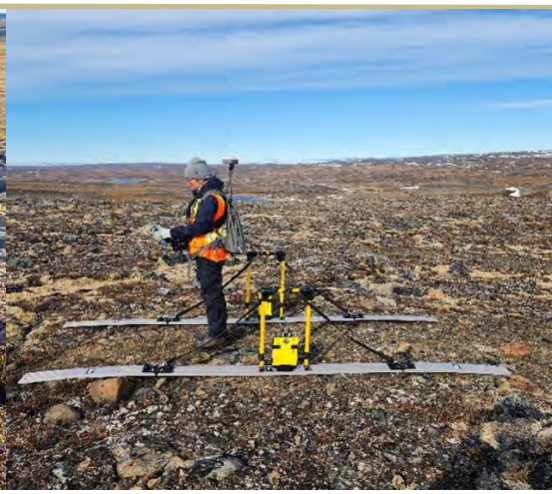
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation





PRESENTED TO

Nunavut Nukkiksautiit Corporation

OCTOBER 31, 2025
ISSUED FOR REVIEW
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EXECUTIVE SUMMARY

Tetra Tech Canada Inc. (Tetra Tech) was retained by Nunavut Nukkiksautiit Corporation (NNC) to complete the engineering design for the Iqaluit Nukkiksautiit Project (INP, the Project). Located approximately 60 km north of Iqaluit on the Kuugaluk River (McKeand River South), the INP is a renewable energy project proposing a hydro power plant that has the potential to become Iqaluit's main electricity source (Project Site).

As a precursor to the 2026 geotechnical drilling and instrumentation program, geophysical surveys were performed at the Project Site in five key Survey Areas: Access Road, Powerhouse, Infill Line, West Alignment, and East Alignment. Data collection occurred between August 26 and September 13, 2025.

Tetra Tech completed a non-intrusive surface geophysical investigation, which consisted of two types of ground penetrating radar (GPR): higher frequency rough terrain antenna and a low-frequency step antenna; and electrical resistivity tomography (ERT) to characterize subsurface features at the Project Site. The objective was to identify and map bedrock elevation, delineate permafrost features, and identify borehole locations for the subsequent geotechnical drilling program.

The geophysical methods, as well as site observations and surficial geology, identified the following surface and subsurface features: active layer, drainage features, ice layers, ice-rich zones, depositional layers/gradational changes, weathered rock/cobbles/boulders, and a possible competent bedrock surface.

The active layer thickness across the five Survey Areas varied from approximately 0.5 to >2.5 m. Ice layers and ice-rich zones were identified near surface drainage features and ice-wedge patterned ground, as well near water bodies. Depositional layers likely associated with various glacial deposits were identified within the end morainal till, particularly along the East Alignment. Weathered rock/cobbles/boulders interface, likely infilled with ice, was identified in all Survey Areas, primarily outside the end moraine boundary. A possible competent bedrock surface was identified in each of the Survey Areas. This surface was identified at greater depths, approximately 73 m at it's deepest, within the East Alignment compared to the other Survey Areas.

The geophysical interpretation at this stage in the Project has not been correlated or confirmed with any borehole drilling information. Depths to subsurface features have been estimated. Subsurface characterization, geophysical interpretation, and estimated depths will change once the drilling data from the next stage has been incorporated into the results.

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ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
CGVD28	Canadian Geodetic Vertical Datum of 1928
CSRS	Canadian Spatial Reference System
DEM	Digital Elevation Model
EGBC	Engineers and Geoscientists of British Columbia
ERT	Electrical Resistivity Tomography
EM	Electromagnetic
GNSS	Global Navigation Satellite System
GPR	Ground Penetrating Radar
GPS	Global Positioning System
INP	Iqaluit Nukkiksautiit Project
NAPEG	Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists
NNC	Nunavut Nukkiksautiit Corporation
PPP	Precision Point Positioning
RTA	Rough Terrain Antenna
RTK	Real-Time Kinematic
Tetra Tech	Tetra Tech Canada Inc.

LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of Nunavut Nukkiksautiit Corporation and their agents. Tetra Tech Canada Inc. (Tetra Tech) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than Nunavut Nukkiksautiit Corporation, or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this document is subject to the Limitations on the Use of this Document attached in the Appendix or Contractual Terms and Conditions executed by both parties.

1.0 INTRODUCTION

Tetra Tech Canada Inc. (Tetra Tech) was retained by Nunavut Nukkiksautiit Corporation (NNC) to complete the engineering design for the Iqaluit Nukkiksautiit Project (INP, the Project). Located approximately 60 km north of Iqaluit on the Kuugaluk River (McKeand River South), the INP is a renewable energy project proposing a hydro power plant that has the potential to become Iqaluit's main electricity source (Project Site).

Geotechnical engineering is required to inform the foundation design of the hydroelectric dam and its supporting infrastructure. Geophysics uses non-intrusive technology to obtain information about the subsurface. As a precursor to the proposed 2026 geotechnical drilling and instrumentation program, geophysical surveys were performed at the Project Site in five key Survey Areas, which are listed below and summarized in Table 1-1:

- Access Road (a select segment near the proposed dam alignment)
- Powerhouse Location (Powerhouse)
- Infill Line
- Proposed footprint of the INP dam alignment:
  - West Alignment
  - East Alignment

The objective of the 2025 geophysical program was to identify and map bedrock elevation, delineate permafrost features of interest, and provide information for the 2026 geotechnical drilling and instrumentation program. Tetra Tech's geophysical program utilized two types of ground-penetrating radar (GPR): a higher frequency rough terrain antenna and a low-frequency step antenna, as well as electrical resistivity tomography (ERT), to characterize subsurface features at the Project Site.

This report presents the results and interpretation of the geophysical data collected at the Project Site in August and September 2025. The geophysical interpretation at this stage in the Project has not been correlated or confirmed with any borehole drilling information. Subsurface characterization, geophysical interpretation, and estimated depths of features of interest will be updated once the drilling data from the proposed 2026 program have been incorporated into the results.

Table 1-1: Summary of the Geophysical Program Survey Areas

Survey Area	Location	Results	Figures
1. Access Road	~300 m west of the proposed dam alignment and the Kuugaluk River	Section 6.1	Appendix B
2. Powerhouse	~1.6 km north of the proposed dam alignment; on the west side of the Kuugaluk River	Section 6.2	Appendix C
3. Infill Line	~500 m south of the western segment of the proposed dam alignment; west of the Kuugaluk River	Section 6.3	Appendix D
4. West Alignment	West side of the proposed dam alignment	Section 6.4	Appendix E
5. East Alignment	East side of the proposed dam alignment	Section 6.5	Appendix F

2.0 PROGRAM BACKGROUND

Tetra Tech conducted a preliminary site visit in Fall 2024 to assess the proposed site's constructability and operational access. The visit included LiDAR scans of potential access to the site from Iqaluit, LiDAR scans and soil samples from the proposed main dam alignment, and an initial assessment of the overall surficial geology.

Tetra Tech's preliminary site visit and subsequent desktop analyses identified various features that indicate the presence of till and the likelihood of high ice content at the surface. Information gathered from this stage of the project was used to develop the 2025 geophysics program.

3.0 SURFICIAL GEOLOGY BACKGROUND

The proposed footprint of the INP dam alignment is located on the Frobisher Bay end moraine, a major regional feature consisting of several ridges of large moraines formed by late glacial readvances of the Laurentide ice sheet approximately 8,000 to 9,000 years ago (Tremblay et al. 2014). These readvances created parallel, pronounced ridges that form part of the larger Frobisher Moraine complex. This moraine complex marks the maximum extent of the glacier's advance, where the ice stopped moving forward and began to retreat, leaving behind a distinct ridge extending about 150 kilometers in length from Frobisher Bay in the south near Iqaluit to the head of Cumberland Sound to the north, averaging approximately 15 meters in height and 150 meters in width (Leblanc-Dumas et al. 2013).

At the proposed footprint of the INP dam alignment, the moraine rises about 35 meters above the Kuugaluk River and spans approximately 350 meters in width. Ice-flow direction indicators, such as striations, suggest that glacial movement was mainly toward the east and southeast, roughly perpendicular to the moraine ridge (Leblanc-Dumas et al. 2013).

The overburden material within the proposed footprint of the INP dam alignment is primarily comprised of till—unsorted soils deposited directly by glacial processes. This till consists of a heterogeneous mix of subangular to subrounded coarse-grained material in a fine-grained matrix, predominantly consisting of medium to coarse-grained sand and silt, with gravels and cobbles, and finer-grained pockets of silt and clay that may contain ice (Tremblay et al. 2014).

Ice wedge polygons, a type of patterned ground indicating excess ground ice, have been identified at the crest of the moraine within the proposed footprint of the INP dam alignment. Additionally, thermokarst terrain is present nearby, caused by the thawing and thermal degradation of ice-rich permafrost. This results in uneven ground surfaces with marshy hollows and small hummocks. Kettles, depressions formed by melting buried ice blocks, are found in or near the moraine ridges, further indicating the presence of buried ice. Fluvial cobbles and exposed fractured/weathered bedrock are found near the bases of slopes adjacent to the Kuugaluk River. Vegetation cover across the moraine is sparse, mainly consisting of grasses and lichens.

4.0 METHODOLOGY

4.1 Ground Penetrating Radar (GPR)

GPR is a geophysical method that maps subsurface interfaces by using electromagnetic (EM) pulses to detect depths at which electrical properties change. This is measured based on the time difference between the

transmission and reflection of each radar pulse within the ground. The GPR system rapidly emits a series of pulses into the ground along the antenna's travel path, which allows a two-dimensional profile of the subsurface to be generated.

Dielectric permittivity and electrical conductivity are two electrical properties to consider when conducting a GPR survey. Dielectric permittivity affects the velocity of the EM wave within a material. At interfaces with different dielectric constants (the ratio of a material's dielectric permittivity to that of free space), a reflection occurs. The magnitude and polarity of this reflection is proportional to the contrast in dielectric permittivity at the interface. A dielectric contrast typically occurs at soil boundaries, such as the contact between overburden and bedrock, but may also occur at other boundaries. Some examples of non-stratigraphic boundaries detected by GPR include the base of the active layer, frozen to unfrozen soil boundaries, groundwater surfaces, or rapid, localized increases/decreases in unfrozen moisture content.

The other important property for GPR surveys is electrical conductivity, which acts to attenuate the radar pulse. When an EM pulse encounters a conductive material, it induces electrical currents within that material proportional to the pulse's frequency and removes energy from the initial pulse. This implies that electrically conductive material (such as soils with more than minor amounts of clay) are more difficult to penetrate with GPR, and higher frequencies are attenuated more easily than lower frequencies, despite providing better resolution. For GPR reflections to be generated, there must be a change in dielectric properties between layers, and those reflections must return to the GPR receiver with a sufficient signal-to-noise ratio for reflections to be reliably identified.

The range of antennas used for GPR surveys vary depending on the survey location and the objective of the investigation. Higher-frequency antennas can offer higher resolution of the subsurface but have a shallower depth of investigation. Conversely, a lower-frequency antenna can penetrate deeper at the cost of resolution. For the Project Site, Tetra Tech utilized a lower-frequency step antenna (25 MHz) GPR system and a higher-frequency (50 MHz and 100 MHz) towable rough terrain antenna GPR system to allow for a larger range of investigation depth.

4.2 Electrical Resistivity Tomography (ERT)

ERT is a geophysical method used to image the subsurface by taking electrical resistivity measurements at the ground surface. The technique involves temporarily installing an array of electrodes (typically 48 to 96 stations per array) at an equal spacing along a profile. The electrodes are hammered into the ground at a sufficient depth to allow for good electrical contact (typically < 30 cm). The electrodes are then attached to multi-core cables that run to a central control unit, which collects and records the data.

The control unit activates four electrodes during data collection in a series of geometric separations. The electrode activation pattern is dictated by the measurement method used; for this project, the Wenner-Schlumberger array was utilized. A known current is injected into one of the electrode pairs while the other electrode pair, positioned between the current electrodes, measures the potential difference (i.e. voltage). The measurements are recorded by the control unit and used to calculate the apparent resistivity values.

Apparent resistivity values provide a bulk reading related to the ground volume encompassed by the measurement electrodes. Apparent resistivity values represent what the subsurface resistivity would be in a completely homogeneous material. Since the subsurface is not entirely homogenous, the calculated value is termed "apparent". An inversion must be run on the dataset to obtain a model of the true subsurface resistivity.

5.0 DATA COLLECTION AND PROCESSING

Geophysical data collection was completed between August 26 and September 13, 2025, by William Onah, P.Geo. (NAPEG), Rafael Manenti, P.Geo. (NAPEG), and Vanessa Yau, G.I.T. (EGBC) of Tetra Tech. Over the course of the survey, air temperatures ranged from approximately -5 °C to +12 °C. The crew experienced a mixture of sun, high winds, snow, and heavy rain, resulting in varying surface ground conditions throughout the program.

The INP geophysical investigation consisted of five Survey Areas: Access Road, Powerhouse, Infill Line, West Alignment, and East Alignment. An overview map of the five Survey Areas is shown in Image 5-1 below, along with the Frobisher Bay end moraine complex mapped in the vicinity of the Survey Areas. A summary of the geophysical data collected at these Survey Areas is presented in Table 5-1.

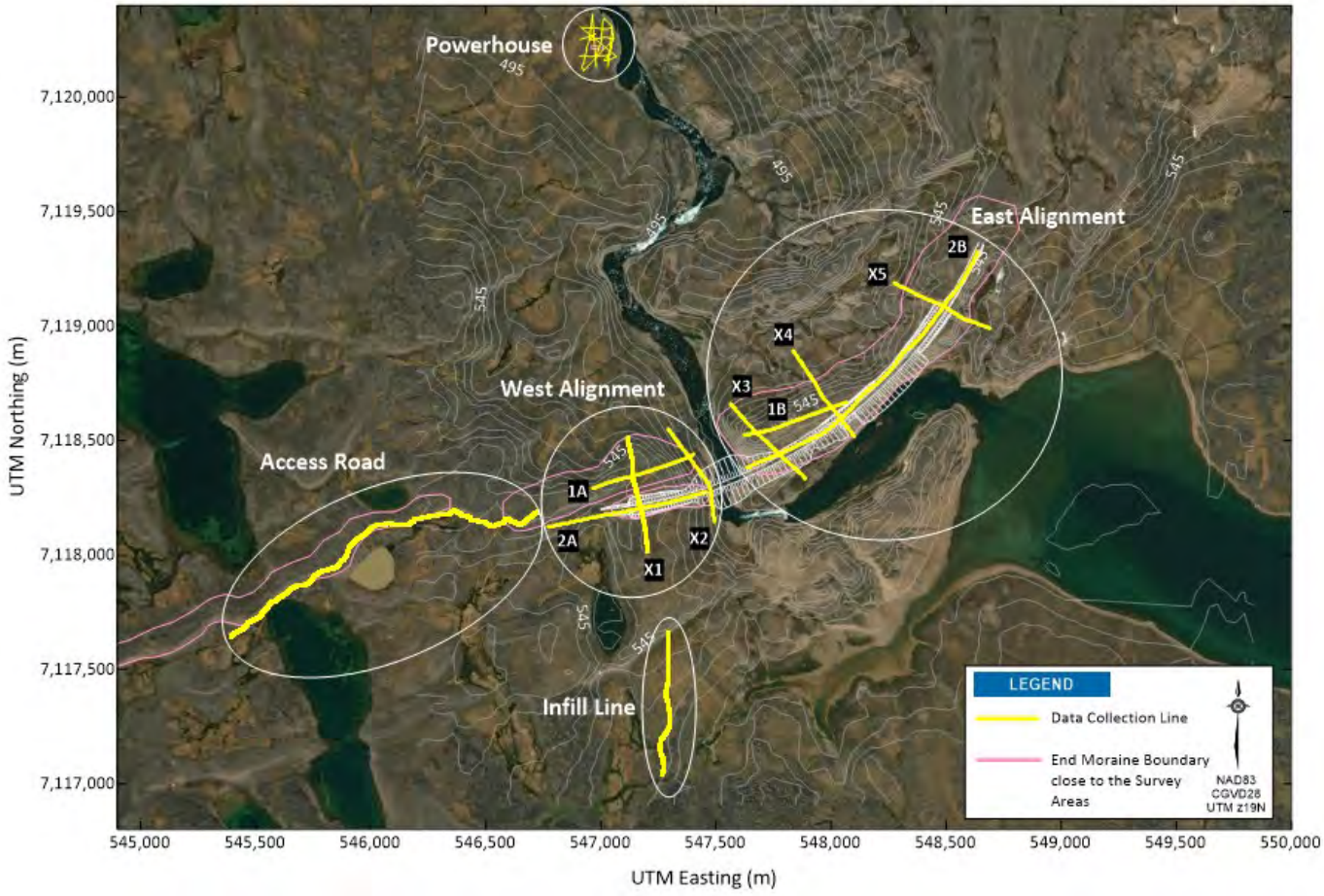


Image 5-1: Site overview map

Table 5-1: Data Collection Summary

Survey Area	Methods Used
1. Access Road	50 MHz RTA GPR
2. Powerhouse	100 MHz RTA GPR
3. Infill Line	50 MHz RTA GPR
4. West Alignment	50 MHz RTA GPR
	25 MHz step antenna GPR
	ERT
5. East Alignment	50 MHz RTA GPR
	25 MHz step antenna GPR
	ERT

5.1 Ground Penetrating Radar (GPR)

GPR data was collected using two different antenna styles, the rough terrain antenna and the step antenna, which are detailed in Sections 4.1.1 and 4.1.2, respectively. Both the rough terrain antenna (RTA) and step antenna GPR data were processed using Tetra Tech's proprietary software. Processing steps included filtering, gaining, and subtracting background noise to highlight features of interest.

5.1.1 50 MHz and 100 MHz Rough Terrain Antenna

RTA GPR data was collected in each of the five survey areas. Generally, a 50 MHz RTA was utilized, except at the powerhouse site, where a 100 MHz RTA antenna was utilized. The 100 MHz RTA was selected for the powerhouse as it was expected to have shallower bedrock than other areas of the site. Both RTA antennas were operated using a Mala Geosciences ProEx GPR control unit. The GPR units were towed on the ground by foot (Images 5-2 and 5-3).

Images 5-2 and 5-3: 50 MHz RTA survey on the East Alignment on Lines X3 (left) and X5 (right) respectively

5.1.2 25 MHz Step Antenna

Additionally, the East and West Alignments were surveyed using a Sensors and Software's pulseEKKO control unit running a 25 MHz step antenna (Image 5-4). Data collection utilized a transmitter-receiver spacing of 4 m and a large time window of 700 or 1000 ns to increase the investigation depth. Data was acquired at the East and West Alignments in accessible areas greater than 200 m long, with data points collected at 1 m intervals along each line.

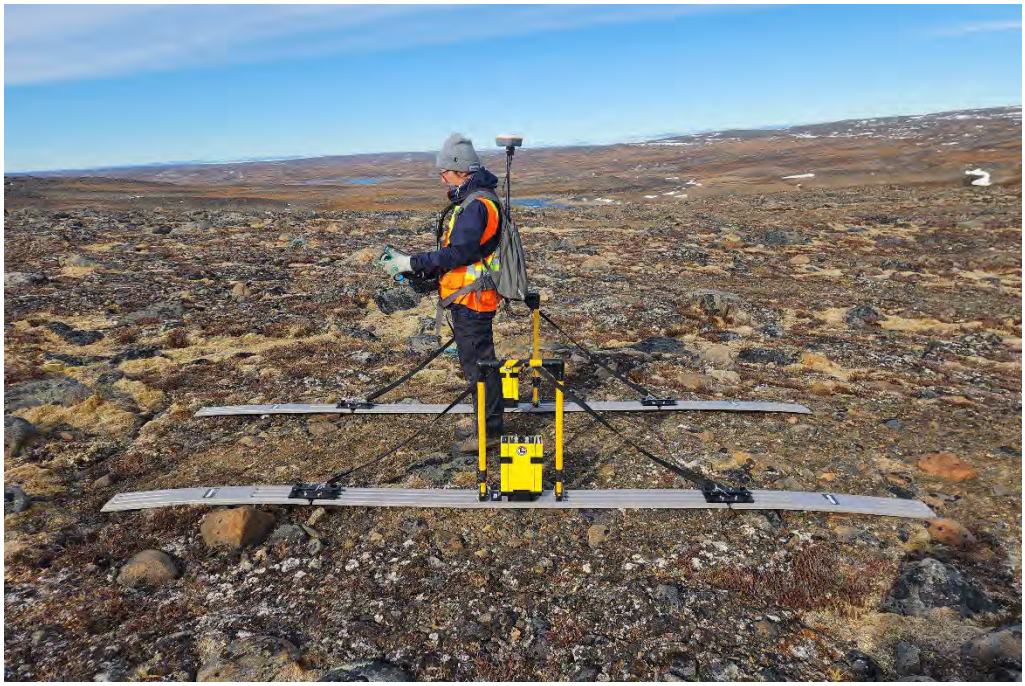


Image 5-4: The 25 MHz step antenna GPR system on the West Alignment

5.2 Electrical Resistivity Tomography (ERT)

ERT data was collected on all lines in the West and East Alignment Survey Areas using an IRIS Instruments Syscal-Switch Pro 96-channel system with a Wenner-Schlumberger electrode configuration. The spacing between electrodes in this configuration was 5 m. Profiles which exceeded the length of the 96-channel array (> 475 m) were "rolled along" to provide continuous ERT models at depth.

ERT data was processed using the RES2DINV resistivity inversion software. The inversion process produces a layered model of varying thicknesses and electrical resistivities, which are used to generate a 2D cross-section of subsurface resistivity along the ERT profile. Preliminary processing and interpretation of the ERT data occurred concurrently with the field collection, and results were reviewed upon the completion of the field program in conjunction with relevant GPR data.

A summary of the ERT data collected is provided in Table 5-2 below.

Table 5-2: ERT Data Collection Summary

Survey Area	Line ID	Start Coordinates (NAD83 UTM z19)		End Coordinates (NAD83 UTM z19)		Total Distance Surveyed (m)
		Easting (m)	Northing (m)	Easting (m)	Northing (m)	
4. West Alignment	1A	546,963	7,118,291	547,400	7,118,441	475
	2A	546,772	7,118,121	547,457	7,118,275	715
	X1	547,200	7,118,036	547,113	7,118,495	475
	X2	547,493	7,118,145	547,291	7,118,550	475
5. East Alignment	1B	547,623	7,118,524	548,070	7,118,667	475
	2B	547,634	7,118,380	548,638	7,119,323	1,420
	X3	547,888	7,118,333	547,562	7,118,660	475
	X4	548,102	7,118,515	547,835	7,118,891	475
	X5	548,689	7,118,989	548,273	7,119,187	475

5.3 GPS

5.3.1 RTA GPR Survey

GPS locations for the RTA GPR survey were obtained using a Hemisphere S321 rover and base station, operating in fixed Real-Time Kinematic (RTK) mode, with positions integrated into the GPR file during data collection. After data collection, base station information was post-processed using the Canadian Spatial Reference System's (CSRS) Precise Point Positioning (PPP) service. Easting and northing position coordinates after PPP processing were referenced to a 50 cm resolution Digital Elevation Model (DEM). This DEM was collected during the field program by a drone survey in the CGVD28 datum.

5.3.2 Step Antenna GPR Survey

GPS locations for the step antenna GPR survey were obtained using a Juniper Geode GNS3S receiver, with positions integrated into the GPR file during data collection. The position coordinates collected from the Juniper receiver were also referenced to the DEM from the drone survey for elevations.

5.3.3 ERT Survey

GPS locations for the ERT survey were obtained using the Hemisphere S321 RTK system. After data collection, base station information was post-processed using the CSRS PPP service. The position coordinates were then referenced to the drone survey DEM for increased vertical resolution.

6.0 RESULTS AND INTERPRETATION

The results of the 2025 geophysical program are summarized in the following sections. The ERT and GPR figures for each respective Survey Area can be found in Appendices B to F. These figures have been oriented to follow the direction of the river flow (e.g. south to north and west to east).

As stated in Section 1.0, the geophysical interpretation has not been correlated or confirmed with any borehole information and therefore, depths to subsurface features have been estimated. Subsurface characterization,

geophysical interpretation, and estimated depths will change once the drilling data from the next stage has been incorporated into the results.

The geophysical data from all the methods, as well as site observations and surficial geology, were used to inform the geophysical interpretation. Interpreted layers, surface, and subsurface features identified in the geophysical profiles are summarized in Table 6-1 below and presented overlain on the GPR profiles.

Table 6-1: Interpreted Layers, Surface and Subsurface Features

Legend	Line Style	Description	Geophysical Signature
Data collection line/ground surface		Data collection line and the top of the ground surface.	▪ **GPR:** High amplitude, horizontal reflector at the top of the profile.
Active layer		Surface layer that freezes and thaws annually in response to air temperature changes.	▪ **GPR:** Linear, near-surface reflector. Variable active layer thicknesses could be attributed to changes in moisture, organic content, slope aspect, and material grain size.
Drainage feature		Corresponds to surface features like patterned ground, slope creep, streams, and creeks.	▪ **GPR**: Select parabolic and high-amplitude reflectors below the active layer, which have been correlated with high-resolution aerial imagery. ▪ **ERT**: Low resistivity, near surface in unfrozen, saturated ground.
Ice layer		Ice layer in mineral soil or in fractured bedrock/cobbles/boulders.	▪ **GPR:** Continuous, high-amplitude reflectors.
Ice-rich zone		Several segments with broken ice and ice layer(s).	▪ **GPR:** Broken, ringing, high-amplitude reflectors. The interpreted segments tend to occur adjacent to drainage features or water bodies. ▪ **ERT**: Very high resistivity values.
Depositional layer/ gradational change		Mineral soil comprised of moraine till (e.g. medium to coarse sand, pebbles and cobbles).	▪ **GPR:** Continuous, low-amplitude reflectors in the profile. Texture changes in the data.
Weathered rock/ cobbles/boulders		Unconsolidated material (could be weathered rock/cobbles/boulders).	▪ **GPR:** Grouped and overlapping hyperbolas with good penetration.
Possible competent bedrock surface		Reflector at depth, below the weathered bedrock/cobbles/boulders zone.	▪ **GPR**: Attenuation of the GPR signal with some high-angle reflectors. Interpreted as a deeper reflector in the GPR profiles. ▪ **ERT**: Contrast in resistivity in select areas.

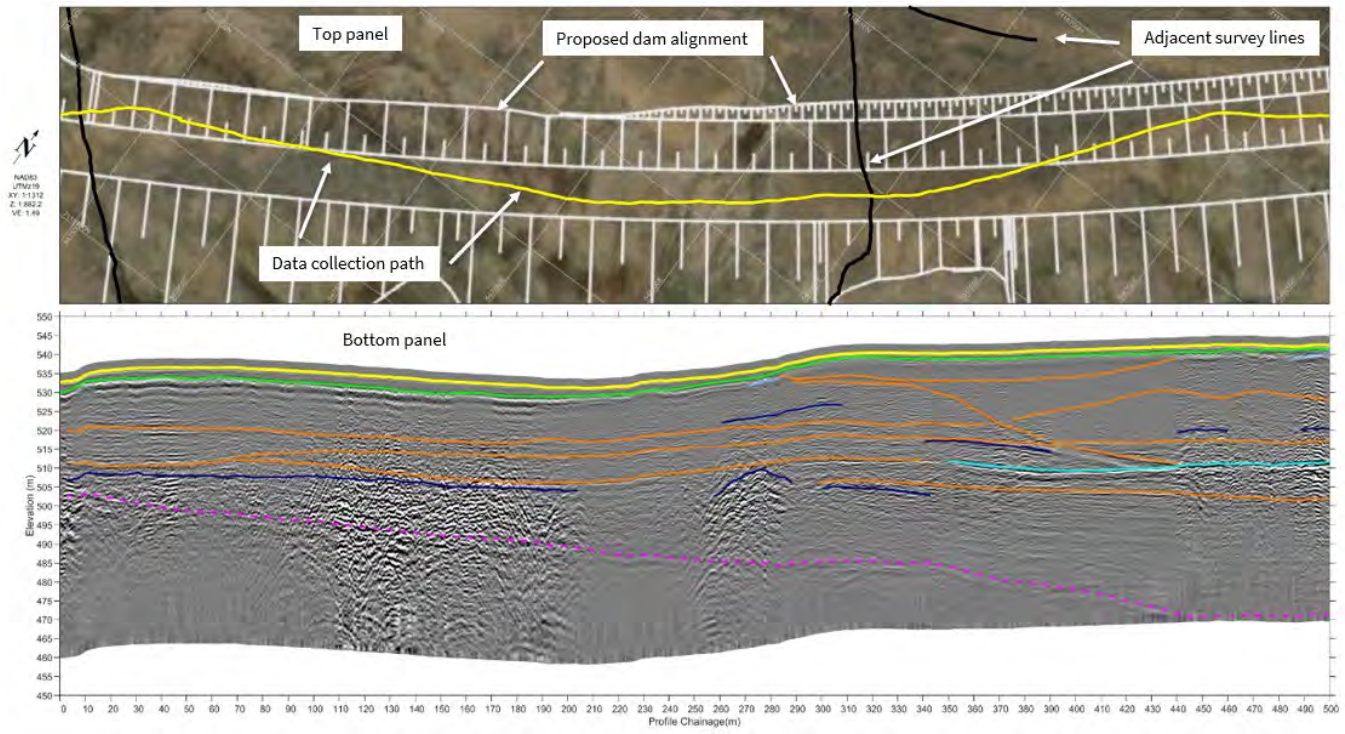


Image 6-1: Example profile of interpreted subsurface features from Line 2B

An example interpreted profile from Line 2B in the East Alignment is shown in Image 6-1. The top panel shows the proposed dam alignment, with the data collection path displayed in yellow. The bottom panel depicts the interpreted GPR profile with topographic correction.

The depths of interpreted features are plotted using an assumed GPR velocity of 0.15 m/ns, which may change once the drilling data is incorporated. The x- and y-axis represent the distance along the surveyed path and the corresponding elevation of the interpreted feature(s).

Interpreted ice-rich zones, including ice layers, along the surveyed paths are delineated in the ground ice map for each respective survey area. The ice-rich zones are located below the active layer and may extend to the possible competent bedrock surface. Areas that are not classified as ice-rich likely have reduced ice content and may be ice-poor; however, they will still require borehole confirmation. The GPR data collected during this program is generally of very high quality. Further ground ice characterization is possible through an additional review of GPR data, provided that high-quality, intact, frozen cores are obtained during the 2026 drill program.

ERT data collection was limited to the West and East Alignment Survey Areas. Modelled ERT profiles are presented in Appendices E and F; an example profile is shown below in Image 6-2.

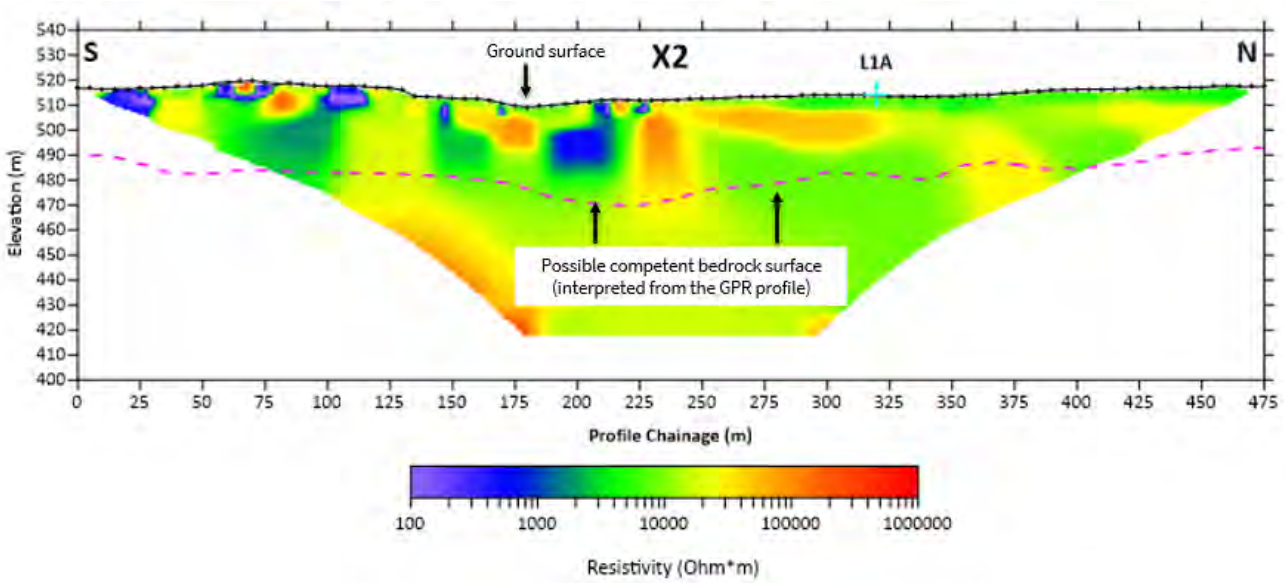


Image 6-2: Modelled ERT profile from Line X2 (West Alignment)

The x-axis represents the distance on the ground surface, while the y-axis represents the elevation referenced to the vertical datum CGVD28. The apparent resistivity legend is summarized in Table 6-2 below.

Table 6-2: Modelled Apparent Resistivity Legend

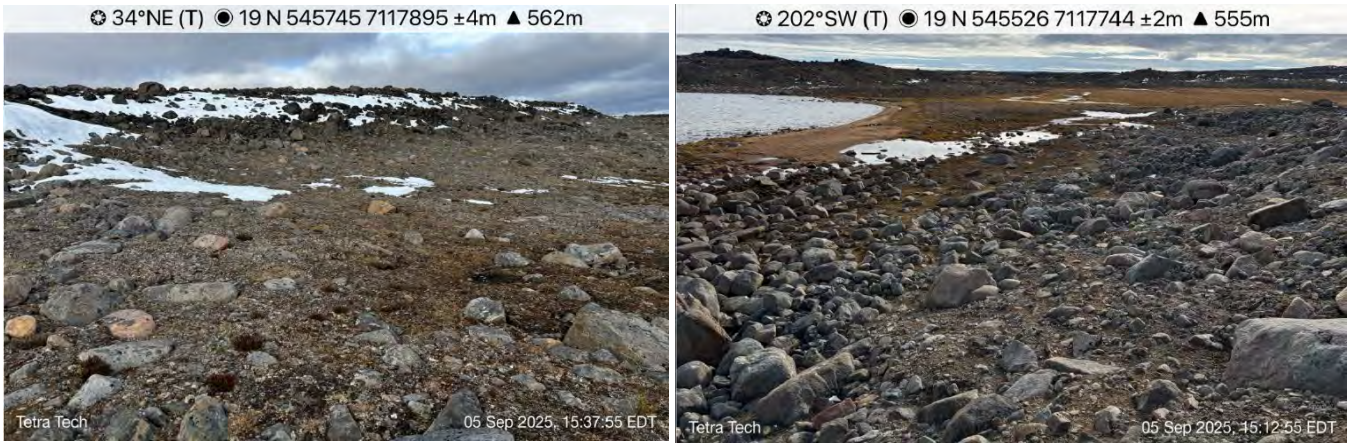
Color	Apparent Resistivity (Ω*m)	Description
	$10^2 – 10^3$	Low resistivity (high conductivity)
	$10^4 – 10^5$	Moderate resistivity
	$>10^5$	High resistivity (low conductivity)

6.1 Survey Area 1: Access Road

The site map, interpreted geophysical results, and ground ice map for the Access Road are presented in Appendix B. The survey area is summarized in Table 6-3 below.

Table 6-3: Access Road Summary

Location	▪ West of the proposed dam alignment and the Kuugaluk River.
Data Collected	▪ GPR (50 MHz)
Geophysical Results	▪ Appendix B
Terrain Description	▪ Undulating moraine ridge characterized by gravel, cobbles and boulders at the surface. ▪ Several water bodies on the northern and southern flanks of the moraine.



Images 6-3 and 6-4: Views from the Access Road facing northeast (left) and southwest (right)

The geophysical results from the Access Road are presented in Table 6-4 below.

Table 6-4: Access Road Geophysical Results and Interpretation

Subsurface Feature/Layer	Approximate Subsurface Depth (m)	Ground Elevation (CGVD 28) (m)	Comments
Active layer	1 – 4.3	550 – 559	▪ The active layer depth was calculated using a GPR velocity of 0.1 m/ns.
Ice-rich zone	7 – 35	508 – 546	▪ The ice-rich zone is approximately 67% of the surveyed path. ▪ The ground ice map is presented in Figure B3.
Weathered rock/ cobbles/boulders	7 – 13	546 – 547	▪ More likely cobbles/boulders in this area.
Possible competent bedrock surface	26 – 41	503 – 529	▪ Predominantly follows the attenuated GPR signal and base of the ice-rich zones.

6.2 Survey Area 2: Powerhouse

The site map, interpreted geophysical results, and ground ice map for the Powerhouse are presented in Appendix C. The survey area is summarized in Table 6-5 below.

Table 6-5: Powerhouse Summary

Location	▪ ~ 2 km north of the proposed dam alignment near the western bank of the Kuugaluk River.
Data Collected	▪ GPR (100 MHz)
Geophysical Results	▪ Appendix C
Terrain Description	▪ Cobbles and boulder zone near the riverbanks. ▪ Intermittent till deposit and sparse vegetation (grasses and lichen) in the southwest.

Images 6-5 and 6-6: East views of the varying surface terrain at the Powerhouse

Based on the GPR results and field observations, the Powerhouse has been classified into two surficial geology zones. These zones are presented in Table 6-6 and Image 6-7 below.

Table 6-6: Powerhouse Surficial Geology

Surficial Geology	Location	Characteristics
Fluvial terrace	East of the proposed site boundary, near the riverbank	▪ Boulders and cobbles at the ground surface. ▪ Lithological change in the active layer. ▪ Several ice-rich zones due to the historical river levels.
Till	Southwest of the proposed site boundary	▪ Intermittent till deposit at the ground surface with sparse vegetation. ▪ Embedded cobbles and boulders.

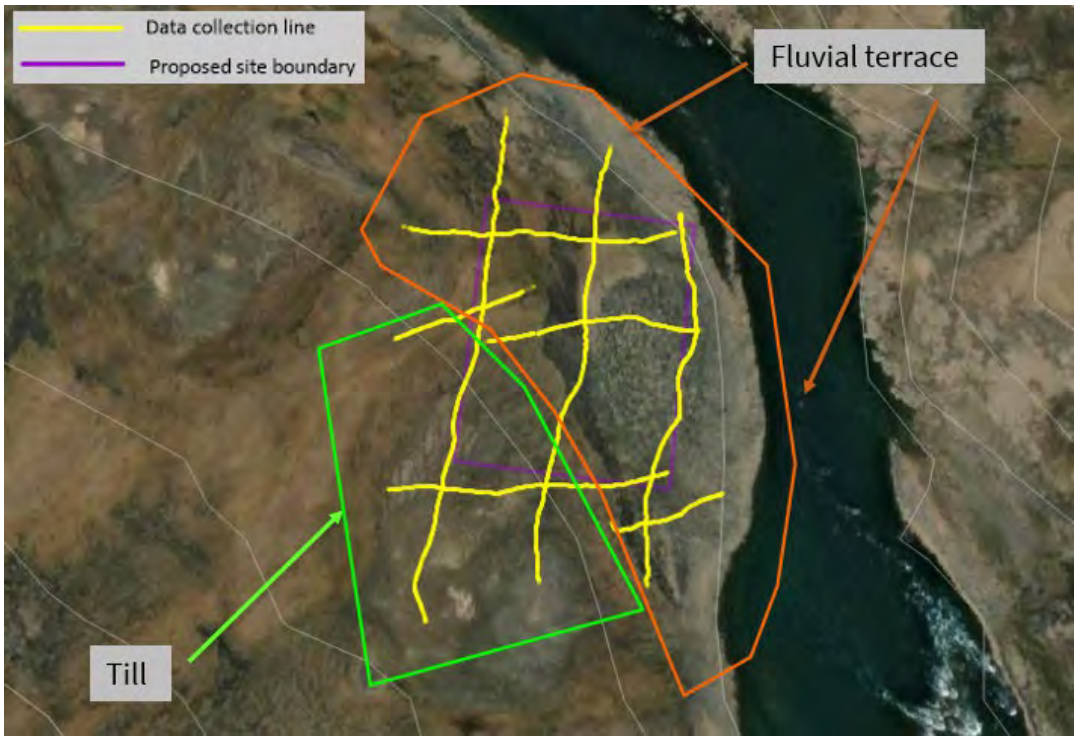


Image 6-7: Interpreted surficial geology map of the Powerhouse

The GPR results from the Powerhouse are presented in Table 6-7 below.

Table 6-7: Powerhouse Geophysical Results and Interpretation

Subsurface Feature/Layer	Approximate Subsurface Depth (m)	Ground Elevation (CGVD 28) (m)	Comments
Active layer	0.4 – 2.8	472 – 474	▪ Active layer thickness varies across the site, being thicker in the till section and thinner in the fluvial terrace. ▪ Active layer depth was calculated using a GPR velocity of 0.1 m/ns.
Ice-rich zone	2 – 15	457 – 477	▪ Ice-rich zone is approximately 54% of the surveyed paths. ▪ Ground ice map is presented in Figure C11.
Weathered rock/ cobbles/boulders	2 – 11	468 – 470	▪ Higher amount of cobbles/boulders is expected in the fluvial terrace area.
Possible competent bedrock surface	11 – 25	447 – 461	▪ Predominantly follows attenuated GPR signal and base of ice-rich zones.

6.3 Survey Area 3: Infill Line

The site map, interpreted GPR results, and ground ice map for the Infill Line are presented in Appendix D. The survey area is summarized in Table 6-8 below.

Table 6-8: Infill Line Summary

Location	▪ ~ 650 m southwest of the proposed dam alignment.
Data Collected	▪ GPR (50 MHz)
Figures	▪ Appendix D
Terrain Description	▪ Saturated ground with intermittent boulders in the north. ▪ Boulder field in the south ▪ East-west creek between the boulder field and saturated ground.

Images 6-7 and 6-8: View of the Infill Line towards the southwest (left) and southeast (right) at the boulder field and saturated ground boundary

The GPR results from the Infill Line are presented in Table 6-9 below.

Table 6-9: Infill Line Geophysical Results and Interpretation

Subsurface Feature/Layer	Approximate Subsurface Depth (m)	Ground Elevation (CGVD 28) (m)	Comments
Active layer	1.2 – 3.9	527 – 529	▪ In the northern section, high-amplitude reflectors are observed in the GPR data at the active layer interface. This is likely due to saturated ground conditions.
Ice-rich zone	3 – 15	509 – 531	▪ The ice-rich zone is approximately 32% of the surveyed path and adjacent to surficial drainage features identified in the aerial imagery. ▪ This zone extends to the depth of the possible competent bedrock surface. ▪ The ground ice map is presented in Figure D3.
Weathered rock/ cobbles/boulders	4 – 11	522 – 530	▪ GPR data analysis indicates the possible occurrence of large boulder clasts within this zone, inferred from high-amplitude reflections indicative of coarse subsurface features.
Possible competent bedrock surface	13 – 27	495 – 508	▪ Competent bedrock is expected to be shallow near the south end of the line, where possible outcrops are observed.

6.4 Survey Area 4: West Alignment

The site map, ground ice map, interpreted geophysical profiles, and resistivity profiles for the West Alignment are presented in Appendix E. The survey area is summarized in Table 6-10 below.

Table 6-10: West Alignment Summary

Location	▪ Western segment of the proposed dam alignment, west of the Kuugaluk River.
Data Collected	▪ GPR (25 and 50 MHz), ERT
Figures	▪ Appendix E
Terrain Description	▪ Undulating terrain with intermittent saturated ground sections. ▪ Large boulders at the northern and southern boundaries extending to the riverbank.

Images 6-9 and 6-10: South view of the West Alignment on Lines X1 (left) and X2 (right)

A summary of geophysical results from the West Alignment is presented in Table 6-11 below.

Table 6-11: West Alignment Geophysical Results and Interpretation

Subsurface Feature/Layer	Approximate Subsurface Depth (m)	Ground Elevation (CGVD 28) (m)	Comments
Active layer	0.9 – 2.5	508 – 527	▪ No comments
Ice-rich zone	5 – 21	503 – 524	▪ The ice-rich zone is approximately 69% of the surveyed paths and proximal to the saturated ground and boulder field. ▪ This zone extends to the depth of the possible competent bedrock surface. ▪ The ground ice map is presented in Figure E6.
Weathered rock/ cobbles/boulders	3 – 18	496 – 511	▪ Weathered bedrock may be more likely as you approach the river. ▪ Weathered bedrock was observed along the west bank of the river near Line X2 chainage 150 m.
Possible competent bedrock surface	20 – 42	466 – 530	▪ Predominantly follows attenuated GPR signal and base of ice-rich zones. ▪ Follows well defined reflector in Line 1A, underneath morainal till. ▪ Bedrock outcrops are observed along the western shore near the end of Line 2A at an approximate elevation of 509 m.

The modelled ERT profiles for the West Alignment are presented in Figures E7 and E8. The ERT profiles show variability in the near-surface material, ranging from areas of electrically resistive material to several pockets of conductive material. The dashed magenta line represents the possible competent bedrock surface interpreted from the GPR data and overlaid on the ERT profile. The resistivity contrast along the competent bedrock surface is, at times, poorly defined. This is likely due to ice-rich zones within the overburden and weathered bedrock, which are all highly resistive, and are not easily imaged by ERT due to the lack of resistivity contrast.

6.5 Survey Area 5: East Alignment

The site map, ground ice map, interpreted geophysical profiles, and resistivity profiles for the East Alignment are presented in Appendix F. The survey area is summarized in Table 6-12 below.

Table 6-12: East Alignment Summary

Location	▪ Eastern segment of the proposed dam alignment; east of the Kuugaluk River.
Data Collected	▪ GPR (25 and 50 MHz), ERT
Figures	▪ Appendix F
Terrain Description	▪ Coarse sand, fluvial cobbles and large boulders along the riverbanks. ▪ Morainal tills consisting of sands, gravels, and cobbles along the alignment. ▪ Several surface runoff streams at the northern and southern edges of the moraine.

Images 6-11 and 6-12: Northwest views of the East Alignment on Line X3

Geophysical results from the East Alignment are presented in Table 6-13 below.

Table 6-13: East Alignment Geophysical Results and Interpretation

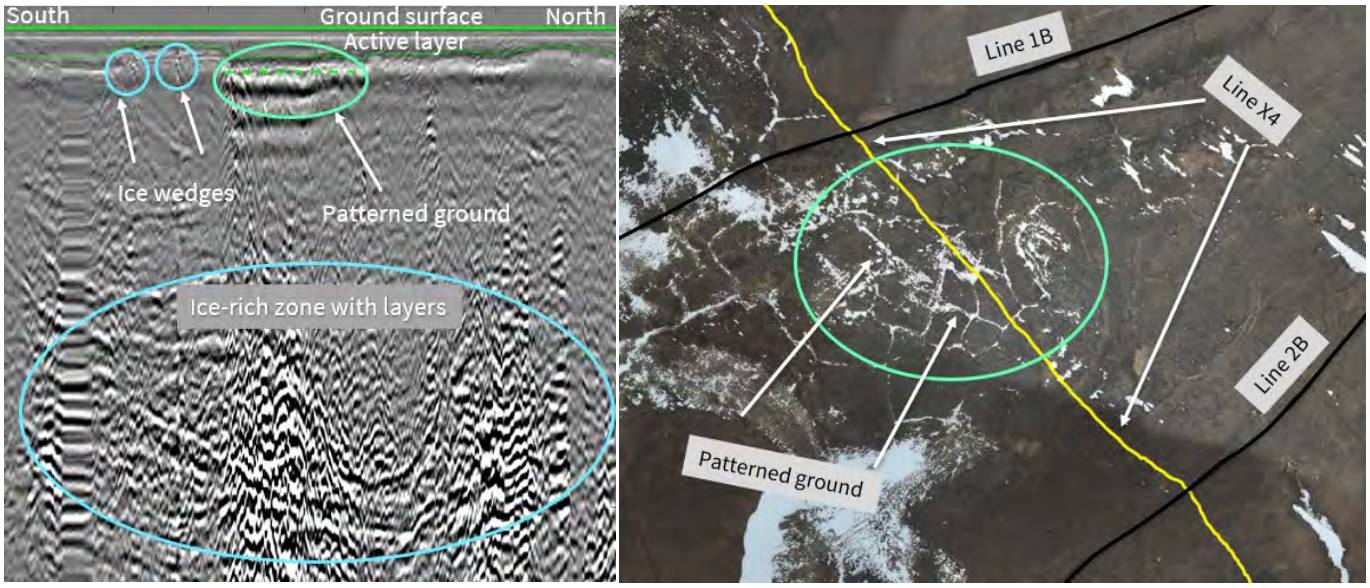
Subsurface Feature/Layer	Approximate Subsurface Depth (m)	Ground Elevation (CGVD 28) (m)	Comments
Active layer	0.4 – 4.3	531 – 549	▪ Variable thickness across East Alignment. – Possibly thinner on the end moraine, where the ground is free draining. – Thicker on the south-facing slopes on Lines X3 to X5.
Ice layer	11 – 45	502 – 521	▪ Several continuous ice layers were identified within the end moraine deposit. – These layers occur near surface drainage features and often coincide with ice-rich zones.
Ice-rich zone	4 – 44	489 – 511	▪ Approximately 49% of the surveyed paths have been characterized as ice-rich zones. – These zones are near surface drainage features identified in the aerial imagery and the GPR profiles. ▪ The ground ice map is presented in Figure F11. ▪ Ice-rich zones identified in the East Alignment are the thickest of all the Survey Areas.
Depositional layer/ gradational change	3 – 47	496 – 534	▪ Several depositional layers were identified within the end moraine that may be attributed to the different glaciation deposits and gradation of the material from sands to gravels. ▪ Some sections of the depositional layer exhibited a muted GPR response, which may indicate the presence of dry, elevated, finer-grained material within the moraine deposit.

Table 6-13: East Alignment Geophysical Results and Interpretation

Subsurface Feature/Layer	Approximate Subsurface Depth (m)	Ground Elevation (CGVD 28) (m)	Comments
Weathered rock/ cobbles/boulders	13 – 27	506 – 508	▪ The weathered rock/cobbles/boulders interface was identified in the GPR data from Line X5, outside of the end moraine. ▪ Weathered bedrock is more likely outside of the end moraine deposits.
Possible competent bedrock surface	27 – 73	470 – 500	▪ The possible competent bedrock surface has been interpreted to follow a deep reflector that is observed in most of the GPR lines in the East Alignment. – The reflector is more evident in the 25 MHz data and coincides with a contrast in the ERT data along Line 2B. ▪ Deepest possible competent bedrock surface is observed along Line 2B (see Figure F4.1 and Figure F4.2) from profile chainage 450 to 740 m at an approximate elevation of 470 m. ▪ Thick morainal tills may be sitting directly on a competent bedrock surface.

GPR profiles also identified a possible correlation between surface and subsurface features, interpreted as possible ice wedges associated with nearby patterned ground. These were evident on the moraine along Line X4, between Lines 1B and 2B.

This section was also characterized as ice-rich due to the high-amplitude reflectors at depth, below the ice wedges and patterned ground (Images 6-13 and 6-14). The ice-rich zone at depth likely developed through the infiltration of historical precipitation, such as rainfall and snowmelt, via troughs within the patterned ground.



Images 6-13 and 6-14: Patterned ground identified in the GPR record (left) and confirmed in aerial imagery (right)

Figures F12 to F14 present modelled ERT profiles for the East Alignment. The ERT profiles on Lines 1B and 2B show alternating zones of low to moderate resistivity near the surface, which transition into high resistivity sections at depth. The central portions of Lines X3 to X5 show highly resistive zones, which are interpreted to be ice-rich morainal till deposits from the glacial process. The dashed magenta line represents a possible competent bedrock surface interpreted from the GPR profiles. The resistivity contrast along this surface varies for each line, likely due to the highly resistive ice-rich zones within the overburden (morainal tills) and similarly resistive bedrock.

7.0 LIMITATIONS

The following limitations should be considered when using the interpreted results outlined in this report.

7.1 GPR

- *Dielectric Properties* – GPR resolution and depth of investigation are primarily a function of antenna frequency and the ground's dielectric properties.
- *Vertical Resolution/Aliasing* – Antennas with higher center frequencies will have greater vertical resolution than those with lower center frequencies. As a result, some interfaces will be aliased or ill-defined when using lower frequency antennas, despite having strong dielectric contrasts.
- *Estimated Depths* – Depths for all GPR sections are based on a reasonable estimated velocity of the GPR pulse through the subsurface media at the survey site. Due to the non-homogeneity of these media, the velocity may change laterally and with depth. Therefore, all depths listed should be considered approximate.

7.2 ERT

- *Surface Conditions During Collection* – The data was collected under variable surface conditions. Soil resistivity properties vary throughout the year, especially when surficial layers are frozen or partly frozen.
- *Coupling Resistance* – High-resistivity areas, such as gravel or loose rock, can result in a poor-quality signal. These effects can be reduced during data processing by filtering out erroneous data points.
- *Skin Effect* – Electric currents concentrate near the surface in low-resistivity materials, such as wet clays, limiting the signal depth and causing errors in resistivity measurements.
- *Inverse Modelling Process* – The 2D ERT profiles are generated using an iterative mathematical inversion process, which results in a non-unique solution. The results are thoroughly examined by geophysicists with available relevant data to help refine the model.
- *Resolution* – Due to the geometric limitations of the survey, layers that are shallower than the geophysical station spacing will not be detected.

8.0 CLOSURE

We trust this document meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech Canada Inc.

ISSUED FOR REVIEW
FILE: ENG.ROCK03543-01
FILE: ENG.ROCK03543-01
FILE: ENG.ROCK03543-01

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REFERENCES:

Leblanc-Dumas, J., Allard, M. and Tremblay, T. 2013: Quaternary geology and permafrost characteristics in central Hall Peninsula, Baffin Island, Nunavut; *in* Summary of Activities 2012, Canada-Nunavut Geoscience Office, p. 101–106.

Tremblay, T., Leblanc-Dumas, J., Allard, M., Ross, M. and Johnson, C. 2014: Surficial geology of central Hall Peninsula, Baffin Island, Nunavut: summary of the 2013 field season; *in* Summary of Activities 2013, Canada-Nunavut Geoscience Office, p. 109–120.

Tremblay, T., Leblanc-Dumas, J., Ross, M., Allard M., McClenaghan, B., Johnson, C., and Mate, D. 2014. Surficial geology and geomorphology of central Hall Peninsula, Baffin Island, Nunavut: summary of the 2013 field season. Canada-Nunavut Geoscience Office. Presentation.

FIGURES

LEGEND

Data Collection Line

End Moraine Boundary close to the Survey Areas

SCALE 1:19,000
NAD83
CGVD28
UTM z19N

CLIENT

NNC
Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Site Overview Map
Collection Dates: Aug 26 - Sept 13, 2025

PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WO	PIF	0

OFFICE	DATE
EBA-EDM	October 31, 2025

Figure 1

APPENDIX A

LIMITATIONS ON THE USE OF THIS DOCUMENT

LIMITATIONS ON USE OF THIS DOCUMENT

GEOPHYSICAL

1.1 USE OF DOCUMENT AND OWNERSHIP

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1.4 DISCLOSURE OF INFORMATION BY CLIENT

The Client acknowledges that it has fully cooperated with TETRA TECH with respect to the provision of all available information on the past, present, and proposed conditions on the site, including historical information respecting the use of the site. The Client further acknowledges that in order for TETRA TECH to properly provide the services contracted for in the Contract, TETRA TECH has relied upon the Client with respect to both the full disclosure and accuracy of any such information.

1.5 INFORMATION PROVIDED TO TETRA TECH BY OTHERS

During the performance of the work and the preparation of this Professional Document, TETRA TECH may have relied on information provided by third parties other than the Client.

While TETRA TECH endeavours to verify the accuracy of such information, TETRA TECH accepts no responsibility for the accuracy or the reliability of such information even where inaccurate or unreliable information impacts any recommendations, design or other deliverables and causes the Client or an Authorized Party loss or damage.

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This Professional Document is based solely on the conditions presented and the data available to TETRA TECH at the time the data were collected in the field or gathered from available databases.

The Client, and any Authorized Party, acknowledges that the Professional Document is based on limited data and that the conclusions, opinions, and recommendations contained in the Professional Document are the result of the application of professional judgment to such limited data.

The Professional Document is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site conditions present, or variation in assumed conditions which might form the basis of design or recommendations as outlined in this report, at or on the development proposed as of the date of the Professional Document requires a supplementary exploration, investigation, and assessment.

TETRA TECH is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the Client.

1.7 ENVIRONMENTAL AND REGULATORY ISSUES

Unless stipulated in the report, TETRA TECH has not been retained to explore, address, or consider and has not explored, addressed, or considered any environmental or regulatory issues associated with the development of the site.

1.8 NATURE AND EXACTNESS OF SOIL AND ROCK DESCRIPTIONS

Classification and identification of soils and rocks are based upon commonly accepted systems and methods employed in professional geotechnical practice. This report contains descriptions of the systems and methods used. Where deviations from the system or method prevail, they are specifically mentioned.

Classification and identification of geological units are judgemental in nature as to both type and condition. TETRA TECH does not warrant conditions represented herein as exact, but infers accuracy only to the extent that is common in practice.

Where subsurface conditions encountered during development are different from those described in this report, qualified geotechnical personnel should revisit the site and review recommendations in light of the actual conditions encountered.

1.9 LOGS OF TESTHOLES

The testhole logs are a compilation of conditions and classification of soils and rocks as obtained from field observations and laboratory testing of selected samples. Soil and rock zones have been interpreted. Change from one geological zone to the other, indicated on the logs as a distinct line, can be, in fact, transitional. The extent of transition is interpretive. Any circumstance which requires precise definition of soil or rock zone transition elevations may require further investigation and review.

1.10 STRATIGRAPHIC AND GEOLOGICAL INFORMATION

The stratigraphic and geological information indicated on drawings contained in this report are inferred from logs of test holes and/or soil/rock exposures. Stratigraphy is known only at the locations of the test hole or exposure. Actual geology and stratigraphy between test holes and/or exposures may vary from that shown on these drawings. Natural variations in geological conditions are inherent and are a function of the historic environment. TETRA TECH does not represent the conditions illustrated as exact but recognizes that variations will exist. Where knowledge of more precise locations of geological units is necessary, additional investigation and review may be necessary.

1.11 SURFACE WATER AND GROUNDWATER CONDITIONS

Surface and groundwater conditions mentioned in this report are those observed at the times recorded in the report. These conditions vary with geological detail between observation sites; annual, seasonal and special meteorological conditions; and with development activity. Interpretation of water conditions from observations and records is judgmental and constitutes an evaluation of circumstances as influenced by geology, meteorology and development activity. Deviations from these observations may occur during the course of development activities.

APPENDIX B

ACCESS ROAD FIGURES

LEGEND

Data Collection Line

End Moraine Boundary close to the Survey Area

SCALE 1:10,000
NAD83
CGVD28
UTM z19N

CLIENT

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Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Access Road Site Map
Collection Dates: Aug 26 - Sept 13, 2025

PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WEO	PIF	0

OFFICE	DATE
EBA-EDM	October 31, 2025

Figure B1

NAD83
UTMz19
XY: 1:1312
Z: 1:882.2
VE: 1.49

Elevation (m)

Profile Chainage (m)

*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

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Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Access Road
GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

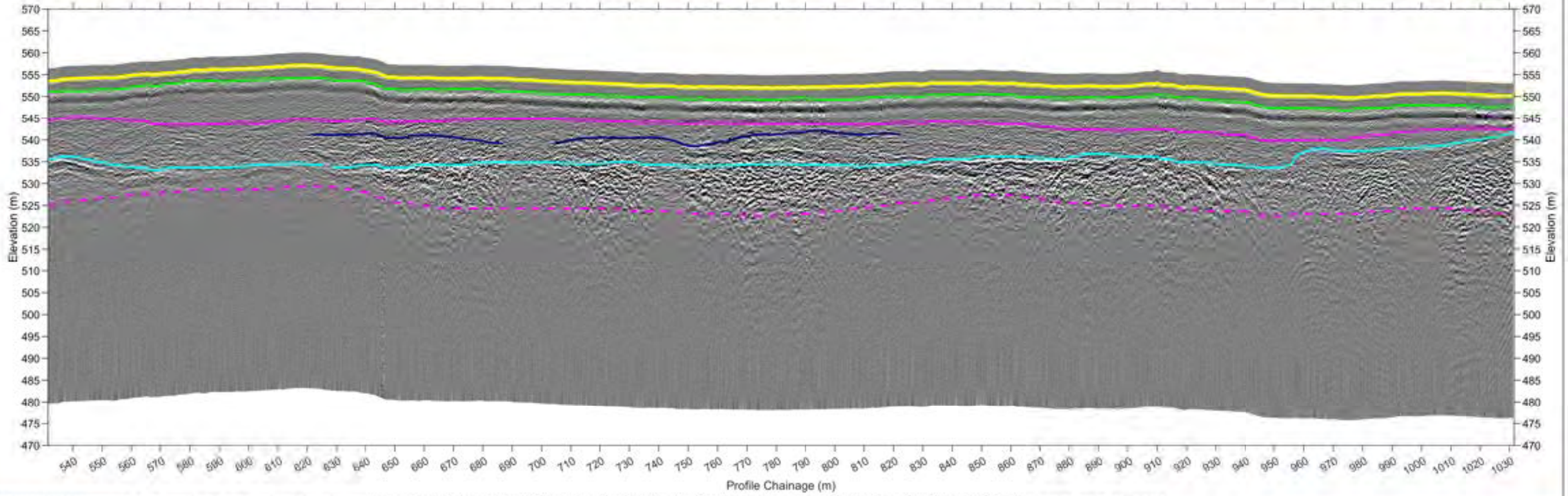
Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02540-01	AD	WO	PF	0

OFFICE: EBA - EDM

DATE: October 31, 2025

Figure B2.1

NAD83
UTMz19
XY: 1:1312
Z: 1:882.2
VE: 1.49



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

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TETRA TECH

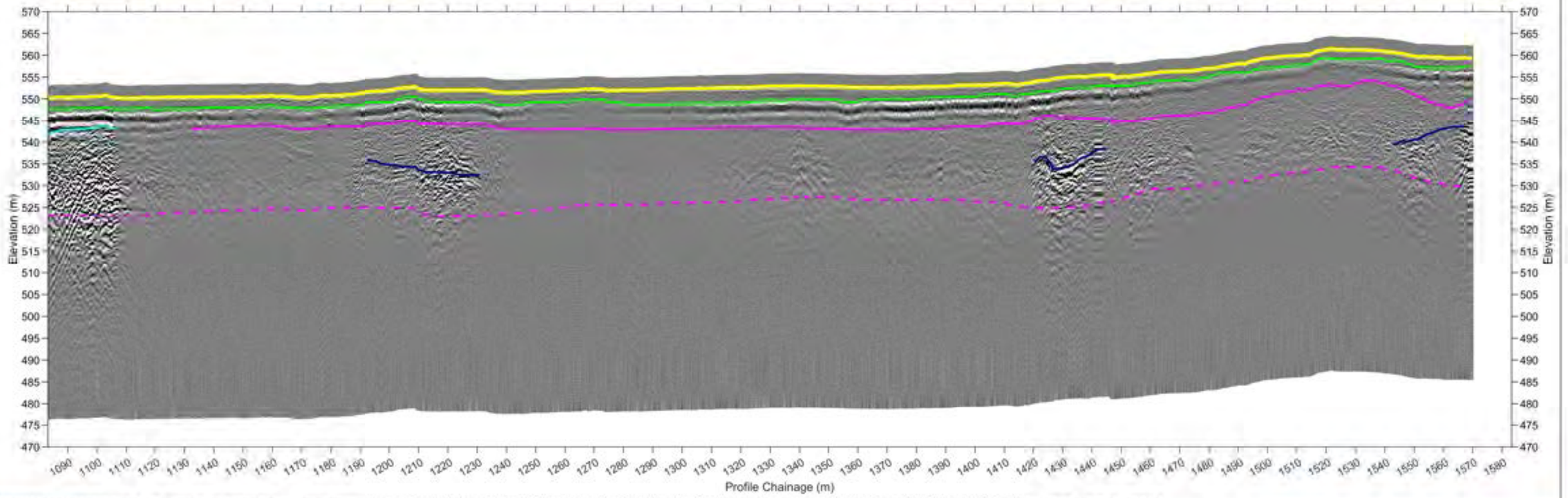
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Access Road
GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM3 ROCK02540-01	AD	WO	PF	0

OFFICE: EBA - EDM
DATE: October 31, 2025

Figure B2.2



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

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Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Access Road
GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02643-01	AD	WO	PP	0

OFFICE: EBA - EDM

DATE: October 31, 2025

Figure B2.3

LEGEND

Data collection line

Interpreted Ice-rich zone

End Moraine Boundary close to the Survey Area

SCALE 1:10,000
NAD83
CGVD28
UTM z19N

CLIENT

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Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Access Road
Interpreted Ground Ice Map
Collection Dates: Aug 26 - Sept 13, 2025

PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WEO	PIF	0

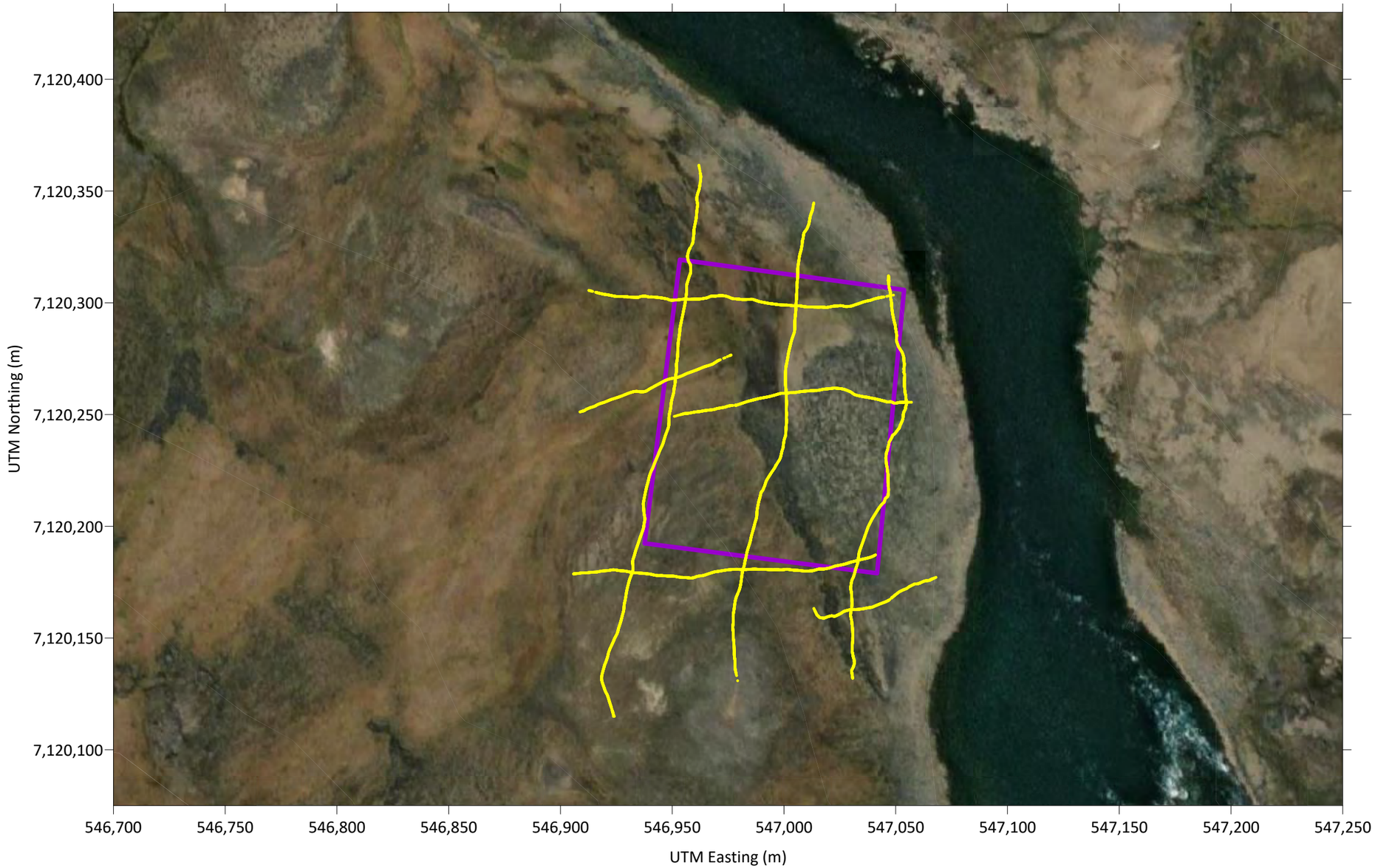
OFFICE: EBA-EDM

DATE: October 31, 2025

Figure B3

APPENDIX C

POWERHOUSE FIGURES



LEGEND

Data Collection Line

Proposed Site Boundary

SCALE 1:2,000
NAD83
CGVD28
UTM z19N

CLIENT

Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Powerhouse Site Map
Collection Dates: Aug 26 - Sept 13, 2025

PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WEO	PIF	0

OFFICE: EBA-EDM
DATE: October 31, 2025

Figure C1

NAD83
UTMz19
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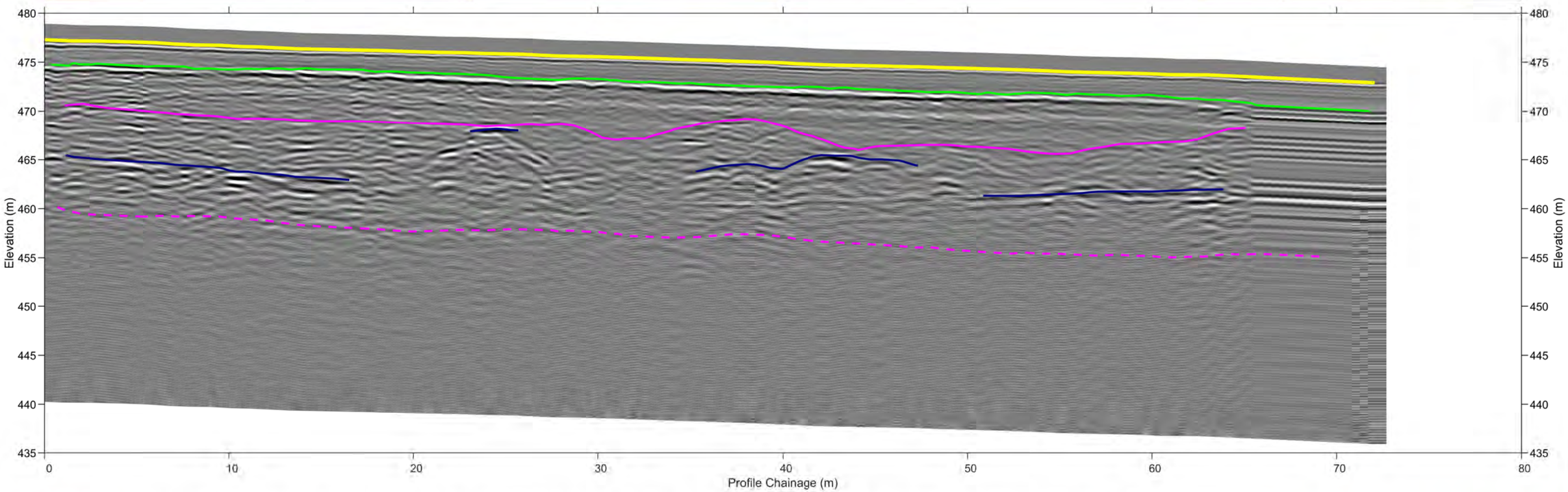
Z: 1:397.0
VE: 0.53



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND
- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

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TETRA TECH

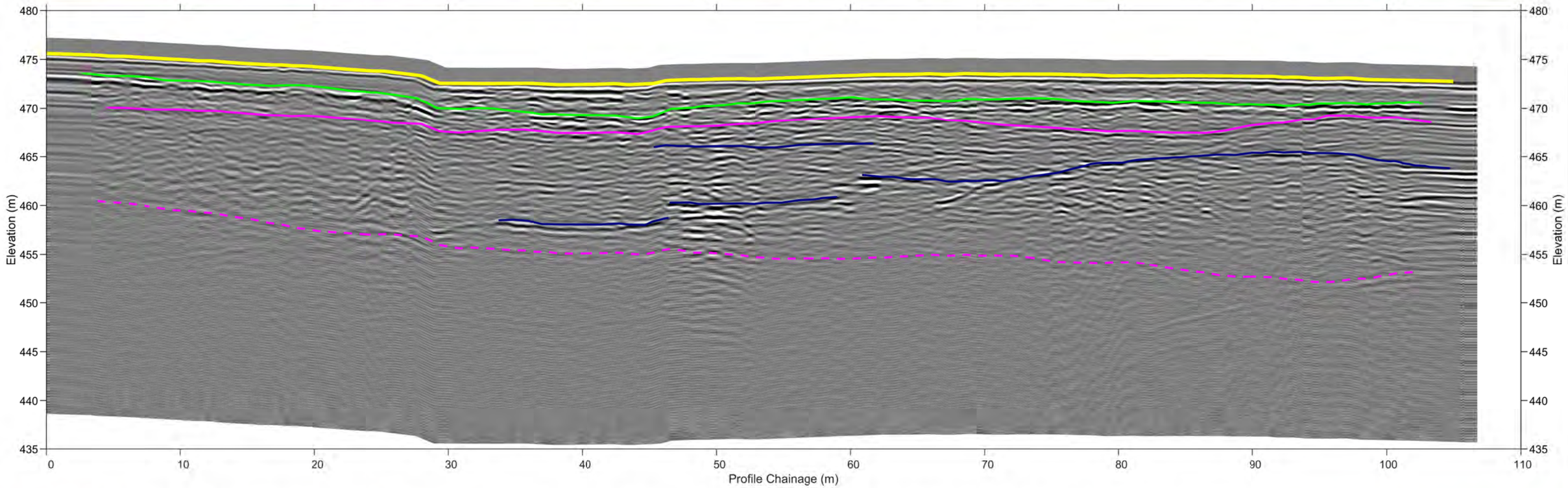
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Powerhouse
GPR Profile (100MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
ENG.ROCK03543-01	AD	WO	PIF	0

OFFICE: EBA - EDM
DATE: October 31, 2025

Figure C2



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

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TETRA TECH

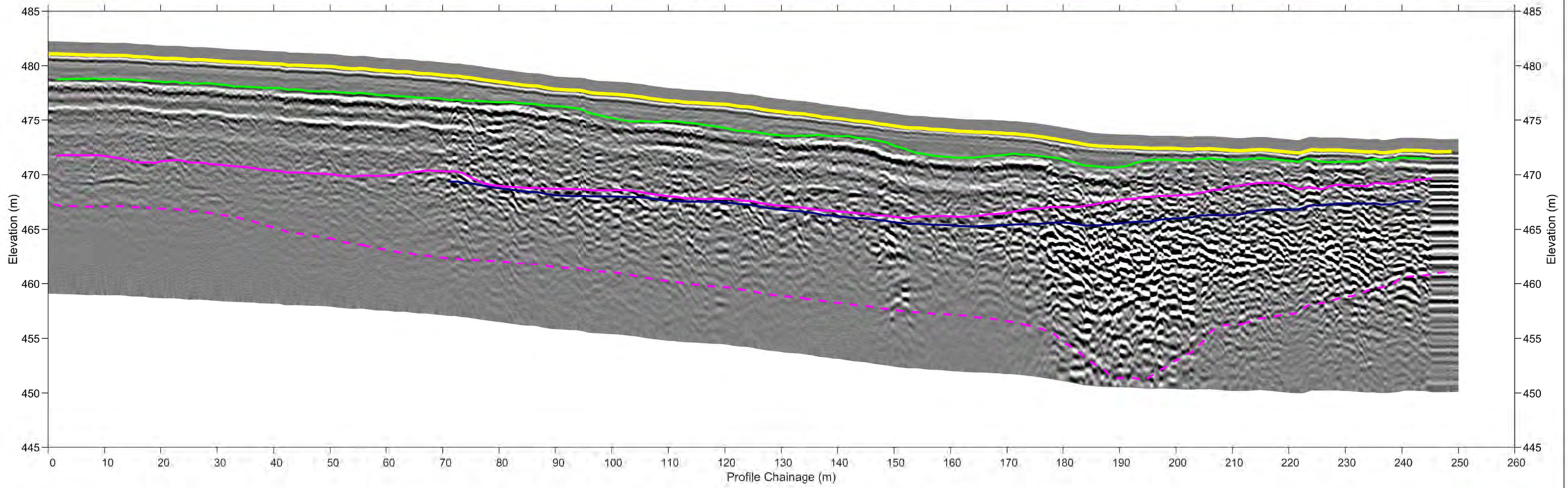
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Powerhouse
GPR Profile (100MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
ENG.ROCK03543-01	AD	WO	PIF	0

OFFICE: EBA - EDM
DATE: October 31, 2025

Figure C3



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

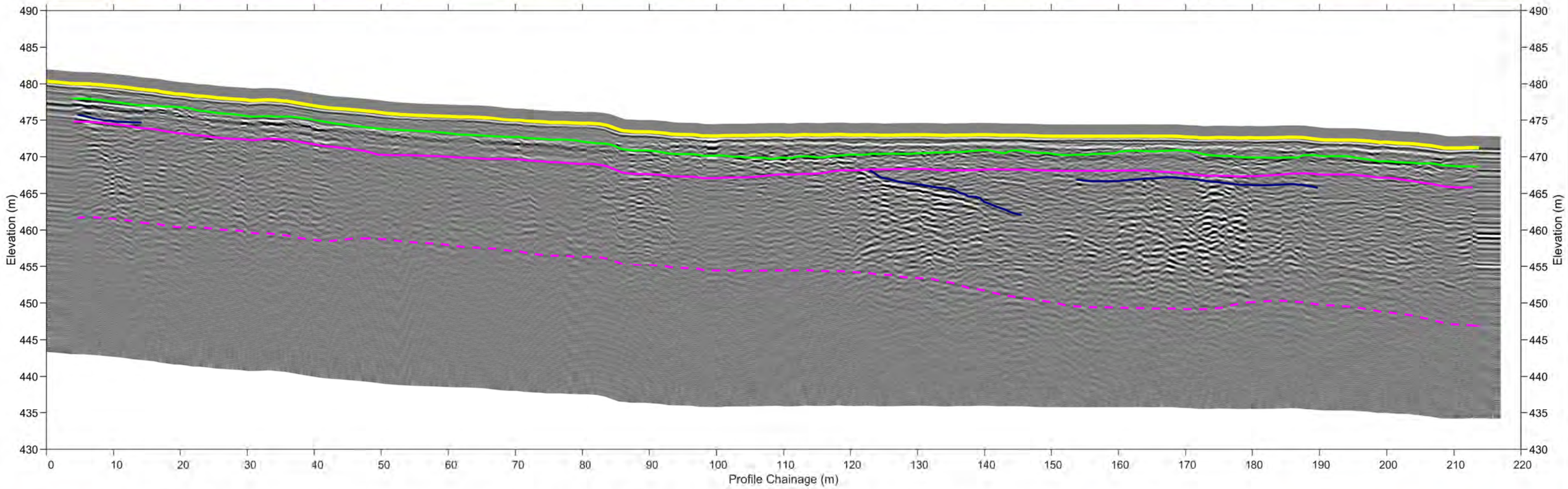
Powerhouse
GPR Profile (100MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
ENG.ROCK03543-01	AD	WO	PIF	0

OFFICE: EBA - EDM
DATE: October 31, 2025

Figure C4

NAD83
UTMz19
XY: 1:577
Z: 1:529.3
VE: 1.09



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

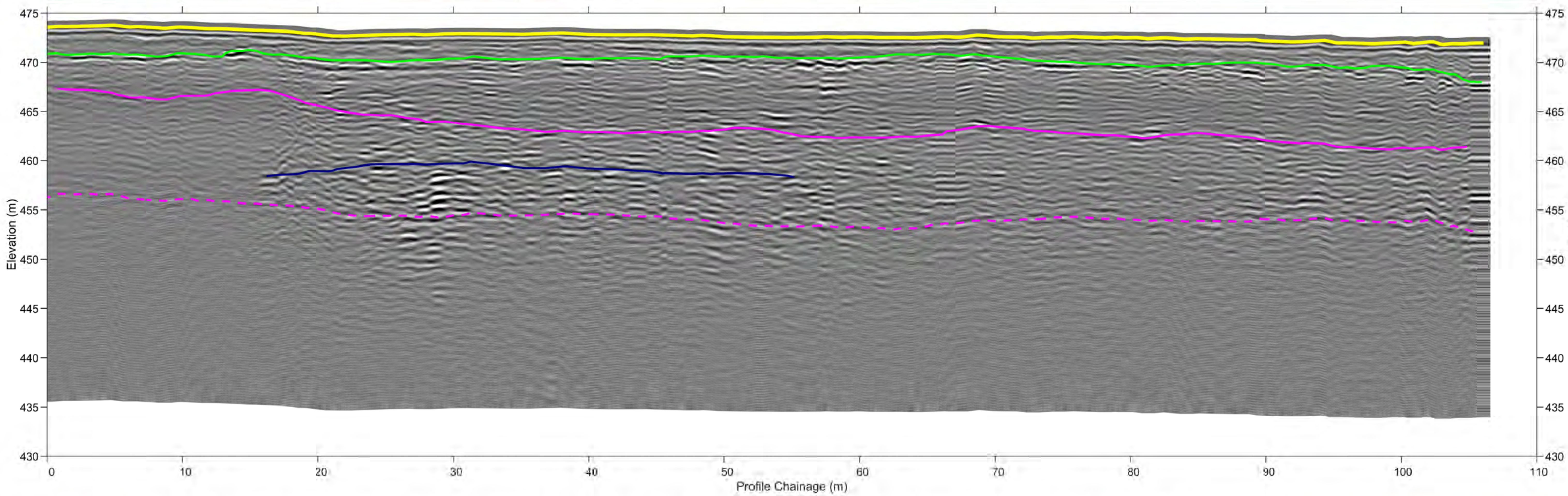
Powerhouse
GPR Profile (100MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
ENG.ROCK03543-01	AD	WO	PIF	0

OFFICE: EBA - EDM
DATE: October 31, 2025

Figure C5

Z
NAD83
UTMz19
XY: 1:289
Z: 1:397.0
VE: 0.73



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

NNC

Nunavut Nukkiksautiit Corporation

TETRA TECH

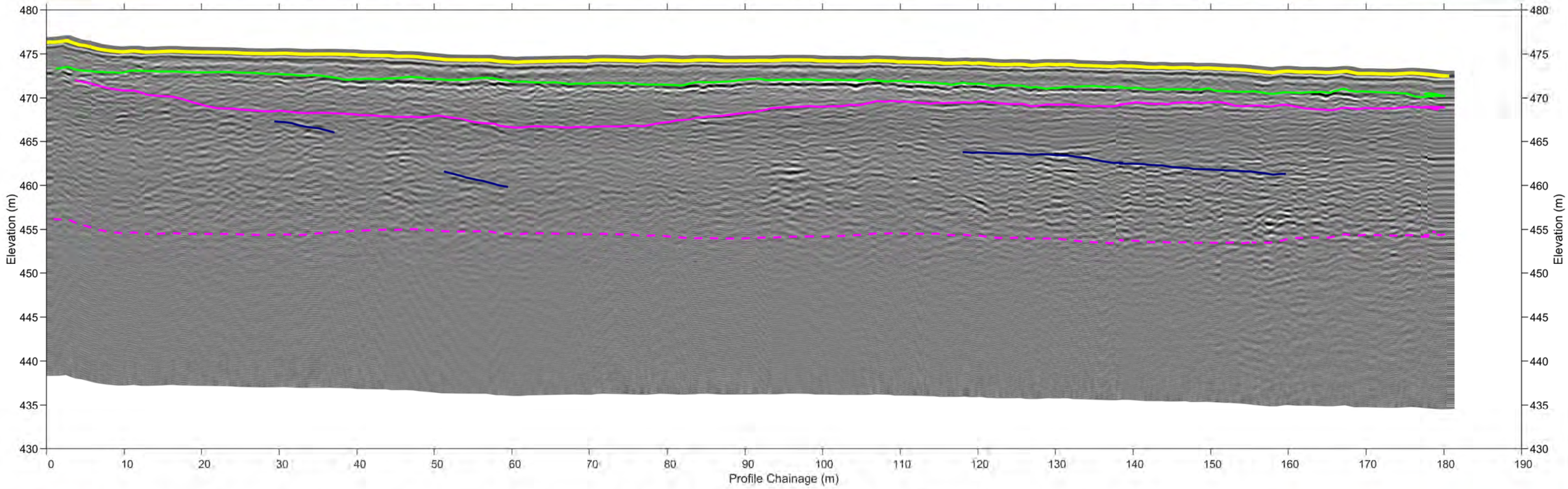
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Powerhouse
GPR Profile (100MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
ENG.ROCK03543-01	AD	WO	PIF	0

OFFICE	DATE
EBA - EDM	October 31, 2025

Figure C6



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

Nunavut Nukkiksautiit Corporation

TETRA TECH

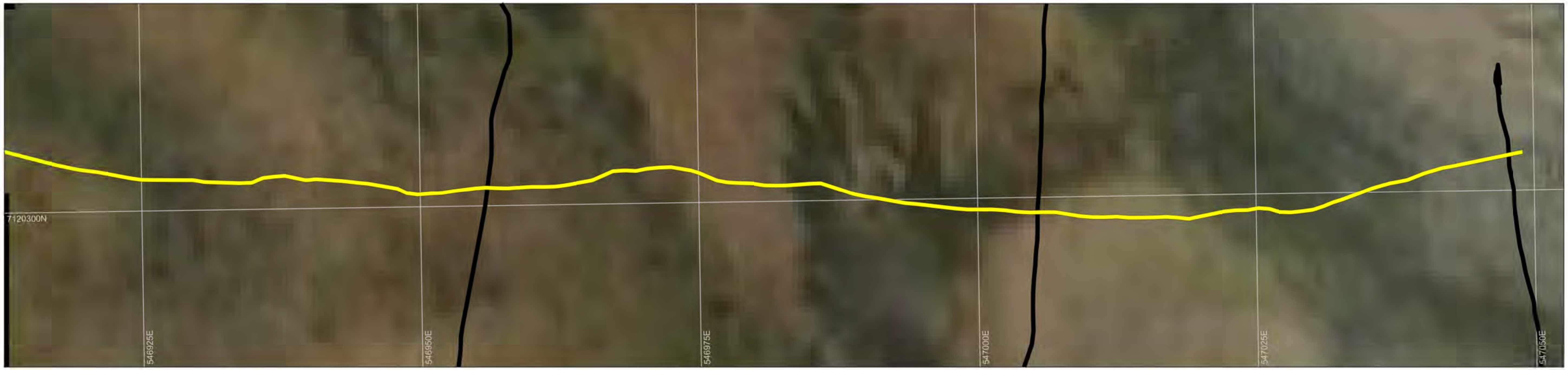
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Powerhouse
GPR Profile (100MHz)
Collection Dates: Aug 26 – Sept 13, 2025

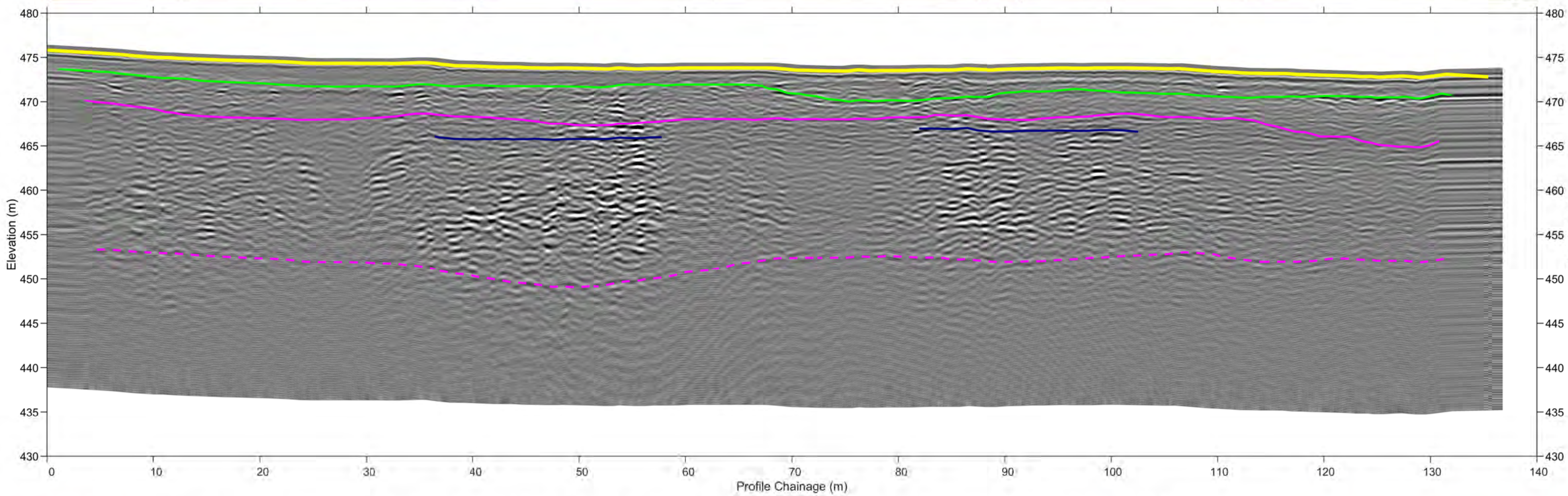
Project No.	DWN	CHKD	APVD	REV
ENG.ROCK03543-01	AD	WO	PIF	0

OFFICE	DATE
EBA - EDM	October 31, 2025

Figure C7



N
NAD83
UTMz19
XY: 1:367
Z: 1:441.1
VE: 0.83



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

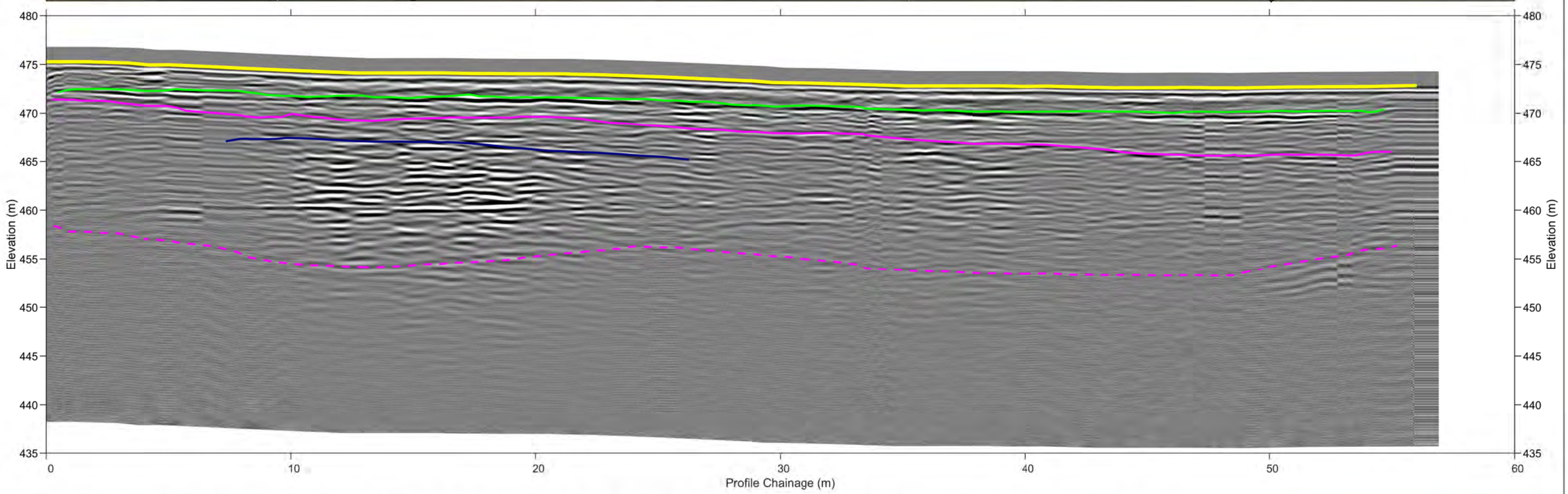
Powerhouse
GPR Profile (100MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
ENG.ROCK03543-01	AD	WO	PIF	0

OFFICE	DATE
EBA - EDM	October 31, 2025

Figure C8

NAD83
UTMz19
XY: 1:157
Z: 1:397.0
VE: 0.40



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND
- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT
Nunavut Nukkiksautiit Corporation

TETRA TECH

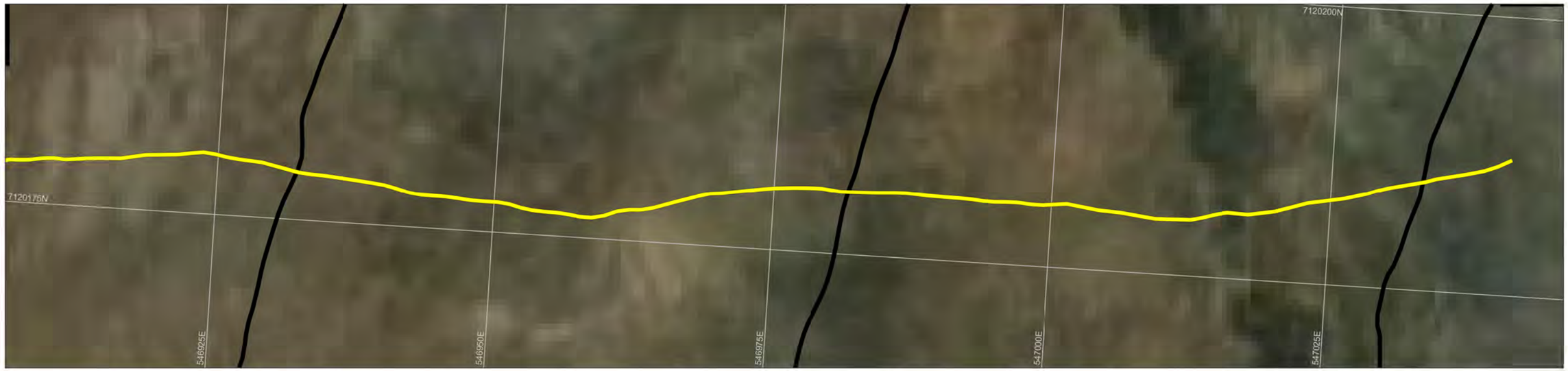
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Powerhouse
GPR Profile (100MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
ENG.ROCK03543-01	AD	WO	PIF	0

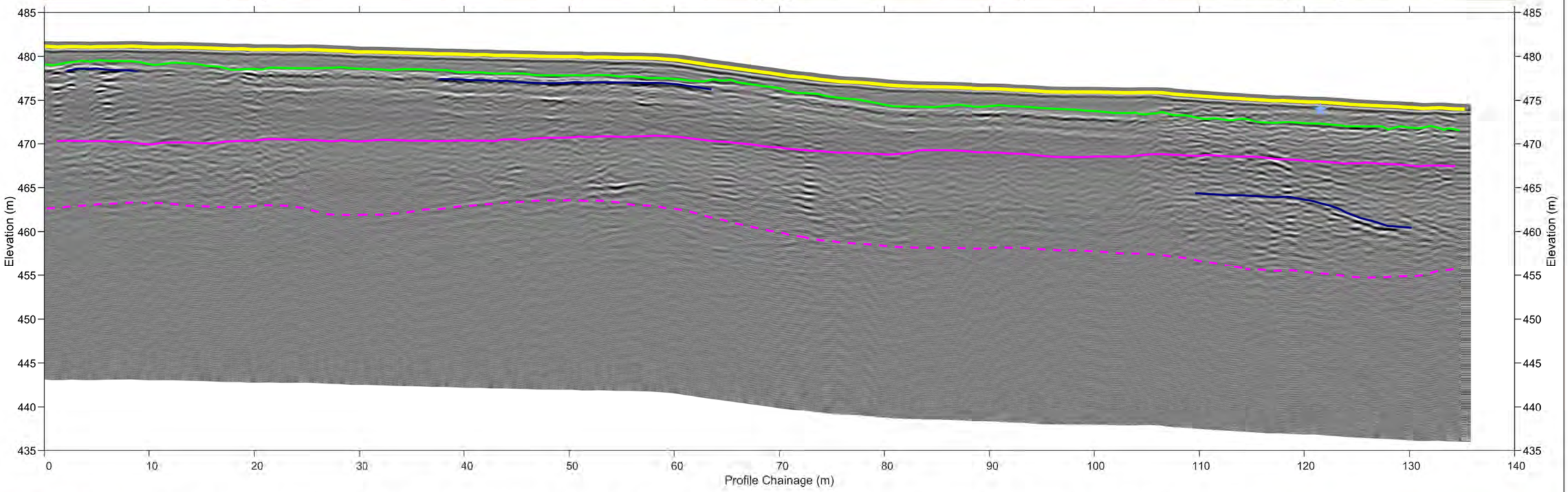
OFFICE: EBA - EDM
DATE: October 31, 2025

Figure C9



N

NAD83
UTMz19
XY: 1:367
Z: 1:441.1
VE: 0.83



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

Nunavut Nukkiksautiit Corporation

TETRA TECH

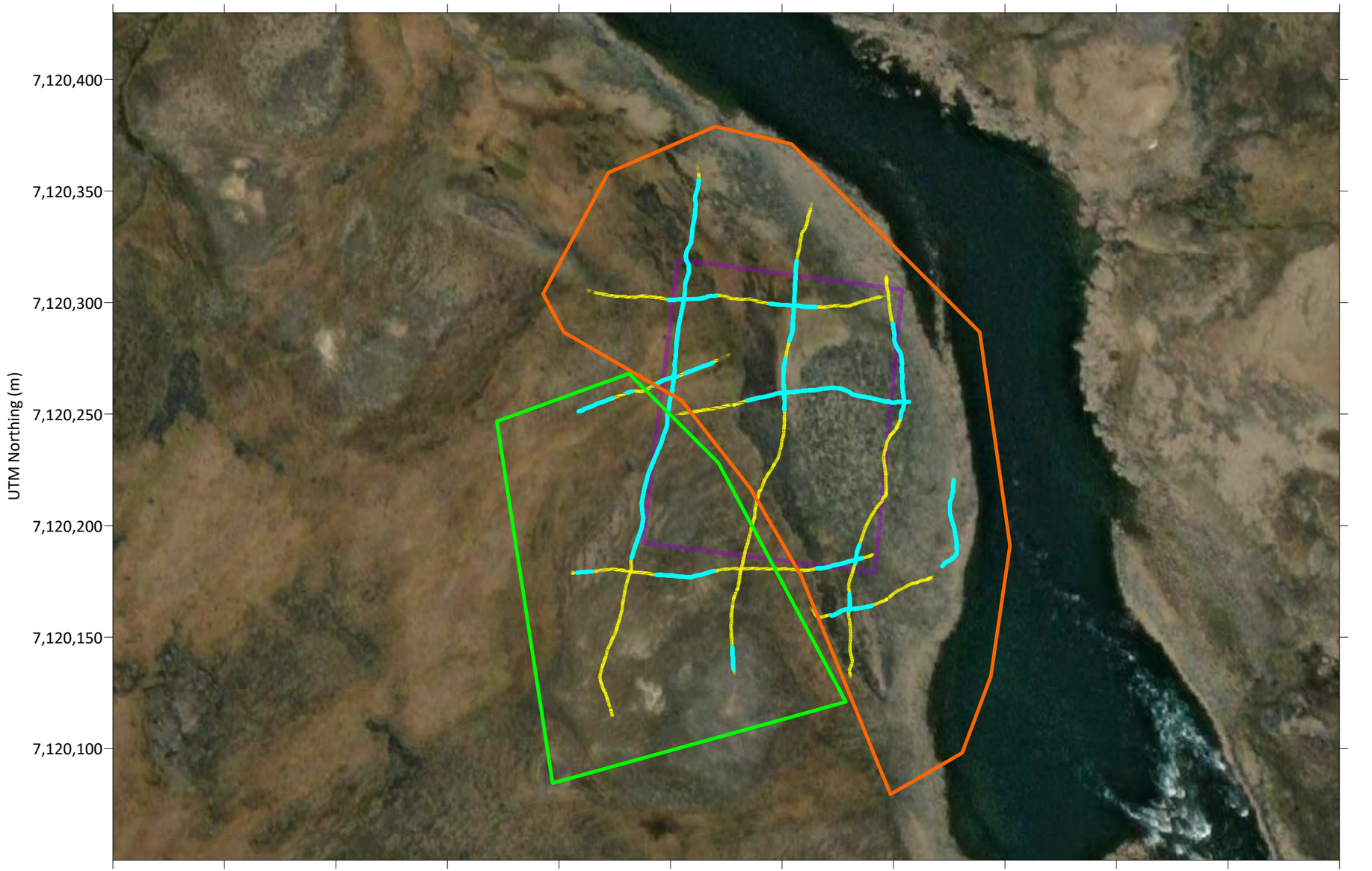
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Powerhouse
GPR Profile (100MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
ENG.ROCK03543-01	AD	WO	PIF	0

OFFICE: EBA - EDM
DATE: October 31, 2025

Figure C10



LEGEND

- Data collection line
- Interpreted Ice-rich zone
- Fluvial terrace
- Till
- Proposed site boundary

SCALE 1:2,000
NAD83
CGVD28
UTM z19N

CLIENT
Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Powerhouse
Interpreted Ground Ice Map
Collection Dates: Aug 26 - Sept 13, 2025

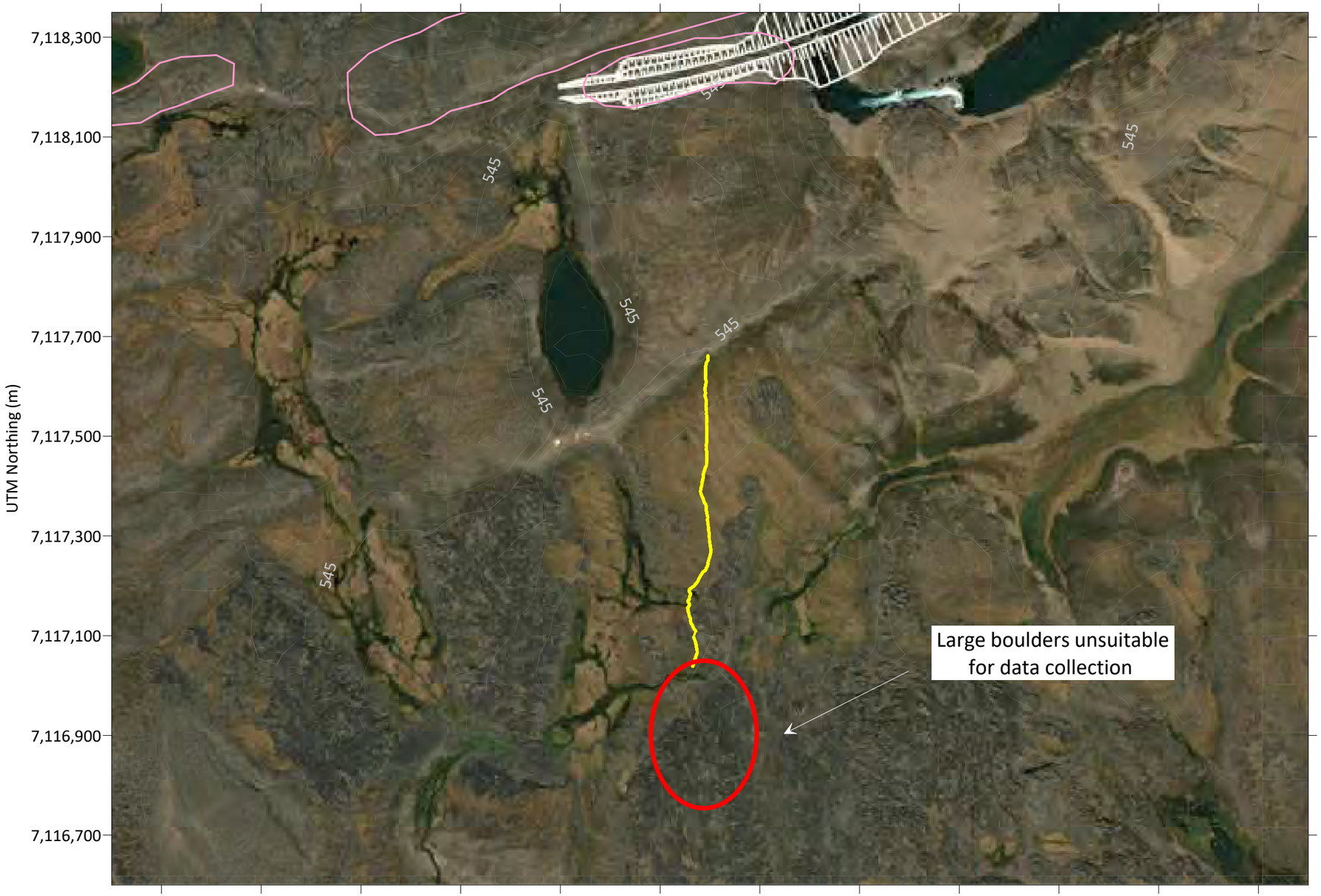
PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WEO	PIF	0

OFFICE: EBA-EDM
DATE: October 31, 2025

Figure C11

APPENDIX D

INFILL LINE FIGURES



LEGEND

Data Collection Line

End Moraine Boundary close to the Survey Area

SCALE 1:9,000
NAD83
CGVD28
UTM z19N

CLIENT

TETRA TECH

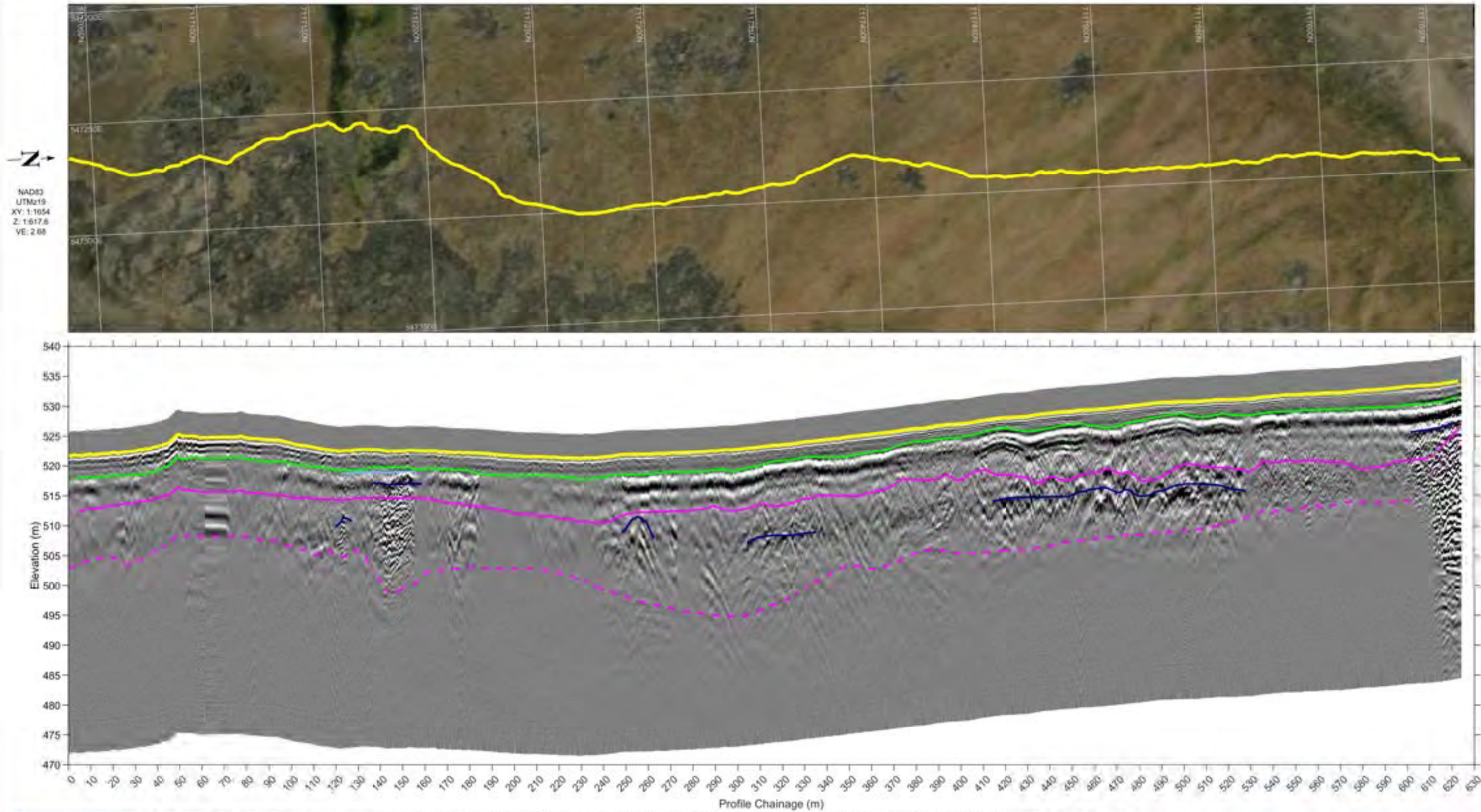
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Infill Line Site Map
Collection Dates: Aug 26 - Sept 13, 2025

PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WEO	PIF	0

OFFICE: EBA-EDM
DATE: October 31, 2025

Figure D1



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

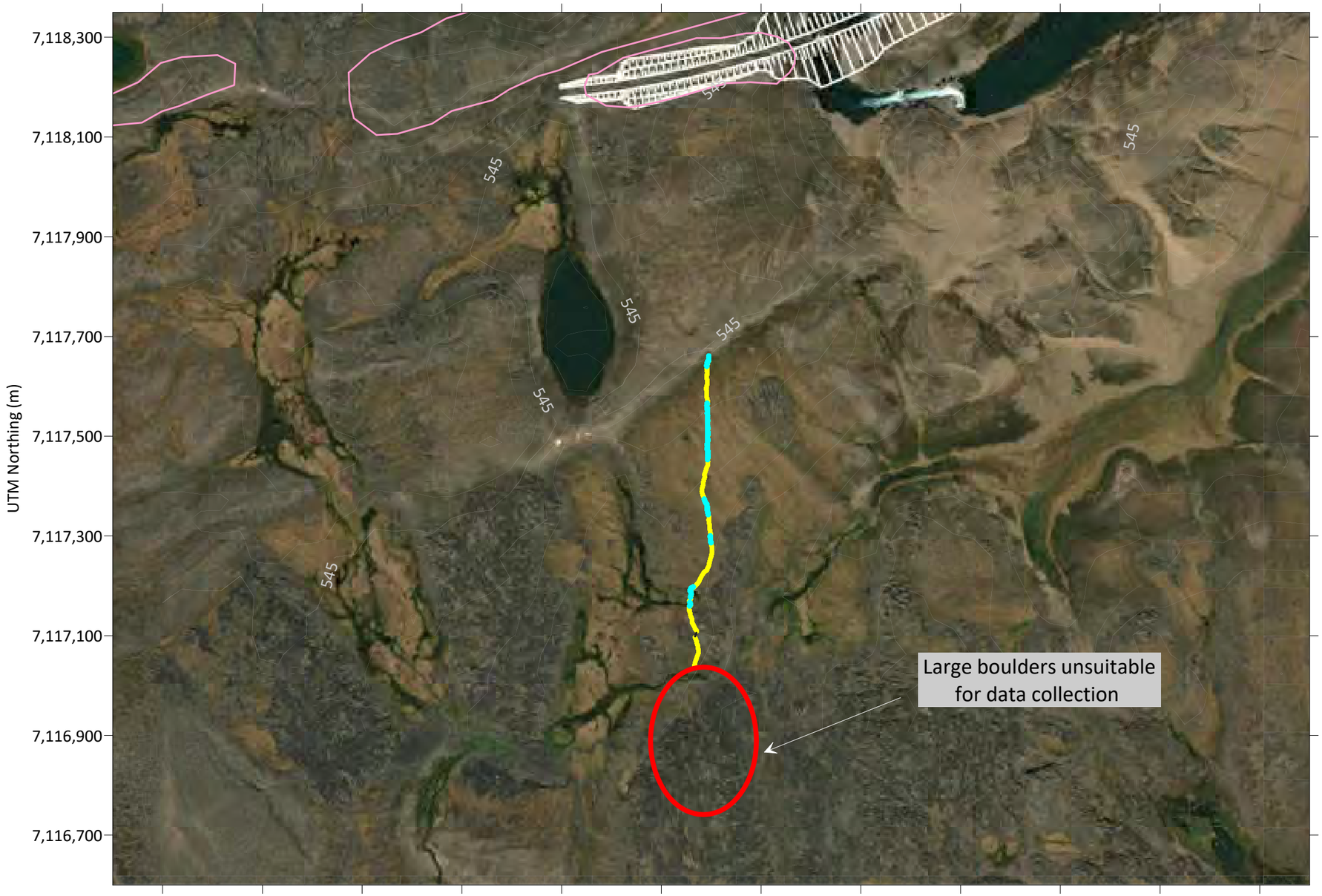
TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Infill Line
GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02540-01	AD	WO	PIF	0
OFFICE: EBA - EDM	DATE: October 31, 2025			

Figure D2



LEGEND

- Data collection line
- Interpreted Ice-rich zone
- End Moraine Boundary close to the Survey Area

SCALE 1:9,000
NAD83
CGVD28
UTM z19N

CLIENT

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

Infill Line
Interpreted Ground Ice Map
Collection Dates: Aug 26 - Sept 13, 2025

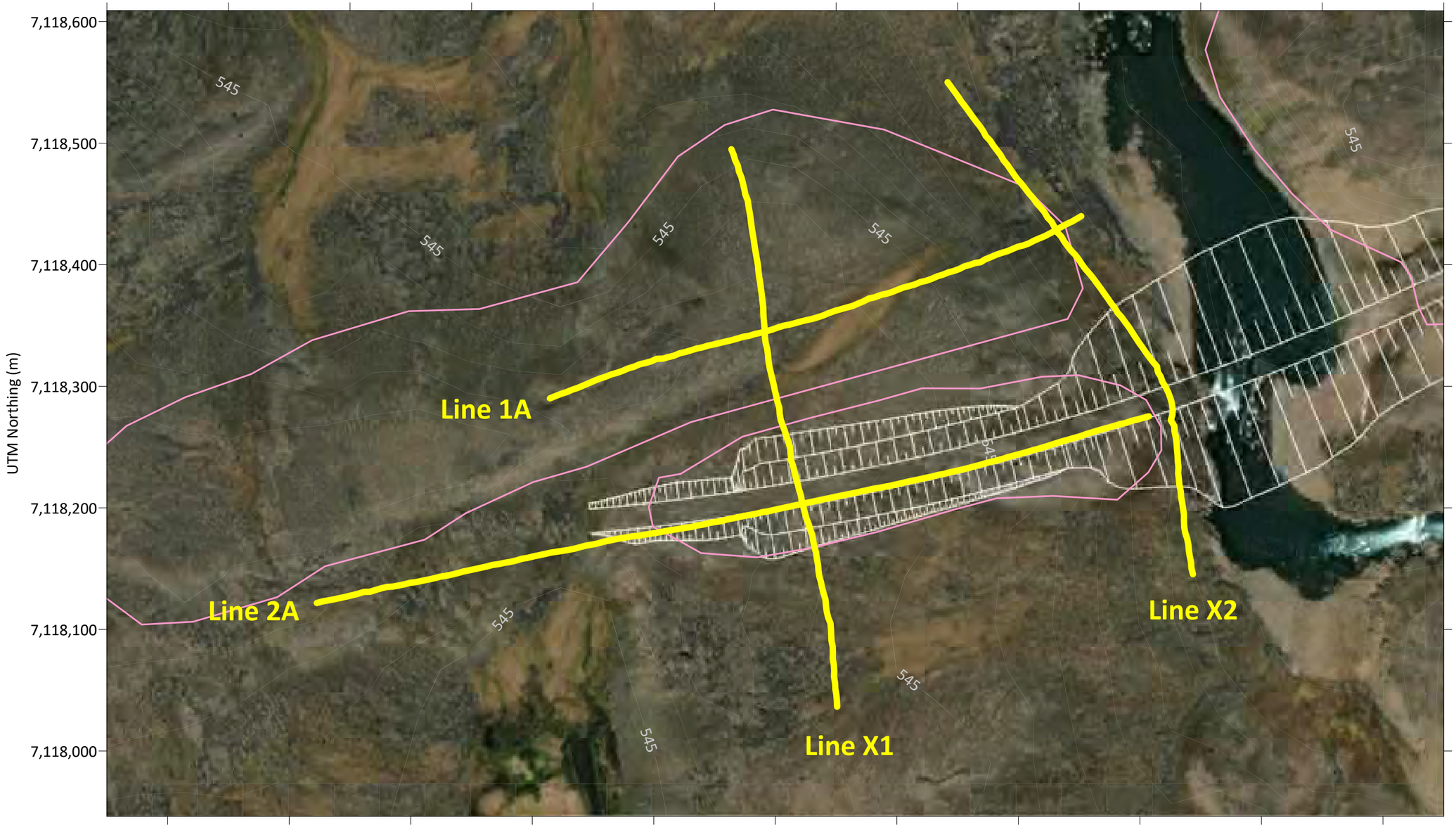
PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WEO	PIF	0

OFFICE	DATE
EBA-EDM	October 31, 2025

Figure D3

APPENDIX E

WEST ALIGNMENT FIGURES



LEGEND

Data Collection Line

End Moraine Boundary close to the Survey Area

SCALE 1:3,500
NAD83
CGVD28
UTM z19N

CLIENT

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

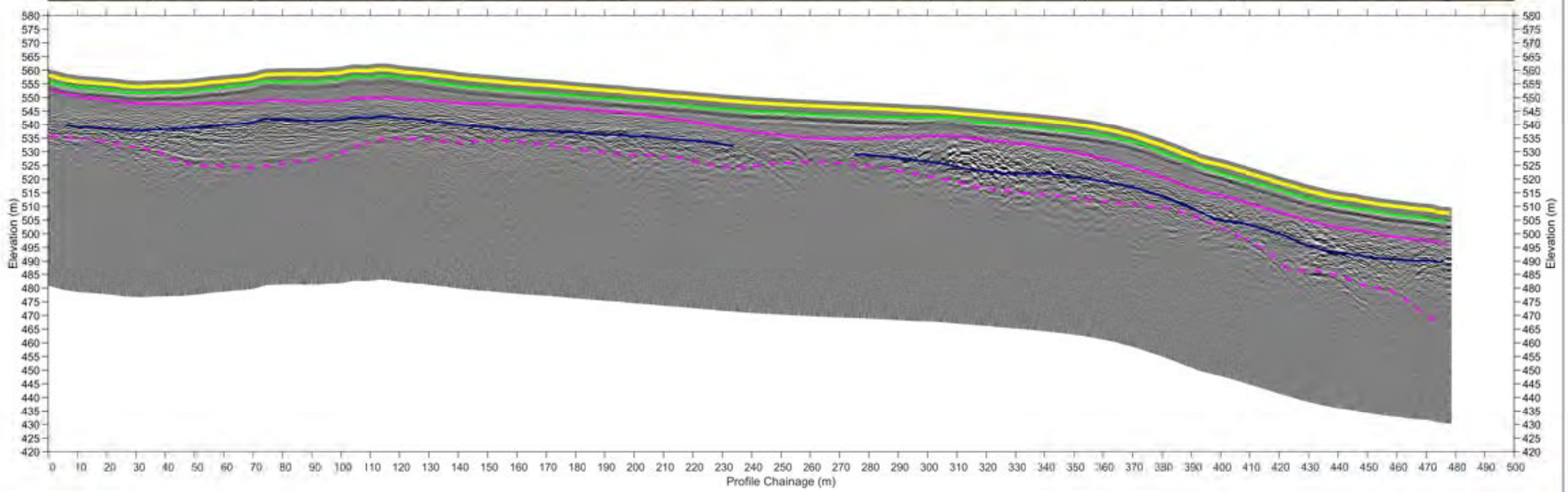
West Alignment Site Map
Collection Dates: Aug 26 - Sept 13, 2025

TETRA TECH

PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WEO	PIF	0

OFFICE	DATE
EBA-EDM	October 31, 2025

Figure E1



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

NNC

Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

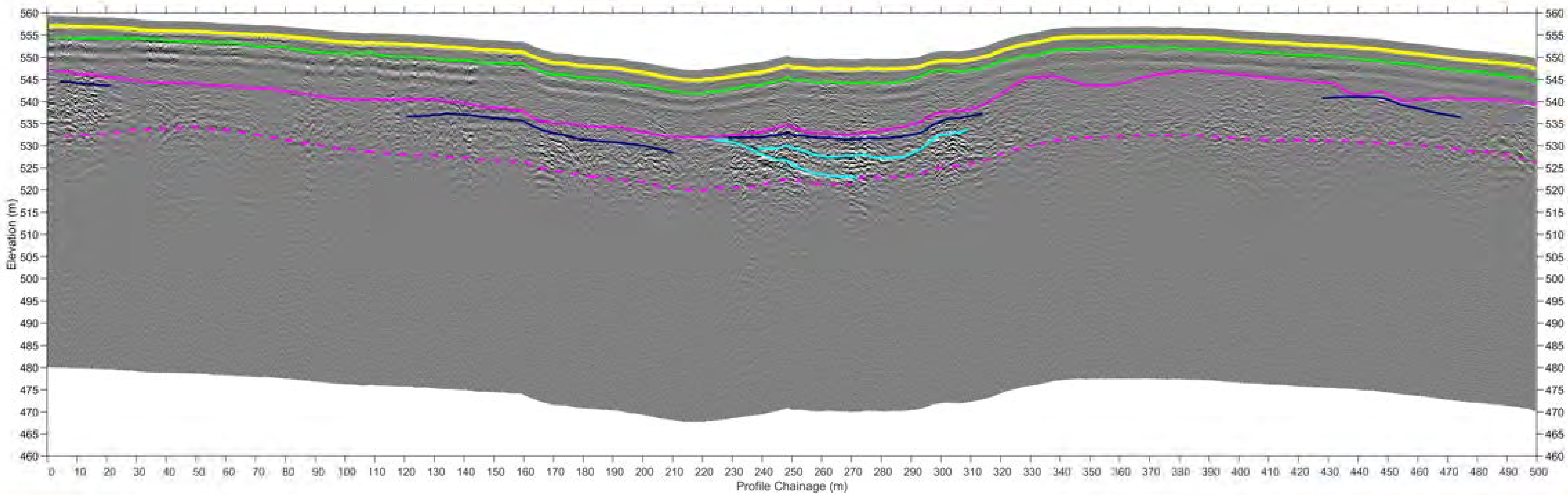
West Alignment
Line 1A GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02540-01	AD	WO	PP	0

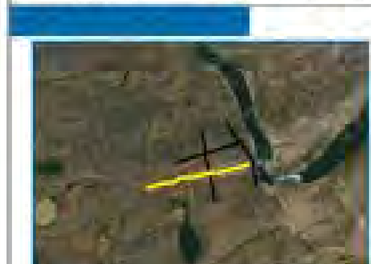
OFFICE: EBA - EDM

DATE: October 31, 2025

Figure E2



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.



GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

Nunavut Nukkiksautiit Corporation

TETRA TECH

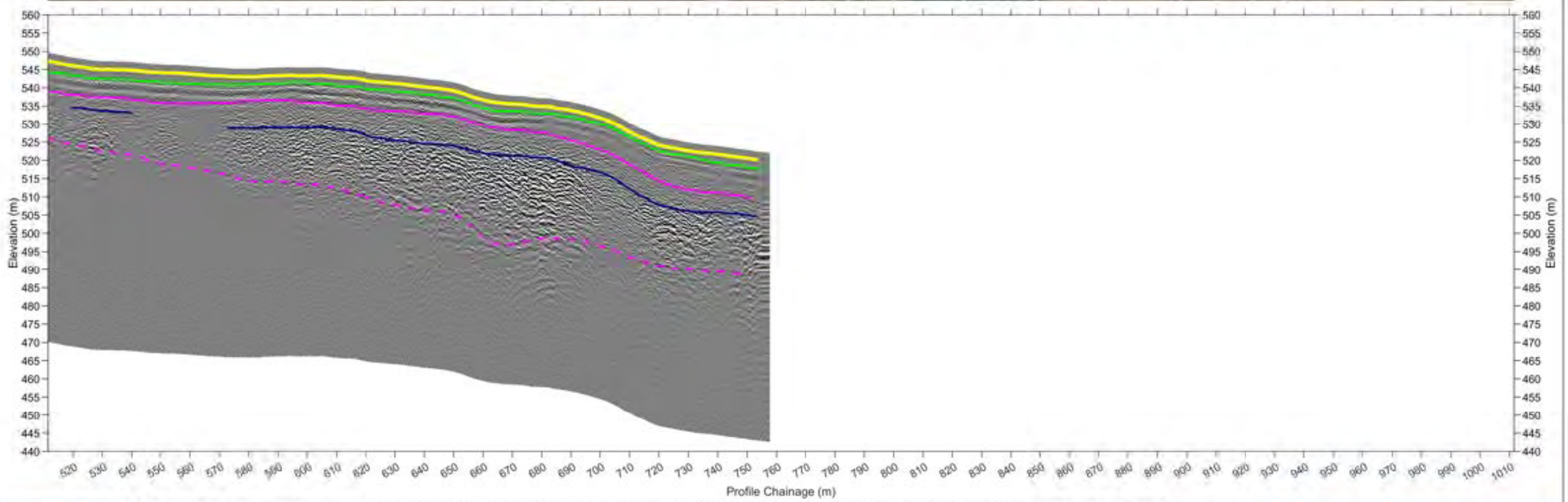
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

West Alignment
Line 2A GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
ENG.ROCK03543-01	AD	WO	PF	0

OFFICE	DATE
EBA - EDM	October 11, 2025

Figure E3.1



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

NNC

Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

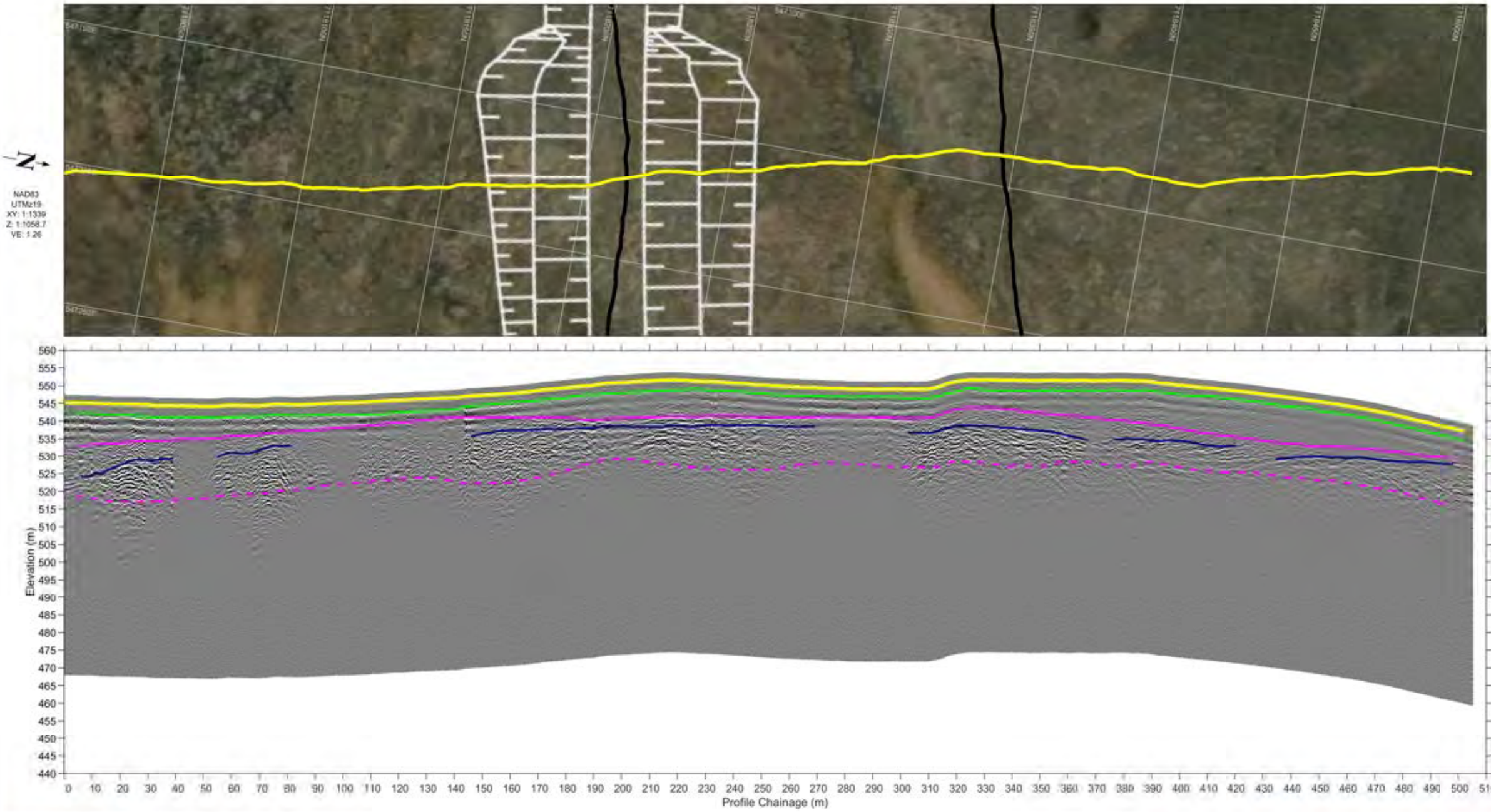
West Alignment
Line 2A GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02543-01	AD	WO	PP	0

OFFICE: EBA - EDM

DATE: October 31, 2025

Figure E3.2



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

NNC

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

West Alignment
Line X1 GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

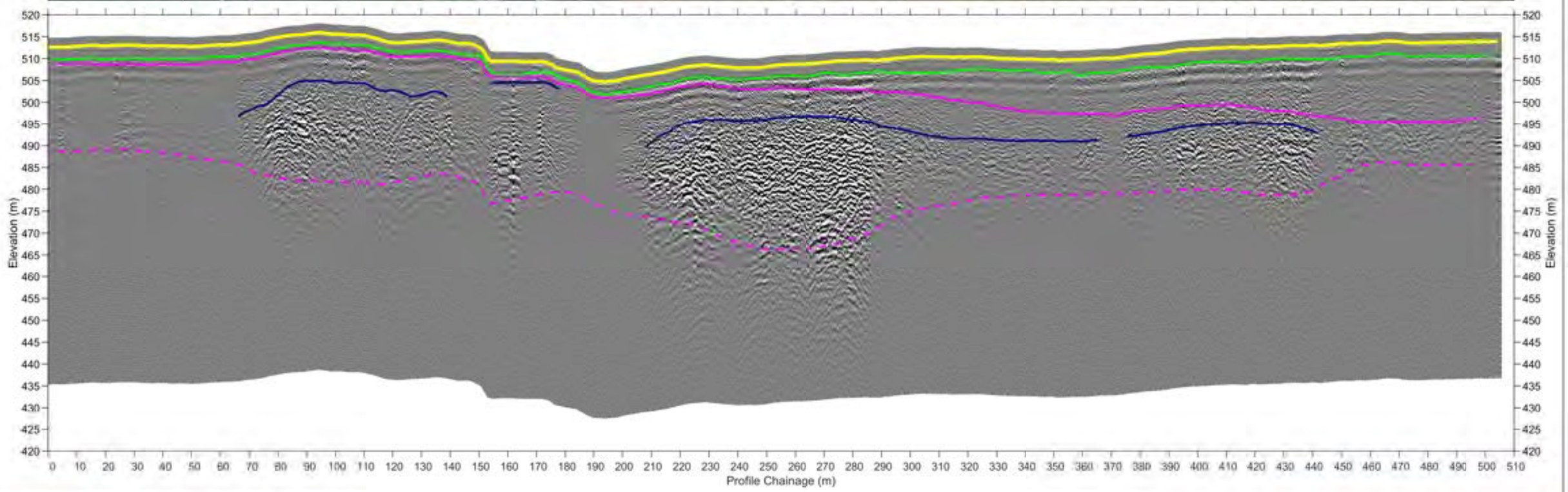
Project No.	DWN	CHKD	APVD	REV
EM3 ROCK225453-01	AD	WO	PP	0

OFFICE: EBA - EDM

DATE: October 31, 2025

Figure E4

NAD83
UTMz19
XY: 1:1339
Z: 1:882.2
VE: 1.52



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

West Alignment
Line X2 GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02540-01	AD	WO	PP	0

OFFICE: EBA - EDM
DATE: October 31, 2025

Figure E5

LEGEND

- Data collection line
- Interpreted Ice-rich zone
- End Moraine Boundary close to the Survey Area

SCALE 1:3,500
NAD83
CGVD28
UTM z19N

CLIENT

TETRA TECH

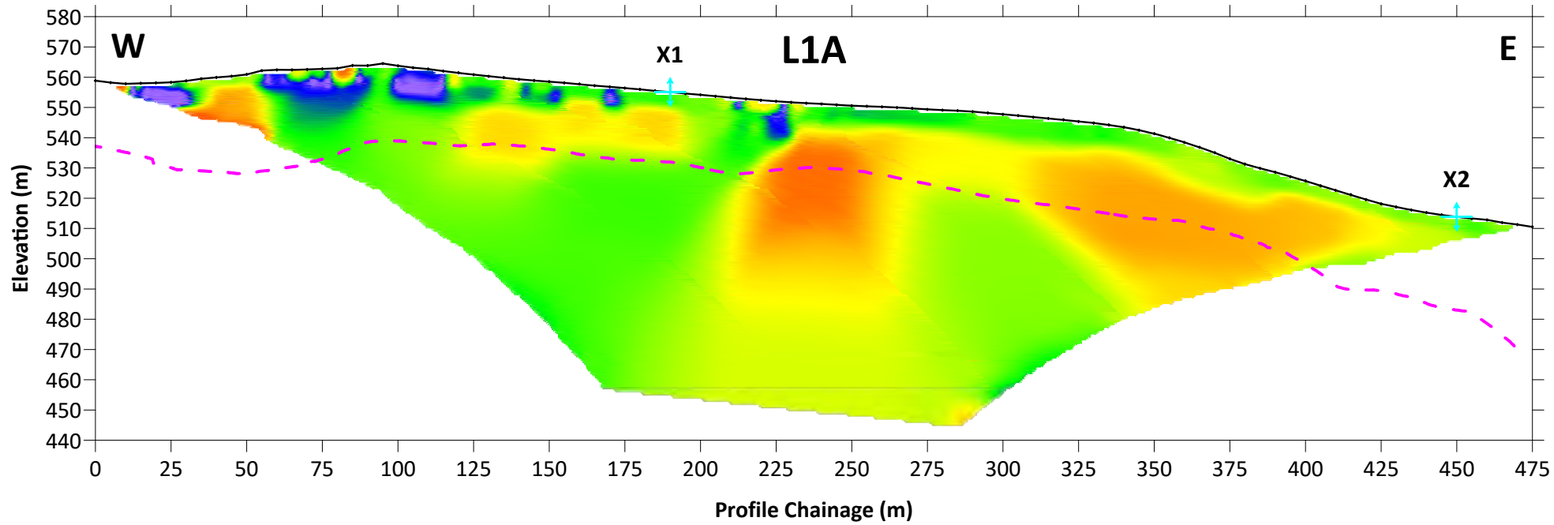
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

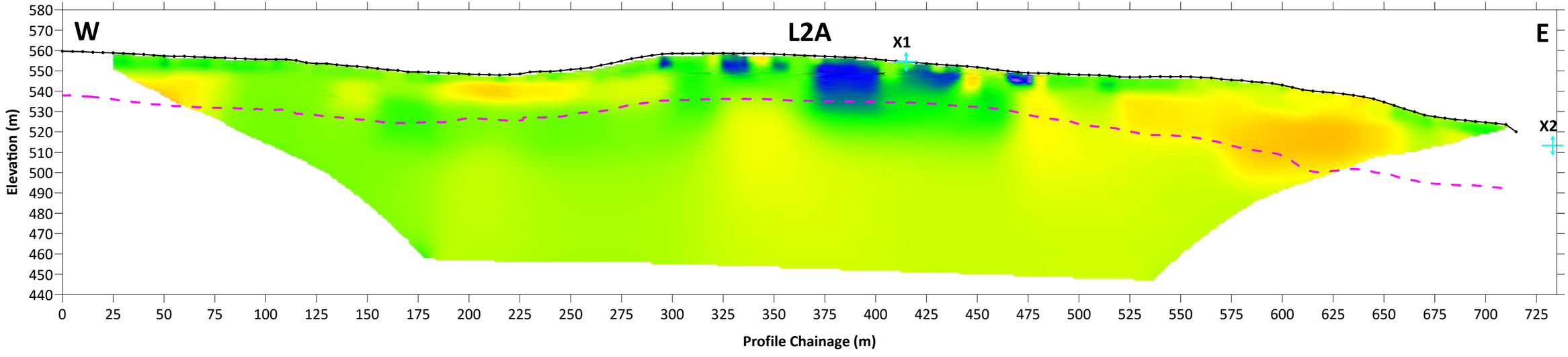
West Alignment
Interpreted Ground Ice Map
Collection Dates: Aug 26 - Sept 13, 2025

PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WEO	PIF	0

OFFICE: EBA-EDM
DATE: October 31, 2025

Figure E6





*Electrode Configuration: Wenner-Schlumberger

LEGEND

SCALE 1:2,000
NAD83
CGVD28
UTM z19

Line Intersection

Possible Competent Bedrock Surface (from GPR profile)

100 1,000 10,000 100,000 1,000,000

Resistivity (Ohm*m)

CLIENT

TETRA TECH

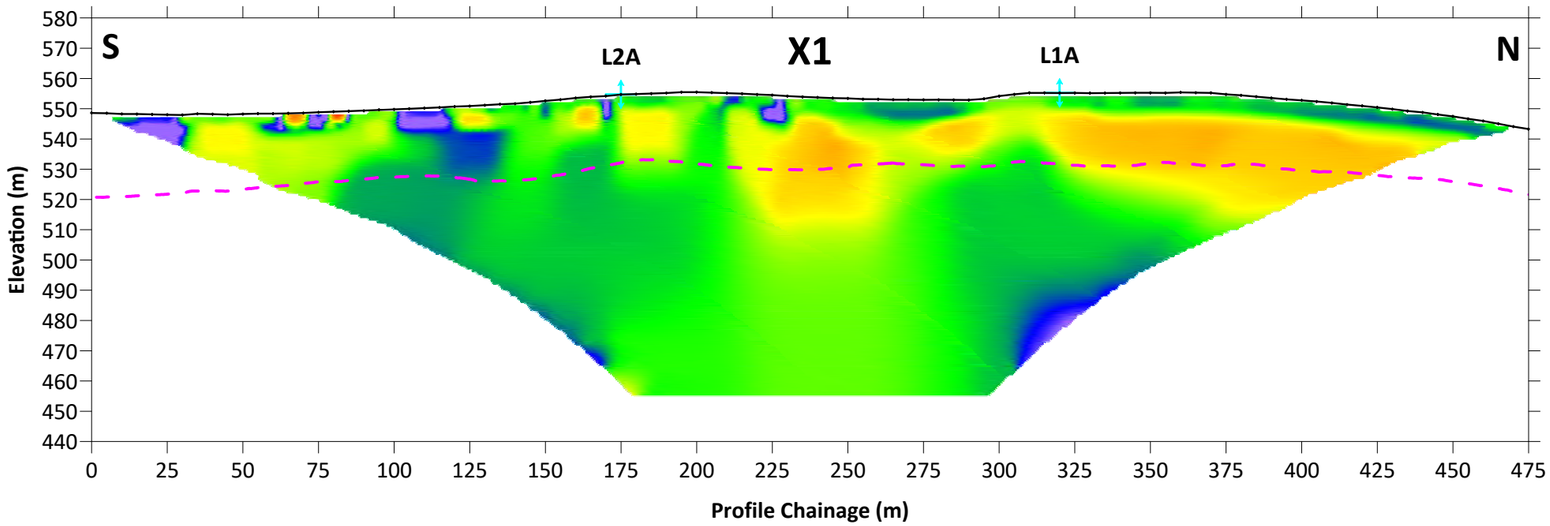
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

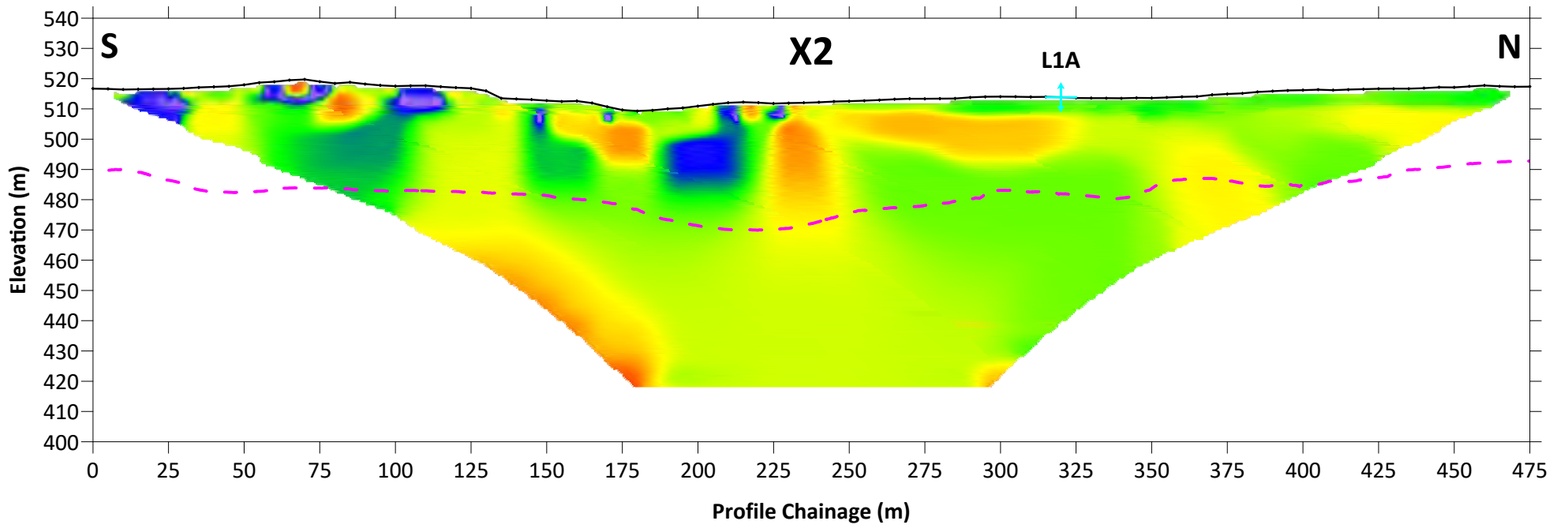
West Alignment
ERT Profiles (Lines 1A and 2A)
Collection Dates: Aug 26 - Sept 13, 2025

PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WO	PIF	0

OFFICE: EBA-EDM
DATE: October 31, 2025

Figure E7





*Electrode Configuration: Wenner-Schlumberger

LEGEND

SCALE 1:2,000
NAD83
CGVD28
UTM z19

Line Intersection

Possible Competent Bedrock Surface (from GPR profile)

100 1,000 10,000 100,000 1,000,000

Resistivity (Ohm*m)

CLIENT

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

West Alignment
ERT Profile (Lines X1 and X2)
Collection Dates: Aug 26 - Sept 13, 2025

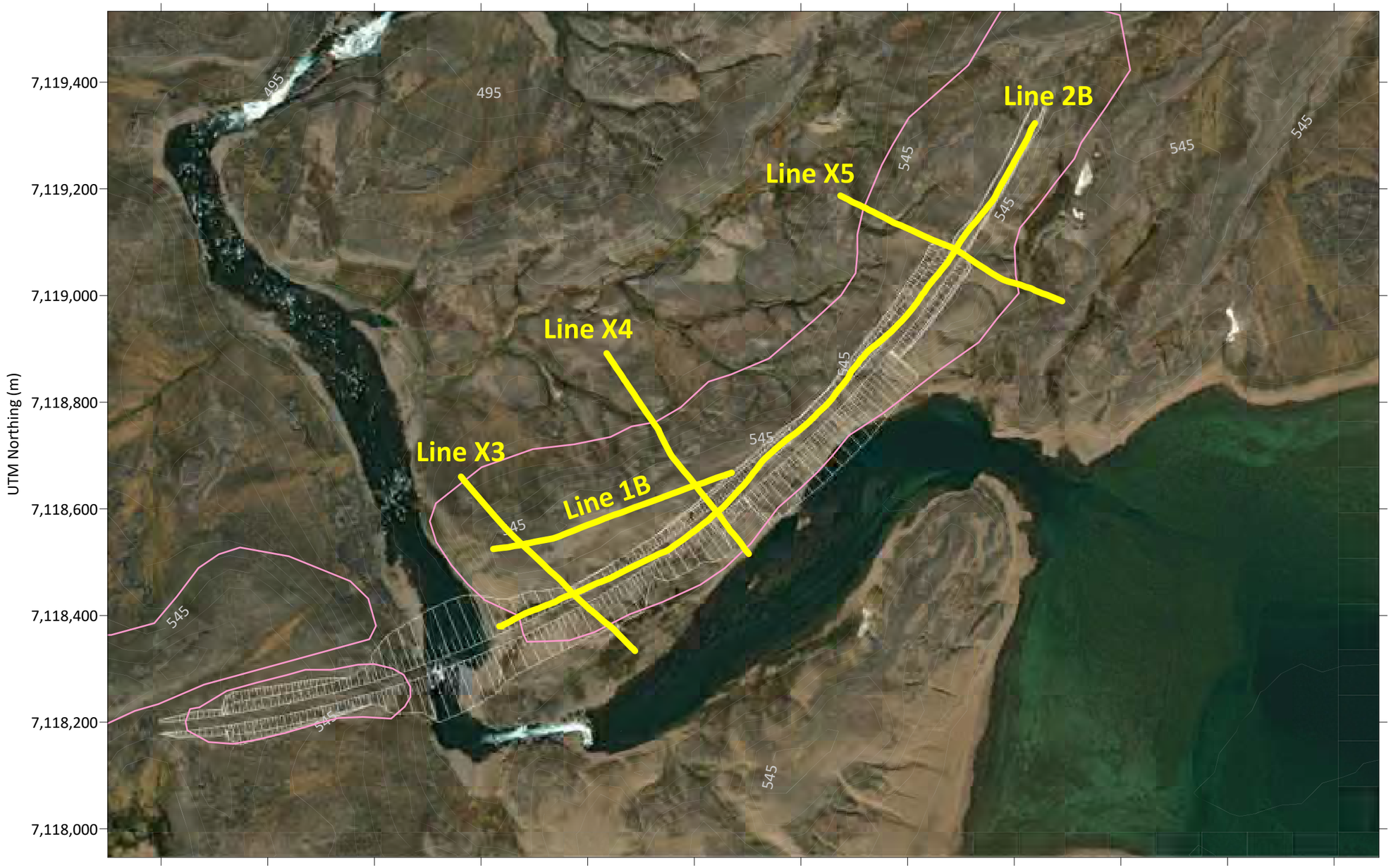
PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WO	PIF	0

OFFICE: EBA-EDM
DATE: October 31, 2025

Figure E8

APPENDIX F

EAST ALIGNMENT FIGURES



LEGEND

Data Collection Line

End Moraine Boundary close to the Survey Area

SCALE 1:8,000
NAD83
CGVD28
UTM z19N

CLIENT

TETRA TECH

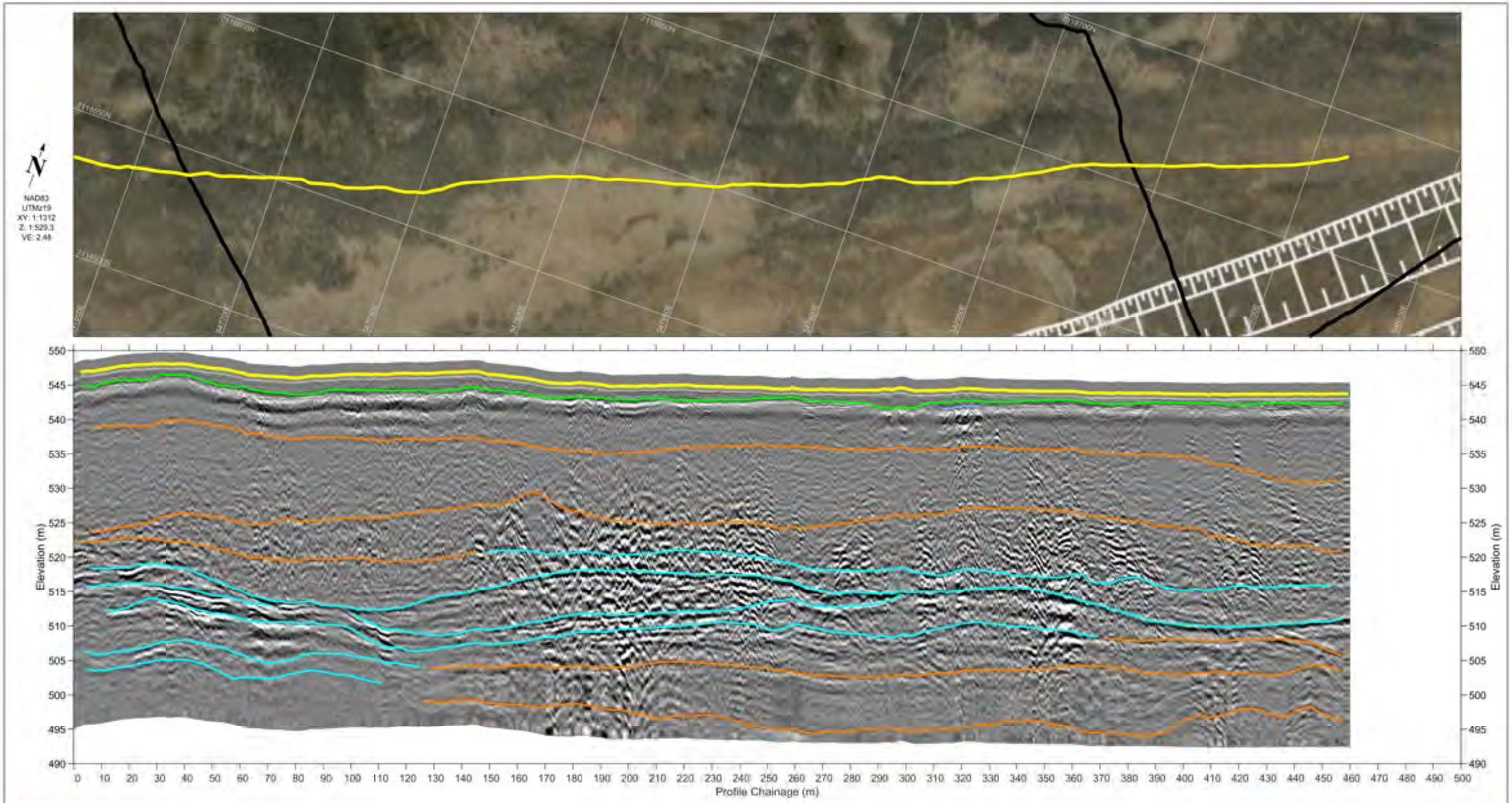
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

East Alignment Site Map
Collection Dates: Aug 26 - Sept 13, 2025

PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WEO	PIF	0

OFFICE	DATE
EBA-EDM	October 31, 2025

Figure F1



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

East Alignment
Line 1B GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

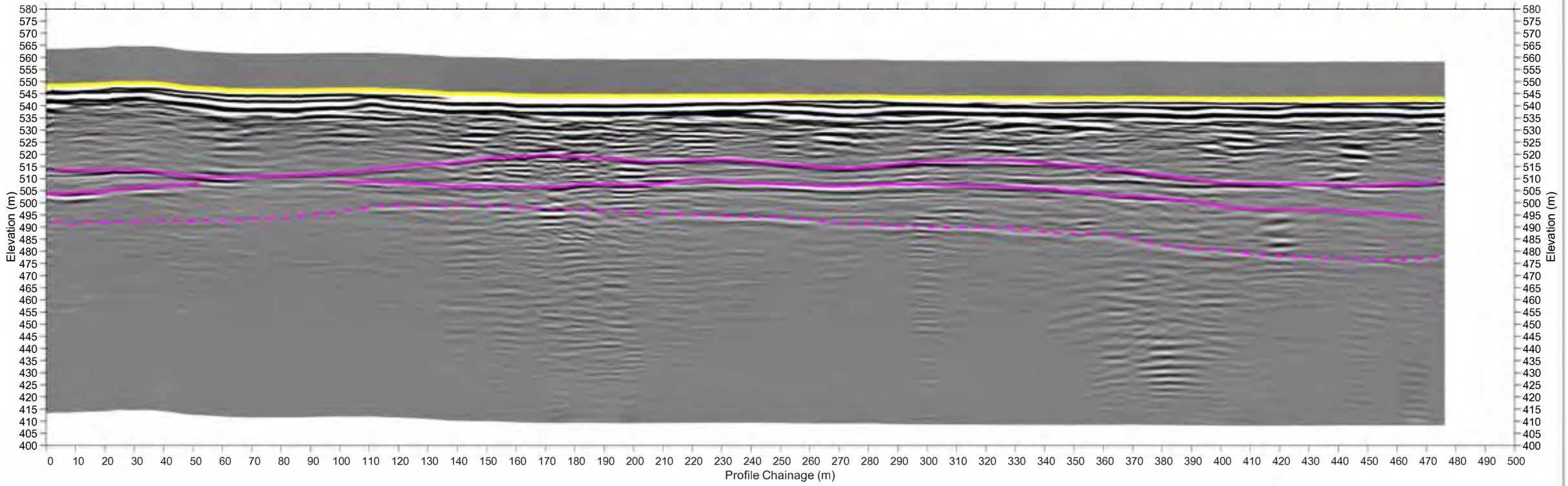
Project No.	DWN	CHKD	APVD	REV.
EM0 ROCK02543-01	AD	WO	PIF	0

OFFICE: EBA - EDM

DATE: October 31, 2025

Figure F2

NAD83
UTMz19
XY: 1:1312
Z: 1:1588.0
VE: 0.83



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

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Nunavut Nukkiksautiit Corporation

TETRA TECH

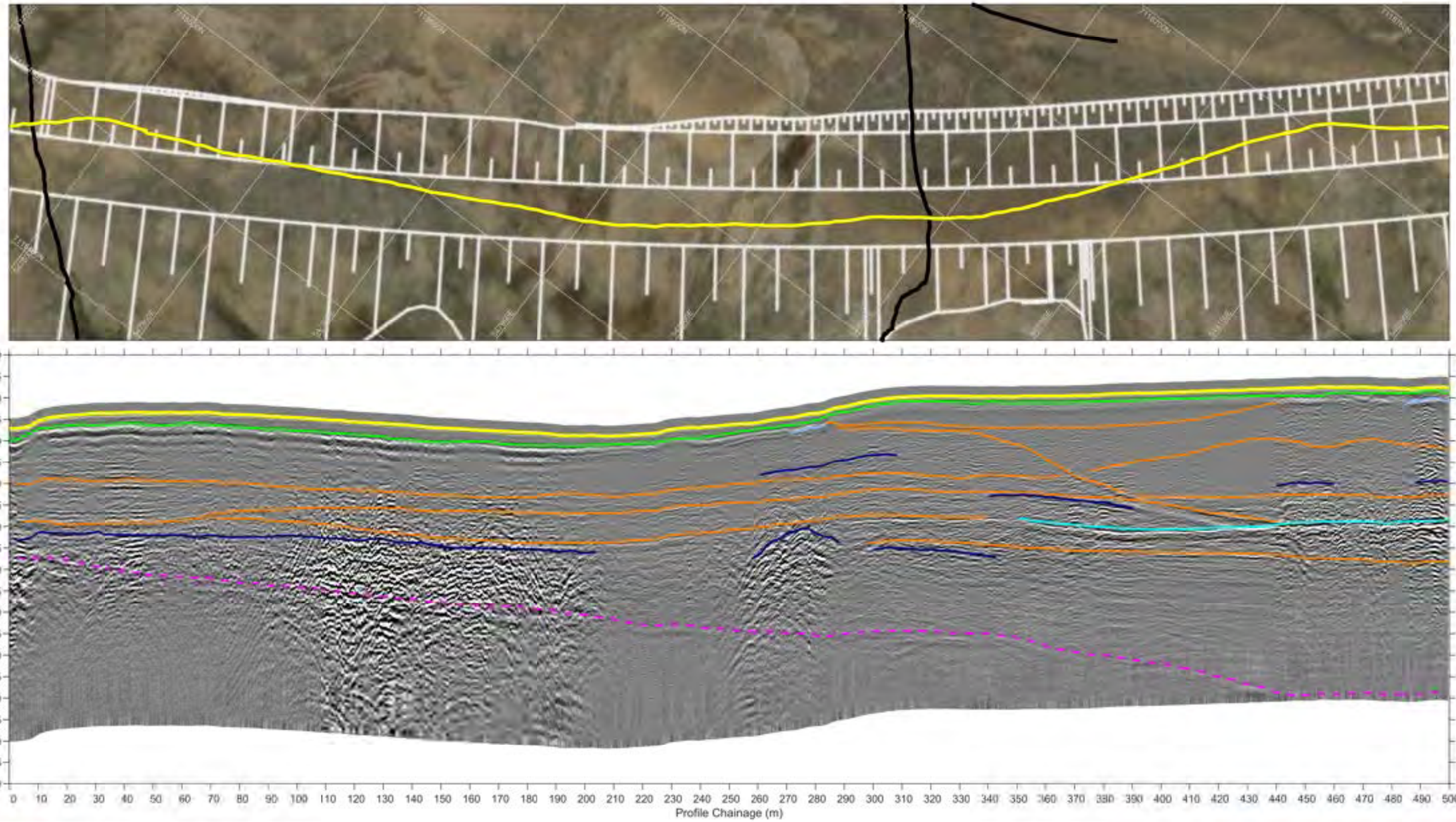
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

East Alignment
Line 1B GPR Profile (25 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
ENG.ROCK03543-01	AD	WO	PIF	0

OFFICE	DATE
EBA - EDM	October 31, 2025

Figure F3



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT: NNC Nunavut Nukkiksautiit Corporation

TETRA TECH

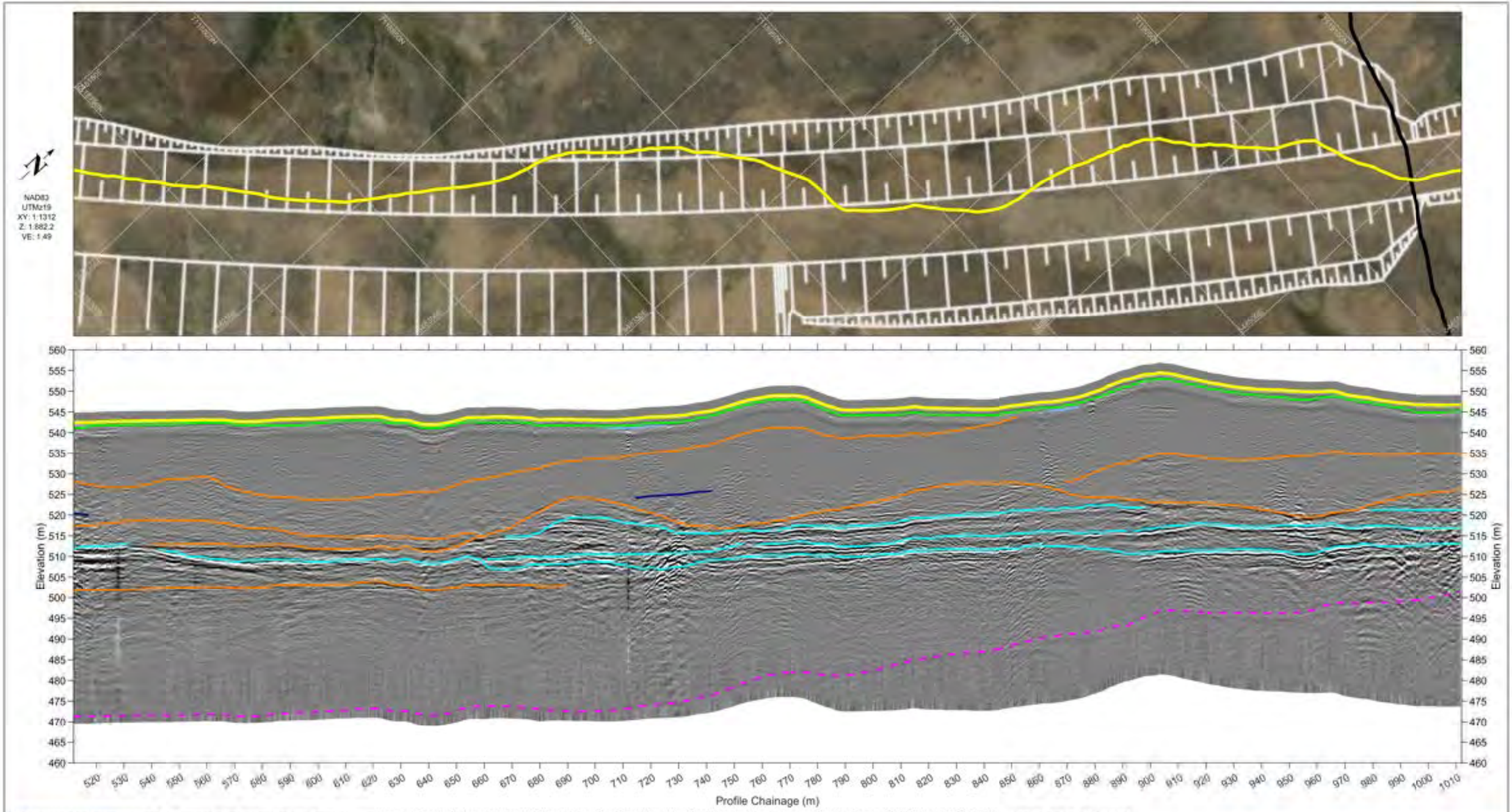
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

East Alignment
Line 2B GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02543-01	AD	WO	PP	0

OFFICE: EBA - EDM
DATE: October 31, 2025

Figure F4.1



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

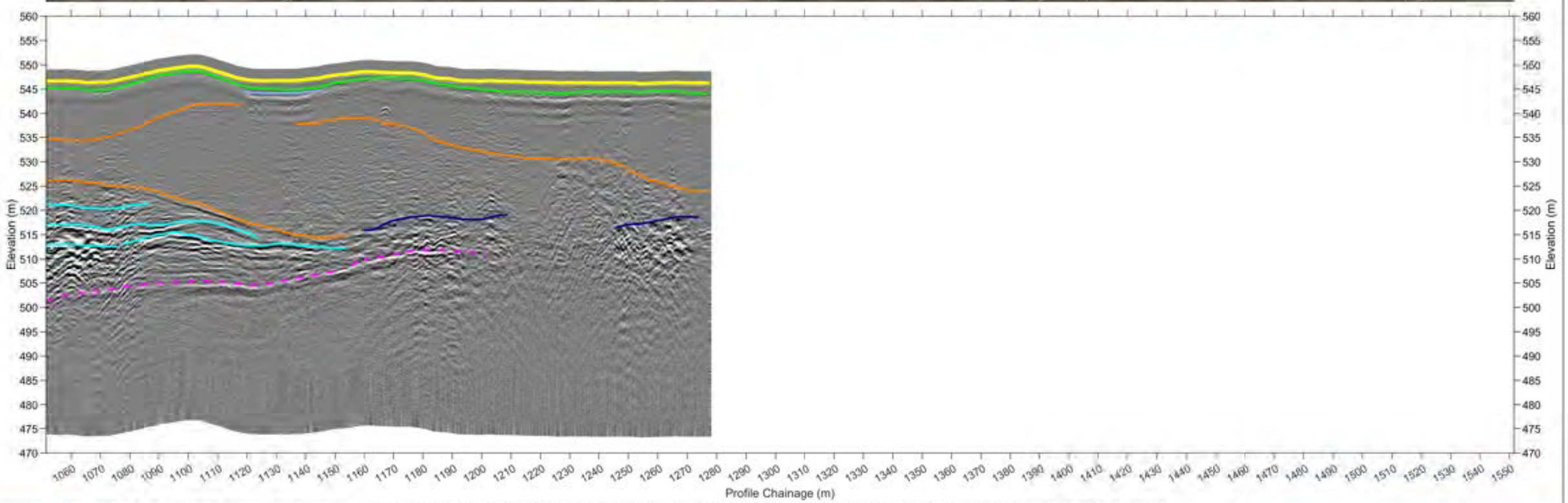
East Alignment
Line 2B GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02543-01	AD	WO	PP	0

OFFICE: EBA - EDM

DATE: October 31, 2025

Figure F4.2



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

NNC

Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

East Alignment
Line 2B GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

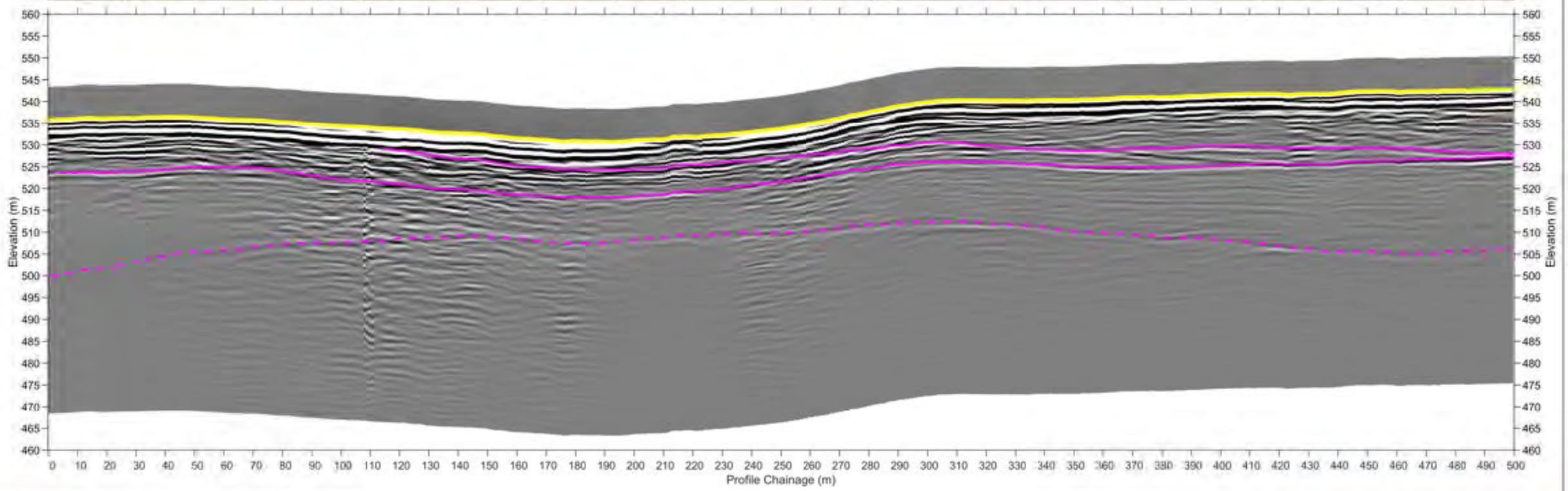
Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02543-01	AD	WO	PP	0

OFFICE: EBA - EDM

DATE: October 31, 2025

Figure F4.3

NAD83
UTMz19
XY: 1:1312
Z: 1:882.2
VE: 1.49



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

NNC

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

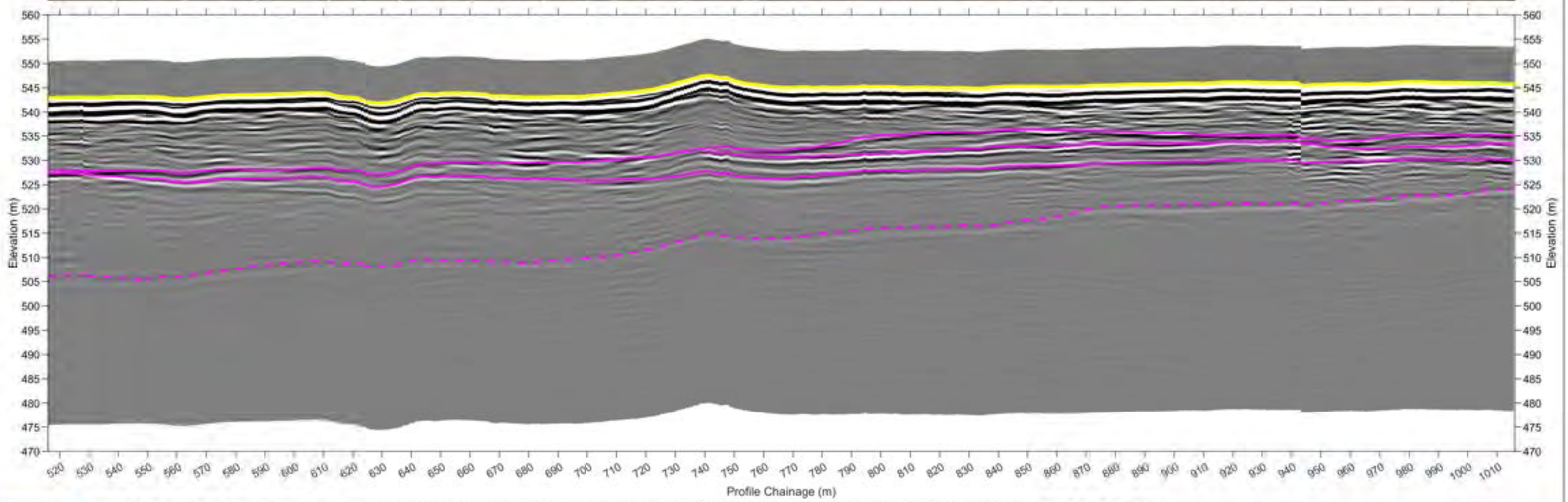
East Alignment
Line 2B GPR Profile (25 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02540-01	AD	WO	PP	0

OFFICE: EBA - EDM
DATE: October 31, 2025

Figure F5.1

NAD83
UTMz19
XY: 1:1312
Z: 1:794.0
VE: 1.65



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND
- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT
NNC
Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

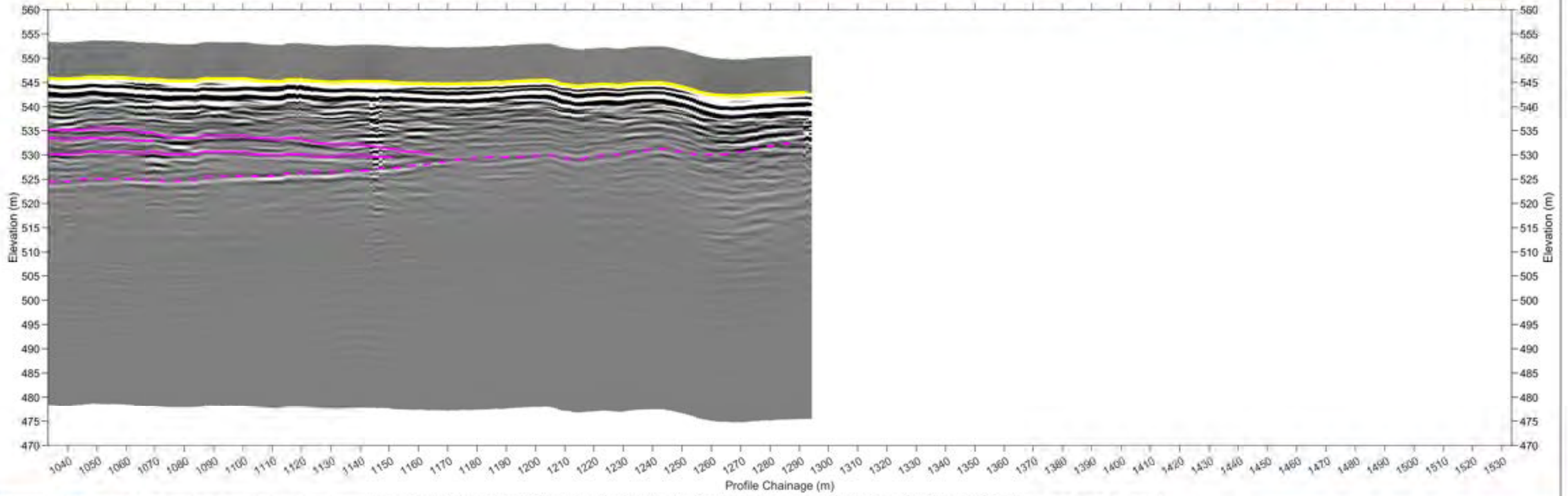
East Alignment
Line 2B GPR Profile (25 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02543-01	AD	WO	PP	0

OFFICE: EBA - EDM
DATE: October 31, 2025

Figure F5.2

NAD83
UTMz19
XY: 1:1312
Z: 1:794.0
VE: 1.65



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

Nunavut Nukkiksautiit Corporation

TETRA TECH

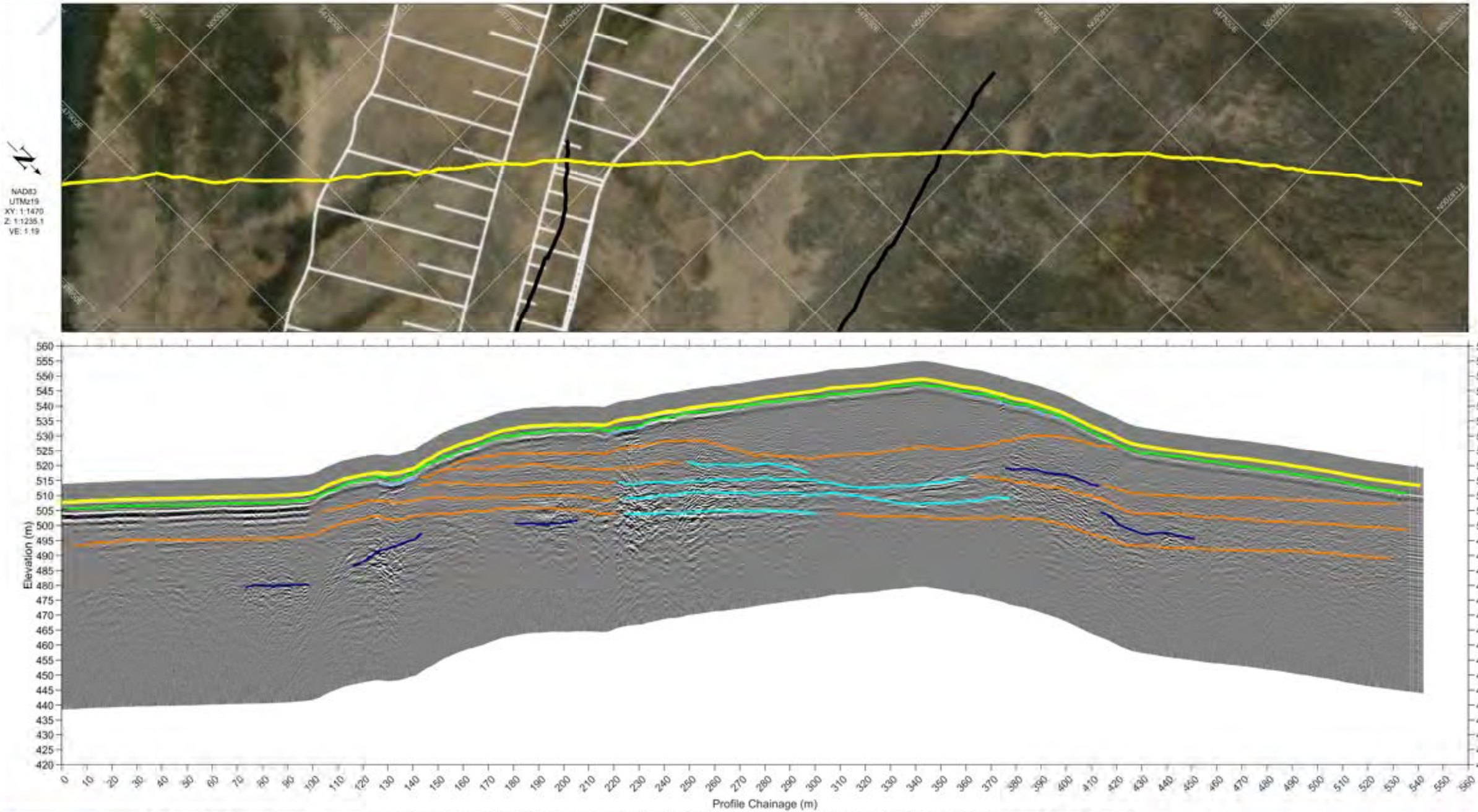
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

East Alignment
Line 2B GPR Profile (25 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM3 ROCK02540-01	AD	WO	PP	0

OFFICE: EBA - EDM
DATE: October 31, 2025

Figure F5.3



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

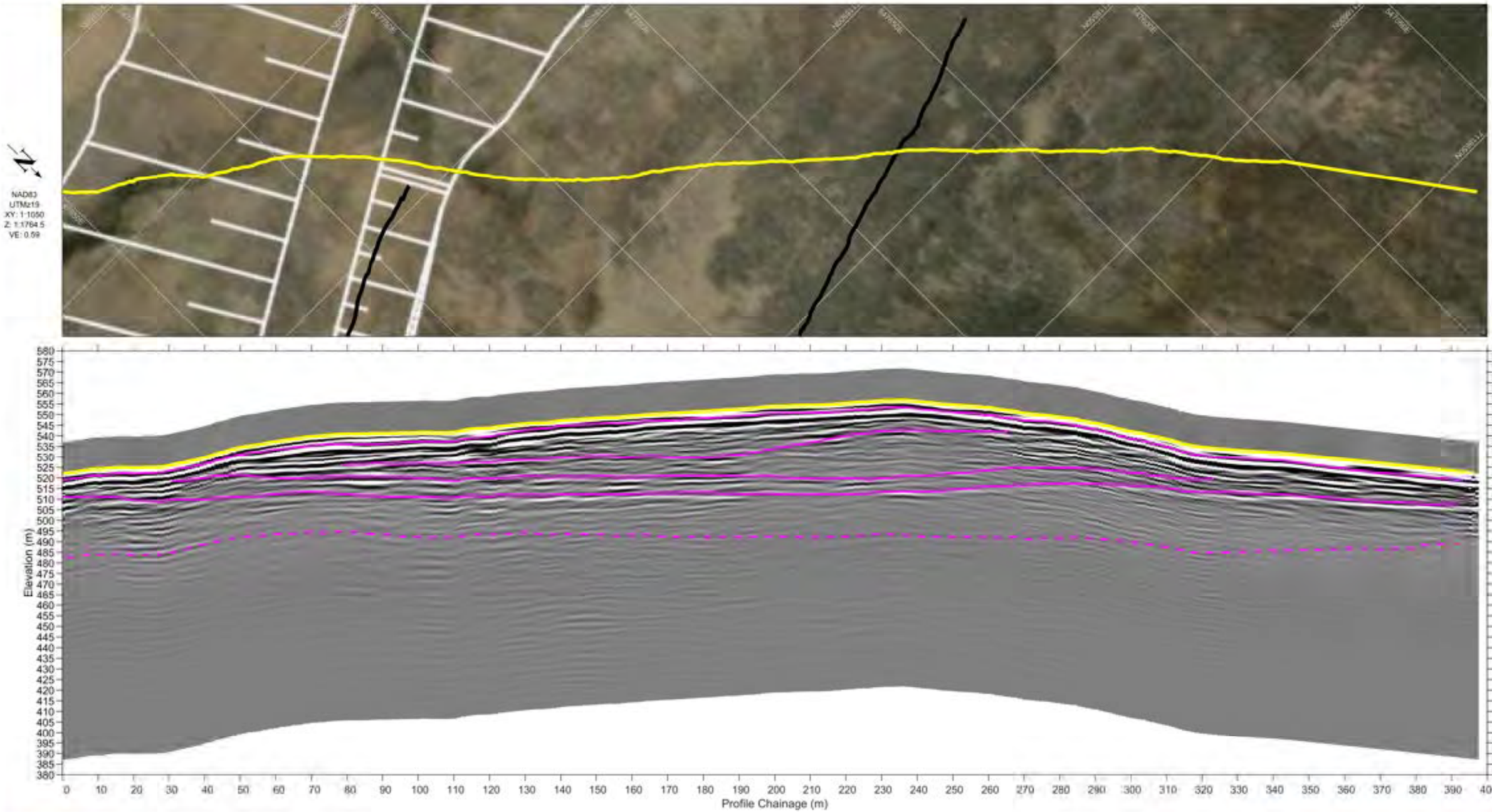
East Alignment
Line X3 GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02543-01	ND	WO	PP	0

OFFICE: EBA - EDM

DATE: October 31, 2025

Figure F6



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

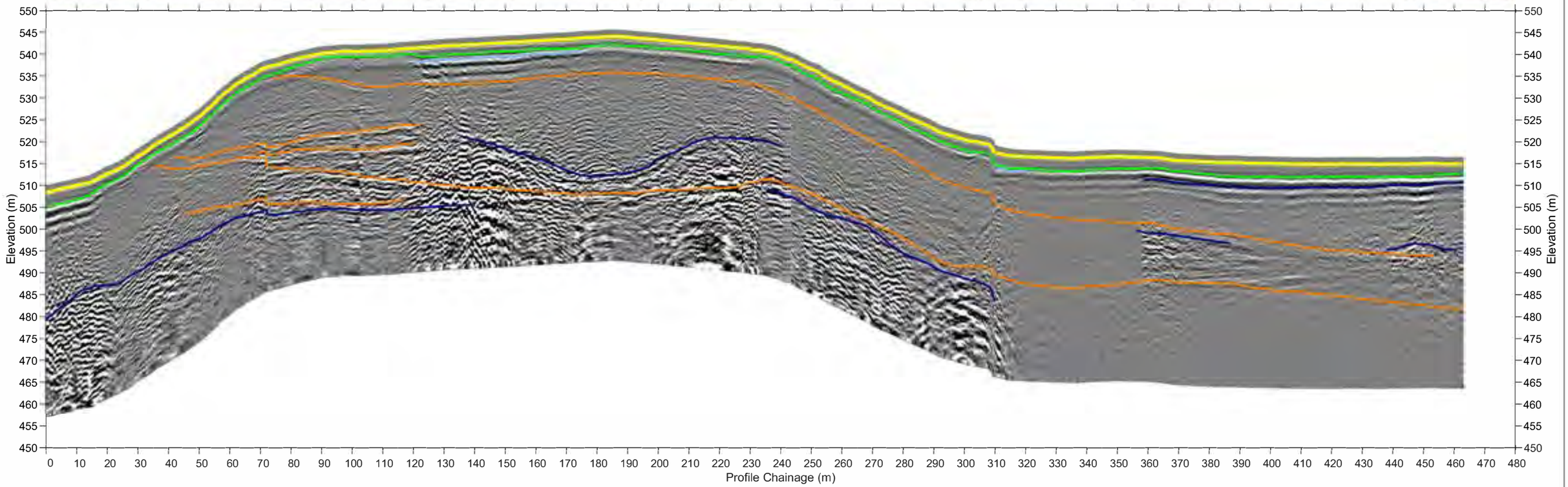
East Alignment
Line X3 GPR Profile (25 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02543-01	AD	WO	PP	0

OFFICE: EBA - EDM
DATE: October 31, 2025

Figure F7

NAD83
UTMz19
XY: 1:1260
Z: 1:882.2
VE: 1.43



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

Nunavut Nukkiksautiit Corporation

TETRA TECH

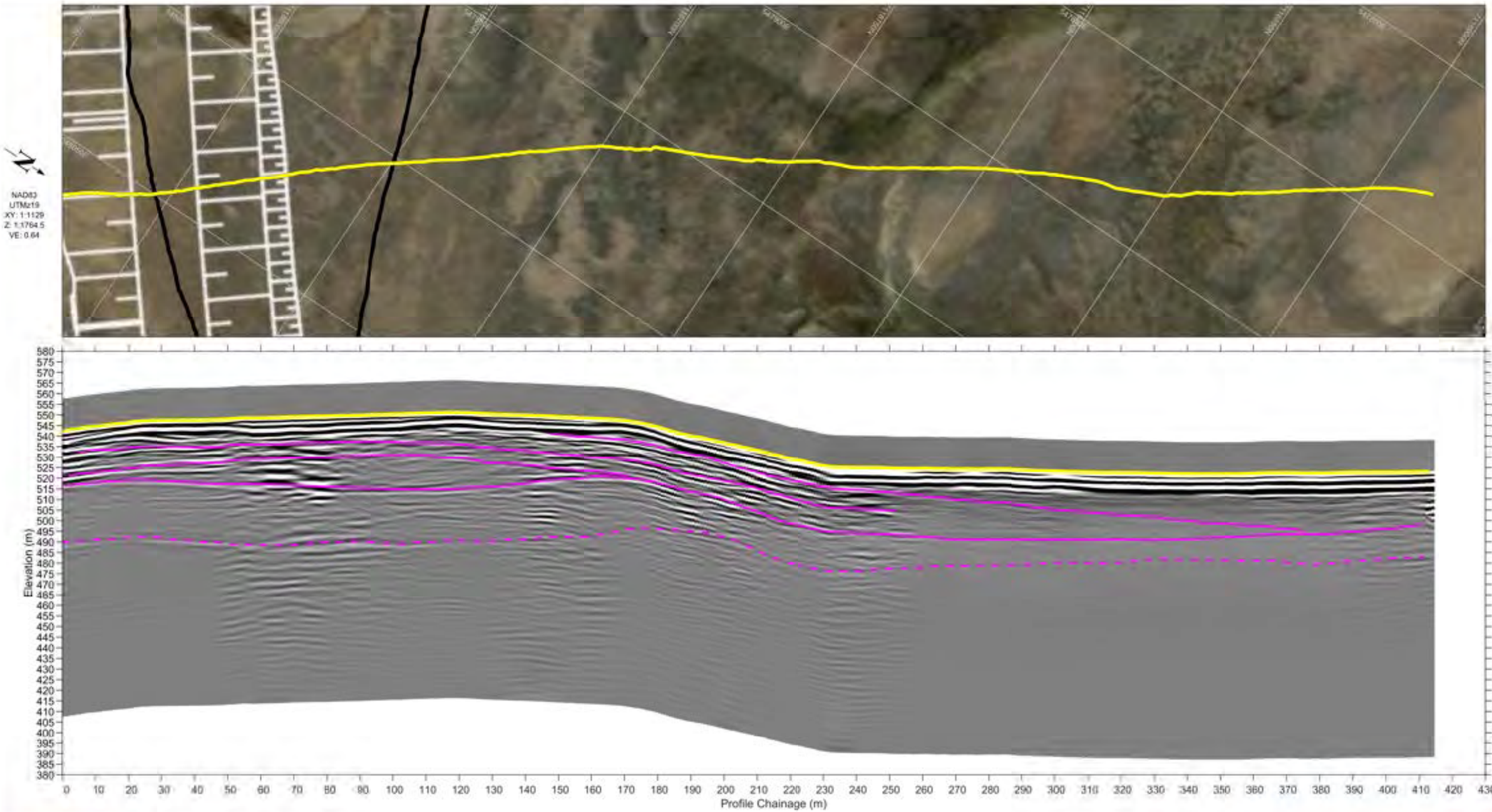
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

East Alignment
Line X4 GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
ENG.ROCK03543-01	AD	WO	PIF	0

OFFICE: EBA - EDM
DATE: October 31, 2025

Figure F8



*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

East Alignment
Line X4 GPR Profile (25 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02543-01	ND	WD	PP	0

OFFICE: EBA - EDM

DATE: October 31, 2025

Figure F9

NAD83
UTMz19
XY: 1:1444
Z: 1:1058.7
VE: 1.36

Elevation (m)

Profile Chainage (m)

*The geophysical interpretation at this stage in the project has not been correlated or confirmed with any borehole drilling information. Depth to subsurface features have been estimated using a GPR velocity of 0.15 m/ns. Vertical datum is CGVD28.

GPR LEGEND

- Data Collection Track/Ground Surface
- Active Layer
- Drainage Feature
- Ice Layer
- Ice-rich Zone
- Depositional Layer/Gradational Change
- Top of Weathered Rock/Cobbles/Boulders
- Possible Competent Bedrock Surface

CLIENT

Nunavut Nukkiksautiit Corporation

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

East Alignment
Line X5 GPR Profile (50 MHz)
Collection Dates: Aug 26 – Sept 13, 2025

Project No.	DWN	CHKD	APVD	REV
EM0 ROCK02543-01	AD	WO	PP	0

OFFICE: EBA - EDM

DATE: October 31, 2025

Figure F10

LEGEND

- Data collection line
- Interpreted Ice-rich zone
- End Moraine Boundary close to the Survey Area

SCALE 1:8,000
NAD83
CGVD28
UTM z19N

CLIENT

TETRA TECH

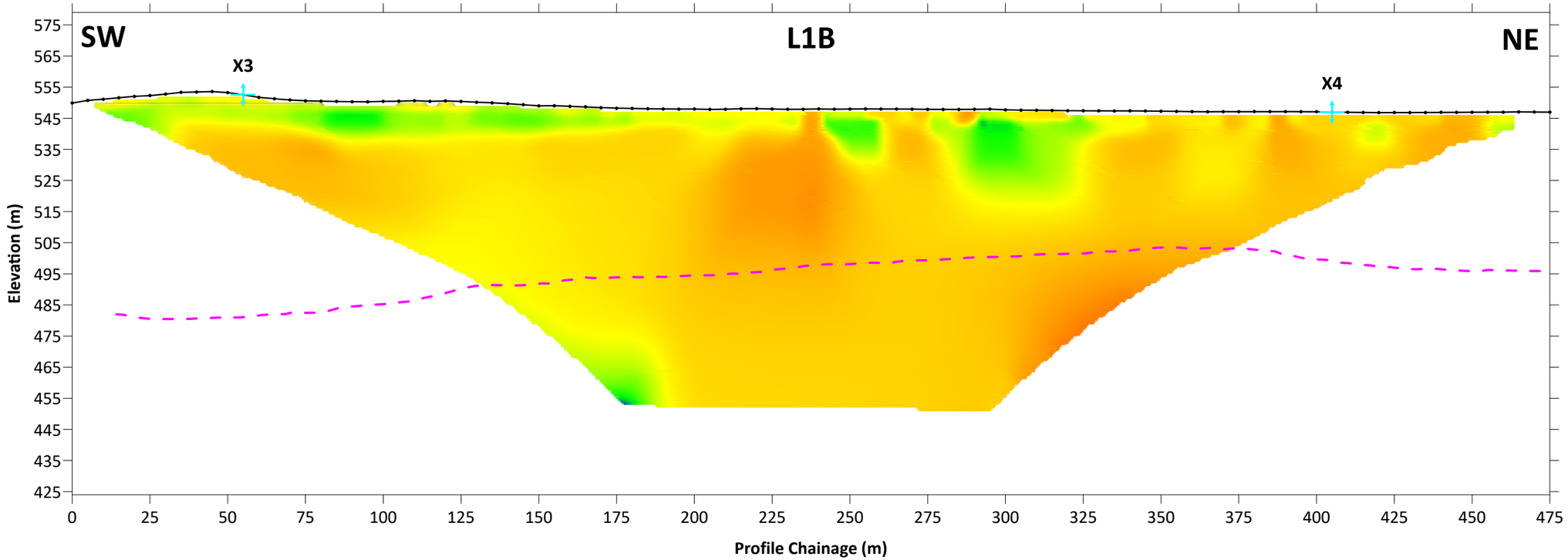
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

East Alignment
Interpeted Ground Ice Map
Collection Dates: Aug 26 - Sept 13, 2025

PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WEO	PIF	0

OFFICE	DATE
EBA-EDM	October 31, 2025

Figure F11



*Electrode Configuration: Wenner-Schlumberger

LEGEND

SCALE 1:1,500
NAD83
CGVD28
UTM z19

Line Intersection

Possible Competent Bedrock Surface (from GPR profile)

100 1,000 10,000 100,000 1,000,000 10,000,000

Resistivity (Ohm*m)

CLIENT

TETRA TECH

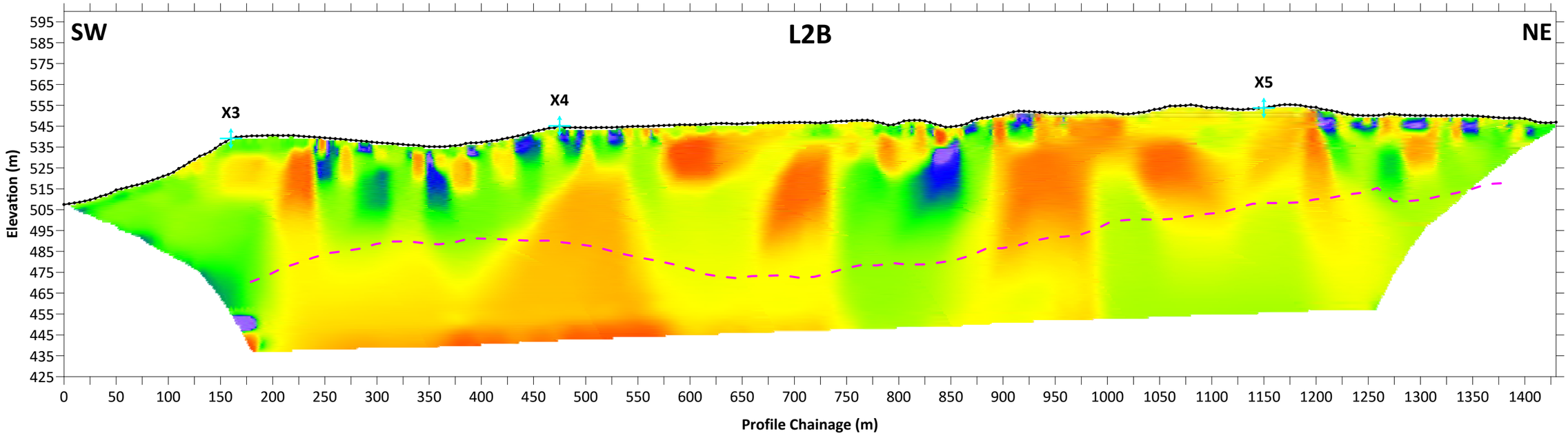
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

East Alignment
ERT Profile (Line 1B)
Collection Dates: Aug 26 - Sept 13, 2025

PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WO	PIF	0

OFFICE: EBA-EDM
DATE: October 31, 2025

Figure F12



*Electrode Configuration: Wenner-Schlumberger

LEGEND

X-SCALE 1:4,000
Y-SCALE 1:2,000
NAD83
CGVD28
UTM z19

Line Intersection

Possible Competent Bedrock Surface (from GPR profile)

100 1,000 10,000 100,000 1,000,000 10,000,000

Resistivity (Ohm*m)

CLIENT

TETRA TECH

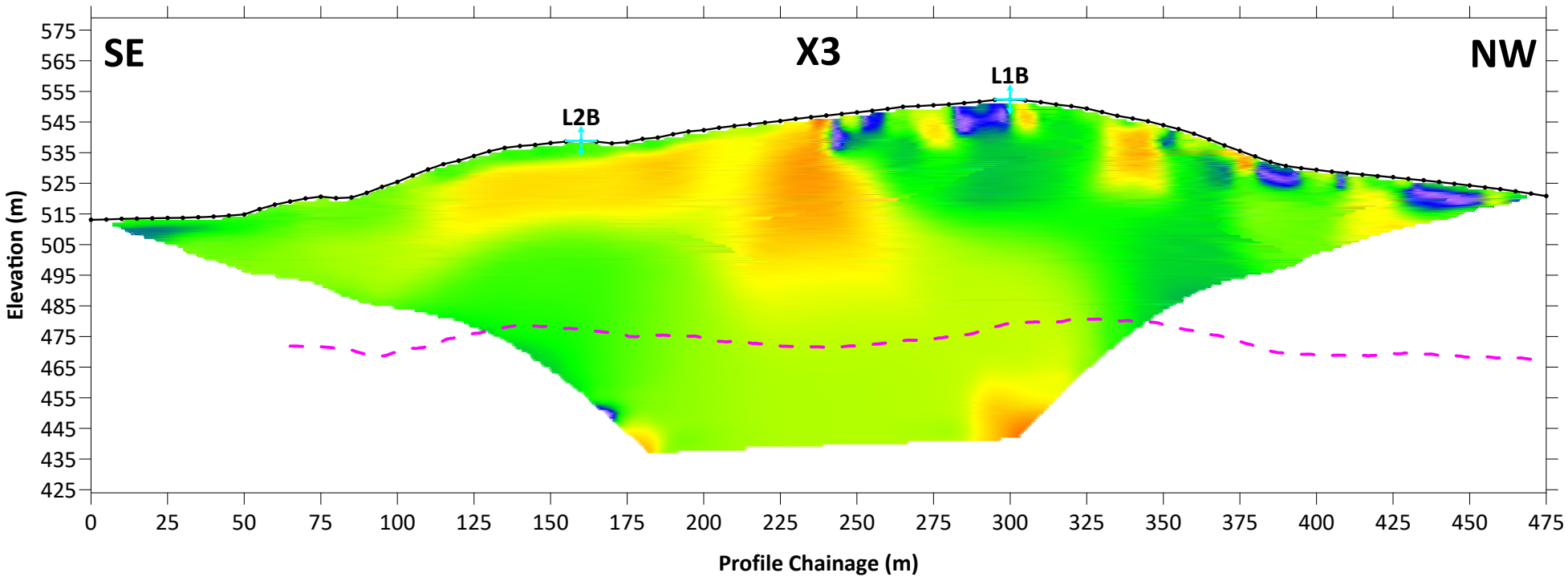
Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

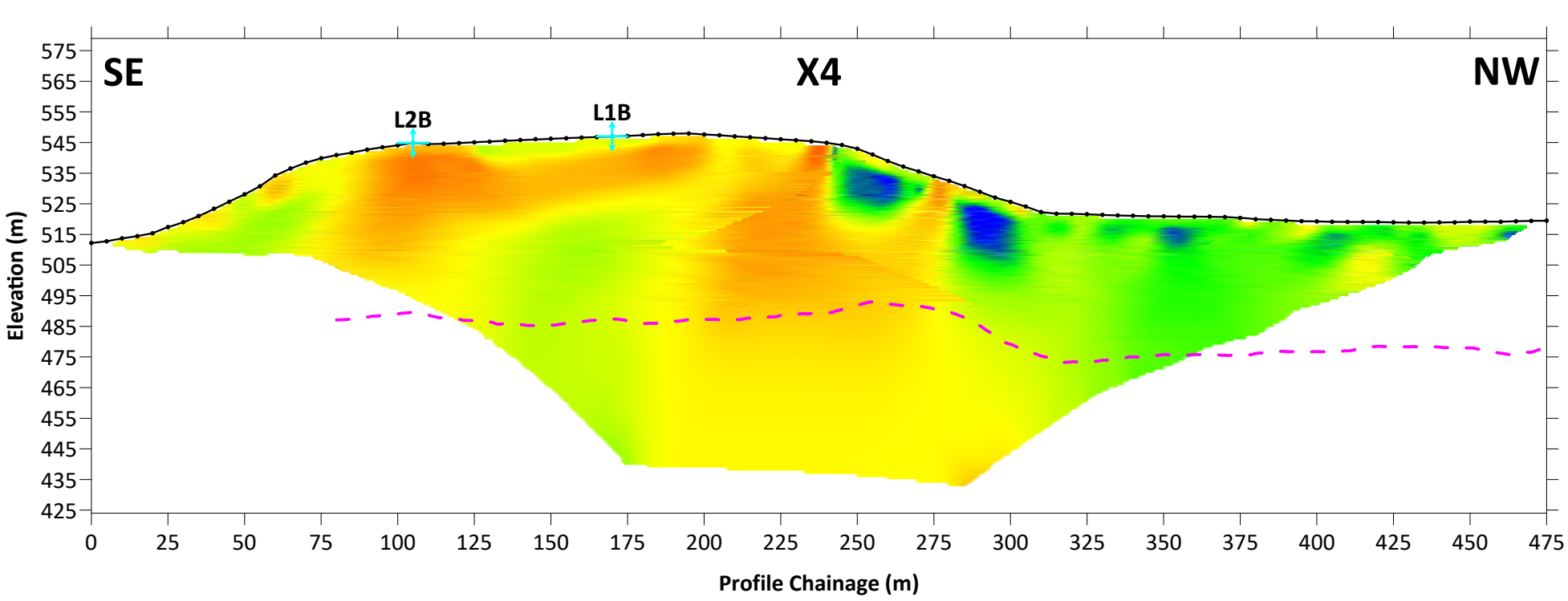
East Alignment
ERT Profile (Line 2B)
Collection Dates: Aug 26 - Sept 13, 2025

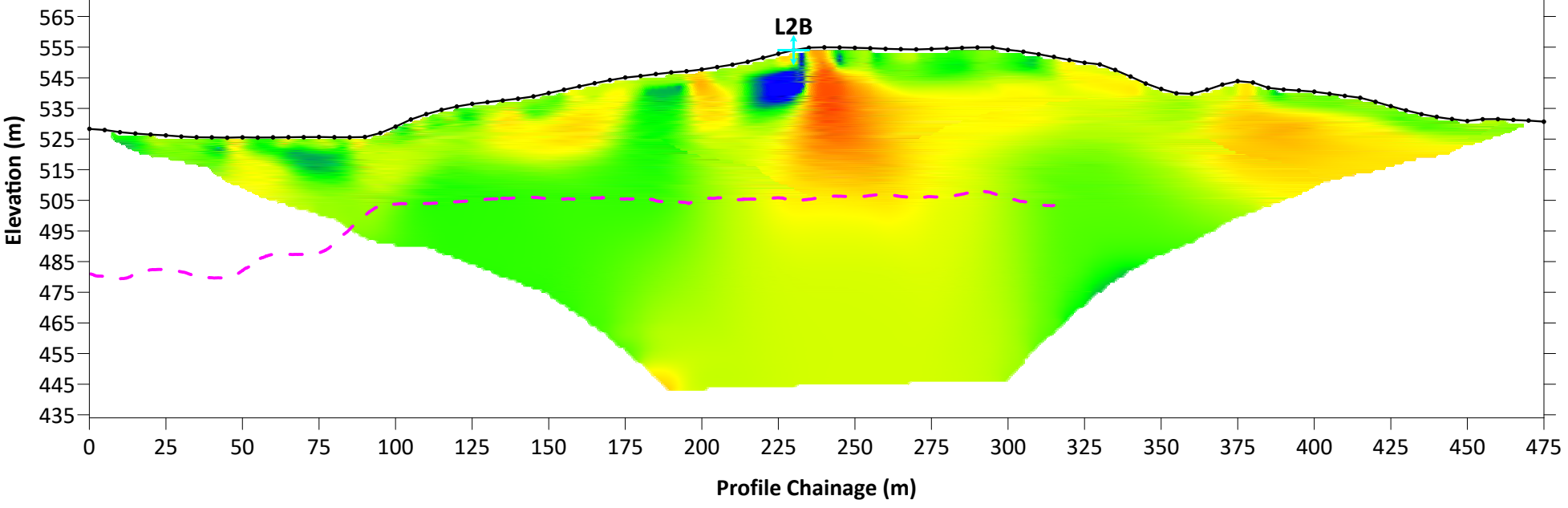
PROJECT NO.	DWN	CKD	APVD	REV
ENG.ROCK03543-01	VY	WO	PIF	0

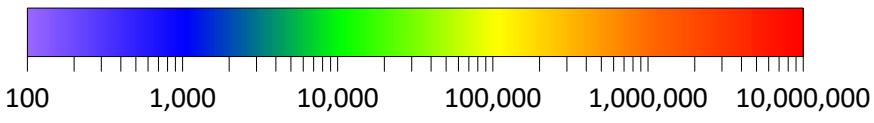
OFFICE	DATE
EBA-EDM	October 31, 2025

Figure F13









*Electrode Configuration: Wenner-Schlumberger

LEGEND

SCALE 1:2,000
NAD83
CGVD28
UTM z19

Line Intersection

Possible Competent Bedrock Surface (from GPR profile)

CLIENT

TETRA TECH

Iqaluit Nukkiksautiit Hydro Project
2025 Geophysical Investigation

East Alignment
ERT Profiles (Lines X3 to X5)
Collection Dates: Aug 26 - Sept 13, 2025

PROJECT NO.	DWN	CKD	APVD	REV
ENG ROCK03543-01	VY	WO	PIF	0

OFFICE: EBA-EDM
DATE: October 31, 2025

Figure F14