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## **RED ROCK ENERGY INC.**

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# **TECHNICAL REPORT ON THE FUSION URANIUM ZONE PROJECT, RB2 CLAIM GROUP, URANIUM CITY AREA, NORTHWESTERN SASKATCHEWAN, CANADA**

**NI 43-101 Report**

**Qualified Person:  
William E. Roscoe, Ph.D., P.Eng.**

**March 7, 2017**



## **Report Control Form**

### **Document Title**

Technical Report on the Fusion Uranium Zone Project, RB2  
Claim Group, Uranium City Area, Northwestern  
Saskatchewan, Canada

### **Client Name & Address**

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### **Document Reference**

Project #2759

### **Status & Issue No.**

FINAL  
Version

### **Issue Date**

March 7, 2017

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# 1 SUMMARY

## EXECUTIVE SUMMARY

Roscoe Postle Associates Inc. (RPA) was retained by Red Rock Energy Inc. (Red Rock) to prepare an independent Technical Report on the Fusion Uranium Zone (the Project), near Uranium City, Saskatchewan, Canada. This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects. The purpose of this Technical Report is to support reactivation of Red Rock's TSX Venture listing and financing.

This Technical Report updates and supersedes a previous Technical Report by Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA, predecessor company to RPA), which documented a Mineral Resource estimate on the Fusion Uranium Zone. The previous Technical Report is dated July 10, 2009, the title is "Technical Report on the Fusion Uranium Zone Project, RB2 Claim Group, Uranium City, Saskatchewan, Canada", and the authors are William E. Roscoe, Ph.D., P.Eng., and R. Barry Cook, M.Sc., P.Eng.

Red Rock is a mineral exploration company which holds a 100% interest in 14 claims covering approximately 9,668 ha located in close proximity to Uranium City, Saskatchewan. In 2008, Red Rock carried out a diamond drilling program on the RB2 claim group to investigate what has been called the Fusion Uranium Zone. RPA visited the Project on November 23-26, 2008. RPA has not carried out a site visit in connection with this updated Technical Report due to winter conditions, but will undertake a site visit when conditions permit in early summer 2017.

## INTERPRETATION AND CONCLUSIONS

Exploration drilling by Red Rock in 2008 along the projected northeasterly extension of the Lake Cinch Mine Main Ore Fault (MOF) has intersected two parallel, mineralized fault structures designated MOF-1 and MOF-2, collectively termed the Fusion Uranium Zone. RPA interprets that the MOF has split into these two features, however, this remains to be determined. The Fusion Uranium Zone mineralization is open on strike to the north and south and down dip, and appears to be co-extensive with the two faults, which also must be verified by more detailed drilling.

At the former Lake Cinch Mine, located southwest of the 2008 Red Rock drilling area, the uranium ore was not entirely co-extensive with the fault but occurred in ore shoots along it, and in cross fractures splaying off the MOF zone. In fact, two thirds of the tonnage mined at Lake Cinch occurred in easterly trending, tensional cross fractures which have not yet been definitively identified associated with the Fusion Zone. Some uranium intersections are located above the MOF zones but cannot be correlated yet into specific zones because of the relatively few intersections, the orientation of drill holes, and their wide spacing. To test effectively for such easterly trending mineralized cross fractures will require drill holes directed to the north as opposed to the northwest direction used to date for the MOF Fusion Zone structure.

There are no current Mineral Resources or Mineral Reserves on the Fusion RB2 property at this time.

RPA has estimated a range of potential tonnes and grade of an exploration target for the Fusion Uranium Zone based on results of drilling to 2008 and other information such as past production from the Lake Cinch and Cenex mines. The Fusion Uranium Zone exploration target has a potential tonnage range of 100,000 t to 200,000 t and a potential grade range of 0.20%  $U_3O_8$  to 0.25%  $U_3O_8$ , for a potential range in contained  $U_3O_8$  of 440,000 lb to 1,100,000 lb. This potential tonnage, grade, and contained  $U_3O_8$  is conceptual in nature, there has been insufficient exploration to define a Mineral Resource, and it is uncertain if further exploration will result in the target being delineated as a Mineral Resource.

## **RECOMMENDATIONS**

Considerably more diamond drilling is required to define the extent and the detailed features of the Fusion Zone, including mineralized cross fractures. For future drilling programs, RPA recommends that Red Rock institute its own quality assurance/quality control (QA/QC) program since there is not one currently in place. Similarly, Red Rock should institute a program to determine bulk density of samples using the water immersion method.

No metallurgical testwork has been carried out on the Fusion Uranium Zone. RPA considers that this should be part of the next work program on the RB2 property.

In addition to the uranium mineralization mined at the past producing New Cinch and Cenex mines, and outlined by drilling at the Fusion Zone, there are a number of other uranium-

bearing zones on the RB2 property. These have been explored to varying degrees mostly in the 1950s, 1960s, and 1970s by sampling and diamond drilling. In RPA's view, field work is warranted on at least eight mineralized zones in addition to compiling and interpreting historical data in order to prioritize them for drill testing.

#### **PROPOSED EXPLORATION AND BUDGET**

RPA recommends a two phase program of exploration for the RB2 claim block. The second phase is contingent on results of the first phase. Table 1-1 lists the estimated budget for the proposed Phase 1 and Phase 2 programs.

Phase 1 involves compilation and interpretation of geology, geophysics, geochemistry, sampling, drilling, and other historical and more recent data. This is an extension of the digitization of data that was commenced by Red Rock in the past. Phase 1 also includes approximately two months of field work to carry out detailed geological mapping, radiometric surveying, and sampling in the vicinity of the Fusion Zone, Lake Cinch mine, and Cenex mine, as well as on other uranium-bearing zones on other parts of the RB2 property. The objective of the Phase 1 work is to develop and prioritize targets for drilling in the Phase 2 program.

Phase 2 involves drill testing for extensions of the Fusion Uranium Zone and for testing of other uranium-bearing zones. RPA recommends that Red Rock institute its own QA/QC program for drill core samples, including insertion of blanks, Certified Reference Material standards, and duplicates. Red Rock should also determine the bulk density of various mineralized rock types as well as barren rock using the water immersion method.

**TABLE 1-1 PROPOSED BUDGET – PHASES 1 AND 2**  
**Red Rock Energy Inc – Fusion Uranium Zone**

<b>Phase 1 Program</b>	<b>C\$</b>
Compilation and interpretation work	50,000
Field program:	
Senior Geologist	25,000
Assistant Geologist	30,000
Expenses, rentals, analyses	40,000
Metallurgy – testwork and consulting	30,000
Geological management	20,000
<b>Subtotal</b>	<b>180,000</b>
Contingency - ~10%	20,000
<b>Total</b>	<b>200,000</b>

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Phase 2 Program	C\$
Diamond drilling:	
Fusion Zone 4,000 m @\$200	800,000
Other zones 3,000 m @\$200	600,000
Supervision, expenses, assays 7,000m @\$100	700,000
Reporting and resource estimate	100,000
Geological management	200,000
<b>Subtotal</b>	<b>2,400,000</b>
Contingency - ~10%	250,000
<b>Total</b>	<b>2,650,000</b>

## TECHNICAL SUMMARY

### PROPERTY DESCRIPTION AND LOCATION

Red Rock's Fusion Uranium Zone project is located in the RB2 claim block in the northwestern corner of northern Saskatchewan, approximately three kilometres by road southwest of Uranium City. It is 525 km by air northwest of La Ronge. The property is located on 1:50,000 NTS sheet 74/N 10SE and is centred approximately on 59° 32' N latitude, 108° 41' W longitude.

### LAND TENURE

The RB2 claim block is comprised of four staked claims wholly owned by Red Rock. The property is not subject to any royalties, back-in rights, payments, other agreements, or encumbrances. All four claims are in good standing and, subject to the completion of the necessary expenditure requirements, can be renewed indefinitely. Beginning in the second year, and continuing to the 10<sup>th</sup> anniversary, annual expenditure requirements to maintain claim ownership are \$12/ha. There are no known environmental liabilities associated with the property.

Except for exploration purposes, a mineral claim does not grant the holder the right to mine minerals. A Saskatchewan mineral claim in good standing can be converted to a lease upon application and with the completion of a boundary survey. Leases are for a term of 10 years and are renewable. Acquisition of a lease grants to the holder the exclusive right to explore for, mine, recover, and dispose of any minerals within the lease lands which are nonetheless owned by the Province of Saskatchewan. Surface facilities and mine workings are therefore located on Provincial lands and the right to use and occupy lands is acquired under a surface lease from the Province of Saskatchewan. A surface lease is for a maximum of 33 years.



## **SITE INFRASTRUCTURE**

The RB2 claim block is ideally close to the local SaskPower electrical grid and adjacent to the Hamlet of Uranium City (population approximately 100).

## **HISTORY**

The RB2 claim block area has a complicated history of claim ownership and exploration from the late 1940s and extending to 1980.

**Lake Cinch Mine area:** The area just west of where the Crackingstone River drains out of Lake Cinch was first staked in 1948 as the “Jam group” and sold in 1950 to Cinch Lake Uranium Mines Ltd. From 1951 to 1953, the Jam group property was explored, including drilling, by Mining Corporation of Canada Ltd., acting for Cinch Lake Uranium Mines Ltd. In 1954, control of the Jam group was acquired by Violamac Mines Limited. The company changed its name to Lake Cinch Mines Limited and conducted exploration, including drilling, from then until fall 1955. Shaft sinking at the Lake Cinch Mine was initiated in September 1955 and ore production started in May 1957. All ore mined was shipped for custom milling to the Laredo custom mill, which was three kilometres to the south. The Lake Cinch Mine closed in May 1960. It is unclear who owned the Lake Cinch Mine Jam group from about 1960 to 1968.

**Cenex Mine area:** In 1949, Amax Athabasca Uranium Mines Limited (Amax Athabasca) acquired the ground to the west of the Jam group as concession CC-1, which included the present location of the Cenex Mine. Between 1951 and 1953, Amax Athabasca explored its concession by diamond drilling. Pardee Amalgamated Mines Limited followed up the work by Amax Athabasca with further drilling. This exploration resulted in the discovery of the River uraniferous zone (also known as the 03 zone). The ground west of the Jam group lapsed in 1958 and was restaked by A.J.B. Nicholson. In 1965, the area was restaked and then acquired by Enex Mines in 1966 as ML5416.

**Lake Cinch – Cenex Property Amalgamation:** In 1969, the Enex Group merged with New Cinch Mines Limited under the name Gardex Mines Limited (Gardex) with the intention of developing the two properties (i.e., the Jam group and ML5416) jointly, using the Lake Cinch Mine shaft. However, this intended reopening of the Lake Cinch workings did not happen. Until 1969, the Lake Cinch and Cenex Mine areas were held by different owners and

explored independently, even though the two properties are only a few hundred metres apart. Although Gardex consolidated the ground position in 1969, there apparently was no further exploration at the Lake Cinch – Cenex area until 1974.

**Eldorado Nuclear Ltd. work at Lake Cinch – Cenex:** In 1974, Eldorado Nuclear Limited (ENL) purchased the property from Gardex and conducted drilling “to confirm the Enex mineralized zones and estimated ore reserves”, however, no mining was carried out at either Cenex or Lake Cinch. In 1976, ENL optioned the property to New Joburke Exploration Limited, which in August 1977 changed its name to Cenex Ltd. (Cenex).

**Development of the Cenex Mine:** In 1978, Cenex sank a decline on the Cenex 03 (River) Zone to a vertical depth of about 114 m, and commenced production, with the ore being shipped to the ENL mill at Eldorado. Production continued until early fall 1979 when a fire destroyed the powerhouse and Cenex was subsequently placed in receivership. Production was entirely from the Cenex Mine workings.

**Frame Contracting work at Lake Cinch – Cenex:** In 1980, A. Frame Contracting Ltd. (Frame Contracting) purchased the Cenex–Lake Cinch Mine site and shipped some stockpiled ore to the ENL mill. Frame Contracting did not carry out any underground mining at either Lake Cinch or Cenex. The publicly available records in the Saskatchewan Assessment Work Catalogue indicate that no further work was done at the Lake Cinch – Cenex locale until the RB2 claim block was staked by Red Rock during 2004 and 2005.

## **GEOLOGY**

The Uranium City area of northwestern Saskatchewan is located in the south-central Rae Subprovince of the Western Churchill Province. The general area is one of multiple basement domains recording a protracted and complex geological evolution that includes multiple phases of granitoid emplacement, deposition of volcanoclastic successions, metamorphism, and tectonism that spans 1.6 billion years from Mesoarchean to Mesoproterozoic. Uranium City proper is on the western edge of the Beaverlodge Domain, adjacent to the Black Bay Fault, which defines the boundary with the Zemlak Domain to the west.

The Beaverlodge District has recently been subdivided into the Zemlak Domain to the west of the Black Bay Fault, and the Beaverlodge and Nevins Lake domains to the east. The

Nevins Lake Block consists of the ca. 3.0 Ga and possibly much older Archean granitic basement that is uncomfortably overlain by the Paleoproterozoic Murmac Bay Group (formerly called Tazin Group). These rocks are cut by a suite of ca. 2.3 Ga mafic to felsic meta-plutonic rocks of the Arrowsmith Orogeny as well as a younger suite of ca. 1.9 Ga syntectonic plutons. All of these rocks are uncomfortably overlain by the Thluicho Lake Group and the Martin Group, although only the latter is exposed in the RB2 mineral claim block. All the above strata are cut by Proterozoic mafic dykes, at least some of which may be feeders to the mafic volcanic rocks within the Martin Group. These rocks are, in turn, unconformably overlain by early Mesoproterozoic, unmetamorphosed, fluvial sandstones of the Athabasca Group; however, basal Athabasca Group is only known to crop out on islands just south of the Crackingstone Peninsula.

The bedrock geology of the RB2 claim block portrays a convoluted history encompassed in highly strained and metasomatized rocks. The bulk of the property (including two historic uranium mines) is underlain by what has been termed the “Black Bay straight belt”, an over 10 km wide, northeast-trending corridor of intensely deformed and attenuated Murmac Bay Group rocks and intrusive rocks. The evident geological relationships are complex due to intense folding, widespread partial melting, locally intense hematization, and repeated and extensive cataclastic deformation. Because of deformation and hematitic alteration, the probably originally diverse sequence of rocks has lost much of its identity and now resembles fairly homogeneous leucocratic granitoids or undifferentiated quartzofeldspathic rocks. The original protoliths have been reduced to crushed cataclasite or mylonitic rock. The general structure is monoclinical, with a steep dip either to the southeast or northwest.

Superimposed on the “Black Bay straight belt” are numerous brittle-ductile to brittle faults, including the first-order northeasterly trending Black Bay and Boom Lake faults and second-order, northeasterly trending faults such as the Lake Cinch MOF, Lake Cinch MOF Extension, which is south of the Crackingstone River, Leadridge, and Leadridge Extension faults. These older faults are offset in places by subsequent major east trending faults, such as the Crackingstone River Fault (CRF), and finally, there are numerous fourth-order faults that trend west-northwesterly, westerly, and west-southwesterly.

The various reports and documents that describe the distribution of uraniferous zones at the Lake Cinch – Cenex region indicate that many or most of the important uranium zones occur along the later secondary to fourth-order structures. As currently understood, the Cenex,

Lake Cinch, and Fusion zones are located a few hundreds of metres west of the Black Bay Fault, proximal to the intersection of the CRF with the Black Bay Fault.

## **MINERALIZATION**

Drilling to date on the RB2 claim block has targeted the northeast extension of the MOF of the former Cinch Lake Mine, just beyond the northeast limit of the mine workings. Two roughly parallel mineralized fault structures, referred to as the Fusion Uranium Zone, have been intersected, each striking approximately 45° and dipping on average 50° to the southeast. It appears that the MOF has split into two fault structures, the most northerly of which is termed MOF-1 and the southerly, MOF-2. These features both average 1.9 m in thickness and are separated by 1.0 m to 8.0 m, or approximately 6.0 m on average. There are 30 drill intercepts through MOF-1 and 37 through MOF-2, and pierce point spacings range from 25 m to 100 m. The apparent sheet-like mineralization indicated by these 67 pierce points extends approximately 300 m along a northeast strike and for 460 m down a southeast dip.

## **MINERAL RESOURCES AND MINERAL RESERVES**

There are no current Mineral Resources or Mineral Reserves on the Red Rock RB2 property at this time.

## 2 INTRODUCTION

Roscoe Postle Associates Inc. (RPA) was retained by Red Rock Energy Inc. (Red Rock) to prepare an independent Technical Report on the Fusion Uranium Zone project (the Project), located on the Red Block 2 claim group (RB2 claim block) near Uranium City, Saskatchewan, Canada. This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects. The purpose of this Technical Report is to support reactivation of Red Rock's TSX Venture listing and financing.

This Technical Report updates and supersedes a previous Technical Report by Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA, predecessor company to RPA), which documented a Mineral Resource estimate on the Fusion Uranium Zone. The previous Technical Report is dated July 10, 2009, the title is "Technical Report on the Fusion Uranium Zone Project, RB2 Claim Group, Uranium City, Saskatchewan, Canada", and the authors are William E. Roscoe, Ph.D., P.Eng., and R. Barry Cook, M.Sc., P.Eng. (Scott Wilson RPA, 2009).

Red Rock is a mineral exploration company which holds a 100% interest in 14 claims covering approximately 9,668 ha located in close proximity to Uranium City, Saskatchewan. Red Rock is in the process of pursuing uranium exploration prospects identified by management within its existing land base and in other strategically located areas, with an initial focus on western Canada.

Currently, the major asset associated with the Project is the Fusion Uranium Zone, which was drilled by Red Rock in 2008. In addition to the Fusion Zone and two past producing mines on the RB2 property, there are a number of other uranium-bearing zones that have had past exploration work.

### SOURCES OF INFORMATION

RPA has not carried out a site visit in connection with this updated Technical Report due to winter conditions, but will undertake a site visit when conditions permit in early summer 2017. William Roscoe, Ph.D., P.Eng., RPA Principal Geologist, is responsible for all sections of this Technical Report.

In connection with the 2009 Technical Report, a site visit to the property was carried out by Barry Cook, M.Sc., P. Eng., Scott Wilson RPA Associate Consulting Geologist, during the period November 23 to 26, 2008. Mr. Cook looked at a variety of maps of the general area and of the property in particular. Plans and sections of the current drilling program were reviewed along with the core from six drill holes. Eight samples of quarter-split drill core were collected for data verification from mineralized intervals in four drill holes. During the site visit, discussions were held with Dr. Reg Olson, Consultant to and Vice-President, Exploration for Red Rock; Scott Botterill, Geologist, Red Rock; and Harold Smith, Geological Assistant, Red Rock. Subsequent discussions and communications were exchanged with Jason Sciarra, GIS Technologist, Red Rock.

The documentation reviewed, and other sources of information, are listed at the end of this report in Section 27 References. It is noted here that through the hard work and perseverance of Red Rock during the period 2005 to 2007, a great deal of useful information was retrieved from the files of the former Crown Corporation Eldorado Nuclear Limited (ENL). Red Rock petitioned the Canada Privacy Commissioner to require Canada Eldor Inc. to grant access to the ENL historical records which are stored at the Library and Archives Canada (LAC) in Ottawa.

The bulk of the information for this report was gleaned from an exhaustive, internal Red Rock report (Olson et al., 2009), access to which is gratefully acknowledged.

## LIST OF ABBREVIATIONS

Units of measurement used in this report conform to the metric system. All currency in this report is Canadian dollars (C\$) unless otherwise noted.

a	annum	kWh	kilowatt-hour
A	ampere	L	litre
bbl	barrels	lb	pound
btu	British thermal units	L/s	litres per second
°C	degree Celsius	m	metre
C\$	Canadian dollars	M	mega (million); molar
cal	calorie	m <sup>2</sup>	square metre
cfm	cubic feet per minute	m <sup>3</sup>	cubic metre
cm	centimetre	μ	micron
cm <sup>2</sup>	square centimetre	MASL	metres above sea level
d	day	μg	microgram
dia	diameter	m <sup>3</sup> /h	cubic metres per hour
dmt	dry metric tonne	mi	mile
dwt	dead-weight ton	min	minute
°F	degree Fahrenheit	μm	micrometre
ft	foot	mm	millimetre
ft <sup>2</sup>	square foot	mph	miles per hour
ft <sup>3</sup>	cubic foot	mSv/hr	microsieverts per hour
ft/s	foot per second	MVA	megavolt-amperes
g	gram	MW	megawatt
G	giga (billion)	MWh	megawatt-hour
Gal	Imperial gallon	oz	Troy ounce (31.1035g)
g/L	gram per litre	oz/st, opt	ounce per short ton
Gpm	Imperial gallons per minute	ppb	part per billion
g/t	gram per tonne	ppm	part per million
gr/ft <sup>3</sup>	grain per cubic foot	psia	pound per square inch absolute
gr/m <sup>3</sup>	grain per cubic metre	psig	pound per square inch gauge
ha	hectare	RL	relative elevation
hp	horsepower	s	second
hr	hour	st	short ton
Hz	hertz	stpa	short ton per year
in.	inch	stpd	short ton per day
in <sup>2</sup>	square inch	t	metric tonne
J	joule	tpa	metric tonne per year
k	kilo (thousand)	tpd	metric tonne per day
kcal	kilocalorie	US\$	United States dollar
kg	kilogram	USg	United States gallon
km	kilometre	USgpm	US gallon per minute
km <sup>2</sup>	square kilometre	V	volt
km/h	kilometre per hour	W	watt
kPa	kilopascal	wmt	wet metric tonne
kVA	kilovolt-amperes	wt%	weight percent
kW	kilowatt	yd <sup>3</sup>	cubic yard
		yr	year

### **3 RELIANCE ON OTHER EXPERTS**

This report has been prepared by Roscoe Postle Associates Inc. (RPA) for Red Rock Energy Inc. (Red Rock). The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to RPA at the time of preparation of this report;
- Assumptions, conditions, and qualifications as set forth in this report; and
- Data, reports, and other information supplied by Red Rock and other third party sources.

For the purpose of this report, RPA has relied on ownership information provided by Red Rock. RPA has not researched property title or mineral rights for the Fusion Uranium Zone project (RB2 claim block) and expresses no opinion as to the ownership status of the property.

Except for the purposes legislated under provincial securities laws, any use of this report by any third party is at that party's sole risk.



## 4 PROPERTY DESCRIPTION AND LOCATION

Red Rock's Fusion Uranium Zone project is located in the northwestern corner of northern Saskatchewan within the Beaverlodge Uranium District on the north shore of Lake Athabasca. It is 360 km by air to the northeast of Fort McMurray, Alberta, and 525 km by air northwest of La Ronge, Saskatchewan (Figure 4-1). The property is approximately three kilometres by road southwest of Uranium City. It is within the Northern Mining District, on 1:50,000 NTS sheet 74/N 10SE. The property is a four claim block with an approximate rectangular shape extending 5.8 km north-south and 3.5 km east-west and is centred approximately on 59° 32' N latitude, 108° 41' W longitude. The UTM coordinates for the approximate centre of the Project are 632310E, 6603270N (NAD83, Zone 12).

### LAND TENURE

The location of the RB2 claim block is shown in Figure 4-2. The claim block includes four staked claims for which the claim posts have global positioning system (GPS) coordinates. Claim data, as supplied by Red Rock, are listed in Table 4-1. Red Rock owns the claim block 100% and has stated that there are no royalties, back-in rights, payments, or other agreements and encumbrances to which the RB2 claim block is subject. Red Rock retains the subject claims in good standing at its own discretion. RPA reviewed the claim status on the website of the Saskatchewan Ministry of the Economy, Mining and Petroleum GeoAtlas, and found them to be in good standing.<sup>1</sup>

**TABLE 4-1 RB2 CLAIM BLOCK INFORMATION**  
**Red Rock Energy Inc – Fusion Uranium Zone**

Claim No.	NTS	Area (ha)	(Effective) Record Date	Good Standing Until
S-107390	74/N10	976	April 14, 2004	July 12, 2029
S-107441	74/N10	220	June 21, 2004	September 18, 2030
S-107788	74/N10	449	Nov. 8, 2004	February 5, 2030
S-108053	74/N10	170	Dec. 13, 2005	March 12, 2031
<b>Subtotals</b>		<b>1,815</b>		

<sup>1</sup> <http://gisappl.saskatchewan.ca/Html5Ext/index.html?viewer=GeoAtlas>

When a mineral claim is recorded in Saskatchewan by an individual or company, the claim holder has the legal right to explore for a two year period from the date of claim record. If the mineral claim is to be maintained beyond this initial two year period, however, then the Government of Saskatchewan requires the claim holder to have done exploration work in the amount of at least \$12/ha, which must be filed for assessment by the anniversary of the end of the second year. Thereafter, the claim holder must complete at least \$12 work per hectare each year, and file this amount each year by the claim anniversary date. If a company does more than the minimum expenditure in any period, the excess will contribute towards the needed assessment expenditures for the subsequent period(s). This requirement that at least \$12/ha in exploration work be done and filed applies to the end of year 10 (at which time a total of at least \$108/ha must have been filed), after which the annual exploration expenditure increases to \$25/ha per year for the next 10 years. Assessment reports documenting these expenditures must be submitted either annually or by the expiry date in order to maintain the mineral dispositions in good standing.

Except for exploration purposes, a mineral claim does not grant the holder the right to mine minerals. A Saskatchewan mineral claim in good standing can be converted to a lease upon application and with the completion of a boundary survey. Leases are for a term of 10 years and are renewable. Acquisition of a lease grants to the holder the exclusive right to explore for, mine, recover and dispose of any minerals within the lease lands which are nonetheless owned by the Province of Saskatchewan. Surface facilities and mine workings are therefore located on Provincial lands and the right to use and occupy lands is acquired under a surface lease from the Province of Saskatchewan. A surface lease is for a maximum of 33 years, as necessary, to allow the lessee to operate the mine and plant and thereafter to carry out the reclamation of the lands involved.

A portion of the RB2 claim block overlies an area of historic uranium mining, however, there does not appear to be any serious implications with respect to Red Rock's title. Within the property are the historic underground mine workings of the former Lake Cinch Mine, which comprised development on six levels accessed via a shaft to approximately 334 m and of the former Cenex Mine (approximately 350 m west of the Lake Cinch Mine), where a spiral decline was driven to a vertical depth of approximately 114.3 m (Tortosa, 1980). There is a tailing pond within the southern portion of mineral claim S107390 approximately 300 m west of Nero Lake, which is associated with the former Laredo mill. There are small (less than 100 m across and up to 30 m thick) waste dumps associated with the former Lake Cinch and

Cenex mines. There are some reported historic mineral resources at both the former Lake Cinch and Cenex mines (Tortosa, 1980).

With respect to the RB2 claim block, when the mineral claims were granted, there was no indication from the Government of Saskatchewan that Red Rock would be liable for any prior environmental issues or liabilities, if such exist, within the property.

At the time of the RPA 2009 Technical Report, the Saskatchewan Ministry of Environment was planning remediation work at the former Lake Cinch and Cenex mine workings. The work involved filling some old vent raises at both mines with waste rock and then capping them, and also clearing the existing Cenex portal, and refilling it with waste up to and just past the surface adit.

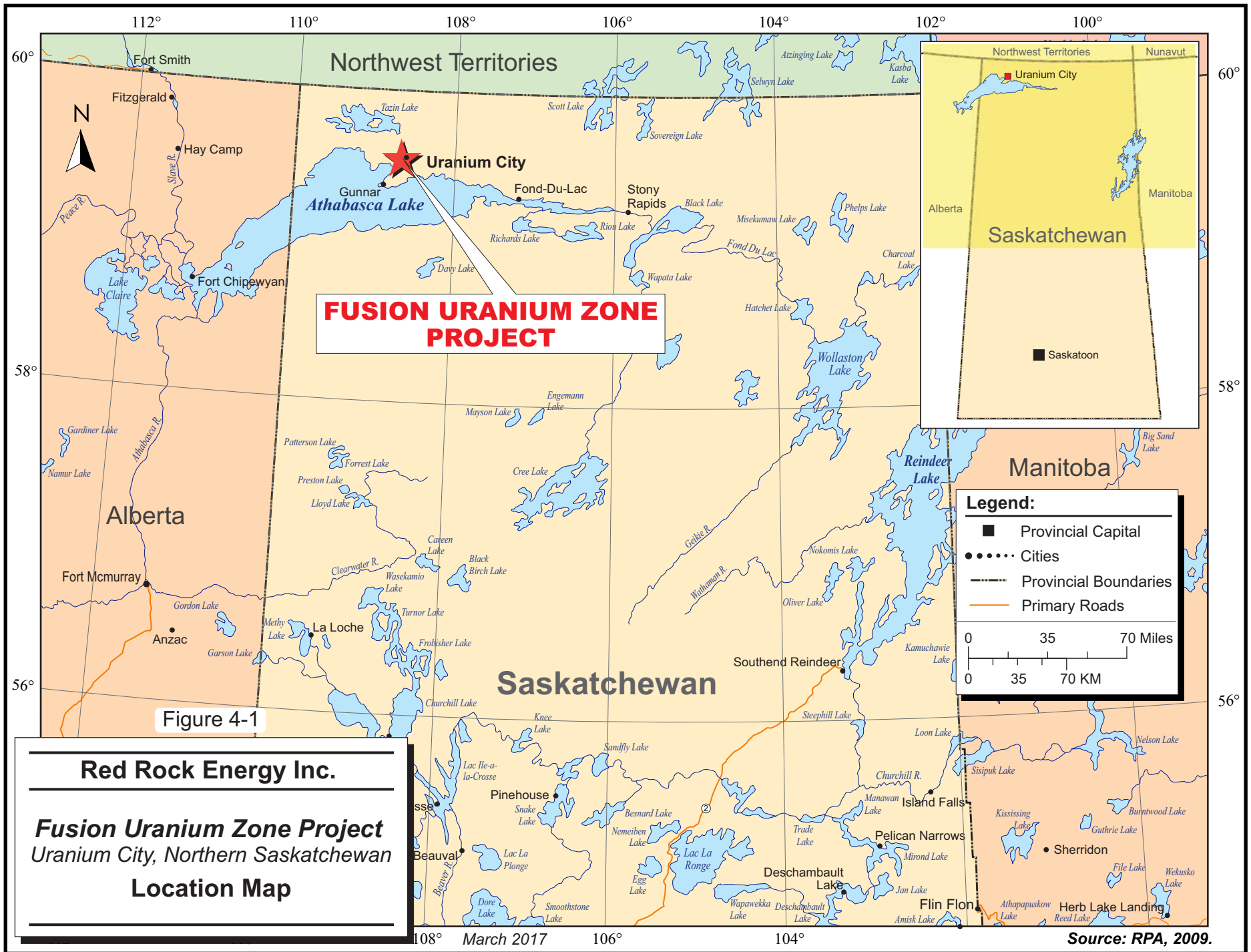
The Saskatchewan Research Council (SRC) manages Project CLEANS (Cleanup of Abandoned Northern Sites) which is a multimillion dollar project to assess and reclaim 37 abandoned mines sites in northern Saskatchewan. According to the SRC Project CLEANS website,<sup>2</sup> remediation was carried out at the Lake Cinch and Cenex mine sites in 2009, and the remediation status is listed as “in progress” as of 2016.

With respect to exploration activities within this reclamation area, it is Red Rock’s understanding that a claim owner can conduct non-destructive surface work such as geological examinations and detailed mapping, prospecting, surface rock sampling, physical gridding, systematic geophysical and geochemical surficial sampling, etc. If trenching, drilling or trail construction in support of such exploration work is contemplated, however, then approvals must be obtained from the Saskatchewan government.

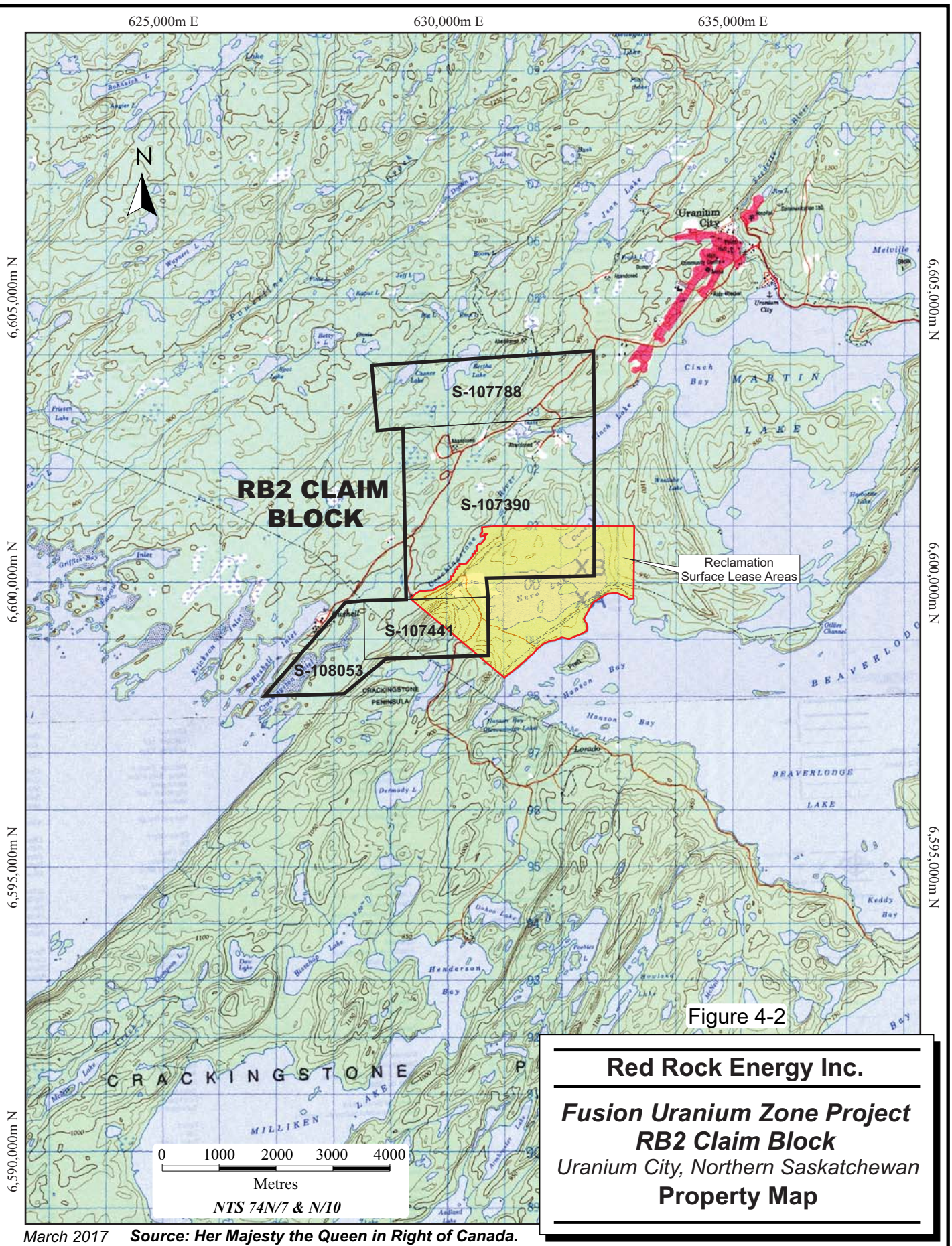
RPA is not aware of any environmental liabilities on the property. RPA is not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform the proposed work program on the property.

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<sup>2</sup> [www.src.sk.ca/about/featured-projects/pages/project-cleans.aspx](http://www.src.sk.ca/about/featured-projects/pages/project-cleans.aspx)









## **5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

### **ACCESSIBILITY**

Uranium City is located at 59°34'N latitude and 108°39'W longitude, and is serviced by an approximately 1,000 m all-weather runway with regularly scheduled flights from Saskatoon. Charter air service by fixed wing, including seasonal float and ski-equipped aircraft, and helicopter service are also available, from the northern communities of La Ronge and Stony Rapids, Saskatchewan, and from Fort McMurray, Alberta.

A road from Points North to Stony Rapids, Saskatchewan, allows for transportation of heavy equipment and supplies to Stony Rapids. Heavy equipment and supplies are transported by barge service operating from Stony Rapids to the communities along the shore of Lake Athabasca from mid-May to early October and via ice road from Stony Rapids for a very brief period in the winter months of February and early March.

The RB2 claim block is approximately three kilometres southwest of the centre of Uranium City. Most parts of the RB2 claim block, except the extreme northwest and southwest parts, are easily accessible by four-wheel drive road, then by foot.

### **CLIMATE**

The average temperature during the winter ranges from -8°C to -32°C, with extreme lows of -48°C having at times been recorded in January and February. The average temperature during the summer months ranges from 12°C to 21°C, with extreme highs of approximately 30°C and higher recorded at times from May to early September.

Average rainfall is approximately 225 mm with the largest amount of rainfall recorded from May to October. The average snowfall is 215 mm with the maximum amount recorded from November to January. The lakes generally freeze over by late November and may remain frozen until late May. The largest lakes in the area, other than Lake Athabasca, are Beaverlodge Lake and Tazin Lake.

## **LOCAL RESOURCES**

Uranium City was formerly a major regional centre, established during the original uranium boom in the area in the 1950s. At present, the Hamlet of Uranium City (population of approximately 100) still operates the municipal water and sewer, and electrical power is provided by the SaskPower grid from the hydroelectric dam at Waterloo and Wellington lakes west of Uranium City. Services currently available in Uranium City include: (a) bulk fuel, including selected aviation fuel at the local airport, (b) a gas station and auto service station, (c) a heavy equipment contractor, (d) a nursing station, (e) a grocery store, (f) bed and breakfast accommodation, (g) a town hall, and (h) postal service.

At the time of the 2009 RPA Technical Report, Red Rock owned four houses in Uranium City that were used to accommodate the geological and drill crews, as well as a building that was used by the drilling contractor to store parts and equipment. In addition, Red Rock rented the former laundromat which was used as a core logging and interim core storage facility. Currently, Red Rock owns some vacant lots in Uranium City that are used for core storage.

La Ronge is the nearest commercial/urban centre in Saskatchewan where most exploration supplies and services can be obtained. Mining personnel could be drawn from the general Saskatchewan populace that supplies the existing uranium mining operations. Adequate water for a mining operation could be obtained from the lakes on and around the property. In the event of a mining operation, there would be a need for local tailings disposal, possibly, though not assuredly, in areas with historical tailings piles.

## **INFRASTRUCTURE**

As noted above, the RB2 claim block is ideally close to the local SaskPower electrical grid, traversed by the all-weather road to Bushell, and adjacent to the hamlet of Uranium City (Figure 4-2).

## **PHYSIOGRAPHY**

The physiography of Beaverlodge Uranium District consists of relatively rugged shield topography with moderately high hills separated by intervening valleys and lakes. Local relief commonly ranges from a few tens of metres to, in places, one hundred metres or more. Elevations range from approximately 213 MASL at Black Bay to 457 MASL on some hills north of Bellegarde Lake, which is approximately five kilometres northwest of Uranium City.

Some local relevant elevations include Beaverlodge Lake at approximately 241 m, Martin Lake at approximately 257 m, and Lake Cinch at approximately 239 m.

The vegetation of the area is typical of the boreal forests of northern Saskatchewan, consisting of small, scattered trees on hilly areas of outcrop. The valleys are generally filled by glacial drift, which supports a denser growth of larger trees. The low-lying areas consist of muskeg swamps and bogs that contain predominately black spruce, grass, shrubs, and moss.



## 6 HISTORY

The RB2 claim block area has a complicated history of claim ownership and exploration. The following is excerpted from Beck (1969), Tremblay (1972), Tortosa (1980), and Saskatchewan assessment files.

**Lake Cinch Mine area:** The area just west of where the Crackingstone River drains out of Lake Cinch was first staked in 1948 as the “Jam group” for C. Swenson who sold it in 1950 to Cinch Lake Uranium Mines Ltd. From 1951 to 1953, the Jam group property was explored, including drilling, by Mining Corporation of Canada Ltd., acting for Cinch Lake Uranium Mines Ltd. In 1954, control of the Jam group was acquired by Violamac Mines Limited. The company changed its name to Lake Cinch Mines Limited and conducted exploration, including drilling from then until fall 1955. Shaft sinking at the Lake Cinch Mine was initiated in September 1955 and ore production started in May 1957. All ore mined was shipped for custom milling to the Laredo Mill located approximately three km to the south. The Lake Cinch Mine closed in May 1960. Tortosa (1980) stated that in 1968 New Cinch Mines Limited (formerly Lake Cinch Mines Limited) dewatered the Cinch Mine, checked the mine’s condition, and “*confirmed the ore reserves as outlined previously by prior work*”. The existing available records are unclear as to which corporate entity owned the Lake Cinch Mine Jam group from 1960 to 1968, although it is known that the property was owned separately from the Cenex Mine during this period.

**Cenex Mine area:** In 1949, Amax Athabasca Uranium Mines Limited (Amax Athabasca) acquired the ground to the west of the Jam group as concession CC-1, which included the present location of the Cenex Mine. From 1951 to 1953, Amax Athabasca explored its concession by diamond drilling. Pardee Amalgamated Mines Limited followed up the work by Amax Athabasca with further drilling. This exploration resulted in the discovery of the River uraniferous zone (also known as the 03 zone). The ground west of the Jam group lapsed in 1958 and was restaked by A.J.B. Nicholson. In 1965, the area was restaked and in 1966 was acquired by Enex Mines as ML5416.

**Lake Cinch – Cenex Property Amalgamation:** In 1969, the Enex Group merged with New Cinch Mines Limited under the name Gardex Mines Limited (Gardex) with the intention of developing the two properties (i.e., the Jam group and ML5416) jointly, using the Lake Cinch

Mine shaft (Tortosa, 1980). This intended reopening of the Lake Cinch workings, however, did not happen. Until 1969, the Lake Cinch and Cenex Mine areas were held by different owners and explored independently, even though the two properties are only a few hundreds of metres apart. Although Gardex consolidated the ground position in 1969, there apparently was no further exploration at the Lake Cinch – Cenex area until 1974 (Tortosa, 1980).

**Eldorado Nuclear Ltd. work at Lake Cinch – Cenex:** In 1974, Eldorado Nuclear Limited (ENL) purchased the property from Gardex and conducted drilling “*to confirm the Enex mineralized zones and estimated ore reserves*”. ENL, however, did not conduct any mining at either Cenex or Lake Cinch (Tortosa, 1980). In 1976, ENL optioned the property to New Joburke Exploration Limited, which in August 1977 changed its name to Cenex Ltd. (Cenex).

**Development of the Cenex Mine:** In 1978, Cenex sank a decline on the Cenex 03 (River) Zone to a vertical depth of about 114 m (375 ft), and commenced production, with the ore being shipped to the ENL mill at Eldorado. Production continued until early fall 1979 when a fire destroyed the powerhouse and Cenex was subsequently placed in receivership. It should be noted that Cenex production was entirely from the Cenex Mine workings, and although they apparently intended to access the former Lake Cinch Mine workings underground, this did not happen (Tortosa, 1980).

**Frame Contracting work at Lake Cinch – Cenex:** In 1980, A. Frame Contracting Ltd. (Frame Contracting) purchased the Cenex–Lake Cinch Mine site and stockpiled ore. Frame Contracting shipped the stockpiled ore to the ENL mill, however, it did not carry out any underground mining at either Lake Cinch or Cenex. The publicly available records in the Saskatchewan Assessment Work Catalogue indicate that no further work was done at the Lake Cinch–Cenex locale until the RB2 claim block was staked by Red Rock during 2004 and 2005.

## HISTORIC PRODUCTION

There has been historic production from the Lake Cinch and Cenex mines, located within the RB2 claim block to the southwest of the Fusion Zone.

At Lake Cinch Mine, Turek (1960, p. 5) stated that from May 1957, when mining commenced, to April 20, 1960 (Saskatchewan Mineral Development Index (SMDI) 1425a

states mining ceased May 1960), a total of approximately 142,078 tons (128,927 tonnes) of ore with an overall average grade of 0.257%  $U_3O_8$  for a total of approximately 730,301 lb  $U_3O_8$  were mined and hoisted to the surface.

At Cenex, SMDI 1425a (p. 6) states that between 1978 and October 1979, the Cenex Mine produced 712,375 lb  $U_3O_8$  (presumably mainly from the River, Breccia, and Shear zones). SMDI 1425a (p. 6) also states that as of June 9, 1979, the Lethbridge Zone (combined zones 03 and 04, a little west of the River Zone and not to be confused with the Leadridge Zone which is farther west) produced 855,429 lbs  $U_3O_8$ ; however, no tonnes or average grade are given. At present, the exact location of the Lethbridge Zone is uncertain based on the documents Red Rock has been able to assemble for the Cenex – Lake Cinch area, but apparently it was within the former Cenex Mine. Finally, Tortosa (1980, p. 22) suggested the overall average grade of the Cenex reserves was 0.22%  $U_3O_8$ . Based on this average grade and the reported pounds produced, the amount mined at Cenex (combined River, Breccia, Shear, and Lethbridge zones) would have been in the order of 356,319 tons (323,338 tonnes).

## HISTORIC RESOURCES

Table 6-1 was assembled by Red Rock from the various sources as indicated. In RPA's opinion, the various "reserves" as presented in Table 6-1 are relevant, as they indicate the potential for uranium mineralization. RPA cautions, however, that these historical estimates should not be relied upon.

**TABLE 6-1 LAKE CINCH-CENEX HISTORIC RESOURCES**  
**Red Rock Energy Inc – Fusion Uranium Zone**

Source and Date	'Reserves/Resources'	Estimated Pounds U <sub>3</sub> O <sub>8</sub>
May 1960; Lake Cinch Mines (At mine closure)	"Proven reserves": 32,473 tons (29,460 tonnes) at 0.196% U <sub>3</sub> O <sub>8</sub> "Probable reserves": 150,000 tons (136,085 tonnes) with an average grade of 0.23% U <sub>3</sub> O <sub>8</sub>	127,290  <u>690,000</u> 817,290 lb total
1976; Mining Corp Canada; Northern Miner (11/11/1976) and (03/02/1977)	300,000 tons (272,170 tonnes) of ore grading 0.2% U <sub>3</sub> O <sub>8</sub> (After 39% dilution; to the 1,000 feet (305 m) level in the Cinch Mine and to the 300 feet level (91.5 m) on the Cenex River Zone)	1,200,000
Trueman, 1976	This internal ENL memo estimates the Lake Cinch Mine Ore Reserves as being: Broken reserves: 4,600 T at 0.15% U <sub>3</sub> O <sub>8</sub> Pillars and Vein Extensions above 4 <sup>th</sup> Level: 16,900 T at 0.21% U <sub>3</sub> O <sub>8</sub> Undeveloped below 4 <sup>th</sup> Level and above 9 <sup>th</sup> Level: 150,000 T at 0.23% U <sub>3</sub> O <sub>8</sub>	13,800  70,980  <u>690,000</u> 774,780 lb total
August 1977; Eldorado Nuclear Limited	300,000 tons (272,170 tonnes) of reserves grading 0.2% U <sub>3</sub> O <sub>8</sub> (Including ore left in the Cinch Mine. This is estimated to 300 feet (91.5 m) on the Cenex property and 1,000 feet (305 m) at Cinch).	1,200,000 However, some of this would have been mined during the 1978-1979 operation of Cenex
Trueman, 1977, p. 7	121,900 tons (110,617 tonnes) of "inferred reserves" grading 0.20% U <sub>3</sub> O <sub>8</sub> at the Cenex 03 Zone.	487,600 lb However, some of this would have been mined during the 1978-1979 operation of Cenex
Tortosa, 1980 (There was no further mining at either the Lake Cinch or Cenex mines after October 1979)	Tortosa (1980, Table 1 on p. 25) reported the following resources still remain at: <b>Cinch:</b> 250,872 tons (227,651 tonnes) grading 0.23% U <sub>3</sub> O <sub>8</sub> (after Roscoe, 1967) <b>Cenex:</b> 34,132 tons (30,973 tonnes) grading 0.178% U <sub>3</sub> O <sub>8</sub> (Tortosa, <i>ibid</i> , states "after Paxton, 1979", but in Paxton, 1979 he tabulates the total "reserves" as of Aug. 9, 1979 as being 22,132 tons at 0.173% U <sub>3</sub> O <sub>8</sub> or about 76,576 lbs U <sub>3</sub> O <sub>8</sub> )	1,154,011    <u>119,462</u> 1,273,473 lb total

A Mineral Resource estimate for the Fusion Uranium Zone was documented in the 2009 Scott Wilson RPA Technical Report and is reproduced in Table 6-2 at a cut-off grade of 0.075% U<sub>3</sub>O<sub>8</sub>. RPA is not treating the 2009 Mineral Resource estimate as a current Mineral Resource estimate. Under current cost and price assumptions, the cut-off grade would be higher than 0.10% U<sub>3</sub>O<sub>8</sub>, the highest cut-off grade shown in Table 17-3 of the Scott Wilson

RPA 2009 Technical Report. Because the Fusion Zone mineralization is very sensitive to cut-off grade, the tonnage and, to a lesser extent, the contained pounds of  $U_3O_8$ , decrease significantly at higher cut-off grades, such that it is not meaningful to report a current Mineral Resource.

**TABLE 6-2 MINERAL RESOURCE ESTIMATE – APRIL 21, 2009**  
**Red Rock Energy Inc. – Fusion Zone Project**

Zone	Cut-off % $U_3O_8$	Inferred Resources		
		Tonnes x 1,000	% $U_3O_8$	Contained $U_3O_8$ lbs x 1,000
MOF-1	0.075	165	0.162	591
MOF-2	0.075	23	0.100	51
<b>Total</b>	<b>0.075</b>	<b>188</b>	<b>0.155</b>	<b>641</b>

Source: Scott Wilson RPA (2009)

Notes:

1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are estimated at a cut-off grade of 0.075%  $U_3O_8$  within wireframe shells of the Main Ore Fault (MOF)-1 and MOF-2 zones.
3. Mineral Resources are estimated using an average long-term uranium price of US\$70/lb  $U_3O_8$  and an exchange rate of US\$1.00=C\$1.20.
4. The Mineral Resource estimate was prepared using Gemcom software. A block model was developed and grades interpolated using inverse distance cubed.
5. A density value of 2.67 tonnes/m<sup>3</sup> was used.
6. Figures may not add exactly due to rounding.

## 7 GEOLOGICAL SETTING AND MINERALIZATION

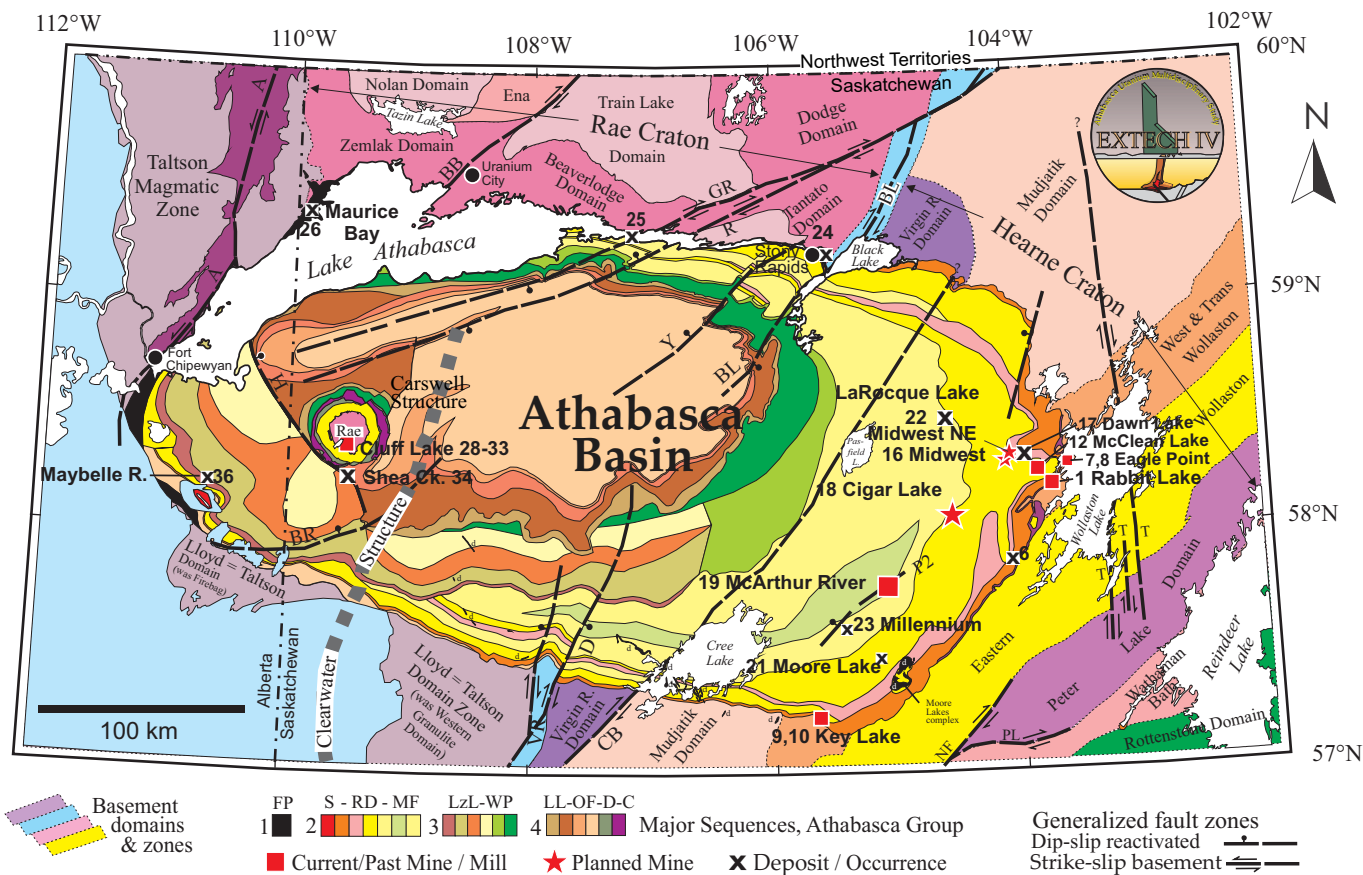
### REGIONAL GEOLOGY

The Uranium City area of northern Saskatchewan is located in the south-central Rae Subprovince of the Western Churchill Province. The general area is one of multiple basement domains recording a protracted and complex geological evolution that includes multiple phases of granitoid emplacement, deposition of volcanoclastic successions, metamorphism and tectonism that spans 1.6 billion years from Mesoarchean to Mesoproterozoic. Uranium City proper is on the western edge of the Beaverlodge Domain, adjacent to the Black Bay Fault which defines the boundary with the Zemlak Domain to the west.

The regional geology map is shown in Figure 7-1.

### LOCAL GEOLOGY

The Beaverlodge District recently has been subdivided into the Zemlak Domain to the west of the Black Bay Fault, and the Beaverlodge and Nevins Lake domains to the east (Ashton et al., 2004b, 2005, 2006, and 2007a, b). The Nevins Lake Block consists of the ca. 3.0 Ga and possibly much older Archean granitic basement that is uncomfortably overlain by the Paleoproterozoic Murmac Bay Group (formerly called Tazin Group). These rocks are cut by a suite of ca. 2.3 Ga mafic to felsic meta-plutonic rocks of the Arrowsmith Orogeny (Hartlaub et al., 2007) as well as a younger suite of ca. 1.9 Ga syntectonic plutons (Hartlaub et al., 2005). All of these rocks are uncomfortably overlain by the Thluicho Lake Group, which was followed by the somewhat younger Martin Group, although only the latter is exposed in the RB2 mineral claim block. All of the above strata are cut by Proterozoic mafic dykes (Tremblay, 1972), at least some of which may be feeders to the mafic volcanics within the Martin Group. These rocks are, in turn, unconformably overlain by early Mesoproterozoic, unmetamorphosed, fluvial sandstones of the Athabasca Group; however, basal Athabasca Group is only known to crop out on islands just south of the Crackingstone Peninsula.



Regional geology of the Athabasca Basin region in northern Saskatchewan and Alberta. Deposits and significant occurrences are numbered as listed in Table 1 and detailed in Gandhi (2005). After Card et al. (2003, 2005a, b), Portella and Annesley (2000a), Ramaekers et al. (2005b) and Thomas et al. (2002). Sequences (from Ramaekers et al., 2005b) are summarized in Table 4. Generalized fault zones (these include multiple ductile movements before deposition of Athabasca Group and brittle transcurrent and dip-slip movements during and after deposition) are: A = Allan; BB = Black Bay; BL = Black Lake; BR = Beatty River; CB = Cable Bay; D = Dufferin; GR = Grease River; H = Harrison; NF = Needle Falls; PL = Parker Lake; P2 = "P2 Fault" at McArthur River; R = Robillard; T = Tabbemor; VR = Virgin River Shear Zone (Dufferin is one named fault of many in VR); Y = Yaworski. Cross Sections of Figures 5A and 5B are located along dotted lines labelled NW - SE (along the basin axis) and E - W (south of Key Lake). The western Wollaston domain and the Wollaston - Mudjatik transition of Portella and Annesley (2000a, b) are combined here as "West + trans. Wollaston".

Figure 7-1

Red Rock Energy Inc.

**Fusion Uranium Zone Project**  
Uranium City, Northern Saskatchewan  
**Regional Geology**

Source: After GSC - Mineral Deposits of Canada,  
Unconformity Associated Uranium Deposits.

March 2017



The geological history of the Beaverlodge Domain described below is mainly taken from Ashton et al., 2000. The oldest unit, basement granite, comprises homogeneous, medium-grained leucocratic to locally mesocratic granitoid rocks that are variably strained, ranging from weakly foliated to mylonitic (Persons, 1988; Ashton et al., 2000a; Hartlaub et al., 2004a, b). The unconformably overlying Murmac Bay Group, of early Paleoproterozoic age (Ashton et al., 2004a) comprises a possible intracratonic basin sequence of weakly to highly metamorphosed supracrustal rocks. The base of the Murmac Bay Group rocks consists of orthoquartzite overlain by thick sheets of meta-basalt interbedded with rare iron formation, dolostone, and serpentinized ultramafic intrusive rocks with komatiitic affinities (Hartlaub and Ashton, 1998). Overlying the basal sequence of Murmac Bay Group is a thick package of pelite and psammite. The highly altered and strained rocks of the Murmac Bay Group were initially termed the Tazin Group by Tremblay (1972), who established a stratigraphic succession based on the assumption that gneissic and granitic units were the result of in situ granitization of a sedimentary succession and that layering in granite gneiss represented bedding. However, the entire sequence from Tremblay's (1972) units 1 to 19 has been assigned to Murmac Bay Group by Ashton et al. (2000a).

Coeval with deposition of the Murmac Bay Group, there was an early thermotectonic event (D1, M1), during which the Murmac Bay Group was intruded extensively by granitoid and gabbroic rocks with ca. 2.3 Ga ages (Hartlaub et al., 2007). Two closely spaced regional high-grade metamorphic (M2 and M3) and deformational (D2 and D3) events followed at ca. 1.93 and 1.90 Ga (Hartlaub, 2004). A widespread suite of crustally derived plutons was broadly coeval with these M2/D2 and M3/D3 events (Ashton et al., 2002; Hartlaub et al., 2005). Subsequently the emplacement of east-west trending diabase dykes coincided with a period of widespread brittle and brittle-ductile deformation (D4, M4). Uplift and erosion along these extensive deformation zones led to deposition of the Martin Group. The cataclastic zones that developed during this time are important hosts for later, epigenetic uranium mineralization deposited mainly in the period  $1,780 \pm 20$  Ma (Koeppel, 1968).

The ca. 1.82 Ga Martin Group (Ashton et al., 2004a) unconformably overlies all older rocks, and consists of weakly deformed, but essentially unmetamorphosed clastic sediments and mafic volcanic rocks. Lithologies present in the Martin Group include conglomerate, arkose, siltstone, andesite, basalt flows and gabbro sills (Trueman and Fortuna, 1976). Tremblay (1972) subdivided the unmetamorphosed Martin Group into seven units that include: (a) basal conglomerate followed by siltstone and arkose (units 20 to 22); (b) middle andesitic to



basaltic volcanic extrusive sequence (unit 23) with, in places, gabbro sills; and (c) at the top, another sequence of arkose, conglomerate and siltstones (units 24 to 26). Tremblay (1972) suggested the Martin Group was deposited under continental, not marine, conditions, and the topography at that time comprised a rugged weathered surface. The basal conglomerate is well consolidated, reddish, clast-supported, and with unsorted, angular to subangular clasts in a red arkosic matrix.

A series of late northeast trending folds (D5) deform the Martin Group, and are believed to be coeval with the Trans-Hudson Orogen ca. 1.83-1.81 Ga (Hartlaub, 2004a, b). The entire above succession is unconformably overlain by the Athabasca Group, a mostly undeformed, unmetamorphosed, fluvial and marine clastic sequence dominated by quartz sandstones and deposited in Paleo- to Mesoproterozoic times (ca. 1,700 Ma).

## PROPERTY GEOLOGY

The RB2 claim block lies astride the Black Bay Fault (Figure 7-2) and as such also straddles structural domains A, B, and C as defined by Kraus and Ashton (2000) based on variation in bulk deformation paths and deformation histories in the area. They define five generations of structures, F1 to F5, and four related compressive deformation events, D1 to D4, with which three metamorphic events, M1 to M3, are associated. The bedrock geology of the RB2 claim block portrays a convoluted history.

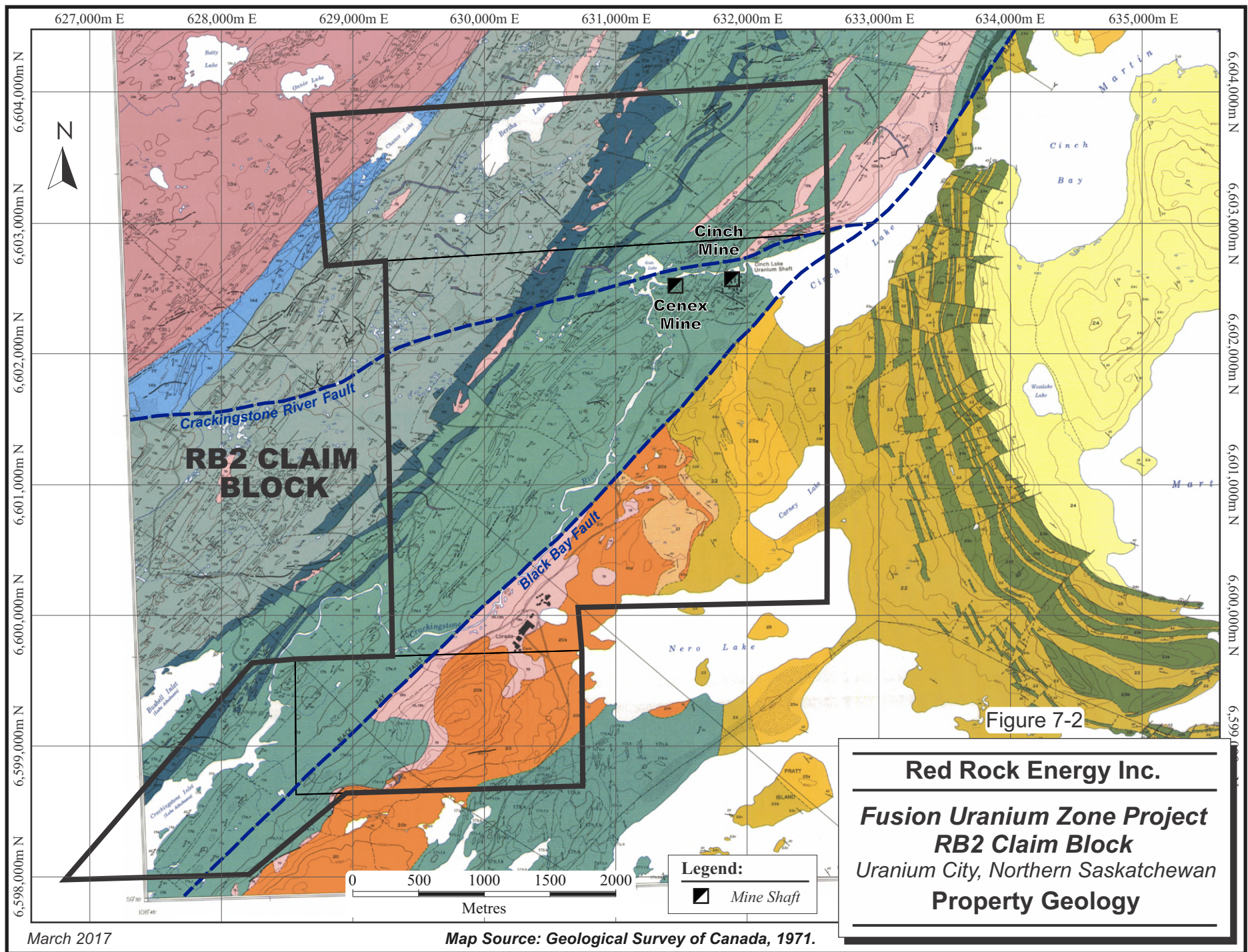
The most easterly domain, A, underlies the southeastern extreme of the property and includes Archean basement, Murmac Bay Group and intrusive rocks. Domain B, which underlies most of the RB2 claim block, is the area west of the Black Bay Fault and hosts essentially the same rocks as Domain A, but it has experienced much higher F3 strain such that Macdonald and Slimmon (1985) referred to it as the “Black Bay straight belt”. The Black Bay straight belt constitutes a 10+ km wide, northeast trending corridor of intensely deformed and attenuated Murmac Bay Group, and both older and younger intrusive rocks. In Domain B, M1 and M2 metamorphic grades are indistinguishable, but the combined grade is characterized by partial melting and leucogranite injection. Domain C, bounded on the west by the Black Bay Fault and on the east by Domain A, is a lithological domain, and it comprises only Martin Group sedimentary rocks, and both extrusive and intrusive mafic volcanic rocks. These rocks were deposited after F2 and M2, possibly during F3, and thus do not record the early deformation history of the Murmac Bay Group.

That portion of the RB2 claim block in Domain B encompasses highly strained and metasomatized rocks. The evident geological relationships are complex due to intense folding, widespread partial melting, locally intense hematization, and repeated and extensive ductile to cataclastic deformation. Because of deformation and hematitic alteration, the probably originally diverse sequence of rocks has lost much of its identity and now resembles fairly homogeneous leucocratic granitoids or undifferentiated quartzofeldspathic rocks (Ashton et al., 2000b). The original protoliths have been reduced to crushed cataclasite or mylonite. No unequivocal top determinations were made by Tremblay (1972) within Domain B and the lithologies generally have a steeply dipping foliation or gneissic layering. The general structure is monoclinial with a steep dip either to the southeast or northwest (Tremblay, 1972; Ashton et al., 2000a).

The geological maps in Beck (1969), Tremblay (1972) and Tortosa (1980, 1983) indicate that the Lake Cinch–Cenex region is structurally complex. West of the Black Bay Fault, there exists a pervasive mylonitic to cataclastic fabric along the Black Bay straight belt, superimposed on which are numerous brittle-ductile to brittle faults, including the first-order northeasterly trending Black Bay and Boom Lake faults, and several second-order northeasterly trending faults such as the Lake Cinch Main Ore Fault (MOF), Lake Cinch MOF Extension, Leadridge, and Leadridge Extension faults, with the two Extension faults being south of the Crackingstone River Fault (CRF). These older faults are offset in places by subsequent major east trending faults, such as the CRF. Finally, there are numerous fourth-order faults that trend west-northwesterly, westerly, and west-southwesterly.

The various reports and documents that describe the distribution of uraniferous zones at the Lake Cinch–Cenex region indicate that many or most of the important uranium zones occur along the later secondary to fourth-order structures. As currently understood, the Cenex, Lake Cinch and Fusion zones are located a few hundreds of metres west of the Black Bay Fault, proximal to the intersection of the CRF with the Black Bay Fault. Tortosa (1980) stated, “*Both the Cinch and Cenex ore bodies occur in northwest trending, southwest dipping fractures and breccia zones and are associated with northeast trending, southeast dipping shear zones.*”





## MINERALIZATION

Drilling to date on the RB2 claim block has targeted the northeast extension of the Main Ore Fault (MOF) zone of the former Cinch Lake Mine, just beyond the northeast limit of the mine workings (Figure 7-3). Interestingly, two roughly parallel mineralized fault structures, referred to as the Fusion Zone, have been intersected, each striking roughly 45° and dipping on average 50° to the southeast. Whereas Turek (1962) implies that there was one single ore zone along the MOF at the Cinch Mine, at the Fusion Zone there may be two, the most northerly of which is termed MOF-1 and the southerly, MOF-2 (Figure 7-4). These features both average 1.9 m in thickness and are separated by 1 m to 8 m or about 6 m on average. Although planar attitudes are ascribed to MOF-1 and MOF-2, they both may be slightly concave to the southeast because of shallowing dips on both features at depth. There are 30 drill intercepts through MOF-1 and 37 through MOF-2 and pierce point spacings range from 25 m to 100 m. The apparent sheet-like mineralization indicated by these 67 pierce points extends roughly 300 m along a northeast strike and for 460 m down a southeast dip.

Mineralization encountered is typically fine grained and subtle but clearly identifiable with a handheld scintillometer and always associated with late brittle fracturing of an originally mylonitized rock. Uranium-mineralized rock is distinctively reddish, mainly from hematization, and commonly carbonate-veined. Extremely fine grained pitchblende/uraninite is the principal radioactive mineral present, intimately associated with hematite and usually in association with calcite gangue. The mineralization is typically disseminated in the hematite-altered rock or concentrated as black, sooty material along late brittle fractures. The fine, black mineralization can also coat or outline centimetre-sized fragments in brecciated rock. The mineralization is heterogeneous by nature, however, no erratic high grade material such as massive uraninite veins has been encountered. Mineralized intercepts in core can range from 1.5 m to 5.0 m.

Mineralization along these two subparallel faults (i.e., MOF-1 and MOF-2) appears to be reasonably continuous in the area drilled, although the drill spacing is variable, largely due to the very uneven topography at this locale which restricts drill pad locations and the downhole curvature of holes. With reference to Section 23 Adjacent Properties, Turek (1962) observed that in the original Cinch Lake workings, uranium ore was not entirely co-extensive with the MOF but occurred in ore shoots along it, and also in cross-fractures splaying off the MOF zone. With respect to mineralization along the MOF-1 and MOF-2, Red Rock geologists



believe both these uranium zones are within the confines of the greater MOF structural zone, however, further drilling will be needed to provide confirmation of this interpretation, as well as the correlation of these two zones with the uranium zones mined along the MOF zone at the former Lake Cinch Mine to the southwest.

It must be noted that approximately two-thirds of the ore mined at Cinch Lake was recovered from the southeast to east trending cross fractures, which reasonably might be expected to be associated with and/or crosscut both MOF-1 and MOF-2. The GEMCOM 3D configuration of drill holes was reviewed to see if mineralized cross fractures could be identified, but no such features were clearly evident. Most of the recent drill holes, however, were targeted on an azimuth of 310°, which is not an optimum direction to identify structures trending east to southeast.

In addition to the uranium mineralization mined at the past producing New Cinch and Cenex mines, and outlined by drilling at the Fusion Zone, there are a number of other uranium-bearing zones on the RB2 property. These have been explored to varying degrees mostly in the 1950s, 1960s, and 1970s by sampling and diamond drilling, and include (Olson et al 2009):

- Leadridge Zone
- Early Bird Zone
- Amax Athabasca Zone #54
- Amax Athabasca Zones #59, #60, #103, and #108
- Amax Concession Zones #55 and #105
- Mor Zone
- Chance Lake Zone
- Anuwon – Whiz Zone

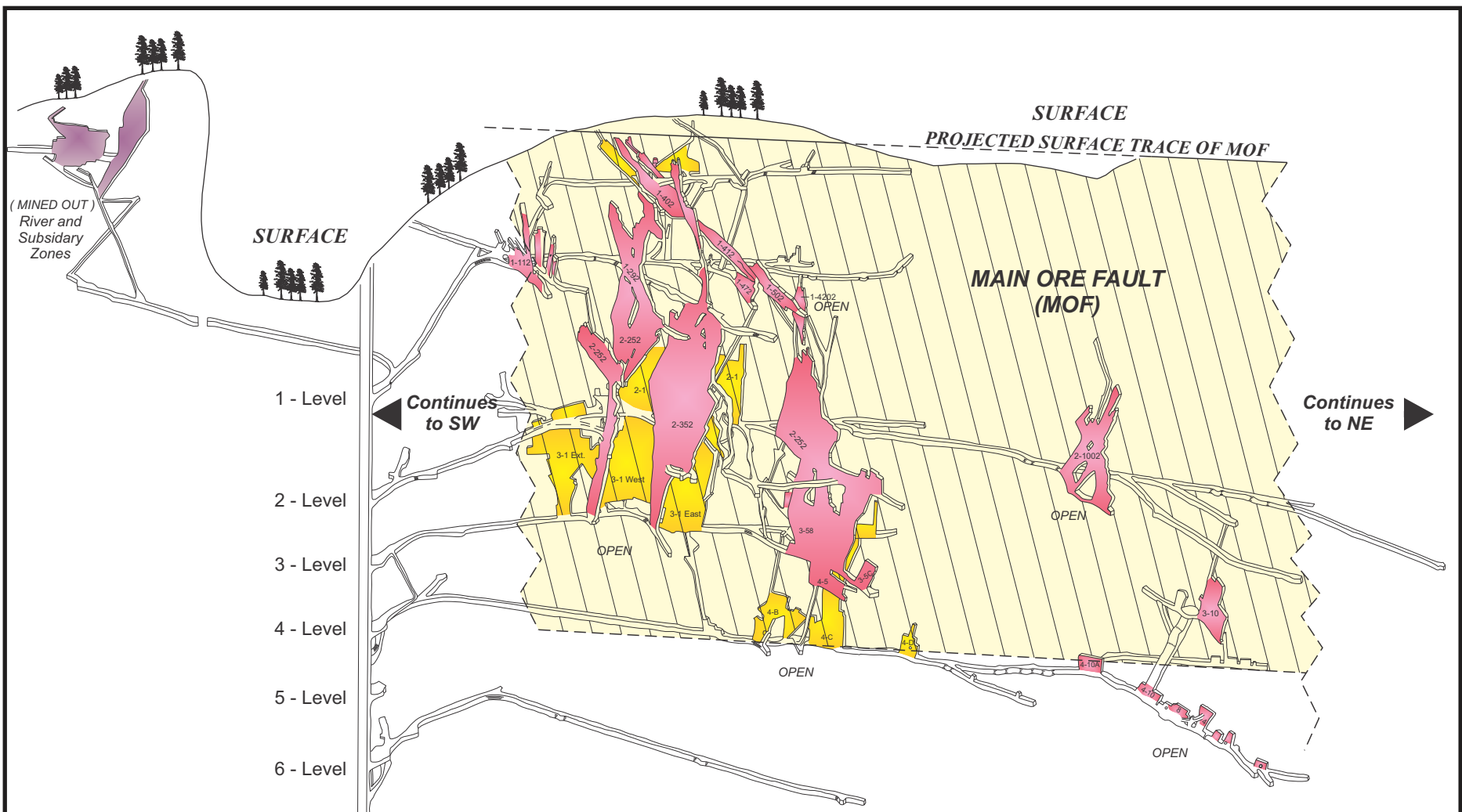


Figure 7-3

**Red Rock Energy Inc.**

***Fusion Uranium Zone Project***  
 Uranium City, Northern Saskatchewan  
**Three Dimensional Drawing of  
 Cinch Mine Workings**

**Legend:**

- Main Ore Fault Stopes
- Cross Fracture Stopes
- River & Subsidiary Stopes

*Direction of View: North at 30°*

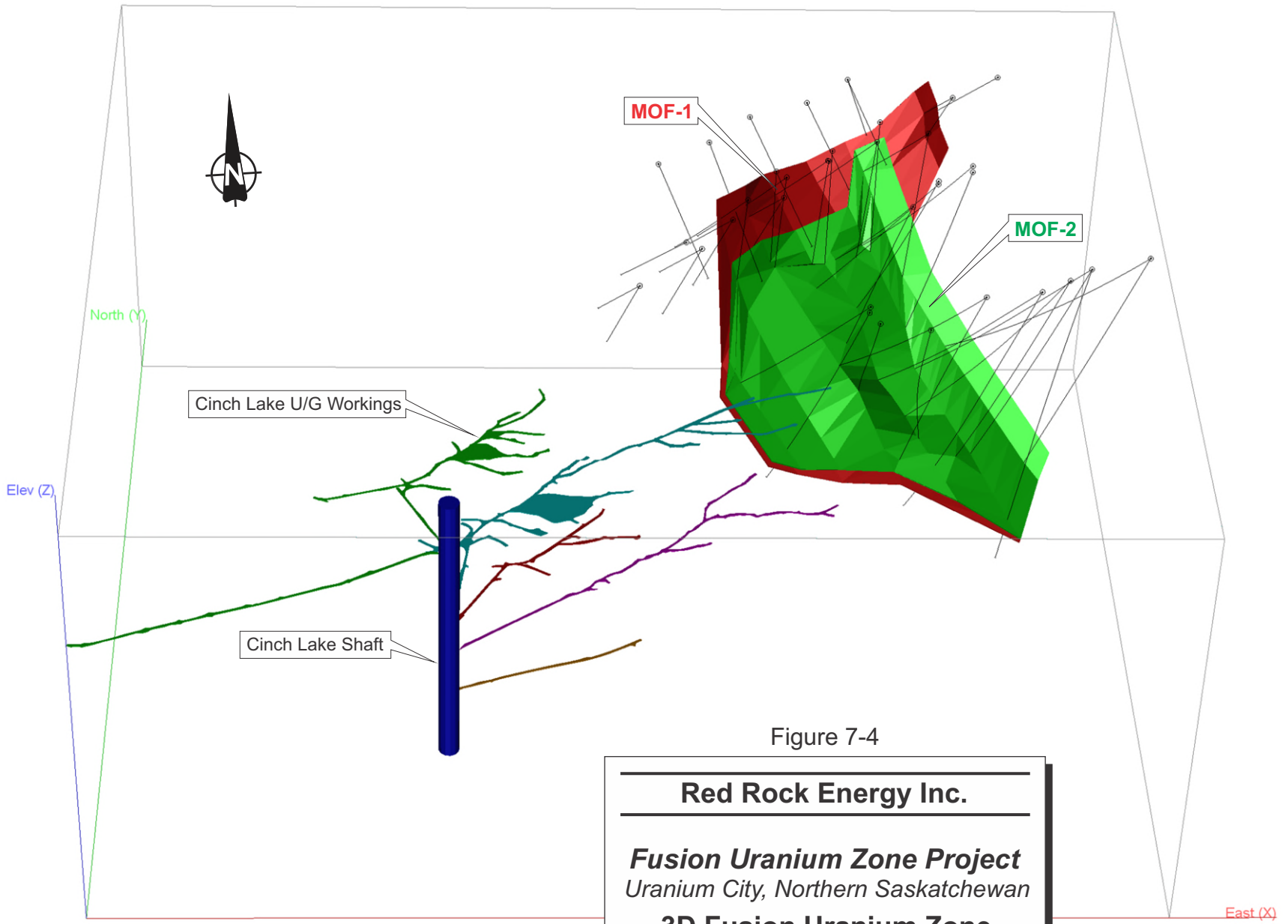


Figure 7-4

## 8 DEPOSIT TYPES

There are at least three distinct types of uranium deposits within the Beaverlodge Uranium District: syngenetic, supergene, and epigenetic deposits (Robinson, 1955). Of the three deposit types, only epigenetic (e.g., Ace-Fay-Verna deposits) and perhaps supergene (e.g., Bolger) maintain relevance for their economic significance. In contrast, the syngenetic uranium deposits tend to have erratic and low radioactive mineral content (Robinson, 1955).

Epigenetic deposits in the Beaverlodge Uranium District are typically classified as monometallic, fracture or breccia fillings, disseminations, or commonly some combination thereof. Fracture filling deposits typically have massive or sooty pitchblende or pitchblende grains and patches scattered through vein material, which commonly is composed of quartz, carbonate and chlorite. The fractures may be straight fissures or tiny irregular cracks. In places, the tiny irregular cracks are so abundant and closely spaced that they form a tight networks of veinlets and stockworks.

The currently known epigenetic deposits within the Beaverlodge District are: (1) disseminations along fault or shear zones, (2) breccia deposits, and (3) vein type deposits. The target deposit sought on the RB2 claim block is fault related and has some combination of the attributes of these three types of epigenetic deposits. Large deposits made up of entirely disseminated pitchblende are rare in the district, although such are reported to occur along the Lake Cinch MOF within Red Rock's RB2 block. Breccia and vein-type zones are common in the uranium deposits spatially associated with the St. Louis Fault and were best exemplified by ENL's Ace-Fay-Verna deposits. The following is taken from Smith (1986), updated by current stratigraphic nomenclature usage.

The Ace-Fay-Verna Mine consists of pitchblende, ±brannerite (at depth), orebodies spatially associated with both sides of a regional east-west structure, the St. Louis Fault. The orebodies in the footwall (Ace and Fay) are elongated deposits of two types raking steeply to the southwest along the 50° south dip of the fault. One type consists of networks of fractures and veins filled with pitchblende, calcite, and quartz in chlorite, epidote-altered, mylonitized mica schists, and amphibolites of the early Paleoproterozoic Murmac Bay Group (formerly referred to as Middle Aphebian Tazin Group). The other type is comprised of fragments of mylonitized metasomatic quartz-feldspar granite of Late Middle Paleoproterozoic age



cemented with a matrix of pitchblende, brannerite, calcite, and some quartz. The vein networks occur en echelon in the footwall of the breccia orebodies that, in part, are capped by the mud gouge of the St. Louis Fault. In other places, the breccia orebodies are overlain by basal conglomerates, grits and arkoses of the Martin Formation, which itself immediately underlies the plane of the fault.

Orebodies in the hanging wall (Verna) of the St. Louis Fault are a series of irregular, tabular deposits lying within a tightly overturned syncline of Murmac Bay Group mica schists, amphibolites, and siliceous mylonites. They consist of pitchblende associated with calcite-filled fractures grouped into zones and deposits displaying stratabound habits within individual rock types.

## 9 EXPLORATION

Red Rock has explored the RB2 claim block from 2005 to 2008 as outlined below.

**2005 and 2006:** Airborne magnetic and electromagnetic surveys were flown over the RB2 claim block. The geophysical survey was completed in August 2005 by Geotech Limited (2005), and a brief interpretive geophysical report was done in early 2006 (Lyatsky, 2006). In addition to this work, in early fall 2005, selected ground work was done on the RB2 block to establish more precise locations for the claim corner posts and selected drill hole collars, and to evaluate whether any of the historic physical grids could be re-established. Preliminary acquisition of historic data was begun.

**2007:** In early 2007, an ongoing GIS compilation of selected data was initiated and a total of 40.1 line km of physical gridding was done within the central part of the RB2 claim block.

**2008:** From February 4 to November 26, 2008, a total of 11,611.3 m was drilled in 42 holes near the former Lake Cinch and Cenex mines (Olson et al., 2009). Geological examinations and semi-detailed mapping was conducted within the central part of the RB2 claim block (Thompson, 2008).

### EXPLORATION POTENTIAL

RPA has estimated a range of potential tonnes and grade of an exploration target for the Fusion Zone based on results of drilling to 2008 and other information such as past production from the Lake Cinch and Cenex mines. The Fusion Zone exploration target has a potential tonnage range of 100,000 t to 200,000 t and a potential grade range of 0.20%  $U_3O_8$  to 0.25%  $U_3O_8$ , for a potential range in contained  $U_3O_8$  of 440,000 lb to 1,100,000 lb (Table 9-1). This potential tonnage, grade, and contained  $U_3O_8$  is conceptual in nature, there has been insufficient exploration to define a Mineral Resource, and it is uncertain if further exploration will result in the target being delineated as a Mineral Resource.

The potential tonnage and grade for the low end of the range is based on the 2009 tonnage and grade estimate, which is no longer current, at the 0.10%  $U_3O_8$  cut-off grade (Scott Wilson RPA 2009 Table 17-3). The high end of the potential tonnage range is based on

doubling the strike length of the Fusion Zone, which is open to the northeast. The high end of the potential grade range is based on the weighted average of the intersections listed in Section 10 (see Table 10-1) with grade greater than 0.10%  $U_3O_8$ , and on the historical average grade of 0.26%  $U_3O_8$  at the Lake Cinch Mine (see Section 6 History and Section 23 Adjacent Properties).

**TABLE 9-1 FUSION ZONE EXPLORATION TARGET ESTIMATE**

**Red Rock Energy Inc.– Fusion Zone Project**

**Potential Ranges**

	<b>Tonnes</b>	<b>Grade <math>U_3O_8</math>%</b>	<b>Contained lb <math>U_3O_8</math></b>
Low end of range	100,000	0.20%	440,000
High end of range	200,000	0.25%	1,100,000

## 10 DRILLING

### RB2 DRILLING

Diamond drilling on the RB2 claim block was contracted to Silverton Drilling of Smithers, British Columbia. One Zinex Mining Corp. model A5 wireline diamond drill was used having a depth capability of 1,300 m. Holes were cased NW into bedrock and drilled NQ size (47 mm) to depth. Holes were spotted on a UTM grid (NAD 83, Zone 12N) and collar sites were surveyed by differential GPS. The three dimensional location of all Red Rock holes was determined using a Reflex EZ-Shot downhole survey instrument in single shot mode which took dip and azimuth readings every 50 m to 100 m and at the bottom of the hole.

On the RB2 claim block, Red Rock drilled a total of 11,611.3 m in 42 holes from February 4 to November 26, 2008. This total includes 9,490.1 m in 33 holes drilled to explore the Lake Cinch Main Ore Fault east of the former underground Lake Cinch Mine workings (specifically holes 08RB2-01 to 08RB2-27 and 08RB2-37 to 08RB2-42, including hole 08RB2-06A which had to be abandoned at 19 m due to poor ground conditions). As well, 2,121.2 m in nine holes were drilled to test the River Zone at and near the former Cenex Mine (specifically holes 08RB2-28 to 08RB2-36). All casings were pulled and a wooden marker inscribed with the hole number was inserted in the hole.

Red Rock probed its drill holes with a BGR-01 Gamma Ray Probe, essentially a scintillometer employing a thallium-activated sodium iodide crystal. Of the various data collected, Red Rock relied on the total counts collected as the probe is lowered down hole at 8 m to 10 m per minute and then raised at an approximate average up-speed of 5 m per minute. Only the up-hole readings are used and are plotted in profile on Red Rocks drill sections. Reliable gamma ray probe data are available for 40 of the 42 holes drilled to date. Red Rock used the gamma ray probe primarily as an exploration and confirmatory tool for radioactivity measured separately on the core and to guide core sampling. Red Rock did not use the gamma ray probe data to estimate equivalent  $U_3O_8$  ( $eU_3O_8$ ) grades across an interval in drill holes because core recovery has averaged 99+% for most holes and core was available for assay.

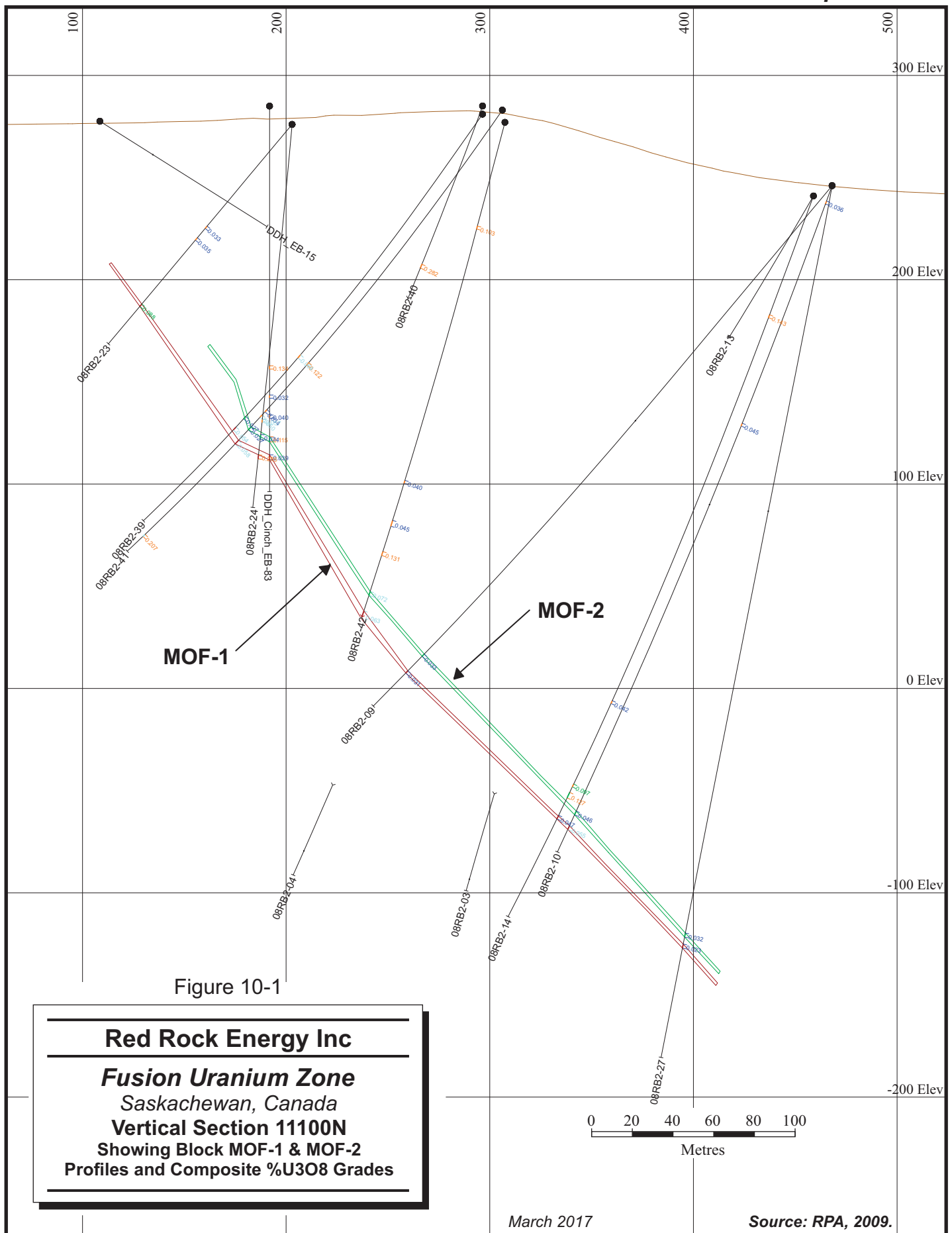
From the above noted drilling, a total of 2,285 core samples were submitted to Loring Laboratories Ltd. (Loring) in Calgary, Alberta for  $U_3O_8$  analyses. Following logging, radioactive intercepts were identified using a handheld scintillometer (SRAT SPP2N). Sample intervals ranged from 0.1 m to 1.0 m but were generally 0.40 m to 0.50 m.

Table 10-1 lists the best intersections from holes drilled into MOF-1 and MOF-2 of the Fusion Zone to 2008. No drilling has been carried out since that time. Figure 10-1 is a drill section through the Fusion Uranium Zone showing some of the 2008 and earlier drill holes and the interpreted MOF-1 and MOF-2 zones.

**TABLE 10-1 SIGNIFICANT DRILL HOLE INTERSECTIONS**  
**Red Rock Energy Inc.– Fusion Zone Project**

Drill Hole	From (m)	To (m)	Length (m)	Zone	True Thickness (m)	$U_3O_8$ % Uncut	$U_3O_8$ % Cut to 1%
DDH-43 <sup>1</sup>	90.67	93.72	3.05	MOF-1	2.76	1.132	0.492
08RB2-24	162.50	164.50	2.00	MOF-1	1.44	0.490	0.285
08RB2-13	313.00	318.50	5.50	MOF-1	5.40	0.543	0.248
DDH-42 <sup>1</sup>	74.06	76.20	2.14	MOF-1	2.02	0.210	0.210
25 Jim Claim <sup>1</sup>	94.79	96.62	1.83	MOF-1	1.73	0.184	0.184
08RB2-21	94.00	96.50	2.50	MOF-1	2.47	0.122	0.122
08RB2-03	314.20	320.20	6.00	MOF-2	4.37	0.130	0.130
08RB2-14	316.00	319.00	3.00	MOF-2	2.72	0.127	0.127
Cinch EB-83 <sup>1</sup>	161.84	164.29	2.45	MOF-2	1.57	0.115	0.115
08RB2-22	136.00	140.50	4.50	MOF-2	3.22	0.079	0.079
08RB2-07	290.00	292.50	2.50	MOF-2	2.48	0.078	0.078
08RB2-42	239.00	241.00	2.00	MOF-2	1.69	0.072	0.072

<sup>1</sup> Identifies holes drilled by prior operators, and not by Red Rock during 2008.



## DRILL CORE SAMPLING

The rocks drilled on the RB2 claim block now resemble fairly homogeneous leucocratic granitoids or undifferentiated foliated to locally gneissic quartzofeldspathic rocks (Ashton et al., 2000b) as a result of the extensive deformation and hematitic alteration. The resulting rock sequence is nonetheless very competent and drill core recovery is recorded as excellent, exceeding 99% for most holes.

Drill core from the RB2 property is descriptively logged and marked for sampling at the Red Rock core storage facility in Uranium City. Initially, the core is fitted together and measured to check the driller's end-of-run (3 m) blocks and per cent core recovery. The drill logging geologist then marks a vertical line in indelible carpenter pencil along the upper side of each row of core with a cross line indicating each metre interval. The metreage number is then written on the adjacent portion of the core box. Once the core is fitted together and the metre intervals marked on the box, the average and maximum radioactivity is systematically recorded as counts per second (cps) for each one metre interval of core as determined using a SRAT SPP2N scintillometer. Intervals with very high radioactivity were removed from the context of the core box to determine the cps.

The core is then descriptively logged using the standard methodology of dividing the core into 'primary', 'secondary' and 'tertiary' intervals based on lithology, alteration, mineralization and radioactivity. A qualitative estimate of the percentage hematization of the core across each one metre interval is recorded. Following a logging template, Red Rock geologists record (a) a colour index from 0 to 5, with 0 representing no colour or completely lacking red (mainly hematite) minerals and 5 being completely red (intensely hematitic) in colour; (b) a measurement in centimetres of any brecciated core in the one metre interval; (c) a foliation index from 0 to 5, with 0 being massive and 5 being extremely well foliated; (d) a maximum porphyroclast size in millimetres; (e) an estimation of clay alteration in centimetres; (f) a percentage of chloritization (basically a measure of how much visible chlorite is in the metre); and (g) the presence of pyrite, graphite, or uranium oxide indicated by a 1.

Following logging, selected radioactive intercepts in core identified using the SRAT SPP2N scintillometer are marked up by the drill geologist preparatory to sampling. During the early stages of the Red Rock drilling campaigns, the intervals of sampled core were based strictly on lithology or level of radioactivity, up to a maximum sample interval of 1.0 m and a

minimum sample interval of about 0.1 m. As drilling progressed, sampling evolved to collection of more systematic interval lengths, which usually have been 0.4 m or 0.5 m during 2008. As standard practice, Red Rock collects at least one sample of assumed barren material on either side of a sampled radioactive interval. Core samples are tracked by two part ticket books. One tag goes with the sample for assay. The other tag is kept with the geologist's records. Core trays are marked with aluminum tags as well as felt marker.

Core from the RB2 drilling was split according to the indicated sample intervals using a diamond saw to provide the best possible sample from the typically brittle mineralized rock. One half of the core is preserved in the box for future reference and the other half is bagged, tagged and sealed in a plastic bag. The radioactivity emitted (cps) by each sample bag was recorded using the scintillometer following which the sample bags were placed in 20 L plastic sample pails. Normally, the more radioactive samples are packed towards the pail centre and less radioactive samples, towards the pail periphery. Once the pails were closed with a plastic lid, the radioactivity emitted by each pail was monitored using a Radiation Alert Inspector instrument to ensure that the emitted radiation was less than 5.0 mSv/hr, as required with respect to the Transportation of Dangerous Goods, Shipping of Nuclear Substances Act. Pails of samples were sealed for shipping and sent in batches to Loring for  $U_3O_8$  analyses. It is also noted that, of the 2,285 samples submitted to Loring, 40 were designated for the determination of specific gravity and apparent gravity analysis prior to assaying for  $U_3O_8$  content.

The split sample material sent for assay is for the most part an accurate reflection of one half of the core and should be free of bias because of the relatively competent nature of the core recovered. The mineralization, however, is heterogeneous by nature and duplicate samples will reflect that fact.



## 11 SAMPLE PREPARATION, ANALYSES AND SECURITY

As described in Section 12, drill core from the Red Rock drilling project is logged, marked for sampling, split, bagged, and sealed for shipment by Red Rock personnel at their logging facility at Uranium City, Saskatchewan. The pails were sealed and locked using chain-of-custody locking tags provided to Red Rock by Loring. The sample pails were consolidated over a period of about two weeks, and then shipped to Fort McMurray, Alberta, via chartered, fixed-wing aircraft. From Fort McMurray they were trucked to Loring in Calgary. On receipt, Loring verified that each pail had the chain-of-custody locking tags in place and that none of the pails had been opened in transit to their laboratory. The core samples received by Loring were catalogued against the sample shipping documents prepared by Red Rock geological staff, which (the documents) accompanied each sample shipment. If there were any discrepancies, Red Rock geological staff in Uranium City were immediately notified by Loring.

Loring was established in 1967. Services provided include assaying, geochemistry, and coal analysis supplemented by a diamond-indicator minerals facility. Loring was certified in 2008 for analysis of mining/mineral exploration samples under ISO 9001. Loring is independent of Red Rock. All sample preparation was done by Loring and uranium analyses were done by fluorimetry. Procedures for sample preparation and uranium analyses are described in Appendix 1.

Red Rock submitted 2,285 core samples for  $\text{U}_3\text{O}_8$  analyses, with results ranging from less than the standard detection limit (i.e.,  $<0.001\%$   $\text{U}_3\text{O}_8$ ) up to  $3.209\%$   $\text{U}_3\text{O}_8$ . In addition, two other samples were analyzed for gold which returned values of 268 ppb and 352 ppb. Some further statistics pertaining to Red Rock's 2008 core sample results include: (i) the arithmetic average is  $0.033\%$   $\text{U}_3\text{O}_8$ ; (ii) the median result is  $0.0096\%$   $\text{U}_3\text{O}_8$ ; (iii) there were 797 samples that assay from  $0.01\%$  to  $0.049\%$   $\text{U}_3\text{O}_8$ ; (iv) there were 175 samples that assay from  $0.05\%$  to  $0.099\%$   $\text{U}_3\text{O}_8$ ; and (v) there were 133 samples that assay  $\geq 0.1\%$   $\text{U}_3\text{O}_8$ .

Red Rock did not insert any blank, standard or duplicate samples in any of the sample shipments sent to Loring. Red Rock relied instead on Loring's internal quality assurance/quality control (QA/QC) procedures which are as follows. In every batch of 39

samples being run for analysis, Loring added a blank, a standard, and a duplicate from one of the samples being analyzed (hence a total of 42 analytical results in each analytical batch). The results from the blank, standard, and duplicate are checked and compared to ensure that the analyses of the batch are within acceptable laboratory limits. If this QA/QC procedure for the 42 sample batch is positive, the results are considered ready for release; if, however, the QA/QC indicates a potential problem, then the 39 Red Rock samples are rerun from the start of digestion. In the course of the program, Loring analyzed a total of 65 samples more than once (i.e., providing duplicate analyses for the same samples). The maximum difference between the 65 duplicate analytical pairs was 0.015%  $\text{U}_3\text{O}_8$ . Similarly, Loring achieved good reproducibility when it ran the Canmet Standard BL-1, which contains 0.0259%  $\text{U}_3\text{O}_8$ . As per Loring's assay reports to Red Rock, the standard was run 15 times with a range from 0.025%  $\text{U}_3\text{O}_8$  up to 0.026%  $\text{U}_3\text{O}_8$ , for an average of 0.0256%  $\text{U}_3\text{O}_8$ .

In the absence of a formal QA/QC program, Red Rock devised a graphical method to monitor the results received from the assay laboratory. Red Rock plotted assay results in %  $\text{U}_3\text{O}_8$  against total counts per second as measured by scintillometer on bags of samples sent to the laboratory. This was done by selecting a total of 66 samples from hole 08RB2-03 because (a) they covered reasonably well the range from detection up to almost 0.4%  $\text{U}_3\text{O}_8$ , and produced total radioactivity up to 2,700 cps, and (b) there was an overall reasonable correction of results with few outliers, as illustrated in the simple X-Y plot in Figure 11-1. This figure includes a line-of-best-fit through the data points. The line-of-best-fit does not pass through the zero point because even though a sample may contain no or very little uranium, there still is some low level of radioactivity due to the radioactive background level that exists in the core logging facility (approximately 60 cps).

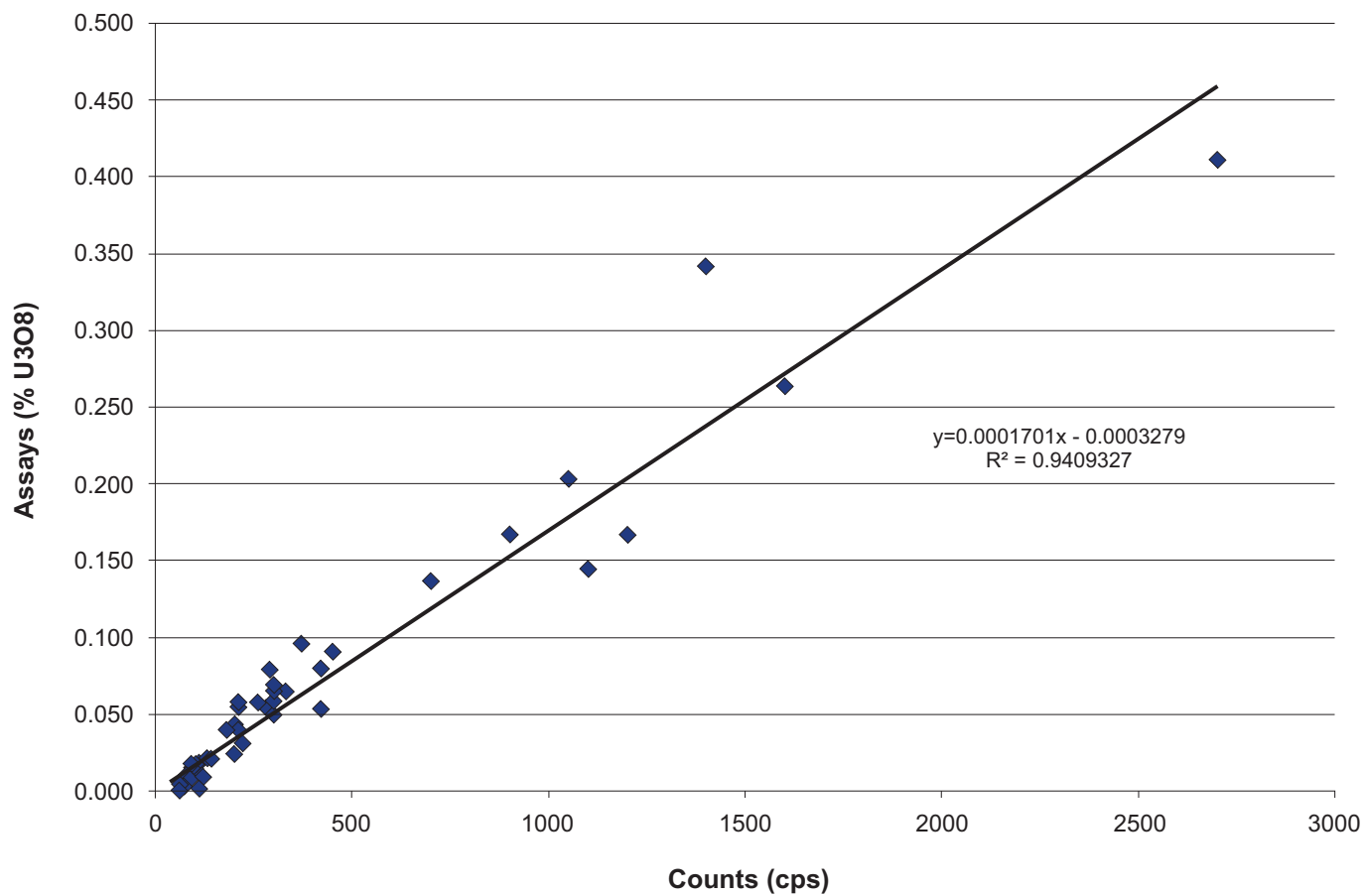


Figure 11-1

**Red Rock Energy Inc.**

***Fusion Uranium Zone Project***  
*Uranium City, Northern Saskatchewan*  
**U<sub>3</sub>O<sub>8</sub> % vs. Bag Counts per Second**

The formula that defines the line-of-best-fit ( $Y = 0.0001701X - 0.0003279$ ) assumes there is an approximate linear relationship between bag count radioactivity and the corresponding sample assay. On this basis, Red Rock devised a linear interpolation formula in Excel, the Check Formula (not included here), to screen assay results received. From the bag radioactivity for a particular sample, it eliminates any sample from consideration if (i) bag count radioactivity is less than 300 cps and the original reported assay for the sample is less than 0.1%  $U_3O_8$ , or (ii) bag count radioactivity is greater than 1,999 cps and the original reported assay for the sample is greater than 1.0%  $U_3O_8$ . If the above two conditions are not met, for example in the situation for a sample with bag count radioactivity <300 cps, but with the reported original result being greater than 0.1%  $U_3O_8$ , then the formula calculates a theoretical  $U_3O_8$  grade based on the interpolation formula and flags a sample to be checked.

Using this system, a total of 116 samples (5.1% of the samples submitted) from 27 of 42 holes were identified as requiring a recheck assay of either the original pulp and/or the reserve reject. For 94 of the 116 recheck results, the correlation between the original result and the recheck result was good. The other discrepancies were found to be the result of clerical errors at the laboratory.

## **SPECIFIC GRAVITY DETERMINATIONS**

Red Rock geologists selected a total of 40 samples to be analyzed for both bulk density and apparent density by Loring. These 40 samples were selected specifically to represent four different grades of rock:

- Barren rock, which had  $U_3O_8$  values of <0.01%.
- Low grade uranium bearing rock, which had values of  $0.05\% > U_3O_8 > 0.01\%$ .
- Moderate grade uranium bearing rock, which had values of  $0.1\% > U_3O_8 > 0.05\%$ .
- High grade uranium bearing rock, which had values of  $U_3O_8 > 0.1\%$ .

To ensure that samples representing these values were taken, Red Rock geologists compared the assay values to bag cps counts from previously assayed samples. In doing this, it was possible to select samples using the SRAT SPP2N scintillometer that would approximately correspond to the desired grades. These scintillometer values were approximately:

- Barren rock, values of 50 cps to 90 cps.
- Low grade uranium rock, values of 100 cps to 250 cps.

- Moderate grade uranium rock, values of 280 cps to 500 cps.
- High grade uranium rock, values of 600 cps and up.

With the exception of a few anomalous values, the guide provided an adequate number of samples within the desired grade ranges. These analyses indicated that while there was an increase in specific gravity as grades went up (i.e., between each grade range), specific gravity was not significantly different. The maximum difference within the 40 samples was 2.79 g/cm<sup>3</sup> for sample 80621 that assayed 3.209% U<sub>3</sub>O<sub>8</sub> and 2.62 g/cm<sup>3</sup> for sample 80079 that assayed 0.055% U<sub>3</sub>O<sub>8</sub> for a difference of 0.17 g/cm<sup>3</sup>. Interestingly, the value of 2.62 g/cm<sup>3</sup> was not the lowest assay value, but still had the lowest density. Results of the average grade, average bulk density, and average apparent density are summarized in Table 11-1.

**TABLE 11-1 AVERAGE BULK DENSITY AND APPARENT DENSITY RESULTS**  
**Red Rock Energy Inc – Fusion Uranium Zone**

Rock Grade	Grade Interval	Average Grade %U <sub>3</sub> O <sub>8</sub>	Average Bulk Density	Average Apparent Density
Barren Rock	U <sub>3</sub> O <sub>8</sub> %<0.01	0.004	2.654	2.626
Low Uranium Rock	0.05>U <sub>3</sub> O <sub>8</sub> %>0.01	0.031	2.660	2.639
Moderate Uranium Rock	0.1>U <sub>3</sub> O <sub>8</sub> %>0.05	0.068	2.668	2.670
High Uranium Rock	U <sub>3</sub> O <sub>8</sub> %>0.1	0.401	2.675	2.679

Notes:

1. Loring determined average bulk density by comparing weight of core in air as compared to weight of overflow water collected when core was immersed in water.
2. Average apparent density was determined by dividing the weight of core in air by the weight of the core in water.

RPA is satisfied as to the adequacy of the sampling procedures of Red Rock, the security of the shipping procedures, and the sample preparation and analytical procedures of Loring. RPA recommends that a conventional QA/QC program be instituted by Red Rock for any subsequent drilling programs meaning that blanks, standards, and duplicate samples are submitted with each shipment of samples to a laboratory. RPA also recommends that in future, batches of a variety of pulps from Loring be sent to at least two other laboratories for check analyses. Over time, at least 300 such check analyses should be done. Similarly, RPA recommends that for future drill programs, Red Rock should determine the bulk density for a variety of mineralized and unmineralized rocks, at its core logging facility, using the water immersion method.

## 12 DATA VERIFICATION

During the site visit on November 23 to 26, 2008, Barry Cook of Scott Wilson RPA selected and marked out eight samples of split core for duplicate analysis. The specified intervals were quarter split by Harold Smith, Geological Assistant, Red Rock, who also bagged, tagged and sealed the samples in plastic bags. The samples were packed and sealed in a larger plastic bag by Mr. Cook and kept in his personal luggage for the trip back to Toronto. From the Scott Wilson RPA offices in Toronto the samples were forwarded by courier to the SGS laboratory in Don Mills, Ontario. SGS forwarded the samples to their facility in Lakefield, Ontario, for analyses. SGS is accredited to the ISO 17025 Standard by Certificate number 456. The content of  $U_3O_8$  in the samples was determined by sodium peroxide fusion and inductively coupled plasma optical emission spectrometry (ICP-OES). Descriptions of the analytical procedures used by SGS are outlined in Appendix 1.

Table 12-1 indicates the relevant sample information, including SGS assay results and the original uranium assays as determined for Red Rock by Loring. The content of  $U_3O_8$  in the samples was determined by fluorimetry as outlined in the analytical procedures used by Loring in Appendix 1.

**TABLE 12-1 INDEPENDENT ASSAYS OF DRILL CORE**  
**Red Rock Energy Inc – Fusion Zone Project**

Drill Hole	From (m)	To (m)	Sample Number	Sample Description	Independent Sampling		Original Red Rock Results	
					$U_3O_8$ (%) SGS	Sample Number	$U_3O_8$ (%) Loring	
08RB2-03	314.70	315.20	71288	Quarter Split Core	0.15	80082	0.137	
08RB2-03	315.70	316.20	71289	Quarter Split Core	0.19	80084	0.203	
08RB2-07	291.00	291.50	71290	Quarter Split Core	0.059	80268	0.069	
08RB2-07	297.00	297.50	71291	Quarter Split Core	0.084	80280	0.058	
08RB2-13	313.00	313.50	71292	Quarter Split Core	1.88	80620	2.211	
08RB2-13	317.50	318.00	71293	Quarter Split Core	0.22	80629	0.159	
08RB2-14	312.00	312.50	71294	Quarter Split Core	0.072	80740	0.088	
08RB2-14	316.50	317.0	71295	Quarter Split Core	0.28	80749	0.106	

The independent sampling by Scott Wilson RPA clearly confirms that there is uranium mineralization in the drill holes sampled. Eight quartered-core duplicates are insufficient to make statistical comparisons, however, it is noted that the variance between the analytical

results from the two laboratories ranges from  $\pm 3\%$  to 19%. Sample inhomogeneity may be the major cause for the differences. It is noted that the presence and relative intensity of the uranium is qualitatively detectable by handheld scintillometer.

In RPA's opinion, the database is sufficient for determining exploration potential.

## 13 MINERAL PROCESSING AND METALLURGICAL TESTING

No mineral processing or metallurgical testing has been done by Red Rock on the mineralization being drilled by Red Rock on its RB2 claim block. Turek (1962) reported that ore from the Lake Cinch Mine was treated on a custom basis at the Lorado mill “which employed the acid leach method, in contrast to the carbonate leach process used at the Eldorado mill”. Turek (1960) reported that comparative studies of the Lake Cinch ore had shown that alkali carbonate leaching produced extractions ranging from 84.1% to 87.7%, whereas acid leaching resulted in extractions of 96.2%, however, acid consumption was high and thus the alkali carbonate method was less costly at that time.

Ward (1982), in his closure report for ENL, stated that the ENL all-time mill recovery was 88.9%. Finally, in a document entitled “Preliminary Feasibility Study of the Cinch Project”, which in fact was for the proposed mining of the Cenex orebodies, Gagnon (1977) used a recovery factor of 90%, but provided no information as to where this recovery percentage was derived from. As a result, the possible uranium recovery factor to be applied for the Fusion Zone uranium mineralization is speculative, but reasonably may be in the 85% up to possibly the 95% range, due to its geological similarity and proximity to the Lake Cinch ore.



## **14 MINERAL RESOURCE ESTIMATE**

There are no current Mineral Resources on the Red Rock RB2 property at this time.

## **15 MINERAL RESERVE ESTIMATE**

There are no current Mineral Reserves on the Red Rock RB2 property at this time.

## **16 MINING METHODS**

This chapter is not applicable.

## **17 RECOVERY METHODS**

This chapter is not applicable.

## **18 PROJECT INFRASTRUCTURE**

This chapter is not applicable.

## **19 MARKET STUDIES AND CONTRACTS**

This chapter is not applicable.



## **20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT**

This chapter is not applicable.

## **21 CAPITAL AND OPERATING COSTS**

This chapter is not applicable.

## **22 ECONOMIC ANALYSIS**

This chapter is not applicable.

## 23 ADJACENT PROPERTIES

In this section, it is appropriate to discuss the former Cinch Lake Mine since it lies within the RB2 claim block and is the northeast extension of the Cinch Lake MOF that was targeted by the Red Rock exploration program. The following description is taken largely from Turek's M.Sc. Thesis on the Cinch Lake Mine (Turek, 1962), supplemented with information in Tortosa (1980), SMDI 1425a, and Trueman (1977).

The Lake Cinch uranium deposit occurs on the footwall side of the Black Bay Fault and is localized by the MOF and possibly the CRF (see Figure 7-2). The CRF has an easterly strike, dips 80° south, and abuts or is terminated against the Black Bay Fault. No ore has been found along the CRF, which ranges from 100 ft (30 m) to 200 ft (61 m) wide and shows considerable hydrothermal alteration with the development of hematite and sericite. The footwall of the fault is sharp and carries an inch or more of plastic gouge. The hanging wall is less sharply pronounced and may be gradational. Hematitic alteration is more intense near the footwall of the fault.

The MOF strikes northeast, dips 50° southeast and lies on the footwall side of the CRF (see Figure 7-3). Uranium ore was not entirely co-extensive with the fault but instead occurs in ore shoots along it. Ore extended from just below the first level (300 ft, ~91.5 m) to the fourth level (750 ft, ~228.5 m) and has been intersected by diamond drilling down to 1,000 ft (305 m). The average width of ore was 5 ft (1.5 m). The line of intersection between the CRF and the MOF, as measured between the first and second levels, has an azimuth of 113° and a plunge of 43°. A northwest striking basalt dyke, dipping 55° southwest, is displaced dextrally 150 ft (46 m) by the MOF. This indicates a right hand wrench movement or thrust movement or a combination of both. Abundant slickensides along the MOF have many orientations and fail to aid in the interpretation of movement.

The trough between the MOF and the CRF is straddled by a series of tensional cross fractures. The strike of these fractures is a function of their location with respect to the intersection of the MOF and the CRF, and they typically dip from 65° to 90° southwest. The most westerly fractures have a southeast strike, while the most easterly strike almost due east. Fractures between these two extremes show a progressive rotation in strike from southeast to east.

Uranium ore in the cross fractures occurred in shoots with a 45° rake to the southeast. Some fractures contained continuous ore for up to 600 vertical feet (183 m). The ore in cross fractures averaged 3 ft (0.9 m) in width. One notable exception was the 1-402 stope which was lens shaped and encompassed an ore zone 100 ft (30 m) long, 50 ft (15 m) wide, and 90 ft (27 m) in vertical extent and included three fractures. Equally unusual, on the first level near the intersection of the CRF and MOF, was the 1-112 stope which was a pod of mineralized breccia.

All of the ore described above was developed to the northeast of the shaft, and on the north side of the CRF. Two smaller zones, the River and Subsidiary, also occurring in cross fractures, were mined in an area 1,200 ft (365 m) west of the shaft; however, both of these zones are on the south side of the CRF. Table 23-1 lists the Cinch Lake production from 1957 to closure on April 20, 1960. It is interesting to note that 66% of the tons produced and 54% of the lbs  $U_3O_8$  produced came from cross fractures.

**TABLE 23-1 PRODUCTION FROM CINCH LAKE ORE ZONES**  
**Red Rock Energy Inc. – Fusion Zone Project**

Ore Zones	Ore (tons)	Uranium (lbs)	Grade $U_3O_8$ %
Main Ore Fault	40,273	264,812	0.33
Cross Fractures	94,363	392,766	0.21
River and Boundary	7,442	72,723	0.49
	142,078	730,301	0.26

RPA has been unable to verify the information concerning production tonnage and grade but has no reason to doubt its veracity. Nonetheless, these historic figures are not necessarily indicative of other mineralized zones which may be discovered on the RB2 claim block, which is the subject of this Technical Report.

## **24 OTHER RELEVANT DATA AND INFORMATION**

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.



## 25 INTERPRETATION AND CONCLUSIONS

Exploration drilling by Red Rock in 2008 along the projected northeasterly extension of the Lake Cinch Mine MOF has intersected two parallel, mineralized fault structures designated MOF-1 and MOF-2, collectively termed the Fusion Uranium Zone. RPA interprets that the MOF has split into these two features, however, this remains to be determined. The Fusion Uranium Zone mineralization is open on strike to the north and south and down dip, and appears to be co-extensive with the two faults, which also must be verified by more detailed drilling.

At the Lake Cinch Mine, located southwest of the Red Rock 2008 drilling area, the uranium ore was not entirely co-extensive with the fault but occurred in ore shoots along it, and in cross fractures splaying off the MOF zone. In fact, two thirds of the tonnage mined at Lake Cinch occurred in easterly trending, tensional cross fractures which have not yet been definitively identified associated with the Fusion Zone. Some uranium intersections are located above the MOF zones but cannot be correlated yet into specific zones because of the relatively few intersections, the orientation of drill holes, and their wide spacing. To test effectively for such easterly trending mineralized cross fractures will require drill holes directed to the north as opposed to the northwest direction used to date for the MOF Fusion Zone structure.

There are no current Mineral Resources or Mineral Reserves on the Fusion RB2 property at this time.

RPA has estimated a range of potential tonnes and grade of an exploration target for the Fusion Uranium Zone based on results of drilling to 2008 and other information such as past production from the Lake Cinch and Cenex mines. The Fusion Uranium Zone exploration target has a potential tonnage range of 100,000 t to 200,000 t and a potential grade range of 0.20%  $U_3O_8$  to 0.25%  $U_3O_8$ , for a potential range in contained  $U_3O_8$  of 440,000 lb to 1,100,000 lb. This potential tonnage, grade, and contained  $U_3O_8$  is conceptual in nature, there has been insufficient exploration to define a Mineral Resource, and it is uncertain if further exploration will result in the target being delineated as a Mineral Resource.

## 26 RECOMMENDATIONS

Considerably more diamond drilling is required to define the extent and the detailed features of the Fusion Zone, including mineralized cross fractures. For future drilling programs, RPA recommends that Red Rock institute its own QA/QC program since there is not one currently in place. Similarly, Red Rock should institute a program to determine bulk density of samples using the water immersion method.

No metallurgical testwork has been carried out on the Fusion Uranium Zone. RPA considers that this should be part of the next work program on the RB2 property.

In addition to the uranium mineralization mined at the past producing New Cinch and Cenex mines, and outlined by drilling at the Fusion Zone, there are a number of other uranium-bearing zones on the RB2 property. These have been explored to varying degrees mostly in the 1950s, 1960s, and 1970s by sampling and diamond drilling. In RPA's view, field work is warranted on at least eight mineralized zones in addition to compiling and interpreting historical data in order to prioritize them for drill testing.

### ***PROPOSED EXPLORATION AND BUDGET***

RPA recommends a two phase program of exploration for the RB2 claim block. The second phase is contingent on results of the first phase. Table 26-1 lists the estimated budget for the proposed Phase 1 and Phase 2 programs.

Phase 1 involves compilation and interpretation of geology, geophysics, geochemistry, sampling, drilling, and other historical and more recent data. This is an extension of the digitization of data that was commenced by Red Rock in the past. Phase 1 also includes approximately two months of field work to carry out detailed geological mapping, radiometric surveying, and sampling in the vicinity of the Fusion Zone, Lake Cinch mine, and Cenex mine, as well as on other uranium-bearing zones on other parts of the RB2 property. The objective of the Phase 1 work is to develop and prioritize targets for drilling in the Phase 2 program.

Phase 2 involves drill testing for extensions of the Fusion Uranium Zone and for testing of other uranium-bearing zones. RPA recommends that Red Rock institute its own QA/QC

program for drill core samples, including insertion of blanks, Certified Reference Material standards, and duplicates. Red Rock should also determine the bulk density of various mineralized rock types as well as barren rock using the water immersion method.

**TABLE 26-1 PROPOSED BUDGET – PHASES 1 AND 2**  
**Red Rock Energy Inc – Fusion Uranium Zone**

<b>Phase 1 Program</b>	<b>C\$</b>
Compilation and interpretation work	50,000
Field program:	
Senior Geologist	25,000
Assistant Geologist	30,000
Expenses, rentals, analyses	40,000
Metallurgy – testwork and consulting	30,000
Geological management	20,000
<b>Subtotal</b>	<b>180,000</b>
Contingency - ~10%	20,000
<b>Total</b>	<b>200,000</b>
 <b>Phase 2 Program</b>	 <b>C\$</b>
Diamond drilling:	
Fusion Zone 4,000 m @\$200	800,000
Other zones 3,000 m @\$200	600,000
Supervision, expenses, assays 7,000 m @\$100	700,000
Reporting and resource estimate	100,000
Geological management	200,000
<b>Subtotal</b>	<b>2,400,000</b>
Contingency - ~10%	250,000
<b>Total</b>	<b>2,650,000</b>

## 27 REFERENCES

- Ashton, K.E., Kraus, J., Hartlaub, R.P., and Morelli, R. (2000a): Uranium City Revisited: A new look at the rocks of the Beaverlodge mining camp; in Summary of Investigations 2000, Volume 2, Saskatchewan Geological Survey, Sask. Energy Mines, Misc. Report 2000-4.2.
- Ashton, K.E., Kraus, R.P., and Morelli, R. (2000b): Geology of the Bushell Area (Part of NTS 74N07 and 10) at 1:20,000 scale; Preliminary Geological Map (2000), Saskatchewan Geological Survey, Sask. Energy Mines, Catalogue Number 2000-4.2-(3.2).
- Ashton, K.E., Hartlaub, R.P., et al. (2004a): Paleoproterozoic Sedimentary Successions of the Southern Rae Province: Ages, Origins, and Correlations; seminar paper abstract found at <http://www.uregina.ca/geology/Seminars/2004KenAshton.htm>.
- Ashton, K.E., and Hunter, R.C. (2004b): Geology of the Camsell Portage Area, Southern Zemplak Domain, Rae Province (Uranium City Project); in Saskatchewan Geological Survey Summary of Publications 2004, v. 2, pp. 1-12.
- Ashton, K.E., Card, C.D., and Modeland, S. (2005): Geological Reconnaissance of the Northern Tazin Lake Map Area (NTS 74N), Including Parts of the Ena, Nolan, Zemplak, and Taltson Domains, Rae Province; in Saskatchewan Geological Survey Summary of Publications 2005, v. 2, pp. 1-24.
- Ashton, K.E., Knox, B., Bethune, K.M., and Marcotte, J. (2006): Bedrock Geology along the Northern Margin of the Athabasca Basin West of Fond-du-Lac (NTS 74O-5 and -6), South-central Beaverlodge Domain, Rae Province, Fond-du-Lac Project; in Saskatchewan Geological Survey Summary of Publications 2006, v. 2, pp. 1-19.
- Ashton, K.E., Knox, B., Bethune, K.M., and Rayner, N. (2007a): Geochronological Update and Basement Geology along the Northern Margin of the Athabasca Basin East of Fond-du-Lac (NTS 74O/06 and /07), Southeastern Beaverlodge – Southwestern Tantato Domains, Rae Province; in Saskatchewan Geological Survey Summary of Publications 2007, v. 2, pp. 1-22.
- Ashton, K.E., Card, C.D., Davis, and Heaman, L.M. (2007b): New U-Pb Zircon Age Dates from the Tazin Lake Map Area (NTS 74N); in Saskatchewan Geological Survey Summary of Publications 2007, v. 2, pp. 1-8.
- Beck, L.S. (1969): Uranium deposits of the Athabasca region, Saskatchewan; Sask. Dept. Mineral Resources, Report #126, 140 pp.
- Gagnon, S. (Feb. 1, 1977) Preliminary Feasibility Study of the Cinch Project; unpublished report prepared by Mining Corporation of Canada Limited for New Joburke Explorations Limited concerning the possible development of the 03 (River) zone on the Jam Group (Cenex area), 18 pp. plus 38 pages of Appendices.
- Geotech Limited (August, 2005): Report on a Helicopter-borne Time Domain Electromagnetic Geophysical Survey, East and West Blocks, Uranium City

- Saskatchewan; survey completed for Alex-Lee Syndicate Inc. which was the precursor corporate name prior to name change to Red Rock Energy Inc.
- Hartlaub, R.P. (2004): Archean and Proterozoic Evolution of the Beaverlodge Belt, Churchill craton, Canada; Ph.D. thesis submitted to the Faculty of Graduate Studies and Research, University of Alberta at Edmonton, 189 pp.
- Hartlaub, R.P., and Ashton, K.E. (1998) Geological investigations of the Murmac Bay Group, Lake Athabasca north shore transect; Saskatchewan Geological Survey, Miscellaneous Report 98-4, pp. 17-28.
- Hartlaub, R. P., Heaman, L. M., Ashton, K. E., and Chacko, T. (2004a): The Archean Murmac Bay Group: evidence for a giant Archean rift in the Rae Province, Canada; Precambrian Research, v. 131, pp. 345–372.
- Hartlaub, R.P., Heaman, L.M., Ashton, K.E., Chacko, T., Simonetti, A., and Creaser R.A. (2004b): Two billion years of crustal reworking recorded in the Beaverlodge Belt of northwestern Saskatchewan: Summary of results and implications for mineral exploration, Saskatchewan Geological Survey Open House, Saskatoon, Abstracts, p. 29.
- Hartlaub, R. P., Chacko, T., Heaman, L. M., Creaser, R., Ashton, K. E., and Simonetti, A. (2005): Ancient (Meso to Paleoarchean) crust in the Rae Province, Canada: evidence from Sm-Nd and U-Pb constraints; Precambrian Research, v. 141, pp. 137–153.
- Hartlaub, R.P., Heaman, L.M., Chacko, T., and Ashton, K.E. (2007): Circa 2.3-Ga Magmatism of the Arrowsmith Orogeny, Uranium City Region, Western Churchill Craton, Canada; The Journal of Geology, v. 115, pp. 181-195.
- Koeppel, V. (1968): Age and History of the Uranium mineralization of the Beaverlodge area, Saskatchewan; Geological Survey of Canada Paper 67-31.
- Kraus, J., and Ashton, K.E. (2000): New insights into the structural geology and tectonic setting of the Uranium City area, north western Saskatchewan; in Summary of investigations 2000, Volume 2, Saskatchewan Geological Survey, Sask. Energy Mines, Misc. Rep. 2000-4.2.
- Lyatsky, H.V. (2006): Brief Geophysical Status Report on Red Rock Energy Inc.'s Airborne Geophysical Survey over the RB2 and RB2 Claim Blocks, Saskatchewan; 4 pp., plus some 40 maps.
- Macdonald, R., and Slimmon, W.L. (1985): Bedrock geology of the Greater Beaverlodge Area, NTS 74N-6 to -11; Sask. Energy Mines, Map 241A, 1:100,000 scale.
- Olson, R.A., Botterill, S., Melnik, A., and Sciarra, J. (April 14, 2009): 2008 Exploration at the RB1, RB2 and RB3 Claim Blocks, Beaverlodge Uranium District, Saskatchewan (Note: Includes physical gridding done during fall 2007); unpublished report prepared for Red Rock Energy Inc. by R.A. Olson Consulting Ltd. and selected Red Rock geological and technical staff, 139 pp.

- Paxton, J. (August 9, 1979): Cenex Mine Ore Reserve; unpublished internal report believed to have been prepared for Cenex Mines Limited, 7 pp., included as Appendix III in Tortosa, 1980.
- Persons, S. S. (1988): U-Pb geochronology of Precambrian rocks in the Beaverlodge area, northwestern Saskatchewan; MS thesis submitted to the Dept. of Geology, University of Kansas at Lawrence, 68 pp.
- Robinson, S.C. (1955): Mineralogy of Uranium Deposits, Goldfields, Sask.; Geol. Survey. Can., Bulletin 31.
- Roscoe, R.L. (Sept. 15, 1967): Report on the Lake Cinch Mine, Uranium City, Saskatchewan; unpublished internal report prepared for Cinch Mines Ltd., 5 pp., included as Appendix VI in Tortosa, 1980.
- Scott Wilson RPA (2009): Technical Report on the Fusion Uranium Zone Project, RB2 Claim Group, Uranium City, Saskatchewan, Canada, a NI 43-101 report prepared by Roscoe, W.E., and Cook, R.B., for Red Rock Energy Inc. (July 10, 2009).
- Smith, E.E.N. (1986): Geology of the Beaverlodge operation, Eldorado Nuclear Limited; in Evans, E.L. (ed), CIM Special Volume 33, pp. 95-109.
- Thompson, P.H. (Aug. 20, 2008): A Re-Assessment of the Geological Setting of Uranium Mineralization on the Red Rock Energy RB2 Property, Beaverlodge Uranium District; unpublished internal report prepared at the request of Red Rock Energy Inc., 25 pp.
- Tortosa, D.J.J. (August 1980): The Potential of the Cinch-Cenex Mines and Area for Further Exploration and Development of Uranium Vein-type Deposits, Beaverlodge, Saskatchewan; unpublished report believed to have been prepared for A. Frame Contracting Ltd., 41 pp. plus 14 figures, 3 tables and 6 appendices.
- Tortosa, D.J.J. (1983): The Geology of the Cenex Mine, Beaverlodge, Saskatchewan; unpublished M.Sc. thesis submitted to the Faculty of Graduate Studies and Research, University of Saskatchewan, 141 pp.
- Tremblay, L.P. (1972): Geology of the Beaverlodge Mining Area, Saskatchewan; Geological Survey of Canada Memoir 367, including two maps at 1:14,400 (1 inch = 1,200 feet) that encompass the entire Beaverlodge Mining Area, 265 pp.
- Trueman, T. (Sept. 24, 1976): Gardex [Reserves at Cenex and Lake Cinch areas]; unpublished internal memo prepared for Eldorado Nuclear Limited, 4 pp.
- Trueman, T. (January, 1977) Annual Exploration Report, Beaverlodge Area, 1976; unpublished report prepared for Eldorado Nuclear Limited, Exploration Division, 29 pp.
- Trueman, T., and Fortuna, P.A. (1976) Dubyna Lake Uranium Deposit (31 Zone), Eldorado Saskatchewan; published paper included in Saskatchewan Geological Society Special Publication #3, Uranium in Saskatchewan, Proceedings of a Symposium held on 10 November, 1976, C.E. Dunn (Ed.), pp. 355-382.
- Turek, A. (1960): Lake Cinch Mines Limited, Geology Report to April, 1960; unpublished internal report prepared for Lake Cinch Mines Limited, 14 pp.



Turek, A. (April 1962): Geology of Lake Cinch Mines Limited, Uranium City, Saskatchewan; unpublished M.Sc. thesis submitted to the Faculty of Graduate Studies, University of Alberta, 86 pp.

Ward, D.M. (October, 1982) Beaverlodge Mine Geology Closure Report; unpublished report prepared for Eldorado Nuclear Limited, Exploration Division, 28 pp. plus 25 appendices.

## 28 DATE AND SIGNATURE PAGE

This report titled “Technical Report on the Fusion Uranium Zone Project, RB2 Claim Group, Uranium City Area, North Western Saskatchewan, Canada” and dated March 7, 2017, was prepared and signed by the following author:

**(Signed and Sealed) “*William E. Roscoe*”**

Dated at Toronto, Ontario  
March 7, 2017

William E. Roscoe, Ph.D., P.Eng.  
Principal Consulting Geologist

## 29 CERTIFICATE OF QUALIFIED PERSON

### WILLIAM E. ROSCOE

I, William E. Roscoe, Ph.D., P.Eng., as the author of this report entitled "Technical Report on the Fusion Uranium Zone Project, RB2 Claim Group, Uranium City Area, North Western Saskatchewan, Canada", prepared for Red Rock Energy Inc. and dated March 7, 2017, do hereby certify that:

1. I am a Principal Geologist with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.
2. I am a graduate of Queen's University, Kingston, Ontario, in 1966 with a Bachelor of Science degree in Geological Engineering, McGill University, Montreal, Quebec, in 1969 with a Master of Science degree in Geological Sciences and in 1973 a Ph.D. degree in Geological Sciences.
3. I am registered as a Professional Engineer (No. 39633011) and designated as a Consulting Engineer in the Province of Ontario. I have worked as a geologist for a total of 48 years since my graduation. My relevant experience for the purpose of the Technical Report is:
  - Thirty-five years experience as a Consulting Geologist across Canada and in many other countries
  - Preparation of numerous reviews and technical reports on exploration and mining projects around the world for due diligence and regulatory requirements
  - Senior Geologist in charge of mineral exploration in southern Ontario and Québec
  - Exploration Geologist with a major Canadian mining company in charge of exploration projects in New Brunswick, Nova Scotia, and Newfoundland
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5. I have not visited the RB2 Claim Group.
6. I am responsible for overall preparation of the Technical Report.
7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.
8. I have prepared a previous Technical Report, dated July 10, 2009, on the property that is the subject of the Technical Report.
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical

information that is required to be disclosed to make the Technical Report not misleading.

Dated this 7<sup>th</sup> day of March, 2017

**(Signed and Sealed) “William E. Roscoe”**

William E. Roscoe, Ph.D., P.Eng.

## 30 APPENDIX 1

### ANALYTICAL LABORATORY PROCEDURES

#### ANALYTICAL PROCEDURES EMPLOYED BY LORING LABORATORIES LTD., CALGARY

##### **SUMMARY OF SAMPLE PREPARATION AND ANALYTICAL PROCEDURES**

- A. The core samples received by Loring were catalogued against the sample shipping documents prepared by Red Rock geological staff and which accompanied each sample shipment; if there were any discrepancies, Red Rock geological staff in Uranium City were immediately notified by Loring. In most instances during 2008, there were no discrepancies between the sample shipping documents and the samples actually in each sample pail when the pail was opened at the laboratory.
- B. The core samples were crushed to less than or equal to ( $\leq$ ) 2 mm using primary jaw and secondary cone crushers. The jaw crusher was cleaned after processing each sample.
- C. The sample was then completely homogenized and a split of 250 g to 350 g was obtained by passing the samples through a Jones Riffle Splitter. The remainder of the sample, which typically is termed the 'reject', was returned to the original sample bag and has been retained in storage by Loring in Calgary.
- D. The ~250 g sub-sample was then pulverized to  $95\% \leq -150$  mesh. The pulverized sample, which is referred to as a 'pulp', was then rolled 100 times to ensure complete homogenization, and then placed in a paper sample bag ready for analysis. A ~1.0 g sub-sample was taken for analysis, with the remaining pulp material also being retained in storage by Loring.
- E. The pulp was analyzed for uranium by the fluorimetric method. This procedure involves the following steps:

##### **DIGESTION**

- A. The ~1.0 gram sub-sample from the pulp is accurately weighed and placed in a 250 ml beaker covered by a "watchglass" cover;
- B. 10 ml of concentrated HCl acid is added to the covered beaker and the sample is boiled for 10 minutes, following which 5 ml of concentrated HNO<sub>3</sub> acid is added to the beaker, and the sample is again boiled for 10 minutes;
- C. The watchglass cover was removed from the top of the beaker, and the sides of the beaker were washed with de-ionized water; then 3 ml of concentrated HF acid was added plus 10 ml of concentrated H<sub>2</sub>SO<sub>4</sub> acid, and the beaker was heated to dryness;
- D. 5 ml of de-ionized water and 15 ml of concentrated HCl acid were then added to the beaker and the solution was boiled for 10 to 15 minutes;
- E. The solution is then filtered into a 100 ml volumetric flask;

- F. The filter is washed twice with hot 30% HCl acid and 6 times with hot de-ionized water to ensure all of the digested sample has passed through the filter;
- G. the volumetric flask is then allowed to cool to room temperature, after which it is bulked to the mark with de-ionized water and shaken;
- H. 0.1 ml of solution is extracted from the volumetric flask and dried in a platinum dish in triplicate;
- I. A flux is added to the platinum dish, and the sample is fused to a pellet in a hot furnace;

#### **ANALYSIS AND QA/QC CHECKS BY LORING LABORATORIES**

- A. The fused pellet is then read in a fluorimeter which has been calibrated with various uranium standards;
- B. Finally, in every batch of 39 samples being run for analysis there is added a Blank, a Standard and one Duplicate from one of the samples being analyzed (hence a total of 42 analytical results in each analytical batch). The results from the Blank, Standard and Duplicate are checked and compared to ensure the analyses of the batch are within acceptable laboratory limits.
- C. If this QA/QC procedure for the 42 sample batch is positive, the results are considered ready for release; if, however, the QA/QC indicates a potential problem, then the 39 Red Rock samples are re-run from the start of digestion.

#### **ANALYTICAL PROCEDURES EMPLOYED BY SGS/LAKEFIELD**

##### **ICP90Q: THE DETERMINATION OF ELEMENTS BY SODIUM PEROXIDE FUSION AND ICP-OES.**

**1. Parameter(s) measured, unit(s):**

Arsenic (As); Cobalt (Co); Copper (Cu); Iron (Fe); Nickel (Ni); Lead (Pb); Zinc (Zn); Sulphur (S); uranium ( $U_3O_8$ ): %

**2. Typical sample size:**

0.20 g

**3. Type of sample applicable (media):**

Crushed and Pulverized rocks, soils and sediments

**4. Sample preparation technique used:**

Crushed and pulverized rock, soil and/or sediment samples are fused by Sodium peroxide in zirconium crucibles and dissolved using dilute  $HNO_3$ .

**5. Method of analysis used:**

The digested sample solution is aspirated into the inductively coupled plasma Optical Emission Spectrometer (ICP-OES) where the atoms in the plasma emit light (photons) with characteristic wavelengths for each element. This light is recorded by optical spectrometers and when calibrated against standards the technique provides a quantitative analysis of the original sample.

**6. Data reduction by:**

The results are exported via computer, on line, data fed to the Laboratory Information Management System (LIMS CCLAS EL) with secure audit trail.

**7. Figures of Merit:**

Element	Limit of Quantification (LOQ) %	Element	(LOQ) %	Element	(LOQ) %
As	0.01	Co	0.002	Cu	0.005
Fe	0.05	Ni	0.005	Pb	0.01
S	0.01	Zn	0.01	U <sub>3</sub> O <sub>8</sub>	0.01

**8. Quality control:**

The ICP-OES is calibrated with each work order. An instrument blank and calibration check is analyzed with each run. One preparation blank and reference material is analyzed every 46 samples, one duplicate every 12 samples.

All QC samples are verified using LIMS. The acceptance criteria are statistically controlled and control charts are used to monitor accuracy and precision. Data that falls outside the control limits is investigated and repeated as necessary.