Technical Report on Resources
Moore Ranch Uranium Project
Campbell County, Wyoming USA

Technical Report for NI 43-101

Effective Date: April 30, 2019

Report Prepared For:

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April 2019
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1.0 SUMMARY


This report addresses the geology and uranium mineralization of the mineral holdings for the Project located in Campbell County, Wyoming, located at approximate Latitude 43° 35’ North and Longitude 105° 50’ West. The Project is located within the Pumpkin Buttes Uranium Mining District of the Powder River Basin (PRB), and approximately 54 air miles northeast of Casper, Wyoming (see Figure 1). Uranium One controls the mineral rights of the Project area with 86 unpatented federal lode mining claims, four State of Wyoming mining leases, and seven fee mineral leases.

Mineral resources within the Project occur in sands of the Eocene age Wasatch Formation. The Wasatch is a fluvial deposit composed of sandstones interbedded with claystone, siltstone, carbonaceous shale, and coals. The uranium mineralization is typical of the Wyoming type roll-front deposits. Uranium One developed a geologic unit identification nomenclature for the Project that describes sand units in ascending order from the 10 sand to the 80 sand. The majority of the mineral resources at the Project occur in the 70 host sand. Other, currently undeveloped, resources also exist in deeper horizons. The 70 sand is up to 120 feet thick and average depth to the mineralized zones is approximately 180 feet below the ground surface depending on local topography.

Approximately 2,800 historic exploration drill holes were completed within the Project area between 1968 and 1992 with the majority being drilled by Conoco Minerals (Conoco). Wold Uranium (Wold), Kerr-McGee Nuclear (Kerr-McGee), Rio Algom Mining (Rio Algom), and Power Resources (now Cameco Resources) held rights to the area during the early 1990’s. Since 2005, Uranium One has drilled an additional 803 new exploration and delineation holes in the Project. Uranium One’s drilling program is described in Section 10.0 of this report.

Data available for the resource estimate presented in this technical report include lithologic and geophysical logs from the drilling described above. A total of 3,662 geophysical logs were evaluated for this report.
Figure 1. Moore Ranch Uranium Project Location
This technical report presents an estimate of Mineral Resources as defined in Section 1.2 of NI 43-101. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. The estimated mineral quantity and grade described in this technical report were calculated using accepted protocols. The estimate meets the NI 43-101 classification of Measured and Indicated Mineral Resources as defined by NI 43-101 and the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definitions Standards incorporated by reference therein.

The Mineral Resource estimates shown below in Table 1 were calculated using the grade thickness (GT) contour method where the uranium grade is multiplied by the mineralization thickness. The GT values of the subject mineralized intervals for each hole were plotted on a drill hole map along with notations of where in the roll front that intercept was located. The roll front was then mapped and contour lines for the GT values were drawn. The areas within the GT contour boundaries were used for calculating resource estimates utilizing the following criteria:

- **Measured Resource**: < 70’ between data points area of influence ~5,000 ft$^2$
- **Indicated Resource**: from 70’ to 200’ between data points: area of influence ~ 40,000 ft$^2$
- **Inferred Resources**: from 200’ to 400’ between data points: area of influence ~160,000 ft$^2$

The minimum grade cutoff was determined to be 0.02% $\text{eU}_3\text{O}_8$ and a thickness cutoff of 2 feet was utilized. The mineral resources are reported based on a grade thickness (GT) cutoff of 0.30 which is presented in the following table. Section 14.0 provides a detailed description and tabulation of the resources by section.

Based upon data from the above-described historical and confirmation drilling, the current resource estimate yields a total of 3.21 million pounds $\text{eU}_3\text{O}_8$ in the Measured and Indicated categories. The Uranium One resource estimation is based on geologic cutoffs as described above. The current resources at the Project are reported in Table 1. The Author, a Wyoming Professional Geologist (PG) and the independent QP, is of the opinion that the classification of the resources as stated meets the CIM definitions as adopted by the CIM Council on May 2014. The mineral resource estimates in this report, based on historical and recent drilling, were reviewed and accepted by the Author.

### Table 1. Summary of Estimated Mineral Resources for the Project

<table>
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<tr>
<th>Township/Range</th>
<th>Ore Metric Tonnage, (000's)</th>
<th>Average Grade % $\text{eU}_3\text{O}_8$</th>
<th>$\text{eU}_3\text{O}_8$ Pounds</th>
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<tr>
<td>T42N R75W</td>
<td>2,427</td>
<td>0.060</td>
<td>3,209,944</td>
</tr>
<tr>
<td>T42N R75W</td>
<td>42</td>
<td>0.047</td>
<td>43,700</td>
</tr>
<tr>
<td>Measured</td>
<td>2,427</td>
<td>0.060</td>
<td>3,209,944</td>
</tr>
<tr>
<td>Indicated</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Inferred</td>
<td>42</td>
<td>0.047</td>
<td>43,700</td>
</tr>
</tbody>
</table>

Notes: 1) Township (T) and Range (R) are in reference to the Public Land Survey System. They are used herein to indicate geographical position of resources within the Project area. 2) Resources calculated at a 0.30 GT cut-off
Recommendations for further work on the Project are summarized as follows:

- Continue delineation and in-filling drilling as necessary to better refine future wellfields, convert inferred resources to higher categories and to evaluate potential for additional resource targets.

The author concludes the Measured and Indicated resources of approximately 3.210 million pounds of U₃O₈ for the Project are compliant with Canadian NI 43-101 guidelines. There is limited risk that the estimate of quantity, quality, and physical characteristics of the resources of the Project will be unfavorably affected by future investigations.

The reader is cautioned that due to the uncertainty attached to Inferred Mineral Resources, it cannot be assumed that all or any part of an Inferred Mineral Resource will be upgraded to an Indicated or Measured Mineral Resource, because of continued exploration. Confidence in the Inferred Mineral Resource estimate is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Inferred Mineral Resources must be excluded from estimates forming the basis of PEA or other feasibility studies.

2.0 INTRODUCTION

2.1 PURPOSE OF THE REPORT

This Technical Report was developed for Uranium One to assess the resource potential based on all available information for the Project in compliance with the requirements of Canadian NI 43-101 and 43-101F1.

2.2 SOURCE OF INFORMATION AND DATA

This report has been constructed and compiled from information and data including drill hole location maps and data sheets, gamma-ray, resistivity, self-potential curves plotted by depth, core hole data from drilling, and other historical data obtained by previous operators within the Project Area. The findings of this report are based on published and unpublished data.

2.3 AUTHOR

Completion of this report was under the direction and supervision of Mr. Benjamin J. Schiffer, P.G., WWC Engineering. Mr. Schiffer has personal work experience employed as a geologist at Cogema’s Christensen Ranch In-Situ Leach (ISL) Mine, now a part of the Willow Creek Mine, from 1995 to 1999. Mr. Schiffer also worked at Cogema’s Holiday-El Mesquite mine and at Pathfinder’s Shirley Basin project. Since leaving Cogema in 1999, Mr. Schiffer has been a consulting geologist and has worked on a number of uranium projects both domestically and internationally. Mr. Schiffer is an independent QP as defined by NI 43-101 and visited the site on March 27, 2019. The purpose of the visit was to observe the geography and geology of the Project site and view the location of the uranium resource areas. Additionally, Mr. Schiffer has approved the technical disclosure contained in this report and has verified the sampling, analytical, and test data underlying the mineral resource estimate.
2.4 **CURRENCY AND UNITS OF MEASURE**

All references to currency are US dollars (US$). Units of measurement are the English system of inches, miles, tons, etc. Uranium is expressed as pounds U₃O₈, the standard market unit. Unless otherwise stated, historical reported grades for Mineral Resources estimated are percent eU₃O₈, which is the equivalent U₃O₈ by calibrated geophysical logging probes. ISR refers to in situ recovery, which is also sometimes referred to as ISL.

3.0 **RELIANCE ON OTHER EXPERTS**

This Technical Report has been prepared under the supervision of Benjamin J. Schiffer, P.G. Content for this Technical Report is based on information provided by Uranium One and generally accepted uranium ISR practices. Mineral Resource estimates are based on historical exploration, delineation and production drilling, and results of recent confirmation drilling provided by Uranium One and independently evaluated by the Author.

4.0 **PROPERTY DESCRIPTION AND LOCATION**

4.1 **PROPERTY DESCRIPTION**

The Project is located in the southern portion of the Pumpkin Buttes Uranium District of Wyoming, within Campbell County (Figure 1). The Project area covers all, or portions of, approximately 16 sections (6,281 acres) and its location is described as follows:

- T42N R75W – All of Sections 26, 27, 33, 34, 35, 36, the south half of Section 25 and the south half of the southeast quarter of Section 28.
- T42N R74W – The west half of the southwest quarter of Section 30, the southwest quarter of Section 31.
- T41N R75W – All of Sections 2, 3, 4, the north half of the north half, the southwest quarter of the northwest quarter, and west half of the southwest quarter of Section 1, the northeast quarter of Section 9, and the northwest quarter of Section 10.

4.2 **LOCATION**

The Project is located in the Pumpkin Buttes Uranium Mining District of the PRB, approximately 54 air miles northeast of Casper, Wyoming and 24 miles southwest of Wright, WY along State Highway 387 (Figure 1). The Project area is primarily located on private surface land with some areas of State managed lands.

4.3 **MINERAL TENURE, RIGHTS, AND ROYALTIES**

Within the Project Area, Uranium One holds 86 unpatented lode claims on federally owned minerals. No royalties are due to the federal government from mining on lode claims. The claims will remain under Uranium One’s ownership and control, provided that Uranium One adheres to required Bureau of Land Management (BLM) annual filing and payment requirements. Legal surveys of unpatented claims are not required and to the authors’ knowledge have not been completed.
Uranium One also holds four State of Wyoming Uranium Leases on state lands and an additional seven fee (private) mineral leases are held with private mineral owners.

State mineral leases have a 5% gross royalty attached. Fee minerals have varying royalty rates and calculations, depending on the agreements negotiated with individual mineral owners. In addition, surface use and access agreements may include a production royalty, depending on agreements negotiated with individual surface owners at various levels. Uranium One’s average combined mineral plus surface production royalty applicable to the Project is variable based upon the selling price of U₃O₈. At a selling price below $25, the combined royalty is 3.36%, with a selling price from $25 to $50, the combined royalty is 3.89%, and at a selling price above $50 the combined royalty is 5.08%.

Uranium One has indicated to the author that payments for state and private leases and BLM mining claim filing payments are up to date as of the effective date of this report.

Table 2 lists the mineral claims and leases as provided to the Author. Uranium One holds mineral claims and leases that extend past the Project boundary, however there are no resources reported in areas outside of the Project boundary.

<table>
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<th>Serial # or Name</th>
<th>Area</th>
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<td>Unpatented Load Claims</td>
<td>PT 1 through PT 10, SD #17 through SD #30, SD #39 through SD #52, SD #61 through SD #66, SD #71 through SD #78, SD #80, SD #82, SD #84 through SD #100, SD #103 through SD #115, SD #117, and SD #119</td>
<td>1,731 acres</td>
</tr>
<tr>
<td>State Mining Lease</td>
<td>WY 0-40887 6-1-2014, WY 0-40892 6-1-2014, and WY 0-41007 12-1-2014</td>
<td>1,005 acres</td>
</tr>
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The Author has not verified the claims within the Project area or how the claims are mapped or plotted. The author has relied on information provided by Uranium One with regards to royalty rates and has not independently verified royalty agreements, rates, or surface use and access agreements.

4.4 ENVIRONMENTAL LIABILITIES

The environmental liability for the Project falls under the jurisdiction of the State of Wyoming, Department of Environmental Quality (WDEQ)-Land Quality Division (LQD), which regulates the Permit to Mine and Source Materials License.
4.5 Permitting

Uranium One was issued source and byproduct materials license SUA-1596 for the Moore Ranch Uranium Project in September 2010 by the Nuclear Regulatory Commission (NRC). The NRC conducted an extensive safety review for the Project and completed a Supplementary Environmental Impact Statement (SEIS) in order to evaluate potential environmental impacts. Similarly, WDEQ-LQD issued Permit to Mine No. 777 in December of 2010. In addition, WDEQ-WQD authorized four Underground Injection Control (UIC) Class I disposal wells (Permit #08-314) in October 2012. To the authors knowledge, all necessary permits, licenses and authorizations for the Project have been granted.

4.6 Other Significant Factors or Risks

The Project is located in the central PRB which is undergoing intensive oil and gas permitting and development for hydrocarbon reservoirs amenable to horizontal development. Horizontal wells require large pads (>10 acres) which can pose a risk to ISR wellfield development if the pad is situated above uranium mineralization. Uranium One is notified by oil and gas companies when they apply for a permit to drill on or nearby the Project. It is incumbent upon Uranium One to protest any applications or negotiate directly with the operator that may impact development of the Project or decrease the recoverable mineralization.

5.0 Accessibility, Climate, Local Resources, Infrastructure, and Physiography

5.1 Topography, Elevation, and Vegetation

The Project is located within the Wyoming Basin physiographic province in the central portion of the PRB. The site is near the basin synclinal axis. Regional structural features the Big Horn Mountains to the west, Casper Arch to the south, and the Black Hills and to the east.

The Project is within the mixed grass eco-region of the Northern Great Plains. The elevation ranges from approximately 5,220 to 5,390 feet above mean sea level. Topography in the area is primarily level to gently rolling with several ephemeral drainages dissecting the site. Figure 2 provides a photograph from within the Project area which depicts typical topography and vegetation.

The Project area is comprised primarily of grassland with areas of sage in the southwest corner. Interspersed among those major communities are less abundant habitat types of seeded grasslands (improved pastures) and ephemeral draws. No perennial streams or other permanent water bodies exist within the Project area. The majority of the area is drained to the south by Pine Tree Draw and Simons Draw tributaries of Ninemile Creek, which is a tributary of the perennial Antelope Creek. All-natural stream flow in the region is categorized as intermittent or ephemeral. A few stock tanks and reservoirs are scattered throughout the area, though the reservoirs rarely contain water.
5.2 ACCESS TO THE PROPERTY

The Property is accessible by 2-wheel drive vehicle via Wyoming State Highway 387, approximately 24 miles southwest of Wright, Wyoming. Existing private gravel and two-track roads provide access though most of the property. Some road development and improvements may be required at a later time to facilitate future development of well fields or satellite facilities. Recent increases in oil & gas activity have led to an increase in road development through the Project area.

5.3 PROXIMITY OF THE PROPERTY TO POPULATION CENTERS AND TRANSPORTATION

The Project is located in southwest Campbell County, Wyoming. The nearest community is Wright, a small, incorporated town at the junction of Wyoming Highways 387 and Wyoming Highway 59 located 24 road miles to the northeast of the Project. Gillette, a major local population center with a regional airport, is located along Interstate 90, 57 road miles north of the Project area via Wyoming Highway 50. The towns of Edgerton and Midwest (27 road miles) are located in Natrona County and lie southwest of the Project on Wyoming Highway 387. Casper

Figure 2. Moore Ranch Project Area
is a major population center with a regional airport and lies approximately 70 road miles to the southwest on Interstate 25. A major north-south railroad, used primarily for haulage of coal, lies approximately 25 miles east of the Project.

5.4 CLIMATE AND LENGTH OF OPERATING SEASON

The Project area is located in a semi-arid or steppe climate. The region is characterized seasonally by cold harsh winter, hot dry summers, relatively warm moist springs and cool autumns. Though summer nights are normally cool, the daytime temperatures can be quite high. Conversely, there can be rapid changes during the spring, autumn and winter when frequent variations of cold-to—mild or mild-to-cold weather can occur.

As noted in Section 2.5 of the License Application, the Wyoming East Uranium region’s relatively cool temperatures are a result of Wyoming’s higher elevation. Temperature extremes ranges from roughly -25° F in the winter to 100° F in the summer. Typically, the “last freeze” occurs during late May and the “first freeze” mid-to-late September. The region is characterized by extremely dry conditions. On average, the region experiences only about 40 to 60 days with measurable (>0.01 in) precipitation (WRCC, 2007). The region of the Moore Ranch Project has an annual average rainfall from 11 to 11.5 inches. Spring and early summer (May-June) thunderstorms produce 45 percent of the precipitation. May is typically the wettest month while January is the driest month of the year. Severe weather can occur throughout the region, but is limited on average four or five severe events per year. The average snowfall ranges from 20 to 25 inches per year in the project vicinity.

Seasonal wind roses for Moore Ranch show the predominate wind direction is west/southwest, with high winds also coming from the west-southwest and a secondary east-southeast mode. The median wind speed for the Project is 11-15 mph and winds average over 25 mph 5% of the time.

5.5 SURFACE RIGHTS AND INFRASTRUCTURE

Uranium One has executed surface use and access agreements with the majority of the landowners who hold surface ownership at the Project, including grazing leasees on state lands.

Energy development in the vicinity of the Project over the past several decades (uranium and oil & gas) has brought considerable upgrades to the local infrastructure. The local economy is geared toward coal mining, oil and gas production, and ranching operations, all of which provide a well-trained and capable pool of workers for ISR production and processing operations. Personnel required for exploration, construction, and facility operations are available in the nearby towns of Casper, Gillette, Wright, and Midwest, Wyoming.

Non-potable water will be supplied by wells developed at or near the site. Water extracted as part of ISR operations will be recycled for reinjection. Typical ISR mining operations also require disposal wells for limited quantities of fluids that cannot be returned to the production aquifers. Four Class I UIC disposal wells have been permitted for this use.
The proximity of the Project to paved roads will facilitate transportation of equipment, supplies, personnel, and product to and from the properties. Electrical power lines extend into and across the Project.

6.0 HISTORY

6.1 PRIOR OWNERSHIP AND OWNERSHIP CHANGES

The Project was originally developed as a joint venture in 1971 between Conoco and Kerr McGee (Sequoyah Fuels). Conoco controlled 50% of the joint venture and was the operator until 1983 when they resigned as operator of the joint venture. Conoco subsequently sold their interests to Wold of Casper, Wyoming (Sequoyah 1984).

Kerr McGee retained the rights with Wold until they were acquired by Rio Algom in 1989. Rio Algom conducted mining claim assessment drilling through 1992, the last year assessment drilling was allowed to retain mining claims. In 2002, Rio Algom was acquired by Power Resources (Cameco Resources) and the properties were subsequently released in 2003.

In 2004, Energy Metals Corporation (EMC) acquired the majority of the mining claims and state leases that make up the current Project area. Uranium One acquired EMC in late 2007.

6.2 TYPE, AMOUNT, QUANTITY, AND RESULTS OF WORK BY PREVIOUS OWNERS

As of 1982, Conoco reported expenditures of $3.5 million in acquisition, discovery and delineation of several mineralized areas in the vicinity and in permitting and licensing of a proposed uranium processing facility then known as the Sand Rock Mill, to have been located at the Project.

All drilling was vertical and given the relatively shallow depth of most holes (less than 400 feet) downhole drift was minimal. Conoco delineated 3 planned open pit areas with drilling on 50-foot centers (approximately 2,500 rotary drill holes) and the completion of approximately 130 core holes on the property.

Conoco developed all required baseline information and applied for both a WDEQ/LQD mining permit and an NRC Source Materials License, including preparation of a Draft Environmental Impact Statement in 1982.

With Conoco’s withdrawal from the Moore Ranch joint venture in 1984, Kerr-McGee became the operating partner with Wold. The project was essentially on standby and only assessment drilling was conducted through 1992 to retain the lode mining claims while waiting for an upswing in the uranium market. After that date, all claim maintenance was paid directly to the BLM, and no further drilling was conducted.

The historical data from this previous work was originally acquired from some of the mineral and surface landowners. The bulk of the remaining data was acquired through a data purchase with Cameco Resources in 2007.
6.3 Significant Historical Mineral Resource Estimates

Numerous historical resource estimates have been made for the Project area by several of the previous operators. Of these, only the BRS estimates in 2006 and 2008 are considered NI 43-101 compliant, authored by an independent qualified geologist and are the most recent publicly available technical resource reports on the Project. Several internal technical reports have been prepared by Uranium One geologists.

In 2006, EMC contracted with BRS Inc. to complete a NI 43-101 resource report for the Project. In 2008, Uranium One contracted with BRS Inc. to revise the original resource report to include historic data obtained from Cameco Resources in 2007 and new drill data through March 2008. BRS Inc. reported 6.56 million lbs. of Measured U₃O₈ at a 0.25 GT cutoff for the Project.

6.4 Production

No known uranium production has previously occurred on the Project.

7.0 Geological Setting and Mineralization

7.1 Regional Geology

The Project is located in the central PRB. The PRB extends over much of northeastern Wyoming and southeastern Montana, and consists of a large north-northwest trending asymmetric syncline. The basement axis lies along the western edge of the basin, and the present surface axis lies to the east of the basement axis. The basin is bounded by the Big Horn Mountains and Casper Arch to the west, the Black Hills to the east, and the Hartville Uplift and Laramie Mountains to the south. Figure 3 is a generalized stratigraphic column of the central PRB and Figure 4 is a geologic map of the Project area.

The PRB is filled with marine, non-marine, and continental sediments ranging in age from early Paleozoic through Cenozoic. Sediments reach a maximum thickness of about 18,000 feet in the deepest parts of the basin, and probably range from 16,000-17,000 feet thick in the project area due to the close proximity to the synclinal axis of the basin. The central part of the basin contains Lance, Fort Union, Wasatch, and White River formation outcrops.

The Upper Cretaceous Lance formation is the oldest of these units, and consists of 1,000 to 3,000 feet of thinly-bedded, brown to gray sands and shales (Sharp and Gibbons 1964). The upper part contains minor, dark carbonaceous shales and thin coal seams, indicating a changing depositional environment over time, which was in this case the gradual regression of a shallow inland sea.

The Paleocene Fort Union formation conformably overlies the Lance and consists of continental and shallow non-marine deposits. Flores (2004) divides the Fort Union into three members, the Tullock, Lebo, and Tongue River members (oldest to youngest). The Tullock Member consists of sandstone, siltstone, and sparse coal and carbonaceous shale (Flores 2004). The Lebo Member
# Figure 3.

**Stratigraphic Column of the Central Powder River Basin**

<table>
<thead>
<tr>
<th>GEOLOGIC FORMATION OR MEMBER</th>
<th>UNIT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EOCENE</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Wasatch Formation</strong></td>
<td>Lenticular arkosic sandstones, shale, clayey sands, and uranium bearing sandstones</td>
</tr>
<tr>
<td><strong>Tongue River Member</strong></td>
<td>Interbedded sandstone, conglomerate, siltstone, mudstone, limestone, anomalously thick coal beds, and carbonaceous shale beds</td>
</tr>
<tr>
<td><strong>Fort Union Formation</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Lebo Shale Member</strong></td>
<td>Abundant drab gray mudstone, minor siltstone and sandstone, and sparse coal and carbonaceous shale beds</td>
</tr>
<tr>
<td><strong>Tullock Member</strong></td>
<td>Sandstone, siltstone, and sparse coal and carbonaceous shale</td>
</tr>
<tr>
<td><strong>CRETACEOUS</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Lance Formation</strong></td>
<td>Thinly bedded, brown to gray sandstones and shales</td>
</tr>
<tr>
<td><strong>Fox Hills Sandstone</strong></td>
<td>Regressive shoreline sandstones</td>
</tr>
<tr>
<td><strong>Lewis Shale or equivalent</strong></td>
<td>Thick marine shale, regional confining layer</td>
</tr>
</tbody>
</table>

**EXPLANATION**

- **Conglomerate**
- **Sandstone**
- **Sandstone, siltstone, mudstone, and limestone**
- **Coal and carbonaceous shale**

Figure developed from Hinaman 2005 and Flores 2004
Figure 4. Geologic Map of the Central Powder River Basin

Quaternary surficial deposits

Alluvial deposits (Holocene)—Unconsolidated, more channel fill, flood plain, and loessic terraces consisting of several sediments including sandstone, siltstone, and fine wood, locally derived from the White River Formation. Thickness 3 to 25 feet (1.5 to 7 meters) (Boyd and Ver Plaeg, 1998; Robitsch and Coates, 1987)

Mica dikes and colluvium (Holocene/Pliocene)—Unconsolidated clay, silt, sand, gravel, and boulders of rock found above the level of present day. Johnell, deposited prior to the recent erosion of streams. Includes slope wash and smaller clastic fan that extends to alluvial and deposits associated with the larger clastic deposits. Thickness ranges from less than 3 feet to about 180 feet (9.2 to 54.8 meters) (Boyd and Ver Plaeg, 1998; Robitsch and Coates, 1987)

Lake sediments (Holocene/Pliocene)—Episodic lake deposits consisting of clay, silt, and sand interbedded in clastic deposits. Sediments and surface accumulations of evaporite minerals may also be present. Only the largest deposits are shown for detail, see Robitsch and Coates, 1987. Thickness ranges from 3 to 15 feet (0.9 to 4.6 meters) (Boyd and Ver Plaeg, 1998; Robitsch and Coates, 1987)

Terrace deposits (Holocene/Pliocene)—Sand, silt, and gravel of coarser texture along major streambeds. Generally consists of locally derived and transported sandstone, siltstone, fine wood, and other rock material derived from the White River Formation. Thickness ranges from a thin veneer to about 25 feet (7.6 meters) (Boyd and Ver Plaeg, 1998; Robitsch and Coates, 1987)

Tertiary sedimentary rocks

Washita Formation (Eocene)—Gray to buff claystone and shale, sandstone, and siltstone. Sands, feldspathic arkose, and arkosic sandstone, locally. Thickness ranges from 170 feet to 220 feet (51.8 to 67.1 meters) (Demorest et al., 1986; Robitsch and Coates, 1987)

consists of abundant drab gray mudstone, minor siltstone and sandstone, and sparse coal and carbonaceous shale beds. The Tongue River Member consists of interbedded sandstone, conglomerate, siltstone, mudstone, limestone, anomalously thick coal beds, and carbonaceous shale beds. This member has been mined extensively for its coal beds which can be hundreds of feet thick. The total thickness of the Fort Union formation varies between 2,000 and 3,500 feet (Conoco 1980; Sharp et al., 1964).

The early Eocene Wasatch formation unconformably overlies the Fort Union formation around the margins of the basin. However, the two formations are conformable and gradational towards the basin center and Project area. The relative amount of coarse, permeable clastics increases near the top of Fort Union, and the overlying Wasatch formation contains numerous beds of sandstone that can sometimes be correlated over wide areas. Except in isolated areas of the PRB, the Wasatch-Fort Union contact is arbitrarily set at the top of the thicker coals (locally known as the Badger Coal) or of some thick sequence of clays and silts. The top of the coal is probably the boundary in the project area.

The Wasatch formation occurs at the surface in the license area. The Wasatch is similar to the Fort Union, but also contains thick lenses of coarse, crossbedded, arkosic sands deposited in a high-energy fluvial environment. These sandstone horizons are the host rocks for several uranium deposits in the central PRB. Within the Project area, mineralization is found in a 50-100 foot thick sandstone lens which extends over an area of several townships. On a regional scale, mineralization is localized and controlled by facies changes within this sandstone, including thinning of the sandstone unit, decrease in grain size, and increase in clay and organic material content. The Wasatch formation reaches a maximum thickness of about 1,600 feet (1,100 to 1,300 feet in the Project area) and dips northwestward from one degree to two and a half degrees in the central part of the PRB (Conoco 1980; Sharp et al., 1964).

The Oligocene White River formation unconformably overlies the Wasatch formation and has mostly been removed from the basin by erosion during the Paleocene. Remnants of this unit crop out on the Pumpkin Buttes, located approximately eight miles to the north of the Project area, and at the extreme southern edge of the Basin (about 60 miles to the south). The White River consists of clayey sandstone, claystone, a boulder conglomerate and tuffaceous sediments which may be the primary source rock for uranium in the Project area and the southern part of the basin as a whole (Conoco 1980; Sharp et al., 1964). The youngest sediments consist of Quaternary alluvial sands and gravels locally present in larger valleys. Quaternary eolian sands can also be found locally.

### 7.2 Project Geology

The site is situated in the central part of the PRB approximately 12 miles east-northeast of the Tertiary Wasatch-Fort Union formation contact. The Wasatch formation, which is the surface geologic unit in this area, is part of the thick PRB sedimentary series and consists of interbedded sandstones, siltstones, claystones and coals. Wasatch sandstones were deposited in a fluvial paleo drainage system which flowed generally northward (Seeland, 1988). These channel deposits are the host rocks for many uranium ore deposits in the region.
The Wasatch sandstones are very light gray to buff, semi-consolidated and well-sorted, with grain sizes in individual beds ranging from very fine to very coarse. Graded bedding is common and individual beds vary in thickness from a few inches to several feet. The finer-grained rocks range from highly consolidated, medium gray siltstones to dark gray carbonaceous claystone.

7.3 Significant Mineralization

Uranium at the Project typically occurs as sandstone-hosted c-shaped roll front deposits. The deposits are found at the interface between brown, tan, or red altered and gray unaltered portions of the sandstone. This interface is caused by oxidizing waters moving down-dip through a reducing environment such as a carbonaceous and pyritic water saturated sandstone (Rackley et al., 1968). As the oxidizing agents move through the reducing environment, they alter the sandstone and precipitate uranium on the interface just ahead of the altered sandstone (Rubin, 1970). These oxidation-reduction boundaries often extend laterally for miles in the PRB, but ore-grade mineralization is typically not present along the entire length of the fronts. Individual roll fronts vary from 5 to 30 feet thick within the host sand and are typically stacked vertically.

Uranium One exploration nomenclature designated the sands in the Project area with decreasing numbers with depth. Mineralized “Production” Sands within the Wasatch Formation were designated using a numeric theme so that the nomenclature designated the sands in the Project area with decreasing numbers with depth. This theme was developed so that the highest number sand (72 Sand) is designated at the top of the mineralized stratigraphic interval and the lowest mineralized sand (30 Sand) is designated as the lowest mineralized sandstone sequence. Figure 5 is the type log for this project and depicts the sand units relative to the Project based on a log from section 35, T42N, R75W.

The 40 and 50 sands are separated by 5 to 40 feet of shale or mudstone and extend aerially across the project area. The approximate thicknesses of the 40 and 50 sands are 80 and 90 feet, respectively. These two sands contain some coarse material in most areas and are considered significant aquifers. The 58 sand varies in thickness from 5 to 80 feet and lacks consistent thickness in some areas. The 60 sand is approximately 100 feet thick and is continuous throughout the permit area. It is separated from the 58 sand by 5 to 70 feet of shale or mudstone. The 40, 50, 58, and 60 sands are shown in Figure 5. These sands contain minor amounts of mineralization in various locations within the project area. However, further drilling will be required to evaluate mineralization quantities.

The 68 sand is separated from the 60 sand by 0 to 25 feet of shale or mudstone. This shale pinches out in the western edge of the mineralization in section 34. The 68 sand is the first sand below the 70 sand, which contains economic ore deposits in the area, and is therefore referred to as the underlying 68 sand. The sand ranges from 40 to 100 feet thick. The 68 sand coalesces with the 60 sand on the west side of the Project area.

The 70 sand is the primary mineralized sand in the Project area. It is laterally extensive and ranges from 40 to 120 feet thick. A 1 to 3-foot-thick lignite exists normally a few feet above the
Figure 5. Type Log of the Moore Ranch Project
top of the 70 sand and has been labeled by Conoco as the E coal, a prevalent marker bed for geologic correlation. The average depth to the ore zone is 180 feet (Conoco 1980; Sharp et al., 1964).

The ore-bearing unit (70 sand) is an arkosic sandstone with calcite and clays as the dominant cementing material. The mean size of the particles is about 0.3 millimeters and the clay content (<325 mesh) is 3 to 6 percent. The dominant clay is montmorillonite, approximately 50 percent, and the other clays, illite and kaolinite, each comprise about 25 percent of the total clay content. There are also trace amounts of chlorite present (Conoco, 1982).

The overlying shale ranges from a few feet to 160 feet thick (where the 72 sand pinches out), and typically includes the E coal. The overlying 72 sand is anywhere from 0 to 100 feet thick. This sand pinches-out on the west side of the project area.

The uranium is associated with either calcite or clay cement. Occasionally, the uranium is associated with woody lignite fragments. Very little crystalline uranium mineral can be identified except for the occasional presence of uraninite. Heavy minerals include pyrite, magnetite, ilmenite, and garnet (almandine) (Conoco, 1982).

7.4 HYDROGEOLOGY

The Project area lies entirely within the drainage basin of Ninemile Creek, which is a tributary to Antelope Creek. Antelope Creek flows into the South Cheyenne River (Wyoming nomenclature) which joins the Belle Fourche River in South Dakota to form the Cheyenne River. The Cheyenne River subsequently flows into the Missouri River.

Recharge to the Wasatch host sands is mainly along their outcrops. Flow in the aquifers generally moves to the northeast along the paleodrainage trend, with a small portion of the groundwater discharging to streams. Aquifer properties are variable due to changes in local lithologies.

Uranium One has been collecting lithologic, water level, water quality, and pump test data as part of its ongoing evaluation of hydrologic conditions at the Project. In addition to recent data acquisition, historic data collected for Conoco (1982) was used to support this evaluation. Drilling and installation of borings and monitor wells is ongoing in order to provide additional data to further refine the site hydrologic conceptual model. Water level measurements, both historic and recent, provide data to assess potentiometric surface, hydraulic gradients and inferred groundwater flow directions for the aquifers of interest at the Project, at least on a localized scale. Recently completed pump tests by EMC and Petrotek Engineering Corporation (PEC, 2008), the pump tests conducted by Conoco (1982), and a 5-spot injection and recovery test completed by Petrotek were used to evaluate hydrologic properties of the aquifers of interest and to assess hydraulic characteristics of the confining units.
8.0 DEPOSIT TYPE

8.1 DEPOSIT TYPE AND MODEL

The formation of roll front uranium deposits is largely a groundwater process that occurs when uranium-rich, oxygenated groundwater interacts with a reducing environment in the subsurface and precipitates uranium. The most favorable host rocks for roll fronts are permeable sandstones with large aquifer systems. Interbedded mudstone, claystone, and siltstone are often present and aid in the formation process by focusing groundwater flux.

Uranium mineralization at the Project is typical of the Wyoming roll-front sandstone deposits as described by Granger and Warren (1979), Rackley (1972), and Davis (1969). Davis describes known uranium mineralization in the PRB as being “usually multiple C-shaped rolls distorted by variations in the gross lithology. The individual rolls range in thickness from 2 to 20 feet and may be several thousand feet in length.” The deposits are roughly parallel to the enclosing channels but may form rolls that cut across bedding. Roll-front deposits are typified by a C-shaped morphology in which the convex side of the C extends down-gradient (direction of historical groundwater flow), and the tails of the C extend up-gradient. The tails are typically caught up (or hung up) in the finer sand deposits that grade into the over and underlying mudstones, whereas the heart of the roll-front (high-grade mineralization) lies within the more permeable and porous sandstones toward the middle of the fluvial channels. Figure 6 shows a conceptual model of a typical uranium roll front in cross section.

9.0 EXPLORATION

Drilling is the primary method to explore for uranium roll fronts deposits at depth. This method is utilized by most operators and to the author’s knowledge, no other methodology has been utilized in the past at the Project.

The past exploration efforts by predecessor companies has been described in Sections 6.1 and 6.2.

Uranium One’s exploration efforts have been focused on developing and upgrading the mineral resources throughout the project area. Limited trend extension drilling has developed additional resources in the primary 70 sand as well as defined resources along deeper trends within the 40 and 50 sands.
10.0 DRILLING

10.1 TYPE AND EXTENT OF DRILLING

The Project was extensively explored from the 1970’s through the mid-1990’s with the principle exploratory work and drilling completed by Conoco. Approximately 2,700 rotary drill holes and approximately 130 core holes were completed by Conoco. The drilling included the delineation of 3 areas of mineralization as planned open pit mining operations with drilling on 50-foot centers. Mineral resource estimates are based on radiometric equivalent uranium grade as measured by the geophysical logs and verified by core drilling and chemical analysis. Drill holes completed by Conoco were reported abandoned in accordance with Wyoming Statute WS 35-11-01 in effect at the time. According to WDEQ-LQD District III personnel, several holes required additional abandonment work, which was completed by Conoco.

To date, more than 3,600 drill holes have been drilled by Uranium One and previous uranium exploration companies on the Project. The historical data sets in Uranium One’s possession were generated by competent exploration companies that used acceptable practices of the day. All
available data from geologic reports, drilling, survey coordinates, collar elevations, depths, electric log data, and grade of uranium intercepts, have been incorporated into Uranium One’s database. The data were found to be adequate and sufficient to support current 43-101 compliant resource estimates and other discussions contained in this report.

The WDEQ-LQD also provided Uranium One a list of additional historic drill holes that were drilled from 1978-1990 by various companies including Conoco, American Nuclear Corporation, Kerr-McGee Nuclear Corporation, Texaco, and Silver King Mines. No historic drill data was available to review for these drill holes.

EMC conducted verification and resource enhancement drilling beginning in late 2006 and drilled the Project Area every year up until 2012. To date, Uranium One has drilled 803 holes at the Project (Table 3). Included in this total are 4 core holes and numerous baseline monitor and pump test wells. The drilling was conducted under WDEQ-LQD Drilling Notification 342DN and all drill holes were abandoned in accordance with Wyoming Statute WS 35-11-401 as documented. All cased wells have been permitted with the Wyoming State Engineer’s Office.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of drill holes</th>
<th>Best hole</th>
<th>Grade (G) (%)</th>
<th>Thickness (T) (ft)</th>
<th>Grade x Thickness (GT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>174</td>
<td>4275-35-4045</td>
<td>0.27</td>
<td>15.5</td>
<td>4.18</td>
</tr>
<tr>
<td>2007</td>
<td>38</td>
<td>4275-34-4234</td>
<td>0.063</td>
<td>39.0</td>
<td>2.48</td>
</tr>
<tr>
<td>2008</td>
<td>237</td>
<td>4275-35-IMW-2</td>
<td>0.059</td>
<td>49.5</td>
<td>2.94</td>
</tr>
<tr>
<td>2009</td>
<td>293</td>
<td>4275-34-4516</td>
<td>0.494</td>
<td>11.5</td>
<td>5.68</td>
</tr>
<tr>
<td>2010</td>
<td>11</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2011</td>
<td>50</td>
<td>4275-35-2R-7</td>
<td>0.153</td>
<td>28.5</td>
<td>4.35</td>
</tr>
<tr>
<td>Total:</td>
<td>803</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To the author’s knowledge, all historic drilling was conducted by mud rotary drilling, with cuttings samples taken every five feet during drilling of the hole. These samples were then analyzed for oxidation/reduction state and lithologic characteristics.

### 11.0 SAMPLE PREPARATION, ANALYSIS, AND SECURITY

Uranium One has Quality Assurance/Quality Control (QA/QC) procedures to guide drilling, logging, sampling, analytical testing, sample handling, and storage. It is the Author’s belief that all procedures were conducted properly.

#### 11.1 DOWNHOLE GEOPHYSICAL LOGGING

Geophysical logging was routinely conducted for every drill hole on the Project. Geophysical logs typically collected data for gamma ray, single-point resistance, spontaneous potential, neutron, and drill hole deviation. Uranium One utilizes their own geophysical logging units which were manufactured and maintained by GeoInstrument, Inc., of Nacogdoches, TX. Natural gamma logs provide an indirect measurement of uranium content by logging gamma radiation in counts per
second (CPS) at one-tenth foot intervals, CPS are then converted to equivalent $\text{U}_3\text{O}_8$ ($\text{eU}_3\text{O}_8$). The conversion requires an algorithm and several correction factors that are applied to the CPS value. The correction factors include a k-factor, dead time factor, and water factor. K-factors and dead times vary from probe to probe and can also vary in each probe over time. Each probe is regularly recalibrated at the U.S. Department of Energy test pit located in Casper, Wyoming.

In all holes drilled by Uranium One, downhole deviation surveys provided true depth, azimuth, and distance from collar location. Deviation rarely exceeded 5 feet, so true depth correction is insignificant. Uranium One staff surveyed drill hole collar locations using Trimble GPS technology to provide easting and northing coordinates and elevations.

All recent logging data is recorded in digital and hard copy paper formats and provided to Uranium One geologists by the logging operators. The logs are transferred to electronic versions with the field geologist’s lithology logs for further evaluation. Uranium One drill data is kept on a local, secure server with tape backups maintained in a safety deposit vault.

11.2  CORE DRILLING
Conoco completed over 130 core holes on the Project in anticipation of open pit mining of the deposit.

Kerr-McKee cored two drill holes in 1984 for in-situ leach amenability testing (Kerr-McGee 1984). Results of this testing are described in detail in Section 13.0 and were found to be “encouraging for in-situ leaching” (Kerr-McGee 1984).

Uranium One has completed four core holes to date on the Project to test for mineral equilibrium and conduct leach testing. The leach test results of this core drilling are detailed in Section 13.0.

11.2.1  Equilibrium Studies
The great majority of the data available for estimation of mineral resources is radiometric geophysical logging data from which the uranium content is interpreted. Radiometric equilibrium conditions may affect the grade and spatial location of uranium in the mineralization. Generally, an equilibrium ratio (Chemical $\text{U}_3\text{O}_8$ [c] to Radiometric $\text{eU}_3\text{O}_8$ [e]) is assumed to be 1, i.e. equilibrium is assumed. Equilibrium occurs when the relationship of uranium with its naturally occurring radioactive daughter products is in balance. Oxygenated groundwater moving through a deposit can disperse uranium down the groundwater gradient, leaving most of the daughter products in place. The dispersed uranium will be in a favorable state of disequilibrium ($c/e = \text{greater than 1}$) and the depleted area will be in an unfavorable state ($c/e = \text{less than 1}$). The effect of disequilibrium can vary within a deposit and has been shown to be variable from the oxidized to the reduced side of the roll fronts.

For the Project, data is available for the evaluation of radiometric equilibrium. Available chemical data includes 130 core holes and some 5,431 assayed samples. This data was thoroughly analyzed and reported by Fluor, 1980, in their “Moore Ranch Ore Reserve Study”, Campbell County, Wyoming. Their conclusion follows:
Radiometric disequilibrium within each zone of the deposit (tail, nose, seepage zones) was investigated separately in this study. Once disequilibrium correction has been made, there are no marked trends in either magnitude or sign of the mean residuals. None of the overall mean residuals for different ore types are greater than +/- 0.15 % U₃O₈. Selective mining units contain a mixture of both positive and negative disequilibrium and, therefore, even less fluctuation in residual disequilibrium will be observed during mining than has been calculated for the core samples.

BRS (2008) concluded, given the level of available data an assumption of radiometric equilibrium is reasonable with respect to mineral resources.

Uranium One conducted core assays with Energy Labs of Casper, Wyoming on samples acquired during the 2006 and 2008 drilling campaigns. Uranium analyses were performed by Inductively Coupled Argon Plasma (ICP) emission spectroscopy against certified commercial standards. The assay results indicate that the uranium mineralization is in equilibrium or slightly positive in the holes tested.

In the opinion of the Author, sufficient core drilling and disequilibrium analysis have been conducted to support an assumption of radiometric equilibrium with respect to mineral resources.

11.3 BOREHOLE DRILL CUTTINGS

During drilling of all holes, cuttings are collected at 5-ft. depth intervals. Detailed descriptions of each of these samples are then documented by the Company’s field geologists. Drill cutting samples are valuable for lithologic evaluation, confirmation of electric log interpretation, and for description of redox conditions based on sample color. Identifying redox conditions in the host formation is critical for the interpretation and mapping of roll fronts. Note, however, that cuttings samples are not analyzed for uranium content because there is considerable dilution and mixing that occurs as the cuttings are flushed to the surface. In addition, the samples are not definitive with regard to depth due to variation in the lag time between cutting at the drill bit and when the sample is collected at the surface.

12.0 DATA VERIFICATION

As previously discussed in Sections 6.0 and 10.0, standard methods of the industry were utilized at the time of data collection. Available data were from drill maps, cross sections, geophysical logs, and lithologic logs. The historic data for this project was developed by a well-financed major US company (Conoco) intent on developing the property as a production center. In the author’s opinion, the data presents a true and correct evaluation of the mineralization within this Project.

12.1 DATABASE

The original, historic, radiometric drill data was available as a paper record. This data was input as electronic data via a spreadsheet into the computer programs utilized in the development of this report. Data entry was checked and confirmed by Uranium One personnel. Drill hole
locations were input from coordinate listings and plotted. The resultant drill maps were then checked and confirmed by overlaying with the original maps.

Radiometric log interpretation was spot checked for the higher-grade intercepts and, as previously discussed, the historic log interpretation followed standard methods.

New drill data included collar elevation, collar location, grade and elevation of mineralized intercepts, elevation of bottom of hole. New drill hole locations were taken from field surveys using modern survey grade GPS equipment. All historic coordinates were converted to match the Wyoming State Plane NAD83 coordinate system. This conversion included the re-surveying of approximately 10% of historic drill holes and any historic claim posts that could be located in the field. Rectification of the historic local coordinate system to the Wyoming State Plane NAD83 coordinate system was completed and combined with the new drill data. With this rectification, historic drill holes could be located in the field with an estimated error of less than 10 feet.

Uranium One has offset numerous historic drill holes to conduct confirmation drilling at the Project with results which validate the historic data. The mineral intercept data of all previous operators was selectively checked for accuracy by Uranium One geologists utilizing the U.S. Atomic Energy Commission standard methods for calculating the thickness and grade of said intercepts.

No historic core samples still exist for verification with the currently held historic data. Uranium One conducted core drilling at the Project in 2006 and 2008. These cores were assayed to verify the historic data and two were utilized for leach testing. Split samples of the coring completed by Uranium One are held in storage.

After a review of the data, it is the Author’s opinion that the historic mining intercept data are valid, do not require re-calculation and are suitable for resource estimation in this Technical Report.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Recent Metallurgical Testing

In 2008, Uranium One contracted with Energy Laboratories of Casper, Wyoming to perform agitation leach tests on Moore Ranch cores. The tests were performed on samples from two core holes and utilized sodium bicarbonate (2 g/L NaHCO₃) as the source of the carbonate complexing agent and hydrogen peroxide (0.5 g/L H₂O₂) was added as the uranium oxidizing agent. The tests were conducted at ambient pressure. Uranium recoveries from the core samples were 82.1% and 87.6%, averaging 84.8%. The Author did not review the results of laboratory leach tests.

14.0 MINERAL RESOURCE ESTIMATES

In-place eU₃O₈ resources for the Project were estimated and classified according to the CIM definition of a Mineral Resource classification of Measured, Indicated, and Inferred resources. The Project Area has been drilled on quite variable drill hole spacing. In areas of Conoco’s historic
mine development and significant mineralization, 50-foot centers were completed. Other areas of the property are not drilled to this density. To date, more than 3,600 drill holes have been drilled on the Project.

Data preparation consisted predominantly of locating, editing and compiling drill hole location and downhole mineralized interval data for each roll front across the project area. The data utilized was from historic datasets from previous operators as well as new drill data generated by Uranium One since acquisition of the properties. These data consisted of drill hole core and cutting description logs, geophysical logs, maps, cross sections, reports, and digital databases.

14.1 **Assumptions**

The mineral resource estimates were completed using accepted methods mandated by NI 43-101 and CIM standards. In order to “normalize” calculations, certain assumptions were incorporated throughout all calculations. The assumptions are as follows:

- Radiometric disequilibrium factor (DEF) is 1.00. (cU$_3$O$_8$: eU$_3$O$_8$ ratio = 1.00)
- The unit weight of the ore zone is 16.0 cubic feet per ton, based on historical data (Bollig 1979).
- All geophysical drill logs were assumed to be calibrated per normal accepted protocols and that all grade calculations are accurate.

14.2 **Cutoff Selection**

Minerals that are reported as resources must be below the historical, pre-mining static water level and must meet several criteria. These cutoff criteria are:

- Minimum Grade: 0.020% eU$_3$O$_8$
  - Grade measured below the cutoff is considered a zero value
- Minimum Thickness: 2 feet.
  - Mineralized thicknesses of less than 2 feet are considered to be a zero value
- Minimum GT (Grade x Thickness): 0.30
  - Intercepts with values lower than this cutoff are mapped outside the GT values employed for resource estimation. They are given a resource value of zero and are excluded from the reported resources.

14.3 **Resource Classification**

In the Author’s opinion, the resource can be defined by existing drilling information, which is of sufficient density and continuity to identify numerous roll front trends at the Project (Figure 7). The data meets the criteria for “Measured and Indicated” Mineral Resources under the CIM standards on Mineral Resources. The grade and mineralized zone thickness were obtained from historical and recent exploratory drilling data as discussed in Section 10.0.
Figure 7. Moore Ranch Mineralized Roll Front Trends
The mineralized roll fronts which traverse the Project display good geologic continuity, as demonstrated by drill hole results displayed on plan maps and cross sections reviewed by the author. Thickness and grade continuity within the Project is good; however, continuity vertically within roll fronts is more variable.

For the Project resource estimates, the classification was based on the following three criteria.

1) Distance between data points (drill hole locations):
   a) **Measured** – 0 feet to 70 feet between locations.
   b) **Indicated** – 70 feet to 200 feet between locations.
   c) **Inferred** – 200 feet to 400 feet between locations.

2) A GT cut-off of 0.30.

3) Mineralization continuity within the roll front as demonstrated by drill log correlation.

These criteria were selected because they are consistent with those commonly used at the other ISR projects in the area and their application reflects the current level of geologic certainty of the resource.

### 14.4 Methodology

Recent and historical drilling data are used to define the Project resources. The mineral intercept and the mineral horizon are defined as the basic units of the mineral identity and the mineral resource respectively. These units are also generally used as a synonym for the roll front. By assigning mineral intercepts, mineral horizons can be identified by a geologist’s interpretation of the stratigraphy, redox, and roll front geometry and zonation characteristics. Horizons, or roll fronts, can then be used to derive and report the resources that are being targeted. Resource areas can then be defined by combining the resources in multiple mineral horizons.

The mineral resource estimates shown below were calculated using the GT (Grade x Thickness) contour method. The GT values of the subject sand intervals for each hole were plotted on a drill hole map along with notations of where in the roll front that intercept was located and the oxidation/reduction state. The roll front was then mapped and contour lines for the GT values were drawn. The areas within the GT contour boundaries were used for calculating resource estimates utilizing the following criteria:

Unlike previous resource estimations, the current resources were developed by detailed geologic interpretation of each sub-roll within the host mineralized sand. These sub-rolls range from 6 to 13 feet in thickness. These sub-rolls are determined by evaluation of the mineralization within the major host sand and recognition of the stratiform layers within each sand package. Mineralized intercepts are evaluated to determine which zone or zones host the $\text{eU}_3\text{O}_8$. The gamma curve character, relative to the host lithology, and oxidation/reduction state determined the specific location within the roll front. Correlations are then carried along trend for an evaluation of each specific zone.
This methodology develops detailed interpretations of where the mineralization is located as well as the quantity of mineral. Subsequent drilling verified the accuracy of the interpretations. New drill data are integrated with the surrounding data as they become available to update the GT maps.

Mineralized intervals (the thickness of the mineralized zone) for each exploratory drill hole were determined from the geophysical logs based on a 0.02 percent grade cutoff. An average grade per drill hole intercept was then determined based on conversion of the counts per second to grade. The product of the mineralized thickness and grade was used to calculate the GT. The contained pounds of uranium were calculated using the following formula:

\[
\text{Mineral Resource, pounds} = (\text{Area, ft}^2 \times (\text{GT, \%} \times \text{ft}) \times (20 \text{ lbs}) \times (\text{DEF}) / (\text{RD, ft}^3/\text{ton})
\]

- **Area (ft\(^2\))**: Area of influence in square feet (measured within contour intervals)
- **GT (percent \times \text{feet})**: Ore grade in percent times thickness (feet) of mineralization
- **20 lbs**: Conversion constant: grade percent and tons to unit pounds 1% of a ton
- **DEF (1.00)**: Disequilibrium factor (1.00)
- **RD (16.0)**: Rock density (16.0 cubic feet/ton)

Since the above calculation derives pounds \(\text{eU}_3\text{O}_8\), tonnage was calculated based on pounds and average grade for a given GT contour area.

GT contouring remains the most dependable method for reliable estimation of resources in roll front uranium deposits. However, this method also depends on the competency of the roll front geologist and the accuracy of the mineral body correlation and contour.

**14.5 Resource Estimation Auditing**

The following methods were used for quality control and assurance for the resource estimates prepared by Uranium One.

1. 249 representative historical log files from Uranium One within the Resource Area were examined in detail to confirm gamma interpretations and grade calculations.
2. Multiple historic logs were reviewed to confirm geologic and grade continuity throughout the Project.
3. Drilling density as depicted on Figure 7 was evaluated to demonstrate that the uranium mineralization at the project location was consistent with CIM resource definitions.
4. Detailed examination of significant resource bearing roll front systems was conducted in collaboration with Uranium One geologists to confirm log interpretations, continuity of mineralization, and the nature of GT development.
5. Random mineralized zones within the resource model were evaluated to confirm the area assigned to the particular GT contour.
6. Resource classification methods and results were reviewed against standard industrial practices and CIM resource definitions.
The Author accepts the Uranium One interpretations as properly done and as responsible representations of the minerals present. These interpretations provide a reasonable basis for calculating the uranium resources at the project location.

14.6 SUMMARY OF RESOURCES

The Author concludes the Measured and Indicated resources (Table 4) of approximately 3.210 million pounds of \( \text{eU}_3\text{O}_8 \) for the Moore Ranch Uranium Project are compliant with Canadian NI 43-101 guidelines. There is limited risk that the estimate of quantity, quality, and physical characteristics of the resources of the Project will be unfavorably affected by future investigations.

The reader is cautioned that due to the uncertainty that may be attributed to Inferred Mineral Resources, it cannot be assumed that all or any part of an Inferred Mineral Resource will be upgraded to an Indicated or Measured Mineral Resource, because of continued exploration. Confidence in the Inferred Mineral Resource estimate is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Inferred Mineral Resources must be excluded from estimates forming the basis of pre-feasibility or other feasibility studies.

Table 4. Summary of Measured and Indicated Resources Moore Ranch Project (0.30 GT Cutoff)

<table>
<thead>
<tr>
<th>Township/Range</th>
<th>Section</th>
<th>Sand</th>
<th>Ore Metric Tonnes (000’s)</th>
<th>Average Grade % ( \text{eU}_3\text{O}_8 )</th>
<th>( \text{eU}_3\text{O}_8 ) Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Measured</td>
</tr>
<tr>
<td>T42N R75W</td>
<td>27-34</td>
<td>70</td>
<td>952</td>
<td>0.050</td>
<td>1,050,417</td>
</tr>
<tr>
<td>T42N R75W</td>
<td>35</td>
<td>70</td>
<td>1,475</td>
<td>0.066</td>
<td>2,159,527</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>2,427</td>
<td>0.060</td>
<td>3,209,944</td>
</tr>
</tbody>
</table>

Note: 1) Township (T) Range (R) and Section are in reference to the Public Land Survey System. They are used herein to indicate geographical position of resources within the Project area.

The results of the estimation of Inferred \( \text{eU}_3\text{O}_8 \) resource in the Project are summarized below in Table 5.

Table 5. Summary of Inferred Resources Moore Ranch Project (0.30 GT Cutoff)

<table>
<thead>
<tr>
<th>Township/Range</th>
<th>Section</th>
<th>Sand</th>
<th>Ore Metric Tonnes (000’s)</th>
<th>Average. Grade % ( \text{eU}_3\text{O}_8 )</th>
<th>( \text{eU}_3\text{O}_8 ) Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Inferred</td>
</tr>
<tr>
<td>T42N R75W</td>
<td>26</td>
<td>40</td>
<td>2</td>
<td>0.055</td>
<td>1,700</td>
</tr>
<tr>
<td>T42N R75W</td>
<td>33-34</td>
<td>40</td>
<td>15</td>
<td>0.052</td>
<td>18,000</td>
</tr>
<tr>
<td>T42N R75W</td>
<td>35</td>
<td>40</td>
<td>25</td>
<td>0.044</td>
<td>24,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>42</td>
<td>0.047</td>
<td>43,700</td>
</tr>
</tbody>
</table>

Note: 1) Township (T) Range (R) and Section are in reference to the Public Land Survey System. They are used herein to indicate geographical position of resources within the Project area.
14.7 Resource Estimate Risk

To the extent known, there are currently no environmental, permitting, legal, title, taxation, socio-economic, marketing, or political factors which could possibly affect the accessibility of the estimated resources.

There is risk of improper interpretation of geological data. Examples include data such as grade and continuity. Improper geologic interpretation could also impact the resource estimate in a positive or negative way. Geologists contributing to this Technical Report are thoroughly trained in understanding the nature of roll front uranium deposits to ensure realistic and accurate interpretations of the extent of mineralization. Based on the positive results of the QA/QC efforts described in Section 14.5 the Author believes that there is limited risk that the geological data was improperly interpreted.

In the opinion of the Author, the uranium mineral resources described herein are considered of economic interest given that with appropriate prices, the mineral resources have reasonable prospect of eventual economic extraction.

15.0 Mineral Reserve Estimates

This section is not applicable for this Project.

16.0 Mining Methods

This section is not applicable for this Project.

17.0 Recovery Methods

This section is not applicable for this Project.

18.0 Project Infrastructure

This section is not applicable for this Project.

19.0 Market Studies and Contracts

This section is not applicable for this Project.

20.0 Environmental Studies, Permitting, and Social or Community Impact

This section is not applicable for this Project.

21.0 Capital and Operating Costs

This section is not applicable for this Project.

22.0 Economic Analysis

This section is not applicable for this Project.
23.0 ADJACENT PROPERTIES

Adjacent Properties are mineral properties of interest in close proximity to the Project that are located within the Pumpkin Buttes Uranium Mining District and have mineralization in the Wasatch Formation. Several mineral properties adjacent to or in close proximity to the project contain uranium resources. As shown on Figure 8, the Adjacent Properties include the Christensen Ranch, North Butte, Nichols Ranch, Hank, Jane Dough, and Reno Creek Projects.

Figure 8. Moore Ranch Adjacent Properties
Christensen Ranch - The Christensen Ranch portion of Uranium One’s operational Willow Creek ISR Mine is located to the north west of the Project. The Willow Creek Mine contains 15.6 million pounds of Indicated U₃O₈ (Uranium One 2016).

North Butte - Cameco’s North Butte project is a satellite facility for the Smith Ranch – Highland ISR mine. The North Butte satellite contains 8.4 million pounds of Measured and Indicated U₃O₈ as of December 2018 (Cameco 2018).

Nichols Ranch - Energy Fuels’ Nichols Ranch Project is an operational ISR facility located to the north west of the Project. Nichols Ranch contains a reported 2.8 million pounds of Measured and Indicated U₃O₈ (Energy Fuels 2019).

Hank – Energy Fuels’ Hank Project is a fully licensed ISR project located to the north of the Project. The Hank Project contains a reported 0.9 million pounds of Indicated U₃O₈ (Energy Fuels 2019).

Jane Dough – Energy Fuels’ Jane Dough Project is in the permitting process and located to the north east of the Project. The Jane Dough project contains a reported 3.6 million pounds of Indicated U₃O₈ (Energy Fuels 2019).

Reno Creek – Uranium Energy Corp.’s Reno Creek Project is a fully permitted and licensed ISR project located to the north east of the Project. The permitted portion of Reno Creek contains a reported 18.71 million pounds of Measured and Indicated U₃O₈ (Cameron & Maxwell 2018).

Based on the close proximity of the Project to Operational ISR facilities and experience gained during operations of these projects, similarity of the roll front geology, typical confined aquifer systems, and similar use of best practicable technology, the author believes that ISR methods can be successfully employed at the Project along with concurrent environmental monitoring programs to ensure that any impact to the environment or public is minimal.

24.0 OTHER RELEVANT DATA AND INFORMATION

There is no other relevant data or information to include.

25.0 INTERPRETATION AND CONCLUSIONS

The Author concludes that the estimated Measured and Indicated mineral resource at a 0.02% grade and 0.30 GT cutoff for the Project is approximately 3.210 million pounds of eU₃O₈ (Table 4) and these resources are compliant with Canadian NI 43-101 guidelines. There is limited risk that the estimate of quantity, quality, and physical characteristics of the resources of the Project will be adversely affected by future investigations.

Available data, including historical lithological and geophysical logs of previous exploration of the Project and data from exploration and development conducted by Uranium One since 2006, support the estimate of mineral resources as summarized above and detailed in Section 14.6. Additionally, the data indicate that the proper conditions exist for potential in-situ recovery
operations with regard to hydrologic conditions and operational infrastructure. In the opinion of the author, the Project represents a viable mineral resource for ISR development.

The quantity and grade described in this NI 43-101 technical report is calculated using accepted protocols and therefore meets the NI 43-101 classification of measured and indicated mineral resources as defined by NI 43-101 and the Canadian Institute of Mining, Metallurgy, and Petroleum Definitions Standards incorporated by reference therein.

26.0 RECOMMENDATIONS

The Author recommends the following for moving the property towards further development:

- Investigate areas of insufficient drilling to identify additional resource targets, refine future wellfields, and upgrade resource classification;
- Continue to receive notices of oil and gas activity and evaluate notices appropriately to ensure oil and gas drilling pads are placed such that they will not limit future wellfield development.
27.0 REFERENCES


Bollig, Duane (Conoco), November 26, 1979, “Moore Ranch Project – Specific Weight of Ore Zone Material”.


Moore Ranch License Amendment Application, Technical Report (May 2010)


Sequoyah Fuels Corporation, August, 1984, “Moore Ranch Project”.


http://www.uranium1.com/upload/iblock/634/634ee0da81760b4b8a66526ae295dcf.pdf

WRCC, Western Region Climate Center 2007, Local Climate Data Summaries, available on the Internet as of December 2018: https://www.wrcc.dri.edu/summary/lcd.html.
28.0 CERTIFICATE

CERTIFICATE OF QUALIFIED PERSON

I, Benjamin J. Schiffer, Wyoming Professional Geologist, of 1849 Terra Avenue, Sheridan, Wyoming, do hereby certify that:

- I am currently employed by WWC Engineering, 1849 Terra Avenue, Sheridan, Wyoming, USA, as the Energy/Environmental Department Manager.

- I graduated with a Bachelor of Arts degree in Geology in May 1995 from Whitman College in Walla Walla, Washington.

- I am a licensed Professional Geologist in the State of Wyoming. My registration number is 3446 and I am a member in good standing. I am a Registered Member of the Society of Mining, Metallurgy and Exploration. My Registration Number is 4170811 and I am in good standing.

- I have worked as a geologist for 23 years in natural resources extraction.

- I have 14 years’ direct experience with uranium exploration, resource analysis, uranium ISR project development, project feasibility and licensing. My relevant experience for the purposes of this analysis includes Field Geologist at COGEMA Mining, Christensen Ranch Mine (now Uranium One America’s Willow Creek Project); Restoration Specialist at COGEMA Mining, Holiday-El Mesquite Mine; Project Manager on multiple due diligence assessments of ISR mines and projects in Wyoming, Texas and New Mexico; Permit Coordinator for Strata Energy, Ross ISR Uranium Project, qualified person on the NI 43-101 assessment (PEA) of Anatolia Energy’s Temrezli ISR Project in Yozgat, Turkey, qualified person on the NI 43-101 Technical Report on the Resources of the Shirley Basin Uranium Project, Carbon County, Wyoming, USA, August 27, 2014 and qualified person on the NI 43-101 Preliminary Economic Assessment (PEA) of the Shirley Basin Uranium Project, Carbon County, Wyoming, USA, January 27, 2015, qualified person on the NI 43-101 Technical Report on the Resources of the Ludeman Uranium Project, Converse County, Wyoming, USA, January 25, 2019.

- I have read the definition of “qualified person” set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, professional registration, and relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.

- I am independent of Uranium One as described in Section 1.5 of NI 43-101.

Dated this 30th day of April, 2019

Benjamin J. Schiffer, P.Geo.

Uranium One – Moore Ranch Uranium Project
Technical Report NI 43-101 –April 2019