# ASX Announcement

18 November 2025

# Satellite Imagery Analysis Identifies Multiple High-Priority Uranium Targets at Central Buttes, Wyoming

## 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 uranium mineralisation across the Central Buttes Project in Campbell County, Wyoming.
- **Strong Spatial Association with Known Uranium Occurrences:** Multivariate spectral endmembers including pyrite, illite, muscovite, hematite, quartz and feldspar show strong correlation with 573 USGS-recorded uranium occurrences within the Pumpkin Buttes district.
- **Priority Subsurface Targets Identified:** Helium, hydrogen and radon gas anomalies, commonly associated with uranium decay pathways, coincide with high-rank mineral endmembers, defining multiple undercover uranium targets across Pioneer's 69 Central Buttes claims.
- **Strategic Positioning in a Tier-1 Uranium District:** The project sits within the Pumpkin Buttes uranium field, host to numerous historical ISR and roll-front deposits in the Eocene Wasatch Formation, one of America's most productive uranium-bearing geological settings.
- **Roll-Front Uranium System Indicated:** Spectral signatures align strongly with sandstone-hosted redox-controlled uranium systems typical of the Wasatch Formation, supporting the potential for ISR-amenable mineralisation.
- **Aligned with US Critical Mineral Priorities:** Project targets roll front style ISR amenable uranium mineralisation, designated by the US Government as critical to national security, and clean energy supply.
- **Central Buttes Uranium Project, Wyoming**
  - **Located in a Prolific US Uranium Province:** Located in the Pumpkin Buttes uranium district, one of the most productive and uranium-rich areas in the US
  - **ISR-Amenable Roll-Front Style Mineralisation:** Targeting sandstone-hosted uranium in the Wasatch Formation, a proven host for In-Situ Recovery (ISR) operations.
  - **Historical Data:** US Geological Survey and MRDS records confirm presence of multiple radiometric anomalies and uranium occurrences *(See PLN:ASX 22/10/2025).*
  - **Strategic Basin Consolidation**: Strengthens Pioneer's position in the Powder River Basin, where multiple uranium producers are currently active.

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 Central Buttes Project in Campbell County, Wyoming. The project lies within the historically significant Pumpkin Buttes uranium district on the eastern flank of the Powder River Basin, an area that has hosted numerous sandstone-hosted uranium operations since the mid-20th century.

The satellite study was completed by renowned spectral imaging specialist Dr Neil Pendock. Using Sentinel-2 VNIR/SWIR datasets, the imagery was atmospherically corrected and processed into a ten-band stack from which sixteen spectral endmembers were extracted. These were correlated with the USGS mineral spectral library to identify mineralogical and gas indicators typically associated with redox-controlled uranium systems found within the Eocene Wasatch Formation.

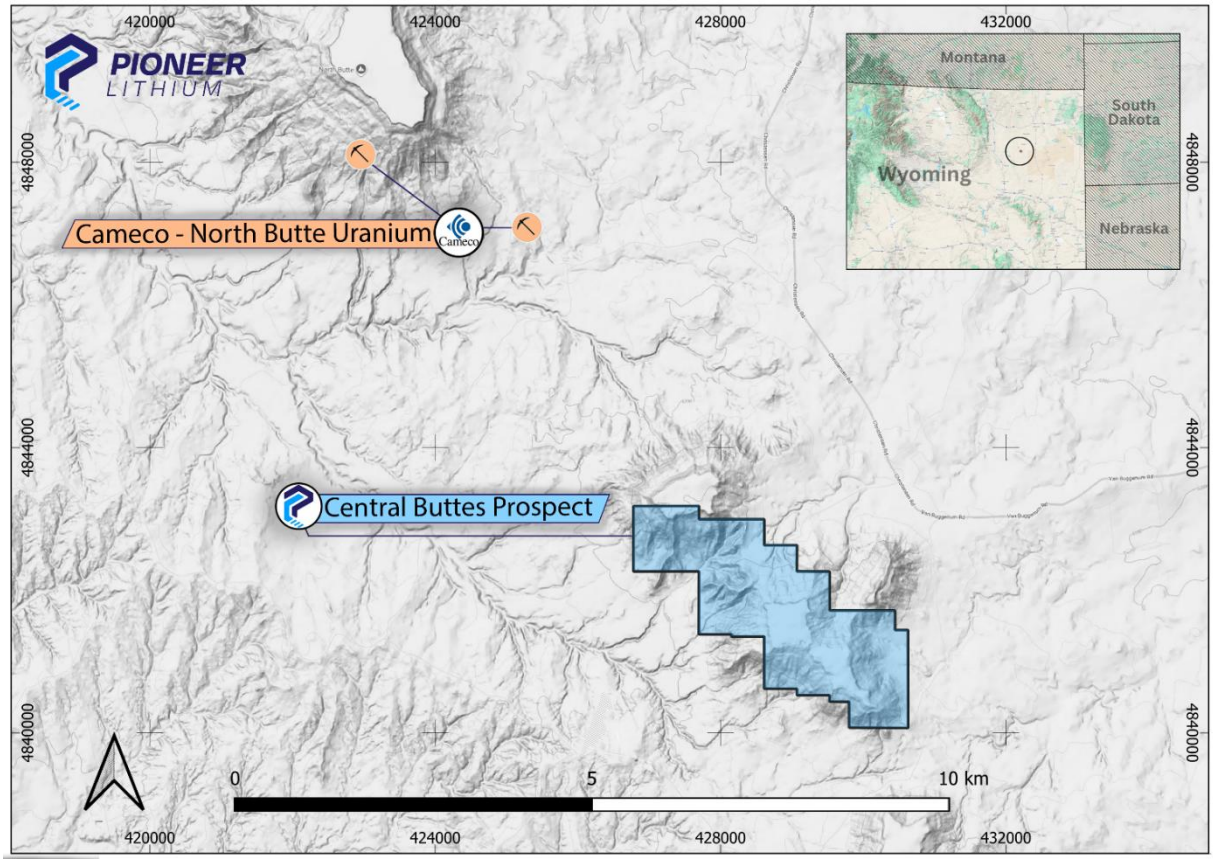


*Figure 1: Central Buttes Uranium Project in Campbell County Wyoming, showing location relative to Camico North Buttes Uranium Project.*

## Interpretation Summary

The spectral unmixing process across the Central Buttes district reveals several endmembers with strong spatial correlation to the 573 USGS-recorded uranium occurrences in the Pumpkin Buttes region.

Key mineral endmembers such as pyrite, illite, muscovite, hematite, feldspar, quartz and arkosic sandstone are all represented across the project area. These minerals are characteristic of reducing and oxidising environments associated with uranium roll-front systems, and their distribution across the Central Buttes claims reinforces the geological potential of the Wasatch Formation as a host for uranium mineralisation.

In addition to mineral mapping, gas anomaly layers were generated for helium, hydrogen, methane and radon. Helium and radon anomalies show particularly strong associations with known uranium occurrences, reflecting the typical decay paths of uranium-bearing minerals such as carnotite, uraninite and coffinite. Hydrogen anomalies are consistent with radiolysis of water caused by uranium decay, while methane anomalies reflect the presence of carbonaceous horizons and thin coal seams within the Wasatch Formation, which serve as reducing traps favourable for uranium precipitation.

Together, the mineral endmembers and gas anomalies define multiple new priority exploration targets across the 69 Central Buttes claims. These targets share spectral characteristics with established roll-front uranium systems in the district and highlight areas of potential uranium mineralisation beneath shallow cover.

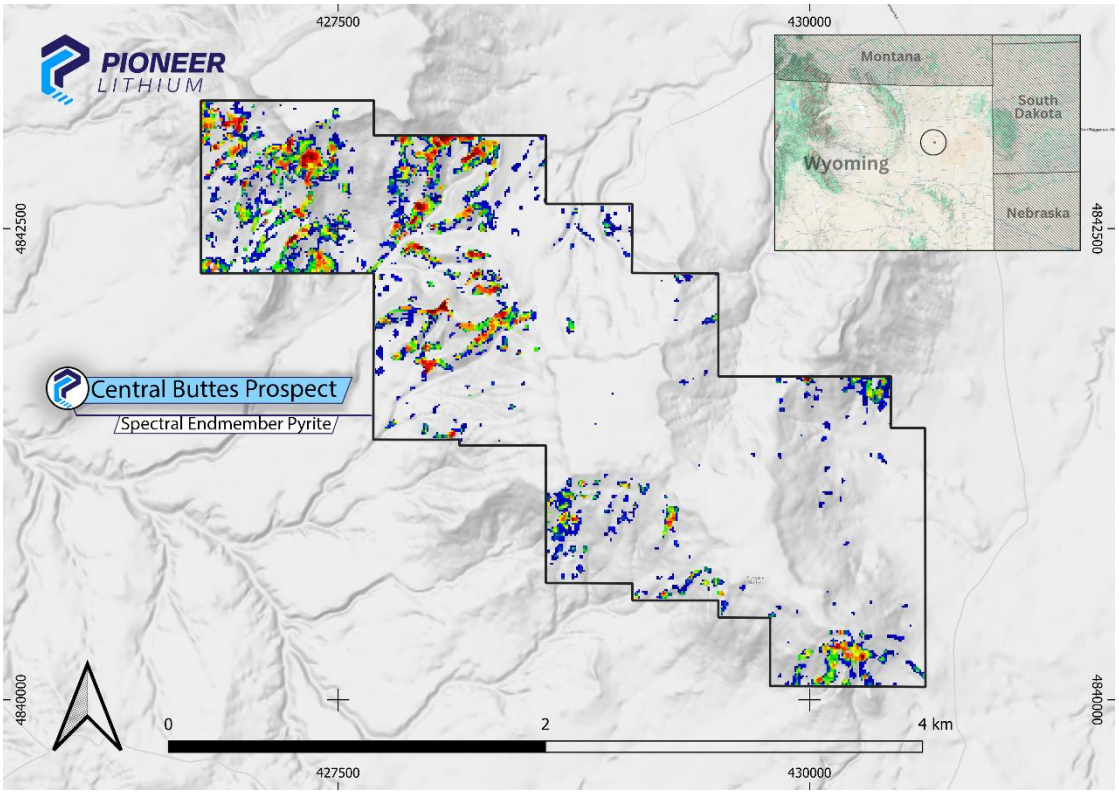


*Figure 2: ASTER interpretation for pyrite endmember commonly associated with uranium mineralisation is sandstone hosted deposits.*

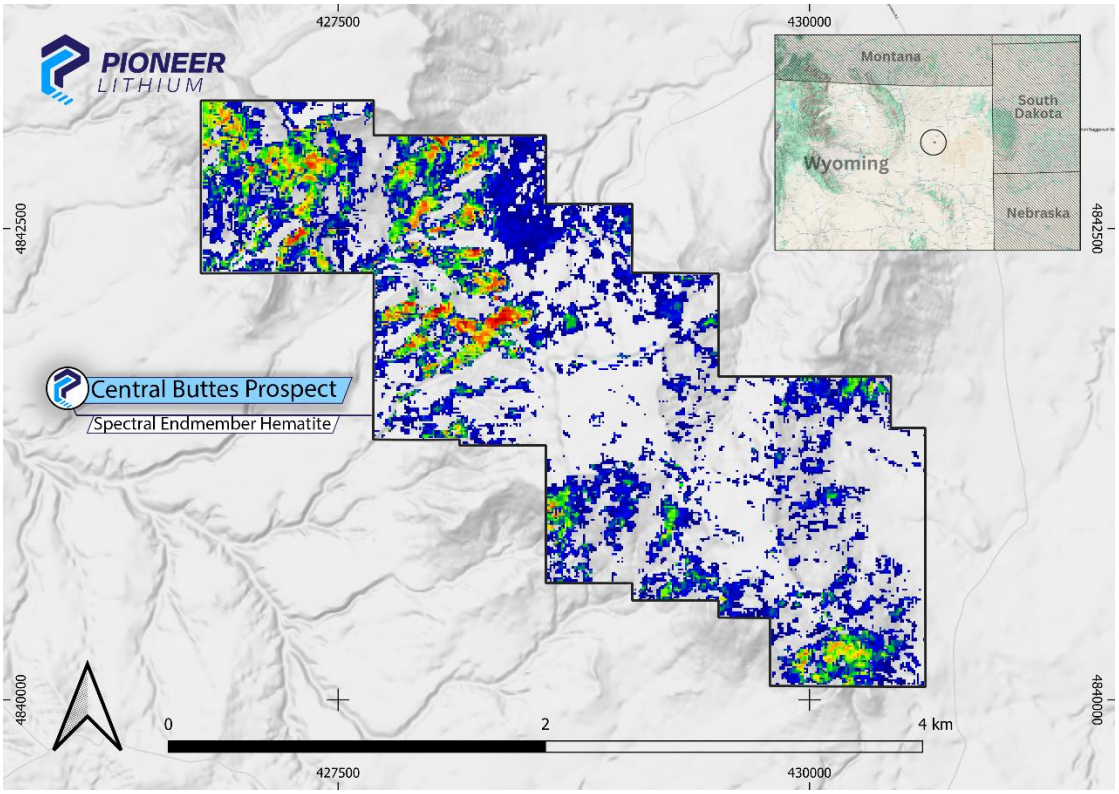


*Figure 3: ASTER interpretation for haematite endmember, zones of iron enrichment associated with haematite cause redox horizons suitable to facilitate the precipitation of mobilised uranium in groundwaters.*

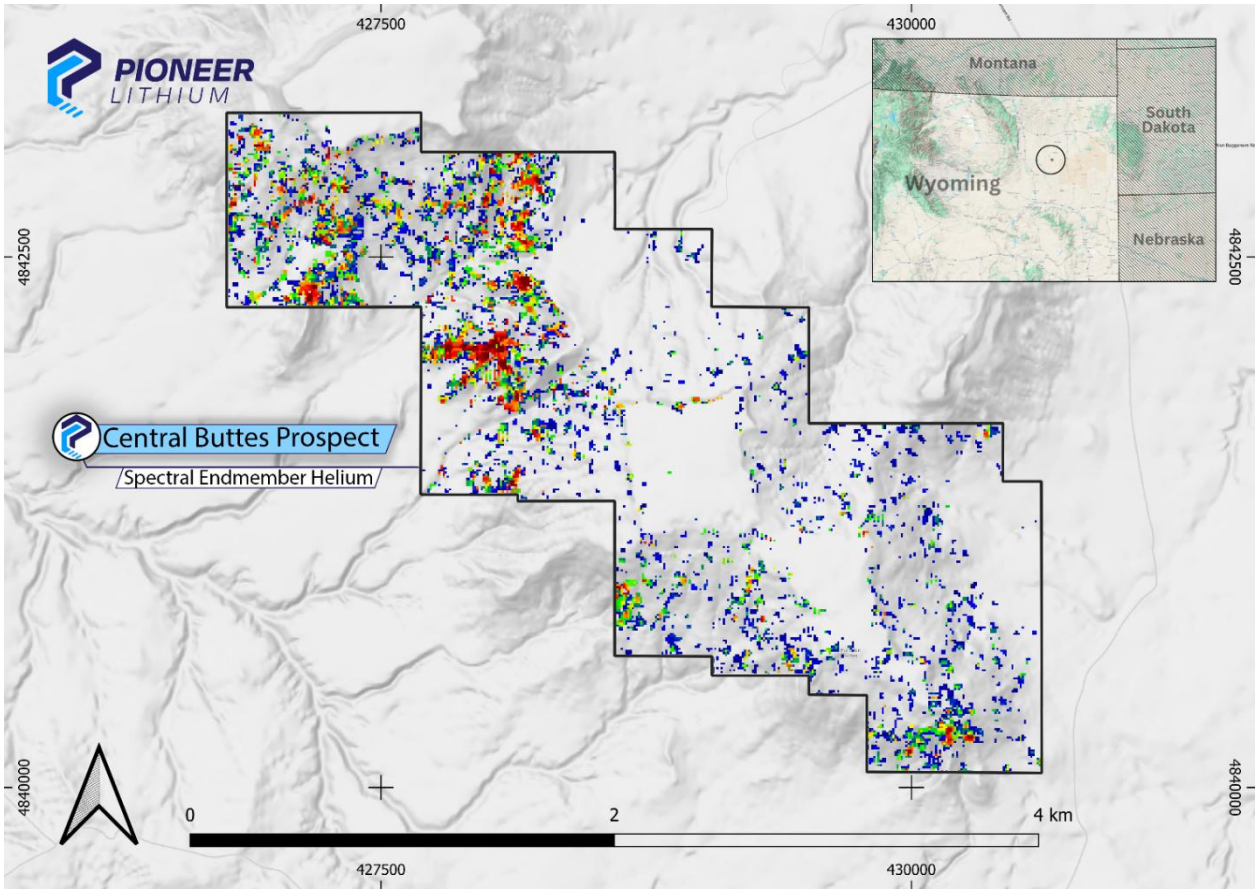


*Figure 4: ASTER interpretation showing Helium gas, helium is produced by natural radioactive decay of uranium and thorium from fractures and permeable sandstones.*

## Central Buttes Uranium Project – Wyoming

The Central Buttes Uranium Project is situated within a region renowned for its sandstone-hosted roll-front uranium deposits. Mineralisation in the region typically occurs between 140 and 900 feet below surface within fluvial sandstones of the Eocene Wasatch Formation, where uranium is precipitated at the interface between oxidised red sandstone and reduced grey or carbonaceous horizons. These redox boundaries, often marked by the presence of pyrite and clay alteration minerals such as illite and muscovite, are strongly represented in the spectral datasets interpreted by Dr Pendock.

The combination of mineralogical indicators, gas responses and proximity to extensive historical uranium occurrences demonstrates that the Central Buttes Project area contains key geological elements required for roll-front uranium deposition. These findings provide a clear framework for the next phase of exploration.

## Pioneer Lithium, CEO Michael Beven commented:

*"The ASTER and Sentinel-2 interpretation have delivered an exceptionally promising outcome for Pioneer. We now have multiple well-defined spectral and gas anomalies that correlate strongly with known uranium occurrences across the Pumpkin Buttes district.*

*The alignment of roll-front indicator minerals, decay-related gas anomalies and the favourable geological setting of the Wasatch Formation provide us strong confidence in the potential scale and quality of the Central Buttes Project. Central Buttes is emerging as a highly compelling addition to our expanding U.S. critical minerals portfolio. Importantly, these datasets provide a clear roadmap for our next phase of exploration, allowing us to focus immediately on the highest-ranked targets."*

## Next Steps

The Company will now integrate the ASTER and Sentinel-2 spectral anomalies into its geological and structural datasets to refine priority areas for field investigation. This work will include on-ground reconnaissance, sampling where possible, handheld scintillometer surveys and validation of spectral anomalies. Pioneer will also progress planning for a detailed airborne geophysical survey, designed to define structural corridors, redox boundaries and lithological contacts that control uranium mineralisation in roll-front systems. These datasets will ultimately inform the generation of high-priority drill targets

## About the Central Buttes Project.

The Central Buttes Project consists of 69 staked lode claims targeting sandstone-hosted roll-front uranium within the Eocene Wasatch Formation. Pioneer notes that tenure remains subject to final confirmation by the Bureau of Land Management (BLM), and the Company will provide updates once claim grants are formally confirmed. The project is located within one of the most prolific uranium-bearing districts in the United States and contains key geological attributes known to host economic roll-front deposits.

## Staking and Claim Status

Pioneer has physically staked the and intends to register 69 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.

**ENDS**

**Investors:**
Michael Beven
Chief Executive Officer
Pioneer Lithium Ltd
Phone: 0452 177 769
E: Michael.Beven@pioneerlithium.com.au

**Media:**
Kelly-Jo Fry
Pioneer Lithium Ltd
Phone: (08) 9465 1044
E: kjfry@pioneerlithium.com.au

## 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 Central Buttes Project and includes references to topographical or geological similarities to that of the Central Buttes 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 Central Buttes Project, if at all.*

## Compliance Statement

*Compliance Statement This report contains information on the Central Buttes Project extracted from ASX market announcements dated 22/10/2025, 20/10/2025 released by the Company and reporting in accordance with the 2012 edition of the "Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (JORC Code). The original market announcements are available to view on www.pioneerlithium.com.au and www.asx.com.au. Pioneer Lithium is not aware of any new information or data that materially affects the information included in the original market announcement which continue to apply.*

## Appendix 1:

### Wyoming Claims Application

| Claim Name | Serial Number | BLM Claim ID | Customer Name | BLM Product Name | BLM Admin State |
|---|---|---|---|---|---|
| WY01 – WY69 | Not yet available | Not yet available | Lia Energy Corporation | Load Claim | WY |

## 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.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*<br>• *Aspects of the determination of mineralisation that are Material to the Public Report.*<br>• *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.<br>• 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.*<br>• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br>• *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.*<br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*<br>• *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.*<br>• *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.*<br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *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.*<br>• *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.*<br>• *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.*<br>• *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.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *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.*<br>• *Specification of the grid system used.*<br>• *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 13N, NAD83. |
| ***Data spacing and distribution*** | • *Data spacing for reporting of Exploration Results.*<br>• *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.*<br>• *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.*<br>• *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 was 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.*<br>• *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 Central Buttes Project Located in Wyoming consists of 69 staked claims, approx. 5.6 $Km^2$. 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.* | • Uranium exploration within the broader Pumpkin Buttes region dates back to the 1950s, when the U.S. Atomic Energy Commission (AEC) identified extensive uranium mineralisation across the eastern Powder River Basin. Early work included district-scale mapping, radiometric surveying and evaluation drilling undertaken by the AEC and private contractors, primarily targeting shallow carnotite occurrences and near-surface redox boundaries in the Wasatch Formation.<br>• During the 1960s–1980s several major uranium companies, including Pathfinder Mines, Rocky Mountain Energy, Kerr-McGee and various local operators, carried out systematic exploration programs in the Central Buttes area. These programs included rotary and core drilling, downhole radiometric logging, geological mapping, stratigraphic logging and limited bench-scale metallurgical testing. Exploration confirmed the presence of multiple roll-front uranium systems at shallow to moderate depths within permeable arkosic sandstone units, consistent with regional mineralisation trends. While extensive drilling occurred throughout the Pumpkin Buttes district, the specific ground now held under the Central Buttes claims appears to have received only reconnaissance-level investigation, with no evidence of detailed deposit appraisal or resource definition drilling within the current claim block.<br>• Historical regional datasets also indicate the presence of several hundred documented uranium occurrences across the district, many plotted within or immediately adjacent to the project area in the U.S. Geological Survey Mineral Resources Database (MRDS). These data points represent prospect-level observations, shallow pits, hand-dug trenches and minor rotary test holes completed during various waves of uranium activity. Most historical work focused on the identification and mapping of redox boundaries and the delineation of favourable sandstone horizons within the Wasatch Formation rather than systematic exploration across what is now the Central Buttes tenure.<br>• No historical production, large-scale drilling programs, ISR pilot studies or resource estimations have been recorded within the current project boundary. Available information indicates that previous explorers completed only “first-pass” prospecting and regional data acquisition, leaving the area effectively underexplored by modern industry standards. The absence of systematic drilling, geophysical surveying and geochemical sampling within the current claim area highlights the early-stage exploration status of the Central Buttes Project. |
| ***Geology*** | • *Deposit type, geological setting and style of mineralisation.* | • The Central Buttes Uranium Project is located within the Pumpkin Buttes uranium district on the eastern margin of the Powder River Basin, northeastern Wyoming. The district is underlain by a thick succession of Paleocene to Eocene continental sediments, with uranium mineralisation hosted predominantly within fluvial sandstones of the Eocene |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | Wasatch Formation, which conformably overlies the Paleocene Fort Union Formation.<br>• The Wasatch Formation comprises interbedded medium- to coarse-grained arkosic sandstones, siltstones, mudstones, carbonaceous shale and thin coal seams deposited in a meandering fluvial to alluvial plain environment. Uranium occurs as sandstone-hosted roll-front deposits, forming along chemically reduced zones where oxidised groundwater encounters reduced lithologies. Mineralisation typically develops at redox interfaces between hematitic red sandstones and reduced grey or carbonaceous horizons.<br>• Primary uranium minerals include carnotite, uraninite and coffinite, and occur as disseminations, pore-filling accumulations and grain coatings within permeable sandstone units. These minerals are commonly spatially associated with pyrite, organic matter, carbonaceous debris and clay alteration assemblages dominated by illite, kaolinite and muscovite. The presence of thin coal seams and carbonaceous shale beds within the Wasatch sequence provides favourable reducing conditions and contributes to the localisation of roll-front systems.<br>• Uranium mineralisation within the Pumpkin Buttes field occurs at shallow to moderate depths, typically 140–900 feet below surface, and is controlled by a combination of stratigraphic permeability contrasts, redox conditions, and subtle structural influences that modify fluid pathways. The sandstone beds dip gently basinward, allowing oxidising fluids to migrate along permeable horizons until encountering reducing environments conducive to uranium precipitation.<br>• The Central Buttes Project contains geological characteristics consistent with established roll-front uranium systems in the district, including the presence of permeable arkosic host sandstones, redox-controlled alteration patterns, carbonaceous reducing horizons, and a regional setting historically known for significant uranium production and exploration success. Satellite spectral analysis confirms the presence of alteration minerals and geochemical indicators typical of uranium-bearing roll-front systems. |
| ***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:*<br>○ *easting and northing of the drill hole collar*<br>○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*<br>○ *dip and azimuth of the hole*<br>○ *down hole length and interception depth*<br>○ *hole length.*<br>• *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.*<br>• *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.*<br>• *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.*<br>• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br>• *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 Central Buttes 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).*<br>• *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 intends to conduct a radiometric survey followed by first pass field reconnaissance of the project area after completing negotiations with local ranchers for the purposes of facilitating logistics |