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ASX: FNT

ASX Limited
Company Announcements Office

31 July 2018

TECHNICAL REPORT – QUARTER ENDED 30th JUNE 2018

Frontier Resources Limited (**Frontier**) is pleased to report on its activities for the June 2018 quarter. During the quarter Frontier advised that the A$6,000,000 Placement Agreement with Forise Investments Sydney Pty Ltd (**Forise**) that was approved by shareholders at the Extraordinary General Meeting held on 15 May 2018 had completed.

The Company proposes to use the funds raised under the Placement Agreement as set out in the table below.

Use of funds	Amount (A$)
Exploration work EL1595 Bulago	140,000
Exploration work EL2356 Muller	150,000
Transaction expenses	118,800
Existing liabilities	318,900
Investment expenses	160,000
Corporate fees and actions	620,000
Project evaluation and acquisitions	4,200,000
Contingency	292,300
	6,000,000

The securities outlined in the Notice of Meeting dated 13 April 2018, have been allotted as follows and an Appendix 3B was released detailing that:

- on the 4th of June 3,125,000 fully paid ordinary shares, issued at $0.016 per share and 1,562,500 free attaching options, exercisable at $0.029, prior to 1 June 2020, were allotted to Forise Investment Sydney Pty Ltd. Consideration of A$50,000 was received from Forise on 31 May 2018, acting as the first tranche payment of the A$6,000,000 Placement Agreement;

- on the 19th of June 325,000,0000 fully paid ordinary shares, issued at $0.016 per share and 162,500,000 free attaching options, exercisable at $0.029, prior to 1 June 2020, were allotted to Forise Investment Sydney Pty Ltd; and

- 46,875,000 fully paid ordinary shares, issued at $0.016 per share and 23,437,500 free attaching options, exercisable at $0.029, prior to 1 June 2020, were allotted to ACH Investments Pte Ltd.

Consideration of A$5,950,000 was received from Forise on 19 June 2018, acting as the second tranche payment of the A$6,000,000 Placement Agreement.

Frontier issued an additional 5,625,000 fully paid ordinary shares at $0.016 per share to Forise in satisfaction of a $90,000 working capital loan received from Forise (**Loan Shares**). The Loan Shares have been issued pursuant to the Company's existing placement capacity under Listing Rule 7.1.

The Frontier board welcomes Fei Peng, Yun Wei Dong (Fenix Dong) and Anthony Hickey to the board. Their biographies are as follows:

Fei Peng holds an MSc in Finance and Investment with Distinction from Durham University, UK. Peng has over 20 years of investment management experience, including corporate advisory, financial restructuring advisory, strategic planning and capital markets advisory in the PRC, Hong Kong, Singapore and the United States. Fei is an Executive Director of Forise International Limited, which is listed on the Singapore Stock Exchange. Fei was previously Executive President of Forise Holdings Limited. Prior to joining Forise Holdings Limited, Fei served as the President of Reignwood International Investment Ltd., where he was responsible for managing the group's global investment activities. Previously, Fei served as the Vice President of CHINALCO Overseas Holdings Ltd (a Fortune 500 company) and was responsible for CHINALCO's overseas investment business.

Yun Wei Dong (Fenix Dong) holds a double degree - Bachelor of Commerce and Bachelor of Information System - from the University of Melbourne. Fenix has extensive mergers and acquisition, investment banking, and management consultant experience in the mining and resources sector across the Asia-Pacific region. His experience extends to mining exploration and processing companies listed on the ASX, and public and private companies in the PRC, Hong Kong and Mongolia. He is Managing Director of Forise and Forise Investment Australia Pty Ltd, both of which are Australian subsidiaries of Forise International Limited. Fenix was previously the Senior Vice President of Investment at Haywood Capital, Deputy General Manager and China Chief Representative of Roxstrata's investment company, and business analyst for National Australia Trustee.

Anthony William Hickey holds a Bachelor of Laws (Honours) from the University of Queensland. He is the Founder and Chairman of Hickey Lawyers. He was a founding partner of one of the Gold Coast's largest legal firms, Rapp Hickey Morgan Power before he established his own firm, Hickey Lawyers in 1993. His legal experience includes expertise in property development, tourism and construction law and commercial litigation. He is also the Founder and Chairman of Hickey Management, a business which is dedicated to providing successful business outcomes in Australia, particularly for overseas based investors. On 26th January 2017, the Governor General of Australia awarded him the Order of Australia Medal as recognition of his service to the Gold Coast Community and charitable organizations. Anthony is also the Chairman of the Salvation Army Red Shield Appeal for South East Queensland, Director of Titans Rugby League Pty Ltd, Chairman of School Council at Somerset College, Gold Coast, Contributor to the Bond University Vice Chancellor's Mentoring Program for Indigenous Education and Engagement, Deputy Chair of the Bleached Arts Ltd Board, Committee member of the Salvation Army Queensland Advisory Board and Trustee of Gold Coast City Council Mayoress Charity Fund.

During the quarter Fenix Dong was appointed as Executive Director of the Company and will be responsible for the day-to-day operations and oversight of the Company. The material terms of Mr Dong's Executive Director Agreement are as follows:

Total fixed remuneration: $30,000 per annum, exclusive of any applicable superannuation contribution.

Termination: Upon receipt of advice in writing of director's resignation or as otherwise in accordance with the Company's Constitution.

Papua New Guinea Operations

The Muller (EL 2356) renewal Warden's Court Hearing has been postponed until later in 2018 following discussions with the PNG Mineral Resource Authority, Chief Mining Warden. The postponement is due to the ongoing logistical and security issues in the Southern Highlands caused by the 7.5 magnitude earthquake and significant aftershocks. The Mineral Resources Authority will advise a revised date in due course.

The proposed Muller and Bulago exploration programs were also deferred after the earthquake and will be undertaken later in 2018, after the wet season.

Aimex Geophysics (Non-Exec. Director Swiridiuk) completed an Aster satellite imagery study for EL2356 Muller Range. The study delineated a total of 37 Aster targets (up to 31 Ha in size) that were recommended for future geochemical sampling and geological mapping. There were 17 anomalies at the Tingi Block, 13 at Baia and 7 at Cecelia. Lineament and volcanic structural features were plotted (over areas not obscured by cloud cover). Aster Targets are areas which have potentially been altered by mineralising fluids. The report is attached as Appendix 1.

Releases Submitted to the ASX During the Quarter Included:

15 May 2018	Results of Extraordinary General Meeting
23 May 2018	Cancellations of Unlisted Options and Corporate Update
	Change of Director's Interest Notices
4 June 2018	Allotment of Securities & Appendix 3B
18 June 2018	Appendix 3B and Cleansing Statement
	Change of Director's Interest Notice
19 June 2018	Completion of Placement Agreement
	Allotment of Placement Agreement Securities
	Additional Allotment of Securities for Loan Shares
	Appointment of Directors
	Initial Director's Interest Notices
	Appendix 3B and Cleansing Statement
22 June 2018	Becoming a substantial holder
5 July 2018	Appointment of Executive Director

For additional information please visit our website at www.frontierresources.com.au

FRONTIER RESOURCES LTD

Fenix Dong

Executive Director
Contact: yunwei.dong@foriseholdings.com

BACKGROUND:

Frontier Resources Ltd is focussed on mineral exploration in highly prospective Papua New Guinea (PNG). The Company is targeting copper+/- gold +/-molybdenum porphyries and intrusive related epithermal gold deposits on its Exploration Licences (Els), plus 2 significant EL Applications. Continued exploration and drilling is strongly warranted. The Papuan Fold Belt contains Frontier's Bulago and Muller ELs and the Ok Tedi porphyry copper-gold Mine (located 80km WNW of Bulago), Porgera intrusive/ epithermal related gold Mine (120km east of Bulago) and Kili Teke porphyry copper-gold Deposit (50km east of Bulago).

Competent Person Statement:
The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by or compiled under the supervision of Peter Swiridiuk - Member of the Aust. Inst. of Geoscientists. Peter Swiridiuk is a Technical Consultant and Non-Executive Director for Frontier Resources. Peter Swiridiuk has sufficient experience which is relevant to the type of mineralisation and type of deposit under consideration to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code of Reporting Exploration Results, Mineral Resources and Ore Resources. Peter Swiridiuk consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

Frontier Resources Ltd Exploration Licence Information						
Licence Name	**Number**	**Date From**	**Date To**	**Ownership**	**Area (SQ KM)**	**Lat. Sub Blocks**
Bulago	EL 1595	7/07/2016	6/7/2018	100% Frontier Gold PNG Ltd	73	22
Muller	EL 2356	31/12/2015	30/12/2017	100% Frontier Copper PNG Ltd	187	56
				Granted Els =	**260**	**SQ KM**
Gazelle	ELA 2529	Application **SECOND**		100% *Frontier Copper PNG Ltd	703	211
Tolukuma	ELA 2531	Application		100% *Frontier Copper PNG Ltd	433	130
				EL Applications =	**1,136**	**SQ KM**
NB:	The PNG Mining Act-1992 stipulates that ELs are granted for renewable 2 year Terms (subject to Work and Financial Commitments) and the PNG Government maintains the right to purchase up to 30% project equity at "Sunk Cost" if/when a Mining Lease is granted.					

The following information is provided to comply with the JORC Code (2012) requirements for the reporting of exploration results for Exploration Licence 2356 Papua New Guinea.

JORC CODE 2012			
Section 1 -- Sampling Techniques and Data			
Criteria		**Explanation**	**Commentary**
Sampling techniques	o	Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down whole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.	Historic exploration results are quoted. Previous explorers are known and standard industry practice sampling procedures were followed.
	o	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Unknown
	o	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 11m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Historical results quoted
Drilling techniques	o	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	No drilling undertaken
Drill sample recovery	o	Method of recording and assessing core and chip sample recoveries and results assessed.	No drilling undertaken
	o	Measures taken to maximise sample recovery and ensure representative nature of the samples.	No drilling undertaken
	o	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No drilling undertaken
Logging	o	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	No drilling undertaken
	o	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	No drilling undertaken
	o	The total length and percentage of the relevant intersections logged.	No drilling undertaken
Sub-sampling techniques and sample preparation	o	If core, whether cut or sawn and whether quarter, half or all core taken.	No drilling undertaken
	o	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	No drilling undertaken
	o	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	No drilling undertaken
	o	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	No drilling undertaken
	o	Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate /second-half sampling.	No drilling undertaken
	o	Whether sample sizes are appropriate to the grain size of the material being sampled.	No drilling undertaken
Quality of assay data and laboratory tests	o o	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Historic exploration results are quoted. Previous explorers are known and standard industry practice sampling procedures were followed

	o	For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	Not applicable
Verification of sampling and assaying	o	The verification of significant intersections by either independent or alternative company personnel.	Historical results quoted
	o	The use of twinned holes.	No drilling reported
	o	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Historical results quoted
	o	Discuss any adjustments to assay data.	Unknown
Location of data points	o	Accuracy + quality of surveys used to locate drill holes (collar + down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Not applicable
	o o	Specification of the grid system used. Quality and adequacy of topographic control.	Map datum is AGD 066. 40m contours - 1:100,000 plans, 20m SRTM contours.
Data spacing and distribution	o	Data spacing for reporting of Exploration Results.	Refer to the attached plans for details relating to the data spacing of exploration results
	o	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	Not applicable
	o	Whether sample compositing has been applied.	Unknown
Orientation of data in relation to geological structure	o	Whether the orientation of sampling achieves unbiased sampling of possible structures to the extent this is known, considering the deposit type.	Unknown
	o	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported.	No drilling undertaken
Sample security	o	The measures taken to ensure sample security.	Unknown. Historical results quoted.
audits or reviews	o	The results of any audits or reviews of sampling techniques and data.	No specific audits or reviews of sampling techniques and data have been undertaken

Section 2 -- Reporting of Exploration Results

Criteria		Explanation	Commentary
Mineral tenement and land tenure status	o	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	Exploration Licence 2356 - Muller Range is located in Papua New Guinea's Western and Southern Highlands Provinces. EL's are regulated under the Mining Act of 1992. There no agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and/or environmental issues associated with the EL. The PNG National government under the Mining Act of 1992 currently has the right to acquire up to 30% of any project at the time of granting of a mining lease for the 'sunk cost'.
	o	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	The tenement was granted 31/12/15 for a standard period of 2 years. Application for a renewal is pending a Warden's hearing as partial requirement by the MRA.
Exploration done by other parties	o	Acknowledgment and appraisal of exploration by other parties.	Exploration in the region was initiated in the late 1960s as part of a PNG porphyry copper deposit search. It was explored for gold initially in the mid 1980's.
Geology	o	Deposit type, geological setting and style of mineralisation.	Porphyry copper-gold – molybdenum, higher grade gold - silver-zinc-lead skarns, gold intrusive -epithermal related targets.
Drill hole information	o	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:	No drilling undertaken
		Easting and northing of the drill hole collar	No drilling undertaken
		Elevation or RL (Reduced Level- elevation above sea level in metres) of the drill hole collar	No drilling undertaken
		Dip and azimuth of the hole	No drilling undertaken
		Down hole length and interception depth	No drilling undertaken
		Hole length	No drilling undertaken
	o	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	No drilling undertaken
Data aggregation methods	o	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	Historical sampling results show data aggregation if applied in trench/channel samples etc. No top cuts have been applied. They are continuous channel samples and so are stated as continuous weighted assay results (length x grade summed for each sample / sum of total length).
		Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail	If this is occurring, it is stated in the text.
	o	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values are reported.
Relationship between	o	These relationships are particularly important in the reporting of Exploration Results.	Not well understood.

mineralisation widths & intercept lengths	o o	If the geometry of the mineralisation with respect to drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	No drilling undertaken.
Diagrams	o	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Appropriate maps and any sample results are included.
Balanced reporting	o	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Reporting of historical Exploration Results is included herein.
Other substantive exploration data	o	Other exploration data, if meaningful and material should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples - size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances	All relevant meaningful exploration data relating to Tingi has been included in this release.
Further work	o o	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Future work is planned based on recent additional funding. Appropriate plans will be included, as possible in a later release documenting approved future work programs.

APPENDIX 1.

FRONTIER COPPER PNG Ltd
MULLER RANGE (EL 2356) - ASTER SATELLITE INTERPRETATION

Peter Swiridiuk (Principal Consultant) - AIMEX GEOPHYSICS
aimexplor@bigpond.com

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LIST OF FIGURES

1.0 EXECUTIVE SUMMARY

The Muller Range exploration licence in the Western and Southern Highlands Provinces is about 150km south east from the Ok Tedi mine (Figure 1). The tenement is split into three separate areas which include the northern Tingi Block, central Baia Block and southern Cecelia Block (Figure 2).

The northern Tingi Block (16 sub-blocks; Figure 2) contains the Tingi, or Tingi Valley prospect with porphyry Cu-Au-Mo mineralisation, polymetallic (Au-Cu-Pb-Zn-Ag) skarns, breccia hosted basemetal mineralisation, fault controlled massive sulphides and gold veining.

The central Baia Block (13 sub-blocks; Figure 2) contains the large porphyry Baia prospect, with a copper-gold-molybdenum in soils anomaly and small skarns present. Historical exploration by Barrick confirmed Baia as a weakly mineralised porphyry system dominated by propylitic and structurally controlled phyllic alteration.

Within the southern Cecelia Block (27 sub-blocks; Figure 2), the northernmost Cecelia prospect has historical outcrop rock samples of 0.62% copper. Strong argillic and propylitic alteration has been covered by recent agglomerate with pebble dykes being common. Two rock chip samples taken between years 1986-88 are of advanced argillic alteration returning 0.616 g/t gold and 710 ppm copper.

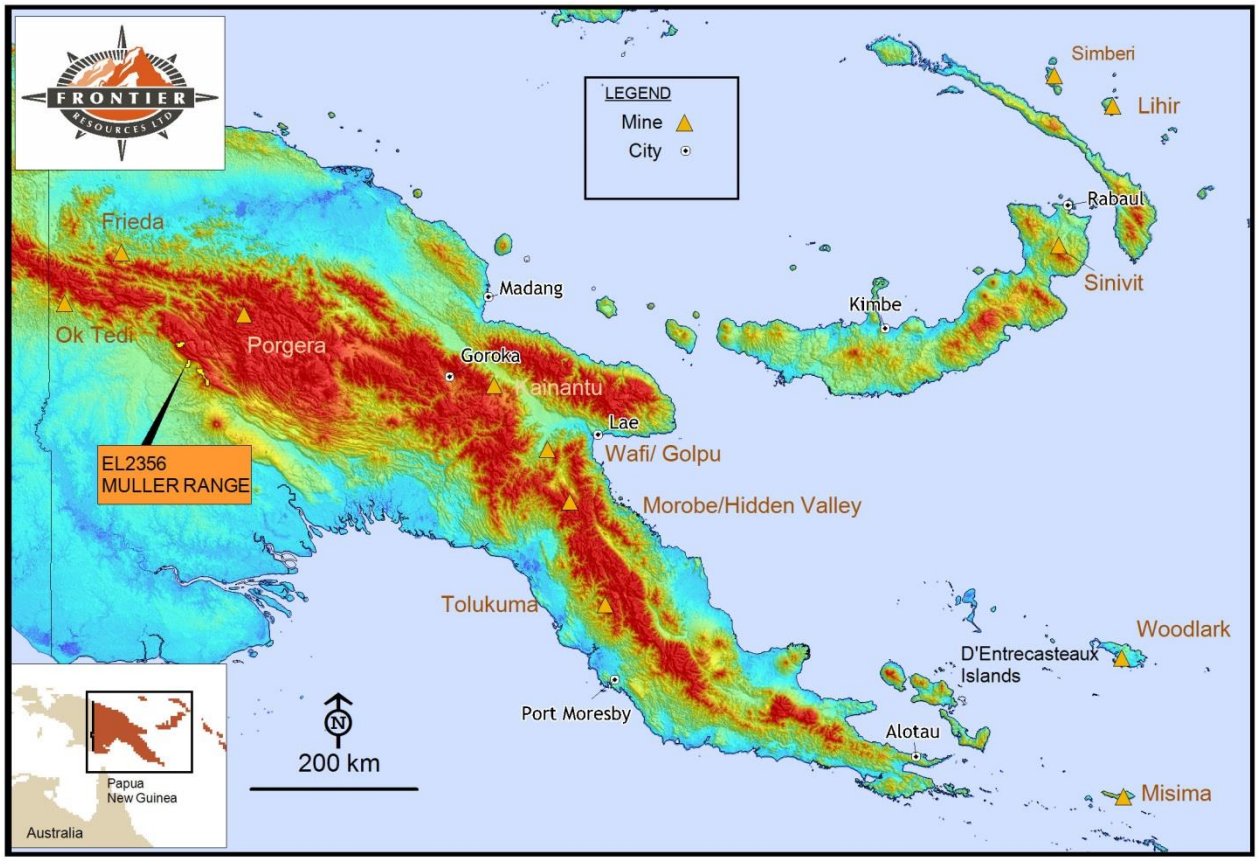

Figure 1: PNG Location Map of Muller Range EL 2356

This report focusses on utilising Aster satellite imagery to map lineaments and circular volcanic features; and to define targets related to clay alteration (i.e., minerals such as kaolinite, dickite, smectite are known to be associated with gold and copper deposits) and anomalous jarosite/hematite iron oxides. Historical surface geochemistry has been reviewed to highlight anomalous gold which may be related to some of the selected Aster target areas in the Tingi Block.

A total of 37 Aster targets (17 Tingi Block: 13 Baia Block targets: 7 Cecelia Block) were selected in size up to 31 Ha. Lineament and volcanic structural features have been plotted over areas not obscured by cloud cover in the Aster scenes. Target areas have potentially been altered by mineralising fluids and are recommended for future geochemical sampling and geological mapping.

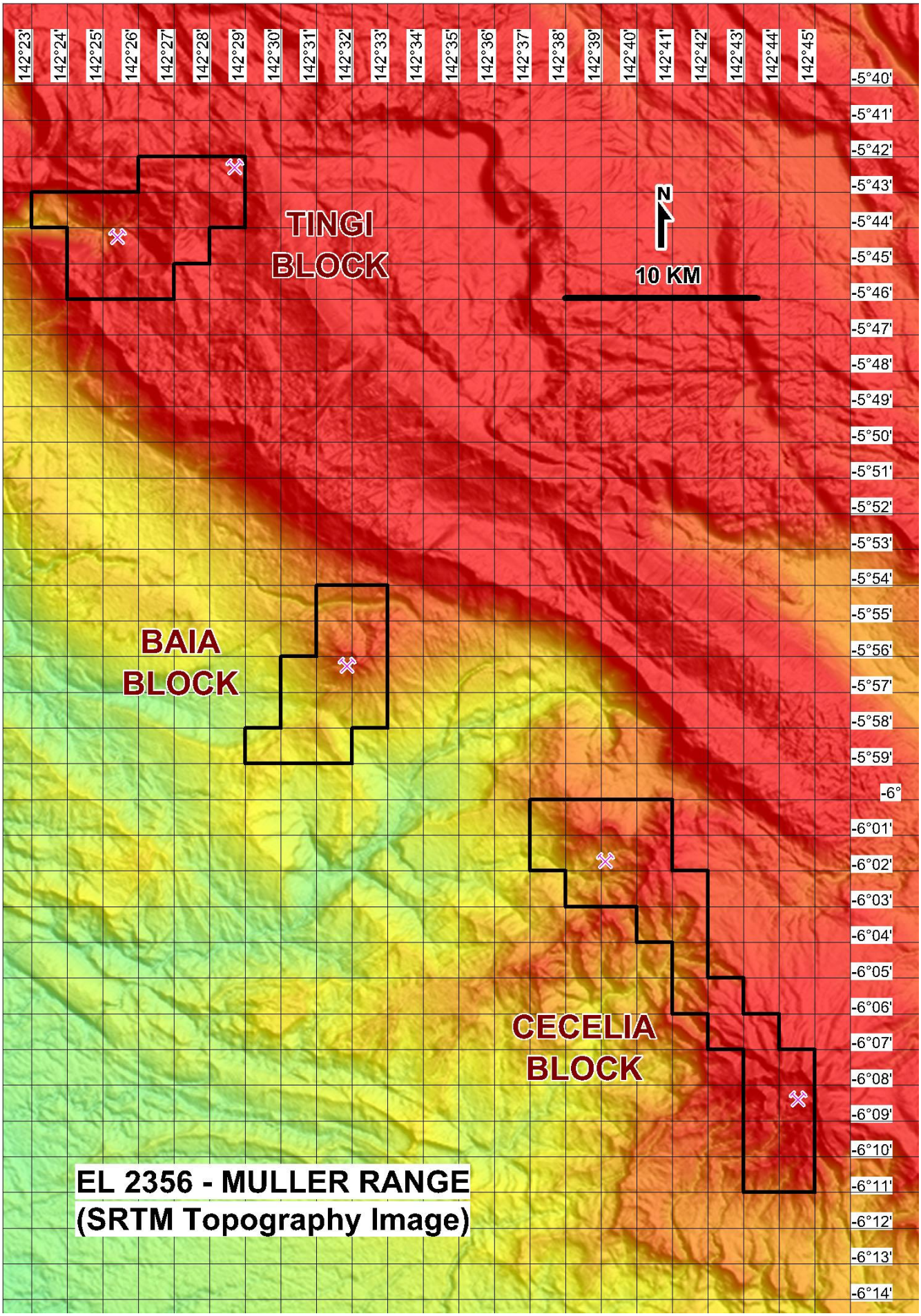

Figure 2: Muller Range Tenement SRTM Topography

2.0 HISTORICAL EXPLORATION

The Tingi Valley Copper-Gold Porphyry Prospect area is covered by Mesozoic sediments (mudstone, siltstone, sandstone) overlain by early Tertiary limestone intruded by Tertiary–Pleistocene monzonite and diorite stocks (Figure 3). Within the prospect, several small diorite stocks and sill complexes intrude Darai Limestone and underlying Mesozoic sediments. Copper-gold mineralisation appears to be associated with these intrusive bodies. In the early 70s, CRA Exploration and BP completed regional stream sediment sampling. In 1991 Kennecott interpreted airborne magnetics to delineate two separate porphyry targets beneath Darai Limestone and completed soil sampling and mapping, receiving spot gold assays of 4.9 g/t gold, 30 g/t gold and 12 g/t gold. Wantok Mining completed channel sampling in 1996, delineating anomalous copper within andesite porphyry and brecciated massive sulphide skarn. Carson-Pratt Exploration completed mapping and sampling in 2004 after which they recommended additional follow-up on the intrusive/limestone contact for possible gold bearing veins. It is expected that analysis of satellite Aster imagery will help define structures and zones of alteration related to mineralisation and porphyry deposits.

In 2016, historical data from for the Baia and Cecelia prospects generated by Barrick were compiled into a number of diagrams to analyse ridge and spur soil geochemical samples together with interpreted lithology, fact mapped geology and airborne geophysics. Barrick confirmed Baia as a weakly mineralised porphyry system dominated by propylitic and structurally controlled phyllic alteration. Copper in soil geochemistry demonstrates a 900m x 600m wide anomaly with a typical zinc/lead halo around the copper system. Dominant alteration is propylitic, with structurally controlled phyllic and patchy un-mineralised potassic alteration. A total of seven skarn targets, identified previously by Aimex Geophysics, are related to near surface magnetic bodies at the contact between limestone and intrusive. The Aster satellite imagery analysis in this report helps define additional alteration targets which may also be related to previously unknown mineralisation within the tenement block.

The Cecelia prospect is defined from stream sediment (> 250ppm Copper) sampling and rock chip sampling by Kennecott in 1970. Best results included in rock float samples included 0.18% copper within granodiorite with bornite-chalcopyrite in altered intrusive in the upper reaches of the prospect. Vuggy quartz-alunite-pyrophyllite rock has been described from the upper reaches of Cecelia. High sulphidation epithermal advanced argillic alteration, with vuggy quartz - alunite- pyrophyllite is present, but no significant gold noted in follow-up. Strong argillic and propylitic alteration, which has been covered by recent agglomerate and pebble dykes are common, indicating a probable buried porphyry copper-gold-molybdenum target. Additional targets defined from the Aster satellite imagery in this report may indicate near surface alteration from underlying hydrothermal events related to mineralisation. Volcanics throughout much of the tenement Block (Figure 3) has been tracked/mapped from airborne magnetic imagery.

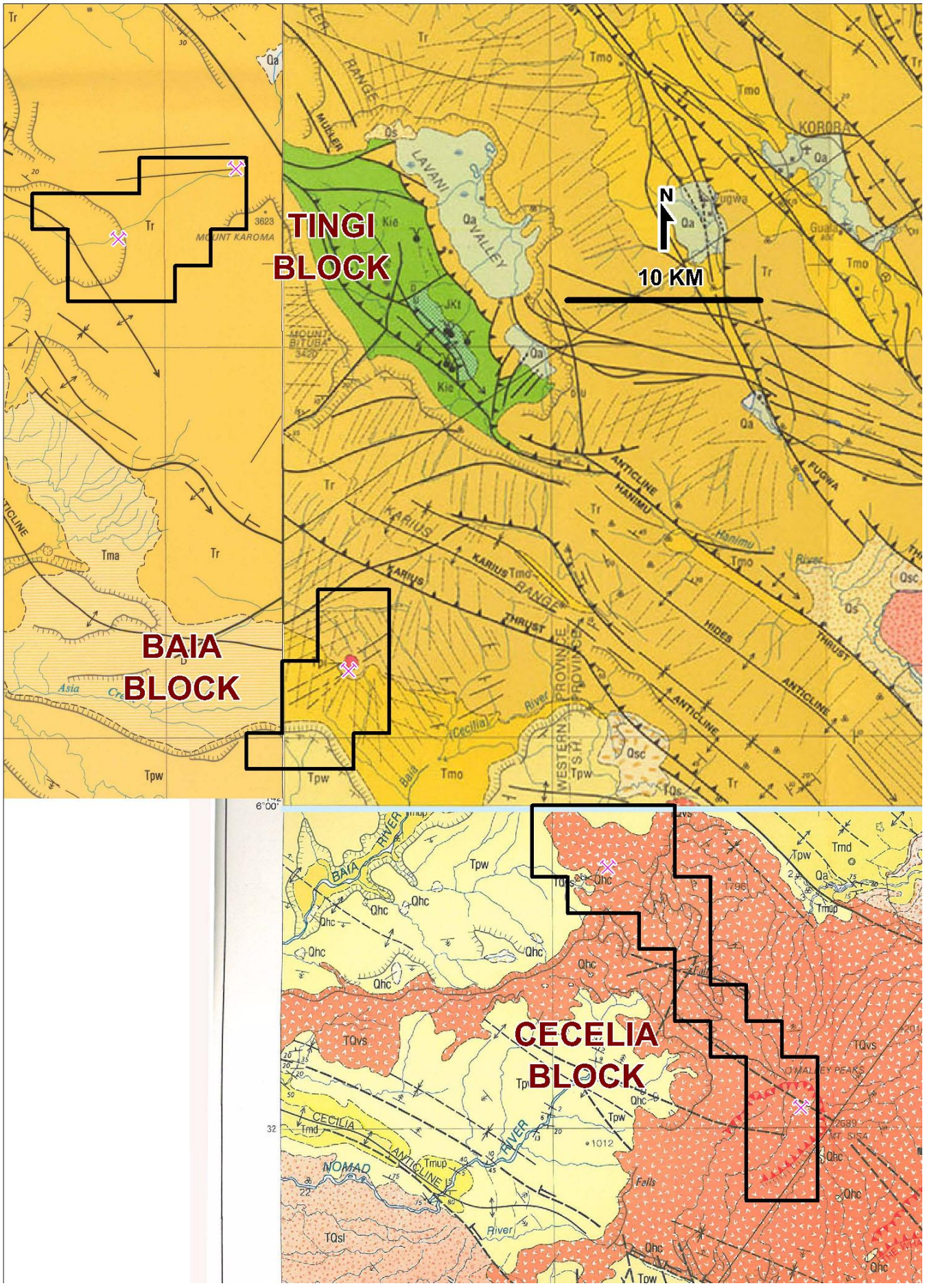

Figure 3: Muller Range Regional Published Geology

3.0 ASTER SATELLITE ACQUISITION AND IMAGERY

A number of Aster satellite scenes were searched and acquired from the NASA Earthdata catalogue web site and processed using ERMapper software into numerous images. Short Wave Infared (SWIR) bands (Table 1) are utilised in coloured imagery to help map areas of alteration related to hydrothermal events including porphyry related intrusives, epithermal veins and hydrothermal breccia.

The SWIR sensors on the ASTER satellite failed in April 2007, hence there are only approximately seven years' worth of captured satellite scenes from around the globe. In the PNG Highlands, cloud coverage is quite extensive year round and no cloud free ASTER images could be found. Satellite scenes were selected on the basis of a minimum amount of cloud cover over the tenement blocks.

Table 1: Aster Bands

ASTER BAND	Band Type	Band Range nm	Resolution (m)	Absorption	Reflection	Mineral peak nm
1	VNIR	520 - 600	15	Ferric Iron	Green - Veg	
2	VNIR	630 - 690	15		Red - Haematite	
3	NIR	780 - 860	15	Jarosite		
			30			
4	MIR	1600 - 1700	30		Vegetation	
5	SWIR	2145 - 2185	30	Pyrophyllite		2160
6	SWIR	2185 - 2225	30	dickite		2190
				sericite		2190
				kaolinite		2190
				illite/smectite		2200
				Montmorillonite		2200
7	SWIR	2235 - 2285	30	Jarosite		2270
8	SWIR	2295 - 2365	30	alunite		2330
				actinolite		2310
				phlogopite		2330
				Calcite		2345
9	SWIR	2360 - 2430	30	phlogopite		2380
				actinolite		2390
10	TIR		90	Silicification		
11	TIR		90	Silicification		
12	TIR		90	Silicification		
13	TIR		90	Silicification		
14	TIR		90	Silicification		

4.0 TINGI BLOCK ASTER INTERPRETATION

A number of Aster scenes were downloaded to determine those with least cloud coverage over the Tingi Northern Block. Numerous images were created including the Band 3,2,1 (RGB) scene which is used to define lineaments and structures (Figure 4).

A total of 17 "MR" targets have been selected within the Northern Tingi Block (Figure 4) from image enhancements (Figure 5 to 15) which utilise Short Wave InfaRed bands. These target zones range in size from 0.8 Ha to 31 Ha (Table 2) and are based on potential hydrothermal alteration including clays such as pyrophyllite, dickite, sericite, kaolinite, illite, smectite and montmorillonite. Zones of anomalous jarosite and hematite may indicate areas for skarns and gossans. Lowly anomalous jarosite and hematite can be related to the presence of hydrothermal related clays.

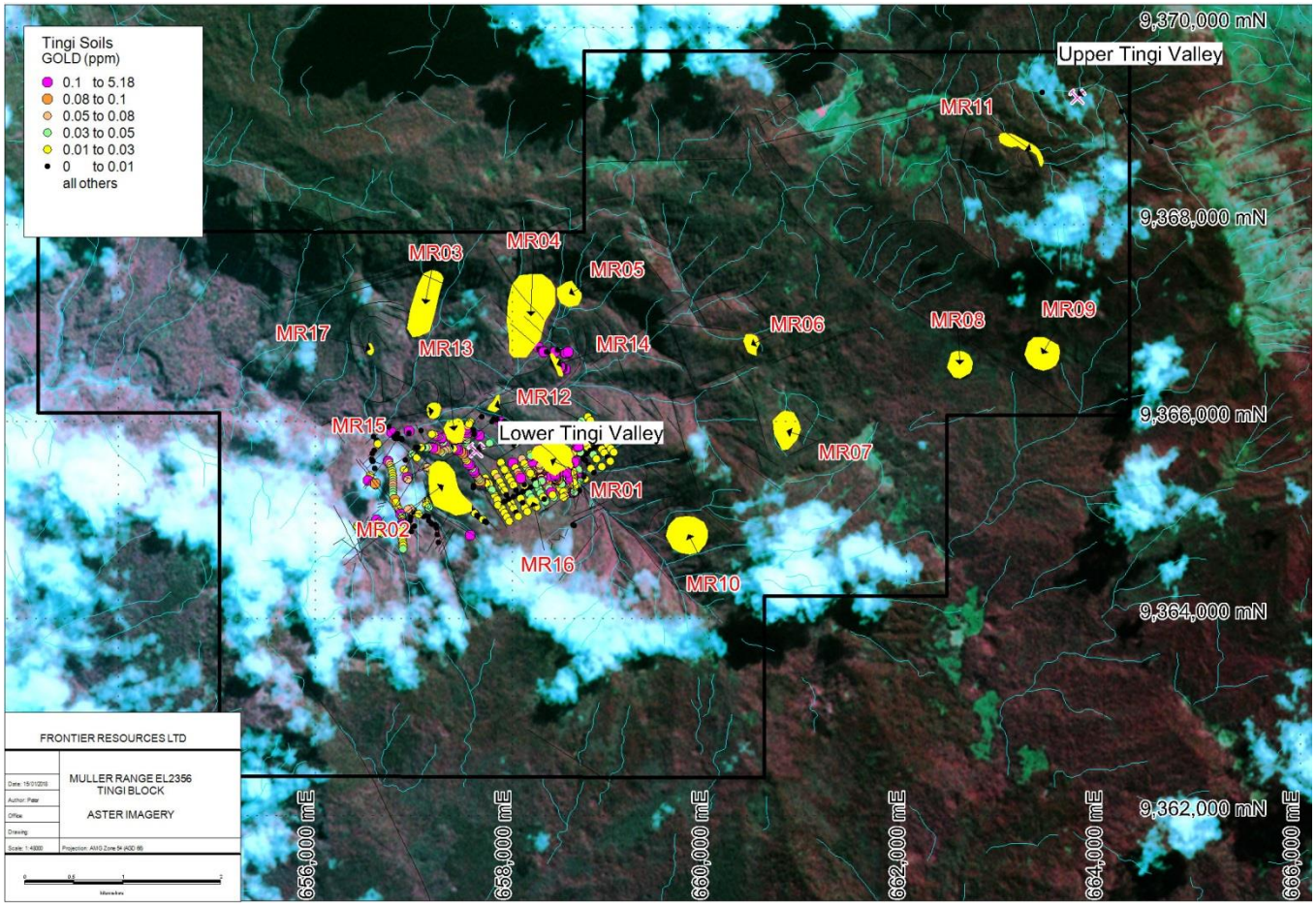

Figure 4: Tingi Block Aster Targets with Historical Gold in Soil Samples

The Abdelsalam Image (Figure 5) is useful for mapping structures in the immediate vicinity of the Tingi Prospect, where soil sampling shows anomalous gold (Figure 10) in the near target MR01. In particular, target MR10 has a concentric halo of anomalous clays and anomalous smectite clays at its centre (Figure 6), indicating a potential porphyry copper-gold target at depth. Other targets in this area include MR12, 13 & 16 which are topographically circular with associated clay alteration (Table 2).

Further west of Tingi, additional targets MR03, 15 & 17 are anomalous in topography and clay alteration.

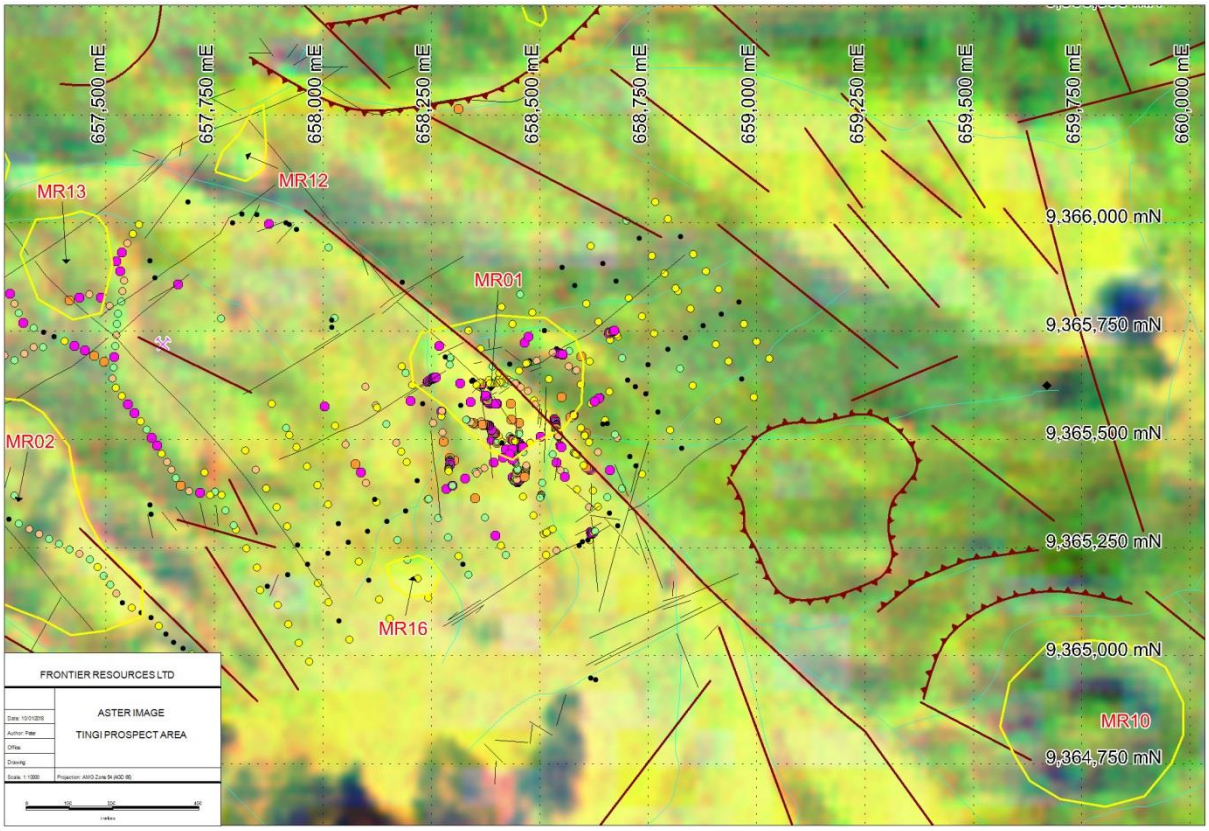

Figure 5: Tingi Prospect Area Aster Targets (Abdelsalam Image)

The "Abdelsalam" Red-Green-Blue false colour image (Figure 5) was created to help map geological volcanic structures and clay anomalies from potential porphyry styles of mineralisation. The "Smectite" image (Figure 6) shows clay style argillic alteration.

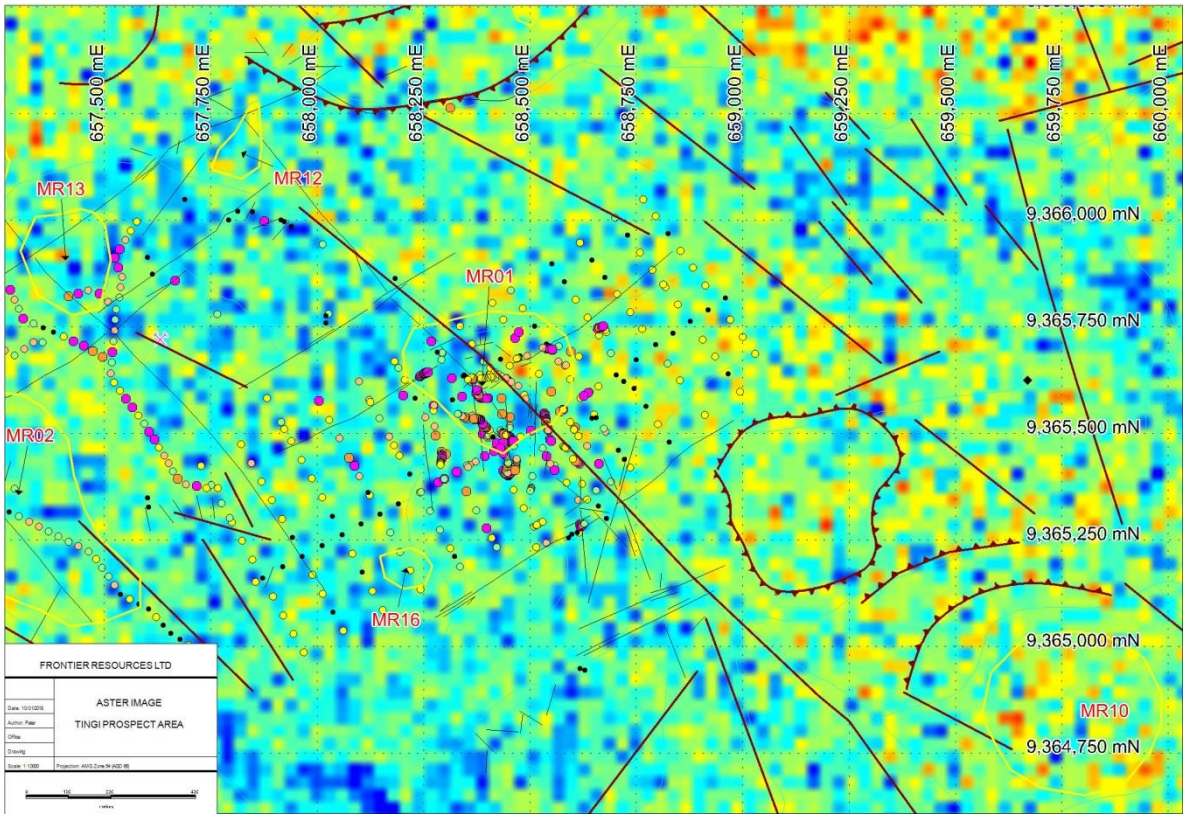

Figure 6: Tingi Prospect Area Aster Targets (Smectite Image)

Band 321 Red-Green-Blue false colour image (Figure 7) shows target MR03 as an elongated topographic anomaly with minor alunite type alteration (Figure 8). MR15 is also an interesting topographic anomaly associated with alunite type argillic alteration.

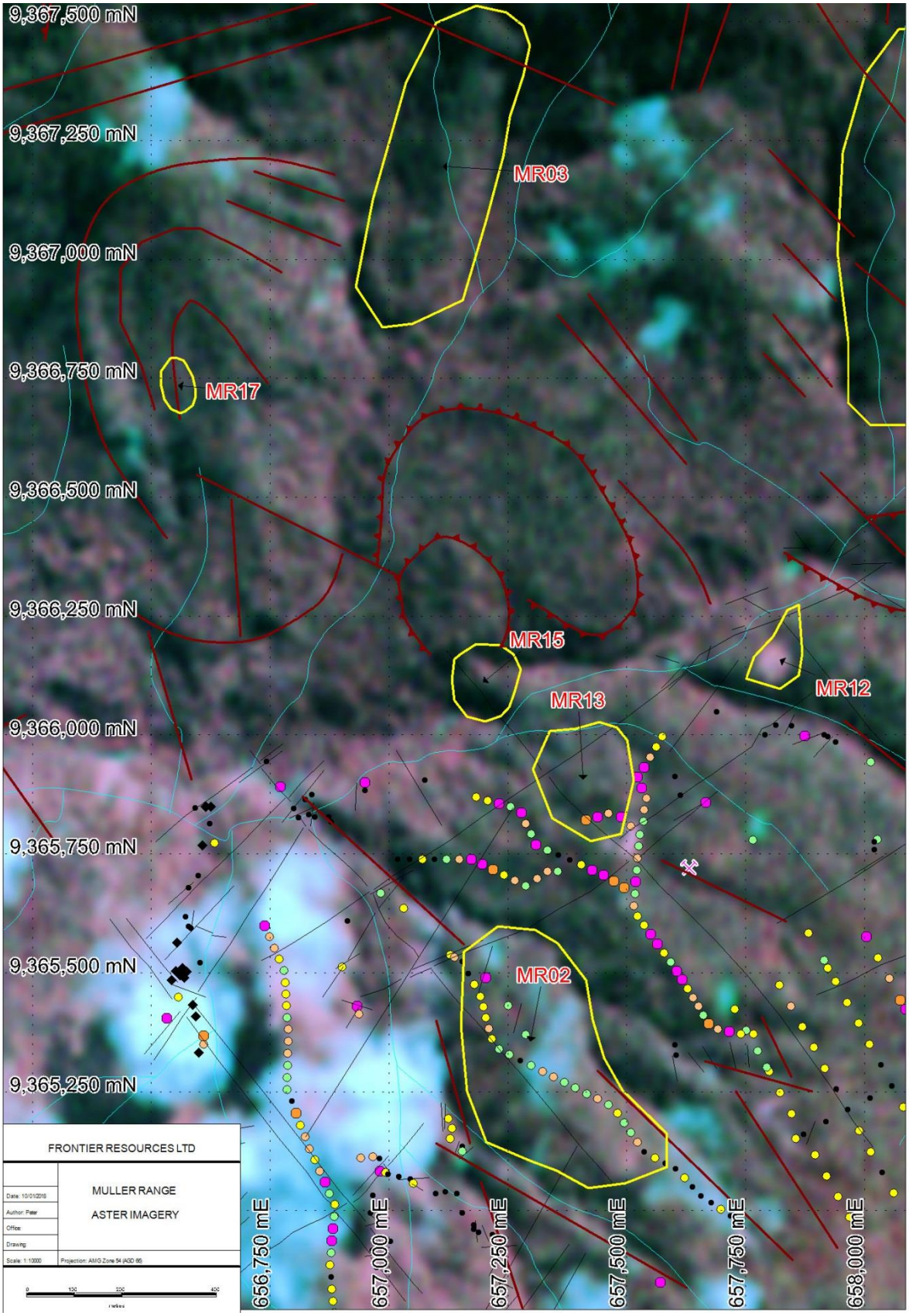

Figure 7: Tingi West Area Aster Targets

The pseudocolour Aster Alunite (Figure 8) image helps define clay styles of alteration in a typical porphyry and epithermal mineralising environment. False colour Red-Green-Blue images including the "Volesky Ratio" enhancement (Figure 9) are used to define possible gossanous material in red and clay alteration as green. MR15 is anomalous along a structure mapped by Kennecott, acting as a possible conduit for mineralising fluids and therefore upgrading this target.

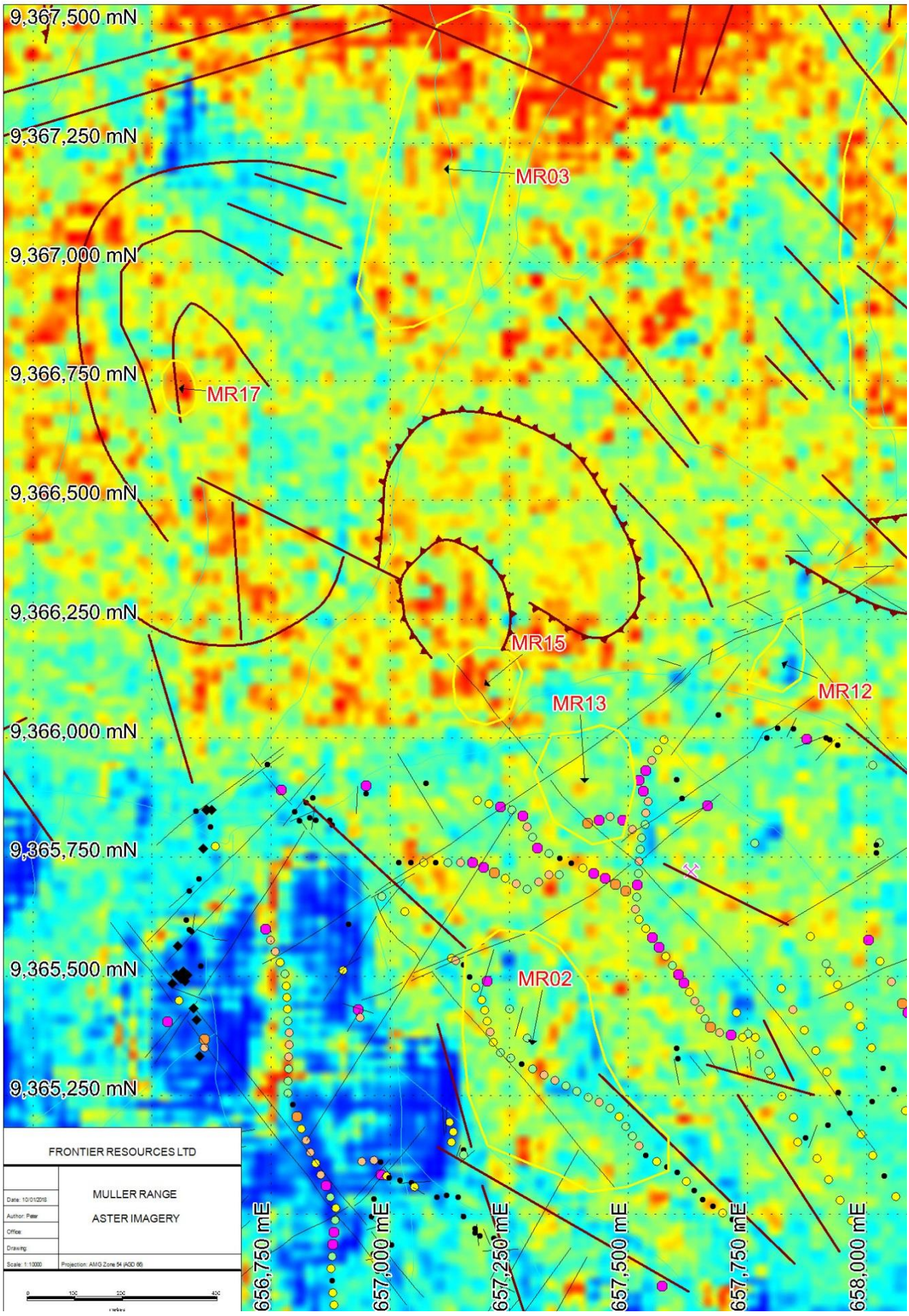

Figure 8: Tingi West Area Aster (Alunite Image) Targets

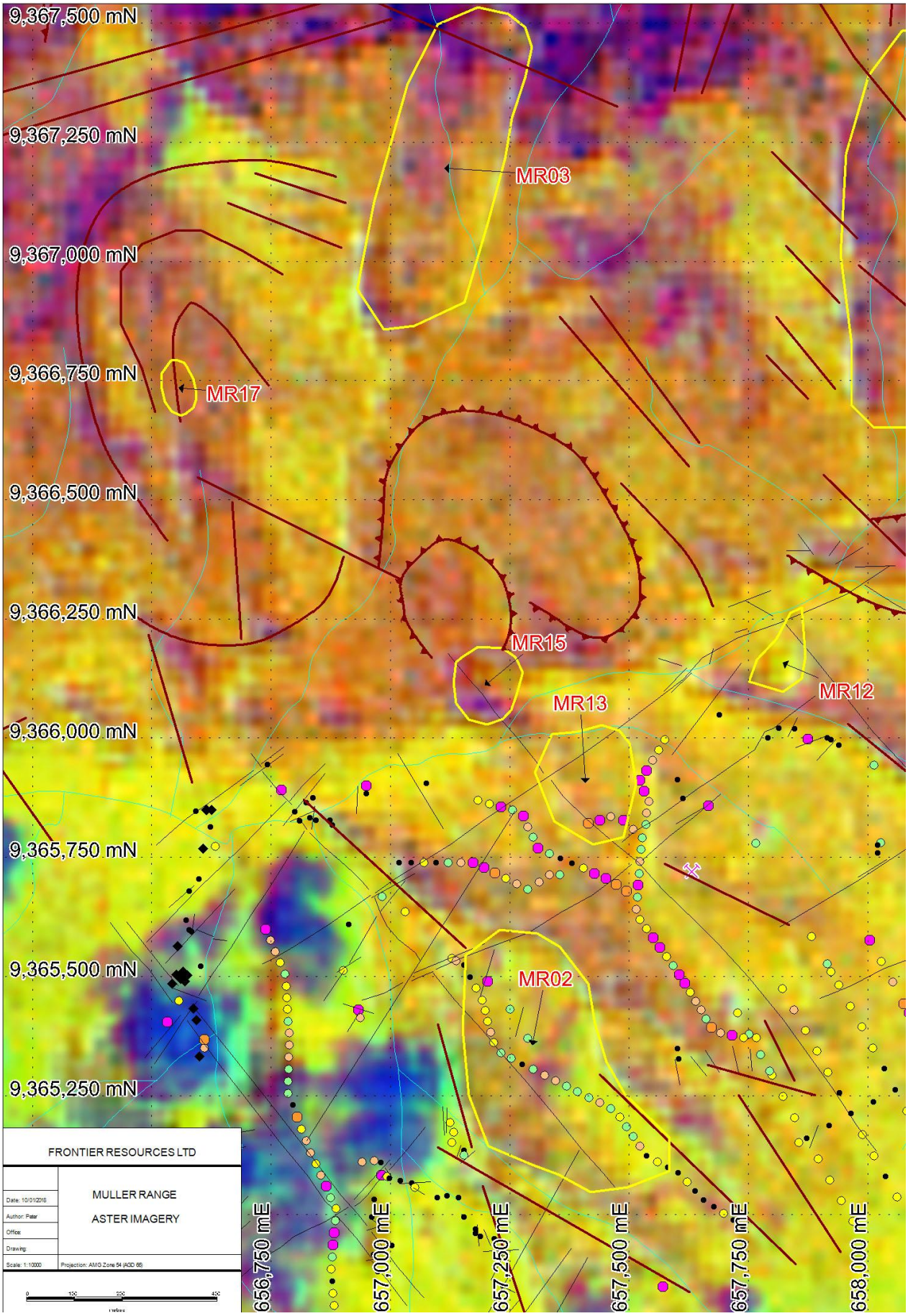

Figure 9: Tingi West Area Aster (Volesky Image) Targets

To the north of the Tingi Prospect (Figure 10), target MR14 occurs as a linear vein related feature anomalous in gold in soil samples; and in alunite clays (Figure 11) from Aster imagery. Target number MR05 has a distinct inner halo in Jarosite iron (Figure 12), which may represent gossan float from weathered ore in the phyllic zone. MR06 is topographically anomalous and low in the alunite clays image and also low in jarosite type irons (Table 2).

Numerous lineaments are plotted as mainly occurring in a northwest orientation with some circular volcanic structures surrounding the MR04 and MR14 target areas (Figure 10). The MR07 is an 8 Ha target area, mainly associated with anomalous Hematite iron, possibly gossanous.

To the northeast of the Tingi Prospect area (Figure 13), the MR11 target occurs as an outer halo along an interpreted circular volcanic structure and anomalous in clay alteration (Figure 14). This target may be related to porphyry style mineralisation in a propylitic zone and should be check with ground sampling and mapping.

Other targets in the northeastern area include MR09, which has two discrete topographic anomalies similar to that at the Tingi MR01 target area. The MR08 target area has a circular alunite clay alteration halo along its south-eastern rim (Figure 15) indicating potential for mineralisation beneath an argillic alteration halo.

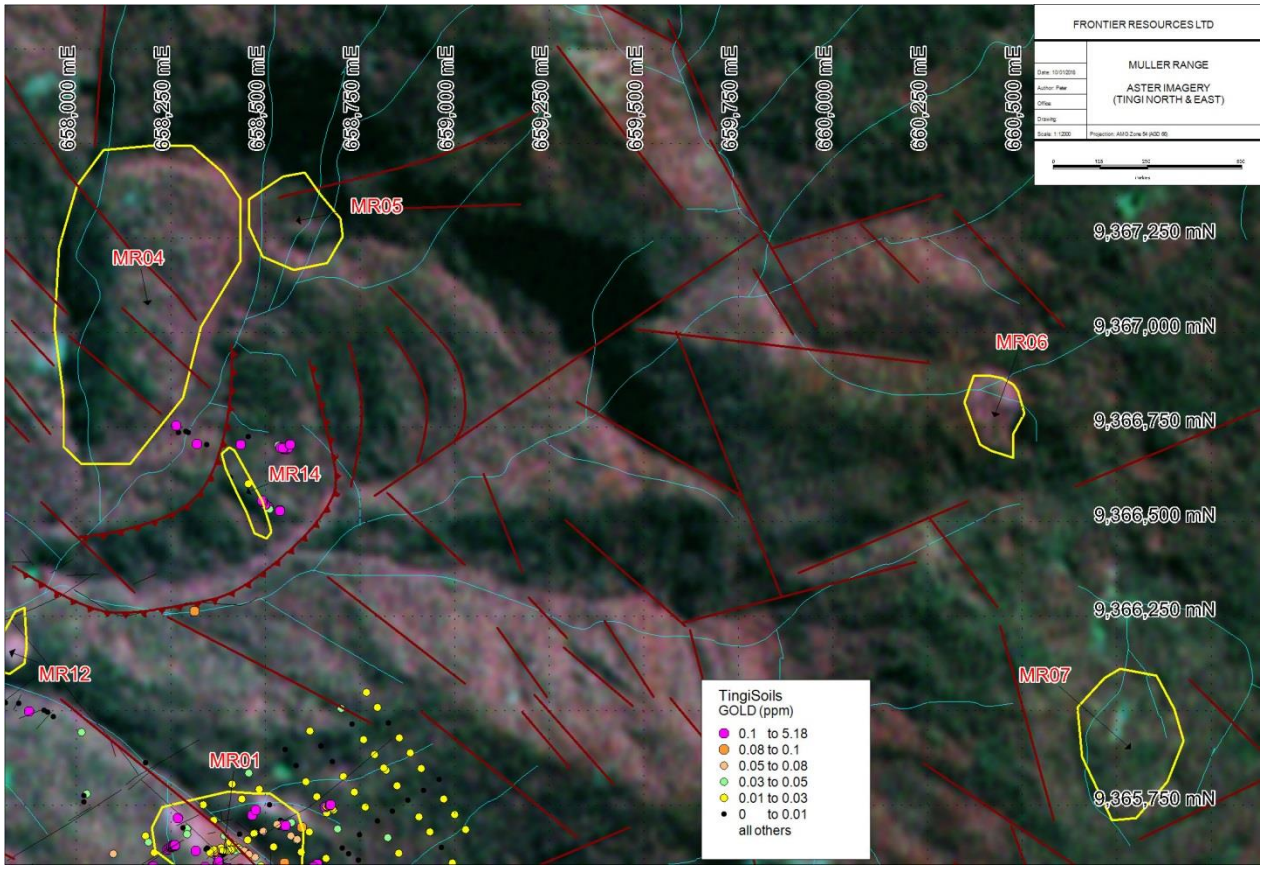

Figure 10: Tingi North Area Aster Targets

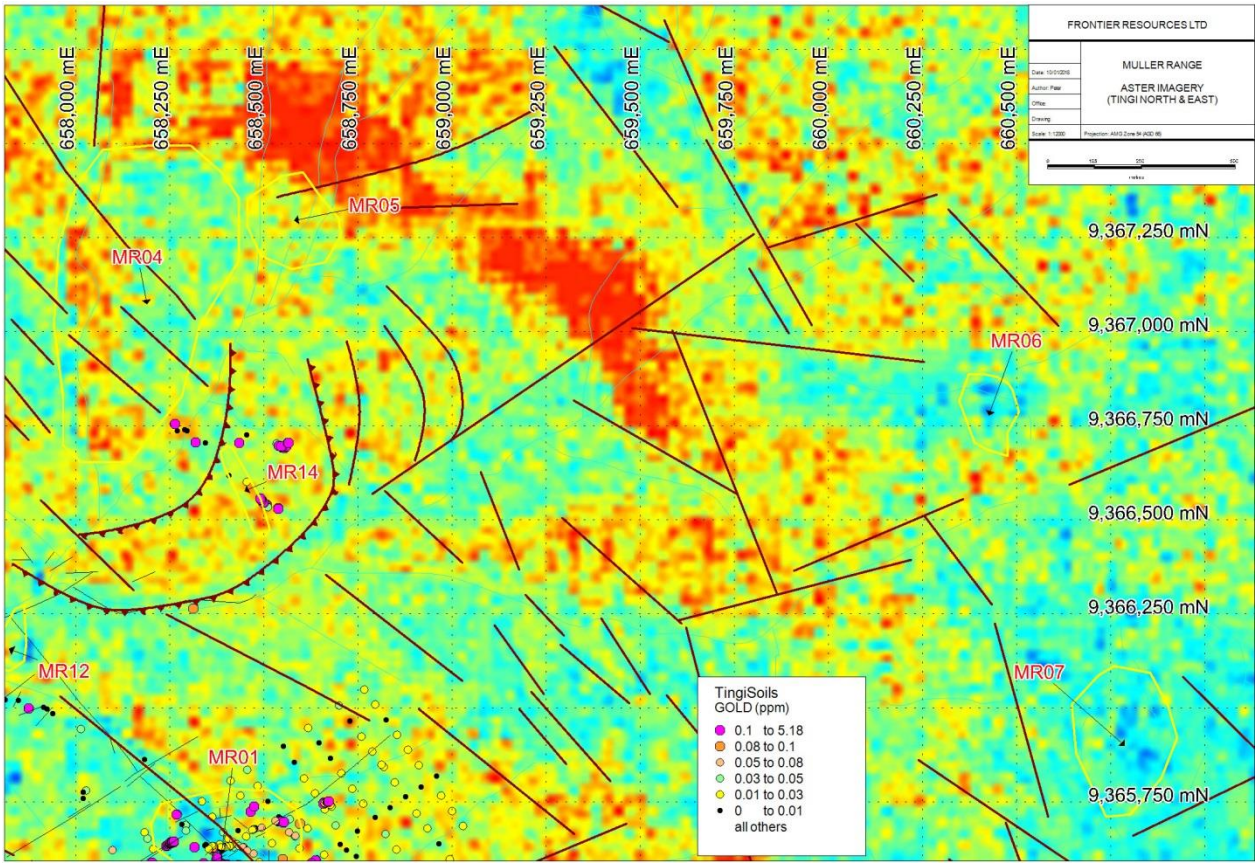

Figure 11: Tingi North Area Aster (Alunite Image) Targets

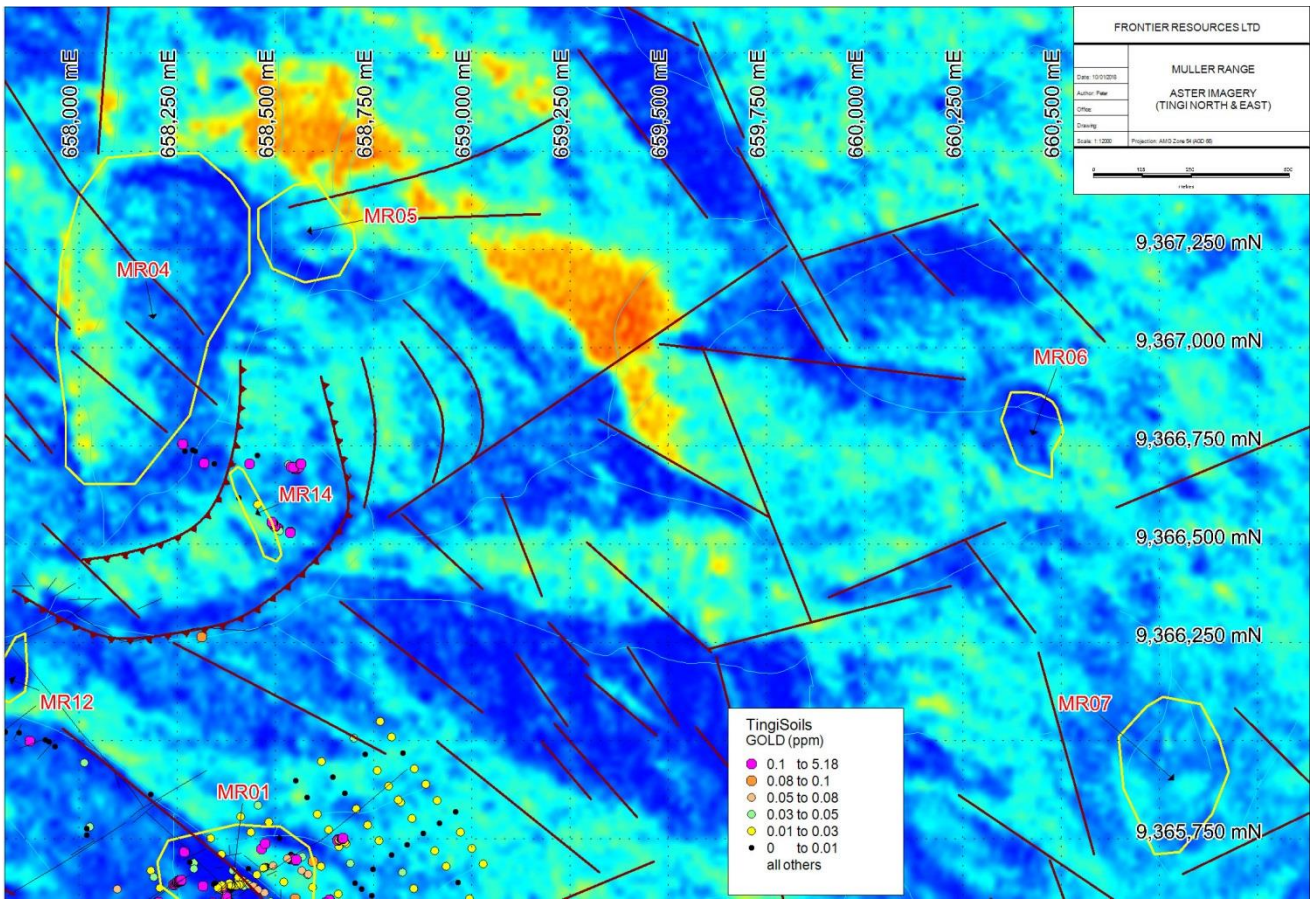

Figure 12: Tingi North Area Aster (Jarosite Image) Targets

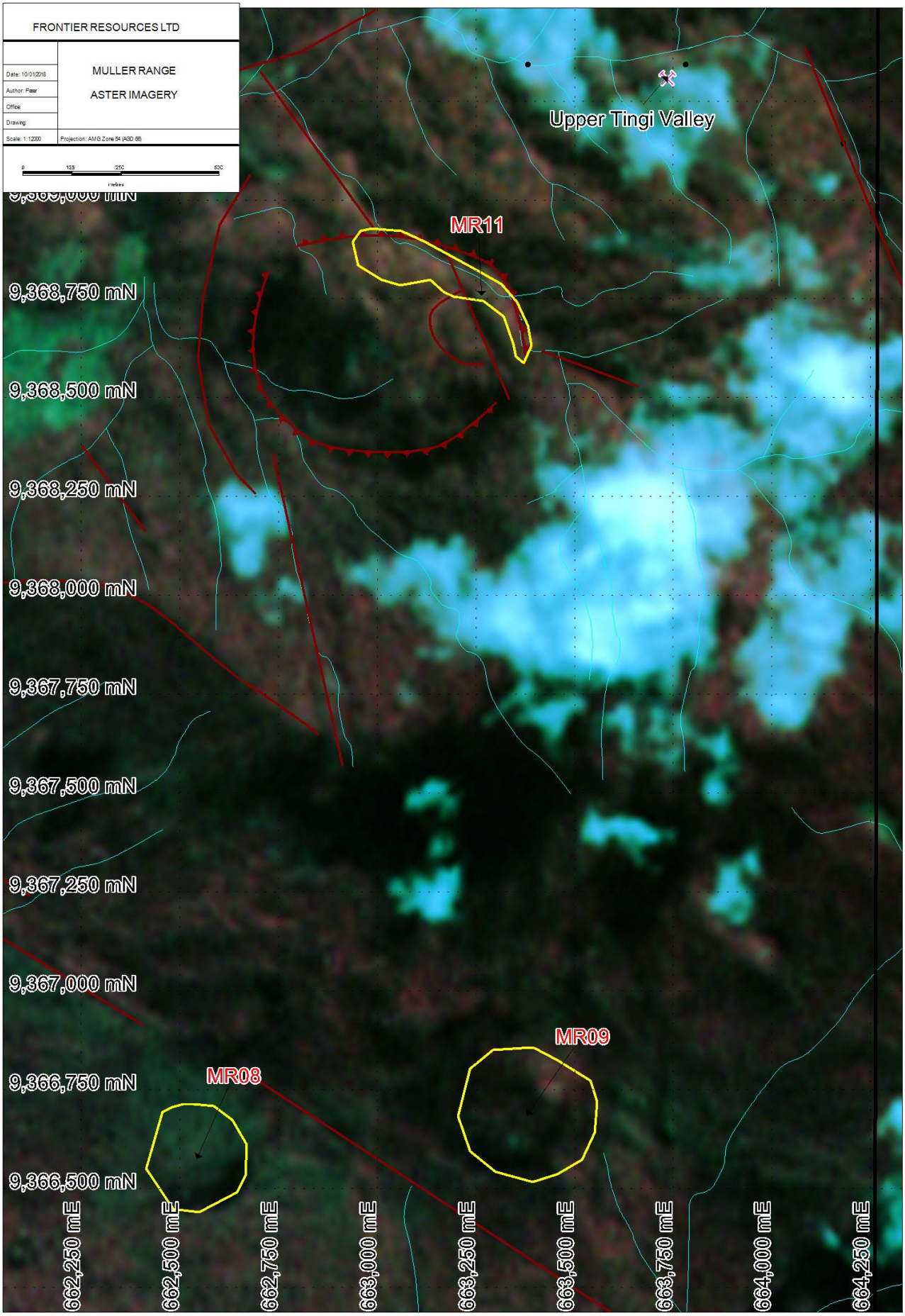

Figure 13: Tingi North-East Area Aster Targets

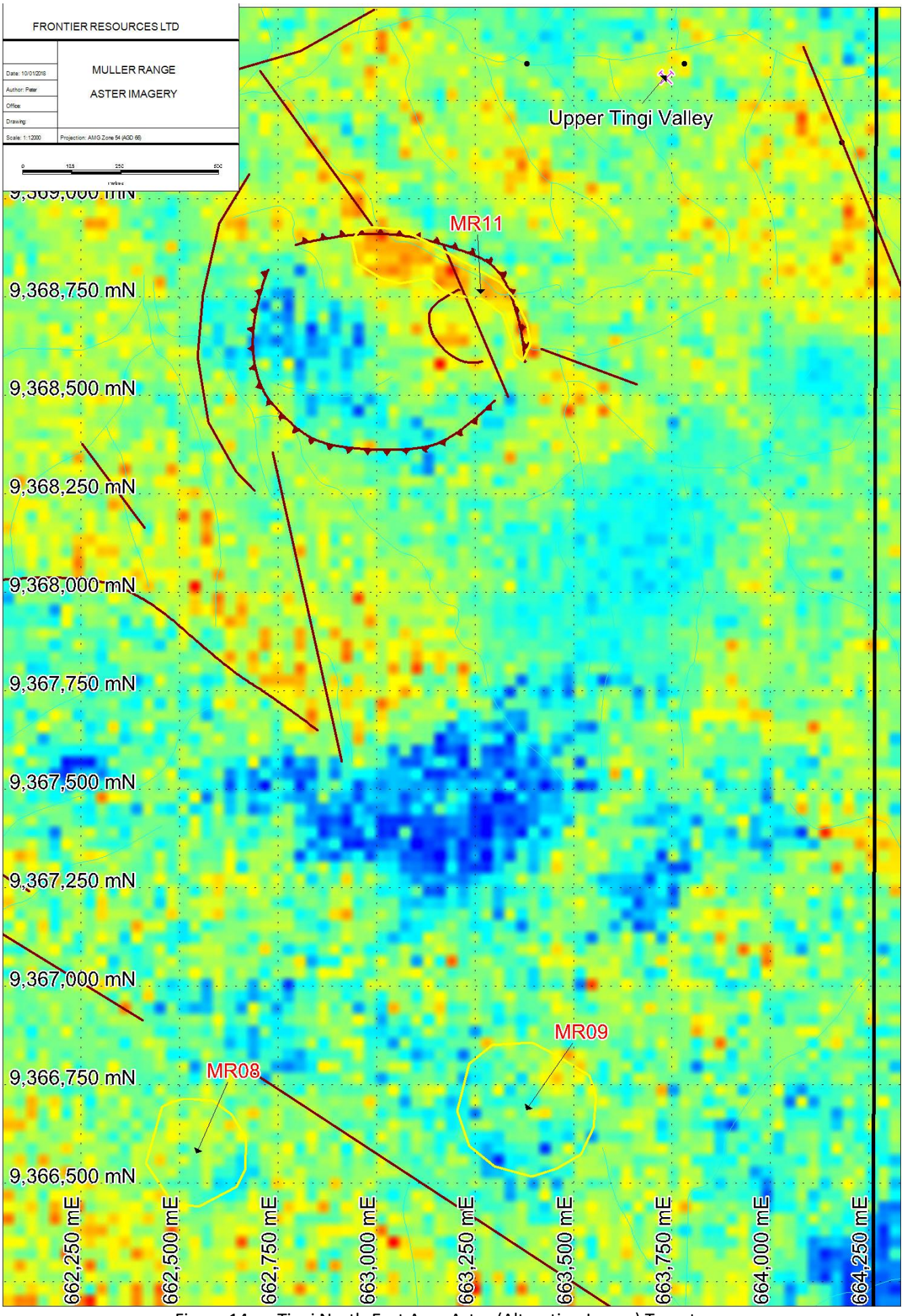

Figure 14: Tingi North-East Area Aster (Alteration Image) Targets

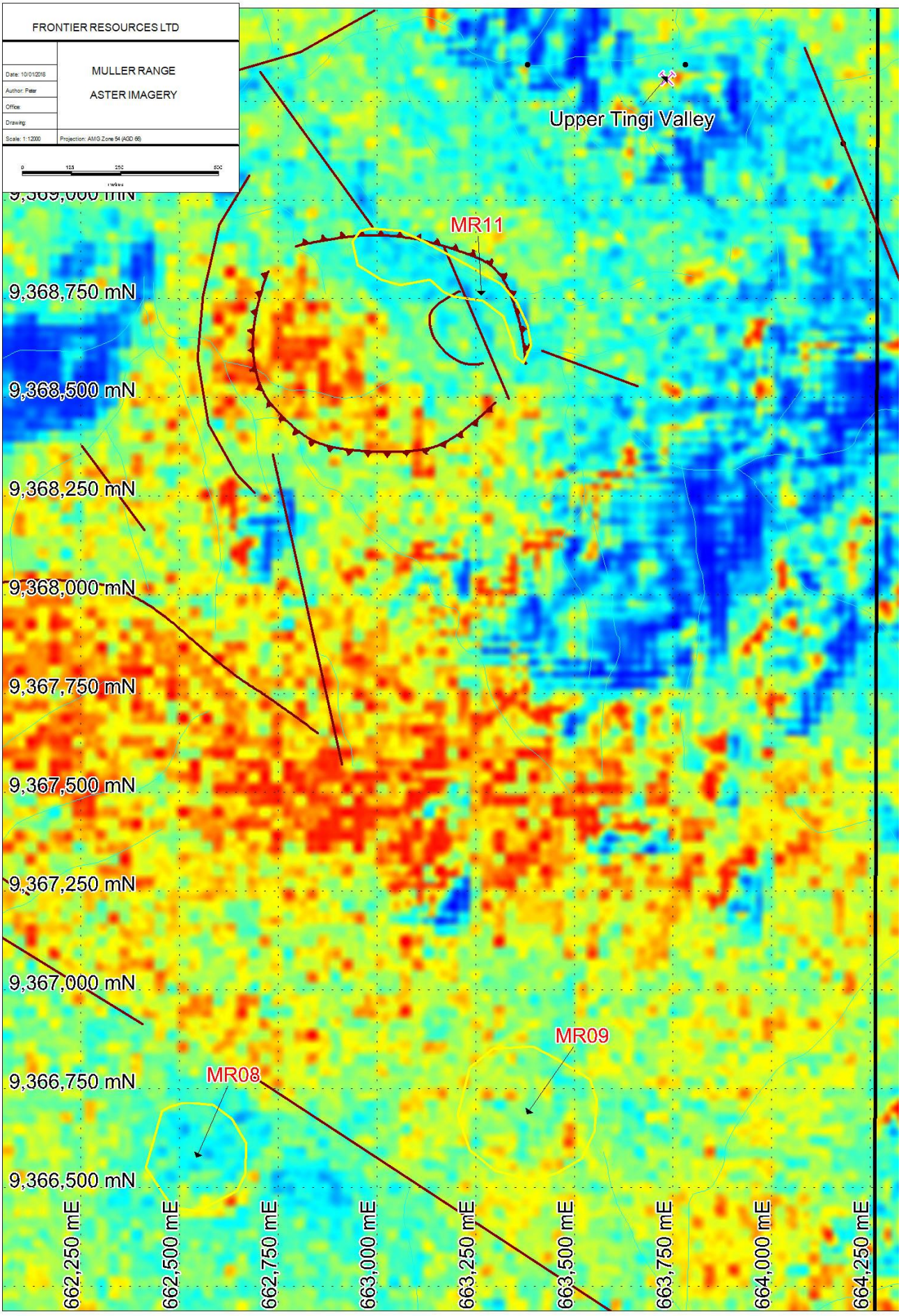

Figure 15: Tingi North-East Area Aster (Alunite Image) Targets

Table 2: Muller Range Northern Tingi Block Aster Target Areas

Target	Location (AGD66, Z56)	Description
MR01	658410e, 9365640n	This 9 Ha area encloses the main exploration zone of the Tingi prospect and includes Jerrys Skarn and Hogo Ck prospects along Angali Ck; with corresponding anomalous gold in soils. The Aster imagery shows zones of particular anomalous clay alteration which can be used as a diagnostic tool for selecting additional target areas.
MR02	657290e, 9365350n	This 15 Ha zone is anomalous in silver and gold in soil samples and has a clay alteration zone on its south-eastern flanks along a structure which is anomalous in gold in soil. It occurs as a large oval shaped zone, possibly representing an intrusive.
MR03	657120e, 9367180n	A north-northeast elongated topographic anomaly 15Ha in size with smectite type alteration on its northern edges.
MR04	658150e, 9367040n	This large 31 Ha topographic anomaly has associated Alunite type alteration.
MR05	658580e, 9367310n	A smaller anomaly similar in appearance to that in the Tingi MR01 target. Minor alteration is associated with a skarn like halo of jarosite iron alteration.
MR06	660440e, 9366800n	Discrete circular 2Ha topographic target anomalous in alteration (alunite/kaolinite/pyrophyllite).
MR07	660780e, 9365950n	Circular 8 Ha topographic target associated with a Hematite gossan type signature at its centre.
MR08	662530e, 9366580n	A circular topographic 5 Ha anomaly with an alteration halo along its south-eastern rim.
MR09	663390e, 9366690n	Two discrete circular anomalies similar to that at the Tingi MR01 target with minor alteration in the northwestern corner.
MR10	659790e, 9364790n	A small patch of anomalous alteration occurs at the centre of this 12 Ha circular anomaly which exists within an outer volcanic rim, suggesting a porphyry style target.
MR11	663050e, 9368850n	This volcanic centre is 700 southwest from the Upper Tingi Valley prospect with the target marked as a zone of alteration along its outer northeastern rim.
MR12	657820e, 9366150n	Small circular 1 Ha anomaly with an associated linear smectite type alteration extending to the northeast.
MR13	657410e, 9365920n	A circular 4 Ha topographic anomaly with smectite alteration at its centre.
MR14	658460e, 9366570n	Linear 260m long epithermal target with smectite alteration associated with gold anomalous soil samples.
MR15	657190e, 9366110n	Circular alunite alteration target coincident with a structure previously mapped by Kennecott. The circular volcanic area 150m to the north-west is also an area of interest, being associated alunite clay alteration; similarly 200m to the west.
MR16	658210e, 9365180n	Small 0.8Ha circular topographic target, 390m south of Jerry's skarn.
MR17	656560e, 9366730n	Discrete oval shaped area of alunite related alteration.

5.0 BAIA BLOCK ASTER INTERPRETATION

Published geological mapping (Figure 3) and the topographic image (Figure 2) shows the Baia prospect, occurring on the southern side of a partly collapsed strato-volcano. All Aster scenes with SWIR bands in this area have existing cloud coverage; however 13 targets (Table 3) have been defined within the central Baia Block (Figure 16) which has mapped feldspar porphyry in contact with limestone and mudstone. Aster imagery (Figure 18) shows the mapped mudstone and limestone extending throughout the tenement block. A second Aster scene with differing cloud coverage (Figure 17) was used to increase the area of interpretation.

In the southwestern portion of the Baia tenement Block, five Aster Targets (BA05, 06, 07, 08 & 13) occur as anomalous 'Dickite' type clay alteration (Figure 18). Targets 05 & 06 have anomalously low jarosite iron (Figure 19).

Target BA03 is a linear clay alteration target with potential forepithermal style mineralisation within mapped limestone. Similarly, BA10 is a linear target within mapped silicate mudstone (Figure 16). BA09, in the southernmost part of the tenement block, occurs as a small topographic feature. Circular targets BA04 and BA11 have a red/blue colour in Figure 18, indicating potential for hydrothermal alteration, as with the smaller target area BA12 (Figure 17). All targets are slightly anomalous in clay/dickite alteration with some anomalously low in jarosite iron. BA01 & 02 occur as small reddish anomalies in Figure 18, indicating potential for alteration and mineralisation at depth.

These target areas are recommended for additional geological mapping and rock sampling prior to further trench sampling and ground geophysics.

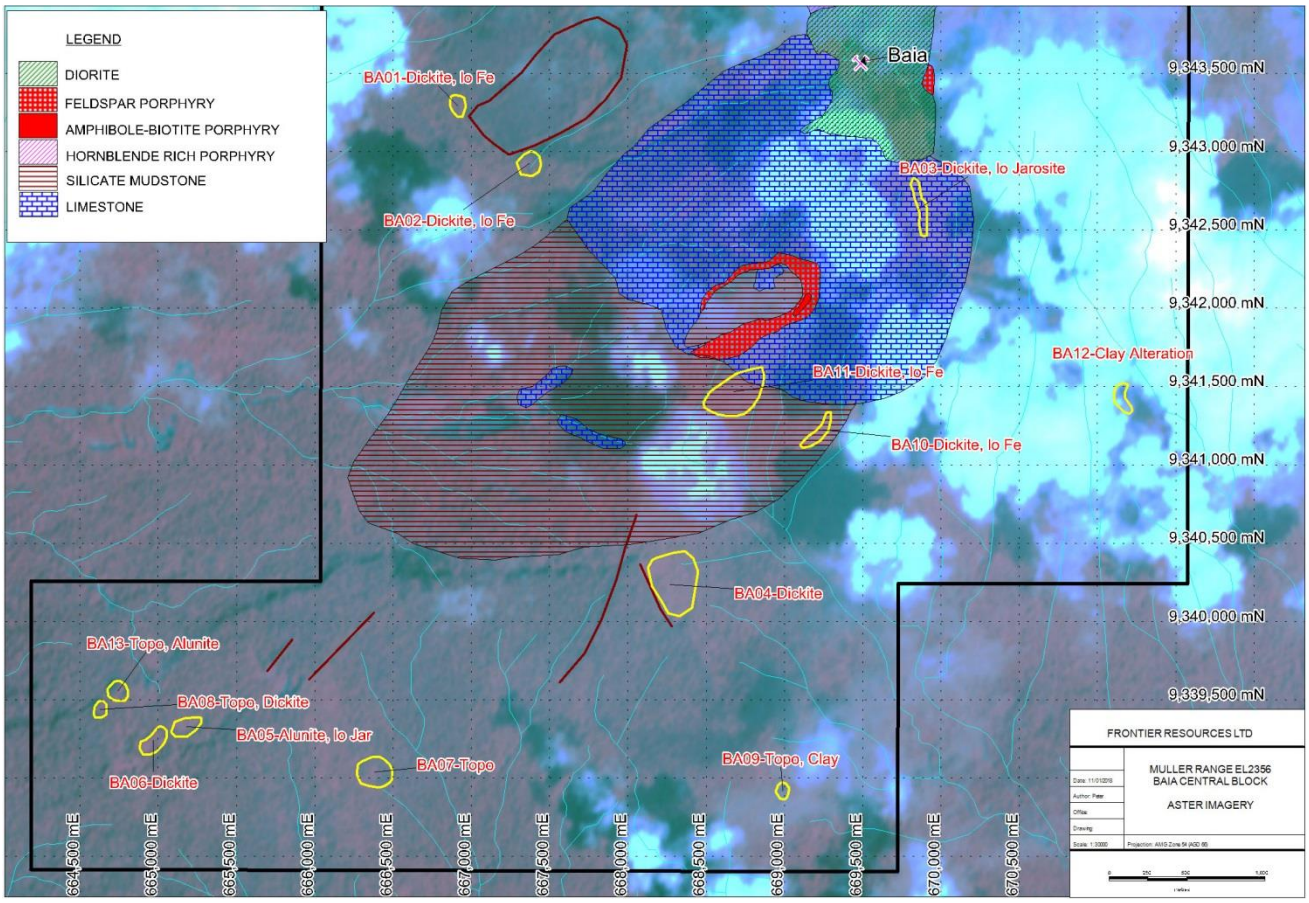

Figure 16: Baia Block Aster Targets

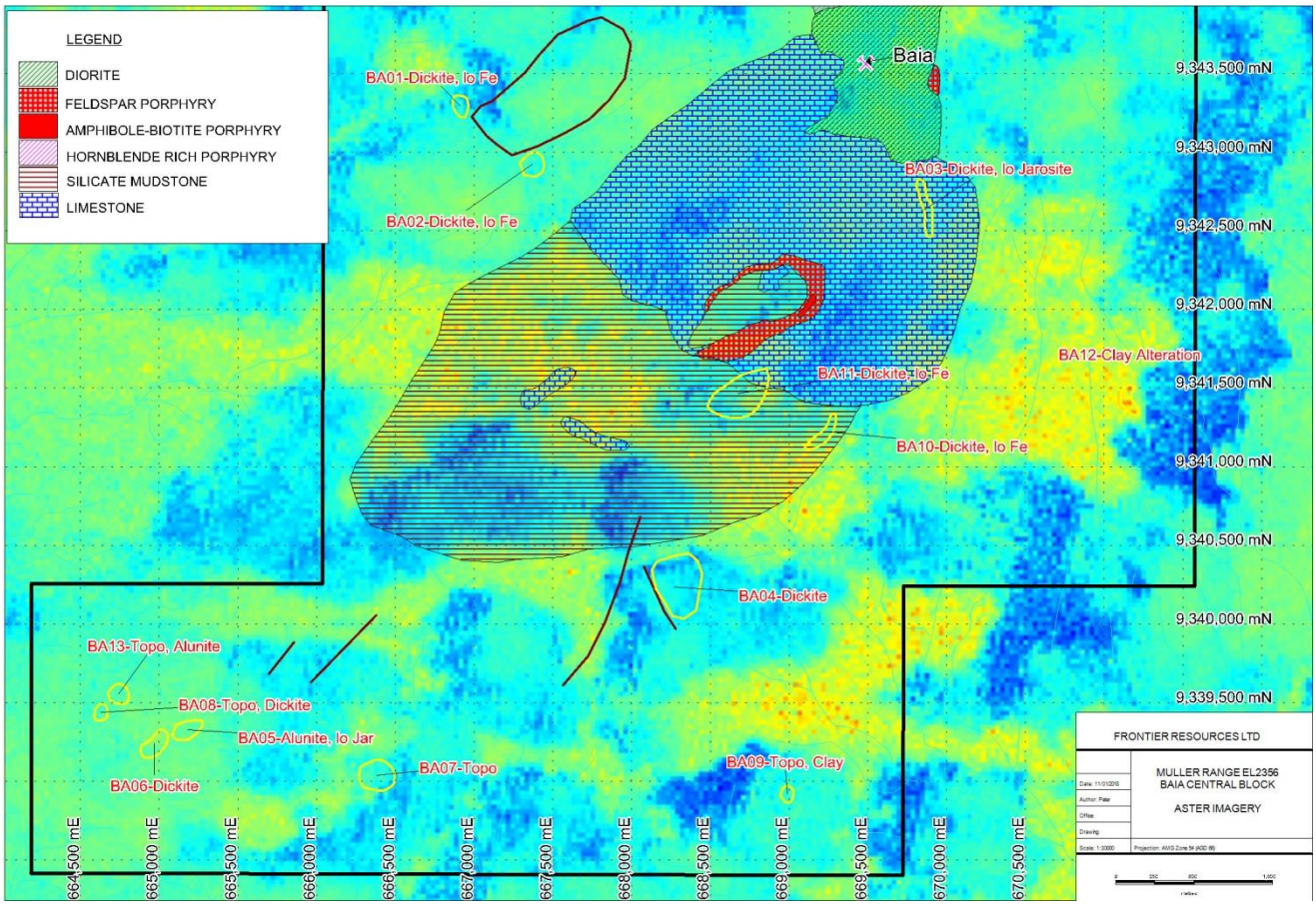

Figure 17: Baia Block Aster Scene II (Clay Alteration Image) with Targets

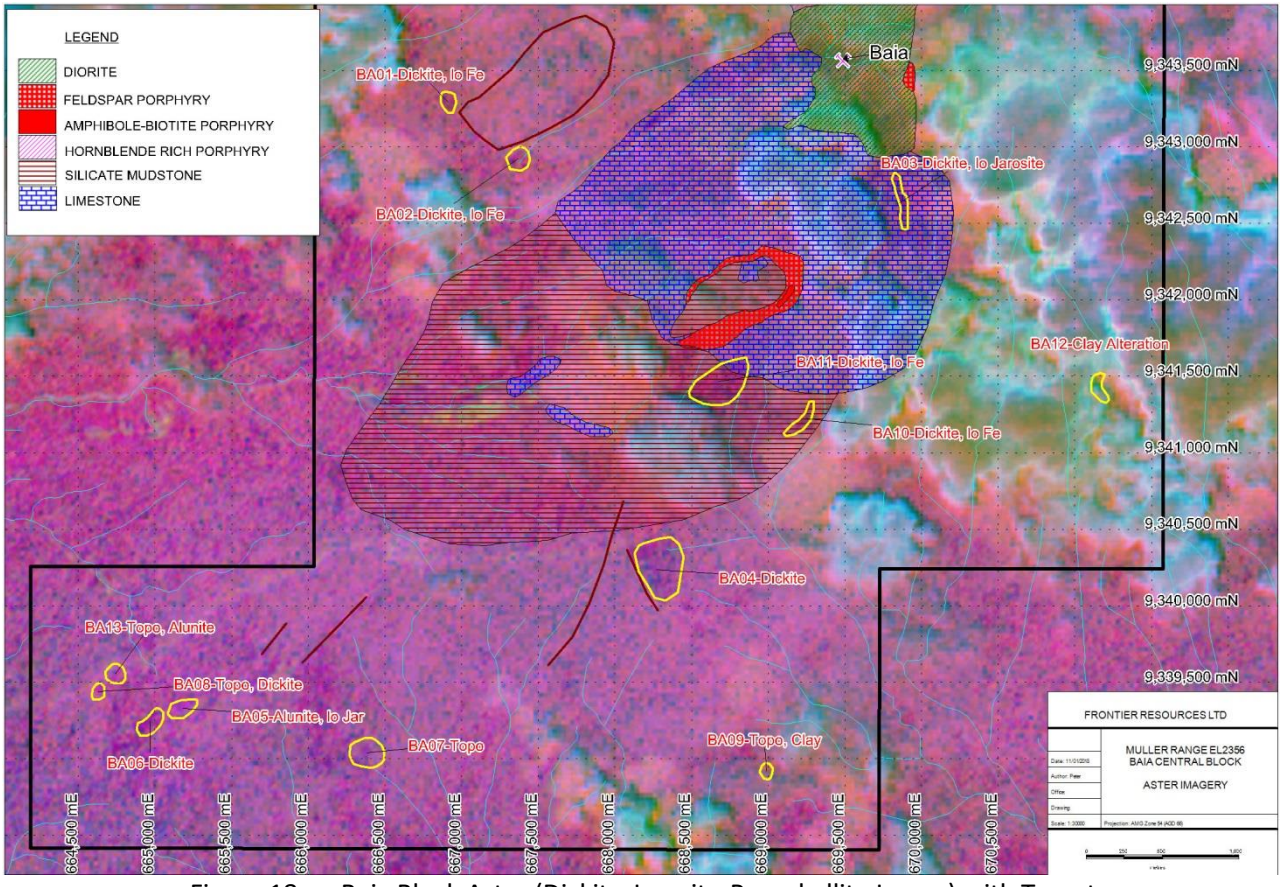

Figure 18: Baia Block Aster (Dickite-Jarosite-Pyrophyllite Image) with Targets

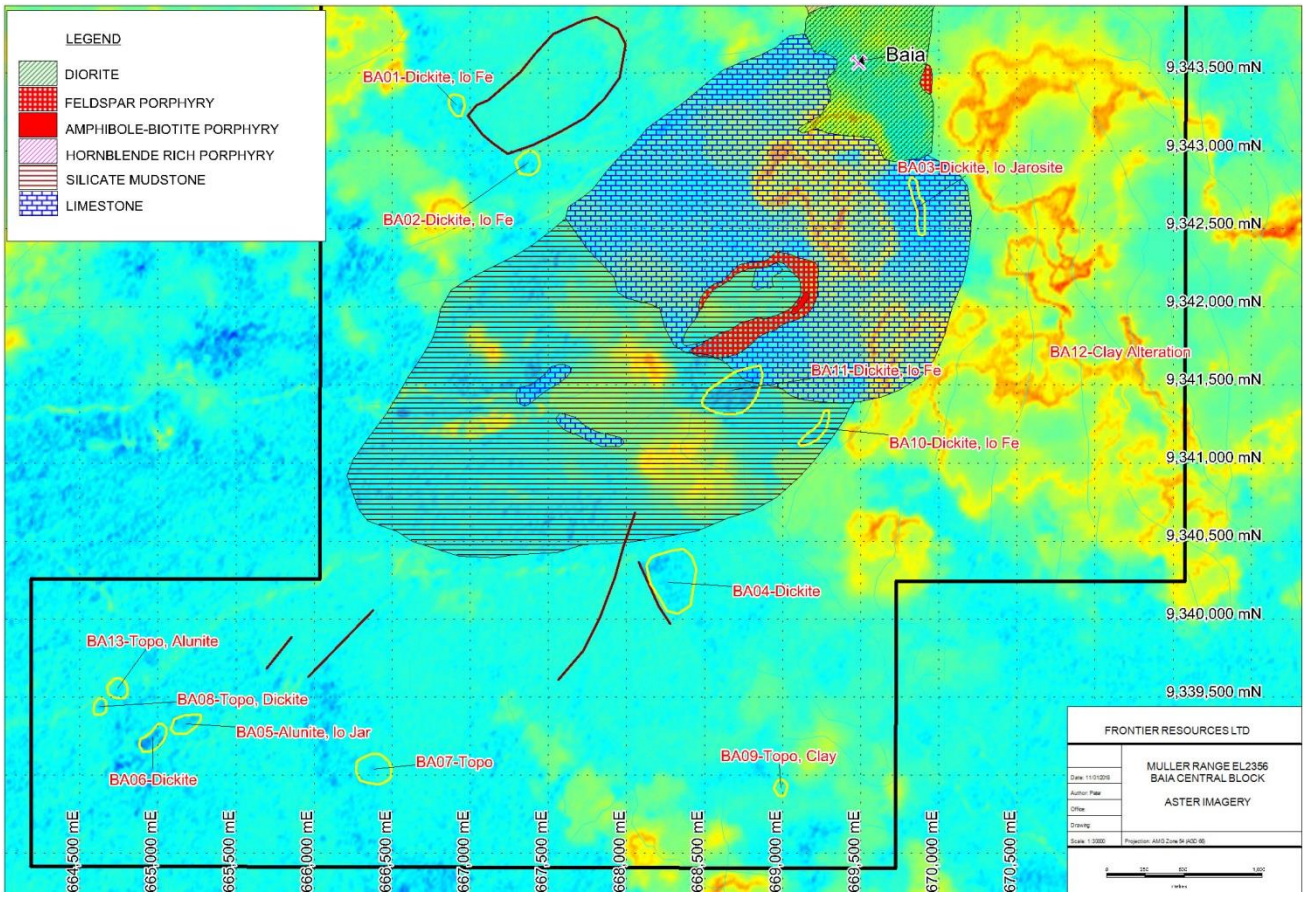

Figure 19: Baia Block Aster (Jarosite Image) with Targets

Table 3: Central Baia Block Aster Target Areas

Target	Location (AGD66, Z56)	Description
BA01	666910e, 9343300n	A 1 Ha circular anomaly anomalous in dickite and low in Jarosite.
BA02	667370e, 9342920n	Small 2 Ha area anomalous in dickite related alteration and low in jarosite iron.
BA03	669880e, 9342630n	Elongated north-south zone 360m in length anomalous in dickite and low in jarosite iron, within mapped limestone.
BA04	668280, 9340230n	A 9.5 Ha circular area of anomalous dickite and low jarosite, indicating potential alteration and mineralisation within mapped mudstone.
BA05	665170e, 9339330n	A 1.7 Ha anomalous area of dickite clay alteration and low jarosite.
BA06	664960e, 9339220n	A 1.8 Ha anomalous area of dickite clay alteration and low jarosite.
BA07	666380e, 9339040n	Anomalous topographic feature with elevated dickite type of alteration.
BA08	664630e, 9339440n	Small topographic anomaly with elevated dickite alteration.
BA09	668990e, 9338920n	Small 0.7 Ha topographic feature with anomalous clay alteration.
BA10	669230e, 9341200n	Elongated 290m anomalous clay and iron orientated north-east within mapped mudstone.
BA11	668700e, 9341450n	An 8 Ha area anomalous in dickite style alteration and correspondingly low in iron on the contact of mapped mudstone and limestone.
BA12	671140e, 9341430n	A 1.3 Ha area of anomalous clay alteration.
BA13	664750e, 9339550n	Circular topographic feature with anomalous alunite style alteration.

6.0 CECELIA BLOCK ASTER INTERPRETATION

Numerous Aster scenes were searched over the larger Cecelia named southernmost tenement block. Although all satellite scenes had significant cloud occurrence, two Aster scenes (Figure 20) were able to be utilised to interpret volcanic structures and alteration within the extensive volcanic pile mapped throughout the tenement block (Figure 3). A number of volcanic circular structures have been identified along with lineaments and six targets (Table 4).

Interpretation was split into the northern area of the Cecelia porphyry copper-gold-molybdenum system (Figures 21 and 22) and the southern area (Figures 23 and 24); which excludes the Mt.Sisa (Figure 20) porphyry/volcano system as it is obscured by cloud cover due to extensive elevation in height (Figure 2).

The Cecelia prospect lies on the contact between Wongop Sandstone and Andesitic Lava. A further 140m south, there exists the CE06 alteration target which is anomalously low in jarosite iron (Figure 22). Within an interpreted volcanic complex, the CE05 alteration Aster target is elongated north-south occurring on the contact between Andesitic Lava and Pyroclastics (Figure 22). CE07 is an area with distinct spotty alteration (Figure 21) and low in jarosite (Figure 22).

Four Targets are interpreted in the southern section (Figure 23) where CE01, 02, 03 & 04 are related to “dickite” clay type alteration. The southernmost target CE02 has a circular halo of anomalous jarosite (Figure 24) and is an priority target for potential mineralisation at depth.

A number of circular volcanic centres were interpreted southwest and southeast of the Cecelia prospect with bedding type structures outlined further south over the cloud free areas of the Aster imagery, between CE01 and CE02 (Figure 20).

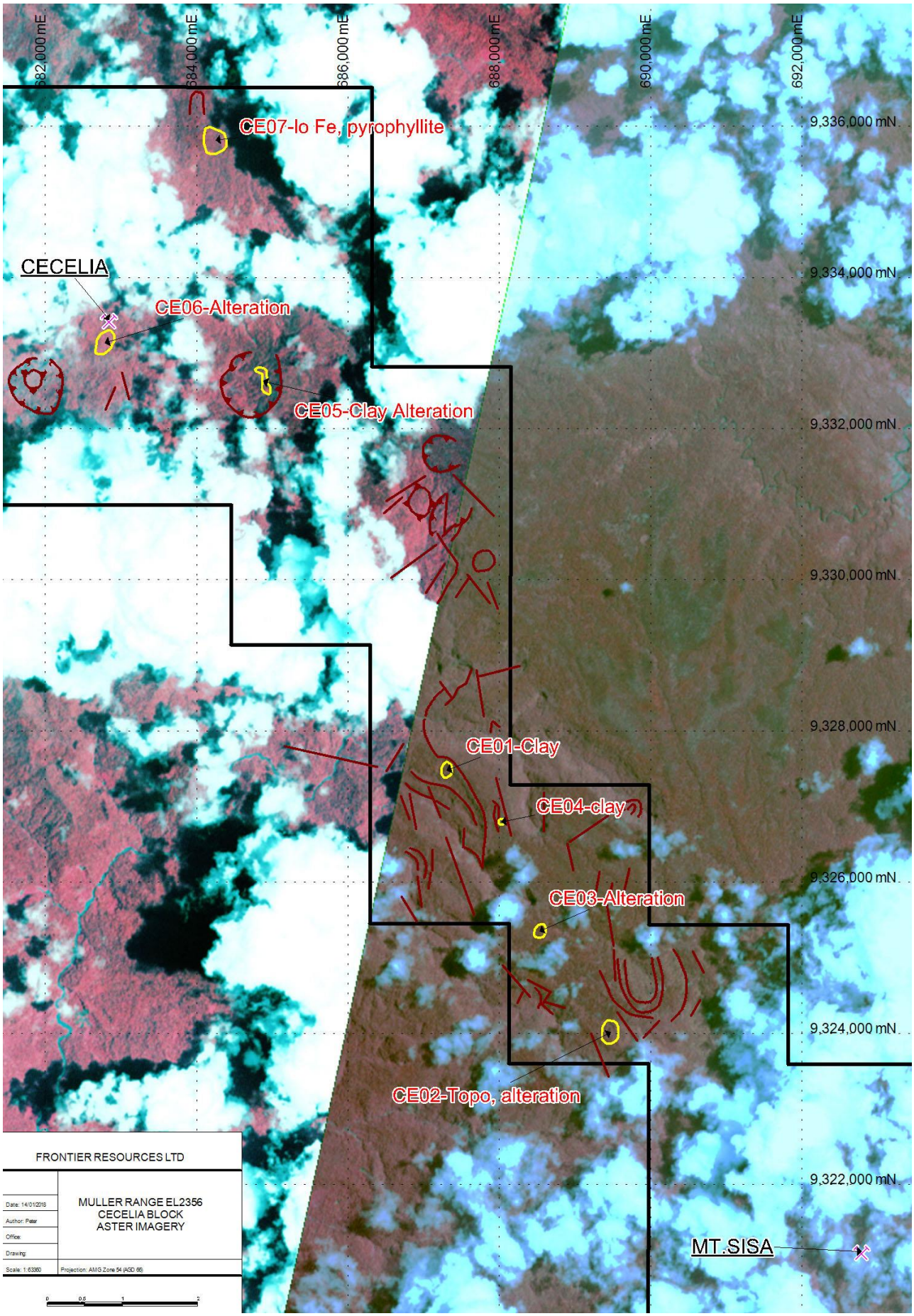

Figure 20: Cecelia Block Aster Imagery with Targets

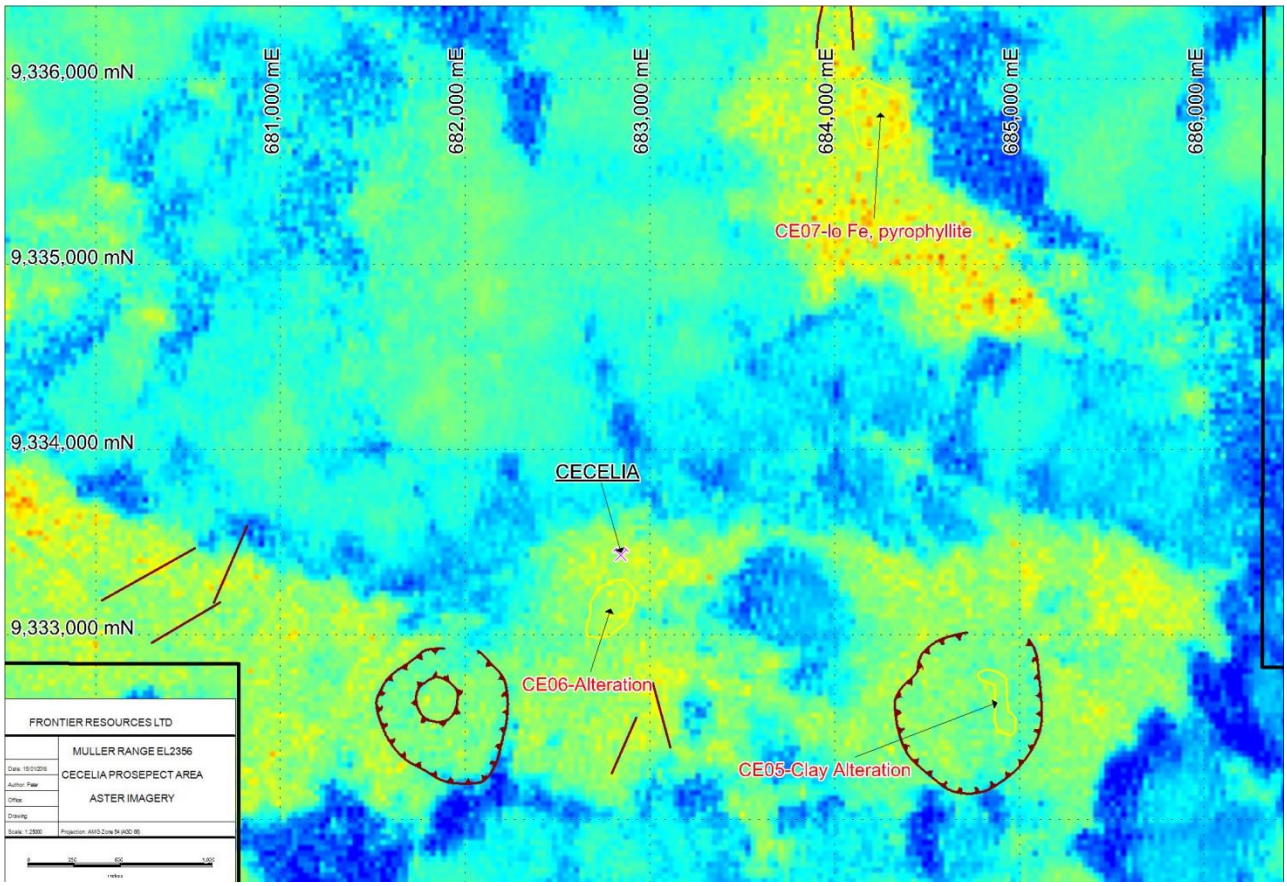

Figure 21: Cecelia North Aster (Clay Image) with Targets

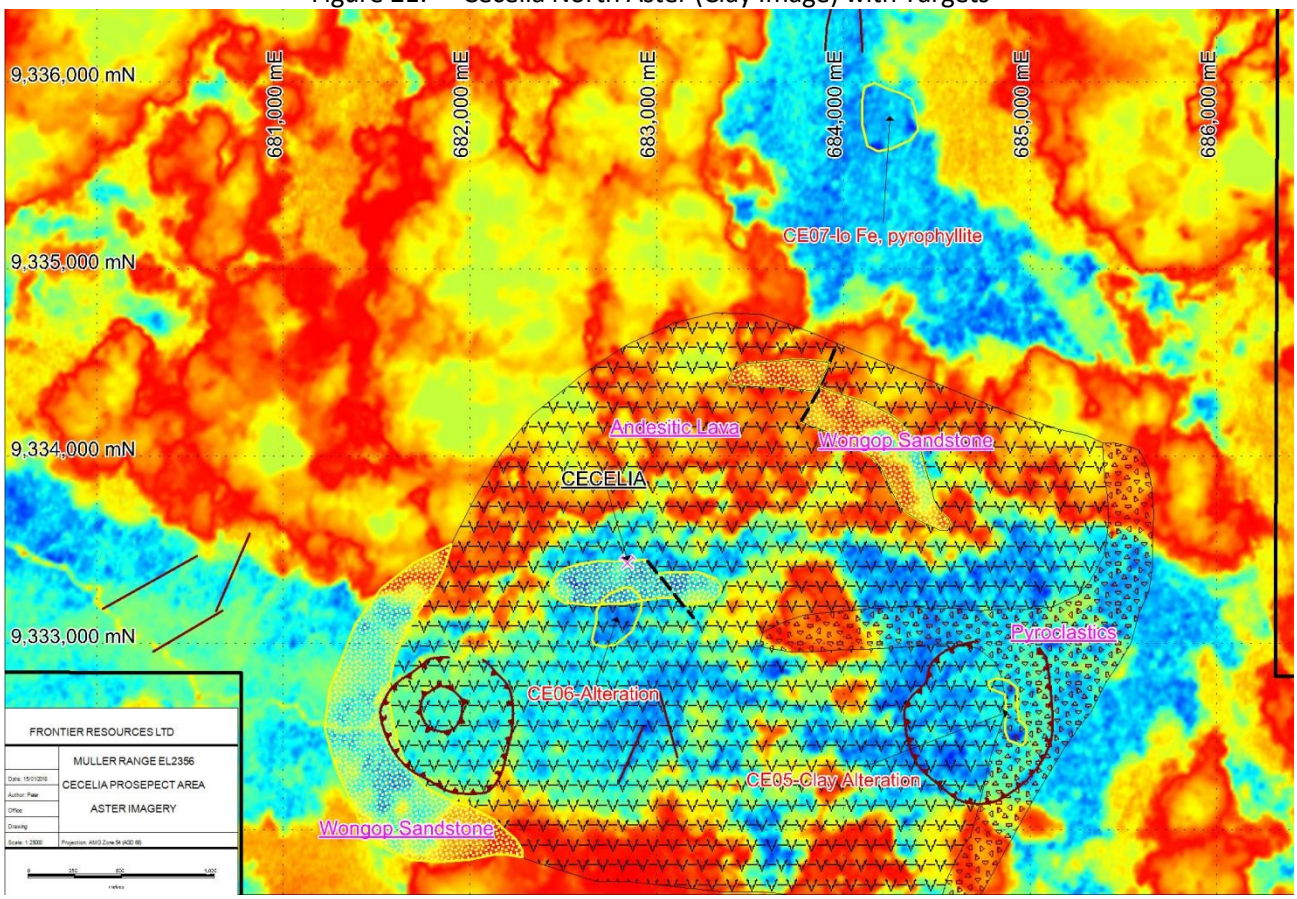

Figure 22: Cecelia North Aster (Jarosite Image) with Geology and Targets

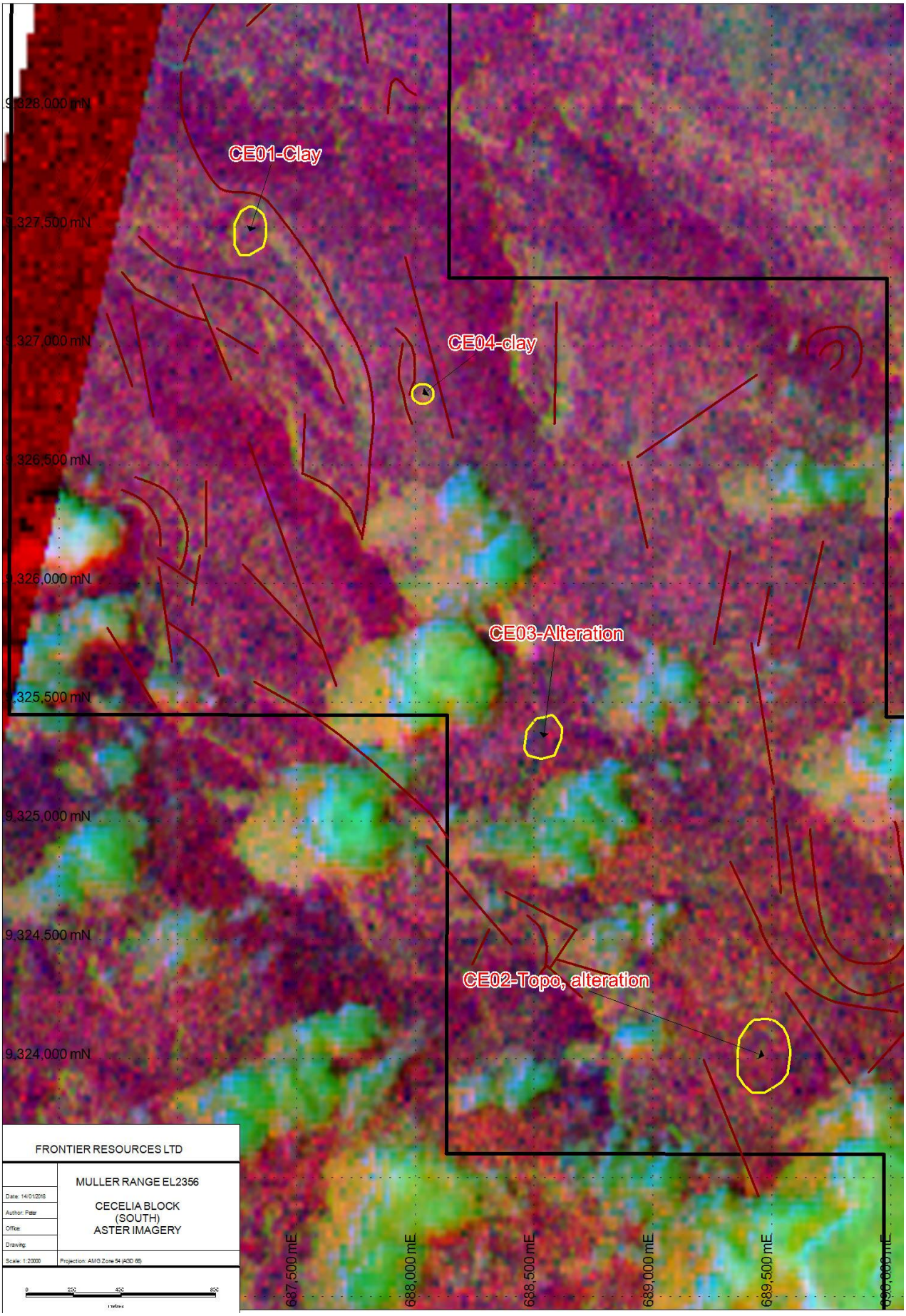

Figure 23: Cecelia South Aster (Dickite-Jarosite-Pyrophyllite Image) with Targets

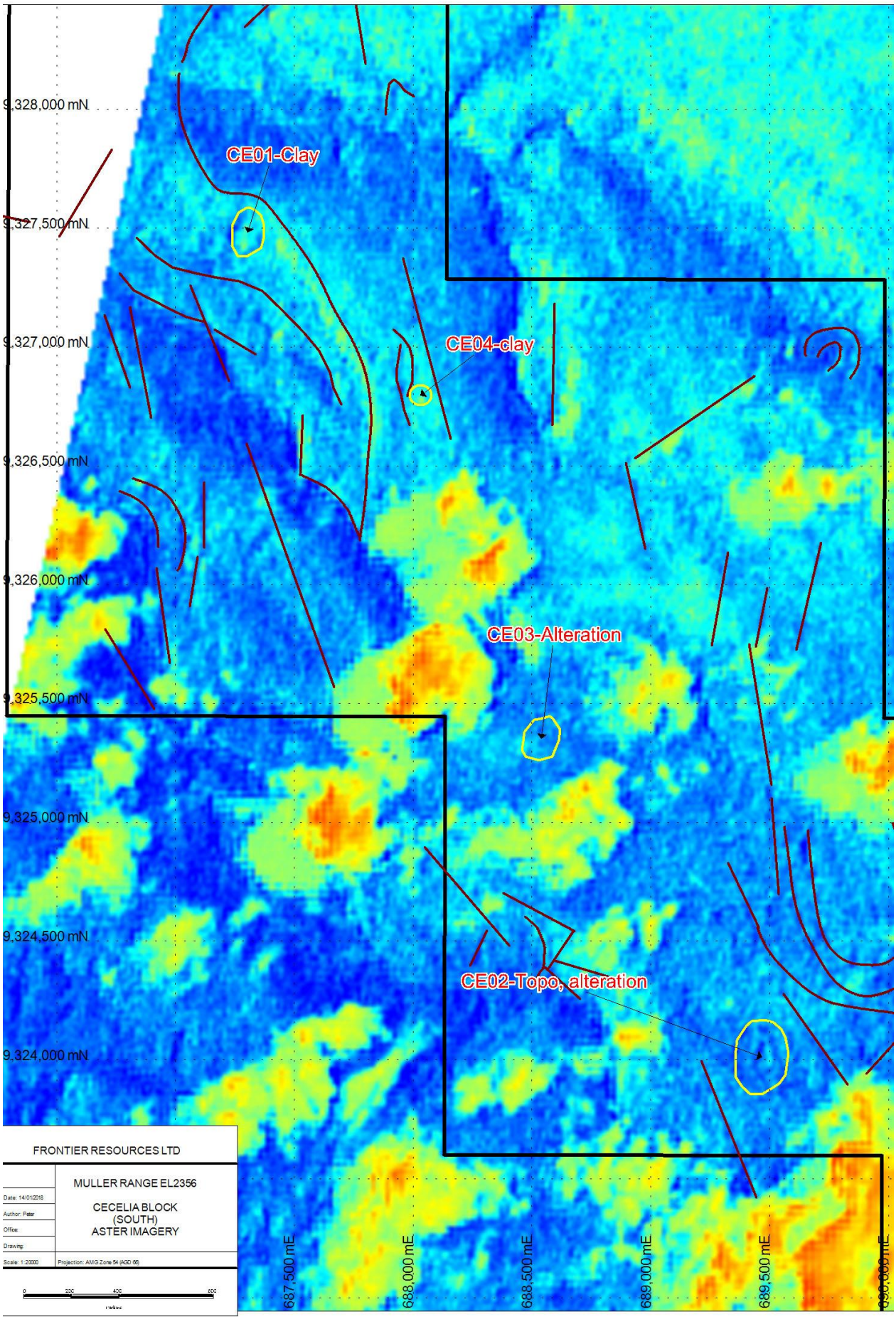

Figure 24: Cecelia South Aster (Jarosite Image) with Targets

Table 4: Southern Cecelia Block Aster Target Areas

Target	Location (AGD66, Z56)	Description
CE01	687300e, 9327470n	Circular topographic 2.2 Ha feature anomalous in alunite style alteration.
CE02	689450e, 9324000n	A 5.6 Ha circular topographic feature associated with anomalous concentric rings of anomalous clays and iron.
CE03	688540e, 9325360n	A 2.2 Ha area of clay alteration.
CE04	688040e, 9326790n	Unusual small circular topographic feature.
CE05	684900e, 9332650n	A 3 Ha north-south elongated area of anomalous clay alteration within a circular volcanic rim.
CE06	682810e, 9333160n	A 5.7 Ha area of clay alteration 140m south the Cecelia prospect with the contact of mapped sandstone and andesitic lava.
CE07	684250e, 9335820n	An 8.4 Ha circular target anomalous in pyrophyllite and low iron.

7.0 CONCLUSION

A total of 17 Tingi Block targets, 13 Baia Block targets and 7 Cecelia Block targets have been defined from a number of different Aster scenes. Each scene has been processed into numerous coloured images to help map out areas of volcanic circular structures, lineaments and alteration due to potential mineralisation related to porphyry copper deposits, gossanous zones, epithermal gold and hydrothermal breccia systems.

The most common images used for interpretation includes Dickite-Jarosite-Pyrophyllite Ratio (Red-Green-Blue false colour), Haematite Ratio (pseudocolour), Jarosite Ratio (pseudocolour), Alunite Ratio (pseudocolour), Clay Ratio (pseudocolour), 'Volesky Ratio' (Re=gossan, Green=alteration, Blue=host rock), 'Abdelsalam Ratio' (Red-Green-Blue false colour), 'Sultan Ratio' (Red-Green-Blue false colour).

Aster Targets are recommended for future geochemical sampling and geological mapping.

Additional interpretation is recommended to be completed from Landsat, Sentinel-2 and Worldview satellite imagery.