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TECHNICAL REPORT ON A MINERAL RESOURCE ESTIMATE UPDATE FOR THE PHOENIX URANIUM DEPOSIT, WHEELER RIVER PROJECT, EASTERN ATHABASCA BASIN, NORTHERN SASKATCHEWAN, CANADA

NI 43-101 Report

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June 17, 2014

RPA

Report Control Form

Document Title	Technical Report on a Mineral Resource Estimate Update for the Phoenix Uranium Deposit, Wheeler River Project, Eastern Athabasca Basin, Northern Saskatchewan, Canada
Client Name & Address	Denison Mines Corp. 885 West Georgia, Suite 2000 Vancouver, British Columbia V6C 3E8
Document Reference	Project #2299
Status & Issue No.	FINAL Version
Issue Date	June 17, 2014
Lead Author	William E. Roscoe (Signed)
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1 SUMMARY

EXECUTIVE SUMMARY

Roscoe Postle Associates Inc. (RPA) was retained by Denison Mines Corp. (Denison) on behalf of the Wheeler River Joint Venture to prepare an independent Technical Report on the Phoenix uranium deposit. The purpose of this report is to support an updated Mineral Resource estimate for the Phoenix deposit prepared by Denison and audited by RPA. The Phoenix deposit is an Athabasca Basin unconformity-type uranium deposit. This report has been prepared to conform to NI 43-101 Standards of Disclosure for Mineral Projects.

Denison is a Toronto-based mining company focused on uranium exploration and development in Canada, Mongolia, Mali, Namibia, and Zambia. Denison is listed on the Toronto Stock Exchange (symbol DML) and on the New York Stock Exchange MKT (symbol DNN).

Denison owns 60% of the Wheeler River Joint Venture, Cameco Corporation owns 30%, and JCU (Canada) Exploration Company Limited owns the remaining 10%. The Wheeler River Property consists of 19 contiguous claims in northern Saskatchewan. Denison's additional assets include a 22.5% interest in the McClean Lake mill in Saskatchewan, one of three licensed uranium mills in Canada.

The updated Mineral Resource estimate for the Phoenix deposit is summarized in Table 1-1.

TABLE 1-1 MINERAL RESOURCE ESTIMATE AS OF MAY 28, 2014 (100% BASIS)
Denison Mines Corp. – Phoenix Deposit

Category	Tonnes	Grade (% U_3O_8)	Contained Metal (million lb U_3O_8)
Indicated	166,400	19.13	70.2
Inferred	8,600	5.80	1.1

Notes:
1. CIM Definitions were followed for classification of Mineral Resources.
2. Mineral Resources are reported above a cut-off grade of 0.8% U_3O_8, which is based on internal Denison studies and a price of US$50 per lb U_3O_8.
3. High grade composites are subjected to a high grade search restriction.
4. Bulk density is derived from grade using a formula based on 196 measurements.

CONCLUSIONS

Drilling at the Wheeler River Property from 2008 to 2014 has discovered and delineated the Phoenix uranium deposit at the intersection of the Athabasca sandstone basal unconformity with a regional fault zone, the WS fault, and graphitic pelite basement rocks.

The Phoenix deposit consists of two separate lenses known as zone A and zone B located approximately 400 m below surface within a one kilometre long, northeast trending mineralized corridor. Both lenses contain a higher grade core within a lower grade mineralized envelope and extend southeastward from the WS fault along the unconformity. Some mineralization also occurs on the northwest side of the WS fault but commonly at a slightly lower elevation.

In addition to the zones A and B, a new domain (zone A basement) of uranium mineralization below and adjacent to zone A has been identified in basement rocks and included in this report.

Mineral Resources for Phoenix, based on 196 diamond drill holes totalling 89,835 m, were estimated by Denison and audited by RPA. Indicated Resources total 166,400 t at 19.13% U_3O_8 containing 70.2 million lbs U_3O_8. Inferred Resources total 8,600 t at 5.80% U_3O_8 containing 1.1 million lbs U_3O_8.

In RPA's opinion, a Preliminary Economic Assessment could be carried out on the Phoenix deposit.

New uranium mineralization has recently been discovered at the Gryphon zone located three kilometres northwest of the Phoenix deposit. Although intersected by only two drill holes to date, the Gryphon discovery warrants considerable follow-up drilling in RPA's view.

RECOMMENDATIONS

The Wheeler River Joint Venture is planning a summer 2014 exploration program consisting of a 14,000 m (20 hole) diamond drill program with two rigs beginning in June 2014. The budget for this program is $3.6 million. Emphasis will be on following up the newly discovered Gryphon zone mineralization in the K North target area as well as similar geological targets along trend of Gryphon. A 3D DC-resistivity survey is also planned for the area north of the Phoenix deposit. RPA has reviewed and concurs with the Wheeler River Joint Venture planned 2014 exploration program.

In addition to this work, RPA recommends that a Preliminary Economic Assessment be considered at an estimated cost of approximately C$200,000.

If additional drill holes are completed at Phoenix, RPA recommends that Denison continue to collect drill core density data to increase the confidence of estimated densities of the entire grade range.

TECHNICAL SUMMARY

PROPERTY DESCRIPTION AND LOCATION

The Phoenix deposit is located within the Wheeler River Property (the Property), which is located in the eastern Athabasca Basin of northern Saskatchewan approximately 600 km north of Saskatoon, 260 km north of La Ronge, and 110 km southwest of Points North Landing, in northern Saskatchewan. The centre of the Property is located approximately 35 km north-northeast of the Key Lake mill and 35 km southwest of the McArthur River mine, which are operated by Cameco Corporation (Cameco).

LAND TENURE

The Wheeler River Property comprises 19 contiguous claims held as a Joint Venture among Denison (60%), Cameco (30%), and JCU (Canada) Exploration Co. Ltd. (10%) with no back-in rights or royalties that need to be paid.

ACCESS AND INFRASTRUCTURE

Access to the Phoenix deposit is by road, helicopter, or fixed wing aircraft from Saskatoon. Vehicle access to the Property is by Highway 914, which terminates at the Key Lake mill. The ore haul road between the Key Lake and McArthur River operations traverses the eastern part of the Property. An older access road, the Fox Lake Road, between Key Lake and McArthur River provides access to most of the northwestern side of the Property. Gravel and sand roads and drill trails provide access by either four-wheel-drive or all-terrain-vehicle to the rest of the Property.

La Ronge is the nearest commercial/urban center where most exploration supplies and services can be obtained. Two airlines offer daily, scheduled flight services between Saskatoon and La Ronge.

Field operations are currently conducted from Denison's Wheeler River camp, three kilometres southwest of the Phoenix deposit. The camp, which is operated by Denison, provides accommodation for up to forty exploration personnel. Fuel and miscellaneous supplies are stored in existing warehouse and tank facilities at the camp. The site generates its own power. Abundant water is available from the numerous lakes and rivers in the area.

HISTORY

The Wheeler River Property was staked on July 6, 1977, due to its proximity to the Key Lake uranium discoveries, and was vended into an agreement on December 28, 1978 among AGIP Canada Ltd. (AGIP), E&B Explorations Ltd. (E&B), and Saskatchewan Mining Development Corporation (SMDC), with each holding a one-third interest. On July 31, 1984, all parties divested a 13.3% interest and allowed Denison Mines Limited, a predecessor company to Denison Mines Corp., to earn a 40% interest. On December 1, 1986, E&B allowed PNC Exploration (Canada) Co. Ltd. (PNC) to earn a 10% interest from one-half of its 20% interest. In the early 1990s, AGIP sold its 20% interest to Cameco, which was a successor to SMDC. In 1996, Imperial Metals Corporation, a successor to E&B, sold an 8% interest to Cameco and a 2% interest to PNC. Participating interests in 2004 were Cameco (48%), JCU (a successor to PNC, 12%), and Denison (40%).

In late 2004, Denison entered into an agreement to earn a further 20% interest by expending $7 million within six years. In November 2004, Denison became the operator of the Wheeler River Joint Venture. When the earn-in obligations were completed; the participating interests were Denison-60%, Cameco-30%, and JCU-10%. Since November 2004, Denison has been the project operator.

Except for the years 1990-1995, exploration activities comprising airborne and ground geophysical surveys, geochemical surveys, prospecting and diamond drilling have been carried out on the Wheeler River Property continuously from 1978 to present.

GEOLOGY AND MINERALIZATION

The Phoenix uranium deposit is located near the southeastern margin of the Athabasca Basin in the southwest part of the Churchill Structural Province of the Canadian Shield. The Athabasca Basin is a broad, closed and elliptically shaped, cratonic basin with dimensions of 425 km (east-west) by 225 km (north-south). The bedrock geology of the area consists of Archean and Paleo-Proterozoic gneisses unconformably overlain by up to 1,500 m of flat-lying, unmetamorphosed sandstones and conglomerates of the mid-Proterozoic Athabasca Group. The Wheeler River Property is located near the transition zone between two prominent litho-structural domains within the Precambrian basement; the Mudjatik Domain to the west and the Wollaston Domain to the east.

The Wheeler River Property lies in the eastern part of the Athabasca Basin where undeformed, late Paleoproterozoic to Mesoproterozoic sandstone, conglomerate, and mudstone of the Athabasca Group unconformably overlie early Paleoproterozoic and Archean crystalline basement rocks. The Phoenix deposit mineralization, generally occurring at depths ranging from 390 m to 420 m, is interpreted to be structurally controlled by the northeast-southwest trending (55º azimuth) WS shear fault which dips 55º to the southeast.

The local geology of the Wheeler River Property is consistent with the regional geology and consists of the following units from top to bottom:

- Quaternary Deposits: The Property is partially covered by lakes and muskeg, which overlie a complex succession of glacial deposits up to 120 m in thickness These include eskers and outwash sand plains, well-developed drumlins, till plains, and glaciofluvial plain deposits.

- Athabasca Group: Little-deformed late Paleoproterozoic to Mesoproterozoic Athabasca Group strata comprised of Manitou Falls Formation sandstones and conglomerates unconformably overlie the crystalline basement and have a thickness that varies from 170 m over the quartzite ridge to at least 560 m on the western side of the Property.

- Basement Geology: Basement rocks at the Phoenix deposit are part of the Wollaston Domain and are comprised of metasedimentary and granitoid gneisses. The metasedimentary rocks belong to the Wollaston Supergroup and include graphitic and non-graphitic pelitic and semipelitic gneisses, meta-quartzite, and rare calc-silicate rocks together with felsic and quartz feldspathic granitoid gneisses.

The Phoenix deposit is an Athabasca Basin unconformity-type uranium deposit. Uranium mineralization is in the form of the oxide uraninite/pitchblende (UO_2). Values of all accompanying metals are low, particularly in comparison with several sandstone-hosted deposits, which can have very high values for Ni, Co, and As.

Alteration is typical unconformity-associated style, with a form and nature similar to other Athabasca Basin deposits. The sandstones are altered for as much as 200 m above the unconformity, and exhibit varying degrees of silicification and desilicification, as well as dravitization, chloritization, and illitization. In addition, hydrothermal hematite and drusy quartz are present in the sandstone and often in the basement rocks.
The mineralization in the Phoenix deposit occurs at the unconformity contact between sandstone of the Athabasca group and underlying lower Proterozoic Wollaston Group metasedimentary rocks. Mineralization and alteration have been traced over a strike length of approximately one kilometre. Since the discovery hole WR-249 was drilled in 2008, 253 drill holes have reached the target depth, delineating two distinct zones (A and B) of high-grade mineralization and the smaller Zone A basement.

EXPLORATION

Following the discovery of the Phoenix deposit in 2008, Denison as operator of the Wheeler River Joint Venture, completed additional geophysical surveys and drilling programs in each of the years 2009, 2010, 2011, 2012, 2013, and 2014.

Geophysical surveys included 67.6 line-km of DC Resistivity/Induced Polarization in 2009, 76.2 km of ground EM surveying in 2010, and large amounts of additional DC/IP surveying in each of 2011 (120.6 line-km) and 2012 (48.2 line-km).

Diamond drilling during the period 2009-2012 was primarily focussed on definition drilling at the Phoenix deposit, but numerous holes were also completed on other targets on the Wheeler River Property. Diamond drilling during the period 2013-2014 was primarily focussed on exploration for additional lenses or deposits, but also included a component of infill delineation drilling on zone A to move all of the 2012 Inferred Mineral Resource into the indicated category, and to extend the higher grade portions of the deposit.

DRILLING

Since 1978 a total of 575 diamond drill holes and 61 reverse circulation (RC) drill holes totalling 377,187 m have been completed within the Wheeler River Property of which 253 drill holes totaling 117,822 m of diamond drilling have delineated the Phoenix trend. Of the 253 drill holes, 196 (141 at Zone A, 55 at Zone B) drill holes totaling 89,835 (64,491 m at Zone A, 25,344 m at Zone B) m have been completed over zone A and zone B. Well-established drilling industry practices were used in the drilling programs.

During the most recent drill program from January to March 2014, 11 diamond drill holes were completed at zone A.

All drill holes on the Wheeler River Property were logged with a radiometric probe to measure the natural gamma radiation, from which an indirect estimate of uranium content can be made. The gamma probes were calibrated and radiometric estimates of $\%U_3O_8$ were used in the drill hole database where core recovery was less than 80%, which involves approximately 23% of the drill holes used for resource estimation. Well established drilling industry practices were used in all of the drilling programs.

ANALYSES AND DATA VERIFICATION

Drill core from the Phoenix deposit was photographed, logged, marked for sampling, split, bagged, and sealed for shipment by Denison personnel at their field logging facility. All samples for assay or geochemical analysis were transported by Denison personnel to the Saskatchewan Research Council Geoanalytical Laboratories (SRC) in Saskatoon, SK. Uranium analyses were carried out at SRC which is accredited by the Standards Council of Canada as an ISO/IEC 17025 Laboratory for Mineral Analysis Testing and is also accredited ISO/IEC 17025:2005 for the analysis of U_3O_8.

To compare results of two different analytical methods, at two separate laboratories, Denison sent one in every 25 samples to the SRC's Delayed Neutron Counting (DNC) laboratory, a separate lab facility located at SRC Analytical Laboratories in Saskatoon.

Analytical standards were used to monitor analytical precision and accuracy, and field standards were used as an independent monitor of laboratory performance. Six uranium assay standards have been prepared for use in monitoring the accuracy and precision of uranium assays received from the laboratory. Denison employed a lithological blank composed of quartzite to monitor the potential for contamination during sampling, processing, and analysis. Core duplicates were obtained by collecting a second sample of the same material, through splitting the original sample, or other similar technique, and were submitted as an independent sample. Duplicates were typically collected at a minimum rate of one per 20 samples in order to obtain a collection rate of 5%. In RPA's opinion, the sample preparation and analytical methods are standard in the industry. Results of the quality assurance and data verification efforts demonstrate that the data are of sufficient quality for Mineral Resource estimates.

MINERAL RESOURCES

Denison has estimated Mineral Resources for the Phoenix deposit based on results of several surface diamond drilling campaigns from 2008 to 2014. The Denison drill hole database and Mineral Resource estimate have been audited by RPA. Table 1-1 summarizes the Phoenix deposit Mineral Resource estimate, of which Denison's share is 60%. The effective date of the Mineral Resource estimate is May 28, 2014.

Denison has interpreted the geology, structure, and mineralization at Phoenix using data from 196 diamond drill holes and developed three dimensional (3D) wireframe models which represent 0.05% U_3O_8 grade envelopes. For both Zone A and zone B, the wireframes each contain a higher grade (HG) domain within an envelope of lower grade material, resulting in four main domains. A fifth domain has been added for the current estimate consisting of a small zone of structurally controlled basement mineralization at the north end of zone A.

Based on 196 dry bulk density determinations, Denison developed a formula relating bulk density to grade which was used to assign a density value to each assay. Bulk density values were used to weight grades during the resource estimation process and to convert volume to tonnage.

Composited uranium grade times density (GxD) values and density (D) values were interpolated into each block model domain using an inverse distance squared (ID^2) algorithm for each mineralized domain. Domain boundaries were treated as hard boundaries, so that composites from any given domain could not influence block grades in other domains. Very high grade composites were not capped but grades greater than a designated threshold level for each domain were subject to restricted search ellipse dimensions in order to reduce their influence. Block grade was derived from the interpolated GxD value divided by the interpolated D value for each block. Block tonnage was based on volume times the interpolated D value.

The Mineral Resources for the Phoenix deposit are classified as Indicated and Inferred based on drill hole spacing and apparent continuity of mineralization.

The Phoenix deposit block models were validated by comparison of domain wireframe volumes with block volumes, visual comparison of composite grades with block grades, comparison of block grades with composite grades used to interpolate grades, and comparison with estimation by a different method.

2 INTRODUCTION

Roscoe Postle Associates Inc. (RPA) was retained by Denison Mines Corp. (Denison) on behalf of the Wheeler River Joint Venture to prepare an independent Technical Report on the Phoenix uranium deposit. The purpose of this report is to support an updated Mineral Resource estimate for the Phoenix deposit. Phoenix is an Athabasca Basin unconformity-type uranium deposit. This report has been prepared to conform to NI 43-101 Standards of Disclosure for Mineral Projects.

Denison is a Toronto-based mining company focused on uranium exploration and development in Canada, Mongolia, Mali, Namibia, and Zambia. Denison is listed on the Toronto Stock Exchange (symbol DML) and on the New York Stock Exchange MKT (symbol DNN).

Denison owns 60% of the Wheeler River Joint Venture, Cameco Corporation owns 30%, and JCU (Canada) Exploration Company Limited owns the remaining 10%. The Wheeler River Project comprises 19 contiguous claims in northern Saskatchewan totalling 11,720 ha.

In addition, Denison has a 22.5% interest in the McClean Lake mill in Saskatchewan, one of the three licensed conventional uranium mills in Canada. Denison's primary exploration properties are located in the eastern side of the Athabasca Basin, along the same geological terrain that hosts all of Canada's currently producing uranium mines, currently accounting for 16% of global production.

SOURCES OF INFORMATION

This report was prepared by William Roscoe, Ph.D., P.Eng., Principal Geologist, RPA. Dr. Roscoe last visited the Property on June 16, 2014 and held discussions with technical personnel in RPA's Toronto office on May 4, 2014.

All geological and sampling data were provided by Denison. Drilling and geological data were generated during the period May 2005 to March 2014. All field activities are currently managed by Denison.

The following Denison personnel have contributed to the geological, geophysical, environmental, and resource estimation sections of this technical report:

- Steve Blower, P.Geo., Vice President Exploration
- Lawson Forand, P.Geo., Exploration Manager
- Larry Petrie, MSc, P.Geo., Senior Geophysicist
- Clark Gamelin, P.Geo., Senior Project Geologist
- Chad Sorba, P.Geo., Senior Project Geologist

Specific activities completed were:

- Site visit and validation of data available for the resource estimate.
- Determination of correlation between assays and radiometric logs used for U_3O_8 grade estimation.
- Compilation of new Phoenix resource models.
- Geological interpretation of mineralized zones.
- Audit of drill hole database and assay certificates.
- Mineral Resource estimation and classification.
- Verification of Mineral Resource estimate.

William E. Roscoe, Ph.D., P.Eng., RPA Principal Geologist, was assisted in the review of the Denison database and resource estimate by Mark Mathisen, C.P.G., RPA Senior Geologist. Most of the Denison resource modelling was completed by Mark Mathisen while he was Director – Project Resources for Denison Mines Services Corp., a subsidiary of Denison, prior to his joining RPA in April 2014.

The documentation reviewed, and other sources of information, are listed in Section 27 References.

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

3 RELIANCE ON OTHER EXPERTS

This report has been prepared by Roscoe Postle Associates Inc. (RPA) for Denison Mines Corp. 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 Denison Mines Corp. and other third party sources.

For the purpose of this report, RPA has relied on ownership information provided by Denison Mines Corp. RPA has not researched property title or mineral rights for the Wheeler River Project 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

PROPERTY LOCATION

The Phoenix deposit is located within the Wheeler River Property, which is located in the eastern Athabasca Basin of northern Saskatchewan approximately 600 km north of Saskatoon, 260 km north of La Ronge and 110 km southwest of Points North Landing, in northern Saskatchewan (Figure 4-1). The centre of the Property is located approximately 35 km northeast of the Key Lake mill and 35 km southwest of the McArthur River mine, which are operated by Cameco Corporation (Cameco). The Property straddles the boundaries of NTS map sheets 74H-5, 6, 11 and 12. The UTM coordinates of the approximate centre of the Property are 475,000E and 6,370,000N (NAD83, Zone 13N).

LAND TENURE

Wheeler River comprises 19 contiguous claims held as a Joint Venture among Denison (60%), Cameco (30%), and JCU (Canada) Exploration Co. Ltd. (10%) with no back-in rights or royalties that need to be paid. The claims are shown in Figure 4-2 and listed in Table 4-1. Denison has been the operator of the Property since November 10, 2004.

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

TABLE 4-1 LAND TENURE DETAILS
Denison Mines Corp. – Phoenix Deposit

Disposition #	Hectares	Annual Assessment ($)	Excess Credit ($)	Years Protected
S-97677	322	8,050	161,000	20
S-97678	335	8,375	167,500	20
S-97690	1,087	27,175	543,500	20
S-97894	246	6,150	123,000	20
S-97895	314	7,850	157,000	20
S-97896	356	8,900	178,000	20
S-97897	524	13,100	262,000	20
S-97907	352	8,800	176,000	20
S-97908	1,619	40,475	809,500	20
S-97909	1,036	25,900	518,000	20
S-98339	362	9,050	181,000	20
S-98340	250	6,250	125,000	20
S-98341	802	20,050	401,000	20
S-98342	1,016	25,400	508,000	20
S-98343	362	9,050	181,000	20
S-98347	939	23,475	469,500	20
S-98348	951	23,775	475,500	20
S-98349	540	13,500	270,000	20
S-98350	307	7,675	153,500	20

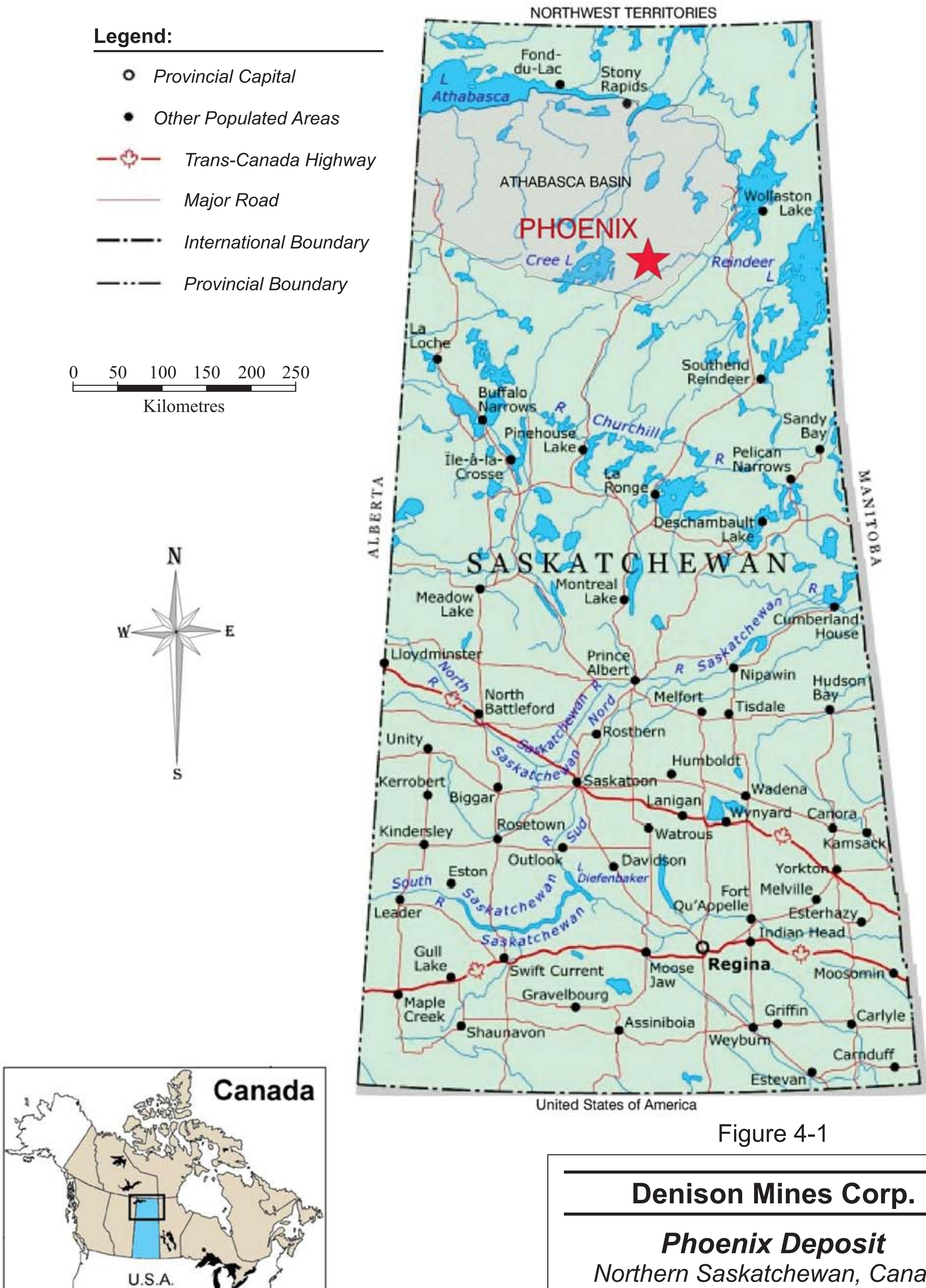

Figure 4-1

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Wheeler River Property Location Map

June 2014

Source: Natural Resources Canada.

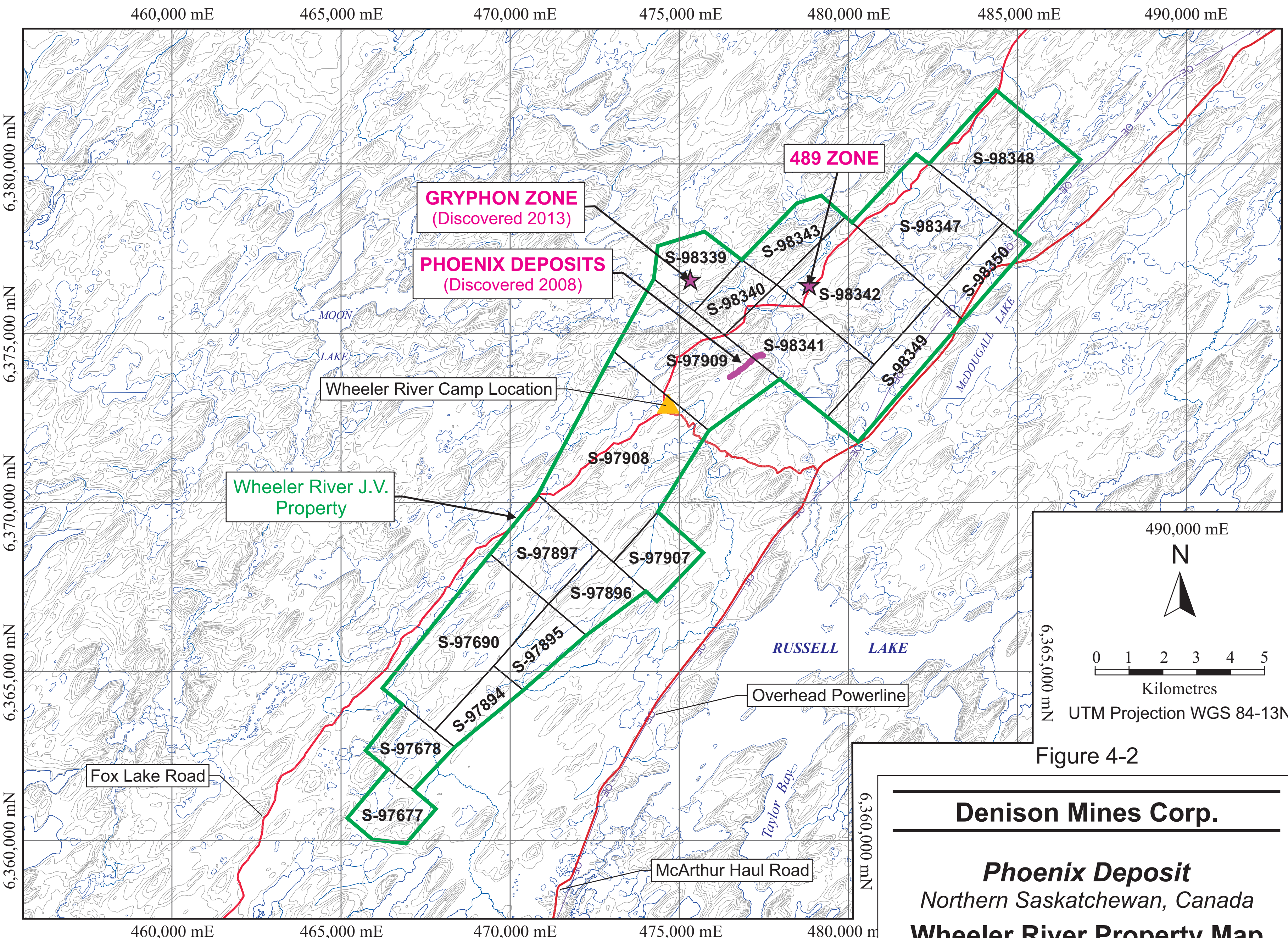

Figure 4-2

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Wheeler River Property Map

June 2014

Source: Denison Mines Corp., 2012.

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5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

ACCESSIBILITY

Access to the Phoenix deposit is by road, helicopter, or fixed wing aircraft from Saskatoon. Vehicle access to the Property is by Highway 914, which terminates at the Key Lake mill. The ore haul road between the Key Lake and McArthur River operations lies within the eastern part of the Property. An older access road, the Fox Lake Road, between Key Lake and McArthur River provides access to most of the northwestern side of the Property. Gravel and sand roads and drill trails provide access by either four-wheel-drive or all-terrain-vehicle to the rest of the Property.

CLIMATE

The climate is typical of the continental sub-arctic region of northern Saskatchewan, with temperatures ranging from +32°C in summer to -45°C in winter. Winters are long and cold, with mean monthly temperatures below freezing for seven months of the year. Winter snow pack averages 70 cm to 90 cm. Field operations are possible year round with the exception of limitations imposed by lakes and swamps and the periods of break-up and freeze-up.

Freezing of surrounding lakes, in most years, begins in November and breakup occurs around the middle of May. The average frost-free period is approximately 90 days.

Average annual total precipitation for the region is approximately 450 mm, of which 70% falls as rain, with more than half occurring from June to September. Snow may occur in all months but rarely falls in July or August. The prevailing annual wind direction is from the west with a mean speed of 12 km/hr.

LOCAL RESOURCES AND INFRASTRUCTURE

La Ronge is the nearest commercial/urban centre where most exploration supplies and services can be obtained. Two airlines offer daily, scheduled flight services between Saskatoon and La Ronge (located approximately 600 km and 260 km respectively, south of the project site). Most company employees are on a two week-in and two week-off schedule. Contractor employees are generally on a longer work schedule.

As noted previously, the Phoenix deposit is well located with respect to all weather roads and the provincial power grid. Most significantly, the operating Key Lake mill complex, owned and operated by Cameco is approximately 35 km south of the Property.

Field operations are currently conducted from Denison's Wheeler River camp, three kilometres southwest of Phoenix (Figure 4-2). The camp, which is operated by Denison, provides accommodations for up to forty exploration personnel. Fuel and miscellaneous supplies are stored in existing warehouse and tank facilities at the camp. The site generates its own power. Abundant water is available from the numerous lakes and rivers in the area.

PHYSIOGRAPHY

The Property is characterized by a relatively flat till plain with elevations ranging from 477 m to 490 m above sea level (MASL). Throughout the area, there is a distinctive northeasterly trend to landforms resulting from the passage of Pleistocene glacial ice from the northeast to the southwest. The topography and vegetation at Phoenix are typical of the taiga forested land common to the Athabasca Basin area of northern Saskatchewan.

The area is covered with 30 m to 50 m of overburden. The terrain is gently rolling and characterized by forested sand and dunes. Vegetation is dominated by black spruce and jack pine, with occasional small stands of white birch occurring in more productive and well-drained areas. Lowlands are generally well drained, but also can contain some muskeg and poorly drained bog areas with vegetation varying from wet, open, non-treed vistas to variable density stands of primarily black spruce as well as tamarack depending on moisture and soil conditions. Lichen growth is common in this boreal landscape mostly associated with mature coniferous stands and bogs.

6 HISTORY

OWNERSHIP

The Wheeler River Property was staked on July 6, 1977, due to its proximity to the Key Lake uranium discoveries, and was vended into an agreement on December 28, 1978 among AGIP Canada Ltd. (AGIP), E&B Explorations Ltd. (E&B), and Saskatchewan Mining Development Corporation (SMDC), with each holding a one-third interest. On July 31, 1984, all parties divested a 13.3% interest and allowed Denison Mines Limited, a predecessor company to Denison Mines Corp., to earn a 40% interest. On December 1, 1986, E&B allowed PNC Exploration (Canada) Co. Ltd. (PNC) to earn a 10% interest from one-half of its 20% interest. In the early 1990s, AGIP sold its 20% interest to Cameco, which was a successor to SMDC. In 1996, Imperial Metals Corporation, a successor to E&B, sold an 8% interest to Cameco and a 2% interest to PNC. Participating interests in 2004 were Cameco-48%, JCU-12% (a successor to PNC), and Denison-40%.

In late 2004, Denison entered into an agreement to earn a further 20% interest by expending $7 million within six years. In November 2004, Denison became the operator of the Wheeler River Joint Venture. When the earn-in obligations were completed; the participating interests were Denison-60%, Cameco-30%, and JCU-10%. Since November 2004, Denison has been the project operator.

EXPLORATION AND DEVELOPMENT HISTORY

Except for the years 1990-1994, exploration activities comprising airborne and ground geophysical surveys, geochemical surveys, prospecting and diamond drilling have been carried out on the Wheeler River Property continuously from 1978 to present.

Subsequent to the discovery of the Key Lake mine in 1975 and 1976, the Key Lake exploration model (Dahlkamp and Tan 1977) has emphasized the spatial association between uranium deposition at, immediately above, or immediately below the unconformity with graphitic pelite units in the basement subcrop under the basal Athabasca sandstone. The graphitic pelite units are commonly intensely sheared and are highly conductive in contrast to the physically more competent adjoining rock types that include semipelite, psammite, meta-arkose, or granitoid gneiss. From the late 1970s to the present, the Key Lake model has been useful in discovering blind uranium deposits throughout the Athabasca Basin (Jefferson, et al. 2007); although it is worth noting that the vast majority of electromagnetic (EM) conductors are unmineralized.

Following the Key Lake exploration model, EM techniques were the early geophysical methods of choice for the Wheeler River Property area during the period 1978-2004 and over 152 line-kilometres of conductors have been delineated on the Property. These conductive units have been delineated to depths of 1,000 m, through the quartz-rich Athabasca Group sandstones that are effectively transparent from an EM perspective.

These conductors or conductor systems were assigned a unique designation and follow-up exploration drilling successfully identified several zones of uranium mineralization.

In 1982 AGIP discovered the MAW Zone. This alteration system contains rare earth element (REE) mineralization in a structurally disrupted zone which extends from the unconformity to the present surface. There is no evidence of uranium mineralization. The REE mineralization contains yttrium values greater than 2.0%, boron values up to 2.5%, and total rare earth oxide (REO) up to 8.1%.

In 1986 SMDC intersected uranium mineralization associated with Ni-Co-As sulphides at the unconformity in the M Zone (DDH ZM-10, 0.79% U_3O_8 over 5.75 m), and also discovered uranium mineralization at the O Zone. O Zone mineralization is associated with a 72 m vertical unconformity offset. The O Zone basement-hosted mineralization grades 0.048% U_3O_8 over 0.9 m at 378.8 m in drill hole ZO-02.

In 1988 Cameco intersected weak basement-hosted mineralization in two holes in the K Zone. Drill hole ZK-04 reported 0.08% U_3O_8 over 2.4 m at 580.0 m and 0.19% U_3O_8 over 2.3 m at 587.7 m, and drill hole ZK-06 returned 0.17% U_3O_8 over 7.7 m at 532.0 m and 0.06% U_3O_8 over 4.4 m at 564.6 m.

From 1995 to 1997, exploration by Cameco identified strong alteration and illitic and dravitic geochemical enrichment associated with major structures in both the sandstone and the basement and a significant unconformity offset associated with the “quartzite ridge” which had been delineated as a result of drilling the Q conductor system.

In 1998, further drilling was carried out at the Q Zone and also at the R Zone (the Phoenix deposit area). At the latter, two drill holes were abandoned in sandstone due to quartz dissolution (desilicification). The possibility that this sandstone alteration might be of significance was not emphasized at the time.

In 1999, a geological setting similar to McArthur River's P2 trend was intersected at the WC Zone, where faulted graphite-pyrite pelitic gneiss overlay the quartzite ridge. The former operator (Cameco) noted extensive dravite (boron) alteration in the overlying sandstones.

In 2002, drill hole WR-185 intersected a 175 m unconformity offset along the west contact of the quartzite ridge. This area was the initial focus of the Wheeler River Joint Venture after Denison became operator in 2004.

In 2003, 61 shallow reverse circulation holes were drilled, targeting the sandstone/overburden interface exploring for alteration zones in the upper sandstone. No anomalies were detected. Drill hole WR-190A tested the WS UTEM conductor and was abandoned at 364 m due to deteriorating drilling conditions. This drill hole is located only 90 m from the eventual Phoenix discovery drill hole WR-249. Noticeable desilicification and bleaching of the sandstone were present, but no noteworthy geochemical anomalies were identified. A direct current (DC) resistivity survey was also completed to map trends of alteration within the Athabasca sandstones and underlying basement rocks that might be related to uranium mineralization.

In November 2004, Denison became operator of the Wheeler River Joint Venture and in 2005 carried out property-wide airborne Fugro GEOTEM and Falcon Gravity surveys with five subsequent ground TEM grids completed on GEOTEM anomalies. The focus for Denison, based on a McArthur River analogy, was the quartzite ridge, particularly the west, or footwall side of the ridge. Several small regional campaigns were carried out to test EM conductors located by airborne and ground geophysical surveys.

Although 2007 drilling on various 2003 resistivity anomalies did not discover any significant uranium mineralization, there was some support for the concept that resistivity did "map" alteration chimneys within the Athabasca sandstone. Alteration chimneys in the Athabasca sandstone above the unconformity or basement-hosted uranium mineralization have been described from almost all Athabasca Basin uranium deposits, following the first thorough description of their occurrence at the McClean deposits (Saracoglu, et al. 1983) (Wallis, et al. 1984). The chimneys nearly always have a prominent structural component consisting of broken and rotated sandstone and a high degree of fracturing and brecciation. These structural features are accompanied by alteration consisting of variable amounts of bleaching (removal of diagenetic hematite), silicification, desilification, druzy quartz-lined fractures, secondary hematite, dravite, and/or clay minerals which can cause resistivity anomalies.

In 2007 a 154.8 line-km geophysical IP and MT survey using Titan 24 DC resistivity technology was undertaken with the prime goals being the extension of Cameco's 2003 resistivity survey, surveying of the K and M zones and exploration of the REa or "Millennium" (WS zone) zone, which appeared to have attractive geological features in an underexplored part of the Property. The results showed the following:

- A very strong resistivity high which delineated the quartzite unit.
- Two strong, well defined resistivity lows both occurring in areas where previous drill holes had been lost in the Athabasca sandstone.
- Well defined resistivity chimneys.

During the winter and spring of 2008, the North Grid resistivity survey data was reinterpreted and three drill targets, A, B, and C were proposed. These targets were well defined alteration or resistivity chimneys situated close to the hanging wall of the quartzite unit in areas where previous attempts to drill ground EM conductors (the WS and the REA) had failed to reach the unconformity.

Drill hole WR-249 in 2008 is considered to be the discovery hole for the Phoenix deposit. Subsequent drilling has identified four mineralized zones over a strike length of more than one kilometre: Phoenix zones A and B, plus the Phoenix C and D target areas. Drilling on the Phoenix deposit is described in Section 10.

An initial Mineral Resource estimate was reported for the Phoenix deposit in a NI 43-101 Technical Report by SRK Consulting (Canada) Inc. (SRK) dated November 17, 2010 (Table 6-1). An updated Mineral Resource estimate for the Phoenix deposit zones A and B was prepared by RPA on December 31, 2012 (Table 6-2). Both previous Mineral Resource estimates are superseded by the Mineral Resource described in this report, which incorporates additional drilling since 2012.

TABLE 6-1 2010 SRK MINERAL RESOURCE ESTIMATE
(100% BASIS)
Denison Mines Corp. – Phoenix Deposit

Deposit	Classification	Tonnes (000)	Lbs U_3O_8 (000)	Average Grade (%U_3O_8)
Zone A	Indicated	89.9	35,638	18.0
Zone B	Inferred	23.8	3,811	7.3

TABLE 6-2 RPA MINERAL RESOURCE ESTIMATE AS OF DECEMBER 31, 2012
(100% BASIS)
Denison Mines Corp. – Phoenix Deposit

Category	Tonnes	Grade (% U_3O_8)	Million lb U_3O_8
Indicated	152,400	15.6	52.3
Inferred	11,600	29.8	7.6

7 GEOLOGICAL SETTING AND MINERALIZATION

Portions of the following geological descriptions are taken from internal Denison reports of 2009 to 2014.

REGIONAL GEOLOGY

GENERAL

The Phoenix uranium deposit is located near the southeastern margin of the Athabasca Basin in the southwest part of the Churchill Structural Province of the Canadian Shield (Figure 7-1). The Athabasca Basin is a broad, closed, and elliptically shaped, cratonic basin with an area of 425 km (east-west) by 225 km (north-south). The bedrock geology of the area consists of Archean and Paleo-Proterozoic gneisses unconformably overlain by up to 1,500 m of flat-lying, unmetamorphosed sandstones and conglomerates of the mid-Proterozoic Athabasca Group. The Wheeler River project is located near the transition zone between two prominent litho-structural domains within the Precambrian basement, the Mudjatik Domain to the west and the Wollaston Domain to the east.

The Mudjatik Domain is characterized by elliptical domes of Archean granitoid orthogenesis separated by keels of metavolcanic and metasedimentary rocks, whereas Wollaston Domain is characterized by tight to isoclinal, northeasterly trending, doubly plunging folds developed in Paleoproterozoic metasedimentary rocks of the Wollaston Supergroup (Yeo and Delaney 2007), which overlie Archean granitoid orthogenesis identical to those of Mudjatik Domain.

The area is cut by a major northeast-striking fault system of Hudsonian Age. The faults occur predominantly in the basement rocks but often extend up into the Athabasca Group due to several periods of post-depositional movement. Diabase sills and dikes up to 100 m in width and frequently associated with the faulting have intruded into both the Athabasca rocks and the underlying basement.

THE METAMORPHOSED BASEMENT

The basement rocks underlying the Athabasca Group have been divided into three tectonic domains: the Western Craton, the Cree Lake Mobile Zone, and the Rottenstone Complex (Figures 7-1 and 7-2). The central Cree Lake Mobile Zone is bounded in the northwest by the Virgin River Shear and Black Lake fault and in the southeast by the Needle Falls Shear Zone.

The Cree Lake Mobile Zone has been further subdivided into the Mudjatik Domain in the west half and the Wollaston Domain in the east half. The lithostructural character of these domains is the result of the Hudsonian Orogeny in which an intense thermo-tectonic period remobilized the Archean age rocks and led to intensive folding of the overlying Aphebian-age supracrustal metasedimentary units. The Mudjatik domain represents the orogenic core and comprises non-linear, felsic, granitoid to gneissic rocks surrounded by subordinate thin gneissic supracrustal units. These rocks, which have reached granulite-facies metamorphic grades, usually occur as broad domal features. The adjacent Wollaston Domain consists of Archean granitoid gneisses overlain by an assemblage of Aphebian pelitic, semipelitic, and arkosic gneisses, with minor interlayered calc-silicate rocks and quartzites. These rocks are overlain by an upper assemblage of semipelitic and arkosic gneisses with magnetite bearing units.

The Wollaston Domain basement rocks are unconformably overlain by flat lying, unmetamorphosed sandstones, and conglomerates of the Helikian age Athabasca Group, which is a major aquifer in the area.

THE ATHABASCA GROUP

The Athabasca Group sediments consist of unmetamorphosed pink to maroon quartz-rich pebbly conglomerate and red siltstone of the Read Formation and maroon quartz pebble conglomerate, maroon to white pebbly sandstone, sandstone and clay-clast-bearing sandstone belonging to the Manitou Falls Formation. The sandstone is poorly sorted near the base, where conglomerates form discontinuous layers of variable thickness. Minor shale and siltstone occur in the upper half of the succession. Locally, the rocks may be silicified and indurated or partly altered to clay and softened. In spite of their simple composition, their diagenetic history is complex (Jefferson et al. 2007). The predominant regional background clay is dickite.

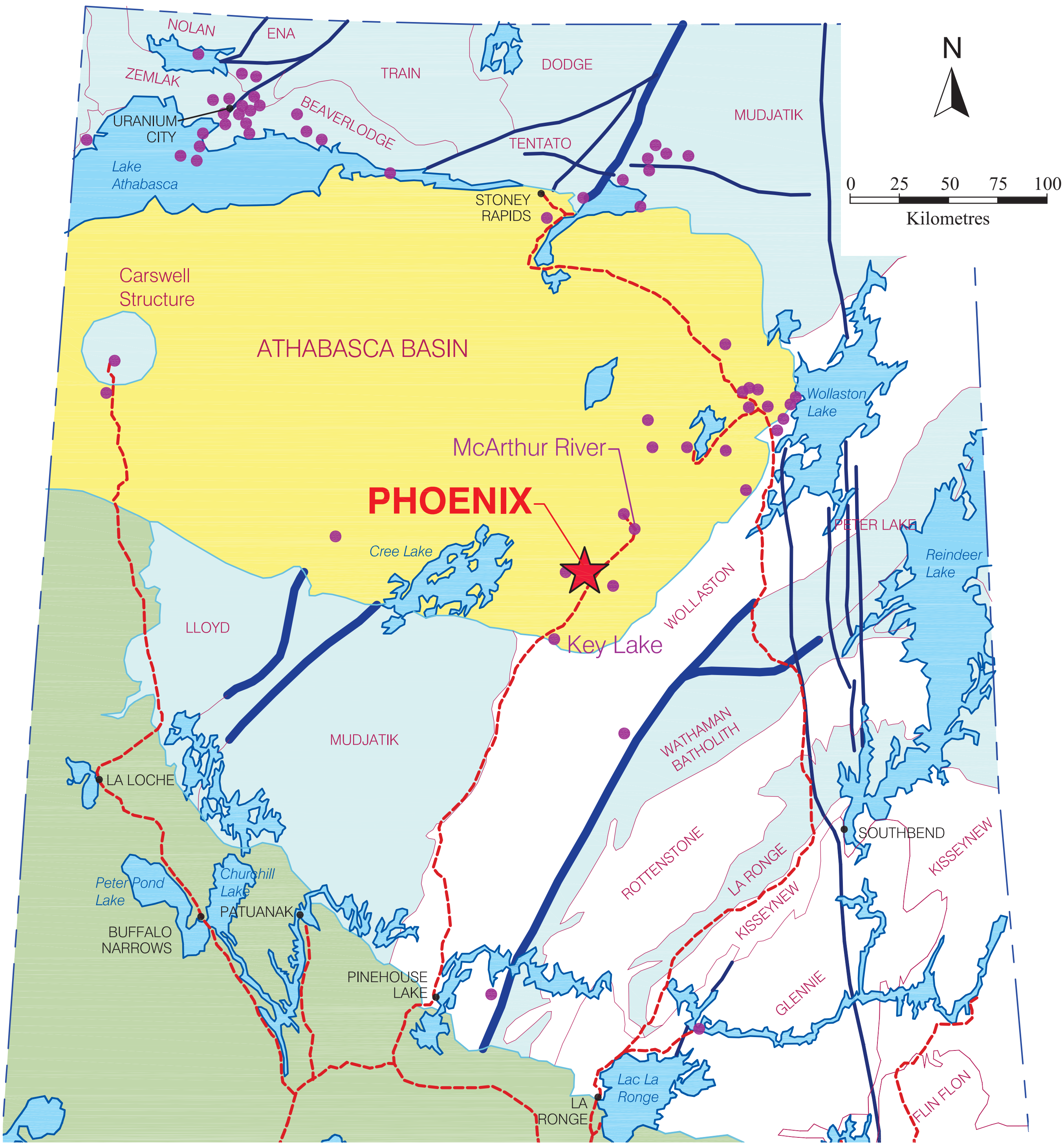


Figure 7-1

Legend:

Phanerozoic	*Road*
Athabasca Group (Helikian)	*Major Shear Zone*
Pre-Athabasca Basement	*Faults*
	Uranium Deposits

Source: From Saskatchewan Ministry of Energy and Resources, 2009.

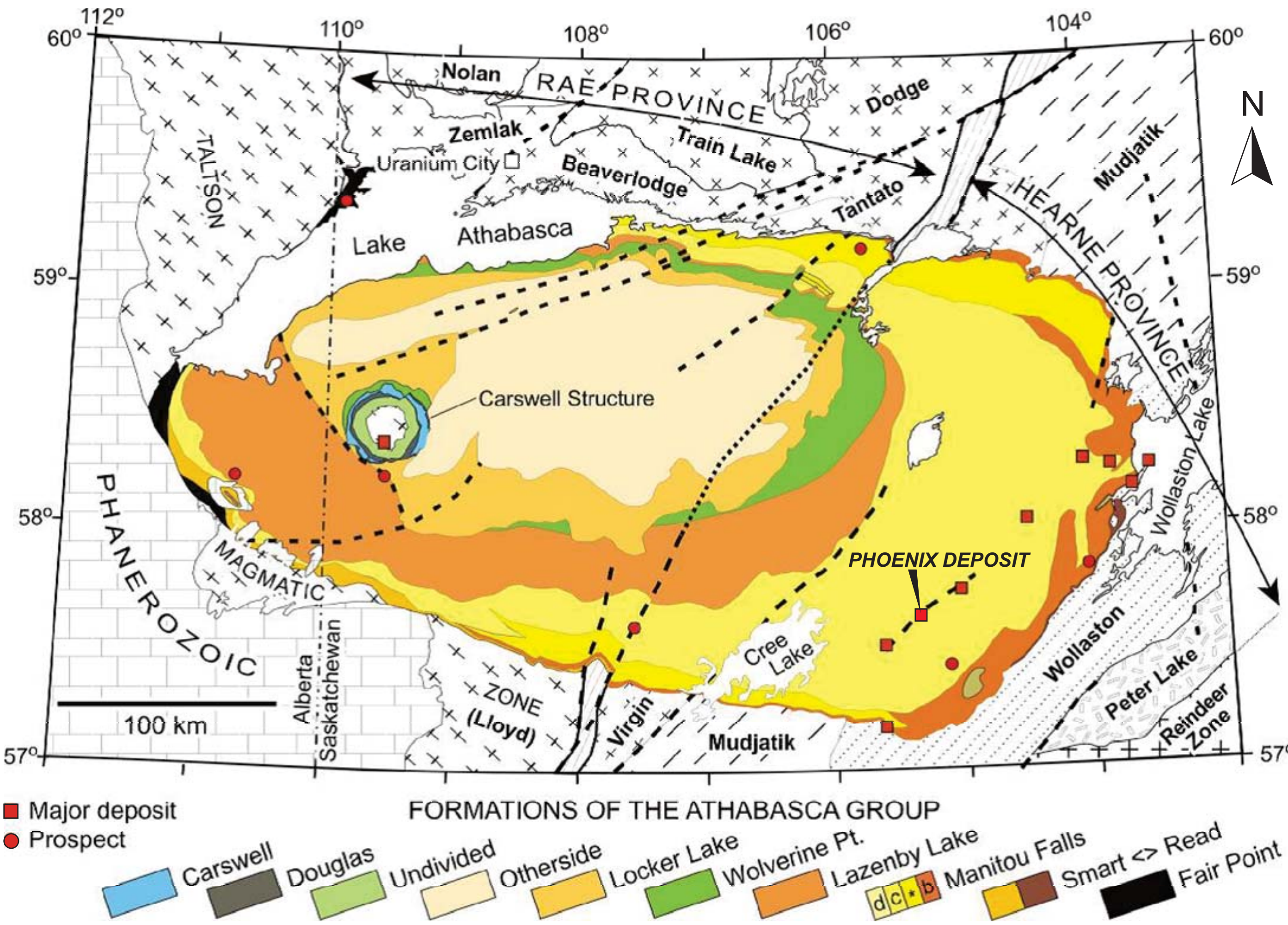
June 2014

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Regional Geology and Uranium Deposits



NOTE: Crystalline basement domains are labeled in bold text. The sub-unit of the Manitou Falls Formation labeled “*” in the legend corresponds to the Warnes and Raible members, which interfinger with the Bird (MFb) Member in southern and northern Athabasca Basin respectively.

Figure 7-2

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Simplified Geological Map of Athabasca Basin

June 2014

Source: EXTECH IV.

The basin is interpreted to have developed from a series of early northeast-trending fault-bounded sub-basins that coalesced. The topographic profile of the unconformity suggests a gentle inward slope in the east, moderate to steep slopes in the north and south and a steeper slope in the west.

The Manitou Falls Formation, which underlies most of the eastern part of the basin (Figure 7-2), is further subdivided into four members from bottom to top:

- Read Formation (formerly the MFa Member) - a sequence of poorly sorted sandstone and minor conglomerate;
- Bird Member (MFb) - interbedded sandstone and conglomerate distinguished from the underlying MFa and overlying MFc by the presence of at least 1% to 2% conglomerate in beds thicker than 2 cm;
- Collins Member (MFc) - a sandstone with rare clay intraclasts;
- Dunlop Member (MFd) - a fine-grained sandstone with abundant (>1%) clay intraclasts.

QUATERNARY DEPOSITS

In the eastern Athabasca Basin, Quaternary glacial deposits up to 100 m thick drape bedrock topography of ridges, typically associated with granitic gneiss domes, and structurally controlled valleys (Campbell 2007). At least three tills, locally separated by stratified gravel, sand, and silt, can be distinguished. The dominant ice-flow direction was southwesterly, but a late glacial re-advance was southerly in eastern parts of the basin and westerly along its northern edge.

LOCAL AND PROPERTY GEOLOGY

The Wheeler River Property lies in the eastern part of the Athabasca Basin where undeformed, late Paleoproterozoic to Mesoproterozoic sandstone, conglomerate, and mudstone of the Athabasca Group unconformably overlie early Paleoproterozoic and Archean crystalline basement rocks. Mineralization at Phoenix generally occurs at depths ranging from 390 m to 420 m and is interpreted to be structurally controlled by the northeast-southwest trending (055º azimuth) WS fault which dips 55º to the southeast.

The local geology of the Wheeler River Property is very much consistent with the regional geology described above with the following units from top to bottom.

QUATERNARY DEPOSITS

The Property is partially covered by lakes and muskeg, which overlie a complex succession of glacial deposits up to 120 m in thickness These include eskers and outwash sand plains, well-developed drumlins, till plains, and glaciofluvial plain deposits (Campbell 2007). The orientation of the drumlins reflects southwesterly ice flow.

ATHABASCA GROUP

Little-deformed late Paleoproterozoic to Mesoproterozoic Athabasca Group strata comprised of Manitou Falls Formation sandstones and conglomerates unconformably overlie the crystalline basement and have a considerable range (Figure 7-3) from 170 m over the quartzite ridge to at least 560 m on the western side of the Property.

The Manitou Falls Formation is locally separated from the underlying Read Formation (formerly the MFa) by a paraconformity, and comprises three units, the Bird Member (MFb), Collins Member (MFc), and Dunlop Member (MFd), which are differentiated based on conglomerates and clay intraclasts (Bosman and Korness 2007) (Ramaekers et al. 2007). Thickness of the Read Formation ranges from zero metres at the north end of the property and over parts of the quartzite ridge to 200 m west of the quartzite ridge. The thickness of the MFb, which is absent above the quartzite ridge, is as much as 210 m in the northeastern part of the Property. The MFc unit is a relatively clean sandstone with locally scattered granules or pebbles and one-pebble-thick conglomerate layers interpreted to be pebble lag deposits. The MFc ranges in thickness from 30 m to 150 m. The MFd is distinguished from the underlying MFc sandstone by the presence of at least 0.6% clay intraclasts (Bosman and Korness, 2007). The MFd is as thick as 140 m. The upper 100 m to 140 m of sandstone is typically buff colored, medium- to coarse-grained, quartz rich and cemented by silica, kaolinite, illite, sericite, or hematite. Alteration of the sandstone is noted along much of the Phoenix deposit trend.

Variations in thickness of the Athabasca sub-units reflect syndepositional subsidence. In particular, the thinning of the Read Formation towards the quartzite ridge, and the absence of both the Read and the MFb Member over much of the ridge, indicate syn-Read uplift of the latter along the thrust fault that bounds it to the west. This is supported by the Read Formation sedimentary breccia, interpreted as a fault-scarp talus deposit, along the western margin of the ridge.

Although the predominant regional background clay in the Athabasca Basin is dickite, the Wheeler River Property lies within a broad illite anomaly trending northeasterly from Key Lake through the McArthur River area (Earle and Sopuck 1989). Chlorite and dravite are also relatively common in sandstones within this zone.

The topography of the sub-Athabasca basement varies dramatically across the Property. From elevations of 160 MASL to 230 MASL along its southeastern edge, the unconformity rises gently to a pronounced northeasterly trending ridge up to 350 MASL, coincident with the subcrop of a quartzite unit in the crystalline basement. The unconformity surface drops steeply westward to as low as 30 MBSL. The unconformity surface is less variable in the northern part of the Property, ranging from 40 MASL in the northeast to 200 MASL in the northwest.

The west side of the quartzite unit forms a prominent topographic scarp, rising up to 200 m above the Athabasca sandstone lying to the west. A breccia of angular quartzite blocks, centimetres to metres in size, with a finely-laminated sandstone matrix, has been intersected in numerous drill holes along the western margin (footwall) of the quartzite ridge. The quartzite breccia is often intimately associated with uranium mineralization that occurs at numerous locations along the footwall of the quartzite unit.

The Athabasca sandstones were deposited as a succession of sandy and gravelly braided river deposits in westward-flowing streams. The conglomerates typical of MFb indicate increased stream competence, due either to increased flow (i.e., higher precipitation) or increased subsidence. The mud chips typical of MFd are fragments of thin mud beds deposited from suspension during the late stages of a flood and re-worked by the next one. Hence, they indicate intermittent, possibly seasonal, stream flow (Liu et al. 2011).

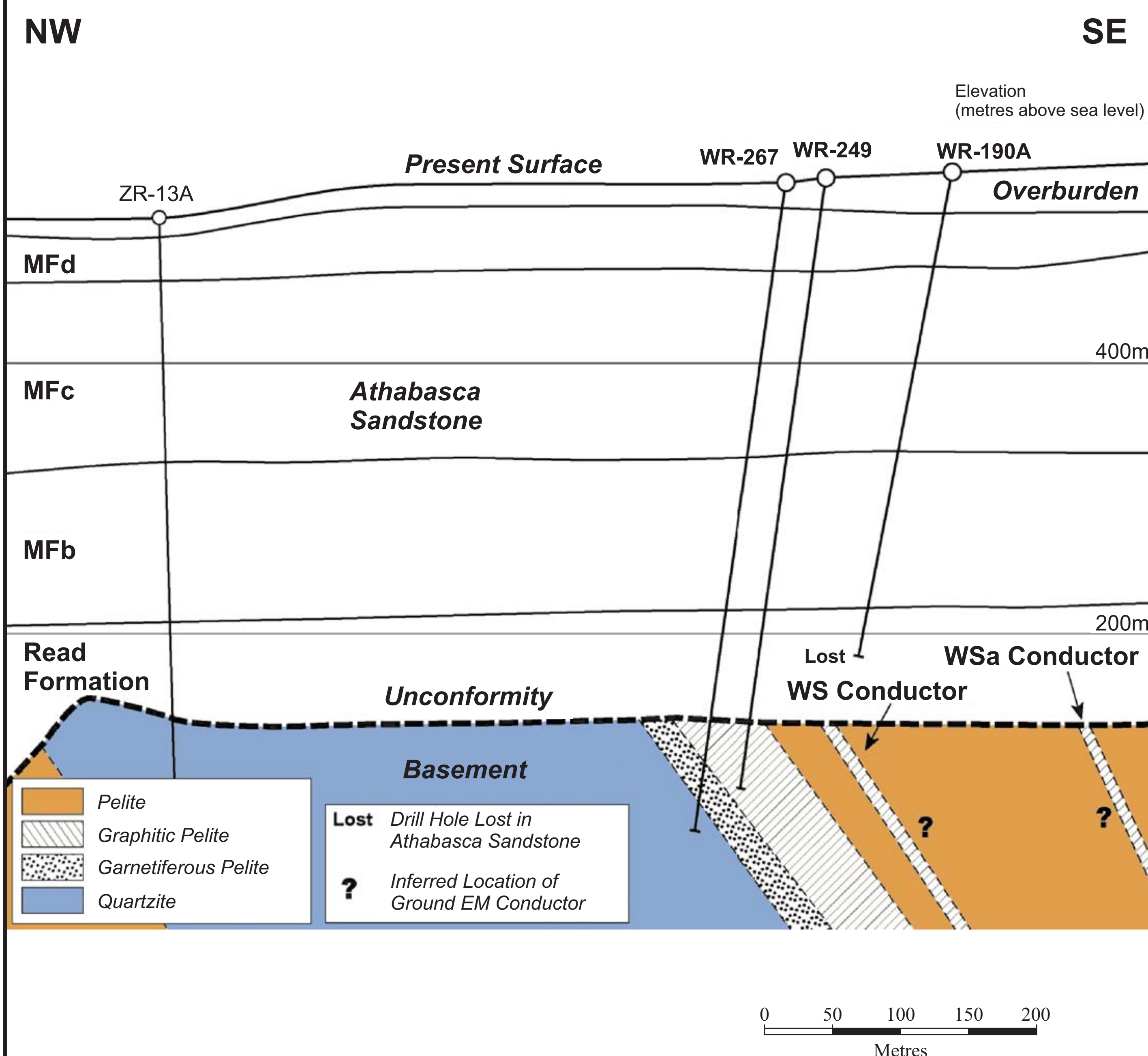


Figure 7-3

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Schematic Section of Athabasca and Basement Rock Types

June 2014

Source: Denison Mines Corp., 2012.

BASEMENT GEOLOGY

Basement rocks beneath the Phoenix deposit are part of the Wollaston Domain and are comprised of metasedimentary and granitoid gneisses (Figure 7-4). The metasedimentary rocks belong to the Wollaston Supergroup and include graphitic and non-graphitic pelitic and semipelitic gneisses, meta-quartzite, and rare calc-silicate rocks together with felsic and quartz feldspathic granitoid gneisses. These metasedimentary rocks are interpreted to belong to the Daly Lake Group (Yeo and Delaney, 2007). Pegmatitic segregations and intrusions are common in all units with garnet, cordierite, and sillimanite occurring in the pelitic strata, indicating an upper amphibolite grade of metamorphism.

The quartzite ridge, an interpreted impermeable and structural barrier forming the footwall to the mineralization (Figure 7-5), dominates the basement geology at the Phoenix deposit. The quartzite unit exhibits variable dips from 45º to 75º to the southeast, averaging 50º, and with an undulating, but generally 055º azimuth. Immediately overlying the quartzite is a garnetiferous pelite, which varies from seven metres to 60 m in thickness. This generally competent and unmineralized unit contains distinctive porphyroblastic garnets and acts as a marker horizon. Overlying the garnetiferous pelite is a graphitic pelite in which the graphite content varies from 1% to 40%. The graphitic pelite is approximately five metres wide in the southwest, increases to approximately 70 m near drill hole WR-249, and is 50 m wide at the northeast extremity. Overlying the graphitic pelite is a massive, non-graphitic, unaltered pelite unit.

Graphitic pelite and quartzite units appear to play important roles in the genesis of Athabasca Basin unconformity-type deposits (Jefferson et al. 2007). Thus the presence of extensive subcrop of both units: 18 km of quartzite and 152 line-km of conductors (assumed to be graphitic pelite), greatly enhances the economic potential of the Wheeler River Property.

All of these rock types have a low magnetic susceptibility. The metasedimentary rocks are flanked by and intercalated with granitoid gneisses, some of which have a relatively high magnetic susceptibility. Some of these granitoid gneisses are Archean (Card et al. 2007). Prior to extensive drilling, interpretation of basement geology depends heavily on airborne magnetic data combined with airborne and ground EM interpretation.

A “Paleoweathered Zone”, generally from three to ten metres thick, is superimposed on the crystalline rocks and occurs immediately below the unconformity.

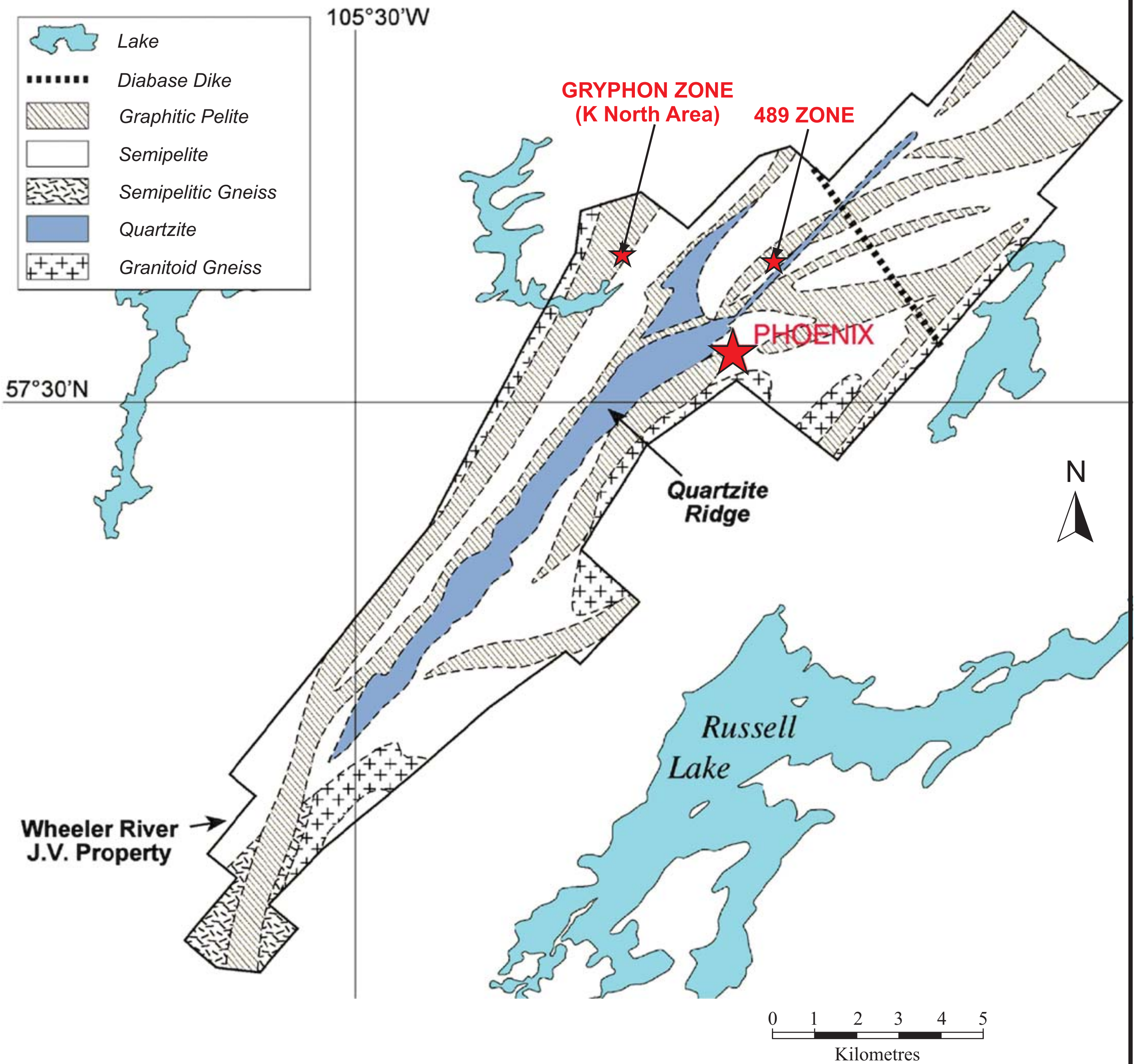


Figure 7-4

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Basement Geology

June 2014

Source: Denison Mines Corp., 2010.

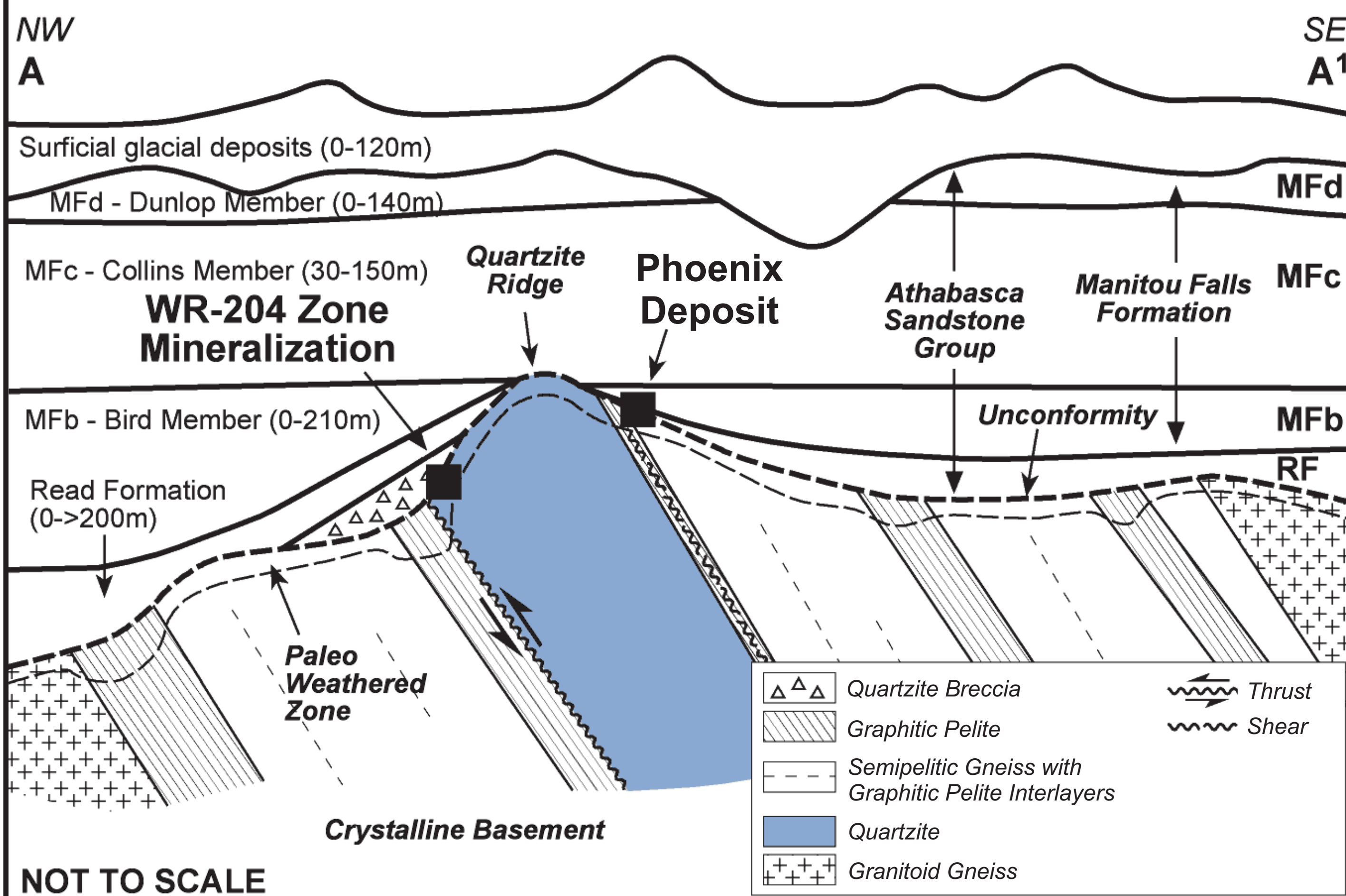


Figure 7-5

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Schematic of the Quartzite Ridge

June 2014

Source: Denison Mines Corp., 2010.

STRUCTURAL GEOLOGY

The Wheeler River Property lies in the Wollaston Domain, a northeast-trending fold and thrust belt with recumbently folded, early Paleoproterozoic, Wollaston Supergroup metasedimentary rocks intercalated with granitoid gneisses, some of which are of Archean age.

Numerous hypothetical structural models have been proposed for the Wheeler River Property. The most simple is to infer a southeast dipping homocline. The presence of mechanically competent quartzite units, as well as the bounding units of competent granitoid gneiss, together with the many kilometres of relatively incompetent graphitic pelite provides a situation for the extensive development of thrust and strike slip/wrench fault tectonics, as well as later normal faults, at competent/incompetent interfaces (Liu et al. 2011).

The major structural feature at the Phoenix deposit is the northeast-southwest trending (055º azimuth) WS reverse fault which dips 55º to the southeast and lies within or at the base of the graphitic pelite unit along the western edge (footwall) of the quartzite ridge, which appears to have acted as a buttress for thrusting and reverse faulting (Kerr 2010) (Kerr, Gamelin et al. 2011). Deformation within the WS shear has occurred partly by ductile shearing, but mainly by fracturing. A progressive sequence of fracturing is evident by variations in the strike and dip of slickensides. The principal stress directions responsible for early deformation were northwest-southeast. A change in the principal stress to an east-west direction led to later strike-slip movement along the WS shear. Later extension is indicated by northwest-striking normal faults, which dip steeply to the southwest.

With the limited data currently available it appears that the WS structure was most active during deposition of the Read Formation, however, continued uplift is indicated by westward tilting of MFc strata along the fault zone. Reverse fault displacements on the western edge of the quartzite ridge occurred primarily within the highly resistant quartzite unit. Within the Wheeler River area, vertical offset on the footwall of the quartzite unit can be as much as 60 m; however, at the Phoenix deposit, known vertical displacements in the hanging wall sequence are always less than 10 m (Figure 7-6).

Mineralization hosted in the lower 15 m of the Athabasca sandstone appears to have some relationship to the extensions of the WS shear and its various hanging wall splays; hence, movement on these faults must have continued after deposition of rocks of the Read Formation and probably the MFd member of the Manitou Falls Formation. The WS shear and its various interpreted hanging wall splays may have been the main conduit for the mineralizing fluids. Thus determining favourable locations along the WS shear, where zones of long-lived permeability are present, is of critical importance. A northwesterly trending diabase dyke, probably part of the 1.27 Ga Mackenzie dyke swarm, cuts across the sandstones on the northern part of the Property.

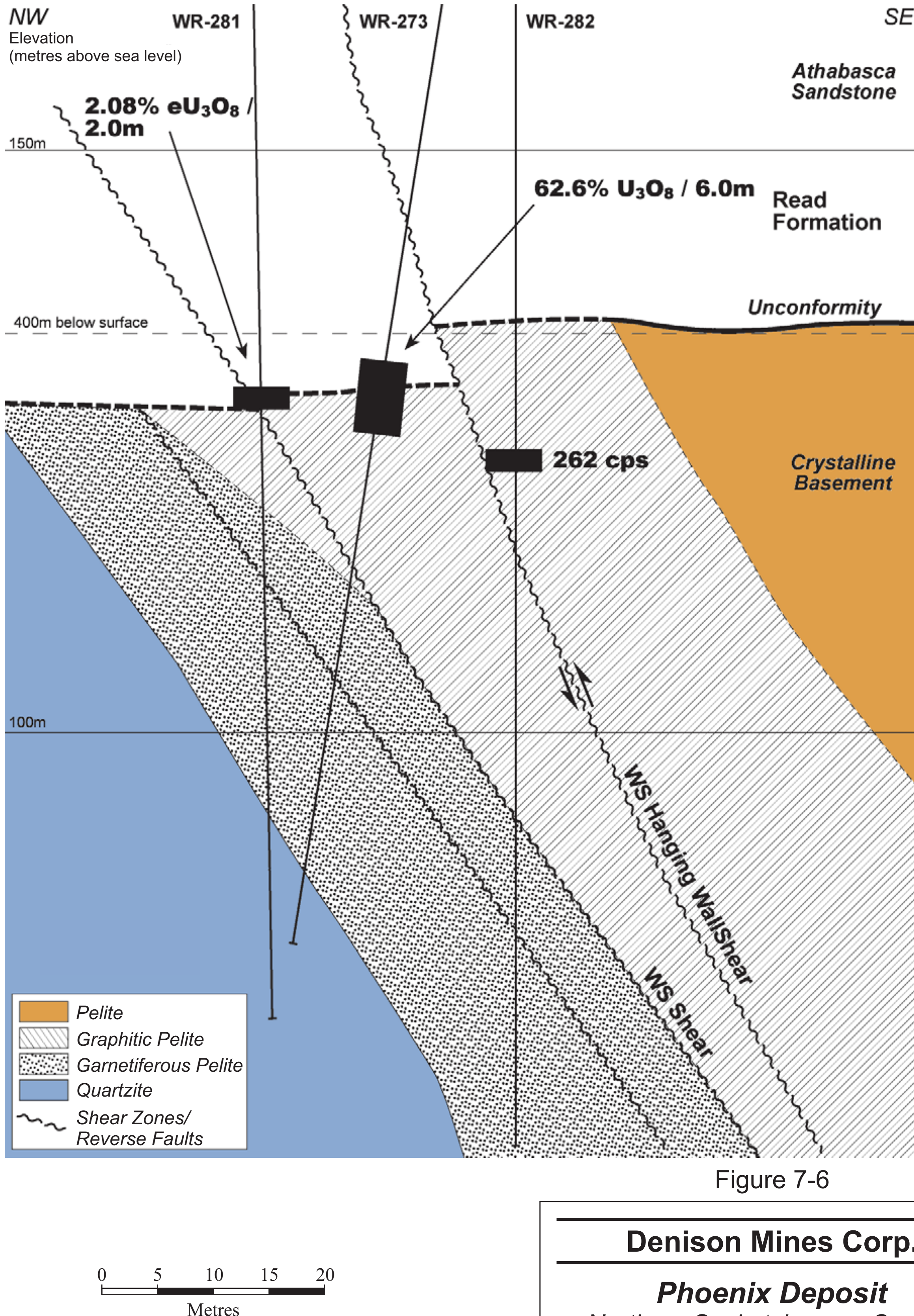


Figure 7-6

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

WS Reverse Fault Offset of the Unconformity

June 2014

Source: Denison Mines Corp., 2010.

URANIUM MINERALIZATION

TYPE OF MINERALIZATION

Uranium mineralization at the Phoenix deposit occurs at the unconformity between Athabasca sandstone and basement rocks, with the most intense mineralization adjacent to the WS fault. A minor amount is fracture hosted in the basement extending below the north part of zone A. The Phoenix deposit is an unconformity-associated type of uranium deposit.

Mineralization is in the form of the oxide uraninite/pitchblende (UO_2). Values of all accompanying metals are low, particularly in comparison with other unconformity or sandstone-hosted deposits, which can have very high values for Ni, Co, and As (Jefferson et al. 2007). For example, drill hole WR-273, from 406.0 m to 406.5 m, assays 78.3% U_3O_8, 35 ppm Ni, 30 ppm Co, 0.05 ppm As, 26 ppm Zn, 221 ppm Ag, 284 ppm Cu, and 9.83% Pb. Some intersections can have significantly higher values for many trace elements, e.g., drill hole WR-287, from 408.5 m to 409.0 m, assays 26.8% U_3O_8, 461 ppm Ni, 119 ppm Co, 170 ppm As, 1,070 ppm Zn, 11.2 ppm Ag, 3,200 ppm Cu, and 2.25% Pb.

In April, 2014 Denison reported the discovery of a new mineralized zone within the Wheeler River Property. The Gryphon discovery is approximately three kilometres northwest of the Phoenix deposit.

Mineralization at the Gryphon zone is located in basement rocks approximately 200 m beneath the Athabasca sandstone unconformity. In this area, the unconformity drops to the northwest in a series of reverse fault offsets. Cumulative offset is approximately 60 m of vertical displacement over 250 m across strike. Basement rocks are Wollaston Group gneisses that dip moderately to the southeast and consist of an upper graphitic pelite unit overlying a quartzite/pegmatite assemblage which overlies a lower graphitic pelite unit followed by a basal pegmatite. To date, the mineralization is hosted in fault zones at the base of the upper graphitic pelite and within the lower graphitic pelite. The faults are assumed to dip moderately to the southeast, conformable with the bedding and foliation in the basement rocks. Three types of mineralization have been noted: 1) irregular fracture fill, 2) semi-massive, and 3) mineral replacement.

ALTERATION

Alteration is typical unconformity-associated style, with a form and nature similar to other Athabasca Basin deposits. The sandstones are altered for as much as 200 m above the unconformity and exhibit varying degrees of silicification and desilicification (which causes many technical drilling problems), as well as dravitization, chloritization, and illitization. In addition, hydrothermal hematite and drusy quartz are present in the sandstone and often in the basement rocks. Alteration is focussed along structures propagating upward from the WS shear and associated splays, and probably does not exceed 100 m width across strike, making this a relatively narrow exploration target. The basement in the northeast part of the Phoenix deposit is much more extensively bleached and clay altered than that to the southwest.

DISTRIBUTION OF URANIUM MINERALIZATION AT PHOENIX

The mineralization in the Phoenix deposit occurs at the unconformity contact between sandstone of the Athabasca group and underlying lower Proterozoic Wollaston Group metasedimentary rocks.

Mineralization and alteration have been traced over a strike length of approximately one kilometre. Since the discovery hole WR-249 was drilled in 2008, 253 drill holes have reached the target depth, delineating two distinct zones (A and B) of high-grade uranium mineralization.

8 DEPOSIT TYPES

The Phoenix deposit is an Athabasca Basin unconformity-type uranium deposit. Figure 8-1 shows a general schematic of unconformity-type uranium deposits. Jefferson et al. (2007) offered the following definition for the geological environment of this type of mineralization.

Unconformity-associated uranium deposits are pods, veins, and semi-massive replacements consisting of mainly uraninite, close to basal unconformities, in particular those between Proterozoic conglomeratic sandstone basins and metamorphosed basement rocks. Prospective basins in Canada are filled by thin, relatively flat-lying, and apparently unmetamorphosed but pervasively altered, Proterozoic (~1.8 Ga to <1.55 Ga), mainly fluvial, red-bed quartzose conglomerate, sandstone, and mudstone. The basement gneiss was intensely weathered and deeply eroded with variably preserved thicknesses of reddened, clay-altered, hematitic regolith grading down through a green chloritic zone into fresh rock. The basement rocks typically comprise highly metamorphosed interleaved Archean to Paleoproterozoic granitoid and supracrustal gneiss including graphitic metapelite that hosts many of the uranium deposits. The bulk of the U-Pb isochron ages on uraninite are in the range of 1,600 Ma to 1,350 Ma. Monometallic, generally basement-hosted uraninite fills veins, breccia fillings, and replacements in fault zones. Polymetallic, commonly subhorizontal, semi-massive replacement uraninite forms lenses just above or straddling the unconformity, with variable amounts of uranium, nickel, cobalt and arsenic; and traces of gold, platinum-group elements, copper, rare-earth elements and iron.

The uranium deposits in the Athabasca Basin occur below, across and immediately above the unconformity, which can lie within a few metres of surface at the rim of the Basin, to over 1,000 m deep near its centre. The deposits formed by extensive hydrothermal systems occurring at the unconformity's structural boundary between the older and younger rock units. Major deep-seated structures are also interpreted to have played an important role in the hydrothermal process, likely acting as conduits for hot mineralized fluids that eventually pooled and crystallized in the structural traps provided by the unconformity. One of the necessary reducing fluids originates in the basement, and flows along basement faults. A second, oxidizing fluid originates within the Athabasca sandstone stratigraphy and migrates through the inherent porosity. In appropriate circumstances, these two fluids mix and precipitate uranium in a structural trap at or near the basal Athabasca- unconformity with basement rocks.

Two end-members of the deposit model have been defined (Quirt 2003). A sandstone-hosted egress-type model (e.g., Phoenix) involved the mixing of oxidized, sandstone brine with relatively reduced fluids issuing from the basement into the sandstone. Basement-hosted, ingress-type deposits (e.g., Rabbit Lake) formed by fluid-rock reactions between oxidizing sandstone brine entering basement fault zones and the local wall rock. Both types of mineralization and associated host-rock alteration occurred at sites of basement–sandstone fluid interaction where a spatially stable redox gradient/front was present.

Although either type of deposit can be high grade, ranging in grade from a few percent to 20% U_3O_8, they are not physically large and typically occur as narrow, linear lenses at considerable depth. In plain view, the deposits can be 100 m to 150 m long and a few metres to 30 m wide and/or thick. Egress-type deposits tend to be polymetallic (U-Ni-Co-Cu-As) and typically follow the trace of the underlying graphitic pelites and associated faults, along the unconformity. Both the Phoenix and McArthur River deposits, however, have very low concentrations of accessory (polymetallic) minerals.

Unconformity-type uranium deposits are surrounded by extensive alteration envelopes. In the basement, these envelopes are generally relatively narrow but become broader where they extend upwards into the Athabasca group for tens of metres to even 100 m or more above the unconformity. Hydrothermal alteration is variously marked by chloritization, tourmalinization (high boron, dravite), hematization (several episodes), illitization, silicification/desilicification, and dolomitization (Hoeve, 1984). Modern exploration for these types of deposits relies heavily on deep-penetrating geophysics and down-hole geochemistry.

The geology of the Phoenix deposit area and the controls on mineralization are sufficiently well understood for Mineral Resource estimation, in RPA's opinion.

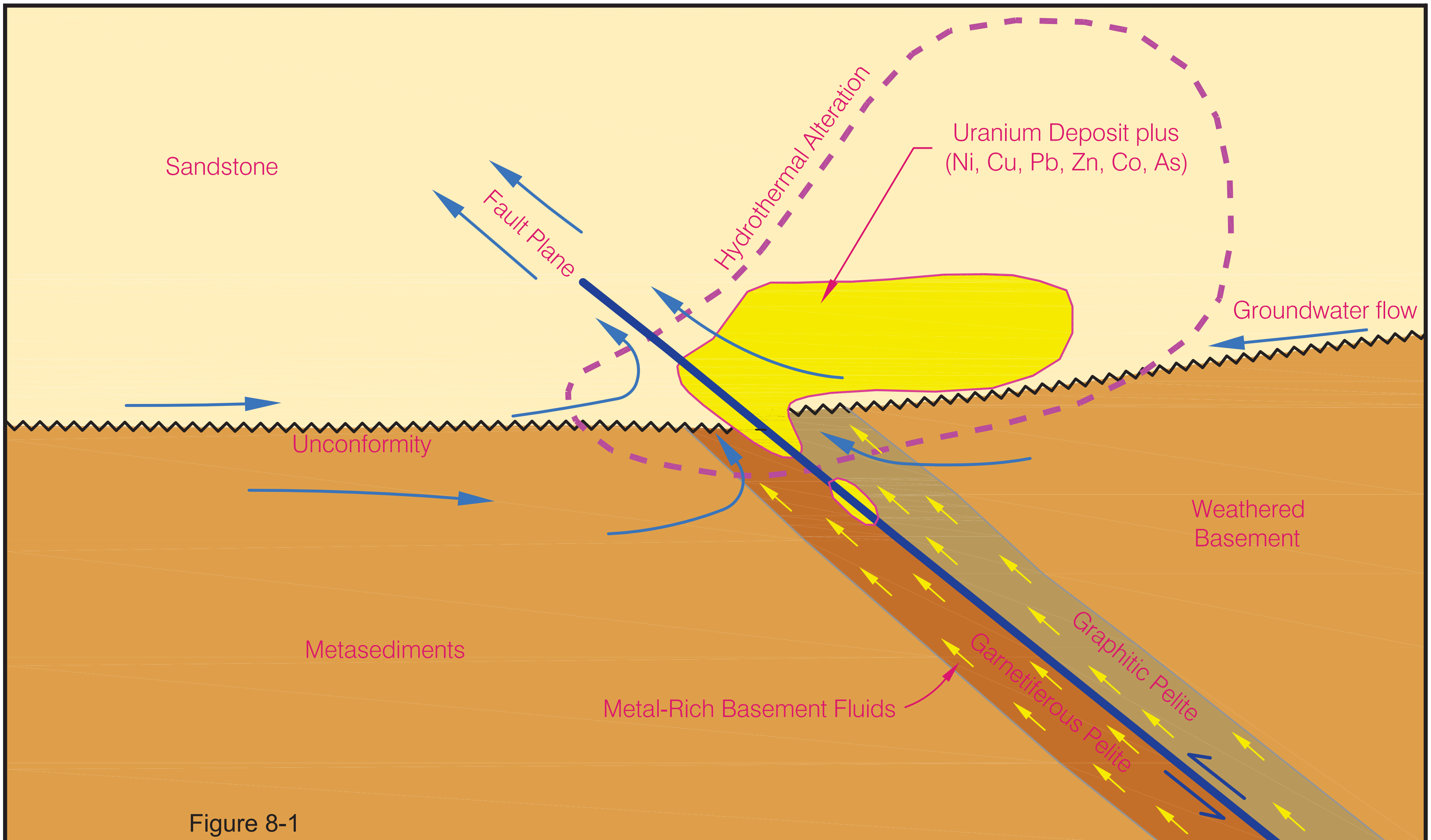


Figure 8-1

NOT TO SCALE

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Schematic of Uncomformity Type Uranium Deposit

June 2014

Source: Denison Mines Corp., 2010.

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9 EXPLORATION

Since discovery of the McArthur River deposit in 1988, the McArthur River exploration model (McGill et al. 1993) has emphasized a different association between uranium mineralization and rock type compared to the earlier Key Lake exploration model. At McArthur River, one of the most significant rock types in the basement succession is a massive, homogenous, and competent quartzite. Mechanically, particularly compared to the adjacent layered members of the basement stratigraphy, the quartzite is extremely competent, and thus exerts an important control both in basement and post-Athabasca sandstone structural evolution. Both the footwall and hanging wall contacts of the quartzite unit, particularly where these contacts involve highly incompetent rocks such as graphitic pelite, are sites of major thrust and strike-slip faults.

Although these faults are loci for mineralization; the poor conductivity, low magnetic susceptibilities and low density values associated with the quartzite limits the effectiveness of airborne and ground geophysical methods in mapping these basement units especially when they are covered by hundreds of metres of sandstone. Another noteworthy characteristic of McArthur River type mineralization is the widespread presence of hydrothermal dravite, indicating boron addition into the overlying Athabasca sandstone above the quartzite ridge. Thus, borehole geochemistry and drilling are the primary exploration methods.

Exploration up to 2008 is described in Section 6 History. Further details of geophysical exploration since 2008 are provided below.

Following the discovery of the Phoenix deposit in 2008, Denison as operator of the Wheeler River Joint Venture completed DC Resistivity/Induced Polarization surveys comprising 67.6 line-km in 2009

During February and March 2010, a geophysical program consisting of 25.2 km of fixed loop surface transient electromagnetic survey (TEM) coverage, and 51.0 km of step loop transient EM survey coverage were completed on three lines of the previously established 2007 Wheeler River grid. Three lines of step-wise moving loop (SWML) transient electromagnetic (TEM) surveying was completed on three previously defined resistivity anomalies in attempt to better define any conductive axis associated with graphitic basement features that could act as conduits for mineralizing events.

The three lines of SWML were chosen to represent variable or subtle differences in low amplitude resistivity signatures interpreted to be associated with breaches in sandstone stratigraphy. In particular, the resistivity signature located on L40+00N is known to be associated with the uranium mineralization associated with the Phoenix deposit. Although this analysis of the survey data is primarily based on empirical observations on profile data collected from the characteristics of the TDEM data, further analysis was required and all data was imported into EM modelling software (Maxwell EMIT and/or EMIGMA) to better define the characteristics of the conductive body and the surrounding half-space. Some conductors were identified.

The 2011 exploration program on the Wheeler River Property carried out by Denison included a 120.6 line-km Titan 24 DC/IP Survey. Additional Titan 24 surveying (48.2 line-km) was completed in 2012.

In 2013, the Wheeler River Joint Venture completed a 128.5 line-km of Titan 24 DC/IP Survey over two areas previously not covered (R North and K West areas) as well as a 990 line-km of helicopter borne VTEM max (time domain electromagnetics). This survey used a bigger loop than previously used in hopes of removing noise that caused difficulties in interpretation of a previous survey.

Geophysical exploration to date in 2014 consisted of the following work, with primary focus directed in and around the K-North area:

- 46.05 line-km over three lines of infill Step–wise Moving Loop (SWML) EM in the K-North area to complete areas previously not covered.
- 43 line-km over two lines of SWML in the WS South area covering areas of interest from the 2013 Titan 24 DC/IP Survey.
- 48 line-km of ground gravity covering the O Zone, where historic drilling showed a large unconformity offset with weak uranium mineralization.
- 52.65 line-km of ground gravity covering the K-North area to test if the unconformity offset seen in drill core could be defined by this method.
- An extension of the 2007 North Titan 24 DC/IP survey to complete the coverage over the K-North area.

10 DRILLING

Diamond drilling on the Wheeler River Property is the principal method of exploration and delineation of uranium mineralization after initial geophysical surveys. Drilling can generally be conducted year round on the Phoenix deposit. Drill holes on Phoenix are labelled with a prefix of the project (WR) followed by the hole number, with almost all drill holes being drilled vertically or oriented steeply towards the northwest.

DRILLING METHODOLOGY

Delineation diamond drilling at Phoenix was primarily done with NQ sized core (47.6 mm diameter) in holes WR-249 through WR-275 and HQ sized core (63.5 mm diameter) reducing down to NQ at 350 m in holes WR-276 through WR-561A, with most holes successfully penetrating into the basement. In general, drilling in the higher grade areas of the Phoenix deposit has been conducted on a nominal drill hole grid spacing of 25 m NE-SW by 10 m NW-SE. Some additional infill holes were drilled primarily to test the spatial continuity of the mineralization. The most notable results from drilling to date are the intersections of 6.0 m of 62.6% U_3O_8 in hole WR-273, 3.5 m of 58.2% U_3O_8 in hole WR-305, 8.4m of 38.4% U_3O_8 in hole WR-401 and 10.5 m of 50.1% U_3O_8 in hole WR-525. The bulk of the flat lying high-grade mineralization is positioned at and sub parallel to the unconformity.

EXPLORATION DRILLING 2005-14

In 2005, 12 holes, (4,829 m) were drilled in the vicinity of the quartzite ridge. The last hole of 2005, WR-204, intersected strong thrust faulting with sandstone wedges and intersected 1.48% U_3O_8 over 0.5 m at a depth of 313 m along the northwest side of the quartzite ridge. This was the first indication of uranium mineralization associated with the quartzite ridge on the Wheeler River Property.

In 2006, Denison drilled a total of 28 holes (10,516 m), all targeting the quartzite ridge, along a seven kilometre length. Most holes were located on the northwest (footwall) side of the ridge. The most significant results were from WR-214, drilled in the WR-204 area, where probing returned 0.85% eU_3O_8 over 3.8 m from 310 m. This was the highest value yet obtained on the Wheeler River Property, and was associated with the footwall thrust contact, but in an area with no graphite.

In 2007, 18 holes (6,147 m) were drilled. Primary targets during the winter program were transient EM (TEM) anomalies as follow up to the airborne GEOTEM survey, and further testing of the hanging wall of the quartzite ridge. Reinterpretation of the 2003 resistivity survey identified three areas on the 2D sections that were deemed worthy of follow up testing. Three holes (WR-236, 237 and 238) were drilled to follow up the strongly altered and geochemically anomalous Cameco hole WR-192 and to test two weakly developed sandstone resistivity anomalies. All three holes intersected significant structure and alteration, but no mineralization or graphitic pelite in the basement.

Work during the summer of 2007 continued to test the quartzite ridge in the WR-204 area and also further south. Almost all holes in the vicinity of the quartzite ridge returned strong clay alteration and structure. WR-242A, located some 600 m along strike to the northeast of WR-214 returned 0.26% U_3O_8 over 1.8 m and strengthened the belief that the footwall should remain a major focus of exploration, although the JV partners noted that the hanging wall of the quartzite unit should not be neglected.

The first hole during the summer of 2008 was WR-249 on geophysics line 4300 to test resistivity target “A”. WR-249 was spotted 90 m northwest of WR-190A, which had been lost in the sandstone 34 m above the unconformity in 2003. The hole encountered strong desilicification, silicification, hydrothermal hematite, druzy quartz and increased fracture density, with progressively more intense alteration towards the unconformity, together with a strong grey bleached zone consisting of extremely fine grained pyrite which provided a strong visual contrast to bleached zones in other nearby holes. At the unconformity, disseminated and massive uranium mineralization was present from 406.65 m to 409 m. The assay grade was 1.06% U_3O_8 over 2.35 m. This was the highest grade intercept on the Wheeler River Property to date. This hole was located seven kilometres northeast of the previous work in the WR-204 area and, more significantly, was drilled on the hanging wall rather than the footwall side of the quartzite ridge.

Target “B” was tested by WR-251 which was located 600 m along strike from WR-249. It intersected similar alteration along with three mineralized zones occurring both at the unconformity and in the basement. The best intersection graded 0.78% U_3O_8 over 2.25 m.

All 2008 follow up drilling was located in the WR-251 area. More uranium mineralization (1.4% U_3O_8 over 4.0 m and 1.75% U_3O_8 over 0.5 m) was intersected in WR-253, which was drilled to test for mineralization 15 m to the southeast of WR-251.

All drill holes during the summer of 2008 intersected either uranium mineralization or very strong alteration close to mineralization on the hanging wall of the quartzite unit. This new discovery was named Phoenix. Located over eight kilometres northeast of areas in the Wheeler River Property that had been tested by previous work, the Phoenix deposit has many geological similarities to the McArthur River mineralization, but is at a shallower depth. The Wheeler River Property is favourably located along trend from the McArthur River deposit and is underlain by many of the same geological features that are present on that producing property.

During 2009, three drill programs consisting of a total of 43 diamond drill holes (19,006 m), were carried out, each of which established significant milestones in the advancement of the project. During the winter program, the first indications of higher grade mineralization came from Hole WR-258, which returned 11.8% U_3O_8 over 5.5 m from a depth of 397 m. The summer drill program continued to test the Phoenix discovery, with hole WR-273 returning a value of 62.6% U_3O_8 over 6.0 m at a depth of 405 m. Mineralization was monomineralic pitchblende with very low concentrations of accessory minerals and was reported to be remarkably similar to the high-grade McArthur River P2 deposits. Most of the mineralization occurs as a horizontal sheet at the base of the Athabasca sandstone proximal to where a graphitic pelite unit in the basement intersects the unconformity. In addition, the alteration changes to the northeast with intense and strong basement bleaching becoming more prominent, and the strongest graphitic faulting yet observed. More significantly, the new mineralized zone returned the highest grades so far intersected in more than 40 years of continuous exploration on the Wheeler River project.

A further drill program in the fall of 2009 established continuity of the high-grade portion of the mineralized zone and extended the overall zone as a possibly continuous unit for a strike length of greater than one kilometre.

During 2010, 62 diamond drill holes totalling 28,362.3 m were carried out on two claims along the Phoenix deposit trend. Of the 62 drill holes, 59 totalling 27,853.25 m were completed to the desired depth and three were lost or abandoned due to poor ground conditions or excessive deviation. The three lost holes were redrilled and successfully completed to the desired depth. Twenty-seven holes were drilled on claim S-98341 during two drill seasons from January to April and June to August. Thirty-five holes were drilled on claim S-97909 during two drill seasons from January to April and June to August. The two-phase drilling program was carried out during the periods of January to April 2010 and June to August 2010.

During 2011, a two-phase drilling program of 80 diamond drill holes totalling 38,426.6 m was carried out on mineral dispositions S-97908, S-97909, and S-98341. Of the 80 drill holes completed, 77 were successfully completed to design depth.

During 2012, Denison completed 51 diamond drill holes totalling 23,073 m on the Phoenix deposit during two drilling campaigns.

In 2013, 30 diamond drill holes totaling 13,797 m were carried out on mineral dispositions across the Wheeler River Property of which 14 were completed as infill delineation drilling on zone A.

In 2014, an additional 11 diamond drill holes were completed on zone A to extend higher grade portions of the deposit.

Since 1978 a total of 575 diamond drill holes and 61 reverse circulation (RC) drill holes totalling 377,187 m have been completed within the Wheeler River Property of which 253 drill holes totalling 117,822 m of diamond drilling have delineated the Phoenix deposit (Table 10-1). Well-established drilling industry practices were used in the drilling programs.

TABLE 10-1 DRILLING STATISTICS
Denison Mines Corp. – Phoenix Deposit

Drilling Program Year	Number of Holes	Metres Drilled
2008	14	6,499
2009	31	14,546
2010	55	25,939
2011	70	33,401
2012	51	23,073
2013	19	8,750
2014	13	5,614
Total	**253**	**117,822**

Drilling Program Year	Number of Holes	Metres Drilled
A Deposit	141	64,492
B Deposit	55	25,344
C Target	24	10,438
D Target	25	13,657
RECON	8	3,893

To date, the Phoenix deposit area has been systematically drill tested over roughly one kilometre of strike length at a nominal 25 m to 50 m section spacing (Figure 10-1).

All holes were logged for lithology, structure, alteration, mineralization, and geotechnical characteristics. Data were entered into DHLogger software on laptops in the field. The DHLogger data were transferred into a Fusion database. All drill hole data were validated throughout the drilling program and as an integral component of the current recent resource estimation work. Hard copies of drill logs are stored at site.

Fourteen holes totaling 8,552 m have been drilled in the K North target area since 2013. Two discrete high grade mineralized intervals were intersected in early 2014 drilling, on the newly discovered Gryphon Zone. The intersections are listed in Table 10-2. Based on the geology observed in the drill core, it is likely that WR-560 intersected low grade mineralization (the 676.2 m to 680.3 m) at the up-dip extension of the high grade zone in WR-556. The high grade mineralization in WR-560 is interpreted to be a new lens in the footwall, about 50 m northwest of the high grade intersection in WR-556. More follow-up drilling is warranted in RPA's opinion, and Denison plans an aggressive follow-up drilling program for the summer of 2014. The Gryphon zone is located three kilometres northwest of the Phoenix deposit.

TABLE 10-2 GRYPHON ZONE MINERAL INTERSECTIONS
Denison Mines Corp. – Phoenix Deposit

Hole-ID	From (m)	To (m)	Length (m)	U_3O_8 (%)
WR-556	697.5	701.5	4.0	15.3
WR-560	759.0	763.5	4.5	21.2

Notes:
1. Intersection interval is composited above a cut-off grade of 1.0% eU_3O_8

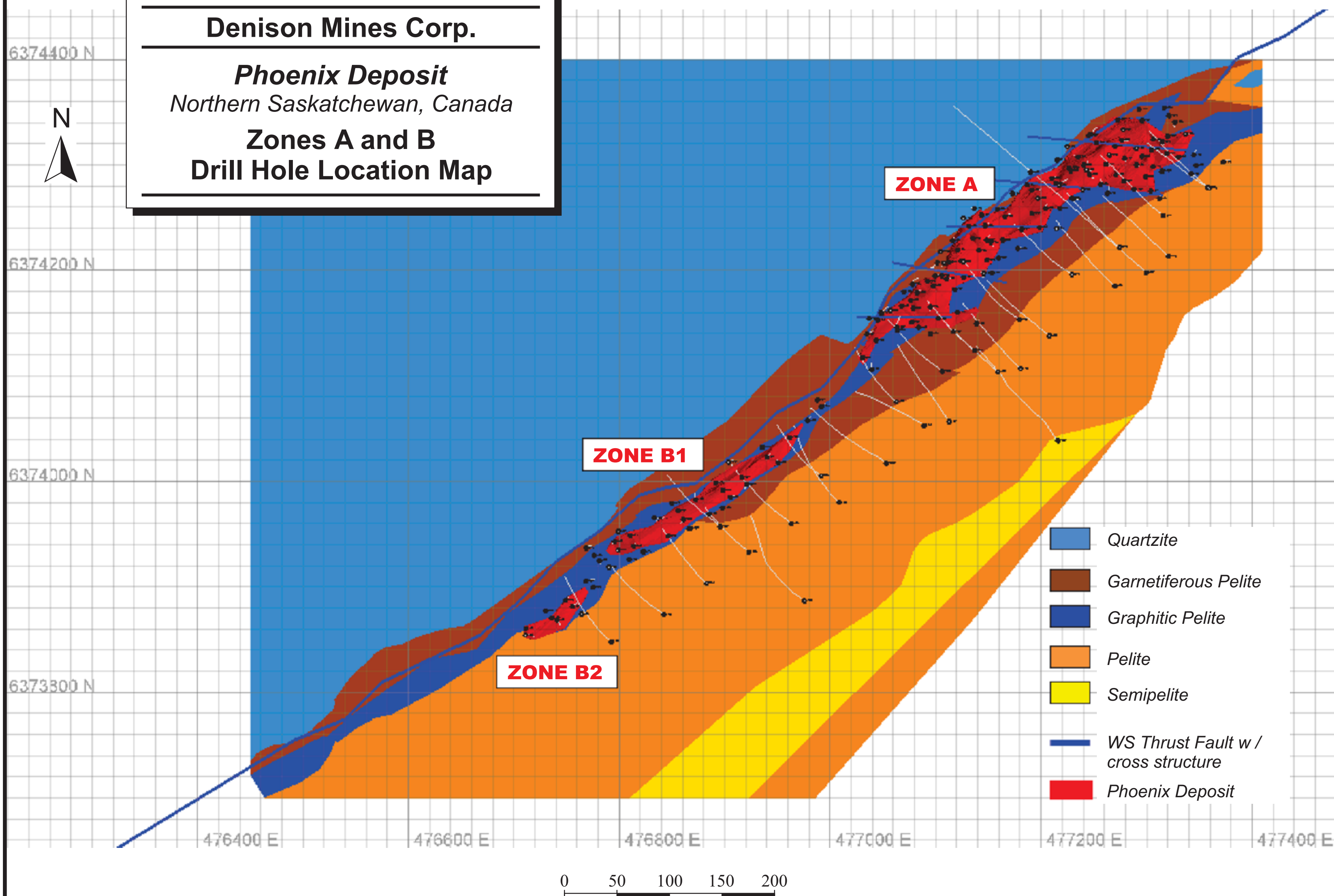
Figure 10-1

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Zones A and B
Drill Hole Location Map



UTM Projection WGS 84-13N

June 2014

RPA

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DRILL HOLE SURVEYING

The collar locations of drill holes are spotted on a grid established in the field and collar sites are surveyed by differential base station GPS using the NAD83 UTM zone 13N reference datum. To date and in general, drilling at Phoenix has been conducted on a nominal drill hole grid spacing of 25 m northeast-southwest by 10 m northwest-southeast.

The trajectory of all drill holes is determined with a Reflex instrument in single point mode, which measures the dip and azimuth at 50 m intervals down the hole with an initial test taken six metres below the casing and a final measurement at the bottom of the hole. All mineralized and non-mineralized holes within the deposit are cemented from approximately 25 m below the mineralized zone to approximately 25 m above the zone.

RADIOMETRIC LOGGING OF DRILL HOLES

All drill holes on the Wheeler River Property are logged with a radiometric probe to measure the natural gamma radiation, from which an indirect estimate of uranium content can be made. Most of the data (approximately 80%) used for the Phoenix Mineral Resource estimate are obtained from chemical assays of the rock. The remainder of the data are derived from radiometric probe results – generally when poor drill core recovery prevents representative sampling for chemical assays.

RADIOMETRIC PROBING

Probing with a Mount Sopris gamma logging unit employing a triple gamma probe (2GHF-1000) was completed systematically on every drill hole. The probe measures natural gamma radiation using three different detectors: one 0.5 in by 1.5 in sodium iodide (NaI) crystal assembly and two Geiger Mueller (G-M) tubes installed above the NaI detector. These G-M tubes have been used successfully to determine grade in very high concentrations of U_3O_8. By utilizing three different detector sensitivities (the sensitivity of the detectors is very different from one detector to another), these probes can be used in both exploration and development projects across a wide spectrum of uranium grades. Accurate concentrations can be measured in uranium grades ranging from less than 0.1% to as high as 80% U_3O_8. Data are logged from all three detectors at a speed of 15 m/min down hole and 5 m/min up hole through the drill rods.

The radiometric or gamma probe measures gamma radiation which is emitted during the natural radioactive decay of uranium (U) and variations in the natural radioactivity originating from changes in concentrations of the trace element thorium (Th) as well as changes in concentration of the major rock forming element potassium (K).

Potassium decays into two stable isotopes (argon and calcium) which are no longer radioactive, and emits gamma rays with energies of 1.46 MeV. Uranium and thorium, however, decay into daughter- products which are unstable (i.e. radioactive). The decay of uranium forms a series of about a dozen radioactive elements in nature which finally decay to a stable isotope of lead. The decay of thorium forms a similar series of radioelements. As each radioelement in the series decays, it is accompanied by emissions of alpha or beta particles or gamma rays. The gamma rays have specific energies associated with the decaying radionuclide. The most prominent of the gamma rays in the uranium series originate from decay of ^{214}Bi (bismuth), and in the thorium series from decay of ^{208}Tl (thallium).

The natural gamma measurement is made when a detector emits a pulse of light when struck by a gamma ray. This pulse of light is amplified by a photomultiplier tube, which outputs a current pulse which is known as “counts per second” or “cps”. The gamma probe is lowered to the bottom of a drill hole and data are recorded as the tool travels to the bottom and then is pulled back up to the surface. The current pulse is carried up a conductive cable and processed by a logging system computer which stores the raw gamma cps data.

Since the concentrations of these naturally occurring radioelements vary between different rock types, natural gamma ray logging provides an important tool for lithologic mapping and stratigraphic correlation. For example, in sedimentary rocks, sandstones can be easily distinguished from shales due to the low potassium content of the sandstones compared to the shales. The greatest value of the gamma ray log in uranium exploration, however, is in determining equivalent uranium grade.

The basis of the indirect uranium grade calculation (referred to as "eU_3O_8" for "equivalent U_3O_8") is the sensitivity of the detector used in the probe which is the ratio of cps to known uranium grade and is referred to as the probe calibration factor. Each detector’s sensitivity is measured when it is first manufactured and is also periodically checked throughout the operating life of each probe against a known set of standard "test pits," with various known grades of uranium mineralization or through empirical calculations. Application of the calibration factor, along with other probe correction factors, allows for immediate grade estimation in the field as each drill hole is logged.

Down hole total gamma data are subjected to a complex set of mathematical equations, taking into account the specific parameters of the probe used, speed of logging, size of bore hole, drilling fluids and presence or absence of any type of drill hole casing. The result is an indirect measurement of uranium content within the sphere of measurement of the gamma detector. A Denison in-house computer program known as GAMLOG converts the measured counts per second of the gamma rays into 10 cm increments of equivalent percent U_3O_8 (%eU_3O_8). GAMLOG is based on the Scott's Algorithm developed by James Scott of the Atomic Energy Commission (AEC) in 1962 and is widely used in the industry.

The conversion coefficients for conversion of probe counts per second to %eU_3O_8 equivalent uranium grades are based on the calibration results obtained at the Saskatchewan Research Council (SRC) uranium calibration pits (sodium iodide crystal) and empirical values developed in-house (Sweet and Petrie 2010) for the triple-gamma probe (Figure 10-2)..

The Saskatchewan Research Council (SRC) down-hole probe calibration facilities are located in Saskatoon, SK. The calibration facilities test pits consist of four variably-mineralized holes, each approximately four metres thick. The gamma probes are tested a minimum of four times per year, usually before and after both the winter and summer field seasons.

Drilling procedures, including collar surveying, down hole Reflex surveying and radiometric probing are standard industry practice.

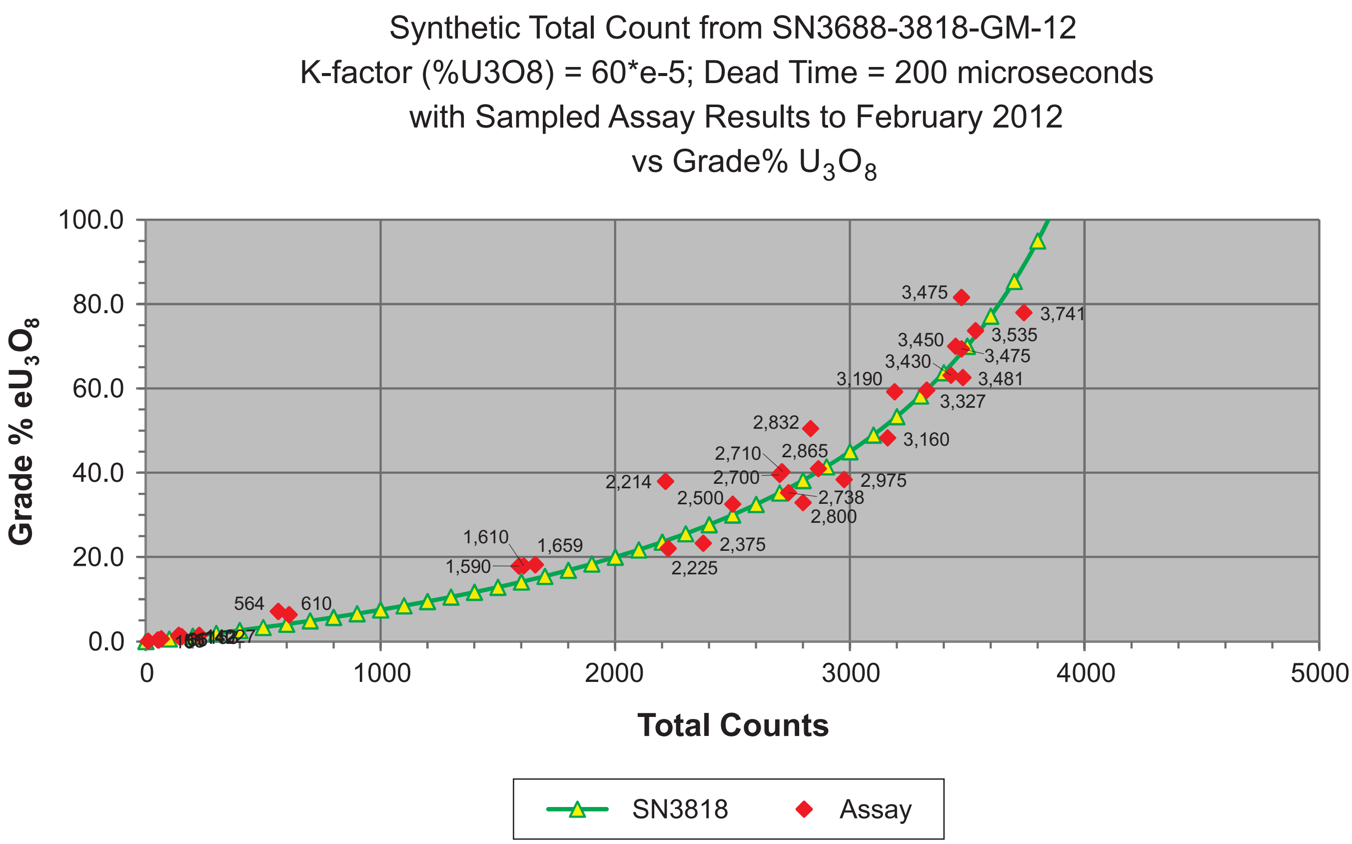


Figure 10-2

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Calibration Curve for Geiger-Mueller SN 3818 Probe

June 2014

SAMPLING METHOD AND APPROACH

DRILL CORE HANDLING AND LOGGING PROCEDURES

At each drill site, core is removed from the core tube by the drill contractors and placed directly into three row NQ wooden core boxes with standard 1.5 m length (4.5 m total) or two row HQ wooden boxes with standard 1.5 m (3 m total). Individual drill runs are identified with small wooden blocks, onto which the depth in metres is recorded. Diamond drill core is transported at the end of each drill shift to an enclosed core-handling facility at Denison's Wheeler River camp. The core handling procedures at the drill site are industry standard. Drill holes are logged at the Wheeler River camp core logging facilities by Denison personnel.

Before samples are taken for assay, the core is photographed, descriptively logged, measured for structures, surveyed with a scintillometer, and marked for sampling. Sampling of the holes for assay is guided by the observed geology, radiometric logs, and readings from a hand-held scintillometer.

The general concept behind the scintillometer is similar to the gamma probe except the radiometric pulses are displayed on a scale on the instrument and the respective count rates are recorded manually by the technician logging the core or chips. The hand-held scintillometer provides quantitative data only and cannot be used to calculate uranium grades; however, it does allow the geologist to identify uranium mineralization in the core and to select intervals for geochemical sampling, as described below.

Scintillometer readings are taken throughout the hole as part of the logging process, usually at three metre intervals and are an average of the interval. In mineralized zones, where scintillometer readings are above five times background (roughly 500 cps depending on the scintillometer being used), readings are recorded over 10 cm intervals and tied to the run interval blocks. The scintillometer profile is then plotted on strip logs to compare and adjust the depth of the down-hole gamma logs. Core trays are marked with aluminum tags as well as felt marker.

DRILL CORE SAMPLING

Denison obtains assays for all the cored sections through mineralized intervals. All mineralized core is measured with the scintillometer described above by removing each piece of drill core from the ambient background, noting the most pertinent reproducible result in counts per second (cps), and carefully returning it to its correct place in the core box. Any core registering over 500 cps is flagged for splitting and sent to the lab for assay. Early drill holes were sampled using variable intervals (0.2 m to 1.0 m), but after drill hole WR-253, were sampled using 0.5 m lengths. Barren samples are taken to flank both ends of mineralized intersections, with flank sample lengths at least 0.5 m on either end, but may be significantly more in areas with strong mineralization.

All core samples are split with a hand splitter according to the sample intervals marked on the core. One-half of the core is returned to the core box for future reference and the other half is bagged, tagged, and sealed in a plastic bag. Bags of samples for geochemical or clay analyses are placed in large plastic pails and sealed for shipping. Bags of mineralized samples are sealed for shipping in metal or plastic pails depending on the radioactivity level.

Several types of samples are collected routinely from drill core at Phoenix. These include:

- Systematic composite geochemical samples of both Athabasca sandstone and metamorphic basement rocks to characterize clay alteration and geochemical zoning associated with mineralization;
- Selective grab samples and split-core intervals for geochemical quantification of geologically-interesting material and mineralized material;
- Samples collected for determination of dry bulk density; and
- Non-geochemical samples for determination of mineralogy to assess alteration patterns, lithology types, and mineralization characteristics.

Selective samples provide a quantitative assessment of mineralization grade and associated elemental abundances, while the systematic and mineralogical samples are collected mainly for exploration purposes to determine patterns applicable to mineral exploration. These sampling types and approaches are typical of uranium exploration and definition drilling programs in the Athabasca Basin.

For Systematic samples, Denison collects a suite of samples from each drill hole for determining the content and distribution of trace elements, uranium, and clay minerals (alteration). For ICP-MS analysis (Section 12) from the collar to approximately 350 m, sandstone samples are collected at ten metre intervals, from 350 m to the unconformity, sandstone samples are collected on five metre intervals. In the basement, Denison samples on five metre intervals throughout. For inductively coupled plasma optical emission spectroscopy (ICP-OES) analysis (Section 12), Denison samples on 0.5 m spacing through the mineralized zone. For the determination of clay alteration species in the sandstone column, Denison collects samples for analysis by a PIMA analyzer. Throughout the sandstone section, a two to three centimetre chip sample of core is collected every ten metres up to 350 m, then every five metres to the end of hole. Near the unconformity, the sample interval is shortened as needed. PIMA samples are also collected as needed throughout the altered basement rocks.

The drill core handling and sampling protocols are standard in the industry.

CORE AND USE OF PROBE DATA

Grade determinations in mineralized rock rely primarily on chemical assays of drill core. Given the high rate of core recovery within the mineralized zone, chemical assays are reliable. Locally, core can be broken and blocky, but recovery is generally good with an average overall 89.65% recovery.

The mineralized zones (sandstones or basement), are moderately to strongly altered, and occasionally disrupted by fault breccias. Local intervals of up to five metres with less than 80% recovery have been encountered due to washouts during the drilling process. Where 80% or less of a composited interval is recovered during drilling (>20% core loss), or where no geochemical sampling has occurred across a mineralized interval, uranium grade determination has been supplemented by radiometric probing. Radiometric probe data accounts for approximately 23% of the drill holes used for the Mineral Resource estimate at Phoenix.

There are 1,708 U_3O_8 assay records totalling 848 m in the Phoenix deposit database. Of these, 1,464 U_3O_8 assay records totalling 726 m are in zone A and 244 U_3O_8 assay records totalling 122 m are in zone B.

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

As described in Section 10 Drilling, core from the Phoenix deposit and other parts of the Wheeler River Property is photographed, logged, marked for sampling, split, bagged, and sealed for shipment by Denison personnel at their field logging facility. All samples for assay or geochemical analyses are sent to the Saskatchewan Research Council Geoanalytical Laboratories (SRC) in Saskatoon, SK. Samples for clay analyses are sent to Rekasa Rocks Inc., in Saskatoon. All samples for geochemical or clay analyses are shipped to Saskatoon by airfreight or ground transport. All samples for U_3O_8 assays are transported by land to the SRC lab by Denison personnel. SRC performs sample preparation on all samples submitted to them. There is no sample preparation involved for the samples sent for clay analyses.

The following sections are copied or paraphrased from the September 22, 2010 SRC Sample Report to Denison and from SRC 2009 documentation.

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

SAMPLE RECEIVING

Samples are received at the SRC laboratory as either dangerous goods (qualified Transport of Dangerous goods (TDG) personnel required) or as exclusive use only samples (no radioactivity documentation attached). On arrival, samples are assigned an SRC group number and are entered into the Laboratory Information Management System (LIMS).

All received sample information is verified by sample receiving personnel: sample numbers, number of pails, sample type/matrix, condition of samples, request for analysis, etc. The samples are then sorted by radioactivity level. A sample receipt and sample list is then generated and e-mailed to the appropriate authorized personnel at Denison. Denison is notified if there are any discrepancies between the paperwork and samples received.

SAMPLE SORTING

To ensure that there is no cross contamination between sandstone and basement, non-mineralized, low level, and high-level mineralized samples, they are sorted by their matrix and radioactivity level. Samples are firstly sorted in their group into matrix type (sandstone and basement/mineralized).

Then the samples are checked for their radioactivity levels. Using a Radioactivity Detector System, the samples are classified into one of the following levels:

- “Red Line” (minimal radioactivity) <500 counts/second
- “1 Dot” 500 – 1,999 counts/second
- “2 Dots” 2000 – 2,999 counts/second
- “3 Dots” 3000 – 3,999 counts/second
- “4 Dots” 4000 – 4,999 counts/second
- “UR” (unreadable) >5,000 counts/second

The samples are then sorted into ascending sample numerical order and transferred to their matrix designated drying oven.

SAMPLE PREPARATION

After the drying process is complete, “Red line” and “1 dot” samples are sent for further processing (crushing and grinding) in the main SRC laboratory. This is done in the Basement preparation area. All radioactive samples at “2 dots” or higher are sent to a secure radioactive facility at SRC for the same sample preparation. Plastic snap top vials are labelled according to sample numbers and sent with the samples to the appropriate crushing room. All highly radioactive materials are kept in a radioactive bunker until they can be transported by TDG trained individuals to the radioactivity facility for processing.

Rock samples are jaw crushed to 60% passing -2 mm. Samples are placed into the crusher (one at a time) and the crushed material is put through a splitter. The operator ensures that the distribution of the material is even so there is no bias in the sampling. One portion of the material is placed into the plastic snap top vial and the other is put in the sample bag (reject). The first sample from each group will be checked for crushing efficiency by screening the vial of rock through a 2 mm screen. A calculation is then carried out to ensure that 60% of the material is -2 mm. If the quality control (QC) check fails the crushing is redone and checked for crushing efficiency; if it still fails the QC department is notified and corrective action is taken.

The crusher, crusher catch pan, splitter, and splitter catch pan is cleaned between each sample using compressed air.

The reject material is returned to its original sample bag and archived in a plastic pail with the appropriate group number marked on the outside of the pail. The vials of material are then sent to grinding; each vial of material is placed in pots (six pots per grind) and ground for two minutes. The material is then returned to the vials. The operator then shakes the vial to check the fineness of the material by looking for visible grains and listening for rattling. The sample is then screened through a 106 µm sieve, using water. The sample is then dried and weighed, to pass the grinding efficiency QC there must be over 90% of the material at -106 µm. The material is then transferred to a labelled plastic snap top vial.

The pots are cleaned out with silica sand and blown out with compressed air at the start of each group. In the radioactive facility the pots are cleaned with water. Once sample pulps are generated they are then returned to the main laboratory to be chemically processed prior to analysis. All containers are identified with sample information and their radioactivity status at all times. When the preparation is completed the radioactive pulps are then returned to a secure radioactive bunker, until they can be transported back to the radioactive facility. All rejected sample material not involved in the grinding process is returned to the original sample container. All highly radioactive materials are stored in secure radioactive designated areas.

Sample preparation methods for the samples used in the Phoenix Mineral Resource estimate meet or exceed industry standards.

ANALYTICAL METHODS

METHOD: ICP1-URANIUM MULTI-ELEMENT EXPLORATION ANALYSIS BY ICP-OES

Method Summary: In ICP-OES analysis, the atomized sample material is ionized and the ions then emit light (photons) of a characteristic wavelength for each element, which is recorded by optical spectrometers. Calibrations against standard materials allow this technique to provide a quantitative geochemical analysis.

The analytical package includes 62 analytes (46 total digestion, 16 partial digestion), with nine analytes being analyzed for both partial and total digestions (Ag, Co, Cu, Mo, Ni, Pb, U, V, and Zn) plus boron. These samples are also sometimes analyzed for Au by fire assay means.

Partial Digestion: An aliquot of pulp is digested in a digestion tube in a mixture of HNO_3:HCl, in a hot water bath for approximately one hour, then diluted to 15 mL using de-ionized water.

Total Digestion: An aliquot of pulp is digested to dryness in a hot block digestor system using a mixture of concentrated HF:HNO_3:$HClO_4$. The residue is dissolved in 15 ml of dilute HNO_3.

METHOD: U_3O_8 WT% ASSAY - THE DETERMINATION OF U_3O_8 WT% IN SOLID SAMPLES BY ICP-OES

Method Summary: When ICP1 U values are >=1000 ppm sample pulps are re-assayed for U_3O_8 using SRC's ISO/IEC 17025:2005-accredited U_3O_8 (wt%) method. In the case of uranium assay by ICP-OES, a pulp is already generated from the first phase of preparation and assaying (discussed above).

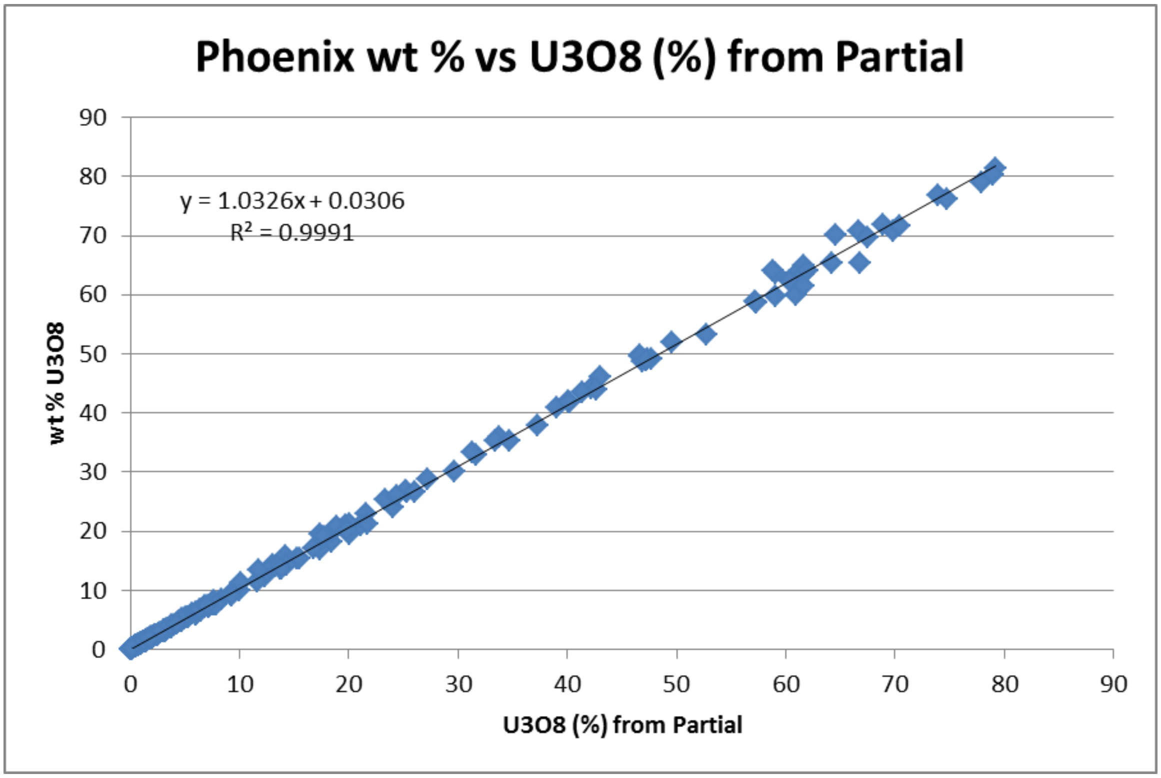
Figure 11-1 shows a plot of Phoenix analyses by the Wt% Method against analyses by the Partial Method. It can be seen that the correlation is excellent.

Aqua Regia Digestion: An aliquot of sample pulp is digested in a 100 mL volumetric flask in a mixture of 3:1 HCl:HNO_3, on a hot plate for approximately one hour, then diluted to volume using de-ionized water. Samples are diluted prior to analysis by ICP-OES.

Instrument Analysis: Instruments in the analysis are calibrated using certified commercial solutions. The instruments used were PerkinElmer Optima 300DV, Optima 4300DV or Optima 5300DV.

Detection Limits: 0.001% U_3O_8

FIGURE 11-1 PHOENIX DEPOSIT U_3O_8 (WT%) VERSUS U_3O_8 FROM U PARTIAL



METHOD: ICPMS1 - THE MULTI-ELEMENT DETERMINATION OF SANDSTONE SAMPLES BY ICP-MS

<u>Method Summary</u>: In ICP-MS analysis, the ions are separated in a mass spectrometer on the basis of their mass-to-charge ratio, allowing determination of ions with atomic masses from 7 to 250. A series of detectors produce signals proportional to the concentration of the individual ions with analytical detection limits in the parts per billion range. Perkin-Elmer instruments (models Optima 300DV, Optima 4300DV, and Optima 5300DV) are currently in use. The samples generally analyzed by this package are non-radioactive, non-mineralized sandstones and basement rocks.

<u>Total Digestion</u>: An aliquot of pulp is digested to dryness in a hot block digestor system using a mixture of ultra pure concentrated acids $HF:HNO_3:HClO_4$. The residue is dissolved in 15 mL of 5% HNO_3 and made to volume using de-ionized water prior to analysis.

<u>Partial Digestion</u>: An aliquot of pulp is digested in a mixture of ultra pure concentrated nitric and hydrochloric acids ($HNO_3:HCl$) in a digestion tube in a hot water bath then diluted to 15 mL using de-ionized water prior to analysis.

Geochemical Analysis: ICP-OES: Multi element total digestion:

The ICP MS detection limits for total analysis include all elements except those noted below:

Al_2O_3, CaO, Fe_2O_3, K_2O, MgO, MnO, Na_2O, P_2O_5, TiO_2, Ba, Ce, Cr, La, Li, Sr and Zr.

These elements are analyzed only by ICP for total digestion leaching. Instruments are calibrated using certified commercial solutions. The instruments used are PerkinElmer Optima 300DV, Optima 4300DV or Optima 5300DV.

Partial digestions by ICP MS: As, Ge, Hg, Sb, Se and Te are done on the partial digestion only, these elements are not suited to the total digestion analysis. The ICP-MS instruments used are Perkin Elmer Elan DRC II.

ANALYTICAL QUALITY ASSURANCE AND QUALITY CONTROL

The SRC laboratory has a Quality Assurance program dedicated to active evaluation and continual improvement in the internal quality management system. The laboratory is accredited by the Standards Council of Canada as an ISO/IEC 17025 Laboratory for Mineral Analysis Testing and is also accredited ISO/IEC 17025:2005 for the analysis of U_3O_8. The laboratory is licensed by the Canadian Nuclear Safety Commission (CNSC) for possession, transfer, import, export, use, and storage of designated nuclear substances by CNSC License Number 01784-1-09.3. As such, the laboratory is closely monitored and inspected by the CNSC for compliance.

SRC is an independent laboratory, and no associate, employee, officer or director of Denison is, or ever has been, involved in any aspect of sample preparation or analysis on samples from the Phoenix deposit.

The SRC uses a Laboratory Management System (LMS) for Quality Assurance. The LMS operates in accordance with ISO/IEC 17025:2005 (CAN-P-4E) “General Requirements for the Competence of Mineral Testing and Calibration laboratories” and is also compliant to CAN-P-1579 “Guidelines for Mineral Analysis Testing Laboratories”. The laboratory continues to participate in proficiency testing programs organized by CANMET (CCRMP/PTP-MAL). All analyses are conducted by SRC, a Standards Council of Canada (CCRMP) certified analytical laboratory, which has specialized in the field of uranium research and analysis for over 30 years.

All instruments are calibrated using certified materials. Within each batch of 40 samples, two quality control samples are inserted (e.g., CG515 or LS4). One in every 40 samples is analyzed in duplicate; the reproducibility of this is 5%. Before the results leave the laboratory the standards, blanks, and split replicates are checked for accuracy, only when the senior scientist is fully satisfied with the results will they be issued. If for any reason there is a failure in an analysis the subgroup affected will be reanalyzed, and checked again. A Corrective Action Report will be issued and the problem is investigated fully to ensure that any measures to prevent the reoccurrence can and will be taken. All human and analytical errors are, where possible, eliminated. If the laboratory suspects any bias, the samples are re-analyzed and corrective measures are taken.

Quality control samples (reference materials, blanks and duplicates) are included with each analytical run, based on the rack sizes associated with the method. The rack size is the number of samples (including QC samples) within a batch. Blanks are inserted at the beginning, standards are inserted at random positions, and duplicates are analysed at the end of the batch. Quality control samples are inserted based on the following rack sizes specific to the method (Table 11-1):

TABLE 11-1 QUALITY CONTROL SAMPLE ALLOCATIONS
Denison Mines Corp. – Phoenix Deposit

Rack Size	Methods	Quality Control Sample Allocation
20	Specialty methods including specific gravity, bulk density, and acid insolubility	2 standards, 1 duplicate, 1 blank
28	Specialty fire assay, assay-grade, umpire and concentrate methods	1 standard, 1 duplicate, 1 blank
40	Regular AAS, ICP-AES and ICP-MS methods	2 standards, 1 duplicate, 1 blank
84	Regular fire assay methods	2 standards, 3 duplicates, 1 blank

SECURITY AND CONFIDENTIALITY

SRC considers customer confidentially and security of utmost importance and takes appropriate steps to protect the integrity of sample processing at all stages from sample storage and handling to transmission of results. All electronic information is password protected and backed up on a daily basis. Electronic results are transmitted with additional security features. Access to SRC Geoanalytical laboratories' premises is restricted by an electronic security system. The facilities at the main lab are regularly patrolled by security guards 24 hours a day.

After the analyses described above are completed, analytical data are securely sent using electronic transmission of the results, by SRC to Denison. The electronic results are secured using WINZIP encryption and password protection. These results are provided as a series of Adobe PDF files containing the official analytical results and a Microsoft Excel spreadsheet file containing only the analytical results.

In RPA's opinion, sample preparation, security, and analytical procedures meet industry standards.

12 DATA VERIFICATION

In order to verify that the data in the Phoenix deposit database are acceptable for Mineral Resource estimation purposes, a review of the transfer of data from logging through to the final database was completed. The data files supplied by Denison comprise 311 drill holes for the Wheeler River Property that include:

- Drill hole collar position data (electronic format)
- Down hole survey data (electronic format)
- Sample assays (electronic format)
- Borehole natural gamma data (electronic format)
- Lithology data (electronic format)
- Structure interpretation (electronic format)
- Property location maps (electronic format)

The data were supplied in .xls, .csv, .txt, .jpg or .dxf formatted files.

QA/QC PROGRAM

Denison has developed and documented several Quality Assurance and Quality Control (QA/QC) procedures and protocols for all exploration projects operated by Denison (Denison Mines 2009-2011). RPA reviewed Denison's procedures and protocols and considers them to be reasonable and acceptable.

DRILL HOLE DATABASE CHECK

Denison conducted audits of historic records to ensure that the grade, thickness, elevation, and location of uranium mineralization used in preparing the current uranium resource estimate correspond to mineralization. The quality control measures and the data verification procedures included the following:

- Surveyed drill hole collar coordinates and drill hole deviations were entered in the database, displayed in plan views and sections and visually compared to relative locations of the holes.

- Core logging information was visually validated on plan views and sections and verified against photographs of the core or the core itself when questions were raised during the geological interpretation process.

- Downhole radiometric probing results were compared with radioactivity measurements made on the core and drilling depth measurements.

- The uranium grade based on radiometric probing was validated with sample assay results.

- The information in the database was compared against assay certificates and original probing data files.

The Phoenix deposit drill hole database has been verified on multiple occasions by Denison geologists and external consultants. The resource database is considered adequate by RPA to prepare a Mineral Resource estimate.

EXTERNAL LABORATORY CHECK ANALYSIS

In addition to the QA/QC described above, Denison sends one in every 25 samples to the SRC's Delayed Neutron Counting (DNC) laboratory, a separate lab facility located at SRC Analytical Laboratories in Saskatoon to compare the values using two different methods, by two separate labs.

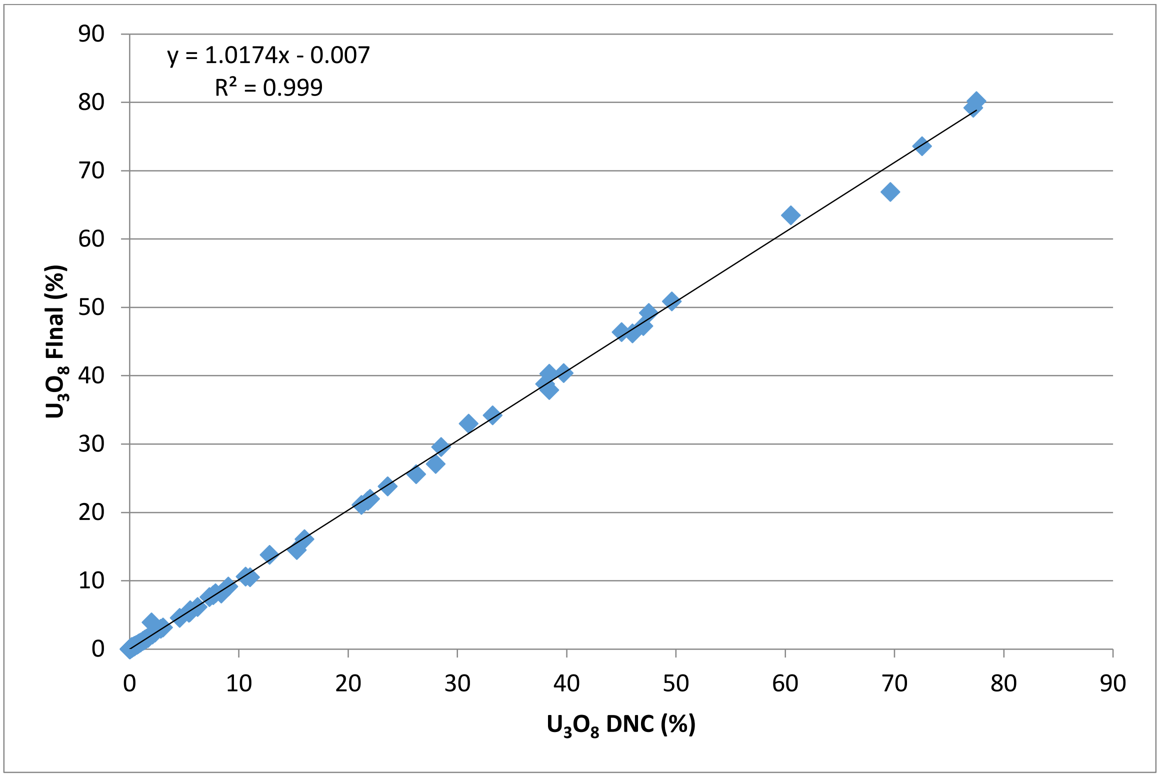
The DNC method is specific for uranium and no other elements are analyzed by this technique. The DNC system detects neutrons emitted by the fission of U-235 in the sample, and the instrument response is compared to the response from known reference materials to determine the concentration of uranium in the sample. In order for the analysis to work, the uranium must be in its natural isotopic ratio. Enriched or depleted U cannot be analyzed accurately by DNC.

Per SRC (2009) documents the method summary for the DNC technique is as follows. Samples previously prepared as pulps for ICP Total Digestion are used for the DNC analysis. The pulps are irradiated in a Slowpoke 2 nuclear reactor for a given period of time. After irradiation, the samples are pneumatically transferred to a counting system equipped with six helium-3 detectors. After a suitable delay period, neutrons emanating from the sample are counted. The proportion of delayed neutrons emitted is related to the uranium concentration. For low concentrations of uranium, a minimum of one gram of sample is preferred, and larger sample sizes (two to five grams) will improve precision. Several blanks and certified uranium standards are analyzed to establish the instrument calibration. In addition, control samples are analyzed with each batch of samples to monitor the stability of the calibration. At least one in every ten samples is analyzed in duplicate. The results of the instrument calibration, blanks, control samples, and duplicates must be within specified limits otherwise corrective action is required.

Analysis for U by DNC incorporates four separate flux/site conditions of varying sensitivity to produce an effective range of analysis from zero to 150,000 µg U per capsule (samples of up to 90% U can be analyzed by weighing a fraction of a gram to ensure that there is no more than 150000 µg U in the capsule). Each condition is calibrated using between three and seven reference materials. For each condition, one of these materials is designated as a calibration check sample. As well, there is an independent control sample for each condition.

There are 48 assay pairs that used both ICP-OES Total Digestion and the DNC assay technique. Figure 12-1 shows the correlation between the SRC Geoanalytical Lab, and the SRC Analytical Lab. It can be seen that correlation is excellent. Uranium grades obtained with the DNC technique were used only as check assays and were not directly used for Mineral Resource estimation

FIGURE 12-1 U_3O_8 DNC VERSUS ICP-OES ASSAY VALUES



SAMPLE STANDARDS, BLANKS AND FIELD DUPLICATES

FIELD ASSAY STANDARDS

Analytical standards are used to monitor analytical precision and accuracy, and field standards are used as an independent monitor of laboratory performance. Six uranium assay standards have been prepared for use in monitoring the accuracy of uranium assays received from the laboratory. Due to the radioactive nature of the standard material, insertion of the standard materials is preferable at the SRC Geoanalytical Laboratory instead of in the field. During sample processing, the appropriate standard grade is determined, and an aliquot of the appropriate standard is inserted into the analytical stream for each batch of materials assayed.

Denison uses standards provided by its Wheeler River JV partner Cameco for uranium assays. Cameco standards are added to the sample groups by SRC personnel, using the standards appropriate for each group. As well, for each assay group, an aliquot of Cameco's blank material is also included in the sample run. In a run of forty samples, at least one will consist of a Cameco Standard and one will consist of a Cameco Blank. Accuracy of the analyses and values obtained relative to the standard values, based on the analytical results of the six reference standards used, is acceptable for Mineral Resource estimates. Chronological plots for the six standards are shown in Figures 12-2 to 12-7 with upper limit (UL) and lower limit (LL) being equal to the mean plus or minus three standard deviations respectively.

FIGURE 12-2 USTD1 ANALYSES

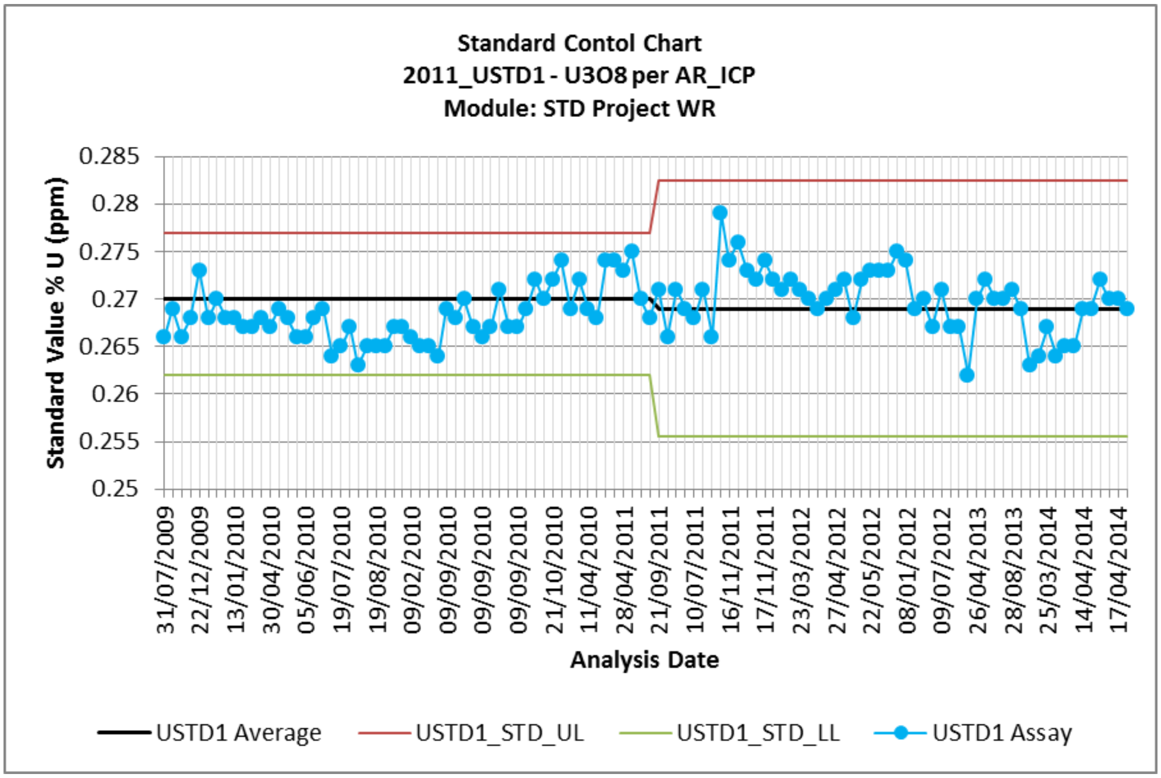


FIGURE 12-3 USTD2 ANALYSES

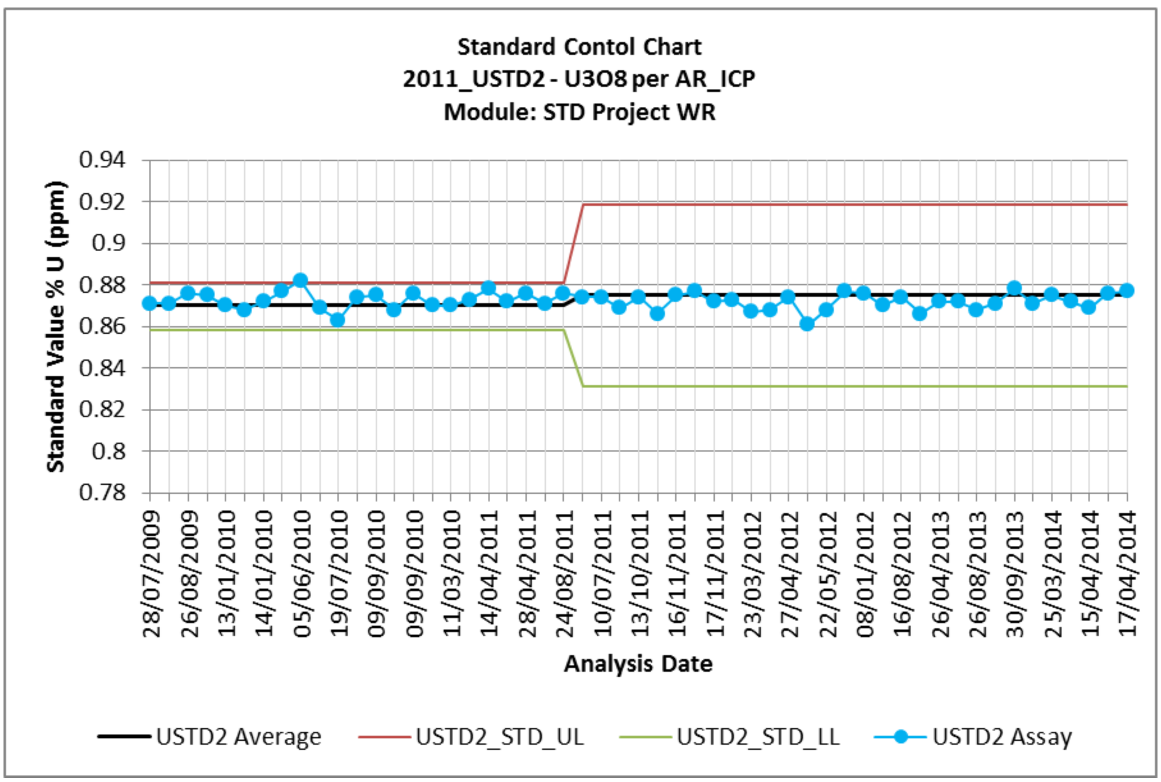


FIGURE 12-4 USTD3 ANALYSES

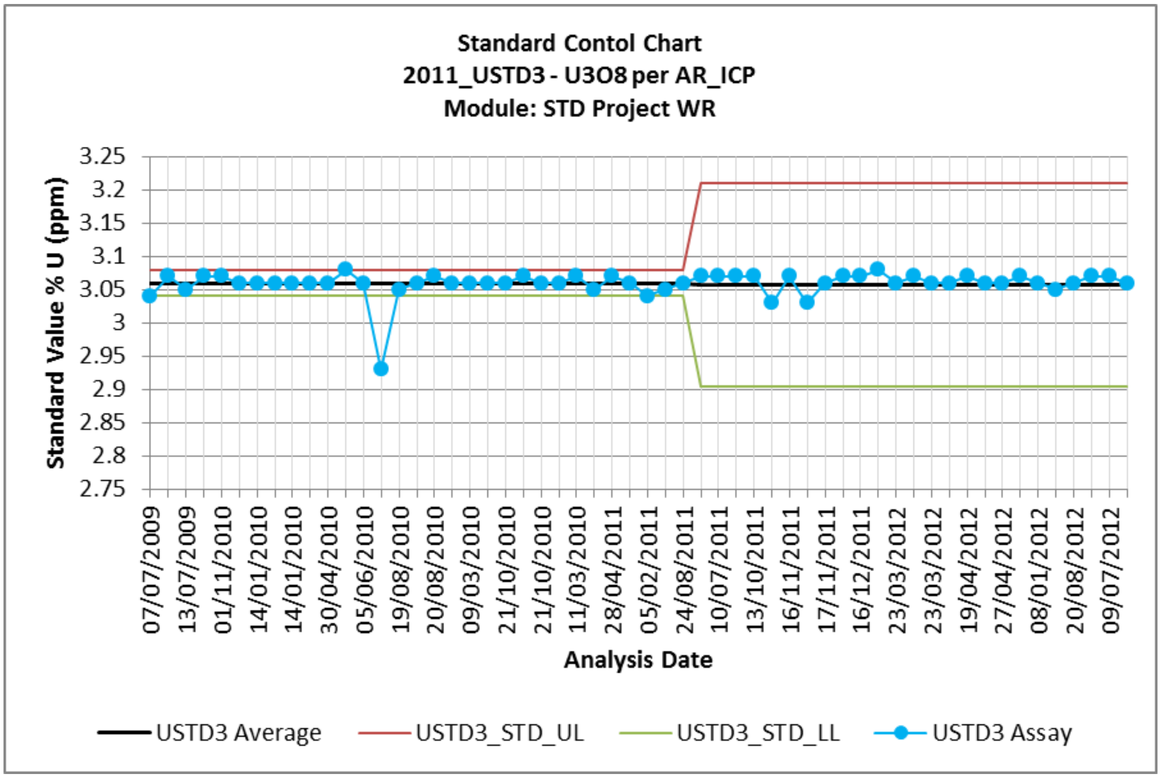


FIGURE 12-5 USTD4 ANALYSES

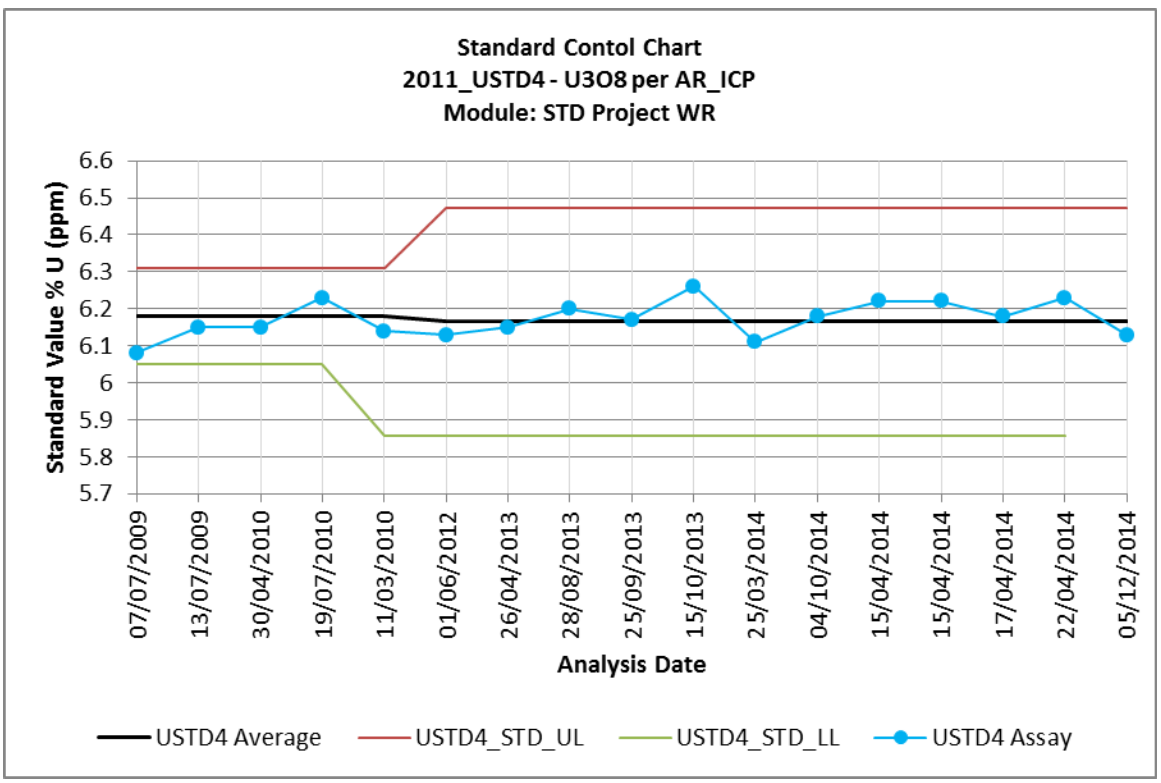


FIGURE 12-6 USTD5 ANALYSES

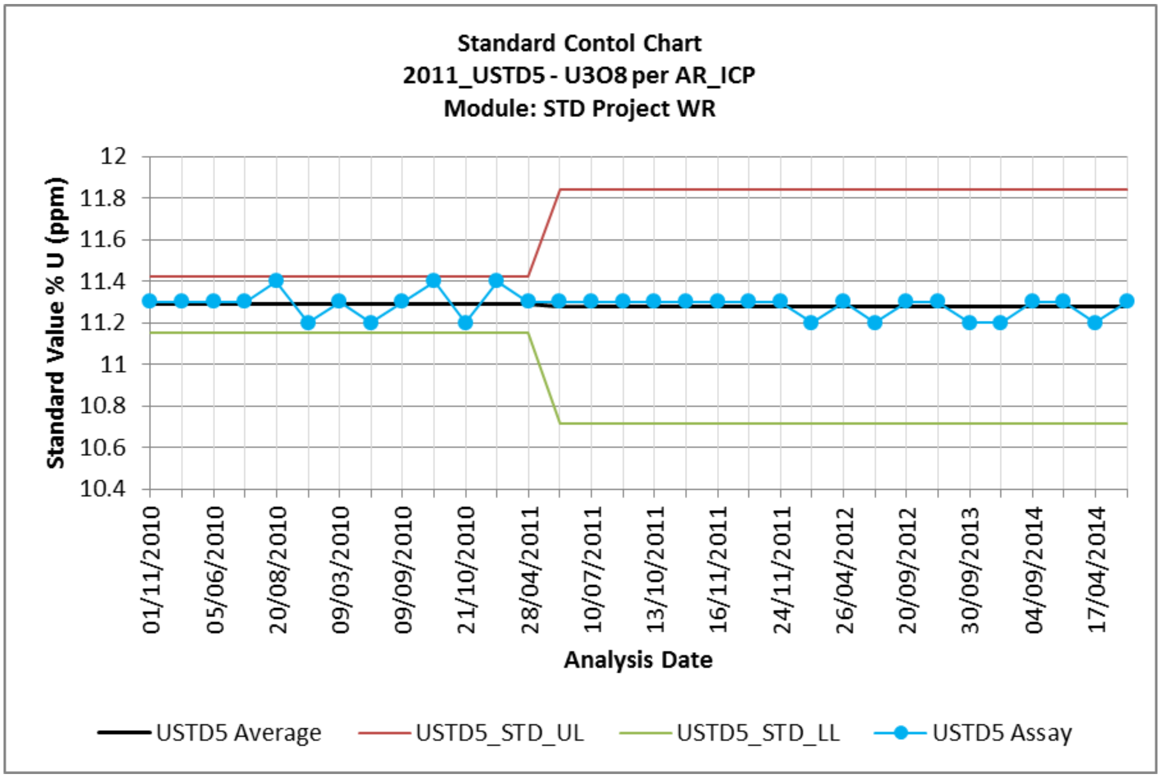
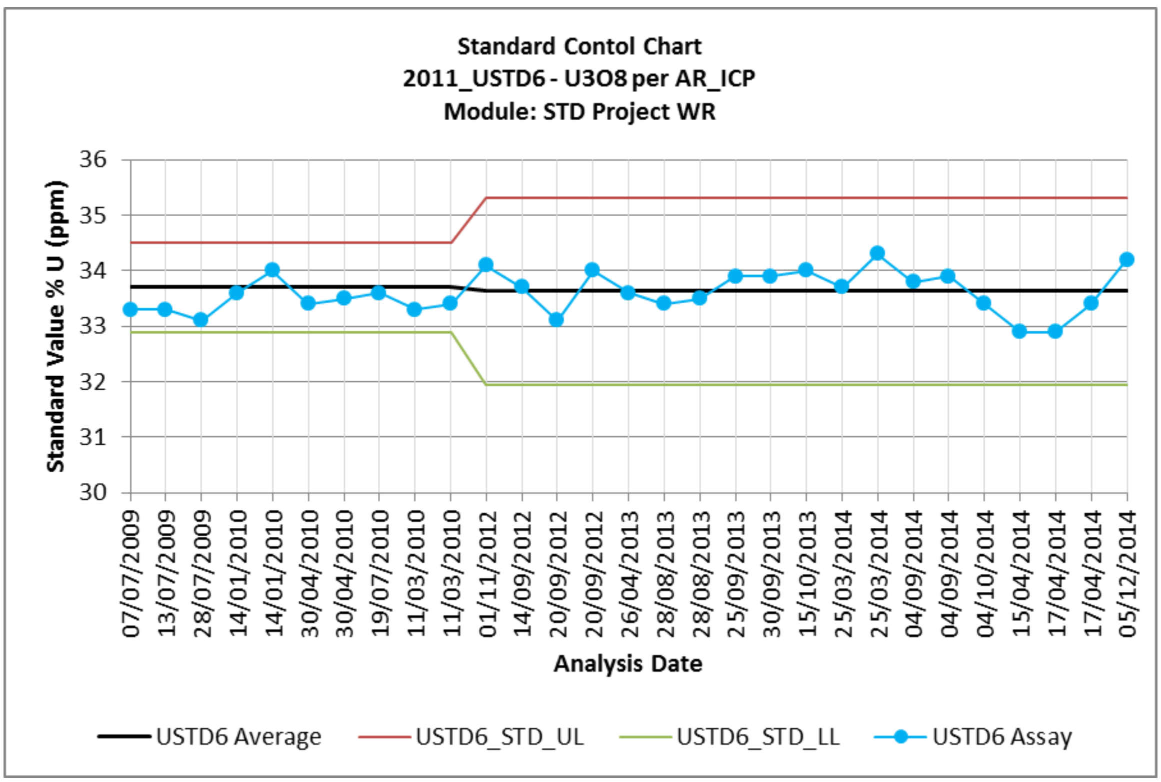


FIGURE 12-7 USTD6 ANALYSES



Denison employs a lithological blank composed of quartzite to monitor the potential for contamination during sampling, processing, and analysis. The selected blank consists of a material that contains lower contents of U_3O_8 than the sample material but is still above the detection limit of the analytical process. Due to the sorting of the samples submitted for assay by SRC based on radioactivity, the blanks employed must be inserted by the SRC after this sorting takes place, in order to ensure that these materials are ubiquitous throughout the range of analytical grades. In effect, if the individual geologists were to submit these samples, they would invariably be relegated to the minimum radioactive grade level, preventing their inclusion in the higher radioactive grade analyses performed by SRC. Figure 12-8 shows results of analyses of blank samples. It can be seen that most are below the upper limit of 0.013% U_3O_8, with a maximum analysis of 0.024% U_3O_8.

Analyses of duplicate samples are a mandatory component of quality control. Duplicates are used to evaluate the field precision of analyses received, and are typically controlled by rock heterogeneity and sampling practices. Core duplicates are prepared by collecting a second sample of the same interval, through splitting the original sample, or other similar technique, and are submitted as an independent sample. Duplicates are typically submitted at a minimum rate of one per 20 samples in order to obtain a collection rate 5%. The collection may be further tailored to reflect field variation in specific rock types or horizons. Figure 12-9 shows results of analyses of field core duplicates plotted against original analyses. It can be seen that results are satisfactory with a correlation coefficient of 98%.

LABORATORY ASSAY DATABASE CHECKS

Denison carried out a check of the digital database used for resource estimation by verifying the resource database against original assay data received from the assay laboratory. The entire digital assay database was verified and only few minor errors due to data rounding were noted. RPA checked five of 28 drill holes in the A Deposit high grade domain and one of eight drill holes in the B Deposit high grade domain in the assay database against the SRK assay data and found no discrepancies. Based on the data validation by Denison and RPA and the results of the standard, blank, and duplicate analyses, RPA is of the opinion that the assay database is of sufficient quality for Mineral Resource estimation.

FIGURE 12-8 BLANK SAMPLE ANALYSES RESULTS

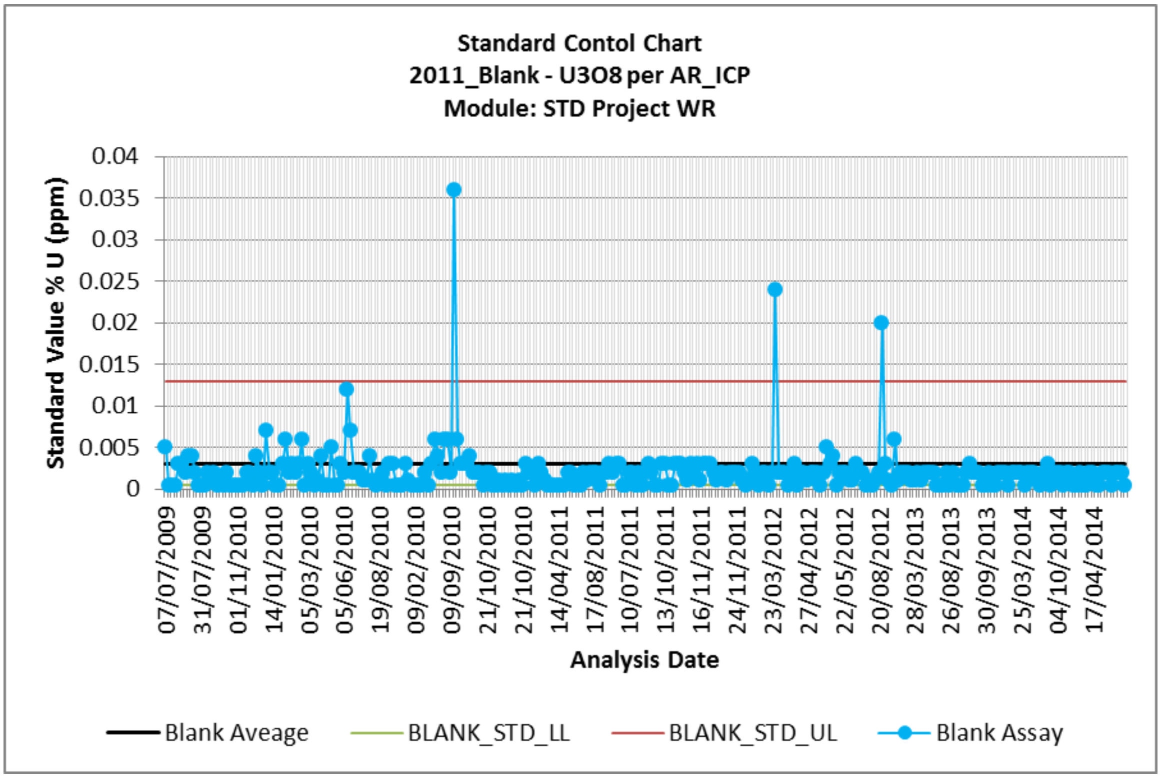
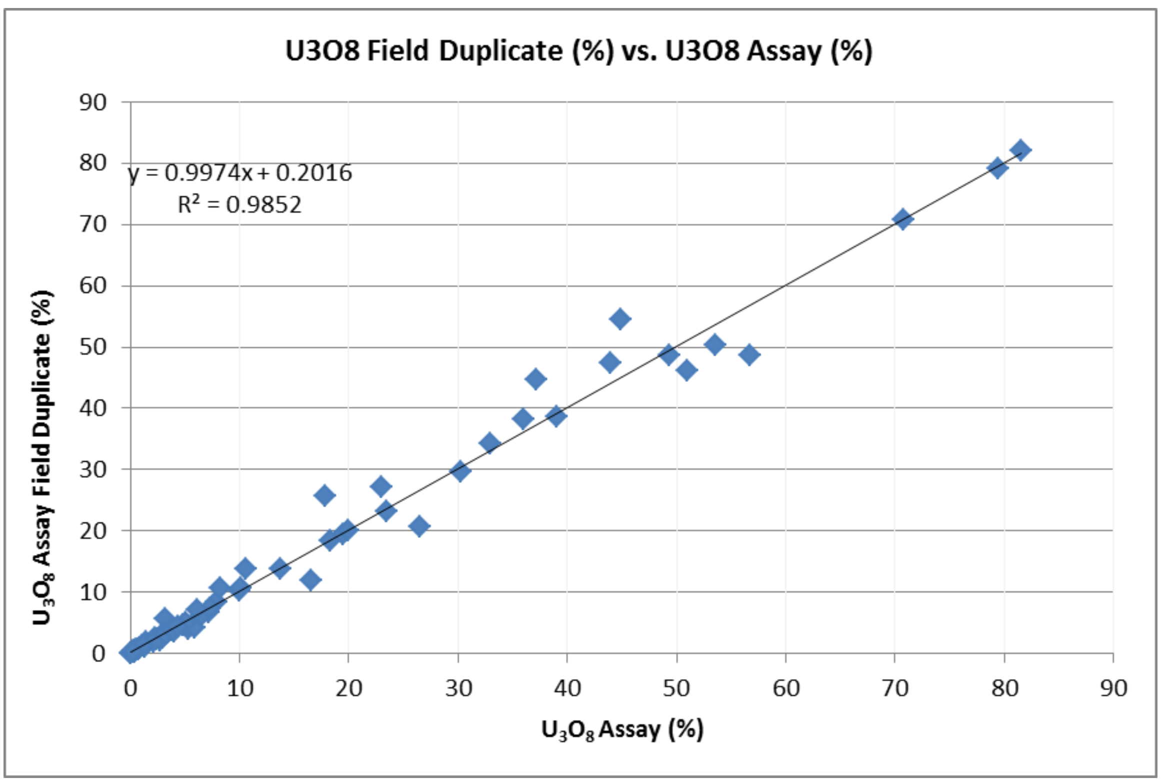


FIGURE 12-9 FIELD DUPLICATE ANALYSES



DISEQUILIBRIUM

Radioactive isotopes lose energy by emitting radiation and transition to different isotopes in a 'decay series' or 'decay chain' until they eventually reach a stable non-radioactive state. Decay chain isotopes are referred to as 'daughters' of the 'parent' isotope. When all the decay products are maintained in close association with uranium-238 for the order of a million years, the daughter isotopes will be in equilibrium with the parent. Disequilibrium occurs when one or more decay products is dispersed as a result of differences in solubility between uranium and its daughters, and/or escape of radon gas.

Knowledge of, and correction for, disequilibrium is important for deposits whose grade is measured by gamma-ray probes. Disequilibrium is considered positive when there is a higher proportion of uranium present compared to daughters. This is the case where decay products have been transported elsewhere or uranium has been added by, for example, secondary enrichment. Positive disequilibrium has a disequilibrium factor which is greater than 1.0. Disequilibrium is considered negative where daughters are accumulated and uranium is depleted. This so called 'negative' disequilibrium has a disequilibrium factor of less than 1.0 but not less than zero.

Disequilibrium is determined by comparing uranium grades measured by chemical analyses with the 'gamma only' radiometric grade of the same samples measured in a laboratory. There are practical difficulties in comparing chemical analyses of uranium from drill hole samples with corresponding values from borehole gamma logging, because of the difference in sample size between drill core (average grades in core or chip samples) and radiometric probe measurements (gamma response from spheres of influence up to one metre in diameter). Also, any probe calibration (and/or assay) error can be misinterpreted as disequilibrium. If the gamma radiation emitted by the daughter products of uranium is in balance with the actual uranium content of the measured interval (assay), then uranium grade can be calculated solely from the gamma intensity measurement.

Denison routinely compares borehole natural gamma data to chemical assays as part of its QA/QC program as exampled in Figures 12-10 to 12-18. The down hole depths for gamma results in Figures 12-10 to 12-18 have not been corrected for depth so they do not correspond exactly to the chemical assay depths. Reasonable uranium grades can be calculated from the triple gamma probe (Geiger Mueller, or GM, tube) empirical data up to

80%. Above that the counts (the maximum count rate is about 3,500 cps) increase very little with increased grades due to the physical characteristics of the GM tube (Sweet and Petrie 2010). In general, radiometric grades are somewhat lower than chemical assay grades because:

- The GM tube can become saturated at very high grades and it cannot count any higher.
- Some gamma rays are captured by the uranium, converted to photons, and absorbed (self-absorption), i.e., they are not available to the detector.

Denison and RPA carried out a check of the digital probe database used for resource estimation by verifying the resource database against original assay data. Denison and RPA concluded that in instances where core recovery was less than 80% radiometric data could be substituted for chemical assays and that the assay database was of sufficient quality for resource estimation.

FIGURE 12-10 WR-318 RADIOMETRIC VS. ASSAY % U_3O_8 VALUES

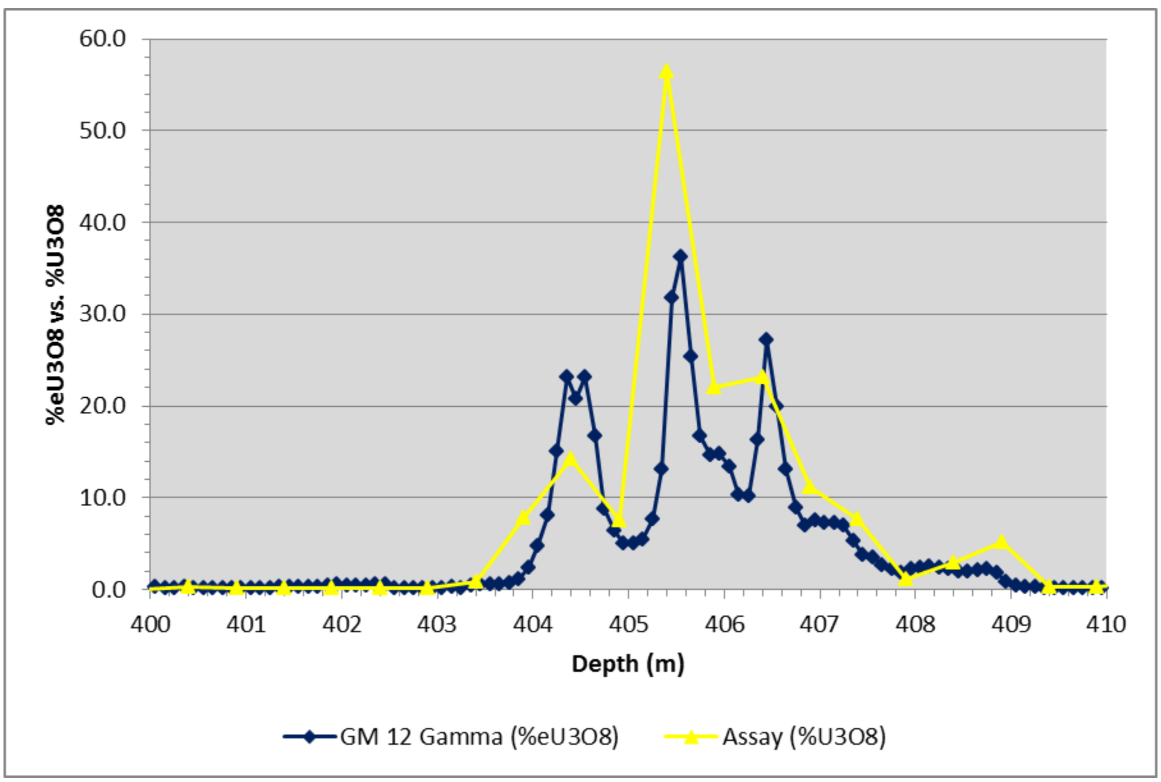


FIGURE 12-11 WR-334 RADIOMETRIC VS. ASSAY % U_3O_8 VALUES

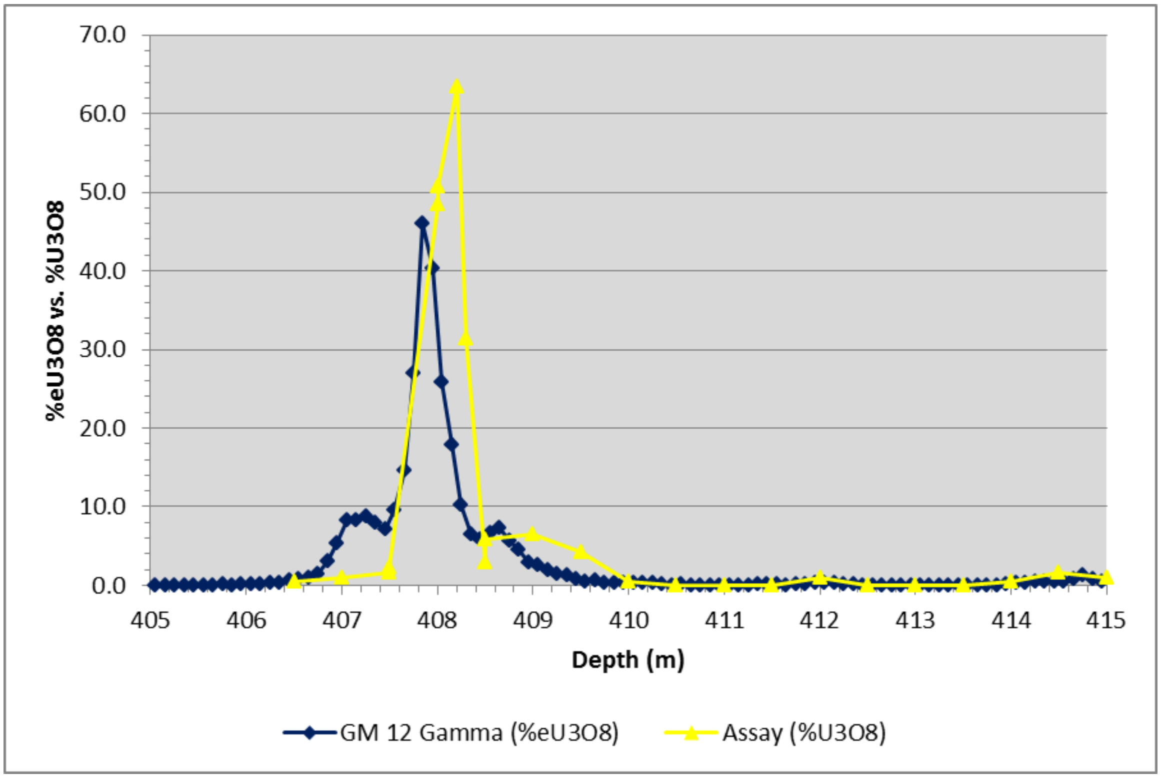


FIGURE 12-12 WR-273 RADIOMETRIC VS. ASSAY % U_3O_8 VALUES

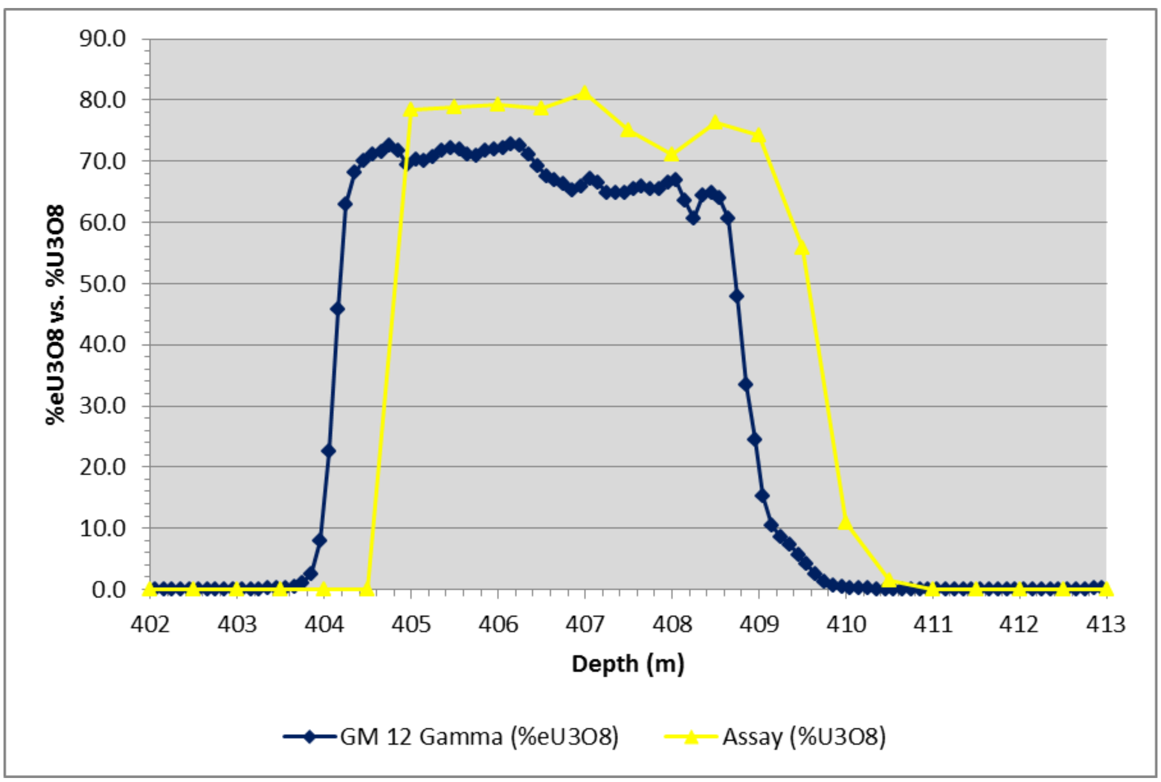


FIGURE 12-13 WR-435 RADIOMETRIC VS. ASSAY % U_3O_8 VALUES

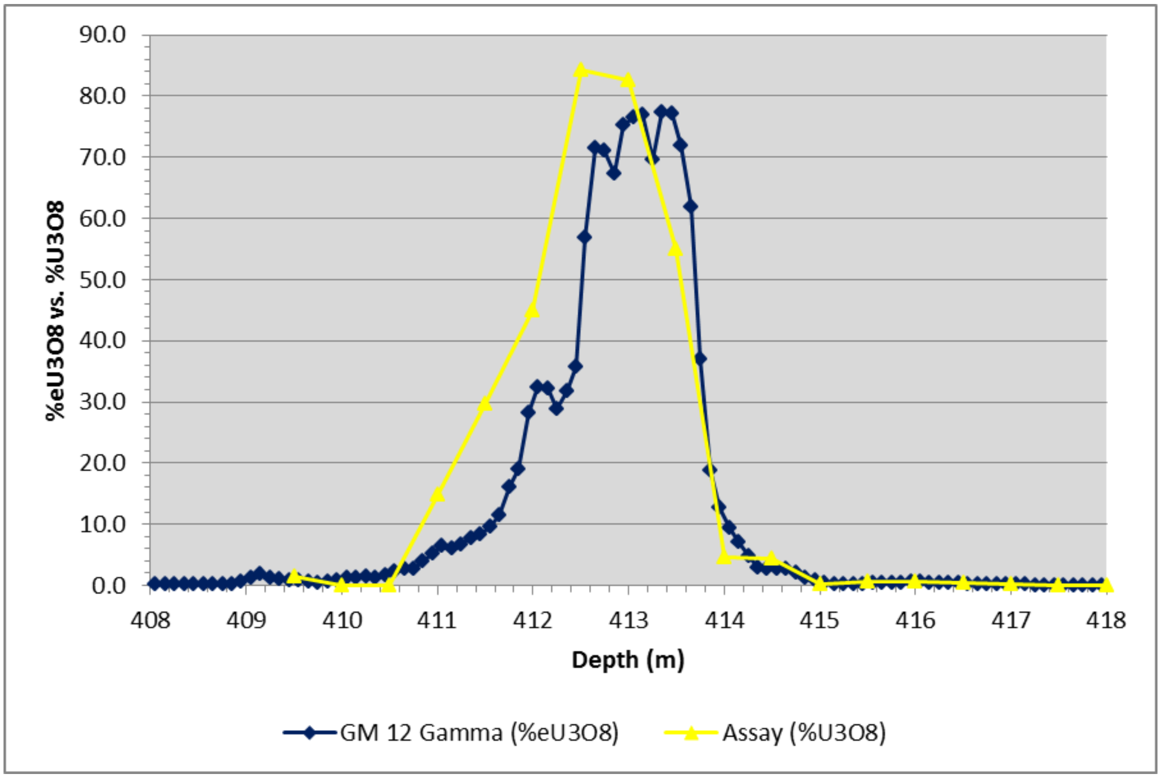


FIGURE 12-14 WR-548 RADIOMETRIC VS. ASSAY % U_3O_8 VALUES

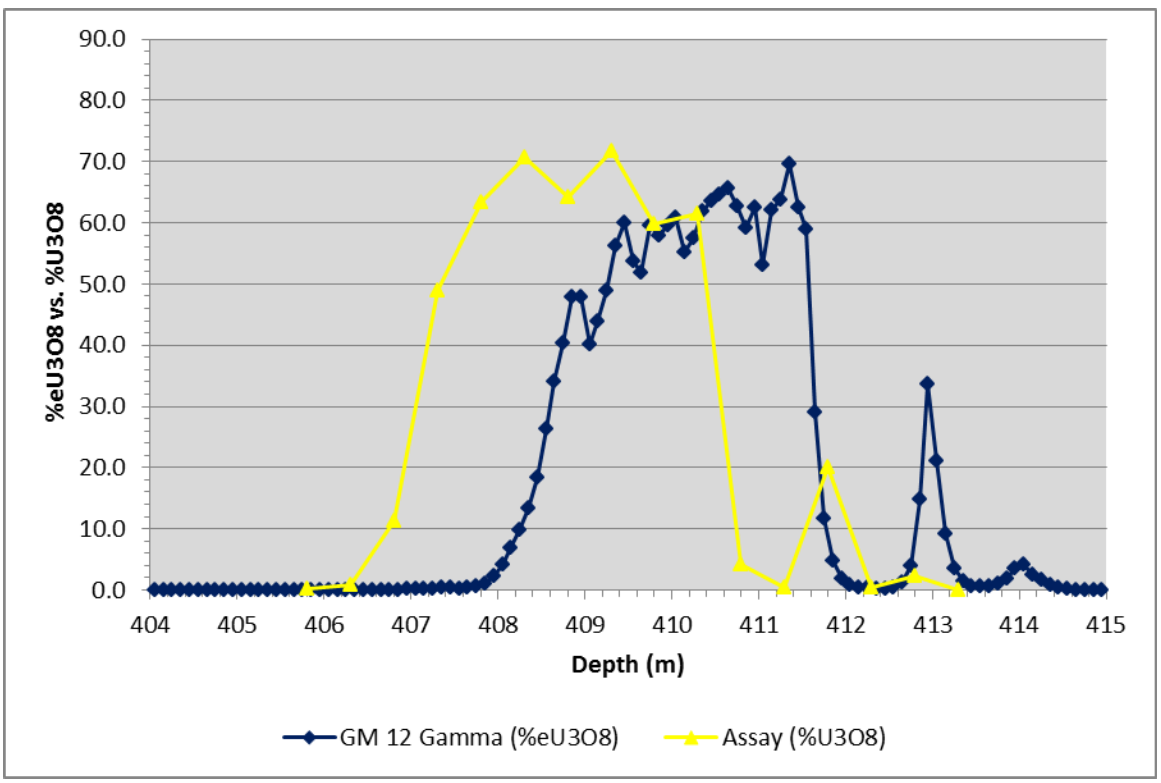


FIGURE 12-15 WR-525 RADIOMETRIC VS. ASSAY % U_3O_8 VALUES

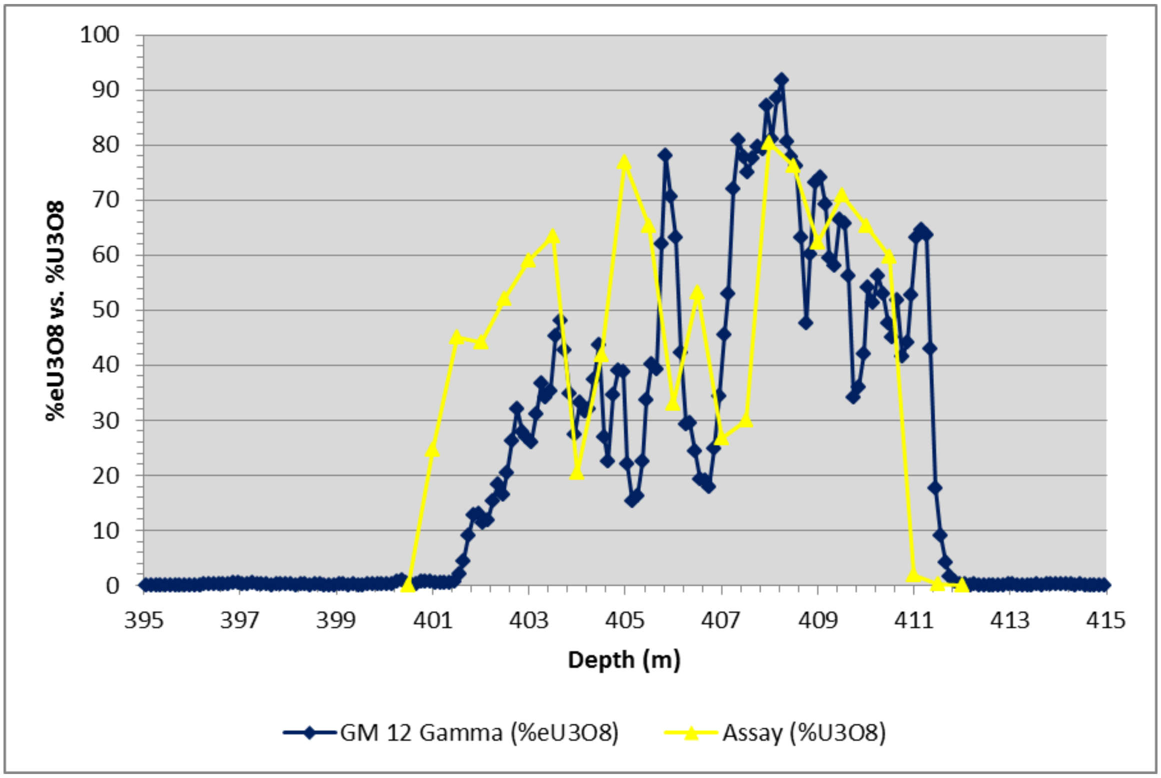


FIGURE 12-16 WR-401 RADIOMETRIC VS. ASSAY % U_3O_8 VALUES

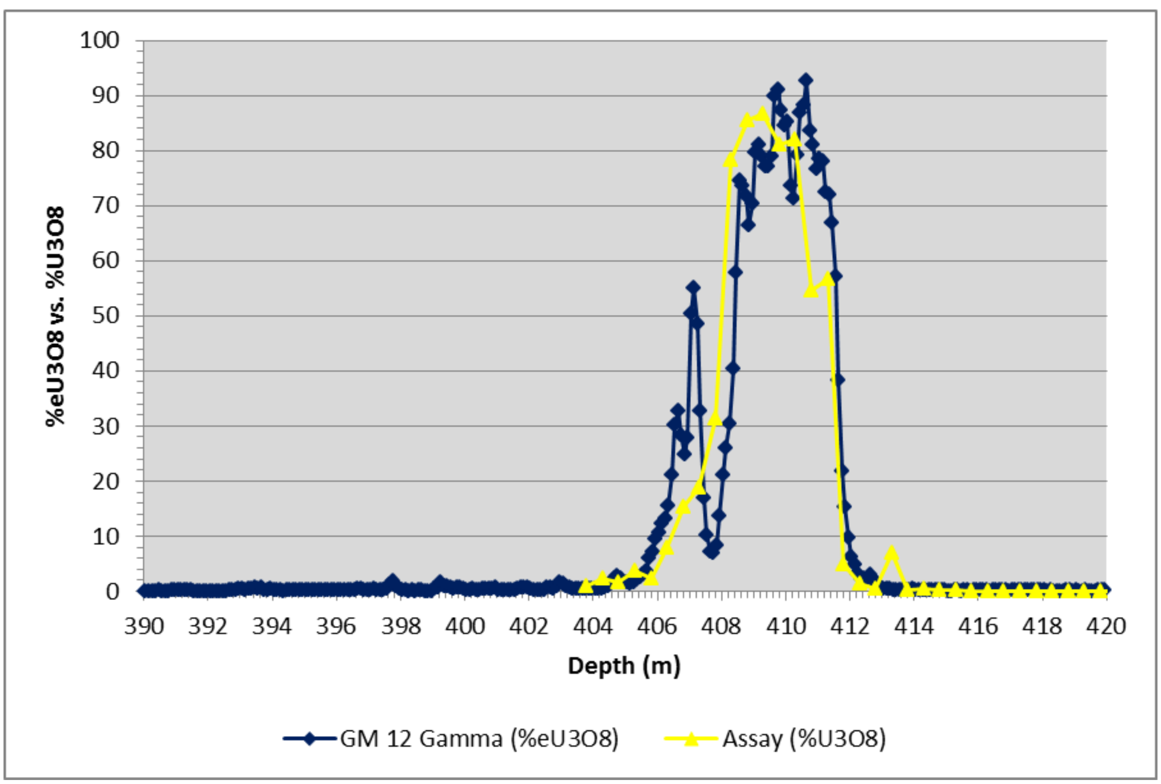


FIGURE 12-17 WR-306 RADIOMETRIC VS. ASSAY % U_3O_8 VALUES

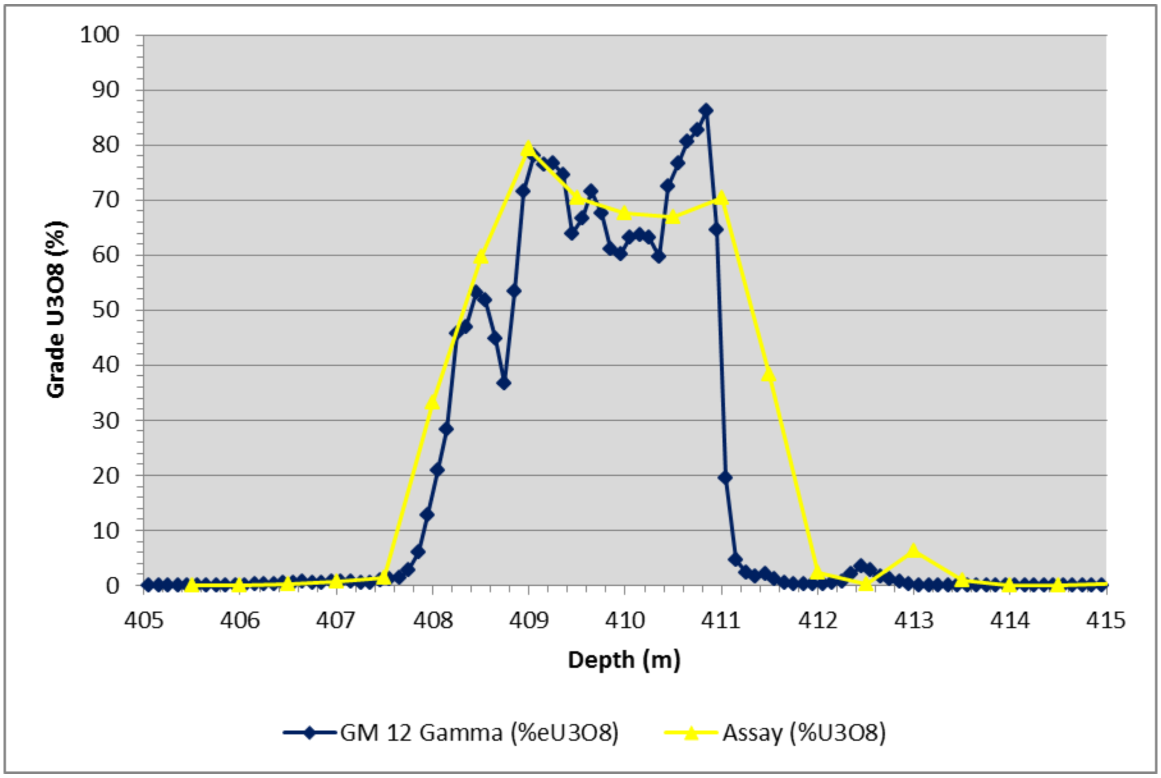
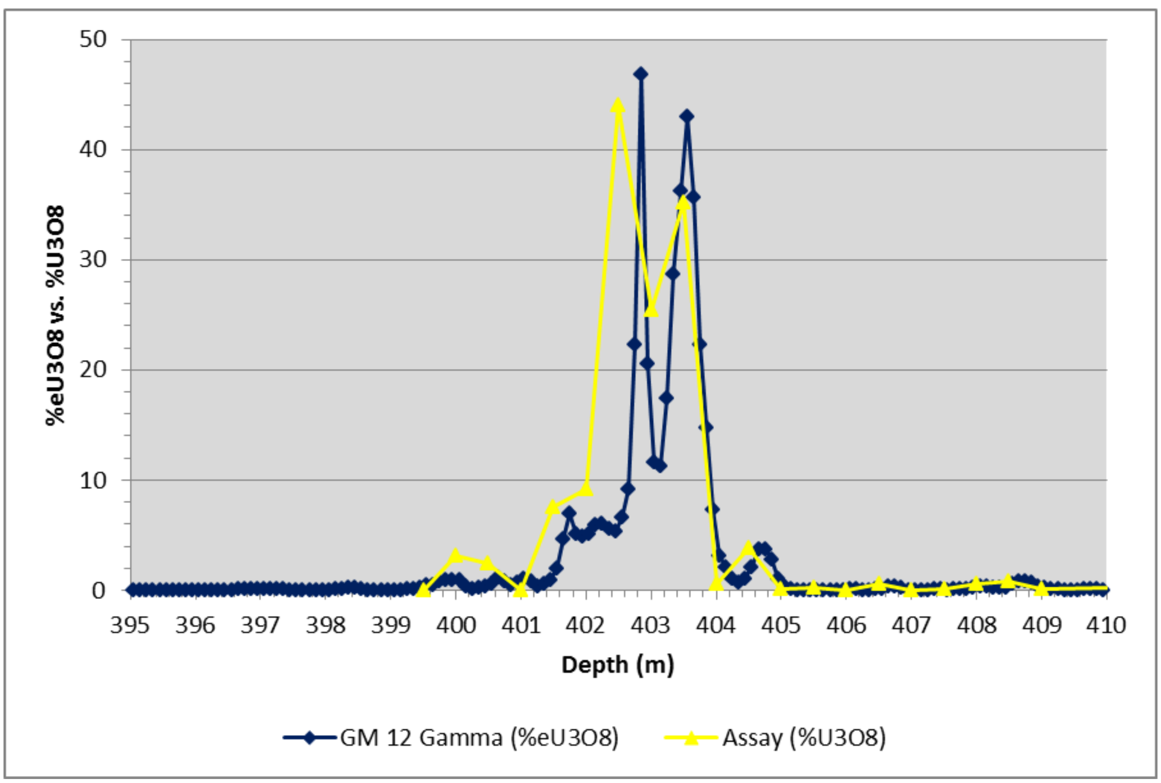


FIGURE 12-18 WR-539 RADIOMETRIC VS. ASSAY % U_3O_8 VALUES



13 MINERAL PROCESSING AND METALLURGICAL TESTING

No representative mineral processing or metallurgical testing studies have been carried out on the Phoenix deposit. Based on observation of drill core and geochemical data, mineralization in the Phoenix deposit is expected to have very similar mineralogical and paragenetic characteristics to mineralization in other deposits in the region, including McArthur River, which is currently being mined.

14 MINERAL RESOURCE ESTIMATE

GENERAL STATEMENT

Denison has estimated Mineral Resources for the Phoenix deposit based on results of several surface diamond drilling campaigns from 2008 to 2014. The Phoenix deposit consists of zones A, B, and zone A basement mineralization which is immediately below the north part of Zone A. The Denison drill hole database and Mineral Resource estimate have been audited by RPA with modifications made where necessary. Table 14-1 summarizes the Mineral Resource estimate, of which Denison's share is 60%. The effective date of the Mineral Resource estimate is May 28, 2014. Details of the estimation methodology follow below.

TABLE 14-1 MINERAL RESOURCE ESTIMATE FOR THE PHOENIX DEPOSIT AS OF MAY 28, 2014 (100% BASIS)
Denison Mines Corp. – Phoenix Deposit

Category	Deposit	Tonnes	Grade (% U_3O_8)	Million lbs U_3O_8
Indicated	Zone A	147,200	19.81	64.3
Indicated	Zone B	19,200	13.94	5.9
Total Indicated		**166,400**	**19.13**	**70.2**
Inferred	Zone B	5,500	3.30	0.4
Inferred	Zone A Basement	3,100	10.24	0.7
Total Inferred		**8,600**	**5.80**	**1.1**

Notes:
1. CIM Definitions were followed for classification of Mineral Resources.
2. Mineral Resources are reported above a cut-off grade of 0.8% U_3O_8, which is based on internal Denison studies and a price of US$50 per lb U_3O_8.
3. High grade composites are subjected to a high grade search restriction.
4. Bulk density is derived from grade using a formula based on 196 measurements.
5. Numbers may not add due to rounding.

RPA is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Resource estimate.

DRILL HOLE DATABASE

The Wheeler River Project includes drilling results from 2008 to 2014, which comprise 311 diamond drill holes totalling 148,210 m, of which 196 drill holes totalling 89,835 m have delineated the zone A, zone B, and zone A basement lenses at Phoenix. Zone A is the northeastern lens and strikes N52°E. Zone B consists of two subzones, B1 and B2 which form the southwestern part of the Phoenix deposit. Zone A basement mineralization is within a narrow fracture zone and extends below the northern end of zone A.

Upon completion of the initial data processing, the borehole data as well as radiometric logging information was uploaded into VULCAN software. Table 14-2 lists details of the VULCAN database used for the Phoenix resource estimate. RPA has reviewed the database with Denison and agrees that it is suitable for Mineral Resource estimation.

TABLE 14-2 VULCAN DATABASE RECORDS
Denison Mines Corp. – Phoenix Deposit

Table Name	Number of Records
Collar	253
Survey	2,879
Stratigraphy	2,632
U_3O_8 Assay Values	2,111
eU_3O_8 Values	166,287
A Deposit UC – Composites	471
B Deposit UC – Composites	92
A Deposit Basement – Composites	140

Drill holes were completed on northwest-southeast oriented sections spaced at approximately 25 m intervals along strike with a drill hole spacing of approximately 10 m along the sections. Earlier holes were drilled at steep angles to the northwest and later holes were collared vertically. Figure 14-1 shows zones A and B with locations of drill holes. Figure 14-2 shows the location of the zone A basement mineralization.

Figure 14-1

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Zones A and B Drill Hole Locations

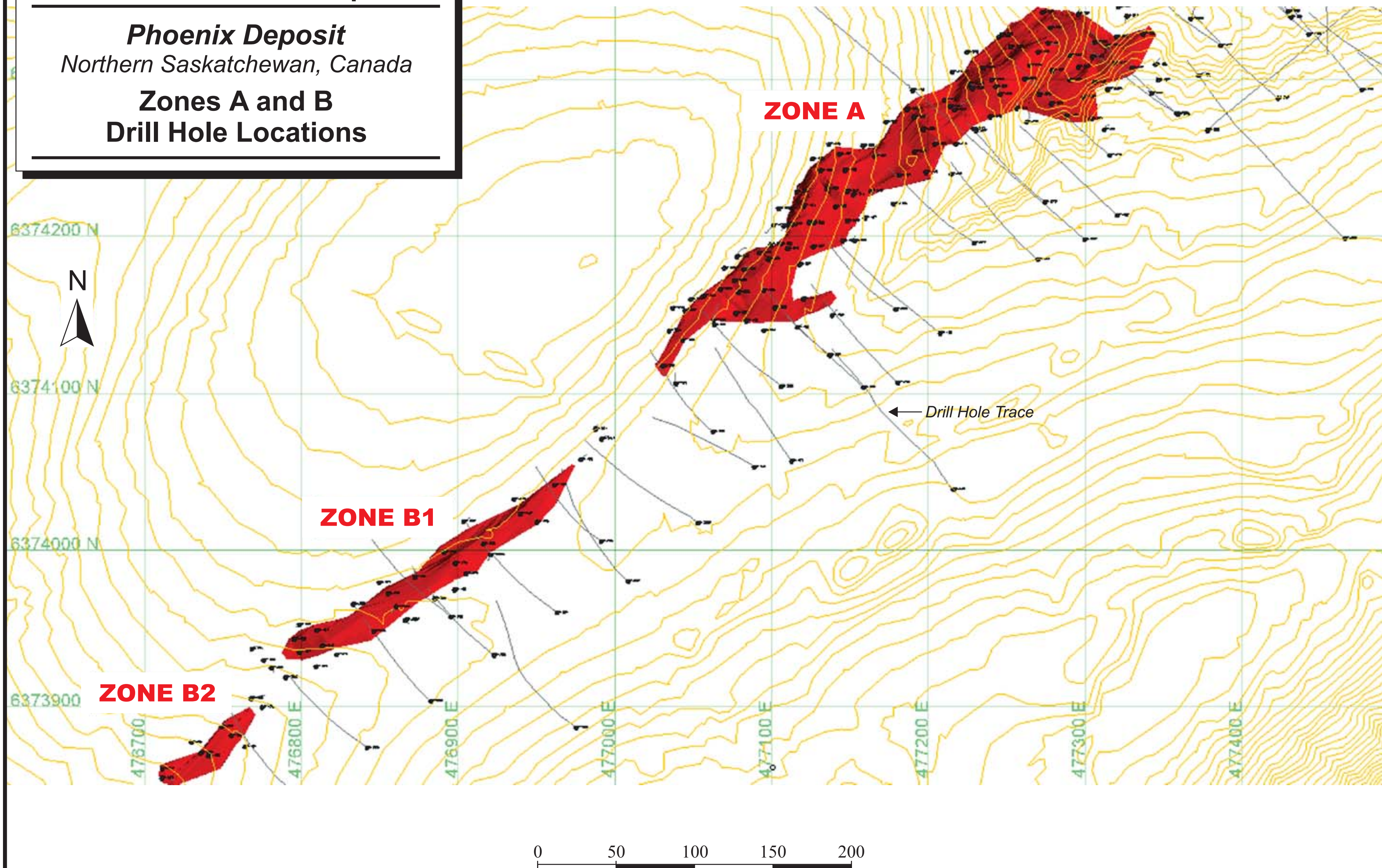


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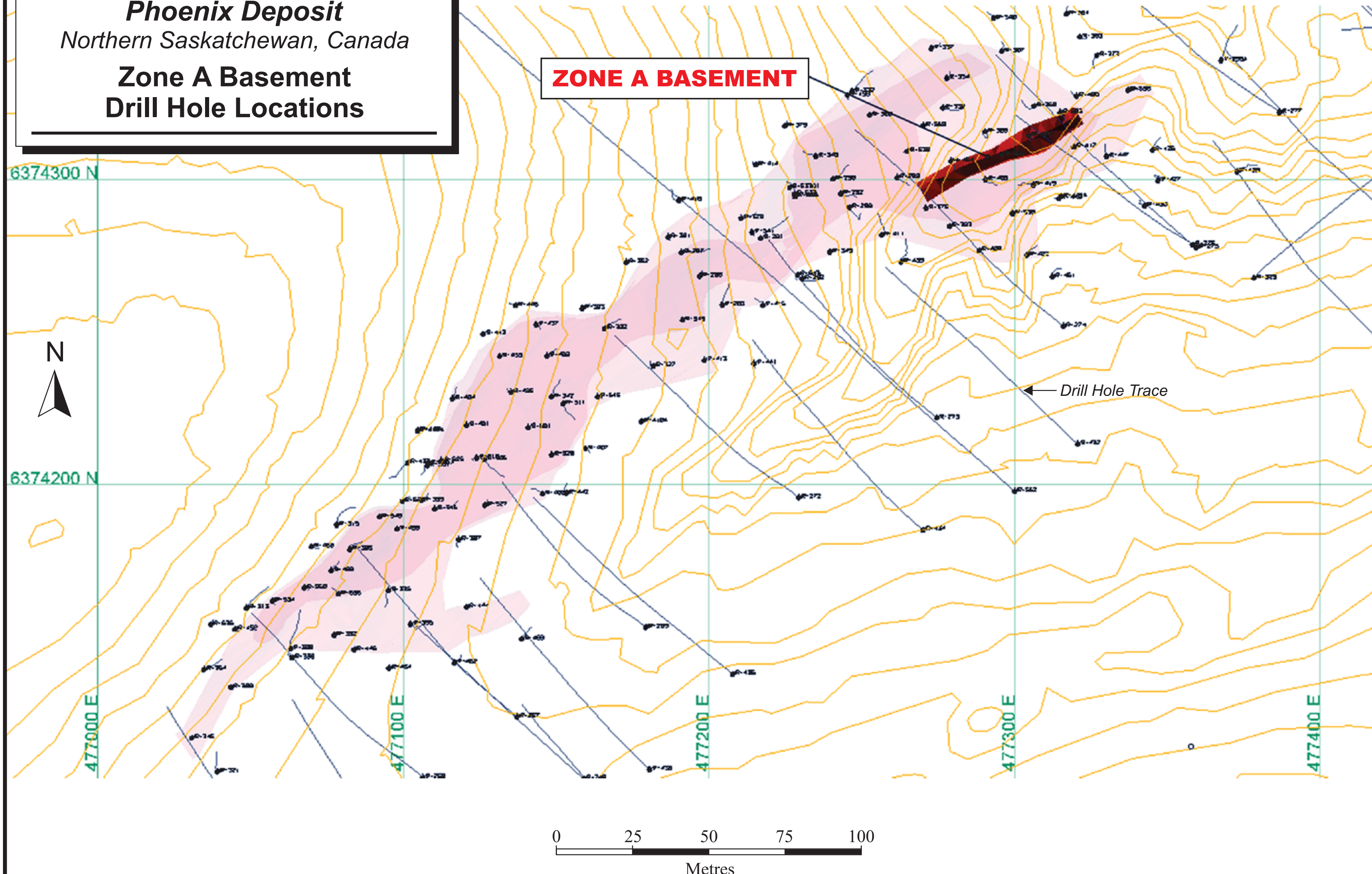
Figure 14-2

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Zone A Basement
Drill Hole Locations



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GEOLOGICAL INTERPRETATION AND 3D SOLIDS

Denison has interpreted the geology, structure, and mineralized zones at Phoenix using data from 196 diamond drill holes that penetrate the basal unconformity of the Athabasca sandstone. Uranium mineralization occurs at the unconformity surface and in the adjacent sandstone above and in the adjacent graphitic pelite basement rocks below. Zones A and B both strike approximately N52°E and are essentially horizontal.

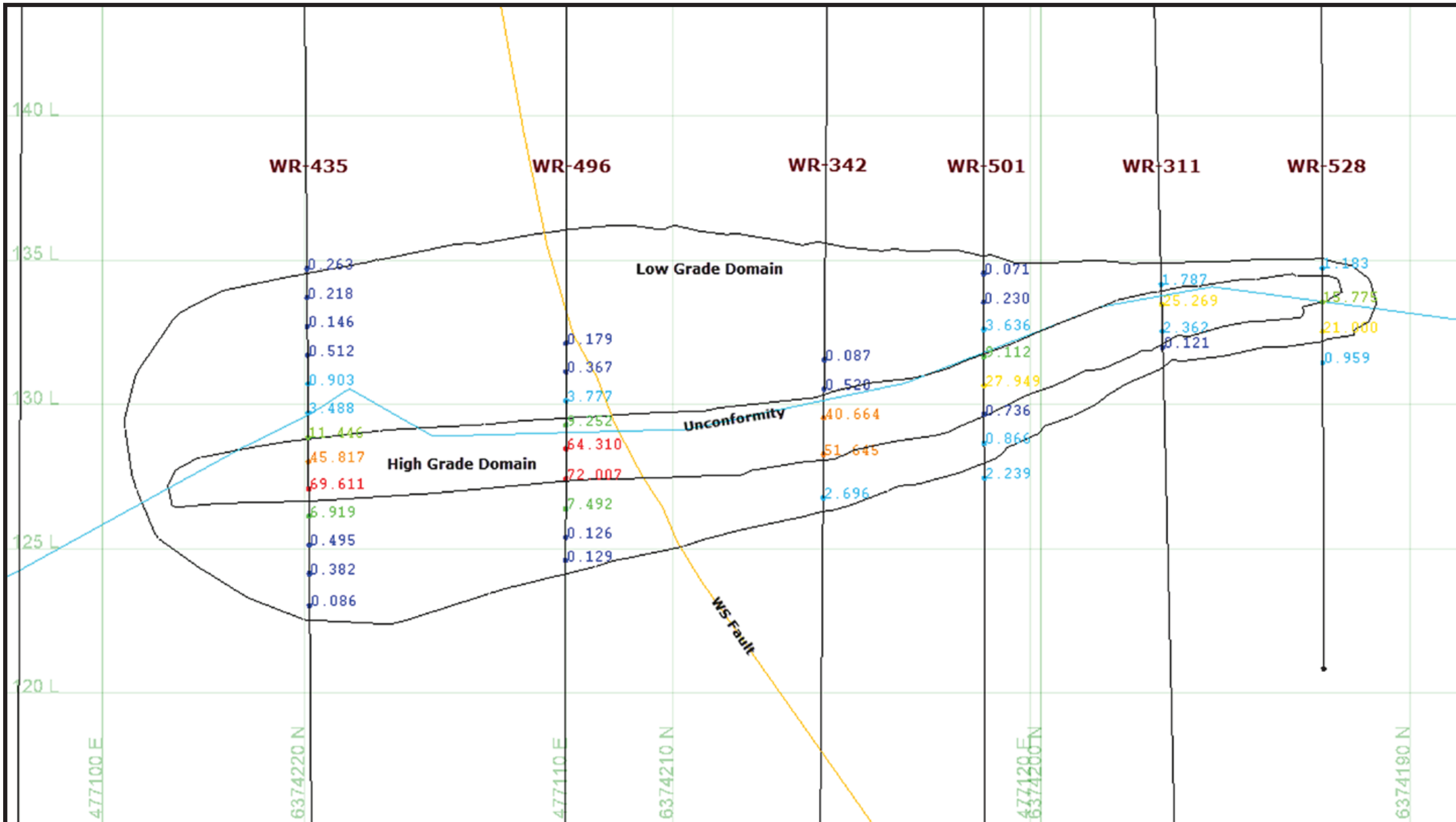
A regional fault, the WS fault, is spatially associated with mineralization in the Phoenix deposit. The WS fault trends northeasterly, parallel to the mineralization and dips moderately to the southeast. It appears to be a steep angle reverse fault, displacing the unconformity in the order of five metres or more upward to the southeast. Uranium mineralization extends outward to the southeast from the WS fault, suggesting that the primary controls on the Phoenix deposit are the intersection of the WS fault with the unconformity and graphitic pelite in the basement. Some uranium mineralization occurs on the northwest side of the WS fault along the unconformity which is at lower elevation, but it is limited in extent to the northwest. Other faults are present in the Phoenix deposit subparallel to the WS fault but with lesser vertical displacements. Some cross faults with easterly or southeasterly trends are interpreted, with displacements in the order of five metres or more.

The zone A basement mineralization is restricted to a narrow (<3 m) fracture zone extending approximately 20 m below the northern end of Zone A. The fracture zone runs parallel to the strike of Zone A at approximately N52°E and dips at -65° to the southeast. The axis of the fracture is centred along drill holes WR-503, WR-403 and WR-506 and is interpreted as splay faulting associated with the WS fault described previously.

Denison developed three dimensional (3D) wireframe models which were reviewed and accepted by RPA for the Phoenix deposit Zones A and B which represent grade envelopes using the geological interpretation described above as guidance. The wireframes consisted of a lower grade (LG) domain and a higher grade (HG) domain. For the LG wireframe a threshold grade of 0.05% U_3O_8 was used as a guide. For Zone A, the threshold grade for inclusion in the HG domain was approximately 20% U_3O_8, although lower grades were incorporated in places to maintain continuity and to maintain a minimum thickness of two metres. For Zone B, the minimum threshold for the HG domain was approximately 10% U_3O_8 over a minimum thickness of two metres. Figures 14-3 to 14-5 are cross sections of

Zone A showing drill holes with one metre composite grades and the outlines of the HG and LG domains. Figure 14-6 shows the same for Zone B. Figure 14-7 is a longitudinal view of the Zone A Basement domain.

The wireframe model developed for Zone A is approximately 380 m long, 36 m wide and ranges in thickness from two metres to 17 m with an average thickness of five metres. The Zone B wireframe model measures approximately 290 m long, averages 19 m wide, and is approximately three metres thick. The wireframes were used to assign domain codes to the blocks in the block model and for generating and coding composited assays.



Legend:

1 metre composite with grade in % U_3O_8

1.07
14.40
Drill Hole
11.25
1.08

0 2 4 6 8 10

Metres

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Figure 14-3

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Phoenix Zone A (WR-435)
Typical Cross Section with
HG and LG Domains

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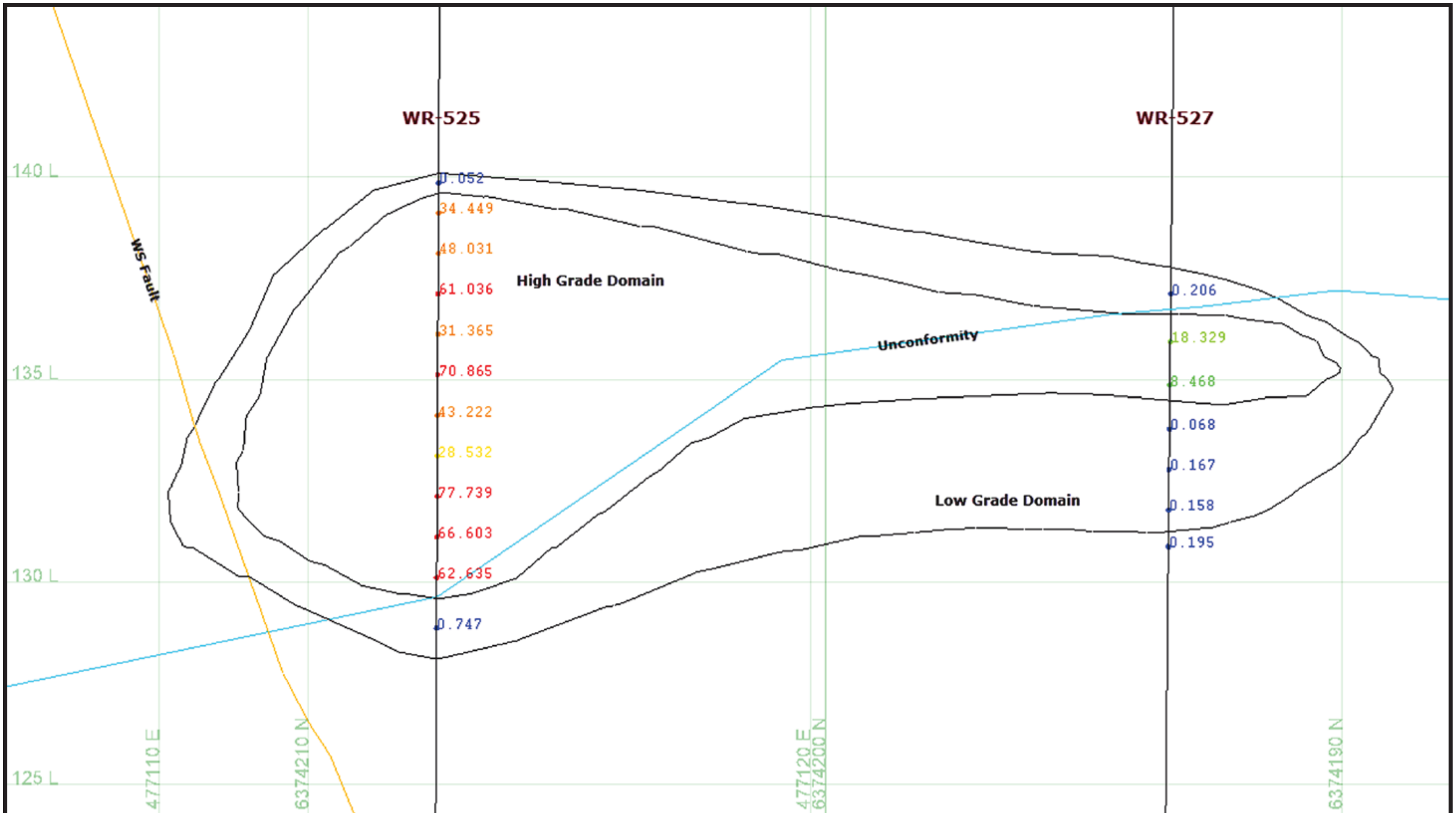

Legend:

1 metre composite with grade in % U_3O_8

1.07
14.40
Drill Hole
11.25
1.08

0 2 4 6 8 10
Metres

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Figure 14-4

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Phoenix Zone A (WR-525) Typical Cross Section with HG and LG Domains

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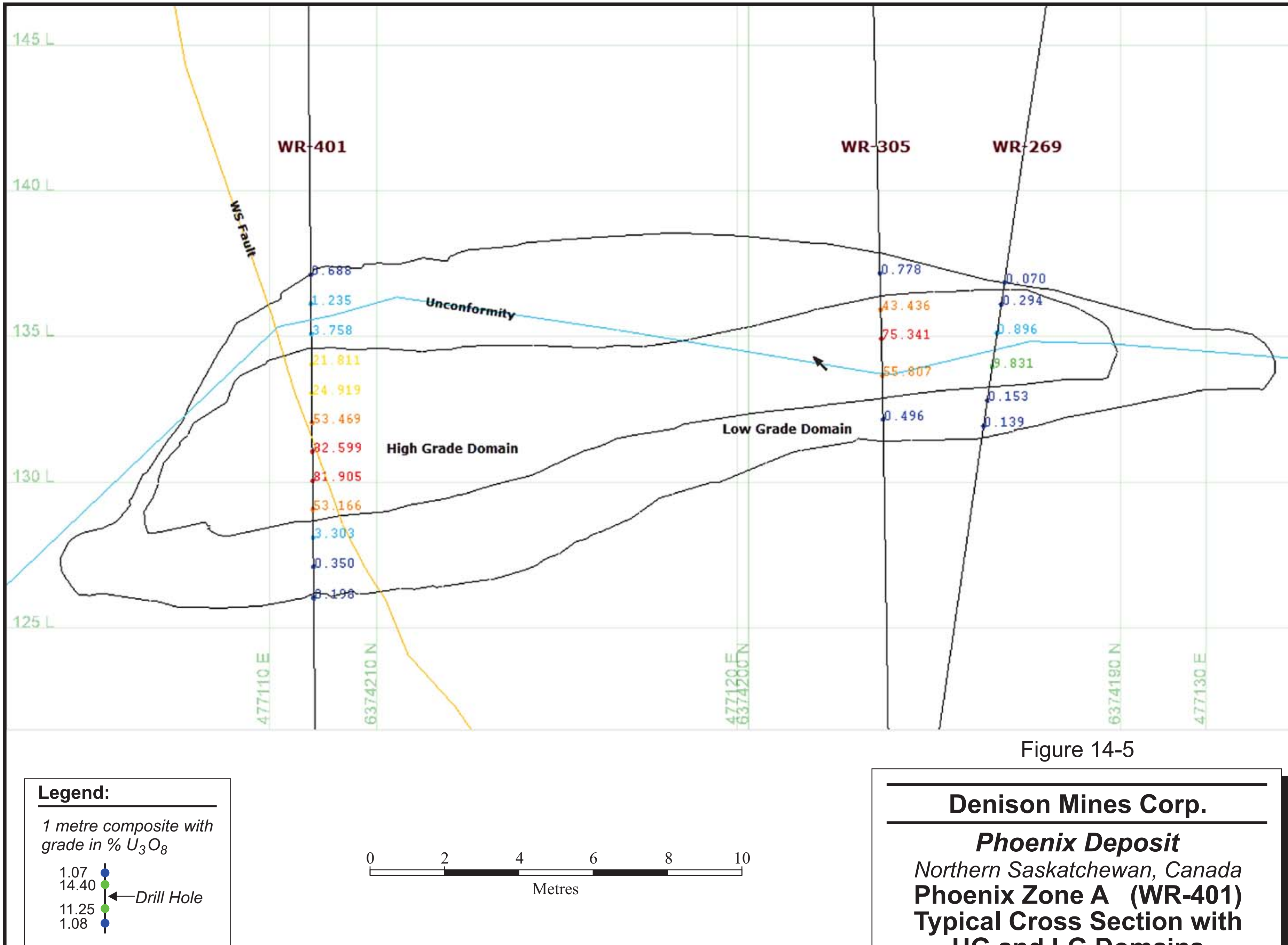

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Figure 14-5

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Phoenix Zone A (WR-401)
Typical Cross Section with HG and LG Domains

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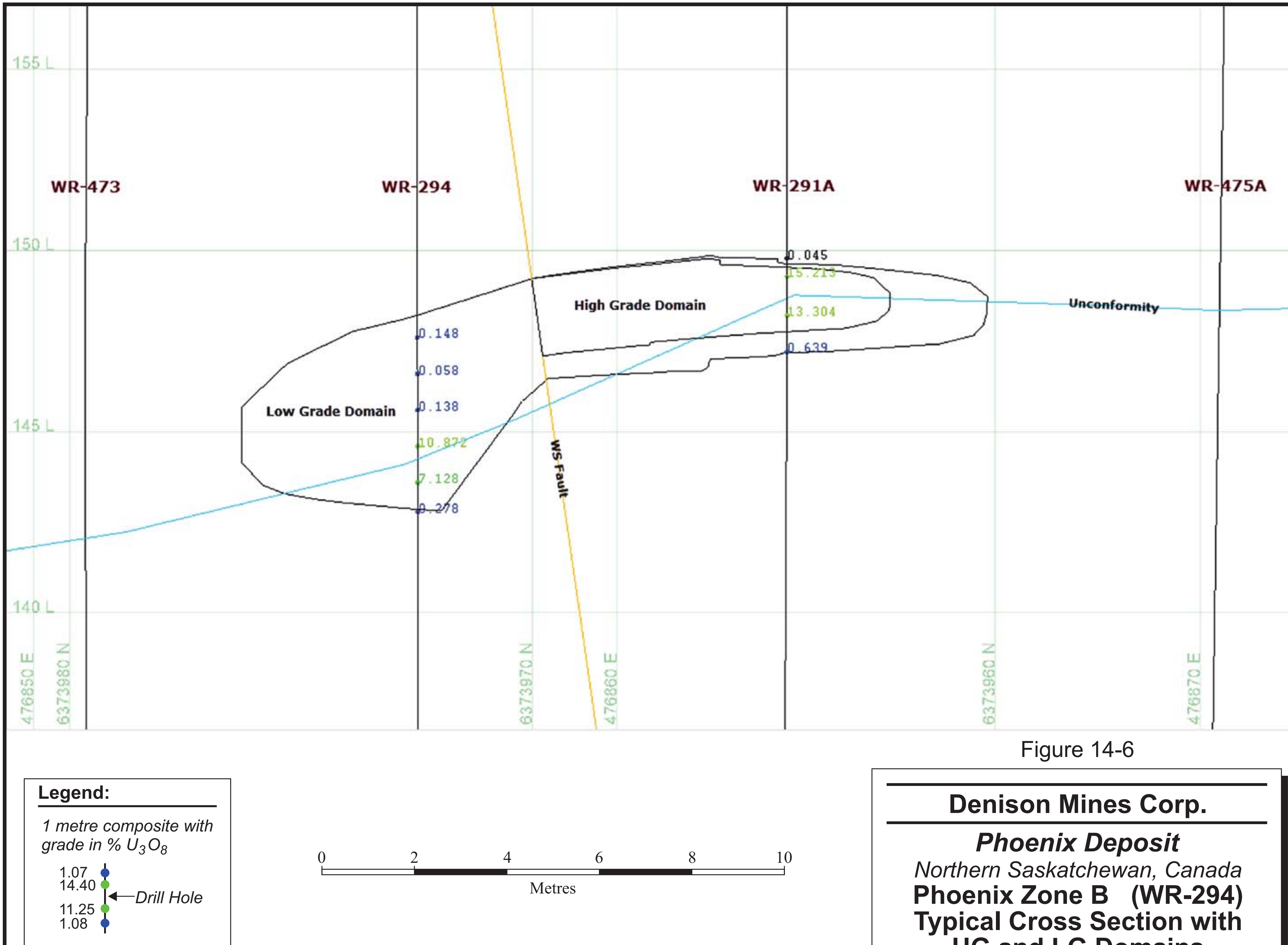

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Figure 14-6

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Phoenix Deposit

Northern Saskatchewan, Canada

Phoenix Zone B (WR-294) Typical Cross Section with HG and LG Domains

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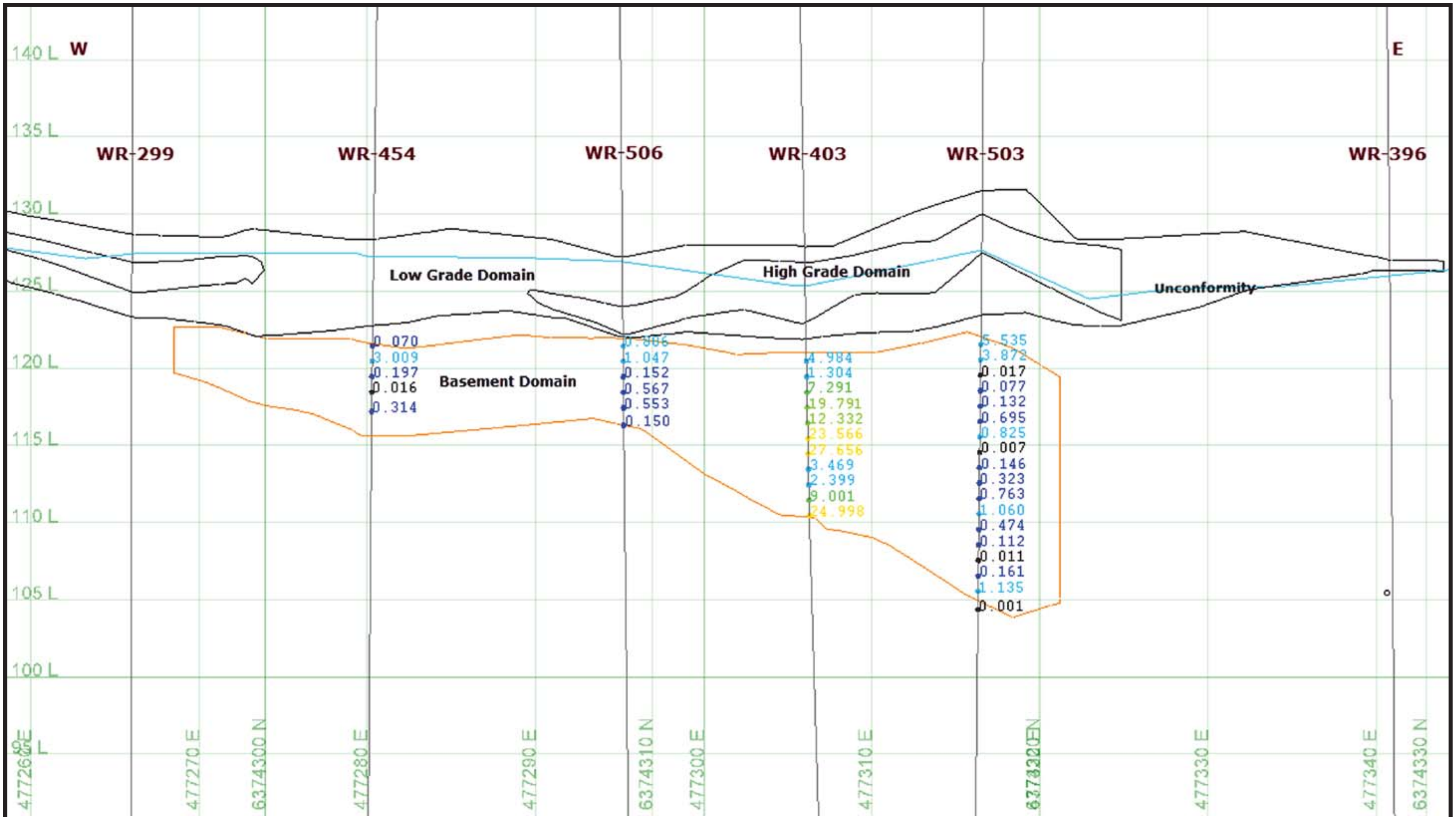

Legend:

1 metre composite with grade in % U_3O_8

1.07
14.40
← *Drill Hole*
11.25
1.08

0 2 4 6 8 10
Metres

June 2014

Figure 14-7

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Phoenix Zone A Basement (WR-403) Longitudinal Section

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DRY BULK DENSITY

Bulk density is used to convert volume to tonnage and to weight the block grade estimates. In high grade uranium deposits such as Phoenix, bulk density varies with grade due to the very high density of pitchblende/uraninite compared to host lithologies. Bulk density also varies with clay alteration and in situ rock porosity. For Mineral Resource estimates of high grade uranium deposits, it is important to estimate bulk density values throughout the deposit and to weight grade values by density since small volumes of high grade material contain large masses of uranium oxide.

Bulk density is determined by Denison with specific gravity (SG) measurements on drill core. SG is calculated as: weight in air/(weight in air – weight in water). Under all reasonable conditions, SG (a unitless ratio) is equivalent to density in t/m^3.

From 2012 to 2014, Denison completed a program of dry bulk density sampling from diamond drill core in order to establish the relationship between bulk density and grade for the Phoenix deposit zones A and B. Dry bulk density samples were selected from the main mineralized zones to represent local major lithologic units, mineralization styles, and alteration types. Samples were collected from half split core, which had been previously retained in the core box after geochemical sampling. Samples were tagged and placed in sample bags on site, then shipped to the SRC in Saskatoon, Saskatchewan. In total, SRC has performed SG measurements on a total of 196 samples; 162 from zone A and 34 from zone B.

Denison carried out correlation analyses of the bulk density values against uranium grades which indicated a strong relationship between density and uranium grade (% U_3O_8) shown in Figure 14-8. The relationship can be represented by the following polynomial formula which is based on a regression fit.

$$\mathbf{y = 0.0008x^2 - 0.0077x + 2.3361}$$

where *y* is dry bulk density (g/cm^3) and *x* is the uranium grade in % U_3O_8. In some cases when the samples are very clay-rich, core fatigue (sample crumbles) prevented the wax from being applied and SG was calculated using the wet/dry method only. Figure 14-9 shows a strong correlation between the methodologies and RPA is satisfied that either methodology is suitable for determining SG.

FIGURE 14-8 LOGARITHMIC PLOT OF DRY BULK DENSITY VERSUS URANIUM GRADE

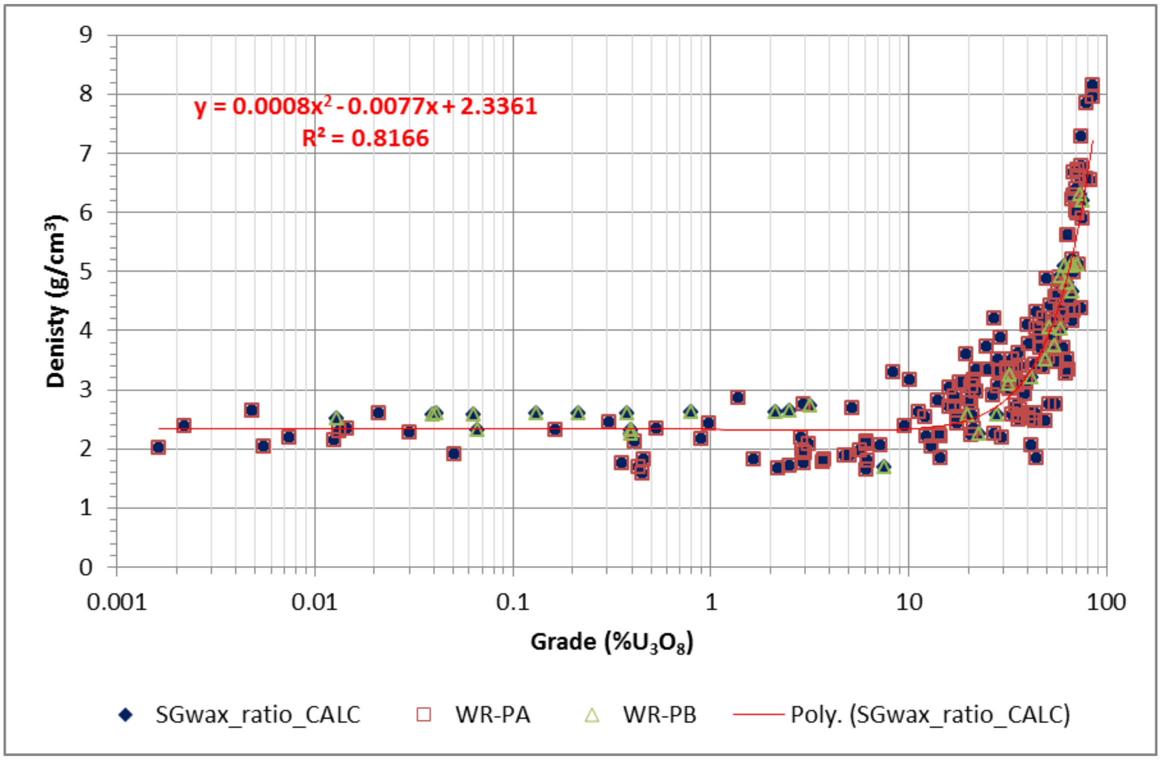
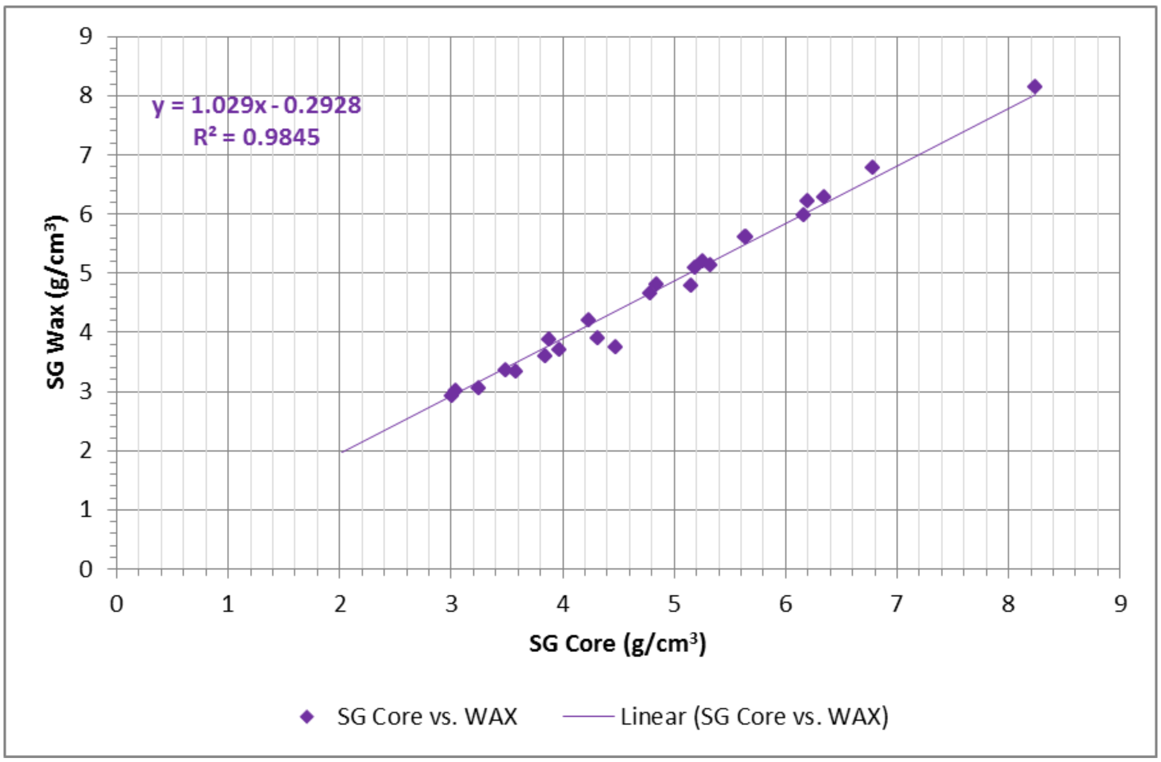


FIGURE 14-9 DRY BULK DENSITY WAX VERSUS DRY/WET METHODS



The regression curve in Figure 14-8 is relatively flat below 10% U_3O_8, with density relatively constant at 2.33 g/cm^3. At grades greater than 20%, dry bulk density increases with higher uranium grades. There are a number of strongly mineralized samples that have low dry bulk densities and vice versa which results in significant scatter in dry bulk density values. The lower bulk density values associated with strongly mineralized samples may be attributed to the amount of clay alteration in the samples. Generally, clay alteration causes decomposition of feldspar and mafic minerals with resultant replacement by lighter clay minerals as well as loss of silica from feldspar that lowers the dry bulk density of the rock.

Denison has estimated a dry bulk density value for each grade value in the drill hole database by using the polynomial formula shown above. In RPA's opinion, the SG sampling methods and resulting data are suitable for Mineral Resource estimation at Phoenix.

STATISTICS

COMPOSITES

As discussed in Section 10 Drilling and Section 11 Sample Preparation, Analyses and Security, all drill core samples with chemical assays are 0.5 m long and all radiometric measurements are 0.1 m long. Radiometric measurements are used in lieu of chemical assays where core recovery is less than 80%. Approximately 23% of the drill holes used for the Phoenix deposit zone A resource estimate have radiometric measurements and approximately 25% of those used for the zone B resource estimate have radiometric measurements.

Denison has composited grade (G), bulk density (D), and grade multiplied by density (GxD) values over one metre run-length intervals to create a composite database for statistical analysis and block estimation purposes. As discussed below, block estimation was done by interpolating GxD and density and dividing them to obtain a weighted grade estimate for each block.

Compositing was restricted to within the wireframe models. Separate composite files were prepared for the Zone A HG domain, Zone A LG domain, Zone B HG domain, Zone B LG domain, and Zone A Basement domain. Table 14-3 lists descriptive statistics of composite grade and GxD for each of these domains. Assay grades are weighted by both sample length and density when compositing.

Figure 14-10 shows histograms of grade for each of these domains. Composites begin in one metre intervals where a drill hole pierces a wireframe. This can result in residual short composites at the bottom of the wireframes. These short composites were retained if they were between 0.5 m and 1.0 m long, and were added to the previous full length composite if they were less than 0.5 m long. Figure 14-11 shows grade versus density plots of these domains.

TABLE 14-3 BASIC STATISTICS OF GRADE AND GXD COMPOSITES FOR PHOENIX DEPOSIT ZONES A AND B HG AND LG DOMAINS
Denison Mines Corp. – Phoenix Deposit

Statistic	Zone A Grade			Zone B Grade		Zone A GxD			Zone B GxD	
	HG	LG	BSMT	HG	LG	HG	LG	BSMT	HG	LG
Mean	34.86	1.77	1.56	21.65	1.57	156.50	4.20	4.48	77.51	3.75
Standard Error	1.93	0.14	0.36	3.74	0.31	12.99	0.36	1.24	16.89	0.76
Median	31.52	0.59	0.32	17.14	0.53	107.54	1.36	0.88	43.68	1.24
Mode	#N/A	0.18	0.00	#N/A	0.25	#N/A	0.42	1.93	#N/A	0.35
Standard Deviation	21.62	2.69	4.26	15.85	2.64	145.26	6.63	14.28	71.67	6.46
Sample Variance	467.56	7.23	18.12	251.25	6.99	21,101.66	43.93	203.78	5,136.66	41.74
Kurtosis	-0.69	10.25	23.16	-1.02	4.65	0.77	15.12	31.86	-0.87	5.24
Skewness	0.45	2.81	4.72	0.54	2.36	1.27	3.23	5.49	0.84	2.46
Range	82.31	20.13	27.66	49.24	10.86	595.34	56.99	101.48	212.74	27.49
Minimum	0.29	0.01	0.00	1.46	0.01	0.69	0.02	0.00	3.42	0.02
Maximum	82.60	20.14	27.66	50.69	10.87	596.02	57.01	101.49	216.16	27.51
Sum	4,357.3	607.7	214.9	389.7	113.0	19,562.5	1,445.5	595.6	1,395.2	270.0
Count	125	344	138	18	72	125	344	133	18	72
CV	0.62	1.52	2.73	0.73	1.68	0.93	1.58	3.19	0.92	1.72

FIGURE 14-10 GRADE COMPOSITE HISTOGRAMS FOR ZONES A AND B HG AND LG DOMAINS

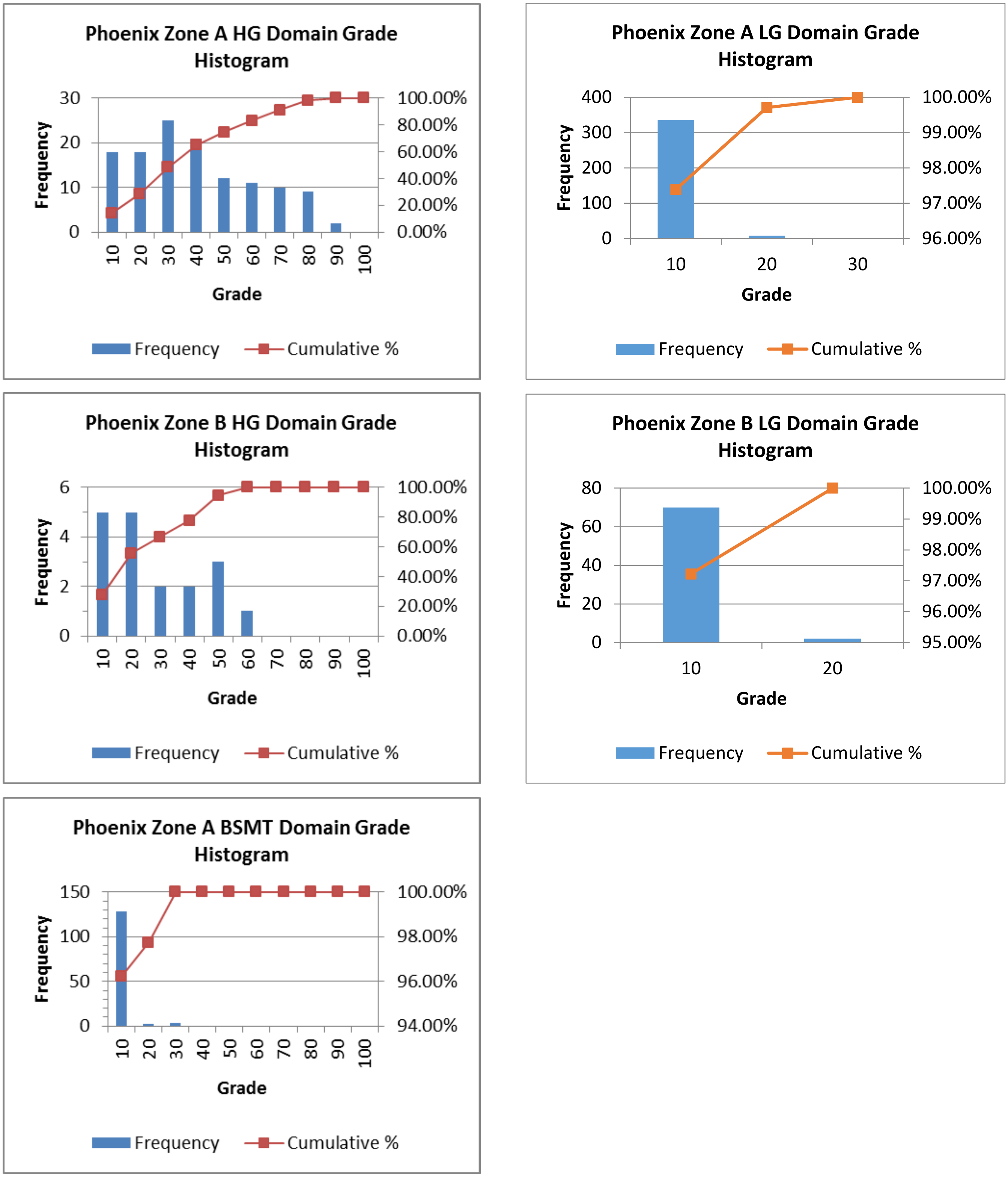
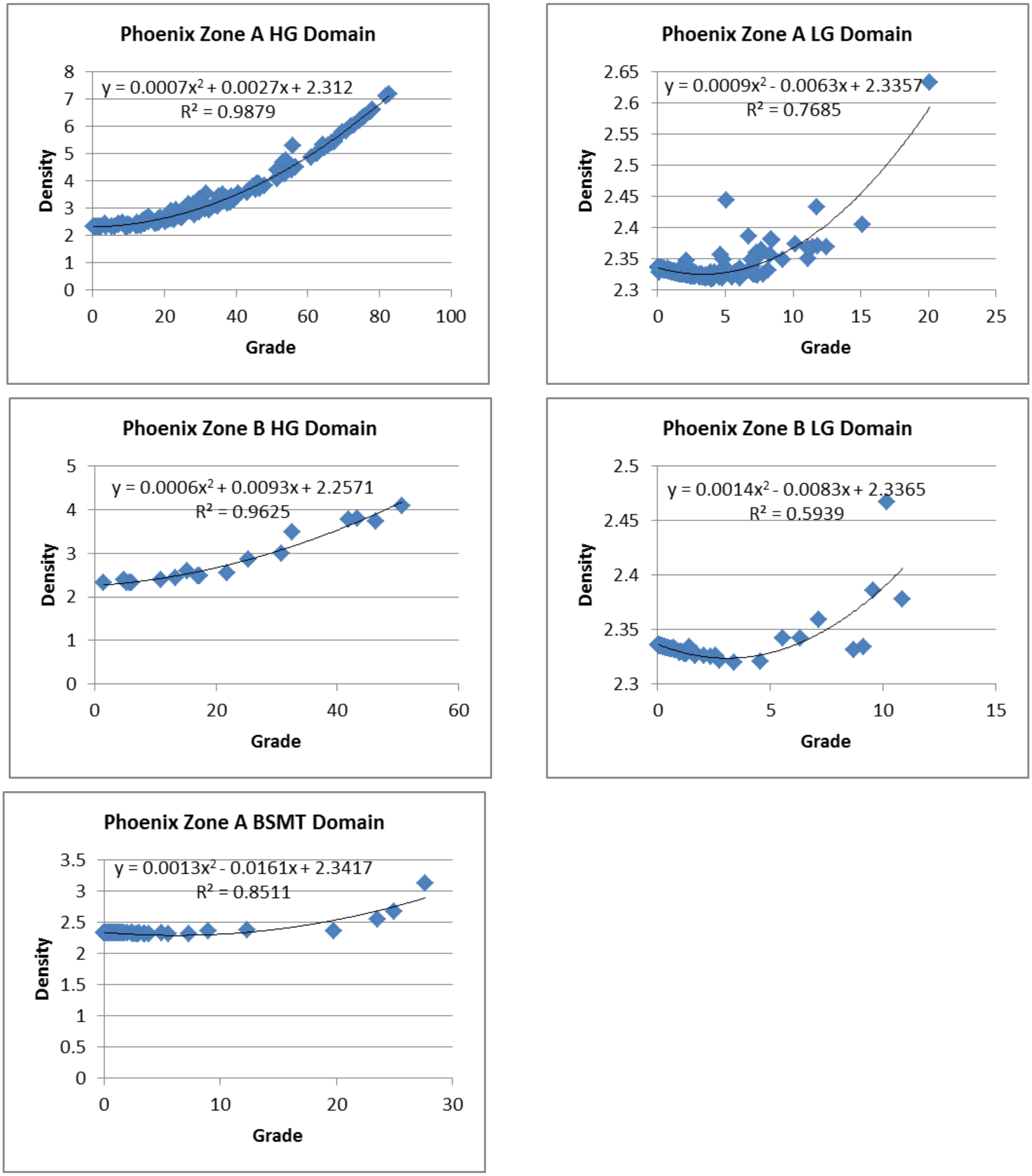


FIGURE 14-11 GRADE VS. DENSITY PLOTS FOR ZONES A AND B HG AND LG DOMAINS



TREATMENT OF HIGH GRADE VALUES

Capping or cutting of high grade samples is sometimes warranted for Mineral Resource estimation for scenarios when high grade outliers may have an undue influence on the estimation process. Although the Phoenix deposit is a high grade uranium deposit, adequate sample support, the use of high grade domains, and lack of apparent high grade outliers made high grade capping unnecessary. The influence of high grade values, however, was restricted during the block estimation process as discussed below.

VARIOGRAPHY

For zone A, RPA reviewed variograms of grade and GxD for the HG domain composite data and grade for the LG domain composite data. Variograms were prepared in the downhole direction, along a northeasterly strike direction, and horizontally across the strike direction. Variograms were of fair quality considering the limited number of composite data with a nugget effect of approximately 10% of the sill. The GxD variograms were similar to those of grade. The variograms suggested approximate ranges for the Zone A HG domain of 2.4 m downhole, 35 m along strike, and 10 m or less across strike; and for the Zone A LG domain 2.1 m downhole, 25 m or less along strike, and 25 m across strike. These ranges were used to derive search ellipse dimensions for block interpolations.

BLOCK MODEL INTERPOLATION

Three dimensional block models were constructed using Vulcan version 8.1.4 Mine Modelling Software. The variables uranium grade (G), density (D) and grade times density (GxD) were interpolated using an inverse distance squared (ID^2) algorithm for each mineralized domain. Hard boundaries were employed at domain contacts so that composites from within a given domain could not influence block grades in other domains.

For zones A and B, blocks were five metres long along the main northeast trend, two metres wide across the main trend, and one metre high. For the zone A basement domain, blocks were two metres long along the main northeast trend, one metre wide across the main trend, and one metre high. A whole block approach was used whereby the block was assigned to the domain where its centroid was located.

The interpolation strategy involved setting up search parameters in two passes for each domain. Search ellipses were oriented with the major axis oriented parallel to the dominant northeasterly trend of the zones. The semi-major axis was oriented horizontally, normal to the major axis (across strike) and the minor axis was vertical.

GxD and D were interpolated into the model using an initial pass. Blocks which did not receive an interpolated grade were then interpolated in the second pass which resulted in all blocks being populated. Block grade was derived from the interpolated GxD value by dividing that value by the interpolated density value for each block. Grades not weighted by density (G) were also interpolated as a check.

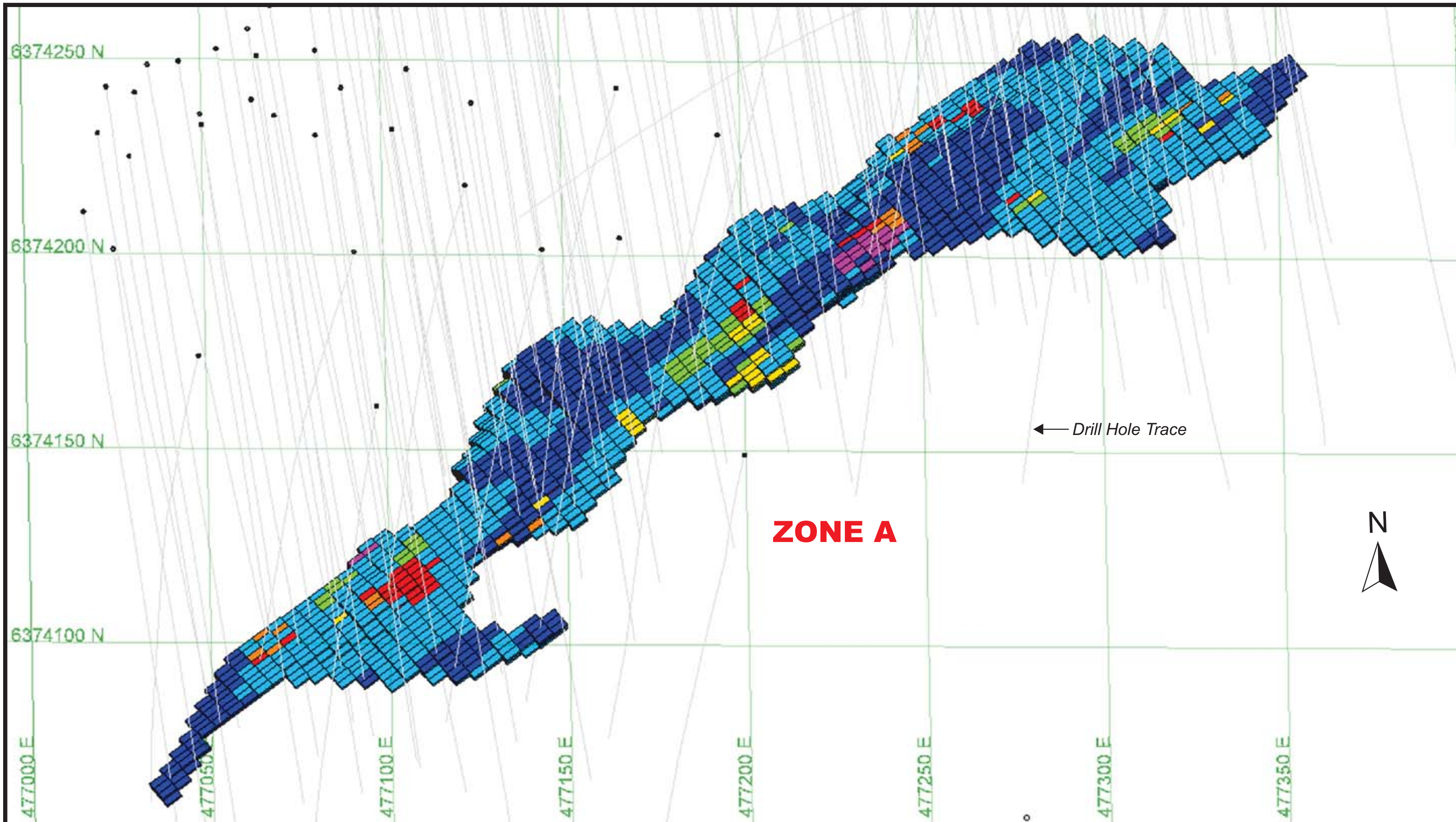
In order to reduce the influence of very high grade composites, grades greater than a designated threshold level for each domain were restricted to shorter search ellipse dimensions. If the search ellipse contained a composite greater than the specified grade, it was used for interpolation only if it fell within the restricted search ellipse. The threshold grade levels were chosen from the basic statistics and from visual inspection of the apparent continuity of very high grades within each domain.

Search parameters are listed in Table 14-4 for the Phoenix deposit zones A and B, HG and LG domains. Major axis is horizontal along the main mineralized trend of N52°E, semi-major axis is horizontal normal to the main trend, and the minor axis is vertical.

TABLE 14-4 BLOCK MODEL INTERPOLATION PARAMETERS
Denison Mines Corp. – Phoenix Deposit

Deposit and Domain	Pass	Search Radii (m)			Number of Composites Used		
		Major	Semi-major	Minor	Min	Max	Max per DH
A Deposit HG	First	35	15	8	3	8	2
	Second	50	25	10	3	8	2
	Restricted >60% U_3O_8	15	6	4	3	8	2
A Deposit LG	First	35	15	8	3	8	2
	Second	50	25	10	3	8	2
	Restricted >6% U_3O_8	15	6	4	3	8	2
A Deposit BSMT	First	10	10	4	2	6	2
	Second	20	20	4	2	6	2
	Restricted >3% U_3O_8	10	10	4	2	6	2
B Deposit HG	First	35	15	6	3	8	2
	Second	50	25	10	3	8	2
	Restricted >40% U_3O_8	15	5	4	3	8	2
B Deposit LG	First	35	15	6	3	8	2
	Second	50	25	10	3	8	2
	Restricted >4% U_3O_8	15	5	4	3	8	2

Figure 14-12 is a three-dimensional isometric view looking north at the zone A block model with colour coded grades. Higher grades are red and green. The blocks shown are mostly in the LG domain. Figure 14-13 is an isometric view looking north at the HG domain of the zone A block model with colour coded grades. Higher grades are red and purple.



Block Grade (U_3O_8 %)

Black	*< 0.001 %*	Yellow	*10 % - 20 %*
Dark blue	*0.001 % - 0.8 %*	Orange	*20 % - 30 %*
Light blue	*0.8 % - 5 %*	Red	*30 % - 50 %*
Green	*5 % - 10 %*	Magenta	*> 50 %*

0 25 50 75 100
Metres

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Figure 14-12

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Phoenix Zone A
3D Block Model

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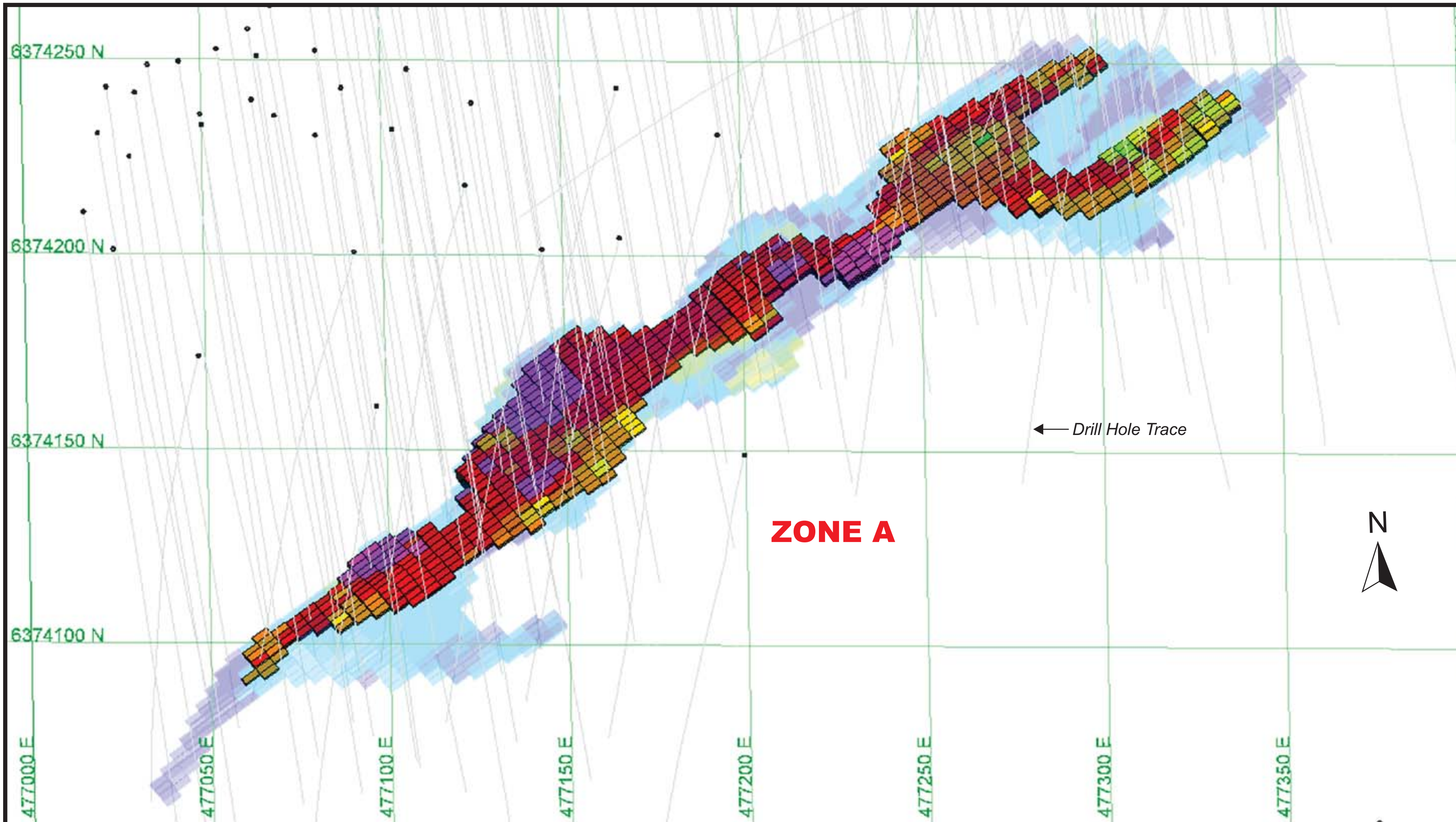

Figure 14-13

Block Grade (U_3O_8 %)

■	*< 0.001 %*	■	*10 % - 20 %*
■	*0.001 % - 0.8 %*	■	*20 % - 30 %*
■	*0.8 % - 5 %*	■	*30 % - 50 %*
■	*5 % - 10 %*	■	*> 50 %*

June 2014

0 25 50 75 100
Metres

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Phoenix Zone A
3D HG Domain Block Model

RPA

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MINERAL RESOURCE CLASSIFICATION

The Mineral Resources for the Phoenix deposit are classified as Indicated and Inferred based on drill hole spacing and apparent continuity of mineralization.

At zone A, the drill hole spacing is approximately 10 m on sections spaced 25 m apart. The classification of Indicated based on drill hole density and good grade continuity along strike is appropriate in RPA's opinion for all of the LG and HG domains. The zone A basement domain is classified as Inferred because of uncertainty of grade continuity due to the small number of drill holes.

At zone B, the drill hole spacing is approximately 10 m on sections spaced 25 m apart. The classification of Indicated is appropriate in RPA's opinion for most of the LG and HG domains. In the northeastern part of zone B, drill hole sections are spaced at approximately 35 m and the most northeasterly drill hole does not correlate well spatially with other drill holes because its elevation is slightly lower than the others. This part of zone B is classified as Inferred because there is some uncertainty in the continuity of grade in both the HG and LG domains. Figure 14-14 shows the area of Inferred Mineral Resources along with Indicated Mineral Resources at zone B.

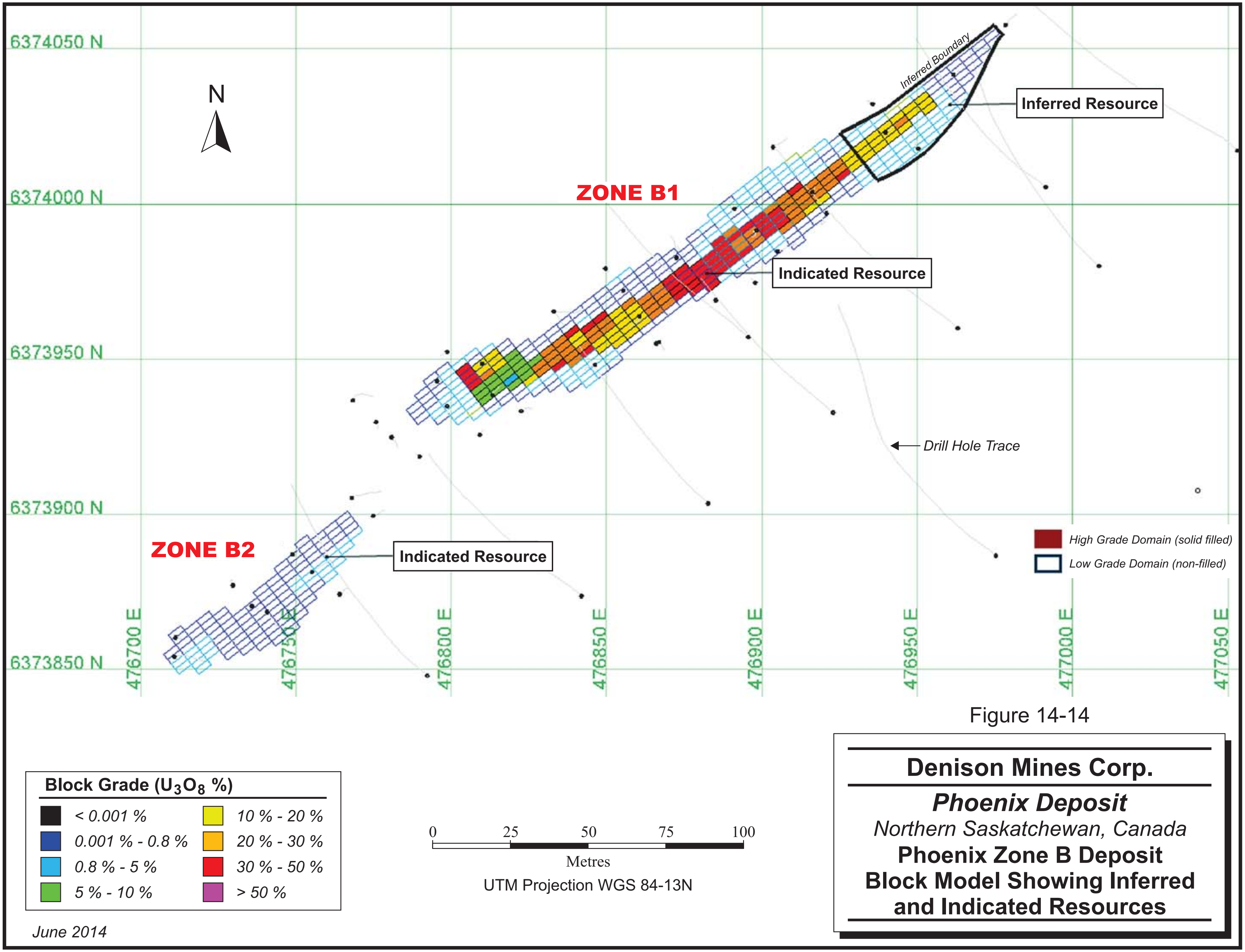

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Figure 14-14

Denison Mines Corp.

Phoenix Deposit

Northern Saskatchewan, Canada

Phoenix Zone B Deposit Block Model Showing Inferred and Indicated Resources

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BLOCK MODEL VALIDATION

The Phoenix deposit block models were validated by the following checks:

- Comparison of domain wireframe volumes with block volumes.
- Visual comparison of composite grades with block grades.
- Comparison of block grades with composite grades used to interpolate grades.
- Comparison with estimation by a different method.

In RPA's opinion, the Mineral Resource estimate is reasonable and acceptable.

VOLUME COMPARISON

Wireframe volumes were compared to block volumes for each domain at the Phoenix deposit. This comparison is summarized in Table 14-5 and results show that the differences between the wireframe volumes and block model volume are less than 1%, except for the Zone B HG domain where the difference is 4.2% due to the small volume of the wireframe combined with the whole block approach.

TABLE 14-5 VOLUME COMPARISON FOR WIREFRAME AND BLOCKS BY DOMAIN
Denison Mines Corp. – Phoenix Deposit

Deposit	Wireframe				Block Model		% Difference
	Points	Triangles	Surface Area	Volume (m^3)	Blocks	Volume (m^3)	
Zone A HG	4,965	9,926	16,732	17,999	1,808	18,080	0.45%
Zone A LG	13,313	26,682	49,758	54,270	5,416	54,160	-0.20%
Zone B HG	308	612	3,722	3,109	324	3,240	4.05%
Zone B LG	1,604	3,254	14,911	15,142	1,492	14,920	-1.49%
Zone A Basement	132	260	2009	2	1,115	2,230	-1.02%

VISUAL COMPARISON

Block grades were visually compared with drill hole composites on cross sections, longitudinal sections, and plan views. The block grades and composite grades correlate very well visually within the HG and LG domains of Phoenix deposit Zones A and B.

STATISTICAL COMPARISON

Statistics of the block grades are compared with statistics of composite grades in Table 14-6 for all blocks and composites within the Phoenix deposit Zones A and B, HG and LG domains. Grades are weighted by density for the composites and tonnage for the blocks.

TABLE 14-6 STATISTICS OF BLOCK GRADES COMPARED TO COMPOSITE GRADES BY DOMAIN
Denison Mines Corp. – Phoenix Deposit

Statistic	Zone A HG		Zone A LG		Zone A BSMT		Zone B HG		Zone B LG	
	Blocks	*Comps*	Blocks	*Comps*	Blocks	*Comps*	Blocks	*Comps*	Blocks	*Comps*
Mean (%U_3O_8)	39.18	34.86	1.73	1.77	1.35	1.56	25.71	21.65	1.34	1.57
Standard Error	0.37	1.93	0.02	0.14	0.35	0.36	0.59	3.74	0.04	0.31
Median (%U_3O_8)	36.51	31.52	1.22	0.59	0.14	0.32	26.63	17.14	0.69	0.53
Mode (%U_3O_8)	N/A	N/A	0.44	0.18	0.00	0.00	N/A	N/A	N/A	0.25
Standard Deviation (%U_3O_8)	15.63	21.62	1.72	2.69	4.11	4.26	10.66	15.85	1.65	2.64
Sample Variance	244.16	467.56	2.98	7.23	16.91	18.12	113.73	251.25	2.71	6.99
Kurtosis	-0.13	-0.69	16.02	10.25	25.63	23.16	-1.18	-1.02	5.04	4.65
Skewness	0.67	0.45	3.05	2.81	4.90	4.72	-0.08	0.54	2.23	2.36
Range (%U_3O_8)	77.76	82.31	19.85	20.13	27.82	27.66	44.86	49.24	10.48	10.86
Min (%U_3O_8)	4.62	0.29	0.03	0.01	0.00	0.00	3.46	1.46	0.01	0.01
Max (%U_3O_8)	82.38	82.60	19.88	20.14	27.82	27.66	48.32	50.69	10.49	10.87
Sum	70,832	4,357	9,354	608	186.78	215	8,329	390	2,025	113
Count	1,808	125	5,417	344	138	138	324	18	1,506	72
CV	0.40	0.62	1.00	1.52	3.04	2.73	0.41	0.73	1.23	1.68

In some cases the average block grades are higher than the average composite grades, which RPA attributes to density weighting of the block grades.

CHECK BY DIFFERENT ESTIMATION METHODS

RPA has carried out check estimates of the Denison ID2 block models of the Phoenix deposit using the contour method.

For the contour method (Agnerian and Roscoe, 2002), grade times thickness times density (GxTxD) values for each drill hole intercept were plotted on plans and contoured. The areas between the contours were measured and multiplied by the average value in the contour interval. The GxTxD values are proportional to pounds of U_3O_8 per square metre and the sum of these values times area are converted to total pounds of U_3O_8 for each domain.

Thickness times density (TxD) values were also plotted on plans and contoured. The areas between the contours were measured and multiplied by the average value in the contour interval. The sum of the TxD values multiplied by the area represents tonnage for each of the domains. For the contour method check on the Phoenix deposit Zone A HG domain, the tonnes, grade, and contained pounds of U_3O_8 estimated by the contour method are in the same general range as the ID2 block model estimate.

MINERAL RESOURCE ESTIMATE

Table 14-7 lists the Mineral Resource estimate for the Phoenix deposit by domain and resource category. The effective date of the resource estimate is May 28, 2014 and the cut-off grade is 0.8% U_3O_8.

The cut-off grade of 0.8% U_3O_8 is based on internal conceptual studies by Denison and a price of US$50/lb U_3O_8. The cut-off grade is consistent with the previous Phoenix Mineral Resource estimate reported in 2012. The HG domains are not sensitive to cut-off grades less than 5% U_3O_8 but the LG domains are quite sensitive to cut-off grade.

In RPA's opinion, the estimation methodology is consistent with standard industry practice and the Phoenix deposit Mineral Resource estimate is considered to be reasonable and acceptable.

TABLE 14-7 MINERAL RESOURCE ESTIMATE FOR THE PHOENIX DEPOSIT AT A CUT-OFF GRADE OF 0.8% U_3O_8 AS OF MAY 28, 2014
Denison Mines Corp. – Phoenix Deposit

Category	Deposit and Domain	Tonnes	Grade (% U_3O_8)	Contained Metal (million lb U_3O_8)
Indicated	Zone A HG	62,900	43.24	59.9
Indicated	Zone A LG	84,300	2.37	4.4
Indicated	Zone B HG	8,500	28.02	5.2
Indicated	Zone B LG	10,700	2.91	0.7
Subtotal Indicated	Zone A	147,200	19.81	64.3
Subtotal Indicated	Zone B	19,200	13.94	5.9
Total Indicated		**166,400**	**19.13**	**70.2**
Inferred	Zone A HG	0	0.00	0.0
Inferred	Zone B HG	700	14.48	0.2
Inferred	Zone B LG	4,800	1.79	0.2
Inferred	Zone A Basement	3,100	10.24	0.7
Subtotal Inferred	Zone A	0	0.00	0.0
Subtotal Inferred	Zone B	5,500	3.30	0.4
Subtotal Inferred	Zone A Basement	3,100	10.24	0.7
Total Inferred		**8,600**	**5.80**	**1.1**

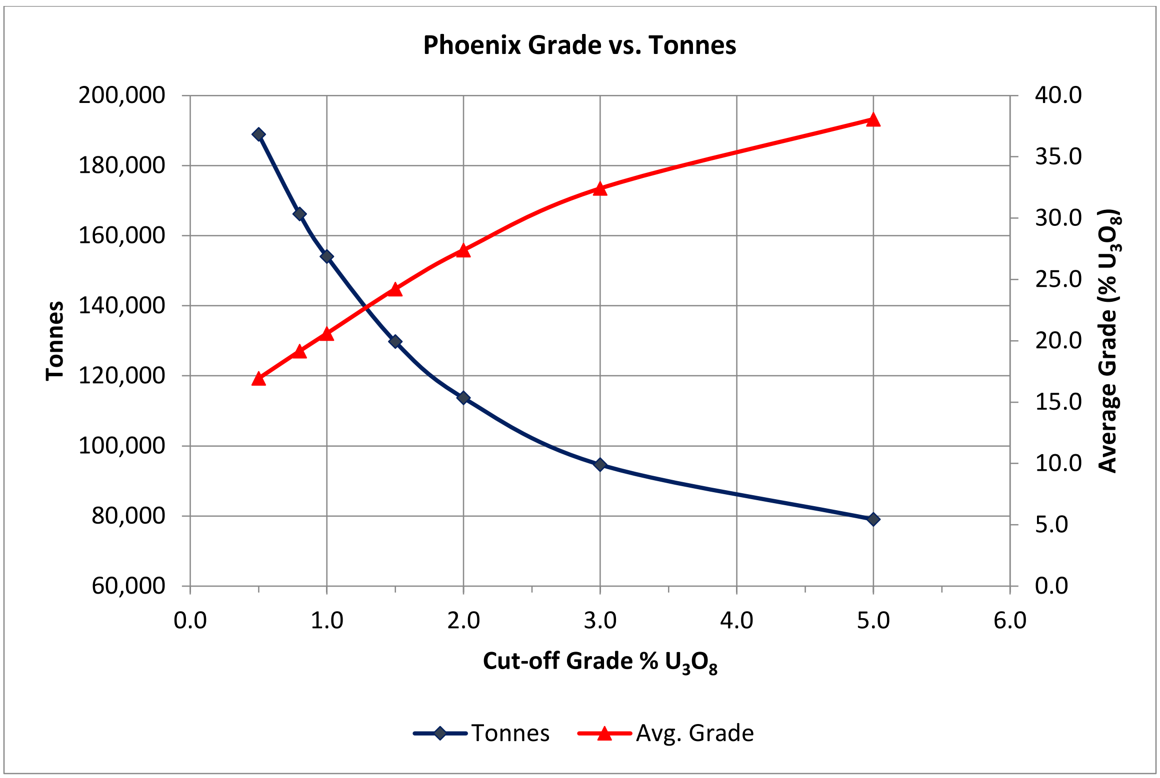
Notes:
1. CIM Definitions were followed for classification of Mineral Resources.
2. Mineral Resources are reported above a cut-off grade of 0.8% U_3O_8, which is based on internal Denison studies and a price of US$50 per lb U_3O_8.
3. High grade composites are subjected to a high grade search restriction.
4. Bulk density is derived from grade using a formula based on 196 measurements.
5. Numbers may not add due to rounding.

Table 14-8 and Figure 14-15 show the sensitivity of the Indicated Mineral Resource to cut-off grade. It can be seen that, although there is some sensitivity of the tonnes and grade to cut-off grade, the contained pounds of U_3O_8 are much less sensitive to cut-off grade. The cut-off grade affects essentially only the LG domains of zones A and B because virtually all of the blocks in the HG domains of Zone A and B are above the 5% U_3O_8 cut-off grade.

TABLE 14-8 INDICATED MINERAL RESOURCES AT VARIOUS CUT-OFF GRADES
Denison Mines Corp. – Phoenix Deposit

Cut-off % U_3O_8	Grade % U_3O_8	Tonnes	Lb U_3O_8 Millions
0.50	16.94	188,900	70.5
0.80	**19.13**	**166,200**	**70.2**
1.00	20.60	154,000	69.9
1.50	24.23	129,800	69.3
2.00	27.40	113,700	68.7
3.00	32.42	94,700	67.7
5.00	38.07	79,100	66.3

FIGURE 14-15 INDICATED MINERAL RESOURCES TONNES AND GRADE AT VARIOUS CUT-OFF GRADES



15 MINERAL RESERVE ESTIMATE

This section is not applicable.

16 MINING METHODS

This section is not applicable.

17 RECOVERY METHODS

This section is not applicable.

18 PROJECT INFRASTRUCTURE

This section is not applicable.

19 MARKET STUDIES AND CONTRACTS

This section is not applicable.

20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

This section is not applicable.

21 CAPITAL AND OPERATING COSTS

This section is not applicable.

22 ECONOMIC ANALYSIS

This section is not applicable.

23 ADJACENT PROPERTIES

This section is not applicable.

24 OTHER RELEVANT DATA AND INFORMATION

This section is not applicable.

25 INTERPRETATION AND CONCLUSIONS

Drilling at the Wheeler River Property from 2008 to 2014 has discovered and delineated the Phoenix uranium deposit at the intersection of the Athabasca sandstone basal unconformity with a regional fault zone, the WS fault, and graphitic pelite basement rocks.

The Phoenix deposit consists of two separate lenses known as zone A and zone B located approximately 400 m below surface within a one kilometre long, northeast trending mineralized corridor. Both lenses contain a higher grade core within a lower grade mineralized envelope and extend southeastward from the WS fault along the unconformity. Some mineralization also occurs on the northwest side of the WS fault but commonly at a slightly lower elevation.

In addition to the zones A and B, a new domain (zone A basement) of uranium mineralization below and adjacent to zone A has been identified in basement rocks and included in this report.

Mineral Resources for Phoenix, based on 196 diamond drill holes totalling 89,835 m, were estimated by Denison and audited by RPA. Indicated Resources total 166,400 t at 19.13% U_3O_8 containing 70.2 million lbs U_3O_8. Inferred Resources total 8,600 t at 5.80% U_3O_8 containing 1.1 million lbs U_3O_8.

In RPA's opinion, a Preliminary Economic Assessment could be carried out on the Phoenix deposit.

New uranium mineralization has recently been discovered at the Gryphon zone located three kilometres northwest of the Phoenix deposit. Although intersected by only two drill holes to date, the Gryphon discovery warrants considerable follow-up drilling in RPA's view.

26 RECOMMENDATIONS

The Wheeler River Joint Venture is planning a summer 2014 exploration program consisting of a 14,500 m (20-hole) diamond drill program with two rigs beginning in June 2014. The budget for this program is $3.6 million. Emphasis will be on following up the newly discovered Gryphon zone mineralization in the K North target area as well as similar geological targets along trend of Gryphon. A 3D DC-resistivity survey is also planned for the area north of the Phoenix deposit. RPA has reviewed and concurs with the Wheeler River Joint Venture planned 2014 exploration program.

In addition to this work, RPA recommends that a Preliminary Economic Assessment be considered at an estimated cost of approximately $200,000.

If further drilling is completed at Phoenix, RPA recommends that Denison continue to collect additional core density data to increase the confidence of estimated densities of the entire grade range.

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28 DATE AND SIGNATURE PAGE

This report titled "Technical Report on a Mineral Resource Estimate Update for the Phoenix Uranium Deposit, Wheeler River Project, Eastern Athabasca Basin, Northern Saskatchewan, Canada" and dated June 17, 2014 was prepared and signed by the following author:

(Signed & Sealed) "*William E. Roscoe*"

Dated at Toronto, ON
June 17, 2014

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

29 CERTIFICATE OF QUALIFIED PERSON

WILLIAM E. ROSCOE

I, William E. Roscoe, Ph.D., P.Eng., as an author of this report entitled "Technical Report on a Mineral Resource Estimate Update for the Phoenix Uranium Deposit, Wheeler River Project, Eastern Athabasca Basin, Northern Saskatchewan, Canada", prepared for Denison Mines Corp. (the "Issuer"), and dated June 17, 2014, 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 46 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Thirty-one years of 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 visited the Wheeler River Project on October 30, 2012, and June 16, 2014.

6. I am responsible for all Sections 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 previously authored a NI 43-101 Technical Report on the property that is the subject of the Technical Report.

9. I have read NI 43-101 and this Technical Report, 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 17th day of June, 2014

(Signed & Sealed) "*William E. Roscoe*"

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