VERY LOW FREQUENCY
GROUND ELECTROMAGNETICS SURVEY (VLF-EM)

LOGISTICS AND INTERPRETATION REPORT

PREPARED FOR

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FRY-MCVEAN PROJECT

DRUM LAKE AREA, NORTHWESTERN ONTARIO, CANADA
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4.1ul	Ground VLF-Electromagnetic Survey – Unnamed Lake Grid In-Phase and Out-of-Phase Profiles (%) Station NAA (Cutler, Maine) - Frequency 24.0 kHz	1:2000
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1. RESEARCH OBJECTIVES

The current geophysical campaign has been carried out on the Fry-McVean Project, located in the Pickle Lake region of Northwestern Ontario. The property itself is located approximately 70 km southwest of Pickle Lake, Ontario, within the central Uchi Sub-Province, Meen-Dempster Greenstone belt.

The Fry-McVean property is found within the Pickle Lake gold camp and is host to three past producing gold mines, Pickle Crow, Central Patricia (18 km north of project area), and the Donna Lake mine.

The property has been explored for gold since the 1970's. There has been prior drilling on the property by Cochenor Willans Gold Mines in the 1970's, following up on a conductive anomaly from an Airborne Electromagnetic (EM) survey. In 1987, an Airborne VLF-EM survey was flown, locating the same conductive anomaly. Various mapping and soil sampling campaigns have also been carried out on this property.

Gold mineralization on this survey area is associated with the major structure, the Fry-McVean Shear Zone (FMSZ), which extends ~30 km. An iron-carbonate and intensely sheared second-order deformation zone, called Linjog Lake – Unnamed Lake – Shear Zone (LL-UL-SZ) crosses the survey area. The structure is estimated to have a 6.5 km strike length and be approximately 200 m to 500 m wide, running sub-parallel to the regional FMSZ. Two sub-parallel Riedel faults or shear zones are interpreted within the LL-UL-SZ from VLF-EM conductors (Ontario Geological Survey, 1986).

The LL-UL-SZ sits within a mafic volcanic host rock. The structure displays modest silicification and hydrothermal carbonatization with accessory finely disseminated pyrite (1 % to 4 %) and/or as clumps of pyrite crystals.

The area has little outcrop exposure (< 0.5 %), with much of the area of interest being covered by lakes (~ 40 %) making geophysical exploration a useful tool. A geophysical campaign consisting of a Very Low Frequency (VLF) EM survey was carried out to further assist in locating and delineating shear zones amenable to gold mineralization.

*Geological information taken form various OGS Assessment reports.

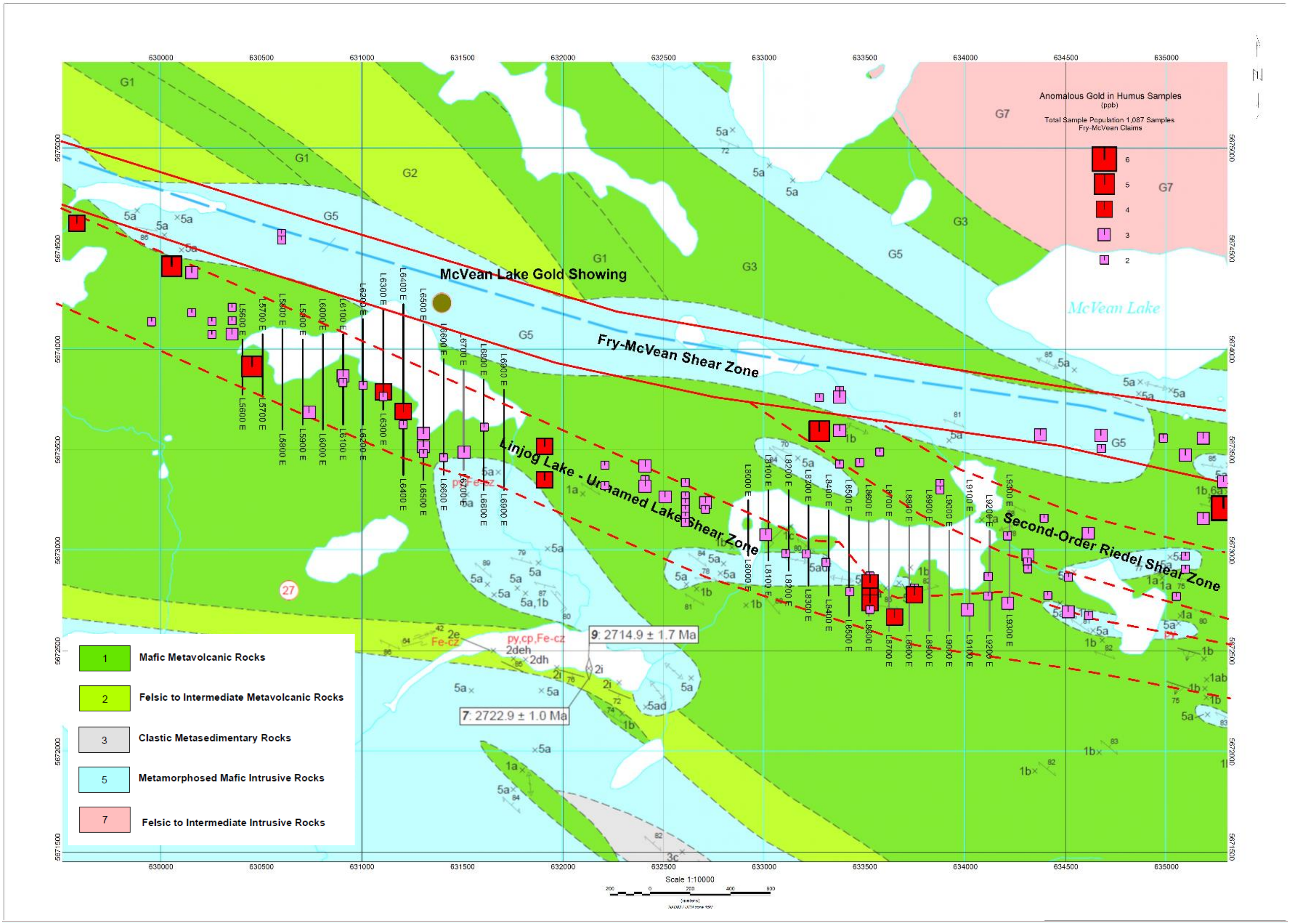


Figure 1. Geology of the Fry-McVean Project with Fry-McVean Shear Zones, Au soil anomalies and VLF-EM grids.

Geology base map taken from OGS Map P.3588

2. IMPLEMENTED SOLUTION

- *VLF-EM METHOD*

The very low frequency electromagnetic (VLF-EM) technique is a passive method that uses radiation from ground-based military radio transmitters as the primary EM field for geophysical surveying. These transmitters generate EM waves that can induce secondary eddy currents, particularly in electrically conductive elongated targets.

EM waves propagate through the subsurface and are subjected to local distortions by the conductivity contrasts in this medium.

The primary EM field is shifted *in-phase* when encountering a conductive body and the conductive body then becomes the source of a secondary field. The VLF instrument detects the primary and secondary fields and separates the secondary field into *in-phase* and *quadrature* components based on the phase lag of the secondary field.

The *in-phase* response is sensitive to metallic or good conductive bodies, while the quadrature response is sensitive to the variation of the earth's electrical properties.

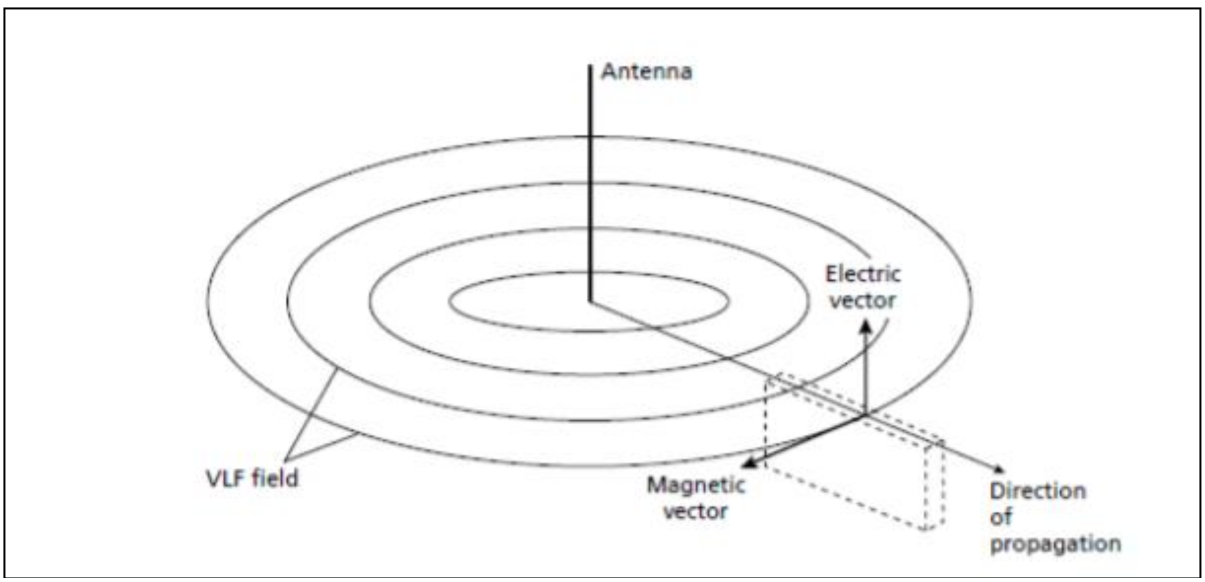


Figure 2. Principle of VLF method; dashed lines show a tabular conductor striking towards the antenna which is cut by the magnetic vector of the EM field.

3. GEOPHYSICAL INTERPRETATION

❑ *VLF-EM SURVEY*

The VLF-EM method is an inductive EM exploration method and the orthogonal magnetic field components are measured operating in the 15-30 kHz frequency range.

In this project, VLF-EM measurements were obtained using the NAA (Cutler, Maine, USA, 24.0 kHz), NSS (Annapolis, Maryland, USA, 21.4 kHz) and NAU (Aguada, Puerto Rico 28.5 kHz) military radio-transmitters.

Being a closer station, with a stronger signal, only the nearest NAA VLF station measurements were used in this project.

Along each profile during the geophysical survey, measurements were made for in-phase (IP), quadrature (OP), two VLF horizontal field components (h1 and h2) and VLF total field (pT) respectively. The in-phase data was used for the interpretation.

The VLF-EM data were analyzed and processed by plotting the percentage of in-phase (IP) and quadrature (OP) components (map 4.1). The interpretation of VLF-EM data is carried out qualitatively on the real (in-phase) component using Fraser and Karous-Hjelt (KH) filters.

Karous-Hjelt filtering is derived directly from the concept of magnetic fields associated with the current flow in the subsurface resulting in a 2D cross section showing the apparent current density distribution at different depths (Figures 4 through 20).

Fraser-filtered in-phase data with positive peaks and higher values of apparent current density correspond to anomalous zones.

Interpretation of the VLF-EM data along the surveyed lines allowed the identification of a minimum of thirteen (13) conductive axes of 100 to 300 m in length, as well as ten (10) isolated conductive sources on the Linjog Lake grid alone**.** On the Unnamed Lake grid, four (4) conductive axes (100 m to 400 m strike length), and four (4) isolated conductive anomalies are present. These anomalous conductive zones appear trending EW to NW-SE.

Based on the intensity of the in-phase component and higher values of apparent current density, six (6) prominent conductive trends, as well as several, strong single line conductors, were selected for follow up. These anomalous conductive zones are reported in Table 3 and should be further explored using prospecting / trenching and the resistivity/IP method. All anomalies observed on the survey grids are outlined fully in Table 2 below.

Table 2. Outlined Conductive Sources

Conductive anomaly	Anomaly Location		Cross-over response in-phase amplitude (%)	Comments
	Line	Station		
Linjog Lake Grid				
LJ-01	56+00E 57+00E 58+00E 59+00E	1+62N 1+12N 0+87N 0+25N	(+35, -18) (+46, -12) (+78, -38) (+189, +86)	Weak current density source, but continuous trend. Located along the southern edge of Linjog Lake. Association with strong Au soil anomaly (between L 56+00E and L 57+00E).
LJ-02	56+00E	0+00N	(+62, -31)	Weak current density source. Land source. Found on one line only.
LJ-03	56+00E 57+00E 58+00E 59+00E	0+62N 0+50N 0+00N 0+62S	(+73, -35) (+71, -89) (+82, -16) (+180, +21)	Weak to moderate current density source, but continuous trend. Located south of Linjog Lake (50 m to 200 m). Loose association with moderate Au soil anomaly (SE of L 59+00E).
LJ-04	56+00E 57+00E	2+12N 2+00N	(+194, -1) (+193, -35)	Strong current density source. Land source found at the very edge of Linjog Lake (south).
LJ-05	58+00E 59+00E	1+25S 1+62S	(+88, -17) (+196, +60)	Moderate current density source. Located south of Linjog Lake (150 m to 200 m).
LJ-06	61+00E	0+12N	(+41, -113)	Weak current density source. Found at the edge of Linjog Lake (south). Loose association with weak Au soil anomaly (north of VLF anomaly station). Found on one line only.

Table 2. Outlined Conductive Sources (continued)

Conductive anomaly	Anomaly Location		Cross-over response in-phase amplitude (%)	Comments
	Line	Station		
Linjog Lake Grid				
LJ-07	61+00E 62+00E	1+75N 0+75N	(+17, -194) (+196, +60)	Strong current density source and quite broad. Land source found at the very edge of Linjog Lake (south), maybe just slightly in the lake on L 61+00E. Trend is following that of **LJ-10**, but amplitude of **LJ-07** is much lower, not a clear continuation.
LJ-08	64+00E (*Q*) 65+00E	2+75N 2+25N	(+124, -56) (-29, -79)	Weak current density source. Lake source. Continuity around L 64+00E is questionable due to poor data quality observed on this line.
LJ-09	63+00E 64+00E (*Q*)	1+25N 1+00N	(+126, +49) (+104, -29)	Weak current density source. Lake source. Continuity around L 64+00E is questionable due to poor data quality observed on this line.
LJ-10	63+00E	0+12S	(+56, -99)	Weak current density source. Located south of Linjog Lake (30 m). Loose association with strong Au soil anomaly (south). Found on one line only.
LJ-11	69+00E	3+75S	(+126, -64)	Moderate current density source. Located south of Linjog Lake (200 m). Found on one line only.

Table 2. Outlined Conductive Sources (continued)

Conductive anomaly	Anomaly Location		Cross-over response in-phase amplitude (%)	Comments
	Line	Station		
Linjog Lake Grid				
LJ-12	68+00E	2+50S	(+113, -27)	Moderate current density source. Located south of Linjog Lake (100 m). Found on one line only.
LJ-13	64+00E (*Q*) 65+00E	3+50S 4+00S	(+79, -40) (+157, -67)	Moderate to weak current density source. Located south of Linjog Lake (175 m to 350 m). Continuity around L 64+00E is questionable due to poor data quality observed on this line.
LJ-14	60+00E	0+25N	(+185, -83)	Strong current density source. Land source found at the edge of Linjog Lake (south). Found on one line only.
LJ-15	65+00E	1+00S	(+129, -15)	Moderate current density source. Found near the south edge of Linjog Lake. Found on one line only.
LJ-16	68+00E 69+00E	4+37S 4+87S	(+79, -40) (+165, -25)	Weak current density source. Located south of Linjog Lake (275 m to 300 m).
LJ-17	66+00E	0+25S	(+130, +15)	Moderate current density source. Lake source. Found on one line only.

Table 2. Outlined Conductive Sources (continued)

Conductive anomaly	Anomaly Location		Cross-over response in-phase amplitude (%)	Comments
	Line	Station		
Linjog Lake Grid				
LJ-18	66+00E	3+12S	(+144, -72)	Moderate current density source. Located south of Linjog Lake (125 m). Found on one line only. Loose association with Au soil anomaly to the south.
LJ-19	68+00E 69+00E	0+12S 0+75S	(+79, -40) (+164, -60)	Weak current density source. Located along the north edge of Linjog Lake, just outside of the LUSZ.
LJ-20	69+00E	1+50S	(+197, -39)	Moderate current density source. Lake source. Found on one line only.
Unnamed Lake Grid				
UN-01	80+00E 81+00E 82+00E 83+00E	1+75N 1+87N 1+75N 1+50N	(+74, -92) (+91, -109) (+170, +107) (+145, -59)	Strong current density source. Located within Unnamed Lake. Questionable continuity across L 82+00E.
UN-02	80+00E 81+00E	0+87N 0+50N	(-16, -38) (+130, +68)	Low current density source. Source starts in Unnamed Lake and then extends eastward onto land. Au soil anomaly correlation north of L81+00E.
UN-03	81+00E 82+00E 83+00E 84+00E 85+00E	0+00N 0+62S 1+37S 1+75S 2+50S	(+118, +35) (+139, +47) (+155, +79) (+17, -64) (+86, +33)	Weak current density source. Land source (southern end of survey lines).

Table 2. Outlined Conductive Sources (continued)

Conductive anomaly	Anomaly Location		Cross-over response in-phase amplitude (%)	Comments
	Line	Station		
Unnamed Lake Grid				
UN-04	85+00E	1+37N	(+167, -30)	Low current density source. Lake source. Found on one line only.
UN-05	82+00E 83+00E 84+00E 85+00E	0+62N 0+37N 0+12S 0+62S	(+116, -42) (+106, +1) (+139, -107) (+91, -64)	Moderate current density source. Found along the southern edge of Unnamed Lake. Loose Au soil anomaly correlation south of L83+00E and L 84+00E.
UN-06	85+00E	0+75N	(+84, +1)	Low current density source. Lake source. Found on one line only.
UN-07	84+00E	1+00S	(+74, -132)	Strong current density source. Found inland, ~70 m south of Unnamed Lake. Found on one line only.
UN-08	84+00E	0+50N	(+163, +41)	Low current density source. Found along the southern edge of Unnamed Lake. Found on one line only.

Q = Questionable continuity due to poor data quality on L 64+00E

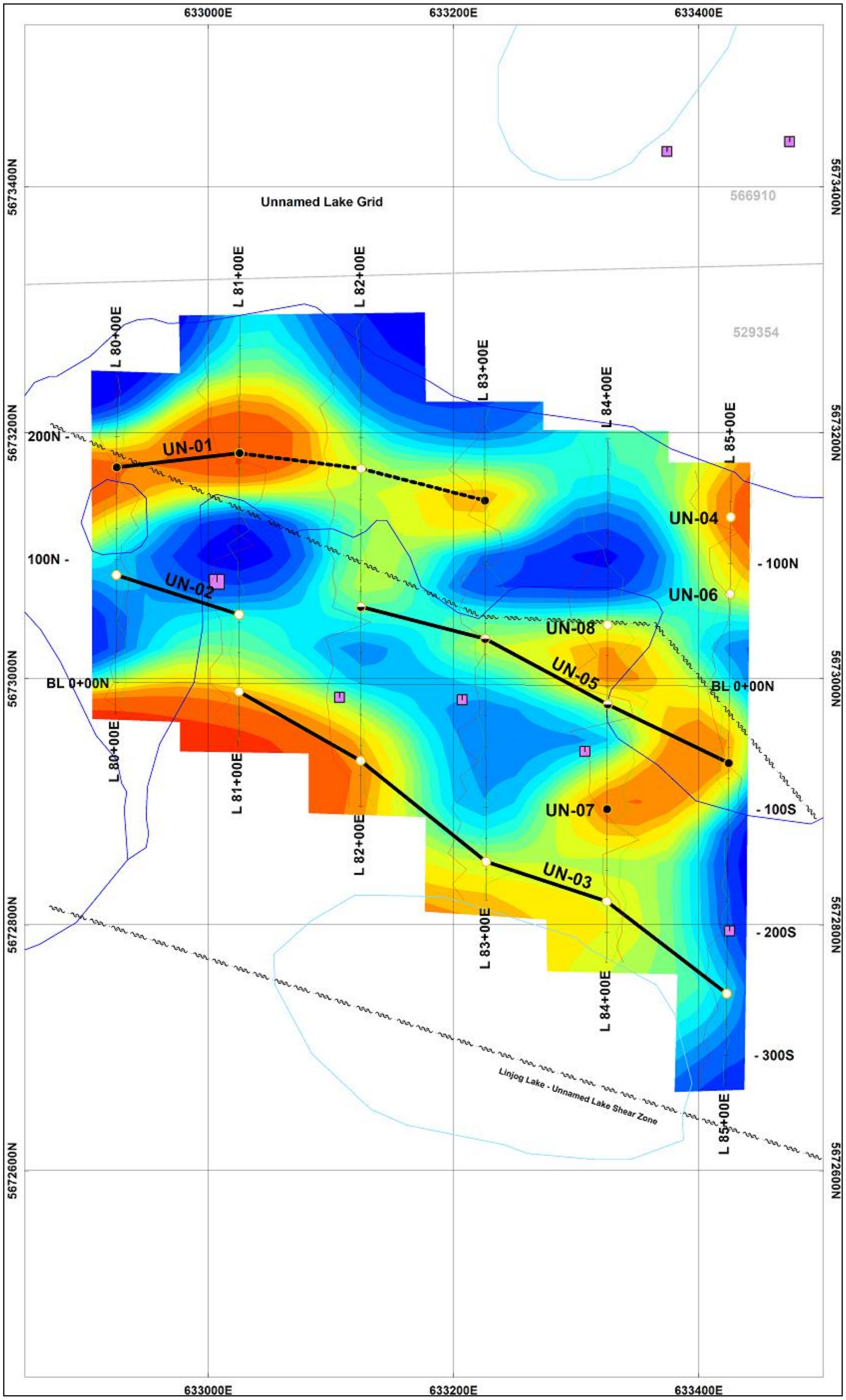


Figure 3. Fraser Filter Contours with outlined VLF Conductors – Unnamed Lake

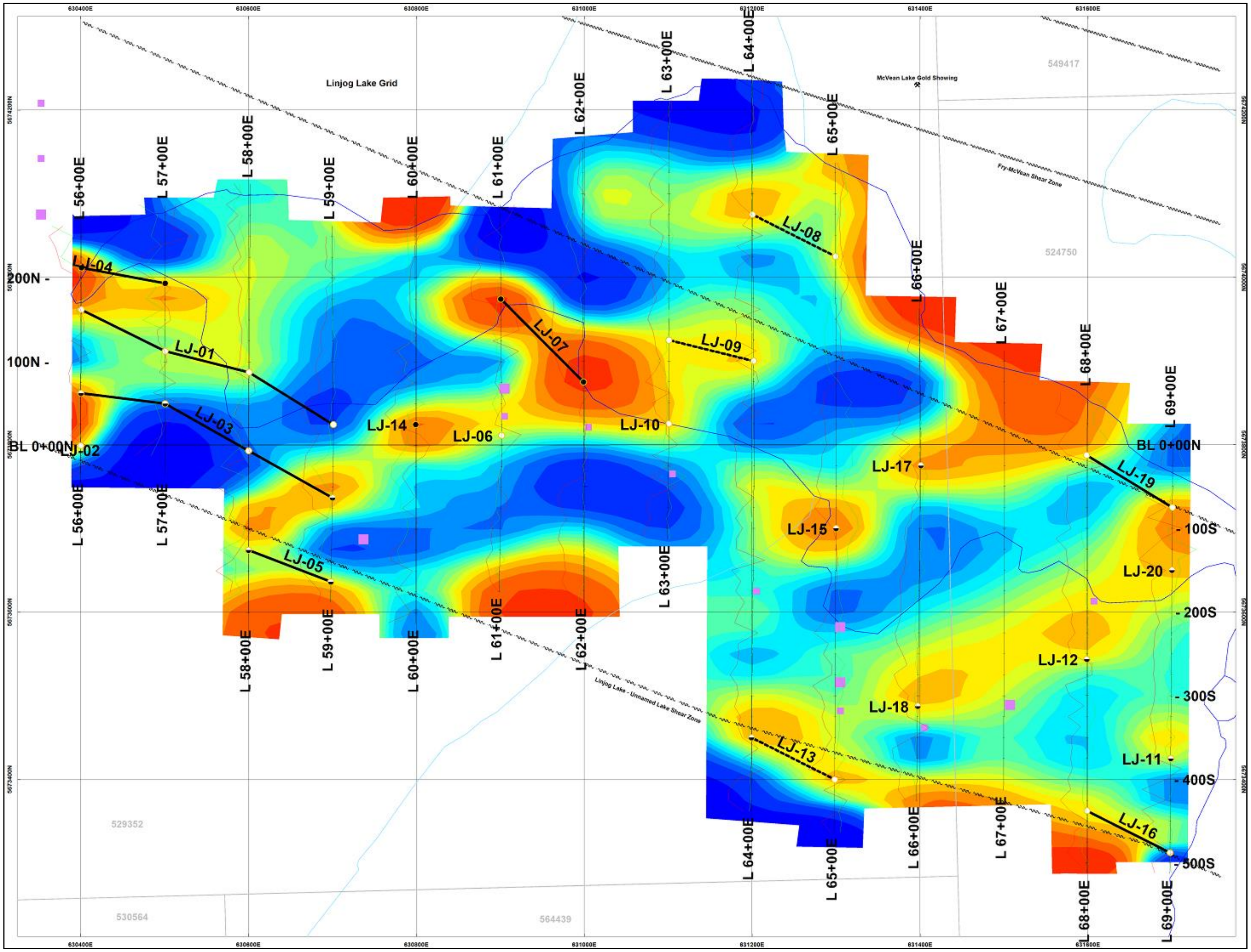


Figure 4. Fraser Filter Contours with outlined VLF Conductors – Linjog Lake

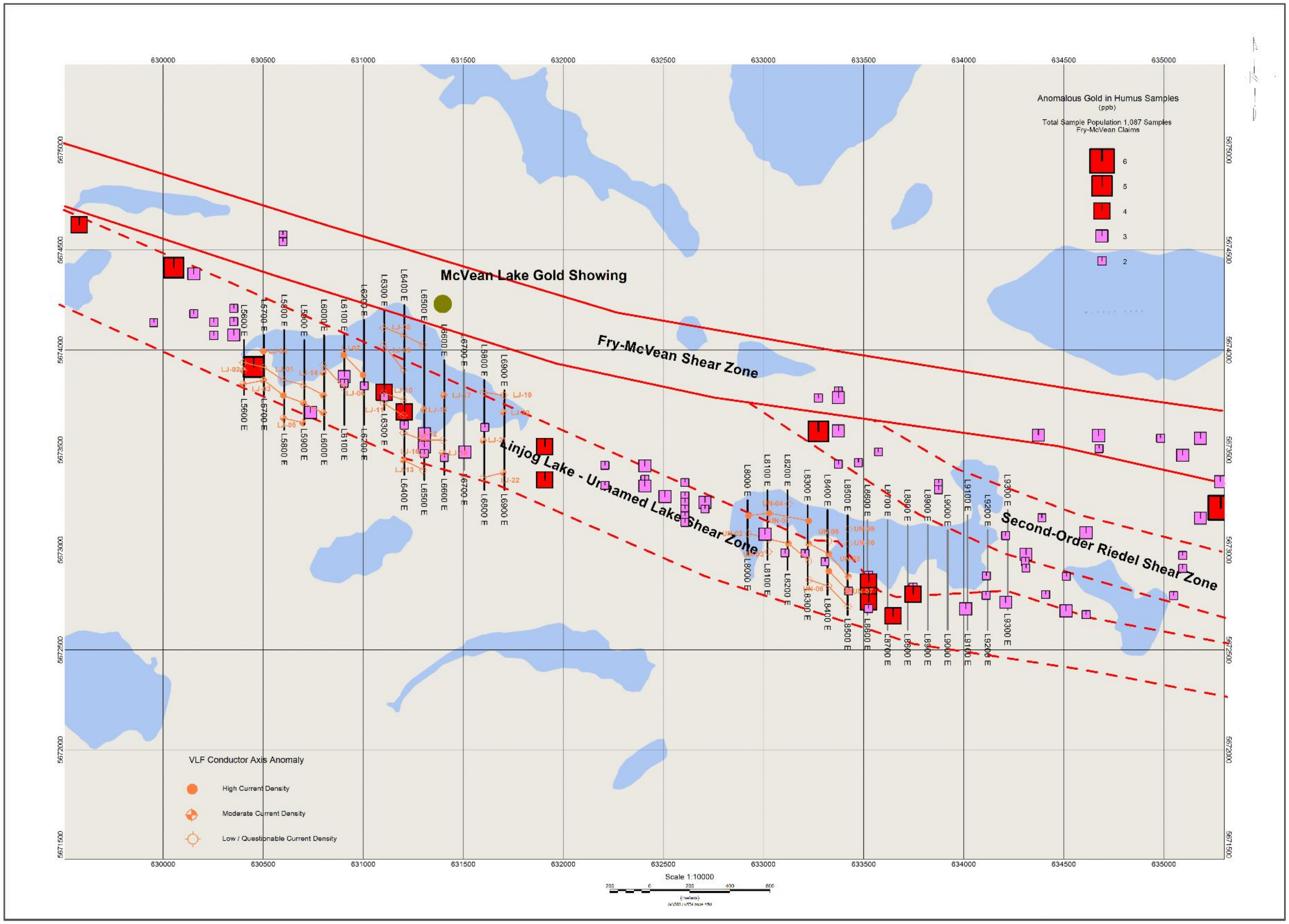
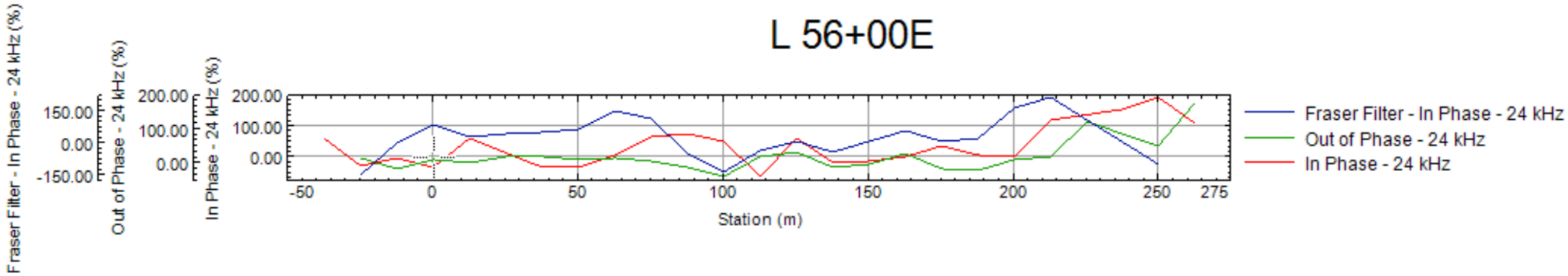


Figure 5. Fry-McVean Project with Fry-McVean Shear Zones, Au soil anomalies and VLF trends.



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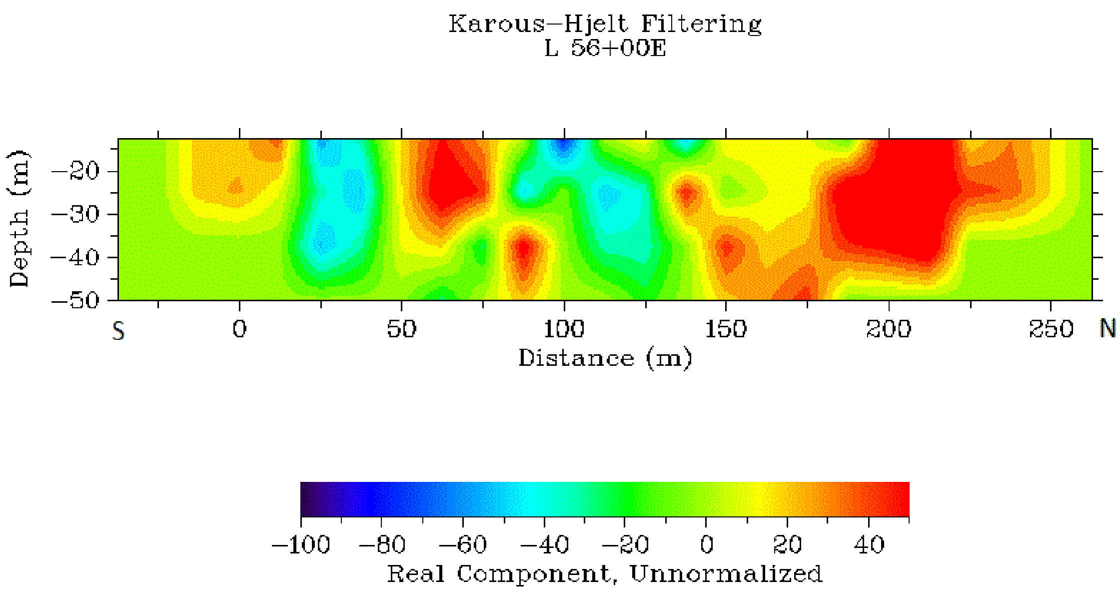

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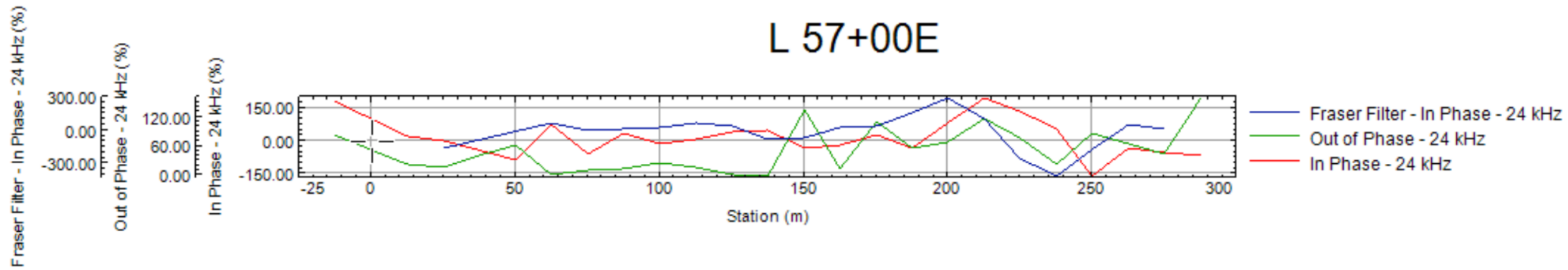
Figure 6. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – LinJog Lake – L 56+00E.



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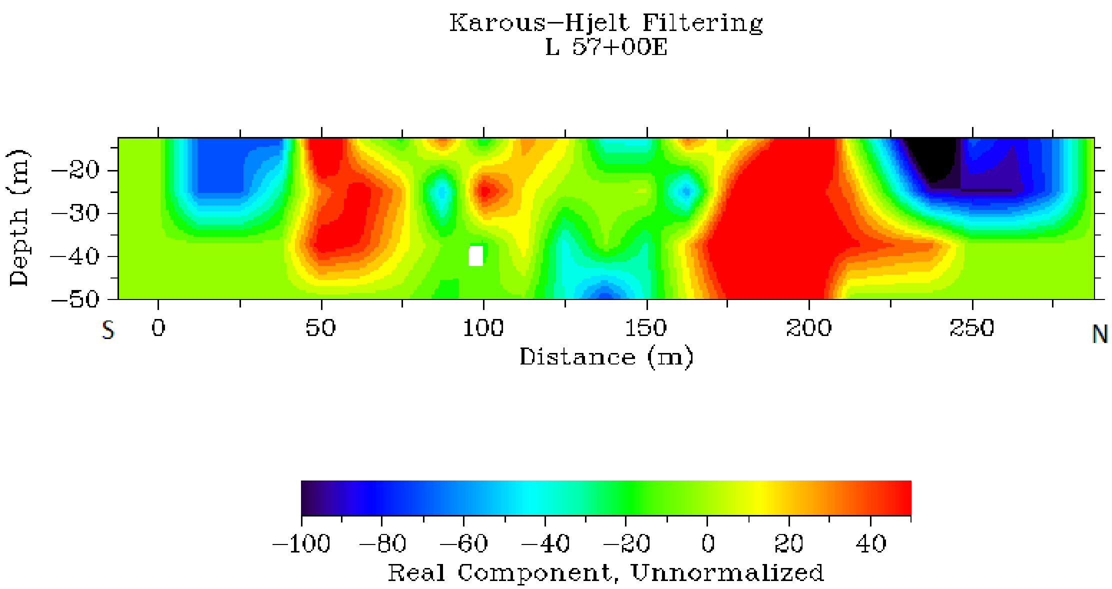

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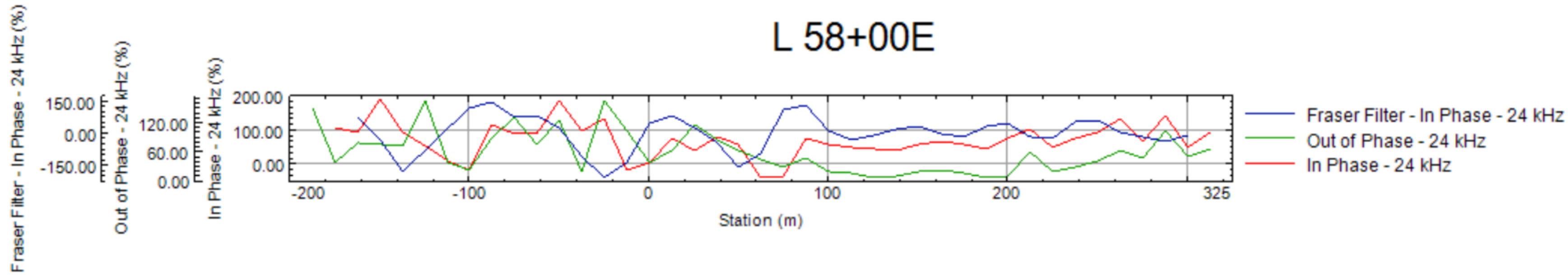
Figure 7. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – LinJog Lake – L 57+00E.



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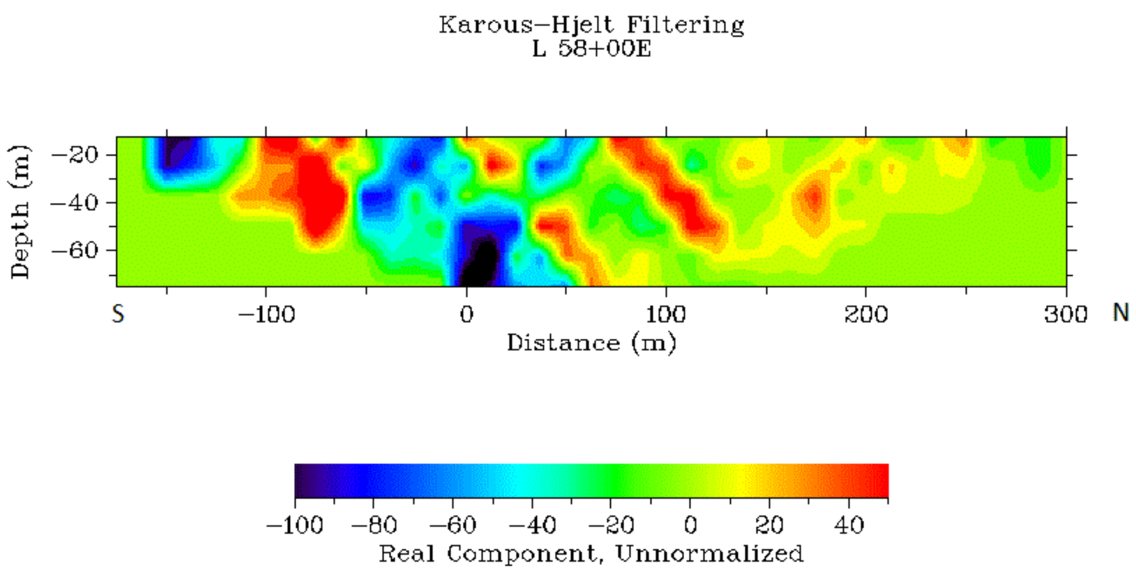

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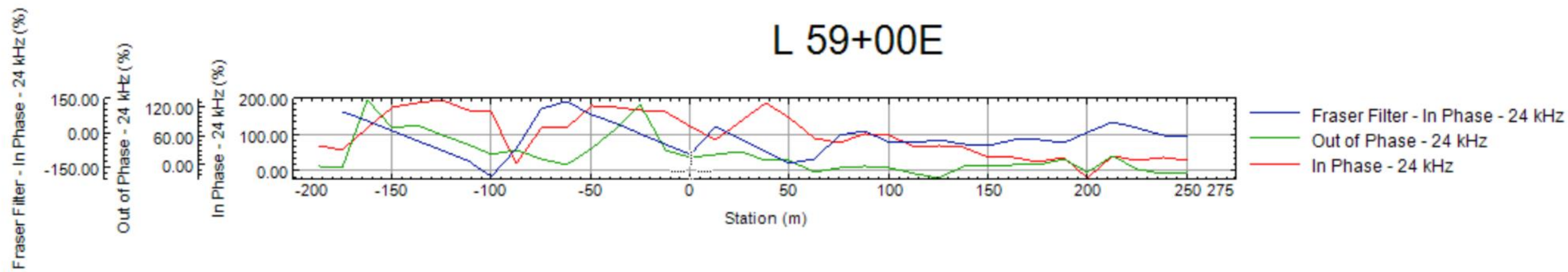
Figure 8. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – LinJog Lake – L 58+00E.



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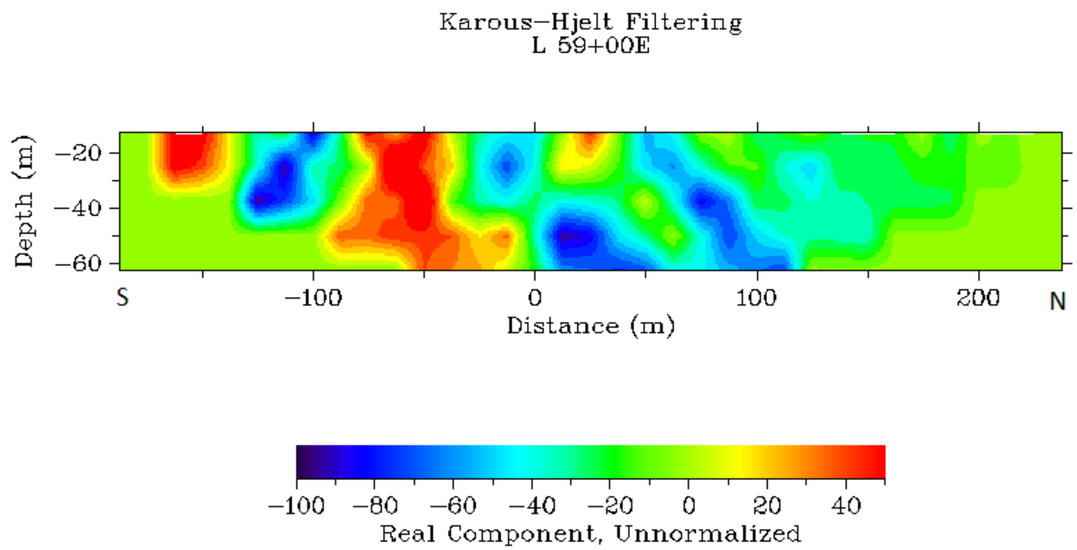

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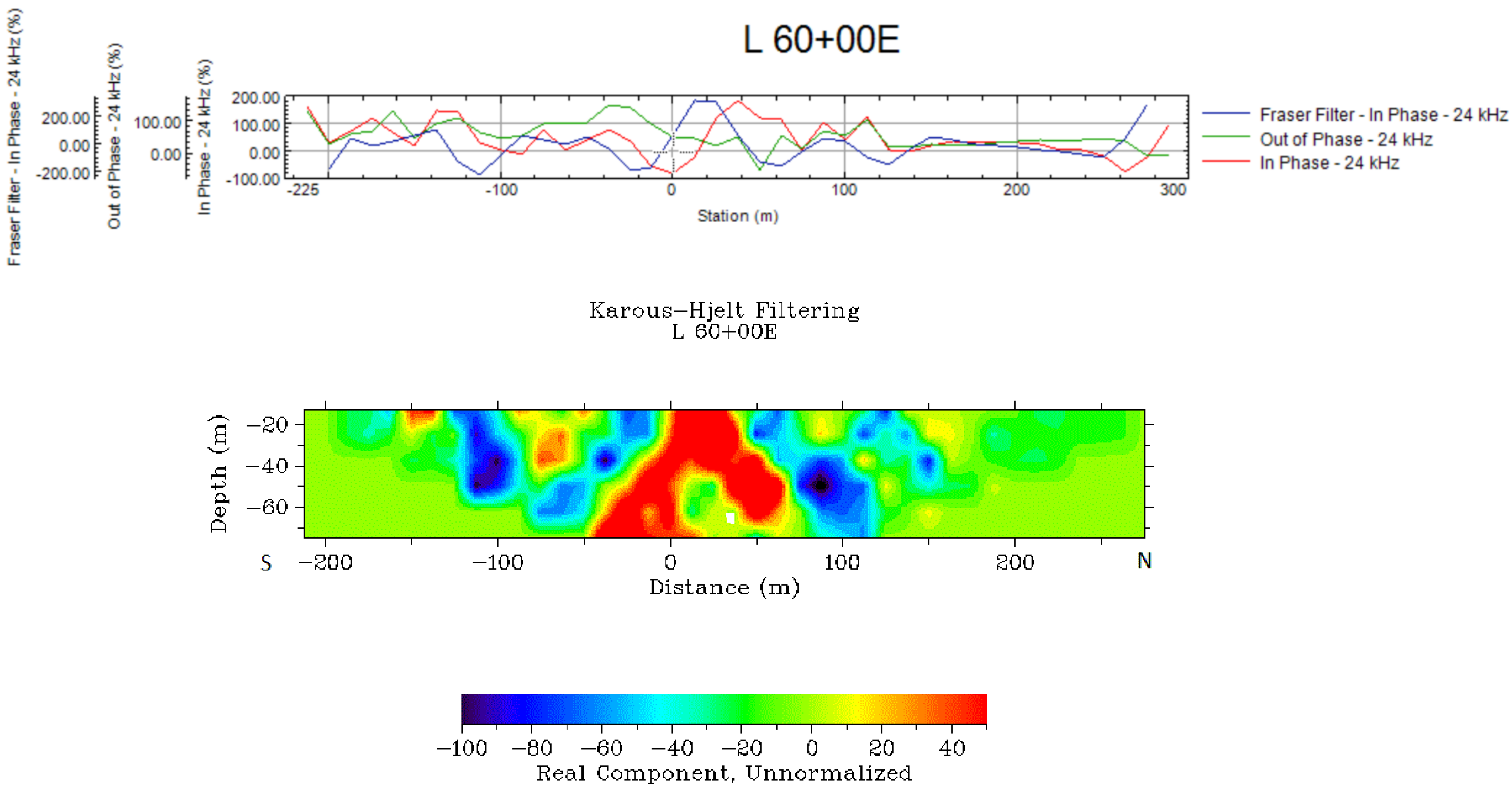
Figure 9. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – LinJog Lake – L 59+00E.



a)

b)

Figure 10. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – LinJog Lake – L 60+00E.

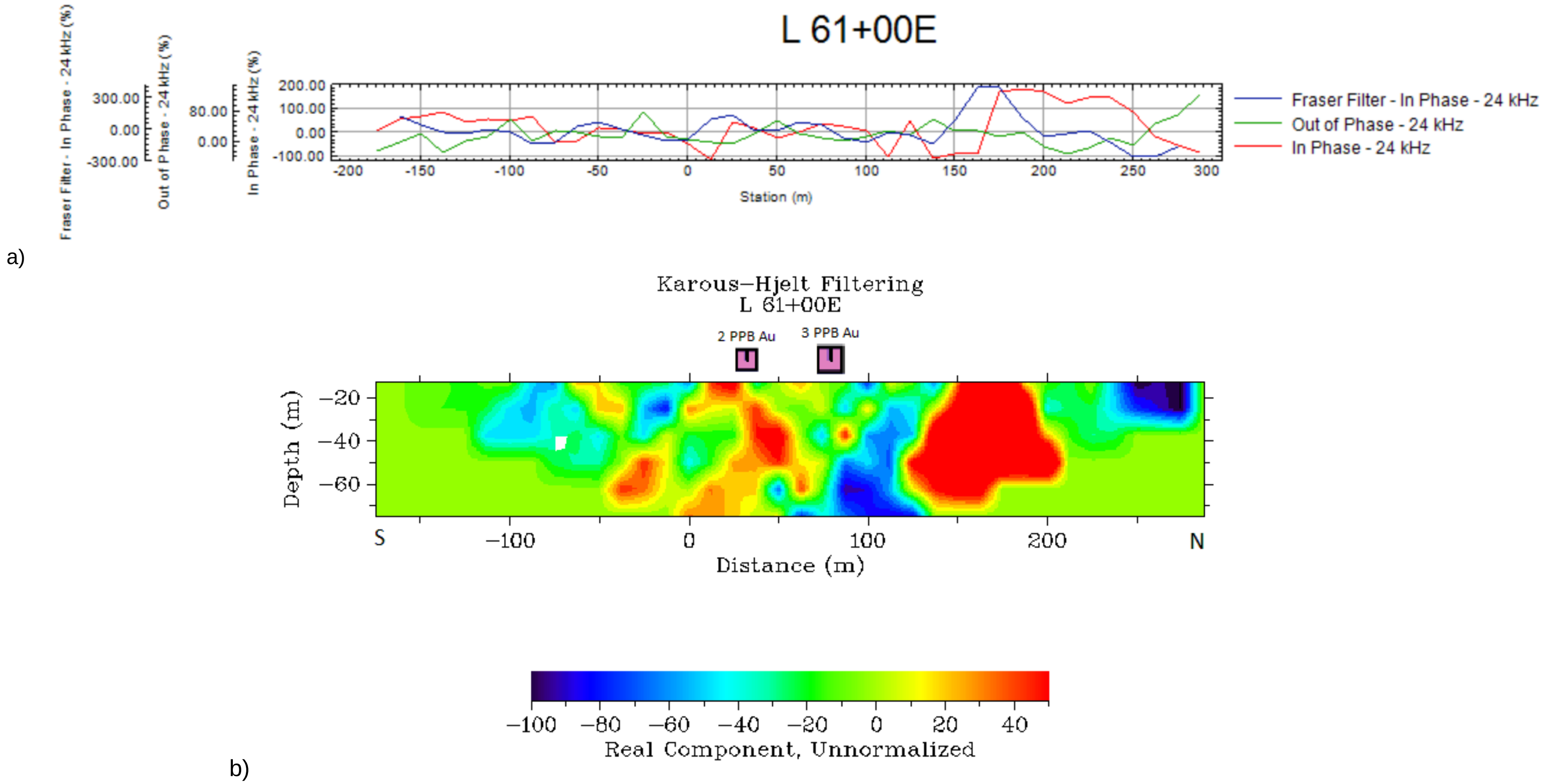
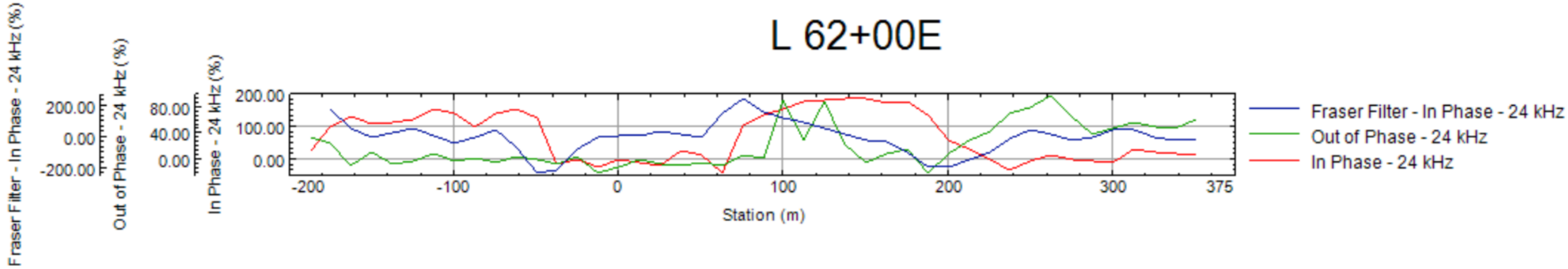


Figure 11. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – LinJog Lake – L 61+00E.



a)

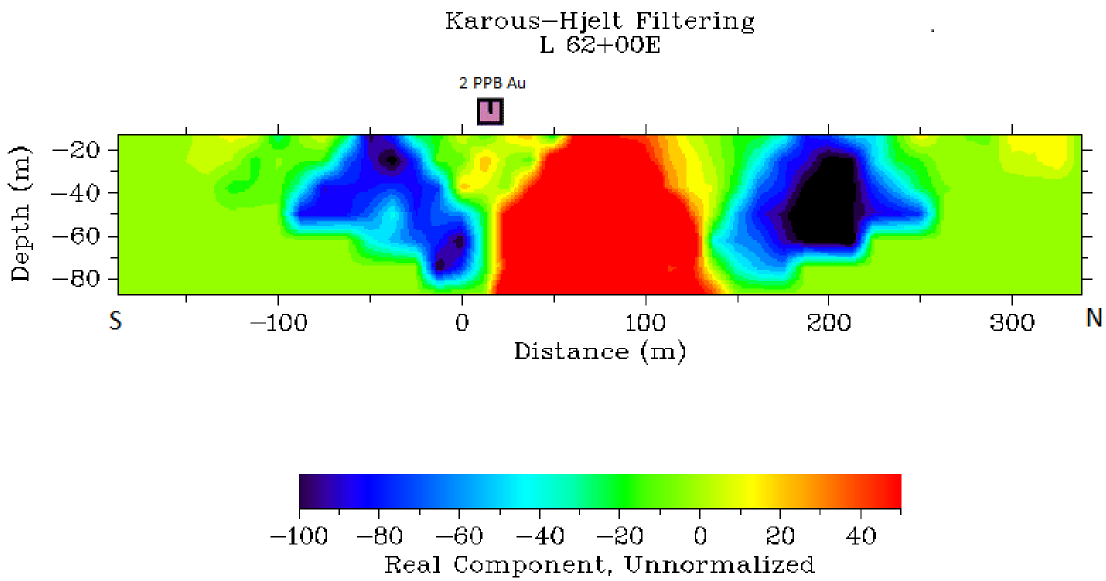


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Figure 12. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – LinJog Lake – L 62+00E.

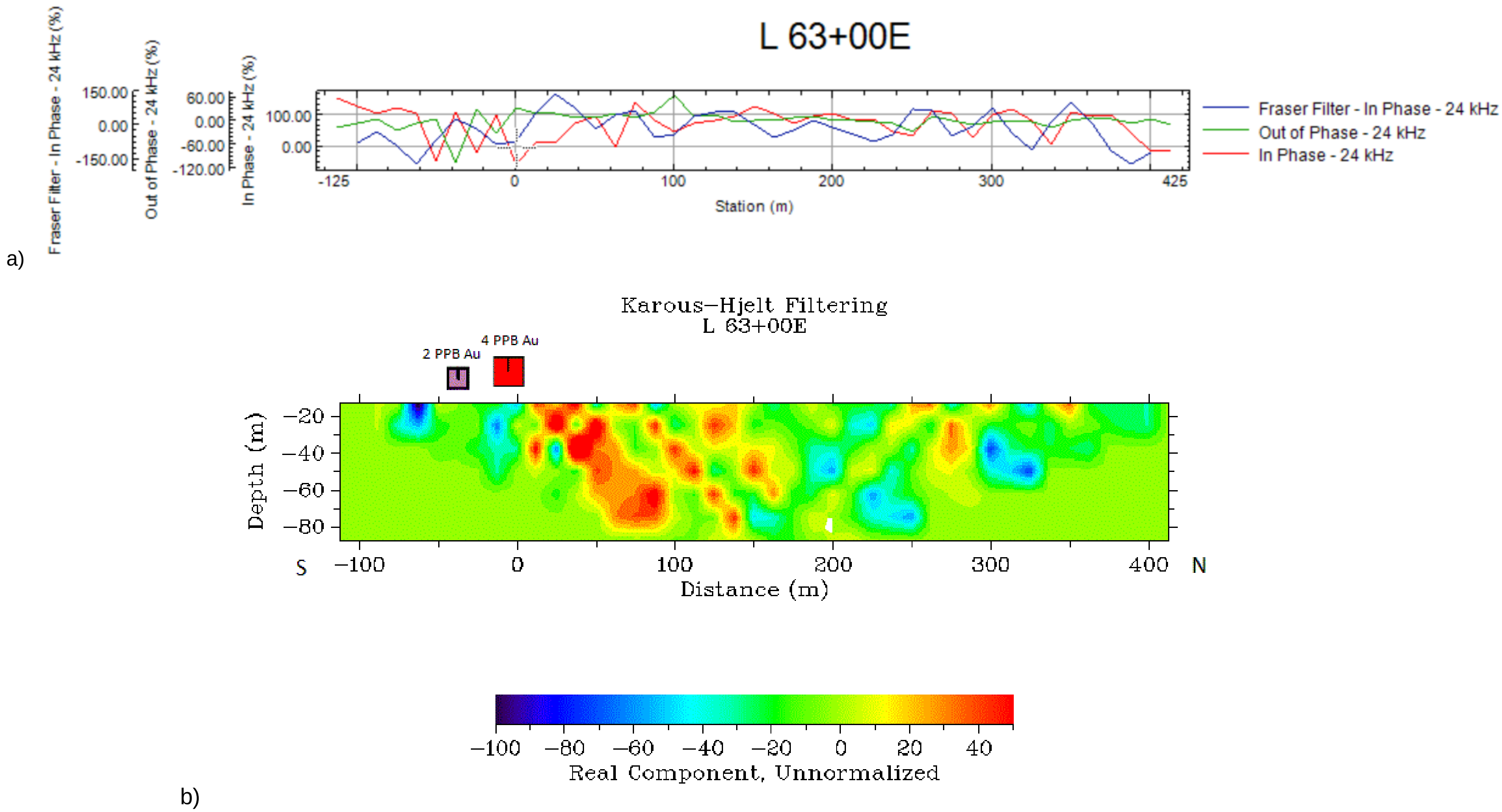


Figure 13. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – LinJog Lake – L 63+00E.

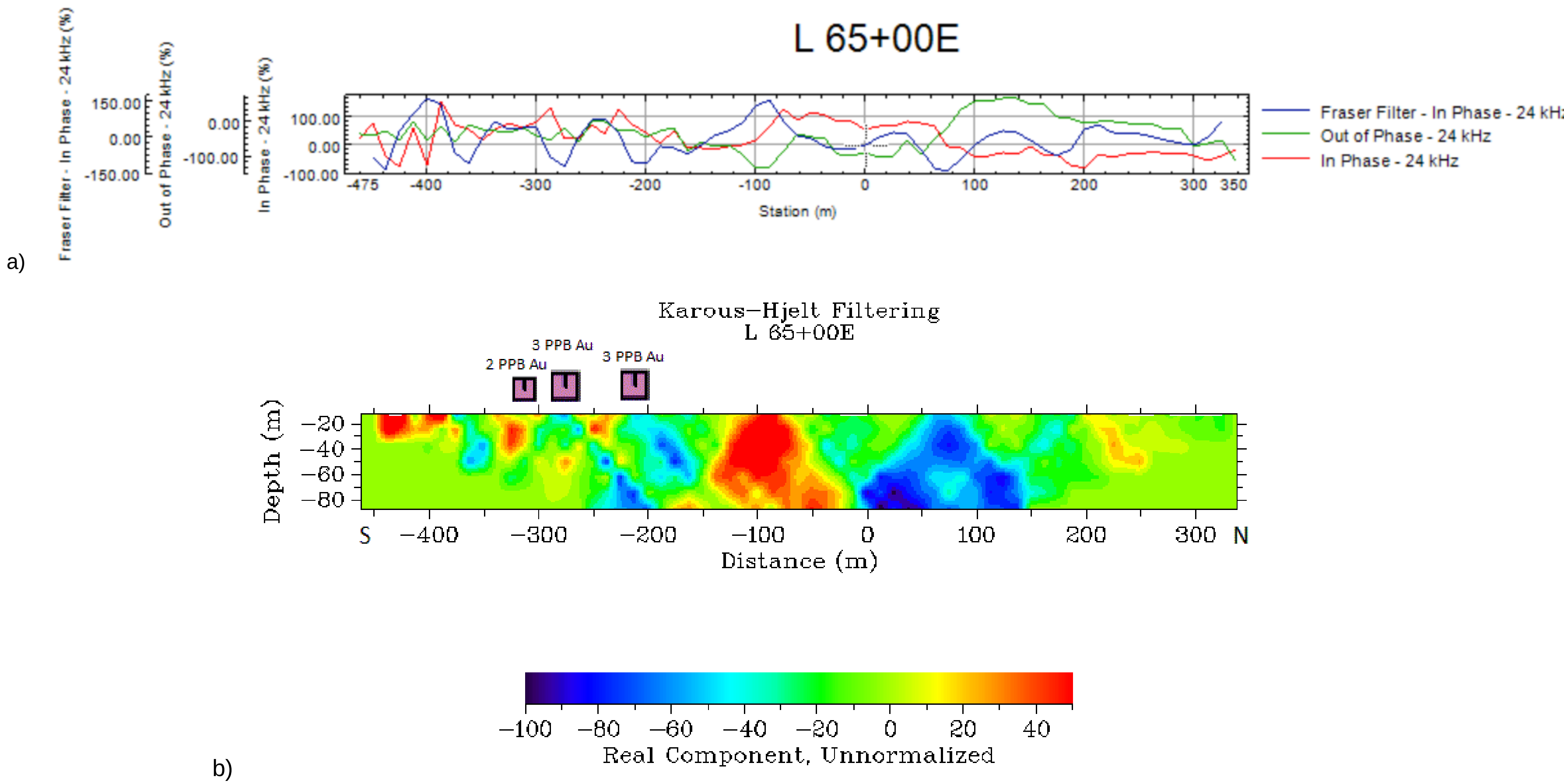
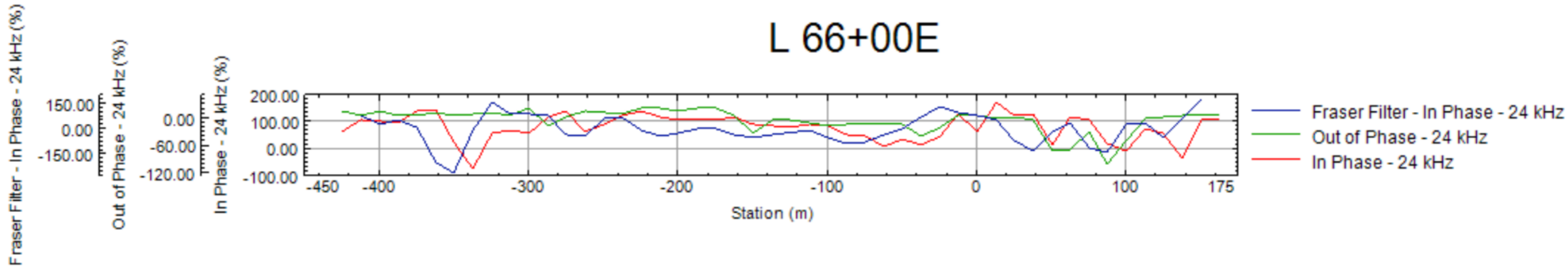


Figure 14. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – LinJog Lake – L 65+00E.



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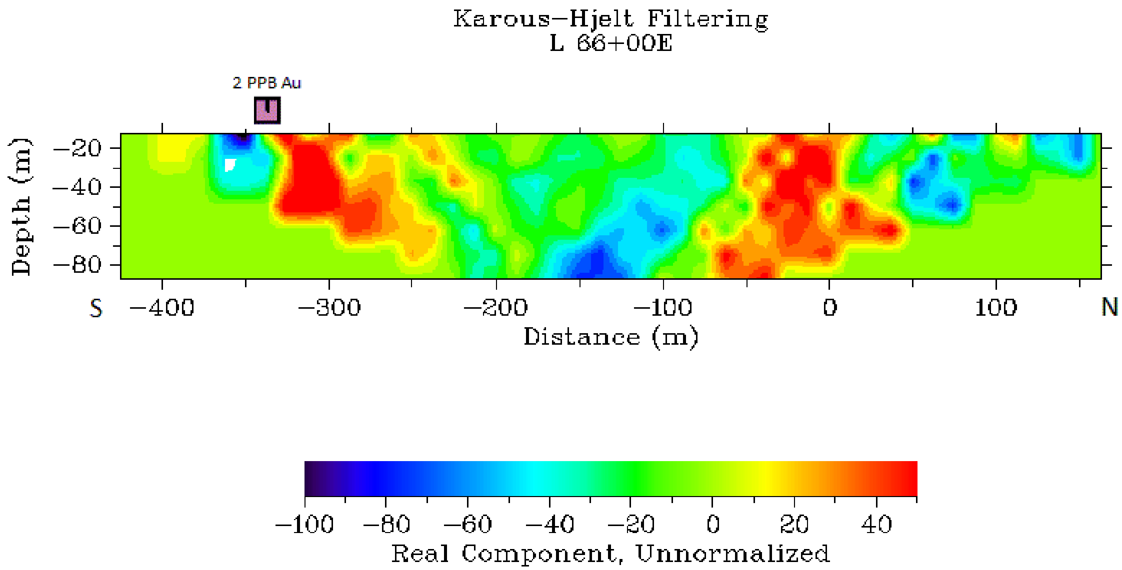

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Figure 15. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – LinJog Lake – L 66+00E.

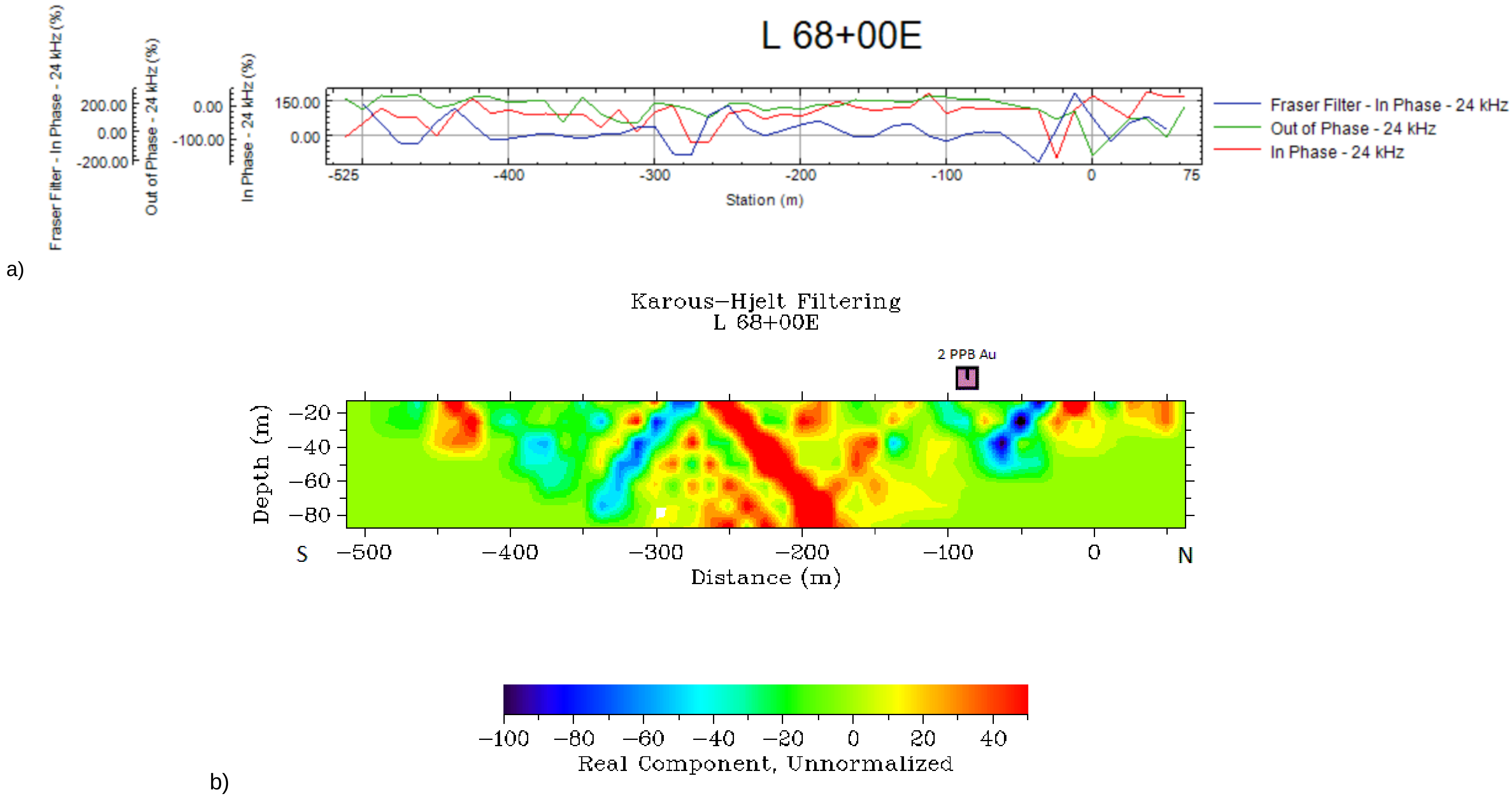
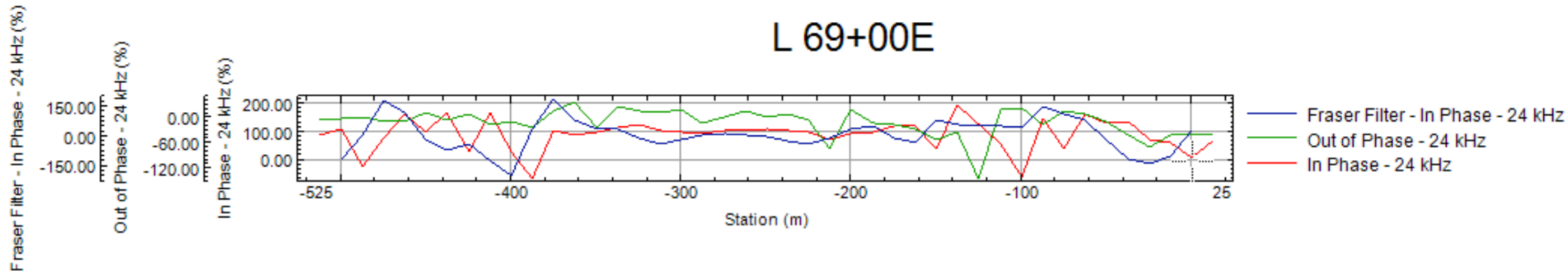


Figure 16. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – LinJog Lake – L 68+00E.



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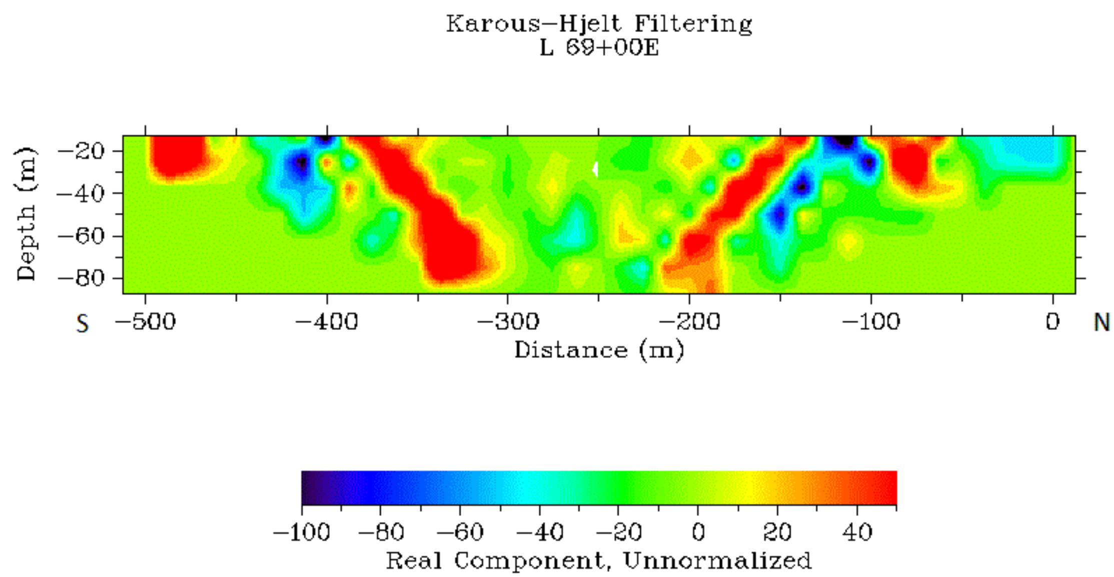

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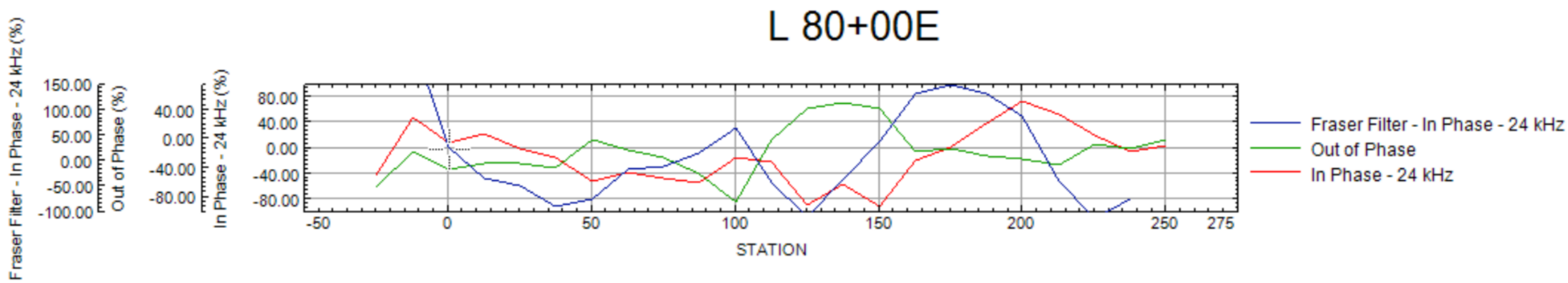
Figure 17. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – LinJog Lake – L 69+00E.



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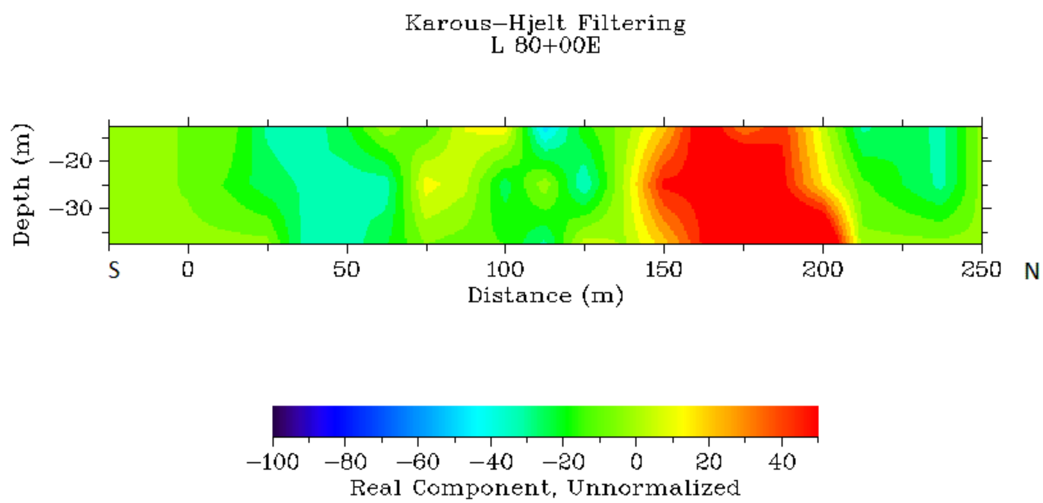

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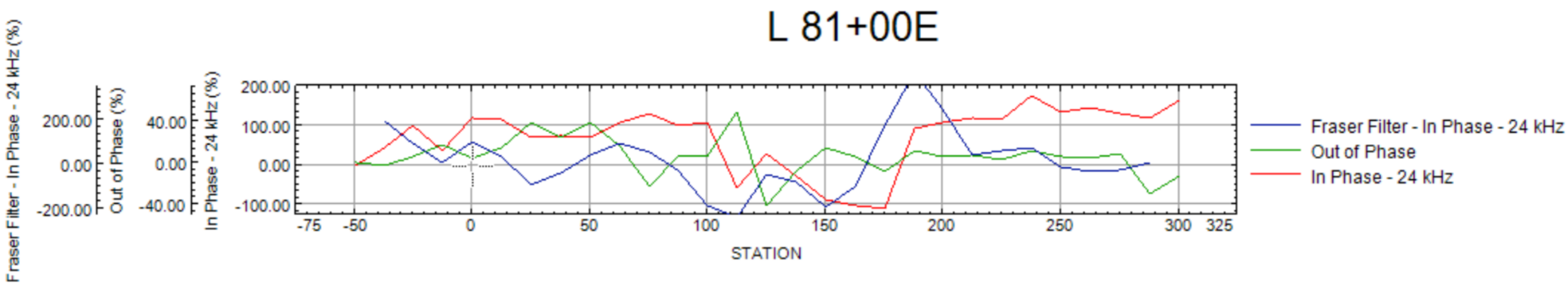
Figure 18. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – Unnamed Lake – L 80+00E.



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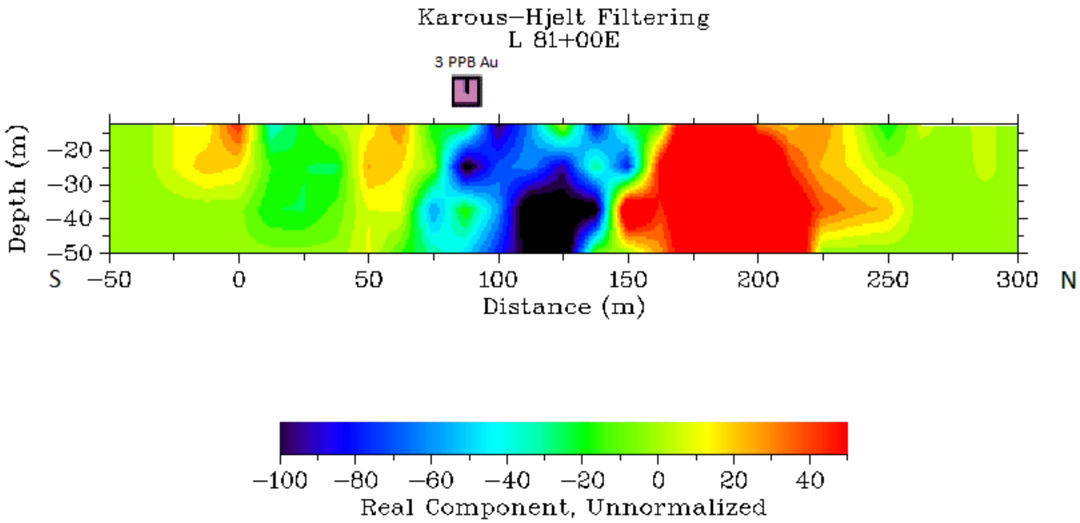

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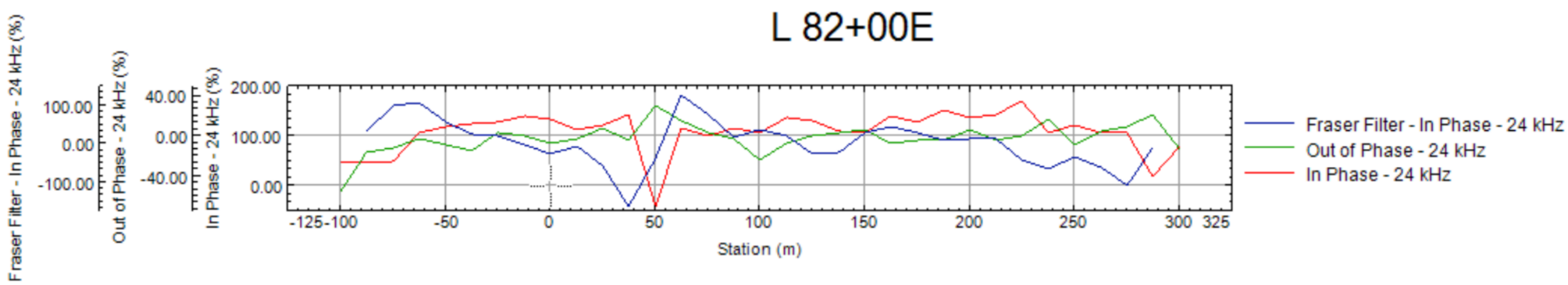
Figure 19. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – Unnamed Lake – L 81+00E.



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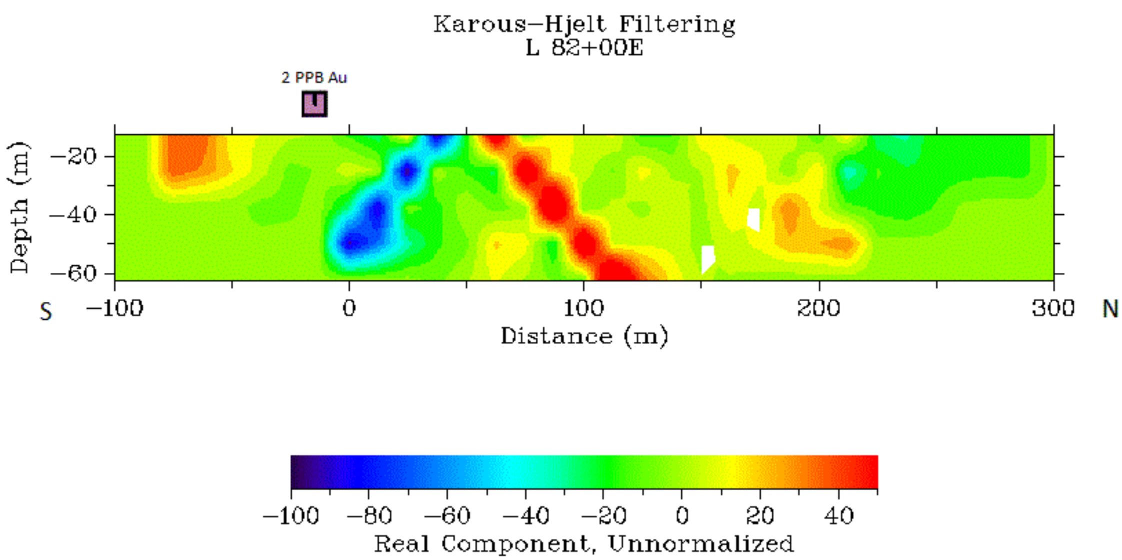

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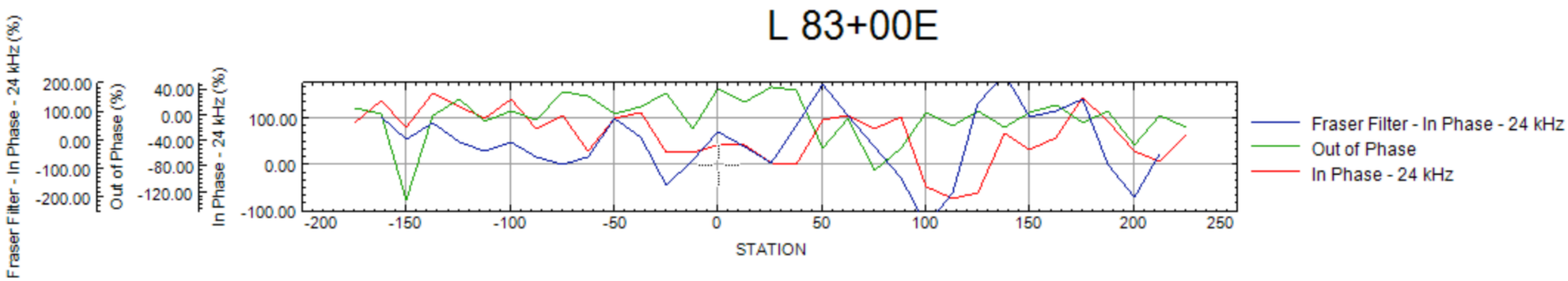
Figure 20. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – Unnamed Lake – L 82+00E.



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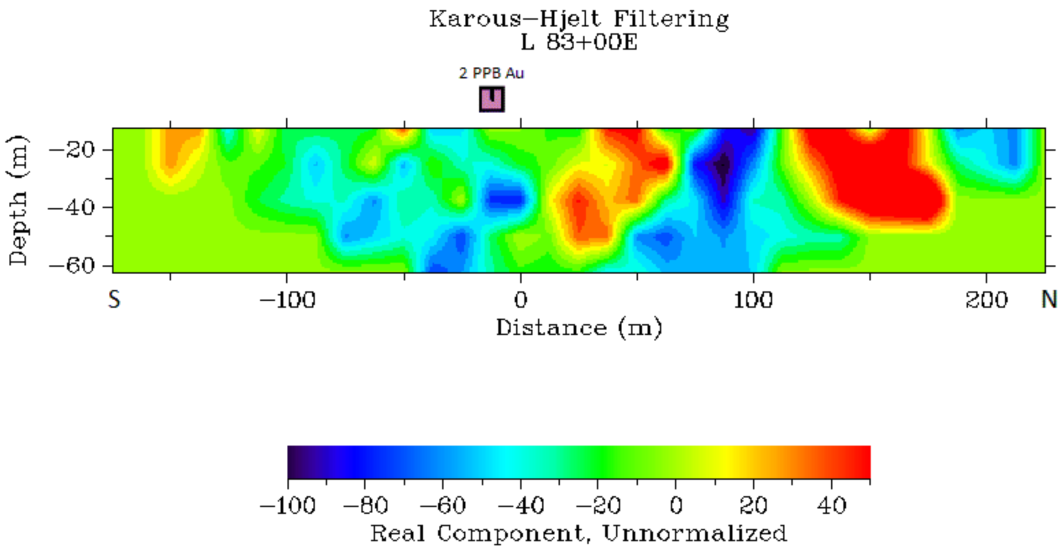
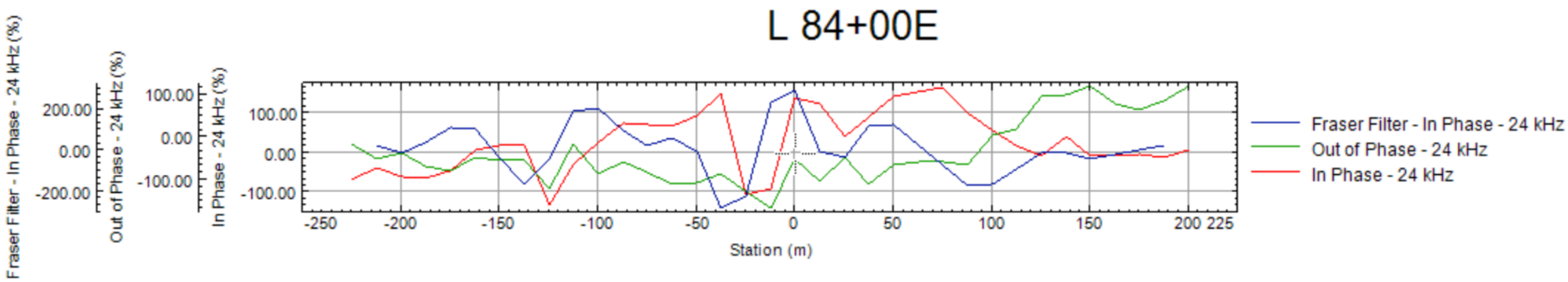
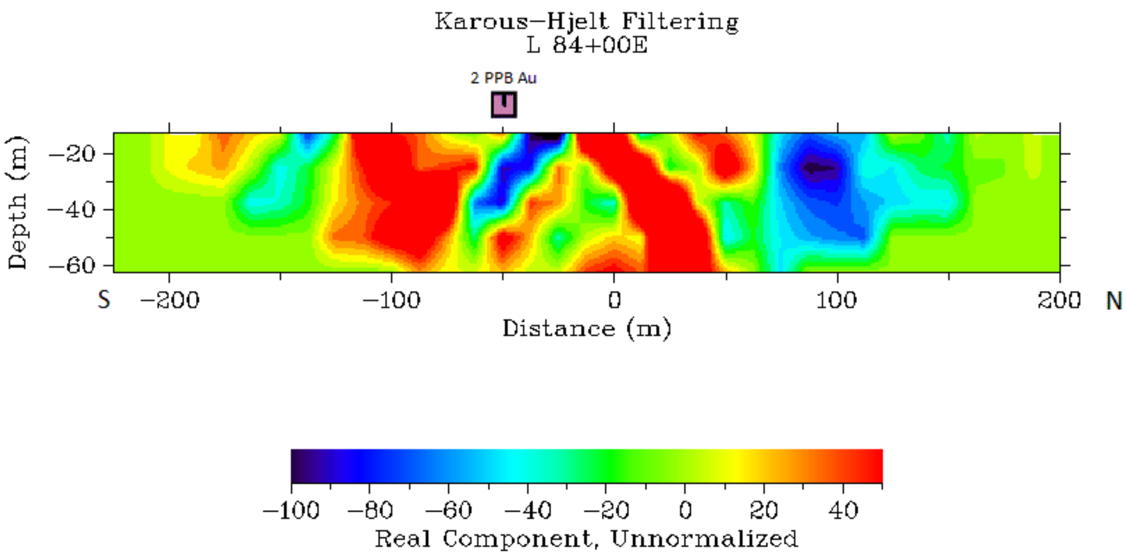


b)

Figure 21. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – Unnamed Lake – L 83+00E.



a)



b)

Figure 22. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – Unnamed Lake – L 84+00E.

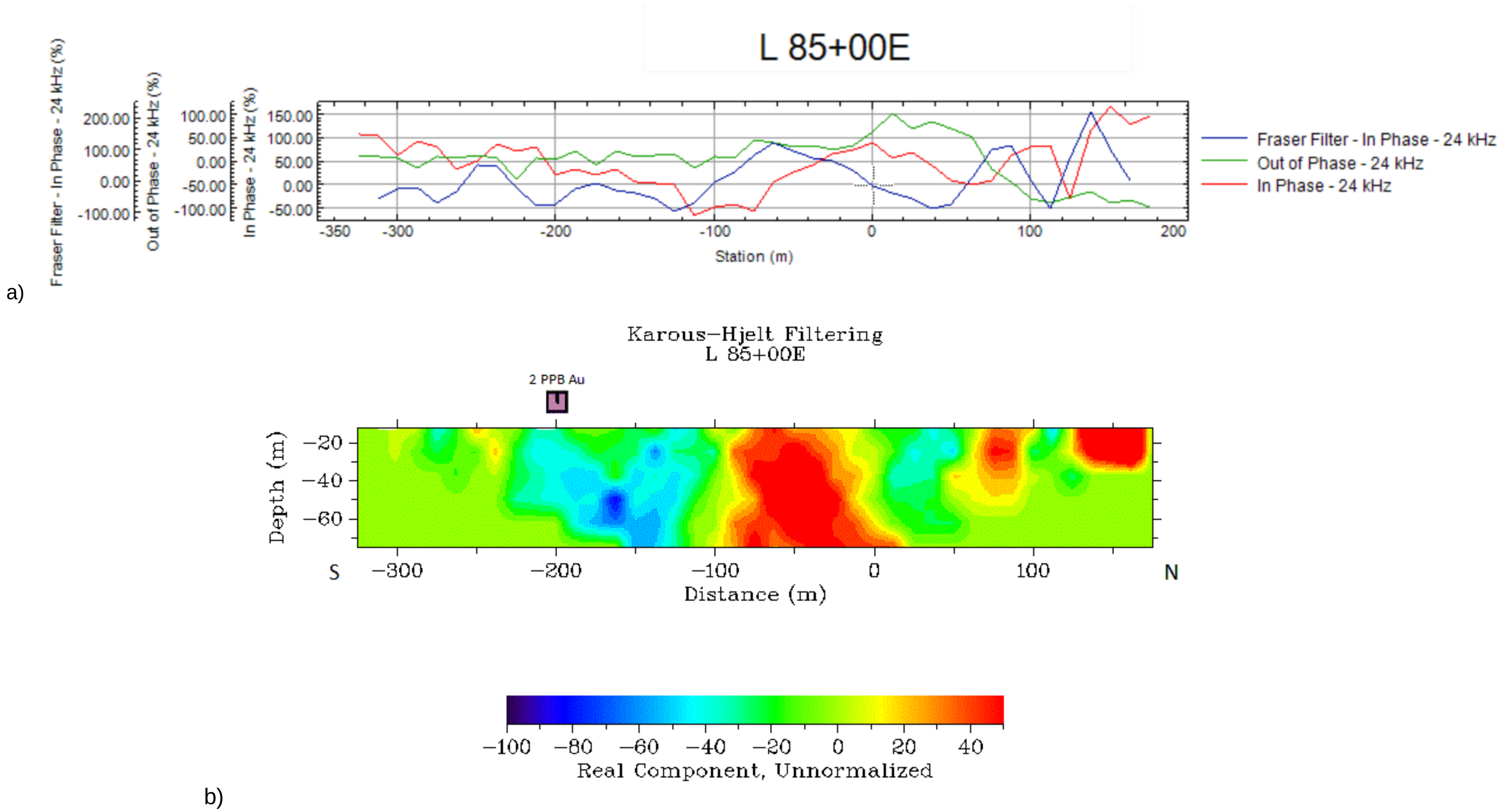


Figure 23. In-Phase, Out-of-Phase and Fraser Filter Profiles (a) Current density Pseudo-distributions obtained with Karous-Hjelt filter (b) – Unnamed Lake – L 85+00E.

4. CONCLUSION AND RECOMMENDATION

Many conductive axes and sources were highlighted in this project with the VLF-EM survey. The most prominent conductors for shear hosted gold mineralization were identified and are reported in Table 3 below. A Horizontal Loop Electromagnetics (HLEM) survey is recommended to verify the extent of shallow conductors and a Resistivity/ Induced Polarization (IP) survey is recommended to verify the nature of these conductive axes.

❑ *RECOMMENDATIONS*

○ *PROSPECTING/TRENCHING*

Much of the grid falls over the Linjog and Unnamed lakes, making prospecting and trenching impossible. However, in the southern portion of the survey grid, there are interesting conductive sources recommended for prospecting or trenching. They are outlined in Table 3 below.

○ *SURVEY EXTENSION*

It is recommended that additional survey lines be added on each side of Linjog and Unnamed lake to test the continuity of the conductive sources outlined in this survey (LJ-01 to LJ-04, LJ-11, LJ-19 and LJ-20, UN-01, UN-02, and UN-05). Linking the two survey grids together is also recommended to test the continuity between the survey regions.

An HLEM and an Induced Polarization program should be carried out over the targets below (Table 3) that seem most interesting, to test their extent and potential for disseminated sulphide mineralization in a shear zone environment.

Table 3. Follow-Up Recommendations Summary on the Fry-McVean Project

Source (Priority_ Source)	Location of the Target		Follow-up Work Proposed
	Line	Station	
Linjog Lake			
1_LJ-03	56+00E 57+00E 58+00E 59+00E	0+62N 0+50N 0+00N 0+62S	Further prospecting and trenching along this trend are recommended, due to its strength and strike length, and that it is a land-based source. HLEM is recommended to test the depth extent of this source. Follow-up IP in this area is also recommended to test sulphide potential.

Table 3. Follow-Up Recommendations Summary on the Fry-McVean Project (cont'd)

Source (Priority_ Source)	Location of the Target		Follow-up Work Proposed
	Line	Station	
Linjog Lake			
1_LJ-04	56+00E 57+00E	2+12N 2+00N	Further prospecting and trenching along this source is recommended, due to its strength and that it is a land-based source. Follow-up IP in this area is also recommended to test sulphide potential.
1_LJ-14	60+00E	0+25N	This source is very interesting for sulphide mineralization associated with a shear zone. Further prospecting and trenching at this single line source location is recommended, due to its strength and that it is a land-based source. Follow-up IP in this area is also recommended to test sulphide potential.
2_LJ-07	61+00E 62+00E	1+75N 0+75N	Further prospecting and trenching along this trend are recommended, due to its strength and that it is a land-based source. Prospecting may not be possible on L 61+00E, due to proximity to lake edge. The source of this conductor could partially represent the response of clay sediments from the river. This should be verified before completing the follow-up IP work mentioned. Follow-up IP in this area is also recommended to test sulphide potential.
3_LJ-11	69+00E	3+75S	Further prospecting and trenching at this single line source location is recommended, due to its strength and that it is a land-based source. HLEM is recommended to test the depth extent of this source.
3_LJ-12	68+00E	2+50S	Further prospecting and trenching at this single line source location is recommended, due to its strength and that it is a land-based source. HLEM is recommended to test the depth extent of this source.

Table 3. Follow-Up Recommendations Summary on the Fry-McVean Project (cont'd)

Source (Priority_ Source)	Location of the Target		Follow-up Work Proposed
	Line	Station	
Linjog Lake			
3_LJ-15	65+00E	1+00S	Prospecting / trenching not possible due to lake. HLEM is recommended to test the depth extent of this source. Follow-up Induced Polarization (IP) survey to gain information about the potential sulphide content associated with conductor axis is recommended.
3_LJ-17	66+00E	0+25S	Prospecting / trenching not possible due to lake. HLEM is recommended to test the depth extent of this source. Follow-up Induced Polarization (IP) survey to gain information about the potential sulphide content associated with conductor axis is recommended.
3_LJ-18	66+00E	3+12S	Further prospecting and trenching at this single line source location is recommended, due to its strength and that it is a land-based source. HLEM is recommended to test the depth extent of this source.
3_LJ-20	69+00E	1+50S	Prospecting / trenching not possible due to lake. HLEM is recommended to test the depth extent of this source. Follow-up Induced Polarization (IP) survey to gain information about the potential sulphide content associated with conductor axis is recommended.
Unnamed Lake			
1_UN-01	80+00E 81+00E 82+00E 83+00E	1+75N 1+87N 1+75N 1+50N	Prospecting / trenching not possible due to lake. Follow-up Induced Polarization (IP) survey to gain information about the potential sulphide content associated with conductor axis is recommended.

Table 3. Follow-Up Recommendations Summary on the Fry-McVean Project (cont'd)

Source (Priority_ Source)	Location of the Target		Follow-up Work Proposed
	Line	Station	
Unnamed Lake			
2_UN-07	84+00E	1+00S	Further prospecting and trenching along this trend are recommended, due to its Au soil anomaly correlation, strength, and that it is a land-based source. Follow-up IP in this area is also recommended to test sulphide potential.
2_UN-05	82+00E 83+00E 84+00E 85+00E	0+62N 0+37N 0+12S 1+25S	Further prospecting and trenching along this trend are recommended, due to its strength, and that it is a land-based source. HLEM is recommended to test the depth extent of this source. Follow-up IP in this area is also recommended to test sulphide potential.
3_UN-02	80+00E 81+00E 82+00E 83+00E	0+87N 0+50N 0+37N 0+50S	Further prospecting and trenching along this trend are recommended, due to its Au soil anomaly correlation. HLEM is recommended to test the depth extent of this source. Follow-up IP in this area is also recommended to test sulphide potential.

The interpretation of the ground magnetic and VLF-EM data embodied in this report is essentially a geophysical appraisal of the Fry-McVean Project. As such, it incorporates only as much geoscientific information as the author had on hand at the time. Geologists thoroughly familiar with the studied area may be in a better position to evaluate the geological significance of the various geophysical signatures. Moreover, as time passes and data provided by follow-up programs are compiled, the priority and significance of exploration targets reported in this study may be downgraded or upgraded.

Respectfully submitted,
Abitibi Geophysics Inc.

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PRACTISING MEMBER
2612
ONTARIO

Pam Coles, P.Geo.,
Chief Geophysicist
PGO # 2612

PC/jg

APPENDIX A: FIELDWORK SITE

- *PROJECT ID* — **Fry-McVean Project**
  (Our reference: **20N031**)

- *CLIENT ADDRESS* — 500 Foxview Place
  Ottawa, ON, K1K 4C4

- *CLIENT REPRESENTATIVE* — **Dr. Donald D. Brown, P.Geo.**
  Geologist
  dbrown9874@rogers.com
  Phone: (613) 746-9873

- *LOCATION* — **Drum Lake Area, Northwestern Ontario, Canada**
  NAD83 / UTM zone 15N: 632 300 mE, 5 673 300 mN
  NTS sheet: 52O/03

- *NEAREST SETTLEMENTS* — **Pickle Lake:** 70 km NE
  Sioux Lookout: 140 km SW

Figure 24. General location of the Fry-McVean Project.

- *ACCESS*

Access to the grid was gained by helicopter from Pickle Lake to the survey grids.

- *CULTURAL FEATURES*

No cultural features were observed on the grid area. There was a helicopter present nearby during the survey.

- *GEOMORPHOLOGY*

The terrain of the Fry-McVean project has quite flat topographic relief. Average elevation in the survey grid ranges from 405 m to 415 m, above sea level.

The Linjog and Unnamed lakes represent about 75% of the survey, northern survey bounds in the case of both lakes. The rest of the survey area is covered by the thick Boreal forest.

- *MINING LAND TENURE*

The claim numbers encompassed in the present survey are illustrated in Figure 25 and listed below. All the claims are 100% owned by Dr. Donald Brown.

Claim Numbers: 529352, 524750 and 529354

- *SECURITY AND ENVIRONMENT*

As part of the Abitibi Geophysics EHS program, crew members received first aid training and are provided with the safety equipment and specialized training for the geophysical techniques utilized on this project. In addition, the crew was provided with a satellite telephone for emergency communication.

No incident was reported during this project.

- *SURVEY GRIDS*

Linjog Lake: The survey grid consists of fourteen (14) lines, regularly spaced at 100 m and oriented in the N-S direction (from L 56+00E to L 69+00E). The lines vary in length from about 300 m to roughly 875 m.

Unnamed Lake: The survey grid consists of fourteen (14) lines, regularly spaced at 100 m and oriented in a N-S direction (from L 80+00E to L 93+00E). The lines vary in length from about 275 m to roughly 500 m.

The survey was completed on a virtual grid. The VLF-EM readings were gathered as close as possible to every 12.5 m.

Due to the tight timeframe of the survey, lack of survey lines, and deep snow present throughout the survey area only six lines (L 80+00E to L 85+00E) were completed in this two-day geophysical campaign.

Refer to Figure 25 for a plan view of the region covered by the present surveys.

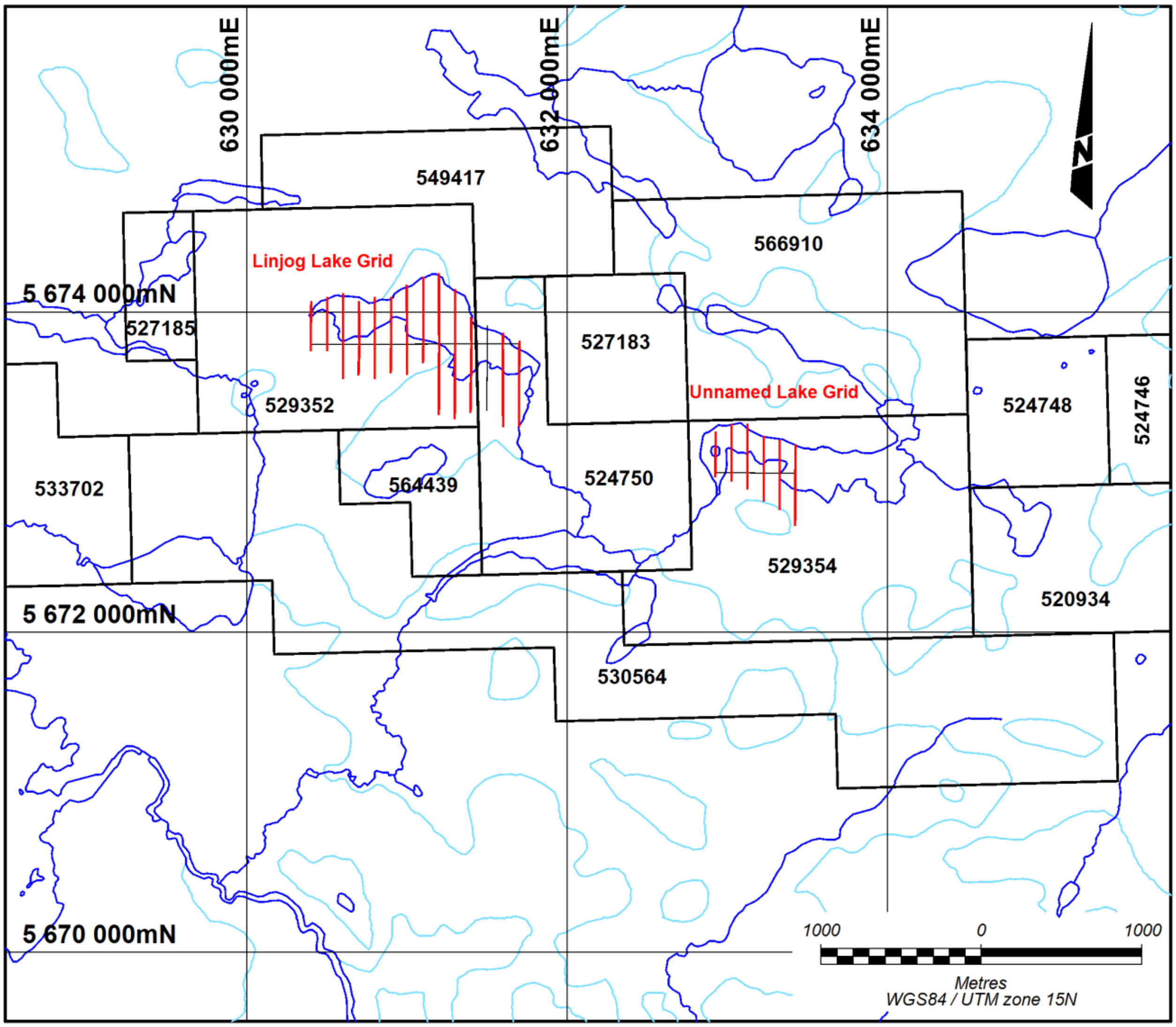

Figure 25. Index of claims and ground VLF-EM coverage (red lines) within the Fry-McVean Project.

APPENDIX B: TECHNICAL SPECIFICATIONS

❑ *TYPE OF SURVEYS*	Observation of the In-Phase and Out-of-Phase components and the total field of the VLF signal were recorded at 12.5 m intervals along the survey lines.

❑ *PERSONNEL*

Guillaume-Olivier Portier	Crew chief, geophysical operator
Alexis Routhier	Geophysical operator
Carole Picard, Tech.	Plotting
Pam Coles, P.Geo.	QC, interpretation and report
Madjid Chemam, P.Geo.	Final quality control

❑ *DATA ACQUISITION* **March 21st to 22nd, 2020**

❑ *SURVEY COVERAGE* **VLF-EM**: 9.35 km

❑ *FIELD MAGNETOMETER-VLF-EM RECEIVER*

GEM Systems GSM-19 WV v7, s/n 7052356
GEM Systems GSM-19 GV v5, s/n 56431
Proton precession magnetometer with Overhauser effect

Resolution:	0.01 nT / 1 m
Absolute accuracy:	0.2 nT / 2-5 m
Range:	10 000 to 120 000 nT
Gradient tolerance:	>10 000 nT / m
Samples at:	60+, 5, 3, 2, 1, 0.5, 0.2 sec
Operating Temperature:	-40C to +55C
TMI sensor elevation:	1.8 m above ground

Omni-directional VLF-EM option

Frequency Range:	up to 3 stations (15 – 30.0 kHz)
Resolution:	0.1% of total field
Parameters:	Vertical In-Phase (IP) & quadrature (Q) components as % of total field Total field (pT) Horizontal field (pT) Vertical field (pT)

❑ *VLF STATION*

NAA Cutler Maine

Frequency:	24.0 kHz
Transmission Power:	2000 kW
Distance:	1080 km
Azimuth:	97°
Location (WGS 84):	636 530 mE, 4 944 115 mN

Appendix C: Data Processing and Deliverables

❑ *Quality Control*

Before the survey:

- ✓ All magnetometers were successfully field-tested on Abitibi Geophysics' private control line.

Every day during data acquisition:

- ✓ Every morning, the operator had to successfully test for any magnetic contamination.
- ✓ In the evening, the Geophysicist reviewed the mobile unit recordings using our Geosoft Montaj processing and QC software.
- ✓ The geophysical operator ensures no active geomagnetic activity would be encountered during the survey by visiting the Space Weather Canada website (www.spaceweather.gc.ca).

At the Base of Operations:

- ✓ Field QCs were inspected and validated.
- ✓ All profiles were inspected, and only duplicate (repeated) readings were removed from the database.

L 64+00E on the Linjog Lake grid was not included with the final report as the data was very erratic on this line, and the quality is questionable. The raw data is included with the Client DVD.

The correlation between Au soil anomalies and Fraser Filtered VLF conductors present on the Unnamed Lake grid displays a better fit if a polarity reversal of the data is completed. It is unclear if a polarity reversal is appropriate here, but worth consideration.

❑ *In-Phase and Out-of-Phase Stacked Profiles*

The In-Phase (in red) and Out-of-Phase (in green) components of the vertical magnetic field were plotted as profiles on the base map (4.1). The base value used was 0% and a vertical scale of 100%/cm with negative values plotted right of the line path and positive values plotted left of the line path.

❑ *Fraser Filter*

The In-Phase component of the VLF signal was Fraser filtered for use as the input data for the Karous-Hjelt pseudosections.

Fraser filtering converts somewhat noisy, non-contourable (cross-over signatures) to less noisy, contourable (peak responses), which greatly improves the utility of VLF-EM surveys.

Fraser filter profiles are displayed for each line in Figures 4 through 20.

The In-Phase component of the VLF signals was Fraser filtered and gridded using the minimum curvature algorithm and are displayed in Figures 3 and 4.

- *KAROUS-HJELT PSEUDOSECTIONS*

The Fraser filtered, In-Phase component of the VLF signal was used as the input data for the Karous-Hjelt pseudosections.

Karous-Hjelt filtering is applied to the Fraser filtered VLF data in or to obtain a section of current density. The high values correlate to conductive structures.

The Karous-Hjelt pseudosections are displayed for each line in Figures 6 through 23.

- *MAPS PRODUCED*

A plot of the geophysical maps produced (as described in Table 1) at a scale of 1:2000, are inserted in pouches at the end of this report.

All plan maps are registered to the WSG84 / UTM zone 15N, coordinate system as collected in the field.

Our Quality System requires that every final map be inspected by at least two qualified persons before being approved and included in a final report.

- *DIGITAL DATA*

The above-described maps are delivered in the Oasis Montaj map file format on DVD-Rom.

A copy of all survey acquisition data (ASCII text format) and processed data (Geosoft Montaj databases) are also delivered on DVD-Rom.