A Geochemical Report on the WILLOW Property

submitted as Representation Work
on the following quartz claims

Claims:
WILLOW 1-40: Grants YF47011-YF47050
Total 40 quartz claims in the Dawson Mining District
All claims recorded June 10, 2015
Owner: Gordon Richards

Location
115P/02
Camp in centre of claims at
UTM 409,460E, 7,011,860N, Elev 1318 m
UTM Zone 8, NAD 83

Field work performed by
Gordon Richards & Jeff Mieras
during the period June 11 to June 17, 2014

Report written by Gordon Richards
September 20, 2015

TABLE OF CONTENTS

INTRODUCTION

Work described in this report was conducted under an YMEP Focussed Regional Grant, Hardrock Type. YMEP 15-008 awarded to Gord Richards.

The following is an historical account of events on this project:

June 8. Bought supplies in Whitehorse and drove to Mayo.

June 9. Richards and Mieras flew from Mayo onto property and staked Willow 1-40. Flew out to Stewart and drove to Dawson.

June 10. Recorded Willow 1-40, bought food for camp and drove to Mayo.

June 11. Flew to property and dropped off camp. Got dropped at south end of property and started prospecting and collection of MMI samples.

June 12-17. Prospected and collected MMI samples.

June 18. Flew out.

June 25. Drove Stewart-Mayo-Whitehorse

June 26. Sorted gear, returned radios, dropped samples, shipped samples.

The claims are located along the ridgeline of Willow Hills 16 km southwest of Stewart Crossing on NTS Map Sheet 115P02. The target area occurs in the underexplored pre-Reid glaciated terrain west of Stewart Crossing within the Reid Lakes Batholith Complex.

The area was selected for VMS mineralization for the following reasons. Volcaniclastic rocks of the Reid Lakes Complex have been shown by U-Pb dating to be Early Mississippian age identical to the rocks enclosing the Wolverine deposit. The volcaniclastics include rhyolite that appeared to form a linear pattern along Willow Hills on images from Google Earth. Rhyolite is a common rock type at Wolverine. The Wolverine VMS Deposit has a similar age and occurs in rhyolites within the Finlayson Lake District. With the approximate 560 km of post Eocene strike-slip movement along the Tintina Fault restored the Willow Project Area sits adjacent to the Finlayson Lake District.

RGS geochemical responses from creeks draining the target area have numerous re-calculated threshold values of 90%, 95%, or 98% for each of Ag, Pb, Se, Hg, and Ba, with significant support from other elements for these same samples and from lower threshold values of metals in other samples.

The Willow Area was glaciated by pre-Reid glaciations (500 to 700 ka J. Bond, personal communication) and lies largely above Glacial Lake Coldspring to

the west and just west of the Reid glacial extent. Prospecting could eventually lead into these more difficult to prospect areas. Pre-Reid glaciation was towards 300* and Reid Glaciation towards the north based on Google Earth images and government data. Pre-Reid tills have been largely removed by weathering because of the age of pre-Reid glaciations and steep to moderate slopes. This partial removal of pre-Reid tills makes geochemical sampling more effective in evaluating and locating mineralization. A blanket of McConnell aged loess covers the area and has been removed on steeper slopes.

Aeromagnetic maps provided little encouragement other than dividing the volcaniclastics into low and high magnetic susceptibility domains. The separation is roughly parallel to schistosity shown on Geoscience Map 7 and thus may reflect distinct units.

The area has a low number of MinFile occurrences and quartz claims well removed from the area of interest. This low occurrence in the general area could reflect low prospectivity or simply underexplored terrain. Recent YGS/GSC bedrock and surficial geological mapping, government sponsored aeromagnetic surveys, and reanalyses of RGS data has helped provide encouragement for prospecting in the area.

Immediately following the recording on June 10 of the Willow 1-40 quartz claims, Richards and Mieras spent 7 days in the field collecting **331 MMI** soil samples, **68 Black Spruce Twig** samples, **4 stream sediment** samples, and **3 rock** samples during the period June 11 to June 17.

Results of that work found several zones of anomalous metal values for Pb, Zn, Cu, and Ag within and around the claim block. Numerous outcrops visited and visible from the ground and air are massive rhyolite with only one bedding attitude found. The rhyolite outcrops have a variable limonitic/hematitic colour caused by fracture hematite and hematitic breccias. No sulphide was discernible in any of the outcrops visited.

All garbage was removed from camp and taken to Mayo for disposal.

HISTORY.

Figure 1 shows all nearby Minfile occurrences and quartz and placer claims. Descriptions are described below.

Minfile Occurrences.

115P 019. ROSEBUD. Fibres of chrysotile asbestos were found on the west side of a serpentinite body that outcrops near the summit of the White Mountains. Property was staked mapped and sampled in 1988.

115P 049. PIRATE. Staked in 1985 by Miramar Energy Corp, which performed mapping, soil sampling and test pitting in 1986. Coarse gold was found in quartz fragments in a test pit but no source was located. "*The gold was extremely angular, occasionally crystaline, and associated with quartz vein material. They were, however, located in or on a thick blanket of Tertiary alluvium, consisting of mature mixed sand and gravel layers. In this type of environment, one would not expect to find such coarse rough-edged gold nuggets. Additionally the small amount of fine gold recovered was scaly in nature, indicating a considerable distance of transport*." (Assessment Report 091847, p 5, 1985 Summary Report on the Pirate Mineral Claims, D.A. Caulfield, C.K. Ikona). The coarse gold found here that initiated the exploration is down ice (pre-Reid age) from the project area. However the gold-quartz was found on the surface and thus may be dropstones from Glacial Lake Coldspring making its source location more enigmatic. Placer claims were also staked over adjacent creeks but no production or testing results, if conducted, are recorded other than small placer tests conducted by shoveling.

115P 038. FIRESTONE. Claims were staked in this area from 1980 to 1987 by J. Carson who conducted hand trenching from 1982 to 1988 in search for gold. No mineralization was found. Claims cover contact between Cretaceous granite [probably unmetamorphosed Early Mississippian Reid Lake Batholith] and quartz mica schist. Carson also staked and presumably tested placer gold in a small creek flowing nearby.

Quartz Claims.

No claims occur in the target area or are known to have been staked previously. See Figure 1.

The closest claims are the Rose Claim Group (98 claims) owned 100% by Goldspike Exploration, staked in June 2010 and the Summit Claim Group (165 claims) owned by 45127 Yukon Inc and Ryan Gold Corp, staked June 2007 and later. Nothing is known about these claims but they occur within metamorphic rocks beyond the Reid Lakes Complex so they have more limited VMS potential than the target area.

The Spec claims to the west are owned by the writer and cover epithermal gold targets within Snowcap Assemblage quartzites.

The Chances Claims also to the west are owned by Goldstrike Resources and cover a ridgeline with RGS samples anomalous for gold and pathfinder elements collected from streams draining the ridge.

The RGS claims to the northwest are owned by the writer and cover soil geochemical patterns believed to represent underlying porphyry style mineralization.

Placer Claims.

No placer leases or claims exist along any creeks of the immediate area. Pre-Reid glaciers may have removed by scouring any placer gold that ever existed. Or thick till, glaciolacustrine, glaciofluvial, and colluvium could have made discovery of placer gold lying on bedrock too difficult and expensive to explore. Placer claims are shown to be have been staked in 1981 by J. Carson over a five mile length on the small creek near Minfile 115P038 sampled by RGS sample 3231. No production is recorded and the claims lapsed by 1985.

CLAIMS.

The Willow Property is comprised of 40 quartz claims, the Willow 1-40, grant numbers YF47011-YF47050. The claims lie in the Dawson Mining District. Claims were staked June 9, and recorded June 10, 2015. The work described in this report was largely funded by YMEP grant, 15-008 awarded to Gordon Richards. A few additional costs were paid for by Richards. The Registered Owner is Gordon G Richards. Title expiry dates will be extended by filing the work described in this report as representation work.

GEOLOGY.

Bedrock geology is best described on Canadian Geoscience Map 7 of *Southwestern McQuesten and Parts of Northern Carmacks* by Ryan, J.J., Colpron, M., and Hayward, N., 2010. See Figures 3 and 4. The claims area is underlain by Early Mississippian Reid Lakes Complex andesite to rhyolite volcanic rocks sitting on Early Mississippian Reid Lakes Complex compositionally monotonous, coarse-grained, massive, quartz-phyric, biotite monzogranite that form part of the Yukon Tanana Terrain.

Volcaniclastic rocks of the Reid Lakes Complex have been shown by U-Pb dating to be Early Mississippian age identical to the rocks enclosing the Wolverine deposit. The volcaniclastics on the property are massive rhyolite. The Wolverine VMS Deposit occurs in rhyolites within the Finlayson Lake District. With the approximate 560 km of post Eocene strike-slip movement along the Tintina Fault restored the Willow Project Area sits adjacent to the Finlayson Lake District.

Numerous outcrops were visited during the sampling program and many more were visible from the ground and from the air. All were massive rhyolite sandstones with a limonitic/hematitic surface colour. Fragments of rhyolite and other pale-coloured volcanic fragments, quartz and rare mafic fragments measured less than 5 mm. Fine-grained hematite fractures and lesser limonitic fractures were often widely spaced (10 cm to 1 m) in outcrop. Areas of breccia occur as irregular shapes usually measuring a metre or so in width and traceable for several metres across outcrops. These breccias often displayed a richer hematite colour. Breccia fragments are generally less than 5 cm diameter and are composed of massive rhyolite like the enclosing rock. Fracture epidote occurs locally in some outcrops. Prominent jointing occurs in most of the outcrops on the two hilltops in the centre of the claims with northerly attitudes and very steep westerly dips. Rock chips R167, R168, and R169 are samples of hematite fractured and brecciated rhyolite. Geochemical analysis show no anomalous metal values or explanation for the limonite/hematite. See Table 4. Angular rubble on the flat ridgetop from soil samples Q27 to Q29 is rhyolite with irregular white quartz veinlets to 3 cm wide. The only bedding attitude was near Q30 where a rhyolite tuff strikes 064* and dips 29*N.

Glaciation on the property is pre-Reid in age possibly older than 500,000 years (Jeff Bond, personal communication, 2012). Direction of the last pre-Reid glaciation, taken from Google Earth, is toward the northwest. Glacial lake Coldspring formed in Lake Creek drainage to the west of the property during pre-Reid glaciations by ice dams in lower Lake Creek and near present day Willow Lake. Glaciolacustrine sediment remains on the hillsides up to an elevation of 1100 m as shown on Figures 6 to 16. Because of their age considerable erosion of pre-Reid aged tills have probably taken place since their deposition leaving a thinner till cover and thus making geochemical prospecting more effective.

Reid glaciation began 200,000 years ago and ended about 50,000 years ago. Reid Glaciation occurred immediately east of the property in a northerly direction. The area of interest straddles the ridgeline of Willow Hills above the glaciolacustrine sediments to the west and Reid Glaciation tills to the east.

Drying conditions of the last glacial period, McConnell Glaciation ca.22 ka has deposited a 10 to 20 cm loess blanket across the area of the property. This loess has been the principal sample medium for the majority of the MMI samples collected. Till was commonly found beneath the loess. Angular pebbles and grit are very common in the loess samples. Tills with no or only minor loess were the sampling medium in about a quarter of the samples collected. These samples were at lower elevations and could be re-worked tills from higher elevations as loess was generally absent on many of these samples. Much of the till found in the claims area is believed to be re-worked till and older loess deposits from the steeper slopes with some admixed colluvium.

RGS DATA.

Results of reanalysis of RGS samples collected in 1986 (OF 1650) using more sophisticated analytical techniques was conducted in 2011 and released as Open File 2012-09. Geochemical data from 278 selected samples that are lying only within the pre-Reid glaciated area within Yukon Tanana Terrain were used to recalculate thresholds for 70^{th}, 80^{th}, 90^{th}, 95^{th} and 98^{th} percentiles for a number of elements. It was believed that this data would provide a more representative data-set on which to evaluate exploration potential for the area. Recalculated threshold values $\geq$ 70% for Se, Ag, and Pb from around the Willow Property are plotted on Figures 6 to 8 respectively and together with several other anomalous

metals (not provided) show the Willow claims to have a high prospectivity for VMS mineralization.

AEROMAG.

Figure 6 is a residual aeromagnetic map showing a general high magnetic response to the west and north of a general low magnetic response over the claims area. This could be indicative of more basic volcanics to the west as was confirmed further north over the YMEP Reid Project area.

GEOCHEMICAL SURVEY.

Survey Methods.

J. Mieras and G. Richards flew from Mayo to the property on June 11 to conduct MMI soil sampling and where soils were unobtainable vegetative samples across the property. Fourteen man days (7 days) were spent by Mieras and Richards from June 11 to June 17 collecting **331 MMI soil samples, 68 black spruce twig samples, 4 stream sediment samples and 3 rock samples**. Where possible MMI soil samples were collected at a 50 m sample interval on sample lines positioned as shown on Figures 9 to 16. Wherever MMI soil samples could not be collected due to rocky terrane or shallow frozen ground black spruce twig samples were collected.

MMI analysis uses a weak partial extraction to improve the conventional geochemical response over buried ore deposits. The process measures the mobile metal ions from mineralization, which have moved toward the surface and are loosely attached to the surfaces of soil particles. Its effectiveness has been documented in over 1000 case histories on six continents and includes numerous commercial successes. The anomalies are sharply bounded and in most cases directly overlie and define the extent of the surface projection of buried primary mineralized zones. The MMI process is a proprietary method developed by Wamtech of Australia. SGS Minerals Services in Toronto purchased all rights to the method and provides analyses in Canada.

Watch and ring were removed prior to sampling. Pits were dug by shovel to a depth of 20 cm in order to expose the soil profile for sampling. The profile was scraped clean with a plastic scoop to remove any metal effect from the digging shovel. A continuous strip of soil was collected by plastic scoop over the interval

of 10 to 20 cm below the top of true soil, placed in a pre-numbered ziplock baggie and placed in an 11 inch by 20 inch 2 mil plastic bag. Loess was present at nearly all sample sites and was the sample medium for most samples with a minor contribution from underlying colluvium or till in some samples. Samples were kept cool until they were shipped to SGS Minerals Services in Vancouver for analyses.

In the SGS Lab, samples are not dried or prepared in any way. The MMI process includes analyses of an unscreened 50-g sample using multi-component extractants. Metals are determined by ICP-MS in the parts per billion range.

Response Ratios were calculated for Pb, Zn, Cu, Co, Ba, Ag, Au, As, Sb, Bi, Ca, Mg, Ni, Fe, and Mn and provided on Table 2. In calculating response ratios the average value for results of the lower quartile was calculated for each element. One-half of detection limit was used for those samples with values reported as less than detection limit. Then each result was divided by the lower quartile average and rounded to the nearest integer to obtain its response ratio. A response ratio of 10 or more is considered very significant for indicating underlying mineralization. Lesser values of 5 to 10 can also be important particularly where more than one element has such a value. Response ratios can best be thought of as a multiple of background in interpreting results. Response ratios for Pb, Zn, Cu, Ag, Au, As, and Ca have been plotted on Figures 9 to 15. A Compilation map showing zones of anomalous metal values is provided as Figure 16.

The following description of twig sampling that was used in the present survey is taken from: *Heberlein, D.R., Dunn, C.E. and Macfarlane, W. (2013): Use of organic media in the geochemical detection of blind porphyry copper-gold mineralization in the Woodjam property area, south-central British Columbia (NTS 093A/03, /06); in Geoscience BC Summary of Activities 2012, Geoscience BC, Report 2013-1, p. 47–62.*

Samples of black spruce twigs comprising the most recent two years of growth were snipped from around the circumference of a single tree. Black spruce was easily identified by observing with aid of a hand lens minute red hairs on the circumference of twigs of the past few years growth. In central Yukon, this amount of growth is typically about a hand-span in length, at which point, the

twig diameter is 4–5mm. This diameter is quite critical because many trace elements concentrate in the bark part of the twig, whereas the woody tissue (the cortex) has lower concentrations of most elements. Consequently, unless there is a consistency in the diameters of the twigs that are collected, any analysis of twig tissue can result in variability among samples simply because of the differing ratios of woody tissue to twig bark. About ten black spruce twigs with needles were placed into porous polypropylene bags ('Hubco' Inc.'s Sentry II). The use of plastic bags was avoided to minimize the chance of moulds forming and thereby losing sample integrity.

Analysis of the black spruce twig samples was carried out at Bureau Veritas (name changed from Acme Analytical Laboratories Ltd. Vancouver) using their VG101-EXT method. In the laboratory, twig samples were thoroughly dried at 60°C in an oven with a forced-air fan for 24 hours to remove moisture. The needles could then be separated from the twigs. In preparation for chemical analysis, each twig sample was then milled to a powder using a Wileymill. A 1 g split of milled material was digested in nitric acid then aqua-regia digestion, and analyzed by ICP-MS ultralow detection limits for 53 elements and selected REE.

Absolute values of Cu, Pb, Zn, Ag, Mn, Au, Ca, Mg, and Ba are provided on Table 3. Results for all of these elements are plotted on Figures 9 to 15. Values of other elements were also plotted but lack of discernible patterns made presenting their results of no usefulness.

Three rock and four stream sediment samples were also collected.

Survey Results.

Results for all samples are provided in Appendices. Response ratios for selected elements of MMI soil samples and values for selected elements of black spruce twig samples are provided in Tables 2 and 3 along with UTM NAD83 coordinates. Rock and stream sediment results for selected elements are provided in Table 4 along with UTM NAD83 coordinates. Results are plotted on Figures 9 to 15 for Pb, Zn, Cu, Ag, Au, As, and Ca. Figure 16 is a compilation of anomalous metal values shown in the above figures. The compilation map also plots As results for black spruce twig samples to show that these results are uniformly low and of no use in evaluating mineral potential with this element. The

compilation map also shows three RGS samples with their high Pb values that were collected from creeks draining the claim block.

Northeast of camp toward the base of slope on a northeast facing hillside is a zone of somewhat discontinuously anomalous Zn about two kilometres long. Within this Zn zone are smaller zones of discontinuously anomalous Pb seen in the twig samples over a length of 700 m, of anomalous Ag seen in twig samples over a length of 700 m, and of Au seen in twig samples over a length of 600 m. Some anomalous As occurs in the MMI samples throughout this Zn anomaly. The Pb, Ag, and Au anomalous zones all occur in the same area although the anomalous Au values extend slightly south of the Pb and Ag zones. Small zones of anomalous Cu and Pb occur in twig samples on the hillside above this Zn anomaly.

Northwest of camp on a west facing slope is another zone of nearly continuously anomalous Zn about 1200 m long. It appears to extend downslope about 700 m to the lower sample line in this area. Some anomalous As occurs throughout this Zn anomaly. Two samples at the north end of this anomaly are anomalous for Cu and Ag and three twig samples in the centre of the anomalous Zn zone are anomalous for Ag as well. This Zn anomaly occurs at the same elevation as the first Zn anomaly described above and may represent the same stratigraphic horizon making the ground between these two anomalies an excellent target for locating VMS mineralization at depth. There were no bedding attitudes seen in the massive rhyolite outcrops between the anomalies but gentle to moderate dips to the south are common on the Reid project area four km north. One bedding attitude southeast of camp has a 29* dip to the north.

Two km east of camp is an interesting Cu and Pb anomaly. Both metals form anomalous zones shown to be about two km long as defined from two sample lines. Width of the anomalies is about 300 m. The Cu anomalous zone is offset somewhat to the north of the Pb anomalous zone. Two adjacent samples are anomalous for Zn on the more easterly line within the anomalous zones. On the easterly sample line within the anomalous zones there was fairly common angular rhyolite float with irregular quartz veins to 3 cm wide over a 100 m length.

A km south of camp is a zone of weaker Pb anomalies with spotty anomalous Zn displayed in both MMI and twig samples. These anomalies extend over about 800 m.

Three rock samples collected north of camp from hematitic rhyolite contained no anomalous values. Table 4.

Four stream sediment samples were collected on the property, three collected from creeks draining the large anomaly east of camp and one from a creek draining the Pb anomalous zones southwest of camp. Using the recalculated thresholds for RGS samples in the selected pre-Reid area of 115P, the three silt samples east of camp (Q85, Q89, and Q136) provide the following analysis listed from north (Q85) to south (Q136); Pb (90, 98, 98%tile), Zn (<70, 70, <70 %tile), Au (95, <70, <70 %tile), As (70, 80, 80 %tile), Sb (80, 80, 80 %tile), Bi (80, 80, 80 %tile). These results support the anomalous zones described except for Zn which is surprisingly weak in the stream sediment results.

The stream sediment sample collected southwest of camp from the southwest flowing creek is anomalous for Cu (80%tile), Pb (98 %tile), Zn (98 %tile), Au (98 %tile), As (95 %tile), Sb (90%tile), Bi (98 %tile), and Ba (80 %tile). Only Pb and perhaps Zn results in the silt sample can be explained by results of soil samples collected upstream of the silt sample. Another source of metals in this drainage may exist in order to explain the anomalous values in the silt sample.

CONCLUSIONS

The property is underlain by massive rhyolite of the Early Mississippian Reid Lakes Complex. Rocks of the Complex, both the volcanics that the rhyolite belongs to and the underlying batholith, have U-Pb ages identical to the rhyolite-bound Wolverine VMS deposit of the Finlayson Lake District. With the approximate 560 km of post Eocene strike-slip movement along the Tintina Fault restored the Willow Project Area sits adjacent to the Finlayson Lake District. This juxtaposition of the Wolverine deposit and the Willow Project Area along with the similarities of rock type and ages, the RGS data, and the results of the present survey gives the Willow Property a high potential for finding VMS mineralization.

RGS geochemical responses from creeks draining the target area have numerous re-calculated threshold values of 90%, 95%, and 98% for each of Ag,

Pb, Se, Hg, and Ba, with significant support from other elements for these same samples and from lower threshold values in other samples.

The Willow Area was glaciated by pre-Reid glaciations (500 to 700 ka J. Bond, personal communication) and lies largely above Glacial Lake Coldspring to the west and just west of the Reid glacial extent. Pre-Reid glaciation was towards 300* and Reid Glaciation towards the north based on Google Earth images and government data. A blanket of McConnell aged loess covers the area and has been removed on steeper slopes.

Aeromagnetic maps provided little encouragement other than dividing the volcaniclastics into low and high magnetic susceptibility domains. The separation is roughly parallel to schistosity shown on Geoscience Map 7 and thus may reflect distinct units. A pattern of residual aeromagnetic low extends to the east of the property to the limits of the Reid Lakes Complex volcanics suggesting that the rhyolite found on the property may extend a similar distance. This is important for extending further prospecting in this formation.

The area has a low number of MinFile occurrences and claims well removed from the property. This low occurrence in the general area could reflect low prospectivity or simply underexplored terrain. Recent YGS/GSC bedrock and surficial geological mapping, government sponsored aeromagnetic surveys, and reanalyses of RGS data has helped provide encouragement for prospecting in the area.

The Willow 1-40 quartz claims were recorded on June 10, 2015. Richards and Mieras spent 7 days in the field collecting **331 MMI** soil samples, **68 Black Spruce Twig** samples, **4 stream sediment** samples, and **3 rock** samples during the period June 11 to June 17.

Results of that work found several zones of anomalous metal values for Pb, Zn, Cu, Au, and Ag within and around the claim block. All outcrops were massive rhyolite sandstones with a limonitic/hematitic surface colour. Fine-grained hematite fractures and lesser limonitic fractures were often widely spaced (10 cm to 1 m) in outcrop. Areas of breccia occur as irregular shapes usually measuring a metre or so in width and traceable for several metres across outcrops. These breccias often displayed a richer hematite colour. Breccia fragments are generally less than 5 cm diameter and are made of similar rhyolite sandstones.

Two zones of anomalous Zn in the samples occur over lengths of 2 km and 1.2 km on either side of the ridgeline on the property. The easterly zone contains zones of anomalous Pb over 700 m, Ag over 700 m, and Au over 600 m. Many anomalous As MMI samples occur on this Zn anomalous zone. The westerly Zn zone contains smaller zones of anomalous Ag and Cu. These two Zn zones with their accompanying anomalous zones of other metals could be occurring on the same stratigraphic horizon making the intervening ground prospective for containing VMS mineralization.

A second target two km southeast of camp is a Pb and Cu anomaly about one km long and 300m wide with the Cu anomaly offset somewhat to the north.

A third target a km south of camp is a zone about 800 m long of weaker anomalous Pb and spotty anomalous Zn. A silt sample collected downstream along the creek draining the area is highly anomalous for Cu, Zn, Ag, Au, Ba, As, Sb, and Bi.

The present survey was conducted on widely spaced lines so that much of the property has not been evaluated.

RECOMMENDATIONS.

It is recommended that:

i) Additional detailed soil sampling be conducted over the identified zones of anomalous metal values and in the headwaters of the drainage south of camp sampled by stream sediment sample Q170.

ii) Additional recce soil sampling be conducted over ground to the east where there is a low residual aeromagnetic signature and RGS encouragement.

iii) Ground and/or airborne EM/mag surveys be considered to search for VMS mineralization.

STATEMENT OF COSTS
2015 WILLOW Property

Note: Of 331 MMI samples 87 or 26.3% were collected on the claims.
Of 68 Twig samples 41 or 60.3% were collected on the claims.
These %ages have been applied to some costs as indicated.
Of all 399 MMI and Twig samples 128 or 32.1% were collected on the claims.
This %age has been applied to some costs as indicated.

Trans North Helicopters:		
#57541 Jun 11. Mob. Mayo to Property.	$1861.34	
#57543 Jun 18. Demob.	1985.42	
Truck: Whs-Mayo-Whs. 900 km @ $0.62/km	558.00	
Mob/Demob time:		
G Richards June25, 26 days @ $500/day	1000.00	
J Mieras June 25, 26 days @ $300/day	600.00	
SUB TOTAL MOB COSTS		**6004.76**
Wages:		
Jeff Mieras Jun 11-17: 7 days @ $300/day **x 32.1%**	674.10	
Gord Richards Jun 11-17: 7 days @ $500/day **x 32.1%**	1123.50	
Living Allowance: sample bags, food, sat phone, radios, flagging, etc		
18 man days @ $100/man day **x 32.1%**	577.80	
Geochem:		
SGS 10887539 MMI 3282.93 **x 26.3%**	863.41	
SGS 10884255 MMI 3363.99 **x 26.3%**	884.73	
SGS 10884228 MMI 3404.52 **x 26.3%**	895.39	
SGS 10884227 MMI 3404.52 **x 26.3%**	895.39	
B Veritas 1231857 Twigs 2191.61 **x 60.3%**	1321.54	
B Veritas 1234028 Silts off claims 126.32 x 0%		
B Veritas 1233739 Rocks all on claims	79.16	
Canadian Freight: MMI samples to Vancouver 297.36 **x 32.1**	95.45	
SUB TOTAL		**7410.47**
Report: 10% of above costs ($ 13,415.23)		**1341.52**
TOTAL		**$14,756.75**

STATEMENT OF QUALIFICATIONS.

I, Gordon G Richards, with business address at 6410 Holly Park Drive, B.C., V4K 4W6, do hereby certify that:

1. I am a Professional Engineer, registration number 11,411 with the Association of Professional Engineers and Geoscientists of British Columbia.
2. I hold a B.A.Sc. (1968) in Geology from The University of British Columbia, and an M.A.Sc. (1974) in Geology from The University of British Columbia.
3. I have been practicing my profession as a geologist for over 40 years and as a consulting geological engineer since 1985. I have work experience in western areas of the United States, Alaska, Canada, Mexico and Africa.
4. I have based this report on my field work and supervision of field work by Jeff Mieras during the period of June 11 to 17, 2015 and on the results generated by that field work.

Respectfully submitted,

Gordon G Richards, P.Eng.

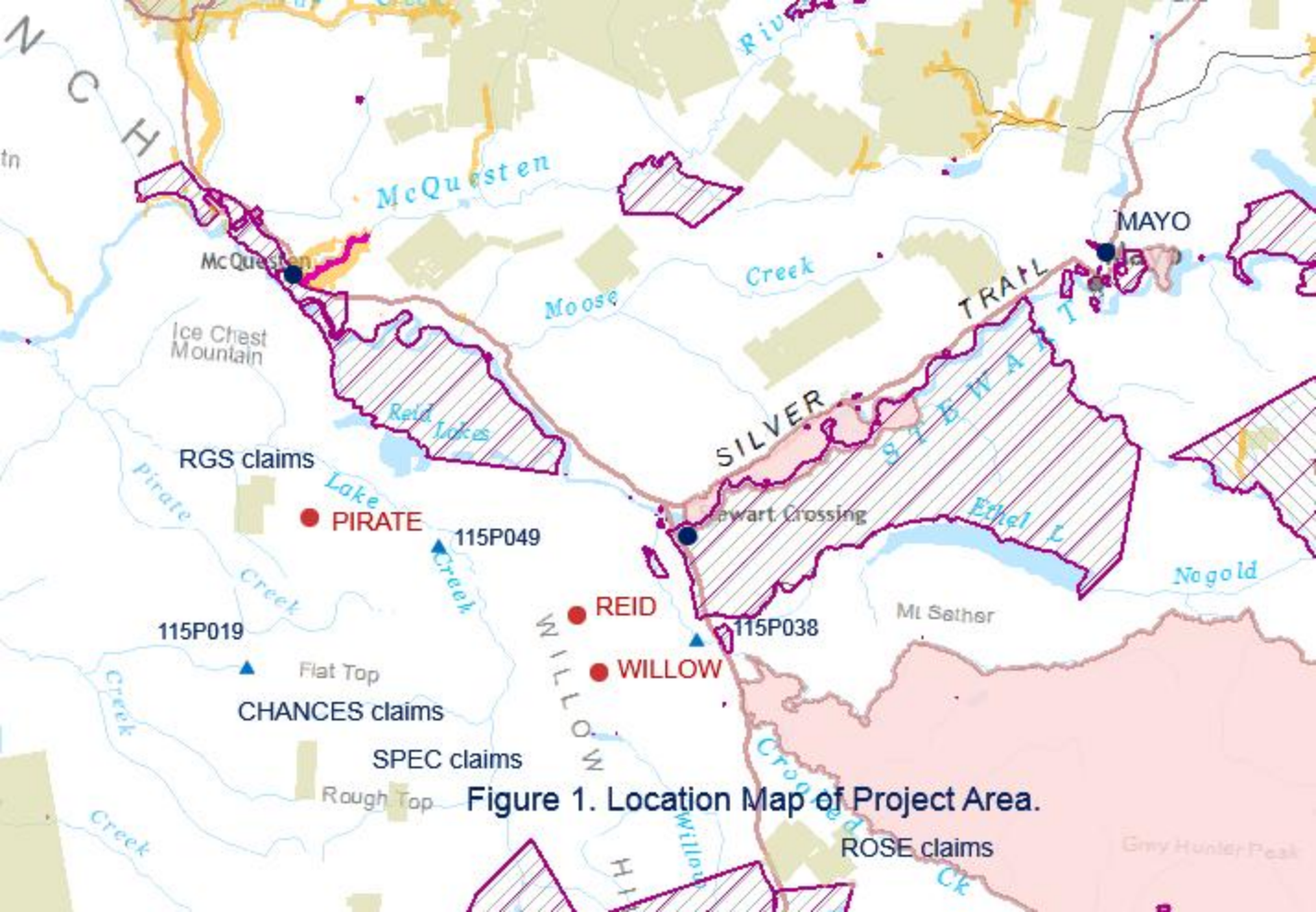
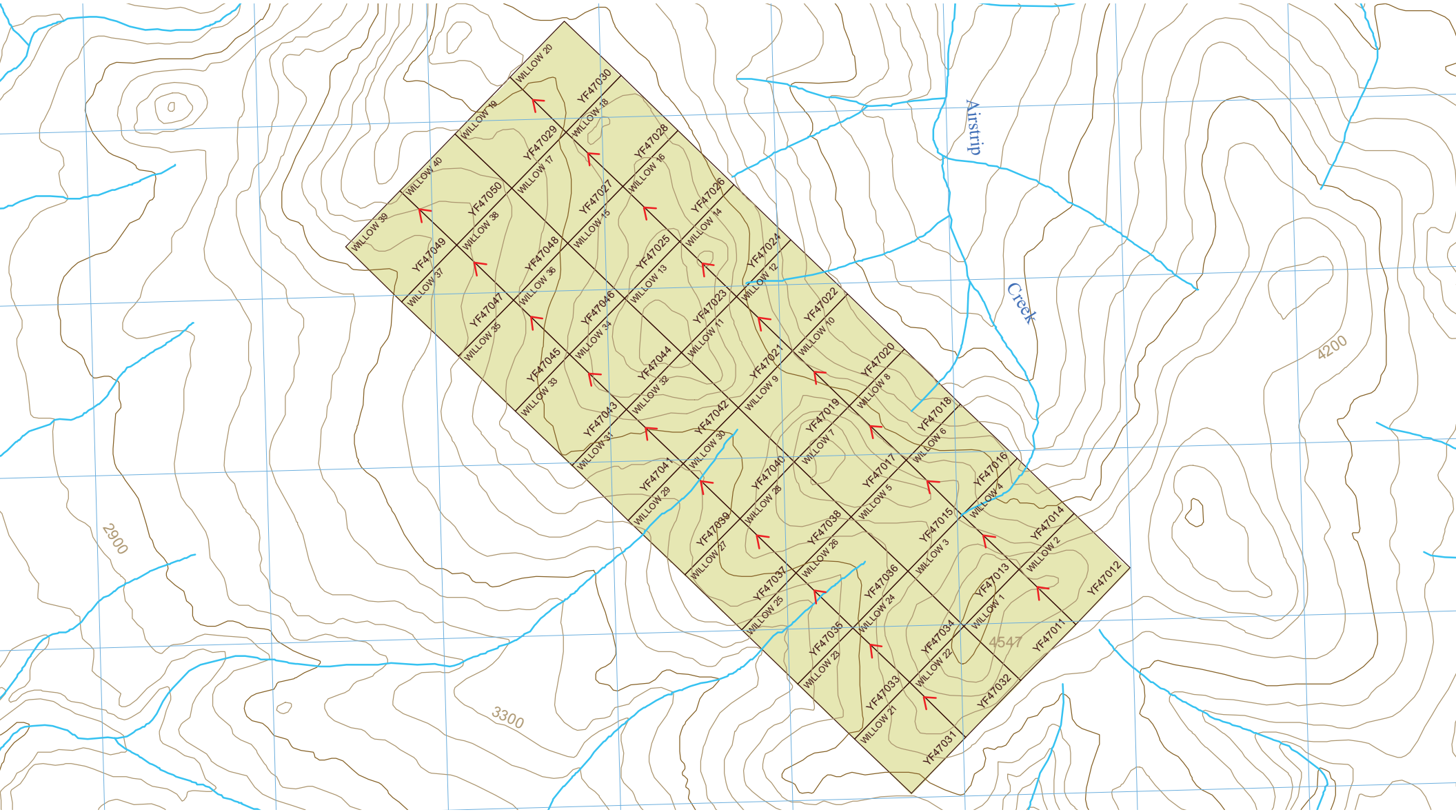


Figure 1. Location Map of Project Area.


WILLOW 20
YF47030
WILLOW 18
YF47029
WILLOW 40
YF47050
WILLOW 17
YF47028
WILLOW 16
YF47027
WILLOW 39
YF47049
WILLOW 38
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YF47018
WILLOW 6
YF47040
WILLOW 7
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WILLOW 29
YF47039
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YF47015
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YF47037
WILLOW 26
YF47014
WILLOW 2
YF47036
WILLOW 3
YF47013
WILLOW 25
YF47035
WILLOW 24
YF47012
WILLOW 1
YF47034
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YF47033
WILLOW 22
YF47011
YF47032
WILLOW 21
YF47031
Airstrip
Creek
4200
2900
3300
4547

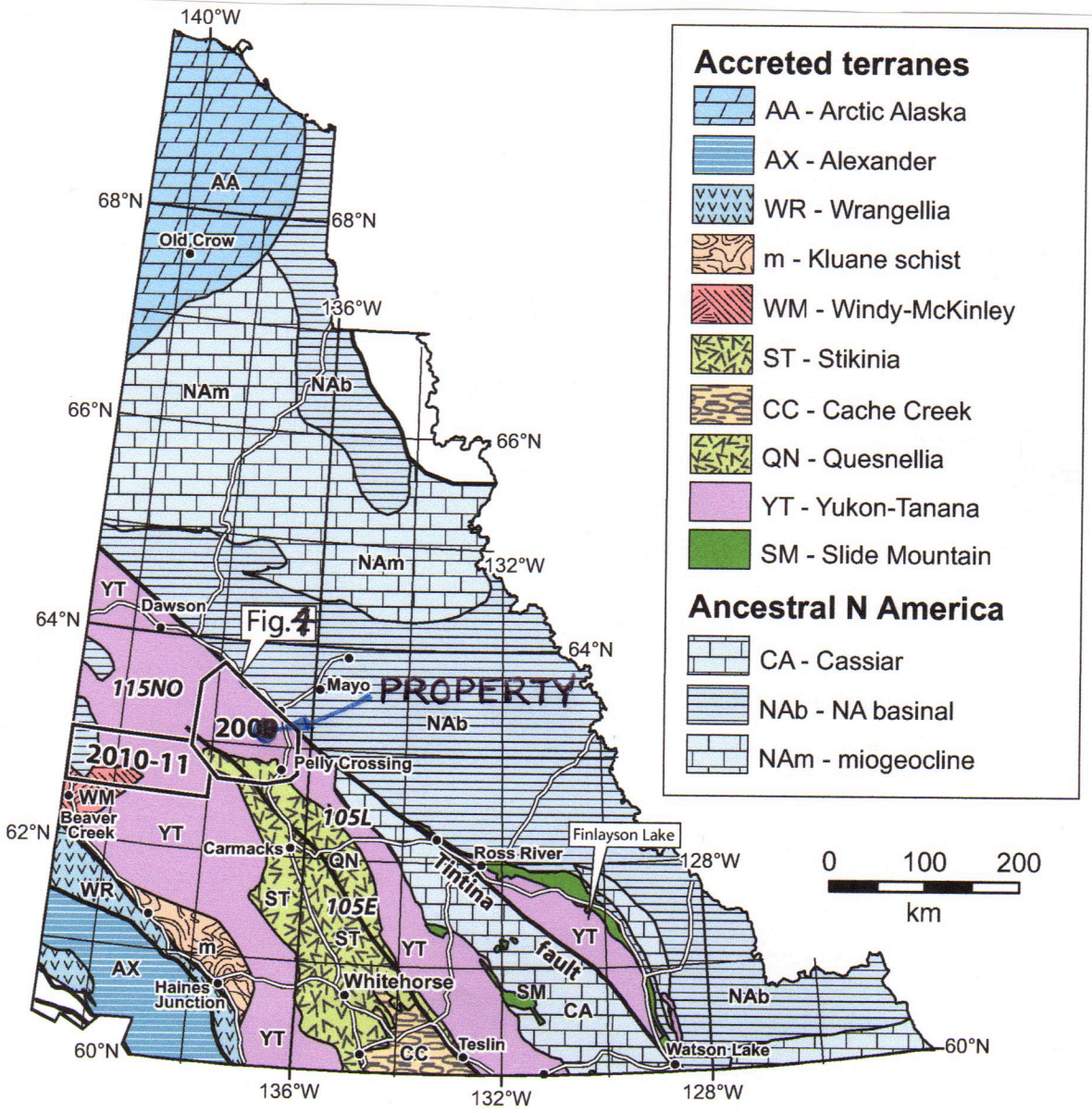

Figure 3. *Terrane map of Yukon. Outlines between Pelly Crossing and Beaver Creek illustrate the extent of the area mapped in 2009 (Fig. 2) and the planned mapping area for 2010-2011. They also approximate the area covered by new aeromagnetic surveys (Kiss and Coyle, 2009 a-r, for McQuesten, see Figure 3; and Kiss and Coyle, 2009 s-af, for northern Stevenson Ridge).*

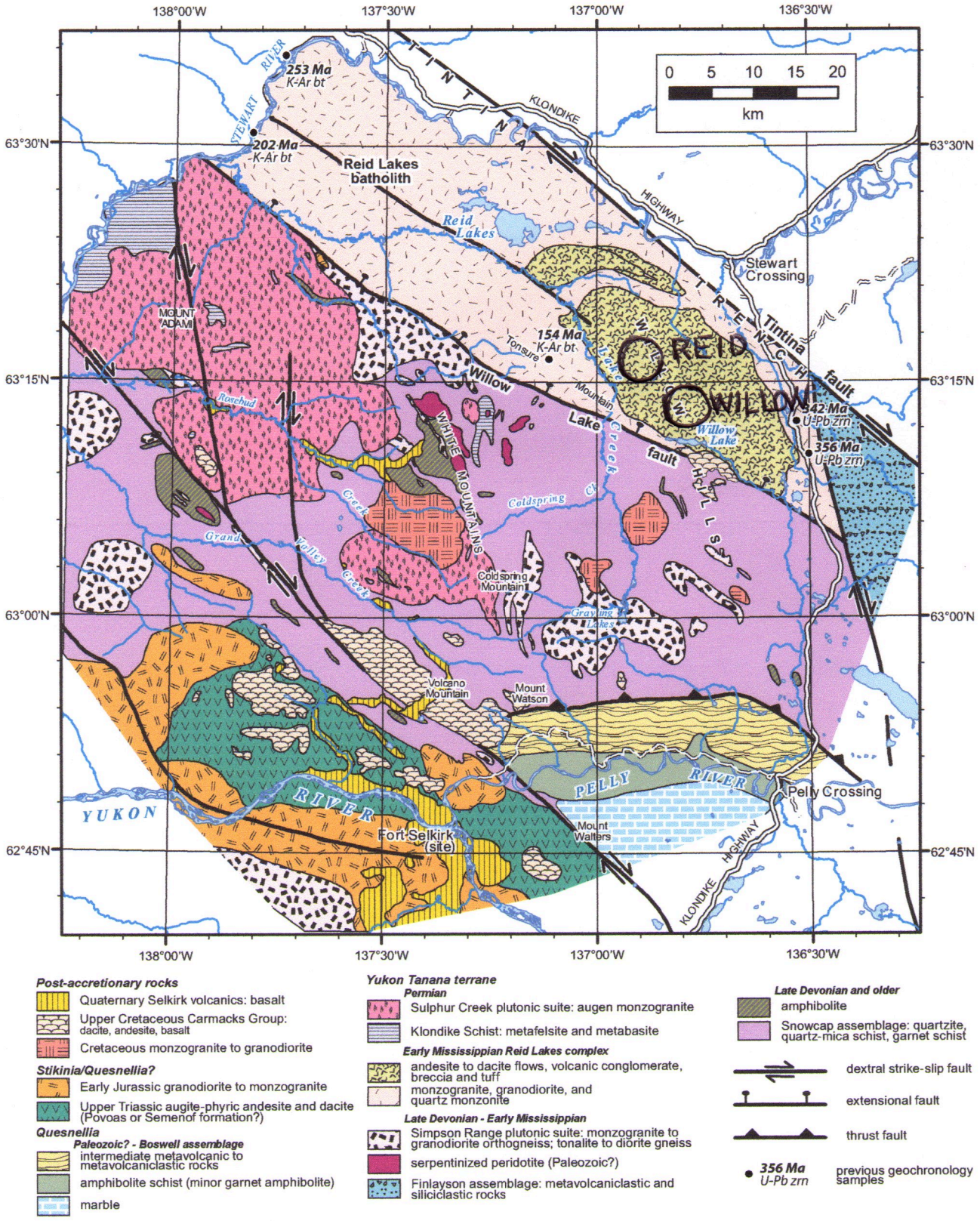

Figure 1. *Simplified geological map of southwest McQuesten-northern Carmacks area (after J.J. Ryan, M. Colpron and N. Hayward, in prep.).*

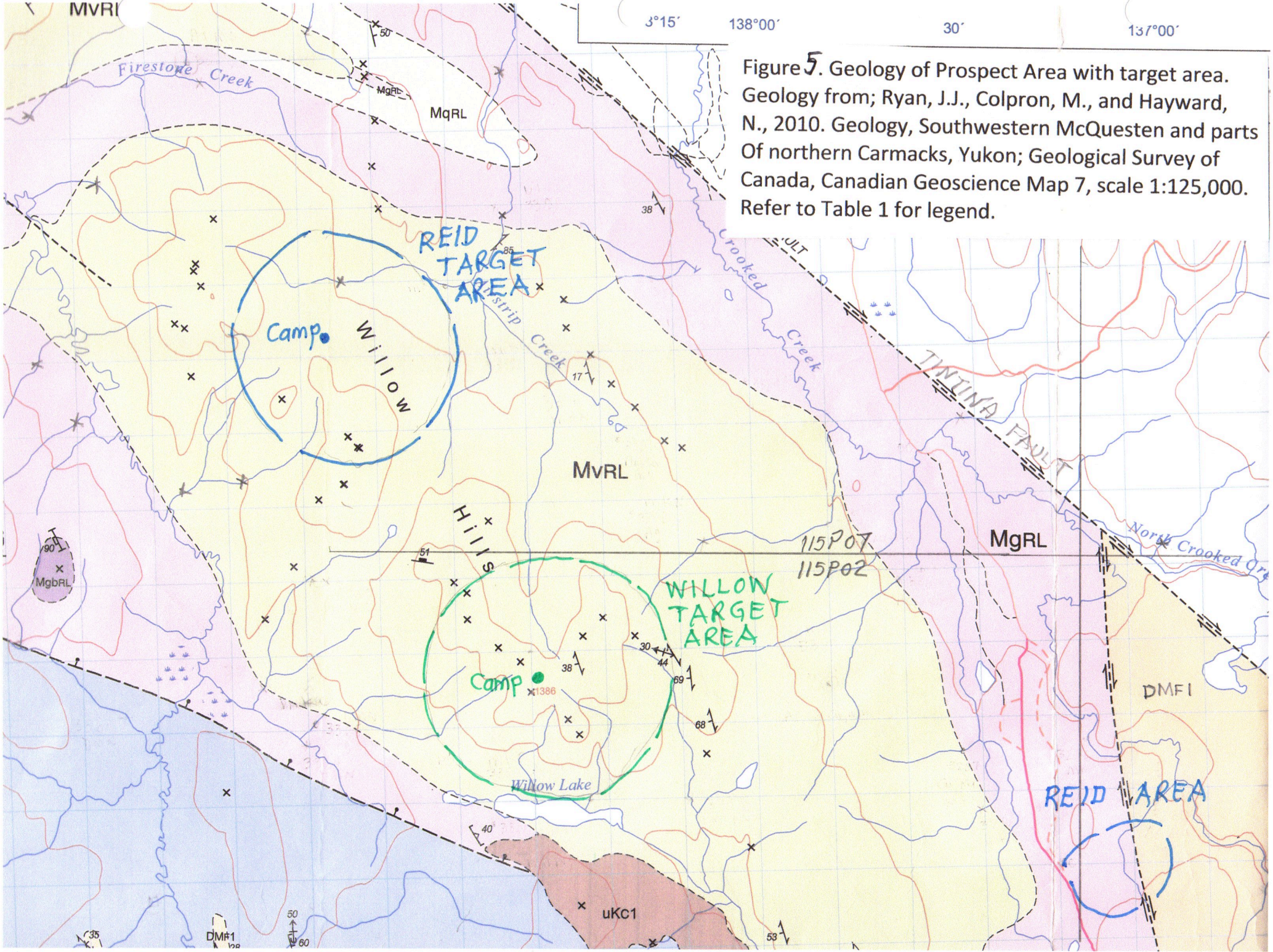

Figure 5. Geology of Prospect Area with target area. Geology from; Ryan, J.J., Colpron, M., and Hayward, N., 2010. Geology, Southwestern McQuesten and parts Of northern Carmacks, Yukon; Geological Survey of Canada, Canadian Geoscience Map 7, scale 1:125,000. Refer to Table 1 for legend.

POST-ACCRETIONARY ROCKS

UPPER CRETACEOUS

Carmacks Group (uKc1, uKc2)

uKc2	Basalt to basaltic andesite flows and/or sills; locally hornblende-phyric; high magnetic susceptibility.
uKc1	Dacite to rhyodacite; commonly plagioclase-phyric; may correlate with Donjek Volcanics.

MIDDLE CRETACEOUS?

mKgW	Whitehorse suite: pink to grey monzogranite to granodiorite, locally syenogranite; generally biotite-bearing; locally K-feldspar porphyritic; forms undeformed cross-cutting plutons and dykes.

YUKON TANANA

EARLY MISSISSIPPIAN

Reid Lakes complex (MgbRL, MgRL, MqRL, MvRL)

MgRL	Reid Lake batholith: polyphase; undeformed to weakly foliated monzogranite, granodiorite and quartz monzonite; typically biotite-bearing and exhibiting abundant blebby to porphyritic smokey quartz; fresh magmatic hornblende and K-feldspar phenocrysts common in eastern extent; slightly foliated adjacent to Willow Lake fault; easily confused with undeformed post-Triassic intrusions.
MqRL	Quartz sandstone; little metamorphosed, with blue grey colour; associated with Reid Lake volcanic rocks.
MvRL	Volcanic and volcaniclastic rocks; andesite to dacite flows, volcanic conglomerate, breccia and tuff; local rhyolite to rhyodacitic porphyritic flows; generally unlayered, except for faint layering in volcanic sandstone; local volcanic siltstone; presumed extrusive equivalents of the Reid Lake batholith.

LATE DEVONIAN - EARLY MISSISSIPPIAN

Moderately to strongly foliated (orthogneissic) plutonic rocks

Simpson Range suite (MgSR, MiSR, MagSR)

MgSR	Monzogranite to granodiorite; equigranular; pink to orange; generally biotite-bearing (after hornblende?); homogeneous to layered.
MiSR	Intermediate to mafic granitoid (tonalite to diorite) sheets; intermediate to dark colour; homogeneous to layered.

Metavolcanic and metasedimentary rocks

Finlayson Assemblage? (DMF1, DMF2)

DMF1	Carbonaceous quartzite to mica-quartz schist; black to white quartzite, with schist and garnet schist interlayers; and rare black phyllite; possibly equivalent to Nasina formation, or simply a carbonaceous member of the Snowcap assemblage.

LATE DEVONIAN AND OLDER

Snowcap assemblage (PDs1, PDs2, PDs3)

PDs3	Amphibolite schist to garnet-amphibolite; metabasite; usually garnet-horneblende-plagioclase or horneblende-plagioclase, with local chorite-biotite; probably derived from mafic volcanic to volcaniclastic rocks; some layers that are internally homogeneous may be mafic sills; more intermediate varieties can have rosettes of decussate, larger hornblende.
PDs2	Marble; metacarbonate (derived from pure to impure limestone); associated calcsilicate schist (derived from calcareous metapelite).
PDs1	Quartzite to quartz-mica schist; banded to massive, grey to white in colour; locally conglomeratic; commonly contains beds of micaceous quartz arenite; clastic in origin; quartz-muscovite-biotite schist is possibly derived from siliceous siltstone; commonly finely interlayered with garnet-metapelite.

Table 1. Legend for Figure 5. From Canadian Geoscience Map 7.

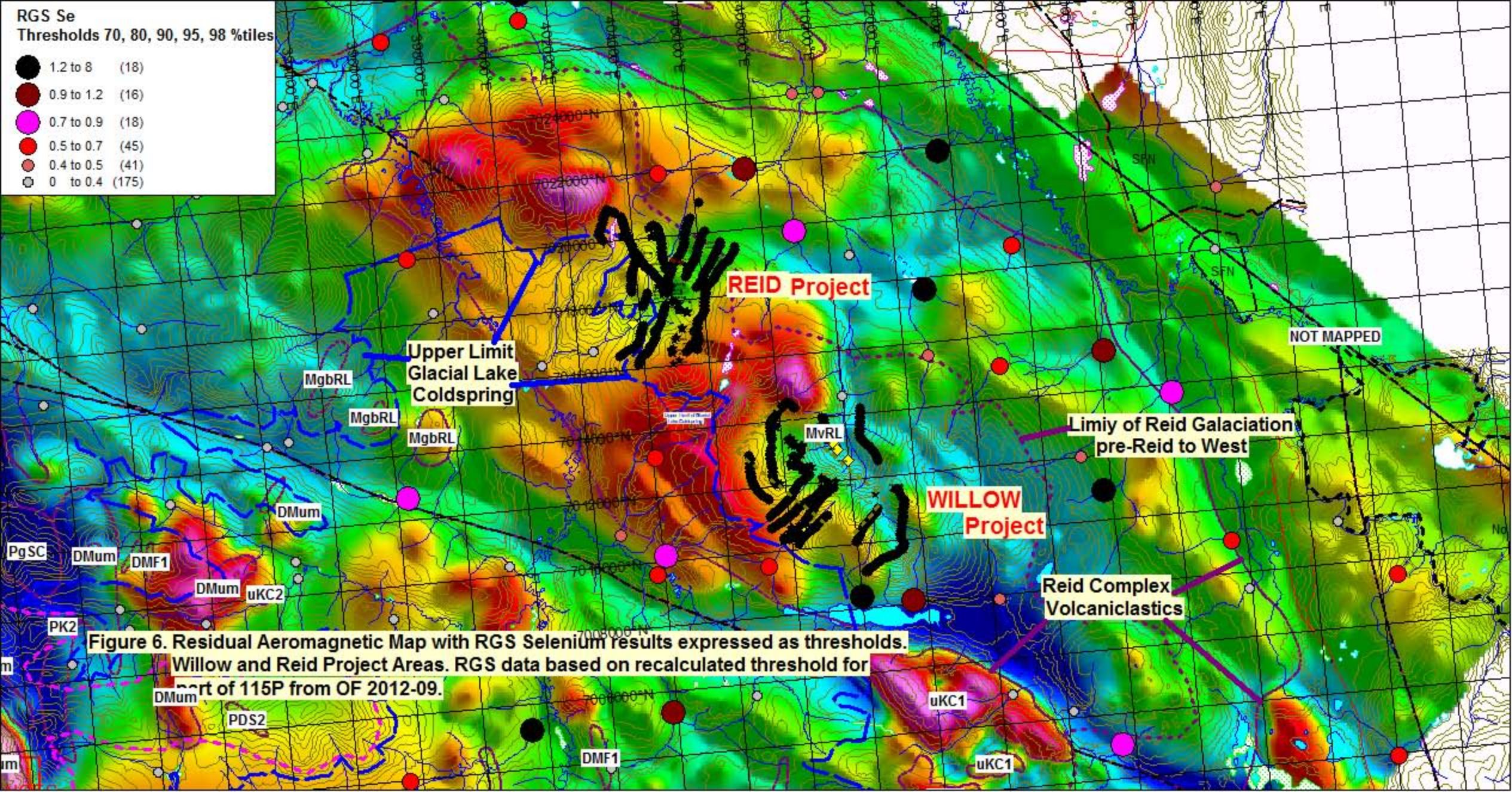

Figure 6. Residual Aeromagnetic Map with RGS Selenium results expressed as thresholds. Willow and Reid Project Areas. RGS data based on recalculated threshold for part of 115P from OF 2012-09.

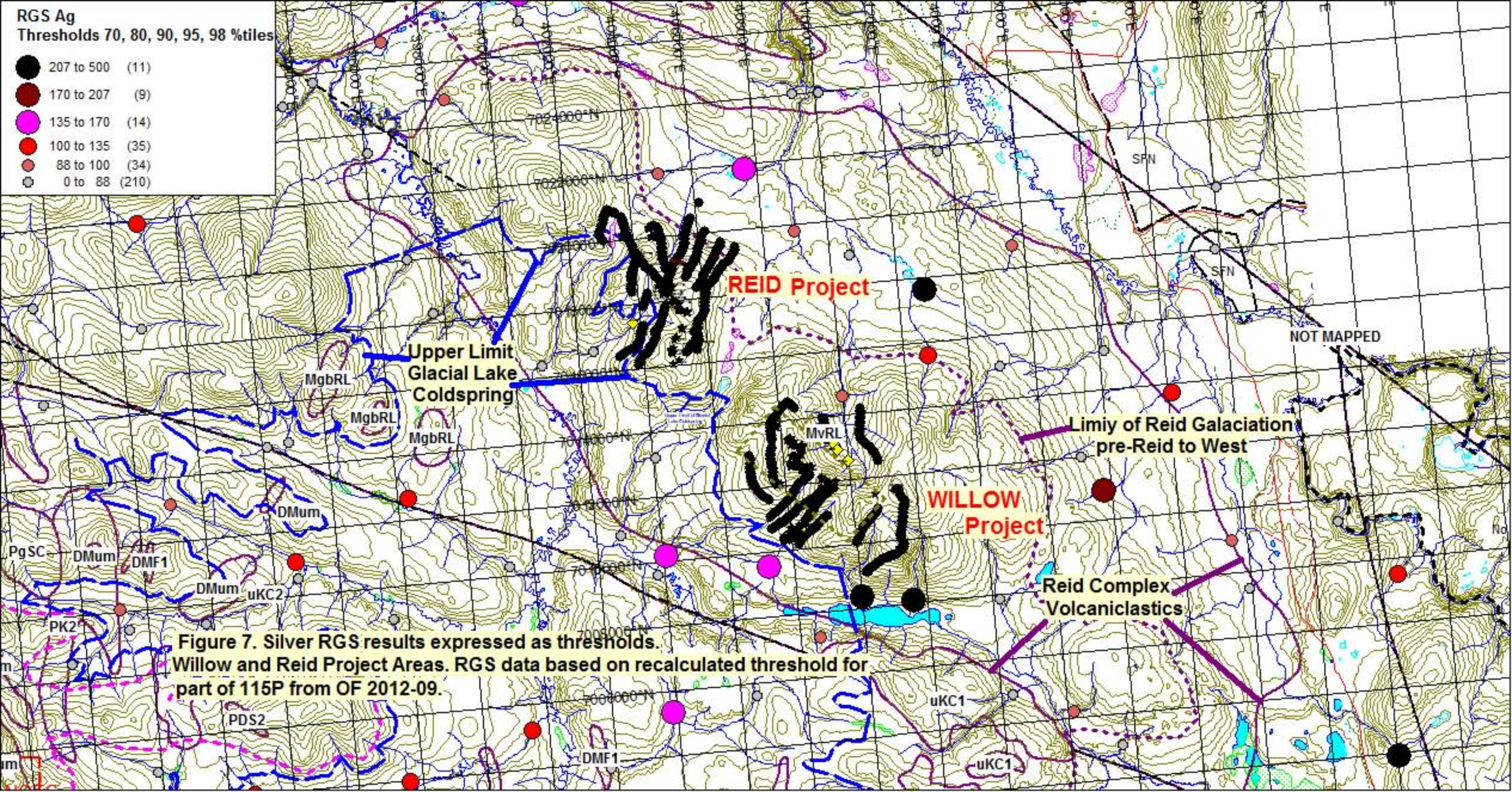

Figure 7. Silver RGS results expressed as thresholds. Willow and Reid Project Areas. RGS data based on recalculated threshold for part of 115P from OF 2012-09.

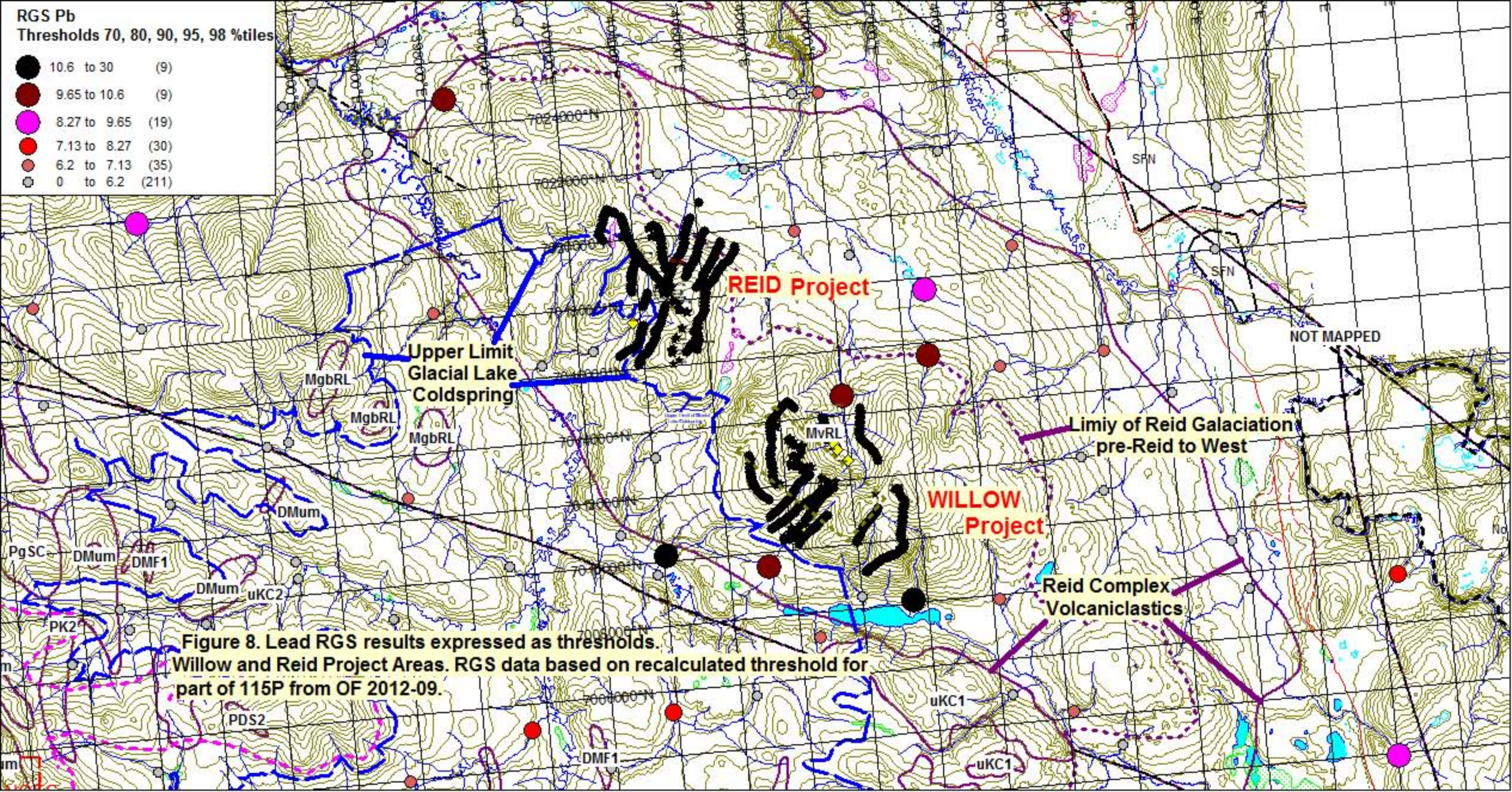

Figure 8. Lead RGS results expressed as thresholds. Willow and Reid Project Areas. RGS data based on recalculated threshold for part of 115P from OF 2012-09.

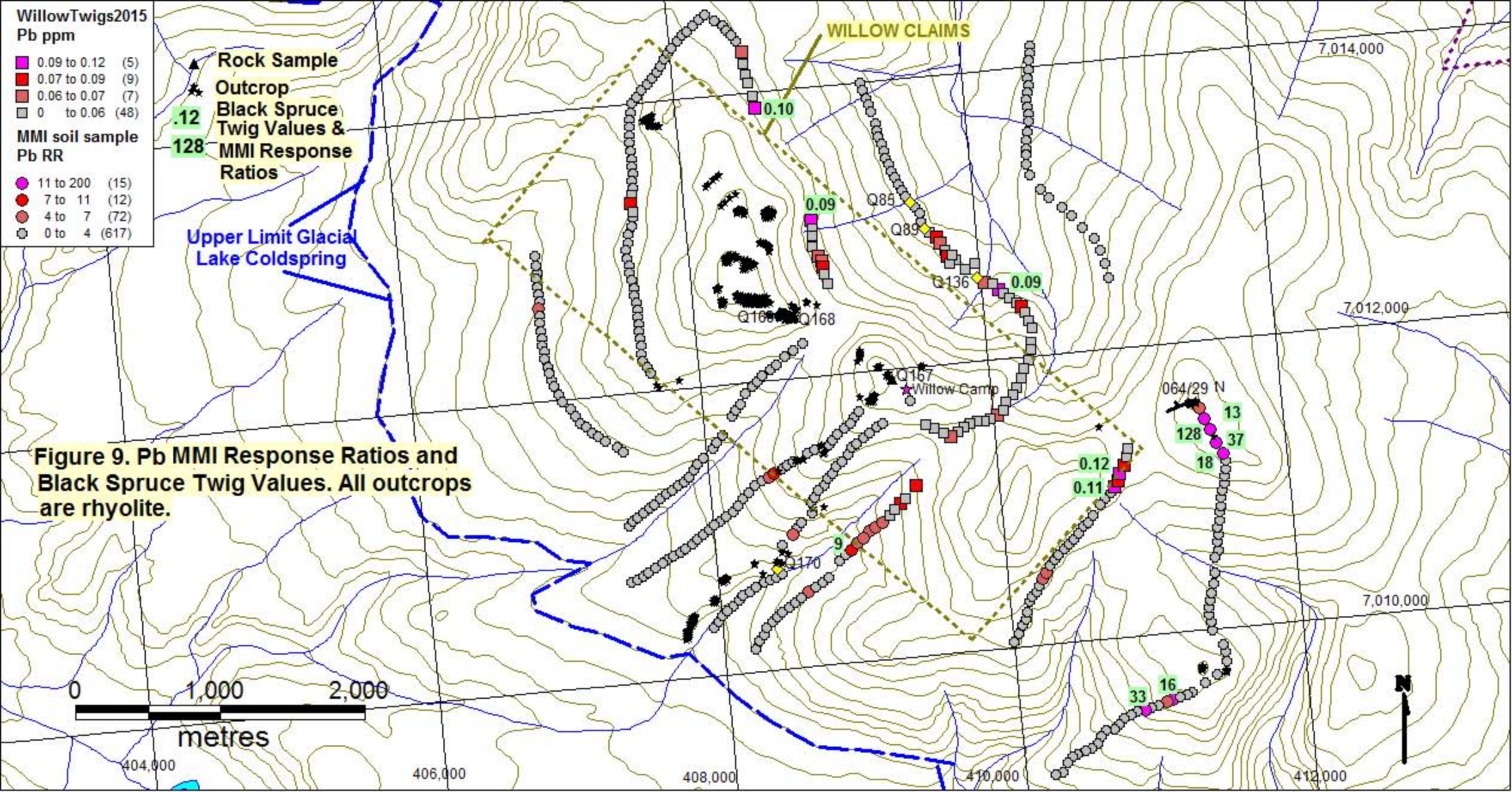

Figure 9. Pb MMI Response Ratios and Black Spruce Twig Values. All outcrops are rhyolite.

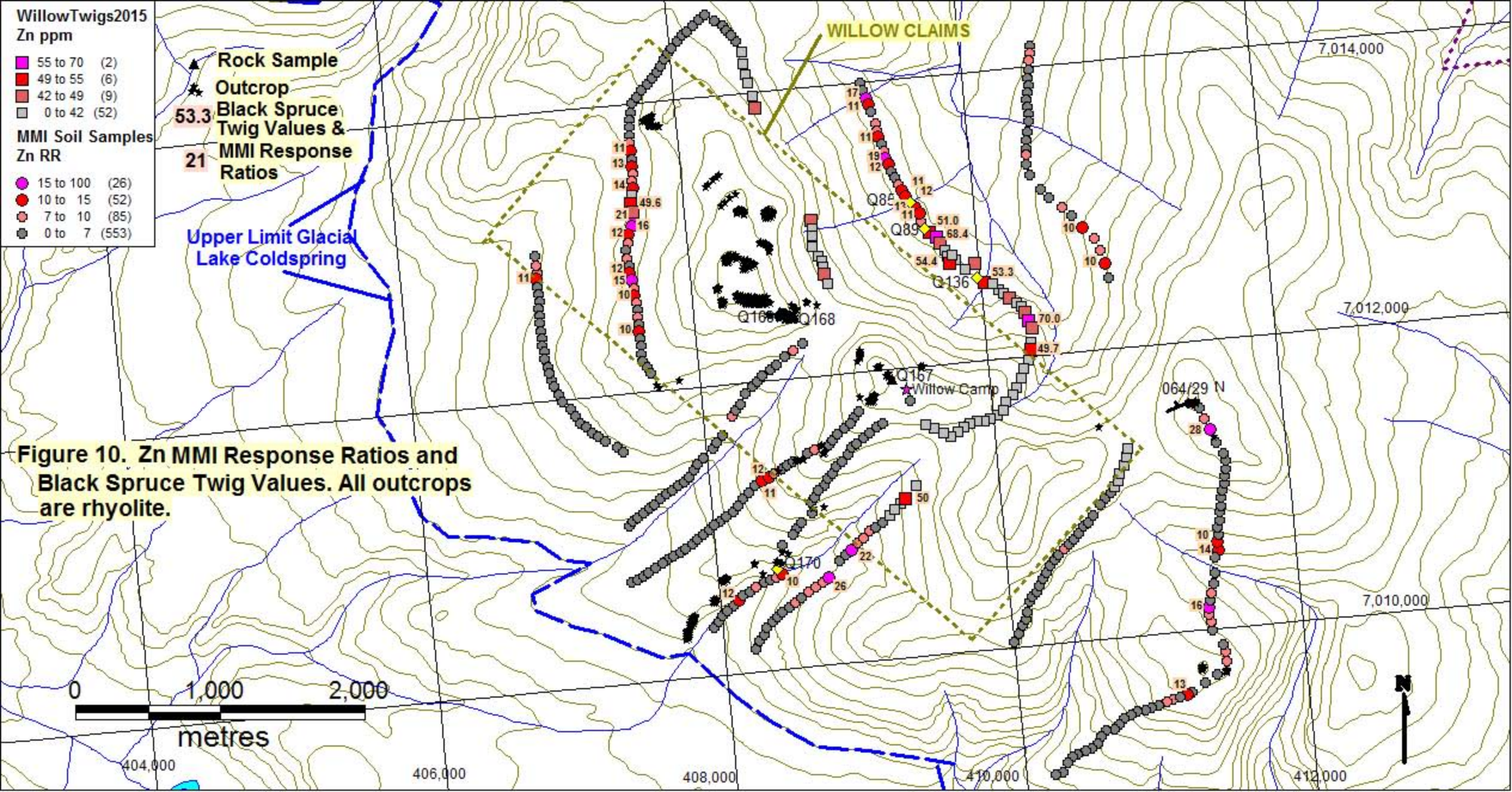

Figure 10. Zn MMI Response Ratios and Black Spruce Twig Values. All outcrops are rhyolite.

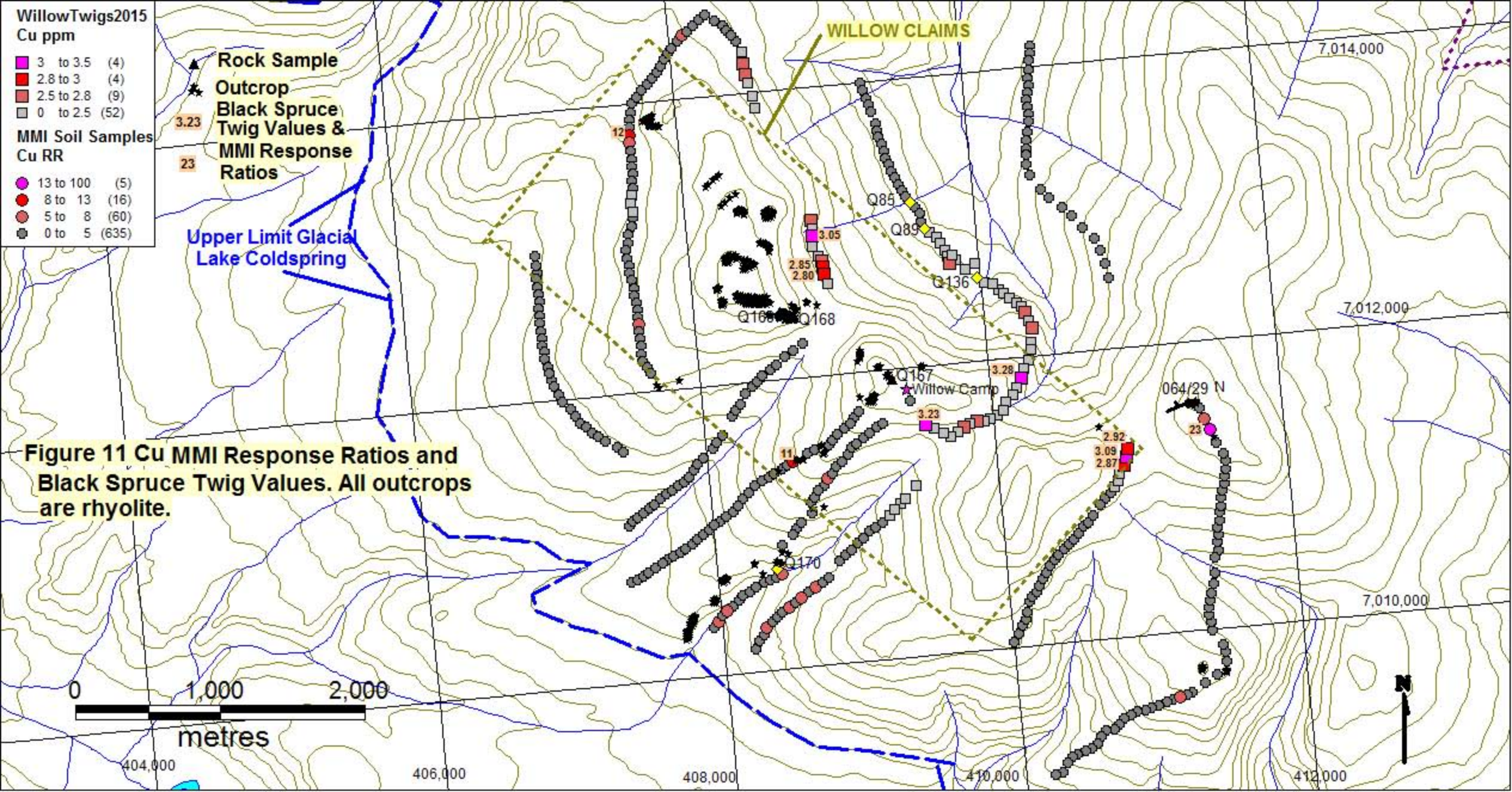

Figure 11 Cu MMI Response Ratios and Black Spruce Twig Values. All outcrops are rhyolite.

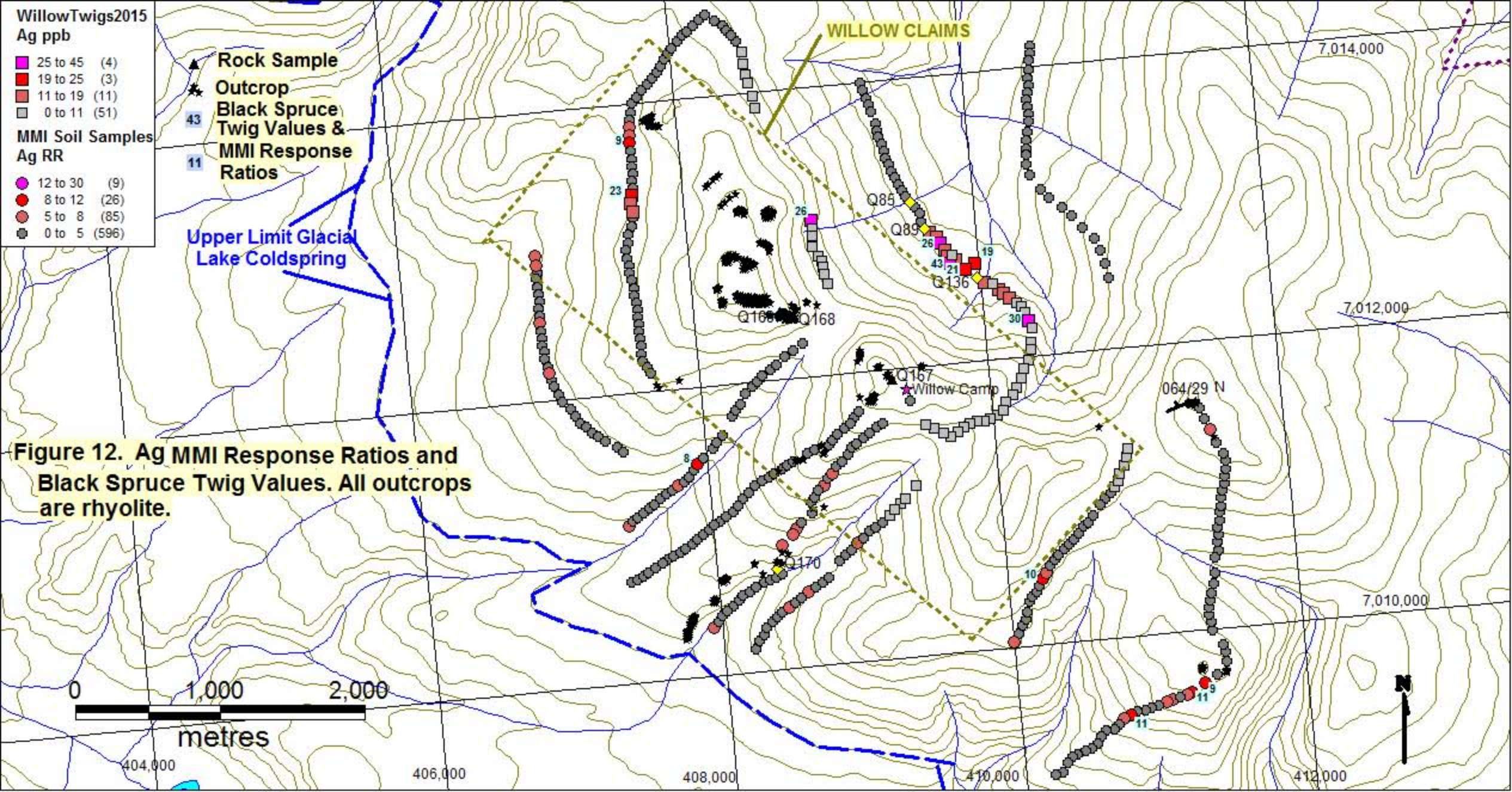

Figure 12. Ag MMI Response Ratios and Black Spruce Twig Values. All outcrops are rhyolite.

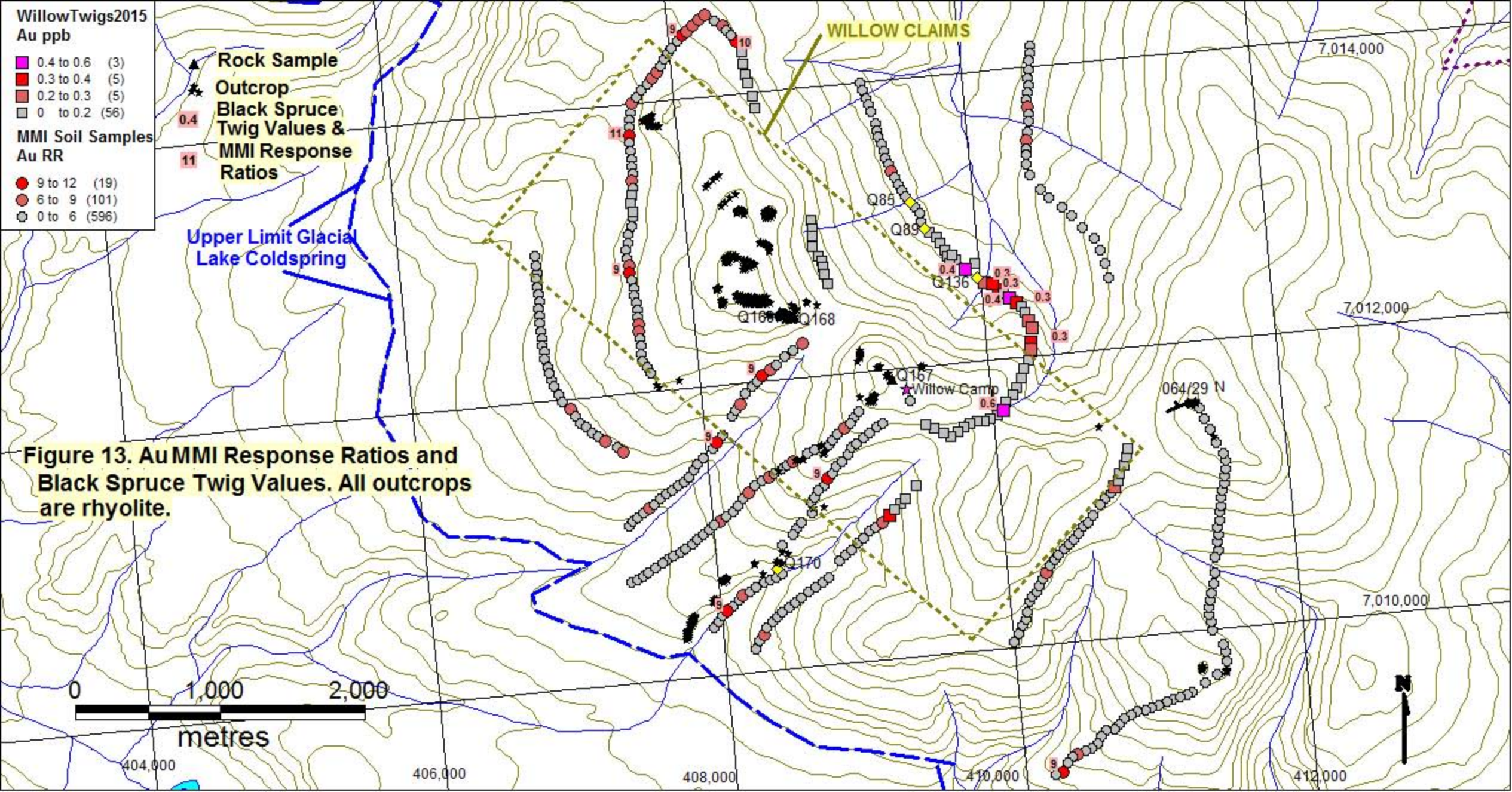

Figure 13. Au MMI Response Ratios and Black Spruce Twig Values. All outcrops are rhyolite.

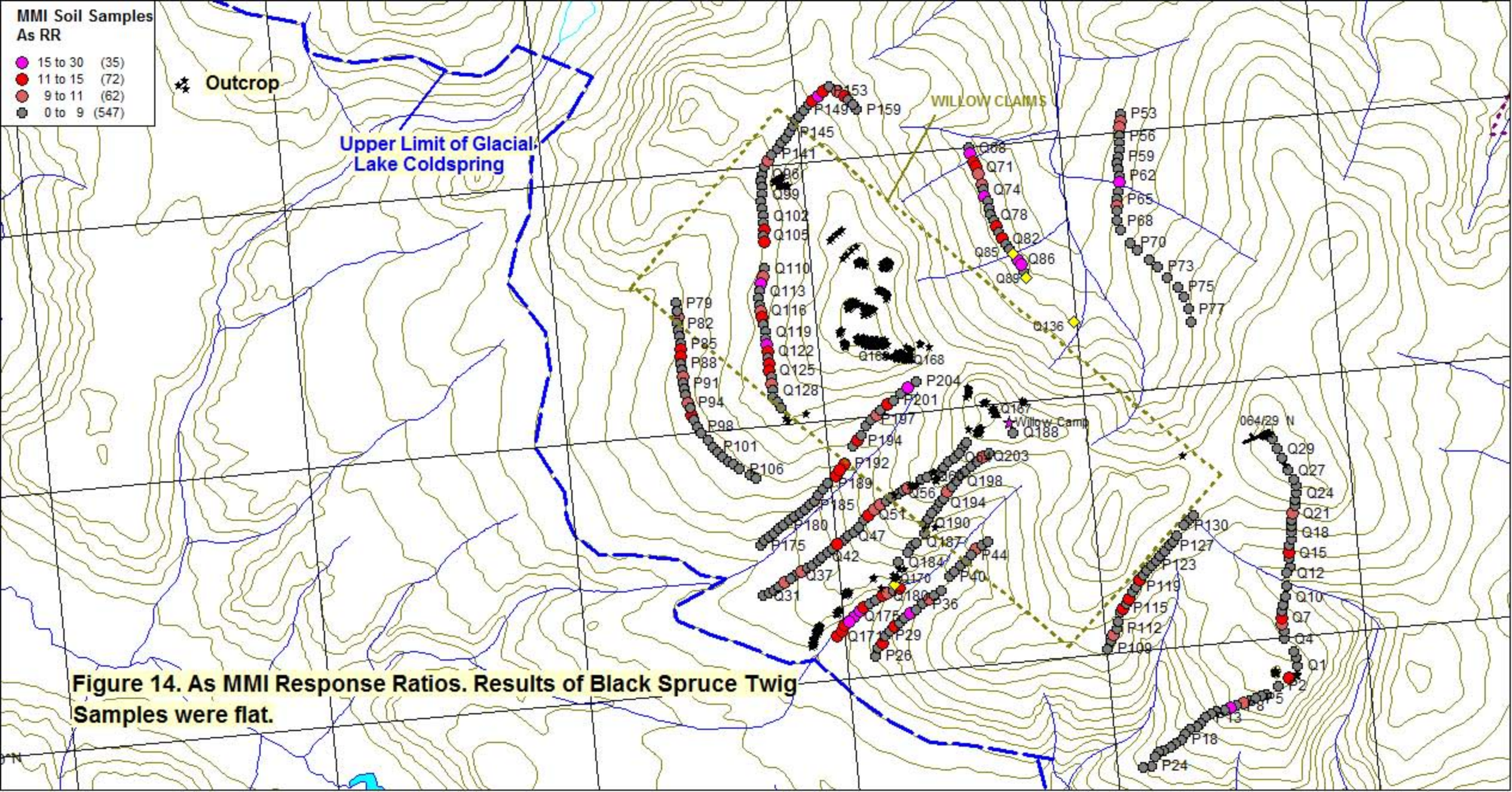

Figure 14. As MMI Response Ratios. Results of Black Spruce Twig Samples were flat.

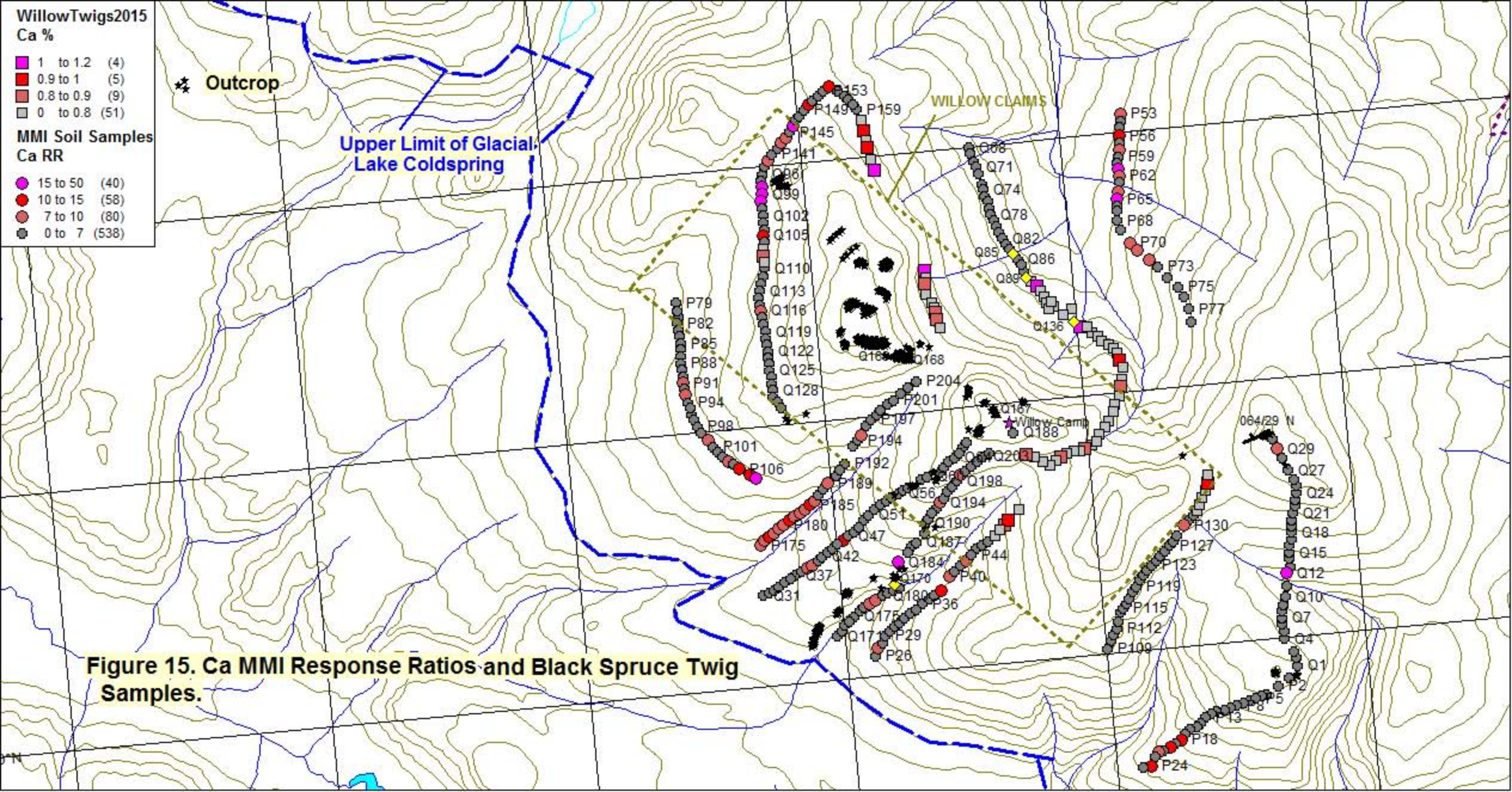

Figure 15. Ca MMI Response Ratios and Black Spruce Twig Samples.

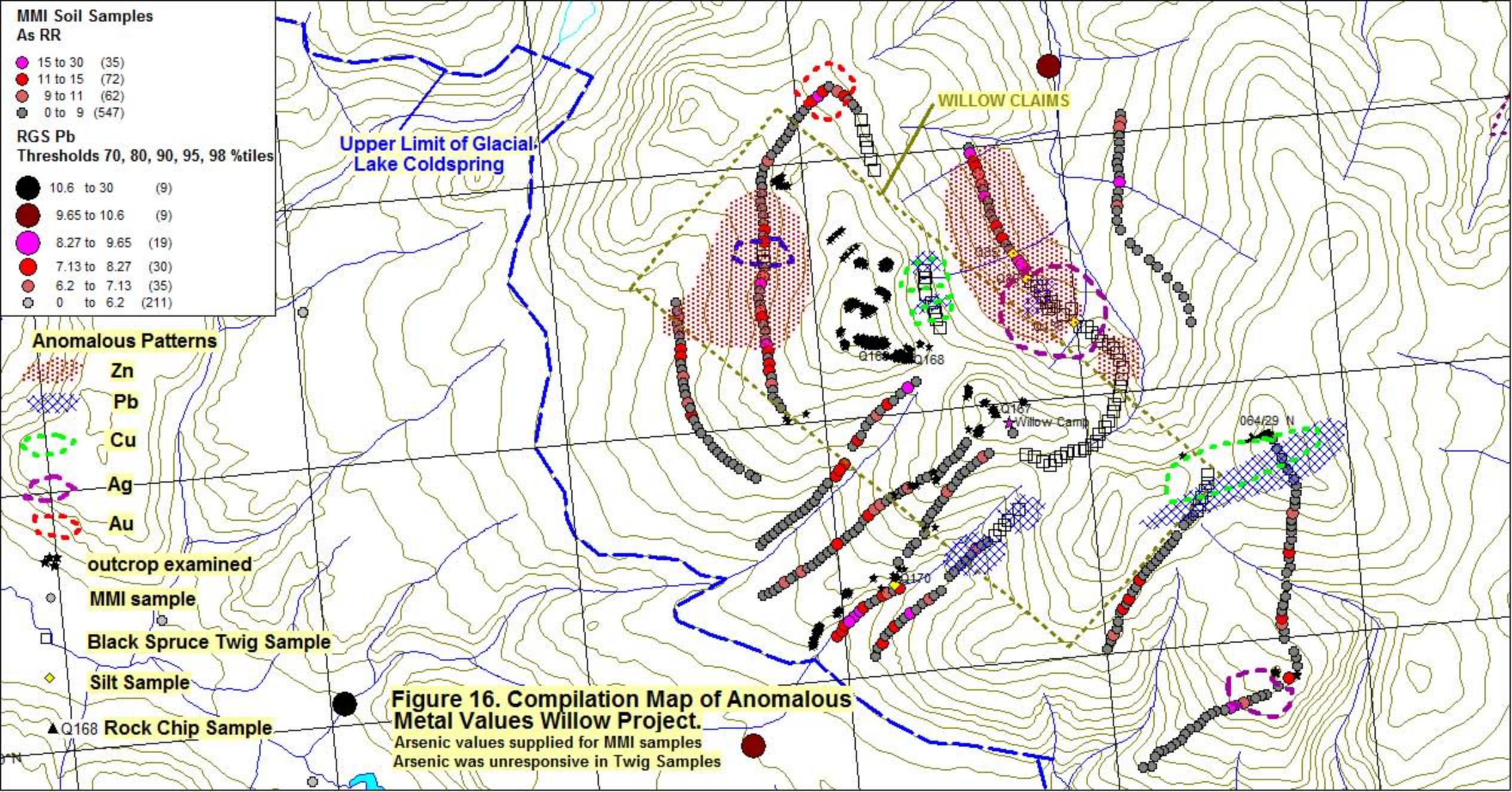

Figure 16. Compilation Map of Anomalous Metal Values Willow Project.

Arsenic values supplied for MMI samples
Arsenic was unresponsive in Twig Samples

Table 2. MMI Soil Sample Respon

ID	UTM_83E	UTM_83N	Pb	Zn	Cu	Co	Ba	Ag	
Q1	411453	7009776	2	7	1	3	1	1	
Q2	411448	7009839	3	7	1	5	1	1	
Q3	411435	7009891	2	3	1	4	1	1	
Q4	411371	7009992	1	3	4	4	1	2	
Q5	411373	7010052	2	9	1	4	1	1	
Q6	411357	7010106	2	8	1	4	1	1	
Q7	411363	7010156	1	16	1	9	1	0	
Q8	411371	7010207	0	1	1	1	0	0	
Q9	411385	7010256	1	8	1	2	1	2	
Q10	411411	7010315	1	1	0	1	0	1	
Q11	411422	7010393	3	4	0	6	0	1	
Q12	411437	7010495	0	4	1	1	2	4	
Q13	411463	7010545	2	14	1	3	1	2	
Q14	411461	7010606	2	10	0	3	1	0	
Q15	411471	7010648	2	3	1	2	0	1	
Q16	411474	7010703	1	1	1	1	1	1	
Q17	411492	7010750	2	1	2	2	0	1	
Q18	411498	7010806	1	1	1	1	1	0	
Q19	411507	7010851	1	0	1	1	0	1	
Q20	411511	7010901	1	3	1	4	1	1	
Q21	411527	7010951	2	2	1	7	1	1	
Q22	411550	7011004	2	2	1	2	1	2	
Q23	411552	7011049	1	2	1	5	1	2	
Q24	411566	7011102	1	1	1	3	1	1	
Q25	411574	7011160	1	3	0	2	0	1	
Q26	411560	7011207	18	1	2	1	1	1	
Q27	411520	7011283	37	4	2	1	1	3	
Q28	411481	7011379	128	28	23	0	2	6	
Q29	411452	7011456	13	7	5	0	7	2	
Q30	411422	7011538	5	5	1	2	1	1	
Q31	407400	7010700	1	1	2	1	2	3	
Q32	407444	7010715	1	1	2	2	2	1	
Q33	407488	7010733	1	1	1	3	1	3	
Q34	407525	7010757	2	1	1	2	2	2	
Q35	407575	7010784	2	4	2	4	1	1	
Q36	407622	7010813	3	1	1	2	1	4	
Q37	407659	7010832	1	2	2	2	1	2	
Q38	407706	7010857	1	3	1	2	2	1	
Q39	407755	7010876	2	4	2	3	3	4	
Q40	407796	7010899	1	2	2	1	2	2	
Q41	407844	7010929	1	2	2	2	1	2	
Q42	407878	7010955	1	6	2	1	1	1	
Q43	407925	7010984	2	5	2	2	1	1	
Q44	407968	7011013	1	3	3	2	2	3	
Q45	408008	7011041	2	2	3	2	3	2	

Q46	408052	7011061	1	4	4	1	5	2
Q47	408091	7011095	3	3	2	2	1	4
Q48	408145	7011118	2	1	2	1	1	4
Q49	408183	7011155	3	2	2	2	1	4
Q50	408220	7011206	3	4	2	1	1	4
Q51	408266	7011243	2	4	2	3	2	2
Q52	408313	7011285	3	3	3	3	1	2
Q53	408366	7011313	3	11	2	3	1	1
Q54	408413	7011333	4	12	3	3	2	3
Q55	408454	7011359	7	8	3	4	1	4
Q56	408509	7011384	2	3	3	4	1	4
Q57	408547	7011408	2	6	3	3	2	1
Q58	408588	7011426	0	4	11	14	2	1
Q59	408697	7011473	0	3	3	2	0	1
Q60	408744	7011494	1	8	4	6	6	1
Q61	408844	7011517	2	1	1	2	1	2
Q62	408877	7011550	2	1	1	1	0	2
Q63	408915	7011592	2	1	1	2	1	2
Q64	408962	7011623	1	1	3	4	1	1
Q65	409008	7011655	1	2	1	2	1	1
Q66	409039	7011692	1	0	1	1	1	1
Q67	409071	7011732	1	4	3	3	4	0
Q68	409297	7013996	0	4	1	4	1	2
Q69	409306	7013949	2	4	2	2	2	1
Q70	409327	7013883	2	17	1	4	2	1
Q71	409340	7013843	2	11	1	5	1	1
Q72	409351	7013791	0	1	4	1	1	1
Q73	409376	7013706	2	8	2	3	2	2
Q74	409379	7013660	3	9	1	1	1	3
Q75	409388	7013610	2	11	0	3	1	0
Q76	409406	7013565	3	6	1	2	1	2
Q77	409413	7013513	3	7	3	3	2	2
Q78	409419	7013464	3	19	1	5	1	2
Q79	409439	7013418	2	12	1	3	1	3
Q80	409453	7013370	2	6	2	2	2	1
Q81	409471	7013321	0	3	2	3	1	4
Q82	409493	7013273	2	7	4	3	2	2
Q83	409517	7013225	2	11	2	3	1	2
Q84	409539	7013186	2	12	1	4	2	1
Q86	409596	7013101	3	13	1	7	2	1
Q87	409620	7013059	2	11	1	6	3	2
Q88	409628	7012998	2	9	3	5	2	1
Q96	407695	7013936	2	6	3	2	2	2
Q97	407681	7013891	3	2	2	1	2	3
Q98	407679	7013839	2	4	4	0	2	6
Q99	407676	7013786	0	5	12	0	8	7
Q100	407668	7013733	0	7	6	0	4	9

Q101	407669	7013674	2	11	3	9	2	3
Q102	407669	7013617	3	6	2	1	2	4
Q103	407669	7013568	3	13	1	4	1	1
Q104	407670	7013514	2	9	3	2	3	1
Q105	407661	7013467	1	7	4	0	8	2
Q106	407661	7013416	2	14	2	3	2	2
Q110	407645	7013213	2	21	1	7	1	1
Q111	407631	7013154	2	16	3	5	3	1
Q112	407603	7013096	2	12	4	4	2	2
Q113	407591	7013043	1	7	2	2	1	1
Q114	407577	7012995	2	3	3	2	1	1
Q115	407579	7012938	1	7	2	1	1	1
Q116	407584	7012888	1	6	4	1	4	1
Q117	407586	7012839	2	12	2	5	3	2
Q118	407593	7012783	2	15	1	5	1	2
Q119	407602	7012726	2	8	1	2	1	1
Q120	407603	7012677	2	10	1	3	1	2
Q121	407610	7012624	2	7	3	2	2	1
Q122	407613	7012574	2	3	3	2	2	1
Q123	407610	7012526	2	9	2	4	1	1
Q124	407614	7012474	2	5	5	2	6	1
Q125	407610	7012424	2	10	2	5	3	1
Q126	407617	7012372	1	6	2	2	1	1
Q127	407619	7012322	1	3	2	2	2	1
Q128	407616	7012269	1	2	3	3	2	3
Q129	407616	7012220	1	1	2	1	1	1
Q130	407646	7012176	2	1	1	2	1	1
Q131	407667	7012127	2	4	1	1	1	1
Q171	407940	7010335	2	4	2	1	2	5
Q172	407976	7010370	2	2	5	2	3	1
Q173	408005	7010414	2	2	3	1	4	3
Q174	408044	7010441	2	4	5	2	3	1
Q175	408083	7010472	2	4	2	2	2	3
Q176	408126	7010510	2	12	1	4	2	1
Q177	408161	7010540	1	3	2	3	4	1
Q178	408209	7010559	2	5	2	4	5	1
Q179	408257	7010586	1	7	2	1	5	1
Q180	408312	7010614	2	5	3	1	3	2
Q181	408354	7010630	3	6	2	2	2	1
Q182	408403	7010643	3	8	2	3	1	3
Q183	408446	7010661	2	10	6	2	4	2
Q184	408462	7010858	0	2	1	0	1	5
Q185	408539	7010927	4	5	2	3	1	5
Q186	408572	7010967	2	3	1	1	2	6
Q187	408611	7010999	2	2	1	2	1	3
Q188	409438	7011771	2	1	2	1	2	1
Q189	408686	7011062	2	2	1	1	2	4

Q190	408688	7011139	3	2	1	1	1	4
Q191	408719	7011170	2	1	2	1	1	3
Q192	408748	7011216	2	2	1	2	3	1
Q193	408791	7011246	2	1	1	2	2	6
Q194	408820	7011287	2	1	5	2	5	3
Q195	408857	7011318	2	1	2	2	1	6
Q196	408885	7011364	2	4	1	4	2	2
Q197	408929	7011399	2	1	1	3	1	3
Q198	408971	7011442	2	4	1	3	2	2
Q199	409002	7011487	1	4	1	3	3	2
Q200	409041	7011514	2	2	2	2	2	2
Q201	409088	7011546	1	2	2	2	2	1
Q202	409135	7011573	2	1	2	2	2	3
Q203	409187	7011610	2	2	1	2	1	3
Q204	409235	7011633	2	1	1	2	1	1
P1	411374	7009685	1	1	1	1	1	3
P2	411286	7009636	3	1	1	1	2	9
P3	411195	7009579	3	2	1	1	1	11
P4	411155	7009567	3	13	1	2	1	7
P5	411107	7009554	2	1	5	1	1	4
P6	411056	7009547	16	9	1	4	1	6
P7	411009	7009531	4	8	1	4	1	5
P8	410951	7009513	2	2	1	1	1	4
P9	410903	7009499	2	5	1	5	1	3
P10	410861	7009483	33	2	0	2	2	4
P11	410798	7009482	2	1	1	1	2	2
P12	410754	7009466	2	1	2	1	1	11
P13	410709	7009445	3	1	1	1	1	5
P14	410669	7009405	2	1	2	1	1	3
P15	410631	7009379	3	1	4	2	2	4
P16	410577	7009368	2	1	1	2	1	1
P17	410534	7009333	2	1	3	2	2	2
P18	410509	7009289	1	4	0	2	1	1
P19	410462	7009261	3	0	1	1	2	1
P20	410418	7009244	2	0	1	10	3	1
P21	410364	7009222	2	1	2	1	2	2
P22	410325	7009215	2	1	1	1	3	1
P23	410289	7009177	2	1	0	2	1	2
P24	410254	7009112	1	1	3	2	6	4
P25	410196	7009102	2	1	2	1	3	3
P26	408214	7010155	2	3	2	3	3	1
P27	408241	7010217	3	1	4	2	3	3
P28	408279	7010250	2	2	3	2	4	2
P29	408303	7010304	2	1	5	1	2	2
P30	408342	7010335	1	1	2	1	1	2
P31	408383	7010364	3	3	4	2	2	2
P32	408422	7010396	2	2	2	2	1	2

P33	408468	7010425	2	3	6	2	1	6
P34	408511	7010454	3	7	3	3	2	3
P35	408559	7010485	3	4	5	2	1	3
P36	408613	7010521	5	9	3	2	1	5
P37	408667	7010550	3	8	5	1	2	2
P38	408715	7010580	2	7	3	3	2	3
P39	408766	7010609	1	26	1	1	4	1
P40	408847	7010713	2	3	1	2	4	0
P41	408888	7010748	3	4	2	1	1	2
P42	408935	7010784	9	22	1	8	2	3
P43	408981	7010823	5	9	1	3	2	5
P44	409025	7010859	6	7	1	6	1	2
P45	409069	7010901	5	8	1	3	2	1
P46	409118	7010925	5	5	2	3	1	2
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P53	410489	7014144	1	6	4	3	3	2
P54	410483	7014091	1	9	3	2	2	2
P55	410472	7014047	1	9	2	3	1	3
P56	410464	7013978	0	3	4	2	4	2
P57	410456	7013923	1	6	3	4	2	3
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P59	410443	7013819	1	6	3	2	2	2
P60	410428	7013772	2	4	3	2	1	3
P61	410431	7013720	0	2	4	0	5	3
P62	410437	7013670	1	3	2	1	5	2
P63	410431	7013622	1	6	2	2	2	1
P64	410414	7013550	0	2	3	1	3	1
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P66	410398	7013440	1	6	1	2	2	3
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P68	410387	7013328	2	1	2	1	1	2
P69	410403	7013250	1	3	1	3	1	3
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P71	410523	7013084	1	2	4	1	2	2
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P75	410806	7012775	1	8	3	6	1	2
P76	410844	7012689	2	9	1	3	1	2
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P144	407899	7014200	1	3	4	1	3	1
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P152	408178	7014502	2	6	2	2	3	1
P153	408223	7014536	2	5	4	3	3	1
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P180	407608	7011224	1	0	3	2	5	1
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P183	407743	7011308	1	1	1	2	4	2
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P185	407823	7011361	1	0	2	1	5	2
P186	407862	7011392	1	1	2	2	5	1
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P188	407931	7011477	2	1	3	1	3	8
P189	407972	7011515	1	1	2	1	2	1
P190	408042	7011571	1	5	1	1	1	1
P191	408077	7011612	2	2	3	3	3	1
P192	408121	7011656	2	3	3	3	4	0
P193	408198	7011783	1	7	1	2	1	1
P194	408231	7011823	2	5	2	2	3	1
P195	408265	7011857	1	4	3	1	8	1
P196	408306	7011927	1	2	2	3	2	2
P197	408355	7011974	2	3	1	2	1	1
P198	408397	7012007	1	4	2	5	2	1
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P200	408493	7012080	1	3	2	2	2	1
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P202	408603	7012155	1	5	2	2	1	2
P203	408658	7012193	2	9	2	4	2	1
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se Ratios for Willow Project 2015

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5	10	5	4	3	3	1	3	11
5	6	5	4	2	1	1	3	2
2	8	4	4	1	1	1	3	1
2	2	2	1	1	1	1	1	3
5	12	6	5	1	1	1	4	8
2	8	4	4	1	1	0	3	1
3	12	7	5	1	1	1	4	12
3	8	4	3	2	1	1	3	2
6	1	1	1	1	1	2	2	0
3	12	5	4	2	1	1	3	7
3	6	3	3	2	0	2	2	2
2	2	2	1	1	0	2	3	1
2	1	1	1	1	1	1	3	4
2	4	2	3	2	2	2	2	4
1	1	1	1	2	1	1	1	1
1	1	1	1	0	0	1	1	5
2	1	1	1	1	0	1	1	2
1	2	1	1	3	1	1	3	1
2	1	0	1	4	2	2	2	1
2	4	3	1	8	4	2	2	22
1	2	1	1	0	0	1	3	1

3	4	3	2	2	2	1	2	5
6	8	4	4	2	2	2	5	12
5	10	5	4	8	2	2	3	21
3	8	5	3	2	1	2	3	5
2	2	2	1	1	1	2	4	1
6	4	4	2	9	8	4	2	5
6	4	4	2	9	5	3	2	5
3	4	4	3	2	1	3	4	19
5	1	1	1	22	7	2	0	1
3	4	3	2	5	3	1	3	5
1	4	3	1	3	1	1	3	3
3	8	6	3	1	0	1	3	12
9	1	1	1	12	13	5	0	1
6	14	7	5	3	2	1	4	4
6	18	9	7	1	1	1	6	8
8	14	9	5	2	2	1	4	9
6	1	1	1	10	8	3	1	1
5	10	6	4	5	4	2	3	7
7	12	2	1	3	3	1	3	1
5	8	4	2	1	0	1	2	2
2	4	3	1	1	0	1	2	2
10	6	5	3	2	2	2	3	9
1	1	1	1	8	7	3	3	9
5	1	1	1	8	9	1	0	1
2	1	1	1	10	10	2	1	1
2	1	0	1	9	10	3	0	0
6	1	0	1	8	9	1	0	0
5	1	2	1	9	9	2	1	1
2	1	1	1	11	10	1	1	1
5	1	1	1	9	8	2	1	0
1	4	3	1	8	8	1	1	1
3	2	2	1	7	8	1	1	0
2	1	1	1	10	10	1	1	2
3	2	2	1	8	8	2	1	3
1	6	2	2	4	4	2	2	1
2	8	3	4	5	5	2	3	1
2	4	2	1	8	5	3	2	3
3	12	2	1	2	1	1	5	1
9	12	6	4	5	4	2	4	6
5	14	7	5	3	2	1	4	8
2	8	3	3	1	1	1	6	5
3	12	5	5	2	2	2	5	5
6	6	5	1	9	9	4	2	5
2	2	2	2	3	2	3	4	6
2	4	1	1	1	1	2	3	1
3	10	4	4	1	1	2	3	12
9	8	5	4	6	6	4	3	4

6	14	8	6	5	5	1	4	8
2	6	3	3	2	1	1	3	3
2	6	2	2	1	0	1	4	1
5	16	6	4	2	1	2	4	9
6	8	4	2	4	2	2	2	4

Table 3. Black Spruce Twig Sample Values for Willow Project 2015.

ID	UTM_83E	UTM_83N	Cu	Pb	Zn	Ag	Mn	Au	Ca	Mg	Ba
P48	409221	7010995	2.08	0.05	27	1	874	0.3	0.52	0.126	69.4
P49	409261	7011031	2.19	0.05	30.6	5	624	0.1	0.72	0.146	64.7
P50	409305	7011072	1.93	0.07	38	3	1049	0.1	0.86	0.102	137.3
P51	409336	7011098	2.21	0.03	50.6	1	1590	0.1	0.95	0.166	230.4
P52	409423	7011181	2.39	0.07	28.3	1	955	0.1	0.64	0.095	35.1
P133	410789	7011044	2.24	0.11	26	6	1271	0.2	0.7	0.102	82.2
P134	410814	7011083	1.87	0.08	34.4	3	654	0.1	0.75	0.098	92.1
P135	410833	7011137	2.01	0.12	31	3	936	0.1	0.73	0.104	78.9
P136	410870	7011187	2.87	0.07	27.8	5	1843	0.1	0.55	0.096	82.8
P137	410891	7011247	3.09	0.04	29.3	4	1309	0.1	0.93	0.117	126.6
P138	410902	7011304	2.92	0.04	37.7	5	1184	0.1	0.7	0.116	62.7
P160	408497	7014287	2.35	0.06	21.4	1	536	0.1	0.77	0.085	78.7
P161	408504	7014201	2.61	0.03	41.8	3	665	0.1	0.9	0.109	109.8
P162	408512	7014128	2.75	0.05	35	4	836	0.1	0.64	0.106	86.5
P163	408518	7014072	1.89	0.05	30.5	1	675	0.1	0.96	0.105	84
P164	408542	7013975	2.21	0.05	26.5	1	1047	0.1	0.71	0.094	81
P165	408557	7013894	2.2	0.1	48.8	4	1667	0.1	1.05	0.085	116.2
P166	408868	7013084	2.58	0.09	47.8	26	1628	0.1	1.11	0.117	196.4
P167	408871	7013024	2.38	0.04	35.1	1	2054	0.1	0.56	0.167	112.4
P168	408865	7012977	3.05	0.03	33.8	9	816	0.1	0.85	0.152	90
P169	408863	7012898	2.23	0.03	32.6	1	1254	0.1	0.63	0.126	76.9
P170	408899	7012833	2.37	0.06	25.4	5	555	0.1	0.58	0.148	57.8
P171	408916	7012794	2.52	0.06	33.3	2	1581	0.1	0.69	0.151	82.5
P172	408923	7012750	2.85	0.08	38.8	5	2432	0.1	0.89	0.127	89.1
P173	408927	7012699	2.8	0.05	44.3	4	1901	0.1	0.88	0.077	92.9
P174	408947	7012631	2.47	0.03	37.3	3	971	0.1	0.57	0.119	86.7
Q90	409680	7012924	1.92	0.03	51	14	1319	0.1	0.76	0.09	55.5
Q91	409719	7012882	2.32	0.07	68.4	17	2894	0.1	1.03	0.1	63.3
Q92	409744	7012840	1.99	0.06	47.5	26	1095	0.1	0.37	0.09	11.4
Q93	409773	7012790	1.88	0.05	40.9	18	891	0.1	0.62	0.099	44.8
Q94	409785	7012742	1.83	0.07	32.7	14	1463	0.1	0.53	0.08	34.5
Q95	409796	7012697	2.5	0.02	54.4	43	1114	0.1	0.75	0.104	47.7
Q107	407649	7013367	2.43	0.03	40.3	23	1015	0.1	0.69	0.084	48.7
Q108	407640	7013313	1.49	0.07	49.6	11	461	0.1	0.87	0.091	55.1
Q109	407644	7013258	2.4	0.03	42.3	13	1617	0.1	0.58	0.082	54
Q132	409820	7012750	1.79	0.05	26.9	1	851	0.1	0.72	0.108	113.1
Q133	409840	7012715	1.96	0.04	35.7	17	1167	0.1	0.44	0.077	21.6
Q134	409970	7012680	1.6	0.04	46.4	19	1199	0.1	0.71	0.074	34.7
Q135	409900	7012640	2.13	0.04	34.3	21	1137	0.4	0.57	0.08	24.2
Q137	410021	7012543	1.5	0.06	53.3	12	1434	0.2	1.17	0.055	36.1
Q138	410081	7012529	1.84	0.02	40.5	10	975	0.3	0.76	0.093	36
Q139	410116	7012485	1.86	0.09	40.4	15	934	0.3	0.62	0.1	54.8
Q140	410152	7012451	1.96	0.04	36.8	13	499	0.1	0.74	0.087	29
Q141	410184	7012416	2.27	0.03	44.2	16	990	0.4	0.62	0.082	16.2
Q142	410230	7012382	2.45	0.05	33.9	10	723	0.3	0.45	0.07	25.8
Q143	410264	7012352	2.35	0.07	34.8	1	1132	0.1	0.47	0.061	33.6
Q144	410288	7012309	2.57	0.02	44.5	9	1147	0.1	0.65	0.089	25.8
Q145	410307	7012252	1.7	0.04	70	30	677	0.2	0.9	0.085	29.8
Q146	410324	7012193	2.5	0.03	43.3	10	1231	0.2	0.78	0.121	51.7
Q147	410308	7012102	2.47	0.03	39.7	7	1171	0.3	0.49	0.102	32.8
Q148	410298	7012052	2.07	0.05	49.7	7	1456	0.2	0.81	0.07	54
Q149	410276	7011976	2.18	0.05	30.2	3	1205	0.1	0.74	0.058	111.4
Q150	410237	7011918	1.99	0.05	30.7	1	888	0.1	0.47	0.097	43.3
Q151	410217	7011860	3.28	0.03	33.1	5	1323	0.1	0.63	0.093	54.7
Q152	410174	7011797	2.34	0.03	24.4	1	775	0.1	0.77	0.105	88.3

Table 3. Black Spruce Twig Sample Values for Willow Project 2015.

ID	UTM_83E	UTM_83N	Cu	Pb	Zn	Ag	Mn	Au	Ca	Mg	Ba
Q153	410145	7011750	2.25	0.02	31.8	3	1170	0.1	0.41	0.125	51.1
Q154	410098	7011699	2.38	0.03	40.5	1	1877	0.1	0.48	0.065	38.4
Q155	410073	7011648	2.46	0.01	27.9	1	1640	0.6	0.65	0.097	55.1
Q156	410032	7011620	2.18	0.06	20.3	4	1112	0.1	0.51	0.108	32.9
Q157	409977	7011599	1.97	0.04	32.4	1	2044	0.1	0.8	0.111	96
Q158	409935	7011585	2.18	0.04	35.6	4	1554	0.1	0.58	0.109	37
Q159	409886	7011592	2.52	0.02	25.1	1	595	0.1	0.48	0.116	51.8
Q160	409832	7011574	2.1	0.05	26.3	3	790	0.1	0.6	0.087	126.6
Q161	409786	7011555	2.58	0.04	32.1	1	818	0.1	0.87	0.108	174.4
Q162	409742	7011525	2.23	0.03	35.9	1	1289	0.1	0.61	0.115	87.4
Q163	409696	7011499	2.17	0.06	25.4	1	1630	0.1	0.51	0.089	48.6
Q164	409642	7011530	2.35	0.005	25.4	1	1105	0.1	0.39	0.09	45.4
Q165	409584	7011566	2.29	0.04	22.9	1	982	0.1	0.56	0.103	48.6
Q166	409524	7011599	3.23	0.04	30.2	1	1622	0.1	0.86	0.112	107.5

Table 4. Rock and Silt UTM and Selected Results WILLOW 2015.																		
Willow Rx UTM Nad 83			Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Sb	Bi	Ca	Ba	Se
ID	**UTM_83E**	**UTM_83N**	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPB	PPM	PPM	%	PPM	PPM
Q167	409324	7011937	0.2	18.4	12.6	88	<0.1	5.1	13.0	758	4.04	2.3	1.4	0.2	0.1	1.05	151	<0.5
Q168	408694	7012423	0.4	12.1	22.6	62	0.2	4.0	9.0	568	2.96	3.2	1.0	0.3	0.1	1.22	95	<0.5
Q169	408593	7012463	0.2	10.7	21.8	64	<0.1	4.2	9.6	674	3.09	5.6	<0.5	0.3	0.1	0.99	85	<0.5
Willow Silts UTM Nad 83			Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Sb	Bi	Ca	Ba	Se
ID	**UTM_83E**	**UTM_83N**	PPM	PPM	PPM	PPM	PPB	PPM	PPM	PPM	%	PPM	PPB	PPM	PPM	%	PPM	PPM
Q85	409563	7013144	0.78	7.33	9.08	43.4	70	9.5	4.9	141	1.56	5.9	8.7	0.34	0.16	0.16	175.7	<0.1
Q89	409650	7012950	0.95	8.94	10.57	58.5	78	11.7	5.5	157	1.83	7.8	<0.2	0.38	0.16	0.17	167.1	0.1
Q136	409980	7012580	0.86	8.74	11.02	51.6	64	8.7	5.8	231	1.89	6.6	0.4	0.37	0.15	0.19	194.4	0.1
Q170	408412	7010693	2.26	17.97	22.38	101.6	205	14.3	16.2	1112	2.84	13.9	29.5	0.44	0.38	0.48	281.4	0.6