

**NI 43-101 Technical Report  
on the**

**Powerline Uranium Project**

**Grand County, Utah, USA**

Prepared for:

**GoldHaven Resources Corp.**

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## 1.0 Summary

Sears, Barry & Associates Limited (SBA) has been retained by GoldHaven Resources Corp. (GoldHaven) to carry out an independent technical review and prepare a report on the Powerline Uranium Project (Project). The Project is located in southeastern Utah, USA. This report is prepared in compliance with guidelines prescribed by National Instrument 43-101 – Standards of Disclosure for Mineral Projects (NI 43-101), Form 43-101F1 and Companion Policy NI 43-101CP of the Canadian Securities Administrators.

GoldHaven is a public Canadian corporation incorporated under the laws of British Columbia and listed on the Canadian Securities Exchange, the OTCQB® Venture Market and the Frankfurt Stock Exchange. All land holdings within the Project are held by Ameranium Energy Corp., a wholly owned subsidiary of Ameranium Resources Corp., a private Canadian corporation, incorporated under the laws of British Columbia. Ameranium Energy Corp. is incorporated under the laws of the State of Utah and is licensed to do business in the state of Utah.

### 1.1 Property Location and Description

The Powerline Uranium Project is located in southeastern Utah in Grand County. It consists of 630 lode claim units covering 5,264 hectares (13,008 acres) of Federal lands. It is 320 km (201 miles) southeast of Salt Lake City, 48 km (30 miles) north northwest of Moab. It is centered at 597,000E and 4,298,010N (WGS 84, Zone 12 North). It is well situated in a state that is supportive of mine development and has all the necessary infrastructure for mining exploration and production.

Access to the Project is excellent. The Project area has relatively low relief with low hill ridges and wide-open valleys. Vegetation is sparse and used for grazing lands for cattle.

GoldHaven has the option to acquire a 100% interest in the 630 lode claims of the Powerline Project under a 2-stage agreement. The 1<sup>st</sup> stage includes 40 lode claims and the 2<sup>nd</sup> covers the remaining 590 lode claims.

### 1.2 Geology

The project area lies within the Paradox Basin, a Mississippian to Tertiary aged sub-basin developed within the Colorado Plateau Physiographic Province. The Paradox Basin is a 290 km long by 145 km wide (180 x 90 miles), northwest-southeast trending basin located mainly in

southeastern Utah and partly in southwestern Colorado. Rocks within the Paradox Basin consist of alternating sequences of deep and shallow water marine sediments and evaporites as well as a broad range of terrestrial sediments. The principal, targeted uranium mineralization is hosted within sandstone and conglomerate horizons that make up the lower part of the Chinle Formation. These rocks are interpreted to have been deposited in broad, meandering, braided stream channels, floodplains and ancient beach-fronts. Within the Powerline Project area, these horizons are very extensive and occupy the west limb of a major, gently dipping fold structure referred to as the Courthouse Syncline. Geophysical logs from historical abandoned oil and gas test wells combined with geological logs and projections from surface mapping have outlined a very prospective target zone extending across the 13 km (8 mi) wide property.

### 1.3 Deposit Model and Mineralization

The known uranium mineralization in southeast Utah and that which is targeted on the Powerline Project is broadly classified by the International Atomic Energy Agency (IAEA) as sandstone uranium deposits. In summary from an IAEA publication *“sandstone deposits refer to uranium accumulations in medium - to coarse-grained siliciclastic sedimentary rocks deposited in continental fluvial, lacustrine or shallow-marine sedimentary environments. Uranium is precipitated by reduction processes caused by the presence of a variety of possible reducing agents within the host sandstone such as intrinsic detrital plant debris, sulphides, ferro-magnesian minerals, anaerobic sulphate-reducing bacteria, or extrinsic migrated fluids from underlying hydrocarbon reservoirs”*. Sandstone deposits worldwide are divided into five often-related subtypes, three of which are targets for exploration on the Powerline Project. These consist of: basal channel deposits, tabular deposits and roll-front deposits. All are hosted by to fine- to coarse-grain quartzose to arkosic sandstone with occasional pebble conglomerates and are bounded on top and bottom by fine grained sediments including siltstone and shale. Mineralization consists mainly of coffinite and uraninite with associated uranium and vanadium hydroxides.

Interpretation of gamma ray geophysical logs of a historical oil and gas test-well located near the center of the Powerline Project, (Samson Resources, Powerline 12-1 well), indicates a 35.4 m (116 ft) thick zone of uranium mineralization within which a 19.0 m (62.4 ft) thick section has been estimated to have a uranium grade of 0.0258%  $eU_3O_8$ . This intersection, drilled in 2007, is interpreted to be from the base of the Chinle Formation at depths between 826.6 and 862 m (2,712 and 2,828 ft). This stratigraphic unit is the host for hundreds of known uranium occurrences, prospects and past producing mines in the region.

## 1.4 Exploration

Ameranium Resources Corp. completed a work program consisting mainly of the acquisition and re-interpretation of geophysical and other data from historical work programs targeting oil and gas deposits in the area now covered by the Powerline Uranium Project. This included the purchasing and re-processing of two important lines of commercial seismic data from a 1982 survey crossing the property and re-interpretation of this data in association with gamma ray logs from numerous historical oil and gas wells within the Project. The work program also included environmental and archaeological surveys required before drilling can be carried out. Four drill holes have been permitted in the area around two historical wells that contain intervals of strong gamma ray features that are interpreted to be caused by uranium mineralization in sandstone horizons of the Chinle Formation. This Formation is a favourable geological structure that hosts scores of past producing uranium mines in this part of the Paradox Basin, part of the Colorado Plateau in Utah.

## 1.5 Interpretation and Conclusions

Information from historical oil and gas test-wells and interpretation of published geological data indicate that the very favorable Moss Back and/or Shinarump members of the Chinle Formation underlie the Powerline property. These sedimentary horizons are host to more than 80% of the known uranium deposits in the Colorado Plateau. The target zones consist of a very extensive sequence of interbedded sandstone, conglomerate and fine-grained sediments that occupy a broad, gently dipping limb of the regional scale Courthouse Syncline. Interpretation of data from available oil well logs and interpreted geology outline a target zone greater than 13 km (8 mi) long within the Powerline Project. Gamma ray geophysical logs indicate uranium mineralization over thicknesses greater than 30 m (100 ft) and containing intervals of relatively high grades of uranium ranging in thickness from 6 to 19 m (20 to 62.4 ft) in the two most reliable well logs. The very large target area is located within a gently dipping stratigraphic sequence which is adjacent and parallel to the regional scale Moab Fault. Interpretation of re-processed seismic data over part of the property supports the large, relatively undeformed target zone within the western part of the Powerline Project. Mineralization interpreted from one of the oil well logs indicates that a 19.0 m (62.4 ft) thick section is estimated to have a uranium grade of 0.0258% eU<sub>3</sub>O<sub>8</sub>. The top of this favorable target zone is at a depth of 823 m (2,700 ft). Although relatively deep, the interpreted mineralized zone is well below the potable water table and has exceptional potential to be amenable for uranium mining by In Situ Leach and recovery methods. The seismic data suggests



that this hole lies within a relatively undeformed area greater than 1.6 km (1 mile) across. Deposits of this type and grade account for approximately 46% of world-wide uranium production.

The Powerline Uranium Project is a property of merit and a multi-phased exploration is warranted.

## 1.6 Recommendations

A multi-phased exploration program is highly recommended to explore the Powerline Uranium Project. Phase 1 should consist of at least one drill hole collared near the historical Powerline 12-1 oil and gas well and designed to obtain core through the high gamma ray feature interpreted to be uranium mineralization. Once cored, the hole should be surveyed using a spectral gamma ray tool to differentiate uranium, thorium and potassium. The core from the hole is necessary to obtain accurate and reliable measurements of the uranium content as well as to obtain mineralogical, porosity and other information of the zone and its enclosing stratigraphy. The estimated cost for completing this proposed Phase 1 work program is US\$451,000.

Assuming that the results are encouraging, a Phase 2 work program consisting of multiple drill holes designed to test the 1.5 km (1 mile) relatively undisturbed zone around the Powerline 12-1 hole and to test other parts of the property including a twinning of the Texaco Government No 1 well in the eastern part of the property. These Phase 2 holes may not require coring since information from downhole spectral and other surveys should provide accurate measurements of the mineralization and host rocks. Four initial holes are proposed, two step-out holes at 500 m spacing from the initial hole in the Powerline 12-1 area; one hole designed to twin the Texaco McKinnon 1 hole; and 1 hole in the western part of the property near the historical wells labelled Tenmile No 1 and Govt 2318 #9-1. The latter hole would test a number of highly elevated gamma ray anomalies detected between depths of 230 and 260 m (750 and 850 ft) as well as the Chinle Formation at a depth in the 880 m (2,900 ft) range. Coring of at least 1 in every ten future holes is recommended to support the definition of mineral resources. This Phase 2 program is estimated to cost US\$1,180,000.

## 2.0 Introduction

Sears, Barry & Associates Limited (SBA) has been retained by GoldHaven Resources Corp. (GoldHaven) to carry out an independent technical review and prepare a report on the Powerline Uranium Project (Project). The Project is located in Grand County, Utah, USA. See Figures 1, 2 and 3. This report is prepared in compliance with guidelines prescribed by National Instrument 43-101 – Standards of Disclosure for Mineral Projects (NI 43-101), Form 43-101F1 and Companion Policy NI 43-101CP of the Canadian Securities Administrators.

GoldHaven is a private Canadian corporation, incorporated under the laws of British Columbia. All of the Powerline Project land holdings are held by Ameranium Energy Corp. a wholly owned subsidiary of Ameranium Resources Corp. (Ameranium). Ameranium is a private corporation incorporated under the laws of the State of Utah and is licensed to do business in the state of Utah.

The relationship between Sears, Barry & Associates Limited and GoldHaven is a professional relationship between an independent consultant and a client. This report is prepared in return for fees that are standard commercial rates and the payment of these fees is not contingent on the results or recommendations in this report.

### 2.1 Purpose of Report

The purpose of this report is to provide the results of an independent review of data relating to the Powerline Uranium Project. The report is designed to summarize the scientific and technical data available for the Powerline Uranium Project and to make recommendations for a work program to advance the exploration and possible development of the Project.

The Powerline Uranium Project was acquired by Ameranium Energy Corp. following a search for an available uranium property in a politically stable country.

## 2.2 Sources of Information

Sources of information used in this report are summarized below and include those in the public domain as well as personally acquired data; a more detailed listing of sources can be found in Section 27, References.

- Review of various geological reports and maps, produced by various departments of the Utah Geological Survey, the United States Geological Survey (USGS) and other geological associations.
- Review of data in the possession of Ameranium Energy Corp.
- Personal experience by the author in the exploration of uranium in North America.
- Visits to the Project and area by the author from January 19 to 22, 2022 and May 27, 2023.
- Verification of land status from the Department of the Interior, Bureau of Land Management, Mining Claims website.

## 2.3 Units of Measure

All units of measure are in the metric system with equivalent imperial units in brackets. Monetary values are in both United States Dollars (USD, US\$) and Canadian Dollars (CDN\$, C\$) stated. For the large-scale maps and recorded field positions, location coordinates are expressed in Universal Transverse Mercator (UTM) grid coordinates, using WGS 1984 Zone 12 North. On the small-scale maps, WGS 1984 geographic is used: The geographic projections are noted on each map.

Conversions used in this report:

1 inch (in) = 2.54 centimetres (cm)

1 foot (ft) = 0.3048 meters (m)

1 mile (mi) = 1.609 kilometers (km)

1 acre = 0.4047 hectares (ha)

1% U = 1.1792% U<sub>3</sub>O<sub>8</sub>

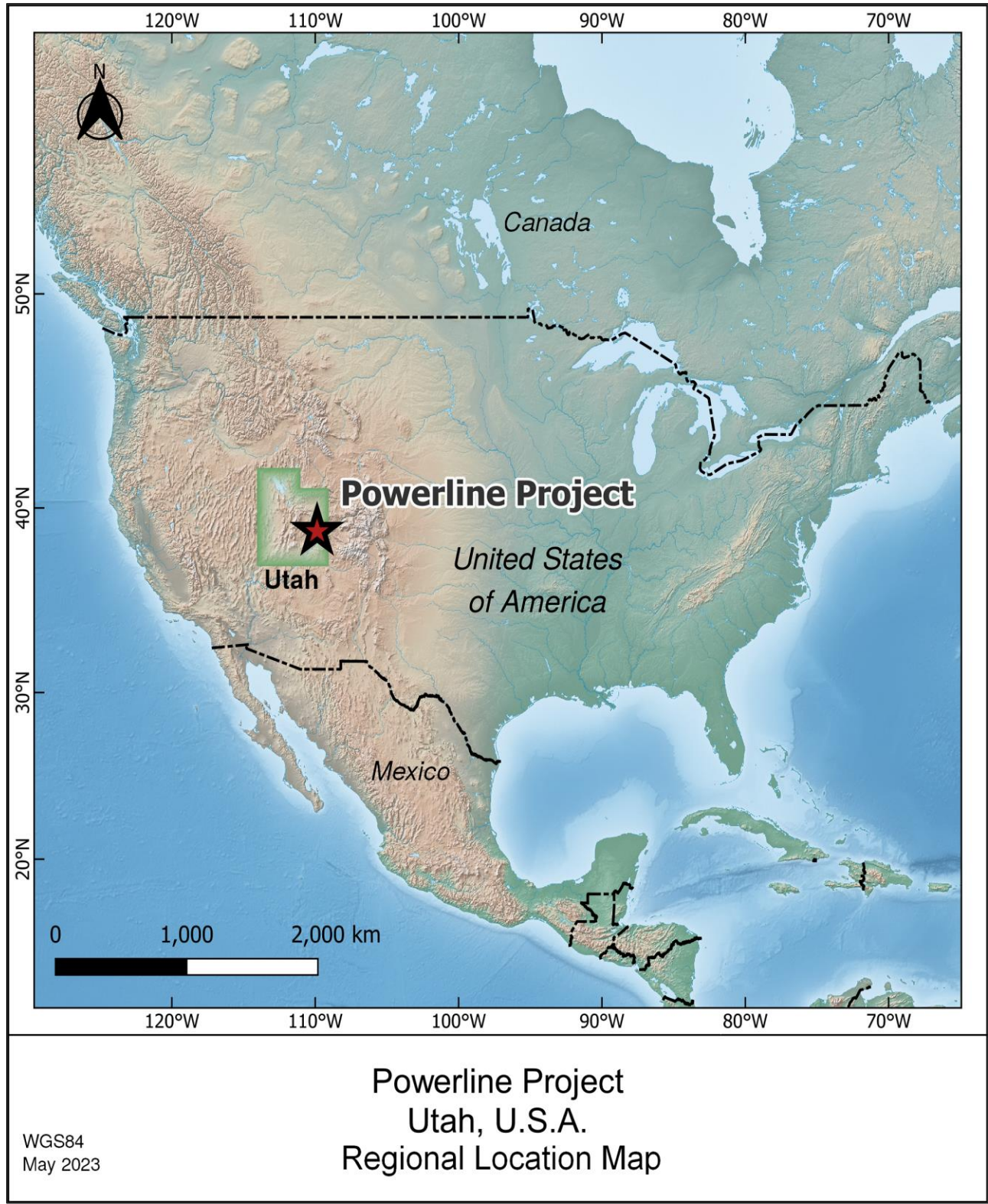


Figure 1 Regional Location Map



Figure 2 Project State Location Map

### 3.0 Reliance on Other Experts

All conclusions, opinions and recommendations concerning the Powerline Uranium Project are based upon the information available to Sears, Barry & Associates Limited as of the effective date of this report.

Information relating to the title and ownership of the Powerline Uranium Project was obtained from Ameranium Energy Corp.

Information relating to the claim data is detailed in Section 4.0 of this report.

The author has also relied on the following legal documents:

- A notarized document: “Notice of Intent to Hold”, State of Utah, County of Grand. This agreement dated December 26, 2023 covers the 630 lode claims covered in this report. This document states that the claim maintenance fee of USD103,950.00 for the 630 lode claims, that are the subject of this report, has been paid. This Notice of Intent to Hold is filed for the assessment year ending September 1, 2024.
- A notarized document dated January 20, 2023 transferring the 630 lode claims from O.J. Gatten to Ameranium Energy Corp. at the Office of the Recorder in Moab, Utah.
- A signed agreement titled “Powerline Uranium Project Option Agreement” between Ameranium Resources Corp. and GoldHaven Resources Corp. dated April 15, 2024.

## 4.0 Project Location and Description

### 4.1 Project Location

The Powerline Project is located in southeastern Utah in Grand County. It is located 278 km (173 miles) southeast of Salt Lake City, 38 km (24 miles) northwest of the town of Moab and 26 km (16 miles) southeast of the town of Green River. The center of the claim group is at 597,000 East and 4,298,010 North (WGS84, Zone 12 North). See Figures 1, 2 and 3 and Table 1.

**Table 1 Powerline Project Centroid Co-ordinates**

Powerline Project Centroid Co-ordinates			
WGS 84 Zone 12 North (projected)		WGS 84 (geographic)	
Easting	Northing	Latitude North	Longitude West
597,000	4,298,010	38° 49' 32"	109° 52' 57"

### 4.2 Land Tenure

Ameranium Energy Corp. has acquired 630 lode claim units of Federal Lands in Grand County, Utah covering 5,264 hectares (13,008 acres). See Table 2. These Federal Lands include both mineral and surface rights and are administered by the Bureau of Land Management (BLM). There is an annual cost to hold the claims of US\$ 165.00 per claim for a total of US\$ 103,950. The expiry date of the claims is September 03, 2024 when the next claim maintenance fees of US\$ 103,950 are due. The claims are registered with the BLM in the name of Ameranium Energy Corp. a private wholly owned Utah registered subsidiary of Ameranium Resources Corporation.

These mining claims have been ground staked with wooden stakes at each corner with a plastic waterproof container holding a paper stating the land coordinates for each claim unit. The Certificate of Location of Lode Mining Claim for each lode claim PL1 – PL630 states: “... whose dimensions are 1500 feet by 600 feet. By this Declaration and such location, the above named locator(s) claim all veins, lodes, ledges, deposits and surface ground within the boundaries of said claim, except where boundaries may overlap existing patented mining claims, private land, or state land which is hereby recognized where such land exist.”

The claims are registered with the BLM in the name of Ameranium Energy Corp. a private wholly owned Utah registered subsidiary of Ameranium Resources Corporation.



Photo 1 The Author at Claim Post 431

Table 2 Powerline Claims Data

Powerline Uranium Project Lode Claims							
Claim Name	Serial Number		Claim Name	Serial Number		Claim Name	Serial Number
PL1	UT105788595		PL211	UT105788805		PL421	UT105789015
PL2	UT105788596		PL212	UT105788806		PL422	UT105789016
PL3	UT105788597		PL213	UT105788807		PL423	UT105789017
PL4	UT105788598		PL214	UT105788808		PL424	UT105789018
PL5	UT105788599		PL215	UT105788809		PL425	UT105789019
PL6	UT105788600		PL216	UT105788810		PL426	UT105789020
PL7	UT105788601		PL217	UT105788811		PL427	UT105789021
PL8	UT105788602		PL218	UT105788812		PL428	UT105789022
PL9	UT105788603		PL219	UT105788813		PL429	UT105789023
PL10	UT105788604		PL220	UT105788814		PL430	UT105789024
PL11	UT105788605		PL221	UT105788815		PL431	UT105789025
PL12	UT105788606		PL222	UT105788816		PL432	UT105789026
PL13	UT105788607		PL223	UT105788817		PL433	UT105789027
PL14	UT105788608		PL224	UT105788818		PL434	UT105789028
PL15	UT105788609		PL225	UT105788819		PL435	UT105789029
PL16	UT105788610		PL226	UT105788820		PL436	UT105789030



Powerline Uranium Project Lode Claims							
Claim Name	Serial Number		Claim Name	Serial Number		Claim Name	Serial Number
PL17	UT105788611		PL227	UT105788821		PL437	UT105789031
PL18	UT105788612		PL228	UT105788822		PL438	UT105789032
PL19	UT105788613		PL229	UT105788823		PL439	UT105789033
PL20	UT105788614		PL230	UT105788824		PL440	UT105789034
PL21	UT105788615		PL231	UT105788825		PL441	UT105789035
PL22	UT105788616		PL232	UT105788826		PL442	UT105789036
PL23	UT105788617		PL233	UT105788827		PL443	UT105789037
PL24	UT105788618		PL234	UT105788828		PL444	UT105789038
PL25	UT105788619		PL235	UT105788829		PL445	UT105789039
PL26	UT105788620		PL236	UT105788830		PL446	UT105789040
PL27	UT105788621		PL237	UT105788831		PL447	UT105789041
PL28	UT105788622		PL238	UT105788832		PL448	UT105789042
PL29	UT105788623		PL239	UT105788833		PL449	UT105789043
PL30	UT105788624		PL240	UT105788834		PL450	UT105789044
PL31	UT105788625		PL241	UT105788835		PL451	UT105789045
PL32	UT105788626		PL242	UT105788836		PL452	UT105789046
PL33	UT105788627		PL243	UT105788837		PL453	UT105789047
PL34	UT105788628		PL244	UT105788838		PL454	UT105789048
PL35	UT105788629		PL245	UT105788839		PL455	UT105789049
PL36	UT105788630		PL246	UT105788840		PL456	UT105789050
PL37	UT105788631		PL247	UT105788841		PL457	UT105789051
PL38	UT105788632		PL248	UT105788842		PL458	UT105789052
PL39	UT105788633		PL249	UT105788843		PL459	UT105789053
PL40	UT105788634		PL250	UT105788844		PL460	UT105789054
PL41	UT105788635		PL251	UT105788845		PL461	UT105789055
PL42	UT105788636		PL252	UT105788846		PL462	UT105789056
PL43	UT105788637		PL253	UT105788847		PL463	UT105789057
PL44	UT105788638		PL254	UT105788848		PL464	UT105789058
PL45	UT105788639		PL255	UT105788849		PL465	UT105789059
PL46	UT105788640		PL256	UT105788850		PL466	UT105789060
PL47	UT105788641		PL257	UT105788851		PL467	UT105789061
PL48	UT105788642		PL258	UT105788852		PL468	UT105789062
PL49	UT105788643		PL259	UT105788853		PL469	UT105789063
PL50	UT105788644		PL260	UT105788854		PL470	UT105789064
PL51	UT105788645		PL261	UT105788855		PL471	UT105789065
PL52	UT105788646		PL262	UT105788856		PL472	UT105789066
PL53	UT105788647		PL263	UT105788857		PL473	UT105789067
PL54	UT105788648		PL264	UT105788858		PL474	UT105789068
PL55	UT105788649		PL265	UT105788859		PL475	UT105789069

Powerline Uranium Project Lode Claims							
Claim Name	Serial Number		Claim Name	Serial Number		Claim Name	Serial Number
PL56	UT105788650		PL266	UT105788860		PL476	UT105789070
PL57	UT105788651		PL267	UT105788861		PL477	UT105789071
PL58	UT105788652		PL268	UT105788862		PL478	UT105789072
PL59	UT105788653		PL269	UT105788863		PL479	UT105789073
PL60	UT105788654		PL270	UT105788864		PL480	UT105789074
PL61	UT105788655		PL271	UT105788865		PL481	UT105789075
PL62	UT105788656		PL272	UT105788866		PL482	UT105789076
PL63	UT105788657		PL273	UT105788867		PL483	UT105789077
PL64	UT105788658		PL274	UT105788868		PL484	UT105789078
PL65	UT105788659		PL275	UT105788869		PL485	UT105789079
PL66	UT105788660		PL276	UT105788870		PL486	UT105789080
PL67	UT105788661		PL277	UT105788871		PL487	UT105789081
PL68	UT105788662		PL278	UT105788872		PL488	UT105789082
PL69	UT105788663		PL279	UT105788873		PL489	UT105789083
PL70	UT105788664		PL280	UT105788874		PL490	UT105789084
PL71	UT105788665		PL281	UT105788875		PL491	UT105789085
PL72	UT105788666		PL282	UT105788876		PL492	UT105789086
PL73	UT105788667		PL283	UT105788877		PL493	UT105789087
PL74	UT105788668		PL284	UT105788878		PL494	UT105789088
PL75	UT105788669		PL285	UT105788879		PL495	UT105789089
PL76	UT105788670		PL286	UT105788880		PL496	UT105789090
PL77	UT105788671		PL287	UT105788881		PL497	UT105789091
PL78	UT105788672		PL288	UT105788882		PL498	UT105789092
PL79	UT105788673		PL289	UT105788883		PL499	UT105789093
PL80	UT105788674		PL290	UT105788884		PL500	UT105789094
PL81	UT105788675		PL291	UT105788885		PL501	UT105789095
PL82	UT105788676		PL292	UT105788886		PL502	UT105789096
PL83	UT105788677		PL293	UT105788887		PL503	UT105789097
PL84	UT105788678		PL294	UT105788888		PL504	UT105789098
PL85	UT105788679		PL295	UT105788889		PL505	UT105789099
PL86	UT105788680		PL296	UT105788890		PL506	UT105789100
PL87	UT105788681		PL297	UT105788891		PL507	UT105789101
PL88	UT105788682		PL298	UT105788892		PL508	UT105789102
PL89	UT105788683		PL299	UT105788893		PL509	UT105789103
PL90	UT105788684		PL300	UT105788894		PL510	UT105789104
PL91	UT105788685		PL301	UT105788895		PL511	UT105789105
PL92	UT105788686		PL302	UT105788896		PL512	UT105789106
PL93	UT105788687		PL303	UT105788897		PL513	UT105789107
PL94	UT105788688		PL304	UT105788898		PL514	UT105789108

Powerline Uranium Project Lode Claims							
Claim Name	Serial Number		Claim Name	Serial Number		Claim Name	Serial Number
PL95	UT105788689		PL305	UT105788899		PL515	UT105789109
PL96	UT105788690		PL306	UT105788900		PL516	UT105789110
PL97	UT105788691		PL307	UT105788901		PL517	UT105789111
PL98	UT105788692		PL308	UT105788902		PL518	UT105789112
PL99	UT105788693		PL309	UT105788903		PL519	UT105789113
PL100	UT105788694		PL310	UT105788904		PL520	UT105789114
PL101	UT105788695		PL311	UT105788905		PL521	UT105789115
PL102	UT105788696		PL312	UT105788906		PL522	UT105789116
PL103	UT105788697		PL313	UT105788907		PL523	UT105789117
PL104	UT105788698		PL314	UT105788908		PL524	UT105789118
PL105	UT105788699		PL315	UT105788909		PL525	UT105789119
PL106	UT105788700		PL316	UT105788910		PL526	UT105789120
PL107	UT105788701		PL317	UT105788911		PL527	UT105789121
PL108	UT105788702		PL318	UT105788912		PL528	UT105789122
PL109	UT105788703		PL319	UT105788913		PL529	UT105789123
PL110	UT105788704		PL320	UT105788914		PL530	UT105789124
PL111	UT105788705		PL321	UT105788915		PL531	UT105789125
PL112	UT105788706		PL322	UT105788916		PL532	UT105789126
PL113	UT105788707		PL323	UT105788917		PL533	UT105789127
PL114	UT105788708		PL324	UT105788918		PL534	UT105789128
PL115	UT105788709		PL325	UT105788919		PL535	UT105789129
PL116	UT105788710		PL326	UT105788920		PL536	UT105789130
PL117	UT105788711		PL327	UT105788921		PL537	UT105789131
PL118	UT105788712		PL328	UT105788922		PL538	UT105789132
PL119	UT105788713		PL329	UT105788923		PL539	UT105789133
PL120	UT105788714		PL330	UT105788924		PL540	UT105789134
PL121	UT105788715		PL331	UT105788925		PL541	UT105789135
PL122	UT105788716		PL332	UT105788926		PL542	UT105789136
PL123	UT105788717		PL333	UT105788927		PL543	UT105789137
PL124	UT105788718		PL334	UT105788928		PL544	UT105789138
PL125	UT105788719		PL335	UT105788929		PL545	UT105789139
PL126	UT105788720		PL336	UT105788930		PL546	UT105789140
PL127	UT105788721		PL337	UT105788931		PL547	UT105789141
PL128	UT105788722		PL338	UT105788932		PL548	UT105789142
PL129	UT105788723		PL339	UT105788933		PL549	UT105789143
PL130	UT105788724		PL340	UT105788934		PL550	UT105789144
PL131	UT105788725		PL341	UT105788935		PL551	UT105789145
PL132	UT105788726		PL342	UT105788936		PL552	UT105789146
PL133	UT105788727		PL343	UT105788937		PL553	UT105789147

Powerline Uranium Project Lode Claims							
Claim Name	Serial Number		Claim Name	Serial Number		Claim Name	Serial Number
PL134	UT105788728		PL344	UT105788938		PL554	UT105789148
PL135	UT105788729		PL345	UT105788939		PL555	UT105789149
PL136	UT105788730		PL346	UT105788940		PL556	UT105789150
PL137	UT105788731		PL347	UT105788941		PL557	UT105789151
PL138	UT105788732		PL348	UT105788942		PL558	UT105789152
PL139	UT105788733		PL349	UT105788943		PL559	UT105789153
PL140	UT105788734		PL350	UT105788944		PL560	UT105789154
PL141	UT105788735		PL351	UT105788945		PL561	UT105789155
PL142	UT105788736		PL352	UT105788946		PL562	UT105789156
PL143	UT105788737		PL353	UT105788947		PL563	UT105789157
PL144	UT105788738		PL354	UT105788948		PL564	UT105789158
PL145	UT105788739		PL355	UT105788949		PL565	UT105789159
PL146	UT105788740		PL356	UT105788950		PL566	UT105789160
PL147	UT105788741		PL357	UT105788951		PL567	UT105789161
PL148	UT105788742		PL358	UT105788952		PL568	UT105789162
PL149	UT105788743		PL359	UT105788953		PL569	UT105789163
PL150	UT105788744		PL360	UT105788954		PL570	UT105789164
PL151	UT105788745		PL361	UT105788955		PL571	UT105789165
PL152	UT105788746		PL362	UT105788956		PL572	UT105789166
PL153	UT105788747		PL363	UT105788957		PL573	UT105789167
PL154	UT105788748		PL364	UT105788958		PL574	UT105789168
PL155	UT105788749		PL365	UT105788959		PL575	UT105789169
PL156	UT105788750		PL366	UT105788960		PL576	UT105789170
PL157	UT105788751		PL367	UT105788961		PL577	UT105789171
PL158	UT105788752		PL368	UT105788962		PL578	UT105789172
PL159	UT105788753		PL369	UT105788963		PL579	UT105789173
PL160	UT105788754		PL370	UT105788964		PL580	UT105789174
PL161	UT105788755		PL371	UT105788965		PL581	UT105789175
PL162	UT105788756		PL372	UT105788966		PL582	UT105789176
PL163	UT105788757		PL373	UT105788967		PL583	UT105789177
PL164	UT105788758		PL374	UT105788968		PL584	UT105789178
PL165	UT105788759		PL375	UT105788969		PL585	UT105789179
PL166	UT105788760		PL376	UT105788970		PL586	UT105789180
PL167	UT105788761		PL377	UT105788971		PL587	UT105789181
PL168	UT105788762		PL378	UT105788972		PL588	UT105789182
PL169	UT105788763		PL379	UT105788973		PL589	UT105789183
PL170	UT105788764		PL380	UT105788974		PL590	UT105789184
PL171	UT105788765		PL381	UT105788975		PL591	UT105789185
PL172	UT105788766		PL382	UT105788976		PL592	UT105789186

Powerline Uranium Project Lode Claims							
Claim Name	Serial Number		Claim Name	Serial Number		Claim Name	Serial Number
PL173	UT105788767		PL383	UT105788977		PL593	UT105789187
PL174	UT105788768		PL384	UT105788978		PL594	UT105789188
PL175	UT105788769		PL385	UT105788979		PL595	UT105789189
PL176	UT105788770		PL386	UT105788980		PL596	UT105789190
PL177	UT105788771		PL387	UT105788981		PL597	UT105789191
PL178	UT105788772		PL388	UT105788982		PL598	UT105789192
PL179	UT105788773		PL389	UT105788983		PL599	UT105789193
PL180	UT105788774		PL390	UT105788984		PL600	UT105789194
PL181	UT105788775		PL391	UT105788985		PL601	UT105789195
PL182	UT105788776		PL392	UT105788986		PL602	UT105789196
PL183	UT105788777		PL393	UT105788987		PL603	UT105789197
PL184	UT105788778		PL394	UT105788988		PL604	UT105789198
PL185	UT105788779		PL395	UT105788989		PL605	UT105789199
PL186	UT105788780		PL396	UT105788990		PL606	UT105789200
PL187	UT105788781		PL397	UT105788991		PL607	UT105789201
PL188	UT105788782		PL398	UT105788992		PL608	UT105789202
PL189	UT105788783		PL399	UT105788993		PL609	UT105789203
PL190	UT105788784		PL400	UT105788994		PL610	UT105789204
PL191	UT105788785		PL401	UT105788995		PL611	UT105789205
PL192	UT105788786		PL402	UT105788996		PL612	UT105789206
PL193	UT105788787		PL403	UT105788997		PL613	UT105789207
PL194	UT105788788		PL404	UT105788998		PL614	UT105789208
PL195	UT105788789		PL405	UT105788999		PL615	UT105789209
PL196	UT105788790		PL406	UT105789000		PL616	UT105789210
PL197	UT105788791		PL407	UT105789001		PL617	UT105789211
PL198	UT105788792		PL408	UT105789002		PL618	UT105789212
PL199	UT105788793		PL409	UT105789003		PL619	UT105789213
PL200	UT105788794		PL410	UT105789004		PL620	UT105789214
PL201	UT105788795		PL411	UT105789005		PL621	UT105789215
PL202	UT105788796		PL412	UT105789006		PL622	UT105789216
PL203	UT105788797		PL413	UT105789007		PL623	UT105789217
PL204	UT105788798		PL414	UT105789008		PL624	UT105789218
PL205	UT105788799		PL415	UT105789009		PL625	UT105789219
PL206	UT105788800		PL416	UT105789010		PL626	UT105789220
PL207	UT105788801		PL417	UT105789011		PL627	UT105789221
PL208	UT105788802		PL418	UT105789012		PL628	UT105789222
PL209	UT105788803		PL419	UT105789013		PL629	UT105789223
PL210	UT105788804		PL420	UT105789014		PL630	UT105789224

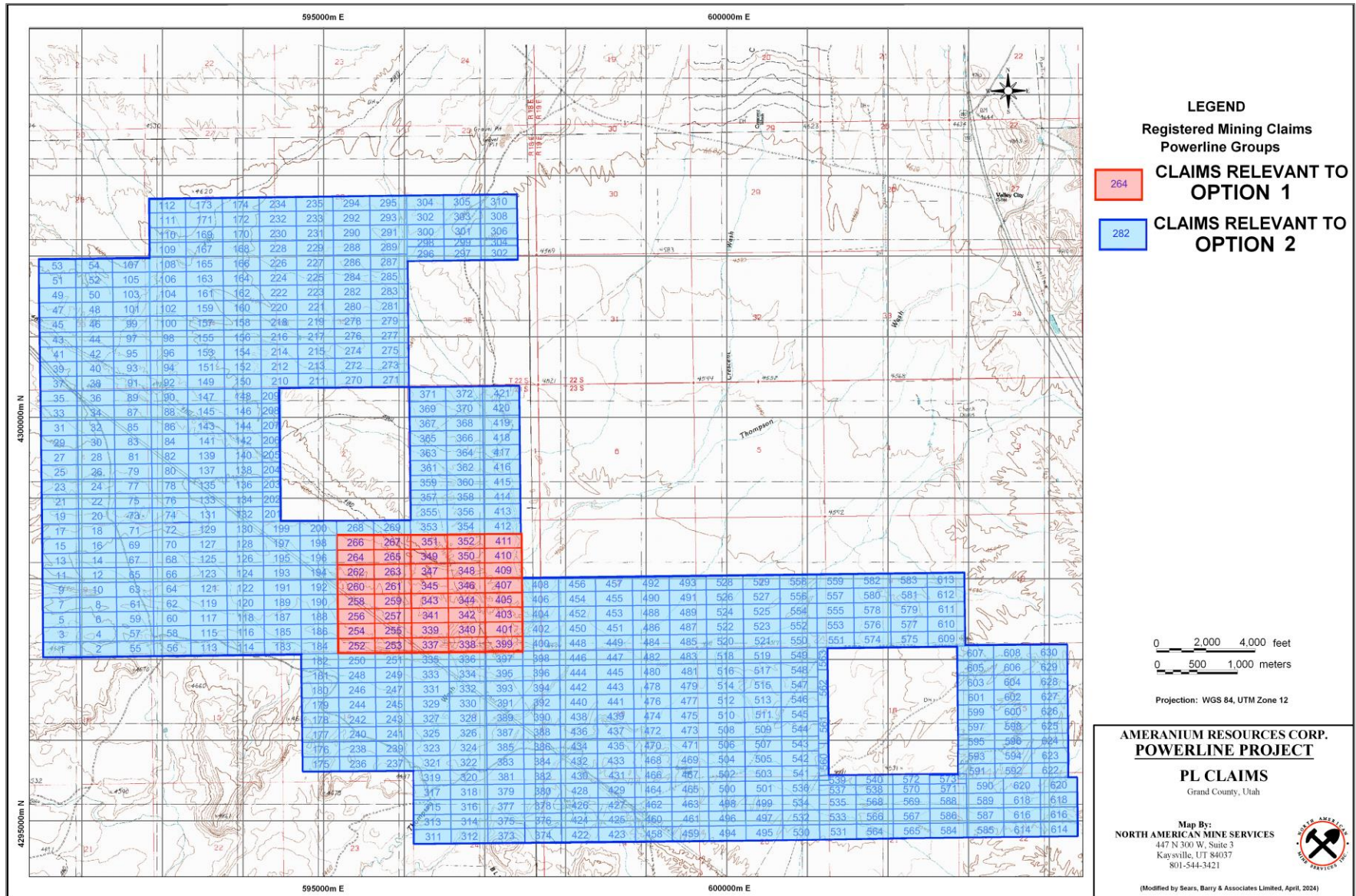


Figure 3 Powerline Project Land Map

### **4.3 Encumbrances**

All of the land within the Powerline Uranium Project has been acquired by ground staking by Ameranium Energy Corp., the Utah subsidiary of Ameranium Resources Corp. There are no underlying royalties, back-in rights, payments, or other agreements and encumbrances to which the property is subject.

### **4.4 Liabilities**

The lands covered by the Powerline Uranium Project were acquired on land owned by the Federal United States Government. Any previously existing liabilities on these lands are the responsibility of the Federal Government. There are no indications of any environmental liabilities on the Project as it is currently undeveloped desert grazing land.

Sears, Barry & Associates Limited is not aware of any significant factors or risks that may affect access, title, or the right or ability to perform work on the Project.

### **4.5 Security Risks and Political Stability**

Utah, as part of the United States of America, has an extremely low risk of terrorism, kidnapping and civil war. It has a long-established democratic system of government and a sound legal system. Mining activities are governed by modern, well-defined mining laws. Mining permits and leases have a guaranteed security of tenure provided that all required conditions are met under the Bureau of Land Management and the Utah Division of Oil, Gas and Mining.

### **4.6 Permits**

Prior to the commencement of exploration, drilling, or mining operation on the Federal Lands, permits must be obtained and the posting of reclamation bonds is required. The required environmental and archaeological surveys have been completed and permits to carry out drilling of up to 4 holes from 2 drill pads have been issued by the United States Bureau of Land Management. Drilling can commence at any time following the posting of the necessary reclamation bond. A Plan of Operations must also be filed with and approved by the Utah Government, Division of Oil, Gas and Mining, prior to conducting any surface disturbing operations.

## 4.7 Terms of Acquisition Agreement

GoldHaven has the option to acquire a 100% interest in the 630 lode claims of the Powerline Project under a 2-stage shares and cash agreement. The 1<sup>st</sup> stage includes 40 lode claims and the 2<sup>nd</sup> covers the remaining 590 lode claims (Table 3). The claim units covered under the 1<sup>st</sup> Option are shown in red and the 2<sup>nd</sup> Option in blue on Figure 3.

**Table 3 Staged Payment of GoldHaven Shares**

Staged Payment of GoldHaven Shares				
Option Stage	Claim Units	Share Consideration	Expiry Date	Interest
1	40	8,800,000 common shares of GoldHaven	31-Dec-24	100%
2	590	17,600,000 common shares of GoldHaven	25-Jan-25	100%

In addition to the share considerations, GoldHaven shall also make an aggregate one-time land payment of US\$103,950 to Ameranium Resources Corp. in cash by August of 2024.

As long as the option agreement is in effect and not expired, GoldHaven shall be responsible for all land holding requirements.

The exercise of the both options shall be subject to completion of a financing by GoldHaven of not less than CDN\$1,000,000.



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

### **5.1 Accessibility**

The Powerline Project can be easily accessed by travelling east from Green River for 19 km (12 mi) on Interstate Highway I-70 to Exit 175 (Floy), then proceeding south along the well maintained, graveled, Ruby Ranch Road for 6.5 km (4 mi). Immediately before reaching the “power line” for which the Project is named, proceed east on Ten Mile Road, a reasonably good graveled dirt road. The west boundary of the claims is less than 2 km along Ten Mile Road. This road crosses through the southern part of the 13 km (8 mi) wide property. Alternatively, the Ten Mile Road departs west from Highway 191 near a small airport located 23 km (14 mi) south of Crescent Junction on Interstate I-70 or 26 km (16 mi) north of Moab. The distance from Highway 191 to the eastern side of the Powerline claim group is approximately 13 km (8 mi). Numerous “Jeep” trails and abandoned trails provide local access as well as the service trails that follow or provide access to the power line. Many of these trails require permission to use as they are closed to ‘off-road’ type vehicles.

The town of Green River is located along Interstate I-70. It is easily reached from Salt Lake City by travelling south along I-15 for approximately 90 km (56 mi), then east on US-6E/191 S for approximately 120 km (75 mi). There are numerous daily flights into Salt Lake City International Airport. See Figures 1, 2 and 3.



**Photo 2 South-center of the Project Looking South**

## **5.2 Physiography**

The Powerline Uranium Project lies within the Colorado Plateau Physiographic Province (Figure 4). This province covers an area of approximately 337,000 km<sup>2</sup> (130,000 miles<sup>2</sup>) within western Colorado, northwestern New Mexico, southeastern Utah, and northern Arizona. The area, sometimes referred to as the “Four Corners Area”, is drained by the Colorado River and its tributaries, the Green, San Juan and Little Colorado Rivers.

This region includes colorful high desert plateaus, deep river canyons and high mountain peaks. The immediate area of the Project in Grand County consists of low hill ridges and wide-open valleys. The Powerline Project is crossed by numerous arroyos or “washes” as they are locally referred to. The eastern three-quarters of the Project is drained by washes that are part of the Ten Mile Canyon drainage system which ultimately flows southwest into the Green River. The northwest and western part of the Project drains into the Little Grand Wash and Salt Wash which

both flow towards the west-northwest into the Green River. The Green River flows southwards into the Colorado River and then south-westward into the Pacific Ocean.

Elevations within the project area range from 1,375 to 1,419 m (4,511 to 4,655 ft) above mean sea level (amsl).

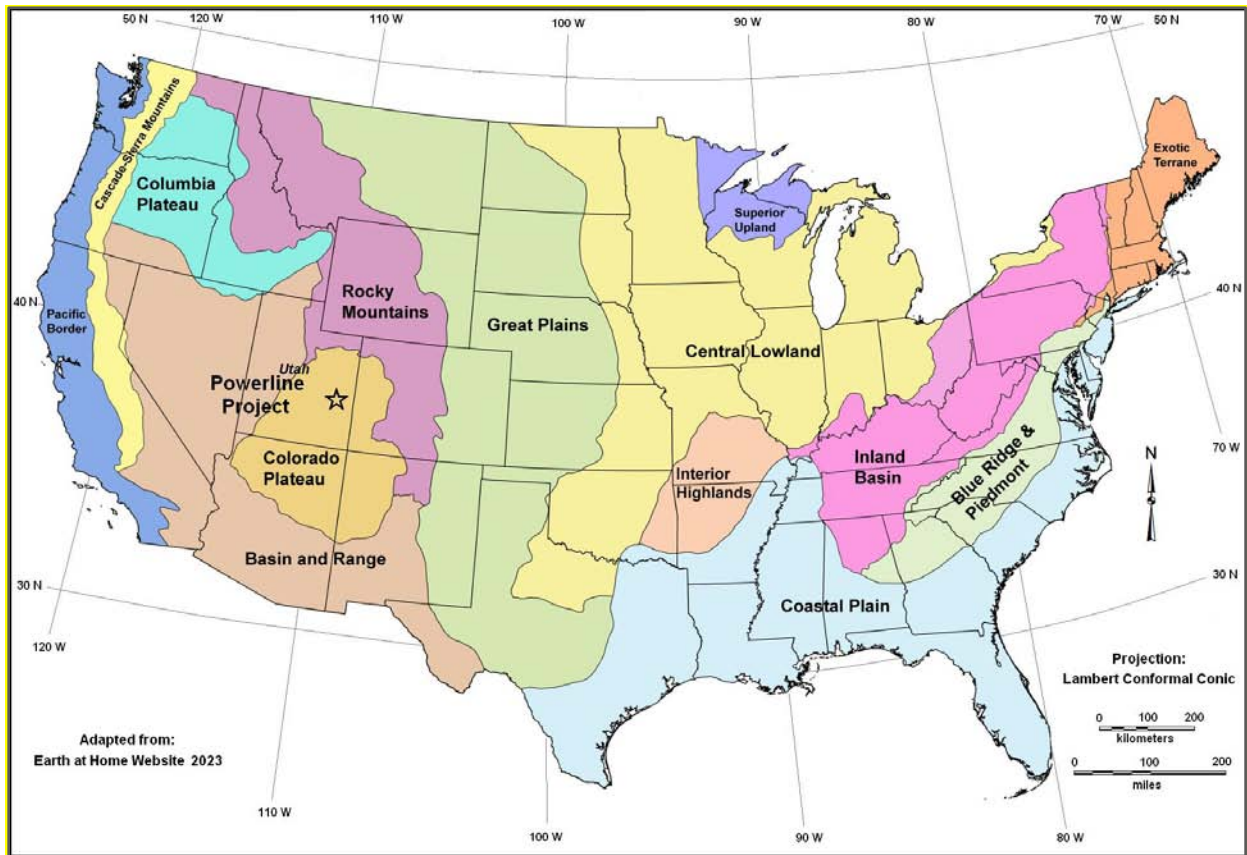


Figure 4 Physiographic Provinces of USA



**Photo 3 Vegetation, Access Road and Outcrop of Morrison Formation on the Project**

### **5.3 Vegetation**

The broad, relatively flat lands that occupy the Powerline Uranium Project area are used as grazing lands for cattle. The vegetation is extremely sparse, in the range of 20 to 30% of soil cover. Shrubs such as saltbush and herbaceous plants dominate the ground cover followed by scattered succulents, mainly prickly pear cactus. See Photo 3.

### **5.4 Climate**

The Powerline Uranium Project area has an arid climate characterized by hot summers and chilly winters, with precipitation evenly spread over the year (usually less than one inch per month). There is a total liquid equivalent precipitation of 15.4 cm (6.06 inches) which is made up of 14 cm (5.51 inches) of rain and 14 cm (5.51 inches) of snow. Field work on the Powerline Uranium Project, which includes the recommended exploration program in Section 26.0, can be carried

out year-round. Mining operations can also be carried out year-round with occasional, brief interruptions due to muddy conditions in March and April. Tables 3 and 4 show the average temperatures and precipitation for Green River, Utah which is 26 km (16 miles) northwest of the Project. Table 4 and 5 source is Weatherspark website.

**Table 4 Temperature Statistics for Green River, Utah**

Temperature Statistics for Green River, Utah (°C)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Average high</b>	5	10	16	21	27	33	35	33	28	21	12	5
<b>Average low</b>	-7	-4	1	5	10	15	18	17	11	4	-2	-7
<b>Average</b>	-2	2	8	13	18	24	27	25	20	12	4	-2

**Table 5 Precipitation Statistics for Green River, Utah**

Precipitation Statistics for Green River, Utah (cm)													
Monthly	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Rain</b>	0.3	0.8	1.0	1.3	1.3	0.8	1.3	1.5	2.3	2.0	1.0	0.5	14.0
<b>Snow</b>	5.1	2.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.5	4.8	14.0
<b>Total Liquid Equivalent Precipitation</b>	0.8	1.0	1.0	1.3	1.3	0.8	1.3	1.5	2.3	2.1	1.2	1.0	<b>15.4</b>

## 5.5 Local Infrastructure and Resources

Utah is a mining friendly state with a long history of mining. Mining in Utah dates back at least to the 1800s and it is home to a variety of mines from narrow vein to large open pit and potash solution mining. A full spectrum of mining and exploration services is available in many major centers in Utah as well as the neighboring mining states of Arizona, New Mexico and Colorado. Salt Lake City has a population of 200,478 as of 2021 and is located 320 km (201 miles) northwest of the Project. The town of Moab is the county seat for Grand County. It is located approximately 29 km by paved road and 13 km by maintained gravel road from the Project. Moab has a population of 5,046 as of 2010 and has an adequate supply of essential services including medical services, schools, churches, a variety of stores and accommodations. The population in the surrounding communities is diverse and large enough to provide a skilled workforce. There is sufficient power available and adequate water in the Project area to support a mining operation.

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A double line, regional, high-capacity powerline and a gas pipeline cross diagonally through the Powerline Project (Photo 2).

The White Mesa uranium processing plant, located approximately 160 km (100 mi) south of the Project near the town of Blanding, is the only fully-licensed and operating conventional uranium mill in the United States. Although there are currently no operating mines in Utah, the White Mesa mill processes ore and other material from out of state as well as local historical waste dumps and tailings piles. It has a licensed capacity of 8+ million pounds of uranium per year. Although Utah currently does not generate any electricity from nuclear energy, there is a proposal to construct a nuclear power plant approximately 8 km (5 mi) northwest of Green River. This facility when completed would have two 1500 megawatt reactors (E.I.A. Website, 2023; Blue Castle Website).

## 6.0 History

There has been no historical uranium mining in the Powerline Project area.

### 6.1 Ownership History

The favourable stratigraphic horizons which are known to host uranium deposits in southeast Utah are covered by younger sediments and therefore not exposed in the Ten Mile Canyon area. The buried deposits are thought to lie at depths ranging from 300 to 1000 m which are likely to be too deep for conventional underground mining therefore the area was previously considered unattractive for commercial development. However, with the increasing demand for uranium and the advent of “In Situ Leach” and recovery methods (ISL) these types of deposits are now considered very attractive targets.

Portions of the Project area have been (and in some areas currently are) held under lease for petroleum and natural gas. Under the mining regulations in Utah, the prospecting and mining rights for different commodities on the same lands can be held by different owners and worked concurrently.

In 1972, Buttes Gas and Oil Co. (Buttes) held a land position of approximately 25.9 square km (10 square miles) covering portions of the eastern part of the Powerline Project. The property consisted of 112 federal lode mining claims and 3 state leases in 4 areas surrounding an abandoned oil and gas test-well drilled by Texaco in 1966. Gamma ray logs of this well, named Government McKinnon 1, indicated the presence of uranium mineralization. A Buttes report (Norman, 1972) recommended drilling a new well to twin the Government McKinnon 1 test-well, but the author was unable to locate any record of this having being carried out.

### 6.2 Exploration History

#### 6.2.1 Regional Uranium Exploration and Production History

Exploration for uranium has been very cyclical in Utah as well as in other parts of the world. Like other commodities, exploration activities have revolved around the demand cycles and were in unison with production. According to information published by the Utah Geological Survey (Mills and Jordan, 2021), total uranium production in Utah is documented to have been 122,497,605 lbs

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of  $U_3O_8$  which would have a current value (May 2023) of approximately US\$6 billion. Following is a simplified timeline of uranium production in the State of Utah.

Pre-1890: Small amounts of the common yellow uranium-vanadium-radium mineral (carnotite) was used as a pigment in body paint by native Americans.

1890-1908: The mineral carnotite was recognized as being a source of uranium and was mined on a small scale for use in medical research. Vanadium was also recovered sporadically for use in manufacturing alloys by the steel industry. The main use continued to be as a pigment.

1909 -1923: Uranium was produced as a by-product of radium mining, the latter being a radioactive decay product of uranium. Radium was in demand for use in the treatment of certain cancers. Production of uranium is estimated as a few thousand tons grading 2-3%  $U_3O_8$  of hand sorted ore; its principal use was as a pigment.

1930s – 1944: During this period, uranium was recovered as a by-product of vanadium mining; production was estimated at 100,000 tons grading 0.19%  $V_2O_5$  and an unknown grade of  $U_3O_8$ . The total recorded uranium production in Utah prior to 1944 is reported to have been 550,000 lbs of  $U_3O_8$  (Mills & Jordan 2021).

1948 – 1969: The first “boom” in uranium production began as a result of the Atomic Energy Commission (AEC) demand for uranium for nuclear weapons production. In Utah, the discovery of the “Mi Vida” deposit in the Lisbon Valley southeast of Moab by a tenacious prospector named Charlie Steen ignited a massive quest for the metal. The AEC established 6 uranium buying stations in Utah designed to purchase the product from more than 500 underground mines. Production during this period was estimated at approximately 11 million tons producing approximately 75 million pounds of  $U_3O_8$  (Mills & Jordan 2021). This implies a recovered grade of approx. 0.34%. Most of these mines were closed by 1969.

1970 – 1990: The second production “boom” was triggered by the growth of the nuclear power industry. During this time period approximately 100 mines were intermittently operated producing approximately 44 million lbs of  $U_3O_8$  from an unknown amount of material (Mills & Jordan 2021). By 1990, virtually all of Utah’s uranium mining was terminated as a result of competition from high grade mines in Canada and other parts of the world.

2007 – 2012: Four uranium mines were either operating or fully permitted for operating during this period. Total production was reported to be approximately 3 million lbs of  $U_3O_8$ . In 2012, the



ownership of these mines along with the only operating conventional uranium and vanadium mill in the United States - the White Mesa Mill – was consolidated under one owner (Energy Fuels Corp). Mining was suspended and the projects placed on care and maintenance. The White Mesa mill, located 11 km (7 miles) south of Blanding, Utah, continues to process uranium/vanadium ores on a toll basis. This facility is fully licensed by the U.S. Nuclear Regulatory Commission for ore processing and permanent tailings disposal.

### **6.2.2 Local Area Exploration History**

The Ten Mile Canyon area where the Powerline Project is located is recognized as one of more than 30 uranium “districts” by the Utah Geological Survey as can be seen on Figure 5. These districts are determined as being areas having favourable geology and having known prospects or potential for uranium deposits. Ten Mile Canyon is considered as a favourable target area for undiscovered uranium deposits because of its location along the axis of the Moab Fault and because the favourable sandstone units that host uranium mineralization in other parts of southeast Utah are known to occur in this district. These units have been intersected in numerous abandoned oil and gas test-wells collared in the area and the oil well logs are publicly available from the well database maintained by the Utah Department of Natural Resources Division of Oil, Gas and Mining (UDOGM). As of the effective date of this report, no documented records of previous exploration activity designed specifically for uranium within the Project area have been located.

At least 7 oil and gas test-wells for which information is available are reported within the claim group and an additional 3 holes are located within a 5 km distance from the Project perimeter. More detailed information relating to some of these holes for which gamma ray geophysical logs were available can be found in Section 9.0 Exploration.

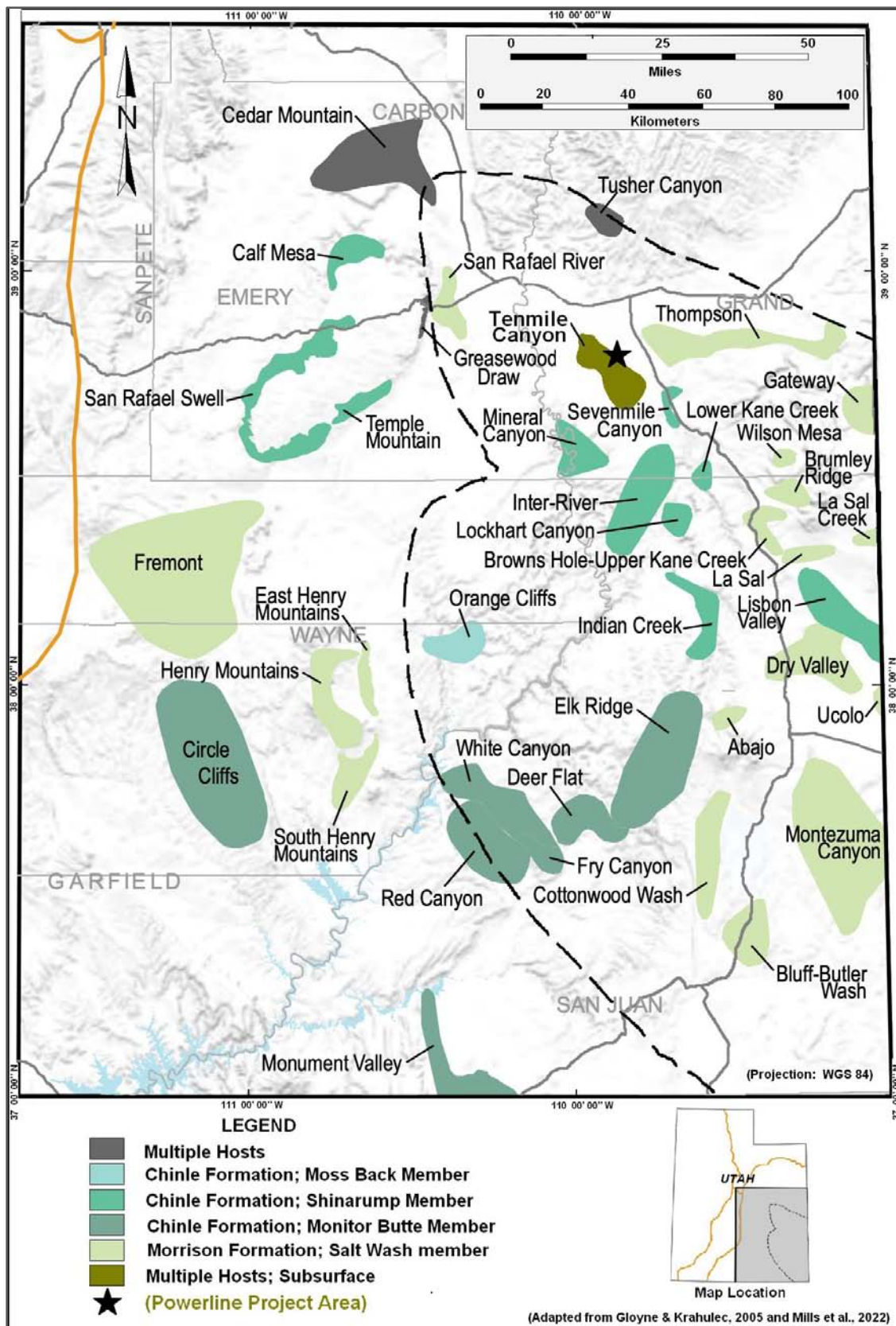


Figure 5 Southeast Utah Showing Ten Mile Canyon and Other Uranium Deposits

## 7.0 Geological Setting and Mineralization

### 7.1 Geological Setting

#### 7.1.1 Regional Geology

The project area lies within the northern part of the Colorado Plateau, a unique tectonic block made up of relatively flat-lying, undeformed sequences of late Paleozoic to early Cenozoic sedimentary rocks intruded by occasional Tertiary plutons of monzonite (Figures 6 and 7). The sedimentary rocks consist of multiple cycles of sandstone, conglomerate, siltstone and shale derived from clastic material eroded from the rising Appalachian orogen far to the east and the Rocky Mountains to the north, along with local carbonate rocks, evaporite beds and minor volcanic rocks. These marine and terrestrial sedimentary rocks were deposited in a partially closed basin formed by faulting and other tectonic activity on a platform of Precambrian metamorphic and igneous rocks. The Plateau is bounded on the north and east by ranges of the Rocky Mountains and on the west and south by the extensional “Basin and Range” province. The present-day elevation of the area underlain by the Colorado Plateau ranges from 1,500 m (5,000 feet) to 3,350 m (11,000 feet) amsl with an average elevation of approximately 1,800 m (6,000 feet) amsl. It is postulated to have been uplifted by as much as 3,000 m (10,000 feet) during the last 20 million years without sustaining any major deformation other than local faulting and gentle folding. Activity on several deep-seated fault structures within the plateau has resulted in the formation of local laccoliths (dome shaped sills of igneous material). Erosion of the overlying sediments has resulted in small mountain ranges that stand out above the sedimentary rocks. The La Sal Mountains, about 20 miles southeast of the project, is an example of these plutons.

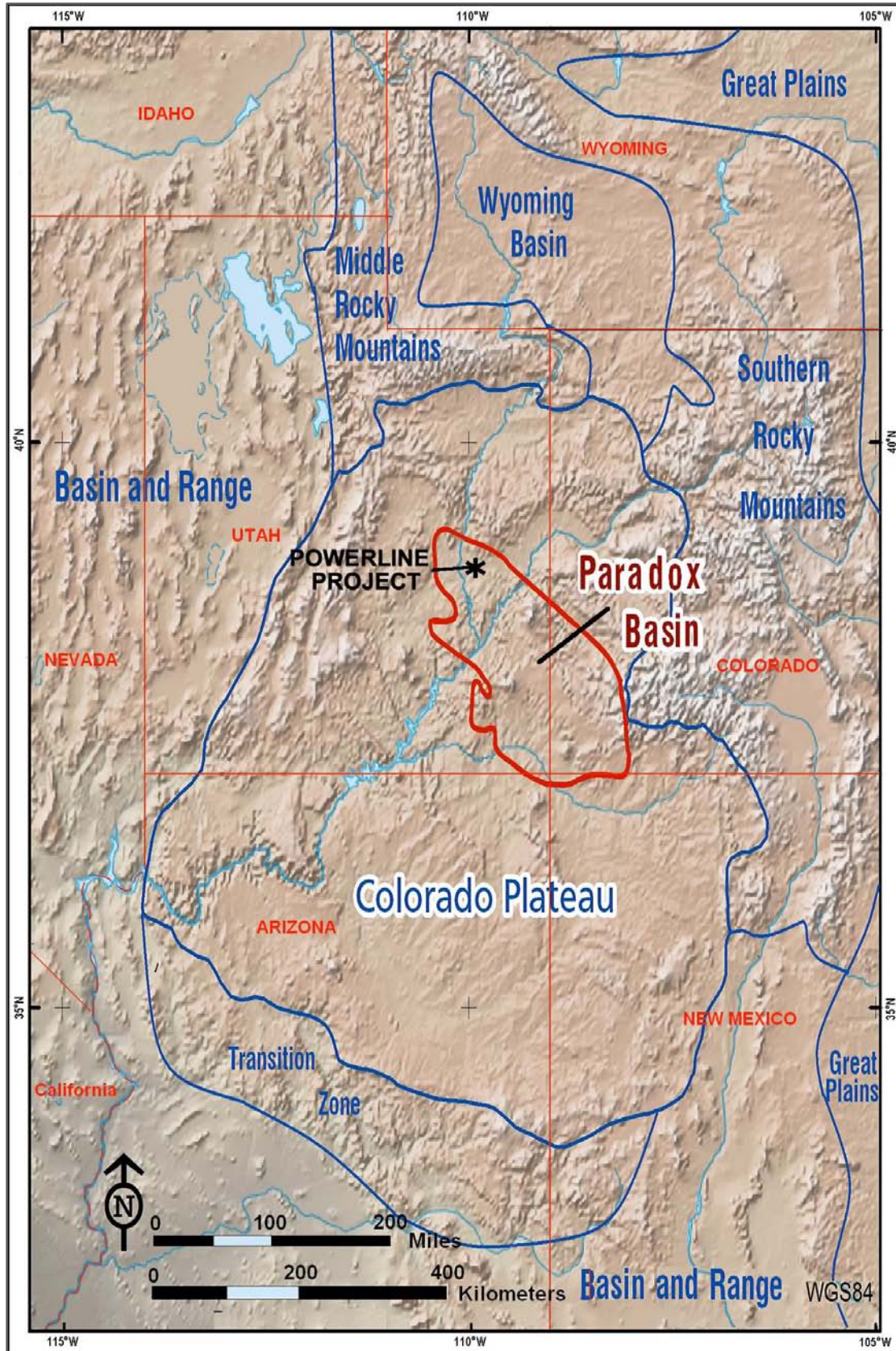


Figure 6 Paradox Basin in the Colorado Plateau

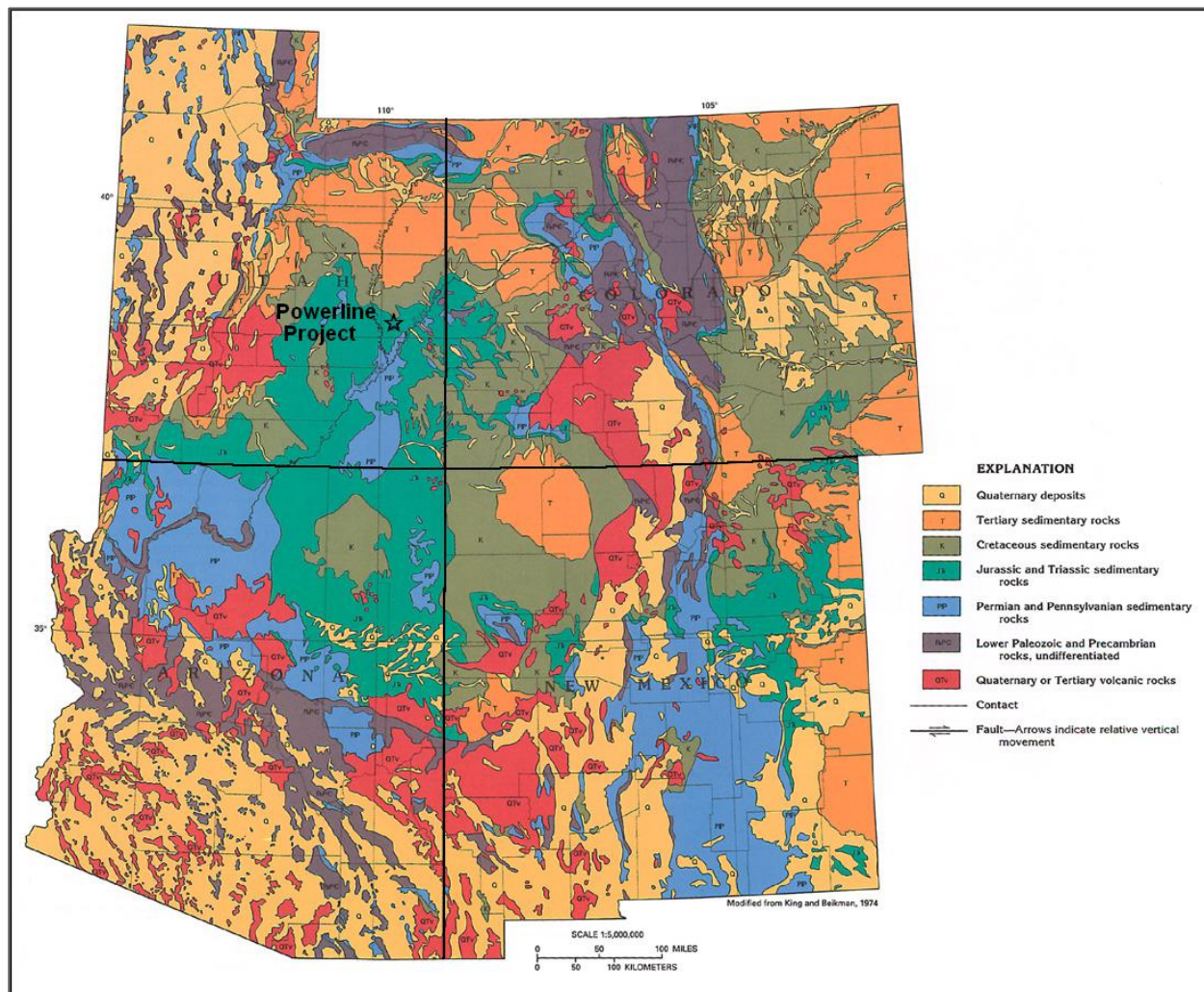


Figure 7 Regional Geology Map

### 7.1.2 Local Geology

Within the north-central part of the Colorado Plateau, lies a structurally controlled sedimentary basin referred to as the Paradox Basin (Figure 6). The Paradox Basin, initially formed during the Pennsylvanian Period (323 to 299 Ma), trends northwesterly and occupies an area that is roughly 290 km long x 145 km wide (180 x 90 miles). The majority of the basin lies within the southeastern part of Utah and southwestern Colorado. Figure 8 is a schematic stratigraphic column showing the general strata that make up this part of the Colorado Plateau. The sedimentary rocks that make up the lower part of the Paradox Basin are referred to as the Paradox Formation, consisting of limestone, dolomite, siltstone, shale and evaporite deposits. The principal evaporite member is halite, a very ductile and relatively light unit that plays a very important role in the stratigraphy

and structure in this part of the Colorado Plateau. As the sediments overlying the Paradox Formation were being deposited, the halite and other salts were compressed and locally squeezed to form the center of anticlinal structures and salt domes. The overlying sediments were primarily sourced from erosion of an uplifted sequence to the northeast referred to as the Uncompahgre Uplift although additional clastic material originating from the east and south also contributed to the sediment load. The salt-related tectonics contributed to a complex paleotopography during the deposition of the overlying sediments. Once the overlying sediments were in place, they continued to be affected by salt flowage as well as uplift and lateral movement related to subduction along the western side of the North American continent.

Following the deposition of the marine lithologies that make up the lower part of the Paradox Basin, the environment transitioned to one that was dominated by terrestrial sediments. The lowest recognized unit in these continental clastic rocks is the Upper Permian Cutler Formation which is dominated by sandstones, conglomerates and lesser siltstone and shale. Most of these sediments are thought to be derived from erosion of rocks from the Uncompahgre Plateau on the northeast side of the basin. The Cutler Formation is overlain by a thick section of brown Triassic mudstone and sandstone strata of the Moenkopi Formation. The Chinle Formation unconformably overlies the Moenkopi Formation. Fluvial sediment containing carbonaceous materials, lacustrine beds, deltaic sandstones and clay beds formed by the devitrification of tuffs extruded from volcanos to the south make up the varied members of the Chinle. The fluvial Moss Back Member, which is the lowermost member of the Chinle Formation, is the hosting unit for the uranium mineralization that is the target of the Project.

Above the Chinle, the Wingate Sandstone, Kayenta Formation, Navajo Sandstone, Carmel Formation and Entrada Sandstone form massive cliffs in the region that can be several thousand feet high. The Kayenta and Curtis Formations form the interbedded siltstones and sandstones that overlie the massive sandstones of the Wingate, Navajo and Entrada Formations. Above the Curtis Formation, are siltstones and clay-stones of the red and white banded Jurassic Summerville Formation. The Summerville Formation lies unconformably below the Jurassic Morrison Formation. The Salt Wash Member of the Morrison Formation, is formed by aggrading braided streams coming from highlands forming to the south of the Colorado Plateau. This member hosts uranium and vanadium mineralization in the project region, but does not constitute the principal targets of this project. Massive clay stones with interbedded channel sandstones siltstone and pebble conglomerates of the Brushy Basin Member of the Morrison overlie the Salt Wash Member. Like members of the Chinle Formation, these clay beds, also result from

devitrification of tuffs in the southern highlands. The Brushy Basin makes up the upper part of the Morrison Formation in the project area.

The Cretaceous transgression of a large, northerly elongated, seaway formed on the interior of the supercontinent Pangea. The Dakota Formation, a medium to fine grained sandstone with occasional pebble conglomerates and coarse-grained sandstones mark this transgression. The Dakota Formation is followed by the Mancos Shale, which form massive slopes of dark gray shales deposited in the abyssal environment within the encroaching sea. This marine shale crops out over most of the Project area. The Tropic and Ferron members of the Mancos Formation outcrop on the Powerline Project. Figure 9 is a simplified version of the local geology showing the Powerline claim block.

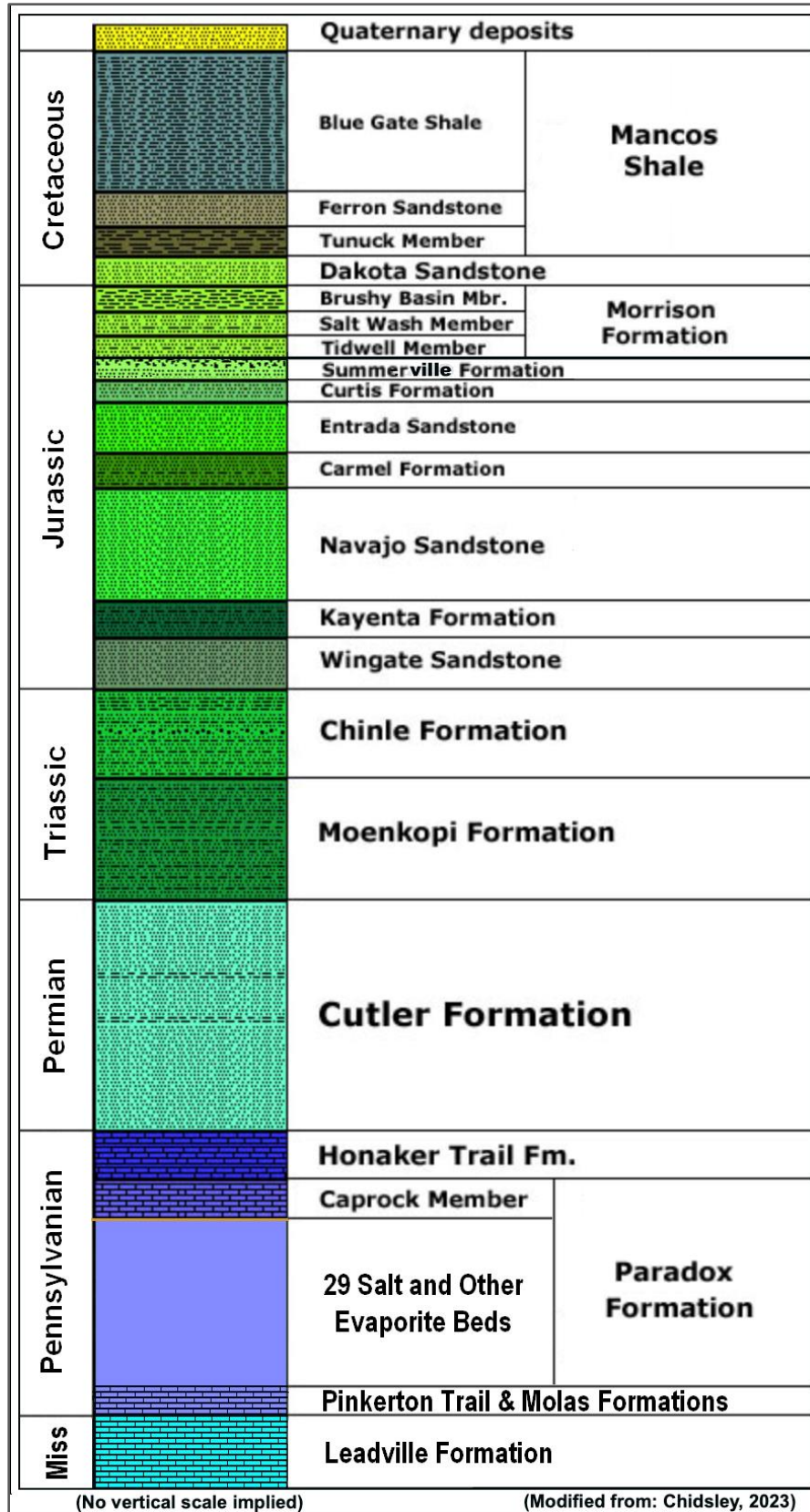


Figure 8 Stratigraphic Column of the Powerline Uranium Project



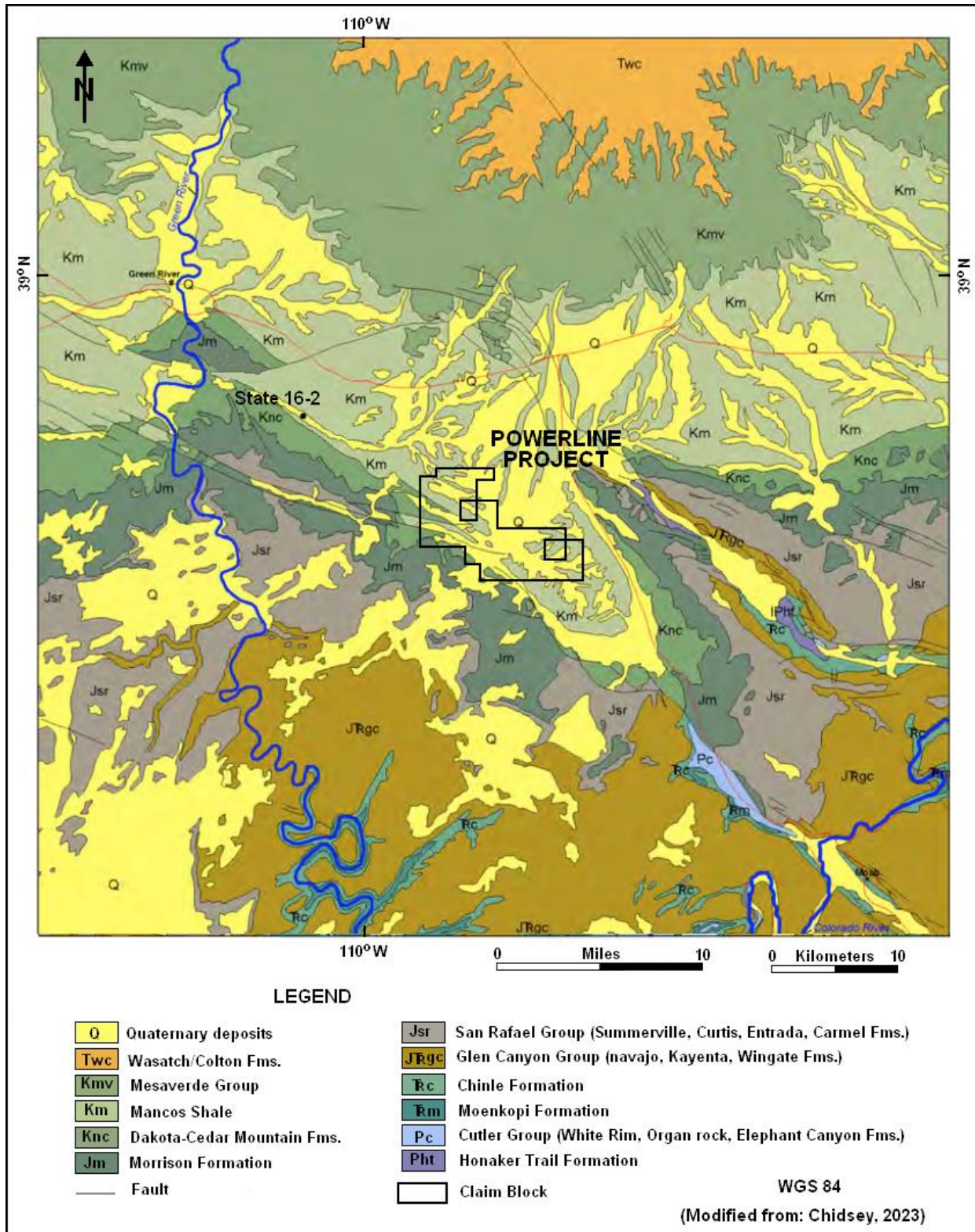


Figure 9 Simplified Geology Map

### 7.1.3 Structural Development of the Paradox Basin

The basement features that created the Paradox Basin are thought to have been formed by the end of the Precambrian (Baars and Stevenson, 1981) although there was limited movement along major fault boundaries during the Paleozoic Era as well as movement during deposition of the Pennsylvanian aged evaporates. Until the end of the Mississippian period, the Paradox Basin is thought to have been a subsiding trough with a foreland shelf upon which relatively thick layers of limestone were accumulated. During Pennsylvanian times, regional subsidence accompanied by local uplifting formed a restricted marine basin that was periodically cut off from the ocean.

This repetitive influx of salt water followed by periods with a hot, arid climate resulted in the deposition of cyclical evaporite sequences in the center of the basin (or sub-basins). The most extensive uplifting movement occurred along the northeast side of the Paradox Basin in the area known as the Uncompahgre Uplift, part of the Rocky Mountain chain (Figure 6). Extensive erosion of the hills bordering the basin resulted in vast amounts of sediments being deposited around the margins of the basin and eventually covered the evaporite units. The salt bodies were compressed locally forming anticlinal structures. These, along with movement along pre-existing faults and basin floor features resulted in a belt of deformed rocks parallel to the Uncompahgre Uplift in the northeastern part of the Paradox Basin referred to as the Paradox Basin Fold and Fault Belt.

The paleo-environment that is envisioned during the deposition of the uranium bearing horizons (the Chinle and Morrison Formations) is a long, relatively flat northwest-southeast trending valley that was traversed by a number of large rivers and streams and their tributaries that flowed into an ocean located towards the northwest. The braided streams, swamps and marshes were ideal locations for the movement and deposition of uranium mineralization.

Figure 10 shows the major structural features that are indicated by geological mapping in the area of the Powerline Project (Doelling, 2002).

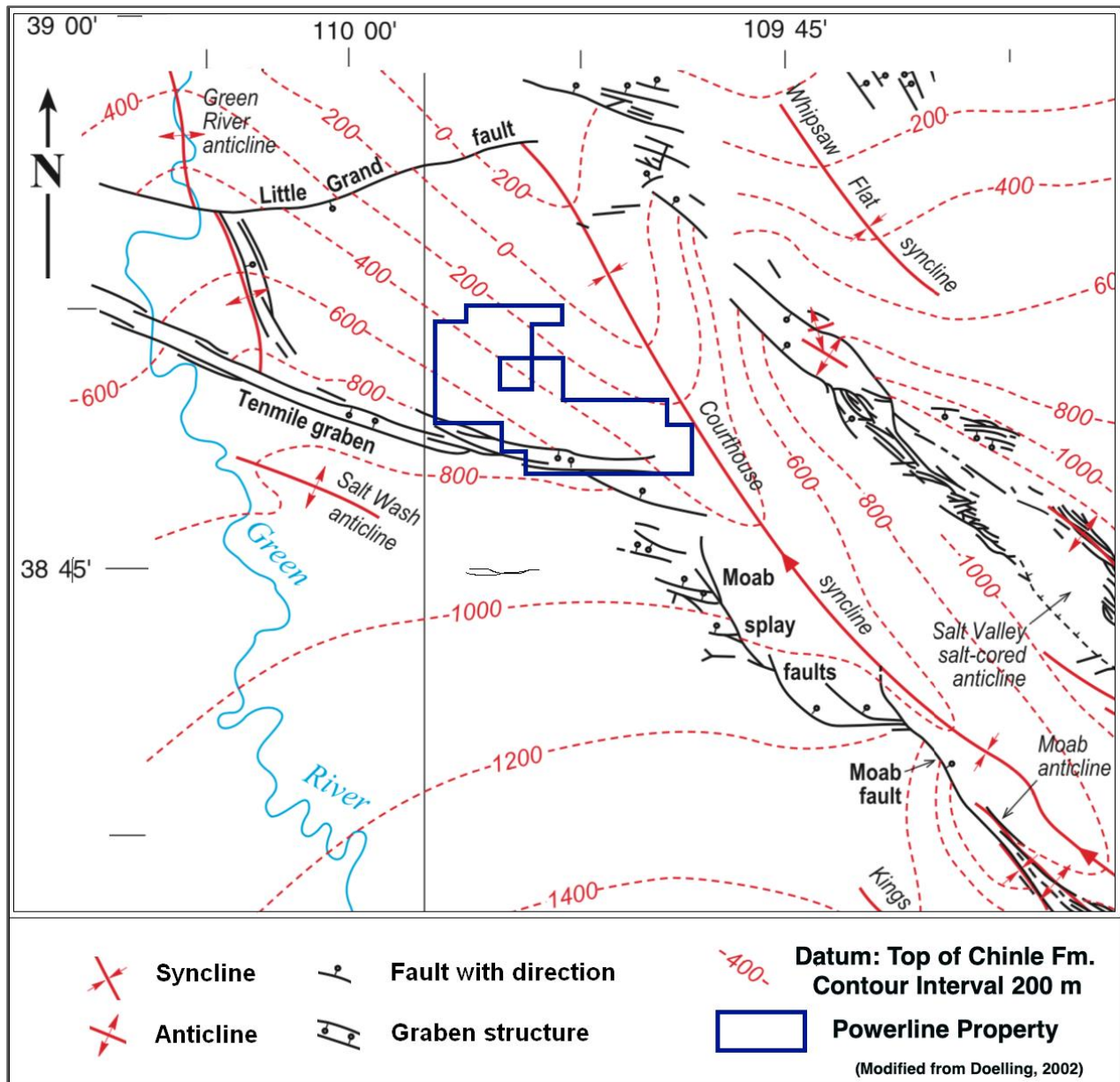
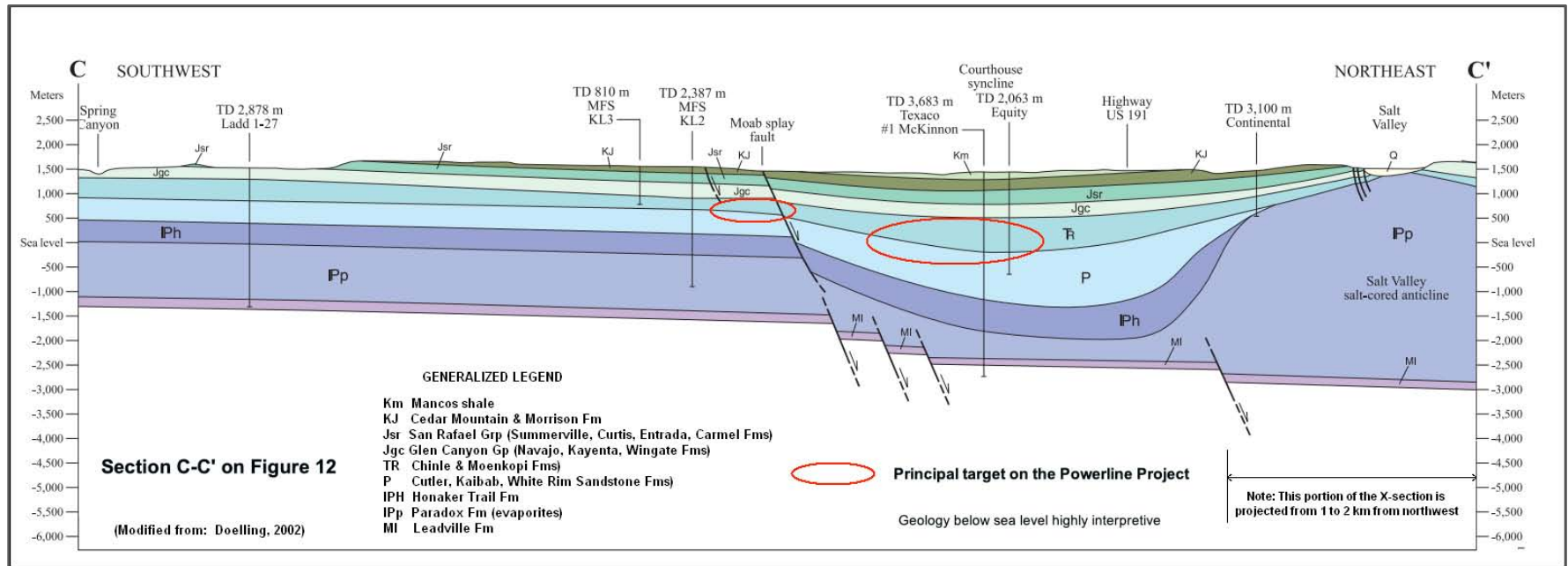


Figure 10 Powerline Project Major Geologic Structures



**Figure 11 Cross-section Through the Courthouse Syncline (Section C – C' on Figure 12)**

Figure 11, extracted and amended from Doelling (2002) is a schematic cross-section through the area showing the general projected location of the mineralized zones being targeted on the Powerline Project.

### 7.1.4 Property Geology

The surface geology of the Project is shown in Figure 12, a portion of the geological map for the Valley City Quadrangle, Grand County, Utah (Doelling, 1997; 2002). The target Chinle Formation is not exposed at surface but has been intersected in numerous oil and gas test-wells within the boundaries of the Project. The stratigraphy as interpreted from surface geological mapping (Doelling, 1997) and from reported logs of oil and gas test-wells in the area is summarized in Table 6. Most of these descriptions were taken directly from Doelling (1997) with additional information on some of the lithologies being from other published sources. Bedrock exposures within the Project are often covered by a shallow layer of quaternary sediments of many varieties.

**Table 6 Table of Lithologies**

#### **CRETACEOUS ROCKS**

##### **Mancos Shale** (Upper Cretaceous)

##### **Mancos Shale** (Upper Cretaceous)

Ferron Sandstone Member (Kmf): Marine, fissile, brown- gray sandy shale, silty shale, and fine-grained sandstone; forms double cuesta with intervening dark-brown to dark-gray carbonaceous shale; fossiliferous, containing abundant pelecypods and sparse ammonites. 15-21 m (50-70 feet) thick.

Tununk Shale Member (Kmt): Medium-gray fissile marine shale; forms soft slope; contains Coon Springs Sandstone Bed (not mapped) 50 or 60 feet (15 or 18 m) below the Ferron Sandstone Member that contains gray-brown sandstone concretions; fossils of the pelecypod *Gryphaea newberryi* is locally abundant a few feet above the Dakota contact 61-107 m (200-350 feet) thick.

##### **Dakota Sandstone** (Upper Cretaceous)

Cedar Mountain Formation (Kcm) (Lower Cretaceous): Yellow-gray, gray, and brown sandstone, and conglomeratic sandstone, interbedded with thick slope-forming mudstone and muddy sandstone; contains gray, brown-weathering limestone nodules in the slopes. 18-61 m (60-200 feet) thick.

#### **JURASSIC ROCKS**

##### **Morrison Formation** (Upper Jurassic)

Brushy Basin Member (Jmb): Predominantly variegated silty and clayey mudstone and muddy sandstone forming colorful steep slopes locally interbedded with resistant conglomeratic sandstone lenses; commonly displays "popcorn" weathered surfaces indicating a high

swelling-clay content; landslides and slumps are common on the slopes. 61-122 m (200-400 feet) thick.

Salt Wash Member (Jms): Interbedded light-gray or light-brown sandstone lenses and channels (25-40 percent) and red and green, slope- and recess-forming mudstone, shale, siltstone, and clayey sandstone (60-75 percent). 43-76 m (140-250 feet) thick.

Tidwell Member (Jmt): Red, maroon, lavender, or light-gray weathering siltstone and discontinuous thin to nodular beds of gray limestone; local large white siliceous (chalcedony) concretions are associated with limestone near the base; when found in outcrop forms gentle slope littered with limestone fragments. 12-15 m (40-50 feet) thick.

***SUBSURFACE UNITS (NOTE: the following units are not exposed at surface on the property but have been recognized in the logs of oil and gas test-wells drilled within or very near the property)***

## **JURASSIC ROCKS**

**Summerville Formation** (Middle Jurassic) (Js): Thin- to medium- bedded, light-tan to brown ledgy sandstone and slope-forming red sandy siltstone; when found in outcrop forms steep slope; upper ledge is commonly ripple marked; zone of yellow-gray reworked Moab Sandstone at base displays rare dinosaur footprints. About 7.6 m (25 feet) thick.

### **Entrada Sandstone** (Middle Jurassic)

Moab Member (Jem): Very pale-orange, gray-orange, pale-yellow-brown, or light-gray, fine- to medium-grained, massive, cliff forming quartzose sandstone; well indurated, cross stratified and highly jointed; about 7.6 m (25 feet) of brown thin-bedded, silty, fine-grained, when found in outcrop is a slope or recess - forming sandstone (Curtis equivalent) at base on flank of salt-cored anticline. 24-34 m (80-110 feet) thick.

Slick Rock Member (Jes): Red-orange or brown, very fine- to fine- grained, massive, quartzose, eolian sandstone; sparse medium to coarse grains along cross-bed laminae; when found in outcrop, forms smooth- weathering color-banded cliff. 61-91 m (200-300 feet) thick.

Dewey Bridge Member (Jed): Red to red-brown, muddy to silty, fine- to medium-grained, medium- to thick-bedded sandstone in upper part and light-colored, mostly fine-grained, planar-bedded sandstone in lower part; when found in outcrop, upper part forms steep slope and lower part forms ledges. Entire unit is from 30-55 m (100-180 feet) thick.

**Navajo Sandstone** (Jn) (Lower Jurassic): orange, light-brown, to light-gray, fine-grained, quartzose, eolian sandstone; grains are sub-rounded to very well rounded, well sorted, and frosted; calcareous and siliceous; cross bedded and massive. Probably ranges from 91-213 m (300-700 feet).

**Kayenta Formation** (Jk) (Lower Jurassic): 50-125 m (164 to 410 feet) thick in local drill holes. May be thinner or missing over salt walls northeast of Project.

**Wingate Sandstone** (Jw) (Lower Jurassic): 73-130 m (240 to 425 feet) thick in local drill holes. May be thinner or missing over salt walls northeast of Project.

## TRIASSIC

**Chinle Formation** (Trc) (Upper Triassic): 134-236 m (440 to 774 feet) thick in local drill holes, including 4.5-108 m (15 to 355 feet) of a lower member (“Shinarump”); probably much thinner or missing over salt walls northeast of project.

**Moenkopi Formation** (Trm) (Lower Triassic): 116-396 m (380 to 1,300 feet) thick in local drill holes; probably much thinner or missing over salt walls northeast of Project.

## PERMIAN

**Cutler Formation** (Pc) (Lower Permian): 0-533 m (0 to 1,750 feet) thick in local drill holes.

## PENNSYLVANIAN ROCKS

**Honaker Trail Formation** (IPh) (Virgilian-Missourian): Estimated to be 0-732 m (0 to 2,400 feet) thick under the quadrangle; thin or missing over salt walls northeast of Project.

**Paradox Formation** (IPp) (Desmoinesian): Contains thick salt (halite, sylvite, and carnallite) beds in addition to lithologies of caprock (residual material after post-Pennsylvanian dissolution of soluble evaporites); estimated subsurface thickness of the Paradox Formation in the quadrangle is 0-3,600 m (0-11,800 feet). (includes Pinkerton Trail Formation (Atokan), 30-61 m (100-200 feet) thick and the Malas Formation (Atokan), 0-61 m (0-200 feet) thick.

## MISSISSIPPIAN ROCKS

**Leadville Formation** (Mississippian) (MI): Estimated to be 122-152 m (400 to 500 feet) thick under the quadrangle. Known to be underlain by Devonian, Cambrian, and Proterozoic rocks as extrapolated from holes drilled in adjacent quadrangles

### 7.1.5 Structural Features within the Powerline Project

The geology within the project area is dominated by two structural regimes. Adjacent to the eastern Project boundary is the axis of a north plunging syncline which trends N 60°W. The fold is called the Courthouse Syncline. At the project it is about 16 km wide (10 mi) with the eastern flank being slightly steeper than that on the west flank. The axis of this syncline lines up along strike with the Moab fault zone and its paralleling Moab anticline. The Moab fault marks the west flank of the anticline. Uranium deposits of the Seven Mile Canyon Uranium District. are found on the up-thrown west block of this fault. These deposits occur in the Moss Back Member of the Chinle Formation, like the mineralization detected in gamma ray logs on the project. (See Figure 15).

## Sears, Barry & Associates Limited

A series of splay faults occur on the west side of the main mapped fault structure. Farther to the south, along the strike of the Courthouse Syncline axis and the Moab fault, lies the western fault of the Spanish Valley graben, wherein sits the town of Moab. These structures are thought to have formed as a result of salt tectonics at depth.

The Ten Mile graben, a second graben, strikes westward at N80°W, from near the Samson Resources, Powerline 12-1 borehole, within the project boundaries. The graben is about 800 feet wide as depicted by Doelling (2002). The difference in elevation across the graben feature is about 1,800 feet at the Chinle horizon. The elevated block is to the north. The eastern termination of the Tenmile graben is at the west flank of the Courthouse syncline. Additional faulting continues on the east side of the syncline. The Texaco Government McKinnon 1 borehole is located at the intersection of the axis of the Courthouse Syncline and the eastern projection of the Ten Mile graben.



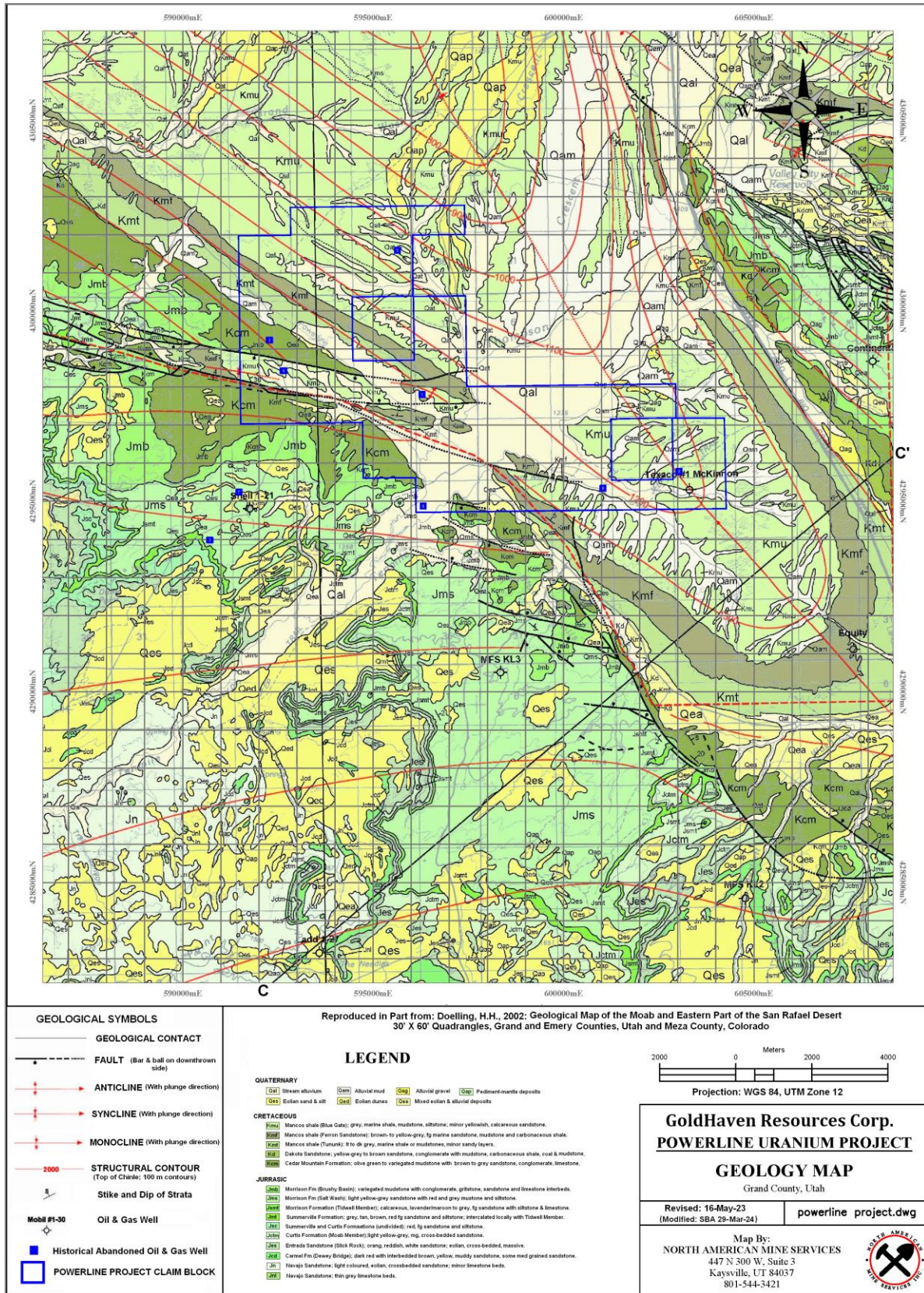


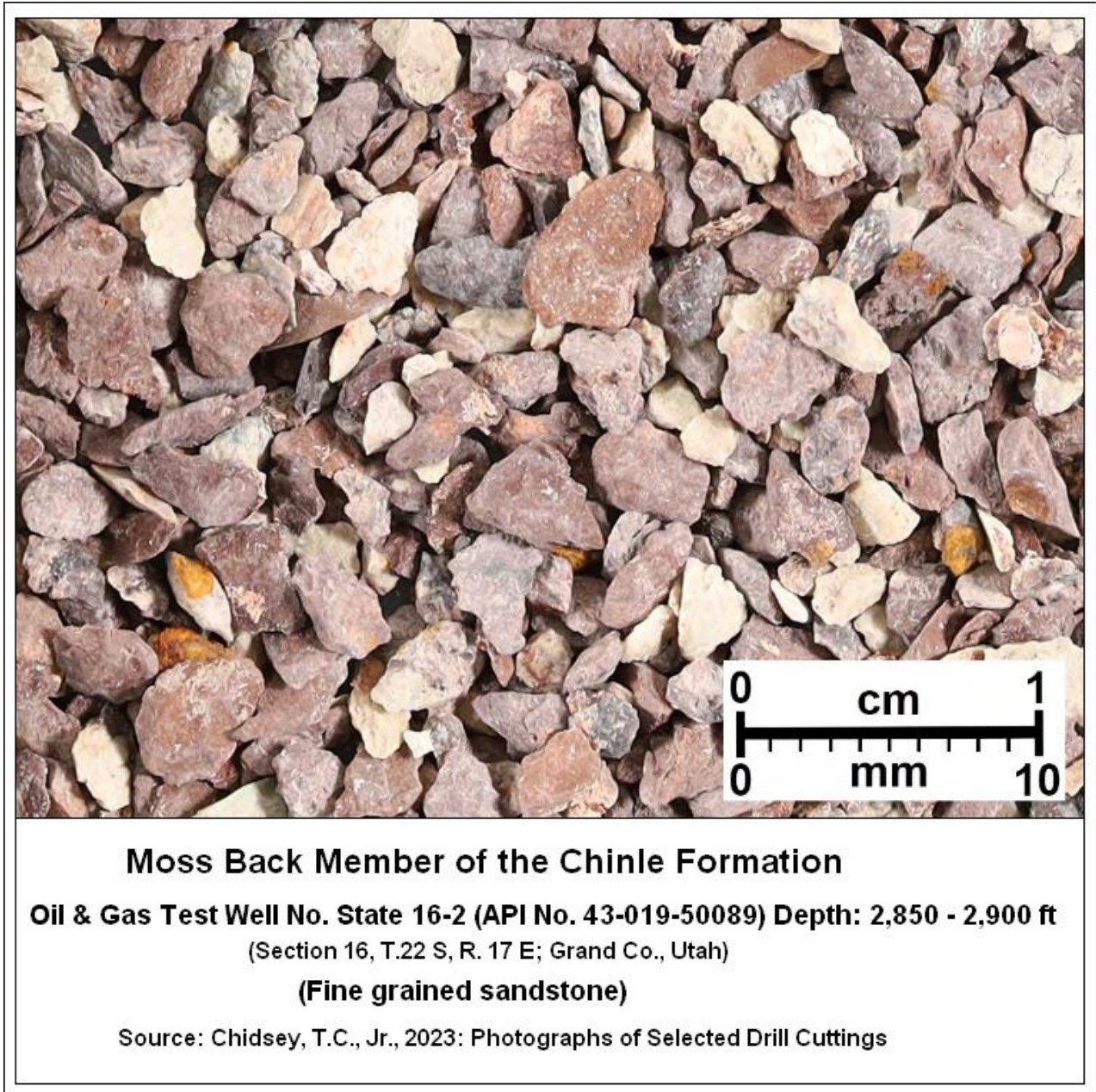
Figure 12 Property Geology Map

## Sears, Barry & Associates Limited

The Project covers a large area located along the southwest limb of the Courthouse syncline and adjacent to the Moab fault system. The uranium bearing members of the Chinle Formation are interpreted to be relatively undisturbed in this area and they should dip gently towards the northeast and plunge gently towards the northwest. This gentle orientation is favourable for the migration of uranium bearing fluids and for the deposition and preservation of uranium deposits. This gently-dipping zone is interpreted to underlie the entire Project, a distance of more than 13 km (8 mi).

The same horizon in the same structural setting (i.e., the southwest limb of the Courthouse Syncline) was intersected in a 2020/2021 research well, funded jointly by the Utah Geological Survey (UGS), Energy & Geoscience Institute of the University of Utah, and Zephyr Petroleum Company (State 16-2; API No 4301950089). This well is located approximately 16 km (10 mi) northwest of the Powerline Project. It targeted the Cane Creek oil shale and was drilled to a depth of 4,380 m (14,370 ft). The geophysical and mudlogging data for the upper part of the hole from 0 to 1,966 m (0 to 6,450 ft) was not filed with the Utah Oil and Gas Well Log database. However, a UGS report (Chidsey, 2023) includes a photograph of well cuttings from the Chinle Formation between depths of 869 and 884 m (2,850 and 2,900 ft). This photograph of a sandstone unit is shown as Photo 4.

Although the well spacing is very large, this well and those on the Powerline Project suggest that the west limb of the Courthouse Syncline is very uniform and relatively undisturbed in the area adjacent to the Moab fault system in this area. This suggests a very large potential area with favourable conditions for a sandstone hosted uranium deposit within the Powerline Project.



**Photo 4 Well Cuttings from the Chinle Formation, Well State 16-2, API No. 43-019-50089**

## 7.2 Mineralization

### 7.2.1 Regional Mineralization

Most of the known uranium deposits in USA are hosted by sedimentary rocks with some additional resources attributed to intrusive related deposits such as porphyries. Figure 13 shows that the traditional uranium production has been from sedimentary deposits in the Colorado Plateau and the Basins of Wyoming. With the onset of modern solution mining, many uranium deposits have been developed in the Southern High Plains and the Coastal Plains of Texas. The Powerline Project lies within sedimentary rocks of the Colorado Plateau.

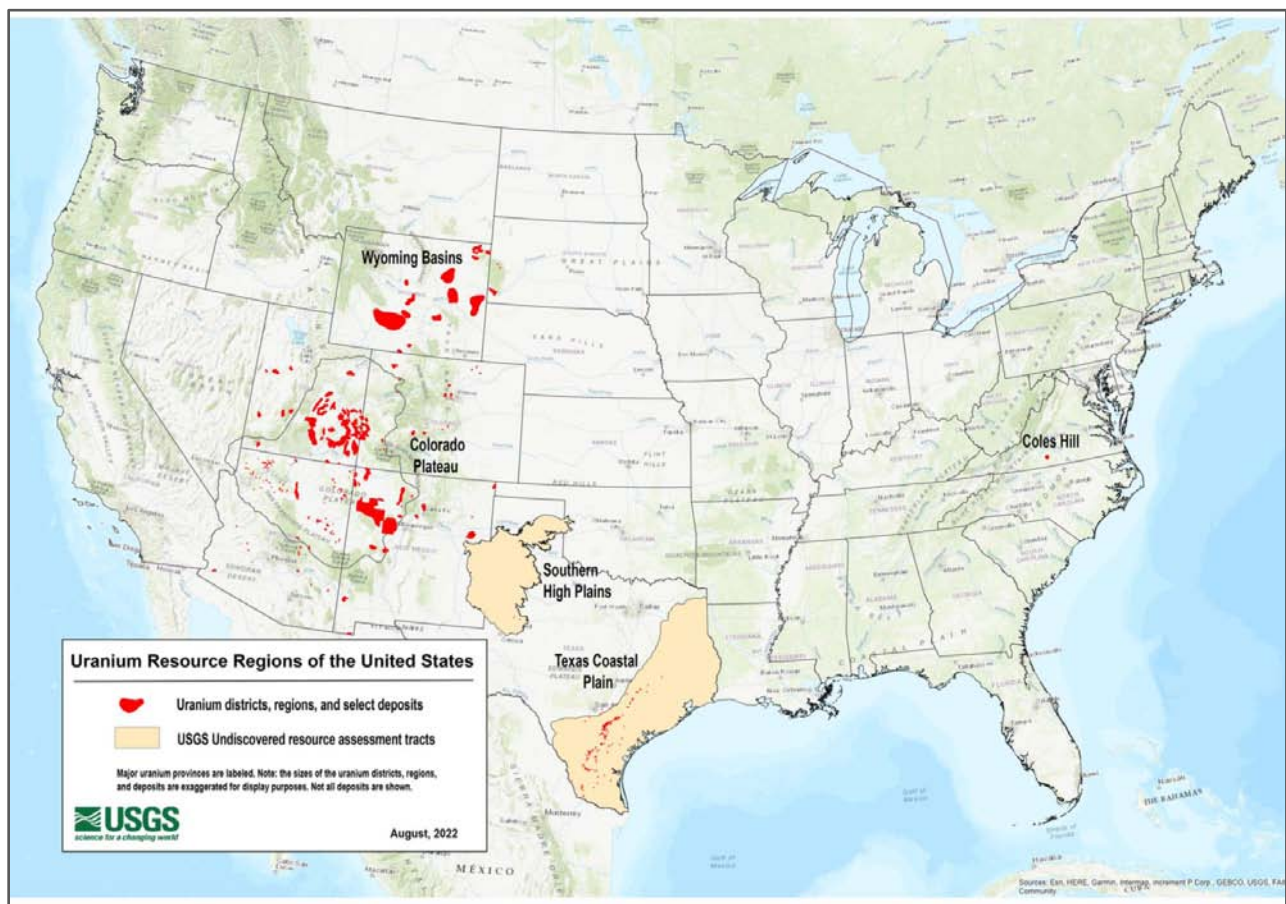


Figure 13 Uranium Deposits in the USA

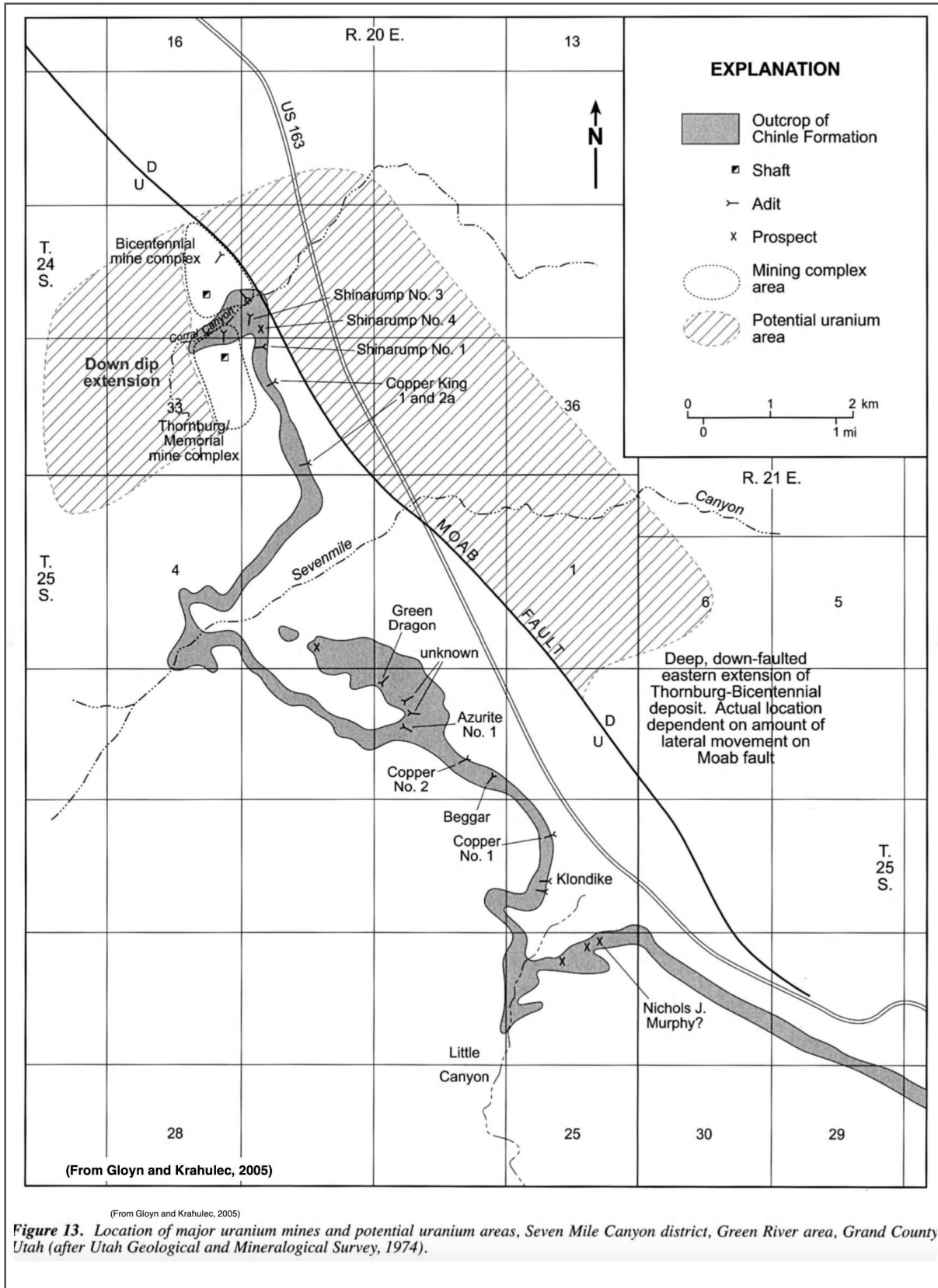
## 7.2.2 Local Mineralization

Uranium is known to occur in numerous strata within the Colorado Plateau but is dominantly found in beds of quartzose to arkosic sandstones that are interbedded with layers of fine-grained clastic sediments such as mudstones and shales. The majority of the known large, relatively high-grade deposits are hosted in three horizons, the Mossback and Shinarump members of the Triassic aged Chinle Formation and the Saltwash Member of the Jurassic aged Morrison Formation. All three of these units are thought to have been deposited as braided stream and/or beach-front environments deposited in a broad NW-SE trending paleo-valley that drained highlands to the northeast, southeast and southwest into an ancient sea that occupied an area that is now part of northwestern Utah.

The general theory is that uranium was scavenged from narrow low-grade volcanic ash horizons that are interlayered with the sedimentary beds and then deposited in paleo river channels and in extensive tabular zones in the valley floor to form large, relatively high-grade sandstone hosted uranium deposits. In some cases, the mineralization may have been further concentrated by down drainage oxidizing fluids and re-deposition at the boundary with unoxidized (reduced) rocks. This type of deposit is referred to as a “redox front” or “roll front”. There are at least 500 uranium occurrences documented in Utah, with virtually all of these being discovered and explored at or very near surface. A fourth possible type of deposit that has not been explored for or evaluated to any serious extent in Utah is fault related replacement zones wherein mineralized fluids migrating either upwards or downwards along major fault zones and then enter and are trapped within adjacent, permeable horizons. Figure 14 shows the general uranium districts of Utah as defined in a 2005 government report (Gloyne and Kahulec, 2005).

Uranium deposits located in the Seven Mile Canyon District, centered approximately 20 km (12 miles) southeast and the more productive Lisbon Valley District, centered approximately 80 km (50 m) to the southeast are assumed to be examples of the mineralization targeted at the Powerline Project. Figure 15 shows the location of numerous historical mines in the Seven Mile Canyon area and their distribution along the Moab Fault Zone.





**Figure 15 Historical Uranium Mines of the Seven Mile Canyon Area**



**Photo 5 Historical Uranium Mine in the Chinle Formation, Seven Mile Canyon Area**

The uranium mineralization in the Seven Mile Canyon district is found within the Mossback Member of the Chinle Formation. The Mossback Member is a fluvial deposit of interbedded sandstone, siltstone, and clay beds typical of many of the fluvial systems in rocks that make up the Colorado Plateau. The beds inter-finger and truncate each other as is common in this environment. The sandstones and siltstones are mostly quartzose, but contain numerous other minerals and abundant to sparse carbonaceous material. Within these horizons are found minerals of uranium, including uraninite ( $\text{UO}_2$ ) and coffinite ( $\text{U}(\text{SiO}_4)_{1-x}(\text{OH})_{4x}$ ) along with various minerals of vanadium and copper as well as pyrite. Typical uranium to vanadium ratios averaged about 1:1. Production grades historically ranged between 0.02 %  $\text{U}_3\text{O}_8$  and 1.00%  $\text{U}_3\text{O}_8$ .

### **7.2.3 Property Mineralization**

All of the favourable target sedimentary rocks that host uranium mineralization in the Paradox Basin area are known to underlie the Powerline Project. These horizons are interpreted from



regional geological mapping (Doelling, 1997; 2002) and from data available in geophysical logs of numerous abandoned oil and gas test-wells. This oil & gas test-well information is required to be filed with the Utah Department of Natural Resources when a well is abandoned and after a 1-year confidentiality period it becomes publicly available. Figures 16 and 17 show the oil and gas test-wells within and near the Project that have available well logs. Figure 18 presents the gamma ray log data from the Samson Powerline 12-1 and Texaco Government 1 McKinnon wells.

Based upon this and other information it is clearly evident that the highly favourable Chinle Formation occurs at average depths of 600 to 1,050 m (2,000 to 3,000 ft) in the northeastern part of the Project and from 1,000 to 1,100 m (3,280 to 3,610 ft) in the southwest. The greater depth to the southwest is the result of a graben structure – the Tenmile Graben - interpreted to underlie this area as well as movement along the regional scale Moab Fault structure that passes diagonally through the Powerline Project. Interpretation of gamma ray geophysical logs of one of the wells on the northeast side of the fault, the Samson Powerline 12-1 well, indicates a 35.4 m (116 ft) thick zone of uranium mineralization within which a 19.0 m (62.4 ft) thick section is estimated to have a uranium grade of 0.0258%  $eU_3O_8$  (Hite, 2015). This hole, drilled in 2007, is collared near the center of the Powerline Project and the intersection is interpreted to be near the base of the Chinle Formation at depths between 826.6 and 862 m (2,712 and 2,828 ft).

A gamma ray anomaly is also reported in another oil well – the Government McKinnon 1 well – located in the eastern part of the Powerline Project, approximately 7 km southeast of the Powerline 12-1 well. A private report (Norman, 1972) suggests that this intersection was the highest gamma ray anomaly ever reported in an oil well at the time it was drilled (1966). The available logs do not have detailed information that would have been available to the original owners of the well so estimates of grade have not been attempted. However, the referenced zone appears to be from the same stratigraphic interval as in the Samson Powerline 12-1 well at depths from 650 to 735 m (2,130 to 2,410 ft). The highest-grade interval within this 85 m (280 ft) zone appears to be approximately 6 m (20 ft) thick between depths of 727.9 and 734 m (2,388 and 2,408 ft). At least one other hole located in the northwestern part of the Project intersected the top of the Chinle Formation. However, the hole appears to have been terminated before intersecting the favorable Moss Back and Shinarump Members near its base. All three of these oil and gas test-wells discussed above as well as two others in the western part of the Project intersected uranium bearing zones at shallower depths that are interpreted to be from rocks of the Morrison Formation. These intersections, at depths ranging from 180 to 610 m (590 to 2,000 ft) are interpreted from gamma ray logs. However, there is very limited geological information for

these intervals and additional detailed interpretation of the logs is required to assess their economic potential.

Data from the available oil well logs and interpreted geology outline a target zone greater than 12 km long within the Powerline Project that could be mineralized over thicknesses greater than 30 m (100 ft) and containing intervals of relatively high grades of uranium ranging in thickness from 6 to 19 m (20 to 62.4 ft) in the two most reliable well logs. The width of this zone is not possible to estimate since there is a lack of drill information down the dip of the host structure. Based upon similar known deposits elsewhere in the Colorado Plateau, the width could range from a few 10's of m to > 300 m (a few ft to > 1,000 ft). Since the wells appear to have intersected the mineralized zone along the edge of a shallow dipping syncline (the Courthouse Syncline), it is highly probable that this zone will be relatively wide compared to other known deposits. The favourable Chinle hosted horizons on the down-faulted southwest side of the Moab fault are likely to underlay a triangle shaped area approximately 7 km long by an average of 2 km wide. The Morrison Formation which overlies the Chinle Formation has been intersected in all holes within this triangle and interpretation of gamma ray logs indicate that there are uranium bearing intervals within it that may represent a shallower exploration target in this area.

It should be noted that uranium grades referred to previously are based upon indirect measurement of the uranium content of the zone using downhole gamma-ray logging techniques. The logged values are then estimated using a standard, industry accepted mathematical formula that takes into account such things as a calibrated probe, speed of logging, size of the bore hole, drilling fluids, and the drill casing if present.

Gamma ray logs are a common geophysical log used in downhole surveying of wells drilled by the oil & gas industry. They are used to assist in identifying lithological units in a well. When radioactive elements decay, they emit radiation that can be measured by the logging instrument. This amount of radiation is typically scaled in API units, a standardized system established by the American Petroleum Institute (API). The logging instruments are calibrated by the logging company in a test facility based upon a standardized value for a "shale" horizon. This method of calibration is adequate for the oil and gas industry but is not necessarily reliable for quantifying the amount of uranium mineralization in the strata being logged since not all radiation being emitted is attributed to uranium. Therefore, to provide more definitive data that can reliably estimate uranium mineralization, the instrument must be calibrated by using the mineralized strata that is being targeted. In most cases this means obtaining and assaying drill core through the

interval of interest prior to the logging of the hole. As recommended by CIM Uranium Guidelines (2003): “If cored holes are utilized, core recovery must be close to 100%, and core assays must be representative of the full range of assay data.” Once completed, the uranium content from other boreholes in the vicinity can be more reliably estimated from the gamma ray logs. Values for uranium content obtained using this method are usually presented as estimates and expressed as equivalent  $U_3O_8$  ( $eU_3O_8$ ).

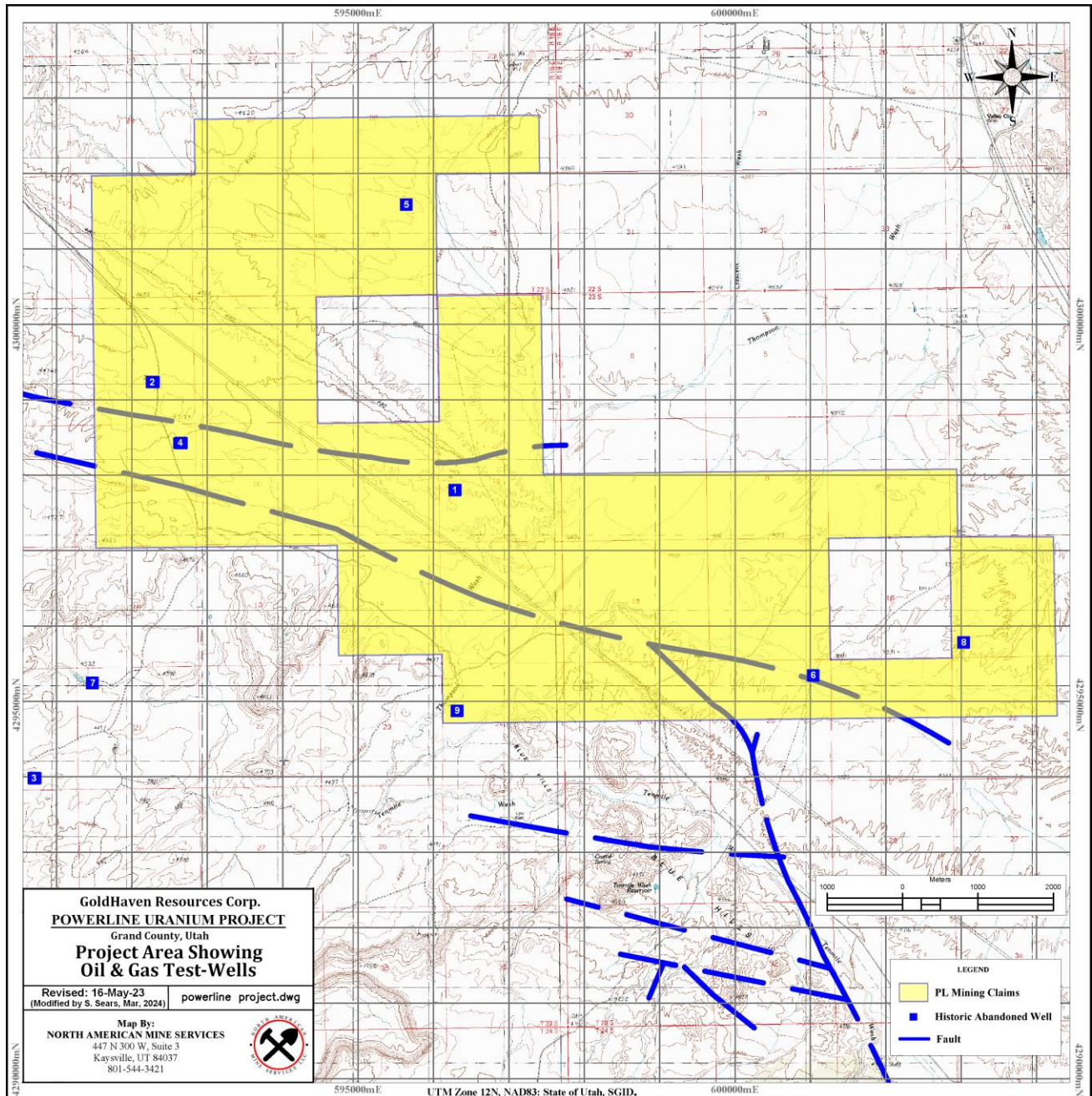


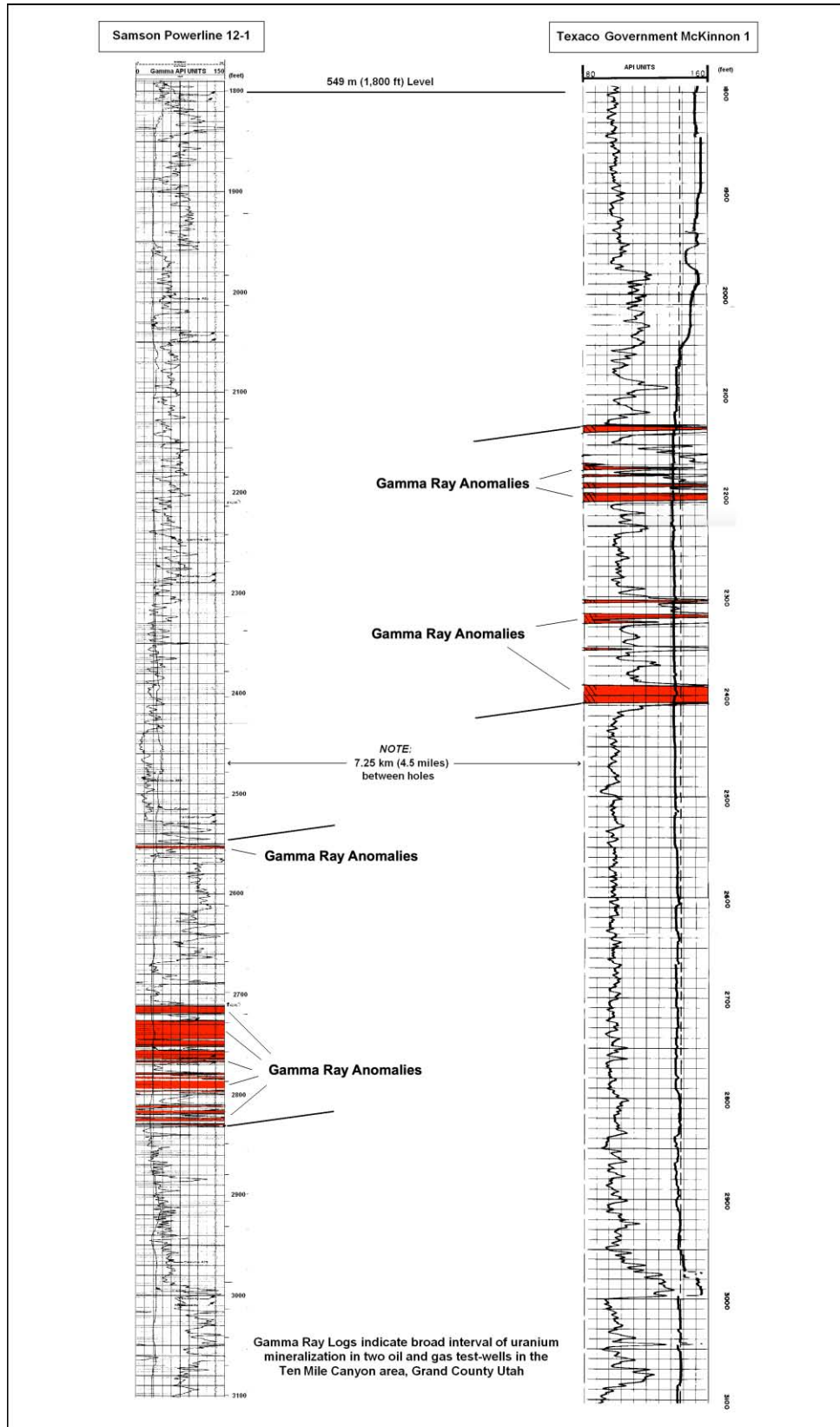
Figure 16 Plan Showing Oil and Gas Test-Wells

Powerline Project - Well Data (All depths in feet from surface)	
<p><b>1. Samson Resources Powerline 12-1 test (Drilled in 2007)</b></p> <p>a. 478 to 494 - 400 API</p> <p>b. 1414 to 1418 – 360 API</p> <p>c. 2712 to 2828 – Historic high gamma ray zone, Interval is 116 feet thick. Within this interval 2712 to 2767 (55 feet) is mostly off scale at more than 200API. There are two intervals each about 10 feet thick that register less than 200 API</p>	<p><b>5. Tidewater Oil &amp; Gas Little Grand 35-2 (drilled in 2006)</b></p> <p>a. 1283 to 1292 - 195 API</p> <p>b. 1388 to 1392 – 185 API</p>
<p><b>2. Benson-Montin-Greer Drilling Company Ten mile No.1 (Drilled in 1988)</b></p> <p>a. 548 to 553 – 280 API</p> <p>b. 612 to 620 – 340 API</p> <p>c. 748 to 753 - +400 API</p> <p>d. 875 to 892 – 260 API</p> <p>e. 975 to 980 – 220 API</p>	<p><b>6. Equity Oil Company Donohue #1 (drilled in 1954)</b></p> <p>a. SP and Resistivity E-logs only, no Gamma Ray E-log</p>
<p><b>3. Cities Service Oil Federal DE-1 (Drilled in 1981)</b></p> <p>a. No gamma ray log above 1,500 feet</p> <p>b. 2837 to 2912 High gamma ray intervals more than 200 API</p> <p>c. 2837 to 2842 – 400 API</p> <p>d. 2866 to 2870 – 240 API</p> <p>e. 2892 to 2896 - 380 API</p>	<p><b>7. Shell Oil Mountain Fuel Federal 1-21 (drilled in 1969)</b></p> <p>a. Gamma Ray E-log from 1820 to 5700.</p> <p>b. No intervals of high radioactivity. Very poor gamma ray log. “Suppressed”?</p>
<p><b>4. Riata Energy Government 2318 #9-1 (drilled in 1998)</b></p> <p>a. Gamma ray logs 220 to 1800 feet, could not determine API readings greater than 2X the scale or 300 API</p> <p>b. 150 to 210 average 180 API</p> <p>c. 500 to 504 maximum 210 API</p> <p>d. 880 to 900 - +300 API</p> <p>e. 1378 to 1386 - +300 API</p> <p>f. 1506 to 1512 - +300 API</p> <p>g. 1540 to 1570 - +300 API</p> <p>h. 1634 to 1704, - several intervals 4 feet to 10 feet thick - +300 API</p>	<p><b>8. Texaco Government McKinnon 1 (drilled in 1966)</b></p> <p>a. Gamma Ray E-log 40 to 4400</p> <p>b. 1022 to 1033 – 220 API</p> <p>c. 1392 to 1395 – 170 API</p> <p>d. 2130 to 2218. Several radioactive intervals, averages about 220 API</p> <p>e. 2303 to 2306 - +320 API</p> <p>f. 2350 to 2353 – 200 API</p> <p>g. 2388 to 2408 +320 API</p>
	<p><b>9. Hilliard Oil and Gas Klondike Unit #1 (drilled in 1979)</b></p> <p>a. Gamma Ray E-log 450 to 5310</p> <p>b. 396 to 420 - 200 API</p> <p>c. 554 to 563 - +200 API</p> <p>d. 628 to 632 - +200 API</p> <p>e. 898 to 920 – 200 API</p> <p>f. 1449 to 1453 - 200 API</p> <p>g. 2044 to 2053 - +200 API</p> <p>h. 3424 to 3433 - +200 API</p> <p>i. 3515 to 3519 - +200 API</p> <p>j. 3560 to 3564 – 200 API</p>

Figure 17 Legend for Figure 16



Photo 6 Riata Energy Government 2318, # 9-1 Well Collar on the Project



**Figure 18 Gamma Ray Log Data from the Samson Powerline 12-1 and Texaco Government McKinnon 1 wells**

## 8.0 Deposit Type

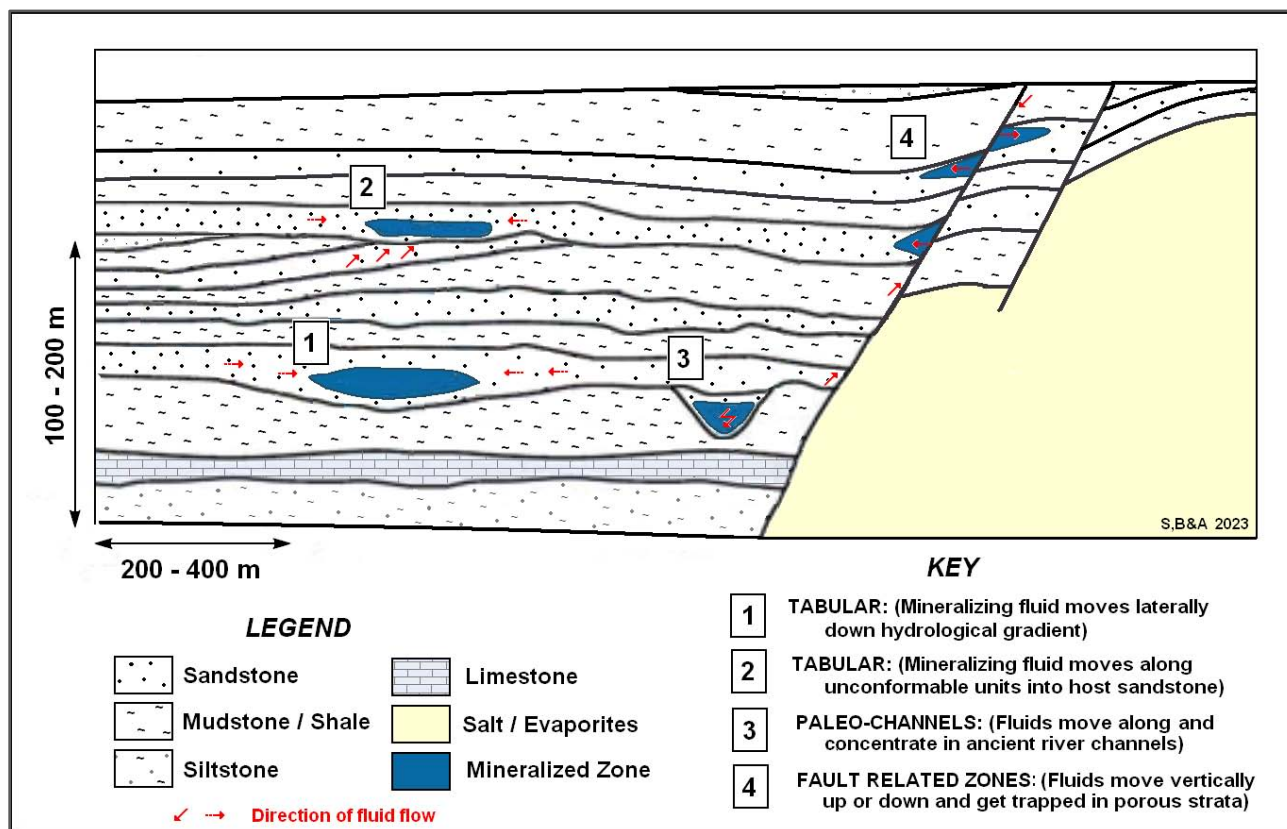
The type of uranium deposit that is common in the Colorado Plateau and is the target for the Powerline Project is generally referred to as a “Sandstone Uranium Deposit”. The International Atomic Energy Agency (IAEA), in technical reports (2013, 2020) provides a definition as follows: *“Sandstone uranium deposits occur in carbon- and/or pyrite-bearing fluvial (less commonly marine), arkosic, medium- to coarse-grained sandstones that contain, are interbedded with and are bounded by less permeable horizons. The primary uranium minerals are predominantly pitchblende, coffinite and, to a lesser extent, uranium-bearing vanadates and phosphates [335–337]. Uranium is precipitated under reducing conditions caused by the presence of a variety of reducing agents within the sandstones (for example, carbonaceous material, sulphides, hydrocarbons and ferromagnesian minerals such as chlorite). Major known sandstone deposits range in age from Palaeozoic to Tertiary. There are also small Precambrian sandstone deposits associated with carbonaceous matter of probable algal origin and deposits associated with mafic dykes and sills intruding Proterozoic sandstones.”*

Sandstone uranium deposits throughout the world can be divided into five main sub-types (IAEA, 2013, 2020) consisting of: 1) Basal channel subtype; 2) Tabular subtype; 3) Roll-front subtype; 4) Tectonic-lithologic subtype; and 5) Mafic dykes–sills in Proterozoic sandstone subtype. The first four of these subtypes are known to occur in the Colorado Plateau. On a local scale, the uranium deposits in southeast Utah are thought to have been deposited by southeast to northwest flowing fluvial systems and their northeast and southwest flowing tributaries. The mineralized zones are typically developed within braided, straight and sinuous channel facies within fluvial system or in tabular sandstone units bound above and below by siltstone and shale horizons.

The IAEA technical reports (2013, 2020) provide a brief general description of the common attributes of sandstone uranium deposits as follows: *“With few exceptions, sandstone uranium deposits are of diagenetic–epigenetic, low temperature origin. Groundwater chemistry and migration are instrumental in leaching uranium from source rocks and transporting it in low concentrations to a chemical interface commonly provided by reducing or precipitating agents where it is deposited. Essential parameters that control these processes include a uranium source, host rock lithology and permeability, groundwater chemistry amenable to leaching and transporting uranium, depositional environment, adsorptive/reducing agents and an arid to semiarid climate. Fluvial, first cycle feldspathic or arkosic sandstones (weakly mature) of limited thickness (<10 m) interbedded with layers of fine-grained, low permeability clastic sediments*

deposited in intracratonic basins provide the most favourable host rocks for large, relatively high grade sandstone-hosted uranium deposits. Marginal marine environments are also prospective, but to a lesser degree. The presence of uraniumiferous tuffaceous material either as a constituent of the host sandstone or in overlying strata may enhance the favorability of a fluvial sequence owing to its potential as a uranium source rock. Felsic volcanic and crystalline terrains are also considered to be potential uranium source rocks for sandstone uranium deposits.

The principal types of recognized deposits in southeast Utah include channel fill deposits, tabular deposits and to a lesser extent, roll front deposits. A very prominent regional scale fault system, the Moab fault, passes diagonally from southeast to northwest across the Powerline Project. This fault system is partially related to large salt bodies that have been moved both during and after the depositional cycles. The faults may have provided vertical channel ways for movement of uranium bearing fluids so the potential for high grade mineralization localized in porous horizons adjacent to these faults or at local unconformities is highly conceivable and should be considered as a potential target. Figure 19 is a schematic showing types of tabular deposits that occur in Utah and that exist or have potential for occurring on the Powerline Project.



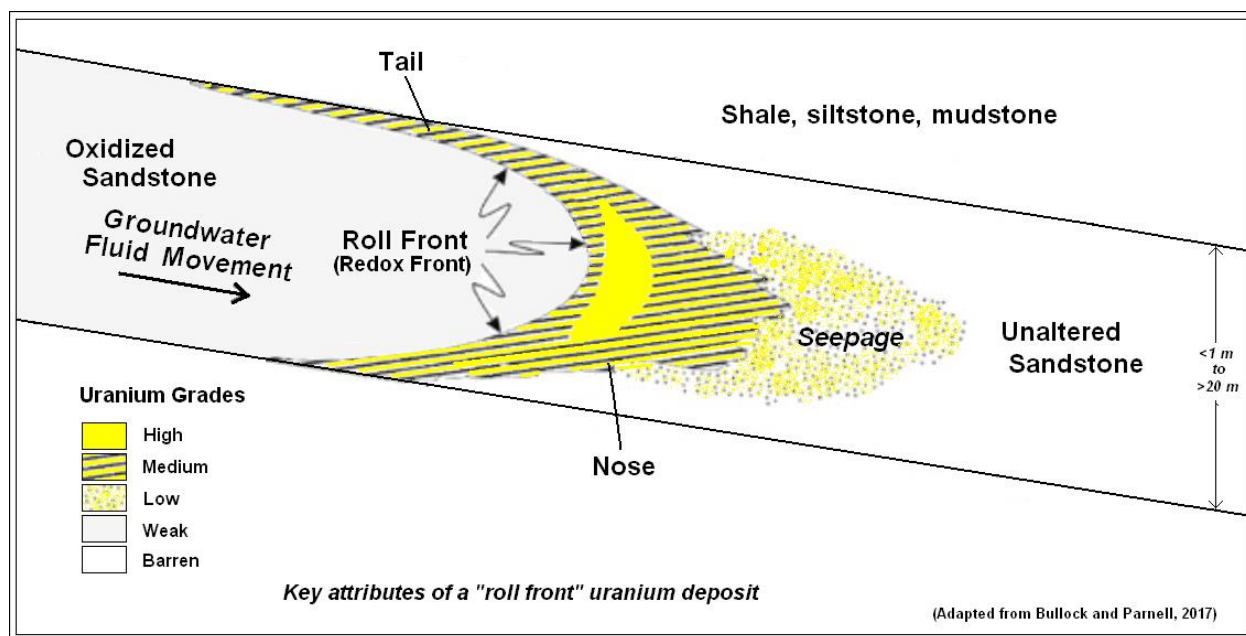
**Figure 19 Schematic Showing Types of Tabular Uranium Deposits**

*The IAEA (2013, 2020) technical report states that: Regardless of which class subtype they belong to, tabular uranium deposits have many characteristics in common. They typically parallel bedding and their overall shape is controlled by the shape/distribution of the reductant, intrinsic or extrinsic carbon, and they are frequently elongated in the direction of host sediment transport. Tabular deposits also have similar metallogenic histories, regardless of class subtype. The uranium was likely sourced from devitrification of volcanic tuff, which was either admixed in the host sands or in overlying beds, or was leached from highlands underlain by felsic volcanic or crystalline terrains. Uranium was introduced into the host sands by laterally circulating oxidized groundwater and was precipitated by reduction arising from contact with carbonaceous material". In southeast Utah, the principal recognized type of tabular deposit are referred to as "Saltwash-type". "Saltwash type uranium deposits are unique among sandstone-hosted uranium deposits in that either vanadium or uranium can be the dominant commercial commodity, depending on fluctuations in commodity prices. The host sands are reduced and contain carbonaceous plant debris similar to intrinsic carbon-related deposits."*

*"Individual extrinsic carbon orebodies range from 500 m to 4 km long, 50–300 m wide and up to 20 m thick. Individual vanadium–uranium deposits of the Saltwash type are typically small, ranging from 100–500 m long, 10–50 m wide and 1–10 m thick."*

Roll-front type deposits are epigenetic concentrations of uranium and other metals (copper, iron, vanadium, molybdenum, etc.) that have been deposited in the matrix of permeable sandstones along the interface (roll front) between pervasively reduced sandstone and pervasively oxidized sandstone (Figure 20). The reduced sandstone is buff, gray or gray-green and contains disseminated carbonaceous material and/or pyrite. The oxidized sandstone is typically pink-red (hematite) or yellow/orange (limonite). The mineralized zones crescent shaped in cross section, and the front displays long linear to sinuous shapes in plan view. These roll front type deposits were formed by uraniferous waters that are thought to have flowed downslope from the oxidized sediments into the carbonaceous and/or pyrite-bearing sandstones.





**Figure 20 Attributes of Roll Front Uranium Deposit**

Sandstone uranium deposits are amenable to conventional open pit and underground mining methods as well as in situ leaching and heap leaching. A total of 662 uranium deposits associated with sandstones are recorded in the World Distribution of Uranium Deposits database (UDEPO) maintained by the IAEA. In 2015, 55% (33 520 tU) of world production was derived from sandstone hosted deposits. According to the IAEA, “sandstone deposits constitute about 28% of world uranium reasonably assured resources and 40% of inferred resources, and are of major economic importance in Kazakhstan, Uzbekistan, USA and Niger. Orebodies of this type are commonly low to medium grade...” Review of documented sandstone hosted deposits being mine worldwide range from 0.017 to 0.35%U. The UDEPO database indicates that “... individual orebodies are small to medium in size (ranging up to a maximum of 50,000 tU although some deposits in Kazakhstan are larger). Roll-front sub-types are mined by in situ leach (ISL) methods. The main primary U minerals are uraninite and coffinite.” In the USA, large uranium resources are found in sandstone deposits in the Powder River Basin in Wyoming, the Colorado Plateau and the Gulf Coast Plain in south Texas. Most current production in the USA is by ISL methods. Of the 21 permitted ISL uranium deposits in the USA, published grades range from 0.024 to 0.077 % U.

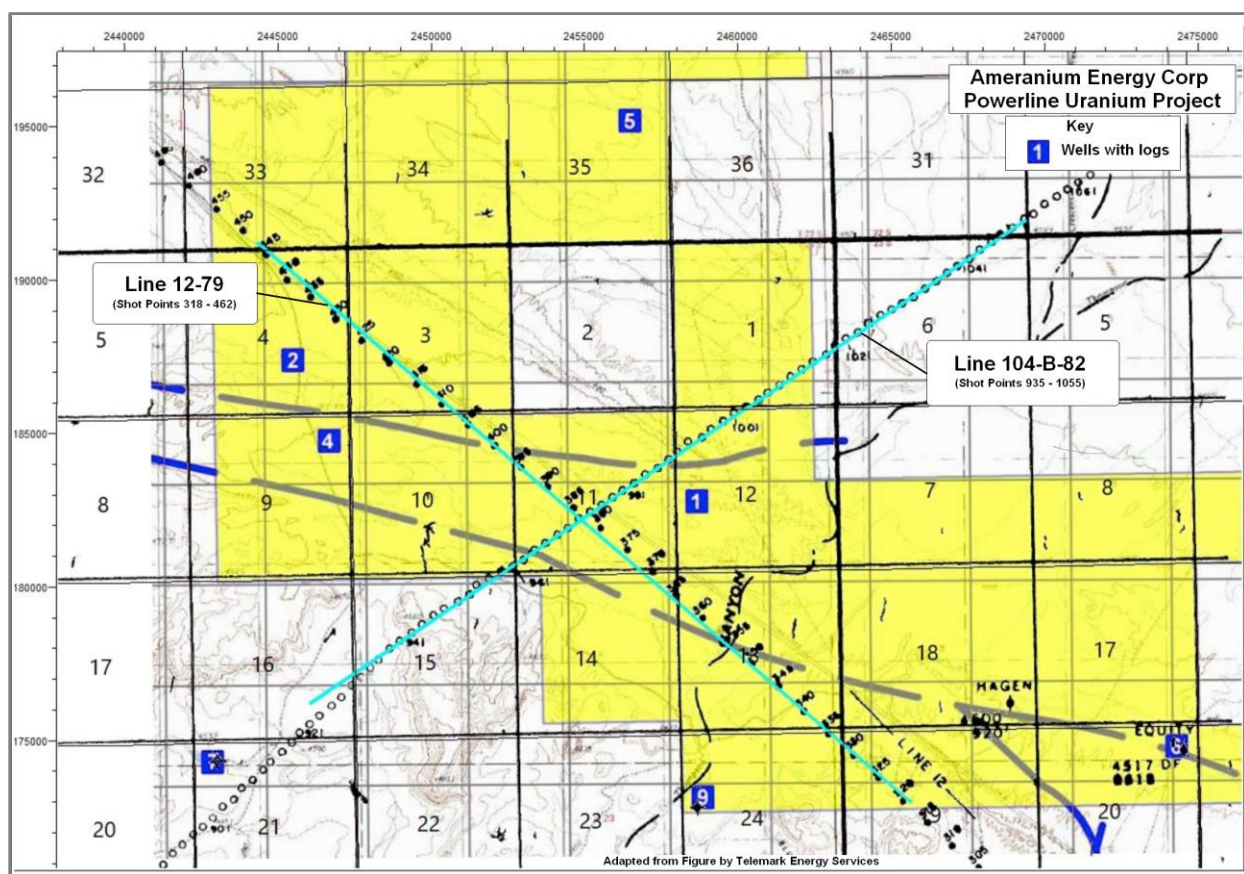
## 9.0 Exploration

Since acquisition of the Powerline Project, Ameranium carried out a review designed to assemble and interpret all available data with the objective of outlining priority targets for drill testing. North American Mine Services (NAMS) was engaged to acquire and verify published information related to the Project, to evaluate the potential for ISL uranium mineralization and to gauge the level of Community acceptance for this type of project. Numerous visits were made to the Project and to the municipal, state and federal offices of the governing agencies overseeing mineral exploration and potential mining in the district. NAMS was also commissioned to make applications for the work permits required to carry out a drilling program on the property if warranted. This includes environmental, archaeological and species identification within the Project.

An independent geologist with extensive knowledge of uranium deposits and the geology of this part of Utah was commissioned to carry out detailed analysis of the geological and geophysical logs of all available oil and gas test-well logs in the area. The work and related advice was summarized in memo form (Rasmussen, 2023) as well as presented during a 4-day visit to the project and surrounding area in January, 2023.

In addition to uranium, certain stratigraphic units that make up the Paradox Basin are also prospective for oil and gas as well as potash and other evaporite minerals. In pursuit of these other commodities, a considerable number of seismic surveys have been carried out, primarily by oil and gas companies. The data from many of these surveys has been acquired and is available for sale to interested parties. In October of 2023, Telemark Energy Services (TES) of Denver, Colorado was contracted to select and purchase commercially available seismic data covering parts of the Powerline Project. There is very good coverage over most of the project area, albeit relatively old. Much of the available data was considered to be of limited use due to poor quality. Two lines completed in 1982 were selected for purchase from American Geophysical Corporation (AGC) as shown in Figure 21. One of these lines (104-B-82) represents a cross-section through the synclinal structure within the property and passes close to an oil and gas well named Powerline 12-1 (Well # 1 on Figure 21). The gamma ray log from this well is one of several that display anomalous intervals interpreted to represent uranium mineralization in favourable Chinle Formation sandstone. The second line (12-79) extends along the strike of the axis of the synclinal structure. It also passes relatively close to the Powerline 12-1 well as well as 2 other abandoned oil and gas wells located further to the west (Wells # 2 and 4 on Figure 21). These latter wells,

Tenmile No 1 and Government 2318 # 9-1, were not drilled deep enough to test the favourable Chinle Formation but are useful in correlating the overlying stratigraphy.



**Figure 21 Property Map showing location of Seismic Lines**

The seismic data collected from shot points within the Powerline property was examined in detail and re-processed by TES. The following discussion is extracted and/or reproduced directly from a report on the seismic interpretation (TES, 2023a). The descriptions taken directly from the TES report are presented in italics. It should be noted that when reference is made to the “fold” of the seismic data, it refers to the number of data points acquired at a particular reflector point and is used to describe the quality and resolution of information at each point. The data quality and resolution varies directly with the “fold’ number, i.e., a high fold number means more reliable data.

*The two lines acquired were: A 6 mile portion of line 12-79 (NW/SE) including shot points 318-462 (which spans the complete project area) and a 5 mile portion of line 104-B- 82(NE/SW) including shot point 935-1055. Both lines acquired from AGC were only available with the original, early 1980’s processing. As can be seen in the data comparison (Figures 22 - 25), significant improvements were made in the imaging with updated processing.*

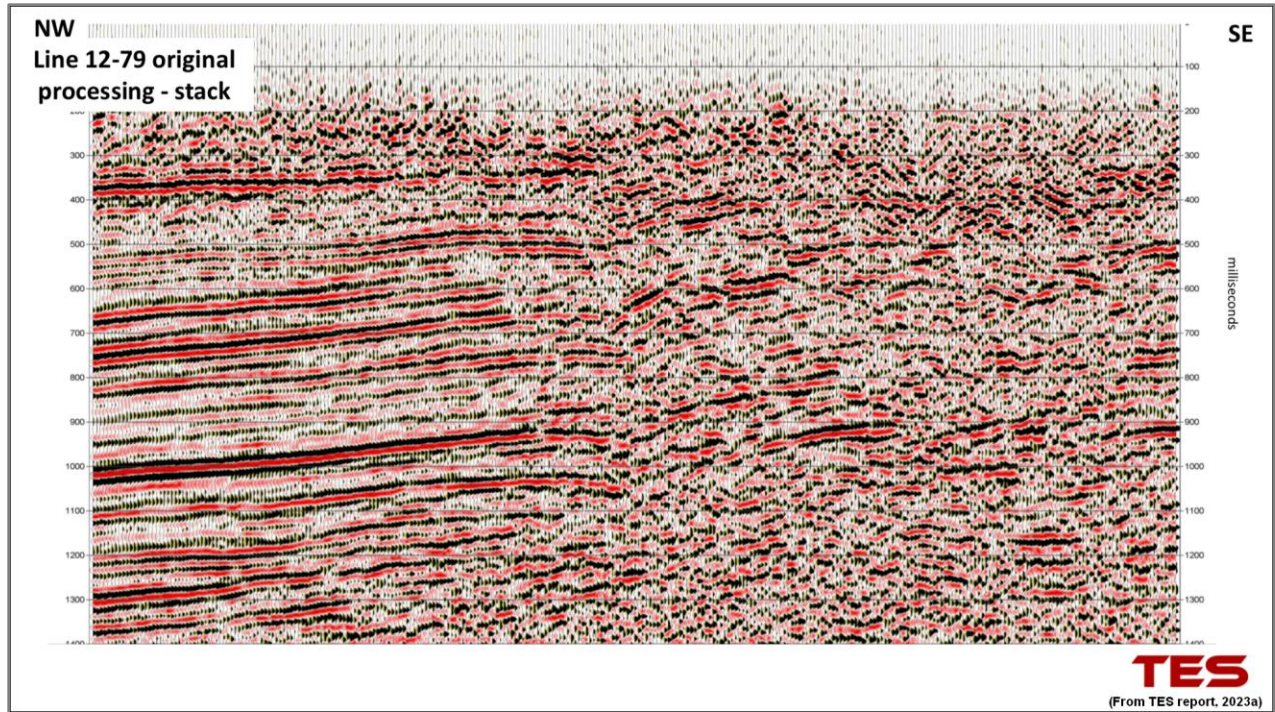


Figure 22 Original Processing Line 12-79

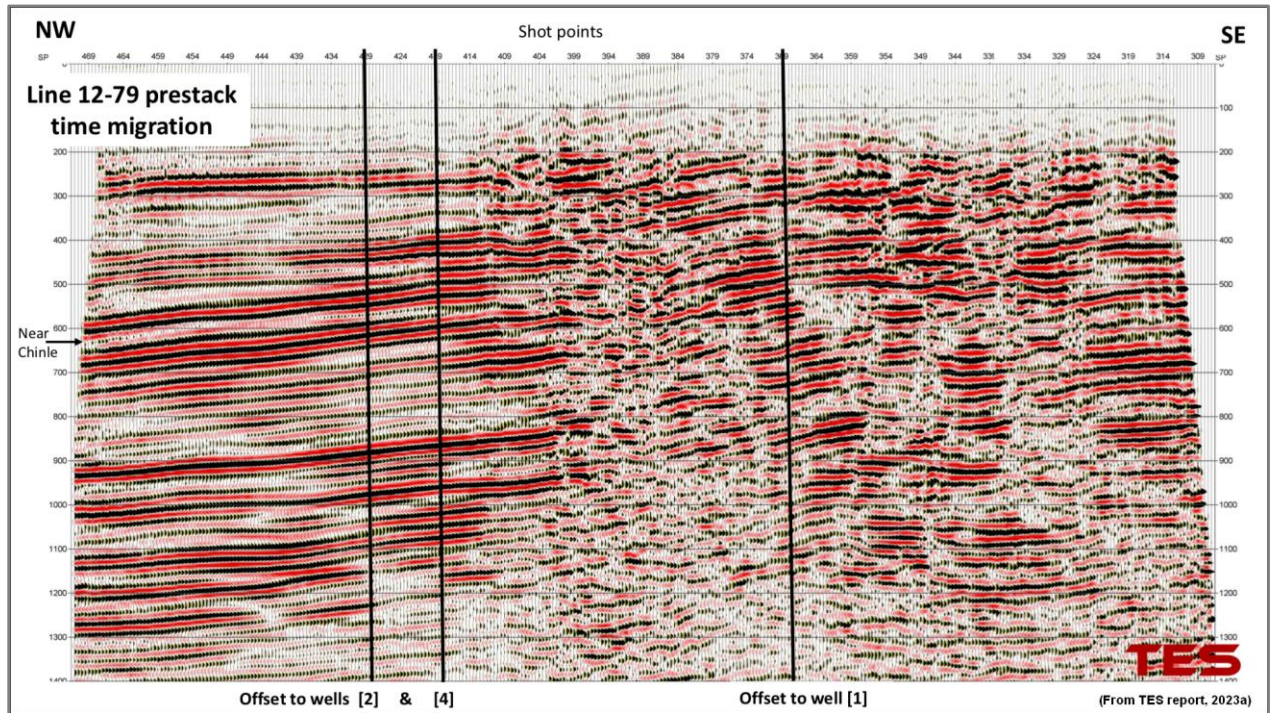


Figure 23 Reprocessed Line 12-79

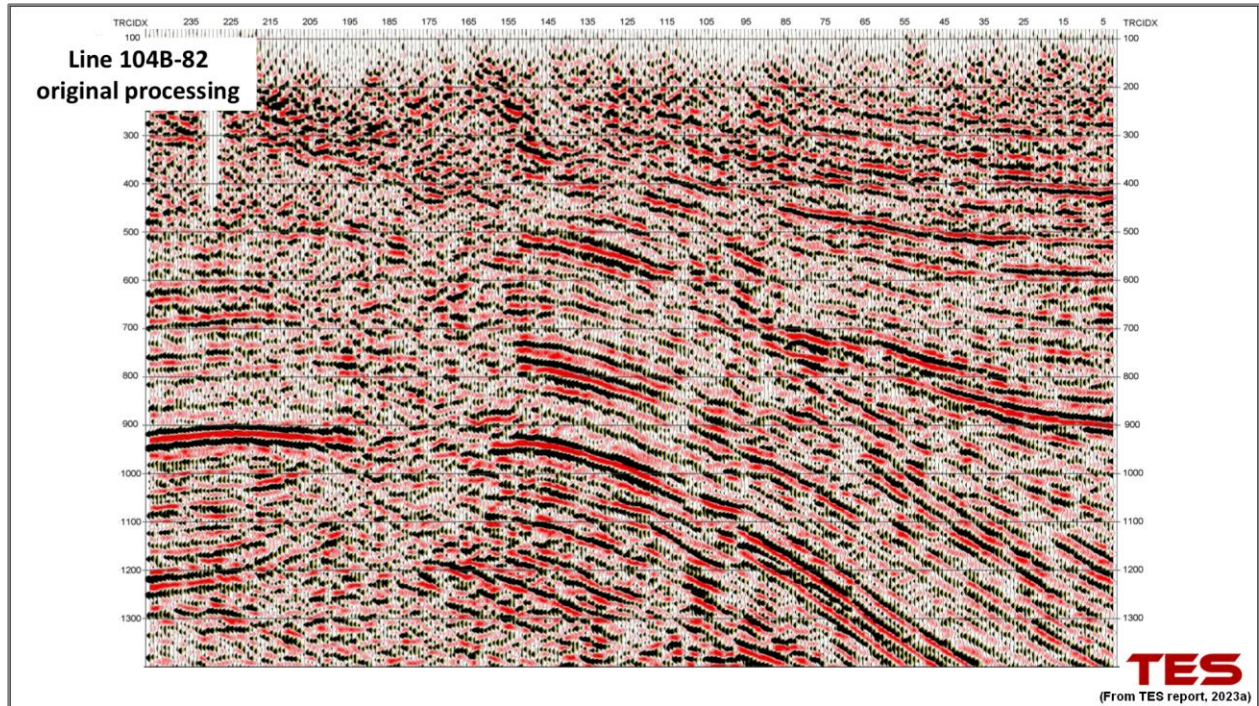


Figure 24 Original Processing Line 104B-82

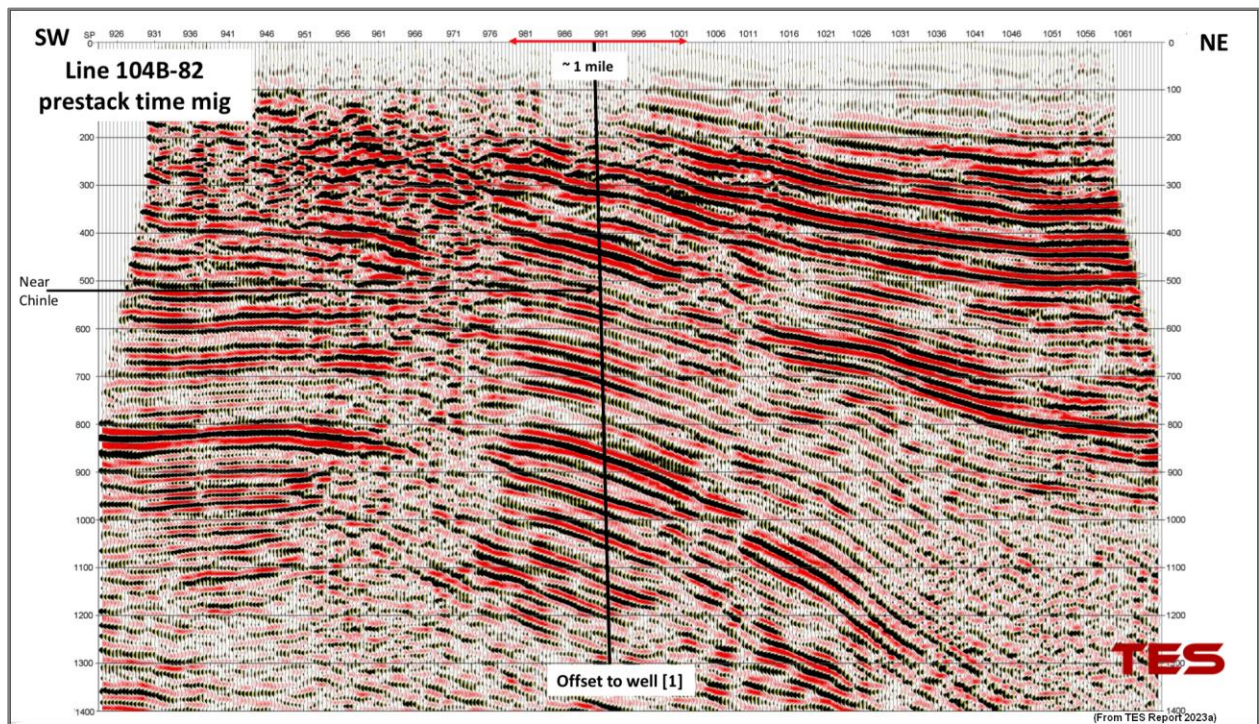


Figure 25 Reprocessed Line 104B-82

Both lines were acquired with a 48-channel system using a 220 ft receiver interval and 440 ft source interval. This produces a dataset with a nominal full fold of 12 with a maximum offset of

*~5,200 ft and 110 ft trace spacing. At the target depth of ~2600 ft this provides 6-fold. While this is not high fold data, we can see in the reprocessing that it provides a fairly good structural picture of the area, and we see variation in the reflector characteristics across the sections suggesting that higher quality data may allow some stratigraphic interpretation.*

*We can also see that along some portions of the lines there is significant subsurface structure extending through the interval of interest, the Chinle formation. The low fold characteristics of the available data limit the amount of resolution in the structurally more complex portions of the lines.*

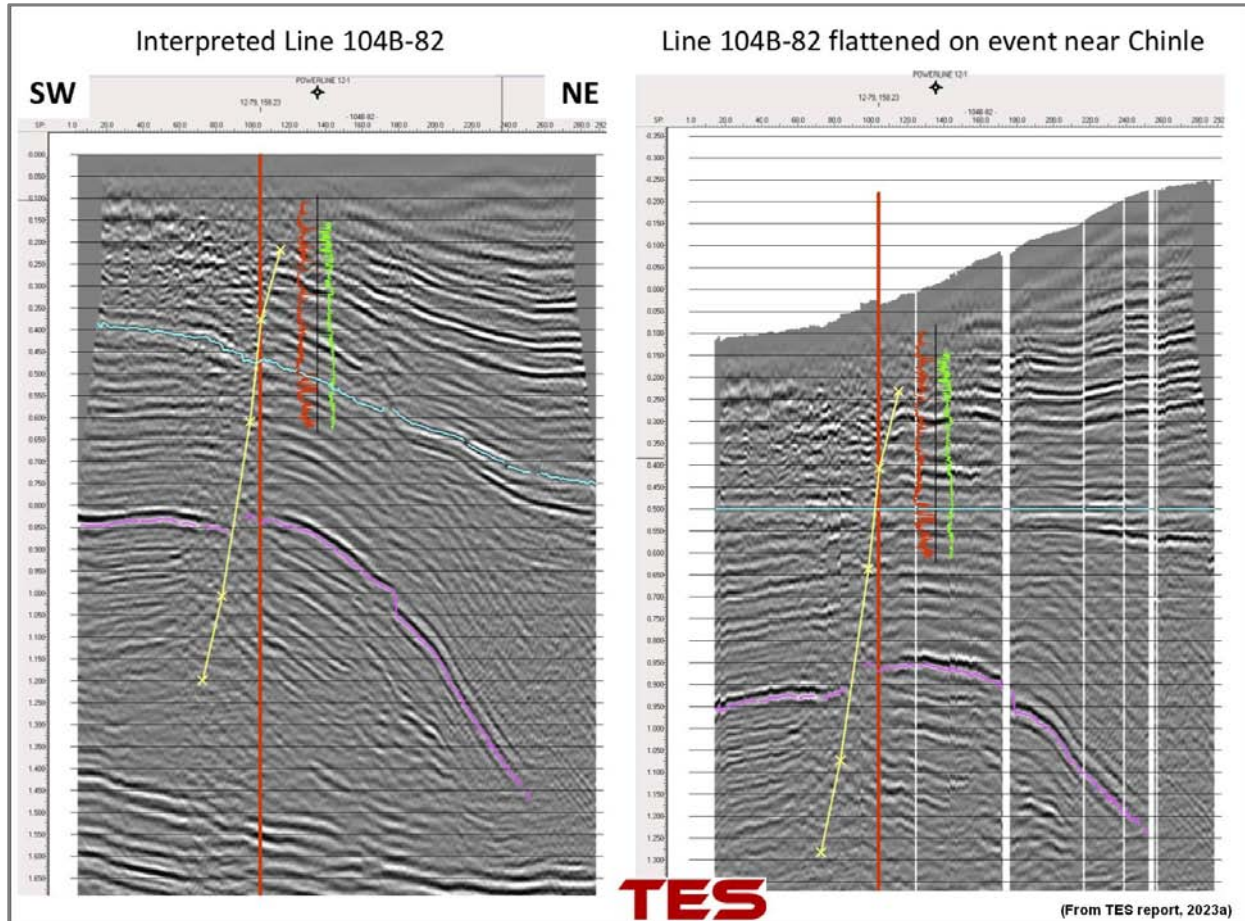
*The lines do not go directly through any of the wells, but the offset projection of the well locations suggests that wells [1], [2] and [4] all sit in blocks that have relative uniform structure, at least over moderate areal extent.*

*Interpretation of the reprocessing was hampered by the lack of sonic logs for the wells in the project area. A sonic log is used to create a synthetic seismogram, which creates a tie between the well depth from the logs to the seismic section by estimating the seismic response of the formations within the log. This allows a tie between the modeled seismic character and the response seen in the seismic to tie known geological markers to their corresponding seismic events at the well location. Without this the best that can be done is an estimate of which event in the seismic section is the horizon of interest. Fortunately, sonic logs were available and utilized from another project in close proximity. These logs allowed a rough correlation of the seismic to key subsurface markers to be used to infer an estimate of where the Chinle formation might be at each of the wells. In particular, the underlying Paradox Salt is a strong regional marker in this part of Utah, and picking a reasonable interval upward from that allowed the rough location of the Chinle to be identified.*

The following discussion is the TES interpretation of the reprocessed data extracted from the TES report (TES, 2023).

*Plotted on the interpreted sections are the gamma and resistivity log data from the wells that were provided, scaled to approximate the seismic time. To gain a more accurate interpretation, one or more sonic logs will be needed to tie the seismic data. A search of nearby wells has so far failed to locate any sonic logs in the immediate area.*

Figure 26 shows interpreted plots of portions of the reprocessed data for Line 104B-82.



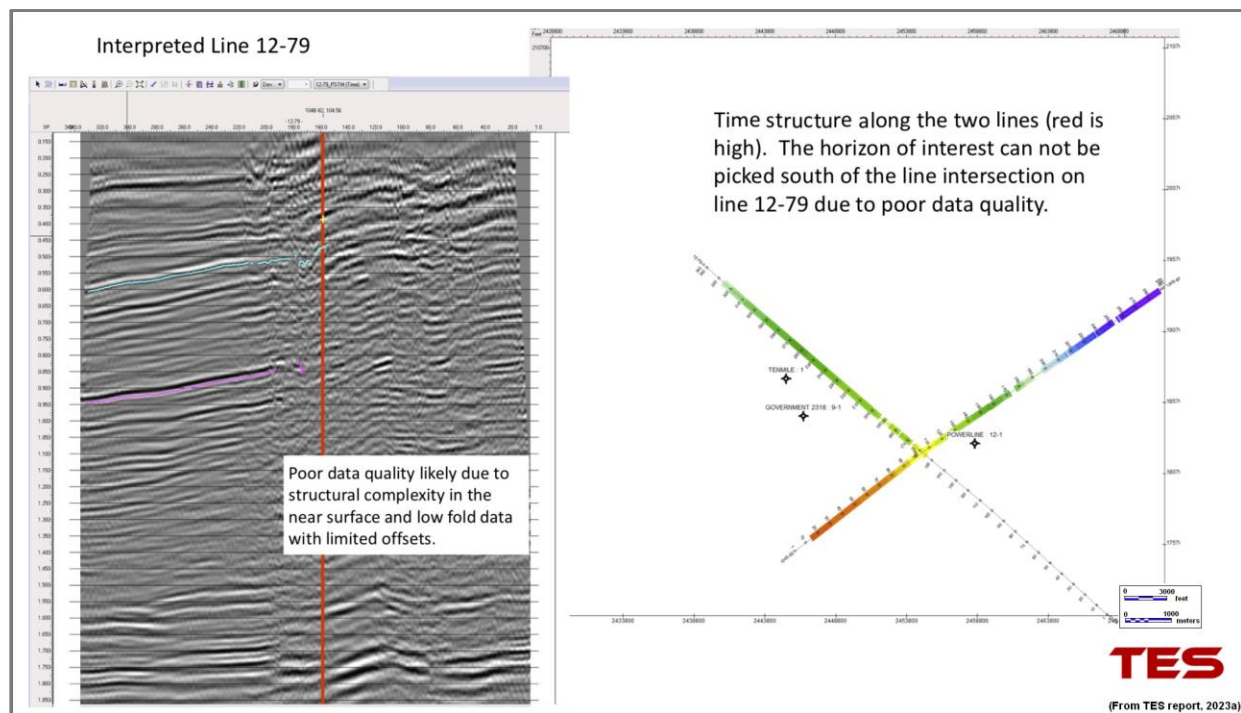
**Figure 26 Interpreted Plot of Line 104B-82**

On the interpreted plots of line 104B-82, the vertical red line shows the tie location with line 12-79. The yellow line is an interpreted fault; the red and green lines are the gamma and resistivity logs scaled using a time/depth table derived from a well a couple of townships away from the project area. The light blue horizon pick is an estimate of the approximate two-way time of the Chinle formation. The easily- identified top of the Pennsylvanian-aged Paradox Salt is shown in purple.

The structure appears relatively flat to the SW and dips more steeply to the north with even steeper dips in the deeper section as well as an unconformity in the Permo-Triassic sediments. There are also some local disturbances in reflector continuity, such as one at SP 180, probably caused by high-angle faulting. The bedding and data continuity in the shallow section is considerably less uniform on the south side of the fault.

The flattened line in the display on the right highlights the aforementioned unconformity below the Chinle on both sides of the fault, serving as a check on the interpretation across the fault, which appears to lose throw upward from the underlying Paradox into the shallow section.

Figure 27 shows interpreted plots of portions of the reprocessed data for Line 12-79.



**Figure 27 Interpreted Plot of Line 12-79**

The seismic clearly shows that to the NW, the shallow subsurface near the Chinle is well behaved with relatively mild dips and no obvious faulting. This is the area of wells [2] and [4]. We don't know exactly which seismic event the Chinle is in this area, but if the Chinle is the event below the strong reflector at about 0.5 sec (500 ms) as outlined in light blue on Figure 27 we can see some change in character along the interval adjacent to the wells. This could be caused by real changes in Chinle stratigraphy or may be an artifact of the relatively low fold nature of the data that exists in this area. If this variation is real, it may have significance to the rocks you are interested in. If the variation is real, higher fold seismic data – designed specifically to image the shallow horizon along this section – would likely provide a much better image at the target depth. If geophysical logs are acquired over the Chinle interval of interest in a future data collection campaign it should be possible to model whether roll-front Uranium mineralization creates a large enough change in the Chinle acoustic impedance to be detectable by seismic techniques on newly-acquired high-resolution seismic data.



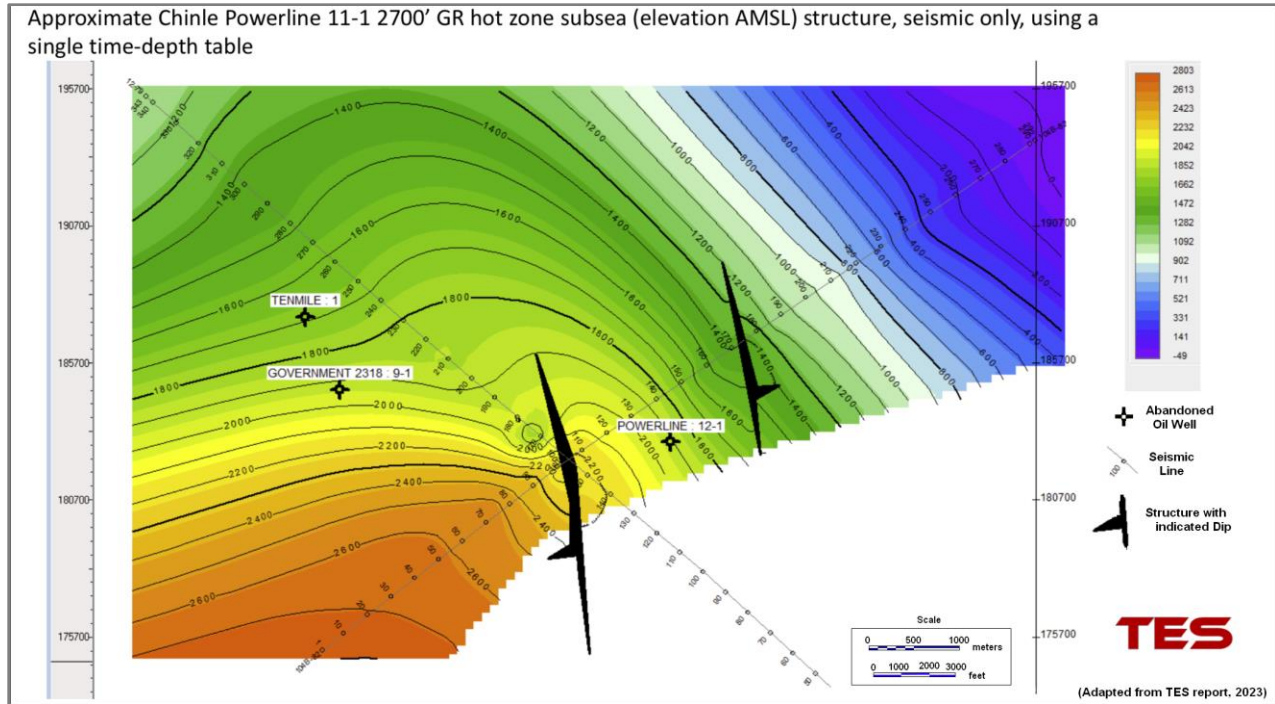
*The area south of well [1] is more problematic. As noted above, the data on line 12-79 is very broken up SE of the fault that is close to the intersection of the two lines. Data that is better sampled (using a much tighter receiver interval) may provide a better image in this area; but if the structure is a result of local salt tectonics, as is the case in some areas in this part of Utah, the target horizon may not be as continuous in this area. The target level is better imaged on line 104B (which is closer to the well than line 12) and the section seen on line 104B is more continuous at the estimated level of interest. Again, we see the reflector at the estimated time of the Chinle (just below a strong reflector at about 0.5s in well [1]) showing evidence of lateral variation. With the low fold nature of this data, it is not clear if this is real variation or not. Regardless, we see that the geologic structure around well [1] is potentially much more complicated than that to the NW around wells [2] and [4].*

*To resolve the geologic complexity around well [1] would require, at a minimum, additional 2D lines acquired with modern parameters and much higher fold to allow imaging of the complex shallow structure suggested by these lines. However, a small high-resolution 3D over the well would likely have the best chance of providing good resolution of the potentially complex subsurface in this area. As noted above, if Uranium mineralization alters the rock fabric enough to cause a significant change in its acoustic impedance, it may well be possible to directly image the mineralization itself with high-quality 3D seismic data.*

Figure 28 is a plan view showing the elevation amsl of the favorable Chinle horizon along with the trace of the apparent fault structures detected on both seismic lines. This plan, together with the interpreted seismic profiles, suggests two important features that should be considered in a follow-up work program. These include:

1) The gamma ray feature in the Powerline 12-1 well appears to lie within a relatively undisturbed area that may be in the order of at least 1.6 km (1 mile) in size. Since the seismic lines are a fair distance away from the well, further detailed 2-D seismic or a small 3-D seismic was recommended to better define this area.

2) The seismic data indicates that the western part of the Project area is gently dipping towards the northwest and is relatively undisturbed structurally. The wells drilled in that very large area were not deep enough to test the favourable Chinle Formation but intersected strong gamma ray anomalies in shallower horizons. A relatively deep drill hole is required to test the shallower features and to provide an initial testing of the Chinle Formation. This has important implications for potential uranium host rocks in that area.



**Figure 28 Plan View Schematic**

TES was also engaged to examine the available geophysical logs of oil and gas wells within the Powerline Project area and provide an independent review of the gamma ray logs (TES, 2023b). The report on the well data review was written after the seismic data interpretation so the following excerpts from the log review often reference the seismic data. Figures 29 to 33 show the relevant portions of the gamma ray logs. The locations of the wells are shown on Figure 21.

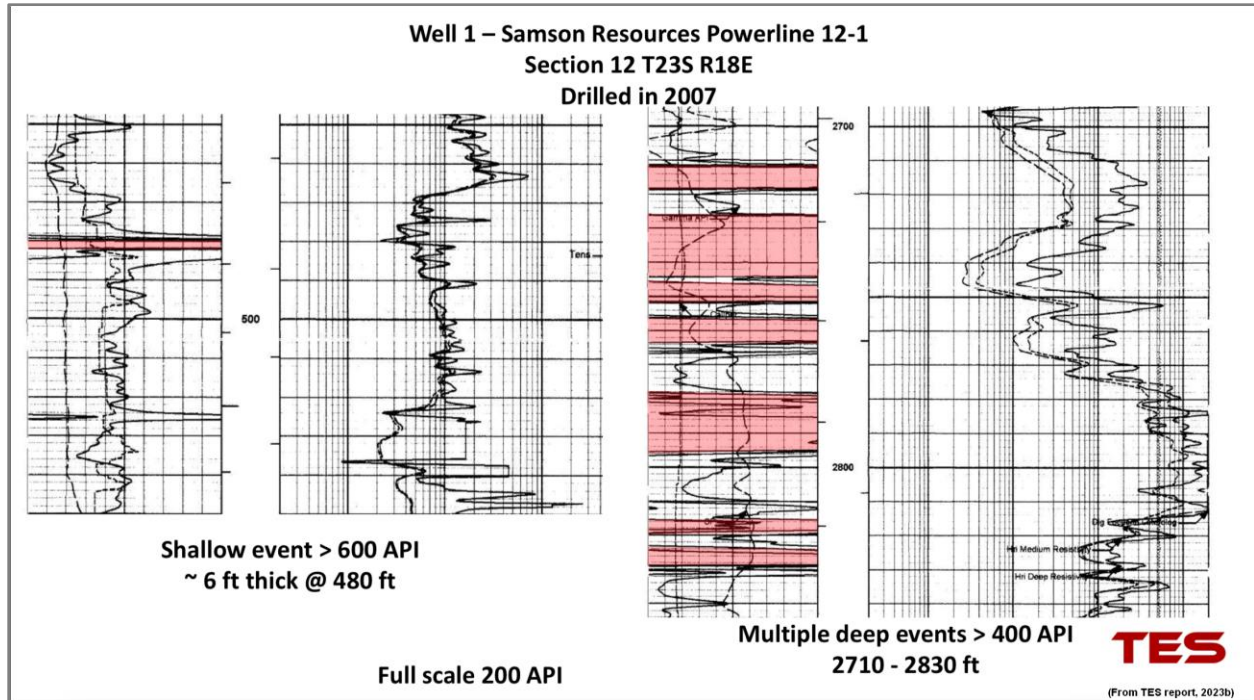


Figure 29 Powerline 12-1 Log

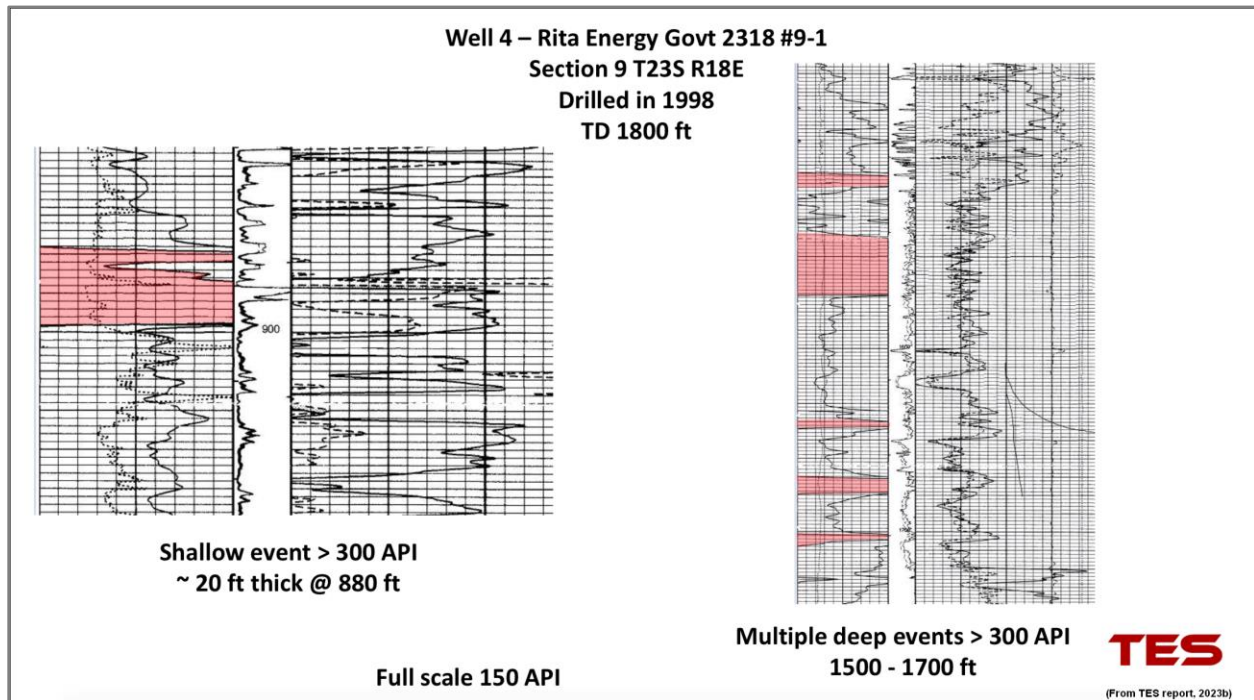
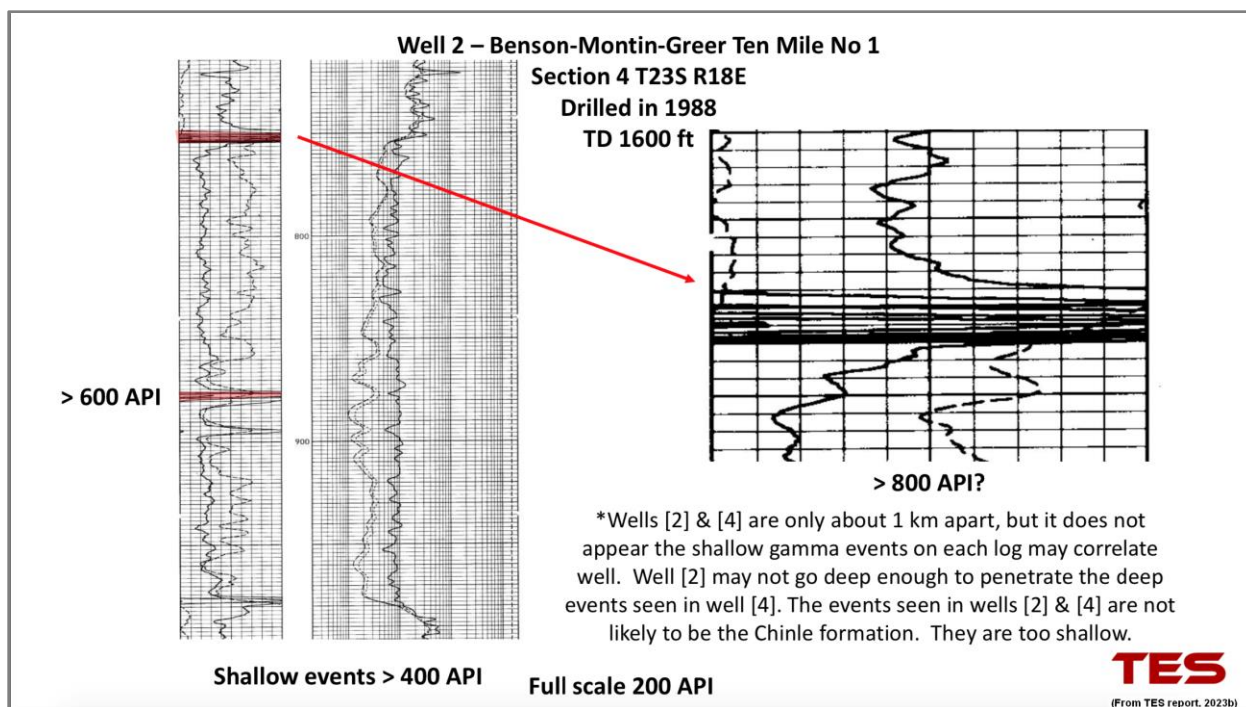
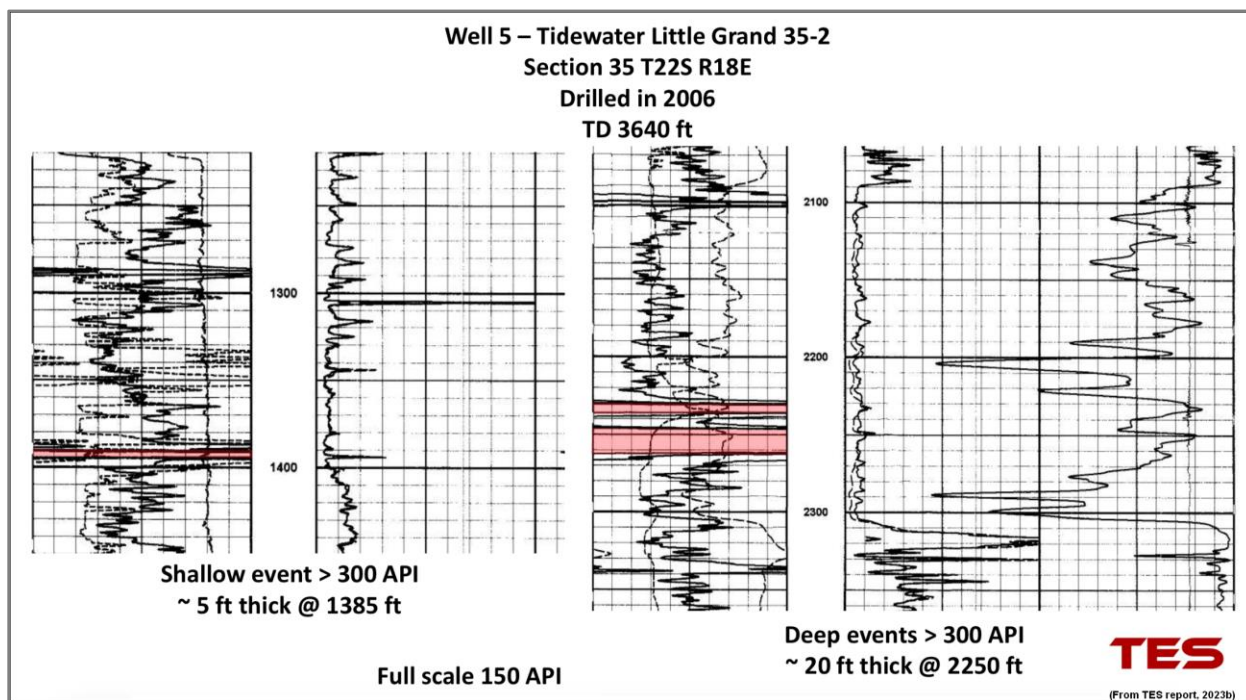


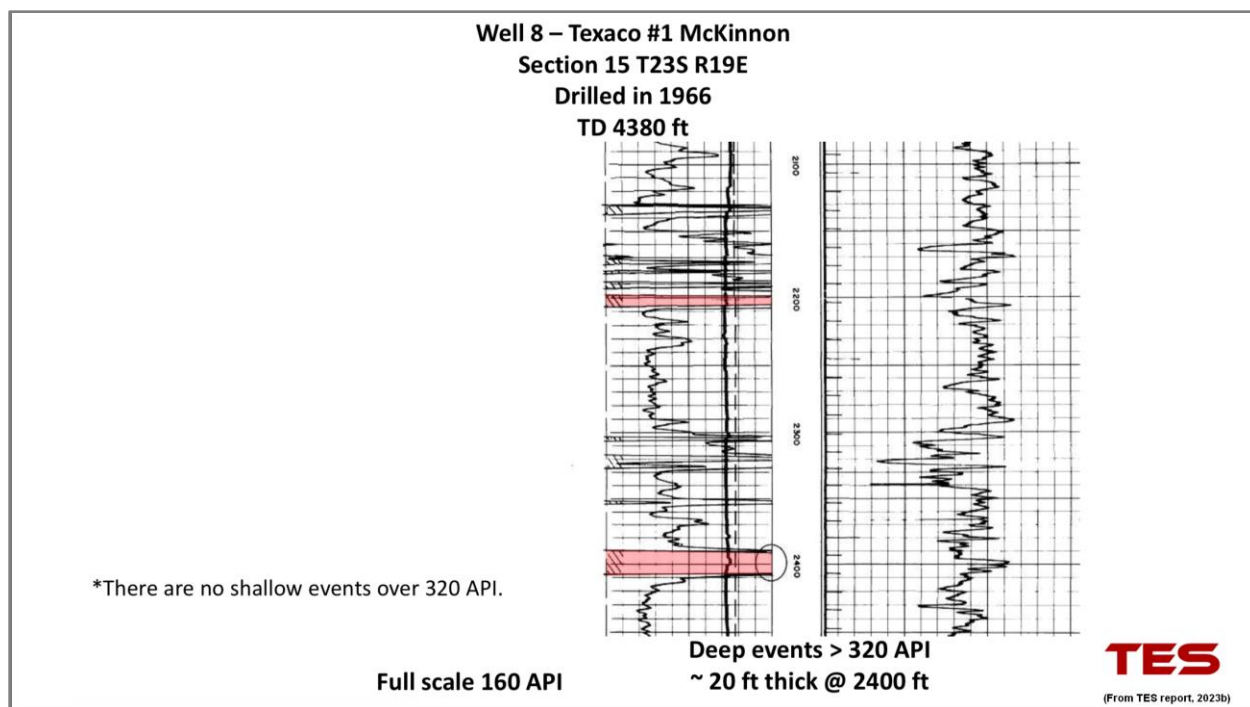
Figure 30 Tenmile No. 1 Log



**Figure 31 Government 2318 9-1 Log**



**Figure 32 Little Grand 35-2 Log**



**Figure 33 No. 1 McKinnon Log**

The Powerline 12-1 well is the primary well of interest with multiple anomalies identified in the Chinle formation at about 2700 ft with readings well in excess of 400 API. The seismic shows that offset to this well the geologic structure is complex. How complex the structure at the well itself might be cannot be determined from the existing seismic data. This well has one shallow hot streak at about 480 ft. This depth is not imaged on the available seismic data.

Wells [2] & [4], the Benson Ten Mile #1 and the Rita Gov't 2318 #9, respectively, are much shallower wells showing anomalies in the shallower section; they do not reach the Chinle formation. Both of these wells have anomalies between 750 – 1000 ft on the logs, but these depths are not imaged with the legacy data. To image these depths will require new acquisition of high-resolution seismic data. Well [4] also has several anomalies with greater than 300 API between 1500 – 1700 ft. Well [2] is not expected to penetrate this section as it has a TD of 1600 ft and based on the seismic structure map, the section is likely below Well [2]'s TD. The seismic data does show that structure at this depth is relatively monoclinial along the 2D line, but the data is only 3-4-fold so little more than an estimate of structure can be interpreted.

Although not discussed in the report, the well labelled as Well 8 on Figure 21 – Texaco #1 McKinnon – in the eastern part of the property shows an anomalous 20-foot (6.1 m) interval at a

depth of 2400 feet. The seismic data examined and reprocessed does not cover this part of the property.

The gamma ray logging tools used in the historical oil and gas logs within the project area were designed to read low radioactive responses from sedimentary rocks in the search for hydrocarbons. They were typically calibrated on a shale unit and were not designed or calibrated to provide meaningful readings above their design level. For this reason, the highly anomalous values detected by the gamma ray logs from these wells are likely to be indicative of much higher-grade radioactive material. The local uranium rich environment suggests that the reported radioactive records are from higher grade uranium.

## **10.0 Drilling**

GoldHaven Resources Corporation has not completed any drilling on the Powerline Uranium Project to date.

## **11.0 Sample Preparation, Analyses and Security**

The uranium exploration target is not exposed at surface within the Powerline Uranium Project area and therefore no sampling has been completed to date. A comprehensive Quality Assurance/Quality Control program is planned for all proposed exploration programs.

## 12.0 Data Verification

The uranium mineralization that is the target of the Powerline Project is not exposed at surface but is interpreted from known geology and records from local oil and gas test-well logs to underlie the Project at depths ranging from 250 to 1050 m (800 to 3,000 ft). It is, therefore, not feasible to physically sample and analyze the uranium bearing horizon within the Project prior to an initial drilling program. During the initial Project visit from January 19 to 22 a full day was spent examining the stratigraphy in the surrounding local area, including the Seven Mine Canyon and Lisbon Valley areas where literally hundreds of uranium occurrences and numerous historical mines hosted by the Chinle Formation are located. The initial Project visit was led by Oren Gatten accompanied by O.J. Gatten, one of the principals of Ameranium Resources and a very respected geologist with extensive experience in the geology of the Colorado Plateau and expert in community and government relations in Utah. In addition, the group included geologist James Rasmussen, an independent consultant and uranium expert with comprehensive knowledge of the stratigraphy of the region and the detailed attributes of its known uranium deposits.

Within the property, the field visit consisted of travelling the main access road which passes diagonally through the southern part of the Project, approximately parallel to an electrical powerline and gas line. Two historical oil and gas test-wells were located as well as numerous claim posts marking the corners of the staked mining claims. Two of these were examined in detail to provide assurance that the locations were as indicated on property maps. The coordinates of the posts and well heads were determined by a portable GPS unit. All locations were determined to be accurately recorded. The Project was once again visited on May 27, 2023. This trip re-traced the access road across the property and examined various bedrock exposures as well as examined the vegetation, drainage secondary trails and other physical features of the Project area.

The data verification process also included:

- a review of available, relevant data including Utah Geological Survey and USGS publications that relate uranium mineralization in the Colorado Plateau and other sandstone-hosted uranium deposits in the USA and worldwide.
- detailed examination of relevant oil well geophysical logs upon which the potential target area is based.



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- a detailed examination of the data relating to titles for the staked mining claims that make up the Project. This included a visit to the Office of the Grand County Recorder in Moab at which time titles were transferred to Ameranium Energy Corp.

The available data is considered to be adequate for the purposes used in this Technical Report. All of the available data is historical in nature and the majority is located in files available from the Utah Geological Survey, the US Geological Survey, the World Nuclear Association or other government agencies.

The available data that is filed in Utah by the oil and gas companies is available for public access after a period of confidentiality. Some of the logs and other data from older wells is of poor quality and incomplete. However, there is no reason to doubt the integrity of the well logs and other information on file.

## **13.0 Mineral Processing and Metallurgical Testing**

No uranium mineral processing or metallurgical testing has been completed on the Powerline Project to date by GoldHaven.

## **14.0 Mineral Resource Estimates**

There has not been any resource estimate on the Powerline Project to date.

## **15.0 – 22.0 Sections not relevant to this report**

## 23.0 Adjacent Properties

The Powerline Project lies within the Paradox Basin, a sedimentary basin that is part of the Colorado Plateau. The principal targeted uranium bearing horizons within the Project are the Moss Back and Shinarump Members which occupy the lower part of the Chinle Formation. These fluvial sandstone units are the host to literally hundreds of known uranium occurrences, prospects and past producing mines within the Paradox Basin. The targeted uranium zones are interpreted from historical oil and gas test-wells to occur at moderate depths within the Powerline Project. The nearest known uranium deposits in this geological setting are located in the Seven Mile Canyon area, 15 km (9.3 mi) southeast of the Project. The geology of some of the deposits in this area are described in numerous reports including those by Finch (1964) and Krahulec (2018). The uranium mineralization interpreted from gamma ray logs of oil and gas test-wells on the Powerline Project are thought to be in the same stratigraphic interval as those found at surface in the Seven Mile Canyon district

**Cautionary Statement:** *The author has not been able to verify this information and this information is not necessarily indicative of the mineralization on the Powerline Project.*

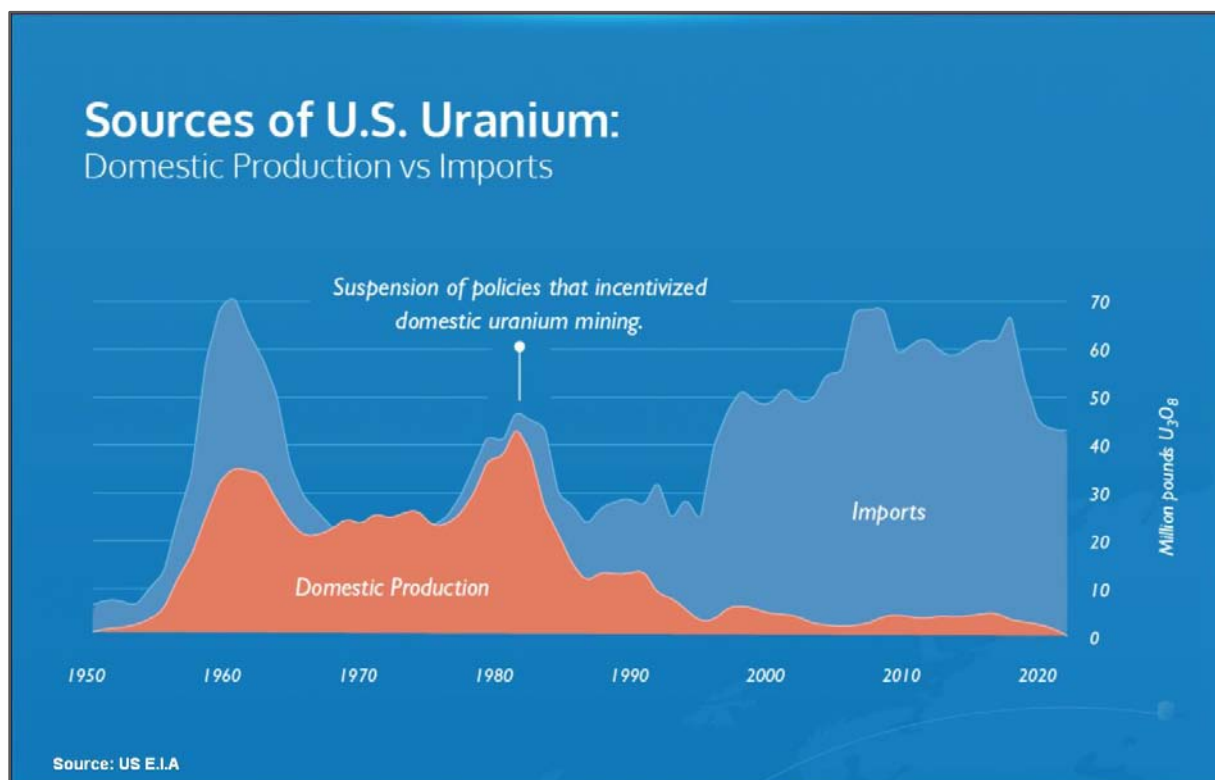
The only known active mining claims that are immediately adjacent to the Powerline Project are held by Atomic Minerals Corp. (Atomic News Release, 2023). These claims were recently staked and include 3 blocks that are contiguous to the Powerline Project. As of the effective date of this report, there has been no reported exploration programs carried out on these claims.

## 24.0 Other Relevant Data and Information

### 24.1 World Uranium Production

According to the World Nuclear Association (2023), the total world-wide production from mines in 2022 was 48,888 tonnes of Uranium (tU). Of this, the total USA production was 75 tU representing only 0.13% of world production. World resources (reasonably assured resources plus inferred resources, at a price of \$130/kg U) was 6,078,500 tU with the USA contributing 59,400 tU or slightly under 1% of these resources. On the demand side, worldwide demand for reactor fuel in 2022 was approximately 62,500 tU with 16% of this (approximately 10,000 tU) being from USA (E.I.A., 2023). Some of the demand vs supply shortfall is generated by the processing of depleted uranium from military and certain types of reactors. Figure 21 sourced from the US Energy Information Administration (E.I.A.) is a graphic representation of the domestic production vs the importation of uranium in the USA for the year 2020.

Consumption is expected to increase continuously over the next 50 years as the demand for more environmentally acceptable and politically stable sources of energy become entrenched and as the population grows.



**Figure 34 Sources of USA Uranium**

## 24.2 Sources of Uranium

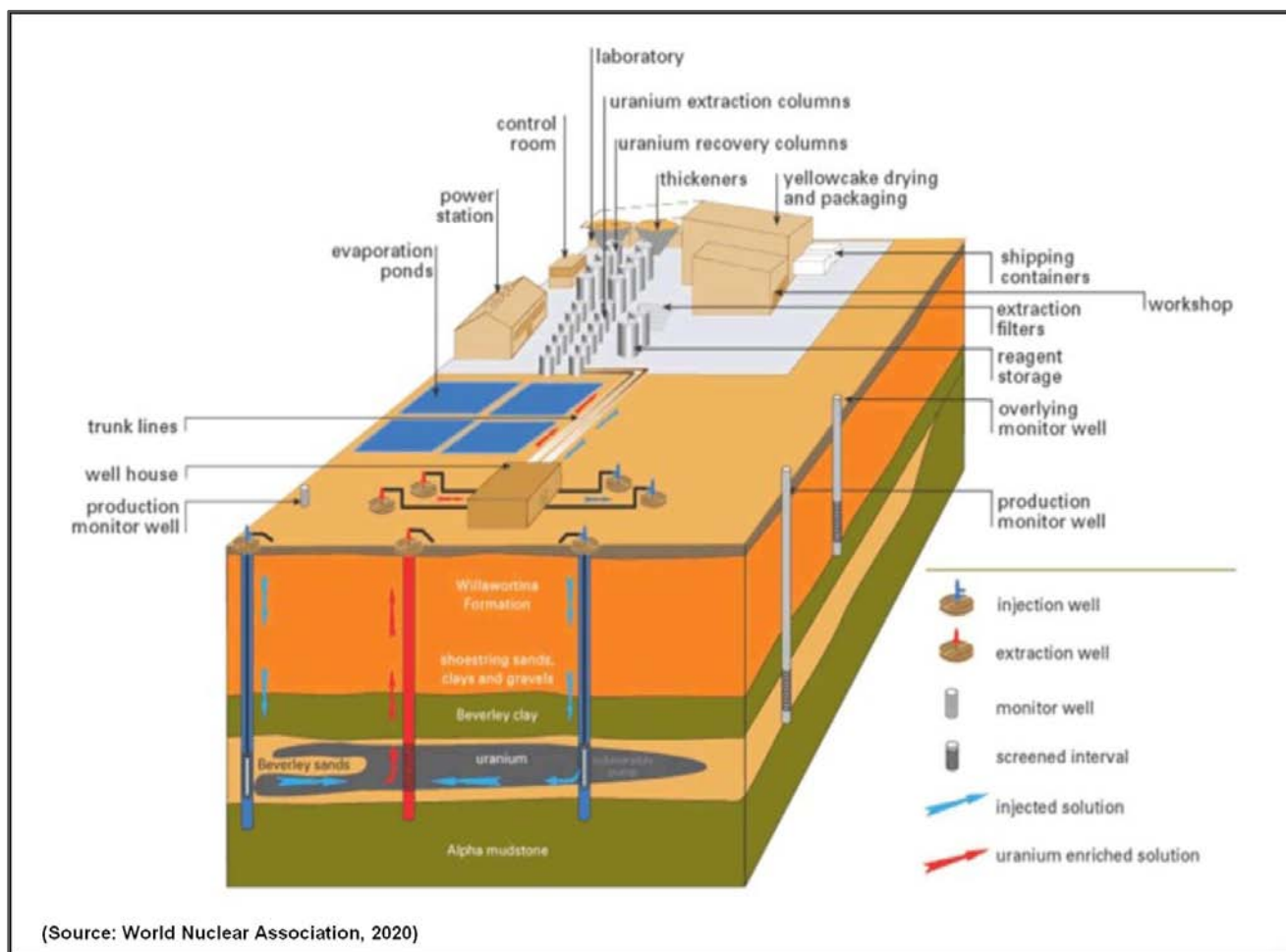
According to the World Nuclear Association (2023), the largest producing underground uranium mines in the world in 2022 are in Canada and Australia with the Cigar Lake mine in Canada being the largest individual producer at 6,928 tU or 14% of the supply. Open pit mines in Namibia and Niger are the next largest producers. The country producing the largest amount of uranium, however, was Kazakhstan which produced 21,227 tU representing 43% of the world's supply. Most of the Kazakhstan production is by In Situ Leach (ISL) operations. This method is described in more detail in the following section. In the USA, there was no recorded uranium production from underground mining although a small amount of product was derived from reprocessing of old tailings and waste material at the only USA processing plant in Blanding, Utah. The US Energy Information Administration (E.I.A., 2023) lists 19 ISL mines in various stages of permitting/licensing/development with only 2 of these currently operating. If all were operating at capacity, these operations are predicted to produce approximately 14,000 tU annually.

## 24.3 In Situ Leach and Recovery Mining

Historically, uranium mining in Utah has focused on near-surface deposits that were relatively high-grade and small in size. These were mined by conventional mining methods by underground or open pit methods and then crushed and treated in a mill to recover the uranium and associated minerals such as vanadium and copper. In Situ Leach Mining and Recovery ("ISR" mining), also known as In Situ Leaching ("ISL") or solution mining, was developed in Wyoming, USA in the 1960's and 70's for the purpose of extracting uranium from the mineralized zones where they are located, ie.in the ground. ISL is a much lower cost mining method and it has the advantage of producing relatively little surface disturbance and no tailings or waste rock are generated. This method can also be a viable method of developing large-tonnage, lower-grade deposits.

In order that a uranium deposit is suitable for ISL and recovery, it must be hosted within permeable sandstone units that are overlain and underlain by impermeable strata. The uranium minerals occur within the sandstone host-rocks as coatings on the sand grains. The groundwater within this aquifer is not potable due to naturally high concentrations of radionuclides and dissolved solids. Two sets of holes (wells) are drilled into the mineralized body, one set for injecting fluids and one set for extraction. Groundwater taken from the mineralized aquifer is fortified with either an acid or an alkali complex. This leaching fluid is then pumped down the "injecting wells" into the uranium bearing zone. As the fluid gradually migrates through the sandstone host, it extracts the

uranium. Once the fluid becomes more enriched with uranium this pregnant solution reaches the “extraction wells” where submersible pumps pump it to surface. The uranium is recovered from the pregnant solutions in much the same way as at other uranium operations. After recovery, the barren solution is re-fortified to become a leaching fluid and reused in the injection wells. Once the uranium is recovered, the fluids used are disposed of in the depleted aquifer. During production, the wells are cased to prevent the solutions from the mineralized aquifer affecting any overlying aquifers. When production is terminated, the wells are permanently cemented. Figure 22 is a schematic drawing of a typical ISR operation.



**Figure 35 Schematic of a Typical In Situ Leach Operation**

Approximately 56% of the world's supply of uranium comes from ISR operations. Most of this production is from Kazakhstan. Currently all of the primary sources of uranium produced in the United States are from ISR mining.

## 25.0 Interpretation and Conclusions

The Powerline uranium project in Utah, USA consists of a group of 630 Federal Lode mining claims that are underlain by a 1,200 to 1,500 m (4,000 to 5,000 foot) thick sequence of terrestrial to shallow marine sedimentary rocks. These rocks are part of the Colorado Plateau, a geological feature that has been the center of uranium mining in the USA since the early 1900's. Uranium is known to occur in numerous strata within the plateau but is dominantly found in beds of quartzose to arkosic sandstones that are interbedded with layers of fine-grained clastic sediments such as mudstones and shales. The majority of the known large, relatively high-grade deposits are hosted in three horizons, the Moss Back and Shinarump members of the Triassic aged Chinle Formation and the Salt Wash Member of the Jurassic aged Morrison Formation. All three of these units are thought to have been deposited as braided stream and/or beach-front environments deposited in a broad NW-SE trending paleo-valley that drained highlands to the northeast, southeast and southwest into an ancient sea that occupied an area that is now part of northwestern Utah. Low-grade uranium was scavenged from narrow, interlayered volcanic ash horizons and deposited in paleo river channels and in extensive tabular zones in the valley floor to form large, relatively high-grade sandstone hosted uranium deposits. In some cases, the mineralization may have been further concentrated by down drainage oxidizing fluids and re-deposition at the boundary with unoxidized (reduced) rocks. This type of deposit is referred to as a "redox front" or "roll front". There are at least 500 uranium occurrences documented in Utah, with virtually all of these being found at surface. A fourth possible type of deposit that has not been explored for to any serious extent in Utah is fault related replacement zones wherein mineralized fluids migrating either upwards or downwards along major fault zones enter and are trapped within adjacent, permeable horizons.

The core of the Powerline Project is underlain by a broad, shallow dipping northwest plunging syncline (the Courthouse Syncline). The southwest side of the syncline terminates at the northwest trending Moab Fault zone. All three of the favourable uranium target horizons referred to above are known to occur within the Powerline Project as interpreted from regional geological mapping (Doelling, 1997; 2002) and from geophysical logs of numerous oil and gas test-wells. The uranium bearing lowermost members of the Chinle Formation occur at average depths of 600 to 1,050 m (2,000 to 3,000 ft) in the northeastern part of the Project and from 1,000 to 1,100 m (3,280 to 3,610 ft) in the southwest. The greater depth to the southwest is the result of a graben structure in this area and tectonic movement along the regional scale Moab fault structure that

passes diagonally through the Powerline Project. Interpretation of gamma ray geophysical logs of one of the wells on the northeast side of the fault, the Powerline 12-1 well (Samson Resources Company), indicates a 35.4 m (116 ft) thick zone of uranium mineralization within which a 19.0 m (62.4 ft) thick section has been estimated to have a uranium grade of 0.0258%  $U_3O_8$ . This hole, drilled in 2007, is collared near the center of the Powerline Project and the intersection is interpreted to be from the Chinle Formation at depths between 826.6 and 862 m (2,712 and 2,828 ft). It is important to note here that the gamma ray logging tools used in the historical oil and gas logs within the project area were designed to read low radioactive responses from sedimentary rocks in the search for hydrocarbons. They were typically calibrated on a shale unit and were not designed or calibrated to provide meaningful readings above their design level. For this reason, the highly anomalous values detected by the gamma ray logs from these wells, as in the case of the Powerline 12-1 hole referred to above, are likely to be indicative of much higher-grade radioactive material.

A positive gamma ray anomaly is also reported in another oil well – the Government McKinnon 1 well – located in the eastern part of the Powerline Project, approximately 6 km southeast of the Powerline 12-1 well. A private report (Norman, 1972) suggests that this intersection was the highest gamma ray anomaly ever reported in an oil well at the time it was drilled (1966). The available logs do not have detailed information that would have been available to the original owners of the well. However, the referenced zone appears to be from the same stratigraphic interval as in the Powerline 12-1 well. The highest interval appears to be between depths of 727.9 and 734 m (2,388 and 2,408 ft). Other drill holes located in the western part of the Project and on lands adjacent to the Project may also have intersected the Chinle Formation but detailed logs for these portions of the wells are not available.

Data from the available oil well logs and interpreted geology outline a target zone greater than 12 km long within the Powerline Project that is mineralized over thicknesses greater than 30 m (100 ft) and containing intervals of relatively high grades of uranium ranging in thickness from 6 to 19 m (20 to 62.4 ft) in the two most reliable well logs. Interpretation of seismic data purchased and reprocessed on behalf of Ameranium indicate that the sedimentary rocks that underlie the Powerline property form a broad, relatively undeformed synclinal structure dipping slightly towards the north and plunging gently towards the northwest. The exceptions to this undisturbed pattern are two disrupted features on the seismic profiles that are interpreted to be fault zones. These occur along the northeast and southwest flanks of a relatively undisturbed block measuring greater than 1.6 km (1.0 miles) within which the Powerline 12-1 well is located.



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Based upon the information available, it is the author's strong opinion that the Powerline Project is a property of merit with a potential to host uranium mineralization that can be economically mined using ISL mining and standard recovery methods. A comprehensive exploration program is warranted.

The claims on the Powerline Project were acquired by the ground staking on land owned by the Federal United States Government. Any previously existing liabilities on these lands are the responsibility of the Federal Government. There are no indications of any environmental liabilities on the Project as it is currently undeveloped desert grazing land. Sears, Barry & Associates Limited is not aware of any risk factors that would impact access to, or the ability to perform work on the Project.

The Powerline Project is a property of merit and warrants an extensive multi-phased exploration program.

## 26.0 Recommendations

A multi-phased exploration program is highly recommended to explore the Powerline Uranium Project. Phase 1 should consist of at least one drill hole collared near the historical Powerline 12-1 oil and gas well and designed to obtain core through the high gamma ray feature interpreted to be uranium mineralization. Once cored, the hole should be surveyed using a spectral gamma ray tool to differentiate uranium, thorium and potassium as well as a suite of other modern down hole geophysical surveys. The core from the hole is necessary to obtain accurate and reliable measurements of the uranium content as well as to obtain mineralogical, porosity and other information of the zone and its enclosing stratigraphy. The estimated cost for completing this proposed Phase 1 work program is US\$451,000 (Table 7).

**Table 7 Phase 1 Budget – Powerline Uranium Project**

<b>Phase 1 - BUDGET - Powerline Uranium Project</b>			
<b>Description</b>	<b>Unit Value</b>		<b>USD</b>
	<b># Units</b>	<b>Unit Cost</b>	
Drilling of 1 Test Wells (870 m) (coring 150 m)	870	300	261,000
Environmental, Site Leasing, Site Prep, Legal	1	50,000	50,000
Downhole Logging & Interpretation	1	30,000	30,000
Logging Mud, Core, Sampling, Supervision (2-man crew)	30	1,000	30,000
Assaying (30 samples)	30	100	3,000
Accommodation & Food (man days)	40	200	8,000
Vehicle and Fuel (60 days)	40	200	8,000
General Supervision, Drafting & Report Writing (months)	1	20,000	20,000
Contingency and Administration (approximate)		10%	41,000
<b>TOTAL PHASE 1</b>			<b>\$451,000</b>

Assuming that the results are encouraging, a Phase 2 work program consisting of multiple drill holes designed to test the 1.5 km (1 mile) relatively undisturbed zone around the Powerline 12-1 hole and to test other parts of the Project including a twinning of the Texaco Government No. 1 well in the eastern part of the Project. These Phase 2 holes may not require coring since information from downhole spectral and other surveys should provide accurate measurements of the mineralization and host rocks. Four initial holes are proposed, two step-out holes at 500 m spacing from the initial hole in the Powerline 12-1 area and one designed to twin the Texaco McKinnon 1 hole and 1 hole in the western part of the property near the historical well labelled

Tenmile No 1. Coring of at least 1 in every 10 future holes is recommended to support the definition of mineral resources. This Phase 2 program is estimated to cost US\$1,180,000 (Table 8).

**Table 8 Phase 2 Budget – Powerline Uranium Project**

<b>Phase 2 - BUDGET - Powerline Uranium Project</b>			
<b>Description</b>	<b>Unit Value</b>		<b>USD</b>
	<b># Units</b>	<b>Unit Cost</b>	
Drilling of 4 Test Wells (3,400 m)	3,400	175	595,000
Environmental, Site Leasing, Site Prep, Legal	4	40,000	160,000
Downhole Logging & Interpretation	4	30,000	120,000
Logging Mud, Core, Sampling, Supervision (2-man crew)	90	1,000	90,000
Accommodation & Food (man days)	160	200	32,000
Vehicle and Fuel (60 days)	80	200	16,000
General Supervision, Drafting & Report Writing (months)	3	20,000	60,000
Contingency and Administration (approximate)		10%	107,000
<b>TOTAL PHASE 2</b>			<b>\$1,180,000</b>

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Weatherspark

Earth at Home Website, Paleontological Research Institution

## 28.0 Certificate of Qualifications

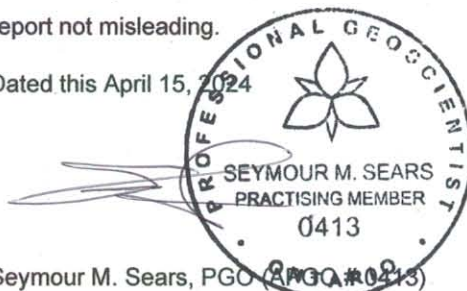
### Seymour M. Sears, PGO

To accompany the report entitled: "NI 43-101 Technical Report on the Powerline Uranium Project, Grand County, Utah, USA", effective date, April 15, 2024.

I, Seymour M. Sears, do hereby certify that:

1. I reside at 1899 Latimer Crescent, Sudbury, Ontario, Canada, P3E 2W1.
2. I am a graduate of Mount Allison University in Sackville, New Brunswick with a B.A. in Psychology and a B.Sc. in Geology.
3. I have been practicing my profession continuously since 1972.
4. I am a member of the Association of Professional Geoscientists of Ontario (APGO # 0413).
5. I am a partner of Sears, Barry & Associates Limited (APGO Certificate of Authorization # 90150), a firm of consulting geologists based in Sudbury, Ontario.
6. I have extensive work experience over the past 50 years in the exploration and evaluation of sedimentary hosted mineral deposits in Canada, USA, Mexico, Colombia, Ecuador, Peru and Chile.
7. I am a "Qualified Person" as defined by National Instrument 43-101 by virtue of my education, qualifications, work experience and membership in the professional association of the Professional Geoscientists of Ontario, Canada.
8. I visited the Powerline Uranium Project most recently on May 27, 2023.
9. I am responsible for all sections of this report.
10. I am independent of GoldHaven Resources Corp. and Ameranium Energy Corp. applying all of the tests in section 1.5 of National Instrument 43-101.
11. I have read the NI 43-101 – standards of disclosure for mineral projects, Form 43-101F1 and Companion Policy NI 43-101CP of the Canadian Securities Administrators and have prepared this report in compliance with these documents and with generally accepted Canadian mining industry standards.
12. As of the effective date of this technical report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this April 15, 2024



Seymour M. Sears, PGO (APGO #0413)  
Sears, Barry & Associates Limited

## 29.0 Date and Signature Page

To accompany the report entitled: "NI 43-101 Technical Report on the Powerline Uranium Project, Grand County, Utah, USA", effective date, April 15, 2024, was prepared and signed by the following author:



Dated April 15, 2024

Seymour M. Sears, PGO (APGO # 0413)  
President and Consulting Geologist  
Sears, Barry & Associates Limited



## **APPENDIX 1 Abbreviations and Symbols**

<b>Abbreviations and Symbols</b>	
<b>Description</b>	<b>Abbreviation / Symbol</b>
above mean sea level	amsl
Canadian National Instrument 43-101	NI 43-101
centimetre(s)	cm
degree(s)	°
degree(s) Celsius	°C
dollar (United States)	\$, US\$, USD
east	E
equivalent U <sub>3</sub> O <sub>8</sub>	eU <sub>3</sub> O <sub>8</sub>
feet; foot	ft
Global Positioning System	GPS
gram(s)	g
gram(s) per tonne	g/t
hectare(s)	ha
hydrogen	H
in situ leach	ISL
inch(s)	in
kilometre(s)	km
metre(s)	m
mile(s)	mi
millimetre(s)	mm
million year(s)	Ma
million(s)	M
month	mo
Net Smelter Return	NSR
north	N (direction)
number	#
oxygen	O
parts per billion	ppb
parts per million	ppm
percent	%
pound(s)	lb
Quality Assurance /Quality Control	QA/QC
Sears, Barry & Associates Limited	SBA
silicon	Si
south	S
tonne(s)	t
tonnes of uranium	tU
Universal Transverse Mercator	UTM
uranium	U

<b>Abbreviations and Symbols</b>	
<b>Description</b>	<b>Abbreviation / Symbol</b>
United States of America	USA
vanadium	V
west	W (direction)
World Geodetic System 1984	WGS 84