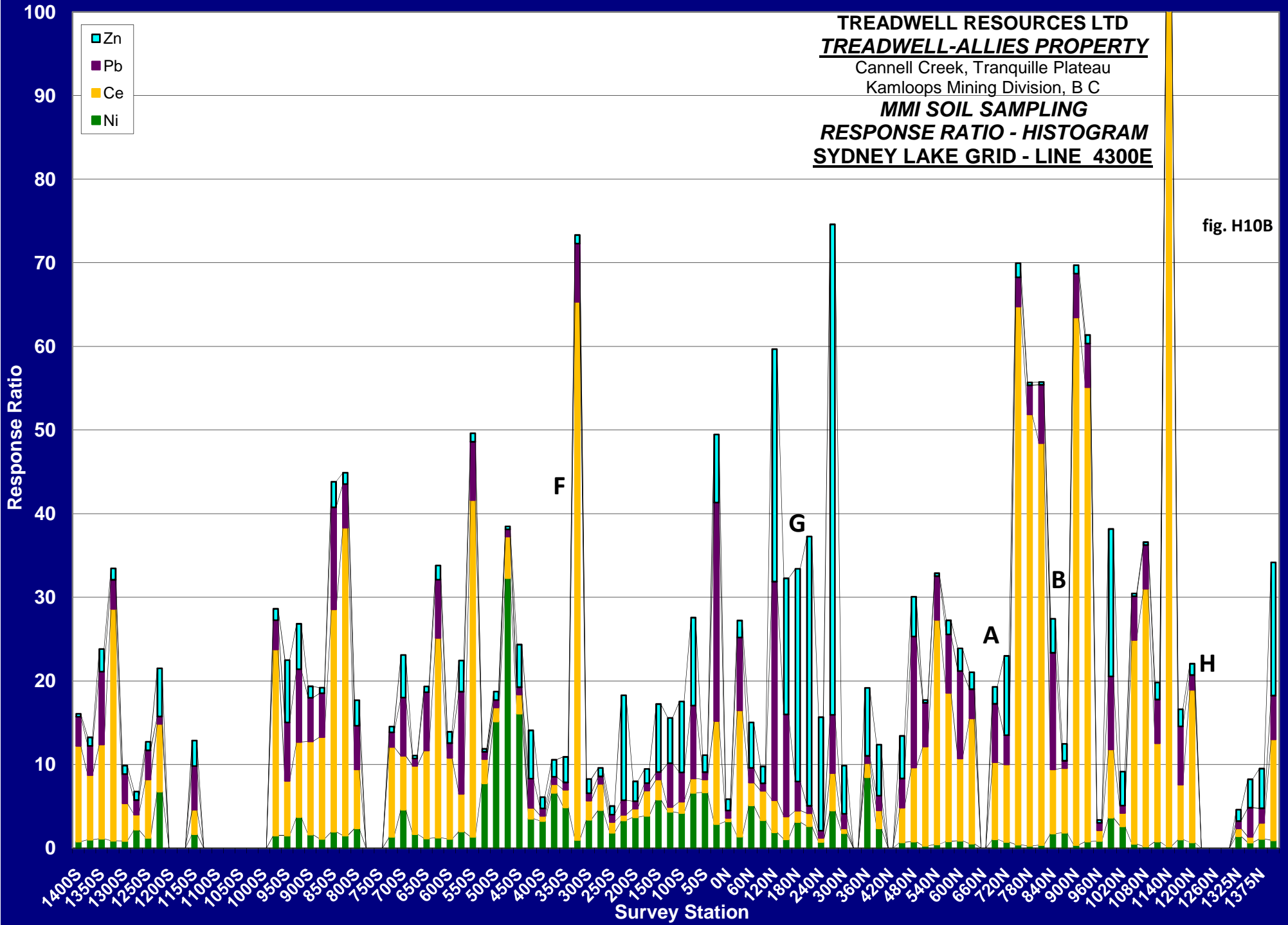
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B.C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4200E**

fig. H9B



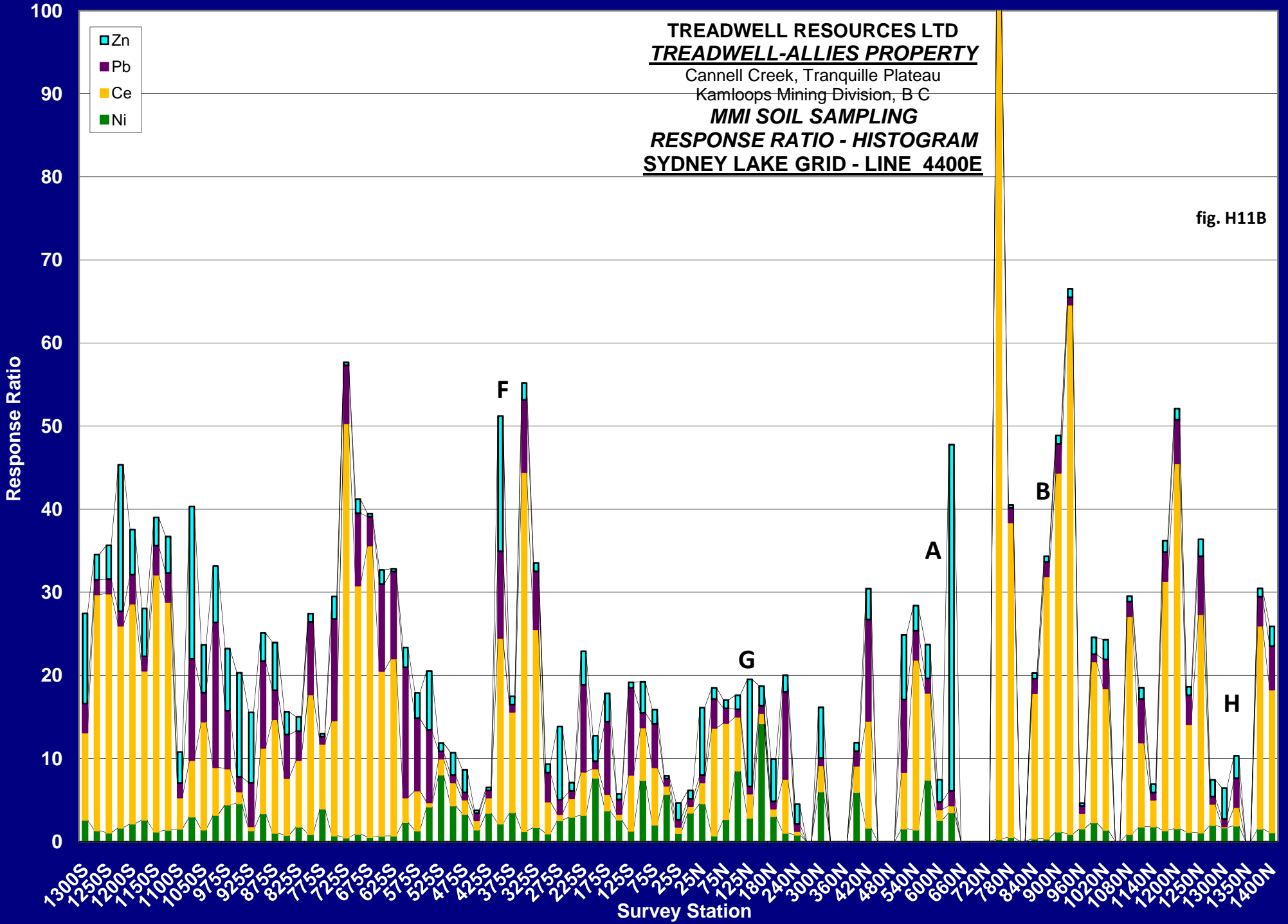
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4300E**

fig. H10B



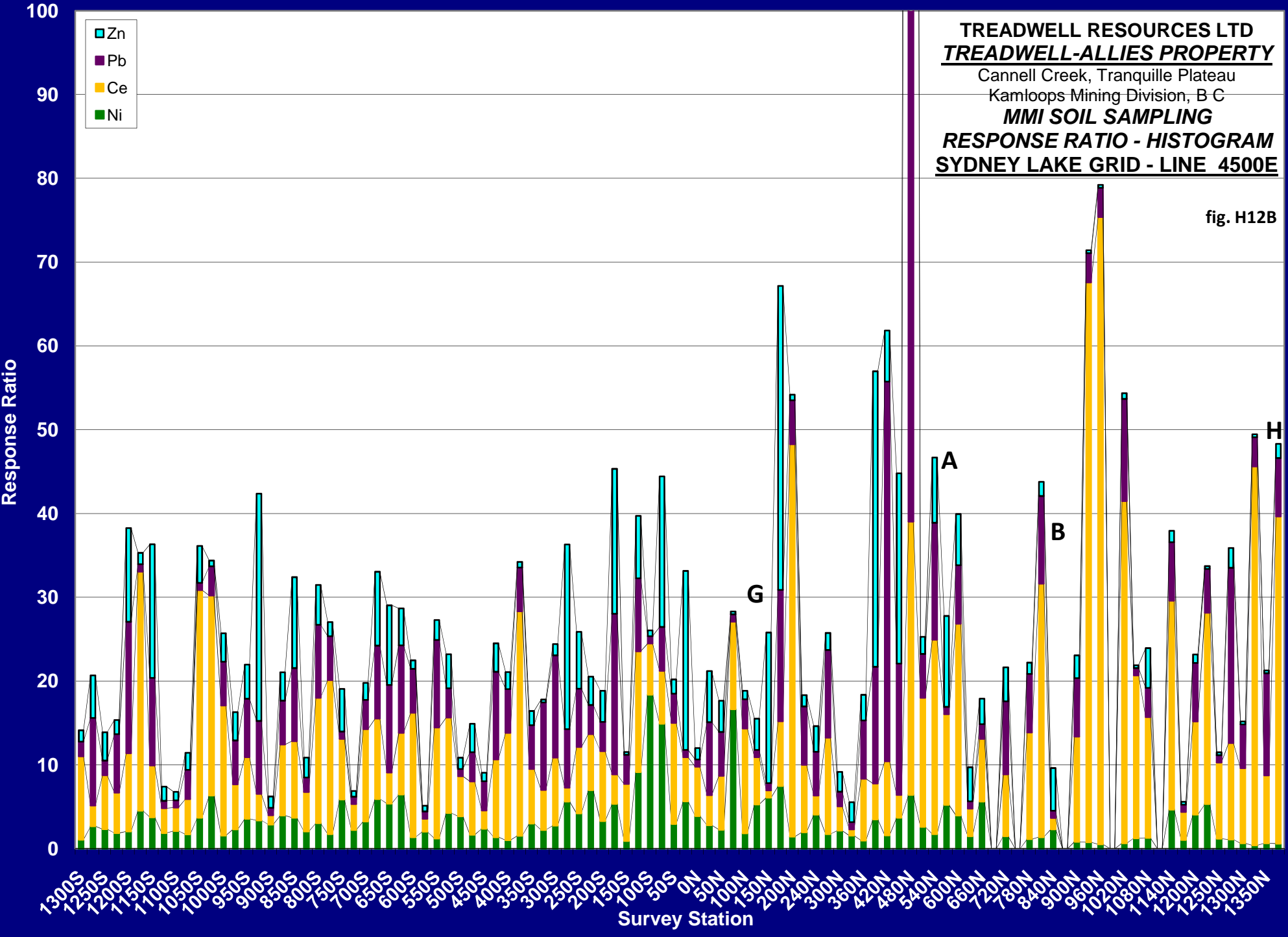
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
Cannell Creek, Tranquille Plateau  
Kamloops Mining Division, B-C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4400E**

fig. H11B



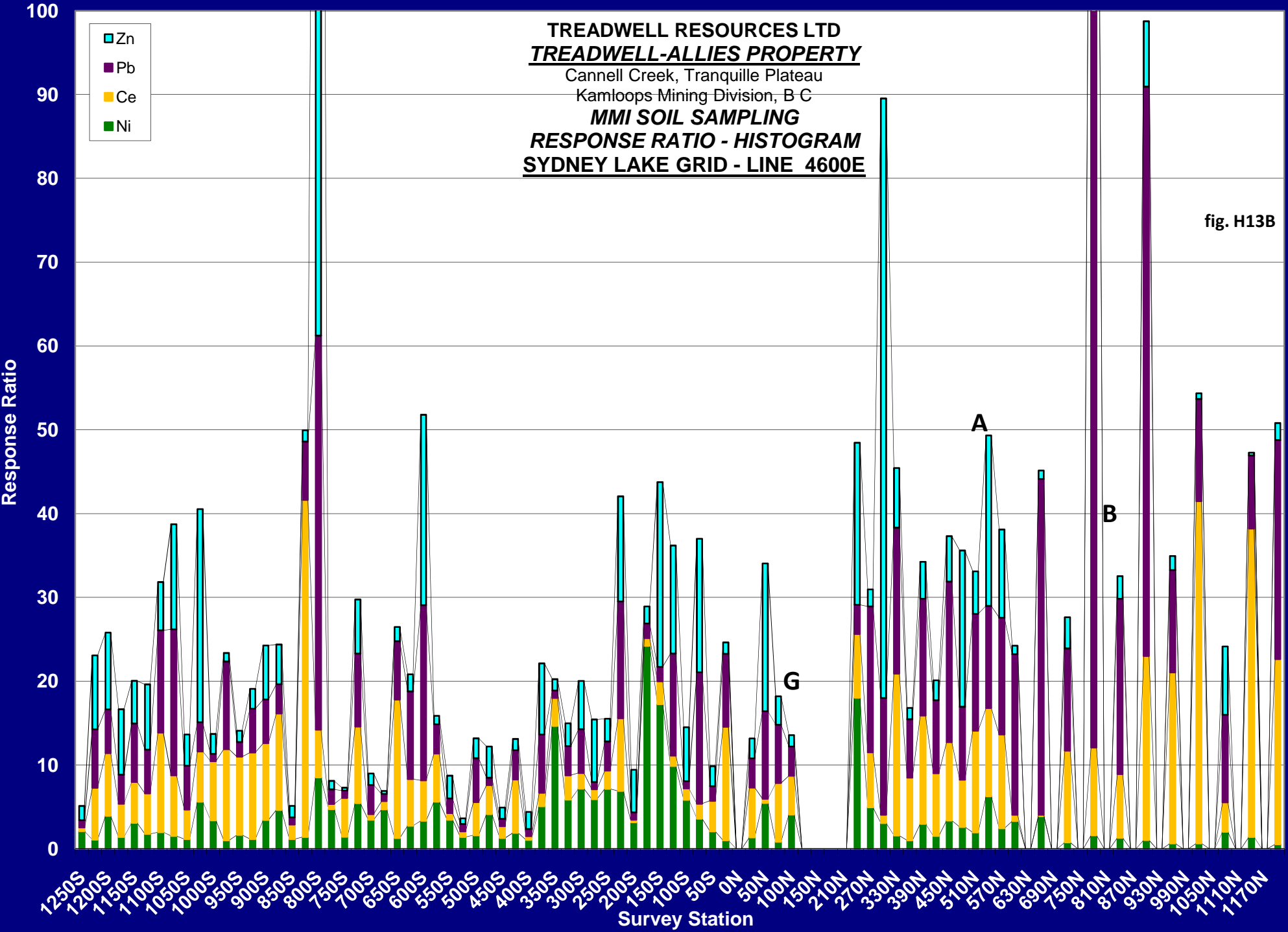
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B-C  
**MMI SOIL SAMPLING**  
***RESPONSE RATIO - HISTOGRAM***  
**SYDNEY LAKE GRID - LINE 4500E**

fig. H12B



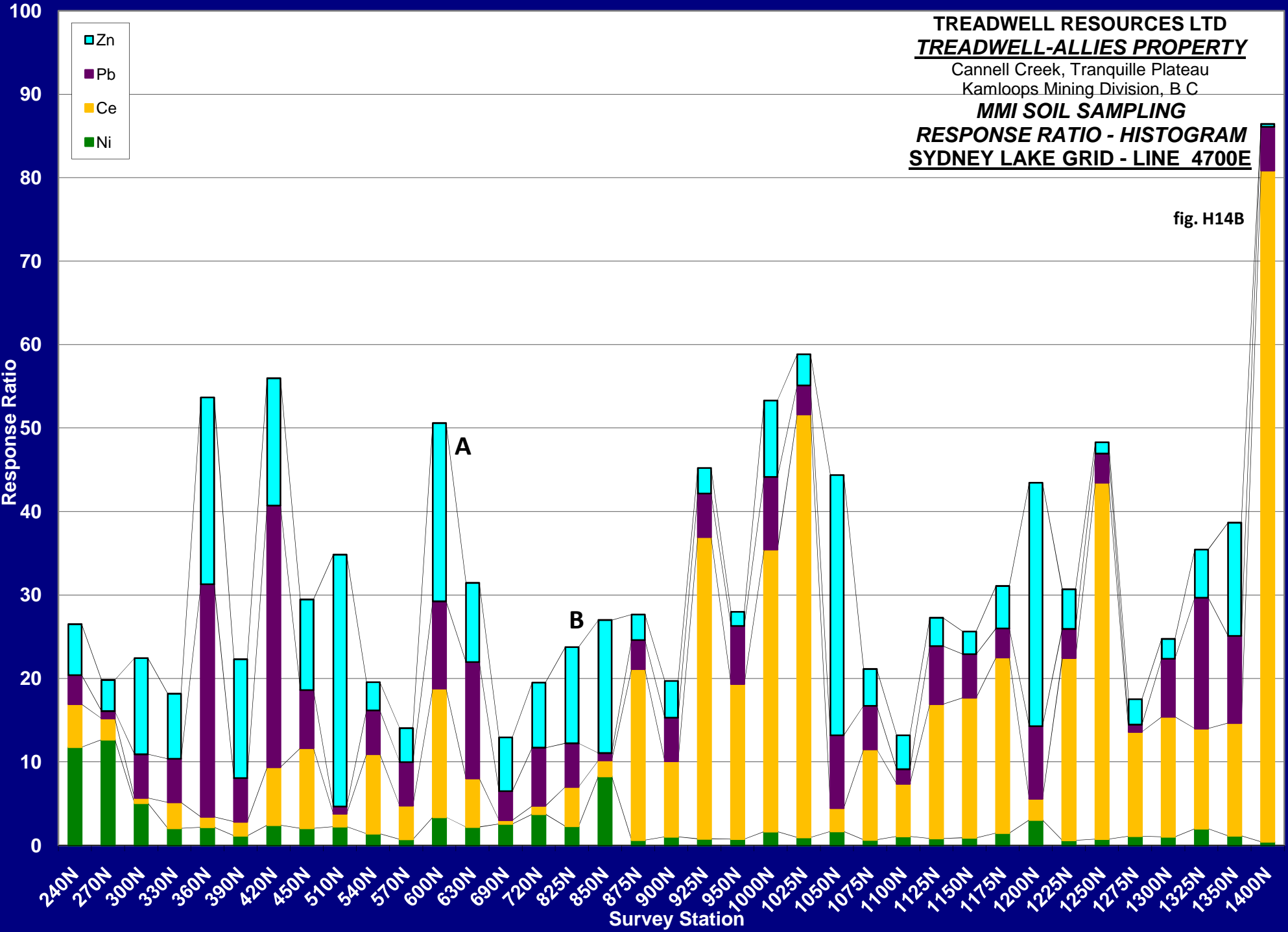
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4600E**

fig. H13B



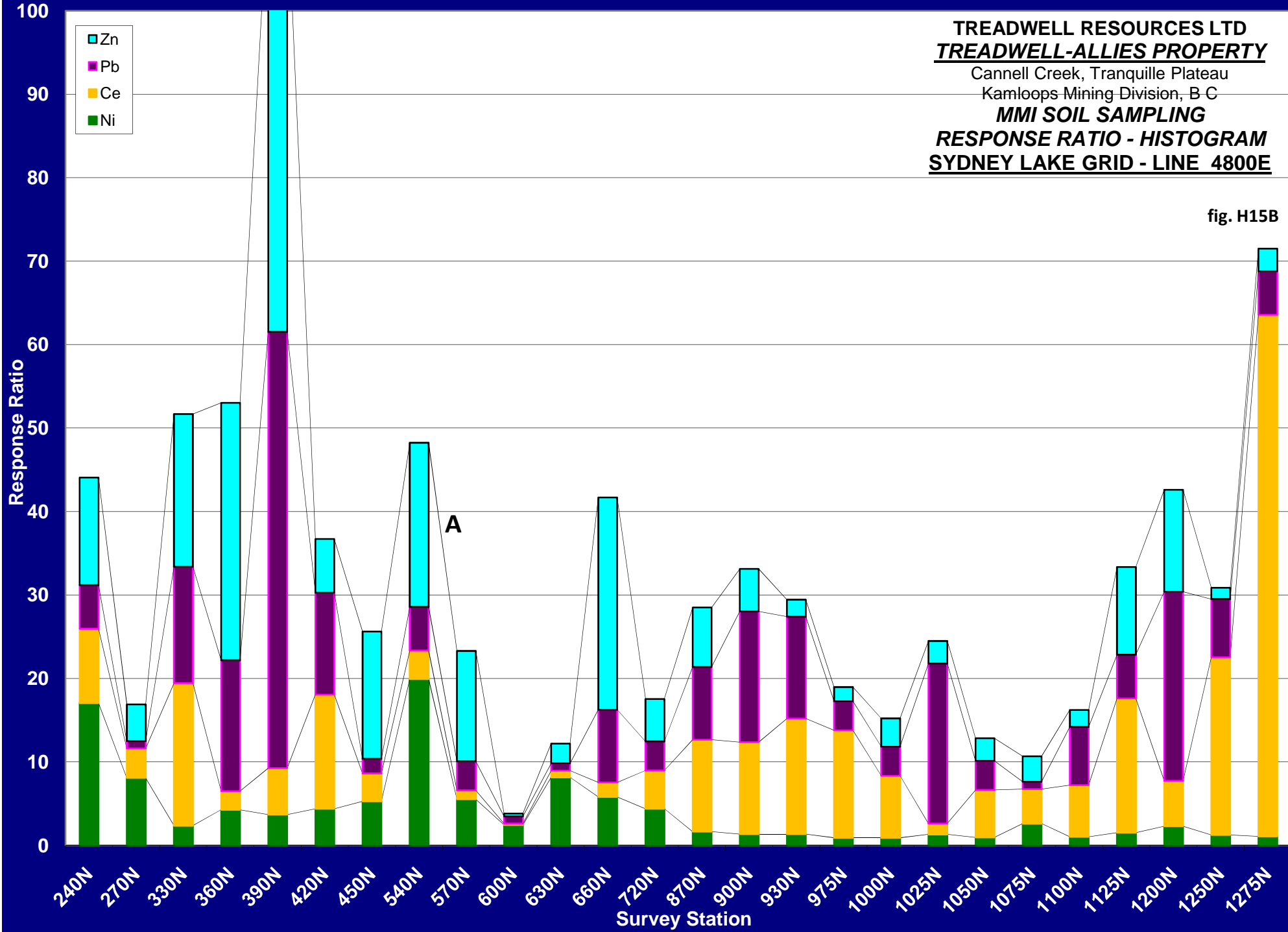
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4700E**

fig. H14B



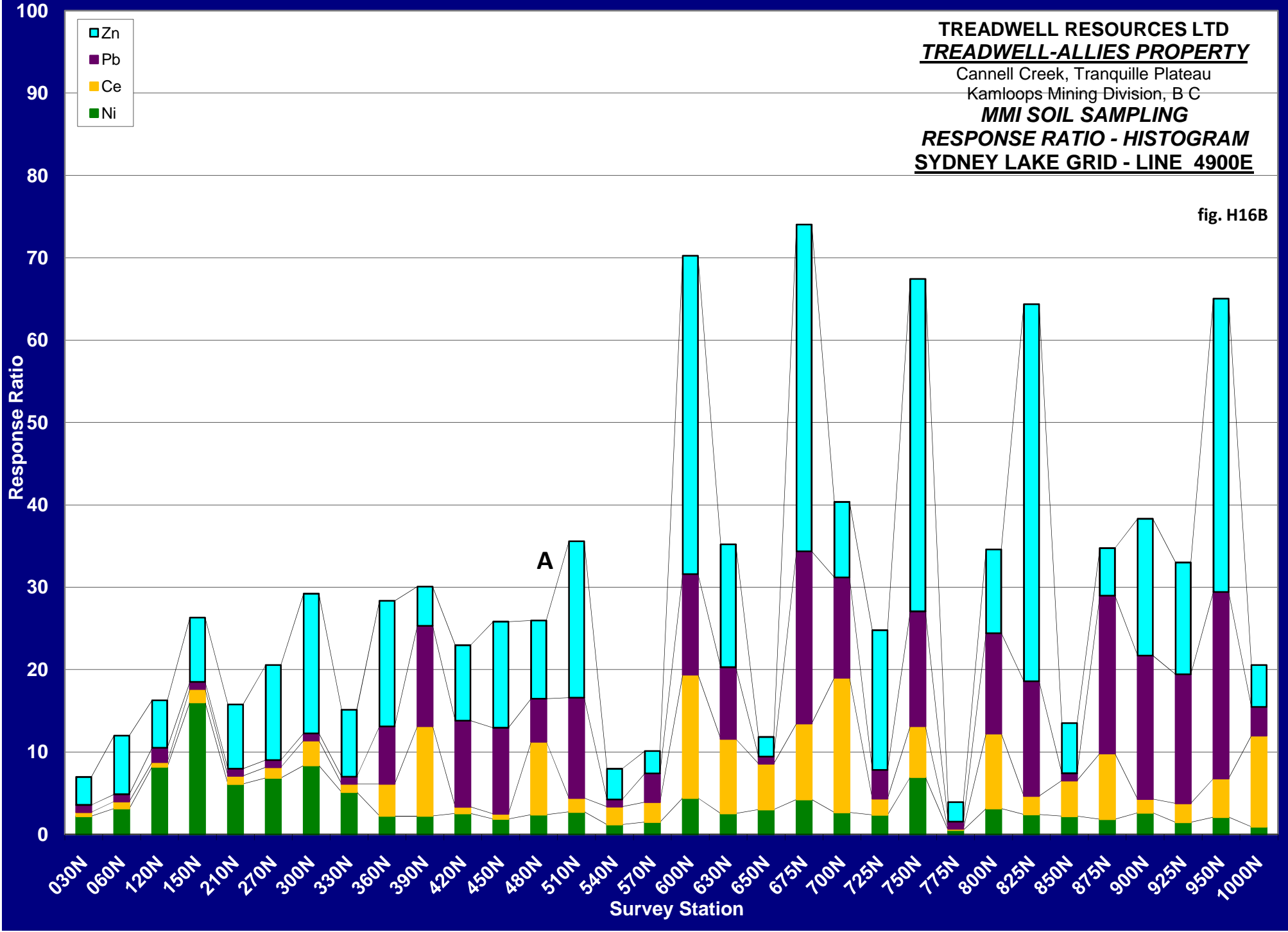
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B.C.  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4800E**

fig. H15B



**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**SYDNEY LAKE GRID - LINE 4900E**

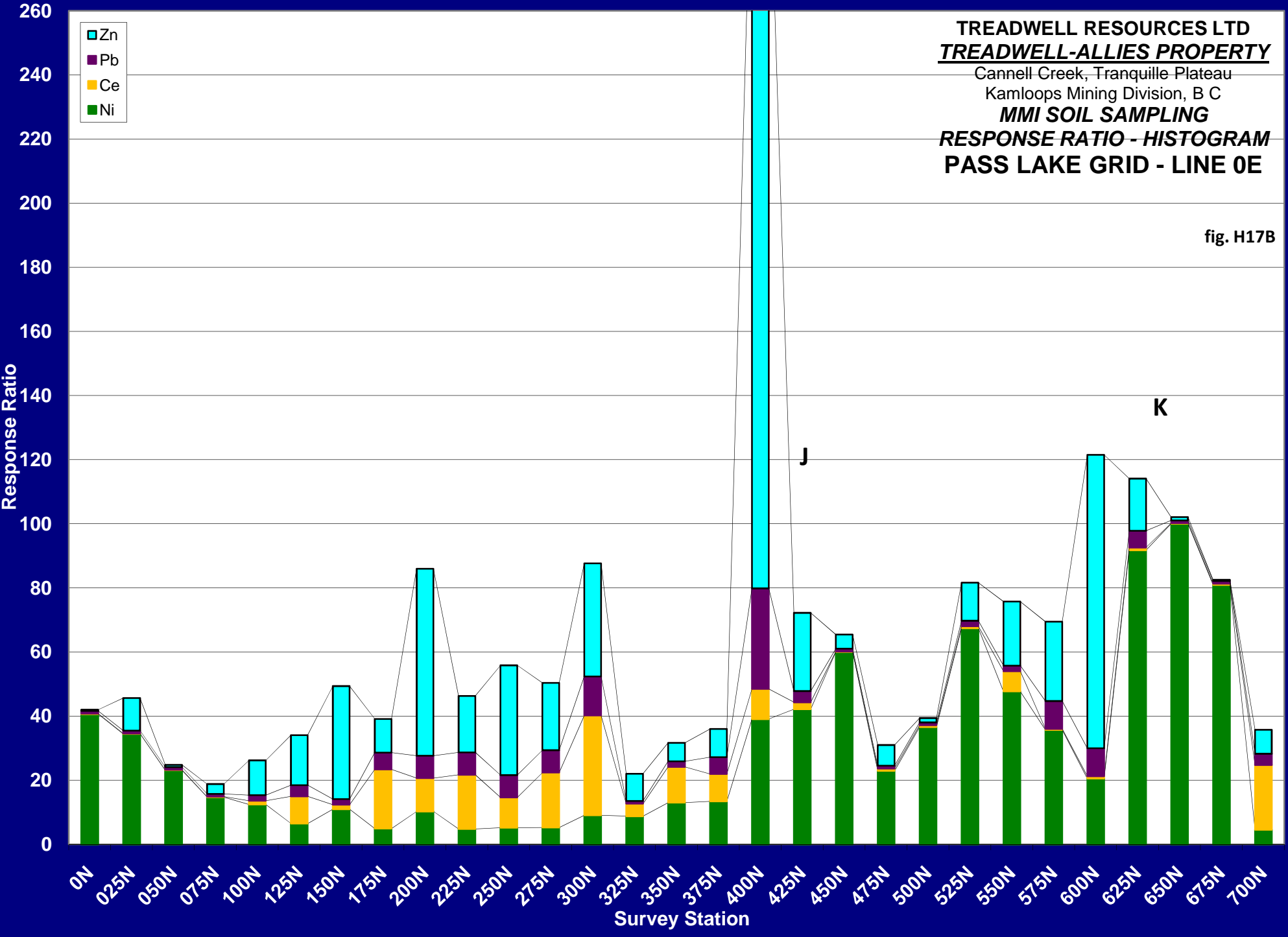
fig. H16B





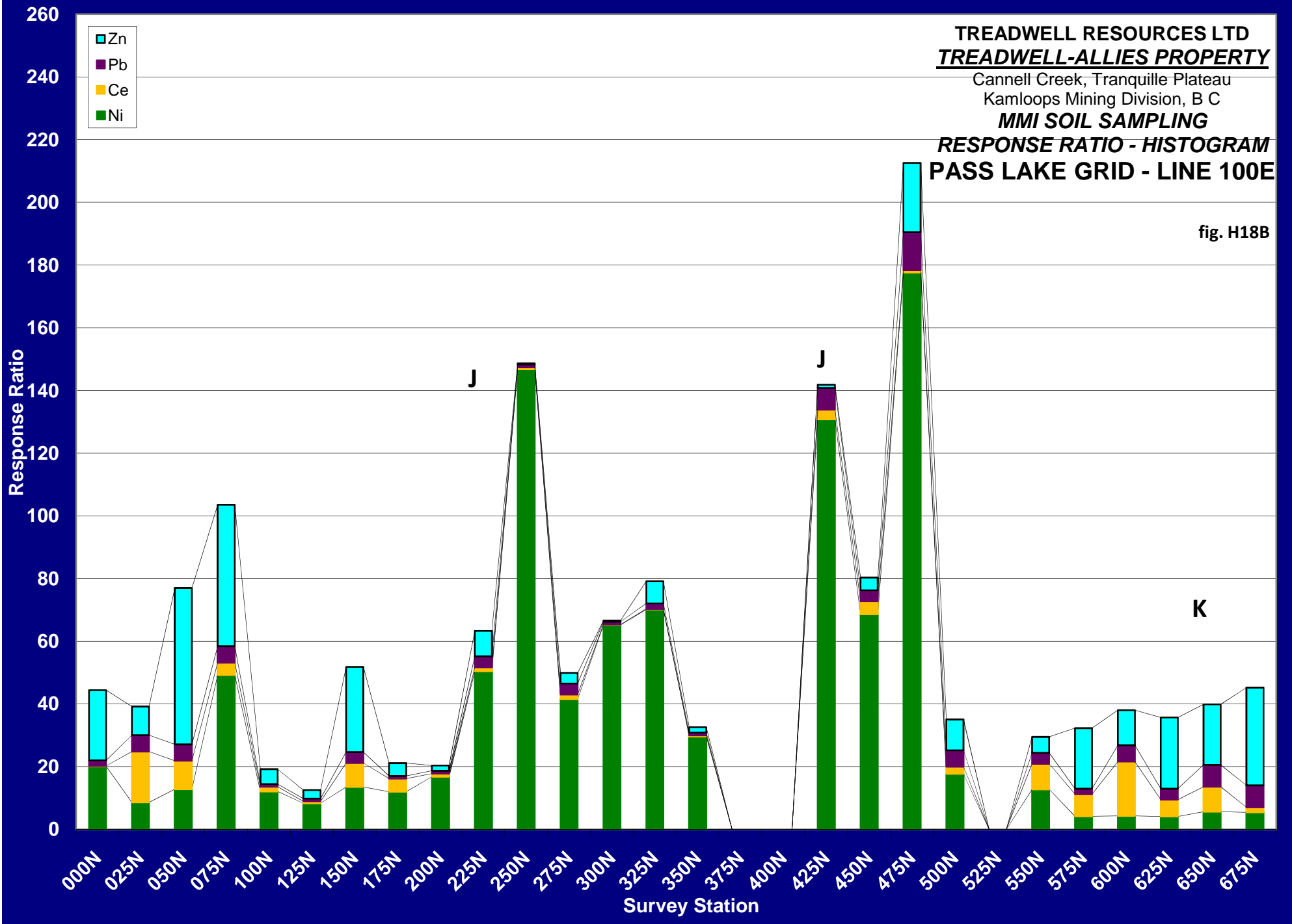
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**PASS LAKE GRID - LINE 0E**

fig. H17B



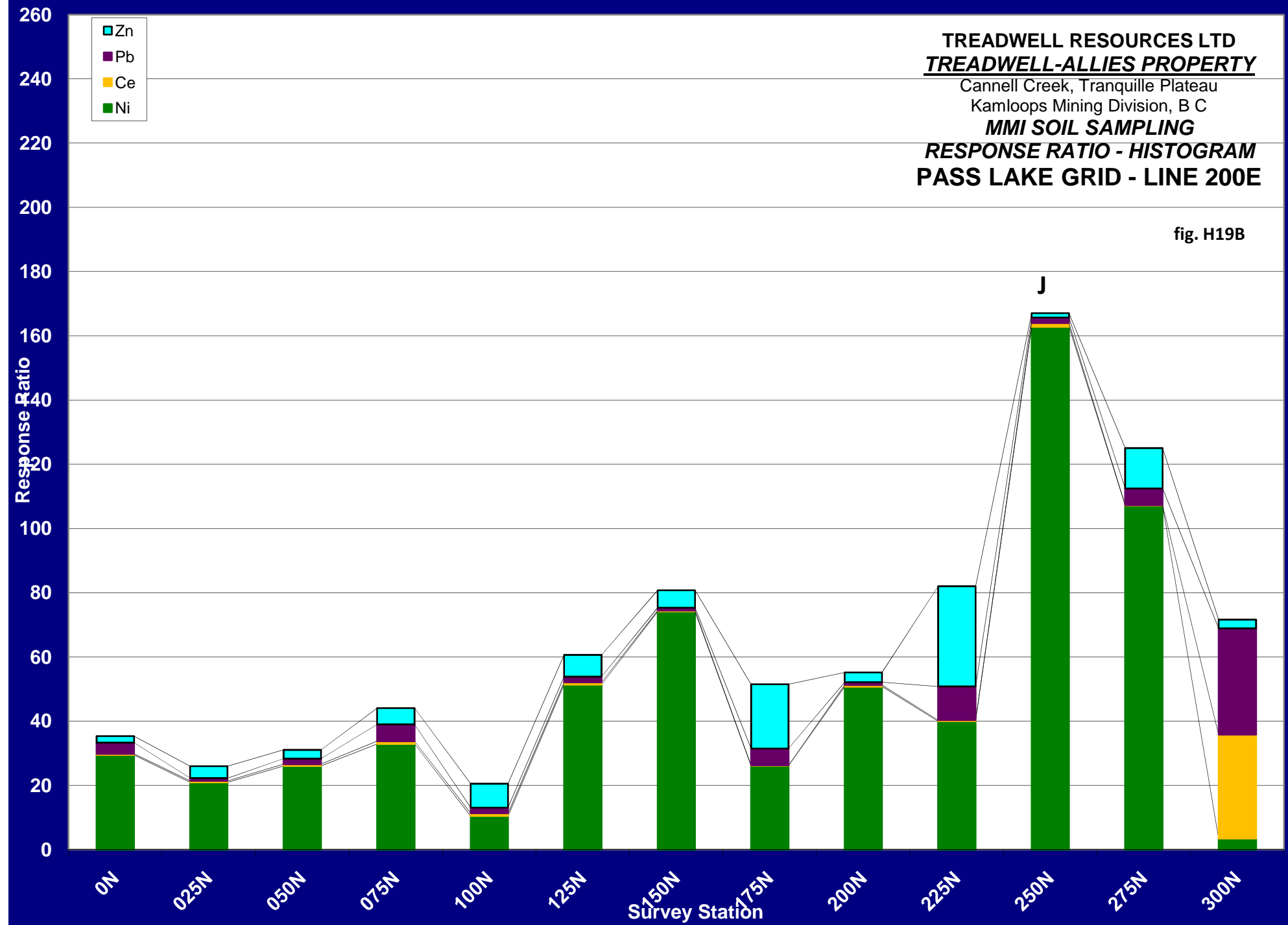
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**PASS LAKE GRID - LINE 100E**

fig. H18B



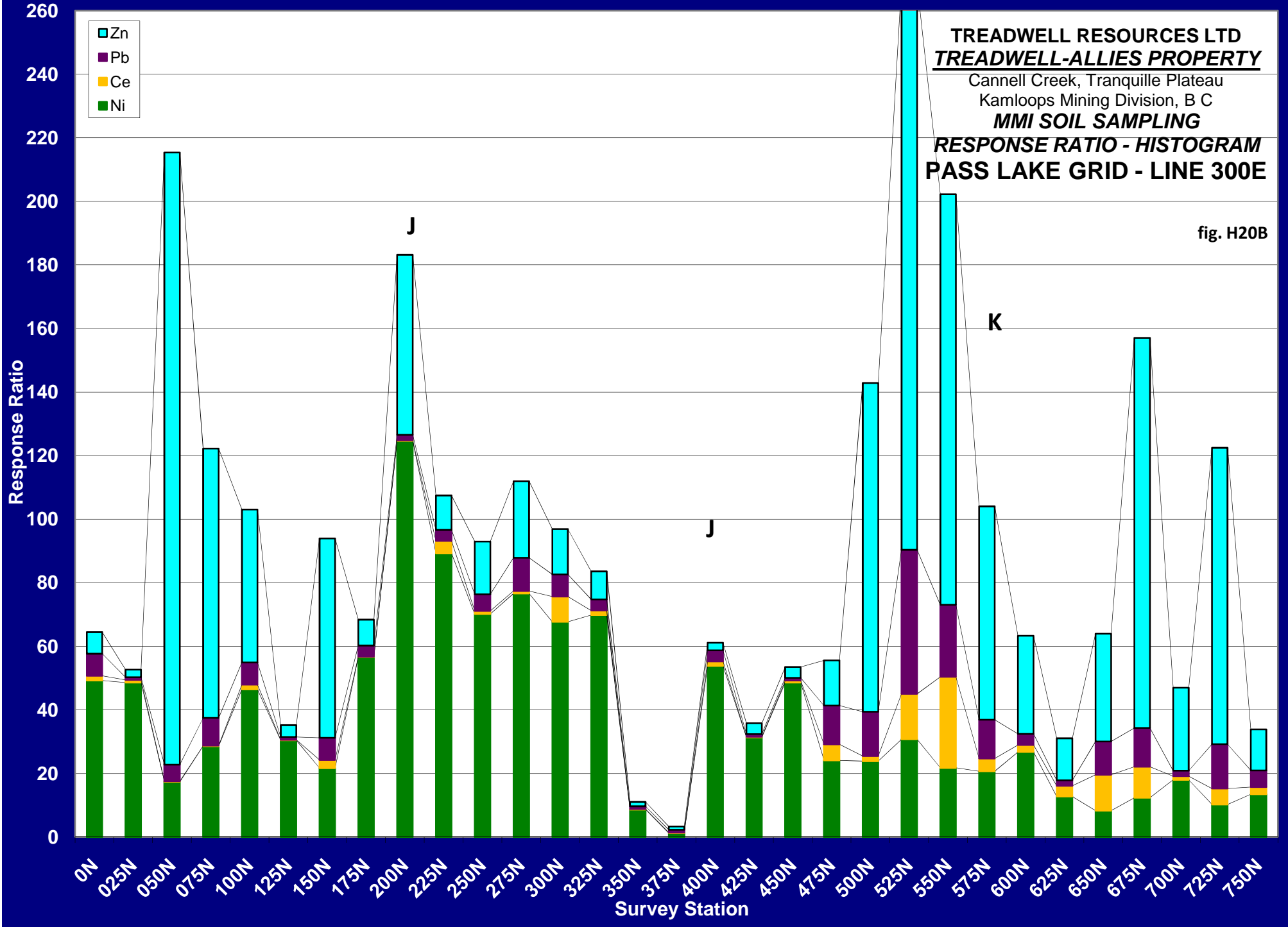
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**PASS LAKE GRID - LINE 200E**

fig. H19B



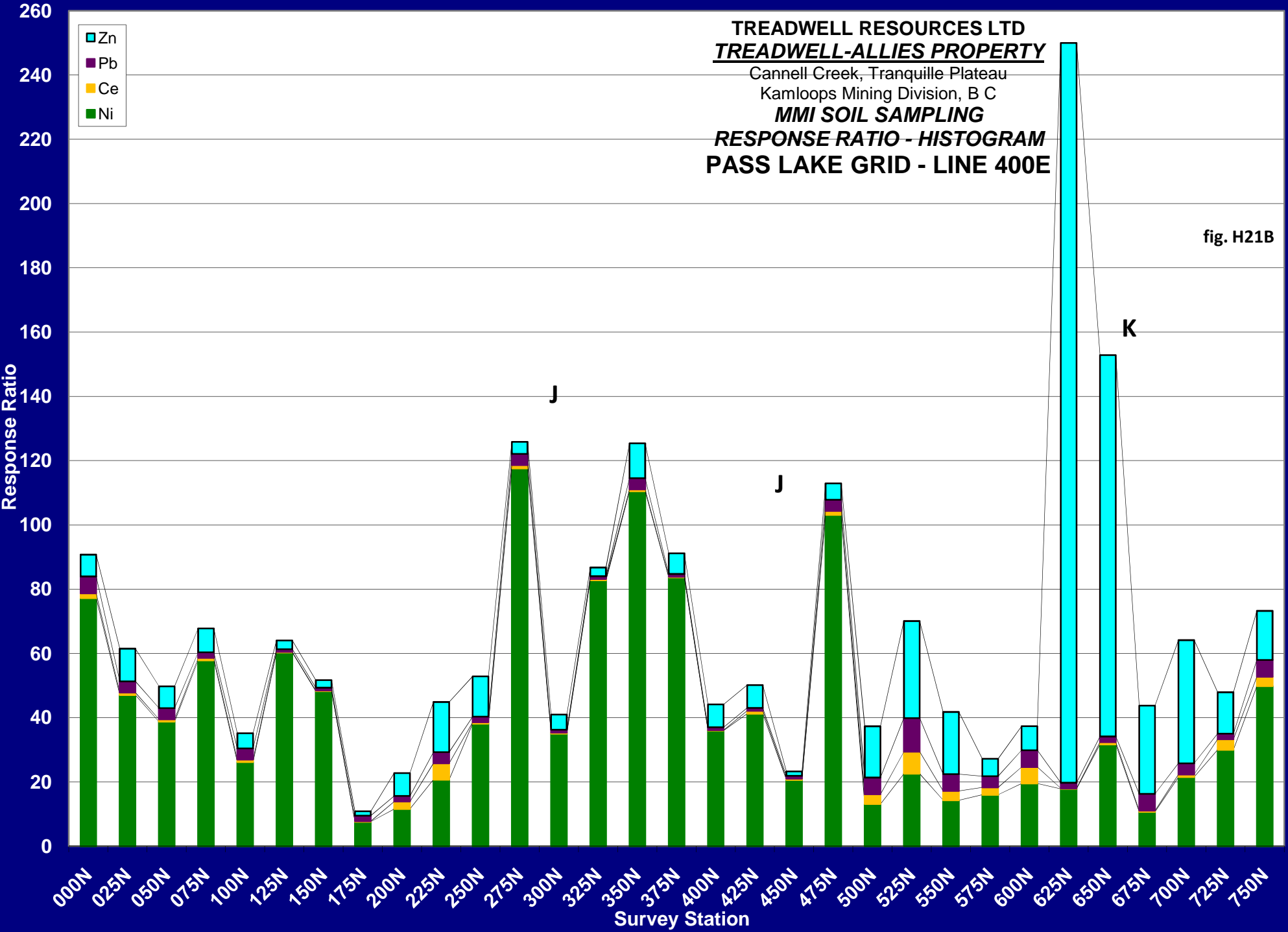
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**PASS LAKE GRID - LINE 300E**

fig. H20B



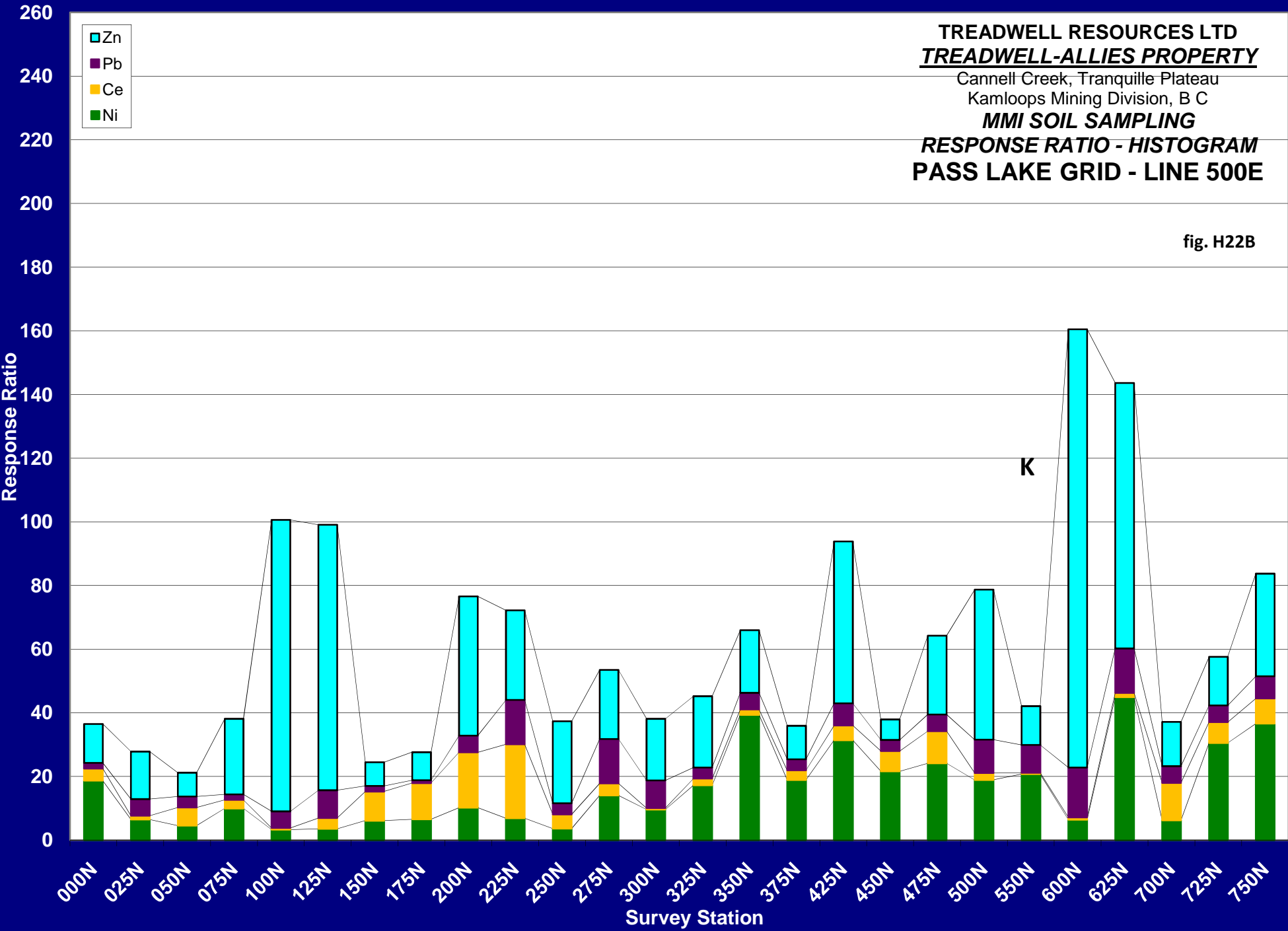
**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**PASS LAKE GRID - LINE 400E**

fig. H21B



**TREADWELL RESOURCES LTD**  
**TREADWELL-ALLIES PROPERTY**  
 Cannell Creek, Tranquille Plateau  
 Kamloops Mining Division, B C  
**MMI SOIL SAMPLING**  
**RESPONSE RATIO - HISTOGRAM**  
**PASS LAKE GRID - LINE 500E**

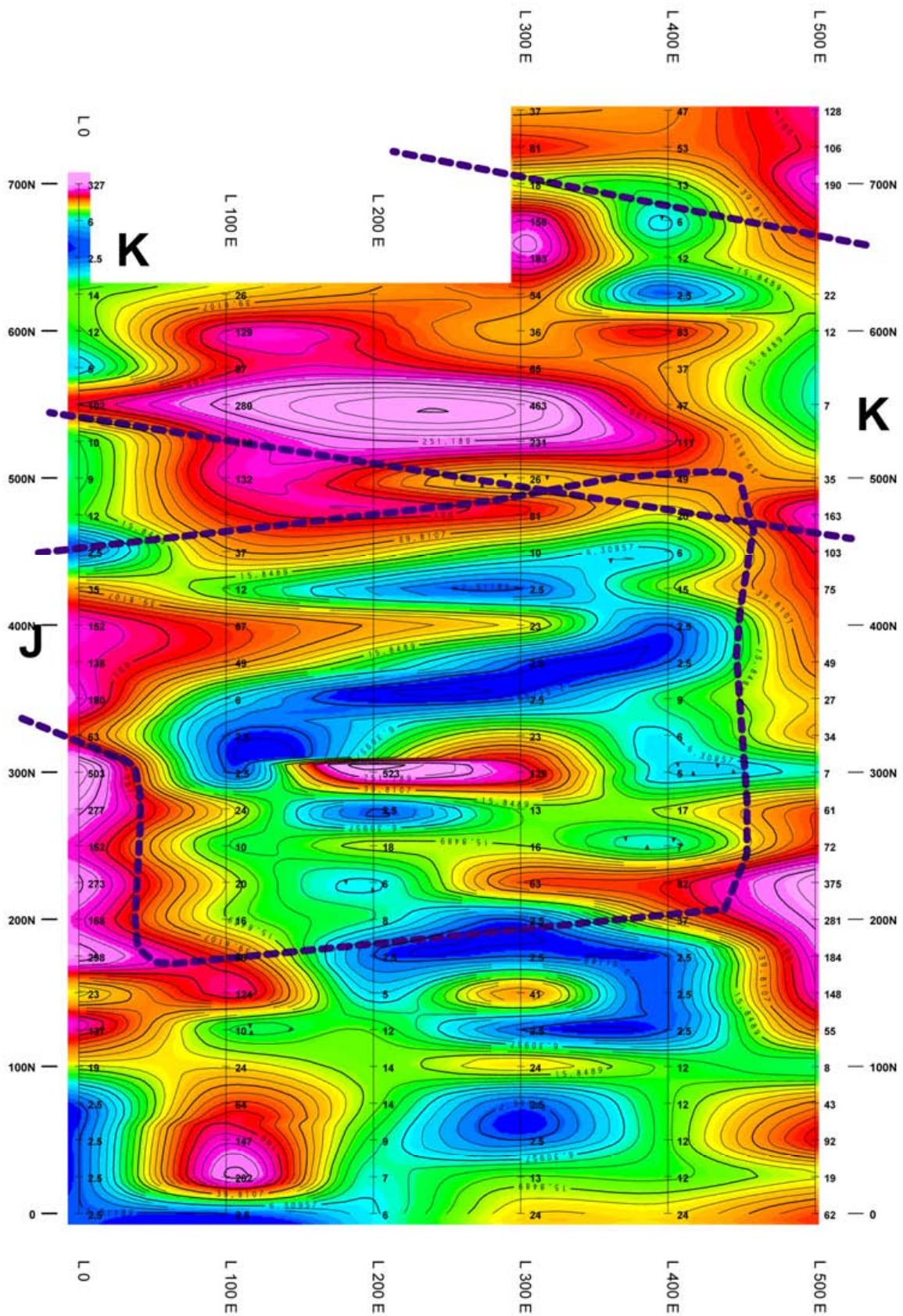
fig. H22B







Declination 18



### LEGEND

- B** Ip and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP anomaly
- Self potential anomaly

Date Samples Picked Up:  
June - July 2007

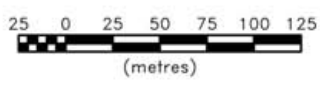
Soils Tested by:  
SGS Laboratories  
Toronto, Ontario

Contour Interval:  
log base 10

Note:  
Values are in  
parts per billion (ppb)



Data Reduced by:  
**GEOTRONICS CONSULTING INC**  
**SURREY BC.**

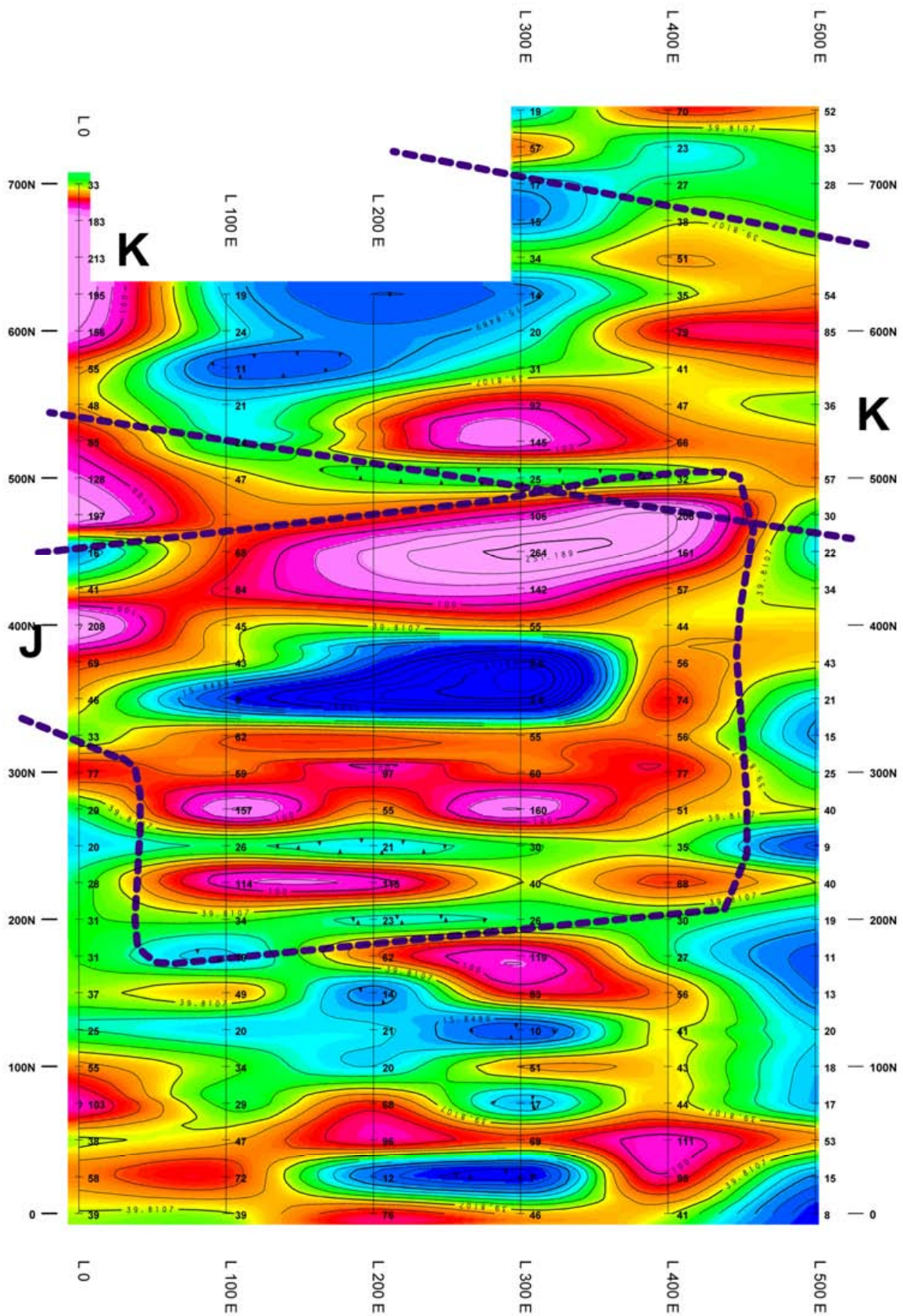


GEOTRONICS CONSULTING INC.				
TREADWELL RESOURCES LTD.				
TREADWELL-ALLIES PROPERTY				
PASS LAKE GRID				
Cannell Creek, Tranquille Plateau Area				
Kamloops Mining Division, B.C				
<b>MMI SOIL GEOCHEMISTRY SURVEY</b>				
<b>PLAN MAP</b>				
<b>CERIUM</b>				
Drawn by: DGM	Job No. 07-15	NTS 921/15	Date Feb 08	Fig No. GC-11





Declination 18



### LEGEND

- B** Ip and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP anomaly
- SP Self potential anomaly

Date Samples Picked Up:  
June - July 2007

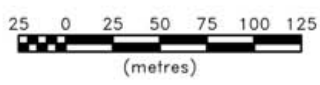
Soils Tested by:  
SGS Laboratories  
Toronto, Ontario

Contour Interval:  
log base 10

Note:  
Values are in  
parts per billion (ppb)



Data Reduced by:  
**GEOTRONICS CONSULTING INC**  
**SURREY BC.**

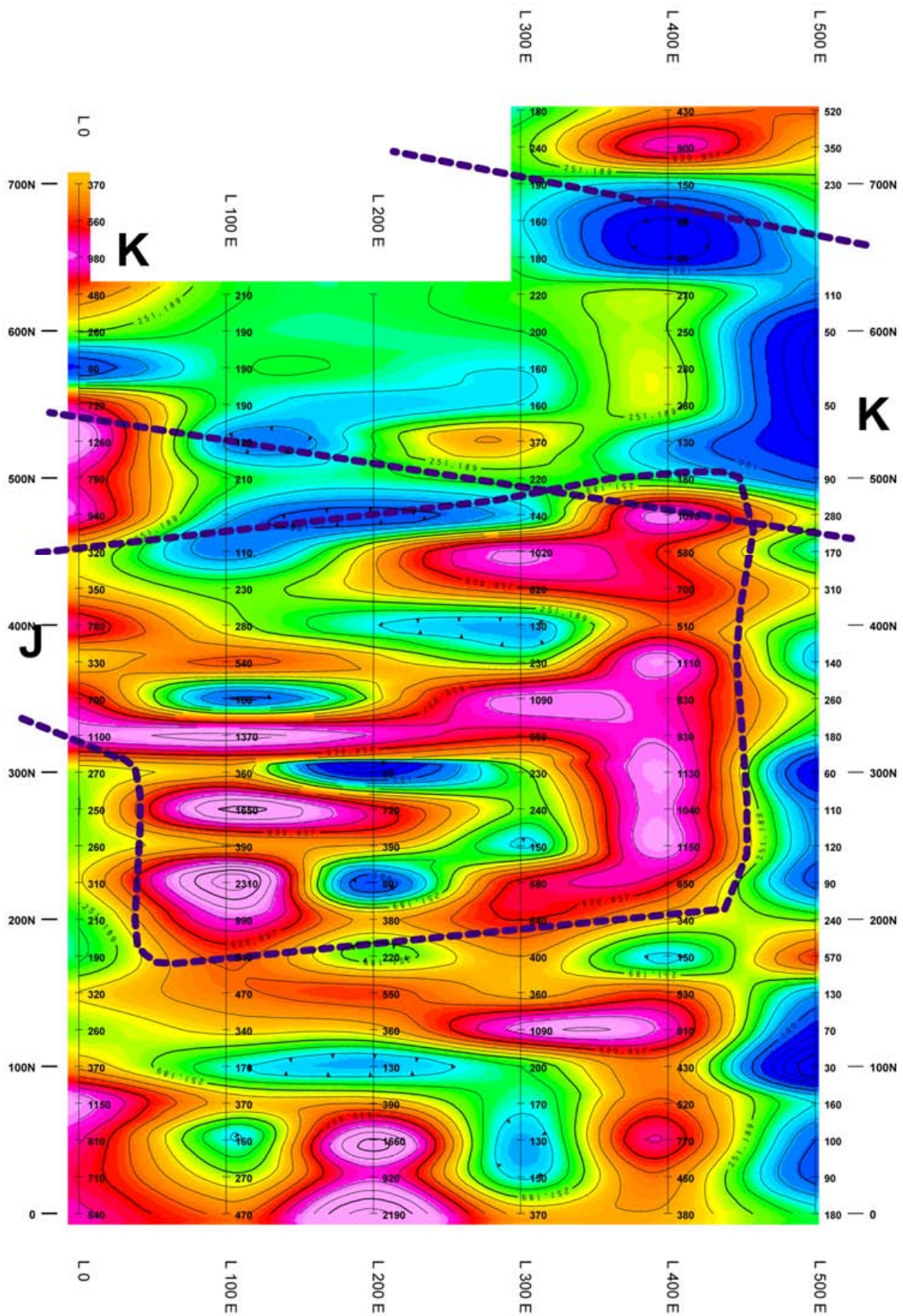


GEOTRONICS CONSULTING INC.				
TREADWELL RESOURCES LTD.				
TREADWELL-ALLIES PROPERTY				
PASS LAKE GRID				
Cannell Creek, Tranquille Plateau Area				
Kamloops Mining Division, B.C				
<b>MMI SOIL GEOCHEMISTRY SURVEY</b>				
<b>PLAN MAP</b>				
<b>COBALT</b>				
Drawn by: DGM	Job No. 07-15	NTS 921/15	Date Feb 08	Fig No. GC-12





Declination 18



### LEGEND

- B** Ip and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP anomaly
- Self potential anomaly

Date Samples Picked Up:  
June - July 2007

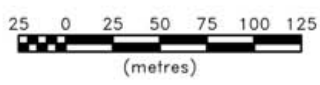
Soils Tested by:  
SGS Laboratories  
Toronto, Ontario

Contour Interval:  
log base 10

Note:  
Values are in  
parts per billion (ppb)



Data Reduced by:  
**GEOTRONICS CONSULTING INC**  
**SURREY BC.**

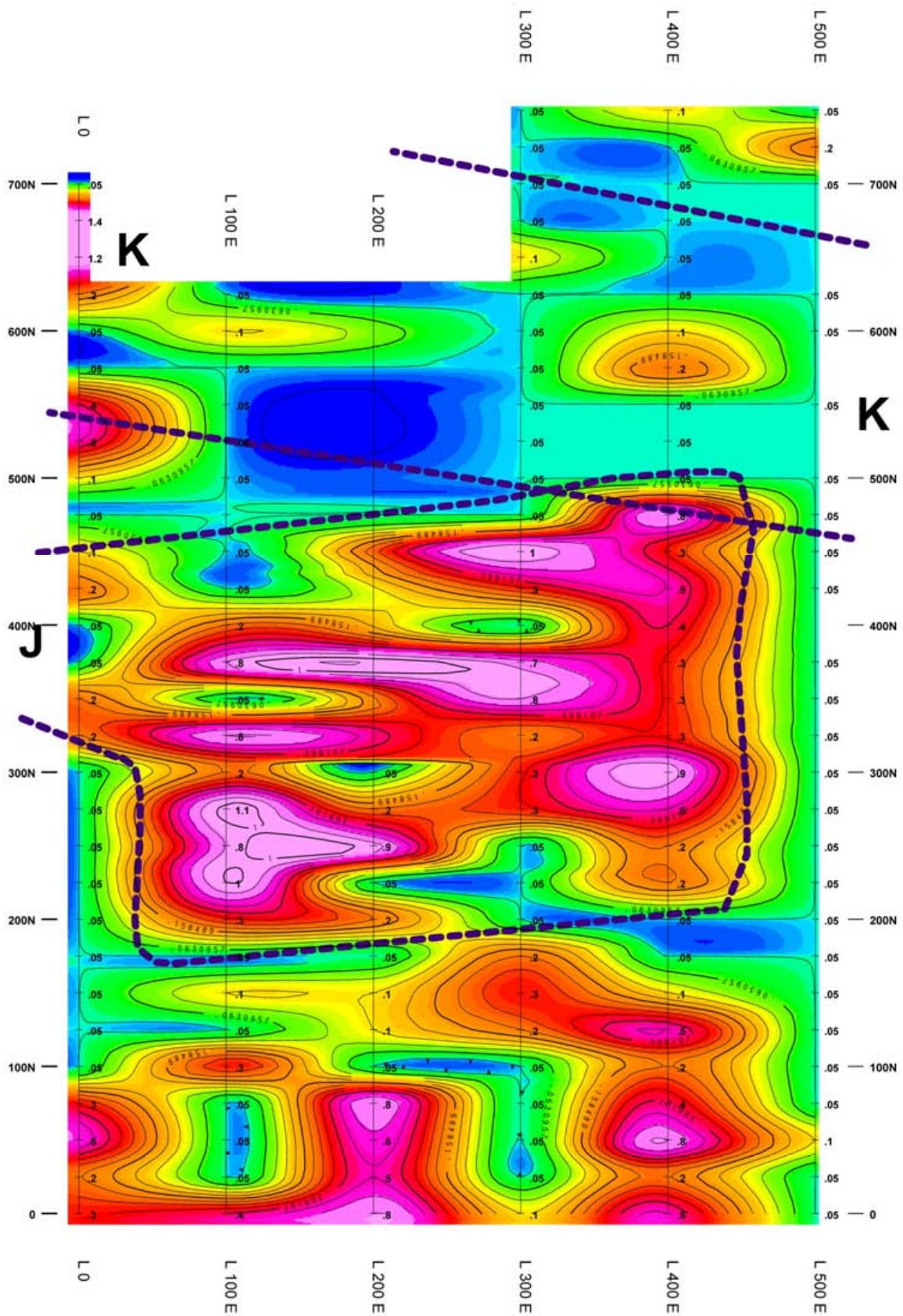


GEOTRONICS CONSULTING INC.				
TREADWELL RESOURCES LTD.				
TREADWELL-ALLIES PROPERTY				
PASS LAKE GRID				
Cannell Creek, Tranquille Plateau Area				
Kamloops Mining Division, B.C				
<b>MMI SOIL GEOCHEMISTRY SURVEY</b>				
<b>PLAN MAP</b>				
<b>COPPER</b>				
Drawn by: DGM	Job No. 07-15	NTS 92/15	Date Feb 08	Fig No. GC-14





Declination 18



### LEGEND

- B** Ip and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP anomaly
- Self potential anomaly

Date Samples Picked Up:  
June - July 2007

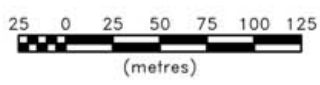
Soils Tested by:  
SGS Laboratories  
Toronto, Ontario

Contour Interval:  
log base 10

Note:  
Values are in  
parts per billion (ppb)



Data Reduced by:  
**GEOTRONICS CONSULTING INC**  
**SURREY BC.**

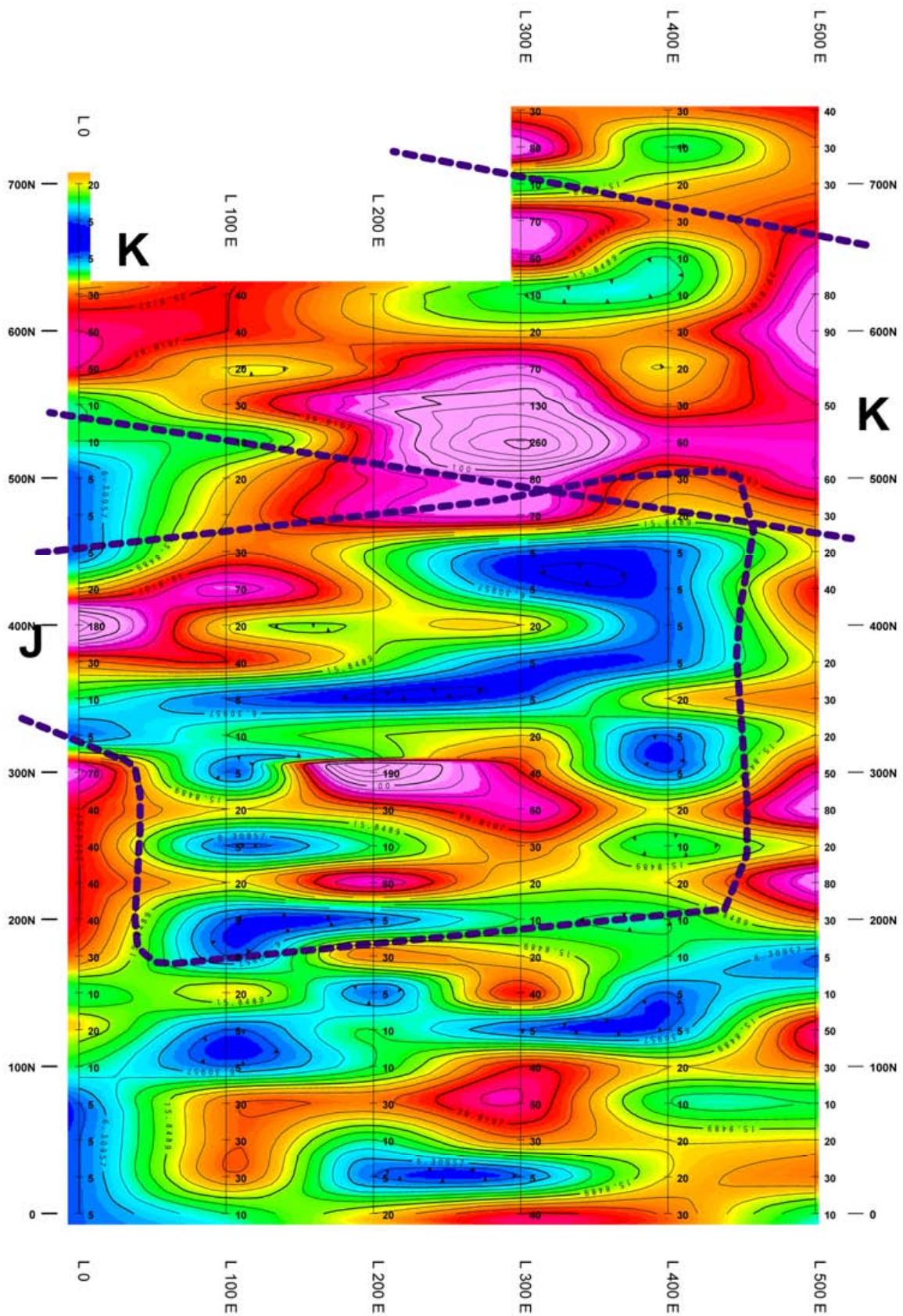


GEOTRONICS CONSULTING INC.				
<b>TREADWELL RESOURCES LTD.</b>				
<b>TREADWELL-ALLIES PROPERTY</b>				
<b>PASS LAKE GRID</b>				
Cannell Creek, Tranquille Plateau Area Kamloops Mining Division, B.C				
<b>MMI SOIL GEOCHEMISTRY SURVEY</b>				
<b>PLAN MAP</b>				
<b>GOLD</b>				
Drawn by: DGM	Job No. 07-15	NTS 921/15	Date Feb 08	Fig No. GC-4





Declination 18



### LEGEND

- B** Ip and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP anomaly
- SP Self potential anomaly

Date Samples Picked Up:  
June - July 2007

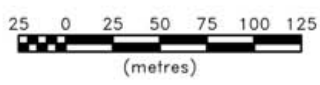
Soils Tested by:  
SGS Laboratories  
Toronto, Ontario

Contour Interval:  
log base 10

Note:  
Values are in  
parts per billion (ppb)



Data Reduced by:  
**GEOTRONICS CONSULTING INC**  
**SURREY BC.**

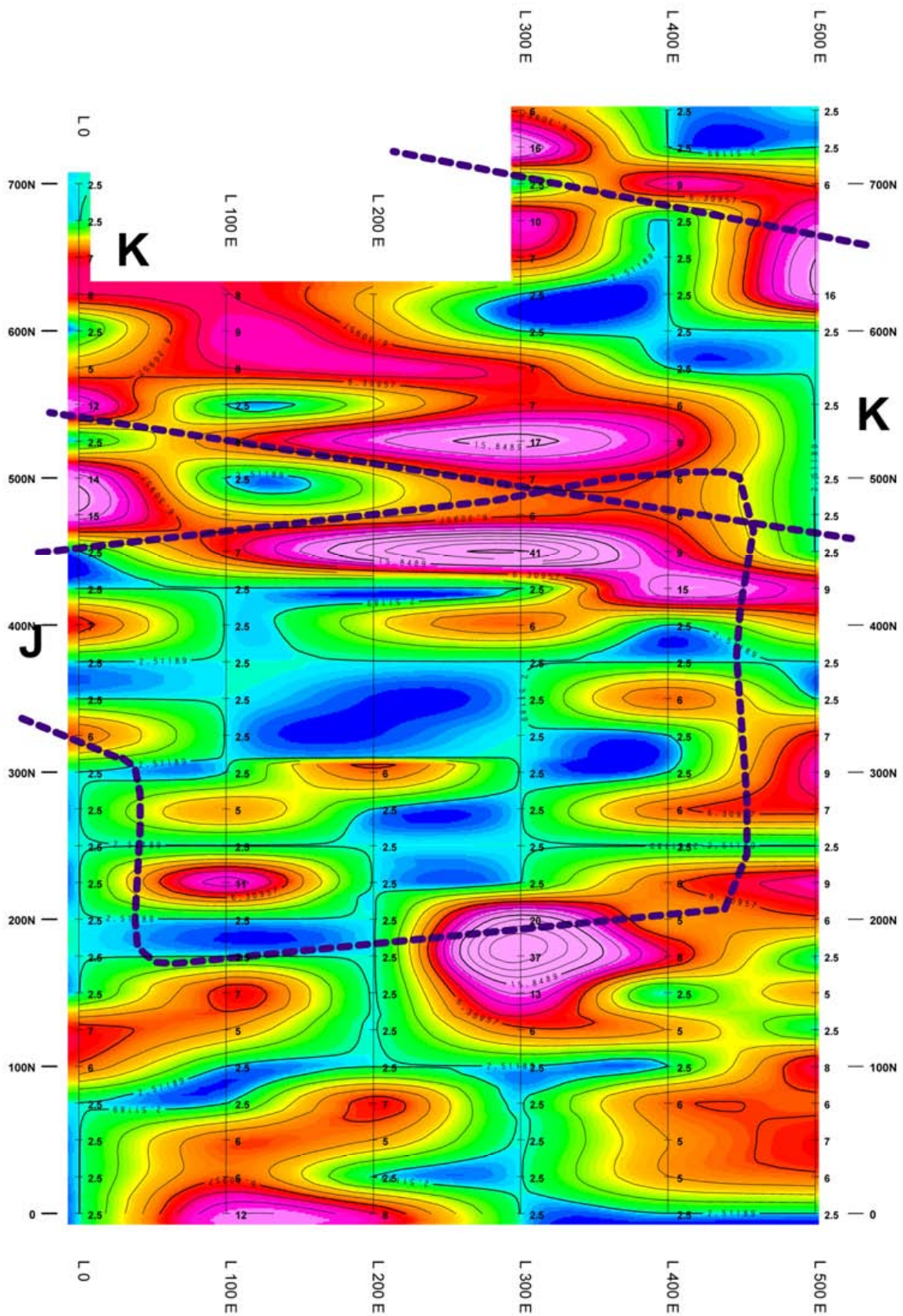


GEOTRONICS CONSULTING INC.				
TREADWELL RESOURCES LTD.				
TREADWELL-ALLIES PROPERTY				
PASS LAKE GRID				
Cannell Creek, Tranquille Plateau Area				
Kamloops Mining Division, B.C				
<b>MMI SOIL GEOCHEMISTRY SURVEY</b>				
<b>PLAN MAP</b>				
<b>LEAD</b>				
Drawn by: DGM	Job No. 07-15	NTS 921/15	Date Feb 08	Fig No. GC-15





Declination 18



**LEGEND**

- B** Ip and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP anomaly
- SP Self potential anomaly

Date Samples Picked Up:  
June - July 2007

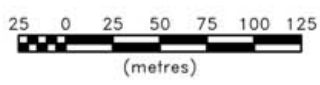
Soils Tested by:  
SGS Laboratories  
Toronto, Ontario

Contour Interval:  
log base 10

Note:  
Values are in  
parts per billion (ppb)



Data Reduced by:  
**GEOTRONICS CONSULTING INC**  
**SURREY BC.**

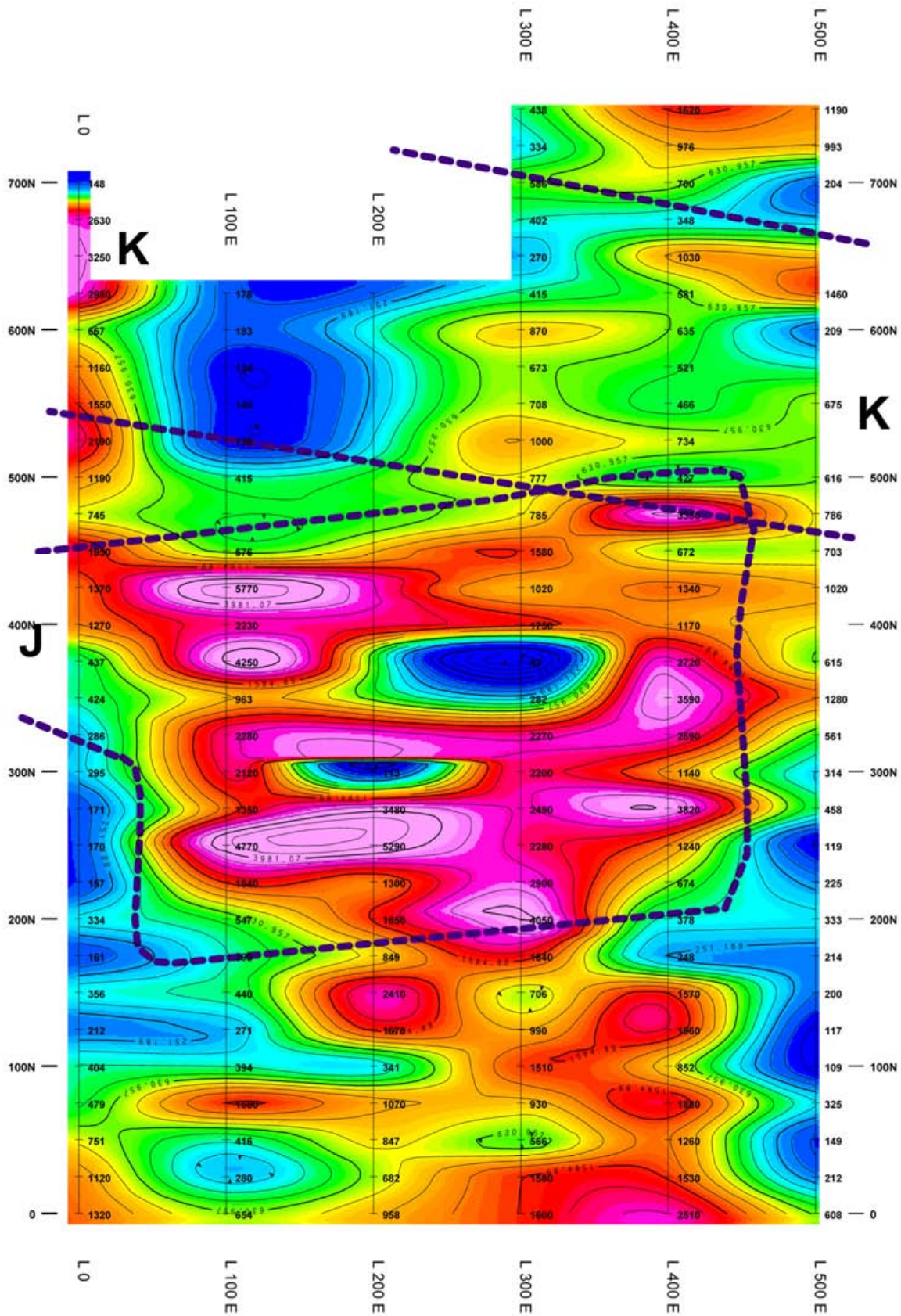


GEOTRONICS CONSULTING INC.				
<b>TREADWELL RESOURCES LTD.</b>				
<b>TREADWELL-ALLIES PROPERTY</b>				
<b>PASS LAKE GRID</b>				
Cannell Creek, Tranquille Plateau Area Kamloops Mining Division, B.C				
<b>MMI SOIL GEOCHEMISTRY SURVEY</b>				
<b>PLAN MAP</b>				
<b>MOLYBDENUM</b>				
Drawn by: DGM	Job No. 07-15	NTS 921/15	Date Feb 08	Fig No. GC-16





Declination 18



### LEGEND

- B** Ip and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP anomaly
- SP Self potential anomaly

Date Samples Picked Up:  
June - July 2007

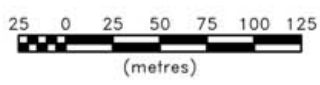
Soils Tested by:  
SGS Laboratories  
Toronto, Ontario

Contour Interval:  
log base 10

Note:  
Values are in  
parts per billion (ppb)



Data Reduced by:  
**GEOTRONICS CONSULTING INC**  
**SURREY BC.**

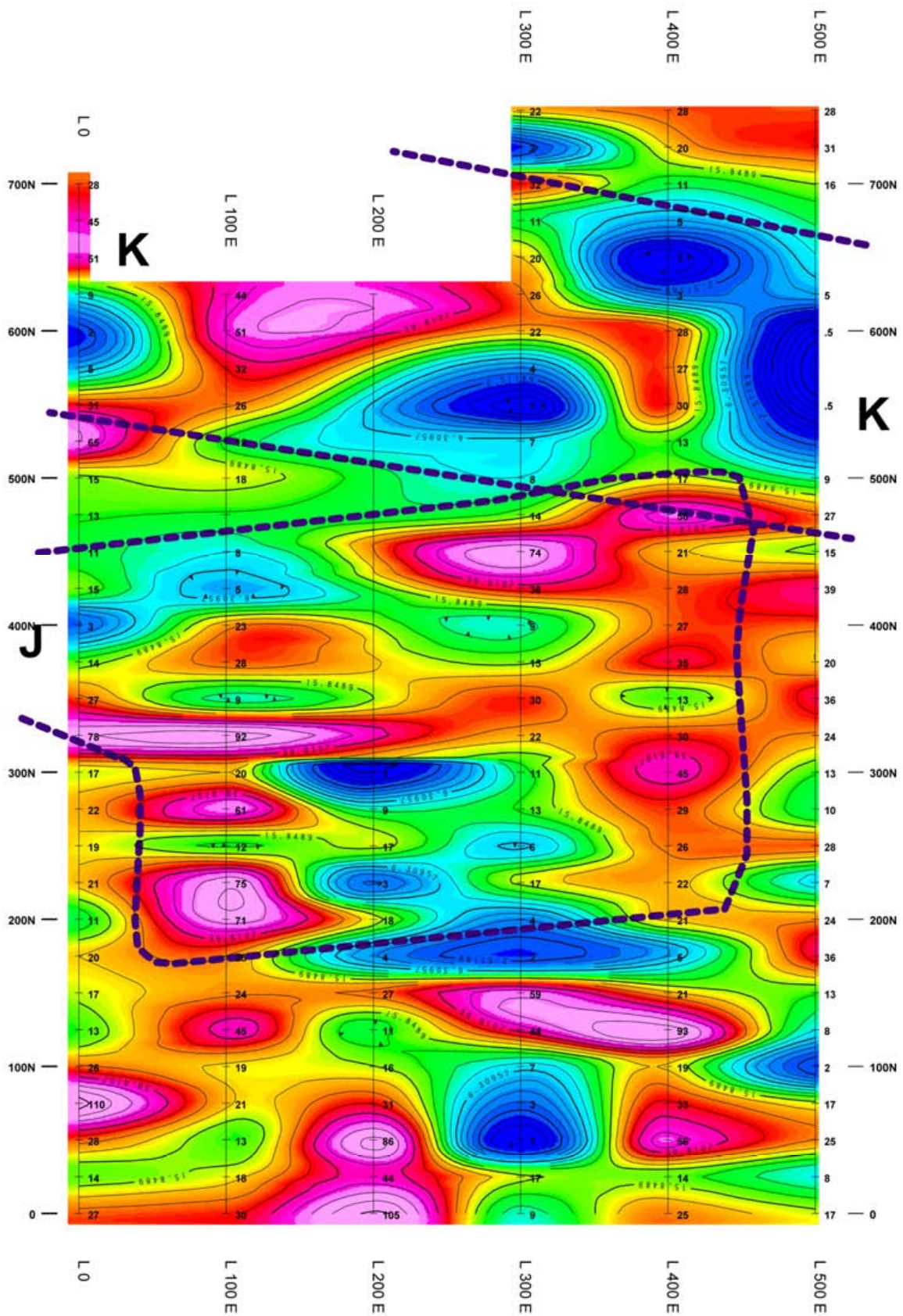


GEOTRONICS CONSULTING INC.				
<b>TREADWELL RESOURCES LTD.</b>				
<b>TREADWELL-ALLIES PROPERTY</b>				
<b>PASS LAKE GRID</b>				
Cannell Creek, Tranquille Plateau Area Kamloops Mining Division, B.C.				
<b>MMI SOIL GEOCHEMISTRY SURVEY</b>				
<b>PLAN MAP</b>				
<b>NICKEL</b>				
Drawn by: DGM	Job No. 07-15	NTS 921/15	Date Feb 08	Fig No. GC-17





Declination 18



### LEGEND

- B** Ip and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP anomaly
- SP Self potential anomaly

Date Samples Picked Up:  
June - July 2007

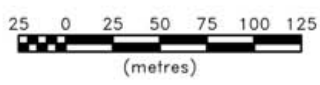
Soils Tested by:  
SGS Laboratories  
Toronto, Ontario

Contour Interval:  
log base 10

Note:  
Values are in  
parts per billion (ppb)



Data Reduced by:  
**GEOTRONICS CONSULTING INC**  
**SURREY BC.**

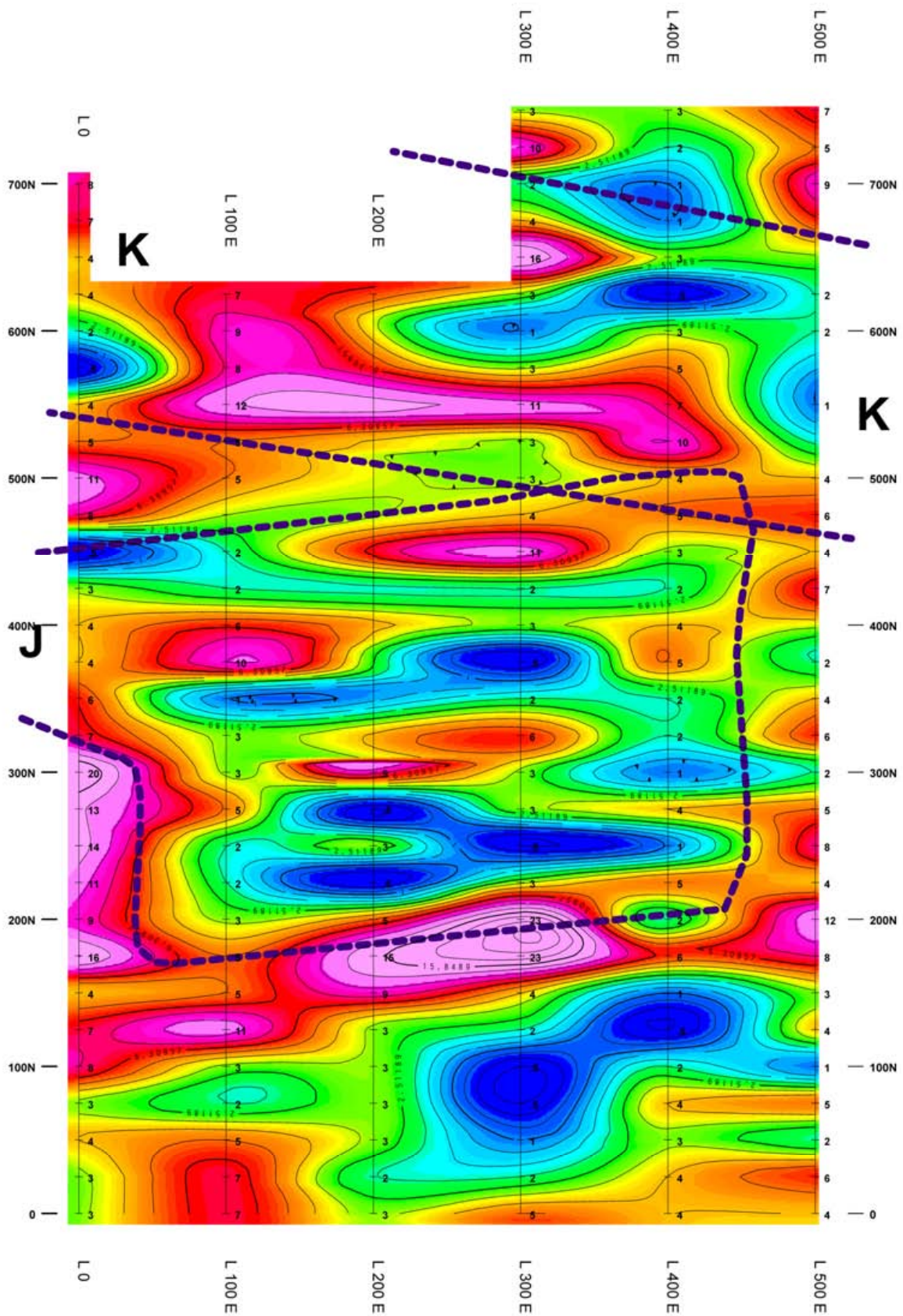


GEOTRONICS CONSULTING INC.				
<b>TREADWELL RESOURCES LTD.</b>				
<b>TREADWELL-ALLIES PROPERTY</b>				
<b>PASS LAKE GRID</b>				
Cannell Creek, Tranquille Plateau Area Kamloops Mining Division, B.C				
<b>MMI SOIL GEOCHEMISTRY SURVEY</b>				
<b>PLAN MAP</b>				
<b>SILVER</b>				
Drawn by: DGM	Job No. 07-15	NTS 92I/15	Date Feb 08	Fig No. GC-18





Declination 18



### LEGEND

- B** Ip and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP anomaly
- SP Self potential anomaly

Date Samples Picked Up:  
June - July 2007

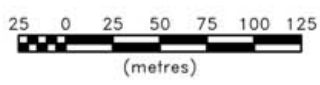
Soils Tested by:  
SGS Laboratories  
Toronto, Ontario

Contour Interval:  
log base 10

Note:  
Values are in  
parts per billion (ppb)



Data Reduced by:  
**GEOTRONICS CONSULTING INC**  
**SURREY BC.**

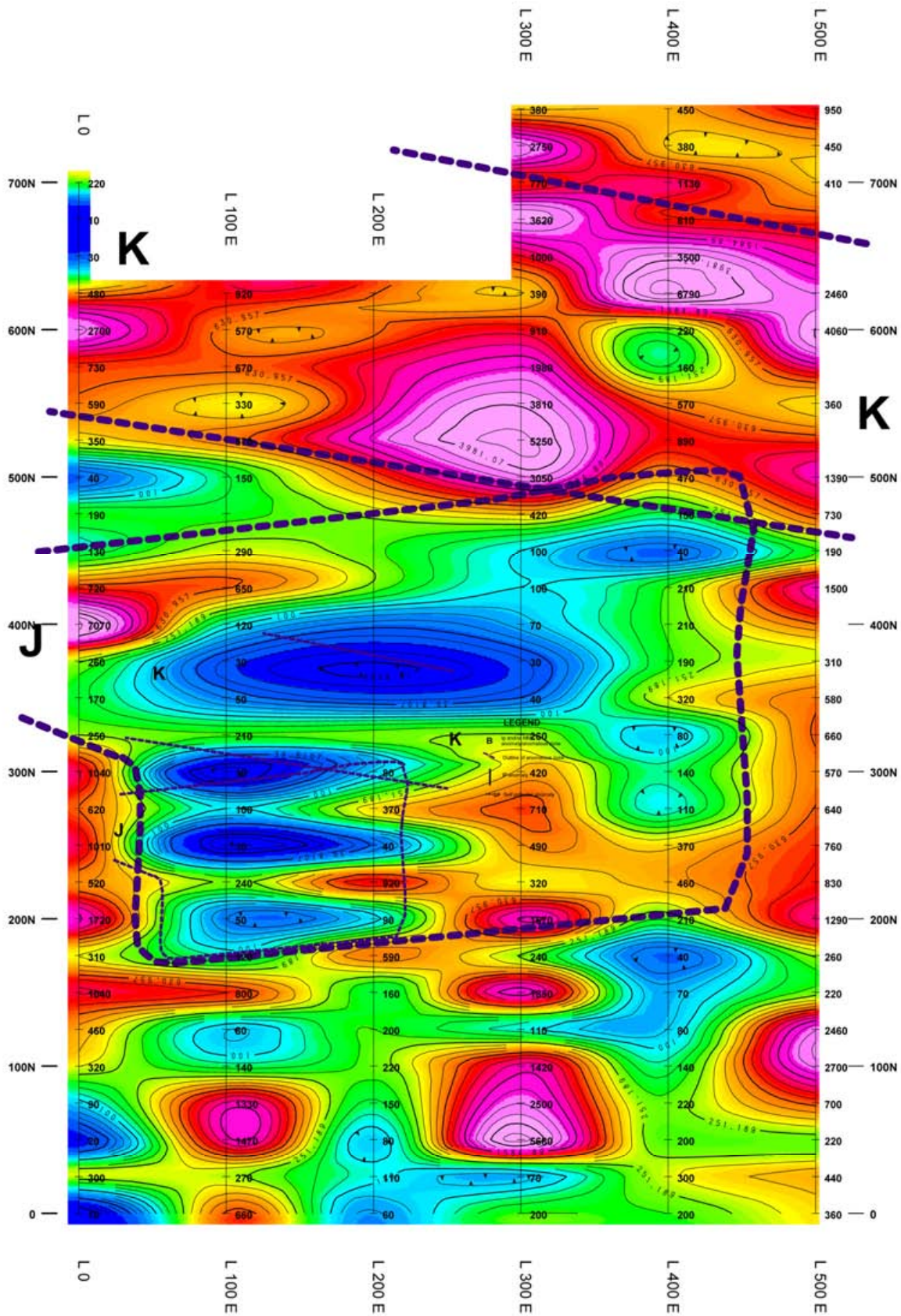


GEOTRONICS CONSULTING INC.				
<b>TREADWELL RESOURCES LTD.</b>				
<b>TREADWELL-ALLIES PROPERTY</b>				
<b>PASS LAKE GRID</b>				
Cannell Creek, Tranquille Plateau Area Kamloops Mining Division, B.C				
<b>MMI SOIL GEOCHEMISTRY SURVEY</b>				
<b>PLAN MAP</b>				
<b>URANIUM</b>				
Drawn by: DGM	Job No. 07-15	NTS 921/15	Date Feb 08	Fig No. GC-19





Declination 18



### LEGEND

- B** Ip and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP anomaly
- SP Self potential anomaly

Date Samples Picked Up:  
June - July 2007

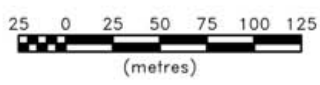
Soils Tested by:  
SGS Laboratories  
Toronto, Ontario

Contour Interval:  
log base 10

Note:  
Values are in  
parts per billion (ppb)

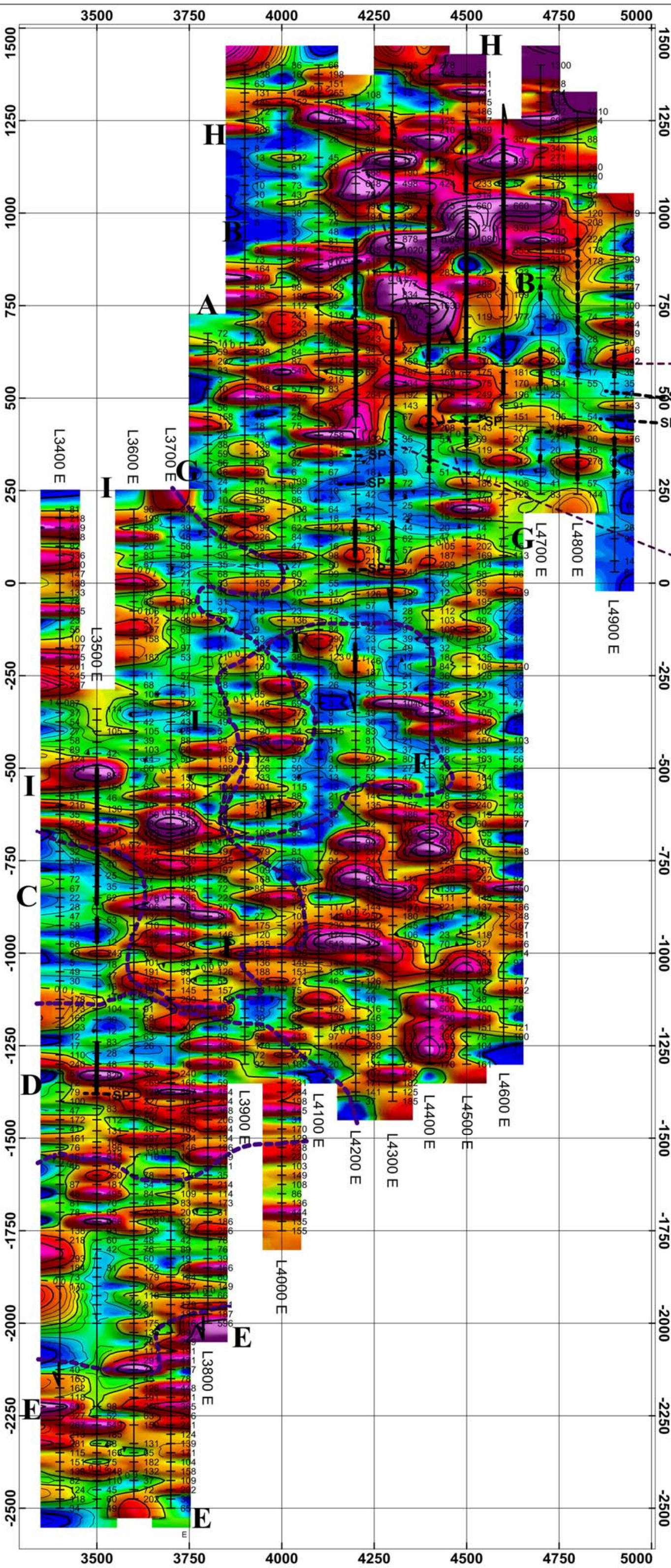


Data Reduced by:  
**GEOTRONICS CONSULTING INC**  
**SURREY BC.**



GEOTRONICS CONSULTING INC.				
TREADWELL RESOURCES LTD.				
TREADWELL-ALLIES PROPERTY				
PASS LAKE GRID				
Cannell Creek, Tranquille Plateau Area				
Kamloops Mining Division, B.C				
<b>MMI SOIL GEOCHEMISTRY SURVEY</b>				
<b>PLAN MAP</b>				
<b>ZINC</b>				
Drawn by: DGM	Job No. 07-15	NTS 921/15	Date Feb 08	Fig No. GC-20





Inclination 18

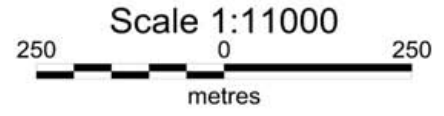
**LEGEND**

- B** IP and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP inversion anomaly - weaker, stronger
- Self potential anomaly
- Magnetic lineation suggestive of geological structure.



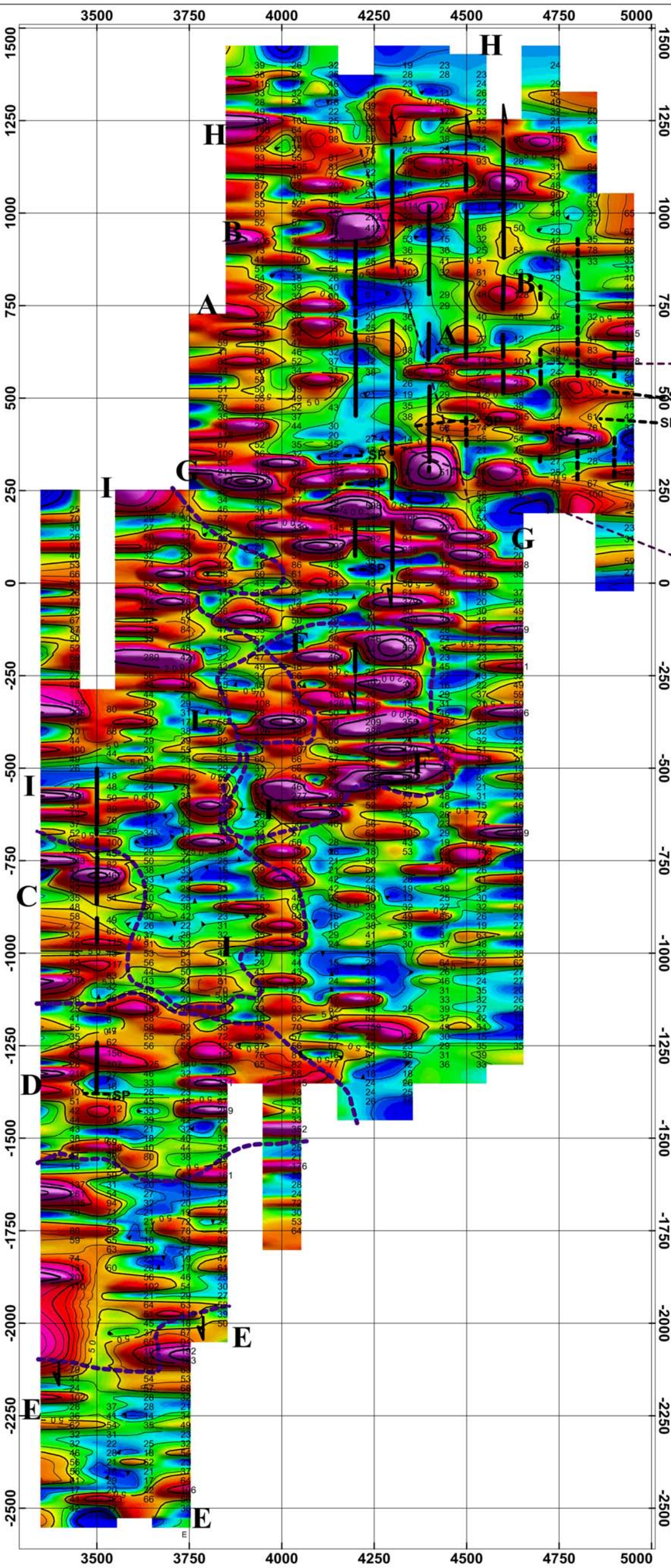
Soils Tested By:  
SGS Laboratories, Toronto, Ontario

Note:  
Values are in parts per billion (ppb)



TREADWELL RESOURCES LTD.				
TREADWELL ALLIES PROPERTY SYDNEY LAKE GRID CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
MMI SOIL GEOCHEMISTRY SURVEY CONTOUR PLAN <b>CERIUM (ppb)</b>				
DRAWN BY: DGM	JOB NO.: 09-05	NTS: 92/15E	DATE: July 09	FIG. NO.: GC-3

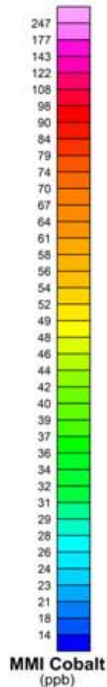




Inclination 18

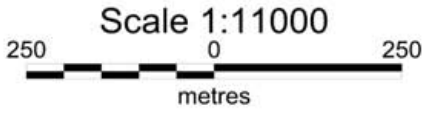
**LEGEND**

- B** IP and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP inversion anomaly - weaker, stronger
- Self potential anomaly
- Magnetic lineation suggestive of geological structure.



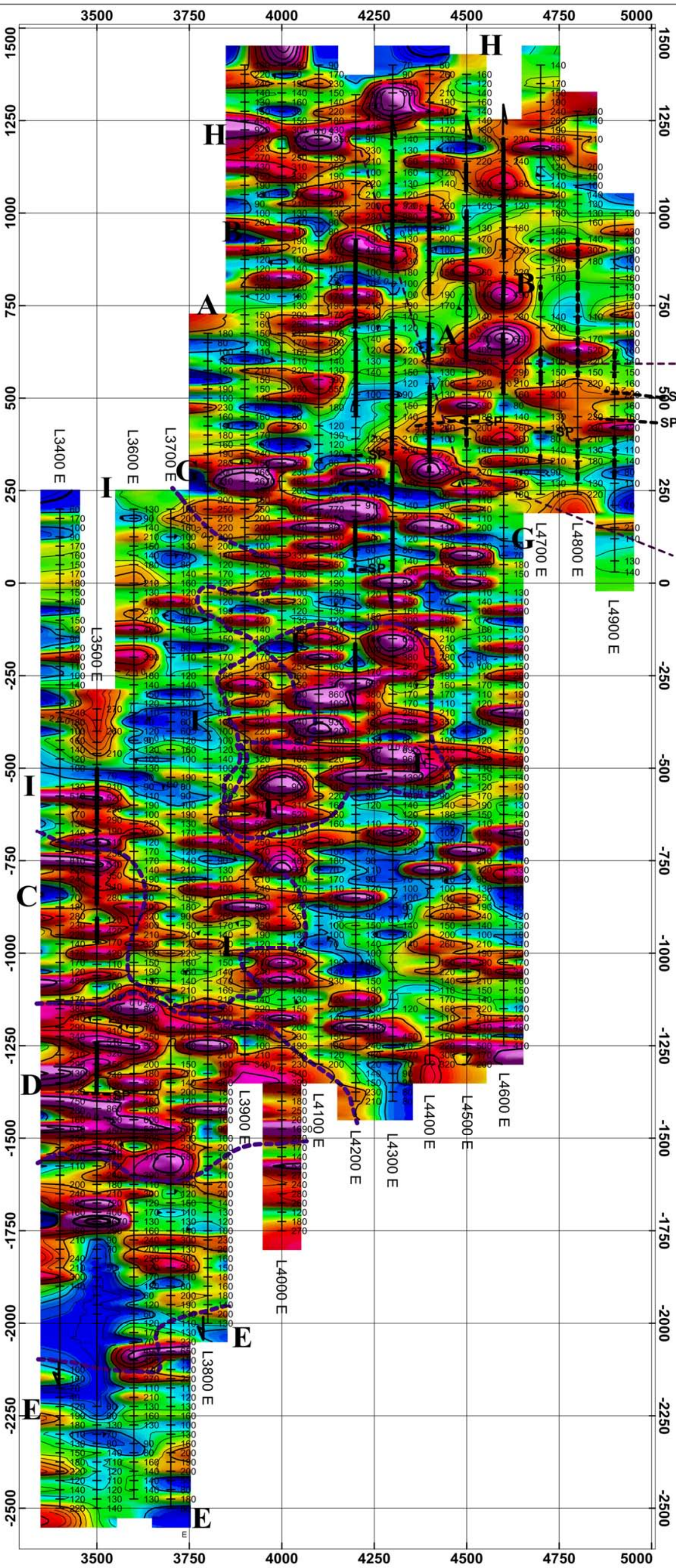
Soils Tested By:  
SGS Laboratories, Toronto, Ontario

Note:  
Values are in parts per billion (ppb)



TREADWELL RESOURCES LTD.				
TREADWELL ALLIES PROPERTY				
SYDNEY LAKE GRID				
CANNEL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
MMI SOIL GEOCHEMISTRY SURVEY				
CONTOUR PLAN				
<b>COBALT (ppb)</b>				
DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG. NO.:
DGM	09-05	92I/15E	July 09	GC-4





Inclination 18

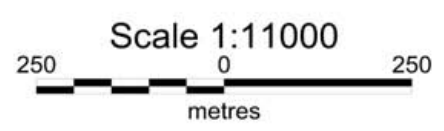
**LEGEND**

- B** IP and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP inversion anomaly - weaker, stronger
- Self potential anomaly
- Magnetic lineation suggestive of geological structure.



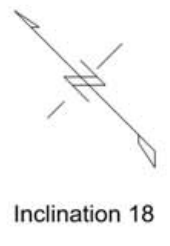
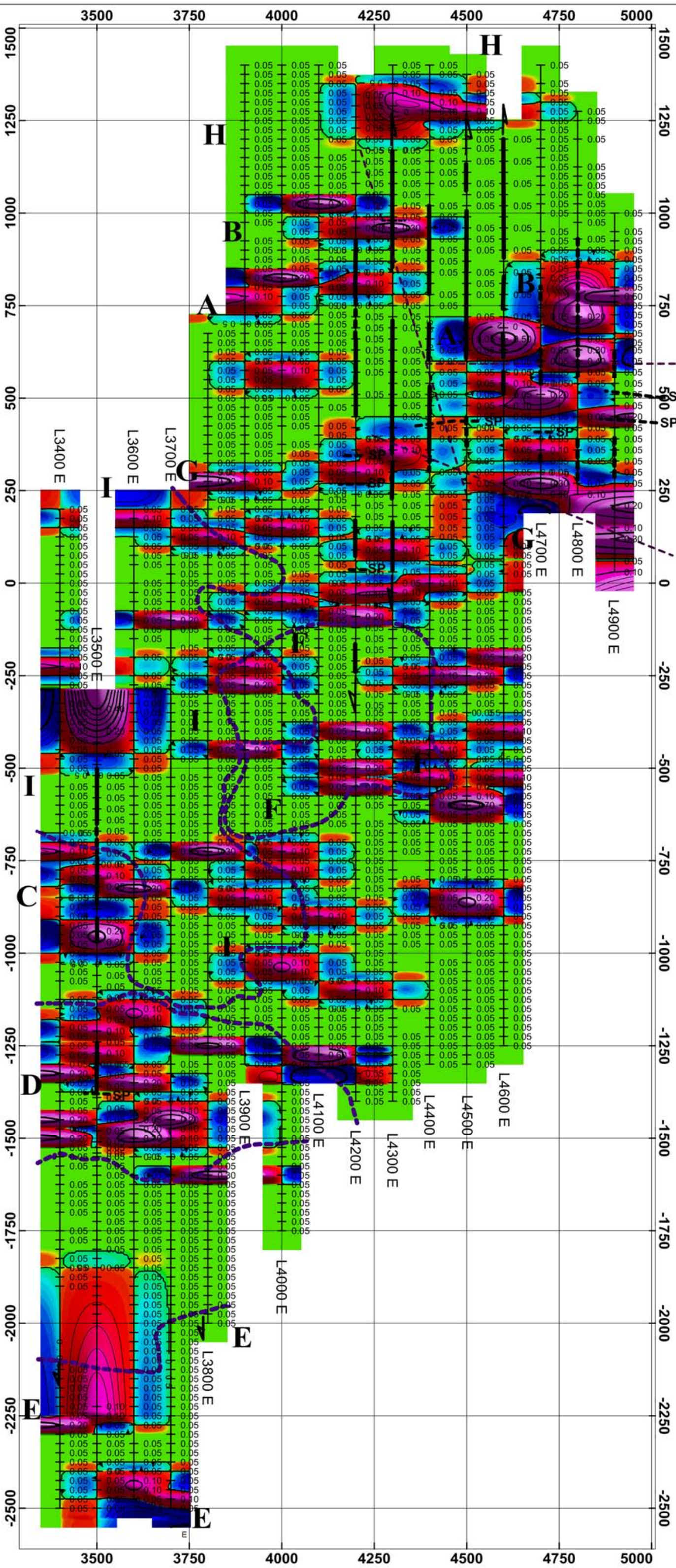
Soils Tested By:  
SGS Laboratories, Toronto, Ontario

Note:  
Values are in parts per billion (ppb)



TREADWELL RESOURCES LTD.				
TREADWELL ALLIES PROPERTY SYDNEY LAKE GRID CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
MMI SOIL GEOCHEMISTRY SURVEY CONTOUR PLAN <b>COPPER (ppb)</b>				
DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG. NO.:
DGM	09-05	92/15E	July 09	GC-5

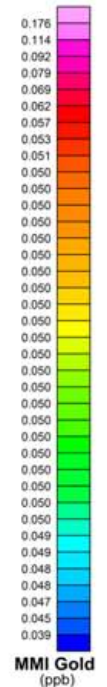




Inclination 18

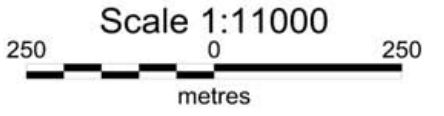
**LEGEND**

- B** IP and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP inversion anomaly - weaker, stronger
- Self potential anomaly
- Magnetic lineation suggestive of geological structure.



Soils Tested By:  
SGS Laboratories, Toronto, Ontario

Note:  
Values are in parts per billion (ppb)







TREADWELL RESOURCES LTD.				
TREADWELL ALLIES PROPERTY SYDNEY LAKE GRID CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
MMI SOIL GEOCHEMISTRY SURVEY CONTOUR PLAN <b>GOLD (ppb)</b>				
DRAWN BY: DGM	JOB NO.:	NTS:	DATE:	FIG. NO.:
	09-05	92I/15E	July 09	GC-2

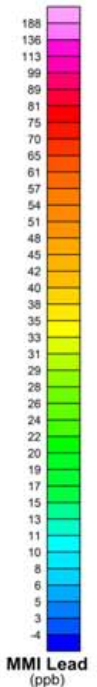




Inclination 18

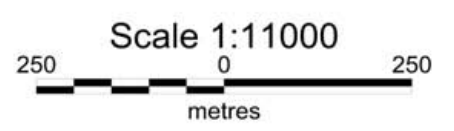
### LEGEND

- B** IP and/or MMI anomaly/anomalous zone
-  Outline of anomalous zone
-  IP inversion anomaly - weaker, stronger
-  Self potential anomaly
-  Magnetic lineation suggestive of geological structure.

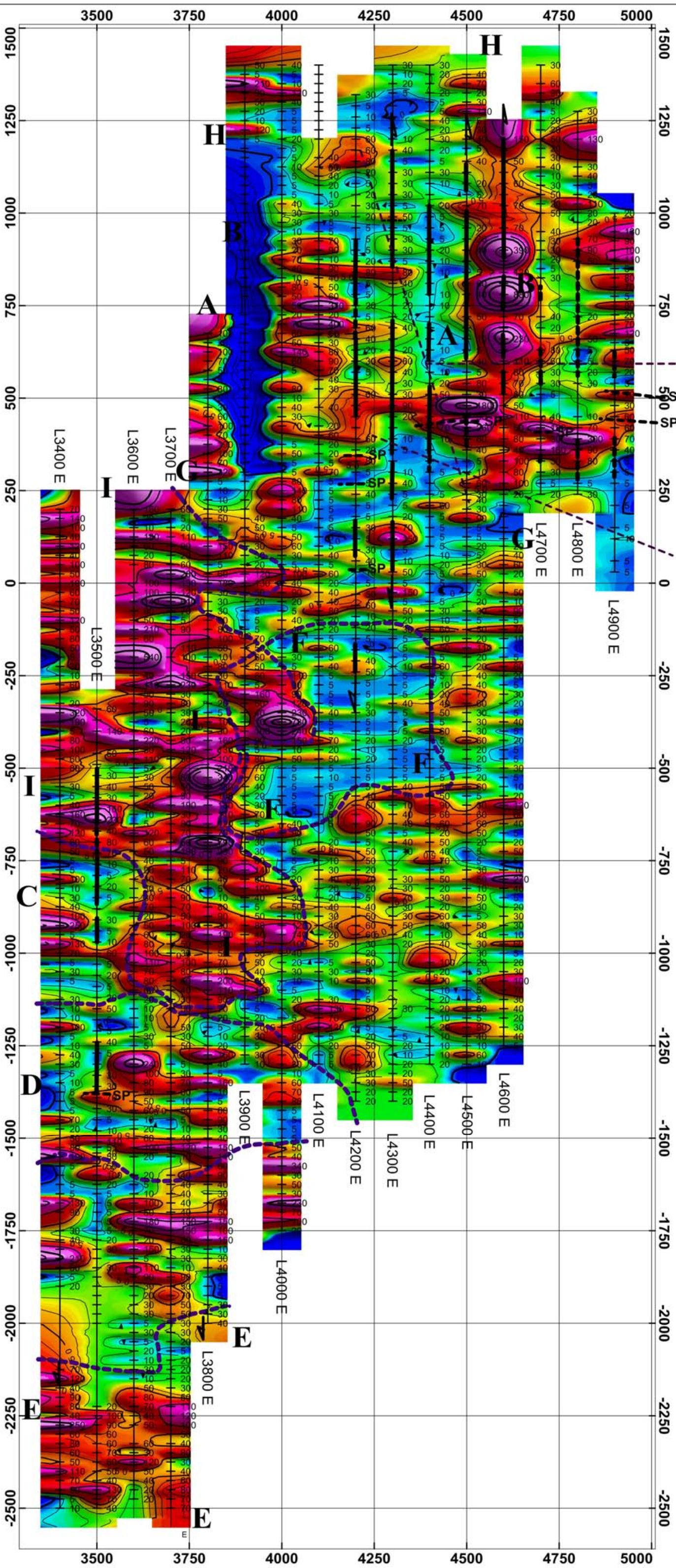


Soils Tested By:  
SGS Laboratories, Toronto, Ontario

Note:  
Values are in parts per billion (ppb)



TREADWELL RESOURCES LTD.				
TREADWELL ALLIES PROPERTY SYDNEY LAKE GRID CANNEL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
MMI SOIL GEOCHEMISTRY SURVEY CONTOUR PLAN <b>LEAD (ppb)</b>				
DRAWN BY: DGM	JOB NO.: 09-05	NTS: 92I/15E	DATE: July 09	FIG. NO.: GC-8







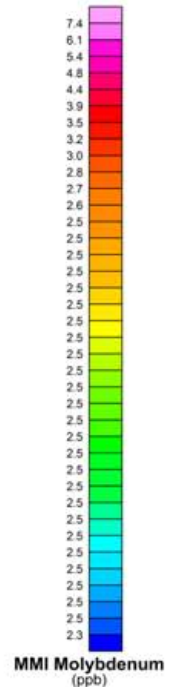
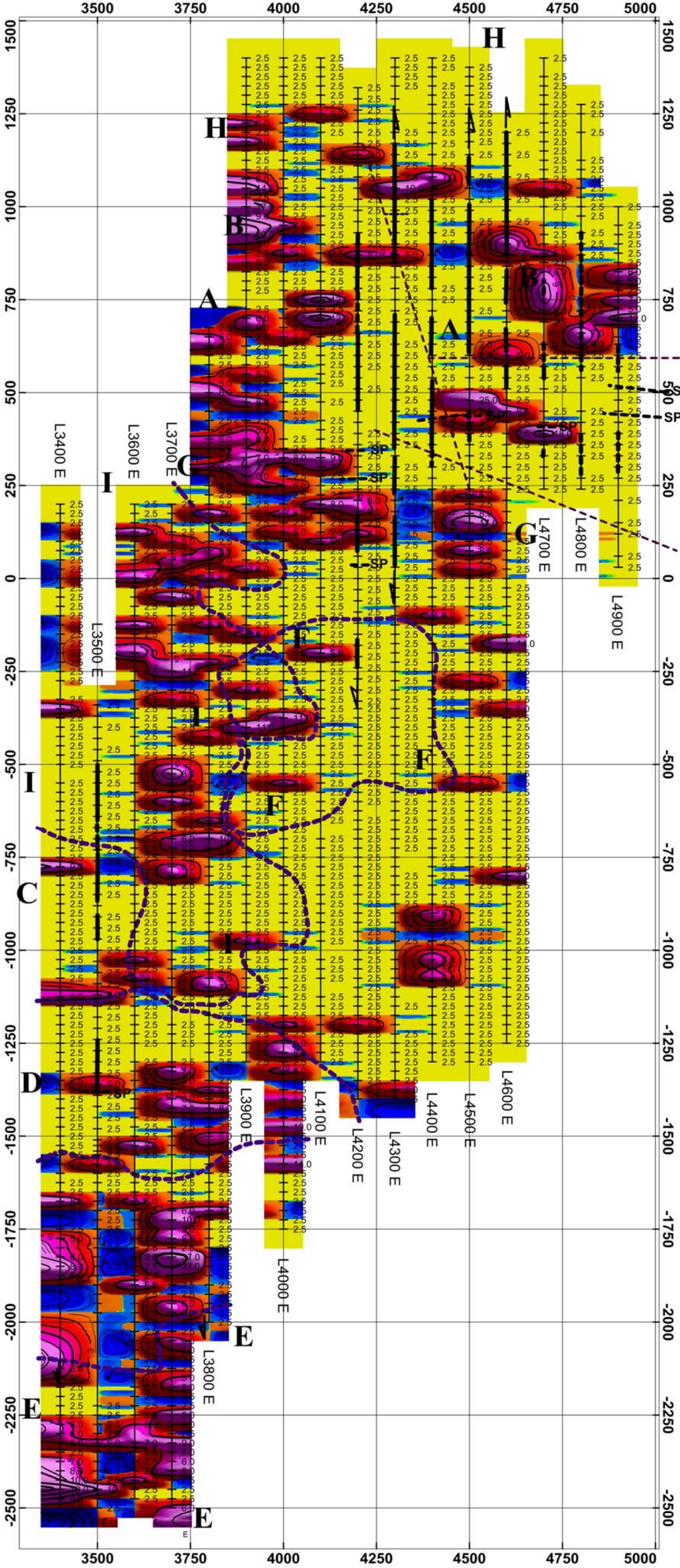




Inclination 18

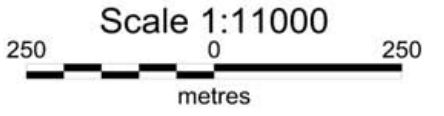
### LEGEND

- B** IP and/or MMI anomaly/anomalous zone
-  Outline of anomalous zone
-  IP inversion anomaly - weaker, stronger
-  Self potential anomaly
-  Magnetic lineation suggestive of geological structure.



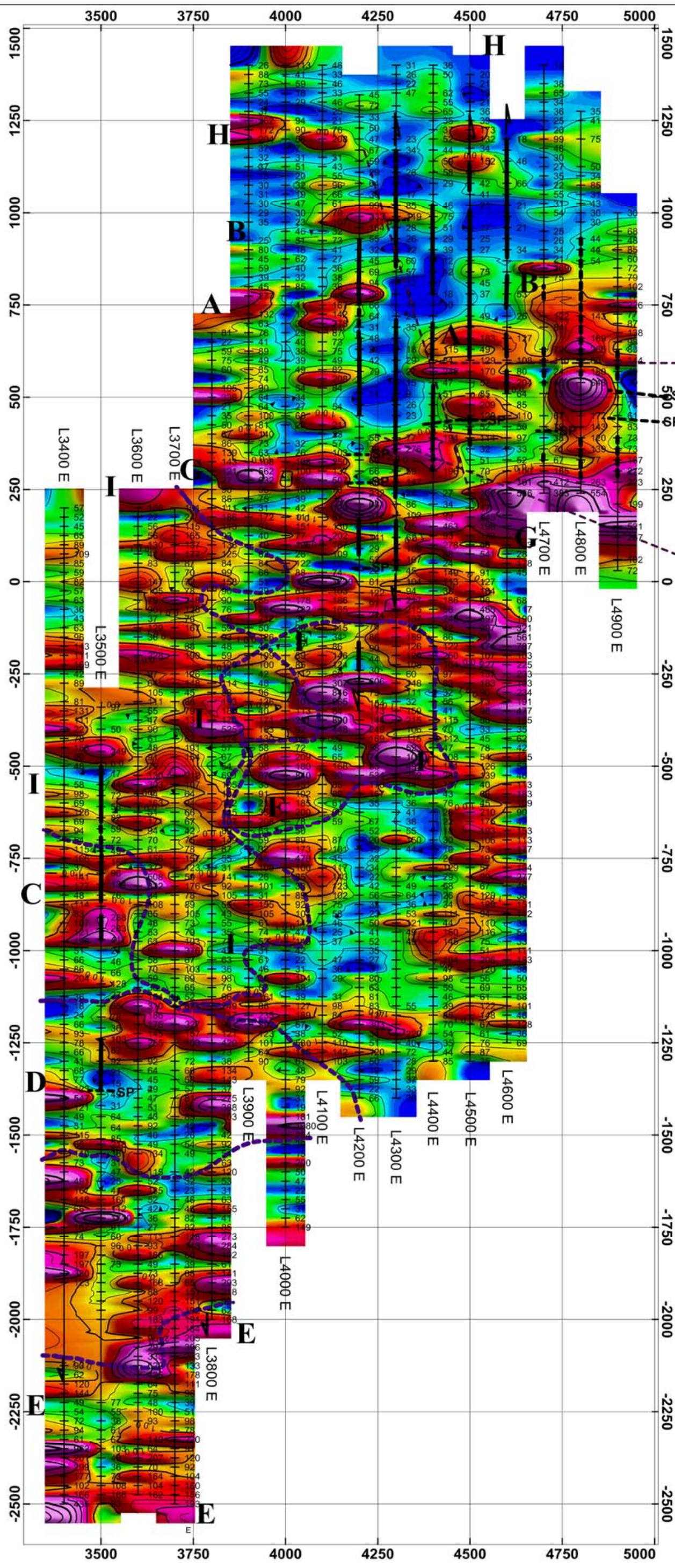
Soils Tested By:  
SGS Laboratories, Toronto, Ontario

Note:  
Values are in parts per billion (ppb)



TREADWELL RESOURCES LTD.				
TREADWELL ALLIES PROPERTY SYDNEY LAKE GRID CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
MMI SOIL GEOCHEMISTRY SURVEY CONTOUR PLAN <b>MOLYBDENUM (ppb)</b>				
DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG. NO.:
DGM	09-05	92I/15E	July 09	GC-6

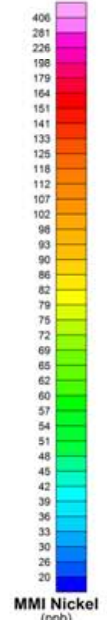




Inclination 18

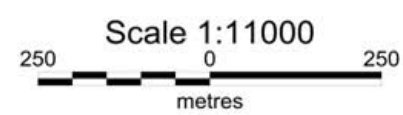
**LEGEND**

- B** IP and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP inversion anomaly - weaker, stronger
- Self potential anomaly
- Magnetic lineation suggestive of geological structure.



Soils Tested By:  
SGS Laboratories, Toronto, Ontario

Note:  
Values are in parts per billion (ppb)







TREADWELL RESOURCES LTD.				
TREADWELL ALLIES PROPERTY				
SYDNEY LAKE GRID				
CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
MMI SOIL GEOCHEMISTRY SURVEY				
CONTOUR PLAN				
<b>NICKEL (ppb)</b>				
DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG. NO.:
DGM	09-05	92/15E	July 09	GC-7

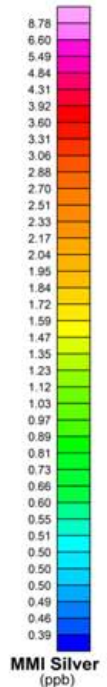




Inclination 18

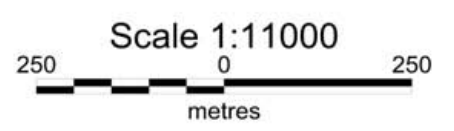
### LEGEND

- B** IP and/or MMI anomaly/anomalous zone
-  Outline of anomalous zone
-  IP inversion anomaly - weaker, stronger
-  Self potential anomaly
-  Magnetic lineation suggestive of geological structure.

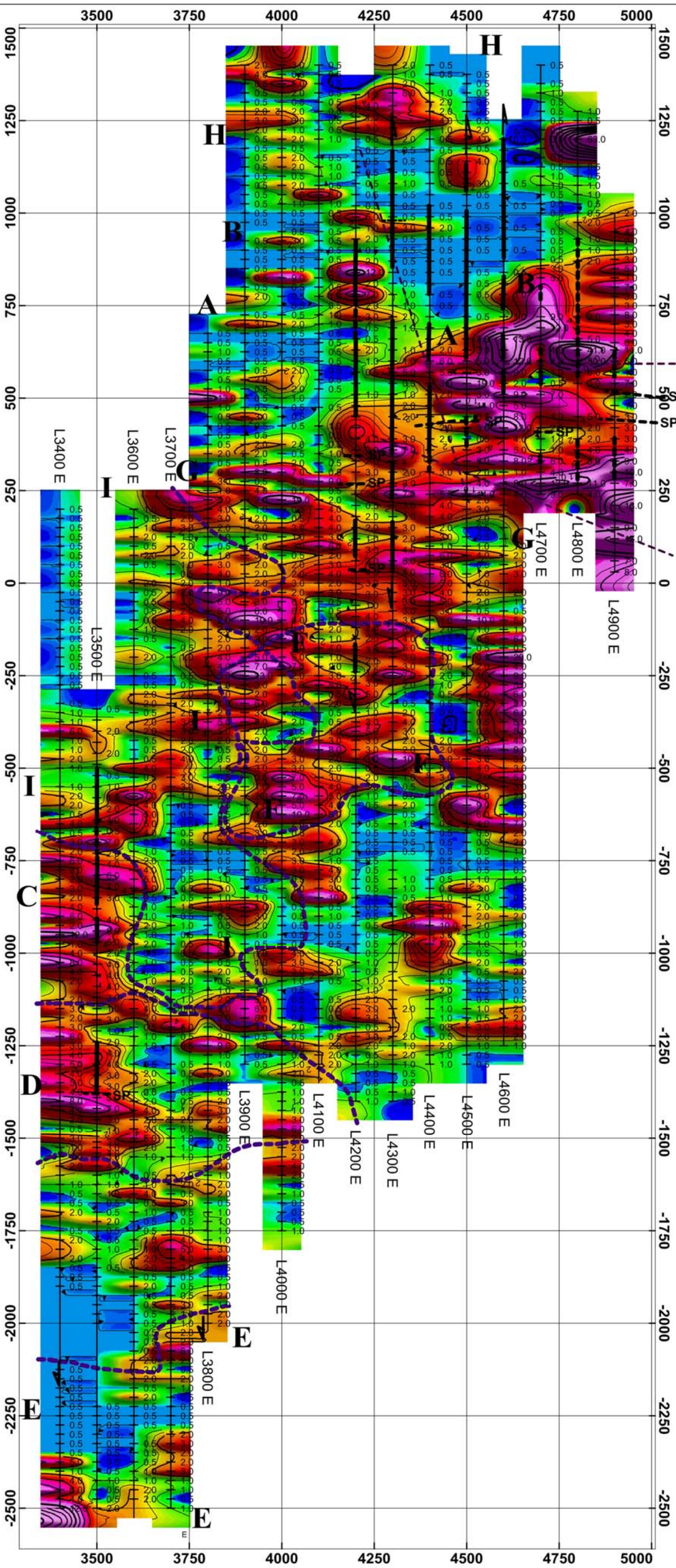


Soils Tested By:  
SGS Laboratories, Toronto, Ontario

Note:  
Values are in parts per billion (ppb)



TREADWELL RESOURCES LTD.				
TREADWELL ALLIES PROPERTY SYDNEY LAKE GRID CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
MMI SOIL GEOCHEMISTRY SURVEY CONTOUR PLAN <b>SILVER (ppb)</b>				
DRAWN BY: DGM	JOB NO.: 09-05	NTS: 92I/15E	DATE: July 09	FIG. NO.: GC-1







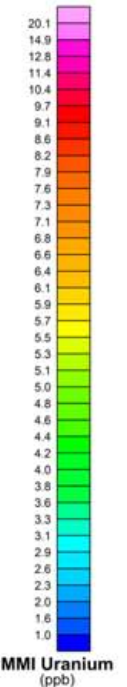




Inclination 18

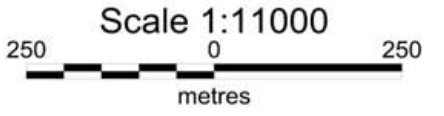
### LEGEND

- B** IP and/or MMI anomaly/anomalous zone
-  Outline of anomalous zone
-  IP inversion anomaly - weaker, stronger
-  Self potential anomaly
-  Magnetic lineation suggestive of geological structure.

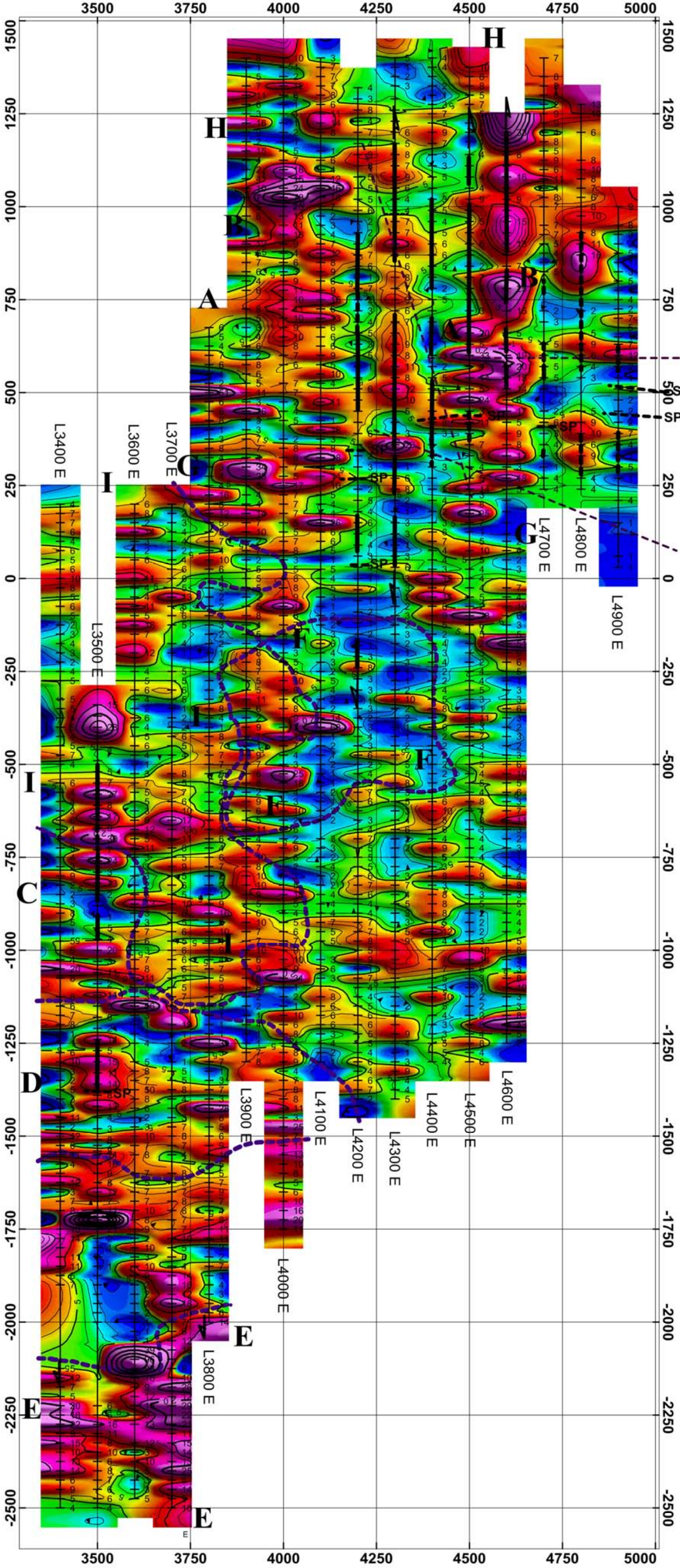


Soils Tested By:  
SGS Laboratories, Toronto, Ontario

Note:  
Values are in parts per billion (ppb)



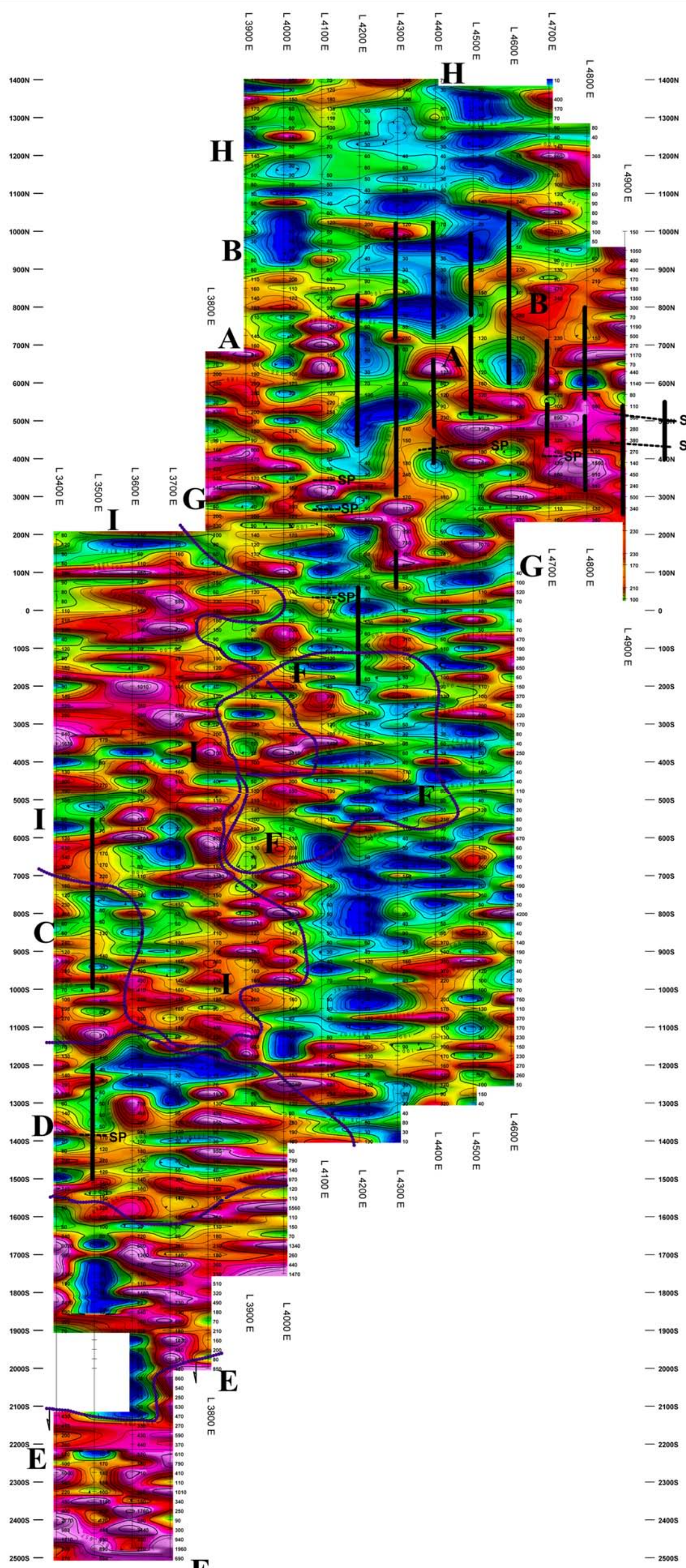
TREADWELL RESOURCES LTD.				
TREADWELL ALLIES PROPERTY SYDNEY LAKE GRID CANNEL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
MMI SOIL GEOCHEMISTRY SURVEY CONTOUR PLAN <b>URANIUM (ppb)</b>				
DRAWN BY: DGM	JOB NO.: 09-05	NTS: 92I/15E	DATE: July 09	FIG. NO.: GC-9







Declination 18



**LEGEND**

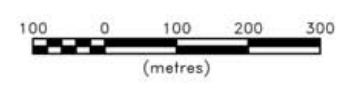
- B** IP and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP anomaly
- SP Self potential anomaly

Date Samples Picked Up:  
June - July 2007

Soils Tested by:  
SGS Laboratories  
Toronto, Ontario

Contour Interval:  
log base 10

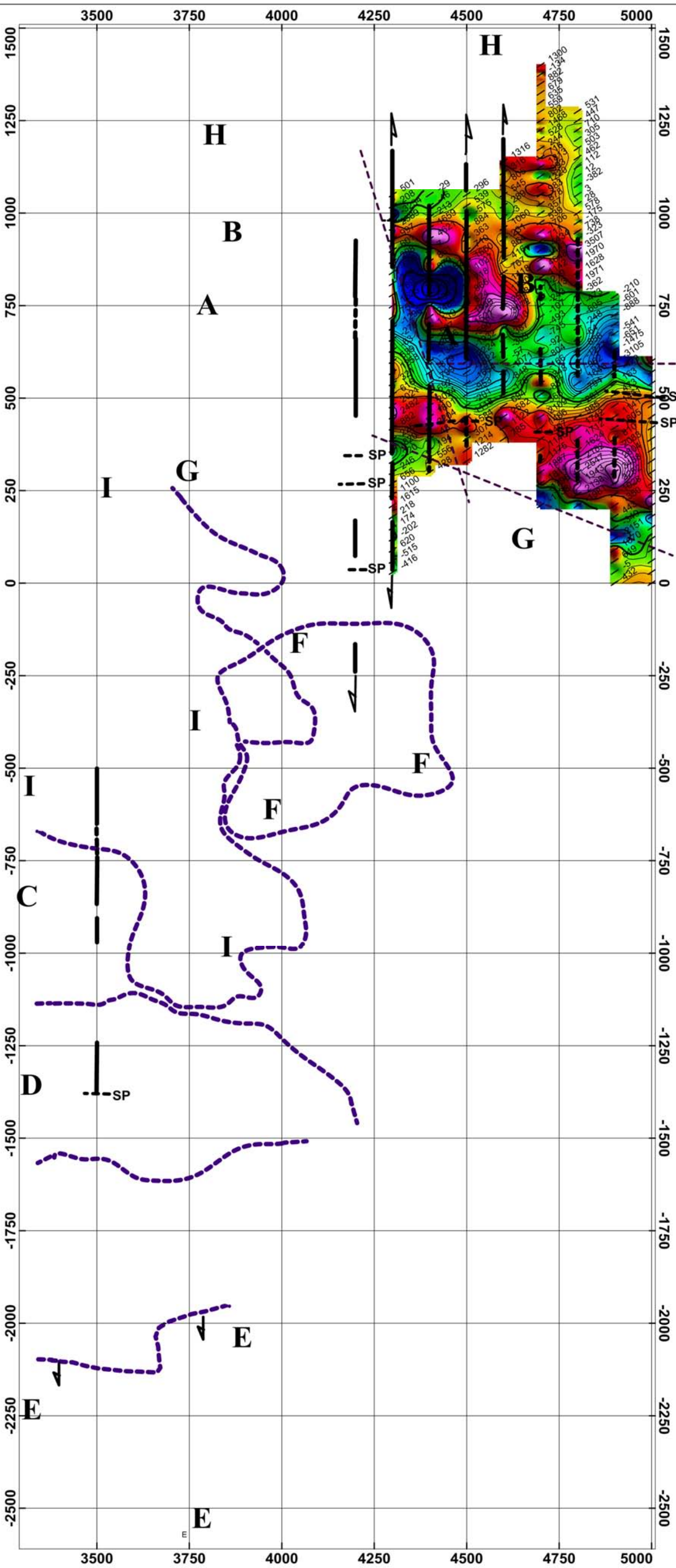
Note:  
Values are in  
parts per billion (ppb)



Data Reduced by:  
**GEOTRONICS CONSULTING INC**  
SURREY BC.

GEOTRONICS CONSULTING INC.				
<b>TREADWELL RESOURCES LTD.</b>				
<b>TREADWELL-ALLIES PROPERTY</b>				
<b>SYDNEY LAKE GRID</b>				
Cannell Creek, Tranquille Plateau Area Kamloops Mining Division, B.C.				
<b>MMI SOIL GEOCHEMISTRY SURVEY</b>				
<b>PLAN MAP</b>				
<b>ZINC</b>				
Drawn by: DGM	Job No. 07-15	NTS 921/15	Date Feb 08	Fig No. GC-10

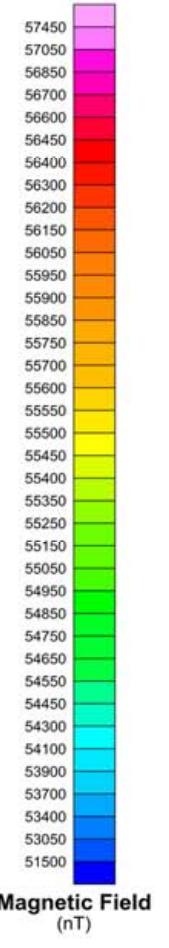




Inclination 18

**LEGEND**

- B** IP and/or MMI anomaly/anomalous zone
- Outline of anomalous zone
- IP inversion anomaly - weaker, stronger
- SP Self potential anomaly
- Magnetic lineation suggestive of geological structure.

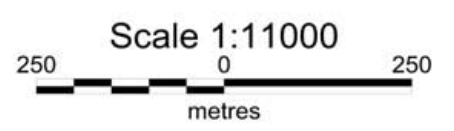


Dates of Survey:  
September 2009

Instrument:  
Geometrics Proton Precession Magnetometer, Model G-856

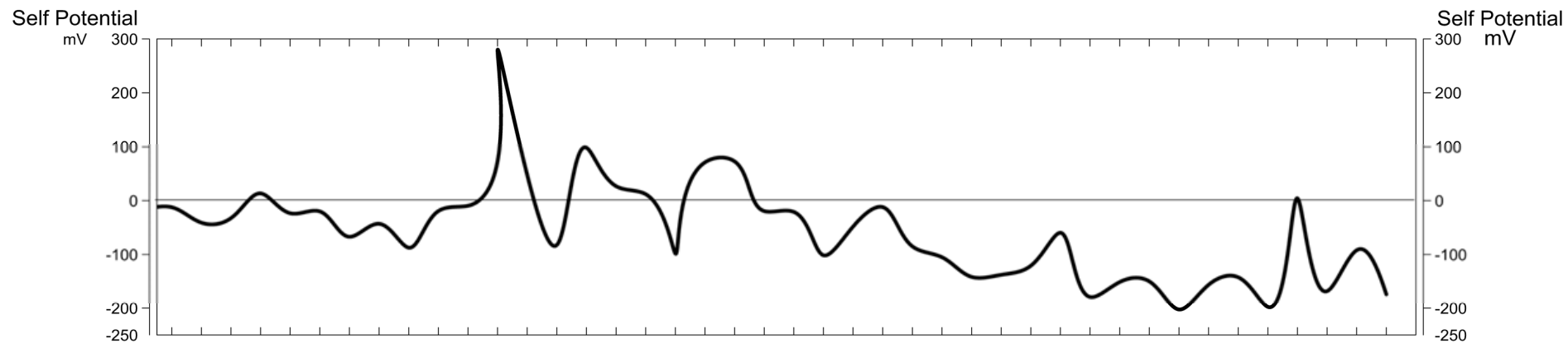
Note:  
Readings are in nanoTelas (nT).

Base:  
55,000 has been subtracted from each reading.

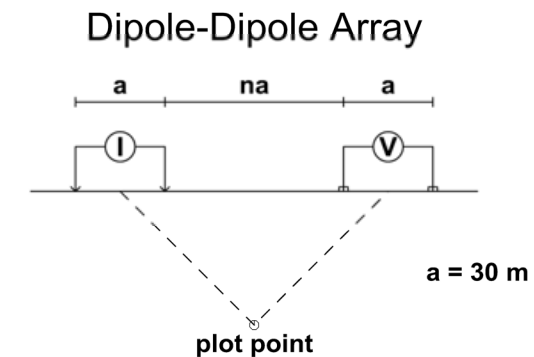


TREADWELL RESOURCES LTD.				
TREADWELL ALLIES PROPERTY				
SYDNEY LAKE GRID				
CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
<b>MAGNETIC SURVEY</b>				
CONTOUR PLAN				
DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG. NO.:
DGM	09-05	92I/15E	Oct 09	GP-11

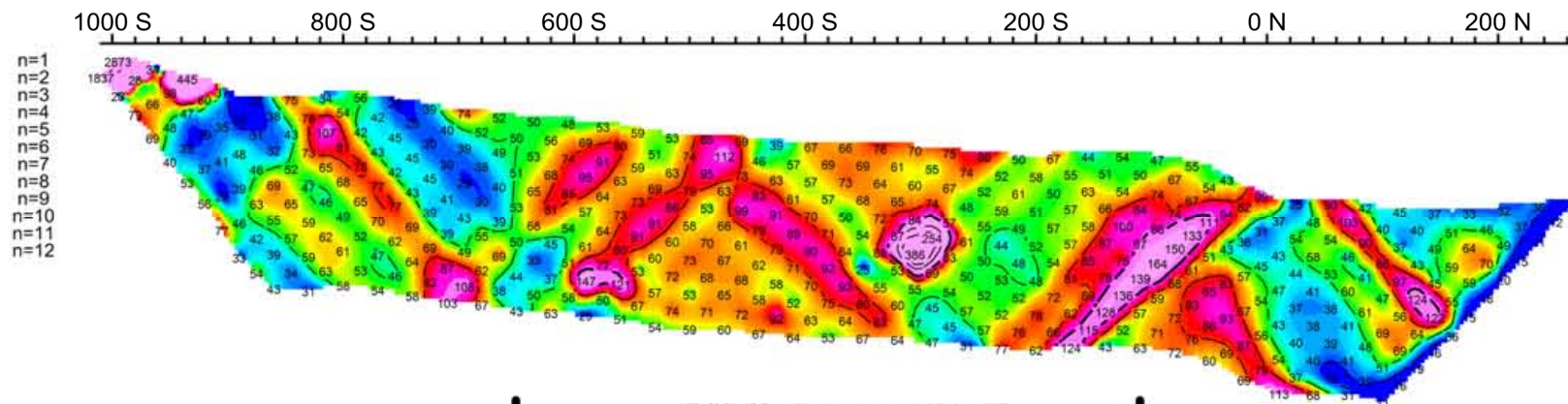




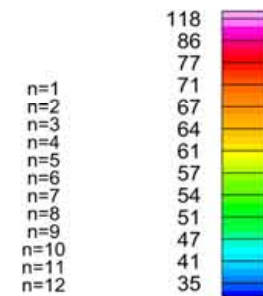
# Pseudo Section Plot



Resistivity  
Ohm\*m



Resistivity  
Ohm\*m



## LEGEND:

### CONTOUR INTERVALS:

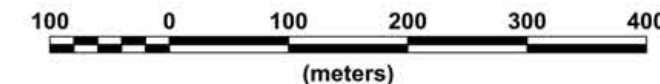
Resistivity: log base 10 ohm-meters  
Chargeability (IP): log base 10 ohm-meters

### INSTRUMENTATION:

IP Receiver: BRGM Iris Elrec 6  
IP Transmitter: BRGM VIP 4000  
IP Generator: 6.5 kWatt Honda

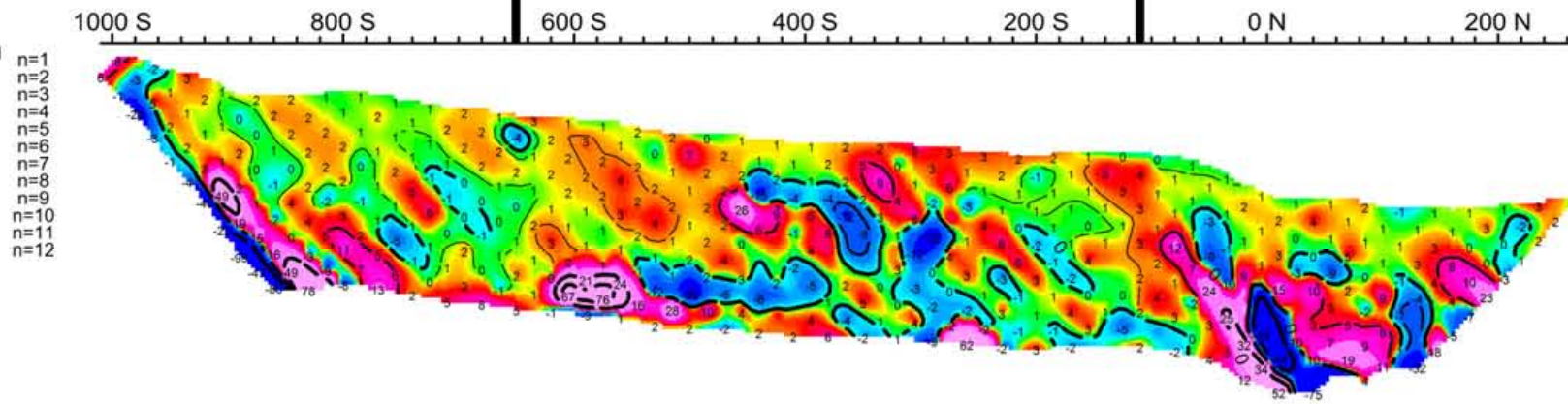
### IP SURVEY PARAMETERS:

Survey Mode: Time Domain  
Array: Dipole-dipole  
Dipole Length: 12.5 meters (41 feet)  
Dipole Separation: n=1 to n=12  
Delay Time: 240 milliseconds  
Integration Time: 1600 milliseconds  
Charge Cycle: 8 second square wave

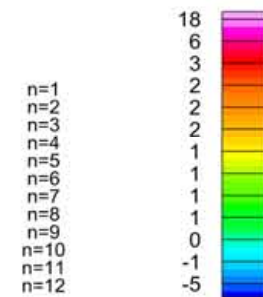


MMI Anomaly F

Induced Polarisation  
mV/V



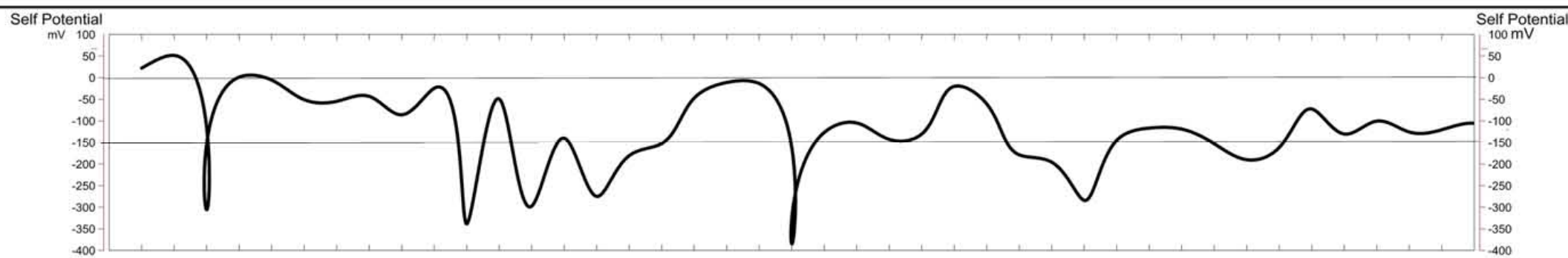
Induced Polarisation  
mV/V



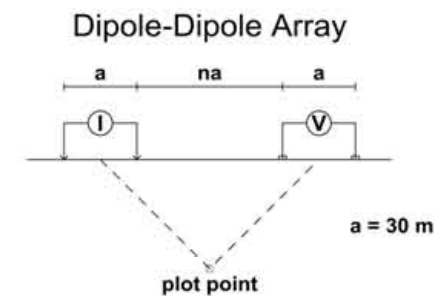
**TREADWELL RESOURCES LTD.**  
**TREADWELL ALLIES PROJECT**  
CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC  
*INDUCED POLARIZATION and RESISTIVITY SURVEYS*  
PSEUDO SECTION PLOT  
**LINE 4100E**

DRAWN BY: DGM	JOB NO.: 10-08	NTS: 92I/15E	DATE: JUNE '10	FIG NO.: GP-12
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### Pseudo Section Plot

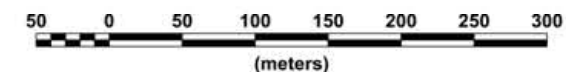


#### LEGEND:

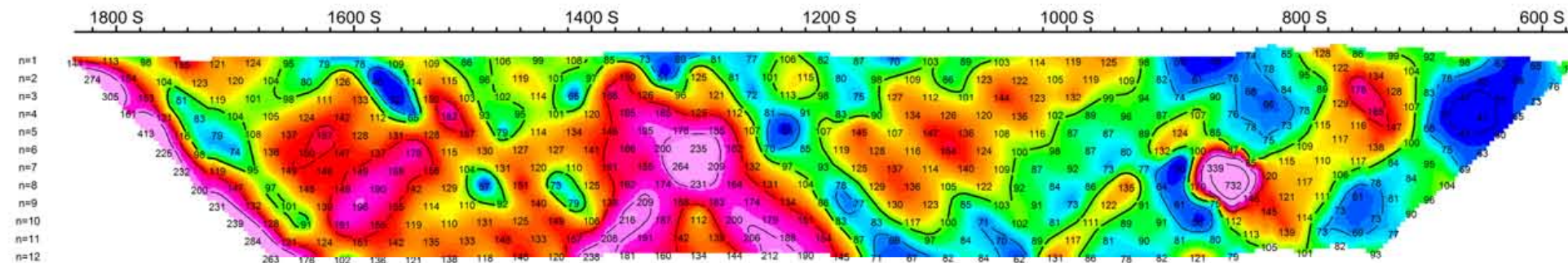
**CONTOUR INTERVALS:**  
 Resistivity: log base 10 ohm-meters  
 Chargeability (IP): log base 10 ohm-meters

**INSTRUMENTATION:**  
 IP Receiver: BRGM Iris Elrec 6  
 IP Transmitter: BRGM VIP 4000  
 IP Generator: 6.5 kWatt Honda

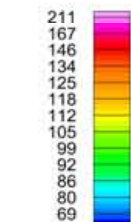
**IP SURVEY PARAMETERS:**  
 Survey Mode: Time Domain  
 Array: Dipole-dipole  
 Dipole Length: 12.5 meters (41 feet)  
 Dipole Separation: n=1 to n=12  
 Delay Time: 240 milliseconds  
 Integration Time: 1600 milliseconds  
 Charge Cycle: 8 second square wave



Resistivity  
Ohm\*m

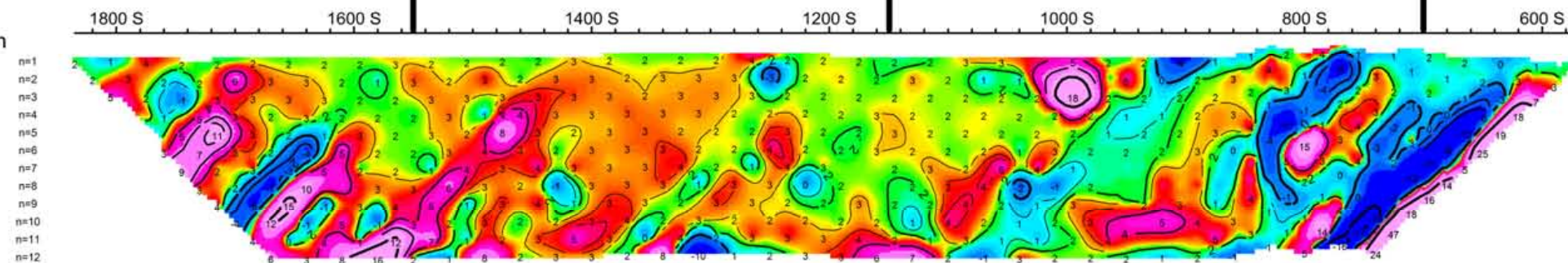


Resistivity  
Ohm\*m

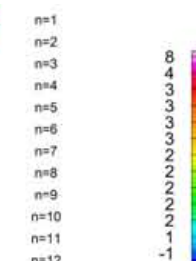


MMI Anomaly D      MMI Anomaly C      MMI Anomaly I

Induced Polarisation  
mV/V



Induced Polarisation  
mV/V

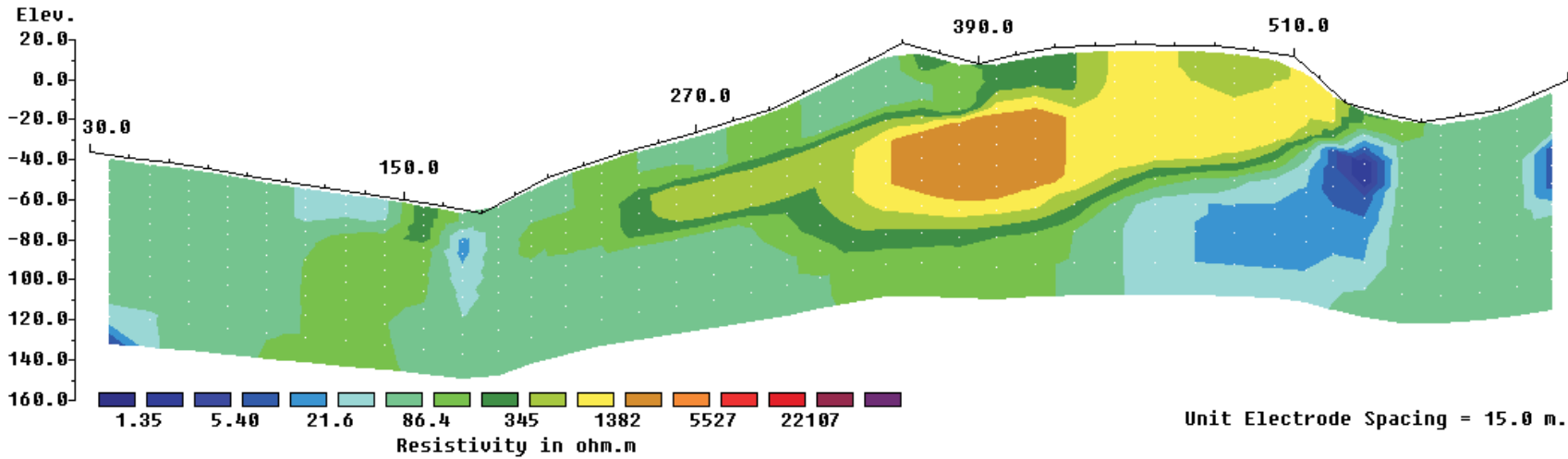


**TREADWELL RESOURCES LTD.**  
**TREADWELL ALLIES PROJECT**  
 CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC  
 INDUCED POLARIZATION and RESISTIVITY SURVEYS  
 PSEUDO SECTION PLOT  
**LINE 3400E**

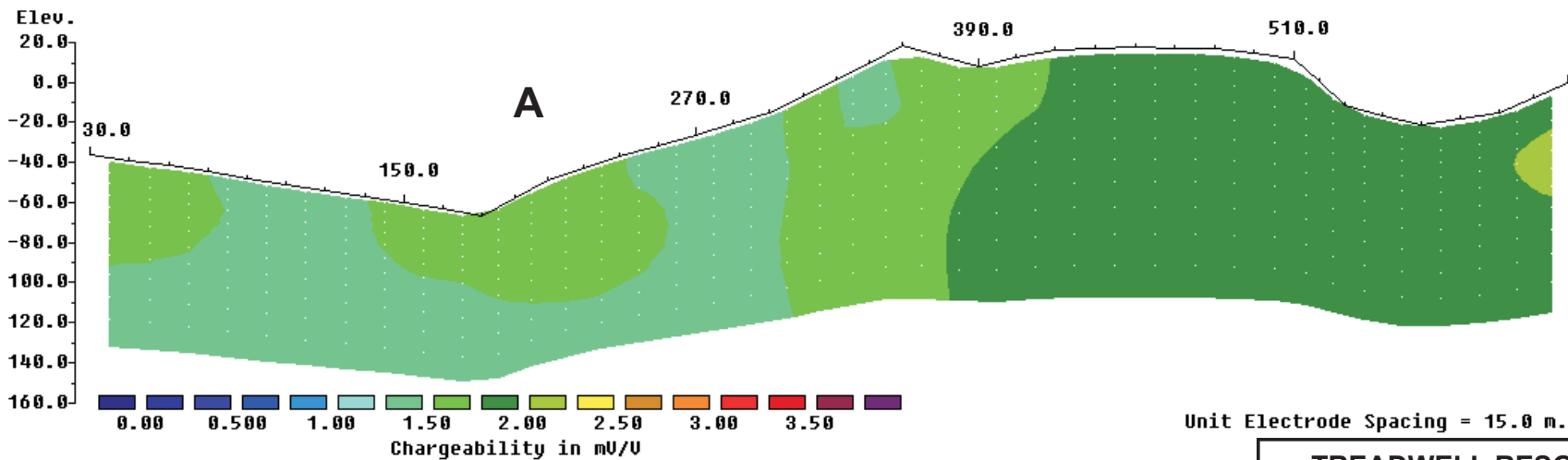
DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
DGM	10-08	92I/15E	JUNE '10	GP-11

L5000E.bin

Model resistivity with topography  
Iteration 8 Abs. error = 2.3



Model IP with topography  
Iteration 8 Abs. error = 1.1



Horizontal scale is 26.77 pixels per unit spacing  
Vertical exaggeration in model section display = 0.75  
First electrode is located at 30.0 m.  
Last electrode is located at 630.0 m.

TREADWELL RESOURCES LTD.

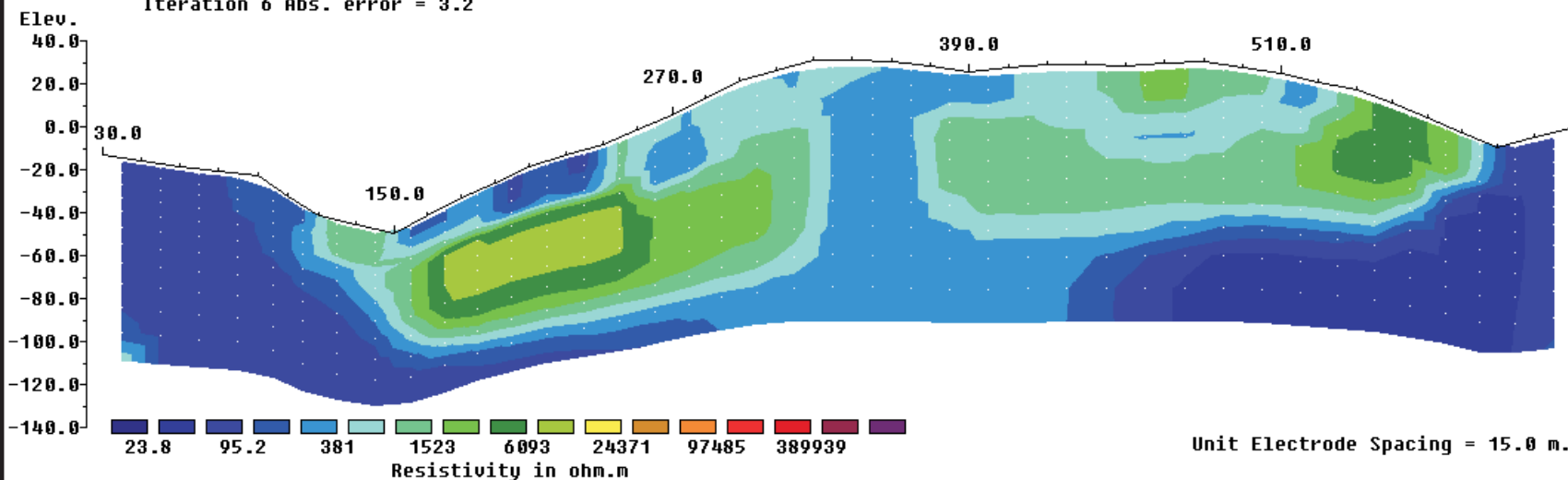
TREADWELL ALLIES PROPERTY  
CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC

IP and RESISTIVITY SURVEYS  
GEOTOMO INVERSION  
**Line 5000E**

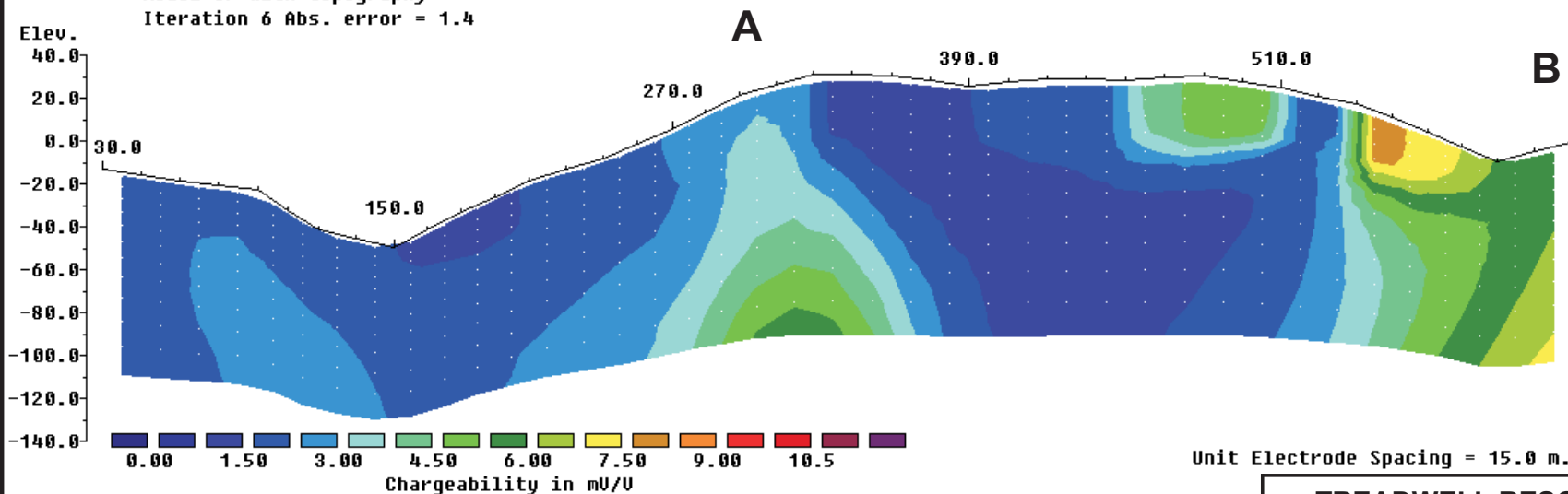
DRAWN BY: DGM	JOB NO.: 09-05	NTS: 92I/15E	DATE: JULY 09	FIG NO.: GPI-10
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4900E.bin

Model resistivity with topography  
Iteration 6 Abs. error = 3.2



Model IP with topography  
Iteration 6 Abs. error = 1.4



A

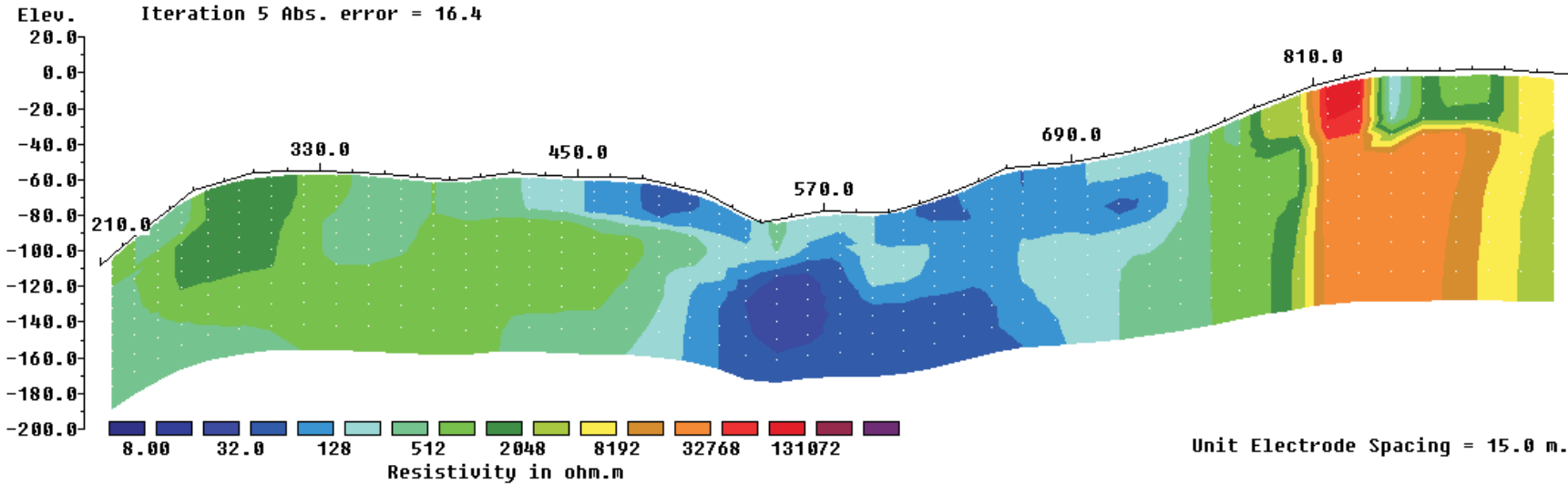
B

Horizontal scale is 26.50 pixels per unit spacing  
Vertical exaggeration in model section display = 0.82  
First electrode is located at 30.0 m.  
Last electrode is located at 630.0 m.

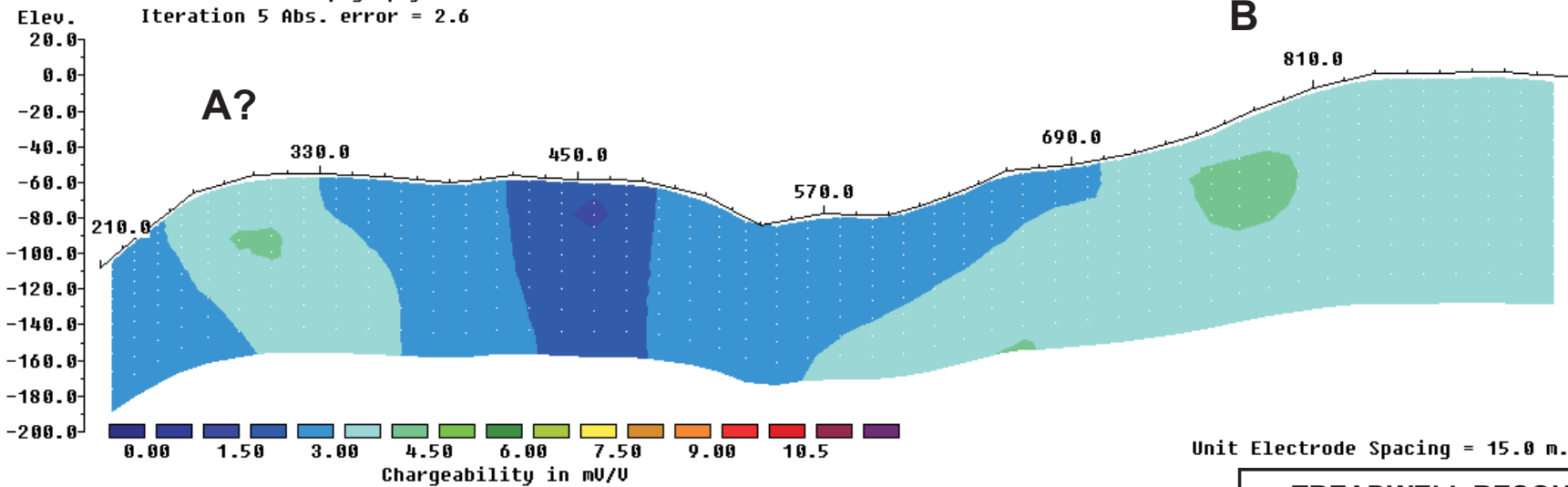
<b>TREADWELL RESOURCES LTD.</b>				
<b>TREADWELL ALLIES PROPERTY</b> CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
<i>IP and RESISTIVITY SURVEYS</i> GEOTOMO INVERSION <b>Line 4900E</b>				
DRAWN BY: DGM	JOB NO.: 09-05	NTS: 92I/15E	DATE: JULY 09	FIG NO.: GPI-9

4800E.bin

Model resistivity with topography  
Iteration 5 Abs. error = 16.4



Model IP with topography  
Iteration 5 Abs. error = 2.6



Horizontal scale is 22.08 pixels per unit spacing  
 Vertical exaggeration in model section display = 0.82  
 First electrode is located at 210.0 m.  
 Last electrode is located at 930.0 m.

TREADWELL RESOURCES LTD.

TREADWELL ALLIES PROPERTY  
CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC

IP and RESISTIVITY SURVEYS  
GEOTOMO INVERSION  
**Line 4800E**

DRAWN BY: DGM	JOB NO.: 09-05	NTS: 92I/15E	DATE: JULY 09	FIG NO.: GPI-8
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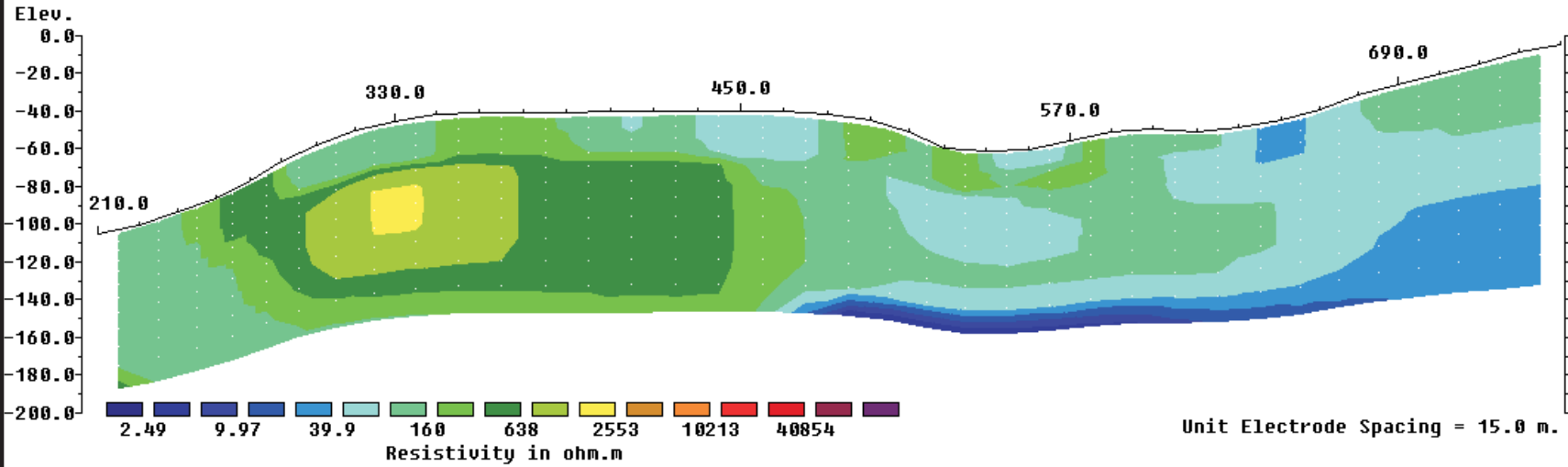


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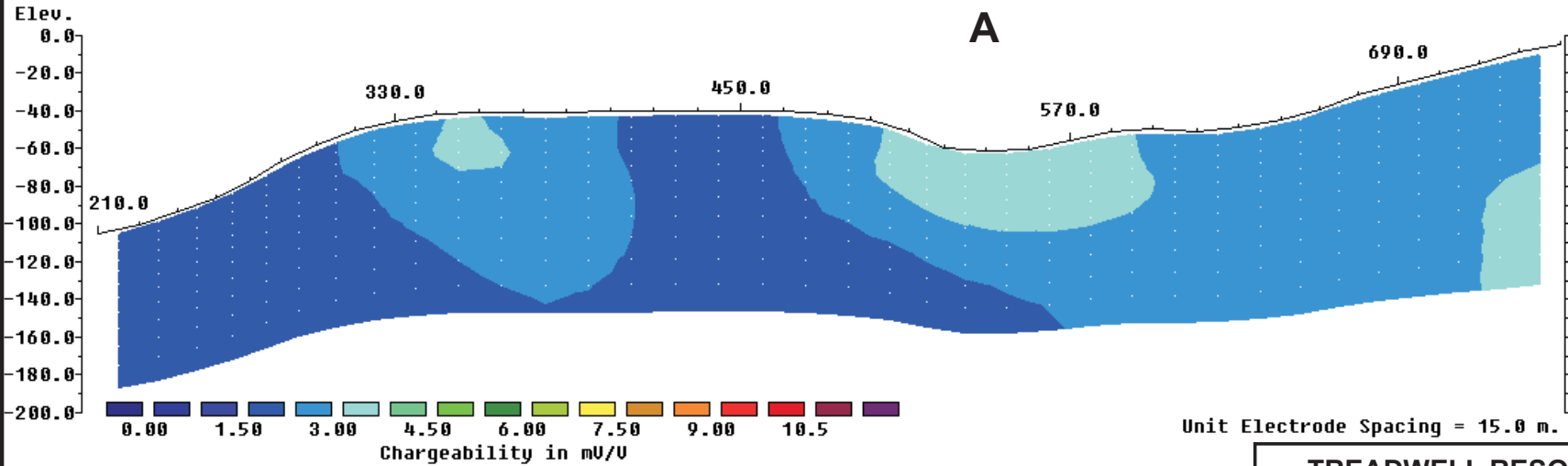


4700E.bin

Model resistivity with topography  
Iteration 6 Abs. error = 2.0



Model IP with topography  
Iteration 6 Abs. error = 2.6

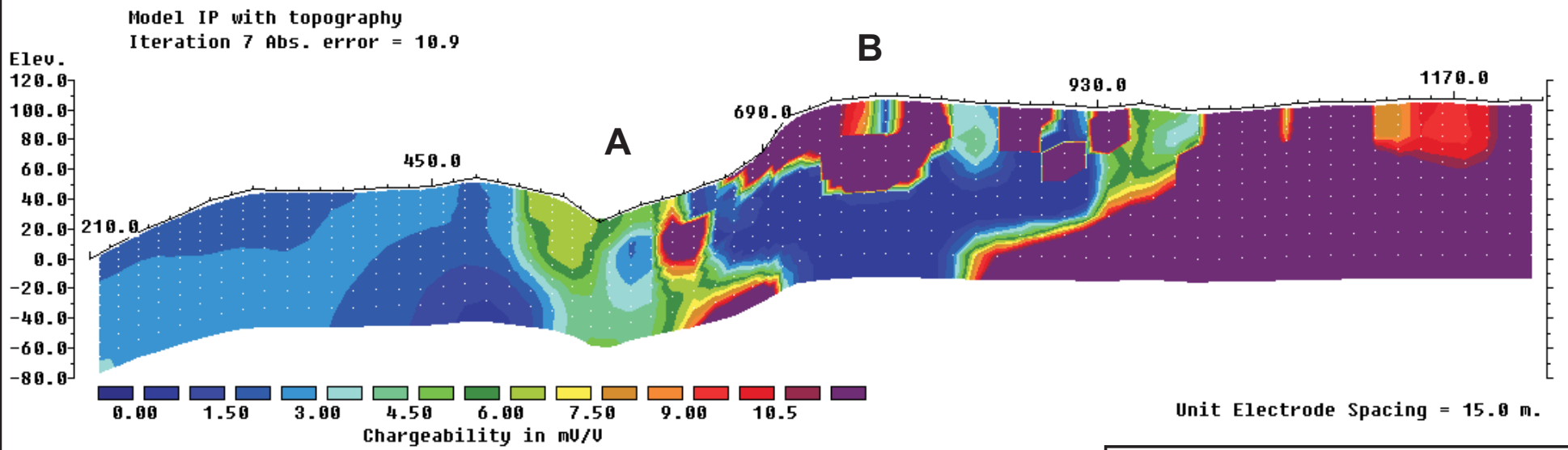
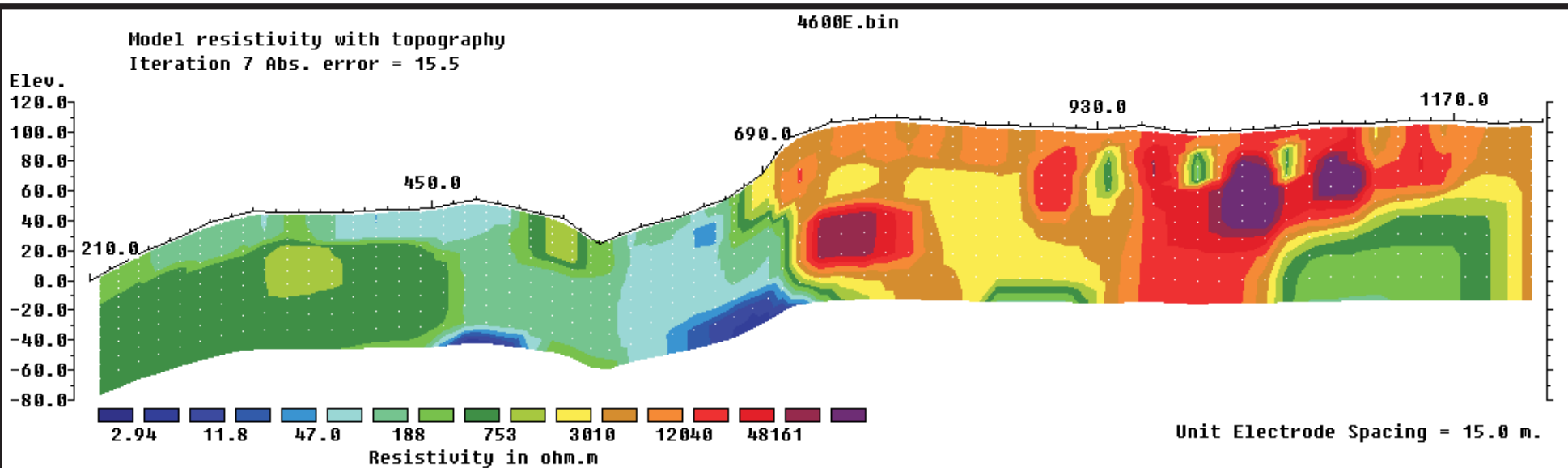


Horizontal scale is 29.44 pixels per unit spacing  
Vertical exaggeration in model section display = 0.65  
First electrode is located at 210.0 m.  
Last electrode is located at 750.0 m.



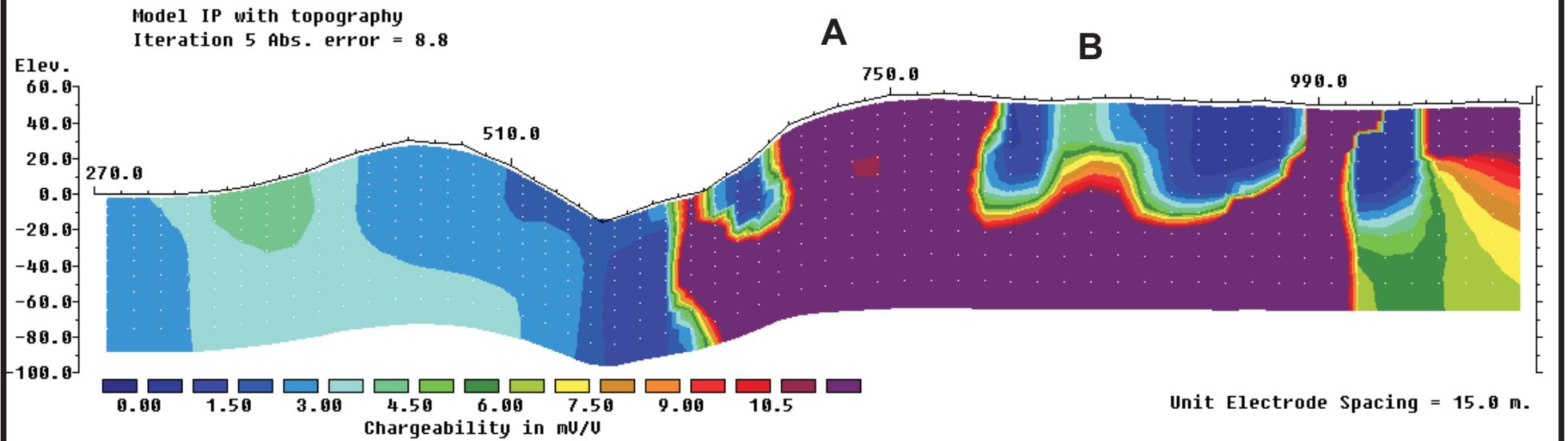
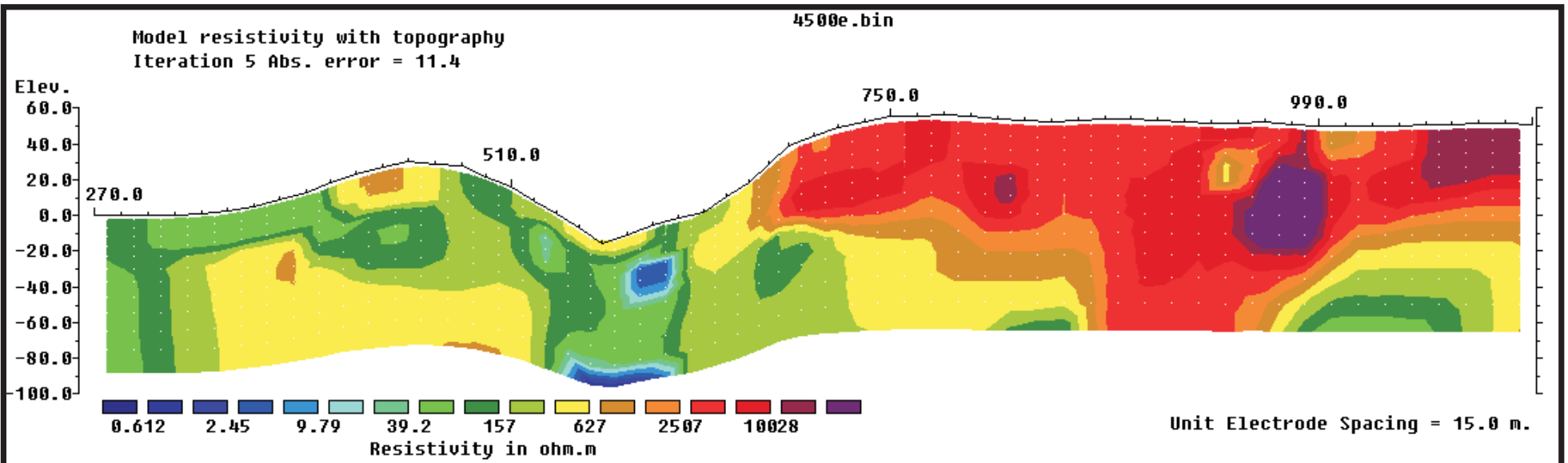
GEOTRONICS CONSULTING INC.  
SURREY B.C.

<b>TREADWELL RESOURCES LTD.</b>				
<b>TREADWELL ALLIES PROPERTY</b> CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
<i>IP and RESISTIVITY SURVEYS</i> GEOTOMO INVERSION <b>Line 4700E</b>				
DRAWN BY: <b>DGM</b>	JOB NO.: <b>09-05</b>	NTS: <b>921/15E</b>	DATE: <b>JULY 09</b>	FIG NO.: <b>GPI-7</b>



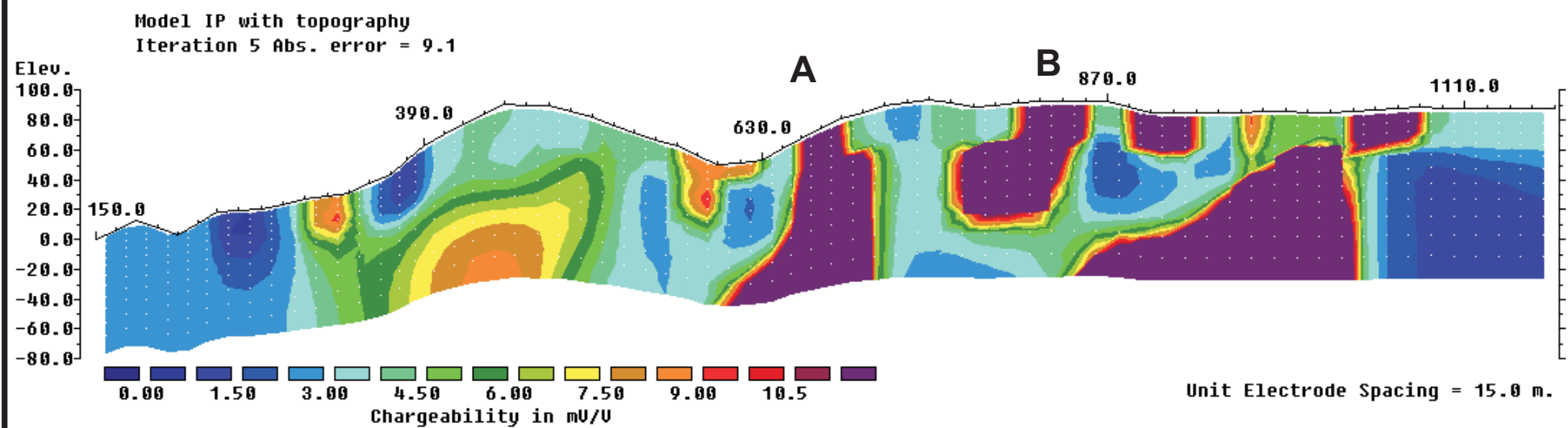
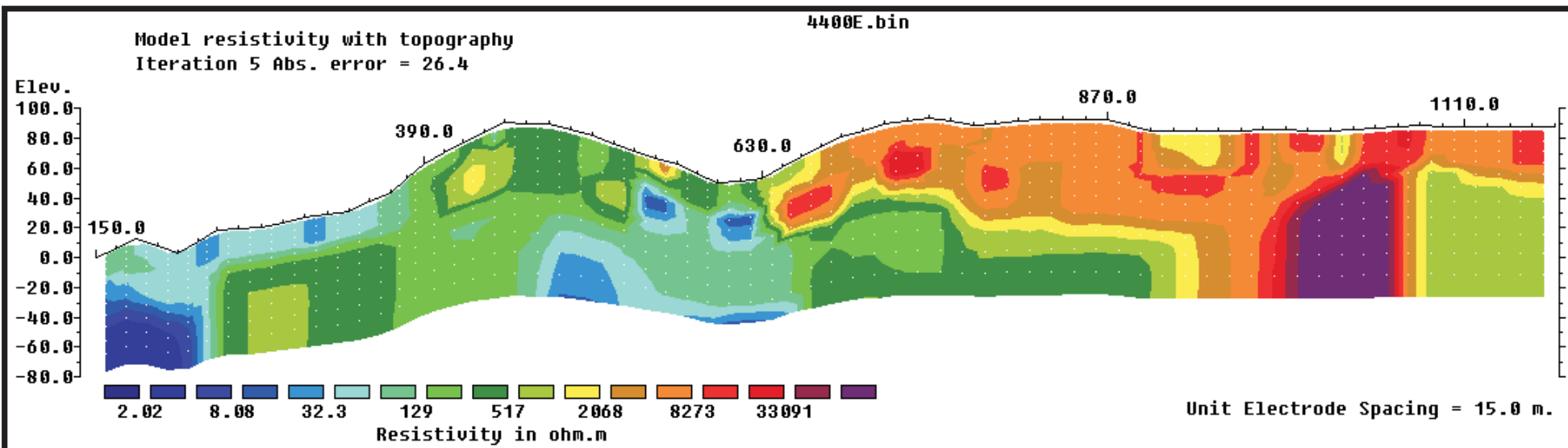
Horizontal scale is 15.59 pixels per unit spacing  
Vertical exaggeration in model section display = 1.00  
First electrode is located at 210.0 m.  
Last electrode is located at 1230.0 m.

<b>TREADWELL RESOURCES LTD.</b>				
<b>TREADWELL ALLIES PROPERTY</b> CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
<i>IP and RESISTIVITY SURVEYS</i> GEOTOMO INVERSION <b>Line 4600E</b>				
DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
DGM	09-05	92I/15E	JULY 09	GPI-6



Horizontal scale is 18.93 pixels per unit spacing  
Vertical exaggeration in model section display = 1.00  
First electrode is located at 270.0 m.  
Last electrode is located at 1110.0 m.

<b>TREADWELL RESOURCES LTD.</b>				
TREADWELL ALLIES PROPERTY CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
<i>IP and RESISTIVITY SURVEYS</i> GEOTOMO INVERSION <b>Line 4500E</b>				
DRAWN BY: DGM	JOB NO.: 09-05	NTS: 92I/15E	DATE: JULY 09	FIG NO.: GPI-5



Horizontal scale is 15.59 pixels per unit spacing  
Vertical exaggeration in model section display = 1.00  
First electrode is located at 150.0 m.  
Last electrode is located at 1170.0 m.

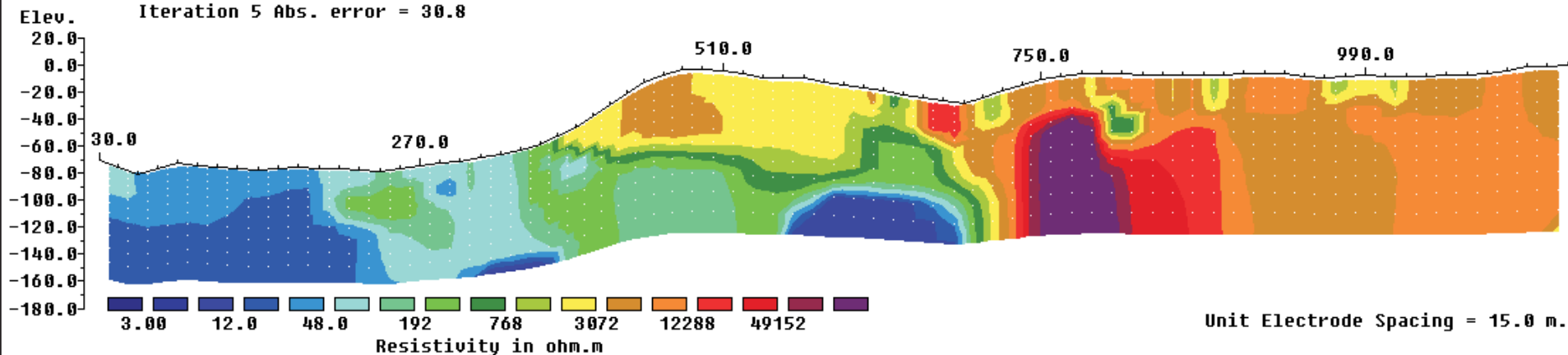
<b>TREADWELL RESOURCES LTD.</b>				
TREADWELL ALLIES PROPERTY CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
<i>IP and RESISTIVITY SURVEYS</i> GEOTOMO INVERSION <b>Line 4400E</b>				
DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
DGM	09-05	92I/15E	JULY 09	GPI-4



4300E.bin

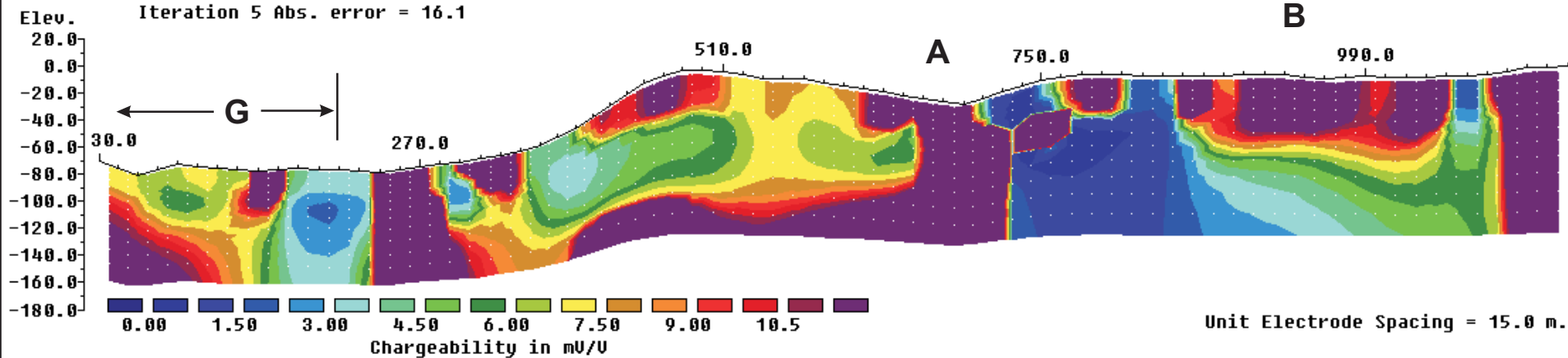
Model resistivity with topography

Iteration 5 Abs. error = 30.8



Model IP with topography

Iteration 5 Abs. error = 16.1



Horizontal scale is 14.32 pixels per unit spacing

Vertical exaggeration in model section display = 1.00

First electrode is located at 30.0 m.

Last electrode is located at 1140.0 m.

TREADWELL RESOURCES LTD.

TREADWELL ALLIES PROPERTY  
CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC

IP and RESISTIVITY SURVEYS  
GEOTOMO INVERSION  
**Line 4300E**

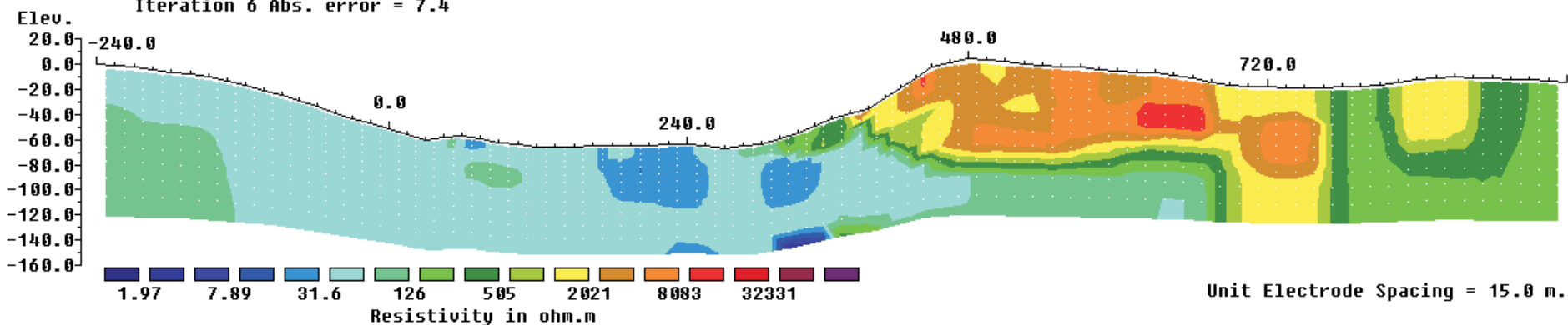
DRAWN BY: DGM	JOB NO.: 09-05	NTS: 92I/15E	DATE: JULY 09	FIG NO.: GPI-3
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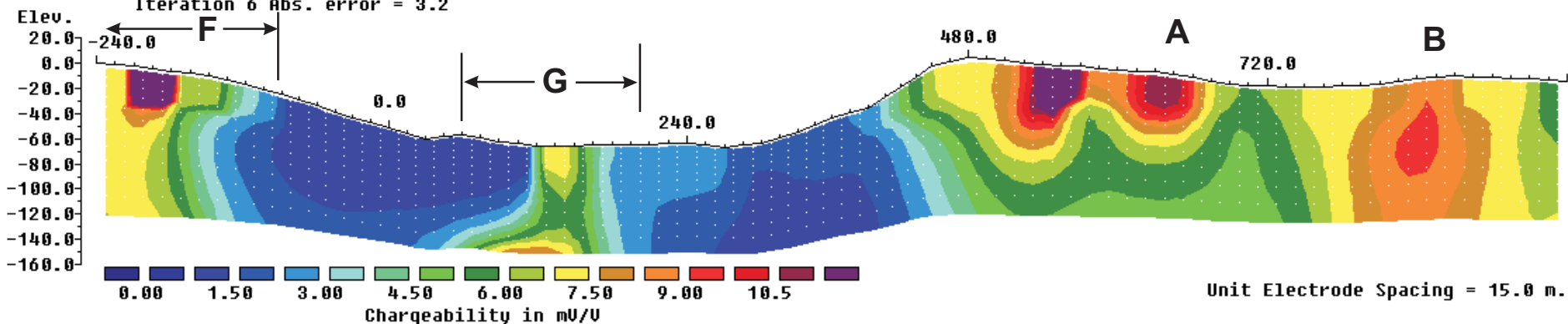
GEOTRONICS CONSULTING INC.  
SURREY B.C.

4200E.bin

Model resistivity with topography  
Iteration 6 Abs. error = 7.4



Model IP with topography  
Iteration 6 Abs. error = 3.2

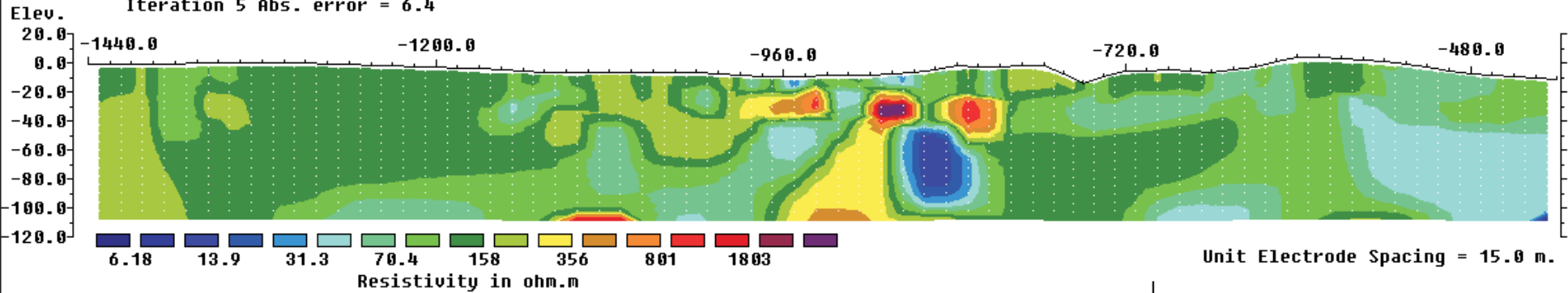


Horizontal scale is 13.38 pixels per unit spacing  
Vertical exaggeration in model section display = 1.00  
First electrode is located at -240.0 m.  
Last electrode is located at 960.0 m.

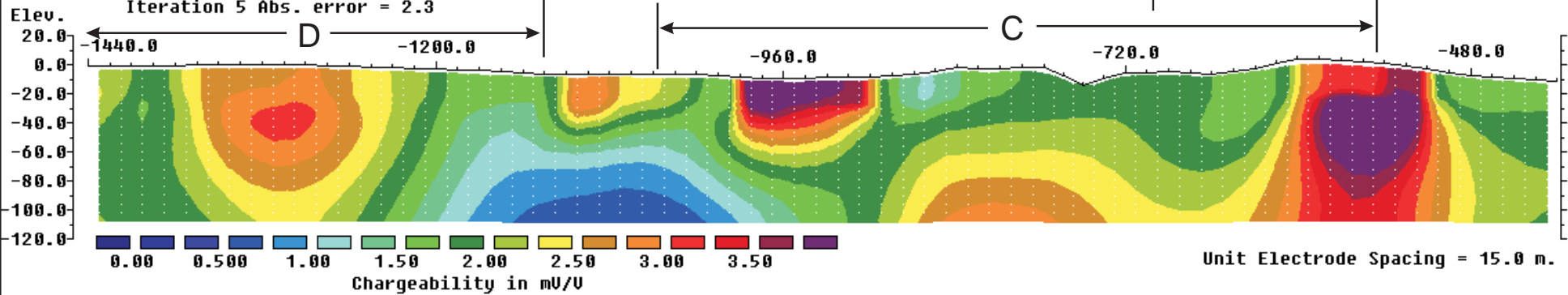
<b>TREADWELL RESOURCES LTD.</b>				
<b>TREADWELL ALLIES PROPERTY</b> CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC				
<i>IP and RESISTIVITY SURVEYS</i> GEOTOMO INVERSION <b>Line 4200E</b>				
DRAWN BY: DGM	JOB NO.: 09-05	NTS: 92/15E	DATE: JULY 09	FIG NO.: GPI-2

3500E.bin

Model resistivity with topography  
Iteration 5 Abs. error = 6.4



Model IP with topography  
Iteration 5 Abs. error = 2.3



Horizontal scale is 15.74 pixels per unit spacing  
 Vertical exaggeration in model section display = 1.00  
 First electrode is located at -1440.0 m.  
 Last electrode is located at -420.0 m.

TREADWELL RESOURCES LTD.

TREADWELL ALLIES PROPERTY  
CANNELL CREEK, TRANQUILLE AREA, KAMLOOPS MD, BC

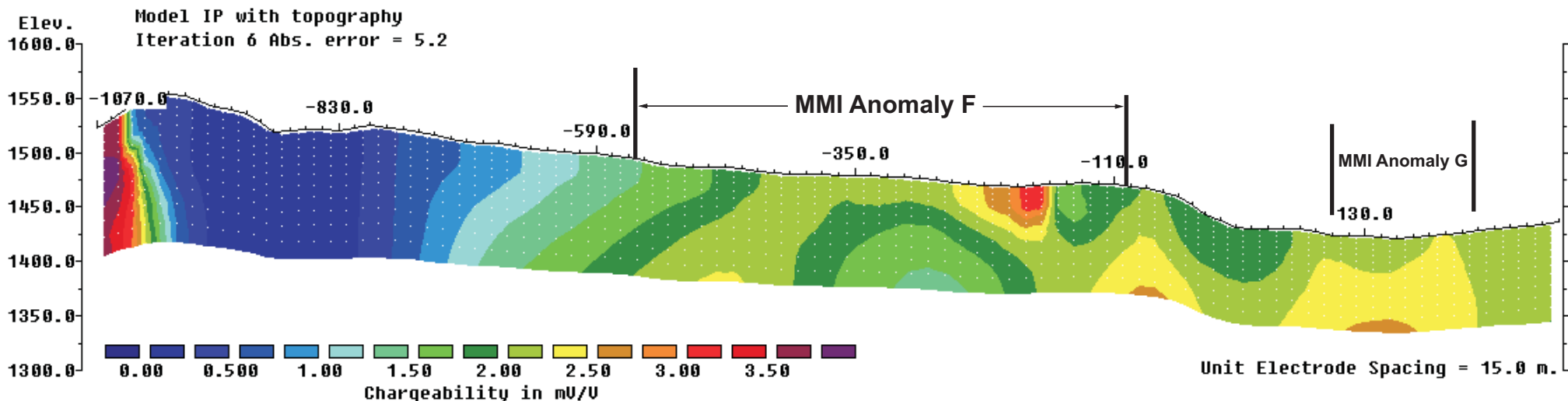
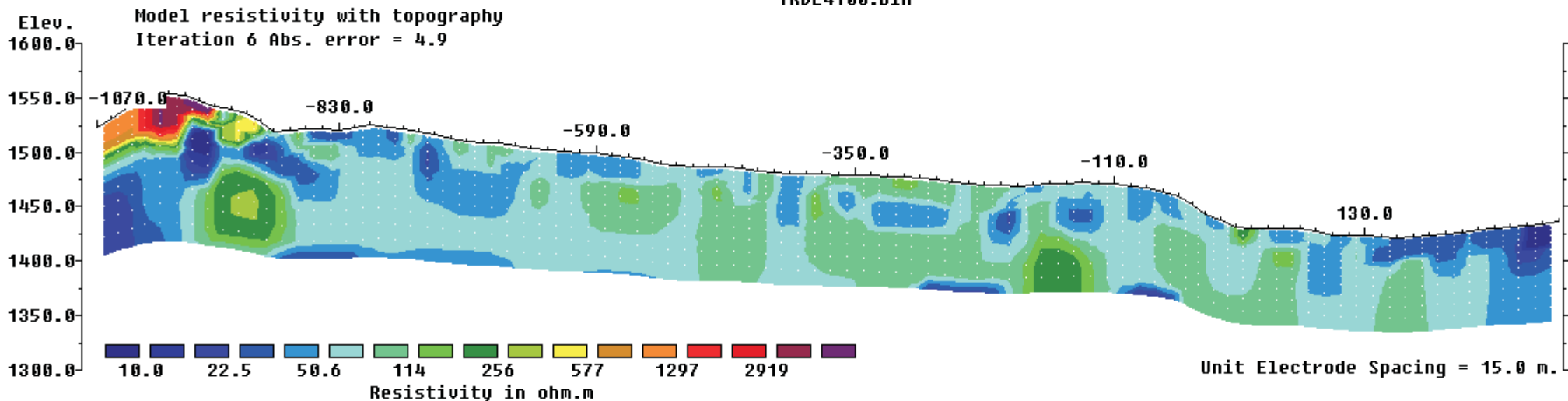
IP and RESISTIVITY SURVEYS  
GEOTOMO INVERSION  
**Line 3500E**

DRAWN BY: DGM	JOB NO.: 09-05	NTS: 92I/15E	DATE: JULY 09	FIG NO.: GPI-1
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SURREY B.C.

TRDL4100.bin



Horizontal scale is 11.63 pixels per unit spacing  
Vertical exaggeration in model section display = 1.00  
First electrode is located at -1070.0 m.  
Last electrode is located at 310.0 m.

**INSTRUMENTATION:**

IP Receiver: BRGM IRIS ELREC 6  
IP Transmitter: BRGM VIP 4000  
IP Generator: 6.5 kWatt Honda

**IP SURVEY PARAMETERS**

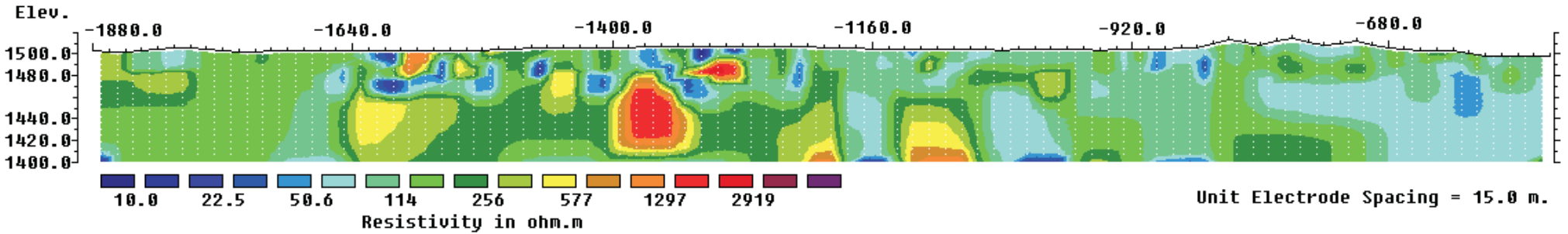
Survey Mode: Time Domain  
Array: Dipole-Dipole  
Dipole Length: 12.5 meters (41 feet)  
Dipole Separation: n=1 to n=12  
Delay Time: 240 milliseconds  
Integration: 1600 milliseconds  
Charge Cycle: 8 second square wave

TREADWELL RESOURCES LTD.				
TREADWELL ALLIES PROJECT CANNELL CREEK, TRANQUILLE AREA KAMLOOPS MD, BC				
IP and RESISTIVITY SURVEYS GEOTOMO INVERSION <b>LINE 4100E</b>				
DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
DGM	10-08	92I/15E	JUNE 10	GPI-12

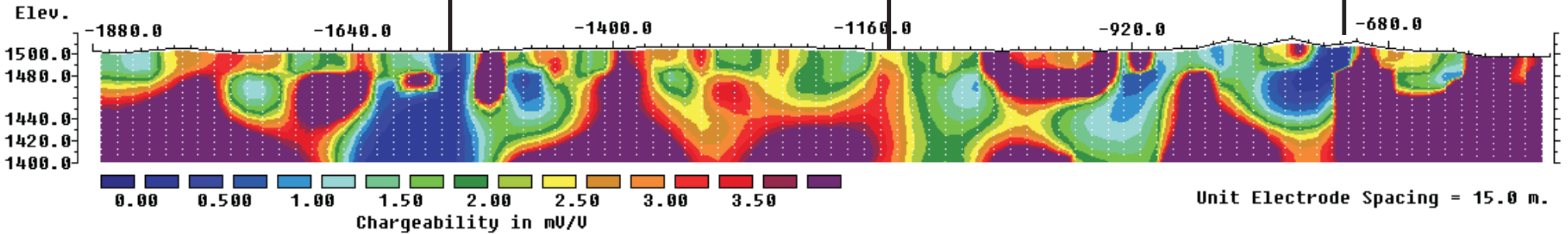


TRDL3400.bin

Model resistivity with topography  
Iteration 6 Abs. error = 5.9



Model IP with topography  
Iteration 6 Abs. error = 1.5



Horizontal scale is 11.78 pixels per unit spacing  
 Vertical exaggeration in model section display = 1.00  
 First electrode is located at -1880.0 m.  
 Last electrode is located at -530.0 m.

**INSTRUMENTATION:**

IP Receiver: BRGM IRIS ELREC 6  
 IP Transmitter: BRGM VIP 4000  
 IP Generator: 6.5 kWatt Honda

**IP SURVEY PARAMETERS**

Survey Mode: Time Domain  
 Array: Dipole-Dipole  
 Dipole Length: 12.5 meters (41 feet)  
 Dipole Separation: n=1 to n=12  
 Delay Time: 240 milliseconds  
 Integration: 1600 milliseconds  
 Charge Cycle: 8 second square wave

TREADWELL RESOURCES LTD.				
TREADWELL ALLIES PROJECT CANNELL CREEK, TRANQUILLE AREA KAMLOOPS MD, BC				
IP and RESISTIVITY SURVEYS GEOTOMO INVERSION <b>LINE 3400E</b>				
DRAWN BY:	JOB NO.:	NTS:	DATE:	FIG NO.:
DGM	10-08	92I/15E	JUNE 10	GPI-11