ASX Announcement

22 October 2025

Satellite Imagery Analysis Identifies Multiple High-Priority Antimony and Tungsten Targets at North Pine Project, Idaho.

Highlights

- **Advanced ASTER and Sentinel-2 Analysis Completed:** Remote sensing interpretation conducted by Dr Neil Pendock using Sentinel-2 VNIR/SWIR imagery has identified multiple spectral and gas anomalies indicating potential antimony and tungsten mineralisation across the North Pine Project in Valley County, Idaho.
- **Nine Priority Antimony and Tungsten Targets Identified at Northman and Springfield Prospects:** Analysis of Sentinel-2 and ASTER spectral signatures has resulted in the identification of nine compelling antimony and tungsten targets across the North Pine Project's Springfield and Northman prospects.
- **Strong Antimony and Tungsten Association:** Endmember analysis reveals strong correlations between antimony mineralisation and jarosite, feldspar, microcline and illite minerals. These are typically linked to stibnite hosting hydrothermal systems while scheelite, jarosite, feldspar and chert show strong correlation with tungsten mineralisation.
- **Proximal to World Class Stibnite-Gold Project:** The North Pine Project is located near one of North America's most advanced antimony-gold developments (Perpetua's Stibnite Project). The North Pine prospect areas lies over the contact between the Idaho Batholith and Windermere Supergroup, a major structural and geochemical corridor also hosting the world class Perpetua Stibnite Gold project and Horse Heaven Antimony Project.
- **Exploration of ASTER Identified Anomalies Underway:** Pioneers experienced field geologists are currently on-site at the North Pine project and are actively following up signatures of potential mineralisation identified by the ASTER and Sentinel-2 data interpretation.
- **Aligned with US Critical Mineral Priorities:** Projects target antimony and tungsten, designated by the US Government as critical to national security, clean energy, and defence supply chains.
- **North Pine Project, Idaho: A Tier-One Critical Minerals Opportunity**
  - **Strategically Positioned:** Strategically located nearby to one of North America's most advanced antimony-gold developments (Perpetua's Stibnite Project).
  - **Historic High-Grade Tungsten Mine:** (*see PLN ASX: 09/10/2025*)
  - **Geological Analogues:** The Northman Prospect shows signs of directly analogous geology to Perpetua Stibnite Gold Project.
  - **Multiple untested antimony and polymetallic Occurrences:** Silver Cliffs antimony prospect and Big Creek Sb, Au, Ag, Cu, Zn and Pb polymetallic occurrences.

Pioneer Lithium Limited (ASX Code: PLN) ('**Pioneer'** or '**the Company'**) is pleased to announce the results from an advanced satellite imagery analyses over its recently staked North Pine Project in Valley County, Idaho.

The study was conducted by renowned spectral imaging specialist Dr Neil Pendock and utilised Sentinel-2 VNIR/SWIR datasets. Following atmospheric correction, the data were processed into a ten-band stack from which 16 spectral endmembers were extracted and correlated with the USGS spectral library to identify mineralogical indicators associated with antimony and tungsten mineralisation systems.

Interpretation Summary

The spectral unmixing of Sentinel-2 imagery across the North pine district produced 16 endmembers (minerals) representing surface reflectance's which, when unmixed are interpreted against a library of 481 minerals collected by the USGS. Of these endmembers four key minerals, being scheelite, jarosite, illite and feldspar display strong spatial association with recorded antimony and tungsten occurrences.

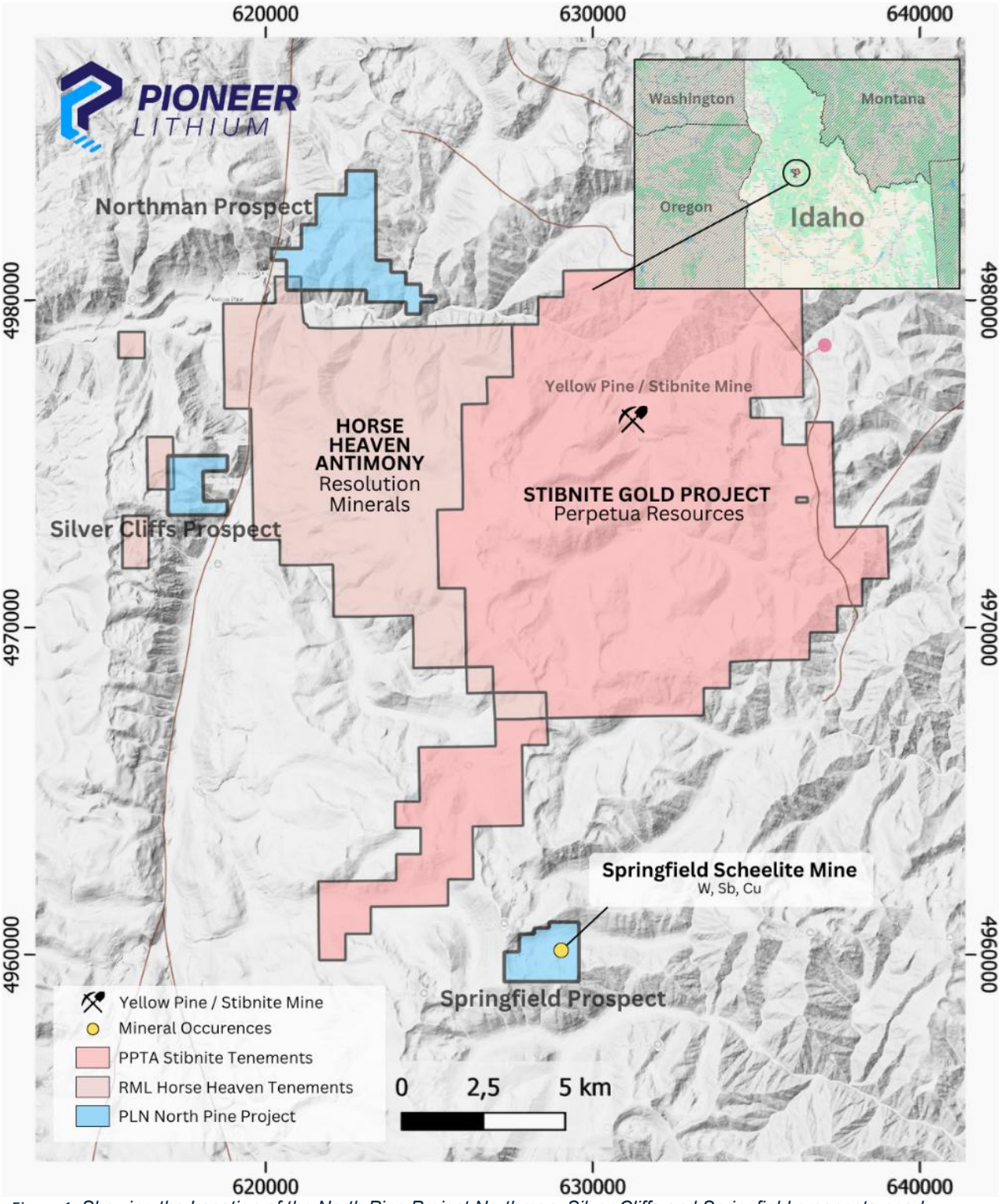

Figure 1: Showing the Location of the North Pine Project Northman, Silver Cliffs and Springfield prospects nearby to Perpetua Resources, Stibnite Gold Project and Resolution Minerals, Horse Heaven Antimony Project.

North Pine Project – Springfield Prospect – Idaho

At the Springfield Prospect, the ASTER signature of the historic Springfield Tungsten Mine and associated tungsten mineralisation is clearly and easily identifiable with four targets with similar ASTER signatures to the Springfield Mine identified (Figure 2, ST1 to ST4). Three of these targets show an ASTER signature indicating potential co-incidental antimony and tungsten mineralisation occurring to the south of the mine (figure 2, targets ST1-ST3). The four target areas have been identified by cross referencing the ASTER anomalies with geological maps and anomalous areas identified in Google Earth.

At the Springfield Mine, samples of the skarn hosted tungsten mineralisation will be taken to assess tungsten grades. Small bulk samples will be taken from the tailings to enable Pioneer to perform recovery test work to ascertain how much recoverable material and associated grades remain in the tailing and are potentially recoverable.

Figure 2 shows the overlay of both antimony and tungsten ASTER spectral images along with the location of associated mineralisation indications provided by Dr Niel Pendock. Targets ST1 to ST3 are areas that show overlay between the spectral signature of indicator minerals associated with both antimony and tungsten mineralisation. These areas show exposure of weathered bedrock in the landscape; it was this weathering and exposure of bedrock that exposed the mineralisation of the Springfield Tungsten Mine deposit in 1945. Pioneers field geologists will visit these targets and provide as assessment of the rock types and sample the talus material and exposed rock faces where possible.

To the northwest of the Springfield Mine a cluster of antimony only targets (ST4) occur in a topographic low of the glacial valley upstream of the Springfield Mine. Pioneers field geologist will explore this area for antimony and tungsten mineralisation and will conduct stream and sediment sampling to determine if transported mineralisation from further up the valley from targets ST2 and ST3 is present, or alternatively primary mineralisation is present.

Figure 2 shows the ASTER signatures of antimony only targets with particularly strong grouping and clustering of antimony targets at ST2 and ST4. Smaller more discrete but strong antimony indicators overlap the ST1 and ST3 strong tungsten targets.

Figure 3 shows the ASTER signatures of tungsten only targets with targets ST 1 and ST3 showing a remarkable similarity to the spectral signature of the Springfield Tungsten Mine itself. These are exciting targets that will be followed up by Pioneers field team. Importantly the ST1 targets shows a strong tungsten spectral image and associated antimony signature absent the slumped and exposed rockface seen at targets ST2 and ST3. This is a very encouraging sign as it may indicate the presence of mineralisation without having the mineralisation or body directly exposed.

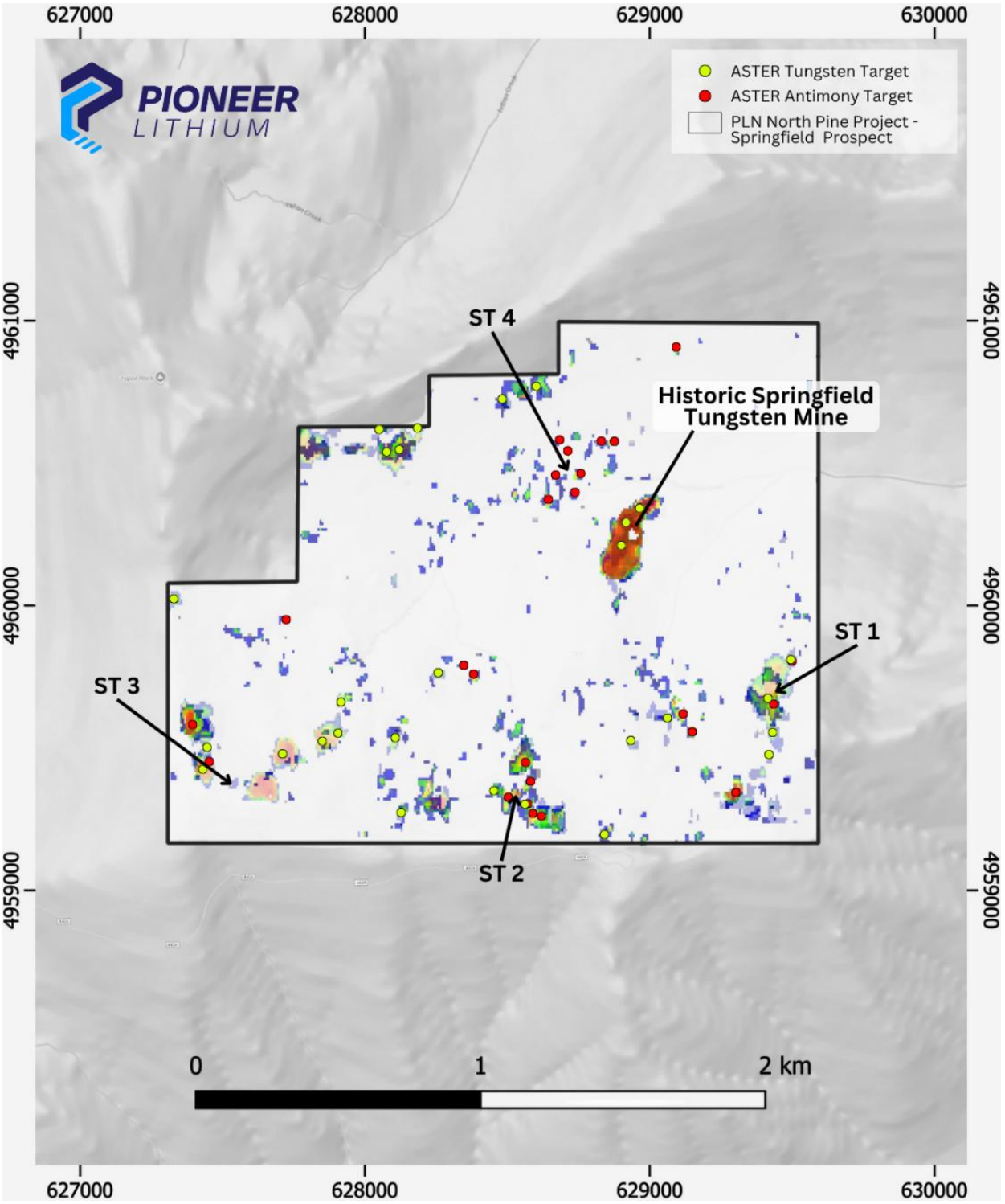

Figure 2: ASTER analysis showing the location of antimony and tungsten indicators at Springfield Prospect. Multiple co-incidental signatures occur in the south of the claim group located uphill from the existing known mineralisation ST1 – ST3).

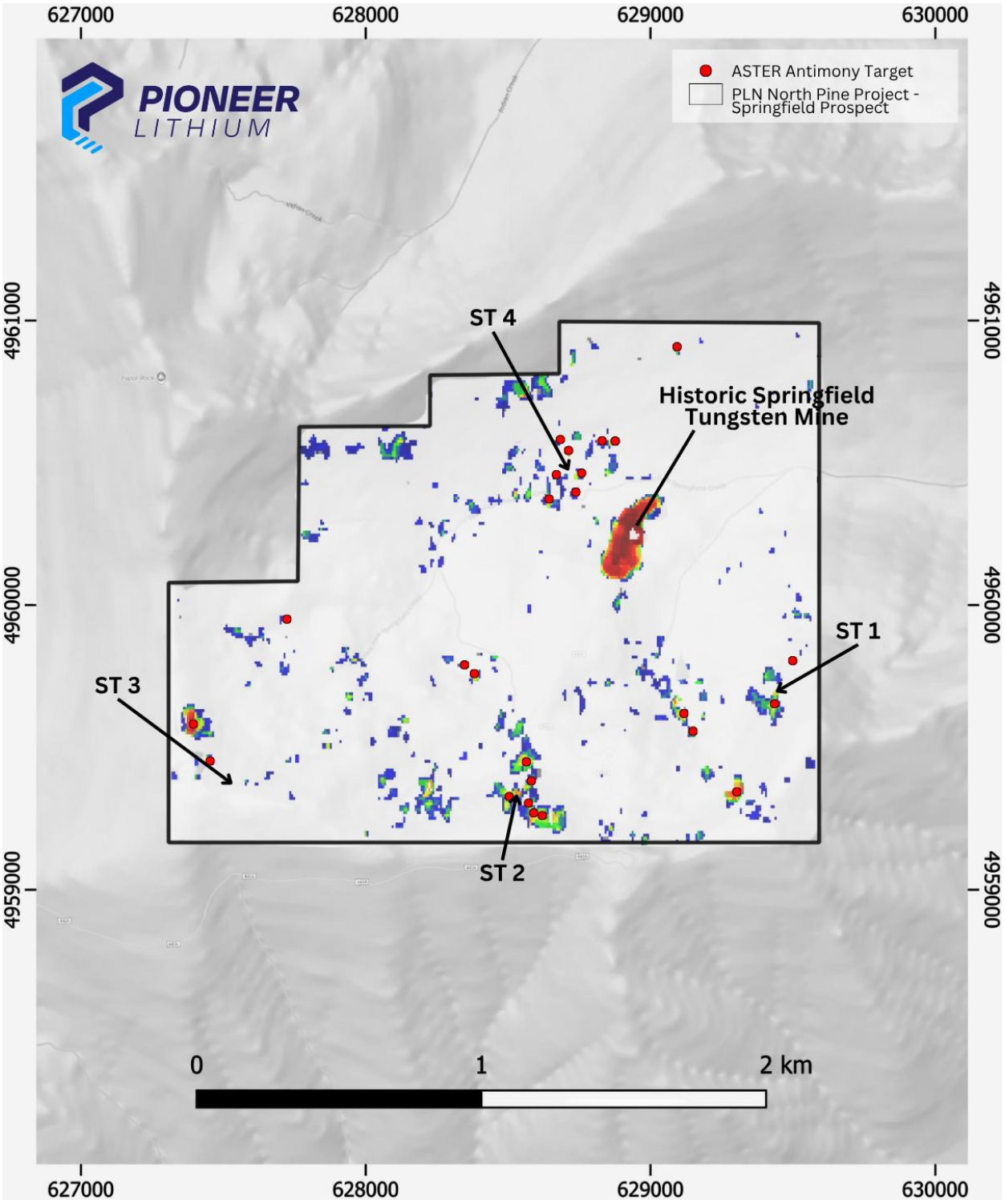

Figure 3: ASTER spectral analysis showing antimony targets currently being investigated by Pioneers field geologists, note the cluster of targets occurring NW and upstream of the Springfield Mine at ST4.

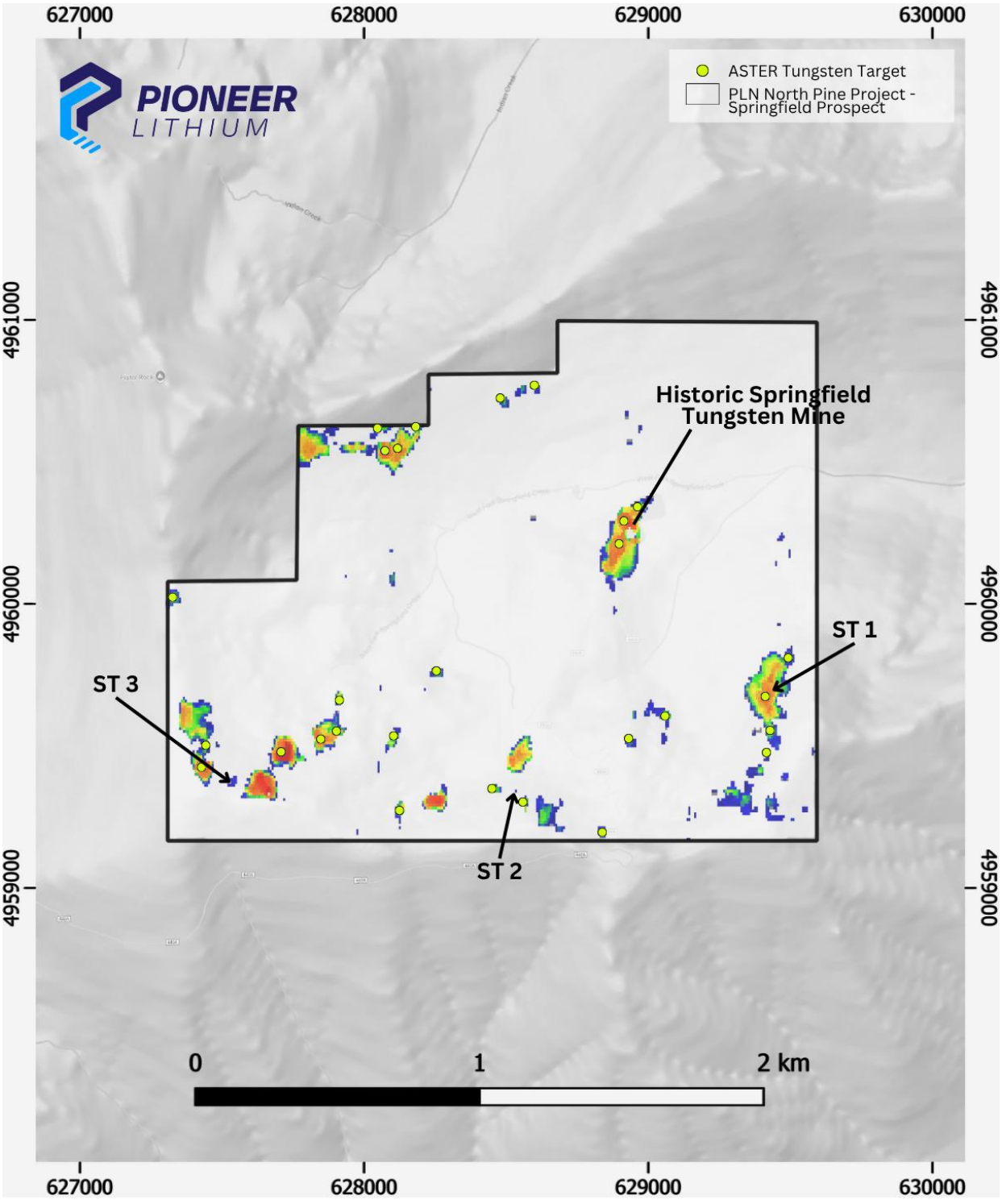

Figure 4: ASTER spectral analysis for mineral endmembers indicative of tungsten mineralisation, note the strong ASTER targets to the south of Springfield Tungsten Mine with very similar strength of signal as the Springfield Tungsten Mine itself (ST1 and ST3).

North Pine Project – Northman Prospect – Idaho

At the Northman Prospect five target zones have been identified (see figure 5, NT1 to NT5). The antimony and tungsten ASTRAL signatures at Northman Prospect are much more discrete with less overlap than that seen at the Springfield Prospect with the exception for two clusters on the western (NT1) and northwestern (NT2) edges of the claim holding where an overlap of antimony and tungsten indicators occur. A NE trending zone of antimony spectral indicators (NT3) runs along the side of the hill at a relative consistent elevation and could represent a large-scale continuous target. In the east of the claim group target NT 4 is a discrete cluster of antimony only indicators and in the north of the claim group NT5 represents a target where a cluster of tungsten only indicators are found.

Figure 6 shows the antimony only signatures identified by Dr Neil Pendock with target areas NT 2 to NT4 having multiple occurrences of antimony ASTRAL indicators. Pioneers team of field geologists will investigate NT 2 and 4 during the current field trip and NT3 if accessible. Given the length and size of the NT3 target it is expected that if this represents a significant lode or shear zone then subsequent geophysical surveys will be able to more accurately trace its footprint.

The Northman Prospect shows stronger ASTER evidence for antimony targets then tungsten however figure 7 shows tunester indicators at NT1, 2 and a discrete tungsten only cluster at NT5.

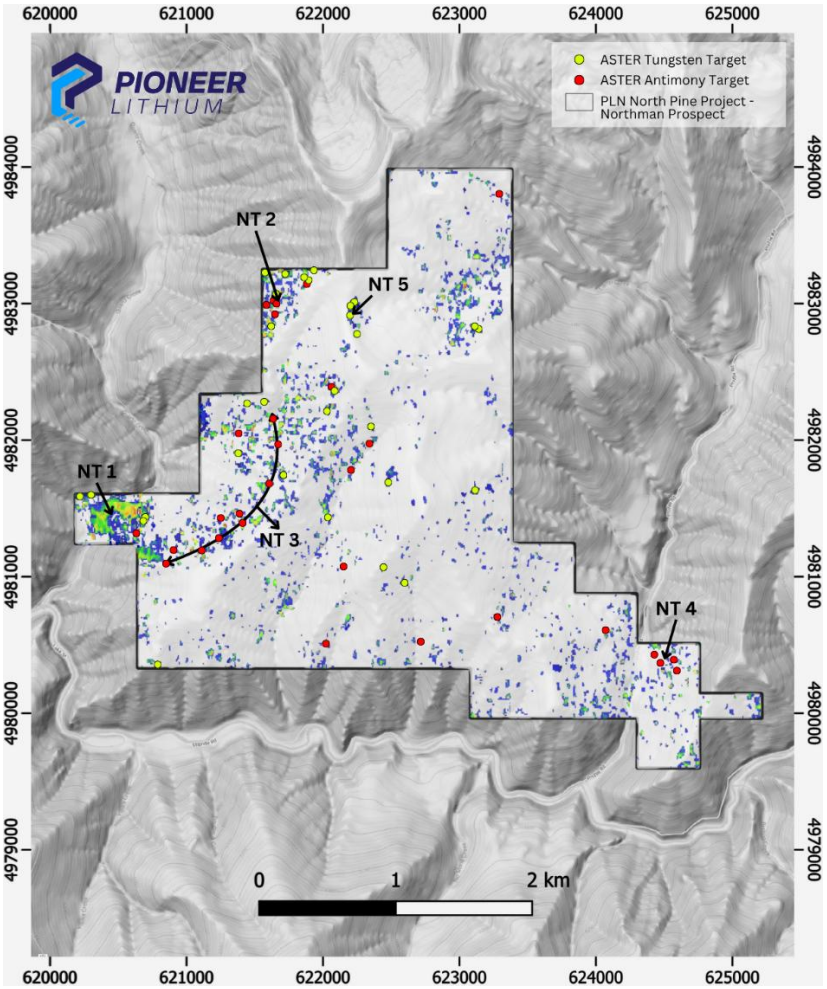

Figure 5: ASTER spectral analysis of the Northman Prospect showing both antimony and tungsten signatures overlain one another. Five target areas NT 1 to NT5 representing both antimony and tungsten signatures are present.

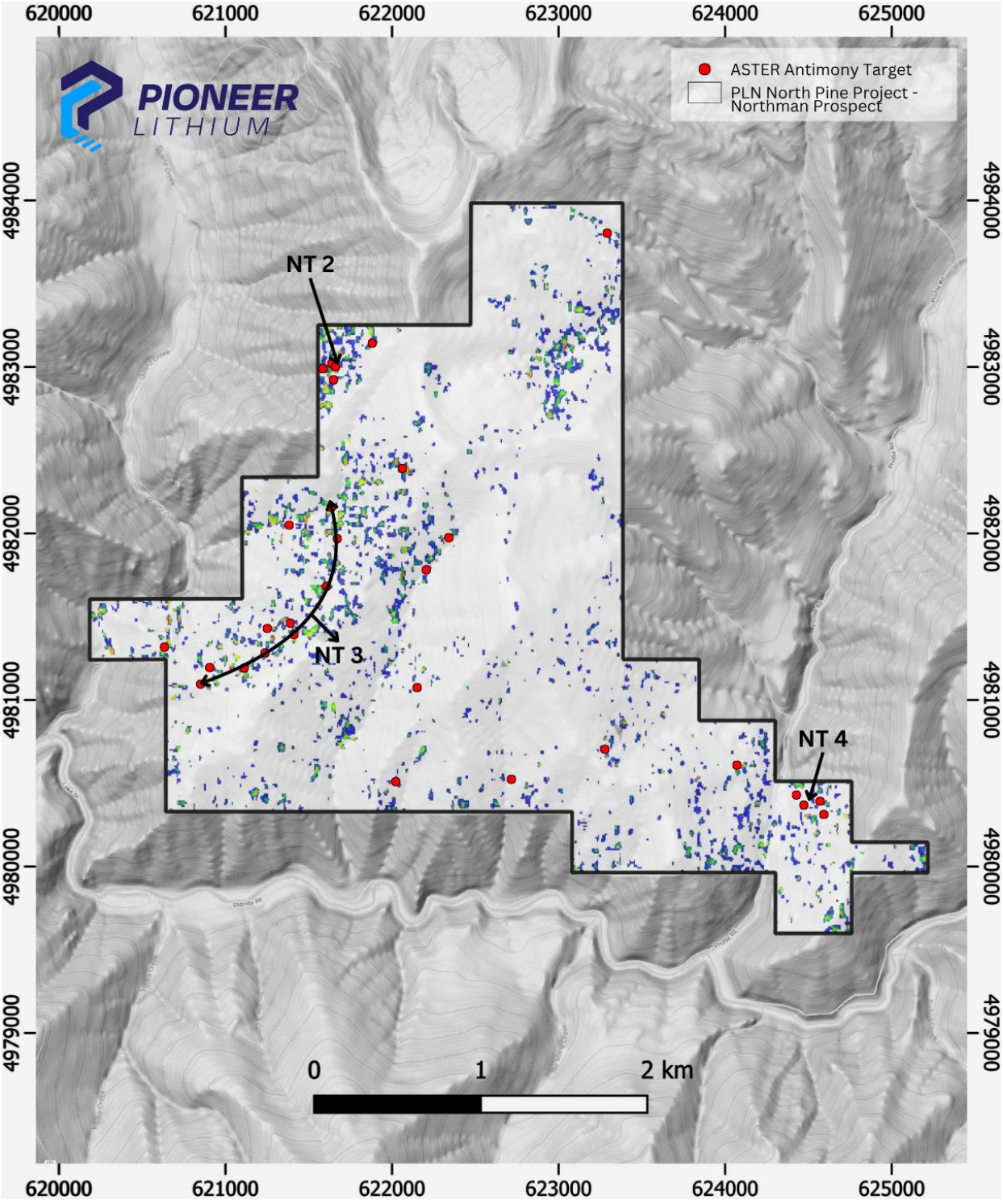

Figure 6: ASTER spectral analysis showing antimony only signatures currently being investigated by Pioneers field geologists. Target NT 2 is co-incidental with tungsten signatures while NT3 and NT4 represent antimony only targets.

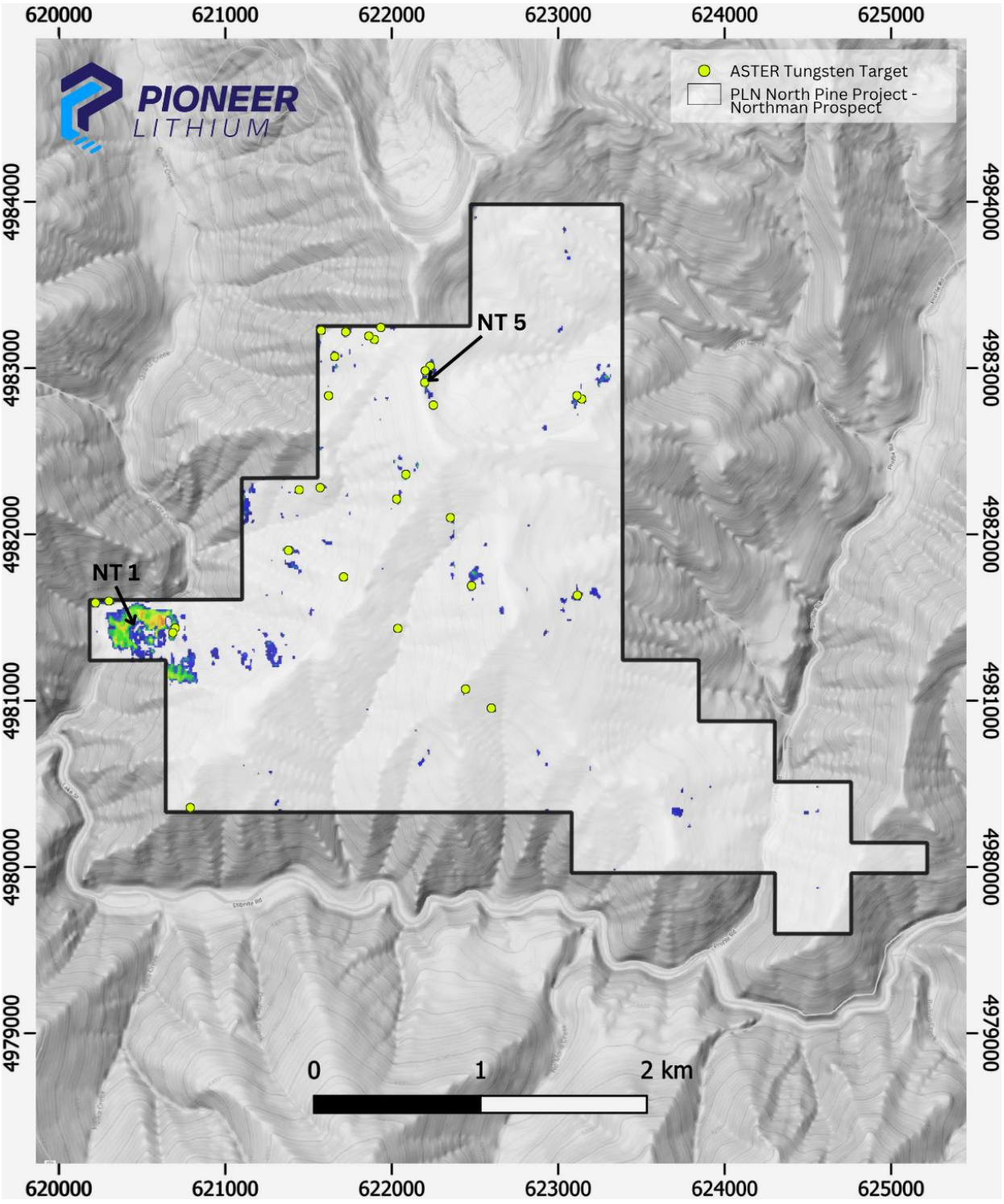

Figure 7: ASTER spectral analysis showing tungsten only signatures currently being investigated by Pioneers field geologists. Target NT 1 is co-incidental with antimony signatures while NT5 represents a tungsten only target.

Pioneer Lithium, CEO Michael Beven commented:

"The ASTER and Sentinel-2 interpretation has delivered compelling new insights into the Pine North Project. The strong overlap between jarosite and illite alteration and scheelite anomalies reinforces our confidence that this district hosts a major antimony and tungsten mineralising systems analogous to the nearby Stibnite and Horse Heaven deposits. These results are an exciting step forward as we continue to build a pipeline of high-value critical mineral projects in North America."

Next Steps

Antimony and Tungsten targets identified by ASTER targeting by Dr Neil Pendrock have been cross referenced to local geology, topography and satellite imagery to generate antimony and tungsten targets that are actively being followed up right now by our geological field team currently on site at North Pine.

Target sites at Northman and Springfield Prospects will be visited and sampled where possible with the goal of finding evidence of primary mineralisation or stream and sediment samples that will allow vectoring towards hidden mineralisation upstream of the target areas.

The grade of mineralisation at the Springfield Mine will be determined by rock chip sampling and small bulk samples will be taken from the tailing to ascertain grade and the recovery potential of tungsten mineralisation.

The findings of the field program will be integrated into the geophysical assessment currently underway to define geophysical targets at the North Pine project and assist with the design of the geophysical survey program to be executed during the winter months.

About the North Pine Project.

The North pine Project is located in Valley County, Idaho, and surrounds the Perpetua Resources Stibnite Gold and Resolution Minerals Horse Heaven Antimony Project. The project covers structurally complex contacts between the Idaho Batholith and Windmere Supergroup metasediments, a proven geological setting for antimony, tungsten and gold mineralisation.

Staking and Claim Status

Pioneer has physically staked the and intends to register 186 lode claims. Under the BLM system, mineral claims are awarded on a first-come, first-served basis however, there is no guarantee that all claims will be granted to Pioneer. The Company advises investors that the tenure status of the North Pine Project is subject to final confirmation by the BLM. Pioneer will update the market in due course once claim grants have been officially confirmed.

For further information on Pioneer: www.pioneerlithium.com.au.

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Competent Persons Statement

The information in this report that relates to Geophysical targets identified via ASTER spectral analysis conducted by Dr Neil Pendock. The ASTER analysis was them combined with and cross referenced to geological maps and google earth images for the purposes of target generation by Mr Michael Beven. The reporting of project information at the North Pine Project is based on, and fairly represents, information and supporting documentation compiled and evaluated by Michael Beven, the CEO to the Company and a Member of the Australian Institute of Geoscientists (AIG). Mr. Beven has sufficient experience relevant to the style of mineralisation, type of deposit under consideration, and the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australian Code for Reporting of Exploration Results, Mineral Resources, and Ore Reserves (JORC Code). Mr. Beven consents to the inclusion of the information in the form and context in which it appears. The information in the market announcement is an accurate representation of the available data and studies for the North Pine Project in the US.

Forward-looking statements

This announcement contains forward-looking statements. Generally, the words "expect", "potential", "intend", "estimate", "will" and similar expressions identify forward-looking statements. By their very nature forward-looking statements are subject to known and unknown risks and uncertainties that may cause our actual results, performance or achievements, to differ materially from those expressed or implied in any of our forward-looking statements, which are not guarantees of future performance. Statements in this announcement regarding Pioneer's business or proposed business, which are not historical facts, are forward-looking statements that involve risks and uncertainties, such as Mineral Resource estimates, market prices of commodities (including gold), capital and operating costs, changes in project parameters as plans continue to be evaluated, continued availability of capital and financing and general economic, market or business conditions, and statements that describe Pioneer's future plans, object.

Proximate Statements

This announcement contains references to mineral exploration results derived by other parties either nearby or proximate to the North Pine Project and includes references to topographical or geological similarities to that of the North Pine Project. It is important to note that such discoveries or geological similarities do not in any way guarantee that the Company will have similar exploration successes on the North Pine Projects, if at all.

Appendix 1:

Idaho Claims Application

Claim Name	Serial Number	BLM Claim ID	Customer Name	BLM Product Name	BLM Admin State
SP001 – SP042	Not yet available	Not yet available	Lia Energy Corporation	Load Claim	ID
AP041 – AP178	Not yet available	Not yet available	Lia Energy Corporation	Load Claim	ID
AP187 – AP234	Not yet available	Not yet available	Lia Energy Corporation	Load Claim	ID

Appendix B: JORC Code, 2012 Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *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 (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g 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 (eg submarine nodules) may warrant disclosure of detailed information.*	• No physical sampling was conducted; the reported data is based on satellite spectral interpretation using Sentinel-2 VNIR/SWIR imagery. • Target mineralisation is inferred from spectral endmembers matched to USGS mineral libraries. This is an early-stage remote sensing technique used to identify prospective zones.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).*	• N/A. No drilling results are being reported in this release.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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.*	• N/A. No drilling results are being reported in this release.
Logging	• *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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• N/A. No drilling results are being reported in this release.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and*	• N/A. No drilling results are being reported in this release.

Criteria	JORC Code explanation	Commentary
	whether sampled wet or dry. • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *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.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• No laboratory assays were conducted. Interpretation is based on spectral correlation with USGS mineral databases.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Spectral interpretation was conducted by Dr. Neil Pendock (Dirt Exploration) using published USGS mineral spectral libraries and multivariate classification models.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Sentinel-2 imagery has a spatial resolution of 10 m (VNIR) and 20 m (SWIR), resampled to 10 m. Interpretation is geographically referenced to UTM Zone 11N, NAD83.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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.* • *Whether sample compositing has been applied.*	• Sentinel-2 data provides continuous coverage over the project areas.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the*	• The satellite data is orthorectified and not subject to directional bias. Interpretation accounts for surface spectral response regardless of structural trends.

Criteria	JORC Code explanation	Commentary
	drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	
Sample security	• *The measures taken to ensure sample security.*	• N/A. No drilling results are being reported in this release.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• The interpretation has been reviewed by the Company and is consistent with regional geological and geophysical datasets. No third-party audit has been performed.

Section 2 Reporting of Exploration Results

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *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.* • *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 North Pine Project Located in Idaho consists of 186 staked claims, approx. 18.8 Km^2. The tenure status of the North pine Project is subject to final confirmation by the BLM. Pioneer will update the market in due course once claim grants have been officially confirmed.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• At Northman and Silver Cliffs prospect within the North Pine Project no systematic historical exploration is recorded on the project areas. • At Springfield Prospect, Only1,900 ft of diamond drilling was reported to have taken place to define the tungsten mineralisation which was already exposed in the rockface. Production commenced 1953–1955 under U.S. Government tungsten subsidy and Ore was processed in a 75-tpd gravity mill with concentrates trucked to Stibnite for final electric separation • Historical records indicate that 39,000 tons of ore were mined averaging 0.35 to 0.40% WO3 for 1,522 short ton units of high grade >70% WO3 concentrate sold. An additional 2,159 lower grade concentrate and 8 tons of >9% material was sent to the Salt Lake Tungsten Co. (Mitchell, 2008, p.8;
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Yellow Pine district is underlain by Cretaceous granitic rocks of the Idaho Batholith intruding metasedimentary rocks of the Windermere Supergroup. Mineralisation occurs as structurally and lithologically controlled hydrothermal replacement and skarn-related systems, associated with late-stage magmatic fluids derived from the Idaho Batholith. Primary mineralisation comprises stibnite (Sb_2S_3) and scheelite ($CaWO_4$) with accessory sulfides, hosted in brecciated shear zones and carbonate horizons adjacent to major fault structures. Alteration assemblages include illite–sericite–quartz and calc-silicate skarns, with later oxidation producing jarosite and ferruginous halos. The mineralisation is interpreted as a multi-phase magmatic-hydrothermal Sb–W system analogous to the nearby Perpetua (Stibnite) and Horse Heaven deposits.
Drill hole Information	• *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:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.* • *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.*	• N/A No drilling results are reported in this release.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high*	• N/A No drilling results are reported in this release.

Criteria	JORC Code explanation	Commentary
	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. • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the 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 (eg 'down hole length, true width not known').*	• N/A No drilling results are reported in this release.
Diagrams	• *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.*	• Pertinent maps for this stage of the Project are included in the release.
Balanced reporting	• *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.*	• All material results from the satellite analysis at Northman and Springfield are disclosed. The interpretation is preliminary and conceptual in nature.
Other substantive exploration data	• *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 and material historical exploration data related to the project area is discussed, have been reported or referenced.
Further work	• *The nature and scale of planned further work (eg 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.*	• The Company has a team of exploration geologists in the field currently ground truthing the spectral targets. Detailed geophysical surveys are currently being planned to define drill targets.